APPENDIX E-26 2021 NSPW Hayward Project Recreation Report

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February 24, 2021

VIA Electronic Mail

Ms. Cheryl Laatsch
Wisconsin DNR
N7725 Hwy 28
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Ms. Angela Tornes
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626 E. Wisconsin Ave., Suite 400
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Mr. Nick Utrup
U.S. Fish & Wildlife Service
4101 American Boulevard East
Bloomington, MN 55425

Mr. John McCue
City of Hayward Public Works
P.O. Box 969
Hayward, WI 54843

Subject: **Recreation Report**
Hayward Hydro – FERC Project No. 2417

Dear Ms. Laatsch, Ms. Tornes, Mr. Utrup and Mr. McCue:

Enclosed for your review is the 2021 Recreation Report for the Hayward Hydroelectric Project (Project). Pursuant to Article 414 of the Federal Energy Regulatory Commission's license for the Project, Northern States Power Company (licensee), d/b/a Xcel Energy, is required to monitor recreational use every six years to determine whether existing recreation facilities are meeting recreation needs. License Article 414 further directs licensee to allow the agencies 30 days to provide comment on the recreation report.

Please provide any comments you may have by **March 27, 2021**. If I do not hear from you by then, I will assume that you are satisfied with the report and will file it with the Commission accordingly. Should you have any questions, please feel free to contact me at (715) 225-8841 or matthew.j.miller@xcelenergy.com.

Sincerely,

Matthew J. Miller

Digitally signed by Matthew J. Miller
DN: cn=Matthew J. Miller, o=Xcel Energy, ou=Energy Supply, email=matthew.j.miller@xcelenergy.com, c=US
Date: 2021.02.24 13:50:15 -06'00'

Matthew Miller
Hydro License Compliance Consultant

Enclosure: Hayward Recreation Report

c: Marty Sneen – EA Associates (via e-mail)
Scott Crotty, Rob Olson – Xcel Energy (via e-mail)
Hayward Project Files

Recreation Report for the Hayward Hydroelectric Project (FERC Project No. 2417)

Prepared for

Northern States Power Company - Wisconsin
d/b/a Xcel Energy
P.O. Box 8
Eau Claire, Wisconsin 54702

Prepared by

EA Engineering, Science, and Technology, Inc., PBC
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February 2021
Version: DRAFT
EA Project No. 1605201

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CONTENTS

Page

LIST OF FIGURES ii
LIST OF TABLES iii
LIST OF ACRONYMS AND ABBREVIATIONS iv
1. INTRODUCTION 1-1
2. METHODS 2-1
2.1 INVENTORY OF FACILITIES 2-1
2.2 INTERVIEWS WITH OWNERS AND OPERATORS OF FACILITIES AND OTHER KEY PERSONNEL 2-1
2.3 COUNTS OF RECREATIONAL USERS 2-1
2.4 SELF-REPORTING SURVEYS 2-2
3. DESCRIPTIONS OF RECREATIONAL FACILITIES AT LAKE HAYWARD 3-1
3.1 LAKE HAYWARD BOAT LANDING 3-1
3.2 LAKE HAYWARD BEACH AND PARK 3-1
3.3 TAILWATER ACCESS AND CANOE PORTAGE 3-1
3.4 OTHER ACCESS POINTS 3-2
4. SUMMARIES OF INTERVIEWS WITH KEY PERSONNEL 4-1
4.1 CHRIS ROMPORTL – NPS 4-1
4.2 MAX WOLTER – WDNR 4-1
4.3 RICKY REICHERT – XCEL ENERGY 4-2
4.4 JOHN MCCUE – CITY OF HAYWARD PUBLIC WORKS 4-2
4.5 AARON KOSHATKA – WDNR 4-2
5. RECREATIONAL USE ESTIMATES 5-1
6. RESULTS OF SELF-REPORTING SURVEYS 6-1
6.1 POPULAR ACTIVITIES 6-1
6.2 VISITOR SATISFACTION 6-1
6.3 REPORTED RECREATIONAL USE 6-1
7. DISCUSSION OF ADEQUACY OF CURRENT FACILITIES 7-1
8. RECOMMENDATIONS FOR FUTURE USE 8-1
9. REFERENCES 9-1

APPENDIX A: AGENCY CORRESPONDENCE

LIST OF FIGURES

Number	Title	Page
1-1	Location of Lake Hayward, Hayward, Wisconsin	1-3
2-1	Lake Hayward Self-Reporting Recreational Use Survey Form	2-3
2-2	Example of survey boxes installed at select recreational facilities	2-4
3-1	Map of Lake Hayward showing location of recreational facilities	3-3
5-1	Recreational use estimates by month, Lake Hayward (January–December 2020)	5-7

LIST OF TABLES

Number	Title	Page
2-1	Estimated local population change, Lake Hayward tri-county area (2013/2014–2019)	2-2
5-1	Estimated count for daytime recreational use (in recreation days), Lake Hayward (January–December 2020)	5-3
5-2	Estimated count of recreational use by type of day, Lake Hayward (January–December 2020)	5-5
6-1	Ratings of recreational facilities (on a scale of 1 to 5) and overall recreational experiences (on a scale of 1 to 10), Lake Hayward (January–December 2020) (n = 1)	6-1
6-2	General visitor comments, Lake Hayward (January–December 2020)	6-1
6-3	Percent of recreation time (0- 100%) spent at facilities, Lake Hayward (January–December 2020) (n = 1)	6-2
6-4	Average number of days and nights spent recreating, Lake Hayward (January–December 2020) (n = 1)	6-2
6-5	Average number of hours spent at Lake Hayward during listed time periods (January–December 2020) (n = 1)	6-3

LIST OF ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
COVID-19	Coronavirus Disease 2019
FERC	Federal Energy Regulatory Commission
NPS	National Park Service
WDNR	Wisconsin Department of Natural Resources

1. INTRODUCTION

Lake Hayward is a 247-acre impoundment of the Namekagon River located in the City of Hayward, Sawyer County, Wisconsin, (Figure 1-1). Lake Hayward contains 8.64 miles of shoreline, with approximately 11 percent of the lakeshore accessible to the public and the remainder heavily developed . In general, Lake Hayward is a popular summer resort area that receives tourists from around the country. Recreation on Lake Hayward accounts for a small percent of the overall summer recreation that occurs in the Hayward area. Individual homes are located along the shoreline of Lake Hayward and these homeowners also use the lake for recreational opportunities on a regular basis. Lake Hayward is also a popular resort area for winter recreation including snowmobiling and cross-country skiing. Some visitors use Lake Hayward during the winter season for recreation. The American Birkebeiner, a large internationally known cross-country ski race, crosses Lake Hayward. During this event, thousands of skiers cross the lake on one weekend each winter.

The Hayward Hydroelectric Project (FERC Project No. 2417) operates under a 30-year license issued by the Federal Energy Regulatory Commission (FERC). License Article 414 requires that the Licensee (Xcel Energy) monitor recreational use of the Hayward Hydroelectric Project area to determine whether existing recreational facilities are meeting recreational needs. In December 2018, FERC amended their regulations to remove §8.11, eliminating the requirement for licensees to file a Licensed Hydropower Development Recreation Report, designated as FERC Form No. 80 (Form 80). Form 80 solicited information on the use and development of recreational facilities at hydropower projects licensed by the Commission under the Federal Power Act. Therefore, a Recreation Study of Lake Hayward was conducted in 2020 to comply with both the license article and amended FERC regulations.

The goals of the 2020 Lake Hayward Recreation Study were to:

- provide updates on the inventory and condition of the recreational facilities at Lake Hayward;
- estimate the recreational usage on Lake Hayward both as a whole and at specific recreational facilities;
- determine the adequacy of each of the recreational facilities and their ability to meet the current recreational demand; and
- obtain feedback from users on the recreational facilities to help gauge facility adequacy and receive input from the public on recommended improvements to the recreational facilities.

The results of the Hayward Recreation Study are presented in this Recreation Report which includes the following items:

- annual recreation counts based on the data collected in 2013–2014 and the 2020 population and recreation trends;
- a discussion of the adequacy of the Licensee's recreational facilities in the project area to meet recreational demand;
- a description of the methodology used to extrapolate the 2013–2014 data to determine the recreational use of Hayward in 2020; and
- recommendations to accommodate recreational needs in the project area.

Figure 1-1 Location of Lake Hayward, Hayward, Wisconsin

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2. METHODS

This section describes the methods used to collect, summarize, and extrapolate the recreation data for 2020. Each subsection focuses on the different types of data and information collected.

2.1 INVENTORY OF FACILITIES

A list and inventory of public and private recreational facilities at Lake Hayward was created using previous recreation studies, maps and aerial images of the area, internet resources, and interviews. Section 3 describes each of the following public recreational facilities in detail:

- Hayward Boat Landing Area
- Hayward Beach and Park Area
- Tailwater Access and Canoe Portage
- Other Access Points.

2.2 INTERVIEWS WITH OWNERS AND OPERATORS OF FACILITIES AND OTHER KEY PERSONNEL

Phone interviews with key personnel associated with the recreational facilities on Lake Hayward were conducted during Fall 2020. Interviews were conducted with the hydroelectric project operator and staff from the Wisconsin Department of Natural Resources (WDNR), National Park Service (NPS), and City of Hayward Public Works. The goals of these interviews were to characterize current recreation, assess the adequacy of the facilities, identify any changes that have occurred since the 2013–2014 Recreation Study, and discuss improvements that are planned to take place over the next several years. Details of each interview are contained in Section 4.

2.3 COUNTS OF RECREATIONAL USERS

Field surveys or passive counting efforts were not conducted on Lake Hayward in 2020. Instead, estimated counts of recreational users were based on local population change occurring since data were collected during the 2013–2014 Recreation Study. For detailed descriptions of data collection and analysis methodologies used to produce the 2013–2014 Recreation Study, see Great Lakes Environmental Center (2015).

In order to quantify how recreational use of Lake Hayward may have changed between the 2013–2014 study period and the 2020 study period, estimates of population change at the county level were applied to the data reported in the 2013–2014 Recreation Study. Population estimates for three counties were obtained from the U.S. Census Bureau (2020) for the years 2013, 2014, and 2019 (being the most recent year for which estimates are available). Counties selected were Sawyer County, where Lake Hayward is located, and the two neighboring counties nearest to Lake Hayward, i.e., Washburn and Bayfield counties. Population estimates were summed for all counties for the years 2013, 2014, and 2019 (Table 2-1). The tri-county population estimate averaged between years 2013 and 2014 was subtracted from the tri-county 2019 population

estimate to yield the population change across all counties. The percent population change relative to the 2013–2014 average was then applied to the recreational use data reported in the 2013–2014 Recreation Study to produce estimates for recreational use in 2020 (see Section 5).

Table 2-1 Estimated local population change, Lake Hayward tri-county area (2013/2014–2019)

	Population, 2013	Population, 2014	Average Population, 2013–2014	Population, 2019	Population Change, 2013/14–2019	Population Change (percent)
Sawyer County	16,474	16,357	16,416	16,558	+143	+0.9
Washburn County	15,661	15,658	15,660	15,720	+61	+0.4
Bayfield County	15,113	14,973	15,043	15,036	-7	0.0
All Counties	**47,248**	**46,988**	**47,118**	**47,314**	**+196**	**+0.4**
Note: Due to rounding, sums may not add up as presented.						

2.4 SELF-REPORTING SURVEYS

A self-reporting survey form was developed to capture detailed information on visitor use and satisfaction of the recreational facilities at Lake Hayward (Figure 2-1). Weatherproof survey boxes that housed the uncompleted blank and completed survey forms were placed at various facilities around Lake Hayward (Figure 2-2). Completed forms were removed by hydroelectric project operators on a regular basis. The goals of the self-reporting surveys were to:

- collect and characterize information about visitors including party size, length of stay, types of recreational activities, and mode of travel;
- collect opinions of the adequacy of recreational facilities at Lake Hayward and obtain suggestions for improvements to any of the facilities or recreational opportunities in general; and
- Determine how Coronavirus Disease 2019 (COVID-19) has influenced visitors' recreational experience.

Data collected were used to support extrapolation of visitor use data and to identify improvements needed in the future. Summary results of the self-reporting surveys can be found in Section 6.

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Lake Hayward Recreation Survey 2020

Lake Hayward Recreation Use Survey Form

1. In 2020 (January through December), how many days and nights have you spent or do you plan to spend recreating in the Lake Hayward area in the following months?

# Days/Nights	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Days												
Nights												

2. In 2020, (January through December), what percentage of your time recreating in the Lake Hayward area is during:

   Weekdays _____ Weekends/holidays _____ (Total should equal 100%)

3. During your recreation visits at Lake Hayward in 2020 (January through December), how many hours on average do you spend each day during the following time periods:

   6AM to 10AM_____ 10AM to 2 PM _____ 2PM to 6PM _____ 6PM to 10PM _____ 10PM to 6AM _____

4. What is the average amount of time you spend at Lake Hayward during a recreational visit? _____ hours

5. When recreating at the Lake Hayward area, how many people on average are in your party? _____

6. When traveling to Lake Hayward recreation areas, what percentage of time do you travel by the following:

   Car/Truck:____% Motorcycle:____% Bicycle:____% Foot:____%

7. Select up to five activities below that you usually participate in at the Lake Hayward area.

   - ☐ Fishing (Boat)
   - ☐ Fishing (Shoreline)
   - ☐ Boating
   - ☐ Jet skiing
   - ☐ Water Skiing/Tubing
   - ☐ Swimming
   - ☐ Biking
   - ☐ Walking/Running
   - ☐ Camping
   - ☐ Picnicking
   - ☐ Photography
   - ☐ Wildlife Viewing
   - ☐ Sports
   - ☐ Playgrounds
   - ☐ Relaxing
   - ☐ Hunting
   - ☐ Other (specify) _____

8. For the following facilities at Lake Hayward, indicate what percentage of time was spent recreating at each facility from January 2020 through December 2020 (Total should be equal to 100%). Then on a scale from 1 to 5, rate the status of each facility. If you are unfamiliar with the facility, please leave blank. **1 = Facility is not at all adequate. 5 = Facility is totally adequate.** Please provide comments where applicable to the specific facility.

Facility	% Recreation Time	Rating (1-5)	Comment
Hayward Boat Landing Area			
Hayward Beach/Park Area			
Tailrace Area			
Canoe Portage Area			
Other (specify)			
Other (specify)			

9. How do you rate your overall recreation experiences at Lake Hayward on a scale from 1 to 10?

   Very Poor 1 2 3 4 5 6 7 8 9 10 **Very Good**

10. Has or will the COVID-19 pandemic change your 2020 usage of the Lake Hayward recreation areas? YES NO

    a. If YES, is change in recreational use an _____increase, or a _____decrease?

11. Please note anything you feel would be helpful in understanding the recreational opportunities at Lake Hayward.

_____

_____

_____

Figure 2-1 Lake Hayward Self-Reporting Recreational Use Survey Form

Figure 2-2 Example of survey boxes installed at select recreational facilities

3. DESCRIPTIONS OF RECREATIONAL FACILITIES AT LAKE HAYWARD

Each of the public recreational facilities located on Lake Hayward are described below. Discussions of the use and adequacy of each facility are presented in subsequent sections of this report. Unless otherwise noted by interviewees or survey respondents, the quantity and state of amenities at each facility are assumed to be consistent with the 2013–2014 inventory. Facility locations are depicted in Figure 3-1. Other facilities such as parks, trails, and other recreational areas are present in the general area of Lake Hayward; however, these facilities are not within the study boundary and are not included in this report.

3.1 LAKE HAYWARD BOAT LANDING

The City of Hayward owns and maintains Lake Hayward Boat Landing, a single launch boat landing on the west end of the lake. It is the only public landing on the lake and consists of a cement launch with a paved approach but no dock. The adjacent gravel parking lot is large enough to accommodate approximately 15 vehicles with trailers. The City does not charge a fee for the use of this launch and no other amenities are present. The landing is in good condition and is adequate for the light to moderate (and sometimes heavy) use it receives. A light pole situated in the parking area provides lighting during the evening hours. The parking lot, which has recently been regraded and leveled, also serves as overflow parking for users of the beach and park area.

3.2 LAKE HAYWARD BEACH AND PARK

The City of Hayward owns Lake Hayward Beach and Park which is located near the boat landing on the west end of the lake. It features a 100-foot sand beach with a designated swimming area, changing rooms, restroom facilities, playground, picnic areas, and shore fishing opportunities. A paved parking lot is provided that can accommodate 24 vehicles [two parking spaces are designated Americans with Disabilities Act (ADA) accessible spaces]. The area also features an ADA-compliant fishing pier that was constructed in Fall 2013 and is very popular with anglers. The area receives moderate to heavy use in the summer and on weekends, with swimming and fishing being the primary activities. Overall, the facility is in good condition and is adequate for the current usage. There is no fee associated with the use of the park or beach.

3.3 TAILWATER ACCESS AND CANOE PORTAGE

Xcel Energy owns and maintains the tailwater access and canoe portage area which includes tailwater fishing access on both sides of the river. The canoe portage take-out was refurbished in 2019 and is located just upstream of the spillway along the east shoreline of Lake Hayward. The canoe portage trail, which features good signage, proceeds from the take-out in a southwesterly direction approximately 600 ft. to the downstream put-in location. The portage enables canoeists who are navigating from an upstream location to a downstream location to safely bypass the Hayward Dam. There are no fees associated with the use of this area. No additional amenities are provided and overall, the area is adequate for the moderate but consistent use it receives.

3.4 OTHER ACCESS POINTS

The City of Hayward owns one unimproved access to the lake on the north-central portion of Lake Hayward. The access is open to the public, but not commonly used as there are no signs that indicate its location.

There is one additional access point to the lake located off of a local road, Chippewa Trail, that is popular with anglers in the winter who want to walk out on to Bartz's Bay to ice fish. This access is an unimproved trail located on private land (essentially between two residential lots). Users park along Chippewa Trail which causes occasional traffic congestion.

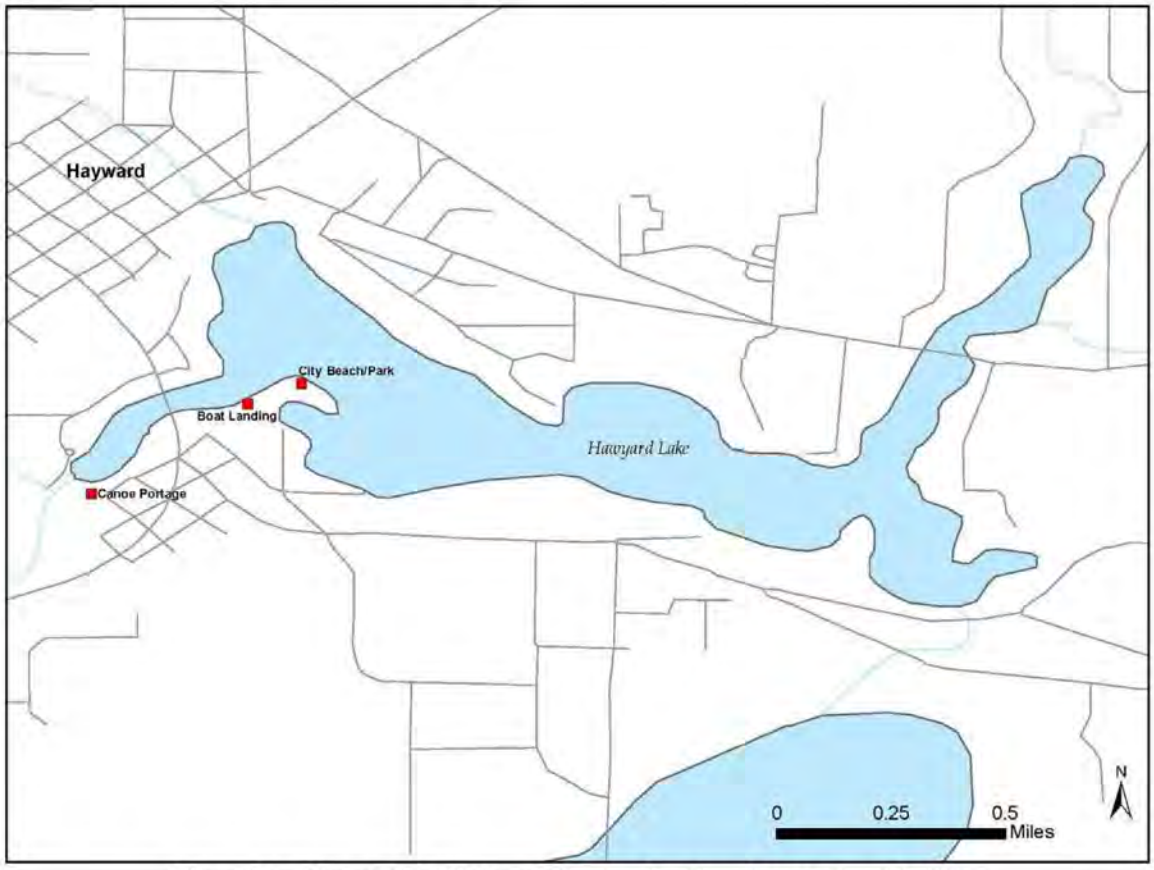

Figure 3-1 Map of Lake Hayward showing location of recreational facilities

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4. SUMMARIES OF INTERVIEWS WITH KEY PERSONNEL

This section provides a brief summary of the interviews with owners/operators of recreational facilities and other key personnel that have detailed knowledge of the recreational facilities and opportunities on Lake Hayward.

4.1 CHRIS ROMPORTL – NPS

Mr. Chris Romportl has been with NPS for 18 years, and he primarily works on the Namekagon River out of Trego, Wisconsin. Since Lake Hayward is not under the responsibility of NPS, Mr. Romportl does not visit the boat landing or beach park as part of his routine activities. While he says his personal observations suggest that there has been increased recreational activity on Lake Hayward, he cannot validate that statement. He confirmed that the American Birkebeiner crosses Lake Hayward in normal years but the past year has been different and he is not sure how it will be handled this year due to COVID-19.

Regarding the Tailwater Access and Canoe Portage, he confirmed there is no fee, that there have been no updates to facilities, and that the area remains lightly used. However, there is an increasing number of outfitters using this access point and he expects that could increase beyond light use in the near future. The signage at the site is faded as of last year and could potentially need replacing.

4.2 MAX WOLTER – WDNR

Mr. Max Wolter is a fisheries biologist who has been working with the WDNR for 8 years and has a total of 20 years' experience. Over the past 5 years, Mr. Wolter stated that recreation has increased at Lake Hayward especially for canoeing and kayaking. Year-round fishing occurs with more use on the weekends, although there is still plenty of fishing during the weekdays. The months of May and June are peak fishing months at Lake Hayward. Overall, boating has the highest use, followed by fishing and swimming. The American Birkebeiner is still being planned to cross Lake Hayward.

The Hayward Boat Landing and parking lot is a free launch in average condition. There are potholes throughout the parking area. There are plans to construct a dock if a grant from Xcel Energy becomes available. The Hayward Beach and Park is a popular area in the spring and summer and use is moderate to heavy in the summer for swimming. An ADA-accessible fishing area was added to the site in 2014. The Tailwater Access and Canoe Portage is an area owned and maintained by Xcel Energy. Use of the area for fishing and canoe portage is considered to be light, but consistent. The access area owned by the City of Hayward on the north-central portion of Lake Hayward is still there but is not commonly used. The access point off of the Chippewa Trail is still common with anglers in the winter. Parking along the Chippewa Trail can be problematic. Visitors walk out on Bartz's Bay Ice Access to icefish.

4.3 RICKY REICHERT – XCEL ENERGY

Mr. Ricky Reichert is a hydroelectric operator for Xcel Energy and is responsible for maintaining its recreational facilities. Overall, Mr. Reichert feels that use of Lake Hayward has been consistent with previous years. Recreational fishing, boating, and canoeing/kayaking are the most popular activities. Weekends and evenings are the busiest times for recreation at Lake Hayward. The canoe portage receives moderate, but consistent use. The canoe take-out was refurbished in 2019 to include steps, which now makes it easier for canoers and kayakers to exit the lake.

The City of Hayward boat landing and parking lot are free for users. The light pole on the parking lot provides sufficient lighting in the evening. The overall condition of the landing and parking lot is good and the area receives light to moderate use. The Hayward Beach and Park is free to users and receives moderate to heavy use on the weekends. Fishing in this area is popular.

4.4 JOHN MCCUE – CITY OF HAYWARD PUBLIC WORKS

Mr. John McCue has been the Director of Public Works for the City of Hayward for 16 years. He oversees the water, sewer, parks, and streets. He stated that the overall use of Lake Hayward has slightly increased or has stayed the same. Since COVID-19, fishing has become more popular. Swimming, water skiing, and jet skiing are also popular. The American Birkebeiner was held this year, but it will not be held next year.

WDNR installed a fishing pier in 2013 at the Hayward Beach and Park. The facility is accessible by driving from the beach or from a walkable pier/bridge that was rebuilt with wood. The pier is a floating structure made of plastic and aluminum, is ADA compliant, and in excellent condition. Fishing, including ice fishing, is popular in this area. There is heavier use during the summer between Memorial Day and Labor Day.

There is a need for a boat dock at the Hayward Boat Landing, as visitors who are alone need to beach their boat after launching in order to park their vehicle. WDNR has applied for a grant to install a dock. The parking lot has been regraded and leveled. There is one overhead streetlight that provides sufficient lighting in the evening. The landing receives moderate use.

4.5 AARON KOSHATKA – WDNR

Mr. Aaron Koshatka has been a Conservation Warden with WDNR since 2018. He has worked at Lake Hayward since January 2019. Mr. Koshatka stated that overall, there has been an increase in fishing, pontoon boating, and paddle boarding on the lake. The lake is least used for ice fishing. The American Birkebeiner crossed Lake Hayward this year, however, it may not in 2021 due to impacts from COVID-19. In general, recreational use becomes busy the last few weeks of April and continues through the summer. Weekends and holidays receive the heaviest use, however; this year's use was heavy nearly every day that had good weather.

The Hayward Boat Landing is in good condition and receives moderate to occasional heavy use. The Hayward Beach and Park also receives moderate to heavy use and is a very popular fishing area. The foot access to Bartz's Bay is also popular with anglers seeking to ice fish this area of the lake.

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5. RECREATIONAL USE ESTIMATES

For the 2013–2014 Recreation Study, daytime recreational use estimates were extrapolated from multiple sources including a WDNR creel survey, trail counter, and event registration. Use estimates are in "recreation days" which is defined as each visit by a person to a development (e.g., facility) for recreational purposes during any portion of a 24-hour period. These methods do not account for recreational use on the lake that is not associated with a monitored facility or controlled site (i.e., residents or users of other unmonitored areas); therefore, recreational use extrapolations do not refer to the total use occurring on the lake itself, just at the monitored facilities. Use estimates for Lake Hayward were generated for daytime use only, due to the lack of any overnight use facilities (campgrounds, hotels, etc.).

In 2020, fieldwork did not involve replicating the data collection methods used in 2013 and 2014. Instead, in order to report daytime use values across Lake Hayward facilities, months and days of the week estimates were extrapolated from the data reported in the 2013–2014 Recreation Study. The use values were based on local population change estimates from the U.S. Census Bureau (see Methods in Section 2).

Total annual daytime use for the study period was estimated at 20,441 recreation days, representing an increase of 85 recreation days above the value reported for 2013–2014 (Table 5-1). Facility use is estimated to range from 279 recreation days at the Bartz's Bay Ice Access (up by 1 since 2013–2014), to 8,615 recreation days at Hayward Beach/Park (an increase of 36 days since 2013–2014). Monthly use across all facilities is estimated to range from 0 recreation days in April (unchanged since 2013–2014) to 7,892 recreation days in February (an increase of 33 days since 2013–2014) (Table 5-1).

During the summer months, the average number of recreation days (i.e., visitors) was estimated at 68 per weekday, 94 per day on weekends, and 135 per day on peak weekends (Table 5-2). These estimates represent a slight increase in recreation days only on peak weekends. Highest day-use on weekdays was in summer (i.e., June) while weekend use was highest in winter (i.e., February) and peak use varied throughout summer (Figure 5-1). During the winter months, the average number of recreation days (i.e., visitors) was estimated at 29 per weekday, 120 per day on weekends, and 135 per day on peak weekends (Table 5-2). These estimates represent a slight increase in recreation days only on weekends and peak weekends.

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Table 5-1 Estimated count for daytime recreational use (in recreation days), Lake Hayward (January–December 2020)

Month	Hayward Boat Landing Area	Hayward Beach/Park Area	ADA Fishing Pier and Adjacent Shore	Bartz' s Bay Ice Access	Tailrace Area	Canoe Portage Area	Cross Country Ski Races	Total by Month
January	0	7	0	74	0	0	0	81
February	0	12	0	30	0	0	7,850	7,892
March	0	7	0	72	0	0	0	79
April	0	0	0	0	0	0	0	0
May	182	508	308	0	189	70	0	1,257
June	175	3,883	386	0	253	59	0	4,756
July	295	2,202	341	0	221	24	0	3,084
August	175	1,577	285	0	156	108	0	2,301
September	113	263	86	0	92	30	0	585
October	42	121	27	0	58	20	0	268
November	0	13	0	0	0	0	0	13
December	0	22	0	102	0	0	0	125
Total by Facility	982	8,615	1,434	279	969	312	7,850	20,441

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Table 5-2 Estimated recreation days by type of day, Lake Hayward (January–December 2020)

	Weekdays	Weekends	Peak Weekends
Summer Months			
May	706	220	331
June	2,857	1,899	-
July	1,724	710	651
August	1,581	553	166
September	329	190	66
TOTAL	*7,197*	*3,572*	*1,214*
# of Days	*106*	*38*	*9*
Average per Day	*68*	*94*	*135*
Winter Months			
January	33	48	-
February	18	7,874	-
March	6	73	-
April	0	0	-
October	195	73	-
November	12	1	-
December	45	79	-
TOTAL	*309*	*8,149*	-
# of Days	*153*	*60*	-
Average per Day	*2*	*136*	*N/A*
Year			
TOTAL	*7,506*	*11,721*	*1,214*
# of Days	*259*	*98*	*9*
Average per Day	*29*	*120*	*135*

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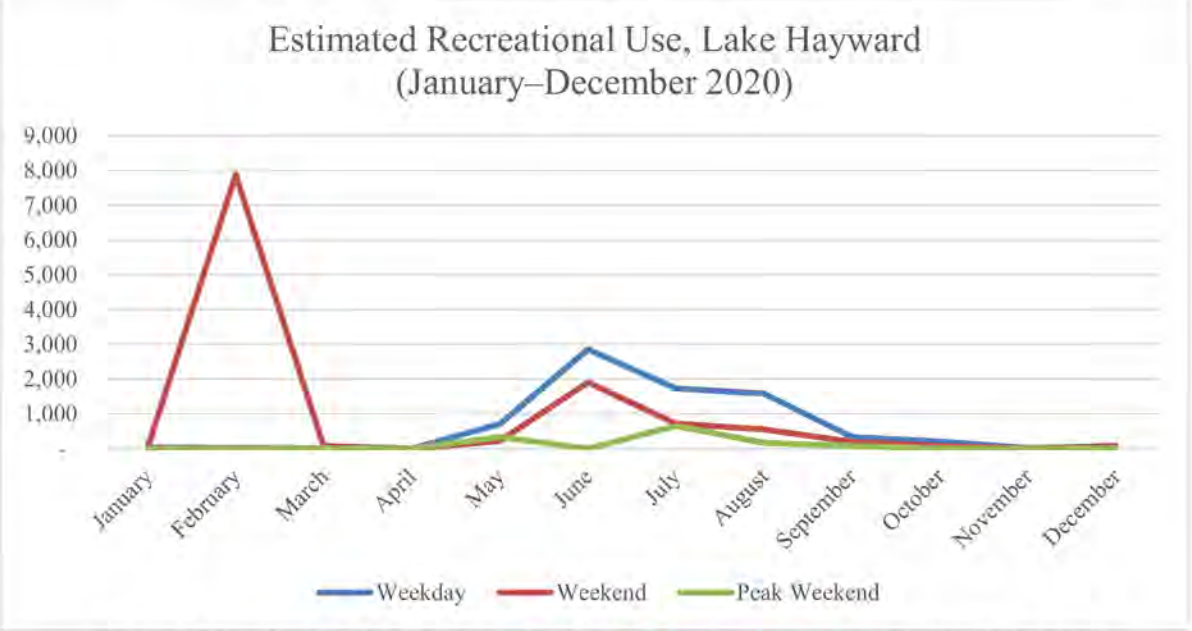

Figure 5-1 Recreational use estimates in recreation days, Lake Hayward (January–December 2020)

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6. RESULTS OF SELF-REPORTING SURVEYS

Only one survey was submitted and collected during the course of the study. The submitted survey was completed in its entirety. Survey boxes were located in three places throughout the Lake Hayward area: Hayward Boat Landing, Hayward Beach, and Hayward Canoe Portage.

6.1 POPULAR ACTIVITIES

The survey asked respondents to list up to five activities they usually participate in at Lake Hayward. The lone respondent indicated that shoreline fishing, swimming, picnicking, playgrounds, and relaxing are his/her top activities at Lake Hayward.

6.2 VISITOR SATISFACTION

Overall, the sole respondent was satisfied with the recreational facilities at Lake Hayward, which the survey form listed as:

- Hayward Boat Landing Area
- Hayward Beach/Park Area
- Tailrace Area
- Canoe Portage Area.

The sole respondent rated two facilities and Lake Hayward as a whole (Table 6-1).

Table 6-1 Ratings of recreational facilities (on a scale of 1 to 5) and overall recreational experiences (on a scale of 1 to 10), Lake Hayward (January–December 2020) (n = 1)

	Hayward Boat Landing Area	Hayward Beach/ Park Area	Tailrace Area	Canoe Portage Area	OVERALL RECREATIONAL EXPERIENCES
Respondent Rating	4	5	n/a	n/a	9

The sole survey respondent provided a comment regarding the facilities at Hayward Beach (Table 6-2).

Table 6-2 General visitor comments, Lake Hayward (January–December 2020)

Comment	Topic	Topic 2
The wood chips at the playground area at Hayward Beach are very dangerous. They cut the kids' feet. Please, please change it!!	Facility	Safety

6.3 REPORTED RECREATIONAL USE

Respondents were asked to provide information on how they usually travel to Lake Hayward. Of the listed options, the sole respondent reported arriving 100 percent of the time by car/truck.

The sole respondent indicated what proportion of his/her time at Lake Hayward was spent at any of the four listed recreational facilities (Table 6-3).

Table 6-3 Percent of recreation time (0- 100%) spent at facilities, Lake Hayward (January–December 2020) (n = 1)

	Hayward Boat Landing Area	Hayward Beach/ Park Area	Tailrace Area	Canoe Portage Area
Percent of total time	95%	5%	0%	0%

Respondents were asked to provide estimates of their time spent throughout 2020 at Lake Hayward in general, broken down by month, day vs. night, weekdays vs. weekend days and holidays, and time of day.

The sole respondent provided the number of days and nights spent at Lake Hayward each month (Table 6-4). In general, daytime use is more popular than nighttime use, and the sole respondent spends more days per month at Lake Hayward in the summer (May through September) than in the winter (January through April, and October through December). Throughout the year, the sole respondent reports visiting Lake Hayward a total of 195 days and 95 nights.

Table 6-4 Average number of days and nights spent recreating, Lake Hayward (January–December 2020) (n = 1)

	Days	Nights
Summer Months		
May	20	10
June	20	10
July	20	10
August	20	10
September	20	10
Summer Monthly Average	*20*	*10*
Winter Months		
January	10	5
February	10	5
March	15	5
April	20	10
October	20	10
November	10	5
December	10	5
Winter Monthly Average	*13.6*	*6.4*
Year		
2020 Annual Total	*195*	*95*

The sole respondent reported spending 75 percent of his/her time at Lake Hayward during weekdays, and 25 percent during weekends or holidays.

Respondents were asked to report the number of hours typically spent at Lake Hayward during listed time periods. The sole respondent recorded hours between 10 AM and 10 PM (Table 6-5).

Table 6-5 Average number of hours spent at Lake Hayward during listed time periods (January–December 2020) (n = 1)

	6 AM to 10 AM	10 AM to 2 PM	2 PM to 6 PM	6 PM to 10 PM	10 PM to 6 AM
Hours Reported	0	4	3	1	0

Survey respondents were asked to provide estimates of the average length of stay while recreating at Lake Hayward, as well as estimates of average party size. The sole respondent reported spending 4 hours at Lake Hayward with an average party size of 5 people.

Finally, the survey form asked respondents whether the COVID-19 pandemic changed their 2020 usage of the Lake Hayward recreational areas. The sole respondent indicated that the pandemic has increased his/her usage.

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7. DISCUSSION OF ADEQUACY OF CURRENT FACILITIES

Overall, the Lake Hayward area offers a sufficient amount of recreational opportunities for both land and water-based activities. The recreational facilities, while limited in number, are in good condition and receive regular maintenance and upgrades when required. The number and size/capacity of the facilities appear sufficient to accommodate the current amount of use on all but the busiest of days.

Recreational use at a minimum has remained consistent and apparently increased gradually over the past 5 years. Estimated total recreational use throughout 2020 is 20,441 recreation days (Table 5-1); however, this count, which is based on population growth, may underestimate the acute visitor pressure exerted on Lake Hayward facilities during the COVID-19 pandemic. One person interviewed remarked that Lake Hayward received high recreational use nearly every fair-weather day in 2020.

Based on survey responses and personnel interviews, recreational facilities at Lake Hayward may be considered adequate for meeting the recreational demand of the community. When rating recreational experience at Lake Hayward in general, the sole survey respondent in 2020 gave a positive rating of 9 out of 10 (Table 6-2). Personnel interviewed commented on the average-to-excellent condition of the amenities at Lake Hayward's recreational facilities. New and updated amenities include a new dock at Hayward Beach and Park and the refurbished take-out at the Canoe Portage. Lighting at the Hayward Boat Landing and parking lot is considered sufficient. Recreational use of the Canoe Portage area remains moderate; however, an increase in use by outfitters has been observed.

Recreational use at Lake Hayward is most concentrated in the evening hours and on weekends. The average number of visitors per day in 2020 was estimated to be 29 on weekdays, 120 on weekends, and 135 on peak weekends (Table 5-2). Personnel associated with Lake Hayward recreational facilities indicated that Hayward Beach and Park and the Hayward Boat Landing remain popular facilities. All facilities at Lake Hayward provide opportunities for recreation that are well suited to social distancing. Personnel observed that fishing, pontoon boating, paddle boarding, canoeing, and kayaking have increased in recent years and/or in 2020. Swimming, water skiing, and jet skiing are likewise popular activities. Fishing occurs year-round; however, this activity is more popular in May and June than in the winter.

While the recreational facilities at Lake Hayward are generally considered adequate, there are possible areas for improvement. The sole survey respondent criticized the quality and safety of the playground area at Hayward Beach. The Hayward Boat Landing may benefit from a boat dock to facilitate use by individual boaters. Finally, the Tailwater Access and Canoe Portage areas could use new signs.

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8. RECOMMENDATIONS FOR FUTURE USE

Based on the results of this Recreation Study, including the evaluation of existing facilities and discussions with key personnel associated with Lake Hayward, the following actions are recommended. Please note that these recommendations are solely the opinion of the author(s) and do not necessarily reflect those of Xcel Energy, the applicable resource agencies, or any of the organizations/persons referenced in this report.

City of Hayward

- Consider adding a dock to the Hayward Boat Landing to make loading and unloading boats easier.
- Consider adding signage at Hayward Beach and Park recommending safe practices for use of the playground.
- Evaluate the condition of parking lots, especially regarding potholes, and consider enhanced maintenance.
- Consider adding signage that indicates the location of the north-central lake access point.
- Evaluate the traffic congestion caused by lake users parking on Chippewa Trail and consider providing designated parking areas.

Xcel Energy

- Evaluate the condition of signage at the Tailwater Access and Canoe Portage areas and consider replacing.

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9. REFERENCES

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Appendix A

Agency Correspondence (pending)

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APPENDIX E-27 Sawyer County Plan for Outdoor Recreation

A PLAN FOR OUTDOOR RECREATION

SAWYER COUNTY, WISCONSIN

2021-2025

TABLE OF CONTENTS

I. INTRODUCTION 1

II. BACKGROUND 2

III. SUPPLY OF EXISTING RECREATION RESOURCES 5

IV. RECOMMENDATIONS 12

V. SUMMARY 33

VI. APPENDICES 34

Introduction

The primary purpose of this recreation plan is to provide continued direction toward meeting the current and future recreation needs of Sawyer County. This is accomplished by investigating Sawyer County's existing outdoor recreational resources, studying population trends, anticipating future demands, and developing guidelines and recommendations for public outdoor recreation facilities. These comments and suggestions are intended as guides for the County and its municipalities.

Objectives

- Meet existing as well as the foreseeable future recreational needs of Sawyer County residents and visitors.
- Maintain quality recreation areas while protecting Sawyer County's natural and scenic resources.
- Provide and improve the aesthetic and environmental values of the county's resources through acquisition, easements, zoning and other legislation, and to provide educational programs.
- Identify and preserve sites having scientific, historic, architectural or archeological significance.
- Consider this plan a program for development of year-round recreational facilities which will provide opportunities for all citizens and visitors.
- Encourage the efforts of municipalities to provide "community" recreation facilities such as ball fields, playgrounds, tennis courts etc.
- Encourage private development of quality recreational areas.
- Provide recreational opportunities for people with disabilities whenever feasible and environmentally possible.
- Develop coordinated countywide recreational trail systems.

Background

Population

Sawyer County, the 5th largest county in land area in the state, had a 2010 population of 16,557 according to census data, which is approximately 0.3 percent of the total state population. Overall, Sawyer County population trends do not reflect recreational activity in the county as overnight visitors and second homeowners account for a substantial recreation use. Based on 2010 census data, 50.6 % of homes within the county are second homes designated as seasonal or for recreational use.

Population Trends in Sawyer County (1980-2010)

Municipality	1980 CENSUS	1990 CENSUS	2000 CENSUS	2010 CENSUS	CHANGE 1980-2010	PERCENT CHANGE
Town of Bass Lake	1,288	1,717	2,244	2,483	1,195	48%
Town of Couderay	394	386	469	479	85	18%
Town of Draper	242	208	171	208	-34	-16%
Town of Edgewater	441	509	586	640	199	31%
Town of Hayward	2,331	3,017	3,279	3,601	1,270	35%
Town of Hunter	594	557	765	841	247	29%
Town of Lenroot	926	966	1,165	1,349	423	31%
Town of Meadowbrook	202	192	146	155	-47	-30%
Town of Meteor	105	111	170	183	78	43%
Town of Ojibwa	264	250	267	327	63	19%
Town of Radisson	394	412	465	480	86	18%
Town of Round Lake	786	727	962	1,115	329	30%
Town of Sand Lake	768	821	774	885	117	13%
Town of Spider Lake	331	362	391	419	88	21%
Town of Weirgor	386	356	370	424	38	9%
Town of Winter	704	801	969	1,135	431	38%
Village of Couderay	114	92	96	94	-20	-21%
Village of Exeland	219	180	212	206	-13	-6%
Village of Radisson	280	237	222	218	-62	-28%
Village of Winter	376	383	344	353	-23	-7%
City of Hayward	1,698	1,897	2,129	2,340	642	27%

Landscape Characteristics

Sawyer County is geographically located in the northwest corner of the state in what could be defined as the "Northwoods" region of Wisconsin. The County lies primarily within the North Central Forest physiographic region of Wisconsin. The topography of the county has glacial origin, glaciers eroded hilltops and filled valleys, thus reducing relief resulting in a topography best described as an undulating plain dissected by many lakes, rivers, and streams. The northeastern corner of the County is quite hilly and the southwestern corner contains many high quartzite ridges. The highest elevation (1800 feet) occurs at Meteor Hill with the "Blue Hills" region of southern Sawyer County. The terrain in the southeastern portion of the County is generally considered flat.

Climate

The climate of Sawyer County is classified as continental with an average annual temperature of 42.5 degrees Fahrenheit according to the Hayward Ranger Station weather station. The winters are long, cold and snowy, while summers are relatively short and warm with only brief periods of hot, humid weather. Springs and falls are often short and mixtures of both summer and winter. Mean temperatures drop below freezing in mid-November and freeze up of lakes follows soon after. The average annual precipitation in Hayward is 31.67 inches, snowfall averages between 60 and 70 inches per year. The growing season averages about 120 days with the date of the last killing frost ranging from mid-May to mid-June.

Land-use

Sawyer County encompasses 863,859 acres with the greatest percentage of the county being rural and semi-wilderness in nature. Over 38% of Sawyer County's land base is under some form of public ownership or management. Public lands are prevalent across much of the northern and eastern areas of the county. Sawyer County has 115,197 acres in county forest lands.

The federal government owns and manages 126,728 acres of land in Sawyer County. The largest federal holding is the Chequamegon-Nicolet National Forest (CNNF). There are currently 123,805 acres of National Forest System lands within Sawyer County. The National Park Service (NPS) also owns and manages 2,922 acres of land within the Saint Croix National Scenic Riverway.

The State of Wisconsin owns and manages 81,719 acres of land within Sawyer County, the largest contiguous state holding is the Flambeau River State Forest which manages 64,707 acres. Approximately 14,000 acres of state-owned lands are adjacent to the Chippewa Flowage, the largest wilderness lake in Wisconsin. Numerous state-owned islands are located within the flowage, the remaining approximately 3,000 acres of state land is comprised of state wildlife and fishery areas and recreational trails.

Nearly two-thirds of the landscape of Sawyer County is covered by forestlands while open water and wetlands cover nearly one-third, less than six percent of the landscape is considered cropland or developed areas.

Soils

The soils of Sawyer County are primarily upland and outwash from glacial drift, generally acidic in nature. The sandy soils occur along the Namekagon River, Lac Courte Oreilles, Round and Grindstone Lakes region. More organic soils, including silt loams and peats are found in much of the eastern half of the County.

Supply of Existing Recreation Resources

Introduction

In 2020, all of the major recreational facilities and resources in Sawyer County were inventoried to determine the types and numbers of recreational areas and facilities available for public use. From this inventory, it was determined that Sawyer County has an extensive base of recreational resources and facilities.

WATER BASED ACTIVITIES

Fishery Resources

Many of the surface waters in Sawyer County provide excellent fishing opportunities. Of the 550 named and unnamed lakes in the county, 220 lakes with an area of 53,716 aces have game and panfish populations. The remaining 330 lakes with an area of 3,127 acres have no fish or only minnow populations. The lakes are further classified in Table 2 by the number of lakes and their total acreage where each game and panfish species occur.

There are also nearly 690 miles of perennial streams and rivers in the county, including 265 miles of trout stream which are also important to the county's fishery resources.

Table 2. Lake Fishery Resources in Sawyer County

Fish Species	Occurrence (number of lakes)	Acres
Muskellunge	67	42,093
Walleye	82	49,568
Northern Pike	76	43,365
Largemouth Bass	170	52,560
Smallmouth Bass	53	44,693
Panfish	194	53,619
Trout Lakes and Springs	37	1,527
Minnow only, or none	330	3,127

Boating

There are 15 natural lakes and impoundments of over 500 acres in size that offer a total of 40,235 acres of surface water. There are an additional 20 lakes between 200 and 500 acres providing another 6,075 acres of surface water to the boater. Altogether these 35 lakes account for 81 percent of all the surface water (46,310 acres) in the county. The largest of these lakes are the Chippewa Flowage, Lac Courte Oreilles, Round, Grindstone, Nelson, Chetac, Moose, Lost Land, Spider, Teal, Sand, Tiger Cat, Sissabagama, Whitefish, and Windigo. Boating

is available on a number of the other named lakes and flowages throughout the county, depending on access and some lakes may have local restrictions on speeds and water skiing.

Of the 35 lakes over 200 acres, thirty have one or more public access points.

Canoeing-Kayaking-Paddle Sports

Sawyer County contains a large number of paddling rivers, many of them are often categorized as the best in the Midwest. Fourteen different rivers lend themselves to a variety of paddling experiences with a total mileage of approximately 268 miles. Rivers and mileage are shown in table 3. Access is good and varies from developed landing sites to more rustic bridge put-ins. The numerous area lakes and flowages also offers paddling opportunities.

Table 3. Canoeing/Kayaking Rivers in Sawyer County

River Name	Length (miles)
Brunet River	40
Chief River	6.1
Chippewa River	27.1
Couderay River	16.3
East Fork Chippewa River	17
Moose River	10.1
Namekagon River	26.7
North Fork Flambeau River	32.8
South Fork Flambeau River	7.7
Teal River	4.1
Thornapple River	39.3
Torch River	3
Totogatic River	11.2
West Fork Chippewa River	27.4
Total Miles	**268.8**

Swimming Areas

Sawyer County has many lakes which provide excellent sand beaches for swimming. Both developed and undeveloped sites located in the county. Table 4 lists the developed swimming areas and location. Other lakes may also have boat access, privately owned beaches, or road rights-of-way where public swimming may be permitted.

Table 4. Developed Swimming Areas in Sawyer County		
Name	**Ownership**	**Location**
Round Lake Peninsula Beach	Town of Hayward	Northwest
Smith Lake	Town of Lenroot	Northwest
Silverthorn Lake	Town of Lenroot	Northwest
Hayward Beach	City of Hayward	Northwest
Conners Lake	Flambeau River State Forest	Southeast
Black Lake	Chequamegon-Nicolet National Forest	Northeast
Moose Lake	Chequamegon-Nicolet National Forest	Northeast

LAND BASED ACTIVITIES

Camping

Camping on the county forest is permitted in many areas, in general, most of the forest is open to camping with a tent, trailer, truck camper or other camping shelter for a period not to exceed ten days. A camping permit is required for a per night fee. A large percentage of campers on the county forest are hunters during the gun hunting deer season. At this time, there are no designated campgrounds on Sawyer County Forest Lands.

The Flambeau River State Forest offers two family campgrounds, primitive canoe sites along the Flambeau River and an ADA accessible yurt. The Lake of the Pines Campground has a total of 30 sites, all non-electric and there are no ADA designated sites. Connors Lake Campground has 29 sites with two ADA designated sites, 4 sites have electric service. There are also 12 primitive canoe campsites along the Flambeau River within Sawyer County. Each landing provides room for one to three individual campsites and includes a picnic table, fire ring and pit toilet.

The Chippewa Flowage contains 18 primitive island campsites. Each public campsite is marked with a sign and has a fire ring, picnic table and open-air box latrines. All campsites are accessible by water only. Of the 18 total campsites on the flowage, 11 are on WDNR owned islands, one is on an island under Chequamegon-Nicolet National Forest ownership and the remaining 6 are on Lac Courte Oreilles Tribal ownership and are managed be the Lac Courte Oreilles Conservation Department.

The St. Croix National Scenic Riverway provides 11 different primitive shoreline campsites along the Namekagon River.

The Chequamegon-Nicolet National Forest offers camping facilities at two campground recreation areas. Black Lake Recreation Area provides 29 sites on Black Lake. All campsites provide a hardened parking area, picnic table, and fire ring. Some sites can accommodate a 45-foot trailer. Moose Lake Recreation Area offers 15 campsites, 3 of which are tent only, the rest

can accommodate RV's from 25-45 feet. Each site is equipped with a parking spur, picnic table and campfire rings.

Several Towns in Sawyer County also offer campground facilities. The Town of Ojibwa provides camping at Ojibwa Park. The park has 16 camper sites and 3 tent sites. The park is bordered by the Chippewa River and the Tuscobia State Trail. An RV dump station, drinking water, and pit toilets are available. The Town of Draper has a tent and RV campground located off the Tuscobia Trail. The sites are level and graveled, have fire rings and picnic tables. Electric service is available for each site. The Town of Radisson provides camping along the Couderay River.

Other private campgrounds are distributed throughout the county with a variety of camping amenities and densities, there is a growing demand in recent years for seasonal campsite rentals with many sites in private campgrounds being occupied by the same campers all season long.

Picnic Areas-Day Use Parks

Sawyer County has many picnic and day use area parks distributed throughout the county, county, state, federal, township and villages all provide day use areas with multiple amenities and facilities available.

Nature Study and Hiking Trails

There are many suitable areas for nature study and hiking within the county. Among the designated trails are:

- Uhrenholdt Memorial Forest, 1.8 miles of trail through WDNR forest management demonstration area.
- Ojibwa Park Trails, 1-mile Turkey Feather Nature Trail. Also, a 1.5-mile skiing/hiking trail.
- Town of Hayward County Hill Recreational Forest Trails
- Sawyer County Forest Green Lake/Little Sissabagama non-motorized trail, 2.5 miles.
- Mino-giizhigad Trail, WDNR trail located east of the CC North Boat Landing.
- Moss Creek-Hay Creek skiing/hiking trails on WDNR land on the north side of the Chippewa Flowage, 2.0 miles.
- Hatchery Creek Park Nature Trail
- Lynch Creek State Wildlife Area, ¼ mile interpretive nature trail.

Bicycling- Mountain Biking

Sawyer County offers a wide variety of biking opportunities. From paved county and town roads, paved bike paths, to excellent trail riding mountain biking.

There are no marked or signed bike routes for road touring within Sawyer County, there are, however, many paved county and town roads that offer excellent low traffic routes. A map for Sawyer County designating road and highways as routes for bicycle travel is available from the Wisconsin Department of Transportation at https://wisconsindot.gov/Pages/travel/bike/bike-maps/county.aspx

The City of Hayward provides a 6.6-mile paved bike path and connecting road routes. The path is slightly sloped, is separated from traffic and has safety signals at road crossings. A map can be viewed at https://cityofhaywardwi.gov/wp-content/uploads/bike-trail.jpg

There are great trail and off-road biking opportunities in Sawyer County on public lands. The Sawyer County Forest, Chequamegon-Nicolet National Forest, and Hayward Area Memorial Hospital provide miles of trails, including winter fat biking opportunities. The trail system was developed, built, marked, mapped and maintained by the Chequamegon Area mountain Bike Association (CAMBA). It provides a diverse, beginner to expert variety of mountain biking trails and includes approximately 41.5 miles of singletrack trails, 46-miles of winter Fat Bike trails, over 220 miles of gravel road and two-track road routes throughout Sawyer County. Additionally, built in 2016 the Hatchery Creek Bike Park located at Sawyer County Forest Hatchery Creek Park is a popular facility among CAMBA's trail and riding experiences. The bike park includes a pump track, singletrack climbing trail and two descending lines: a jump line and a flow line. The bike park also includes a skills area designed to accommodate beginner, intermediate and more advanced riders. Features include: rock gardens, skinnies, drops, benchcut singletrack, teeter-totters, log lifts/ride-overs, and ladder bridges. Maps can be viewed for Sawyer County mountain bike and fat bike opportunities at the CAMBA website: https://cambatrails.org/trails/

ATV/UTV Trails

ATV/UTV (All terrain vehicle/ Utility terrain vehicle) is a popular activity that continues to grow throughout the county. Trail systems are provided for on the Sawyer County Forest, Chequamegon-Nicolet National Forest (CNNF), Flambeau River State Forest (FRSF), Tuscobia State Trail, and some private landowners within Sawyer County. Sawyer County currently manages 150.4 miles of summer use state funded trails which includes the Tuscobia State Trail and trails on the CNNF in cooperation with the Sawyer County Snowmobile and ATV Alliance which is the primary contract holder for all maintenance and grooming. There are approximately 25-miles of additional trail available on the FRSF as well as on the Lac Courte Oreilles Tribal Lands. There is also 149.8 miles of winter use ATV trails available in the county.

In 2012, the State of Wisconsin established a permanent program for UTV's, also known as side-by-sides, are allowed on all ATV trails managed by Sawyer County. These vehicles have been increasing in popularity every year.

Snowmobile Trails

Sawyer County has one of the best snowmobile trail networks in the Midwest. The trail system has over 600 miles of groomed trails which includes 383.2 miles of state funded trails under the management of Sawyer County. This system is part of the statewide network of snowmobile trails which links Sawyer County with adjoining counties as well as the rest of the state. The County has a single contract with the Sawyer County Snowmobile and ATV Alliance to maintain the state-funded trails. The Alliance is very dedicated to keeping the trails in good condition.

The Sawyer County Snowmobile and ATV Alliance is a non-profit corporation made up of 11 snowmobile and ATV clubs within Sawyer County. The purpose of the Alliance is to help create and maintain some of the best ATV/Snowmobile trails around.

A link to the snowmobile and ATV trails within Sawyer County can be found at:

https://sawyercountyalliance.com/sawyer-county-snowmobile-atv-trail-maps/

Cross-Country Skiing

There are extensive cross-country ski trails and associated facilities throughout Sawyer County. The American Birkebeiner Ski Trail includes trails from the north county line of Sawyer County to Highway 77 just outside of hayward, which covers 32.5 miles of the original trail as well as the more recent addition of the classical trail which runs from the county line to the double OO trailhead facility. Facilities and trailheads associated with the birkie trail include Fish Hatchery Park- with parking, drinking water, pit toilet, warming building. Mosquito Brook – with parking, warming building, drinking water. Double "OO" Trailhead Building – with parking, indoor bathrooms and gathering area, and drinking water. Boedecker Trailhead – with warming building, parking, and drinking water. Firetower – Warming building, limited parking, drinking water.

Several loop trails are available at Hatchery Creek Park, Hayward Area Memorial Hospital Trails, Mukwonago Ski trail on CNNF, Seeley Hills Ski trail on Sawyer County Forest, Town of Hayward Recreational Forest Trail, Flambeau Hills Ski Trail on FRSF and the Turkey Feather Ski Trail in Ojibwa Park.

Lighted ski trails are also located at the "OO" trail facility on the Birkie Trail and at the Hatchery Creek Park.

Snowshoeing

Anywhere hiking is permitted in the county snowshoeing is also possible. The CAMBA single track trails at Hatchery Creek Park are a designated snowshoe trail. Mosquito Brook and "OO" trailheads also have designated and marked snowshoe trails. The Hayward Hospital trails as well as the Town of Hayward Recreational Forest Trail also provide trail opportunities.

Hunting

There are approximately 330,000 acres of publicly owned lands open for hunting in Sawyer County. There are 115,197 acres of county land, 81,719 acres of state land, and 126,728 acres of federal land. A map of public lands in Sawyer County is included in this plan. In addition to public lands, hunting is also permitted by law on over 86,000 acres of private forest under the State's forestry tax programs.

State Natural Areas Within Sawyer County

State natural areas (SNA's) protect outstanding examples of Wisconsin's native landscape of natural communities, significant geological formations and archeological sites. Sawyer County has 16 valuable state natural areas for research and educational use, the preservation of genetic and biological diversity and for providing benchmarks for determining the impact of use on managed lands. The also provide some of the last refuges for rare plants and animals. Sawyer County has the following SNA's

- Bass lake Peatlands
- Flambeau River Hardwood Forest
- Ghost Lake
- Hanson Lake Wetlands
- Kissick Alkaline Bog Lake
- Lake Helane
- Lake of the Pines Conifer – Hardwoods
- Moose River Cedar Hills
- No-Name Lake
- Oxbo Pines
- Snoose Creek
- Spring Brook Drumlins
- Swamp Lake
- Thornapple Hemlocks
- Upper Brunet River
- Wilson Lake

More information can be found at https://dnr.wi.gov/topic/Lands/naturalareas/index.asp

Recommendations

Introduction

Previous sections of this plan have dealt with supplies, trends, and demands of recreational facilities of Sawyer County. This final section will analyze existing facilities and makes recommendations for possible improvements.

The plan is divided into two sections, the first discusses the projected needs by activity and makes general recommendations that may be implemented by a variety of governmental units. Existing parks, trails, and recreation facilities are listed in the next section, with more specific recommendations where applicable.

Recreational Needs by Activity

Water Based Activities

Fishing

Sawyer County's abundance of lakes, rivers and streams assures of an adequate fishery resource for many years to come. Improvements that could be considered are additional development of public access sites.

On the larger lakes, increased parking could be developed. Boat ramps could be improved to hard-surfaced concrete planks or cement pads. Handicap accessible docks should also be incorporated. Small lake public access sites should be designed to discourage deep draft boats and large motors. Walk-in access for small, lightweight hand-carried crafts should be provided on smaller bodies of water where possible.

Boating

According to the 2019-2023 Wisconsin Statewide Comprehensive Outdoor Recreation Plan (SCORP), motorboating remains a high recreational demand in the northwest region of the state. In order to continue to accommodate a large number of boaters in the county, additional public boat launches may need to be developed, and existing launches and facilities improved.

Canoeing/Kayaking

Rivers and streams suitable for canoeing and kayaking are abundant in Sawyer County. Increased public access points and maintaining the existing access should be adequate to meet projected demands.

Swimming

Sawyer County has several beaches throughout the county, but many areas of the county need well-developed public swimming areas.

Land Based Activities

Camping

Sawyer County has a number of private campgrounds as well as public campgrounds available on state and federal lands. Primitive camping is available throughout the county forest. Much of the increased demand for camping is provided for through private campgrounds.

Picnic – Day Use Areas

There hasn't been a demand for additional picnic facilities in Sawyer County. Picnic facilities will generally be better utilized if combined with other recreation activities such as swimming beaches, recreational trails/trailheads, playground equipment etc. Picnic areas should be included at any new park development.

A number of parks are being recommended for future improvements, additional grills and picnic tables will be incorporated into the parks to accommodate day-use activities.

Nature Study and Hiking Trails

Sawyer County offers many hiking and nature study opportunities to the public. Development of any hiking trails could include modifying the trail for disabled individuals, constructing boardwalks, providing interpretive signs and trail brochures, and creating overlooks and rest areas along the trail. These improvements will help satisfy nature study and hiking trail demands.

The Grindstone Lake Foundation currently has a project acquisitioning a former cranberry bog on Grindstone Lake to provide water quality protection, provide low-impact public recreation and educational experiences and demonstration of wetland, shoreline and nearshore habitats and land restoration which would be a benefit for Sawyer County for nature study.

Bicycling-Mountain Biking

Mountain biking is a sport that is increasing in popularity in Sawyer County every year. Sawyer County provides many miles of both singletrack, two track, and gravel road routes throughout the county. Proposed improvements to the trails system would include on-going trail maintenance, improvements and rehabilitation of older trails. Reclamation of degraded trail segments. Expansion of gravel route system, including mapping and marking routes. Upgrading trailhead kiosk facilities and upgrading wayfinding signage.

ATV/UTV Riding

As ATV/UTV use is constantly growing, facilitating trail improvements and developments on the Sawyer County state funded trail system will be a priority. Trail rehabilitations, developments

of new trail and trail facilities will help to address the growing demand for trail riding opportunities. Sawyer County will continue to work with the Sawyer County Snowmobile and ATV Alliance as well as other units of government and other landowners to maintain and improve the trails. Bridge and trail rehabilitation will continue as needed. Development of shelters, restrooms and other trailhead facilities are recommended for remote locations along the trail system. Trail interconnectivity will also be a focus for any future developments.

Snowmobile Trails

Sawyer County continues to be a destination for snowmobiling and continues to experience a high demand on snowmobile trails throughout the county. Sawyer County will continue to work with the Sawyer County Snowmobile and ATV Alliance as well as other units of government and landowners to maintain and improve the trails. Bridge and trail rehabilitation will continue as needed. Development of shelters, restrooms and other trailhead facilities are recommended for remote locations along the trail system. Trail interconnectivity will also be a focus for any future developments.

Cross-Country Skiing

Sawyer County also continues to be a destination for cross country skiing as well, with the world-famous American Birkebeiner Ski Trail as well as several other smaller loop trail systems throughout the county provides facilities for the increasingly popular activity in the county. Sawyer County will continue to work with the American Birkebeiner Ski Foundation and other local groups to provide and improve trail and trailhead facilities within the county.

Summary

Sawyer County has ample natural resources that are attractive to residents and nonresidents alike. The key to keeping this attractive is adequate resource protection, maintenance of current facilities, and expansion of facilities in the areas previously discussed.

The next section analyzes and makes recommendations for improving existing parks and facilities.

Recommendations

County Facilities

- Hatchery Creek Park

A former DNR fish hatchery, Hatchery Creek Park was established as the first county park in 1984. Hatchery Creek Park has become a focal point for many events including the Chequamegon Fat Tire mountain bike race, American Birkebeiner ski race, and regional high school cross-country meets. These events bring thousands of participants and spectators from around the world to the area each year.

In addition to large, competitive events the park hosts many smaller, private functions and provides opportunities for outdoor education and recreation. Opportunities include ski trails with lights for night skiing, trout fishing, picnicking and a nature trail for hiking. Mountain bikers access singletrack trails and pump park bike area from the trailhead at the park. Located at the park, the Hatchery Creek Trailhead provides access to the southern portion of the Birkie trail within a short distance of Hayward

Existing Facilities

- Paved parking area and trailhead on the southern portion of Sawyer County Forest Seeley Block
- Restrooms
- Heated log pavilion/shelter with picnic tables
- Fire ring and benches
- Picnic tables and grills
- Trail information
- Lighted ski loops
- Nature/ educational trail
- Drinking water

Recommendations

- Increase opportunities for multi-season use
- Improve nature/educational hiking trail signs
- Replace picnic tables and grills

- American Birkebeiner Trail

The primary focus of development will be for year-round recreational use as well as providing support for annual events.

Existing Facilities

- Mosquito Brook Trailhead
  - Warming Building
  - Parking

    - Drinking water
- Pit Road Trailhead
    - Warming building
    - Limited parking
    - Drinking water
- Double OO Trailhead Center
    - Indoor bathrooms
    - Meeting area
    - Parking
    - Fitness park
    - Drinking water
- Boedecker Road Trailhead
    - Warming building
    - Limited parking
    - Drinking water
- FireTower Trailhead
    - Warming building
    - Limited parking
    - Drinking water
- Birkie Ridge Trailhead
    - Parking area

Seeley Fire Tower

The location of the now removed Seeley Fire Tower provides a unique vista south across miles of the Sawyer County Forest. The site is adjacent to the birkie trail and CAMBA singletrack bike trails and is used as a stopping point by hikers, mountain bikers, skiers and snowmobilers.

Recommendations

- Develop an elevated overlook
- Information kiosk

Nelson Lake Wayside

Former Department of Transportation wayside located on State Highway 27 North, adjacent to the County owned Totogatic Dam that forms Nelson Lake and immediately upstream from the WDNR Totogatic Wildlife Area. Managed in cooperation with the Town of Lenroot.

Existing Facilities

- Paved parking Area
- Picnic table and grills
- Pit toilets
- Boat landing

- Pavilion
- Native plant display

Eagles Landing Park

A 1.42 acre park and landing on the Namekagon River, which is accessible from Airport Road. Improvements will emphasize the natural setting and aesthetics of the Namekagon River and improve wildlife and shoreline habitat.

Existing Facilities

- Gravel parking area
- Artesian well
- Handicap accessible restroom
- Wildlife viewing benches
- Picnic area
- Walkway to river access
- Pier for river access

Recommendations

- Shelter/pavilion

Sawyer County Fairgrounds

A 10.65 acre site adjacent to the County Highway Shop on CTY Hwy B. The fairgrounds are available to organizations for events and storage of county equipment.

Existing Facilities

- Pavilion
- Exhibit hall
- Large animal barn
- Hog/sheep barn
- Poultry barn
- Milking parlor
- Motocross track
- Grandstand
- 4-H building
- Large parking area

Recommendations

- Surface improvements for walkways and road
- Insulate and install HVAC system in exhibit hall
- Bleachers
- Outdoor public bathrooms
- Storage building for fair equipment

Boat Landings

- Nelson lake Dam Boat Landing, developed
- Nelson Lake Tag Alder Landing, developed
- Weirgor Lake, walk in landing
- Price Dam Landing, Lake Winter, developed
- Windfall lake, developed
- Spring Lake, developed
- Tiger Cat Flowage, developed
- Deer Lake, developed
- Winter Dam, Chippewa Flowage, developed
- Green Lake, undeveloped

Township Recreational Facilities

Town of Bass Lake

Existing Facilities

- Durphee Boat Landing – Cement ramp with limited parking located on County Road KK
- Grindstone Scenic Overlook
- Grindstone Shallows Park – Boat landing, pavilion, picnic area, grills, restrooms and rustic nature trail
- Harvey Park – Rustic walkway with benches at LCO shoreline with limited parking located on Circle Drive at the end of County Road KK.
- Henks Park
- Little LCO Boat Landing
- Spring Lake Boat Ramp – Cement ramp and dock with limited parking located at the junction of Williams Road and County Road E
- Windigo Boat Landing – Cement boat ramp with dock, gazebo, view shed, large paved parking area, picnic area, grills and restroom located on Highline Road.

Town of Draper

Loretta/Draper Municipal Park

Existing Facilities

- Pavilion
- Picnic area
- Restrooms
- Ball field

Tent/RV Campground

Town of Hayward

The Town of Hayward maintains a lake access and swimming area on Peninsula road and boat landing with parking on Linden Road, both sites are on the west side of Round Lake.

County Hill Recreational Forest

A year-round park for non-motorized recreation located on County Hill Road adjacent to the WDNR Kissick Swamp Wildlife Area.

Existing Facilities

- Picnic/warming shelter
- Handicap accessible restroom
- Gravel parking area
- Sledding hill
- Natural lake
- Trail system for hiking, hunter walking trail, snowshoeing, cross-country skiing

Recommendations

- Signage
- Develop interpretive trail for forest management practices and native trees and vegetation
- Benches
- Power to shelter building
- Trail lighting
- Develop Koznieski pond area
- Gravel pit reclamation for skating rink

Town of Lenroot

The town of Lenroot owns and maintains two recreation facilities and a boat landing. The facilities are on Silverthorn Lake and Smith Lake, with the boat landing on Nelson lake.

Eytcheson Park – Smith lake

Existing Facilities

- Boat landing and parking
- Swimming beach
- Restrooms
- Picnic area
- Pavilion

Silverthorn Lake Park

Existing Facilities

- Swimming beach
- Shelter/pavilion
- Restrooms
- Tennis court
- Playground equipment
- Baseball field

Town of Meteor

Existing Facilities**:**

- Softball field
- Sand volleyball court
- Paved court area
- Picnic pavilion with grill and tables

Recommendation**s:**

- Continue development of recreation center at Town Hall.

Town of Ojibwa

Ojibwa Park

The Town of Ojibwa owns and maintains the former Ojibwa State Park. The Town has a 4 member park committee who oversees maintenance/ management of the Ojibwa Park. The Park provides access for snowmobilers and ATVs to the Tuscobia State Trail, as well as a campground. The Turkey Feather Trail is a one mile marked hiking trail on the north side of Highway 70 in Ojibwa Park. A two mile ski loop starts at the Turkey Feather Trailhead.

Existing Facilities**:**

- Restrooms
- Picnic areas & large grill
- Sixteen camper sites and three tent sites

Existing Facilities

- Drinking water
- RV waste station
- Shelter building
- Playground equipment for pre-school to age 10
- Turkey Feather Trail – hiking & skiing

Recommendations:

- Develop/install shower unit in campground

Baird Community Park
Located on the north side of the Chippewa River.

Existing Facilities**:**

- Picnic tables
- Grills
- Restrooms
- Ball Field with dugouts
- Concession stand
- Canoe access to the river

Recommendations**:**

- Replace concrete floor in shelter
- Roll grounds in ball park outfield

Ojibwa Park-Canoe Access
A small parking area adjacent to the Ojibwa Park that provides scenic access and a canoe take-out point on the north side of the Chippewa River.

Existing Facilities**:**

- Picnic area
- Improved canoe access point
- Gravel parking area

Town of Round Lake
The Town of Round Lake utilizes the Town Hall located on CTH A for Town meetings and annual functions. Hall/Community Building is also used by multiple lake and property associations for meetings and informational forums.

Existing Facilities:

- Parking area

- Non-motorized boat launch
- Scenic area with fishing access (West Fork Chippewa River)
- Battle of the Horsefly historical site/marker

Recommendations:

- Develop picnic facilities including grills and tables, pavilion, and landscaping.
- Restrooms
- Drinking water
- Hiking/Snowshoe trail development on 40 acres of town property adjacent to Town Hall.
- Develop water access/swim/picnic area, possibly in conjunction with adjacent Towns.

Town of Sand Lake

Recreation facilities in the Town of Sand Lake are provided primarily for Stone Lake area residents, visitors and tourists.

Stone Lake Lions Park

The park is located on STH 70

Existing Facilities:

- Softball field with improved fencing and players benches
- Pavilion. With adjoining serving area (roll serving doors and picnic tables
- Picnic areas with tables and grilles
- Fire Pit
- Playground Equipment
- Equipment Storage Building and Garage
- Restrooms (Pit Toilets)
- Basketball court
- Pickle Ball court
- Volley Ball court

Recommendations:

- Add Horseshoe courts
- Provide a water source to the park
- Paint the existing Pit toilets
- Build Restrooms with running water and sewer.

Stone Lake Elementary School

Previously the Stone Lake Elementary school building, the building and lot is now owned by the Stone Lake Cranberry Fest, Inc. and used as a community park.

Existing Facilities:

- Playground Equipment , 2 groupings

Recommendations:

- Move one grouping of Playground equipment to Lions Park (Replacement) or Lions Hall (New Play Area)

Town of Winter

Archery Range – Lagoon Road

Existing Facilities:

- Pavilion
- Small storage shed
- Parking
- Porta-potty (owned by archery club)

Recommendations:

- Expand facility to include rifle and pistol range
- Expand parking area to accommodate approximately 20 vehicles and/or trailers
- Develop recreational vehicle operation training area for youth lessons/certifications
- Plant a buffer of trees
- Provide a water source to the area
- Provide restroom facilities
- Provide playground equipment
- Develop a picnic area with shelter, tables and grills
- Provide electricity to site

Lake Winter Boat Landing – Tower Road (NE side of lake)

Existing Facilities:

- Seasonal boat dock
- Handicap accessible fishing dock
- Parking area

Recommendations:

- Develop playground area with shelter and equipment
- Provide electricity to picnic area
- Provide picnic tables
- Provide water source
- Provide restroom facilities

Village recreational facilities

Village of Couderay
The recreation facilities are provided within the village located on the Couderay River.

Ed Anderson Recreation Area

Existing Facilities:

- Two ball fields
- Playground equipment
- New pavilion
- Picnic area
- Restrooms

Recommendations:

- New barrier free restrooms should be added
- New chain-link backstops on both fields
- New line fencing on both fields
- Picnic area with tables and grills could be developed along the river within the park
- Acquire Eddy Creek Park from the County and improve

Village of Radisson
Four outdoor recreation areas are located in the village. All town roads are open to ATV and Snowmobiles.

New Project Recommendations:

- Create path and rehabilitation of boat landing/public rest area on Couderay River. Property lies within Town of Radisson and owned by North Central Power.
- Develop biking/walking/rollerblade path to Tuscobia Trail to create a circular recreational path

-

Radisson Recreational Park

Existing Facilities:

- Eight campsites with electric & water hookup
- 5 tent sites
- Picnic tables
- Pavilion with electricity & water
- Restrooms
- Playground equipment for preschool
- Volleyball net

- Basketball hoop
- RV waste station
- ATV wash station
- ATV unloading ramp

Recommendations:

- Shower building
- Blacktop parking area

Radisson Ball Park

Existing Facilities:

- Restrooms
- Concession stand
- Ball field

Recommendations:

- Add a chain-link backstop and outfield fence

Village Firehall Park
Located adjacent to the Firehall on the Tuscobia State Trail.

Existing Facilities:

- Pavilion
- Restrooms inside the pavilion
- Basketball court

Recommendations:

- Remodel Village Hall restrooms

Former Radisson Elementary School

Existing Facilities:

- Ball field
- New playground equipment

Recommendations:

- Upgrade existing ball fields for youth leagues

Village of Winter
Excellent outdoor recreation facilities are provided in the village.

Dr. H.A. Smith Park and V.F.W.

Existing Facilities:

- Picnic area
- Ball field
- Pavilion
- Restrooms – barrier free 2006

Recommendations:

- Park signage
- Recondition softball diamond
- Repaving
- Event shelters with electricity
- Construct two ballpark dugouts
- Construct ballpark concession stand

CM Olson Athletic Field

The Winter School District also provides excellent facilities at the school.

Existing Facilities:

- Baseball diamond
- Asphalt track
- Playground equipment

Friends of Tuscobia – Winter Depot Trailhead

Existing Facilities:

- Historic Village of Winter railroad depot near the Tuscobia Trail for use as a multi-use trailhead including ATV, snowmobiles, hiking, and biking.

Recommendations:

- Provide entrance and parking areas to accommodate vehicles and trailers
- Establish picnic area with shelter, tables and grills
- Establish a water source
- Restrooms
- Lighting
- Landscaping
- Fencing
- Signage

Village of Exeland

The Village of Exeland has excellent and well used recreation facilities.

Swan Creek Park

Existing Facilities:

- Shelter.
- Camping.
- Water pump.
- Restrooms.
- Horseshoe pits.
- Little League field.
- Grass open play area with playground equipment.

Recommendations:

- Create a multi-use community recreation facility. A fishing area for children could be developed at the park where the Swan and Weirgor Creeks come together. A small shelter and a stream-side handicap accessible fishing dock could be included.
- Ice skating rink
- Tennis courts
- Bathroom/shower facility for camp area

Exeland Sports Center

Excellent recreation opportunities are available at this facility.

Existing Facilities:

- Rod & Gun Club with a trap and rifle range
- Softball field
- The major facility of the Exeland baseball field
- New restrooms
- Concession stand
- New batting cages & dugouts
- Pavilion
- New sand volleyball court
- Playground equipment
- Open and covered bleachers

City recreational facilities

City of Hayward

Hayward, the county seat of Sawyer County, has shown substantial growth in the past thirty years-

-from a 1980 population of 1,698 to a 2010 census population of 2,340, an increase of 27 percent.

The Town of Hayward, which surrounds the city, increased from 2,331 in 1980 to 3,601 people in the 2010 census. This is an increase of 35 percent. The City and Town of Hayward now have a combined population total just under 6,000.

This dramatic increase has placed increased pressure on existing recreation facilities and created demand for new recreational opportunities. The City of Hayward's existing recreation facilities receive extremely heavy use during high tourist periods. The lack of major picnic open-space play area is evident. The city swimming beach, which is the only public swimming area in Hayward, is now accessible via the biking/walking trail that circumnavigates the city limits.

Hayward functions as a popular service center for area second home residents, and resorts and receives extremely sharp population increases in the summer months. Special events as the Musky Festival, Lumberjack World Championships, Winterfest, Fat Tire Festival and the American Birkebeiner cross-country ski race bring additional thousands of visitors into the area. Hayward is also fortunate to be the home of the National Fresh Water Fishing Hall of Fame. This facility is located adjacent to the city beach.

The Hayward area presently supports men's and women's summer softball leagues, Little League baseball, a men's city baseball team, youth soccer, logrolling and amateur ice hockey programs. The majority of organized team recreation activities take place at the Hayward Sports Center located adjacent to the Middle School.

Hayward Community School District

Hayward Primary School

Existing Facilities:

- Ball fields
- New playground equipment
- Gymnasium
- Soccer field
- Paved parking

Recommendations:

- Upgrade ball fields (new backstops)

Hayward Intermediate School

Existing Facilities:

- Access to paved fitness trail
- New playground equipment

- Gymnasium
- Paved parking

Hayward Middle School

Existing Facilities:

- Shares outdoor fields with Sports Center and High School
- Large gymnasium
- Paved parking
- Football field
- Sand volleyball court

Hayward Senior High School

Existing Facilities:

- Baseball fields
- Softball fields
- Track facility
- Football field
- Soccer fields
- 4 tennis courts
- Auditorium
- Access to paved fitness trail

Recommendations:

- Upgrade tennis courts

Erik and Randy Lawry Skate Park

Excellent skateboard and rollerblade park (44,167 sq ft.). Located adjacent to the High School and Middle School. Open to the public.

Hayward Sports Center

This 28 acre sports complex is on land owned by the City of Hayward but is administered by the Hayward Sports Center Board of Directors and provides recreation opportunities for Sawyer County and area residents, and visitors.

Existing Facilities:

- 28,000 sq. ft. indoor arena providing ice hockey, meetings, concession, restrooms, and year round activities
- Softball field with restrooms
- 3 Little League fields with concession and storage
- Playground equipment

Recommendations:

- Bury overhead electric lines
- Develop swim park

Dog Park (formerly Nyman Park)

A 9.2-acre parcel located along Smith Lake Creek on the north side of the city with 77,700 sq. ft. of mowed area.

Existing Facilities:

- Vehicle parking area
- Designated area for unleashed dogs
- Walking trail for leashed dogs

Smith Creek

Recommendations:

- Develop a plan to address problems and utilize the potential of the creek.

Upper Shues Pond

This area is adjacent to the Senior Citizens Center.

Existing Facilities:

- Benches
- Trails (.3 miles)

Recommendations:

- Develop a picnic area with a small pavilion

Pedestrian/Bike Trail

Year-round, paved fitness trail originates near the City Beach, continues through the business park, past the school campuses and down Nyman Ave, continuing past the Sherman & Ruth Weiss public library, and ends at the city limits on Highway 77 near Walmart/Slumberland. The trail provides access to the Middle School, Sports Center, Intermediate School, and Primary School locations, as well as the public library.

Recommendations:

- Complete bike/walking trail and work with adjacent townships to make a regional trail.
- Utilize the trail corridor for the Tree City/Bird City initiative

Jaycees Tot Lot

This small playground and ice skating rink is located at the corner of Wisconsin and Fourth Street

in the City of Hayward (34,956 sq. ft.).

Existing Facilities:

- Playground equipment
- Outdoor skating rink

Recommendation:

- Additional lighting

City Beach

Existing Facilities (121,000 sq. ft.):

- Swimming beach
- Restrooms
- Open shelter
- Basketball court
- Boat ramp
- Accessible Pier
- Picnic area with tables and grills
- Playground with a variety of equipment

Recommendations:

- Define parking for boat access

Shues Pond

This attractive area provides beautiful inter-city open space (90,000 sq. ft.). The annual "Lure of the Lights" display is held here. The pond is used by a variety of wildlife, and many residents enjoy viewing the wildlife while having lunch.

Existing Facilities:

- Gazebo
- Picnic tables
- Flag pole
- Playground equipment

Recommendations:

- Plant a pollinator garden to attract birds and butterflies.
- Utilize the area for the Tree City/Bird City initiative

Library Nature Park

Existing Facilities:

- Nature park
- Walking trails
- Viewing pier
- Bridge
- Informational kiosks
- Plant identification signs
- Outdoor amphitheater/classroom

Recommendations:

- Upgrade/improve/maintain outdoor amphitheater
- Conserve and restore the wetland and upland areas
- Invasive species control
- Reforestation/habitat management

SUMMARY

Sawyer County has a diverse natural resource base providing a variety of recreational opportunities. Many of the opportunities take place on public lands such as Sawyer County Forest, Chequamegon National Forest, State of Wisconsin lands managed by the DNR, and the Namekagon River National Scenic Riverway. The area offers many nationally recognized recreational events.

Sawyer County has a unique group of citizens who, through volunteer efforts, are able to make things happen, and provide unique recreational opportunities and world class recreation events. The county's role is that of managing and maintaining its vast county forest system as a viable multi-use recreation base as well as providing quality forest products. The municipalities in the county must continue to provide and maintain community based recreation facilities that have made Sawyer County one of the most livable areas in the Midwest.

APPENDIX A - FINANCIAL AIDS

PROGRAM DESCRIPTION

Land and Water Conservation Fund (LWCF) Program

This is a federal program administered in all states that encourages creation and interpretation of high-quality outdoor recreational opportunities. Funds received by the DNR for this program are split between DNR projects and grants to local governments for outdoor recreation activities.
Grants cover 50 percent of eligible project costs.

Eligible applicants

Towns, villages, cities, counties, tribal governments, school districts or other state political subdivisions are eligible to apply for grants for acquisition and/or development of public outdoor recreation areas and facilities.

Eligible projects

- Land acquisition or development projects that will provide opportunities for public outdoor recreation.
- Property with frontage on rivers, streams, lakes, estuaries and reservoirs that will provide water based outdoor recreation.
- Property that provides special recreation opportunities, such as floodplains, wetlands and areas adjacent to scenic highways.
- Natural areas and outstanding scenic areas, where the objective is to preserve the scenic or natural values, including wildlife areas and areas of physical or biological importance. These areas shall be open to the general public for outdoor recreation use to the extent that the natural attributes of the areas will not be seriously impaired or lost.
- Land or development within urban areas for day use picnic areas.
- Land or development of nature-based outdoor recreation trails.
- Development of basic outdoor recreation facilities.
- Renovation of existing outdoor recreation facilities which are in danger of being lost for public use.

Ineligible project examples

- A project that is not supported by a local comprehensive outdoor recreational plan.
- Acquisition and development of golf courses.
- A project where storm water management is the primary purpose.
- Motorized recreation trails.
- Lands that include cell towers.
- Land that will be used for non-outdoor public recreation purposes.

Deadlines and funding cycles

- Submit completed applications by **May 1** of each year

  to: Lavane Hessler

Local government grant manager
Department of Natural Resources
P.O. Box 7921
Madison WI 53707-7921
608-267-0497

- Department of Natural Resources regional staff review and rate eligible projects in **early June**.
- Final project listing is compiled in **July** with projects ranking the highest selected for grants to the extent funds are available.
- Final selected projects will be reviewed and approved by the National Park Service prior to the sponsor receiving an agreement with the DNR.

Application materials

Because these grants are often coupled with grants from the Knowles-Nelson Stewardship Program, LWCF grant application materials appear in the same booklet as Stewardship Local Assistance grant application materials.

APPENDIX E-28 NPS Namekagon River Recreation Sites, Maps 1-4

Enjoy the River Safely and Responsibly.

Regulations
Boating and Paddling (36CFR 3)

- Wear your life jacket! Approved life jackets for each person are required on your vessel.
- Children under 13 are required to wear a life jacket.
- Slow-no wake, which is operation of a motorboat at the slowest possible speed necessary to maintain steerage, is in effect within 100 feet of
  - o A downed water skier;
  - o A person swimming, wading, fishing from shore or floating with the aid of a flotation device;
  - o A designated launch site; or
  - o A manually propelled, anchored or drifting vessel.
- Use of personal watercraft is prohibited. (Defined in 36CFR 1.4)

Camping (36CFR 2.10)

- Camping is only allowed at designated sites on a first-come, first-served basis.
- Camping stay limit is 3 consecutive nights at a campsite.
- Individual campsites accommodate a maximum of 8 people and 3 tents. Group sites accommodate a maximum of 16 people and 6 tents.
- Tents must be occupied on the first night of stay. Equipment left unattended to hold a site will be treated as abandoned.

Campfires and Firewood (36CFR 2.1)

- Open campfires are allowed only in metal campfire rings.
- Dead and down wood may be collected for campfires from shoreline areas but not from islands.
- The cutting of live vegetation is strictly prohibited.
- To prevent the spread of emerald ashborer, only use firewood that is kiln dried or collected within 25 miles of where it will be used.
- Campfires must be out and cold before you leave the area.

Fishing (36CFR 2.3)

- Dumping or release of live bait is prohibited.
- Use of live crayfish as bait is prohibited.
- Help prevent the introduction of invasive species. Never release bait, bait water, or water from live bait wells into the river.

Sanitation and Refuse (36CFR 2.14)

- Where a pit toilet is not available, human waste and pet waste must be removed from the park or be buried at least 6 inches underground and a minimum of 100 feet from any water source, high water mark, trail, or facility.
- Carry out all trash.
- Littering is not allowed.
- Please do not put trash in toilets.

Resource Protection (36CFR 2.1)

- Collecting live or dead mussels, empty mussel shells, historical artifacts, or wildflowers is prohibited.

General

- Pets must be on a leash no longer than 6 feet. Pet waste must be removed from the park or buried. (36CFR 2.15(a)(1))
- Possession or shooting of fireworks are prohibited. (36CFR 2.38(b))
- Quiet hours are from 10:00 pm to 6:00 am. (36CFR 2.10(b)(4))
- Do not jump or dive from cliffs, trees, swing ropes, or bridges. (36CFR 1.5)

Safety Tips

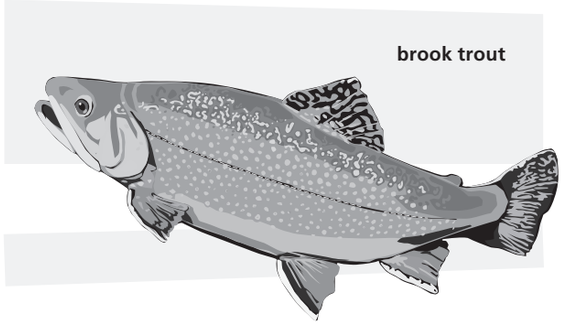
- Check river conditions before launching www.nps.gov/sacn/planyourvisit/current-conditions.
- Know your paddling ability. Not all stretches of the Riverway are suitable for beginners.
- Avoid trees that have fallen into the river. They can catch and overturn your vessel.
- Wear sunscreen, sunglasses, and a hat to prevent sunburn.
- Use alcohol responsibly.
- Do not bring glass containers to the Riverway. Broken glass cuts bare feet.
- Protect your feet with river shoes or sandals
- Bring your own drinking water. River water is not safe to drink unless purified.
- Check for ticks.
- Watch for poison ivy.

For COVID-19 updates, see www.nps.gov/sacn.

Codes: Superintendent's Compendium, park specific rules under 36 Code of Federal Regulations (36CFR), www.nps.gov/sacn/learn/compendium.htm.

National Park Service
St. Croix National Scenic Riverway

Namekagon River Map 1:
Namekagon Dam to Hayward Landing



Native brook trout are found in the colder waters of the upper Namekagon River.

In This Stretch

- The first ten miles of this stretch are isolated. Expect numerous beaver dams, downed trees, and three low bridges. Water levels can be extremely low and impassable during dry conditions.
- From **Phillipi Landing** to **Cable Wayside**, water levels tend to be slightly better.
- At the old **Phipps Dam** site, you can usually run the rapids or look for the portage on the right.
- From **Trout Run Landing** to Hospital Road you may encounter large groups of people on tubes.
- Hayward Lake is large and open, making paddling difficult during a strong headwind. You must portage the **Hayward Dam.**
- **ALERT:** Construction of Tag Alder Rd. begins May/June 2022. Portage around the bridge will be needed at times.

St. Croix National Scenic Riverway

Namekagon River Map 1: Namekagon Dam to Hayward Landing

Namekagon River Visitor Center

Highway 63, half mile east of Highway 53
Trego, Wisconsin
715-635-8346

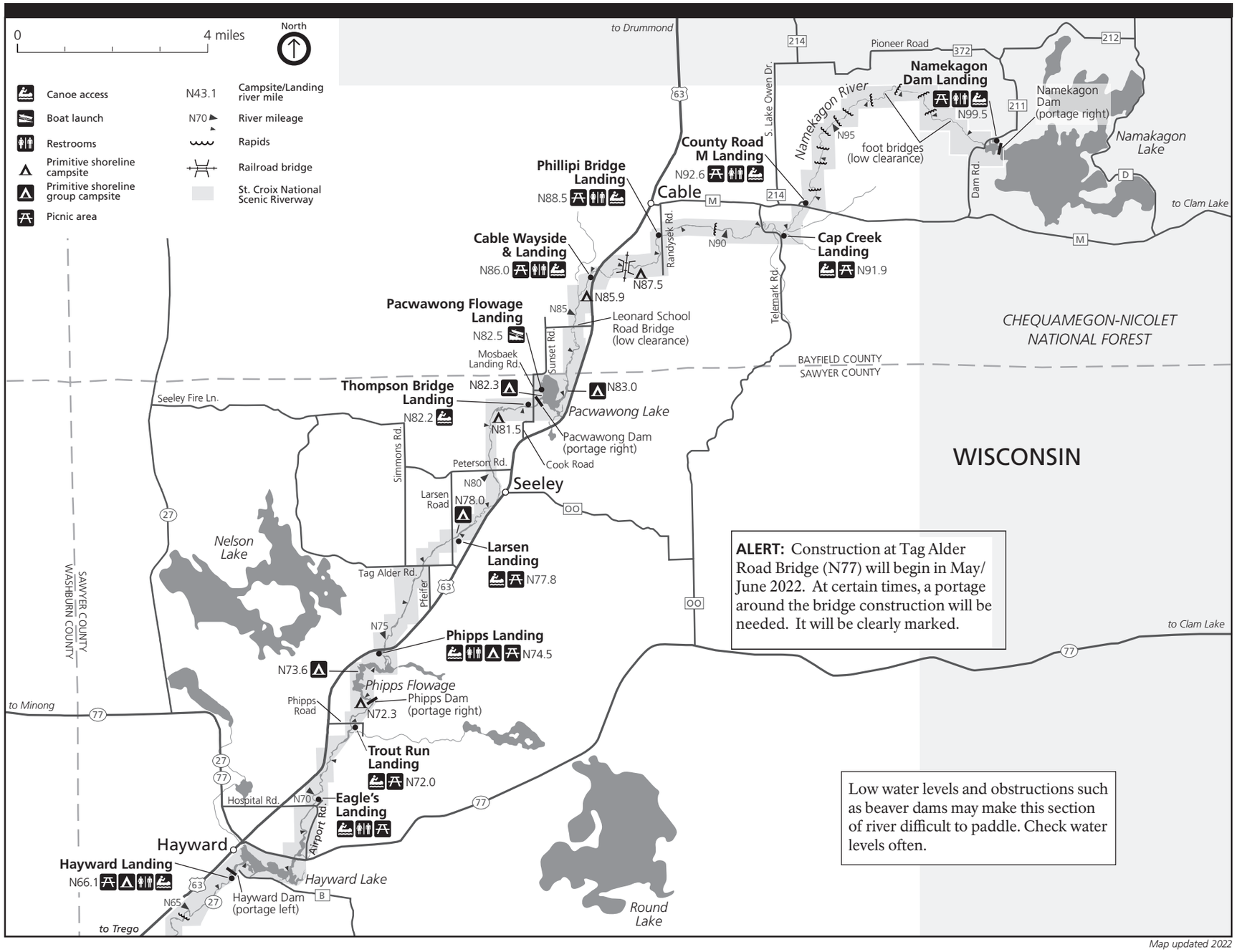
www.nps.gov/sacn
www.facebook.com/StCroixNSR/

Emergencies call 911
See a problem? 1-800-**PARKTIP**

For Current River Conditions

Visit www.nps.gov/sacn/planyourvisit/current-conditions.htm
Call 715-483-2274

FIND YOUR PARK



Map updated 2022

Enjoy the River Safely and Responsibly.

Regulations
Boating and Paddling (36CFR 3)

- Wear your life jacket! Approved life jackets for each person are required on your vessel.
- Children under 13 are required to wear a life jacket.
- Slow-no wake, which is operation of a motorboat at the slowest possible speed necessary to maintain steerage, is in effect within 100 feet of
  - o A downed water skier;
  - o A person swimming, wading, fishing from shore or floating with the aid of a flotation device;
  - o A designated launch site; or
  - o A manually propelled, anchored or drifting vessel.
- Use of personal watercraft is prohibited. (Defined in 36CFR 1.4)

Camping (36CFR 2.10)

- Camping is only allowed at designated sites on a first-come, first-served basis.
- Camping stay limit is 3 consecutive nights at a campsite.
- Individual campsites accommodate a maximum of 8 people and 3 tents. Group sites accommodate a maximum of 16 people and 6 tents.
- Tents must be occupied on the first night of stay. Equipment left unattended to hold a site will be treated as abandoned.

Campfires and Firewood (36CFR 2.1)

- Open campfires are allowed only in metal campfire rings.
- Dead and down wood may be collected for campfires from shoreline areas but not from islands.
- The cutting of live vegetation is strictly prohibited.
- To prevent the spread of emerald ashborer, only use firewood that is kiln dried or collected within 25 miles of where it will be used.
- Campfires must be out and cold before you leave the area.

Fishing (36CFR 2.3)

- Dumping or release of live bait is prohibited.
- Use of live crayfish as bait is prohibited.
- Help prevent the introduction of invasive species. Never release bait, bait water, or water from live bait wells into the river.

Sanitation and Refuse (36CFR 2.14)

- Where a pit toilet is not available, human waste and pet waste must be removed from the park or be buried at least 6 inches underground and a minimum of 100 feet from any water source, high water mark, trail, or facility.
- Carry out all trash.
- Littering is not allowed.
- Please do not put trash in toilets.

Resource Protection (36CFR 2.1)

- Collecting live or dead mussels, empty mussel shells, historical artifacts, or wildflowers is prohibited.

General

- Pets must be on a leash no longer than 6 feet. Pet waste must be removed from the park or buried. (36CFR 2.15(a)(1))
- Possession or shooting of fireworks are prohibited. (36CFR 2.38(b))
- Quiet hours are from 10:00 pm to 6:00 am. (36CFR 2.10(b)(4))
- Do not jump or dive from cliffs, trees, swing ropes, or bridges. (36CFR 1.5)

Safety Tips

- Check river conditions before launching www.nps.gov/sacn/planyourvisit/current-conditions.
- Know your paddling ability. Not all stretches of the Riverway are suitable for beginners.
- Avoid trees that have fallen into the river. They can catch and overturn your vessel.
- Wear sunscreen, sunglasses, and a hat to prevent sunburn.
- Use alcohol responsibly.
- Do not bring glass containers to the Riverway. Broken glass cuts bare feet.
- Protect your feet with river shoes or sandals
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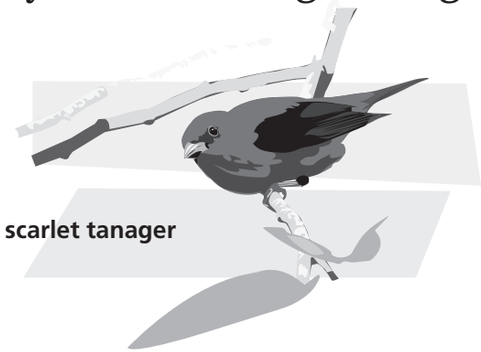
- Check for ticks.
- Watch for poison ivy.

For COVID-19 updates, see www.nps.gov/sacn.

Codes: Superintendent's Compendium, park specific rules under 36 Code of Federal Regulations (36CFR), www.nps.gov/sacn/learn/compendium.htm.

National Park Service
St. Croix National Scenic Riverway

Namekagon River Map 2:
Hayward Landing to Trego



scarlet tanager

The St. Croix and Namekagon rivers are migration corridors and nesting areas for many species of songbirds.

In This Stretch

- After **Hayward Landing** the river is rocky and narrow. A few miles downstream the river becomes sandy and slow. Water levels are usually good.
- Just downstream from **Stinnett Landing** the river narrows, forming a chute.
- As you continue downstream the river quickens with many Class I rapids.
- After **Big Bend Landing** the river widens, slows, and is an easy paddle.
- **Earl Park Landing** is a popular put-in spot for people on tubes on hot summer days.
- Five miles down river, the river passes under Highway 53, to **Trego Town Park Landing**, followed by five miles of slow paddling through the **Trego Flowage** to the **Trego Dam**. (See Map 3 for the complete map of the Trego Flowage.)
- **ALERT:** Construction of US 53/63 Trego Interchange will occur through 2022. See map side for further information.

St. Croix National Scenic Riverway

Namekagon River Map 2: Hayward Landing to Trego

Namekagon River Visitor Center

Highway 63, half mile east of Highway 53
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715-635-8346

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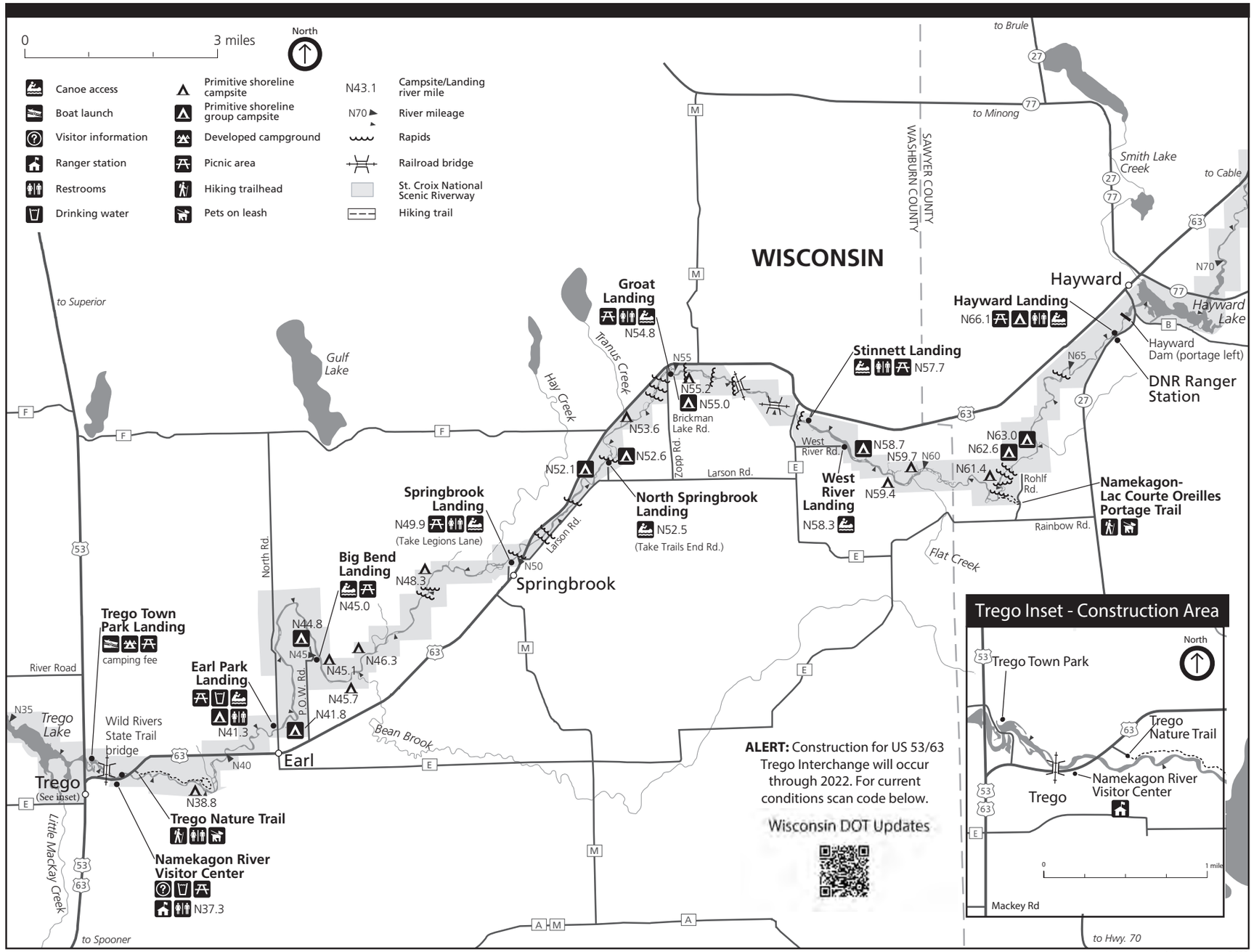

Map updated 2022

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- Children under 13 are required to wear a life jacket.
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  - o A downed water skier;
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General

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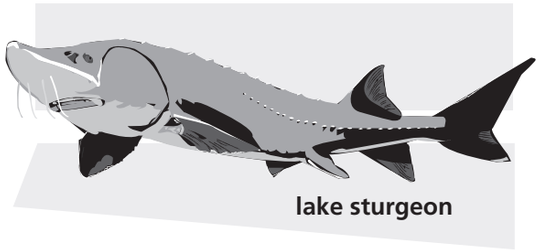
National Park Service
St. Croix National Scenic Riverway

Namekagon River Map 3:
Trego to Riverside Landing


lake sturgeon

The Namekagon River is named after an Ojibwe word meaning "place where the sturgeon are." Look for them resting under overhanging river banks.

In This Stretch

- Downstream of **County Road K Landing** the river is narrow and contains riffles.
- Downstream of **Howell Landing** the river is somewhat rocky until you pass Highway 77, then it becomes sandy.
- **Fritz Landing** can be hard to see. Watch for a small island and use the left channel if taking out there.
- The river widens after **McDowell Bridge Landing**. After **Namekagon Trail Landing** the river becomes rockier with riffles and there are several Class I rapids before the confluence.
- The St. Croix River has a rocky bottom and is shallow, making it challenging during low water conditions. There are more rapids as you approach **Riverside Landing**.
- **ALERT:** Construction of US 53/63 Trego Interchange will occur through 2022. See map side for further information.

St. Croix National Scenic Riverway

Namekagon River Map 3: Trego to Riverside Landing

Namekagon River Visitor Center

Highway 63, half mile east of Highway 53
Trego, Wisconsin
715-635-8346

www.nps.gov/sacn
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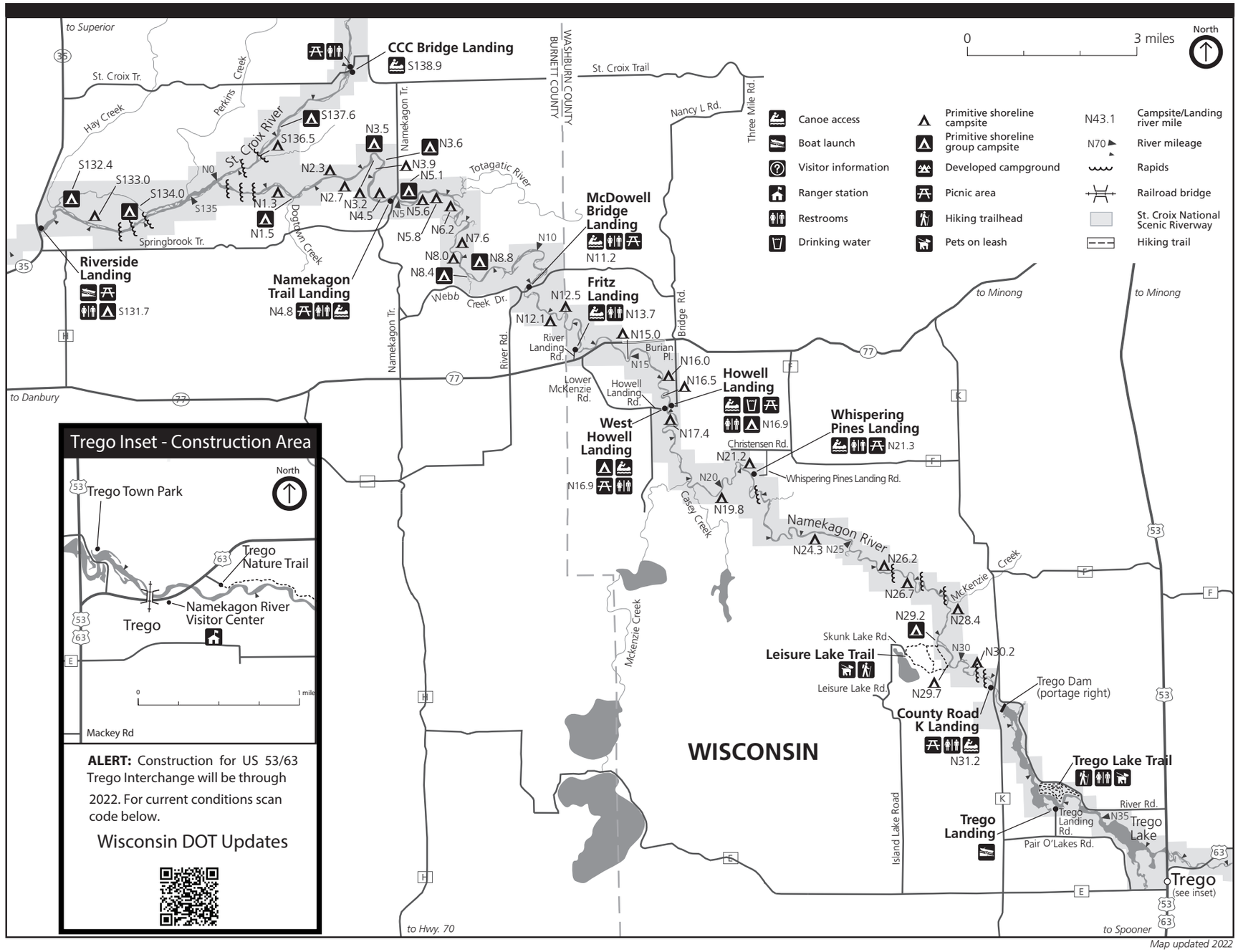

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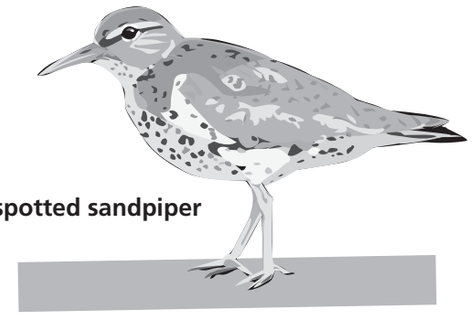
Codes: Superintendent's Compendium, park specific rules under 36 Code of Federal Regulations (36CFR), www.nps.gov/sacn/learn/compendium.htm.

National Park Service
St. Croix National Scenic Riverway

St. Croix River Map 4:
Gordon Dam to Riverside Landing



spotted sandpiper

Often seen making short flights ahead of vessels, spotted sandpipers are the most common shorebird on the rivers.

In This Stretch

- This stretch can be very challenging in low water conditions causing paddlers to continually dodge large rocks and boulders.
- Approximately 300 yards of boulders, plus Class I and II rapids come up suddenly before the **Scott Bridge**. It is best to paddle to the left.
- You can sometimes run the chute of **Coppermine Dam,** but make sure you scout it first or use the portage on the right.
- Winding Class I and II rapids at **Fish Trap Rapids** are considered the most challenging on the Riverway, and no portage exists.
- A smaller set of Class I rapids called **Little Fish Trap Rapids** exists right before the **CCC Bridge Landing.**
- There are more rapids around **Big Island** and as you approach **Riverside Landing.**

St. Croix National Scenic Riverway

St. Croix River Map 4:
Gordon Dam to Riverside Landing

Namekagon River Visitor Center
Highway 63, half mile east of Highway 53
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715-635-8346

www.nps.gov/sacn www.facebook.com/StCroixNSR/

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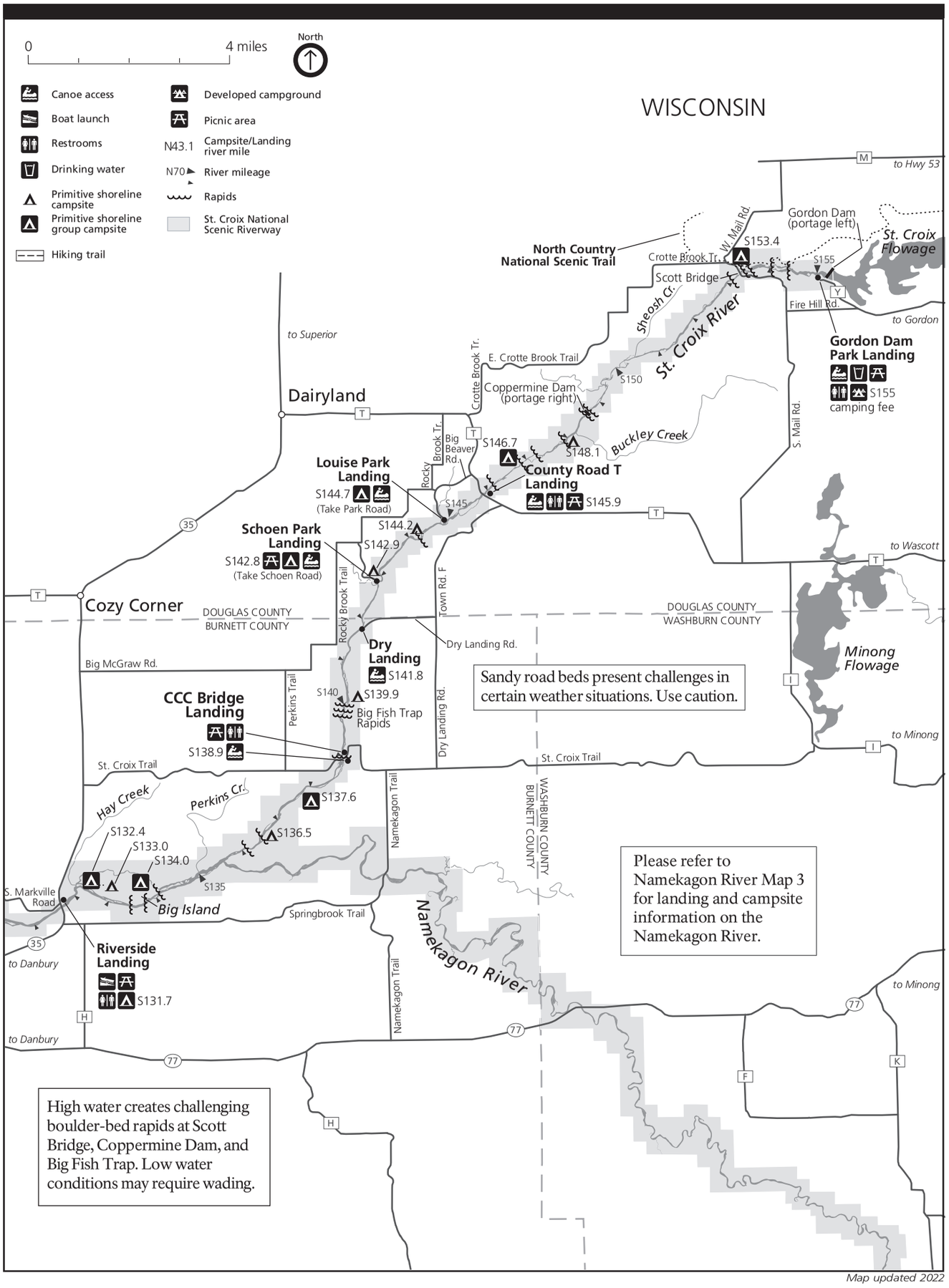

Map updated 2022

APPENDIX E-29 Recreation Study Report

Recreation Report for the Hayward Hydroelectric Project (FERC No. 2417) and Trego Hydroelectric Project (FERC No. 2711)

Prepared for

Northern States Power Company – Wisconsin
P.O. Box 8
Eau Claire, Wisconsin 54702

Prepared by

EA Engineering, Science, and Technology, Inc., PBC
444 Lake Cook Road, Suite 18
Deerfield, IL 60015

March 2023
Version: FINAL
EA Project No. 16154.02

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CONTENTS

Page

LIST OF FIGURES iii

LIST OF TABLES iv

LIST OF ACRONYMS AND ABBREVIATIONS v

1. INTRODUCTION 1-1

2. METHODS 2-1

2.1 RECREATION INVENTORY 2-1
2.2 FACILITY CONDITION ASSESSMENT 2-1
2.3 RECREATION USE SURVEY 2-2
2.4 RECREATION SPOT COUNTS 2-3
2.5 FUTURE AND POTENTIAL RECREATION 2-3

3. DESCRIPTIONS OF RECREATIONAL FACILITIES AT THE HAYWARD PROJECT 3-1

3.1 HAYWARD CANOE PORTAGE TAKE-OUT AND CARRY-IN RESERVOIR ACCESS 3-1
3.2 HAYWARD CANOE PORTAGE TRAIL AND PUT-IN 3-1
3.3 HAYWARD INFORMAL TAILWATER BANK FISHING AREA 3-1
3.4 HAYWARD CITY BOAT LANDING 3-1
3.5 HAYWARD CITY BEACH AND BARRIER-FREE FISHING PIER 3-2
3.6 HAYWARD BARTZ'S BAY INFORMAL ICE FISHING ACCESS 3-2
3.7 TOWN OF TREGO PARK BOAT LANDING 3-2
3.8 TOWN OF TREGO BOAT LANDING 3-2
3.9 TREGO NORTH TAILWATER ACCESS (CANOE PORTAGE) 3-3
3.10 TREGO SOUTH TAILWATER ACCESS 3-3

4. RESULTS OF RECREATION INVENTORY AND CONDITION ASSESSMENTS 4-1

4.1 HAYWARD CANOE PORTAGE TAKE-OUT AND CARRY-IN RESERVOIR ACCESS 4-1
4.2 HAYWARD CANOE PORTAGE TRAIL AND PUT-IN 4-1
4.3 HAYWARD INFORMAL TAILWATER BANK FISHING AREA 4-2
4.4 HAYWARD CITY BOAT LANDING 4-2
4.5 HAYWARD CITY BEACH AND BARRIER-FREE FISHING PIER 4-3
4.6 HAYWARD BARTZ'S BAY INFORMAL ICE FISHING ACCESS 4-3
4.7 TOWN OF TREGO PARK BOAT LANDING 4-4
4.8 TOWN OF TREGO BOAT LANDING 4-4
4.9 TREGO NORTH TAILWATER ACCESS (CANOE PORTAGE) 4-5
4.10 TREGO SOUTH TAILWATER ACCESS 4-5
4.11 SUMMARY 4-6

5. SUMMARY OF RECREATIONAL USE 5-1

5.1 RECREATIONAL USE SURVEYS 5-1
5.2 SPOT COUNTS 5-13
5.3 FUTURE AND POTENTIAL RECREATION 5-14
5.3.1 National Park Service 5-15
5.3.2 Trego Lake District 5-15
6. CONCLUSIONS 6-1

Appendix 1 – Field Forms
Appendix 2 – Future and Potential Recreation Questionnaire
Appendix 3 – Recreation Inventory Photolog
Appendix 4 – Recreation Inventory Assessment Raw Datasheets
Appendix 5 – Recreation User Interview Raw Datasheets
Appendix 6 – Spot Count Raw Datasheets
Appendix 7 – Completed Future and Potential Recreation Questionnaire

LIST OF FIGURES

Number	Title	Page
Figure 1-1	Hayward and Trego Project Site Locations	1-3
Figure 2-1.	Hayward Project Recreation Facilities.	2-5
Figure 2-2.	Trego Project Recreation Facilities.	2-6
Figure 3-1.	Hayward Project Recreation Facilities - Tailwater Areas	3-4
Figure 3-2.	Hayward Project Recreation Facilities – Upstream Areas.	3-5
Figure 3-3.	Trego Project Recreation Facilities – Canoe Portage and Tailwater Access	3-6

LIST OF TABLES

Number Title Page

Table 2-1. Recreation Use Survey Schedule 2-2

Table 5-1. Recreational use based on user interviews, Hayward Project (January-February, April-September 2022) 5-1

Table 5-2. Recreational use based on user interviews, Trego Project (January-February, April-September 2022) 5-2

Table 5-3. Recreational use by type of day, Hayward and Trego Projects (January-February, April-September 2022) 5-3

Table 5-4. Activities during visit to the Hayward Project Area (January-February, April-September 2022) 5-3

Table 5-5. Activities during visit to the Trego Project Area (January-February, April-September 2022) 5-4

Table 5-6. Crowding during visit to the Hayward Project Area (January-February, April-September 2022) 5-5

Table 5-7. Crowding during visit to the Trego Project Area (January-February, April-September 2022) 5-5

Table 5-8. Satisfaction with the Hayward Project Area Facilities (January-February, April-September 2022) 5-9

Table 5-9. Satisfaction with the Trego Project Area Facilities (January-February, April-September 2022) 5-10

Table 5-10. Summary of comments received from interviews near the Hayward Project (January-February, April-September 2022), Subject (number of comments) 5-11

Table 5-11. Summary of comments received from interviews near the Trego Project (January-February, April-September 2022), Subject (number of comments) 5-12

Table 5-12. Recreational use based on spot counts, near the Hayward Project (January-February, April-September 2022) 5-13

Table 5-13. Recreational use based on spot counts, near the Trego Project (January-February, April-September 2022) 5-14

LIST OF ACRONYMS AND ABBREVIATIONS

ATV – All terrain vehicle

AIS – Aquatic Invasive Species

FERC, Commission – Federal Energy Regulatory Commission

NPS – National Park Service

NSPW, Applicant – Northern States Power Company-a Wisconsin corporation

SCORP – Statewide Comprehensive Outdoor Recreation Plan

TLD – Trego Lake District

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1. INTRODUCTION

Northern States Power Company – Wisconsin (NSPW or Licensee), currently holds licenses issued by the Federal Energy Regulatory Commission (FERC or Commission) to operate and maintain the Hayward and Trego Hydroelectric Projects (Projects). The Projects are owned, operated, and maintained by the Licensee. The current licenses, which designate the Projects as FERC Nos. 2417 (Hayward) and 2711 (Trego), expire on November 30, 2025. To obtain subsequent licenses, the Licensee must submit final license applications to FERC no later than November 30, 2023. The final license applications, in part, must include an evaluation of the existing recreational facilities associated with each Project along with proposed recreation enhancements.

The Projects are located on the Namekagon River in Sawyer County (Hayward) and Washburn County (Trego) in Wisconsin. The Namekagon River is a 99.5-mile-long northern tributary to the St. Croix River and is protected by the National Park Service (NPS) under the St. Croix National Scenic Riverway (Figure 1-1). The river is classified as Class I-II rapids. It is generally shallow with a rocky bottom. There are ample opportunities for fishing, wildlife viewing, water sports, and paddling on the Namekagon River.

In March 2019, the State of Wisconsin published its Statewide Comprehensive Outdoor Recreation Plan (SCORP) for 2019-2023. The SCORP identifies recreation needs by region rather than specific sites or Project areas. The SCORP places an emphasis on nature-based recreational opportunities including hiking, fishing, and boating. For both Projects, the Licensee currently provides a carry-in access on the reservoir, a tailrace fishing area downstream of the powerhouse, and a canoe portage that helps fulfill recreation needs. These recreational opportunities are consistent with the SCORP.

Hydro operations, including fluctuations in reservoir elevation, and insufficient public access, can limit recreational opportunities. Adequate information is necessary to determine what impacts may be occurring from hydro operations as well as which recreational opportunities may be enhanced. The existing recreational facilities within the Projects were evaluated for recreational use and improvements.

The goals of the 2022 Hayward and Trego Recreation Study were to:

- obtain a subjective assessment of recreation facility conditions and needed enhancements;
- determine capacity of existing facilities to address current and future user demand; and
- provide sufficient information to evaluate impacts and provide rationale for recreation enhancement recommendations.

The results of the Hayward and Trego Recreation Study are presented herein and include the following items:

- recreation counts based on the data collected in 2022;
- recreation trends by activity and season;
- a discussion of the adequacy of the recreational facilities in the project area to meet recreational demand;
- recommendations to accommodate recreational needs in the project area.

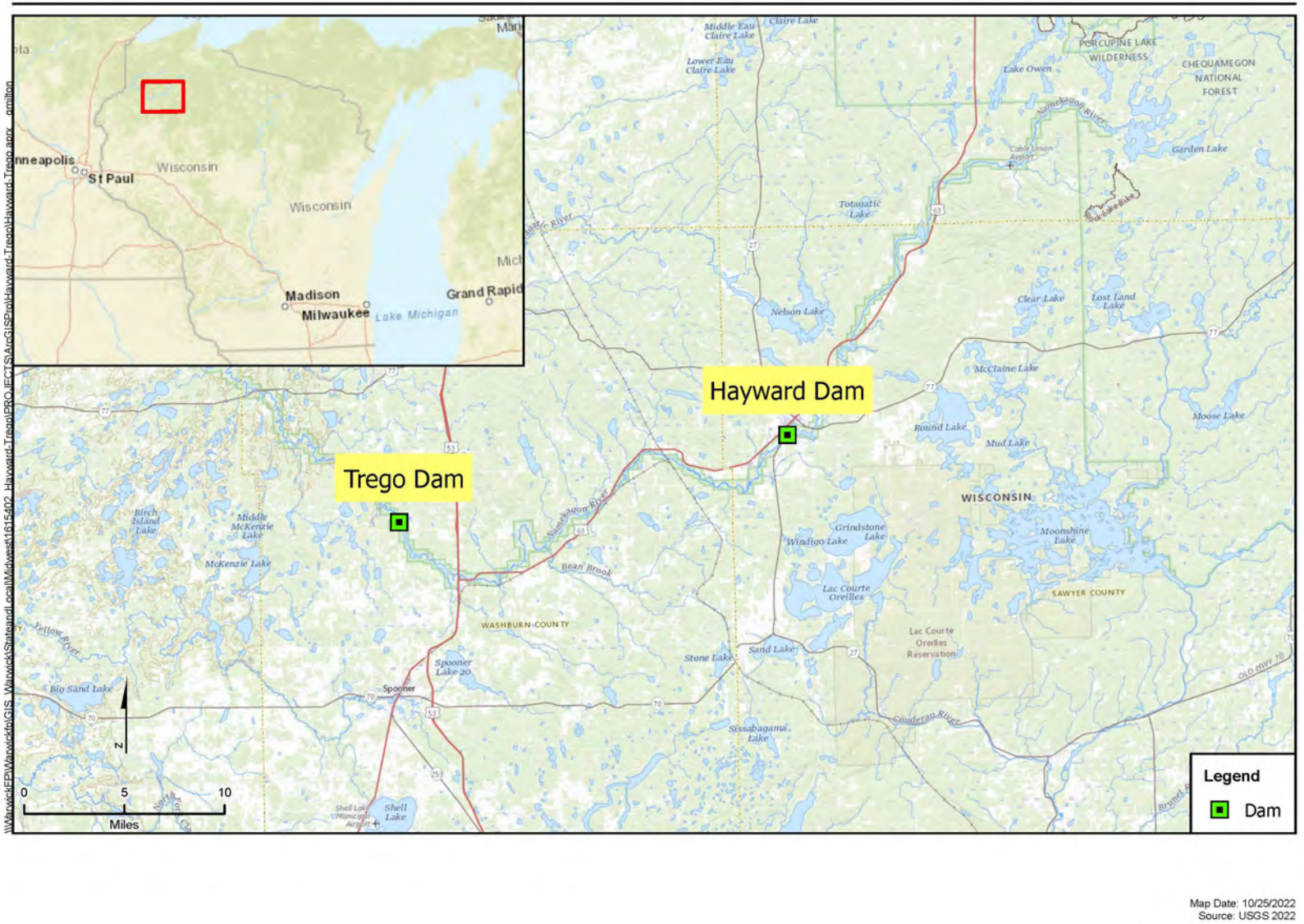

Figure 1-1 Hayward and Trego Project Site Locations

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2. METHODS

This section describes the methods used to collect, summarize, and extrapolate the recreation data collected in 2022. Each subsection focuses on the different types of data and information collected.

2.1 RECREATION INVENTORY

An inventory of public and private recreational facilities near the Projects (Figures 2-1 and 2-2) was created using maps and aerial images of the area, internet resources, and interviews. Section 3 describes each of the following public recreational facilities:

- Hayward Canoe Portage Take-Out and Carry-In Reservoir Access – NSPW facility
- Hayward Canoe Portage Trail and Put-In – NSPW facility
- Hayward Informal Tailwater Bank Fishing Area – NSPW facility
- Hayward City Boat Landing
- Hayward City Beach & Barrier-Free Fishing Pier
- Hayward Bartz's Bay Informal Ice Fishing Access[1]
- Town of Trego Park Boat Landing
- Town of Trego Boat Landing
- Trego North Tailwater Access (Canoe Portage) – NSPW facility
- Trego South Tailwater Access – NSPW facility

The recreation facilities were inventoried during one of the recreational use surveys, using the forms included in Appendix 1, to collect information on recreation amenities and capacity. The following types of information were recorded:

1) The primary type(s) of recreation provided at the site.
2) Existing sanitation facilities (if any).
3) Type of vehicle access and parking capacity (if any).
4) The presence and type (if any) of barrier-free facilities.
5) The geolocation of the facility.
6) Signage
7) Photographs of each recreation site, each amenity and sign, the entryways to primary recreation sites from the main road(s), and any adverse impacts from the site on the surrounding environment, including shoreline erosion.

2.2 FACILITY CONDITION ASSESSMENT

The condition of each amenity or feature at each facility (including recreational wayfinding signs and interpretive signs) and its immediate vicinity were assessed during one of the site visits. Each facility was assigned a rating according to the following scale:

[1] Bartz's Bay Informal Ice Fishing Access was surveyed during the January and February survey periods only.

1) Missing and Needs Replacement
2) Not Usable and Needs Replacement
3) Needs Repair
4) Needs Maintenance or cleaning
5) Good Working Condition (does not need any attention)

If a rating warranted additional attention, that specific item was noted on the form.

2.3 RECREATION USE SURVEY

Recreation use surveys were conducted at each of the recreation sites listed in Section 2.1. The surveys lasted a minimum of one hour per site and were conducted between the hours of 7:00 a.m. and 7:00 p.m. Surveys were completed on a rotating schedule to avoid from being conducted at the same time of the day and to account for time-of-day use patterns. The use survey form included in Appendix 1 was administered to gather opinions about the existing recreation facilities and opportunities. The surveyor recorded the number of people in a party, their primary reason for visiting the site, their perception of level of use, and their opinions regarding the amount and types of recreation opportunities offered within the proposed Project vicinity. The recreation use surveys were conducted according to the following schedule in Table 2-1.

Table 2-1. Recreation Use Survey Schedule.

Survey Month/Season	Recurrence Interval
January	One randomly selected weekend day. One randomly selected weekday.
February	One randomly selected weekend day One randomly selected weekday
April	One randomly selected weekend day.
May	One randomly selected weekend day. One day during Memorial Day weekend.
June	One randomly selected weekday. Two randomly selected weekend day.
July	One randomly selected weekday. One[2] randomly selected weekend day.
August	One randomly selected weekday. Two randomly selected weekend day.
September	One weekend day the weekend following Labor Day weekend.

The recreation surveys provided the information necessary to estimate the use at each site (Section 5.1).

[2] Two randomly selected weekend days were planned; however, only one was completed due to unavoidable staffing shortages.

2.4 RECREATION SPOT COUNTS

Upon arriving at each recreation site where recreation use surveys were collected, a spot count was conducted using the form enclosed in Appendix 1. The information was then analyzed to assess recreational use and is summarized in Section 5.2 by month, season, and type of activity.

2.5 FUTURE AND POTENTIAL RECREATION

To assess future recreation needs within the Project vicinity, a questionnaire was sent to municipalities and other entities responsible for existing recreation within the Project vicinity (Appendix 2). Specifically, the questionnaire was sent to the City of Hayward, Hayward Area Chamber of Commerce, and Sawyer County for the Hayward Project and the Town of Trego, Trego Lake District, and Washburn County for the Trego Project. The questionnaire was also sent to the NPS St. Croix National Scenic Riverway for both Projects. Each entity was given 30 days to respond to the questionnaire and their responses were incorporated into the Future and Projected Use evaluation (Section 5.3).

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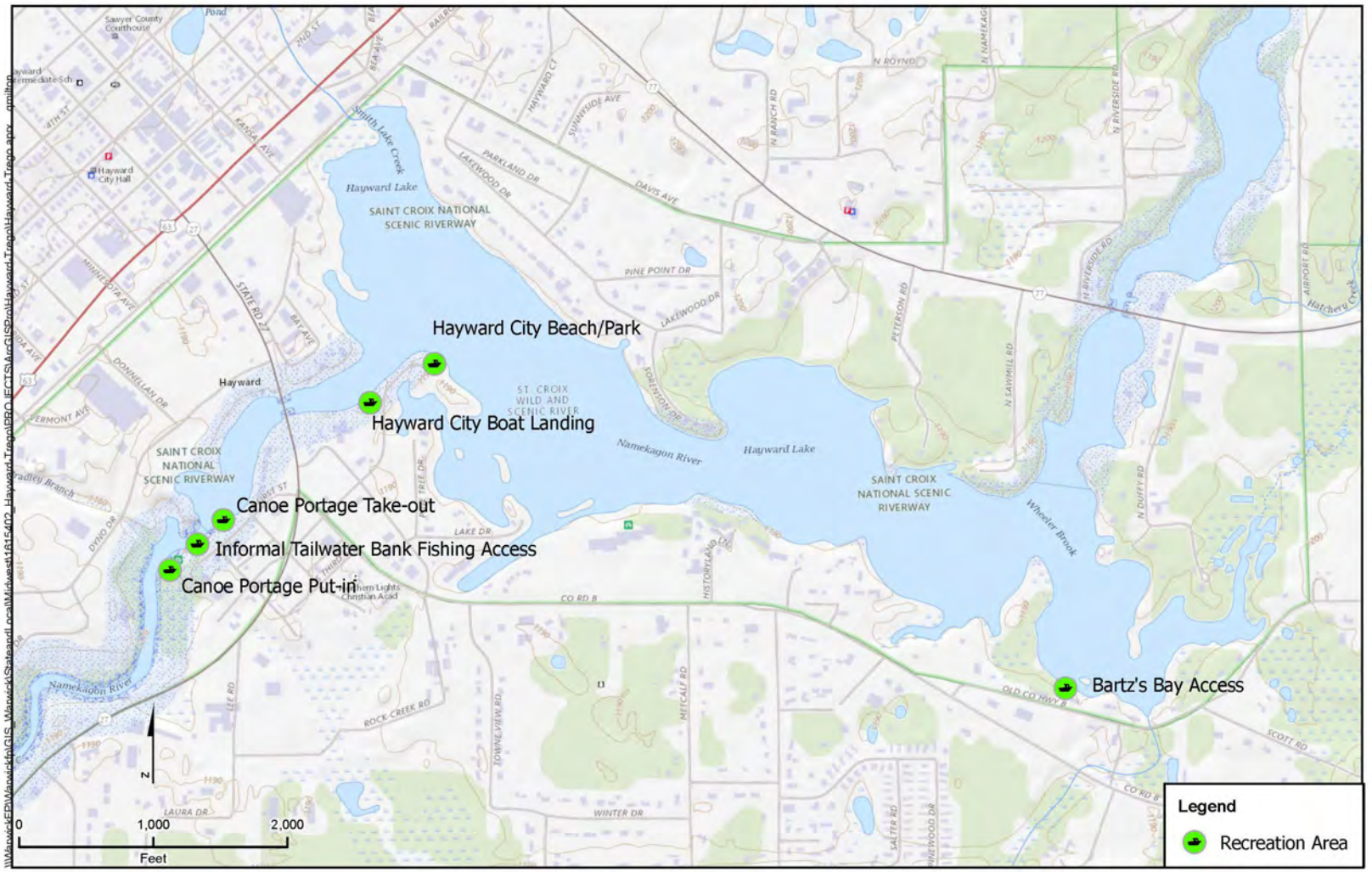
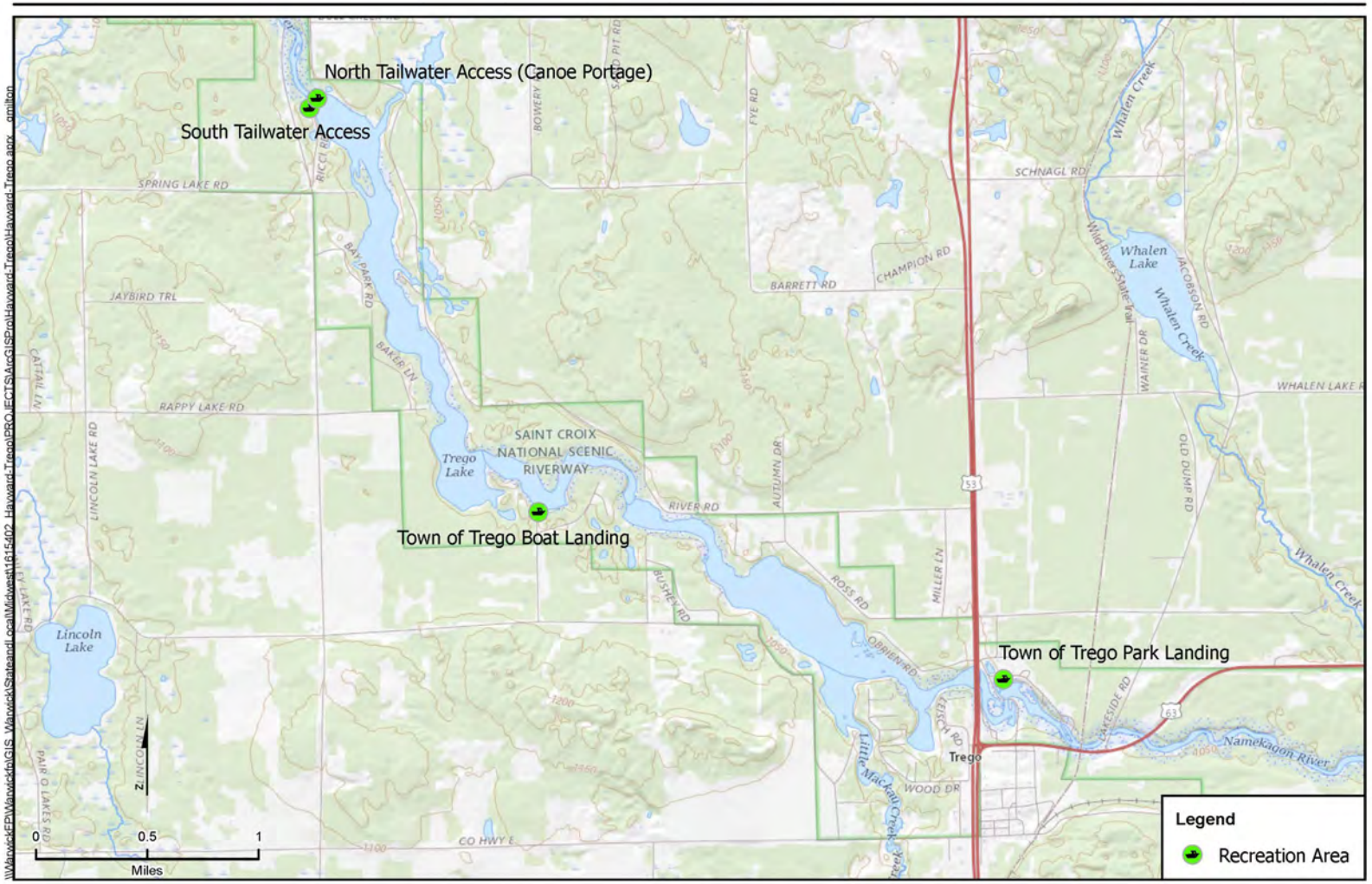


Figure 2-1. Hayward Project Recreation Facilities.



Map Date: 10/25/2022
Source: USGS 2022

Figure 2-2. Trego Project Recreation Facilities.

3. DESCRIPTIONS OF RECREATIONAL FACILITIES AT THE HAYWARD PROJECT

The public recreational facilities listed in the approved study plan are described below along with a discussion of their use and adequacy. Facility locations are depicted in Figures 2-1, 2-2, and 3-1 through 3-3.

3.1 HAYWARD CANOE PORTAGE TAKE-OUT AND CARRY-IN RESERVOIR ACCESS

NSPW owns and maintains the canoe portage take-out and carry-in access just upstream of the spillway along the east shoreline of Lake Hayward (Figure 3-1). The access enables recreationists to safely launch small craft on, and disembark from, Lake Hayward. The canoe portage take-out and carry-in access was refurbished in 2019 and features a parking area, informational Project signage, and timber step approach to and from the water. The parking area is shared with the informal tailwater bank fishing area and can accommodate approximately 20 vehicles. There is no fee associated with the use of this area.

3.2 HAYWARD CANOE PORTAGE TRAIL AND PUT-IN

NSPW owns and maintains the canoe portage trail and put-in along the east side of the Project (Figure 3-1). The canoe portage trail proceeds from the take-out in a southwesterly direction, along South 1st Street and a gravel road, approximately 600 ft. to the short trail leading from the road to the put-in downstream of the Project tailwater. When combined with the Hayward canoe portage take-out, the trail and put-in enable canoers/kayakers to safely bypass the Hayward Dam. Access between the take-out and put-in is available both to users that are walking and driving. Parking is available for approximately six vehicles along the gravel loop road that terminates at the put-in trail. As with the take-out, there are no fees associated with recreational the use of this area.

3.3 HAYWARD INFORMAL TAILWATER BANK FISHING AREA

NSPW owns and maintains an informal tailwater shoreline fishing area on the east side of the Namekagon River, approximately 270 feet downstream of the canoe portage take-out and carry-in access (Figure 3-1). The informal tailwater access features an area for parking and tiered (i.e., terraced) approach to and from the river. The parking area is shared with the canoe portage take-out and carry-in access and can accommodate approximately 20 vehicles. There is no fee associated with the use of this area.

3.4 HAYWARD CITY BOAT LANDING

The City of Hayward owns and maintains this single launch boat landing on the south side of the lake (Figure 3-2). It is the only public, trailer-accessible boat landing on the lake. The landing consists of a cement launch pad with paved approach and dock with gravel approach. The City maintains a “lifejacket loaner” stand to encourage recreationists to use lifejackets when on Lake

Hayward. A light pole situated in the parking area provides lighting during the evening hours. The adjacent gravel parking lot is large enough to accommodate approximately 20 vehicles or 10 vehicles with trailers. The parking lot also serves as overflow parking for users of the beach and park area. The City does not charge a fee for the use of this launch and no other amenities are present.

3.5 HAYWARD CITY BEACH AND BARRIER-FREE FISHING PIER

The City of Hayward owns the City beach and park on the south side of the lake (Figure 3-2). It consists of a 100-foot sand beach with designated swimming area, changing rooms, restroom facilities, shelter, playground, park bench with solar-powered charging station, six picnic tables near the beach and playground, seven tables in the picnic area with charcoal grills, and shore fishing opportunities. The area also features a walking bridge and an Americans with Disabilities Act (ADA) compliant fishing pier. A paved parking lot is provided that can accommodate 24 vehicles with two parking spots being designated for handicap access. There is no fee associated with the use of the park or beach.

3.6 HAYWARD BARTZ'S BAY INFORMAL ICE FISHING ACCESS

The Bartz's Bay informal ice fishing access was only visited for the recreation survey during January and February since it is a winter recreation access (Figure 2-1). The Bartz's Bay informal ice fishing access is located off a local road, Chippewa Trail, that is popular with ice anglers in the winter who wish to walk out to ice fish. The informal access consists of an unimproved trail on private land, between two residential lots. Ice anglers park their vehicles along Chippewa Trail, predominantly on the southwest side, which is snow-plowed wider at the access point to accommodate approximately six vehicles.

3.7 TOWN OF TREGO PARK BOAT LANDING

The Town of Trego owns and maintains a small boat landing adjacent to the Town Park campground located on the north shore of the Namekagon River, east of U.S. Highway 53, at the end of Cash Road (Figure 2-2). The access consists of a single-lane boat ramp composed of concrete planks with a gravel driveway and no dock. The landing is small and shallow and is primarily used as a put-in and take-out for canoers and kayakers. Shallow water between this landing and the main flowage excludes the use of larger motorized watercraft. Cash Road and the parking area can accommodate 20 vehicles or six vehicles with trailers, primarily along the margin. There is no user fee for the landing.

3.8 TOWN OF TREGO BOAT LANDING

The Town of Trego owns and maintains a single-lane boat launch along the south shore of the middle portion of Trego Flowage (Figure 2-2). It is the only public landing on the flowage and consists of a single cement launch, paved approach, and dock. The landing is sufficient to launch larger motorized boats. Parking is available along the shoulders of Trego Landing Road and can

accommodate eight vehicles or two vehicles with trailers. There is space designated as handicap parking that can accommodate two vehicles. There is no user fee for this launch.

3.9 TREGO NORTH TAILWATER ACCESS (CANOE PORTAGE)

NSPW owns and maintains an area north of the Trego Dam that serves both as a canoe portage and tailwater fishing access (Figure 3-3). The take-out for the canoe portage is located along the northwest shore of Trego Flowage, immediately north of the Trego Dam buoyed exclusion zone. From the take-out, the portage trail follows a west-southwesterly direction for approximately 325 ft. to the downstream put-in, adjacent to the north tailwater access. The portage enables users travelling from upstream-to-downstream to safely bypass the dam. The north tailwater fishing access consists of a concrete retaining wall with safety railing along the river. Parking for the area is available along the shoulder of River Road as well as the gravel approach to the north access gate. There is space for approximately eight vehicles. A portable lavatory is provided and maintained between the portage take-out or parking area and tailwater access. There are no fees associated with the use of these areas.

3.10 TREGO SOUTH TAILWATER ACCESS

NSPW owns and maintains an area southwest of the Trego Dam that provides access to the south tailwater (Figure 3-3). Access to the south tailwater is provided via two metal staircases. The upper staircase is located near the southwest corner of the Project's powerhouse while the lower staircase is closer to river level. The lower staircase provides access to a concrete retaining wall with safety railing along the river. Parking for up to four vehicles is available in an area off the north end of Ricci Road, southwest of the south Project's access gate. There is no fee associated with the use of this area.

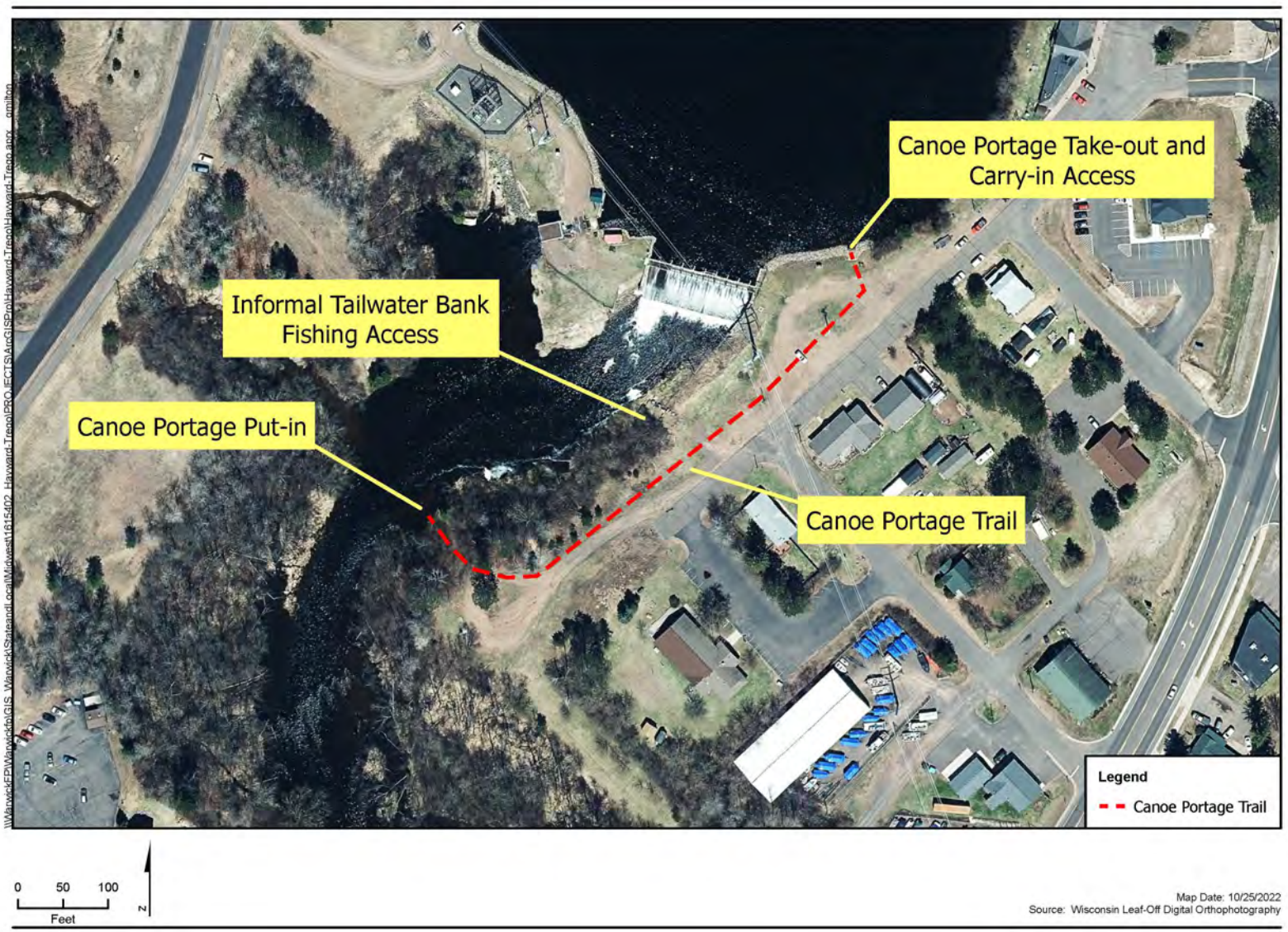


Figure 3-1. Hayward Project Recreation Facilities - Tailwater Areas

Figure 3-2. Hayward Project Recreation Facilities – Upstream Areas.

Figure 3-3. Trego Project Recreation Facilities – Canoe Portage and Tailwater Access

4. RESULTS OF RECREATION INVENTORY AND CONDITION ASSESSMENTS

As part of the recreation inventory and recreation assessments of facilities near the Hayward and Trego Projects, photographs were taken of amenities and observations were recorded on data sheets. A photolog of amenities for each of the facilities inventoried and assessed is presented as Appendix 3. Likewise, data sheets used in the inventory and assessment are provided as Appendix 4.

4.1 HAYWARD CANOE PORTAGE TAKE-OUT AND CARRY-IN RESERVOIR ACCESS

Condition of Amenities

The amenities at the Hayward canoe portage take-out and carry-in reservoir access, as described in Section 3.1, were assessed as being in good condition in 2022. Amenities and signage associated with the Hayward canoe portage take-out and carry-in reservoir access are presented as Photographs 1 through 13 in Appendix 3.

Parking

The Hayward canoe portage take-out and carry-in reservoir access parking is an unpaved area. While there are no designated parking spaces, there is room to park approximately 20 vehicles.

Signage

Signage at the facility includes a directional FERC Project sign that identifies the Hayward Project and displays the nearby recreational resources. Directional signs face the water to inform paddlers of the take-out location and, on the shoreline, display the direction of the portage trail. Additional signage identifies hazards, informs the public of private property, and provides details on normal pond elevation. The signage associated with the portage take-out and carry-in access was considered to be comprehensive and in good condition during 2022.

4.2 HAYWARD CANOE PORTAGE TRAIL AND PUT-IN

Condition of Amenities

The Hayward canoe portage trail and put-in amenities described in Section 3.2 were evaluated as being primarily in good condition. However, due to one sign as described below, the location was rated as needing maintenance. Amenities at the Hayward canoe portage trail and put-in are depicted in Photographs 14 through 25 in Appendix 3.

Parking

There are no designated parking spaces near the Hayward canoe portage put-in. However, the area can accommodate approximately six vehicles along the gravel loop road that terminates at the put-in trail. Additional parking is available a short distance away, near the take-out.

Signage

The canoe portage trail signage consists of a sign near the take-out directing paddlers to the put-in as well as a sign near the trail leading to the river put-in. The signage is in generally good condition and the trail is clearly marked. The only exception is the invasive species sign that was vandalized and observed in the river. The sign is not owned by NSPW nor is it a FERC requirement to have it at this facility. While the existing signage is in good condition, the present condition of the invasive species sign resulted in a "in need of maintenance" rating.

4.3 HAYWARD INFORMAL TAILWATER BANK FISHING AREA

Condition of Amenities

The Hayward informal tailwater shoreline fishing area amenities described in Section 3.3 were assessed as being in good condition during 2022. Amenities at the Hayward informal tailwater bank fishing area are depicted as Photographs 26 through 37 in Appendix 3.

Parking

There are no designated parking spaces for the Hayward informal tailwater bank fishing access. A parking area is shared with the Hayward canoe portage take-out and carry-in reservoir access which can accommodate approximately 20 vehicles.

Signage

Due to the informal nature of the access, signage specific to the Hayward informal tailwater bank fishing access is not provided.

4.4 HAYWARD CITY BOAT LANDING

Condition of Amenities

The amenities at the Hayward City Boat Landing, as described in Section 3.4, were assessed as being in good condition during 2022. The facility's amenities are depicted in Photographs 38 through 47 of Appendix 3.

Parking

There are no designated parking spaces at the Hayward City Boat Landing; however, the available space can accommodate 20 vehicles or 10 vehicles with trailers.

Signage

All signage associated with the Hayward City Boat Landing was rated as being in good condition. Signage includes interpretive and regulation signs. The interpretive signage is related to the Namekagon River being designated a National Scenic River. The regulation signage provides information on fish species bag and size limits as well as invasive species control. Additionally, the City maintains a "lifejacket loaner" stand to encourage recreationists to use lifejackets when on or around Lake Hayward.

4.5 HAYWARD CITY BEACH AND BARRIER-FREE FISHING PIER

Condition of Amenities

All amenities at the Hayward City Beach and Barrier-Free Fishing Pier, described in Section 3.5, were assessed as being in good condition during 2022. Amenities at the Hayward City Beach and Barrier-Free Fishing Pier are included as Photographs 48 through 67 of Appendix 3.

Parking

Central to the beach, park, and picnic area, the City provides a paved parking lot that can accommodate 24 vehicles including two parking spots being designated for handicap access.

Signage

Signage is restricted to areas within the Hayward City Beach and Park. Signs are largely related to regulations and include beach rules, restricted motor vehicle access, and handicap parking. All signage was in good condition.

4.6 HAYWARD BARTZ'S BAY INFORMAL ICE FISHING ACCESS

Condition of Amenities

The limited amenities of the Bartz's Bay Informal Ice Fishing Access, as described in Section 3.6, were assessed as being in good condition during 2022. Photographs 68 through 71 of Appendix 3 depict the amenities at the facility.

Parking

No designated parking spaces are associated with the Bartz's Bay Informal Ice Fishing Access. Parking is available on the shoulder of Chippewa Trail, along the southwest side, which is snow-plowed wider at the access point to accommodate approximately six vehicles

Signage

No signage is associated with the Bartz's Bay Informal Ice Fishing Access.

4.7 TOWN OF TREGO PARK BOAT LANDING

Condition of Amenities

The amenities at the Town of Trego Park Boat Landing, described in Section 3.7, were assessed as being in good condition during 2022. Photographs 72 through 81 of Appendix 3 depict the amenities at the Town of Trego Park Boat Landing.

Parking

The Town of Trego Park Boat Landing does not have delineated spaces in the gravel parking lot; however, the area can accommodate up to 20 vehicles or six vehicles with trailers.

Signage

Signage at the Town of Trego Park Boat Landing consists of both regulation (i.e., no camping) and directional signs. The "no camping" wood sign was in poor condition. However, a newer metal sign nearby was in good condition as were the directional signs to the landing from both the Trego Campground Road and the Namekagon River.

4.8 TOWN OF TREGO BOAT LANDING

Condition of Amenities

The amenities at the Town of Trego Boat Landing, described in Section 3.8, were assessed as being in good condition during 2022. Photographs 82 through 93 of Appendix 3 depict the amenities at the facility.

Parking

The Town of Trego Boat Landing parking area can accommodate eight vehicles or two vehicles with trailers. A handicap parking space is designated and can accommodate two vehicles or one vehicle with a trailer.

Signage

Signage at the Town of Trego Boat Landing is almost entirely related to regulations. Regulation signs consist of fishing regulations, invasive species control, no fireworks, no personal watercraft, no power loading, no parking, and handicap parking. The signs were considered to be in good condition during 2022.

4.9 TREGO NORTH TAILWATER ACCESS (CANOE PORTAGE)

Condition of Amenities

The amenities at the Trego North Tailwater Access (Canoe Portage), described in Section 3.9, were assessed as being in good condition during 2022. Photographs 94 through 119 of Appendix 3 depict the amenities at the facility.

Parking

There are no designated parking spaces for the Trego North Tailwater Access (Canoe Portage) Users may park along the shoulder of River Road as well as the gravel approach to the north Project access gate. Collectively, there is space for approximately eight vehicles.

Signage

Signage at Trego North Tailwater Access (Canoe Portage) includes directional and interpretive signs. Directional signage indicates the canoe portage take out as well as direction of the portage trail. Interpretive signage is provided to inform visitors of the hazards associated with the Project tailwater area. The signs were considered to be in good condition during 2022.

4.10 TREGO SOUTH TAILWATER ACCESS

Condition of Amenities

The amenities at the Trego South Tailwater Access, described in Section 3.10, were assessed as being in good condition during 2022. Photographs 120 through 133 of Appendix 3 depict the amenities at the Trego South Tailwater Access.

Parking

There are no designated parking spaces for the Trego South Tailwater Access; however, parking for up to four vehicles is available in an area off the north end of Ricci Road, southwest of the south access gate for the Project.

Signage

Signage at Trego South Tailwater Access includes a FERC Project sign and interpretive signs. The FERC Project sign is located to the east of the south project access gate. Interpretive signage is provided to inform visitors of the hazards associated with the Project tailwater area. The signs were considered to be in good condition during 2022.

4.11 SUMMARY

The existing amenities of the 10 surveyed recreation resources near the Hayward and Trego Projects were rated as in good condition (Appendix 3). No deficiencies that NSPW is responsible for were identified as part of the recreation inventory and condition assessment.

5. SUMMARY OF RECREATIONAL USE

5.1 RECREATIONAL USE SURVEYS

This section provides a summary of the data gathered from interviews with recreational users regarding the recreational facilities and opportunities near the Hayward and Trego Projects (Appendix 5). Recreational surveys were conducted over 16 days at each of the two project areas between January and September 2022. The surveys were conducted on weekdays, weekends, and holidays with the number of surveys varying by month throughout the period. Surveys near the Hayward Project were conducted at six locations in January and February. Bartz's Bay Informal Ice Fishing Access was not surveyed in April through September. Four locations were surveyed near the Trego Project throughout the study period. Collectively, the 16 surveys at each project yielded 73 total visitor interviews.

Of the 73 recreation users that were interviewed, 44 visitors were interviewed at recreation locations associated with the Hayward Project (Table 5-1).

Table 5-1. Recreational use based on user interviews, Hayward Project (January-February, April-September 2022)

Month	Surveys	Bartz's Bay	Hayward Canoe Portage Take Out	Hayward Canoe Portage Trail Put In	Hayward Informal Tail Access	City of Hayward Boat Landing	City of Hayward Beach/Pier	Total by Month	Average by Month & No. Surveys
January	2	1	0	0	0	2	0	3	1.50
February	2	0	0	0	0	0	0	0	0.00
April	1	--	0	0	0	0	2	2	2.00
May	2	--	0	1	1	0	0	2	1.00
June	3	--	0	0	0	2	8	10	3.33
July	2	--	1	0	0	0	6	7	3.50
August	3	--	2	0	2	1	9	14	4.67
September	1	--	1	0	0	3	2	6	6.00
Total	**16**	**1**	**4**	**1**	**3**	**8**	**27**	**44**	

The City of Hayward Beach and Fishing Pier produced over half of the visitor interviews followed by the City of Hayward Boat Landing. The fewest interviews were conducted at the Bartz's Bay informal ice fishing access and Hayward Canoe Portage Trail and Put-In. The greatest number of visitors were interviewed in August while the single survey in September produced the highest average number of interviews per survey event.

The four recreation sites associated with the Trego Project yielded 29 user interviews over 16 surveys (Table 5-2).

Table 5-2. Recreational use based on user interviews, Trego Project (January-February, April-September 2022)

Month	Surveys	Town of Trego Park Boat Landing	Town of Trego Boat Landing	Trego North Tailwater Access (Canoe Portage)	Trego South Tailwater Access	Total by Month	Average by Month & No. Surveys
January	2	0	0	0	0	0	0.00
February	2	0	0	0	0	0	0.00
April	1	0	0	0	1	1	1.00
May	2	2	0	3	1	6	3.00
June	3	1	2	0	3	6	2.00
July	2	0	1	0	3	4	2.00
August	3	2	0	3	3	8	2.67
September	1	1	0	2	1	4	4.00
Total	**16**	**6**	**3**	**8**	**12**	**29**	

The two tailwater access points were the most popular recreation areas near the Trego Project with 12 and eight visitors being interviewed at the South Tailwater Access and North Tailwater Access, respectively. The fewest interviews were conducted at the Town of Trego Boat Landing. Similar to the Hayward Project, August had the highest number of visitors and the single survey in September again produced the highest average number of interviews per survey event.

Collectively, weekends produced more interviews compared to weekdays for both projects; however, this was more apparent for the Trego Project (Table 5-3). Only slightly more visitors were encountered during weekend surveys compared to weekdays at the Hayward Project. In contrast, more than double the visitors were interviewed on weekend days compared to weekdays at Trego.

Seasonally, the four surveys in January and February yielded three interviews, all at the Hayward Project. By comparison, spring and summer had substantially more visitors with 27 and 43 interviews conducted, respectively. At Hayward, 27 interviews were conducted during the summer period compared to 14 interviews during the spring months. Spring and summer were more evenly split at the Trego Project with spring producing 13 visitor interviews and summer 16.

Table 5-3. Recreational use by type of day, Hayward and Trego Projects (January-February, April-September 2022)

Season	Month	Surveys	Hayward Project		Trego Project		Total	
			Weekday	Weekend	Weekday	Weekend	Monthly	Seasonally
Winter	January	2	0	3	0	0	3	3
	February	2	0	0	0	0	0	
Spring	April	1	0	2	0	1	3	27
	May	2	0	2	0	6	8	
	June	3	6	4	4	2	16	
Summer	July	2	7	0	4	0	11	43
	August	3	5	9	1	7	22	
	September	1	1	5	0	4	10	
Year	**Total**	**16**	**19**	**25**	**9**	**20**	**73**	**73**
	# Days		**6**	**10**	**6**	**10**	**16**	
	Ave. Per		**3.17**	**2.50**	**1.50**	**2.00**	**4.56**	

Visitors were asked which of nine activities they participated in during their visit. At the Hayward Project, each of the nine activities was identified as the primary activity by at least one individual (Table 5-4). The most popular activities at Hayward were shoreline/tailwater fishing (24% of the respondents), swimming (24% of the respondents), and other (22% of the respondents).

Table 5-4. Activities during visit to the Hayward Project Area (January-February, April-September 2022)

Location	Shore fishing	Boat Fishing	Motorized Boating	Paddling	Swim	Picnic	Wildlife Viewing	Ice Fishing	Other
Bartz's Bay	0	0	0	0	0	0	0	1	0
Hayward Portage Take Out	1	0	1	1	0	0	0	0	2
Hayward Portage Trail/Put In	1	0	0	0	0	0	0	0	0
Hayward Informal Tailwater Access	2	0	0	0	0	0	1	0	0
City of Hayward Boat Landing	3	4	1	0	1	0	0	2	0
City of Hayward Beach/Fishing Pier	5	0	1	1	11	1	1	1	9
Total	12	4	3	2	12	1	2	4	11

Shoreline/tailwater fishing was a popular recreation activity for all locations except at Bartz's Bay. In contrast, those who responded that swimming or other was their primary activity were mostly interviewed at the City of Hayward beach and fishing pier. Dog walking was the activity for the majority of visitors that identified their primary activity as other.

Five of the nine activities were identified as the primary activity by visitors to the Trego Project area (Table 5-5). Over 50% percent of visitors at the Trego Project were participating in shoreline/tailwater fishing and most of those respondents were divided between the Trego North Tailwater Access and Trego South Tailwater Access. Motorized boating and non-motorized boating were the second and third most popular activities.

Table 5-5. Activities during visit to the Trego Project Area (January-February, April-September 2022)

Location	Shore fishing	Boat Fishing	Motorized Boating	Paddling	Swim	Picnic	Wildlife Viewing	Ice Fishing	Other
Trego Park Boat Landing	4	0	4	3	0	0	0	0	0
Trego Boat Landing	0	1	2	1	0	0	0	0	0
Trego North Tailwater Access/Canoe Portage	7	0	0	0	0	0	0	0	1
Trego South Tailwater Access	9	0	2	2	0	0	0	0	1
Total	**20**	**1**	**8**	**6**	**0**	**0**	**0**	**0**	**2**

The two visitors that identified other as their primary activity were hiking.

Visitors to both Projects were asked if they were prevented from participating in an activity of their choice and to provide the reasons why they were unable to engage in said activity. Of the 44 respondents at the Hayward Project, two provided comments regarding being unable to engage in an activity. One individual stated that they wanted to ride their All-Terrain Vehicle (ATV) but were unable to locate the trail and another individual stated that they were unable to use the restroom at the Hayward City Beach because a suspicious person was occupying the restroom for an inordinate amount of time. The remainder of the respondents at the Hayward Project, and all individuals interviewed at Trego, stated that they had not been prevented from engaging in the activities of their choice.

Recreationists were asked if they or anyone in their group had a physical condition or personal limitation that made it difficult to access or participate in an activity. All visitors at both Projects responded that they did not have a physical condition or personal limitation that made it difficult to access or participate in activities.

Users were asked multiple questions about resource crowding at recreation sites associated with both Projects. At Hayward, 83 of the 92 responses or 90% stated that the resources were not crowded (Table 5-6). Only three respondents indicated that at least some of the resources were moderately to extremely crowded.

Table 5-6. Crowding during visit to the Hayward Project Area (January-February, April-September 2022)

Resource	Not Crowded	Slightly Crowded	Moderately Crowded	Very Crowded	Extremely Crowded
Parking	33	4	0	1	0
Trails	14	0	0	0	0
Campground	11	0	1	0	0
Boat-in Campsite	4	0	0	0	0
Shore Fishing	13	2	0	0	1
Boating	8	0	0	0	0
Total Each Response	**83**	**6**	**1**	**1**	**1**
Total No. Responses	**92**				

Similarly, 64 of 73 responses from individuals visiting the Trego Project area stated that the resources were not crowded (Table 5-7). Once again, only three responses indicated that at least some of the resources were moderately to very crowded.

Table 5-7. Crowding during visit to the Trego Project Area (January-February, April-September 2022)

Resource	Not Crowded	Slightly Crowded	Moderately Crowded	Very Crowded	Extremely Crowded
Parking	25	2	0	0	0
Trails	13	2	0	0	0
Campground	2	0	0	2	0
Boat-in Campsite	0	0	0	0	0
Shore Fishing	17	2	1	0	0
Boating	7	0	0	0	0
Total Each Response	**64**	**6**	**1**	**2**	**0**
Total No. Responses	**73**				

Visitors were asked if crowding caused them to change their plans. Overwhelmingly, 93% and 97% of visitors to the Hayward and Trego Project areas, respectively, responded that crowding did not affect their plans. Four individuals responded that crowding did affect them (i.e., three near Hayward and one near Trego). In each case, the individuals stated that they moved to avoid crowding.

When asked if crowding was a factor in their trip planning, 40 of 44 respondents at Hayward and 20 of 29 visitors to the Trego Project area said that crowding was not a factor considered in their trip planning. For those that did consider over-crowding in their trip planning, most said that they avoided certain times of the day while a few others said they avoided specific places.

In addition to crowding, visitors were asked if the behavior of an individual or group had interfered with the enjoyment of their trip. At both the Hayward and Trego Projects, 100% of respondents stated that no group or individual had interfered with the enjoyment of their trip.

Visitors were asked to rate their satisfaction with the amenities during their current visit; 1-very satisfied, 2-somewhat satisfied, 3-neither, 4-dissatisfied, and 5-very dissatisfied. At the Hayward Project, the average ratings given for the facilities among the locations ranged from 1.00 (very satisfied) to 5.00 (very dissatisfied) with an average rating of 1.89 between very satisfied and satisfied (Table 5-8).

While most visitors gave the facilities at the Hayward Project neutral or positive ratings, some negative ratings were received. Of the 44 respondents, 14 expressed dissatisfaction (i.e., dissatisfied or very dissatisfied) among the facilities at the Hayward Project. Dissatisfaction was primarily related to poor signage outside and within the facility at the Hayward Canoe Portage Take-Out (n=2). Lack of trash receptacles, poor signage, and inadequate parking were listed as reasons for visitor dissatisfaction at the Hayward Canoe Portage Trail and Put-In and Hayward Informal Tailwater access (n=2). At Hayward City Beach and Fishing Pier, poor signage, lack of trash receptacles, and restroom conditions were cited as reasons for dissatisfaction (n=10).

Average satisfaction ratings among the recreation amenities associated with the Trego Project ranged from 1.00 (very satisfied) to 4.00 (dissatisfied) with an overall average rating of 2.10 (Table 5-9).

Similar to the recreation facilities at the Hayward Project, most Trego Project amenities were rated neutral or better; however, a few negative ratings were received. Of the 29 visitors interviewed, eight expressed dissatisfaction (i.e., dissatisfied or very dissatisfied) with one or more of the amenities. At the Trego Park Boat Landing, dissatisfaction was voiced regarding the lack of signage (n=2). Four individuals collectively expressed dissatisfaction with the lack of trash receptacles, vehicle parking, roads to the facility, and/or signage at the Trego South Tailwater Access. Lastly, one individual described their dissatisfaction with the condition of the Trego Boat Landing signage, rocks at the end of the ramp and near the dock, as well as the lack of a restroom.

In terms of demographics regarding respondents at the Hayward Project, based on zip codes, 52% (n=22) of them were from Hayward while 31% (n=13) stated that they were from more than 25 miles away. The average distance traveled among the respondents was approximately 76 miles with the longest distance being approximately 600 miles.

The individuals interviewed at the Hayward recreation sites ranged in age from 18 to 75 years with the average age being 38 years old. Among those that provided their age, 62% were under the age of 40.

More than two-thirds (i.e., 70%) of those interviewed at the Hayward Project identified as being male, while women made up one-quarter of the visitors. Likewise, nearly 80% stated their ethnicity as White; however, 16% identified themselves as being Indigenous North American. Those claiming Asian and Hispanic ethnicity each made up approximately two percent of those interviewed.

Approximately 56% of those interviewed among the facilities associated with the Hayward Project stated that they obtained the information to plan their trip via “Other” and “Word of Mouth” while 40% said they planned their trip based on a “Previous Visit”. Those responding “Other” identified internet resources most often while local retailers were commonly associated with “Word of Mouth” responses.

Visitors to the Trego Project facilities were less local but also traveled a shorter distance compared to Hayward Project area facilities. Of the 29 visitors interviewed, 24% (n=7) of the Trego respondents were from Trego while 52% (n=15) stated that they were from more than 25 miles away. The average distance travelled among the respondents was approximately 52 miles with the longest distance being approximately 175 miles.

The age of those interviewed at the Trego recreation sites ranged from 17 to 73 years old with the average age being 47 years old. Among those that provided their age, 59% were over the age of 50 years old.

The gender composition of Trego respondents was similar to Hayward with women representing one-quarter and men making up three-quarters. The Trego visitors that were interviewed represented a less diverse segment of the population compared to the Hayward Project. Approximately 97% stated their ethnicity as White with three percent identifying themselves as being Indigenous North American.

Approximately 95% of those interviewed stated that they obtained the information to plan their trip via “Word of Mouth” or based on a “Previous Visit”.

Respondents were asked to comment on the amenities, needs, or concerns with the facilities near the Hayward and Trego Projects. Comments from the satisfaction portion of the survey, as well as general comments received at the end of the survey, were combined. While several positive comments about the facilities were given, some comments included recommended improvements. The comments were organized into two main categories: maintenance and new amenities.

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Table 5-8. Satisfaction with the Hayward Project Area Facilities (January-February, April-September 2022)

Location	Parameters	Restroom	Picnic Sites	Trash	Parking	Boat Launch Parking	Boat Launch	Boat Dock	Other Vehicle/ Boat	Roads to Facility	Signage to Facility	Signage within Facility	Other Roads/ Signage
Bartz's Bay	Number Responses	0[1]	0	0	1	0	0	0	1	0	0	0	0
	Average Rating	--	--	--	1.00	--	--	--	1.00	--	--	--	--
Hayward Canoe Portage Take Out	Number Responses	0	0	0	4	0	0	0	0	4	4	4	0
	Average Rating	--	--	--	2.00	--	--	--	--	1.25	3.00	3.00	--
Hayward Canoe Portage Trail Put-In	Number Responses	1	1	1	1	0	0	0	0	1	1	1	0
	Average Rating	1.00	2.00	5.00	1.00	--	--	--	--	1.00	1.00	1.00	--
Hayward Informal Tailwater Access	Number Responses	0	0	0	2	0	0	0	0	3	3	3	0
	Average Rating	--	--	--	3.00	--	--	--	--	2.33	3.00	3.00	--
City of Hayward Boat Landing	Number Responses	0	0	0	5	6	4	4	0	8	8	6	0
	Average Rating	--	--	--	1.20	1.67	1.50	1.25	0.00	1.38	1.38	1.17	--
City of Hayward Beach/Fishing Pier	Number Responses	17	15	10	22	0	0	0	0	26	26	26	1
	Average Rating	2.18	1.53	2.10	1.36	--	--	--	--	1.50	2.15	2.19	1.00

[1] 0 equals no response. Rating scale 1 to 5 (1 = Very Satisfied, 5 = Very Dissatisfied). See Appendix 1.

Table 5-9. Satisfaction with the Trego Project Area Facilities (January-February, April-September 2022)

Location	Parameters	Restroom	Picnic Sites	Trash	Parking	Boat Launch Parking	Boat Launch	Boat Dock	Other Vehicle /Boat	Roads to Facility	Signage to Facility	Signage within Facility	Other Roads/ Signage
Trego Park Boat Landing	Number Responses	0[1]	0	0	2	2	2	2	0	2	3	3	0
	Average Rating	--	--	--	3.00	3.00	3.00	3.00	--	3.00	3.67	2.33	--
Trego Boat Landing	Number Responses	5	0	1	7	0	0	0	1	8	7	5	0
	Average Rating	1.00	--	1.00	1.29	--	--	--	1.00	1.00	1.00	1.00	--
Trego North Tailwater/Canoe Portage	Number Responses	1	0	1	6	4	4	1	0	6	6	6	0
	Average Rating	3.00	--	3.00	1.00	2.25	2.00	3.00	--	1.17	2.00	2.00	--
Trego South Tailwater	Number Responses	0	0	1	11	0	0	0	1	12	11	11	0
	Average Rating	--	--	4.00	2.00	--	--	--	1.00	1.83	2.09	2.36	--

[1] 0 equals no response. Rating scale 1 to 5 (1 = Very Satisfied, 5 = Very Dissatisfied). See Appendix 1.

For the facilities at the Hayward Project, new amenities were more often suggested than maintenance needs (Table 5-10). The City of Hayward Beach/Fishing Pier was the most visited facility at the Hayward Project and it received the most comments (n=21). The most frequent comments received were in regard to new or more signage, need for trash receptacles, and geese management. More or better signage was also mentioned for the Hayward Canoe Portage Take-Out and Carry-In Access while trash receptacles were also suggested for the Hayward Canoe Portage Trail and Put-In.

Table 5-10. Summary of comments received from interviews near the Hayward Project (January-February, April-September 2022), Subject (number of comments)

Location	Maintenance	New Amenities
City of Hayward Beach/Fishing Pier	-Restroom improvements (2) -Geese management (3) -Pavilion maintenance (1)	-Dog waste bag station (1) -Fishing pier (1) -New/more signage (4) -Trash receptacles (3) -Public Wi-Fi (1) -Campground (1) -Additional fishing pier (1) -Buoys for the beach (1) -Widen entry road (2)
City of Hayward Boat Landing		-Additional boat moorings (1)
Hayward Canoe Portage Take-Out and Carry-In Access		-More/better signage (2) -ADA viewing and parking (1)
Hayward Canoe Portage Trail and Put-In		-Trash receptacles (1) -Picnic table (1)

Among the facilities near the Trego Project, constructive comments were received at all four facilities (Table 5-11). The Town of Trego Park Boat Landing and Trego South Tailwater Access received the most comments for facilities near the Trego Project. As with the Hayward facilities, comments regarding new amenities such as signage, portable lavatories, and expanded tailwater fishing access were more common than maintenance related comments.

Table 5-11. Summary of comments received from interviews near the Trego Project (January-February, April-September 2022), Subject (number of comments)

Location	Maintenance	New Amenities
Town of Trego Park Boat Landing	-Replace signage (1) -Remove rocks at end of landing and by dock (1)	-Install portable lavatory (1) -Add marker to sign at CTH K Landing (1)
Town of Trego Boat Landing		-New\better signage (2)
Trego North Tailwater Access/Canoe Portage		-Trash receptacles (1) -Expand fishing area (1) -Rod holders on the railing (1)
Trego South Tailwater Access	-Replace signage (1)	-Trash receptacles (2) -New signage (1) -Expand fishing area (2) -Lighted stairway (1)

5.2 SPOT COUNTS

The 16 recreational surveys conducted at facilities near the Hayward Project resulted in 84 spot count reports across the surveyed locations. These spot counts observed 175 users total (Table 5-12, Appendix 6). The average spot count for the 16 surveys was 10.94 users per location. Use of the City of Hayward Beach /Fishing Pier was substantially greater than the other five facilities surveyed and accounted for 81% of the user counts during 2022.

Among the eight months surveyed, April had the fewest total and average visits by recreational user (Tables 5-12). August had the highest user counts but July exhibited the greatest monthly average. The City of Hayward Boat Landing had the highest Winter counts (i.e., January and February) while the City of Hayward Beach\Fishing Pier saw the highest spring and summer spot counts.

Table 5-12. Recreational use based on spot counts, near the Hayward Project (January-February, April-September 2022)

Month	Surveys	Bartz' s Bay Informal Ice Fishing Access	Hayward Canoe Portage Take-Out and Carry-In Access	Hayward Canoe Portage Trail and Put-In	Hayward Informal Tailwater Bank Fishing Access	City of Hayward Boat Landing	City of Hayward Beach /Fishing Pier	Total by Month	Average by Month & No. Surveys
January	2	2	0	0	0	2	0	4	2.00
February	2	2	0	0	0	3	0	5	2.50
April	1	0	0	1	0	0	0	1	1.00
May	2	0	0	0	0	0	3	3	1.50
June	3	0	0	1	2	1	35	39	13.00
July	2	0	0	0	0	5	45	50	25.00
August	3	0	5	0	0	3	49	57	19.00
September	1	0	1	0	0	5	10	16	16.00
Total	**16**	**4**	**6**	**2**	**2**	**19**	**142**	**175**	**10.94**

In addition to instantaneous site counts of recreation users at each location, the spot count forms identified 11 specific recreational activities and one "other" category (Appendix 1). These activities ranged from ATV/Snowmobiling and various types of boating to hiking, jogging, walking and wildlife viewing. Recreation users at the Hayward Project were observed participating in many of the aforementioned activities, with the exception of bicycling and bird watching. All of the recreationist observed at the Hayward Project during the winter were listed under "other" and were ice fishing. From July through September, the primary activities for most visitors were swimming and shore fishing.

Spot counts conducted at the Trego Project were noticeably lower compared to the Hayward Project. The Trego spot counts tallied 34 users total (Table 5-13). The average spot count for the 16 surveys was 2.13 users per location. Unlike the Trego recreational interviews, which were highest at the tailwater facilities, spot counts were highest at the Town of Trego Boat Landing followed by the Town of Trego Park Boat Landing.

February had the fewest total and average visits by recreational user over the eight survey months (Tables 5-13). Similar to Hayward, the highest user count at Trego was in August, which also exhibited the highest average count. Trego spot counts were similar among the months and seasons with the exception of August, which was substantially higher.

Table 5-13. Recreational use based on spot counts, near the Trego Project (January-February, April-September 2022)

Month	Surveys	Town of Trego Park Boat Landing	Town of Trego Boat Landing	Trego North Tailwater Access/Canoe Portage	Trego South Tailwater Access	Total by Month	Average by Month & No. Surveys
January	2	0	2	0	0	2	1.00
February	2	0	0	0	0	0	0.00
April	1	1	0	0	1	2	2.00
May	2	1	0	2	0	3	1.50
June	3	0	1	1	0	2	0.67
July	2	3	0	0	1	4	2.00
August	3	3	9	3	2	17	5.67
September	1	1	0	2	1	4	4.00
Total	**16**	**9**	**12**	**8**	**5**	**34**	**2.13**

Among the 11 specific recreational activities, visitors to the Trego area were observed participating in seven activities. The four activities that were not observed include swimming, picnicking, bird watching, and ATV/Snowmobiling. Winter activities were minimal and restricted to walking. However, summer activities were largely split between power boating and shore/tailwater fishing.

5.3 FUTURE AND POTENTIAL RECREATION

Future and potential recreation use questionnaires were mailed to representatives from the City of Hayward, Hayward Area Chamber of Commerce, Sawyer County, Town of Trego, Trego Lake District (TLD), Washburn County, and NPS on July 14, 2022. Delivery on July 18, 2022 was confirmed for each recipient (Appendix 2). Among the seven stakeholder entities that

received the questionnaire, only the TLD and NPS responded. The following is a summary of their responses with complete responses provided by each stakeholder included in Appendix 7.

5.3.1 National Park Service

Stakeholders were asked about their interest in recreation sites in the vicinity of the Hayward and Trego Projects as well as their primary function and responsibilities with regard to the recreation sites. NPS responded that the Namekagon River is protected as part of the Wild and Scenic Rivers system and the National Park system. The Namekagon River is managed by St. Croix National Scenic Riverway for "*the preservation and protection of the aquatic, cultural, recreational, scenic-aesthetic, water quality, and free-flowing condition values*". The NPS does not manage all recreation sites near the Hayward and Trego Projects but has "*an interest in providing safe, high-quality recreational opportunities to the public as part of the NPS experience*".

NPS owns and manages the County K Landing, which is downstream of the Trego Project. In addition, the NPS Namekagon River Visitor Center in the Town of Trego and the Earl Landing in the Town of Earl are between the Hayward and Trego Project areas but within the responsibilities of NPS. Amenities associated with the County K Landing include a gravel river access, picnic tables, interpretive and informational signage, paved parking lot, and vault toilet. The amenities at Earl Landing include a gravel parking area, concrete boat ramp, vault toilet, primitive camping, potable water, and picnic tables.

NPS reported that Namekagon River access points near the Visitor Center on the north and south banks of the river were removed due to redevelopment of the Highway 63 and Highway 53 Interchange project and the removal of the Lakeside Road Bridge. As such, no facilities remain at these locations. The removal of these two access points has reduced recreational access to the Namekagon River and near the Hayward and Trego Projects. The NPS is considering a river access point to the east of the Namekagon River Visitor Center, near the Highway 63 Bridge. NPS noted that parking capacity is frequently exceeded at Earl Landing. As such, NPS is set to begin the design process to improve conditions at the Earl Landing during Fiscal Year 2024.

5.3.2 Trego Lake District

The TLD described itself as "*a specialized unit of government created to manage Trego Lake with a legal responsibility to support and encourage the preservation of the natural beauty, peacefulness, safety, and recreational value of the shoreline and waters of Trego Lake, and to coordinate with the various public and private organizations in these efforts*". The TLD encompasses the water and shoreline from the Trego Project to the Highway 53 bridge and is managed by those owning property within the boundary. There are approximately 275 landowners that have access to the lake from their property.

TLD works with Wisconsin Department of Natural Resources to analyze water quality, protect the fishery, maintain and mark navigation channels, and coordinate control of aquatic invasive species (AIS) in the lake.

Recreational activities on Trego Lake, including boating, swimming, and fishing, are all impacted by sedimentation buildup and AIS. In conjunction with the Town of Trego, TLD operates and maintains the Trego Landing. In addition, a private resort and campground (i.e., Bay Park Resort and Campground) is situated on Trego Lake. TLD stated that these sites have not exceeded capacity or experienced insufficient parking.

In terms of future management and enhancement of recreational opportunities, TLD will continue to manage AIS and navigation through aquatic macrophyte harvesting and spot dredging. In 2023, via a tax levy on members, TLD intends to expand AIS control through additional macrophyte harvesting as identified in their Aquatic Plant Management Plan. Despite these efforts, TLD foresees the need to further expand AIS and sedimentation management within the district to enhance the resource and improve recreational opportunities near the Trego Project. TLD also expressed concern over the loss of Namekagon River due to the Trego interchange development access (see NPS discussion above) and believes those former access points need to be replaced.

6. CONCLUSIONS

Overall, the six Hayward Project and four Trego Project recreational locations were considered in good condition during the 2022 surveys. The inventory identified one facility and amenity that required maintenance and that was related to signage at the Hayward Canoe Portage Trail and Put-In. Most recreational facilities at the Hayward and Trego Projects received low to moderate use during the 2022 survey events. The lone exception was at the Hayward City Beach/Fishing Pier, which received periodic moderate to high use, particularly in June, July, and August. Despite the high use at the Hayward City Beach/Fishing Pier, based on the facility assessments, observations, spot counts, and user interviews, this facility does not appear to be overused and overcrowding is infrequent. With the exception of the Hayward City Beach/Fishing Pier, crowding or lack of capacity was not observed during the surveys.

A few respondents requested improved signage at NSPW-owned recreation locations (Tables 5-10 and 5-11). Improved signage was requested for both the Hayward Canoe Portage Take-Out and Carry-In Access and the Trego South Tailwater Access. The Hayward Canoe Portage Take-Out and Carry-In Access is visibly marked for recreation users both on the water and on land (Appendix 3, Photos 9, 12, 13, 14, 17, and 19). Therefore, additional signage is unnecessary at this time. Likewise, one respondent suggested that the signage at the Trego South Tailwater Access is faded (Appendix 3, Photo 120). While somewhat faded, the signage remains completely readable such that replacement is unnecessary at this time.

For the Hayward project, one individual suggested that an ADA parking and viewing area would benefit the public at the Hayward Canoe Portage Take-Out and Carry-In Access (Table 5-10). Given the open, level, and relatively obstacle free area at the Hayward Canoe Portage Take-Out and Carry-In Access, it is recommended that NSPW evaluate the possibility for an ADA parking and viewing area. In addition, one respondent requested that a picnic table be located along the Hayward Canoe Portage Trail and Put-In. Given the ample space available along the portage trail, near the take out, carry-in access, informal bank fishing access, or at the loop near the canoe portage put-in, it is recommended that NSPW evaluate the possibility of installing a picnic table near the Hayward Canoe Portage Trail and Put-In.

Three respondents suggested that the Trego North Tailwater Access and Trego South Tailwater Access fishing areas are in need of expansion (Table 5-11). However, based on actual observed use throughout the Trego recreation survey, the facilities are more than adequate to support the number of individuals visiting them. In fact, among the 16 surveys conducted, the number of individuals using the north or south tailwater fishing areas exceeded one individual on two occasions and in both cases there were two people using the access compared to eight surveys when no users were observed at either tailwater access (Appendix 6). Therefore, use of these resources suggests that expansion of the north and south tailwater fishing areas at the Trego Project is unnecessary.

While there may be legitimate needs for future improvement or expansion of recreational resources in the vicinity of the Projects, the low to moderate observed use during these surveys

suggests that the capacity of the Hayward and Trego recreational resources is sufficient now and in the foreseeable future.

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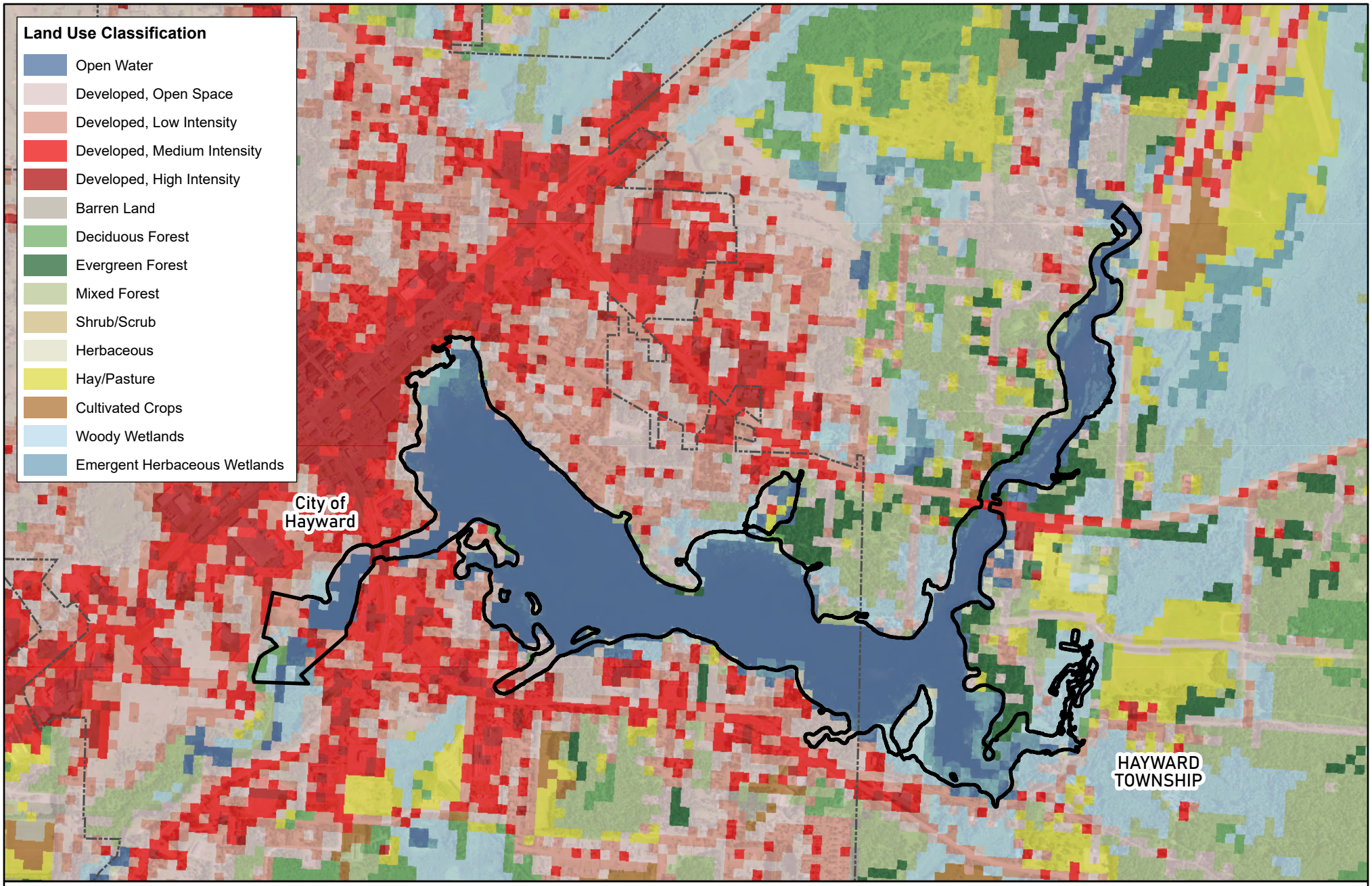
APPENDIX E-30 Land Use in the Hayward Project Vicinity



Xcel Energy®

Mead & Hunt

Proposed Project Boundary

Municipal Boundary

Note: the impounded Proposed Project Boundary is established at elevation 1,187.5 feet NGVD 1929.

N

0 1,000 2,000 Feet

Hayward Hydroelectric Project
Major Land Use in Vicinity of Project

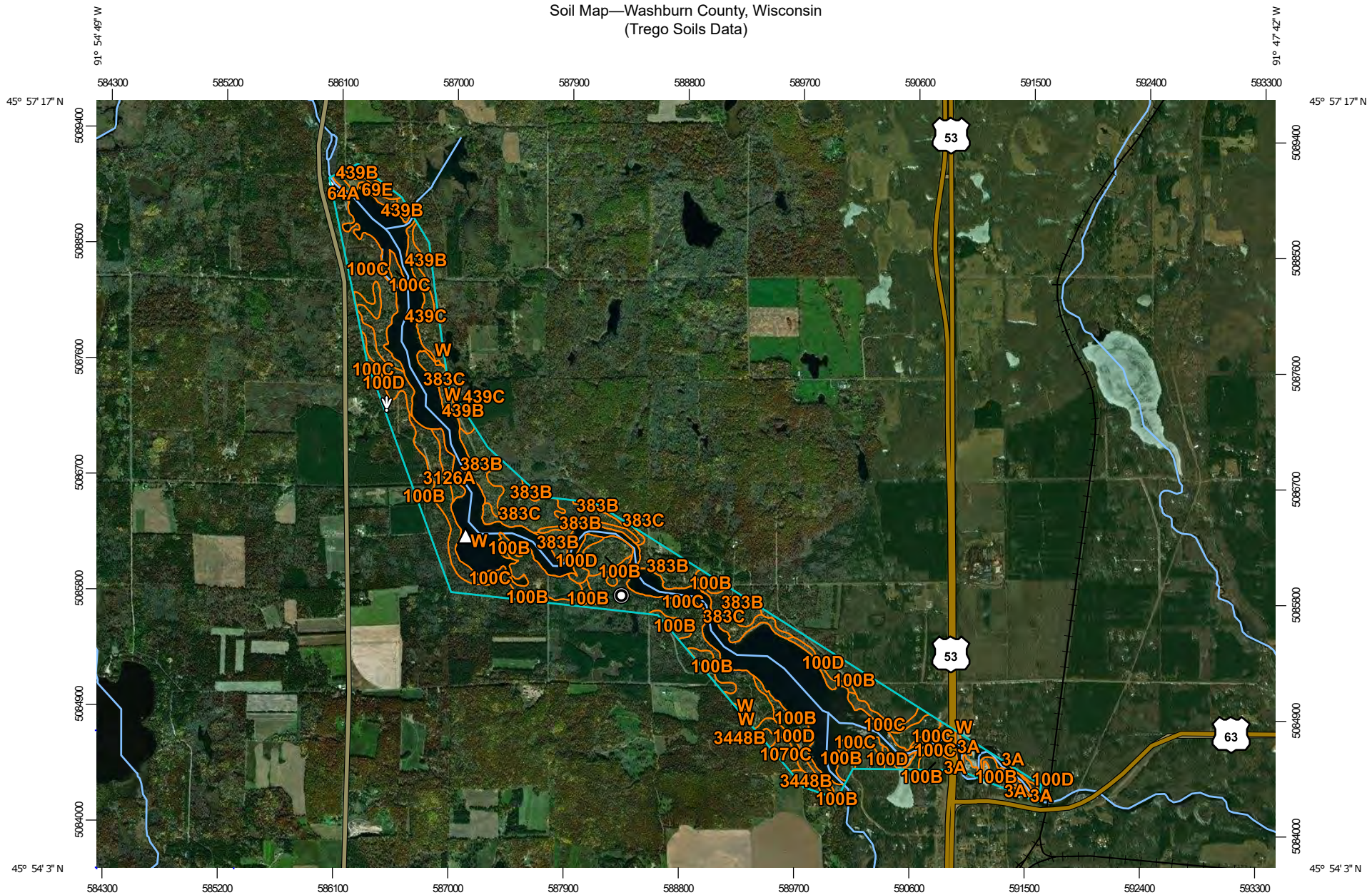
FERC No. 2417

Source Layer: National Land Cover Database 2019, WI 2022 NAIP (natural color, 0.6-meter resolution)

X:\240010019292 3.01\TECH\Hayward and Trego\Project Maps\Hayward\DLA\PRO\Hayward_DLA_Maps.aprx

APPENDIX E-31 Trego Project Soils Report

Soil Map—Washburn County, Wisconsin
(Trego Soils Data)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washburn County, Wisconsin
Survey Area Data: Version 20, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 28, 2012—Jul 8, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3A	Totagatic-bowstring-ausable complex, 0 to 2 percent slopes, frequently flooded	13.1	1.1%
64A	Totagatic-Winterfield complex, 0 to 2 percent slopes, frequently flooded	2.7	0.2%
69C	Keweenaw-Sayner-Vilas complex, 1 to 15 percent slopes, stony	5.0	0.4%
69E	Keweenaw-Sayner-Vilas complex, 5 to 35 percent slopes, stony	0.4	0.0%
100B	Menahga sand, 0 to 6 percent slopes	228.1	18.5%
100C	Menahga sand, 6 to 12 percent slopes	254.1	20.6%
100D	Menahga sand, 12 to 30 percent slopes	57.0	4.6%
383B	Mahtomedi loamy sand, 0 to 6 percent slopes	89.4	7.3%
383C	Mahtomedi loamy sand, 6 to 12 percent slopes	85.8	7.0%
383D	Mahtomedi loamy sand, 12 to 30 percent slopes	6.8	0.6%
439B	Graycalm-Menahga complex, 0 to 6 percent slopes	18.9	1.5%
439C	Graycalm-Menahga complex, 6 to 12 percent slopes	25.9	2.1%
439D	Graycalm-Menahga complex, 12 to 30 percent slopes	7.5	0.6%
1070C	Fremstadt, stony-Cress complex, 6 to 15 percent slopes	8.2	0.7%
3126A	Wurtsmith loamy sand, 0 to 3 percent slopes	10.4	0.8%
3448B	Grettum loamy sand, 0 to 6 percent slopes	7.2	0.6%
W	Water	412.6	33.5%
Totals for Area of Interest		**1,233.3**	**100.0%**

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factor Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic layer.

Report—RUSLE2 Related Attributes

Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed or the first mineral horizon below an organic surface horizon. Organic horizons are not displayed.

RUSLE2 Related Attributes–Washburn County, Wisconsin

Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
3A—Totagatic-bowstring-ausable complex, 0 to 2 percent slopes, frequently flooded								
Totagatic	40	249	A/D	.24	5	79.2	15.8	5.0
Bowstring	30	249	A/D	—	1	—	—	—
Ausable	20	249	A/D	.02	1	92.9	1.6	5.5
64A—Totagatic-Winterfield complex, 0 to 2 percent slopes, frequently flooded								
Totagatic	50	249	A/D	.24	5	79.2	15.8	5.0
Winterfield	40	249	A/D	.10	5	83.5	9.0	7.5
69C—Keweenaw-Sayner-Vilas complex, 1 to 15 percent slopes, stony								
Keweenaw, stony	35	151	A	.10	5	76.0	19.0	5.0
Sayner, stony	20	—	A	.10	5	82.0	15.0	3.0
Vilas, stony	20	—	A	.10	5	82.0	15.0	3.0
69E—Keweenaw-Sayner-Vilas complex, 5 to 35 percent slopes, stony								
Keweenaw, stony	35	59	A	.10	5	76.0	19.0	5.0
Sayner, stony	20	—	A	.10	5	82.0	15.0	3.0
Vilas, stony	20	—	A	.10	5	82.0	15.0	3.0

RUSLE2 Related Attributes–Washburn County, Wisconsin								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
100B—Menahga sand, 0 to 6 percent slopes								
Menahga	88	200	A	.02	5	94.6	1.4	4.0
100C—Menahga sand, 6 to 12 percent slopes								
Menahga	88	151	A	.02	5	94.6	1.4	4.0
100D—Menahga sand, 12 to 30 percent slopes								
Menahga	95	79	A	.02	5	94.6	1.4	4.0
383B—Mahtomedi loamy sand, 0 to 6 percent slopes								
Mahtomedi	75	200	A	.10	5	82.5	9.0	8.5
383C—Mahtomedi loamy sand, 6 to 12 percent slopes								
Mahtomedi	75	151	A	.10	5	82.5	9.0	8.5
383D—Mahtomedi loamy sand, 12 to 30 percent slopes								
Mahtomedi	80	79	A	.10	5	82.5	9.0	8.5
439B—Graycalm-Menahga complex, 0 to 6 percent slopes								
Graycalm	55	200	A	.20	5	77.7	16.3	6.0
Menahga	30	200	A	.02	5	94.6	1.4	4.0
439C—Graycalm-Menahga complex, 6 to 12 percent slopes								
Graycalm	55	151	A	.20	5	77.7	16.3	6.0
Menahga	35	151	A	.02	5	94.6	1.4	4.0
439D—Graycalm-Menahga complex, 12 to 30 percent slopes								
Graycalm	60	79	A	.20	5	77.7	16.3	6.0
Menahga	35	79	A	.02	5	94.6	1.4	4.0
1070C—Fremstadt, stony-Cress complex, 6 to 15 percent slopes								
Fremstadt, stony	40	151	A	.24	5	66.9	23.1	10.0
Cress	20	151	B	.24	2	65.3	23.2	11.5
3126A—Wurtsmith loamy sand, 0 to 3 percent slopes								
Wurtsmith	85	249	A	.17	5	81.1	13.9	5.0

RUSLE2 Related Attributes–Washburn County, Wisconsin								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
3448B—Grettum loamy sand, 0 to 6 percent slopes								
Grettum	80	200	A	.10	5	84.5	8.5	7.0

Data Source Information

Soil Survey Area: Washburn County, Wisconsin
Survey Area Data: Version 20, Jun 8, 2020

APPENDIX E-32 Trego Project Shoreline Monitoring Report

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West Allis, WI 53214

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TRCcompanies.com

January 31, 2023

Matt Miller
Xcel Energy
1414 West Hamilton Avenue
P.O. Box 8
Eau Claire, WI 54702-0008

Subject: Shoreline Monitoring of the Trego Hydroelectric Project (FERC No. 2711)
WIARC No. 287

Dear Mr. Miller:

On August 17, 2022 a TRC archaeologist inspected the shoreline of the Trego Hydroelectric Project (Project) on the Namekagon River near Trego, Wisconsin (Figure 1). The purpose of the survey was to determine if any of the seven archaeological sites previously identified near the shoreline in the Wisconsin Historic Preservation Database (WHPD) had been affected by operation of the Project. The survey would also document if erosion had exposed any new archaeological sites. The last archaeological survey was conducted in 2013.

BACKGROUND

The Project has a history of archaeological and erosion monitoring efforts dating from about 1990 through 2013 as documented in three surveys during that period (Harrison 1991; Van Dyke, 2003, 2013). The 1990 survey was an observation of the shoreline supplemented with subjective shovel testing along the reservoir banks (Harrison 1991). The two later surveys examined the shoreline through a non-invasive technique, focusing on the seven previously reported archaeological site locations while looking for new erosion. The entire shoreline was examined during the 2003 and 2013 surveys.

Compliance with Section 106 of the National Historic Preservation Act (NHPA) and 36 CFR 800 requires a shoreline monitoring survey to assess whether continued operation of the Project will affect any sites eligible for the National Register of Historic Places (NRHP). Therefore, Mead & Hunt, Inc., contracted with TRC (TRC) to conduct an archaeological survey of the Project shoreline as depicted in (Figures 1-8). The survey was required as part of the federal relicensing process for the Project. Because the Trego Hydroelectric Project is on the Namekagon River, which is part of the St. Croix National Scenic Riverway, an Archaeological Resources Protection Act (ARPA) permit is required by the National Park Service (NPS). The ARPA permit was obtained from NPS on July 20, 2022. A copy of the permit is in Appendix A of this report.

LITERATURE AND ARCHIVES RESULTS

A TRC archaeologist reviewed the WHPD which includes the Archaeological Site Inventory (ASI), Architecture and History Inventory (AHI), and Archaeological Reports Inventory (ARI), as well as the NRHP database, old county atlases, historic US Geological Survey (USGS) 15-Minute and 7.5-Minute Quadrangles, and other sources likely to yield cultural resource information about the Project location. The literature and archives search noted that seven cultural resource sites are mapped adjacent to the

reservoir. The 1991 archaeological survey report noted that five archaeological sites were adjacent to the shoreline. An additional prehistoric site and two historic structures were also noted; however, they were determined to be well outside the operating range of reservoir (Harrison 1991: 19). The 2022 survey attempted to inspect all seven of the sites that appear to be near the shoreline per the WHPD map.

47WB39

This site was referred to by one local resident as "the home of a band of Ojibwe as well as long used by explorers, missionaries, and fur traders" (WHPD ASI 6962). The site was reported to the State Historical Society of Wisconsin (SHSW – now WHS) in the first decade of the twentieth century. The 1990 survey visited the location and stated that it was "entirely outside the project impact zone" and did not mention it again in the report (Harrison 1991: 17). The mapped site was visited by later surveys (Van Dyke 2003, 2013) which found that the shoreline was stable. No additional archaeological work was recommended at that time (Van Dyke 2003, 2013).

A 2016/2017 survey along US Highway 63 found no cultural material within the part of the site that was overlapped by the highway but reported disturbance of that area (Jones 2017). No other archaeological work has been reported for the site.

47WB105 *(Trego I Site)*

The WHPD lists the Trego I site as a Euro-American cabin or homestead described as:

> A standing log structure located near the south end of an island some 60-70 m inland from what would have been the predam west bank of the Namekagon. According to the owner the place was once used as a trading post or stopping place at the west end of a well-used river crossing (Harrison 1991: 21).

The 1990 survey found no artifacts during testing and survey around the structure and noted that it was well outside of the "reservoir impact zone" (Harrison 1991: 21); thus, she stated it was beyond the scope of work for the project to continue additional research on the structure. No other archaeological work is on record for the site.

47WB106 *(Trego II Site)*

The 1990 survey reported this as a Euro-American and prehistoric site of unknown cultural affiliation. The historic component is a homestead, depicted on a 1915 plat, that was subsequently flooded when the reservoir was created. The property owner stated that remains of the homestead were still present underwater (Harrison 1991a). The prehistoric component contained a thin secondary flake of brown chalcedony, a piece of quartz shatter, and a basalt hammerstone or smoother, all found in shovel tests in the top 10 cm of the surface (Harrison 1991a). The archaeologist inferred that the site was not likely to retain integrity and was not a candidate for NRHP significance. No other archaeological work is on record for the site.

47WB107 *(Trego III Site)*

Identified in the WHPD as a prehistoric campsite or village of unknown cultural affiliation, the site was discovered by the 1990 archaeological survey through two positive shovel tests that yielded 11 secondary flakes (artifact manufacturing debris) at the end of a small island (Harrison 1991a). The archaeologist could not obtain permission from the owner to conduct additional testing but stated that additional excavation might yield information that would contribute to understanding the site. There is no mention in the report of erosion at the site. There is no record that additional archaeological work was done at the site.

47WB108 *(Trego IV Site)*

Noted in the WHPD as a prehistoric campsite/village of unknown cultural affiliation, this was discovered during the 1990 survey when shovel tests yielded 14 pieces of debitage, a bone fragment, and a fire cracked rock fragment (Harrison 1991a). The landowner reported finding a projectile point near his home. Based on the landowner's description of the projectile point, the archaeologist suggested it was a Middle to Late Woodland type (Harrison 1991a). The 1991 report indicated that the site was likely to contain intact deposits, and that a field visit was planned for 1991. The WHPD includes the following comment relative to a 1991 field visit.

> The form information above was compiled by the Burnett County Historical Society and State Historical Society of Wisconsin 03/1993 from a survey report (Harrison 1991: 23- 25). A follow-up survey was conducted in 1991. The survey resulted in the collection of 6 pieces of debitage. This site represents either a briefly used campsite or the edge of a larger site that has now been inundated by the impoundment (ASI 23884).

We interpret this to mean that fieldwork done in late 1991 was later added to the WHPD as an addendum to the 1991 report.[1] Apparently the SHSW staff and Burnett County Historical Society (BCHS) staff collaborated on this update to the record. The Introduction to the 1991 report states:

> Most of the field reconnaissance took place during the month of June, with some follow-up work later in the summer and fall, mainly within areas where it had not been possible to secure property owner permission earlier or at locations where cultural evidence had been found and needed further evaluation (Harrison 1991a: 1).

The archaeologist who did the work in 1990 thought the site might have NRHP potential and recommended additional work to determine significance.

47WB109 *(Trego V Site/Rowan's Resort Site)*

Identified by the 1990 survey as a prehistoric campsite or village of unknown cultural affiliation, shovel tests revealed 36 flakes, 7 pieces of shatter, 1 hammerstone and smoother, 9 burnt bone fragments, 1 piece of fire-cracked rock, and a feature containing dark soil stained with charcoal (Harrison 1991a). Figure 7 of the 1991 report shows that nearly all 50-plus artifacts were found clustered between the

[1] [1] TRC was not able to obtain the letter, but it is referenced in this report as Harrison 1991b while the first report is referenced as Harrison 1991a.

river and three structures. No artifacts were reported from the riverbank itself, nor was there any mention of erosion at the bank. All artifacts were found in shovel tests and the scale on Figure 7 (Harrison 1991: 26) indicates that the shovel tests were more than 6 meters (~20 feet) from the bank. There is no additional record of archaeological work at the site although the archaeologist recommended that the site be evaluated for NRHP significance.

There is no additional record of archaeological work at the site although the archaeologist recommended that the site be evaluated for NRHP significance.

47WB110 *(Trego Site VI)*

Also reported by the 1990 survey as a prehistoric campsite/village of unknown cultural affiliation, the site yielded six flint and quartz flakes. The archaeologist determined that the site had potential for buried deposits as the site appeared relatively undisturbed (Harrison 1991a). However, the owner would not allow the archaeologist to do additional work at his property nor is there a record of additional archaeological work at the site.

2022 FIELDWORK

The 2022 shoreline monitoring survey occurred on August 17, 2022. The survey was conducted on foot with access to the shoreline facilitated by boat. Figures 2 – 4 are parts of USGS quadrangles that depict the limits of the Project shoreline and the locations of the seven archaeological sites that are adjacent or near the shoreline; Figures 5 – 8 are aerial depictions of the site locations and the photo locations. The boat was beached at the WHPD-recorded locations of archaeological sites 47WB39, 47WB105, 47WB106, 47WB107, 47WB108, 47WB109, and 47WB110 to inspect the shoreline at each location. In two cases, the shoreline at the site was not accessible by boat. In those two instances, the shoreline was accessed from land after the work from the water was completed. Photos of the shoreline at those two sites were taken from the opposite bank. Photos 1 – 7 are examples of different areas of the shoreline while Photos 8 – 12 are views of the shoreline at the WHPD-mapped archaeological site locations. The non-site photos are shown to help characterize the Project shoreline. No erosion was encountered during the survey. The present setting of each archaeological site is described in the following paragraphs.

47WB105 *(Trego I Site)*

The shoreline was inspected on foot with access to the site provided by boat. Surface collection along the riverbank yielded no artifacts. The shoreline at the site is stable with trees and a managed lawn extending to the water along with two boat docks (Photo 8). The 1990 survey determined that the log structure was outside the Project impact zone. It is unknown if the structure in Photo 8 is the same one viewed during the 1990 survey 32 years ago. Whether it is or not, there is no concern that operation of the Project will affect a structure that far from the bank, just as there was no concern about it in 1990. No additional work is recommended at this site. Future shoreline monitoring should adhere to the schedule outlined in any future Historic Properties Management Plan (HPMP).

47WB107 *(Trego III Site)*

Surface collection of the shoreline and bank yielded no artifacts. The shoreline at the site is stable with a mix of trees and maintained lawn extending to the water and emergent vegetation offshore (Photo 9). Future monitoring should follow the schedule outlined in any future HPMP.

47WB106 *(Trego II Site)*

The shoreline at this WHPD-mapped site was surface collected on foot, with access to the site obtained by boat. No artifacts were recovered. The shoreline is stable with a mix of pine, oak, and birch trees, as well as grasses extending to the water (Photo 10). There is a small exposure at the point of land (left of photo) that did not yield artifacts. Although the 1990 survey found a "flint flake, hammerstone, and quartz shatter" (ASI #23882), the archaeologist thought that the site was "too peripheral, too disturbed to meet National Register criteria" (Harrison 1991a: 30) and that the site had been destroyed by construction. Since there were no artifacts in the small exposure, TRC does not recommend additional archaeological work at this site. Any further shoreline monitoring should follow the schedule outlined in any future HPMP.

47WB108 *(Trego IV Site)*

Access to the site was blocked by shallow water and emergent vegetation; however, the WHPD-mapped site does not extend to the water, therefore, there is no photo of the shoreline at this site. This location is well buffered from the water by emergent vegetation and stabilized by a mix of pine, oak, and birch trees. TRC does not recommend any archaeological work at this location. Future shoreline monitoring should follow the schedule outlined in the then current HPMP.

47WB109 *(Trego V Site [Rowan's Resort Site])*

Access to this site by boat was not possible due to shallow water and emergent vegetation. An inspection of the shoreline, conducted on foot, did not reveal any artifacts. The overview photo was taken from the US Highway 53 bridge since boat access was not possible. The shoreline at the site is stable with maintained lawns and a mix of pine, oak, and birch trees (Photo 11).

The 1990 archaeologist said of this site, as well as WB-110: "…receive fairly light, low-key recreational use and shoreline erosion is minimal", and "…it should be relatively easy to ensure their continued preservation in place … as long as periodical monitoring by NSP and a qualified archaeologist will be done to assess whether the situation has or has not changed" (Harrison 1991a: 30). Any further shoreline monitoring should follow the schedule outlined in any future HPMP.

47WB39

Access to this site was achieved by foot as shallow water precluded the use of a boat. The shoreline is stable with trees and grass extending to the water. The overview photo was taken from the opposite bank (Photo 12). No archaeological work is recommended at this location. Any further shoreline monitoring should follow the schedule outlined in any future HPMP.

47WB110 *(Trego Site VI)*

The shoreline at this WHPD-mapped site was inspected on foot since access from the water was not feasible due to shallow water and aquatic vegetation. Thus, the shoreline photo of this site was taken

from the opposite bank (Photo 12). The shoreline is stable with trees and grass extending to the water. No additional archaeological work is recommended for this location. Any further monitoring should follow the schedule outlined in any future HPMP. The 1990 archaeologist described the site in the previous discussion about 47WB109.

CONCLUSION AND RECOMMENDATION

Literature and archives research noted seven archaeological site boundaries that are mapped as adjacent or near the reservoir; two of the boundaries are not mapped to the shoreline. All the sites reported herein were discovered through shovel testing, rather than by surface collection at exposed banks, by a 1990 archaeological survey (Harrison 1991a). There is no mention in the report of erosion at any of the sites; thus, no mention of artifacts being found at the bank. Since the Trego Project is operated as run-of-river, little erosion is expected in the future, and none has been reported by any of the previous surveys. Some of the shoreline is comprised of residential lots and no areas of riprap or manmade stabilization were noted, attesting to the overall natural stability of the reservoir. Any follow-up shoreline monitoring should follow the schedule outlined in any future HPMP.

If Project personnel identify or become aware of erosion at any of the known archaeological site locations, or identify any substantial new erosion, they should transmit that information to their environmental manager who can consult with an archaeologist and the State Historic Preservation Office (SHPO) to determine the best means to proceed. If I can provide additional assistance, I can be reached by phone at 262-225-5105, or by email at AVanDyke@trcscompanies.com.

Sincerely,

TRC Environmental Corporation

Allen P. Van Dyke
Principal Archaeologist – Midwest

Attachments: 12 Photos and 9 Figures

REFERENCES CITED

Harrison, C.

1991a Report on Cultural Resource Investigation Along the Trego Reservoir Shoreline, Washburn County, Wisconsin. Burnett County Historical Society. Siren, Wisconsin.

1991b Letter Report of Survey: Addendum to Report on Cultural Resource Investigation Along the Trego Reservoir Shoreline, Washburn County, Wisconsin. Burnett County Historical Society. Siren, Wisconsin.

Jones, R.

2017 WDOT Archaeological Survey Field Report: USH 53, Spooner to Minong, USH 63-Trego Interchange, Washburn County, Wisconsin. Commonwealth Heritage Group, Inc. Milwaukee, Wisconsin.

Van Dyke, A. P.

2003 Five-Year Reservoir Shoreline Surveys for Eroding Archaeological Sites. AVD Archaeological Services, Inc. Union Grove, Wisconsin.

2013 10 Year Archaeological Monitoring at Trego (FERC #2711), Hayward (FERC #2417), Thornapple (FERC #2475), Big Falls (FERC #2390-01), and Chippewa Falls (FERC #2440) Hydroelectric Projects. AVD Archaeological Services, Inc. Union Grove, Wisconsin.

Photo 1: Dam area at the north end of the hydro project. View to northwest.

Photo 2: Stretch of shoreline with mixed pine, oak, and birch extending to water's edge. View to northeast.

Photo 3: Stretch of shoreline with mixed pine, oak, and birch extending to the water's edge buffered by emergent vegetation. View to west.

Photo 4: Stretch of shoreline with mixed pine, oak, and birch water's edge. View to south.

Photo 5: Shoreline with mixed pine, oak, and birch to water's edge buffered by emergent vegetation. View to east.

Photo 6: Shoreline with a mix of pine, oak, and birch to water's edge, buffered by emergent vegetation. View to west.

Photo 7: Shoreline with mixed pine, oak, and birch to water's edge buffered by emergent vegetation. View to south.

Photo 8: 47WB105 with mix of pine, oak, and birch to water's edge. View to north.

Photo 9: 47WB107 location with mix of pine, oak, and birch extending to water's edge. View to West.

Photo 10: 47WB106 with mixed pine, oak, and birch to water's edge. View to southeast.

Photo 11: 47WB109 with managed lawns, mixed pine, oak, and birch to water's edge, emergent vegetation buffer. View to west.

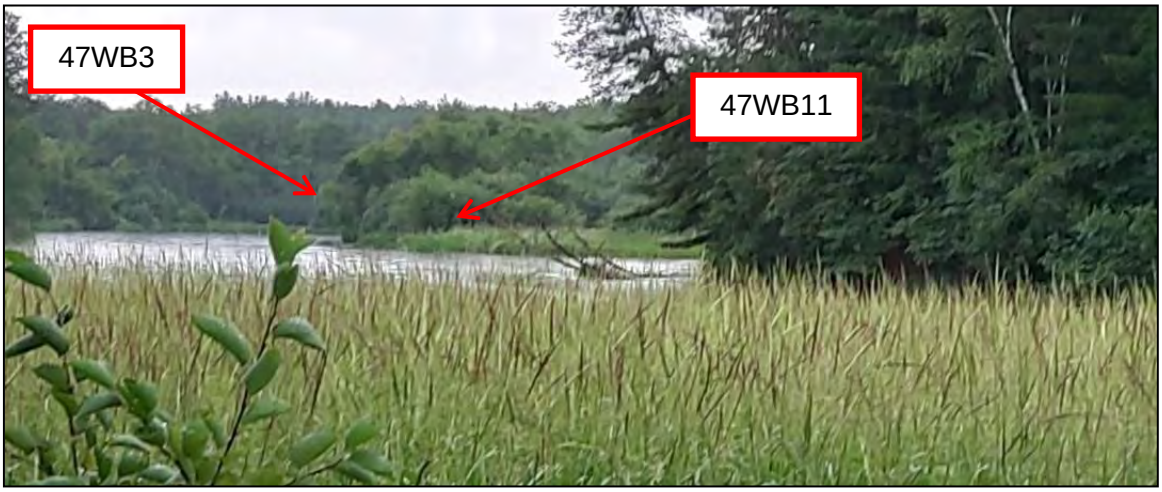


Photo 12: 47WB39 & 47WB110 with mixed pine, oak, and birch to water's edge, emergent vegetation buffer. View to southeast.

Figure 3.3.2-1: Trego Project Boundary

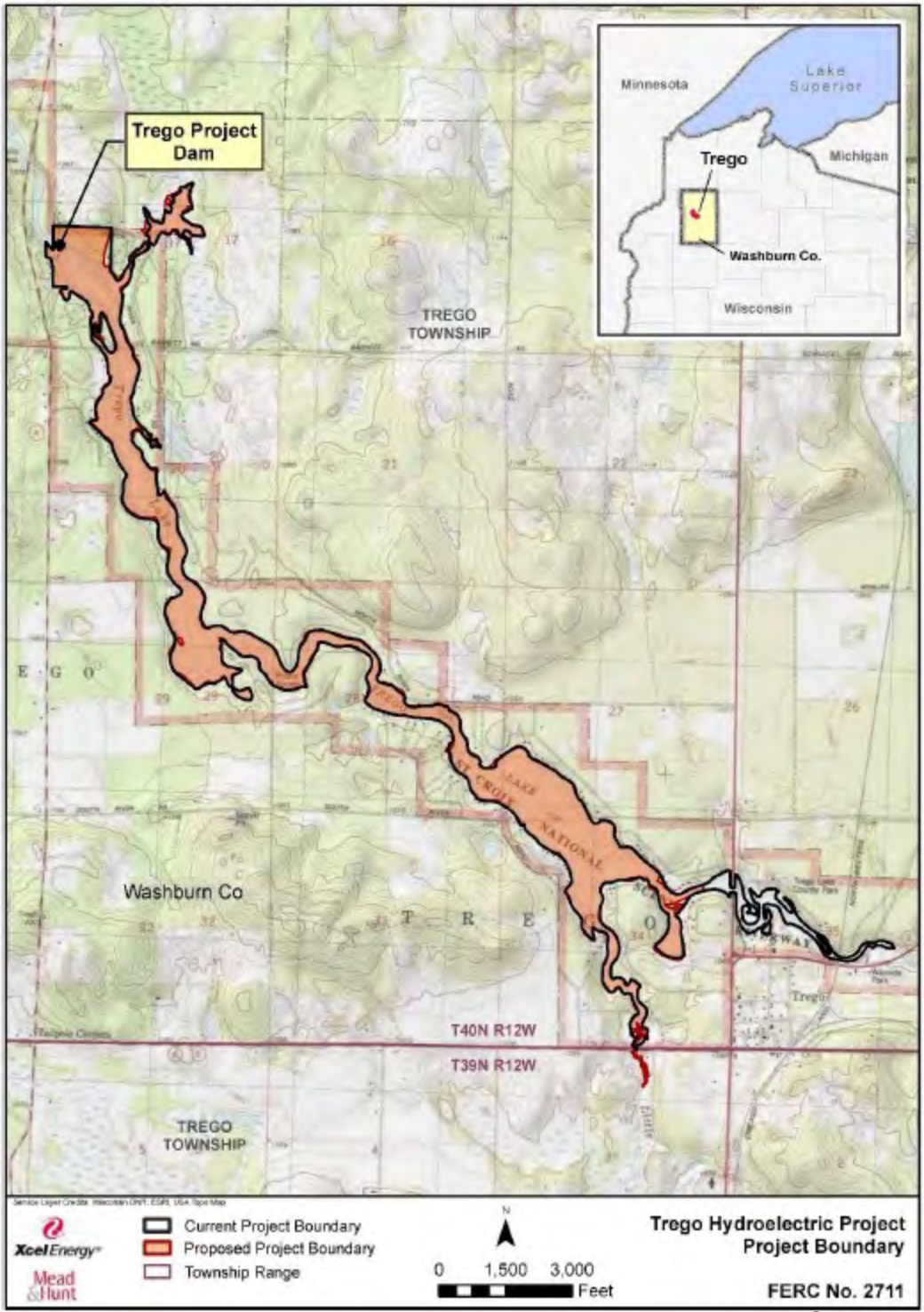
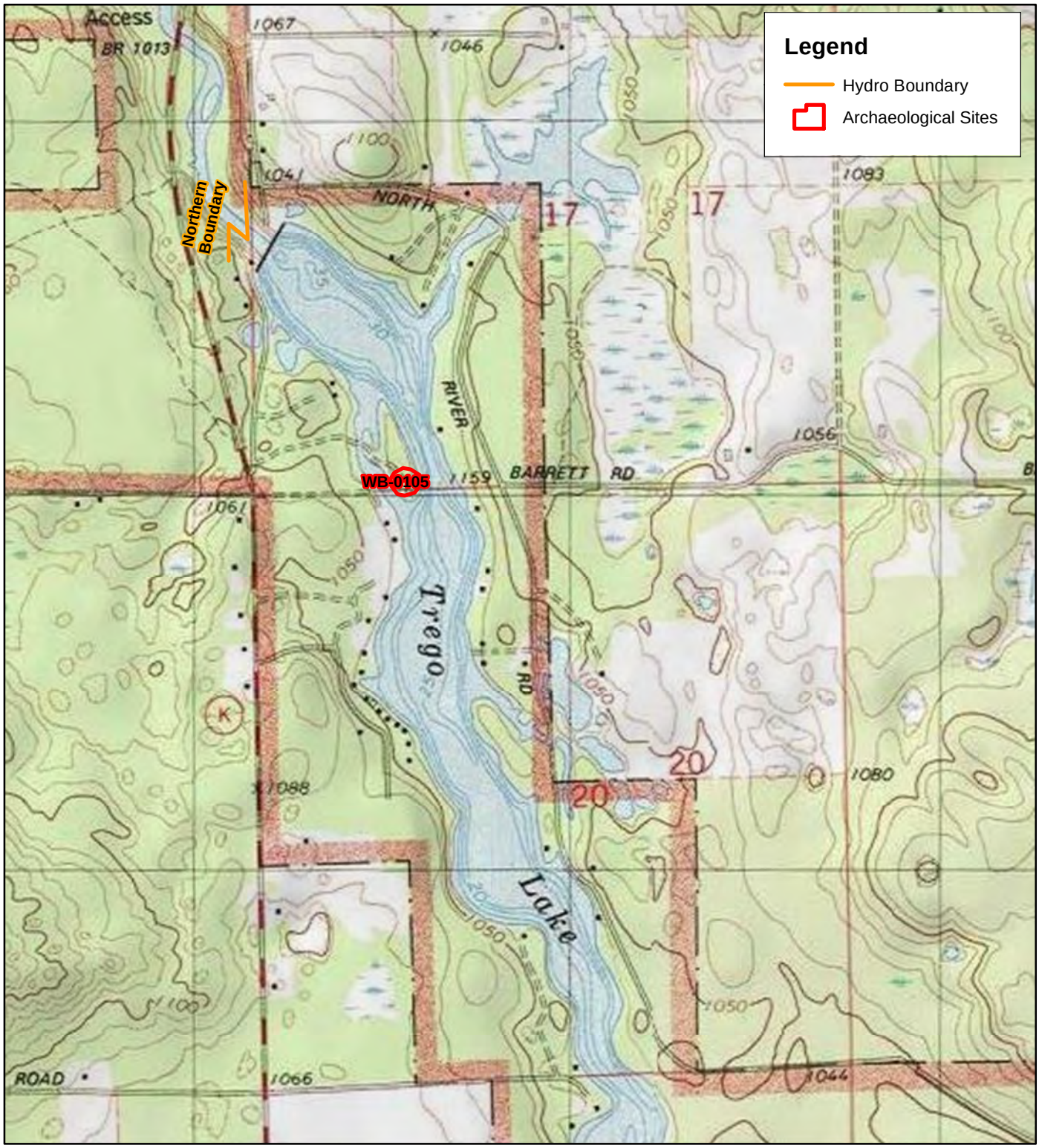


FIGURE 1



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES. SITE INFORMATION OBTAINED FROM WHPD, (2022)

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TRC
6737 W WASHINGTON STREET
SUITE 2100
WEST ALLIS, WI 53214
PHONE: 262.879.1212
TRC - GIS

PROJECT:

XCEL ENERGY
TREGO HYDRO SURVEY
WASHBURN COUNTY, WI

TITLE:

WHPD SITE LOCATION MAP

DRAWN BY:	A.MCMAHON
CHECKED BY:	R.KLABACKA-WILLIAMS
APPROVED BY:	A.VAN DYKE
DATE:	OCTOBER 2022
PROJ. NO.:	483156
FILE:	[rpt]_Figx_[Trego]_8x11.mxd

FIGURE 2

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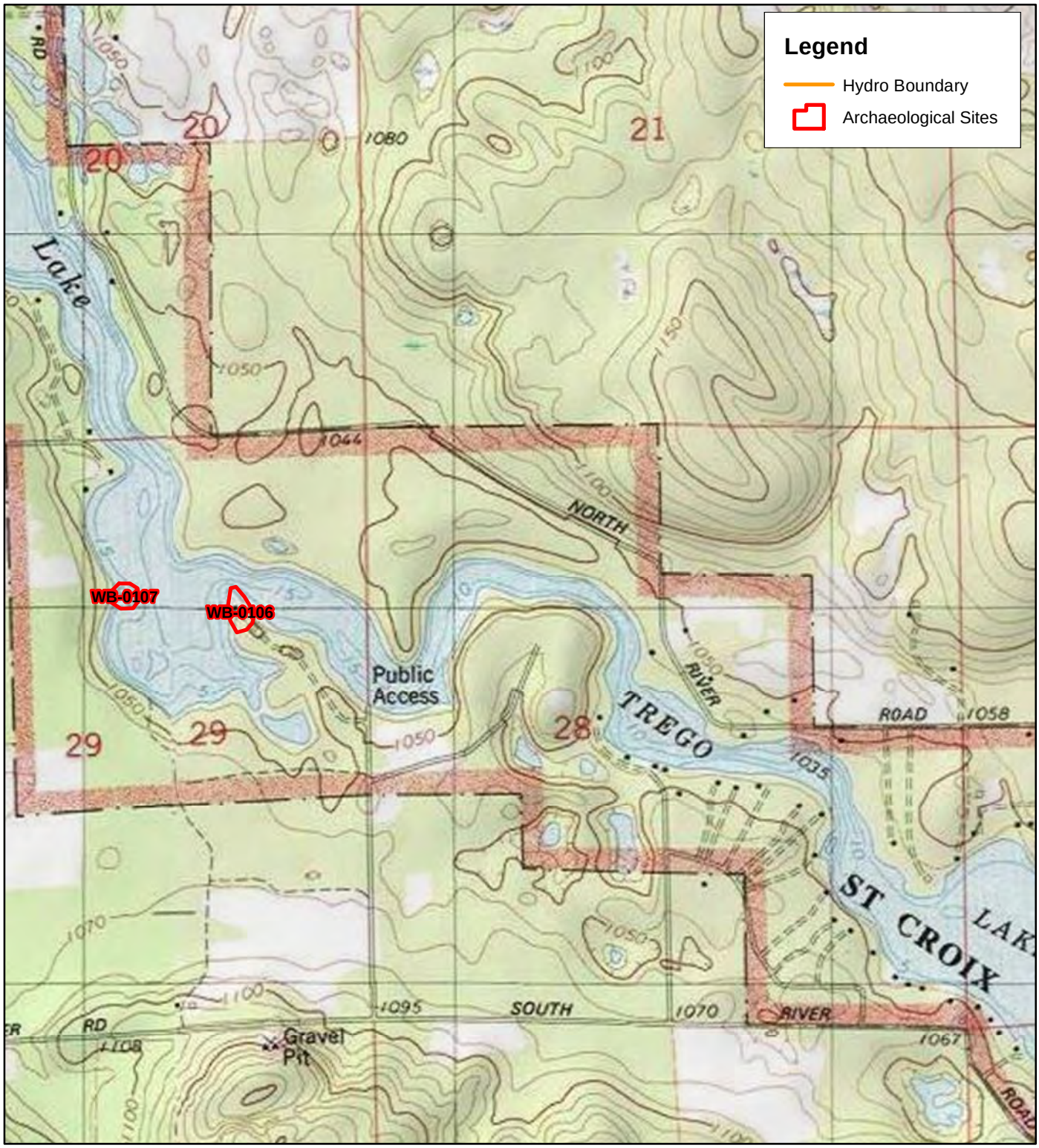

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FIGURE 3

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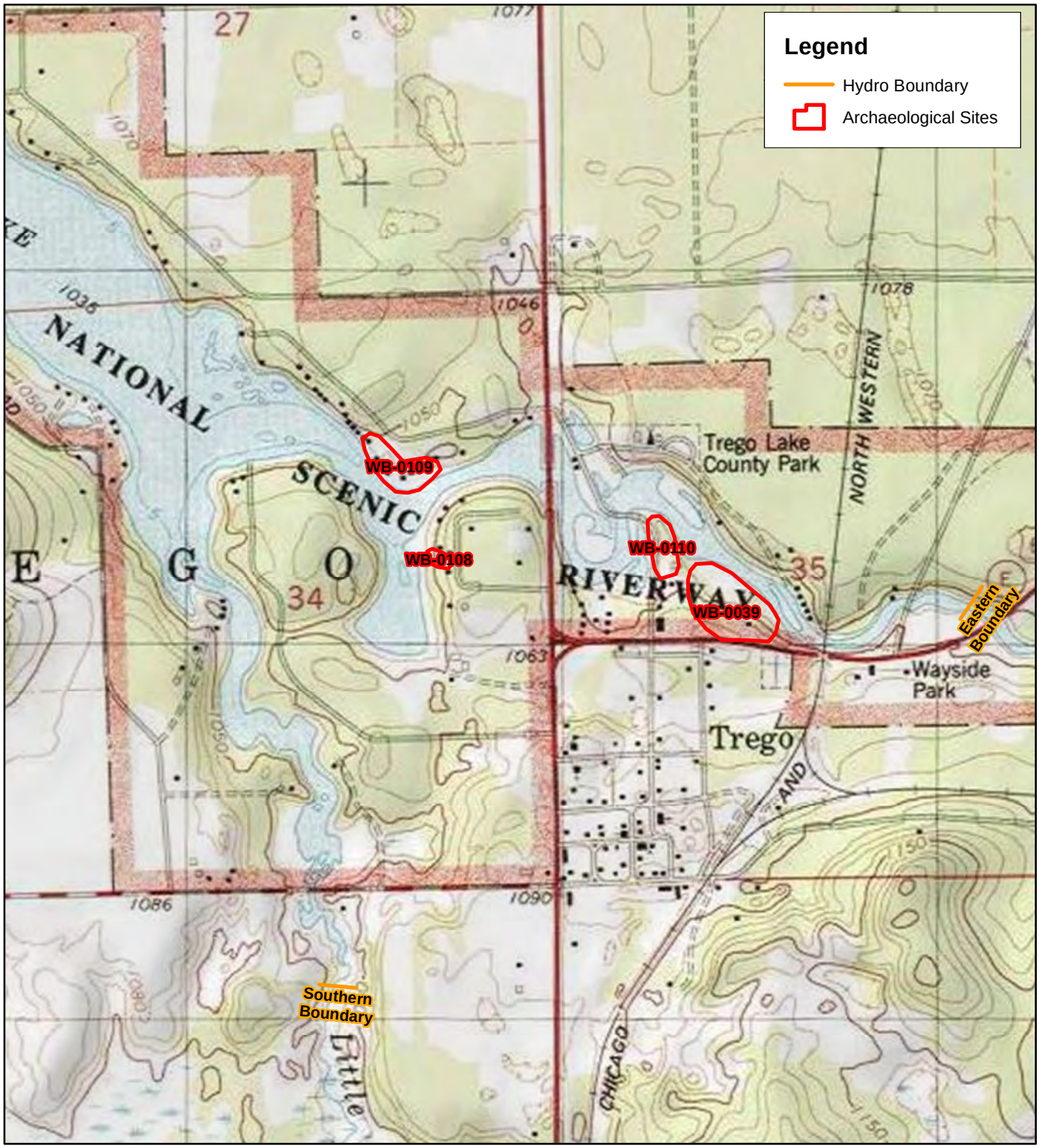

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XCEL ENERGY
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WASHBURN COUNTY, WI

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APPROVED BY:	A.VAN DYKE
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PROJ. NO.:	483156
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FIGURE 4

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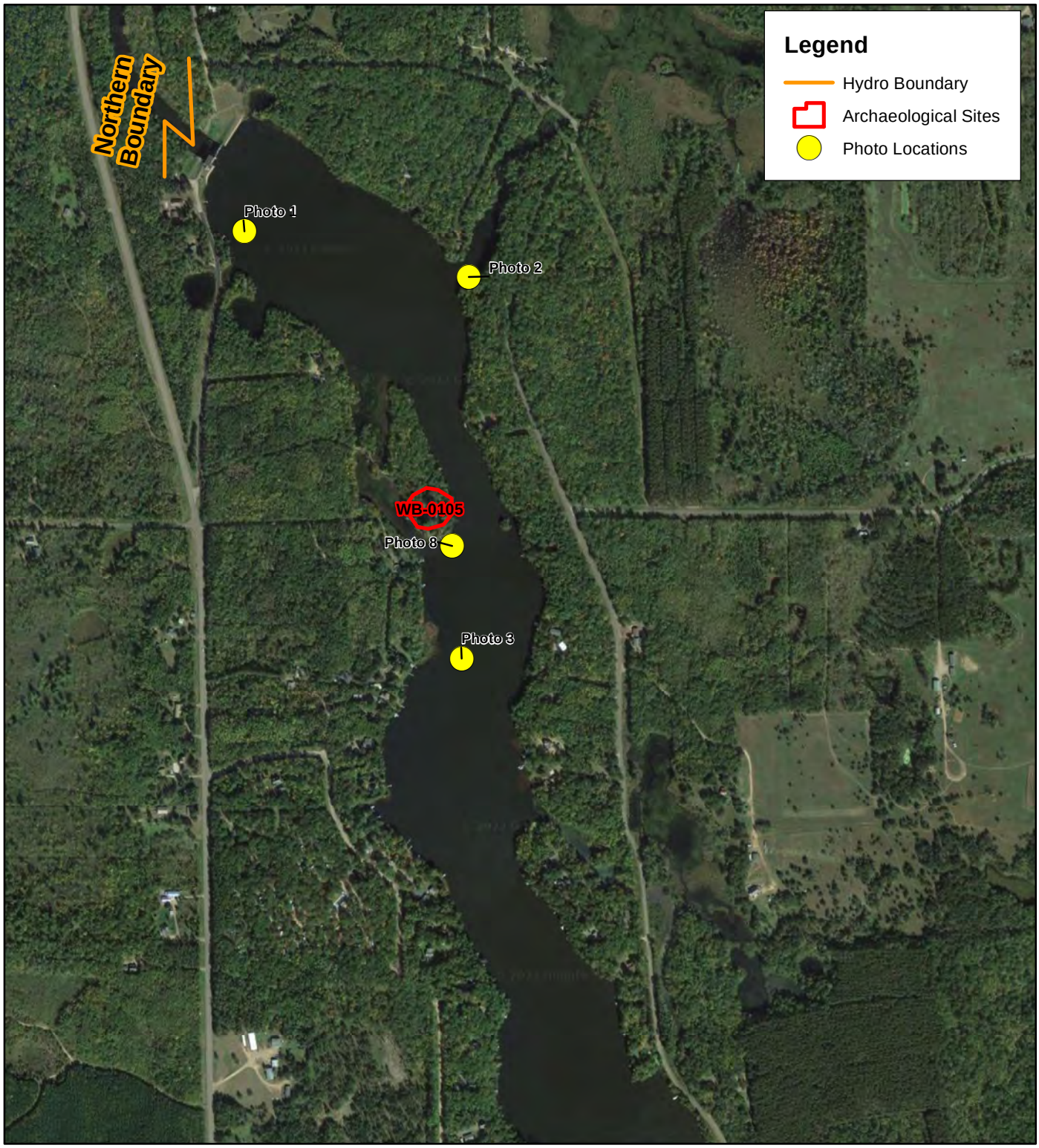

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PROJECT:
XCEL ENERGY
TREGO HYDRO SURVEY
WASHBURN COUNTY, WI

TITLE:
PHOTO LOCATION MAP

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CHECKED BY:	R.KLABACKA-WILLIAMS
APPROVED BY:	A.VAN DYKE
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PROJ. NO.:	483156
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FIGURE 5

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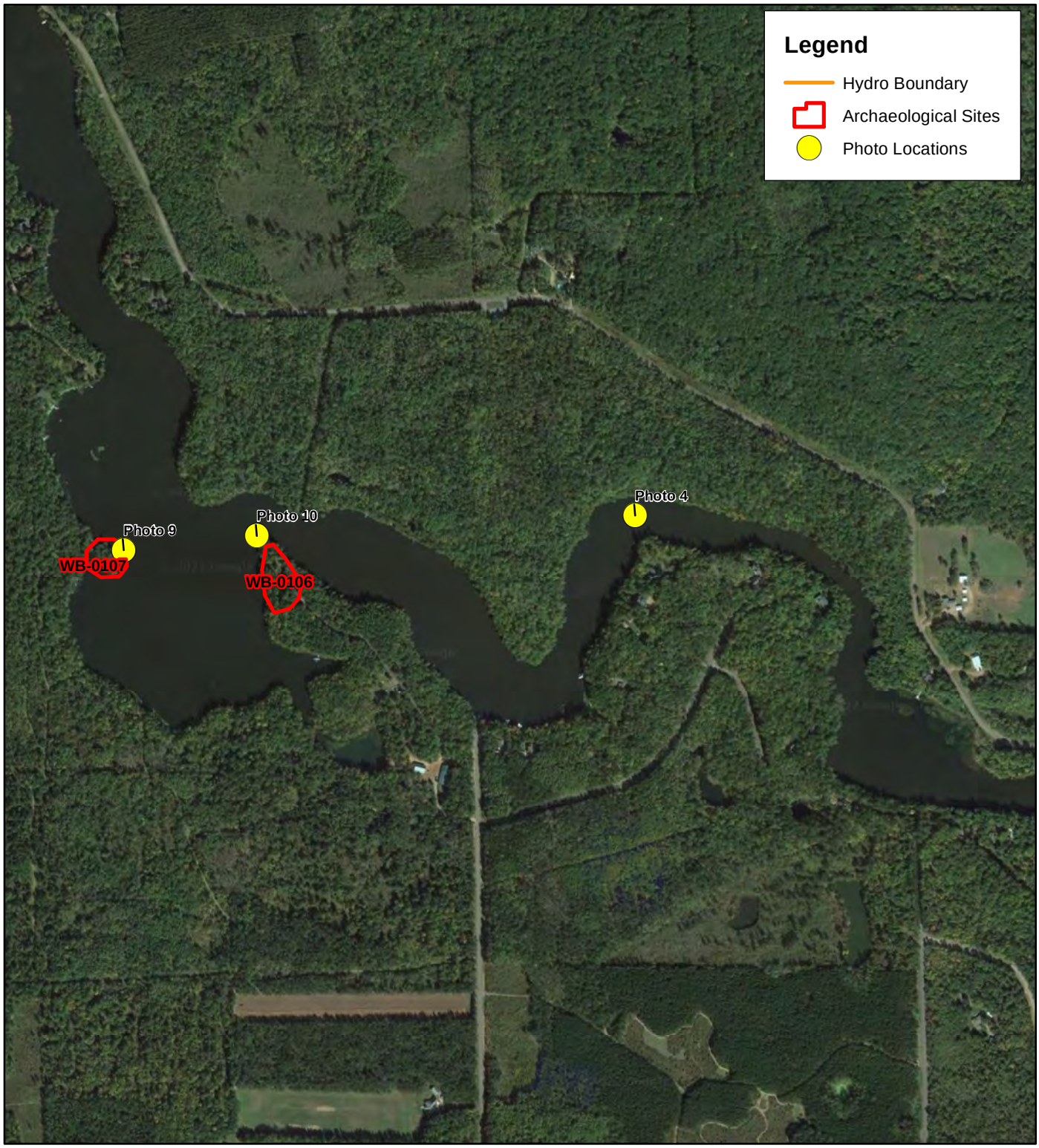

BASE MAP FROM GOOGLE IMAGERY PRO & PARTNERS, (2022). SITE INFORMATION OBTAINED FROM WHPD, (2022)

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TRC
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WASHBURN COUNTY, WI

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APPROVED BY:	A.VAN DYKE
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PROJ. NO.:	483156
FILE:	[rpt]_Figx_[Trego]_8x11.mxd

FIGURE 6

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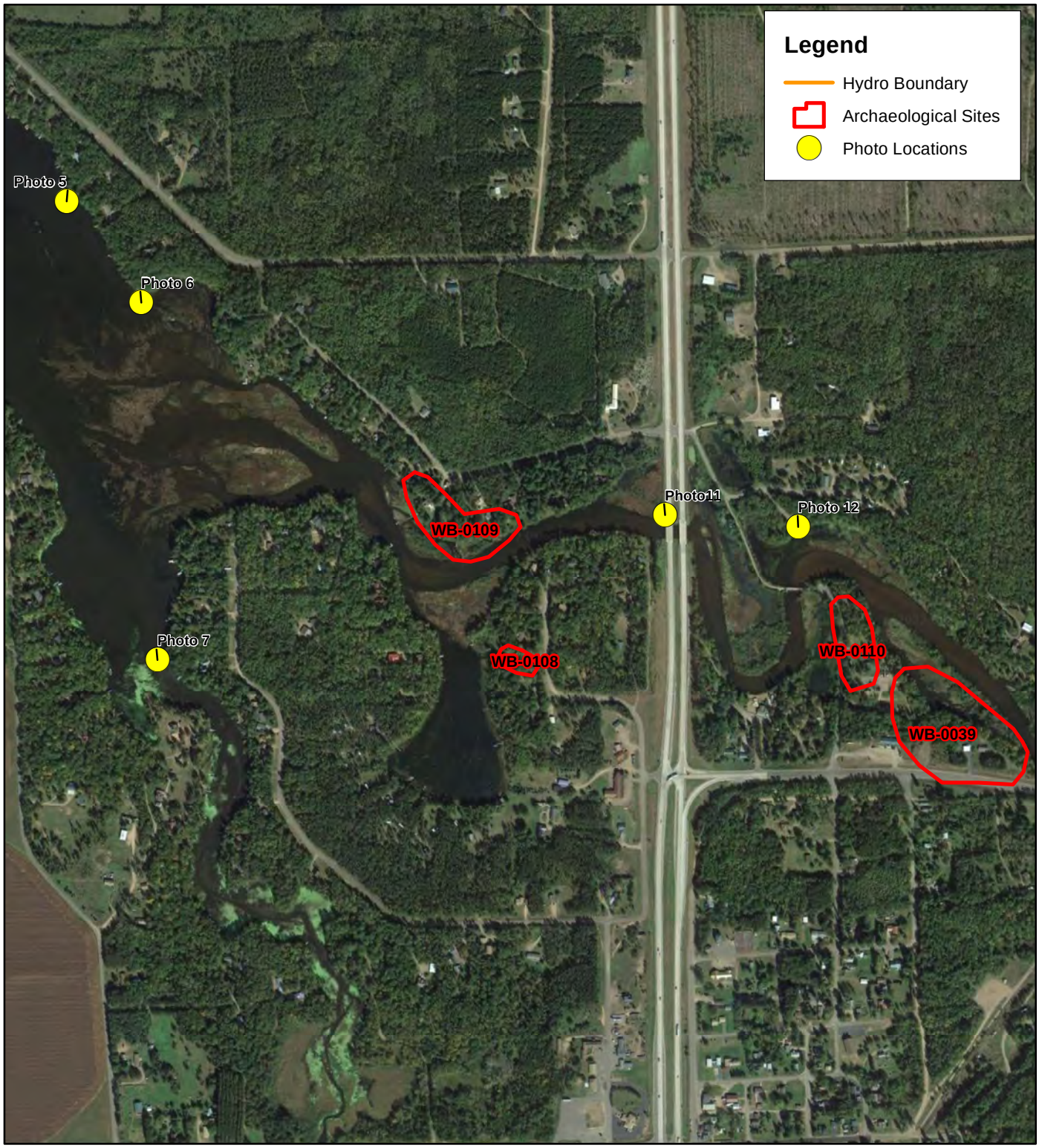

BASE MAP FROM GOOGLE IMAGERY PRO & PARTNERS, (2022). SITE INFORMATION OBTAINED FROM WHPD, (2022)

1 " = 833 '
1:10,000

0 2,000 4,000 FEET

TRC
6737 W WASHINGTON STREET
SUITE 2100
WEST ALLIS, WI 53214
PHONE: 262.879.1212
TRC - GIS

PROJECT:
XCEL ENERGY
TREGO HYDRO SURVEY
WASHBURN COUNTY, WI

TITLE:
PHOTO LOCATION MAP

DRAWN BY:	A.MCMAHON
CHECKED BY:	R.KLABACKA-WILLIAMS
APPROVED BY:	A.VAN DYKE
DATE:	OCTOBER 2022
PROJ. NO.:	483156
FILE:	[rpt]_Figx_[Trego]_8x11.mxd

FIGURE 7

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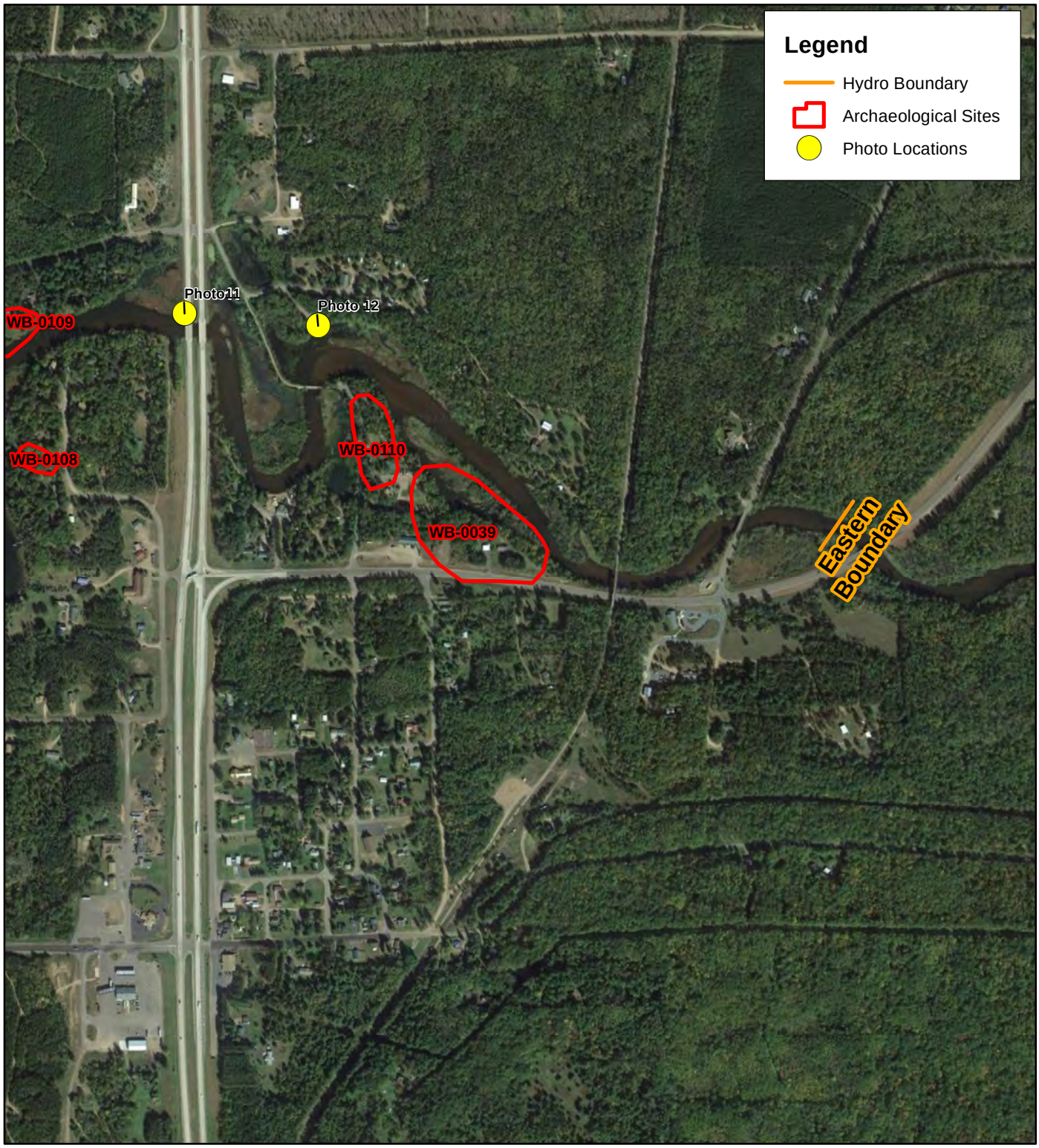

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FIGURE 8

P:\ARCHAEOLOGY\TRC\Project by Client\Mead & Hunt\2022\Trego and Hayward Hydros\Trego\Trego GIS\[rpt]_Figx_[Trego]_8x11.mxd -- Saved By: <ACP>AMcMahon </ACP>on 9/19/2022, 09:53:59 AM

ARCHAEOLOGICAL REPORTS INVENTORY FORM

WHS PROJECT # N/A COUNTY Washburn

AUTHORS: Van Dyke, A.P. & R. Klabacka-Williams

REPORT TITLE: Shoreline Monitoring of Archaeological Sites and Erosion Check on the Trego ~~Hydr~~oelectric Project (FERC No. 2711

DATE OF REPORT (MONTH AND YEAR): 11/2022

SERIES/NUMBER: WIARC# 287

PLACE OF PUBLICATION: West Allis, WI

LOCATIONAL INFORMATION [LEGAL DESCRIPTION OF SURVEY AREA (T-R-S)]
40N, 12W, 17, 20, 28, 29, 34, 35. various quarter sections.

U.S.G.S. QUAD MAP(S): Dunn Lake 7.5, Trego 7.5,

SITE(S) INVESTIGATED: WB-39, 105, 106, 107, 108, 109, 110,

ACRES INVESTIGATED: N/A AGENCY # FERC

INVESTIGATION TECHNIQUES COMPLETED (Check all that apply.)

■ Historical Research	■ Surface Survey	☐ Geomorphology
☐ Interview/Informant	☐ Soil Core	☐ Underwater
■ Records/Background	■ Walk Over/Visual Inspection	☐ Avocational Survey
■ Literature Background Research	☐ Mechanical Stripping	☐ Chance Encounter
☐ Traditional Knowledge	☐ Test Excavation/Phase II	☐ Osteological Analysis
■ Monitoring	☐ Major Excavation/Phase III	☐ Faunal Analysis
☐ Shovel Testing/Probing	☐ Remote Sensing	☐ Floral Analysis

ABSTRACT: ■ Included in report ☐ Written in space below

Please use this number when referring to this permit

No.: 2022-12

DI Form 1991 (Rev Jan 2008)
for use with DI Form 1926

United States Department of the Interior

PERMIT FOR ARCHEOLOGICAL INVESTIGATIONS

To conduct archeological work on Department of the Interior lands and Indian lands under the authority of:

- ☑ The Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm) and its regulations (43 CFR 7).
- ☐ The Antiquities Act of 1906 (P.L. 59-209; 34 Stat. 225, 16 U.S.C. 431-433) and its regulations (43 CFR 3).
- ☐ Supplemental regulations (25 CFR 262) pertaining to Indian lands.
- ☐ Bureau-specific statutory and/or regulatory authority: _____

_____

1. Permit issued to TRC	2. Under application dated 6/10/2022
3. Address 6737 W. Washington St. Suite 2100 Milwaukee, WI 53214	4. Telephone number(s) (262) 225-5105 (cell) 5. E-mail address(es) avandyke@trccompanies.com

6. Name of Permit Administrator Allen Van Dyke Telephone number(s): (262) 225-5105 (cell) Email address(es): avandyke@trccompanies.com	7. Name of Principal Investigator(s) Allen Van Dyke Telephone number(s): (262) 225-5105 (cell) Email address(es): avandyke@trccompanies.com
8. Name of Field Director(s) authorized to carry out field projects Rachel Klabacka-Williams	Telephone number(s): (262) 225-5105 (cell) Email address(es): rklabacka@trccompanies.com

9. Activity authorized: This permit authorizes TRC to conduct an on-the-ground survey of documented archeological site locations along the Trego Lake shoreline, and to identify any erosional areas, to determine if artifacts are exposed at the bank/shoreline. Results will be documented and used to determine if archeological sites are being affected by normal operation of the Trego Hydroelectric Project.

10. On lands described as follows: The NPS-owned federal lands in the Trego Hydroelectric Project are in the NW¼ of section 28 and the NE¼ section 29, T40N, R12W, Trego Township, Washburn County, Wisconsin. Parcel IDs: 65-042-2-40-12-28-2-1-0010; 65-042-2-40-12-28-2-1-0010; 65-042-2-40-12-28-2-2-0010; 65-042-2-40-12-28-2-3-0010; 5-042-2-40-12-29-1-1-0010; and 65-042-2-40-12-29-1-2-0010. A map is included with the application.

11. During the duration of the project From July 25, 2022 To December 31, 2022

12. Name and address of the curatorial facility in which collections, records, data, photographs, and other documents resulting from work under this permit shall be deposited for permanent preservation on behalf of the United States Government.

Midwest Archeological Center, 100 Centennial Mall North, Federal Bldg Room 474, Lincoln, NE 68508

13. Permittee is required to observe the listed standard permit conditions and the special permit conditions attached to this permit.

14. Signature and title of approving official HERBERT FROST Digitally signed by HERBERT FROST Date: 2022.07.20 12:17:35 -05'00' Regional Director	15. Date 20 July 2022

15. Standard Permit Conditions

a. This permit is subject to all applicable provisions of 43 CFR Part 3, 43 CFR 7, and 25 CFR 262, and applicable departmental and bureau policies and procedures, which are made a part hereof.

b. The permittee and this permit are subject to all other Federal, State, and local laws and regulations applicable to the public lands and resources.

c. This permit shall not be exclusive in character, and shall not affect the ability of the land managing bureau to use, lease or permit the use of lands subject to this permit for any purpose.

d. This permit may not be assigned.

e. This permit may be suspended or terminated for breach of any condition or for management purposes at the discretion of the approving official, upon written notice.

f. This permit is issued for the term specified in 11 above.

g. Permits issued for a duration of more than one year must be reviewed annually by the agency official and the permittee.

h. The permittee shall obtain all other required permit(s) to conduct the specified project.

i. Archeological project design, literature review, development of the regional historic context framework, site evaluation, and recommendations for subsequent investigations must be developed with direct involvement of an archeologist who meets the Secretary of the Interior's Standards for Archeology and Historic Preservation; fieldwork must be generally overseen by an individual who meets the Secretary of the Interior's Standards for Archeology and Historic Preservation.

j. Permittee shall immediately request that the approving official (14. above) make a modification to accommodate any change in an essential condition of the permit, including individuals named and the nature, location, purpose, and time of authorized work, and shall without delay notify the approving official of any other changes affecting the permit or regarding information submitted as part of the application for the permit. Failure to do so may result in permit suspension or revocation.

k. Permittee may request permit extension, in writing, at any time prior to expiration of the term of the permit, specifying a limited, definite amount of time required to complete permitted work.

l. Any correspondence about this permit or work conducted under its authority must cite the permit number. Any publication of results of work conducted under the authority of this permit must cite the approving bureau and the permit number.

m. Permittee shall submit a copy of any published journal article and any published or unpublished report, paper, and manuscript resulting from the permitted work (apart from those required in items q. and s., below), to the approving official and the appropriate official of the approved curatorial facility (item 12 above).

n. Prior to beginning any fieldwork under the authority of this permit, the permittee, following the affected bureau's policies and procedures, shall contact the field office manager responsible for administering the lands involved to obtain further instructions.

o. Permittee may request a review, in writing to the official concerned, of any disputed decision regarding inclusion of specific terms and conditions or the modification, suspension, or revocation of this permit, setting out reasons for believing that the decision should be reconsidered.

p. Permittee shall not be released from requirements of this permit until all outstanding obligations have been satisfied, whether or not the term of the permit has expired. Permittee may be subject to civil penalties for violation of any term or condition of this permit.

15. Standard Permit Conditions (continued)

q. Permittee shall submit a preliminary report to the approving official within a timeframe established by the approving official, which shall be no later than 6 weeks after the completion of any episode of fieldwork, setting out what was done, how it was done, by whom, specifically where, and with what results, including maps, GPS data, an approved site form for each newly recorded archeological site, and the permittee's professional recommendations, as results require. If other than 6 weeks, the timeframe shall be specified in Special Permit Condition p. Depending on the scope, duration, and nature of the work, the approving official may require progress reports, during or after the fieldwork period or both, and as specified in Special Permit Condition r.

r. Permittee shall submit a clean, edited draft final report to the agency official for review to insure conformance with standards, guidelines, regulations, and all stipulations of the permit. The schedule for submitting the draft shall be determined by the agency official.

s. Permittee shall submit a final report to the approving official not later than 180 days after completion of fieldwork. Where a fieldwork episode involved only minor work and/or minor findings, a final report may be submitted in place of the preliminary report. If the size or nature of fieldwork merits, the approving official may authorize a longer timeframe for the submission of the final report as specified in Special Permit Condition q.

t. Two copies of the final report, a completed NTIS Report Documentation Page (SF-298), available at http://www.ntis.gov/pdf/rdpform.pdf, and a completed NADB-Reports Citation Form, available at http://www.cr.nps.gov/aad/tools/nadbform_update.doc, will be submitted to the office issuing the permit.

u. The permittee agrees to keep the specific location of sensitive resources confidential. Sensitive resources include threatened species, endangered species, and rare species, archeological sites, caves, fossil sites, minerals, commercially valuable resources, and sacred ceremonial sites.

v. Permittee shall deposit all artifacts, samples and collections, as applicable, and original or clear copies of all records, data, photographs, and other documents, resulting from work conducted under this permit, with the curatorial facility named in item 12, above, not later than 90 days after the date the final report is submitted to the approving official. Not later than 180 days after the final report is submitted, permittee shall provide the approving official with a catalog and evaluation of all materials deposited with the curatorial facility, including the facility's accession and/or catalog numbers.

w. Permittee shall provide the approving official with a confirmation that museum collections described in v. above were deposited with the approved curatorial facility, signed by an authorized curatorial facility official, stating the date materials were deposited, and the type, number and condition of the collected museum objects deposited at the facility.

x. Permittee shall not publish, without the approving official's prior permission, any locational or other identifying archeological site information that could compromise the Government's protection and management of archeological sites.

y. For excavations, permittee shall consult the OSHA excavation standards which are contained in 29 CFR §1926.650, §1926.651 and §1926.652. For questions regarding these standards contact the local area OSHA office, OSHA at 1-800-321-OSHA, or the OSHA website at http://www.osha.gov.

z. Special permit conditions attached to this permit are made a part hereof.

16. Special Permit Conditions

☑ a. Permittee shall allow the approving official and bureau field officials, or their representatives, full access to the work area specified in this permit at any time the permittee is in the field, for purposes of examining the work area and any recovered materials and related records.

☑ b. Permittee shall cease work upon discovering any human remains and shall immediately notify the approving official or bureau field official. Work in the vicinity of the discovery may not resume until the authorized official has given permission.

☐ c. Permittee shall backfill all subsurface test exposures and excavation units as soon as possible after recording the results, and shall restore them as closely as reasonable to the original contour.

☐ d. Permittee shall not use mechanized equipment in designated, proposed, or potential wilderness areas unless authorized by the agency official or a designee in additional specific conditions associated with this permit.

☐ e. Permittee shall take precautions to protect livestock, wildlife, the public, or other users of the public lands from accidental injury in any excavation unit.

☐ f. Permittee shall not conduct any flint knapping or lithic replication experiments at any archeological site, aboriginal quarry source, or non-site location that might be mistaken for an archeological site as a result of such experiments.

☑ g. Permittee shall perform the fieldwork authorized in this permit in a way that does not impede or interfere with other legitimate uses of the public lands, except when the authorized officer specifically provides otherwise.

☑ h. Permittee shall restrict vehicular activity to existing roads and trails unless the authorized officer provides otherwise.

☑ i. Permittee shall keep disturbance to the minimum area consistent with the nature and purpose of the fieldwork.

☑ j. Permittee shall not cut or otherwise damage living trees unless the authorized officer gives permission.

☑ k. Permittee shall take precautions at all times to prevent wildfire. Permittee shall be held responsible for suppression costs for any fires on public lands caused by the permittee's negligence. Permittee may not burn debris without the authorized officer's specific permission.

☑ l. Permittee shall conduct all operations in such a manner as to prevent or minimize scarring and erosion of the land, pollution of the water resources, and damage to the watershed.

☑ m. Permittee shall not disturb resource management facilities within the permit area, such as fences, reservoirs, and other improvements, without the authorized officer's approval. Where disturbance is necessary, permittee shall return the facility to its prior condition, as determined by the authorized officer.

☑ n. Permittee shall remove temporary stakes and/or flagging, which the permittee has installed, upon completion of fieldwork.

☑ o. Permittee shall clean all camp and work areas before leaving the permit area. Permittee shall take precautions to prevent littering or pollution on public lands, waterways, and adjoining properties. Refuse shall be carried out and deposited in approved disposal areas.

☐ p. Permittee shall submit the preliminary report within _____ days/weeks of completion of any episode of fieldwork..

☐ q. Permittee shall submit the final report within _____ days/weeks/months after completion of fieldwork..

☐ r. Permittee shall submit progress reports every _____ months over the duration of the project.

☑ s. Additional special permit conditions are attached.

Special Permit Conditions Continuation Sheet

- Permittee shall have a signed copy of the permit in possession at all times while conducting archeological work at SACN.
- SACN Cultural Resources Program Manager Jonathan Moore is the park's point of contact for this project (email: jonathan_moore@nps.gov, phone: 715-491-6839); please contact prior to initiating fieldwork.
- No certification of a collections repository is necessary as all artifacts will be returned to NPS for curation.
- All original project records (including 35 mm photographs, digital image files, archeological data, field notes, forms, maps, drawing, and other related project material) and artifacts obtained from National Park Service lands during this project are the property of the National Park Service and must be submitted to the Midwest Archeological Center, Lincoln, NE, where they will be curated. Field and laboratory records generated as part of the project must be on archival-quality materials whenever possible, photographs must be accompanied by a corrected photo log that describes the subject matter of each photograph, and digital data must be submitted with associated metadata.
- Geospatial data will be submitted in a format compatible with ESRI ARCGIS 10.8 and with complete metadata following NPS data transfer standards. The MWAC Cultural Resource data transfer standards attribute guidance for submitting geospatial data will be provided to the permittee.
- Artifacts of each different analytical category (typically provenience, material, and specific type of object) should be placed in separate self-sealing polyethylene bags with their corresponding provenience information. All artifacts in a bag must have the same recorded field provenience. Artifacts of different materials may not be mixed in a bag (for example, ceramics and stone may not be in the same bag). Archival artifact cards for recordation of provenience and other identifying artifact information are available from the Midwest Archeological Center if desired. These standardized artifacts cards have fields that correspond with entries in the National Park Service cataloging program.
- The permittee is responsible for washing, sorting, identifying, and developing an inventory of artifacts collected from the investigations. The permittee shall consult with the Midwest Archeological Center about cataloging the collection and the conclusion of the fieldwork. Please contact MWAC Manager Ann Bauermeister (402-437-5392 ext 140, ann_bauermeister@nps.gov) to discuss.
- The report authors shall use the “Midwest Archeological Center Report Classification Guidelines” to determine if the report contains sensitive archeological site location information that must be restricted, and properly label the cover, title page, and figures with language provided in the guidelines. A copy of the guidelines will be provided by MWAC.

By signing below, I, the Principal Investigator, acknowledge that I have read and understand the Permit for Archeological Investigations and agree to its terms and conditions as evidenced by my signature below and initiation of work or other activities under the authority of this permit.

Signature and title:	Date:

Paperwork Reduction Act and Estimated Burden Statement: This information is being collected pursuant to 16 U.S.C. 470cc and 470mm, to provide the necessary facts to enable the Federal land manager (1) to evaluate the applicant's professional qualifications and organizational capability to conduct the proposed archeological work; (2) to determine whether the proposed work would be in the public interest; (3) to verify the adequacy of arrangements for permanent curatorial preservation, as United States property, of specimens and records resulting from the proposed work; (4) to ensure that the proposed activities would not be inconsistent with any management plan applicable to the public lands involved; (5) to provide the necessary information needed to complete the Secretary's Report to Congress on Federal Archeology Programs; and (6) to allow the National Park Service to evaluate Federal archeological protection programs and assess compliance with the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470). Submission of the information is required before the applicant may enjoy the benefit of using publicly owned archeological resources. To conduct such activities without a permit is punishable by felony-level criminal penalties, civil penalties, and forfeiture of property. A federal agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. Public reporting for this collection of information is estimated to average three hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Departmental Consulting Archeologist; NPS; 1849 C Street, NW (2275); Washington, DC 20240-0001.

APPENDIX E-33 WDNR 1989 Sediment Study Report

1989 DNR Study without charts + maps - They didn't copy well

INTRODUCTION

The upper reaches of the Trego Flowage, Washburn Co., has shallowed from the accumulation of sediment causing access and use problems for riparians.

In response to requests by the Trego Lake Association and State Senator Robert Jauch, the Department of Natural Resources evaluated the nature of the sedimentation problem on Trego Flowage, the sources of the sediment reaching the flowage, and alternatives available to deal with the problems.

Data collected specifically for this study included 9 inlake sediment samples - to characterize the sediment accumulated in the lake, 45 depth transects - to define present flowage volumes, and 2 ground-penetrating radar transects - to describe the stratigraphy of accumulated sediment.

Summaries of Previous Aquatic Plant and Sedimentation Studies on Trego Flowage

Wisconsin Hydro Electric Company Permit Materials - 1923-1927

Original approval materials were submitted to the Wisconsin Railroad Commission for construction of the flowage between 1923 and 1927. This material included surveys of the area to be flowed and construction details on the dam. Information is on file at the Department of Natural Resources Bureau of Water Regulation and Zoning in Madison. Of note is the availability of the original gradients and channel configuration of the Namekagon River with a portion of the map shown in Figure 1.

DNR Internal Memorandum on Flowage Drawdown - 1979

An 11 foot drawdown of the flowage was conducted during November and December of 1978 by Northern States Power Company to facilitate repairs to the dam. The Department used the drawdown as an opportunity to evaluate the affects it had on flowage basin morphometry and aquatic plant communities.

The early winter drawdown caused the upper end of the flowage to deepen with water volume increasing by approximately 13 acre-feet (21,000 cubic yards). The drawdown steepened channel gradients, increased river velocities, and resulted in greater streamflow sediment carrying capacities. Sediment which had been deposited in the inlet area was significantly scoured by the drawdown. The

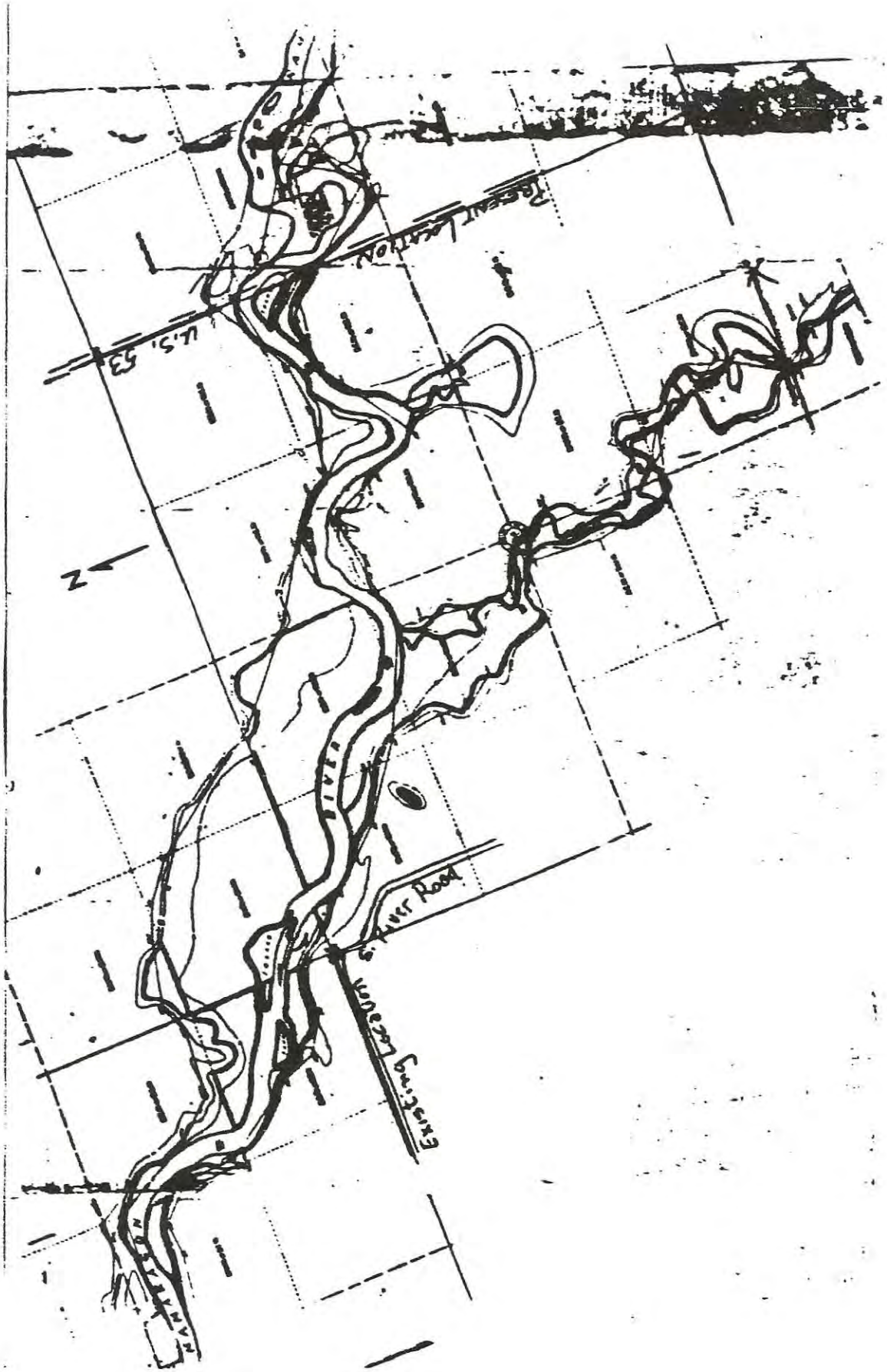


FIGURE 1. Namekagon River Channel Location, 1925.

stream channel closely returned to the configuration existing prior to dam construction in 1927.

In addition to the scouring, sediment was translocated from the inlet area by water level manipulations which allowed lake bottom sediments and plants to freeze into the lake ice. This sediment/ice mixture was then resuspended by raising water levels. Most of this resuspended material and virtually all of the coarser material directly scoured by the drawdown appears to have been retained in the lower reaches of the flowage. The partial drawdown appeared to affect only the upper reaches of the flowage where parts of the inlet were deepened and rooted plants were controlled for a period of a few years.

Sedimentation Study Engineering Report - 1988

Ripley Engineering Services, Inc. conducted a preliminary engineering evaluation of the sedimentation problem. As part of this study a 4 foot drawdown of the flowage was conducted to determine the extent of the sedimentation problem. Low level aerial photography visually documented the infilling of the inlet area that has occurred since the 1978 drawdown.

The report recommendations included dredging approximately 40,000 cubic yards of accumulated sediment from the inlet area and construction of a sediment trapping device above the lake. It also recommended that more detailed studies of the watershed be conducted to identify watershed sediment sources which are being deposited in the inlet area.

Corps of Engineers, Technical Paper - 1988

A field investigation of the sediment and aquatic plant problems on Trego Lake was conducted in May, 1988 by Corps of Engineers personnel from the Vicksburg, Mississippi Waterways Experiment Station and the St. Paul, Minnesota Regional Office. The reconnaissance study evaluated the nature of the inlake sedimentation problem, the source of sediments, and the mechanisms creating the problems.

The Corps evaluation concluded that river borne sediments are principally derived from natural sources although there was some concern for erosion problems caused by lumbering activities in the watershed.

The proposal to construct a sediment trap immediately above the lake was also discussed. The sediment trapping concept, which would have required an instream structure and constant maintenance, was thought not to be cost-effective.

The availability of Corp Aquatic Plant Control programs was mentioned but their use at Trego was determined to be unlikely

because of the limited scope of the problem area and the small number of properties affected.

EXISTING CONDITIONS

Flowage Development - Trego Flowage is an impoundment of the Namekagon River near Trego Wisconsin (Figure 2). A dam was constructed on the river in 1927 by the Wisconsin Hydro Electric Company to provide electricity to the Spooner area. The 31 foot head dam impounded an area of 470 acres and produced a long, narrow waterbody having 18 miles of shoreline. Approximately 120 homes, cottages, and resorts have been constructed adjacent to the flowage with development comprising 25% of the shoreline. The flowage and Namekagon River, upstream of the lake, are included in the St. Croix National Scenic Riverway system, the area meeting national criteria that it possess outstanding scenic and recreational value.

Inlake Water Quality - The existing water quality of Trego Flowage is very good. Nutrient levels are generally low, with total phosphorus concentrations averaging approximately 0.02 mg/l. Generally rooted aquatic plant densities are moderate to low, with exception being in the upper lake area shallow water depths and organic sediments create good conditions for aquatic plant growth.

Watershed Condition and River Morphology - The Namekagon at the Trego dam drains an area of 488 square miles (Figure 3). Most of the flowage's watershed is well protected forest land and experiences few of the typical nonpoint source pollutional problems that plague many of Wisconsin's lakes. Silviculture, recreational based industries, and some agriculture comprise land uses within the watershed.

The pitted and outwashed watershed has a complex geologic history, having been repeatedly glaciated and subjected to extensive river migration, meandering, braiding, and headward erosion. Soils in the watershed are predominently windblown sand deposits (loess) comprised mostly of clean, medium to coarse grained, material.

Presently the Namekagon river carries very low quantities of sediment compared to other, similar sized Wisconsin river systems. Eleven measurements of suspended sediment concentrations made between 1978 and 1983 by the U.S. Geological Survey in the river above the flowage, showed concentrations averaging 4 mg/l. This compares to an average suspended sediment concentration in Wisconsin rivers of 157 mg/l. These very low concentrations are consistent with the nature of this well protected river and watershed system.

The sediment that is carried by the system also appears to be

generated from mostly natural processes. The Namekagon River above the flowage is undergoing a natural transition from a meandering to a braided river system. Such river developments result in the undercutting of banks, slumping of unsupported banks, and subsequent transport of the eroded material downstream. Streambed erosion is also a source of sediment to the river but is limited in most of the stream reaches by an armored riverbed. Streambottom cobbles, boulders, and pea-gravel protect much of the finer, easily erodible, underlying material from erosion and downstream transport.

Although watershed soil loss is minimal, timber cutting on sloped land near tributary channels and construction activities that expose soils contribute some sediment to the system. River bank erosion is also being accelerated by the recreational use of the system where human traffic on exposed streambanks causes bank slumping. The steepest and most severely eroded area observed is the river bank used by recreationalists northeast of Earl.

INLAKE SEDIMENTATION

The sedimentation process occurring in the upper end of the lake has been ongoing since the flowage was initially constructed in 1927. When the hydraulic gradients and sediment carrying capacity of the Namekagon were reduced by the flowage construction, heavier, sand sized particles were dropped out of suspension and deposited in the inlet area of the flowage. Sedimentation probably began to cause problems even in the 1930's, although most concerns began to surface during the 1970's. Following the 1978 drawdown for dam repairs the inlet areas problems were reduced for several years, but have resurfaced again as sediment redeposited in areas previously scoured.

A component of this survey was to estimate sediment infilling rates to help define the scope of watershed erosion problems and to aid in predicting the longevity of a potential future sediment removal project. Direct measurements of sediment loads were beyond the scope of this survey. Indirect estimates were attempted utilizing changes in flowage volumes over time.

Original (pre 1927) channel configurations were available from DNR permit files. In 1978 depth data was obtained in the inlet area to document conditions existing prior to the drawdown. Post drawdown conditions were documented in 1979 (Figure 4). As part of this survey, 45 lake depth cross-sections (Figure 5) were collected on the flowage to document existing (1988) water volumes.

Transects of the inlet area were compared to post-drawdown conditions (Figures 6A thru 6D). It can be seen that in portions of cross-sections 5 and 6 up to 4 feet of sediment has accumulated

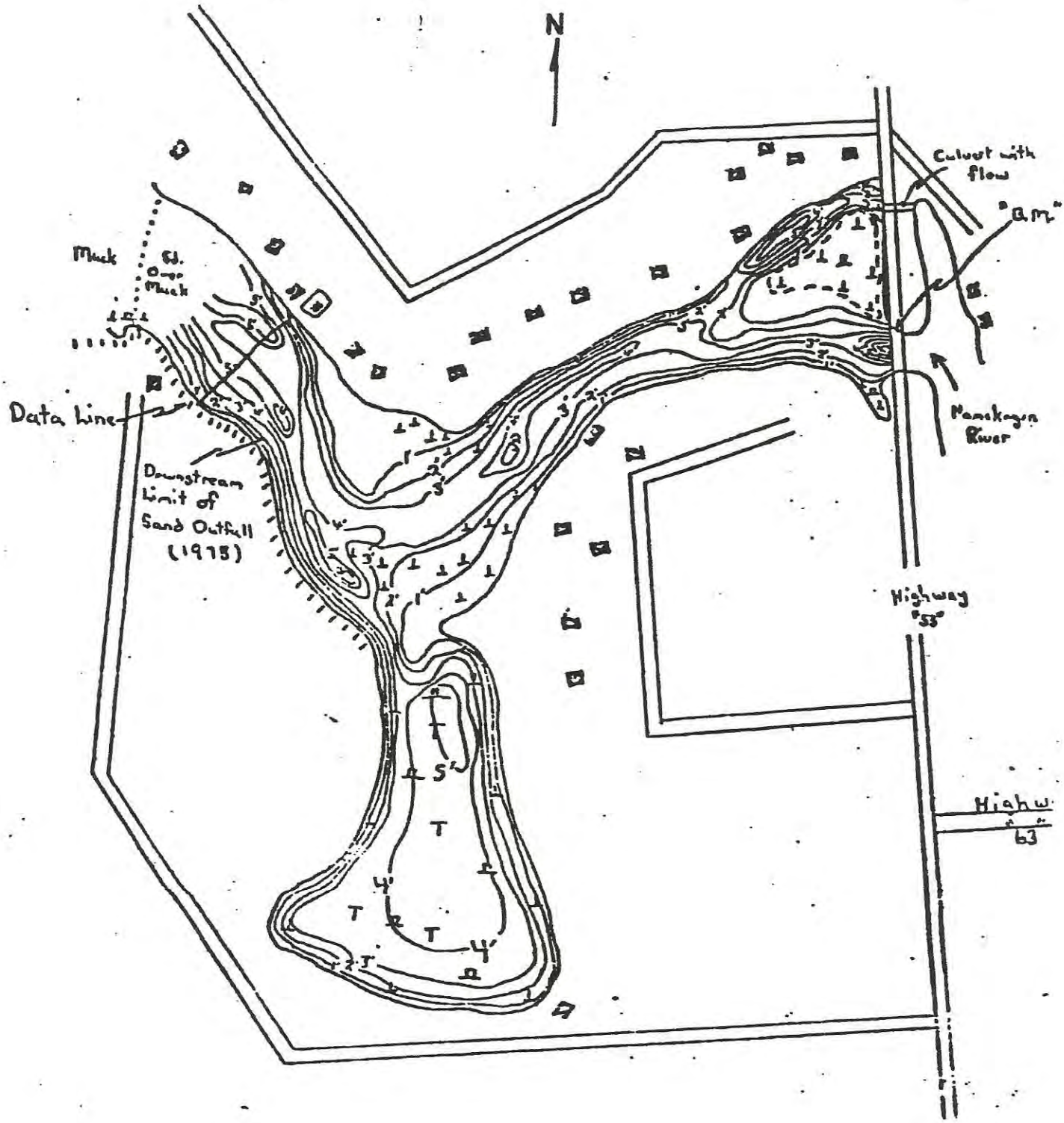


FIGURE 4. Trego Flowage Inlet Morphometry, 1979.

Trego Flowage

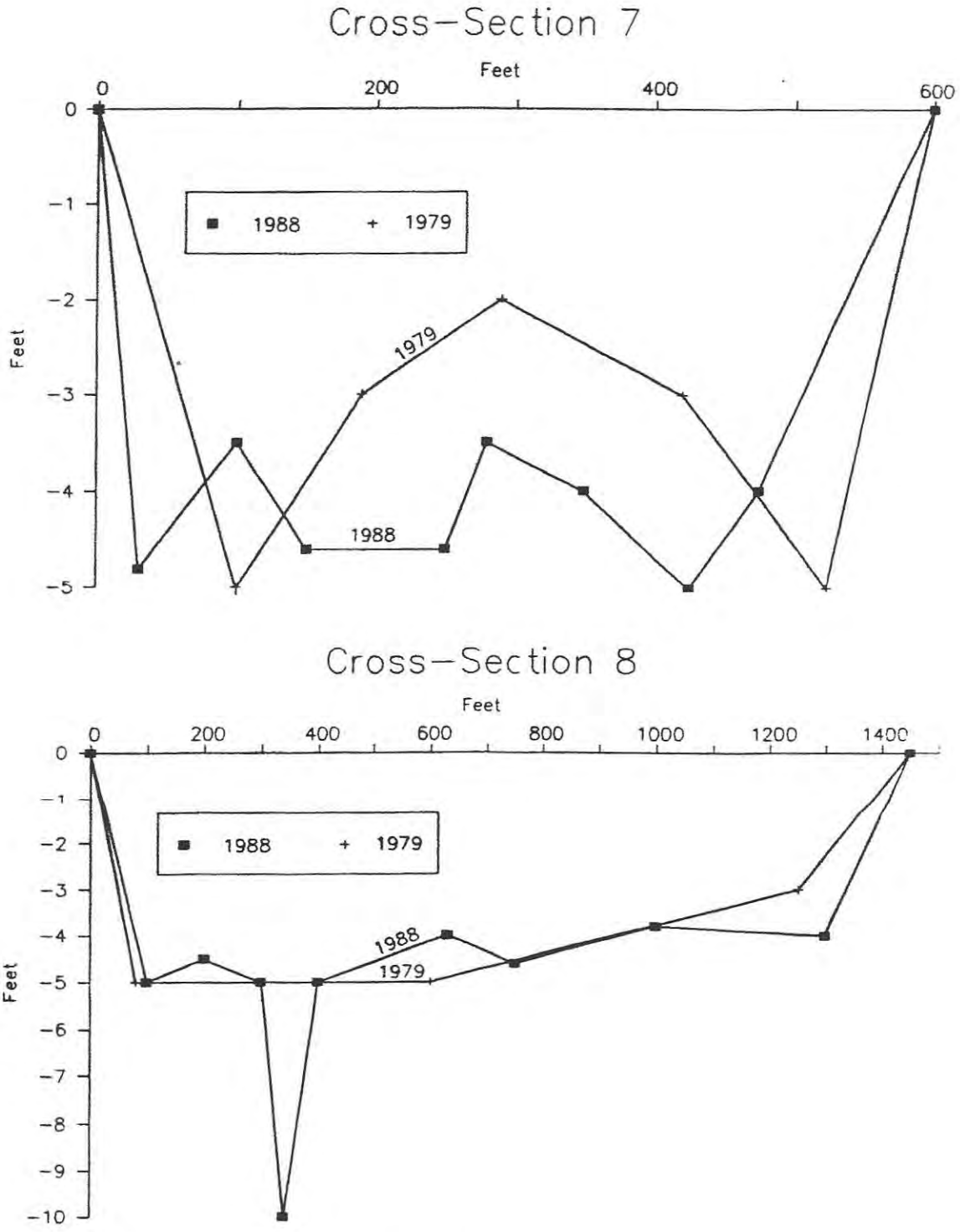


FIGURE 6-D. Trego Flowage Inlet Area Depth Profiles, 1979 and 1988.

since the 1978 drawdown. At cross-sections 1 and 7, lake depths have actually increased. Water depths have changed little at the others. Lake volumes between cross-sections 1 and 7 were calculated to be 46 acre-feet in 1978 and 46 acre-feet in 1988, showing no overall changes. As a note of caution, the comparisons presented here are not exact duplications of the 1978 transects since this information was not available nor are the effects of the recent 4 foot drawdown known. Therefore any comparisons and conclusions drawn from this data must be tempered by this fact and viewed as approximations.

Depth comparisons with the original (1925) survey information suggests that between 3 and 8 feet of sediment has accumulated in the upper most 15 acre inlet area between 1927 and 1988.

To estimate infilling rates it was assumed that an average of 6 feet of coarse grained sediment has accumulated of sediment has occurred in the 15 acre inlet area (145,000 cubic yards) since 1927. If deposited at a uniform rate over the 70 year period than 2000 cubic yards are accumulating in the flowage each year.

Below cross-section 7 very little additional sediment appears to have accumulated, although probing of the sediments during this study documented the presence of a 6 inch thick layer of sand sized material overlaying peat as far west as the Potato Creek inlet area. Presumably this is some of the material which had been scoured and redeposited by the 1978 drawdown.

The use of ground penetrating radar identified that prior to its being flowed, the former river fringe areas which now are the upper bay area of the flowage were low lying meadows having organic soils. A transect of the upper bay showed approximately 4 to 5 feet of varied density material has overlain the valleys original glacial deposits. Sediment samples collected as part of this study (Table 1 and Figure 7) show the upper layer of bottom sediments below the Potato Creek inlet area to be of organic origin. The lower deposits appear to be event deposited, having accumulated as a result of 4 to 6 major hydrologic events since the last period of glaciation 12,000 years ago. Recent accumulations of organic material appear to be low; a few inches or less.

These rates of infilling, when compared to rates observed in other Wisconsin impoundments, are extremely low but yet is consistent with the nature of this particular river system and it's well protected watershed. For example, approximately 110,000 cubic yards of sediment are deposited each year in Lake Altoona, near Eau Claire, Wisconsin by the Eau Claire River. The Eau Claire drains a 827 square mile watershed, approximately twice the size of the Namekagon, yet deposits more than 50 times the quantity of sediment than the Namekagon.

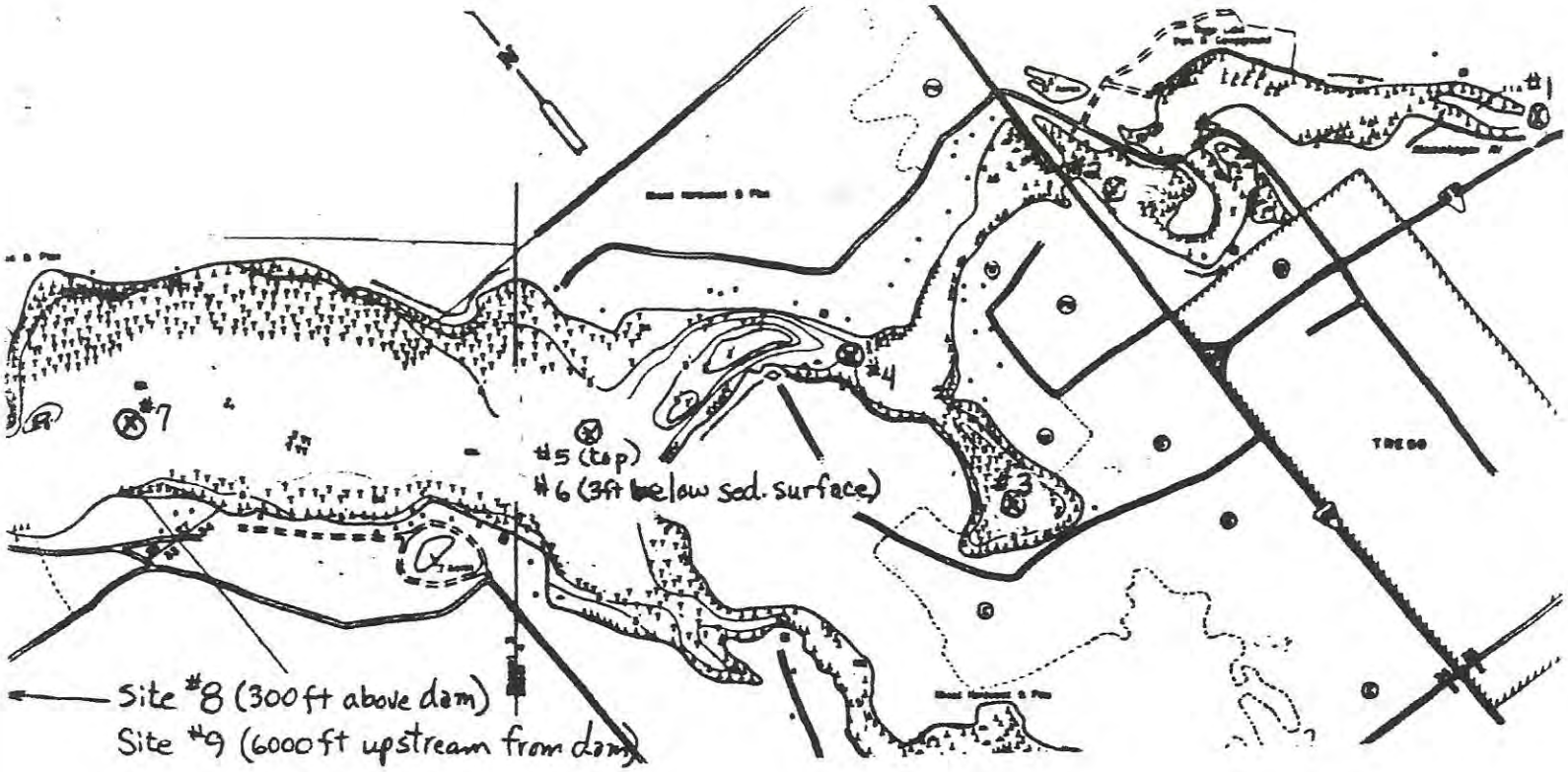


FIGURE 7. Site Locations for Sediment Samples.

Site ID	% Gravel	% Sand Very Coarse	% Sand Coarse	% Sand Medium	% Sand Fine	% Sand Very Fine	Silt & Clay	% Ash
1	1.8	4.3	13.8	54.3	25.3	0.2	0.3	99.4
2	0.0	1.1	16.1	63.0	18.9	0.3	0.6	99.2
3	2.1	4.3	15.8	31.2	17.8	1.3	29.6	88.1
4	1.0	7.4	29.6	49.2	11.3	0.5	1.0	99.2
5	0.0	0.0	0.2	2.6	14.2	20.8	62.2	67.3
6	4.6	5.6	12.2	19.4	27.2	13.4	17.6	94.9
7	0.0	0.0	0.2	0.4	2.2	1.8	95.4	59.2
8	0.0	0.0	0.3	1.5	0.3	0.3	97.6	70.5
9	0.0	0.0	0.2	0.2	0.6	0.4	98.6	58.4

TABLE 1. Sediment Characteristics.

MANAGEMENT ALTERNATIVES

Do Nothing

As described earlier, the Namekagon River system is undergoing a natural transition from a meandering to a braided river system. In this process banks are undercut and a source of sediment is provided to the system. This coarse grained material is transported to the headwaters area of the flowage and is deposited in backwater areas where hydraulic gradients have decreased. Ultimately sediment will completely fill the flowage until only a stream channel remains. At the present rate of deposition the flowage will be completely filled by the year 4000.

By taking no action access problems in the inlet area will continue to become worse and rooted aquatic plant densities in the upper bay will increase, further limiting use of the resource.

Watershed Protection

Sediment loads carried by the Namekagon are extremely low, implying that measures to reduce loads even further will be difficult. Even in situations where streambank erosion delivers significant quantities of sediment, as it does at Lake Altoona, streambank protection measures are often determined to not be cost-effective as it was recently documented for the Eau Claire River. It does not appear that a broad-based watershed improvement project is warranted at this time in the Namekagon basin.

However, control of some of the heavily used human access sites such as the one near Earl would be warranted. Similarly geneneral protection measures should be implemented to prevent future sediment delivery to the system. For example, buffer strips along stream channels should be maintained and the cutting of timber on steep slopes needs to be done carefully to minimize sediment loss.

Sediment Removal

Physical removal of sediment which has accumulated in the lake's inlet area is an alternative that would provide relief to local property owners and improve overall accessability. Sediment removal projects have been completed on many Wisconsin flowages in the past using both conventional mechanical methods, where the lake is first drawn down, or by hydraulic methods where lake level is maintained and material is removed by a floating dredge. The advantage of physically removing the material is the project can be very focused, removing only that sediment causing problems.

The recently completed engineering study on the lake suggested removing between 3 to 4 feet of problem sediment from a 7 acre area in the inlet. Such a project would remove approximately 40,000

cubic yards of sediment and would cost between $80,000 and $200,000. At an infilling rate of approximately 2000 yards per year, the life expectancy of such a project would be 40 years.

Construction of a Sediment Trapping Facility

The concept of a sediment trap was been proposed by Ripley Engineering with the trap being located immediately upstream of the flowage. Sediment traps have been effectively used in other situations where specific circumstances have warranted. Although the concept of a trapping device at Trego has some merit there are several limitations with this situation. These include 1) the need to construct facilities to allow the regular (monthly?) maintenance of the trap by removing accumulated material, 2) maintenance of equipment to both physically remove the sediment and transport it to a disposal site, 3) the potential difficulty of obtaining approvals from the state and federal regulatory authorities given the heavy public use of the area, and 4) the fact that sediment which may not have been deposited in problem areas would also be removed as well, increasing overall costs.

Periodic Drawdown

The 11 foot drawdown completed in 1978 provided significant relief to local property owners and controlled some of the rooted aquatic plants that caused problems in the upper bay area. The drawdown increased hydraulic gradients and caused the river to scour out a new channel. The scouring, along with effects of the freezing and refilling process on adjacent organic material resulted in the removal of approximately 20,000 cubic yards of material from the inlet area.

If conducted again an 11 foot drawdown would be expected to achieve results similar to those observed in 1978, with the river tending to re-scour a channel in a location close to that of it's original course prior to flowage (Figure 1).

Although accessibility would generally be improved it is likely that in certain areas, such as that area near immediately above the resort and at a site near the mouth of the bay area opposite the resort, additional sediment would have to be physically removed to achieve desired results. In addition some change in channel configuration could be encouraged by mechanically removing sediment during the drawdown process to better direct scouring to desired areas thereby improving overall results.

Further analysis would be required to determine the optimal magnitude of a drawdown and the time period required to achieve results. However at this time it would appear that natural downstream channel controls would limit the effectiveness of any drawdown greater than 10 to 11 feet. The optimal time period would also appear to be similar to that of the 1978 drawdown when the lake was down during the month of November. This time period would

seem to cause the least amount of environmental concern and would allow some control of rooted plants through exposure and freezing.

The monetary costs of a one-month drawdown would include the loss of power generation capability by Northern States Power at the dam site hydropower facility. The estimated loss in revenues from a one month fall drawdown is $12,000.

APPENDIX E-34 WDNR Trego Project Water Quality Monitoring Data

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 1-25 of 1894 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	10/22/2022 11:30 AM	CONDUCTIVITY, UMHOS/CM @ 25C		210	UMHOS/CM		
	10/22/2022 11:30 AM	NITROGEN NH3-N DISS		0.03	MG/L		
	10/22/2022 11:30 AM	NITROGEN KJELDAHL TOTAL		0.35	MG/L		
	10/22/2022 11:30 AM	NITROGEN NO3+NO2 DISS (AS N)		ND	MG/L		
	10/22/2022 11:30 AM	PHOSPHORUS TOTAL		ND	MG/L		
	10/22/2022 11:30 AM	PHOSPHATE ORTHO DISS		ND	MG/L		
	10/22/2022 11:30 AM	CHLORIDE		4.2	MG/L		
	05/14/2022 02:00 PM	CONDUCTIVITY, UMHOS/CM @ 25C		134	UMHOS/CM		
	05/14/2022 02:00 PM	NITROGEN NH3-N DISS		0.04	MG/L		
	05/14/2022 02:00 PM	NITROGEN KJELDAHL TOTAL		0.36	MG/L		
	05/14/2022 02:00 PM	NITROGEN NO3+NO2 DISS (AS N)		0.1	MG/L		
	05/14/2022 02:00 PM	PHOSPHORUS TOTAL		0.044	MG/L		
	05/14/2022 02:00 PM	PHOSPHATE ORTHO DISS		0.005	MG/L		
	05/14/2022 02:00 PM	CHLORIDE		3.5	MG/L		
	10/28/2021 12:30 PM	CONDUCTIVITY, UMHOS/CM @ 25C		190	UMHOS/CM		
	10/28/2021 12:30 PM	NITROGEN NH3-N DISS		0.04	MG/L		
	10/28/2021 12:30 PM	NITROGEN KJELDAHL TOTAL		0.31	MG/L		
	10/28/2021 12:30 PM	NITROGEN NO3+NO2 DISS (AS N)		0.2	MG/L		
	10/28/2021 12:30 PM	PHOSPHORUS TOTAL		0.014	MG/L		
	10/28/2021 12:30 PM	PHOSPHATE ORTHO DISS		0.003	MG/L		
	10/28/2021 12:30 PM	CHLORIDE		4.5	MG/L		
	05/02/2021 12:15 PM	CONDUCTIVITY, UMHOS/CM @ 25C		158	UMHOS/CM		
	05/02/2021 12:15 PM	NITROGEN NH3-N DISS		0.03	MG/L		
	05/02/2021 12:15 PM	NITROGEN KJELDAHL TOTAL		0.51	MG/L		
	05/02/2021 12:15 PM	NITROGEN NO3+NO2 DISS (AS N)		0.1	MG/L		

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 26-50 of 1894 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	05/02/2021 12:15 PM	PHOSPHORUS TOTAL		0.028	MG/L		
	05/02/2021 12:15 PM	PHOSPHATE ORTHO DISS		0.004	MG/L		
	05/02/2021 12:15 PM	CHLORIDE		4.1	MG/L		
	10/17/2020 11:15 AM	CONDUCTIVITY, UMHOS/CM @ 25C		190	UMHOS/CM		
	10/17/2020 11:15 AM	NITROGEN NH3-N DISS		ND	MG/L		
	10/17/2020 11:15 AM	NITROGEN KJELDAHL TOTAL		0.3	MG/L		
	10/17/2020 11:15 AM	NITROGEN NO3+NO2 DISS (AS N)		0.1	MG/L		
	10/17/2020 11:15 AM	PHOSPHORUS TOTAL		0.018	MG/L		
	10/17/2020 11:15 AM	PHOSPHATE ORTHO DISS		0.002	MG/L		
	10/17/2020 11:15 AM	CHLORIDE		4.5	MG/L		
	05/31/2020 11:45 AM	TURBIDITY		2.8	NTU		
	05/31/2020 11:45 AM	COLOR		72	C		
	05/31/2020 11:45 AM	CONDUCTIVITY, UMHOS/CM @ 25C		125	UMHOS/CM		
	05/31/2020 11:45 AM	PH LAB		7.85	SU		
	05/31/2020 11:45 AM	ALKALINITY TOTAL CACO3		58	MG/L		
	05/31/2020 11:45 AM	NITROGEN NH3-N DISS		0.07	MG/L		
	05/31/2020 11:45 AM	NITROGEN KJELDAHL TOTAL		0.6	MG/L		
	05/31/2020 11:45 AM	NITROGEN NO3+NO2 DISS (AS N)		ND	MG/L		
	05/31/2020 11:45 AM	PHOSPHORUS TOTAL		0.053	MG/L		
	05/31/2020 11:45 AM	PHOSPHATE ORTHO DISS		0.01	MG/L		
	05/31/2020 11:45 AM	CALCIUM DISS		14.983	MG/L		
	05/31/2020 11:45 AM	MAGNESIUM DISS		4.35	MG/L		
	05/31/2020 11:45 AM	SODIUM DISS		2.633	MG/L		
	05/31/2020 11:45 AM	POTASSIUM DISS		0.653	MG/L		
	05/31/2020 11:45 AM	CHLORIDE		2.2	MG/L		

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 1-25 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	05/31/2020 11:45 AM	TURBIDITY		2.8	NTU		
	05/31/2020 11:45 AM	COLOR		72	C		
	05/31/2020 11:45 AM	CONDUCTIVITY, UMHOS/CM @ 25C		125	UMHOS/CM		
	05/31/2020 11:45 AM	PH LAB		7.85	SU		
	05/31/2020 11:45 AM	ALKALINITY TOTAL CACO3		58	MG/L		
	05/31/2020 11:45 AM	NITROGEN NH3-N DISS		0.07	MG/L		
	05/31/2020 11:45 AM	NITROGEN KJELDAHL TOTAL		0.6	MG/L		
	05/31/2020 11:45 AM	NITROGEN NO3+NO2 DISS (AS N)		ND	MG/L		
	05/31/2020 11:45 AM	PHOSPHORUS TOTAL		0.053	MG/L		
	05/31/2020 11:45 AM	PHOSPHATE ORTHO DISS		0.01	MG/L		
	05/31/2020 11:45 AM	CALCIUM DISS		14.983	MG/L		
	05/31/2020 11:45 AM	MAGNESIUM DISS		4.35	MG/L		
	05/31/2020 11:45 AM	SODIUM DISS		2.633	MG/L		
	05/31/2020 11:45 AM	POTASSIUM DISS		0.653	MG/L		
	05/31/2020 11:45 AM	CHLORIDE		2.2	MG/L		
	05/31/2020 11:45 AM	HARDNESS, CA MG CALCULATED (MG/L AS CACO3)		55.3203	MG/L		
	10/19/2019 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		147	UMHOS/CM		
	10/19/2019 12:00 AM	NITROGEN NH3-N DISS		0.02	MG/L		
	10/19/2019 12:00 AM	NITROGEN KJELDAHL TOTAL		0.40	MG/L		
	10/19/2019 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.2	MG/L		
	10/19/2019 12:00 AM	PHOSPHORUS TOTAL		0.017	MG/L		
	10/19/2019 12:00 AM	PHOSPHATE ORTHO DISS		0.004	MG/L		
	10/19/2019 12:00 AM	CHLORIDE		4.2	MG/L		
	04/03/2019 11:30 AM	CONDUCTIVITY, UMHOS/CM @ 25C		137	UMHOS/CM		
	04/03/2019 11:30 AM	NITROGEN NH3-N DISS		ND	MG/L		

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 26-50 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	04/03/2019 11:30 AM	NITROGEN KJELDAHL TOTAL		0.33	MG/L		
	04/03/2019 11:30 AM	NITROGEN NO3+NO2 DISS (AS N)		0.3	MG/L		
	04/03/2019 11:30 AM	PHOSPHORUS TOTAL		0.019	MG/L		
	04/03/2019 11:30 AM	PHOSPHATE ORTHO DISS		ND	MG/L		
	04/03/2019 11:30 AM	CHLORIDE		3.5	MG/L		
	10/27/2018 10:30 AM	TURBIDITY		17.3	NTU		
	10/27/2018 10:30 AM	TURBIDITY		17.3	NTU		
	10/27/2018 10:30 AM	COLOR		39	C		
	10/27/2018 10:30 AM	COLOR		39	C		
	10/27/2018 10:30 AM	CONDUCTIVITY, UMHOS/CM @ 25C		180	UMHOS/CM		
	10/27/2018 10:30 AM	CONDUCTIVITY, UMHOS/CM @ 25C		180	UMHOS/CM		
	10/27/2018 10:30 AM	PH LAB		8.14	SU		
	10/27/2018 10:30 AM	PH LAB		8.14	SU		
	10/27/2018 10:30 AM	ALKALINITY TOTAL CACO3		84	MG/L		
	10/27/2018 10:30 AM	ALKALINITY TOTAL CACO3		84	MG/L		
	10/27/2018 10:30 AM	NITROGEN NH3-N DISS		0.05	MG/L		
	10/27/2018 10:30 AM	NITROGEN NH3-N DISS		0.05	MG/L		
	10/27/2018 10:30 AM	NITROGEN KJELDAHL TOTAL		0.53	MG/L		
	10/27/2018 10:30 AM	NITROGEN KJELDAHL TOTAL		0.53	MG/L		
	10/27/2018 10:30 AM	NITROGEN NO3+NO2 DISS (AS N)		0.25	MG/L		
	10/27/2018 10:30 AM	NITROGEN NO3+NO2 DISS (AS N)		0.25	MG/L		
	10/27/2018 10:30 AM	PHOSPHORUS TOTAL		0.069	MG/L		
	10/27/2018 10:30 AM	PHOSPHORUS TOTAL		0.069	MG/L		
	10/27/2018 10:30 AM	PHOSPHATE ORTHO DISS		0.018	MG/L		
	10/27/2018 10:30 AM	PHOSPHATE ORTHO DISS		0.018	MG/L		

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 51-75 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	10/27/2018 10:30 AM	CALCIUM DISS		24.519	MG/L		
	10/27/2018 10:30 AM	CALCIUM TOTAL RECOVERABLE		24.519	MG/L		
	10/27/2018 10:30 AM	MAGNESIUM DISS		5.696	MG/L		
	10/27/2018 10:30 AM	MAGNESIUM DISS		5.696	MG/L		
	10/27/2018 10:30 AM	SODIUM DISS		3.584	MG/L		
	10/27/2018 10:30 AM	SODIUM DISS		3.584	MG/L		
	10/27/2018 10:30 AM	POTASSIUM DISS		0.731	MG/L		
	10/27/2018 10:30 AM	POTASSIUM, TOTAL		0.731	MG/L		
	10/27/2018 10:30 AM	CHLORIDE		4.1	MG/L		
	10/27/2018 10:30 AM	CHLORIDE		4.1	MG/L		
	06/24/2018 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		118	UMHOS/CM		
	06/24/2018 12:00 AM	NITROGEN NH3-N DISS		0.06	MG/L		
	06/24/2018 12:00 AM	NITROGEN KJELDAHL TOTAL		0.72	MG/L		
	06/24/2018 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.13	MG/L		
	06/24/2018 12:00 AM	PHOSPHORUS TOTAL		0.044	MG/L		
	06/24/2018 12:00 AM	PHOSPHATE ORTHO DISS		0.009	MG/L		
	06/24/2018 12:00 AM	CHLORIDE		ND	MG/L		
	10/14/2017 12:00 AM	NITROGEN NH3-N DISS		0.07	MG/L		
	10/14/2017 12:00 AM	NITROGEN KJELDAHL TOTAL		0.49	MG/L		
	10/14/2017 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.22	MG/L		
	10/14/2017 12:00 AM	PHOSPHORUS TOTAL		0.029	MG/L		
	10/14/2017 12:00 AM	PHOSPHATE ORTHO DISS		0.018	MG/L		
	10/14/2017 12:00 AM	CHLORIDE		5.1	MG/L		
	04/28/2017 12:00 AM	TEMPERATURE FIELD		51	F		
	04/28/2017 12:00 AM	TURBIDITY		5.1	NTU		

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 76-100 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	04/28/2017 12:00 AM	COLOR		55	COLOR UNITS		
	04/28/2017 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		151	US/CM@25°C		
	04/28/2017 12:00 AM	PH LAB		7.77	SU		
	04/28/2017 12:00 AM	ALKALINITY TOTAL CACO3		63	MG/L		
	04/28/2017 12:00 AM	NITROGEN NH3-N DISS		0.04	MG/L		
	04/28/2017 12:00 AM	NITROGEN KJELDAHL TOTAL		0.43	MG/L		
	04/28/2017 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.15	MG/L		
	04/28/2017 12:00 AM	PHOSPHORUS TOTAL		0.024	MG/L		
	04/28/2017 12:00 AM	PHOSPHATE ORTHO DISS		0.003	MG/L		
	04/28/2017 12:00 AM	CALCIUM DISS		17.753	MG/L		
	04/28/2017 12:00 AM	MAGNESIUM TOTAL		4.904	MG/L		
	04/28/2017 12:00 AM	SODIUM TOTAL		3.05	MG/L		
	04/28/2017 12:00 AM	POTASSIUM, TOTAL		0.73	MG/L		
	04/28/2017 12:00 AM	CHLORIDE		4.0	MG/L		
	04/28/2017 12:00 AM	SECCHI DEPTH - FEET		1	FEET		
	04/28/2017 12:00 AM	SULFUR		3.36	MG/L		
	10/29/2016 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		165	US/CM@25°C		
	10/29/2016 12:00 AM	NITROGEN NH3-N DISS		0.06	MG/L		
	10/29/2016 12:00 AM	NITROGEN KJELDAHL TOTAL		0.54	MG/L		
	10/29/2016 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.19	MG/L		
	10/29/2016 12:00 AM	PHOSPHORUS TOTAL		<0.006	MG/L		
	10/29/2016 12:00 AM	PHOSPHATE ORTHO DISS		0.005	MG/L		
	10/29/2016 12:00 AM	CHLORIDE		4.5	MG/L		
	10/26/2014 12:00 AM	TEMPERATURE FIELD		50.4	F		
	10/26/2014 12:00 AM	TURBIDITY		4.8	NTU		

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 101-125 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	10/26/2014 12:00 AM	COLOR		45	COLOR UNITS		
	10/26/2014 12:00 AM	NITROGEN NH3-N DISS		0.04	MG/L		
	10/26/2014 12:00 AM	NITROGEN KJELDAHL TOTAL		0.35	MG/L		
	10/26/2014 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.34	MG/L		
	10/26/2014 12:00 AM	PHOSPHORUS TOTAL		0.021	MG/L		
	10/26/2014 12:00 AM	PHOSPHATE ORTHO DISS		0.015	MG/L		
	10/26/2014 12:00 AM	CALCIUM DISS		22.96	MG/L		
	10/26/2014 12:00 AM	MAGNESIUM TOTAL		6.358	MG/L		
	10/26/2014 12:00 AM	SODIUM TOTAL		3.6	MG/L		
	10/26/2014 12:00 AM	POTASSIUM, TOTAL		0.81	MG/L		
	10/26/2014 12:00 AM	CHLORIDE		5.7	MG/L		
	10/26/2014 12:00 AM	SECCHI DEPTH - FEET		9.5	FEET		
	10/26/2014 12:00 AM	SULFUR		4.22	MG/L		
	05/13/2014 12:00 AM	NITROGEN NH3-N DISS		0.04	MG/L		
	05/13/2014 12:00 AM	NITROGEN KJELDAHL TOTAL		0.54	MG/L		
	05/13/2014 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.08	MG/L		
	05/13/2014 12:00 AM	PHOSPHORUS TOTAL		0.020	MG/L		
	05/13/2014 12:00 AM	PHOSPHATE ORTHO DISS		0.009	MG/L		
	05/13/2014 12:00 AM	CHLORIDE		3.4	MG/L		
2018 CWA Impairment Assessments	06/30/2013 12:00 AM	Lake 10 Year Mean TP Assessment Value		37.3714285714286			
2018 CWA Impairment Assessments	06/30/2013 12:00 AM	Lake 10 Year TP Upper 80% Percentile Assessment Value		43.3499978744237			
2018 CWA Impairment Assessments	06/30/2013 12:00 AM	Lake 10 Year TP Lower 80% Percentile Assessment Value		28.1218526739864			
2018 CWA Impairment Assessments	06/30/2013 12:00 AM	Assessment Lake Station Natural Community		Impounded Flowing Water			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/12/2013 01:00 PM	PHOSPHORUS TOTAL		0.0462	MG/L		
	06/12/2013 12:00 AM	TEMPERATURE FIELD		72	F		

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 126-150 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	06/12/2013 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		116	US/CM@25°C		
	06/12/2013 12:00 AM	NITROGEN NH3-N DISS		0.01	MG/L		
	06/12/2013 12:00 AM	NITROGEN KJELDAHL TOTAL		0.91	MG/L		
	06/12/2013 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.08	MG/L		
	06/12/2013 12:00 AM	PHOSPHORUS TOTAL		0.069	MG/L		
	06/12/2013 12:00 AM	PHOSPHATE ORTHO DISS		0.006	MG/L		
	06/12/2013 12:00 AM	CHLORIDE		3.6	MG/L		
	06/12/2013 12:00 AM	SECCHI DEPTH - FEET		3.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	TEMPERATURE FIELD		43.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	TEMPERATURE FIELD		42	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	TEMPERATURE FIELD		43.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	TEMPERATURE FIELD		41.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	TEMPERATURE FIELD		42.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	TEMPERATURE FIELD		42	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	TEMPERATURE FIELD		42.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	TEMPERATURE FIELD		42	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	SECCHI DEPTH - FEET		10	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2012 02:00 PM	SECCHI DEPTH HIT BOTTOM		NO			
	10/30/2012	TEMPERATURE FIELD		43.9	F		

12:00 AM			
10/30/2012 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C	174	US/CM@25°C
10/30/2012 12:00 AM	NITROGEN NH3-N DISS	0.04	MG/L

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 151-175 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	10/30/2012 12:00 AM	NITROGEN KJELDAHL TOTAL		0.19	MG/L		
	10/30/2012 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.23	MG/L		
	10/30/2012 12:00 AM	PHOSPHORUS TOTAL		0.019	MG/L		
	10/30/2012 12:00 AM	PHOSPHATE ORTHO DISS		0.028	MG/L		
	10/30/2012 12:00 AM	CHLORIDE		5.1	MG/L		
	10/30/2012 12:00 AM	SECCHI DEPTH - FEET		10	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	TEMPERATURE FIELD		46.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	TEMPERATURE FIELD		46.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	TEMPERATURE FIELD		46.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	TEMPERATURE FIELD		46	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	TEMPERATURE FIELD		45.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	TEMPERATURE FIELD		45.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	TEMPERATURE FIELD		45.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	TEMPERATURE FIELD		45.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	SECCHI DEPTH - FEET		12	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/06/2012 02:00 PM	SECCHI DEPTH HIT BOTTOM		NO			
2018 CWA Impairment Assessments	09/30/2012 12:00 AM	Lake 10 Year Mean Chla FAL Assessment Value		12.9183333333333			
2018 CWA Impairment Assessments	09/30/2012 12:00 AM	Lake 10 Year Chla Upper 80% Percentile Assessment Value		20.0457705125781			

2018 CWA Impairment Assessments	09/30/2012 12:00 AM	Lake 10 Year Chla Lower 80% Percentile Assessment Value	5.79089615408861
2018 CWA Impairment Assessments	09/30/2012 12:00 AM	Lake 10 Year Mean Chla REC Assessment Value	28.5
2018 CWA Impairment Assessments	09/30/2012 12:00 AM	Lake 10 Year Chla REC Upper 80% Percentile Assessment Value	56.5

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 176-200 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
2018 CWA Impairment Assessments	09/30/2012 12:00 AM	Lake 10 Year Chla REC Lower 80% Percentile Assessment Value		9.5			
2018 CWA Impairment Assessments	09/30/2012 12:00 AM	Assessment Lake Station Natural Community		Impounded Flowing Water			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	TEMPERATURE FIELD		68.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	TEMPERATURE FIELD		68.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	TEMPERATURE FIELD		68	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	TEMPERATURE FIELD		64.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	TEMPERATURE FIELD		63.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	TEMPERATURE FIELD		63.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	TEMPERATURE FIELD		68.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	TEMPERATURE FIELD		63.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	PHOSPHORUS TOTAL		0.018	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	SECCHI DEPTH - FEET		8	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/11/2012 12:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		6.80	UG/L		
Citizen Lake Monitoring - Water	08/22/2012	TEMPERATURE FIELD		66.5	DEGREES		

Quality - Trego Lake; Deep Hole Near Dam	02:00 PM			F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	TEMPERATURE FIELD	71	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	TEMPERATURE FIELD	69.8	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	TEMPERATURE FIELD	68	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	TEMPERATURE FIELD	67.4	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 201-225 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	TEMPERATURE FIELD		67.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	TEMPERATURE FIELD		66.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	TEMPERATURE FIELD		66.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	SECCHI DEPTH - FEET		15	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/22/2012 02:00 PM	SECCHI DEPTH HIT BOTTOM		NO			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	TEMPERATURE FIELD		78.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	TEMPERATURE FIELD		80.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	TEMPERATURE FIELD		76.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	TEMPERATURE FIELD		75.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	TEMPERATURE FIELD		74.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	TEMPERATURE FIELD		74.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	TEMPERATURE FIELD		71.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	TEMPERATURE FIELD		74.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	PHOSPHORUS TOTAL		0.025	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	SAMPLE SIZE LITERS		200	ML		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	SECCHI DEPTH - FEET	6	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	WATER COLUMN APPEARANCE	CLEAR	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	WATER COLOR (VISUAL)	BROWN	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	WATER LEVEL (STAFF GAUGE)	1035	FEET

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 226-250 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	SECCHI DEPTH HIT BOTTOM		NO			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/30/2012 02:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		8.92	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	TEMPERATURE FIELD		75.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	TEMPERATURE FIELD		75.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	TEMPERATURE FIELD		78.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	TEMPERATURE FIELD		83.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	TEMPERATURE FIELD		81.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	TEMPERATURE FIELD		79.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	TEMPERATURE FIELD		80.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	TEMPERATURE FIELD		80.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	SECCHI DEPTH - FEET		4	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/07/2012 05:00 AM	SECCHI DEPTH HIT BOTTOM		NO			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2012 03:00 PM	TEMPERATURE FIELD		68	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2012 03:00 PM	TEMPERATURE FIELD		68.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2012 03:00 PM	TEMPERATURE FIELD		69.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2012 03:00 PM	TEMPERATURE FIELD		70.3	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2012 03:00 PM	TEMPERATURE FIELD	71.2	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2012 03:00 PM	TEMPERATURE FIELD	71.9	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2012 03:00 PM	TEMPERATURE FIELD	73.4	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2012 03:00 PM	TEMPERATURE FIELD	75	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2012 03:00 PM	TEMPERATURE AT LAB	ICED	C

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 276-300 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	TEMPERATURE FIELD		58.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	TEMPERATURE FIELD		58.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	TEMPERATURE FIELD		59	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	TEMPERATURE FIELD		59.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	TEMPERATURE FIELD		58.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	TEMPERATURE FIELD		60.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	SECCHI DEPTH - FEET		4.5	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/09/2012 04:00 PM	SECCHI DEPTH HIT BOTTOM		NO			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	TEMPERATURE FIELD		50.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	TEMPERATURE FIELD		52.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	TEMPERATURE FIELD		51.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	TEMPERATURE FIELD		51.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	TEMPERATURE FIELD		49.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	TEMPERATURE FIELD		48	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	TEMPERATURE FIELD		48.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	TEMPERATURE FIELD		49.2	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	TEMPERATURE AT LAB	ICED	C
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	PHOSPHORUS TOTAL	0.028	MG/L
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	SECCHI DEPTH - FEET	7.0	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	WATER COLUMN APPEARANCE	CLEAR	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	WATER COLOR (VISUAL)	BROWN	

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 301-325 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/17/2012 03:00 PM	SECCHI DEPTH HIT BOTTOM		NO			
	04/17/2012 12:00 AM	TEMPERATURE FIELD		52.9	F		
	04/17/2012 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		162	US/CM@25°C		
	04/17/2012 12:00 AM	NITROGEN NH3-N DISS		0.03	MG/L		
	04/17/2012 12:00 AM	NITROGEN KJELDAHL TOTAL		0.24	MG/L		
	04/17/2012 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.18	MG/L		
	04/17/2012 12:00 AM	PHOSPHORUS TOTAL		0.028	MG/L		
	04/17/2012 12:00 AM	PHOSPHATE ORTHO DISS		0.014	MG/L		
	04/17/2012 12:00 AM	CHLORIDE		4.8	MG/L		
	04/17/2012 12:00 AM	SECCHI DEPTH - FEET		7	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	TEMPERATURE FIELD		43.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	TEMPERATURE FIELD		43.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	TEMPERATURE FIELD		43.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	TEMPERATURE FIELD		43.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	TEMPERATURE FIELD		42.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	TEMPERATURE FIELD		42.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	TEMPERATURE FIELD		42.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	TEMPERATURE FIELD		42.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	SECCHI DEPTH - FEET		12	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole	10/31/2011 12:00 PM	WATER COLOR (VISUAL)		BROWN			

Near Dam				
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	WATER LEVEL (STAFF GAUGE)	1035	FEET

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 326-350 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/31/2011 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
	10/31/2011 12:00 AM	TEMPERATURE FIELD		44.4	F		
	10/31/2011 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		149	US/CM@25°C		
	10/31/2011 12:00 AM	NITROGEN NH3-N DISS		0.03	MG/L		
	10/31/2011 12:00 AM	NITROGEN KJELDAHL TOTAL		0.24	MG/L		
	10/31/2011 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		<0.1	MG/L		
	10/31/2011 12:00 AM	PHOSPHORUS TOTAL		0.019	MG/L		
	10/31/2011 12:00 AM	PHOSPHATE ORTHO DISS		0.012	MG/L		
	10/31/2011 12:00 AM	CHLORIDE		5.0	MG/L		
	10/31/2011 12:00 AM	SECCHI DEPTH - FEET		12	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	TEMPERATURE FIELD		63.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	TEMPERATURE FIELD		62.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	TEMPERATURE FIELD		62.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	TEMPERATURE FIELD		62	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	TEMPERATURE FIELD		62.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	TEMPERATURE FIELD		58.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	TEMPERATURE FIELD		56.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	TEMPERATURE FIELD		59.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	SECCHI DEPTH - FEET		8.5	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole	10/11/2011 03:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		

Near Dam				
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/11/2011 03:00 PM	SECCHI DEPTH HIT BOTTOM	NO	Y/N
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	TEMPERATURE FIELD	56.1	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 351-375 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	TEMPERATURE FIELD		56.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	TEMPERATURE FIELD		56.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	TEMPERATURE FIELD		56.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	TEMPERATURE FIELD		55.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	TEMPERATURE FIELD		56.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	TEMPERATURE FIELD		55.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	TEMPERATURE FIELD		55.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	SECCHI DEPTH - FEET		9.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	WATER LEVEL (STAFF GAUGE)		1034.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2011 04:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	TEMPERATURE FIELD		72.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	TEMPERATURE FIELD		70.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	TEMPERATURE FIELD		69.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	TEMPERATURE FIELD		69.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	TEMPERATURE FIELD		72.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	TEMPERATURE FIELD		68.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	TEMPERATURE FIELD		68.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	TEMPERATURE FIELD		68.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	PHOSPHORUS TOTAL		*0.036	MG/L		LAB REAGENT BLANK OF 0.0069 EXCEEDES LOD CRITERIA
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	SECCHI DEPTH - FEET		5.0	FEET		

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 376-400 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/30/2011 12:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		7.85	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	TEMPERATURE FIELD		72.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	TEMPERATURE FIELD		79	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	TEMPERATURE FIELD		71	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	TEMPERATURE FIELD		71.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	TEMPERATURE FIELD		77.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	TEMPERATURE FIELD		72.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	TEMPERATURE FIELD		73.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	TEMPERATURE FIELD		75	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	PHOSPHORUS TOTAL		0.038	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	SECCHI DEPTH - FEET		5.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	WATER COLOR (VISUAL)		BROWN			

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	WATER LEVEL (STAFF GAUGE)	1035	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	SECCHI DEPTH HIT BOTTOM	NO	Y/N
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/26/2011 11:00 AM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)	13.3	UG/L
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	TEMPERATURE FIELD	75.2	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 401-425 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	TEMPERATURE FIELD		79	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	TEMPERATURE FIELD		77.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	TEMPERATURE FIELD		77	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	TEMPERATURE FIELD		76.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	TEMPERATURE FIELD		75.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	TEMPERATURE FIELD		63.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	TEMPERATURE FIELD		66.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	SECCHI DEPTH - FEET		6.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2011 03:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	TEMPERATURE FIELD		69	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	TEMPERATURE FIELD		68.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	TEMPERATURE FIELD		68.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	TEMPERATURE FIELD		68	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	TEMPERATURE FIELD		70.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	TEMPERATURE FIELD		61.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	TEMPERATURE FIELD		63.8	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	TEMPERATURE FIELD	62	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	TEMPERATURE AT LAB	ICED	C
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	PHOSPHORUS TOTAL	0.035	MG/L
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	SAMPLE SIZE LITERS	200	ML
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	SECCHI DEPTH - FEET	5.0	FEET

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 426-450 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/28/2011 12:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		8.14	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	TEMPERATURE FIELD		63.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	TEMPERATURE FIELD		64.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	TEMPERATURE FIELD		63.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	TEMPERATURE FIELD		63.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	TEMPERATURE FIELD		63.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	TEMPERATURE FIELD		61.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	TEMPERATURE FIELD		62	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	TEMPERATURE FIELD		61.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	SECCHI DEPTH - FEET		4.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/27/2011 03:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	TEMPERATURE FIELD	46	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	TEMPERATURE FIELD	43.7	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	TEMPERATURE FIELD	43.8	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	TEMPERATURE FIELD	42.8	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	TEMPERATURE FIELD	42.8	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 451-475 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	TEMPERATURE FIELD		43.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	TEMPERATURE FIELD		43.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	TEMPERATURE FIELD		44.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	PHOSPHORUS TOTAL		0.025	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	SECCHI DEPTH - FEET		5.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/03/2011 01:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
	05/03/2011 12:00 AM	TEMPERATURE FIELD		47	F		
	05/03/2011 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		112	US/CM@25°C		
	05/03/2011 12:00 AM	NITROGEN NH3-N DISS		0.09	MG/L		
	05/03/2011 12:00 AM	NITROGEN KJELDAHL TOTAL		0.540	MG/L		
	05/03/2011 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.14	MG/L		
	05/03/2011 12:00 AM	PHOSPHORUS TOTAL		0.026	MG/L		
	05/03/2011 12:00 AM	PHOSPHATE ORTHO DISS		0.010	MG/L		
	05/03/2011 12:00 AM	CHLORIDE		3.2	MG/L		
	05/03/2011 12:00 AM	SECCHI DEPTH - FEET		5	FEET		
	11/03/2010 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		90	US/CM@25°C		
	11/03/2010 12:00 AM	NITROGEN NH3-N DISS		0.05	MG/L		
	11/03/2010 12:00 AM	NITROGEN KJELDAHL TOTAL		0.78	MG/L		
	11/03/2010 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.15	MG/L		

11/03/2010 12:00 AM	PHOSPHORUS TOTAL	0.030	MG/L

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 476-500 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	11/03/2010 12:00 AM	PHOSPHATE ORTHO DISS		0.019	MG/L		
	11/03/2010 12:00 AM	CHLORIDE		3.7	MG/L		
	11/03/2010 12:00 AM	SECCHI DEPTH - FEET		3.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/02/2010 12:00 PM	SECCHI DEPTH - FEET		3.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/02/2010 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/02/2010 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/02/2010 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/02/2010 12:00 PM	WATER LEVEL (VISUAL)		NORMAL			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/02/2010 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/02/2010 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	TEMPERATURE FIELD		51.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	TEMPERATURE FIELD		51.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	TEMPERATURE FIELD		51.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	TEMPERATURE FIELD		51.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	TEMPERATURE FIELD		51	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	TEMPERATURE FIELD		55.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	TEMPERATURE FIELD		52.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	TEMPERATURE FIELD		51	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	SECCHI DEPTH - FEET		4.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	WATER COLOR (VISUAL)		BROWN			

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	WATER LEVEL (STAFF GAUGE)	1035	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/07/2010 12:00 PM	SECCHI DEPTH HIT BOTTOM	NO	Y/N
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 02:00 PM	TEMPERATURE AT LAB	ICED	C

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 501-525 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 02:00 PM	PHOSPHORUS TOTAL		0.032	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 02:00 PM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 02:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		36.3	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	TEMPERATURE FIELD		61.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	TEMPERATURE FIELD		60.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	TEMPERATURE FIELD		60.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	TEMPERATURE FIELD		61.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	TEMPERATURE FIELD		62	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	TEMPERATURE FIELD		62.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	TEMPERATURE FIELD		64	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	TEMPERATURE FIELD		62.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	SECCHI DEPTH - FEET		4.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	WATER LEVEL (STAFF GAUGE)		1034.75	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/14/2010 01:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	TEMPERATURE FIELD		68.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	TEMPERATURE FIELD		69.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	TEMPERATURE FIELD		70.8	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	TEMPERATURE FIELD	70.3	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	TEMPERATURE FIELD	72	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	TEMPERATURE FIELD	77	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	TEMPERATURE FIELD	74.1	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	TEMPERATURE FIELD	76.2	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 526-550 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	SECCHI DEPTH - FEET		5.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/23/2010 02:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	TEMPERATURE FIELD		75.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	TEMPERATURE FIELD		63.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	TEMPERATURE FIELD		72.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	TEMPERATURE FIELD		74.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	TEMPERATURE FIELD		74.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	TEMPERATURE FIELD		76.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	TEMPERATURE FIELD		77.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	TEMPERATURE FIELD		77.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	PHOSPHORUS TOTAL		0.020	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	SECCHI DEPTH - FEET		12	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	WATER COLOR (VISUAL)		BROWN			

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	WATER LEVEL (STAFF GAUGE)	1035	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	SECCHI DEPTH HIT BOTTOM	NO	Y/N
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/28/2010 10:00 AM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)	4.34	UG/L
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	TEMPERATURE FIELD	73.9	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 551-575 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	TEMPERATURE FIELD		73	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	TEMPERATURE FIELD		72.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	TEMPERATURE FIELD		72.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	TEMPERATURE FIELD		72.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	TEMPERATURE FIELD		71.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	TEMPERATURE FIELD		68	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	TEMPERATURE FIELD		62	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	SECCHI DEPTH - FEET		5.5	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/29/2010 02:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	TEMPERATURE FIELD		75	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	TEMPERATURE FIELD		60.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	TEMPERATURE FIELD		63.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	TEMPERATURE FIELD		65.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	TEMPERATURE FIELD		68	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	TEMPERATURE FIELD		71.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	TEMPERATURE FIELD		74.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	TEMPERATURE FIELD		70.1	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	TEMPERATURE AT LAB	ICED	C
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	PHOSPHORUS TOTAL	0.042	MG/L
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	SAMPLE SIZE LITERS	200	ML
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	SECCHI DEPTH - FEET	4.0	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	WATER COLUMN APPEARANCE	CLEAR	

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 576-600 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/21/2010 11:00 AM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		17.2	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	TEMPERATURE FIELD		52.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	TEMPERATURE FIELD		51.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	TEMPERATURE FIELD		60.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	TEMPERATURE FIELD		68	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	TEMPERATURE FIELD		56.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	TEMPERATURE FIELD		66	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	TEMPERATURE FIELD		53.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	TEMPERATURE FIELD		64.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	SECCHI DEPTH - FEET		5.5	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/19/2010 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	TEMPERATURE FIELD		55.9	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	TEMPERATURE FIELD	57.5	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	TEMPERATURE FIELD	56.4	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	TEMPERATURE FIELD	55.7	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	TEMPERATURE FIELD	55.5	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	TEMPERATURE FIELD	55.2	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 601-625 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	TEMPERATURE FIELD		57.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	TEMPERATURE FIELD		55.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	PHOSPHORUS TOTAL		0.022	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	SECCHI DEPTH - FEET		6.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/27/2010 01:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
	04/12/2010 12:00 AM	TEMPERATURE FIELD		54	F		
	04/12/2010 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		164	US/CM@25°C		
	04/12/2010 12:00 AM	NITROGEN NH3-N DISS		.02	MG/L		
	04/12/2010 12:00 AM	NITROGEN KJELDAHL TOTAL		.32	MG/L		
	04/12/2010 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		.09	MG/L		
	04/12/2010 12:00 AM	PHOSPHORUS TOTAL		.023	MG/L		
	04/12/2010 12:00 AM	PHOSPHATE ORTHO DISS		.013	MG/L		
	04/12/2010 12:00 AM	CHLORIDE		4.1	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	TEMPERATURE FIELD		43.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	TEMPERATURE FIELD		44.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	TEMPERATURE FIELD		43.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	TEMPERATURE FIELD		43.5	DEGREES F		
Citizen Lake Monitoring - Water	11/03/2009	TEMPERATURE FIELD		43.7	DEGREES F		

Quality - Trego Lake; Deep Hole Near Dam	02:00 PM			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	TEMPERATURE FIELD	43.5	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	TEMPERATURE FIELD	43.8	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 626-650 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	TEMPERATURE FIELD		44.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	SECCHI DEPTH - FEET		9.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	WATER LEVEL (VISUAL)		NORMAL			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2009 02:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
	11/03/2009 12:00 AM	TEMPERATURE FIELD		44.4	F		
	11/03/2009 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		141	US/CM@25°C		
	11/03/2009 12:00 AM	NITROGEN NH3-N DISS		0.02	MG/L		
	11/03/2009 12:00 AM	NITROGEN KJELDAHL TOTAL		0.39	MG/L		
	11/03/2009 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.20	MG/L		
	11/03/2009 12:00 AM	PHOSPHORUS TOTAL		0.026	MG/L		
	11/03/2009 12:00 AM	PHOSPHATE ORTHO DISS		0.030	MG/L		
	11/03/2009 12:00 AM	CHLORIDE		3.7	MG/L		
	11/03/2009 12:00 AM	SECCHI DEPTH - FEET		9.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	TEMPERATURE FIELD		72.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	TEMPERATURE FIELD		64.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	TEMPERATURE FIELD		67.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	TEMPERATURE FIELD		68.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	TEMPERATURE FIELD		70.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole	09/20/2009 03:00 PM	TEMPERATURE FIELD		70.8	DEGREES F		

Near Dam				
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	TEMPERATURE FIELD	71.4	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	TEMPERATURE FIELD	62.6	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 651-675 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	SECCHI DEPTH - FEET		12.50	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	WATER LEVEL (VISUAL)		NORMAL			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	WATER LEVEL (STAFF GAUGE)		1034.5	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/20/2009 03:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	TEMPERATURE FIELD		66	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	TEMPERATURE FIELD		71.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	TEMPERATURE FIELD		70.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	TEMPERATURE FIELD		63.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	TEMPERATURE FIELD		64.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	TEMPERATURE FIELD		65.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	TEMPERATURE FIELD		67.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	TEMPERATURE FIELD		70.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	PHOSPHORUS TOTAL		0.023	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	SECCHI DEPTH - FEET		9.75	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	WATER COLUMN APPEARANCE		CLEAR			

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	WATER COLOR (VISUAL)	BROWN	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	WATER LEVEL (VISUAL)	NORMAL	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	WATER LEVEL (STAFF GAUGE)	1035	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	SECCHI DEPTH HIT BOTTOM	NO	Y/N

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 676-700 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/24/2009 12:00 AM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		5.47	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	TEMPERATURE FIELD		75	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	TEMPERATURE FIELD		69	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	TEMPERATURE FIELD		63.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	TEMPERATURE FIELD		60.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	TEMPERATURE FIELD		76.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	TEMPERATURE FIELD		77	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	TEMPERATURE FIELD		70.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	TEMPERATURE FIELD		76.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	SECCHI DEPTH - FEET		9.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	WATER LEVEL (VISUAL)		NORMAL			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/15/2009 11:00 AM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	TEMPERATURE FIELD		74.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	TEMPERATURE FIELD		73.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	TEMPERATURE FIELD		72.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	TEMPERATURE FIELD		72.6	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	TEMPERATURE FIELD	72.3	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	TEMPERATURE FIELD	64.4	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	TEMPERATURE FIELD	60.6	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	TEMPERATURE FIELD	57.2	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	TEMPERATURE AT LAB	ICED	C

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 701-725 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	PHOSPHORUS TOTAL		0.029	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	SECCHI DEPTH - FEET		7.50	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	WATER LEVEL (VISUAL)		NORMAL			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	WATER LEVEL (STAFF GAUGE)		1034.75	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/13/2009 12:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		7.85	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	TEMPERATURE FIELD		57	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	TEMPERATURE FIELD		62	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	TEMPERATURE FIELD		63.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	TEMPERATURE FIELD		64.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	TEMPERATURE FIELD		66.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	TEMPERATURE FIELD		69.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	TEMPERATURE FIELD		71	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	TEMPERATURE FIELD		62.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	SECCHI DEPTH - FEET		6.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	WATER COLUMN APPEARANCE		CLEAR			

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	WATER COLOR (VISUAL)	BROWN	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	WATER LEVEL (VISUAL)	NORMAL	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	WATER LEVEL (STAFF GAUGE)	1034.75	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/03/2009 10:00 AM	SECCHI DEPTH HIT BOTTOM	NO	Y/N

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 726-750 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	TEMPERATURE FIELD		65.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	TEMPERATURE FIELD		71.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	TEMPERATURE FIELD		71.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	TEMPERATURE FIELD		68	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	TEMPERATURE FIELD		61.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	TEMPERATURE FIELD		55.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	TEMPERATURE FIELD		58.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	TEMPERATURE FIELD		56.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	PHOSPHORUS TOTAL		0.025	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	SECCHI DEPTH - FEET		6.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	WATER LEVEL (VISUAL)		NORMAL			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/15/2009 12:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		10.2	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	TEMPERATURE FIELD		66.4	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	TEMPERATURE FIELD	59.7	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	TEMPERATURE FIELD	60.4	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	TEMPERATURE FIELD	61.1	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	TEMPERATURE FIELD	62	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	TEMPERATURE FIELD	64.2	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 751-775 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	TEMPERATURE FIELD		62	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	TEMPERATURE FIELD		64.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	SECCHI DEPTH - FEET		6.75	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	WATER LEVEL (VISUAL)		NORMAL			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2009 04:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	TEMPERATURE FIELD		53.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	TEMPERATURE FIELD		55.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	TEMPERATURE FIELD		55.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	TEMPERATURE FIELD		54.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	TEMPERATURE FIELD		52.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	TEMPERATURE FIELD		52.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	TEMPERATURE FIELD		51.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	TEMPERATURE FIELD		49.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	PHOSPHORUS TOTAL		0.025	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	SECCHI DEPTH - FEET		5.5	FEET		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	WATER COLUMN APPEARANCE	CLEAR	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	WATER COLOR (VISUAL)	BROWN	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	WATER LEVEL (VISUAL)	NORMAL	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	WATER LEVEL (STAFF GAUGE)	1035	FEET

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 776-800 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	04/28/2009 01:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	TEMPERATURE FIELD		41.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	TEMPERATURE FIELD		42.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	TEMPERATURE FIELD		44	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	TEMPERATURE FIELD		43.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	TEMPERATURE FIELD		42.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	TEMPERATURE FIELD		41.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	TEMPERATURE FIELD		42.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	TEMPERATURE FIELD		42.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	SECCHI DEPTH - FEET		10	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/03/2008 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
	11/03/2008 12:00 AM	SECCHI DEPTH - FEET		10	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	TEMPERATURE FIELD		41.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	TEMPERATURE FIELD		43.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	TEMPERATURE FIELD		43.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	TEMPERATURE FIELD		42.8	DEGREES F		
Citizen Lake Monitoring - Water	10/30/2008	TEMPERATURE FIELD		42.8	DEGREES		

Quality - Trego Lake; Deep Hole Near Dam	03:00 PM			F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	TEMPERATURE FIELD	42.6	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	TEMPERATURE FIELD	41.1	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	TEMPERATURE FIELD	41.3	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	SECCHI DEPTH - FEET	8	FEET

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 801-825 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/30/2008 03:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	TEMPERATURE FIELD		59	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	TEMPERATURE FIELD		59	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	TEMPERATURE FIELD		59.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	TEMPERATURE FIELD		60	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	TEMPERATURE FIELD		60.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	TEMPERATURE FIELD		61.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	TEMPERATURE FIELD		61.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	TEMPERATURE FIELD		61.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	SECCHI DEPTH - FEET		7.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/30/2008 04:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	TEMPERATURE FIELD		59.7	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	TEMPERATURE FIELD	59.9	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	TEMPERATURE FIELD	60.2	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	TEMPERATURE FIELD	64	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	TEMPERATURE FIELD	61.8	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	TEMPERATURE FIELD	64.4	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 826-850 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	TEMPERATURE FIELD		64.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	TEMPERATURE FIELD		64	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	SECCHI DEPTH - FEET		10.75	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/10/2008 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE FIELD		71.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE FIELD		71.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE FIELD		71.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE FIELD		72.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE FIELD		69.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE FIELD		69.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE FIELD		68.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE FIELD		70.5	DEGREES F		
Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	PHOSPHORUS TOTAL		ND	MG/L		
Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	PHOSPHORUS TOTAL		0.019	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	PHOSPHORUS TOTAL		0.022	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring Network QA/QC -	08/26/2008	SAMPLE SIZE		200	ML		

2008	12:00 PM	LITERS		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	SECCHI DEPTH - FEET	8.75	FEET

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 851-875 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam, Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		7.70	UG/L		
Citizen Lake Monitoring Network QA/QC - 2008	08/26/2008 12:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		7.98	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	TEMPERATURE FIELD		72.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	TEMPERATURE FIELD		74.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	TEMPERATURE FIELD		74.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	TEMPERATURE FIELD		73.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	TEMPERATURE FIELD		73.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	TEMPERATURE FIELD		71.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	TEMPERATURE FIELD		76.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	TEMPERATURE FIELD		69	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	SECCHI DEPTH - FEET		7.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/08/2008 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	TEMPERATURE FIELD		67.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	TEMPERATURE FIELD		70.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	TEMPERATURE FIELD		71	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	TEMPERATURE FIELD		71	DEGREES F		

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 876-900 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	TEMPERATURE FIELD		67.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	TEMPERATURE FIELD		73.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	TEMPERATURE FIELD		71	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	TEMPERATURE FIELD		71	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	PHOSPHORUS TOTAL		0.032	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	SECCHI DEPTH - FEET		6.5	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/14/2008 12:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		4.37	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	TEMPERATURE FIELD		73.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	TEMPERATURE FIELD		75.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	TEMPERATURE FIELD		75	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	TEMPERATURE FIELD		74.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	TEMPERATURE FIELD		73.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	TEMPERATURE FIELD		72.3	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	TEMPERATURE FIELD	66.5	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	TEMPERATURE FIELD	70.5	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	SECCHI DEPTH - FEET	5.5	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	WATER COLUMN APPEARANCE	CLEAR	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	WATER COLOR (VISUAL)	BROWN	

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 901-925 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	WATER LEVEL (STAFF GAUGE)		1035.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/08/2008 01:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	TEMPERATURE FIELD		67.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	TEMPERATURE FIELD		68.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	TEMPERATURE FIELD		69.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	TEMPERATURE FIELD		74.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	TEMPERATURE FIELD		75.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	TEMPERATURE FIELD		64.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	TEMPERATURE FIELD		66.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	TEMPERATURE FIELD		67.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	PHOSPHORUS TOTAL		0.044	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	SECCHI DEPTH - FEET		5.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/24/2008 11:00 AM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)	25.7	UG/L
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	TEMPERATURE FIELD	58.4	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	TEMPERATURE FIELD	60.4	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	TEMPERATURE FIELD	57.5	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	TEMPERATURE FIELD	57.2	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 926-950 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	TEMPERATURE FIELD		56.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	TEMPERATURE FIELD		55.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	TEMPERATURE FIELD		55.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	TEMPERATURE FIELD		54.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	SECCHI DEPTH - FEET		4.75	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/22/2008 02:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	TEMPERATURE FIELD		52.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	TEMPERATURE FIELD		51.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	TEMPERATURE FIELD		50.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	TEMPERATURE FIELD		50.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	TEMPERATURE FIELD		49.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	TEMPERATURE FIELD		49.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	TEMPERATURE FIELD		49.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	TEMPERATURE FIELD		48.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	PHOSPHORUS TOTAL		0.034	MG/L		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	SECCHI DEPTH - FEET	5.5	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	WATER COLUMN APPEARANCE	CLEAR	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	WATER COLOR (VISUAL)	BROWN	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	WATER LEVEL (STAFF GAUGE)	1035	FEET

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 951-975 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/05/2008 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
	05/05/2008 12:00 AM	SECCHI DEPTH - FEET		5.5	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	TEMPERATURE FIELD		37.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	TEMPERATURE FIELD		38.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	TEMPERATURE FIELD		37.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	TEMPERATURE FIELD		37.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	TEMPERATURE FIELD		37.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	TEMPERATURE FIELD		37.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	TEMPERATURE FIELD		38.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	TEMPERATURE FIELD		37.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	SECCHI DEPTH - FEET		8.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	WATER LEVEL (STAFF GAUGE)		1035.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	11/12/2007 04:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	TEMPERATURE FIELD		44	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	TEMPERATURE FIELD		44	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	TEMPERATURE FIELD		44	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	TEMPERATURE FIELD		44.2	DEGREES F		
Citizen Lake Monitoring - Water	10/29/2007	TEMPERATURE FIELD		44.4	DEGREES		

Quality - Trego Lake; Deep Hole Near Dam	03:00 PM			F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	TEMPERATURE FIELD	44.9	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	TEMPERATURE FIELD	46.7	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	TEMPERATURE FIELD	48	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	SECCHI DEPTH - FEET	6.0	FEET

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 976-1000 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	WATER LEVEL (STAFF GAUGE)		1034.75	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/29/2007 03:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	TEMPERATURE FIELD		61.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	TEMPERATURE FIELD		60.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	TEMPERATURE FIELD		58.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	TEMPERATURE FIELD		58.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	TEMPERATURE FIELD		58.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	TEMPERATURE FIELD		58.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	TEMPERATURE FIELD		58.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	TEMPERATURE FIELD		58.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	SECCHI DEPTH - FEET		7.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	WATER LEVEL (STAFF GAUGE)		1035.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/04/2007 12:00 AM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	TEMPERATURE FIELD		61.5	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	TEMPERATURE FIELD	57.9	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	TEMPERATURE FIELD	58.2	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	TEMPERATURE FIELD	63.4	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	TEMPERATURE FIELD	62.2	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	TEMPERATURE FIELD	62	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 1001-1025 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	TEMPERATURE FIELD		62.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	TEMPERATURE FIELD		63.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	SECCHI DEPTH - FEET		5.5	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/24/2007 11:00 AM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	TEMPERATURE FIELD		64.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	TEMPERATURE FIELD		62.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	TEMPERATURE FIELD		68.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	TEMPERATURE FIELD		69.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	TEMPERATURE FIELD		69.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	TEMPERATURE FIELD		71.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	TEMPERATURE FIELD		71.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	TEMPERATURE FIELD		72.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	PHOSPHORUS TOTAL		0.023	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	SECCHI DEPTH - FEET		10.75	FEET		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	WATER COLUMN APPEARANCE	CLEAR	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	WATER COLOR (VISUAL)	BROWN	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	WATER LEVEL (STAFF GAUGE)	1034.75	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	SECCHI DEPTH HIT BOTTOM	NO	Y/N

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 1026-1050 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	09/04/2007 10:00 AM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		*6.28	UG/L		HOLDING TIME EXCEEDED BY 20 DAYS
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	TEMPERATURE FIELD		63.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	TEMPERATURE FIELD		66.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	TEMPERATURE FIELD		72.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	TEMPERATURE FIELD		74.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	TEMPERATURE FIELD		74.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	TEMPERATURE FIELD		74.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	TEMPERATURE FIELD		75	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	TEMPERATURE FIELD		75	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	SECCHI DEPTH - FEET		9.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/17/2007 12:00 AM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	TEMPERATURE FIELD		64	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	TEMPERATURE FIELD		66.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	TEMPERATURE FIELD		72.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	TEMPERATURE FIELD		74.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole	08/10/2007 12:00 AM	TEMPERATURE FIELD		75.5	DEGREES F		

Near Dam				
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	TEMPERATURE FIELD	82	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	TEMPERATURE FIELD	78.8	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	TEMPERATURE FIELD	77.7	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	SECCHI DEPTH - FEET	14.75	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	WATER COLUMN APPEARANCE	CLEAR	

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 1051-1075 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	WATER LEVEL (STAFF GAUGE)		1034.5	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/10/2007 12:00 AM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	TEMPERATURE FIELD		81.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	TEMPERATURE FIELD		81.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	TEMPERATURE FIELD		80.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	TEMPERATURE FIELD		80	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	TEMPERATURE FIELD		78	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	TEMPERATURE FIELD		72.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	TEMPERATURE FIELD		66.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	TEMPERATURE FIELD		64.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	SECCHI DEPTH - FEET		14.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	WATER LEVEL (STAFF GAUGE)		1034.75	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	08/02/2007 12:00 AM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	TEMPERATURE FIELD		63.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	TEMPERATURE FIELD		67.8	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	TEMPERATURE FIELD	68.3	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	TEMPERATURE FIELD	69	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	TEMPERATURE FIELD	69.8	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	TEMPERATURE FIELD	71.9	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	TEMPERATURE FIELD	74.1	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 1076-1100 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	TEMPERATURE FIELD		67.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	SECCHI DEPTH - FEET		10.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	WATER LEVEL (VISUAL)		NORMAL			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 01:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 12:45 PM	TEMPERATURE AT LAB		10.	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 12:45 PM	PHOSPHORUS TOTAL		0.020	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 12:45 PM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/16/2007 12:45 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)		5.11	UG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	TEMPERATURE FIELD		79.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	TEMPERATURE FIELD		78	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	TEMPERATURE FIELD		76.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	TEMPERATURE FIELD		80.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	TEMPERATURE FIELD		65.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	TEMPERATURE FIELD		73.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	TEMPERATURE FIELD		71.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	TEMPERATURE FIELD		60.8	DEGREES F		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	SECCHI DEPTH - FEET	11.5	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	WATER COLUMN APPEARANCE	CLEAR	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	WATER COLOR (VISUAL)	BROWN	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	WATER LEVEL (VISUAL)	NORMAL	

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 1101-1125 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	07/09/2007 11:00 AM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	TEMPERATURE FIELD		80	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	TEMPERATURE FIELD		63.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	TEMPERATURE FIELD		60.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	TEMPERATURE FIELD		77.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	TEMPERATURE FIELD		81	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	TEMPERATURE FIELD		71	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	TEMPERATURE FIELD		78.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	TEMPERATURE FIELD		73.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	TEMPERATURE AT LAB		ICED	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	PHOSPHORUS TOTAL		0.022	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	SAMPLE SIZE LITERS		200	ML		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	SECCHI DEPTH - FEET		7.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	WATER LEVEL (VISUAL)		NORMAL			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/26/2007 01:00 PM	CHLOROPHYLL A, FLUORESCENCE (WELSCHMAYER 1994)	7.45	UG/L
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	TEMPERATURE FIELD	76.5	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	TEMPERATURE FIELD	63.3	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	TEMPERATURE FIELD	69.8	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	TEMPERATURE FIELD	60.6	DEGREES F

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 1126-1150 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	TEMPERATURE FIELD		74.6	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	TEMPERATURE FIELD		73.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	TEMPERATURE FIELD		71.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	TEMPERATURE FIELD		69.8	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	SECCHI DEPTH - FEET		7.0	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	WATER LEVEL (VISUAL)		NORMAL			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/23/2007 12:00 PM	SECCHI DEPTH HIT BOTTOM		NO	Y/N		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	TEMPERATURE FIELD		70.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	TEMPERATURE FIELD		60.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	TEMPERATURE FIELD		61.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	TEMPERATURE FIELD		63.3	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	TEMPERATURE FIELD		66	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	TEMPERATURE FIELD		71	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	TEMPERATURE FIELD		59	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	TEMPERATURE FIELD		69	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	SECCHI DEPTH - FEET		9.0	FEET		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	WATER COLUMN APPEARANCE	CLEAR	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	WATER COLOR (VISUAL)	BROWN	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	USER PERCEPTION OF WATER QUALITY	1-Beautiful, could not be nicer	
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	06/01/2007 12:00 PM	WATER LEVEL (STAFF GAUGE)	1035	FEET
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/21/2007 04:00 PM	SECCHI DEPTH - FEET	7.50	FEET

Monitoring Station

Station ID 663162
Station Name Trego Lake - Deep Hole Near Dam

Show specific parameter: <Show All>

Sample Results

Previous 1151-1175 of 1793 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/21/2007 04:00 PM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/21/2007 04:00 PM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/21/2007 04:00 PM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/21/2007 04:00 PM	WATER LEVEL (STAFF GAUGE)		1035	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 11:00 AM	TEMPERATURE AT LAB		20.	C		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 11:00 AM	PHOSPHORUS TOTAL		0.022	MG/L		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	TEMPERATURE FIELD		64.7	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	TEMPERATURE FIELD		55.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	TEMPERATURE FIELD		56.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	TEMPERATURE FIELD		58.2	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	TEMPERATURE FIELD		65.1	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	TEMPERATURE FIELD		65.4	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	TEMPERATURE FIELD		66.5	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	TEMPERATURE FIELD		67.9	DEGREES F		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	SECCHI DEPTH - FEET		6.25	FEET		
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	WATER COLUMN APPEARANCE		CLEAR			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	WATER COLOR (VISUAL)		BROWN			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	USER PERCEPTION OF WATER QUALITY		1-Beautiful, could not be nicer			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	WATER LEVEL (VISUAL)		LOW			
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	WATER LEVEL (STAFF GAUGE)		1034.5	FEET		

Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	05/14/2007 12:00 AM	SECCHI DEPTH HIT BOTTOM	NO	Y/N
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/24/2006 01:00 PM	TEMPERATURE FIELD	42	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/24/2006 01:00 PM	TEMPERATURE FIELD	41.3	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/24/2006 01:00 PM	TEMPERATURE FIELD	40.8	DEGREES F
Citizen Lake Monitoring - Water Quality - Trego Lake; Deep Hole Near Dam	10/24/2006 01:00 PM	TEMPERATURE FIELD	40.2	DEGREES F

Monitoring Station

Station ID 663176
Station Name Trego Flowage - Public Access

Show specific parameter: <Show All>

Sample Results

Previous 1-25 of 232 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Total Time Spent At Landing by paid inspectors		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Total Time Spent At Landing by unpaid (volunteer) inspectors		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Number of People Contacted		5			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Was boat used during past 5 days on diff wbody? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Was boat used during past 5 days on diff wbody? - No		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Boat was entering landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Boat was leaving landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Waterbody Name Boat Last Visited (1)		shell lake			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	County Boat Last Visited (1)		Washburn County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Have you been contacted by a watercraft inspector this season? - Yes		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Have you been contacted by a watercraft inspector this season? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Are you willing to answer a few questions? - Yes		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/21/2019 04:00 PM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Total Time Spent At Landing by paid inspectors		16			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Total Time Spent At Landing by unpaid (volunteer) inspectors		8			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Number of People Contacted		29			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Was boat used during past 5 days on diff wbody? - Yes		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Was boat used during past 5 days on diff wbody? - No		10			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Boat was entering landing		9			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Boat was leaving landing		3			

TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Waterbody Name Boat Last Visited (2)	namekogan
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Waterbody Name Boat Last Visited (1)	trego lake / namekogan river upstream
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	County Boat Last Visited (1)	Washburn County
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	County Boat Last Visited (2)	Washburn County
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Have you been contacted by a watercraft inspector this season? - Yes	5

Monitoring Station

Station ID 663176
Station Name Trego Flowage - Public Access

Show specific parameter: <Show All>

Sample Results

Previous 26-50 of 232 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Have you been contacted by a watercraft inspector this season? - No		7			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Are you willing to answer a few questions? - Yes		12			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/17/2019 08:00 AM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Total Time Spent At Landing by paid inspectors		6			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Total Time Spent At Landing by unpaid (volunteer) inspectors		6			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Number of People Contacted		12			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Was boat used during past 5 days on diff wbody? - Yes		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Was boat used during past 5 days on diff wbody? - No		7			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Boat was entering landing		4			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Boat was leaving landing		3			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Have you been contacted by a watercraft inspector this season? - Yes		4			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Have you been contacted by a watercraft inspector this season? - No		3			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Are you willing to answer a few questions? - Yes		7			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/11/2019 10:00 AM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Total Time Spent At Landing by paid inspectors		8			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Number of People Contacted		6			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Was boat used during past 5 days on diff wbody? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Was boat used during past 5 days on diff wbody? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Boat was entering landing		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Boat was leaving landing		1			

TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Waterbody Name Boat Last Visited (1)	trego lake
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	County Boat Last Visited (1)	Washburn County
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Have you been contacted by a watercraft inspector this season? - Yes	1
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Have you been contacted by a watercraft inspector this season? - No	2
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Are you willing to answer a few questions? - Yes	3

Monitoring Station

Station ID 663176
Station Name Trego Flowage - Public Access

Show specific parameter: <Show All>

Sample Results

Previous 51-75 of 232 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/10/2019 01:00 PM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Total Time Spent At Landing by paid inspectors		3.5			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Number of People Contacted		7			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Was boat used during past 5 days on diff wbody? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Was boat used during past 5 days on diff wbody? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Boat was entering landing		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Boat was leaving landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Waterbody Name Boat Last Visited (1)		gull lake			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	County Boat Last Visited (1)		Washburn County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Have you been contacted by a watercraft inspector this season? - Yes		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Have you been contacted by a watercraft inspector this season? - No		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Are you willing to answer a few questions? - Yes		3			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/09/2019 09:00 AM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/02/2019 08:45 AM	Total Time Spent At Landing by paid inspectors		4.5			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/02/2019 08:45 AM	Number of People Contacted		5			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/02/2019 08:45 AM	Was boat used during past 5 days on diff wbody? - Yes		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/02/2019 08:45 AM	Was boat used during past 5 days on diff wbody? - No		3			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/02/2019 08:45 AM	Boat was entering landing		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/02/2019 08:45 AM	Boat was leaving landing		3			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/02/2019 08:45 AM	Have you been contacted by a watercraft inspector this season? - Yes		0			

TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/02/2019 08:45 AM	Have you been contacted by a watercraft inspector this season? - No	3
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/02/2019 08:45 AM	Are you willing to answer a few questions? - Yes	3
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	08/02/2019 08:45 AM	Are you willing to answer a few questions? - No	0
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Total Time Spent At Landing by paid inspectors	0
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Total Time Spent At Landing by unpaid (volunteer) inspectors	1

Monitoring Station

Station ID 663176
Station Name Trego Flowage - Public Access

Show specific parameter: <Show All>

Sample Results

Previous 76-100 of 232 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Number of People Contacted		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Was boat used during past 5 days on diff wbody? - Yes		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Was boat used during past 5 days on diff wbody? - No		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Boat was entering landing		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Boat was leaving landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Have you been contacted by a watercraft inspector this season? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Have you been contacted by a watercraft inspector this season? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Are you willing to answer a few questions? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/29/2019 05:00 PM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Total Time Spent At Landing by paid inspectors		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Total Time Spent At Landing by unpaid (volunteer) inspectors		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Number of People Contacted		4			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Was boat used during past 5 days on diff wbody? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Was boat used during past 5 days on diff wbody? - No		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Boat was entering landing		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Boat was leaving landing		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Waterbody Name Boat Last Visited (1)		clam lake			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	County Boat Last Visited (1)		Burnett County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Have you been contacted by a watercraft inspector this season? - Yes		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Have you been contacted by a watercraft inspector this season? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Are you willing to answer a few questions? - Yes		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/27/2019 02:00 PM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Total Time Spent At Landing by paid inspectors		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Total Time Spent At Landing by unpaid (volunteer) inspectors		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Number of People Contacted		2			

Monitoring Station

Station ID 663176
Station Name Trego Flowage - Public Access

Show specific parameter: <Show All>

Sample Results

Previous 101-125 of 232 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Was boat used during past 5 days on diff wbody? - Yes		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Was boat used during past 5 days on diff wbody? - No		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Boat was entering landing		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Boat was leaving landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Have you been contacted by a watercraft inspector this season? - Yes		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Have you been contacted by a watercraft inspector this season? - No		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Are you willing to answer a few questions? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/26/2019 05:00 PM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Total Time Spent At Landing by paid inspectors		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Total Time Spent At Landing by unpaid (volunteer) inspectors		4			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Number of People Contacted		10			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Was boat used during past 5 days on diff wbody? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Was boat used during past 5 days on diff wbody? - No		3			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Boat was entering landing		3			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Boat was leaving landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Waterbody Name Boat Last Visited (1)		cyclone lake			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	County Boat Last Visited (1)		Washburn County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Have you been contacted by a watercraft inspector this season? - Yes		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Have you been contacted by a watercraft inspector this season? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Are you willing to answer a few questions? - Yes		4			

TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/24/2019 11:00 AM	Are you willing to answer a few questions? - No	0
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Total Time Spent At Landing by paid inspectors	0
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Total Time Spent At Landing by unpaid (volunteer) inspectors	4
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Number of People Contacted	7
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Was boat used during past 5 days on diff wbody? - Yes	1

Monitoring Station

Station ID 663176
Station Name Trego Flowage - Public Access

Show specific parameter: <Show All>

Sample Results

Previous 126-150 of 232 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Was boat used during past 5 days on diff wbody? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Boat was entering landing		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Boat was leaving landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Waterbody Name Boat Last Visited (1)		TOZER LAKE			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	County Boat Last Visited (1)		Washburn County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Have you been contacted by a watercraft inspector this season? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Have you been contacted by a watercraft inspector this season? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Are you willing to answer a few questions? - Yes		3			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/20/2019 08:00 AM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Total Time Spent At Landing by paid inspectors		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Total Time Spent At Landing by unpaid (volunteer) inspectors		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Number of People Contacted		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Was boat used during past 5 days on diff wbody? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Was boat used during past 5 days on diff wbody? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Boat was entering landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Boat was leaving landing		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Waterbody Name Boat Last Visited (1)		matthews lake			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	County Boat Last Visited (1)		Washburn County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Have you been contacted by a watercraft inspector this season? - Yes		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Have you been contacted by a watercraft inspector this season? - No		1			

TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Are you willing to answer a few questions? - Yes	1
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/18/2019 04:00 PM	Are you willing to answer a few questions? - No	0
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Total Time Spent At Landing by paid inspectors	2
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Total Time Spent At Landing by unpaid (volunteer) inspectors	0
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Number of People Contacted	6

Monitoring Station

Station ID 663176
Station Name Trego Flowage - Public Access

Show specific parameter: <Show All>

Sample Results

Previous 151-175 of 232 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Was boat used during past 5 days on diff wbody? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Was boat used during past 5 days on diff wbody? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Boat was entering landing		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Boat was leaving landing		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Waterbody Name Boat Last Visited (1)		yellow river			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	County Boat Last Visited (1)		Washburn County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Have you been contacted by a watercraft inspector this season? - Yes		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Have you been contacted by a watercraft inspector this season? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Are you willing to answer a few questions? - Yes		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/11/2019 05:00 PM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Total Time Spent At Landing by paid inspectors		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Total Time Spent At Landing by unpaid (volunteer) inspectors		4			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Number of People Contacted		8			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Was boat used during past 5 days on diff wbody? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Was boat used during past 5 days on diff wbody? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Boat was entering landing		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Boat was leaving landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Waterbody Name Boat Last Visited (1)		Trego Lake			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	County Boat Last Visited (1)		Washburn County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Have you been contacted by a watercraft inspector this season? - Yes		1			

TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Have you been contacted by a watercraft inspector this season? - No	2
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Are you willing to answer a few questions? - Yes	3
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/06/2019 08:00 AM	Are you willing to answer a few questions? - No	0
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Total Time Spent At Landing by paid inspectors	2
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Number of People Contacted	4

Monitoring Station

Station ID 663176
Station Name Trego Flowage - Public Access

Show specific parameter: <Show All>

Sample Results

Previous 176-200 of 232 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Was boat used during past 5 days on diff wbody? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Was boat used during past 5 days on diff wbody? - No		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Boat was entering landing		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Boat was leaving landing		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Waterbody Name Boat Last Visited (1)		long lake, sarona			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	County Boat Last Visited (1)		Washburn County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Have you been contacted by a watercraft inspector this season? - Yes		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Have you been contacted by a watercraft inspector this season? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Are you willing to answer a few questions? - Yes		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	07/02/2019 06:00 PM	Are you willing to answer a few questions? - No		0			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Total Time Spent At Landing by paid inspectors		16			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Number of People Contacted		11			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Was boat used during past 5 days on diff wbody? - Yes		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Was boat used during past 5 days on diff wbody? - No		5			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Boat was entering landing		5			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Boat was leaving landing		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Waterbody Name Boat Last Visited (2)		lake namekogan			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Waterbody Name Boat Last Visited (1)		spooner lake			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	County Boat Last Visited (1)		Washburn County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	County Boat Last Visited (2)		Sawyer County			

TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Have you been contacted by a watercraft inspector this season? - Yes	3
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Have you been contacted by a watercraft inspector this season? - No	4
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Are you willing to answer a few questions? - Yes	7
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/28/2019 09:00 AM	Are you willing to answer a few questions? - No	0
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Total Time Spent At Landing by paid inspectors	5

Monitoring Station

Station ID 663176
Station Name Trego Flowage - Public Access

Show specific parameter: <Show All>

Sample Results

Previous 201-225 of 232 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Number of People Contacted		4			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Was boat used during past 5 days on diff wbody? - Yes		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Was boat used during past 5 days on diff wbody? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Boat was entering landing		4			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Boat was leaving landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Waterbody Name Boat Last Visited (1)		Cable Lake			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	County Boat Last Visited (1)		Washburn County			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Have you been contacted by a watercraft inspector this season? - Yes		4			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Have you been contacted by a watercraft inspector this season? - No		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Are you willing to answer a few questions? - Yes		3			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/22/2019 10:00 AM	Are you willing to answer a few questions? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Total Time Spent At Landing by paid inspectors		8			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Number of People Contacted		32			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Was boat used during past 5 days on diff wbody? - Yes		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Was boat used during past 5 days on diff wbody? - No		9			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Boat was entering landing		4			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Boat was leaving landing		8			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Waterbody Name Boat Last Visited (2)		shallow lake			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Waterbody Name Boat Last Visited (1)		potatoe lake			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	County Boat Last Visited (1)		Washburn County			

TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	County Boat Last Visited (2)	Barron County
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Have you been contacted by a watercraft inspector this season? - Yes	1
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Have you been contacted by a watercraft inspector this season? - No	11
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Are you willing to answer a few questions? - Yes	11
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/09/2019 10:00 AM	Are you willing to answer a few questions? - No	1

Monitoring Station

Station ID 663176
Station Name Trego Flowage - Public Access

Show specific parameter: <Show All>

Sample Results

Previous 226-232 of 232 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/02/2019 02:00 PM	Total Time Spent At Landing by paid inspectors		4			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/02/2019 02:00 PM	Number of People Contacted		3			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/02/2019 02:00 PM	Was boat used during past 5 days on diff wbody? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/02/2019 02:00 PM	Boat was entering landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/02/2019 02:00 PM	Boat was leaving landing		1			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/02/2019 02:00 PM	Have you been contacted by a watercraft inspector this season? - No		2			
TREGO LAKE DISTRICT: Trego Lake District 2019 CBCW	06/02/2019 02:00 PM	Are you willing to answer a few questions? - Yes		2			

Monitoring Station

Station ID 10034498
Station Name Trego Lake - Upstream

Show specific parameter: <Show All>

Sample Results

Previous 1-25 of 185 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	05/31/2020 11:30 AM	TURBIDITY		6.1	NTU		
	05/31/2020 11:30 AM	COLOR		75	C		
	05/31/2020 11:30 AM	CONDUCTIVITY, UMHOS/CM @ 25C		136	UMHOS/CM		
	05/31/2020 11:30 AM	PH LAB		7.9	SU		
	05/31/2020 11:30 AM	ALKALINITY TOTAL CACO3		62	MG/L		
	05/31/2020 11:30 AM	NITROGEN NH3-N DISS		0.05	MG/L		
	05/31/2020 11:30 AM	NITROGEN KJELDAHL TOTAL		0.49	MG/L		
	05/31/2020 11:30 AM	NITROGEN NO3+NO2 DISS (AS N)		0.2	MG/L		
	05/31/2020 11:30 AM	PHOSPHORUS TOTAL		0.031	MG/L		
	05/31/2020 11:30 AM	PHOSPHATE ORTHO DISS		0.006	MG/L		
	05/31/2020 11:30 AM	CALCIUM DISS		16.307	MG/L		
	05/31/2020 11:30 AM	MAGNESIUM DISS		4.768	MG/L		
	05/31/2020 11:30 AM	SODIUM DISS		3.004	MG/L		
	05/31/2020 11:30 AM	POTASSIUM DISS		0.623	MG/L		
	05/31/2020 11:30 AM	CHLORIDE		3	MG/L		
	05/31/2020 11:30 AM	HARDNESS, CA MG CALCULATED (MG/L AS CACO3)		60.3462	MG/L		
	10/19/2019 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		153	UMHOS/CM		
	10/19/2019 12:00 AM	NITROGEN NH3-N DISS		0.04	MG/L		
	10/19/2019 12:00 AM	NITROGEN KJELDAHL TOTAL		0.41	MG/L		
	10/19/2019 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.2	MG/L		
	10/19/2019 12:00 AM	PHOSPHORUS TOTAL		0.017	MG/L		
	10/19/2019 12:00 AM	PHOSPHATE ORTHO DISS		0.004	MG/L		
	10/19/2019 12:00 AM	CHLORIDE		3.9	MG/L		
	04/03/2019 11:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		798	UMHOS/CM		
	04/03/2019 11:00 AM	NITROGEN NH3-N DISS		ND	MG/L		

Monitoring Station

Station ID 10034498
Station Name Trego Lake - Upstream

Show specific parameter: <Show All>

Sample Results

Previous 26-50 of 185 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	04/03/2019 11:00 AM	NITROGEN KJELDAHL TOTAL		0.36	MG/L		
	04/03/2019 11:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.1	MG/L		
	04/03/2019 11:00 AM	PHOSPHORUS TOTAL		0.025	MG/L		
	04/03/2019 11:00 AM	PHOSPHATE ORTHO DISS		0.003	MG/L		
	04/03/2019 11:00 AM	CHLORIDE		3.3	MG/L		
	10/27/2018 10:00 AM	TURBIDITY		2.2	NTU		
	10/27/2018 10:00 AM	TURBIDITY		2.2	NTU		
	10/27/2018 10:00 AM	COLOR		38	C		
	10/27/2018 10:00 AM	COLOR		38	C		
	10/27/2018 10:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		163	UMHOS/CM		
	10/27/2018 10:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		163	UMHOS/CM		
	10/27/2018 10:00 AM	PH LAB		7.98	SU		
	10/27/2018 10:00 AM	PH LAB		7.98	SU		
	10/27/2018 10:00 AM	ALKALINITY TOTAL CACO3		73	MG/L		
	10/27/2018 10:00 AM	ALKALINITY TOTAL CACO3		73	MG/L		
	10/27/2018 10:00 AM	NITROGEN NH3-N DISS		0.02	MG/L		
	10/27/2018 10:00 AM	NITROGEN NH3-N DISS		0.02	MG/L		
	10/27/2018 10:00 AM	NITROGEN KJELDAHL TOTAL		0.34	MG/L		
	10/27/2018 10:00 AM	NITROGEN KJELDAHL TOTAL		0.34	MG/L		
	10/27/2018 10:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.25	MG/L		
	10/27/2018 10:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.25	MG/L		
	10/27/2018 10:00 AM	PHOSPHORUS TOTAL		0.023	MG/L		
	10/27/2018 10:00 AM	PHOSPHORUS TOTAL		0.023	MG/L		
	10/27/2018 10:00 AM	PHOSPHATE ORTHO DISS		0.009	MG/L		
	10/27/2018 10:00 AM	PHOSPHATE ORTHO DISS		0.009	MG/L		

Monitoring Station

Station ID 10034498
Station Name Trego Lake - Upstream

Show specific parameter: <Show All>

Sample Results

Previous 51-75 of 185 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	10/27/2018 10:00 AM	CALCIUM DISS		20.993	MG/L		
	10/27/2018 10:00 AM	CALCIUM TOTAL RECOVERABLE		20.993	MG/L		
	10/27/2018 10:00 AM	MAGNESIUM DISS		5.613	MG/L		
	10/27/2018 10:00 AM	MAGNESIUM DISS		5.613	MG/L		
	10/27/2018 10:00 AM	SODIUM DISS		3.544	MG/L		
	10/27/2018 10:00 AM	SODIUM DISS		3.544	MG/L		
	10/27/2018 10:00 AM	POTASSIUM DISS		0.739	MG/L		
	10/27/2018 10:00 AM	POTASSIUM, TOTAL		0.739	MG/L		
	10/27/2018 10:00 AM	CHLORIDE		4.3	MG/L		
	10/27/2018 10:00 AM	CHLORIDE		4.3	MG/L		
	06/24/2018 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		125	UMHOS/CM		
	06/24/2018 12:00 AM	NITROGEN NH3-N DISS		0.06	MG/L		
	06/24/2018 12:00 AM	NITROGEN KJELDAHL TOTAL		0.59	MG/L		
	06/24/2018 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.18	MG/L		
	06/24/2018 12:00 AM	PHOSPHORUS TOTAL		0.045	MG/L		
	06/24/2018 12:00 AM	PHOSPHATE ORTHO DISS		0.011	MG/L		
	06/24/2018 12:00 AM	CHLORIDE		3.3	MG/L		
	10/14/2017 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		157	US/CM@25°C		
	10/14/2017 12:00 AM	NITROGEN NH3-N DISS		0.06	MG/L		
	10/14/2017 12:00 AM	NITROGEN KJELDAHL TOTAL		0.39	MG/L		
	10/14/2017 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.25	MG/L		
	10/14/2017 12:00 AM	PHOSPHORUS TOTAL		0.028	MG/L		
	10/14/2017 12:00 AM	PHOSPHATE ORTHO DISS		0.003	MG/L		
	10/14/2017 12:00 AM	CHLORIDE		4.0	MG/L		
	04/28/2017 12:00 AM	TEMPERATURE FIELD		51	F		

Monitoring Station

Station ID 10034498
Station Name Trego Lake - Upstream

Show specific parameter: <Show All>

Sample Results

Previous 76-100 of 185 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	04/28/2017 12:00 AM	TURBIDITY		3.8	NTU		
	04/28/2017 12:00 AM	COLOR		50	COLOR UNITS		
	04/28/2017 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		147	US/CM@25°C		
	04/28/2017 12:00 AM	PH LAB		7.72	SU		
	04/28/2017 12:00 AM	ALKALINITY TOTAL CACO3		63	MG/L		
	04/28/2017 12:00 AM	NITROGEN NH3-N DISS		0.02	MG/L		
	04/28/2017 12:00 AM	NITROGEN KJELDAHL TOTAL		0.36	MG/L		
	04/28/2017 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.14	MG/L		
	04/28/2017 12:00 AM	PHOSPHORUS TOTAL		0.021	MG/L		
	04/28/2017 12:00 AM	PHOSPHATE ORTHO DISS		0.002	MG/L		
	04/28/2017 12:00 AM	CALCIUM DISS		17.489	MG/L		
	04/28/2017 12:00 AM	MAGNESIUM TOTAL		4.816	MG/L		
	04/28/2017 12:00 AM	SODIUM TOTAL		2.93	MG/L		
	04/28/2017 12:00 AM	POTASSIUM, TOTAL		0.68	MG/L		
	04/28/2017 12:00 AM	CHLORIDE		3.7	MG/L		
	04/28/2017 12:00 AM	SECCHI DEPTH - FEET		5	FEET		
	04/28/2017 12:00 AM	SULFUR		3.41	MG/L		
	10/29/2016 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		176	US/CM@25°C		
	10/29/2016 12:00 AM	NITROGEN NH3-N DISS		0.09	MG/L		
	10/29/2016 12:00 AM	NITROGEN KJELDAHL TOTAL		0.42	MG/L		
	10/29/2016 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.22	MG/L		
	10/29/2016 12:00 AM	PHOSPHORUS TOTAL		<0.006	MG/L		
	10/29/2016 12:00 AM	PHOSPHATE ORTHO DISS		0.010	MG/L		
	10/29/2016 12:00 AM	CHLORIDE		4.9	MG/L		
	10/26/2014 12:00 AM	TEMPERATURE FIELD		50.4	F		

Monitoring Station

Station ID 10034498
Station Name Trego Lake - Upstream

Show specific parameter: <Show All>

Sample Results

Previous 101-125 of 185 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	10/26/2014 12:00 AM	TURBIDITY		4.9	NTU		
	10/26/2014 12:00 AM	COLOR		38	COLOR UNITS		
	10/26/2014 12:00 AM	NITROGEN NH3-N DISS		0.02	MG/L		
	10/26/2014 12:00 AM	NITROGEN KJELDAHL TOTAL		0.34	MG/L		
	10/26/2014 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.22	MG/L		
	10/26/2014 12:00 AM	PHOSPHORUS TOTAL		0.020	MG/L		
	10/26/2014 12:00 AM	PHOSPHATE ORTHO DISS		0.013	MG/L		
	10/26/2014 12:00 AM	CALCIUM DISS		23.41	MG/L		
	10/26/2014 12:00 AM	MAGNESIUM TOTAL		6.395	MG/L		
	10/26/2014 12:00 AM	SODIUM TOTAL		3.5	MG/L		
	10/26/2014 12:00 AM	POTASSIUM, TOTAL		0.80	MG/L		
	10/26/2014 12:00 AM	CHLORIDE		5.3	MG/L		
	10/26/2014 12:00 AM	SULFUR		4.41	MG/L		
	06/12/2013 12:00 AM	TEMPERATURE FIELD		67	F		
	06/12/2013 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		126	US/CM@25°C		
	06/12/2013 12:00 AM	NITROGEN NH3-N DISS		0.05	MG/L		
	06/12/2013 12:00 AM	NITROGEN KJELDAHL TOTAL		0.70	MG/L		
	06/12/2013 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.21	MG/L		
	06/12/2013 12:00 AM	PHOSPHORUS TOTAL		0.065	MG/L		
	06/12/2013 12:00 AM	PHOSPHATE ORTHO DISS		0.025	MG/L		
	06/12/2013 12:00 AM	CHLORIDE		4.4	MG/L		
	06/12/2013 12:00 AM	SECCHI DEPTH - FEET		3.5	FEET		
	10/30/2012 12:00 AM	TEMPERATURE FIELD		40	F		
	10/30/2012 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		174	US/CM@25°C		
	10/30/2012 12:00 AM	NITROGEN NH3-N DISS		0.04	MG/L		

Monitoring Station

Station ID 10034498
Station Name Trego Lake - Upstream

Show specific parameter: <Show All>

Sample Results

Previous 126-150 of 185 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	10/30/2012 12:00 AM	NITROGEN KJELDAHL TOTAL		0.24	MG/L		
	10/30/2012 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.30	MG/L		
	10/30/2012 12:00 AM	PHOSPHORUS TOTAL		0.015	MG/L		
	10/30/2012 12:00 AM	PHOSPHATE ORTHO DISS		0.012	MG/L		
	10/30/2012 12:00 AM	CHLORIDE		5.3	MG/L		
	04/11/2012 12:00 AM	TEMPERATURE FIELD		46.8	F		
	04/11/2012 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		158	US/CM@25°C		
	04/11/2012 12:00 AM	NITROGEN NH3-N DISS		0.03	MG/L		
	04/11/2012 12:00 AM	NITROGEN KJELDAHL TOTAL		0.28	MG/L		
	04/11/2012 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.17	MG/L		
	04/11/2012 12:00 AM	PHOSPHORUS TOTAL		0.030	MG/L		
	04/11/2012 12:00 AM	PHOSPHATE ORTHO DISS		0.016	MG/L		
	04/11/2012 12:00 AM	CHLORIDE		4.4	MG/L		
	04/11/2012 12:00 AM	SECCHI DEPTH - FEET		4.5	FEET		
	10/31/2011 12:00 AM	TEMPERATURE FIELD		43	F		
	10/31/2011 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		146	US/CM@25°C		
	10/31/2011 12:00 AM	NITROGEN NH3-N DISS		0.02	MG/L		
	10/31/2011 12:00 AM	NITROGEN KJELDAHL TOTAL		0.27	MG/L		
	10/31/2011 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		<0.1	MG/L		
	10/31/2011 12:00 AM	PHOSPHORUS TOTAL		0.016	MG/L		
	10/31/2011 12:00 AM	PHOSPHATE ORTHO DISS		0.010	MG/L		
	10/31/2011 12:00 AM	CHLORIDE		4.3	MG/L		
	05/03/2011 12:00 AM	TEMPERATURE FIELD		45	F		
	05/03/2011 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		110	US/CM@25°C		
	05/03/2011 12:00 AM	NITROGEN NH3-N DISS		0.01	MG/L		

Monitoring Station

Station ID 10034498
Station Name Trego Lake - Upstream

Show specific parameter: <Show All>

Sample Results

Previous 151-175 of 185 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	05/03/2011 12:00 AM	NITROGEN KJELDAHL TOTAL		0.052	MG/L		
	05/03/2011 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.14	MG/L		
	05/03/2011 12:00 AM	PHOSPHORUS TOTAL		0.025	MG/L		
	05/03/2011 12:00 AM	PHOSPHATE ORTHO DISS		0.012	MG/L		
	05/03/2011 12:00 AM	CHLORIDE		2.6	MG/L		
	05/03/2011 12:00 AM	SECCHI DEPTH - FEET		5	FEET		
	11/02/2010 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		102	US/CM@25°C		
	11/02/2010 12:00 AM	NITROGEN NH3-N DISS		0.04	MG/L		
	11/02/2010 12:00 AM	NITROGEN KJELDAHL TOTAL		0.69	MG/L		
	11/02/2010 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.18	MG/L		
	11/02/2010 12:00 AM	PHOSPHORUS TOTAL		0.024	MG/L		
	11/02/2010 12:00 AM	PHOSPHATE ORTHO DISS		0.020	MG/L		
	11/02/2010 12:00 AM	CHLORIDE		3.6	MG/L		
	11/02/2010 12:00 AM	SECCHI DEPTH - FEET		3	FEET		
	04/12/2010 12:00 AM	TEMPERATURE FIELD		53	F		
	04/12/2010 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		164	US/CM@25°C		
	04/12/2010 12:00 AM	NITROGEN NH3-N DISS		.01	MG/L		
	04/12/2010 12:00 AM	NITROGEN KJELDAHL TOTAL		.26	MG/L		
	04/12/2010 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		.17	MG/L		
	04/12/2010 12:00 AM	PHOSPHORUS TOTAL		.022	MG/L		
	04/12/2010 12:00 AM	PHOSPHATE ORTHO DISS		.007	MG/L		
	04/12/2010 12:00 AM	CHLORIDE		4.0	MG/L		
	11/03/2009 12:00 AM	TEMPERATURE FIELD		44.4	F		
	11/03/2009 12:00 AM	CONDUCTIVITY, UMHOS/CM @ 25C		136	US/CM@25°C		
	11/03/2009 12:00 AM	NITROGEN NH3-N DISS		<0.01	MG/L		

Monitoring Station

Station ID 10034498
Station Name Trego Lake - Upstream

Show specific parameter: <Show All>

Sample Results

Previous 176-185 of 185 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	11/03/2009 12:00 AM	NITROGEN KJELDAHL TOTAL		0.32	MG/L		
	11/03/2009 12:00 AM	NITROGEN NO3+NO2 DISS (AS N)		0.18	MG/L		
	11/03/2009 12:00 AM	PHOSPHORUS TOTAL		0.026	MG/L		
	11/03/2009 12:00 AM	PHOSPHATE ORTHO DISS		0.028	MG/L		
	11/03/2009 12:00 AM	CHLORIDE		3.7	MG/L		
	11/03/2009 12:00 AM	SECCHI DEPTH - FEET		9.25	FEET		
	11/03/2008 12:00 AM	SECCHI DEPTH - FEET		10	FEET		
	05/05/2008 12:00 AM	SECCHI DEPTH - FEET		3	FEET		
	04/17/2006 12:00 AM	SECCHI DEPTH - FEET		4.5	FEET		
	04/19/2005 12:00 AM	SECCHI DEPTH - FEET		5.5	FEET		

Monitoring Station

Station ID 10022021
Station Name Namekagon River At New Sth 053

Show specific parameter: <Show All>

Sample Results

Previous 1-25 of 153 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	TEMPERATURE FIELD		12.3	C		
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	CLOUD COVER		5	%		
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	CONDUCTIVITY FIELD		184	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	DISSOLVED OXYGEN FIELD		9.5	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	PH FIELD		8.0	SU		
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		*ND	MG/L		MATRIX DUPLICATE QC EXCEEDED
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	NITROGEN NH3-N DISS		*ND	MG/L		MATRIX SPIKE QC EXCEEDED BY 1.2%
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	NITROGEN KJELDAHL TOTAL		0.22	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	NITROGEN NO3+NO2 DISS (AS N)		0.080	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	PHOSPHORUS TOTAL		0.014	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	09/09/2008 10:10 AM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		
2018 CWA Impairment Assessments	09/09/2008 12:00 AM	River Stream 10 Year Median TP Assessment Value		28.5	UG/L		
2018 CWA Impairment Assessments	09/09/2008 12:00 AM	River Stream 10 Year TP Upper 90% Percentile Assessment Value		32.757	UG/L		
2018 CWA Impairment Assessments	09/09/2008 12:00 AM	River Stream 10 Year TP Lower 90% Percentile Assessment Value		21.156	UG/L		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	TEMPERATURE FIELD		18.7	C		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	AMBIENT AIR TEMPERATURE - FIELD		26.0	C		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	CLOUD COVER		10	%		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	CONDUCTIVITY FIELD		181	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	DISSOLVED OXYGEN FIELD		8.5	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	PH FIELD		8.1	SU		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		2.	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	NITROGEN NH3-N DISS		ND	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	NITROGEN KJELDAHL TOTAL		0.22	MG/L		

Monitoring Station

Station ID 10022021
Station Name Namekagon River At New Sth 053

Show specific parameter: <Show All>

Sample Results

Previous 26-50 of 153 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	NITROGEN NO3+NO2 DISS (AS N)		0.076	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	PHOSPHORUS TOTAL		0.023	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	08/11/2008 10:45 AM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	TEMPERATURE FIELD		20.0	C		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	AMBIENT AIR TEMPERATURE - FIELD		25.5	C		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	CLOUD COVER		15	%		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	CONDUCTIVITY FIELD		175	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	DISSOLVED OXYGEN FIELD		9.4	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		3.	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	NITROGEN NH3-N DISS		ND	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	NITROGEN KJELDAHL TOTAL		0.43	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	NITROGEN NO3+NO2 DISS (AS N)		0.087	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	PHOSPHORUS TOTAL		0.025	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	07/14/2008 01:00 PM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	TEMPERATURE FIELD		17.3	C		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	AMBIENT AIR TEMPERATURE - FIELD		19.0	C		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	CLOUD COVER		85	%		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	CONDUCTIVITY FIELD		135	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	DISSOLVED OXYGEN FIELD		7.9	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	PH FIELD		7.3	SU		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		9.	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	NITROGEN NH3-N DISS		0.026	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	NITROGEN KJELDAHL TOTAL		0.70	MG/L		

Monitoring Station

Station ID 10022021
Station Name Namekagon River At New Sth 053

Show specific parameter: <Show All>

Sample Results

Previous 51-75 of 153 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	NITROGEN NO3+NO2 DISS (AS N)		0.089	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	PHOSPHORUS TOTAL		0.038	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	06/16/2008 11:30 AM	TRANSPARENCY TUBE MEASUREMENT		>95.0	CM		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	TEMPERATURE FIELD		11.7	C		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	AMBIENT AIR TEMPERATURE - FIELD		13.0	C		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	CLOUD COVER		100	%		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	CONDUCTIVITY FIELD		152	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	DISSOLVED OXYGEN FIELD		11.2	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	PH FIELD		7.8	SU		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		*<4	MG/L		LOW VOLUME
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	NITROGEN NH3-N DISS		0.023	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	NITROGEN KJELDAHL TOTAL		*0.64	MG/L		MATRIX SPIKE QC EXCEEDED
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	NITROGEN NO3+NO2 DISS (AS N)		0.222	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	PHOSPHORUS TOTAL		0.032	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	05/19/2008 10:20 AM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	TEMPERATURE FIELD		8.9	C		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	AMBIENT AIR TEMPERATURE - FIELD		17.0	C		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	CLOUD COVER		60	%		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	CONDUCTIVITY FIELD		109	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	DISSOLVED OXYGEN FIELD		11.1	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	PH FIELD		7.5	SU		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		7.	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	NITROGEN NH3-N DISS		0.016	MG/L		

Monitoring Station

Station ID 10022021
Station Name Namekagon River At New Sth 053

Show specific parameter: <Show All>

Sample Results

Previous 76-100 of 153 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	NITROGEN KJELDAHL TOTAL		0.63	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	NITROGEN NO3+NO2 DISS (AS N)		0.205	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	PHOSPHORUS TOTAL		0.050	MG/L		LRB EXCEEDS LOD CRITERIA BY 0.00067 MG/L
NOR Watershed Rotation Sites (Non_LTT)	04/21/2008 11:05 AM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	TEMPERATURE FIELD		0.07	C		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	CLOUD COVER		100	%		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	CONDUCTIVITY FIELD		183	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	DISSOLVED OXYGEN FIELD		14.3	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	PH FIELD		7.5	SU		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		ND	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	NITROGEN NH3-N DISS		ND	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	NITROGEN KJELDAHL TOTAL		ND	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	NITROGEN NO3+NO2 DISS (AS N)		0.345	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	PHOSPHORUS TOTAL		0.020	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	03/18/2008 11:40 AM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	TEMPERATURE FIELD		0.04	C		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	CLOUD COVER		85	%		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	CONDUCTIVITY FIELD		189	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	DISSOLVED OXYGEN FIELD		14.1	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	PH FIELD		7.4	SU		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		2.	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	NITROGEN NH3-N DISS		0.033	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	NITROGEN KJELDAHL TOTAL		ND	MG/L		

Monitoring Station

Station ID 10022021
Station Name Namekagon River At New Sth 053

Show specific parameter: <Show All>

Sample Results

Previous 101-125 of 153 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	NITROGEN NO3+NO2 DISS (AS N)		0.375	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	PHOSPHORUS TOTAL		0.021	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	02/25/2008 11:30 AM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	TEMPERATURE FIELD		0.05	C		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	AMBIENT AIR TEMPERATURE - FIELD		-5.0	C		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	CLOUD COVER		100	%		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	CONDUCTIVITY FIELD		186	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	DISSOLVED OXYGEN FIELD		14.6	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	PH FIELD		7.3	SU		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		2.	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	NITROGEN NH3-N DISS		0.018	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	NITROGEN KJELDAHL TOTAL		0.39	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	NITROGEN NO3+NO2 DISS (AS N)		0.349	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	PHOSPHORUS TOTAL		0.024	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	01/16/2008 11:30 AM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	TEMPERATURE FIELD		0.06	C		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	AMBIENT AIR TEMPERATURE - FIELD		-5.0	C		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	CLOUD COVER		100	%		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	CONDUCTIVITY FIELD		186	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	DISSOLVED OXYGEN FIELD		10.5	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	PH FIELD		7.1	SU		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		ND	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	NITROGEN NH3-N DISS		0.073	MG/L		

Monitoring Station

Station ID 10022021
Station Name Namekagon River At New Sth 053

Show specific parameter: <Show All>

Sample Results

Previous 126-150 of 153 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	NITROGEN KJELDAHL TOTAL		0.21	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	NITROGEN NO3+NO2 DISS (AS N)		0.346	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	PHOSPHORUS TOTAL		0.019	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	12/18/2007 10:30 AM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	TEMPERATURE FIELD		2.9	C		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	CLOUD COVER		90	%		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	CONDUCTIVITY FIELD		169	UMHOS/CM		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	TEMPERATURE AT LAB		ICED	C		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	DISSOLVED OXYGEN FIELD		13.1	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	PH FIELD		7.6	SU		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		2.	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	NITROGEN NH3-N DISS		ND	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	NITROGEN KJELDAHL TOTAL		0.31	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	NITROGEN NO3+NO2 DISS (AS N)		0.217	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	PHOSPHORUS TOTAL		0.017	MG/L		
NOR Watershed Rotation Sites (Non_LTT)	11/13/2007 10:20 AM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		
	10/22/2007 10:30 AM	TEMPERATURE FIELD		7.5	C		
	10/22/2007 10:30 AM	CLOUD COVER		60	%		
	10/22/2007 10:30 AM	CONDUCTIVITY FIELD		133	UMHOS/CM		
	10/22/2007 10:30 AM	TEMPERATURE AT LAB		ICED	C		
	10/22/2007 10:30 AM	DISSOLVED OXYGEN FIELD		10.3	MG/L		
	10/22/2007 10:30 AM	PH FIELD		6.9	SU		
	10/22/2007 10:30 AM	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)		3.	MG/L		
	10/22/2007 10:30 AM	NITROGEN NH3-N DISS		ND	MG/L		
	10/22/2007 10:30 AM	NITROGEN KJELDAHL TOTAL		0.63	MG/L		

Monitoring Station

Station ID 10022021
Station Name Namekagon River At New Sth 053

Show specific parameter: <Show All>

Sample Results

Previous 151-153 of 153 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
	10/22/2007 10:30 AM	NITROGEN NO3+NO2 DISS (AS N)		0.157	MG/L		
	10/22/2007 10:30 AM	PHOSPHORUS TOTAL		0.034	MG/L		
	10/22/2007 10:30 AM	TRANSPARENCY TUBE MEASUREMENT		>120.0	CM		

APPENDIX E-35 Trego Lake Aquatic Plant Management Plan

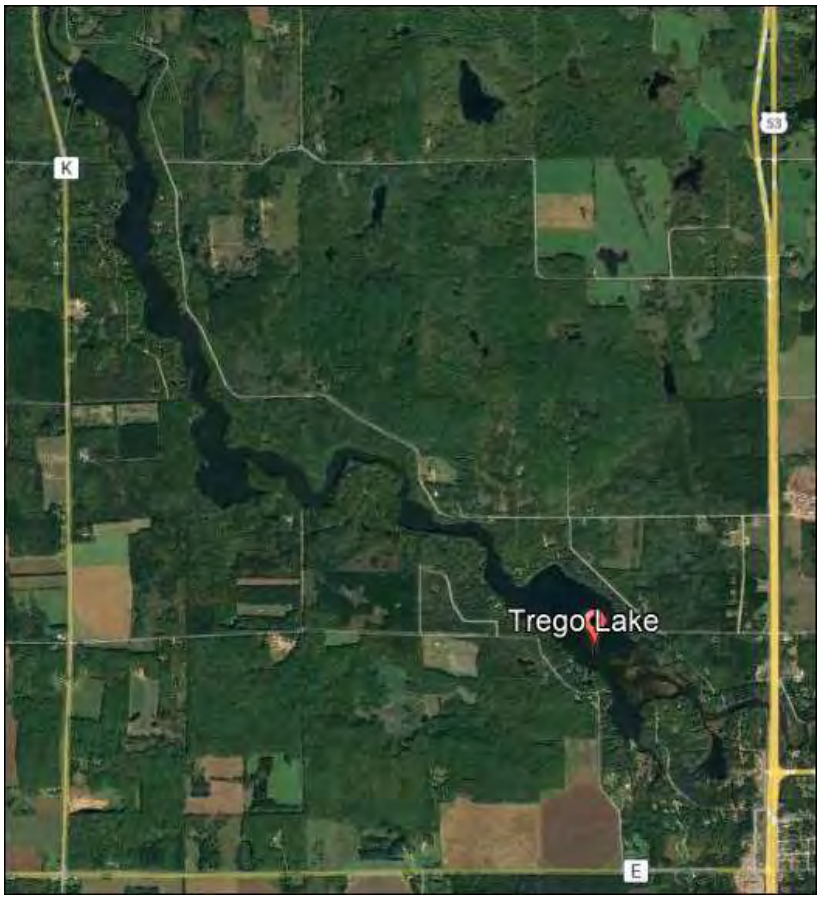
LAKE EDUCATION AND PLANNING SERVICES, LLC
PO BOX 26
CAMERON, WISCONSIN 54822

TREGO LAKE, WASHBURN COUNTY

2022-26 AQUATIC PLANT MANAGEMENT PLAN

WDNR WBIC: 2712000

Prepared by: Dave Blumer, Lake Educator/Manager & Megan Mader, Aquatic Biologist/Lake Management Assistant



TREGO LAKE DISTRICT
TREGO, WISCONSIN 54888

Distribution List

Trego Lake District

Wisconsin Department of Natural Resources

St. Croix Tribal Resources

National Park Service

Washburn County

Town of Trego

Table of Contents

1.0 EXECUTIVE SUMMARY 10

2.0 AQUATIC PLANT MANAGEMENT SUMMARY 11

3.0 PUBLIC PARTICIPATION AND STAKEHOLDER INPUT 12

4.0 LAKE INFORMATION 13

4.1 WATERSHED LAND COVER 14
4.2 WATERSHED SOILS 14
4.3 WATER QUALITY 15
4.3.1 Trophic State Index 16
4.3.2 Dissolved Oxygen 17
4.4 FISHERIES AND WILDLIFE 18
4.5 SHORELANDS 19
4.5.1 Threats To Shorelands 19
4.5.2 Shoreland Preservation and Restoration 19
4.5.3 Septic System Contributions 20
4.6 SHORELAND HABITAT ASSESSMENT 20
4.7 COARSE WOODY HABITAT (WOLTER, 2012) 20
4.8 HEALTHY LAKES AND RIVERS PROGRAM 21
4.9 DAM RELICENSING 21

5.0 NATIVE AQUATIC PLANT SURVEYS 22

5.1 SIMPSONS DIVERSITY INDEX 23
5.2 FLORISTIC QUALITY INDEX 23
5.3 LITTORAL ZONE, SPECIES RICHNESS, AND DENSITY 23
5.4 WILD RICE 27

6.0 AQUATIC INVASIVE SPECIES 30

6.1 CURLY-LEAF PONDWEED 30
6.1.1 CLP in Trego Lake 30
6.2 EURASIAN WATERMILFOIL 31
6.2.1 EWM in Trego Lake 33
6.3 PURPLE LOOSESTRIFE 34
6.4 REED CANARY GRASS 35
6.5 NON-NATIVE AQUATIC INVASIVE ANIMAL SPECIES 36
6.5.1 Chinese Mystery Snails 36
6.5.2 Rusty Crayfish 37
6.5.3 Zebra Mussels 38
6.6 AIS PREVENTION STRATEGY 38

7.0 PAST MANAGEMENT 40

7.1 AQUATIC PLANTS 40
7.2 DREDGING 41

8.0 NEED FOR MANAGEMENT 42

8.1 NO MANAGEMENT 42

9.0 INTEGRATED PEST MANAGEMENT 43

9.1 AQUATIC PLANT MANAGEMENT ALTERNATIVES 44
9.1.1 Physical/Manual Removal 45
9.1.2 Diver Assisted Suction Harvesting 46

9.1.3 Mechanical Removal *46*
9.1.4 Dredging *48*
9.1.5 Drawdown *48*
9.1.6 Bottom Barriers and Shading *49*
9.1.7 Biological Control *49*
9.1.8 Chemical Control *50*

10.0 MANAGEMENT DISCUSSION **52**

10.1 CLP 52
10.2 EWM 52
10.3 DENSE GROWTH NATIVE VEGETATION 52
10.3.1 Wild Rice *52*
10.3.2 Other Plants *52*
10.4 CHANGES TO THE HARVESTING PLAN 54
10.4.1 Open Water (CLP, EWM, and Native Vegetation) Harvest *54*
10.4.2 Access and Navigation Lanes *54*
10.4.3 Harvesting Totals and Estimated Costs (Owning versus Contracting Services) *55*
10.4.4 Benefits and Drawbacks *55*
10.5 OPERATING A MECHANICAL HARVESTER ON TREGO LAKE 56

11.0 WISCONSIN DEPARTMENT OF NATURAL RESOURCES GRANT PROGRAMS **57**

12.0 TREGO LAKE AQUATIC PLANT MANAGEMENT GOALS, OBJECTIVES, AND ACTIONS **58**

13.0 IMPLEMENTATION AND EVALUATION **59**

14.0 WORKS CITED **61**

Figures

Figure 1: Trego Lake, Trego Lake-Namekagon River watershed land cover (NLCD, 2016) 14
Figure 2: Soil types within the Trego Lake watershed 15
Figure 3: Average summer (July-August) Secchi disk readings at the Deep Hole Near Dam 16
Figure 4: Trophic status in lakes 17
Figure 5: Average Summer (July-August) Trophic State Index for Trego Lake 17
Figure 6: Healthy, AIS Resistant Shoreland (left) vs. Shoreland in Poor Condition 20
Figure 7: Coarse woody habitat-Fishsticks projects 21
Figure 8: Species that showed significant changes between 2011 and 2020 (ERS) 24
Figure 9: *Valisneria americana* (water celery) Present at 104/231 sites with vegetation 24
Figure 10: *Ceratophyllum demersum* (Coontail) Present at 89/231 sites with vegetation 25
Figure 11: *Potamogeton zosteriformis* (Flat-stem pondweed) Present at 82/231 sites with vegetation 25
Figure 12: *Zizania palustris* (Northern wild rice) Present at 85/231 sites with vegetation 25
Figure 13: 2020 littoral zone (ERS) 26
Figure 14: 2020 native species richness (ERS) 26
Figure 15: 2020 total rake fullness values (ERS) 27
Figure 16: Wild rice 27
Figure 17: Wild rice in the east basin of Trego Lake, July 2020 (ERS) 28
Figure 18: 2020 point-intercept survey results for wild rice (ERS) 28
Figure 19: Wild rice in Potato Creek and the east basin of Trego Lake in 2009 (GLIFWC) 29
Figure 20: CLP Plants and Turions 30
Figure 21: 2020 CLP bedmapping (ERS) 31
Figure 22: Dense 2020 CLP surface water mats in Trego Lake (ERS) 31
Figure 23: EWM plant and a floating fragment with new roots 32
Figure 24: 2020 EWM beds in the east basin of Trego Lake 34
Figure 25: Purple Loosestrife 35
Figure 26: Reed Canary Grass 36
Figure 27: Chinese Mystery Snails (left) and Banded Mystery Snails (right) 37
Figure 28: Rusty Crayfish and identifying characteristics 38
Figure 29: Zebra Mussels 38
Figure 30: Navigation access lanes included with the last several WDNR mechanical harvesting permits (TLD) 40
Figure 31: 2021 location of navigation buoys (purple stars), and proposed harvesting lanes (yellow lines) 41
Figure 32: Wisconsin Department of Natural Resources: Wisconsin Waterbodies – Integrated Pest Management March 2020 44
Figure 33: Aquatic vegetation manual removal zone 45
Figure 34: Aquatic Mower & Weedshear Weed Cutter (weedersdigest.com) 48
Figure 35: Galerucella Beetle 50
Figure 36: Wild rice in Trego Lake. Orange crosses (2011 WDNR PI), Yellow squares (2020 ERS PI), Green hash – 2021 bedmapping only in the east basin (LEAPS) 53
Figure 37: 2020 water celery distribution (left), coontail distribution (center), and flat-stem pondweed distribution (right) 53
Figure 38: Lemna minor (small duckweed) and Wolfia Columbiana (watermeal) (left), and Spirodela polyrhiza (large duckweed) (right) (ERS) 54

Tables

Table 1: Natural Heritage Inventory Report for T40N, R12W (last accessed 11-7-2021) 18
Table 2: Aquatic plant survey statistics – 2011 (WDNR) and 2020 (ERS) 23

AQUATIC PLANT MANAGEMENT PLAN- TREGO LAKE

PREPARED FOR THE TREGO LAKE DISTRICT

1.0 Executive Summary

Trego Lake, designated as "outstanding resource water" by the State of WI, is home to many species of birds, game fish, and a diverse aquatic plant community. Unfortunately, invasive curly-leaf pondweed *Potamogeton crispus* (CLP) and Eurasian watermilfoil *Myriophyllum spicatum* (EWM) are both established in Trego Lake, threatening its biodiversity, recreation, and overall health. CLP has been an issue in the lake since at least the early 1990's when the first Aquatic Plant Management (APM) Plan was developed. EWM was first discovered in the lake in July 2019 and was the impetus leading toward the development of a new APM Plan. Management of both species is necessary to protect this valuable resource and maintain its status as a high-quality waterbody. An integrated management approach that relies on a combination of manual removal (hand, rake, snorkel, scuba) and mechanical harvesting is recommended to continue for Trego Lake.

Formed in 1989, the Trego Lake District (TLD) in cooperation its partners including but not limited to the Great Lakes Fish and Wildlife Commission (GLIFWC), St. Croix Tribal Resources (SCTR), National Park Service (NPS), Washburn County (WC), Town of Trego, local business entities, and the general lake community, take an active role in managing the lake. Their mission is "To support and encourage the preservation of the natural beauty, peacefulness, safety, and recreational value of the shoreline and waters of Trego Lake, and to coordinate with the various public and private organizations involved in these efforts." Therefore, the primary goal of this plan is to protect Trego Lake's ecosystem and native plant community for the benefit of the general public and all lake users through management efforts that will control invasive aquatic plant species and maintain lake usability.

The main tasks included in this Plan are:

- Management of existing AIS through implementation of a mechanical harvesting program;
- Management of nuisance level native vegetation through implementation of a mechanical harvesting program;
- Education of property owners and lake users about aquatic invasive species – identification, monitoring, impacts on the lake, prevention, and control through public education, information, and outreach;
- Education and outreach to property owners and lake users on how they can reduce pollutant loading to the lake;
- Research and monitoring to develop a better understanding of the lake and the factors affecting it, and;
- Following an adaptive management approach based on Integrated Pest Management guidelines that will measure and analyze the effectiveness of control activities and modify the management plan as necessary to meet goals and objectives.

2.0 Aquatic Plant Management Summary

We recommend the continuation of manual and mechanical control methods to reduce the impact of CLP on the health of the overall plant community, navigation, and recreation; and to minimize future impacts of EWM in Trego Lake. The overall goal of this Aquatic Plant Management (APM) Plan is to protect this outstanding resource from degradation by maximizing prevention of new invasions and through containment and control of existing aquatic invasive species while maintaining recreational use of the lake.

This plan supports sustainable practices to protect, maintain and improve the native aquatic plant community, the fishery, and the recreational and aesthetic values of the lake. This plan is intended to be a living document that will be evaluated annually to determine if it is meeting stated goals and community expectations, and it can be revised if necessary. The TLD sponsored the development of this APM Plan aided by a WDNR Early Detection and Response grant awarded when EWM was first identified in the lake.

APM plans developed for northern Wisconsin lakes are evaluated according to Northern Region APM Strategy goals developed by the WDNR (Appendix A). APM plans and the associated management permits (chemical or harvesting) are reviewed by the WDNR. Additional review may be completed by the Voigt Intertribal Task Force (VITF) in cooperation with the Great Lakes Indian Fish and Wildlife Commission (GLIFWC). WDNR aquatic plant management planning guidelines, the Northern Region Aquatic Plant Management Strategy, and the goals of the TLD in conjunction with the current state of the lake formed the framework for the development of this APM Plan. This plan is designed to be implemented over the course of 5 years with goals and objectives to be met throughout that time frame (Appendix B).

3.0 Public Participation and Stakeholder Input

With the discovery of EWM in the lake in July 2019, it became necessary for the TLD to update their existing APM Plan, written by Barr Engineering (1994). The process of updating that Plan began in the fall of 2019 when TLD board members were asked to identify what they saw as future goals for the lake and lake use in light of the new discovery of EWM. The following goals were identified:

- Maintain and improve recreation, natural habitat, and scenic beauty;
- Ensure clean water, lake access and usability, and abundant fish for all lake users;
- Effective communication with the TLD constituency;
- Build and maintain partnerships with other stakeholders; and
- Effective management planning and implementation - AIS, nuisance native plants, water quality, & sediment build up.

From this, the TLD Board determined it was time to involve a consultant to guide them through the process of applying for grant funds to develop a management plan that would help meet these goals. After a presentation made by their chosen consultant during the October 10, 2019 Board Meeting a WDNR Early Detection and Response grant was submitted by the Trego Lake District. That grant was awarded in March 2020. A meeting with the TLD Board and its constituency was held on May 27, 2020 to introduce and discuss the project. Additional meetings were held in June and August of 2020, and in March, April, July and October 2021. A Stakeholders Meeting was held via ZOOM on October 5th, 2021. WDNR, SCTR, and WC were present. NPS was invited but unable to attend.

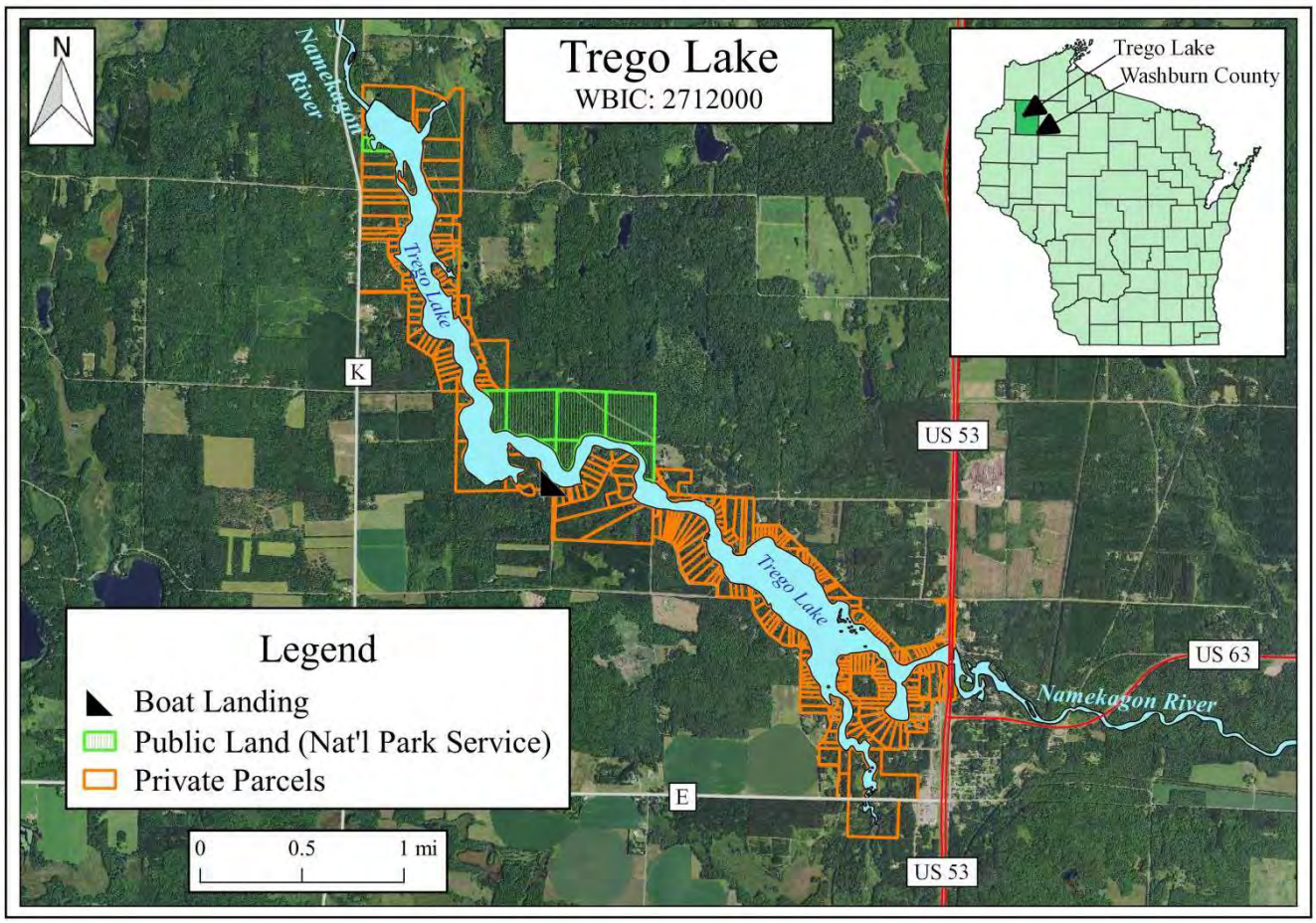
The completed APM Plan was put on the TLD and Consultant's webpage for review by interested parties. Notice was sent to all the primary stakeholders informing them of the posting. After a required comment period, the APM Plan was approved by the TLD and sent to the WDNR with an official request for approval.

4.0 Lake Information

Trego Lake (WBIC 2712000) is a 383 acre flowage created by the Trego Hydro Dam on the Namekagon River in central Washburn County, Wisconsin in the Town of Trego just north of Spooner, WI at the intersection of Hwy 53 and 63 (Figure 1). Potato Creek enters the lake from the south. It is approximately five miles long from Hwy 53 to the dam with a maximum depth of 36-feet and an average depth of 11-feet. While called a lake, it is officially a flowage with more riverine characteristics than lake characteristics. It is accessible from a public access about midway between the dam and Hwy 53 and from landings on the Namekagon River upstream.

Trego Lake is considered "outstanding resource water" by the WDNR. The Namekagon River both upstream and downstream of the lake itself is part of the St. Croix National Wild and Scenic Riverway. The upstream end of the lake is considered a Priority Navigable Waterway for musky. The entire body of Trego Lake and Potato Creek are considered wild rice waters.

The TLD is a local unit of government with responsibility for the protection and rehabilitation of Trego Lake. The TLD has authority to enter contracts, purchase equipment, apply for grants, levy taxes and accept donations. Its activities include: protection of fish, maintenance of water quality, marking navigation channels, control of aquatic plants and aquatic invasive species, and reduction of sedimentation buildup. The TLD consists of the Trego Flowage and lakeshore from the Hwy 53 bridge on the east to the Xcel Energy dam on the west. It is the second largest lake in Washburn County.



4.1 Watershed Land Cover

A watershed is an area of land from which water drains to a common surface water feature such as a stream, lake, or wetland. Trego Lake is within the Trego Lake-Namekagon River watershed (Figure 1). Land cover in the watershed is mostly forest with a mix of wetland, open water, and limited agriculture. A lake usually reflects how the land in its watershed is being used. Less human disturbance like home and business building, roadways, and agriculture within a lake's watershed generally means a healthier lake overall. Agricultural land, mowed lawns, and increased impervious (does not allow liquid to pass through) surfaces like roads and rooftops, cause more of the water falling on the land to "run off" into lakes, ponds, rivers and streams carrying dirt and other pollutants with it, rather than soaking into the ground where many pollutants are removed.

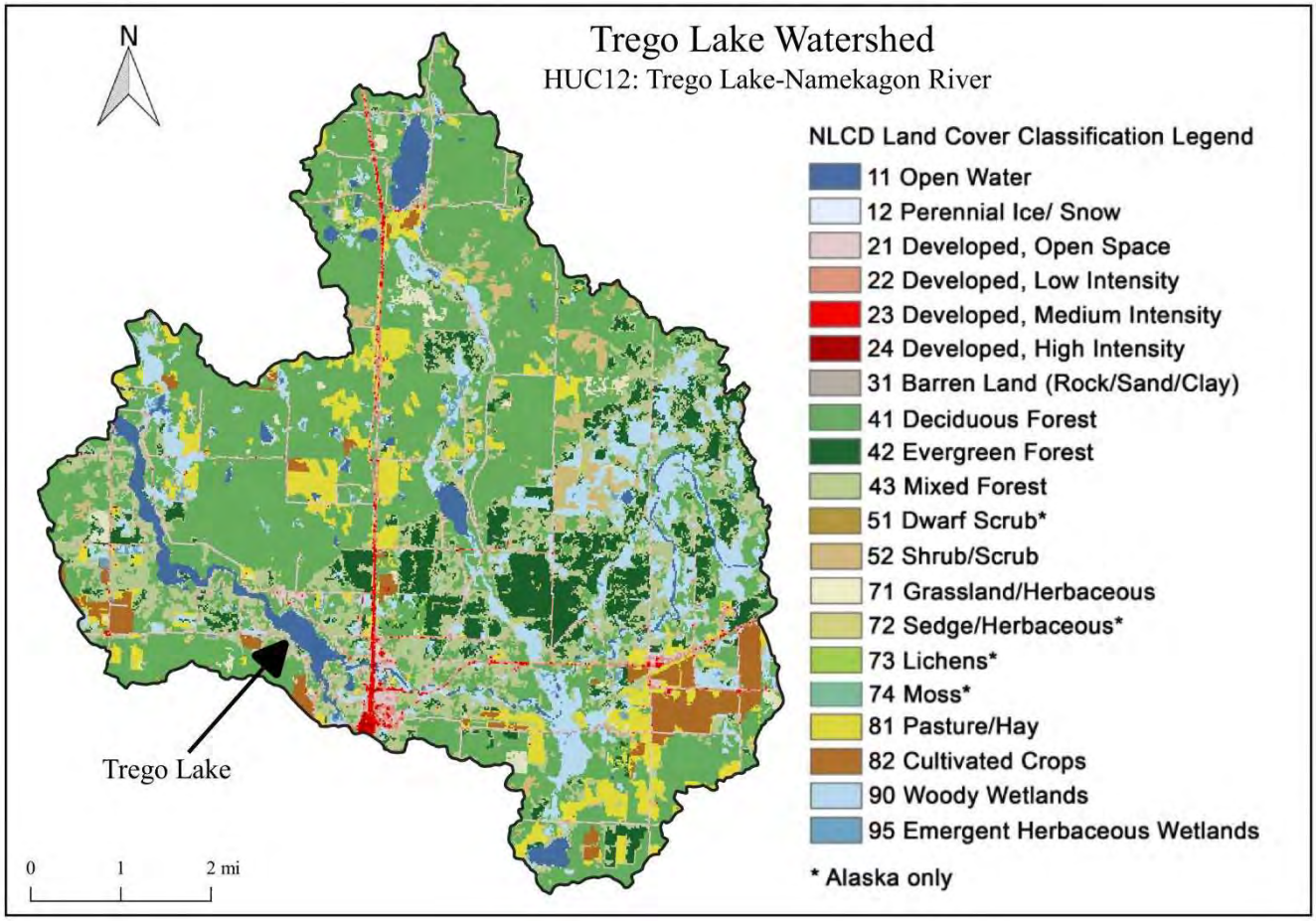


Figure 1: Trego Lake, Trego Lake-Namekagon River watershed land cover (NLCD, 2016)

4.2 Watershed Soils

The soil types found in a watershed help determine the capacity for runoff into a lake. Soils that have a high infiltration rate (can soak up lots of water) make the potential amount of runoff from the land very low. These soils are generally very sandy and allow water to pass through unimpeded. Conversely, soils that have a very low infiltration rate make the runoff potential fairly high. These soils are generally very dense with high amounts of organic material. Water moves slowly through these soils often resulting in standing water on flat surfaces and flowing water over sloped surfaces.

Soils in the Trego Lake watershed are mostly sandy in nature (Figure 2), minimizing overland runoff unless disturbed by human changes including lawns, driveways, roads, and rooftops.

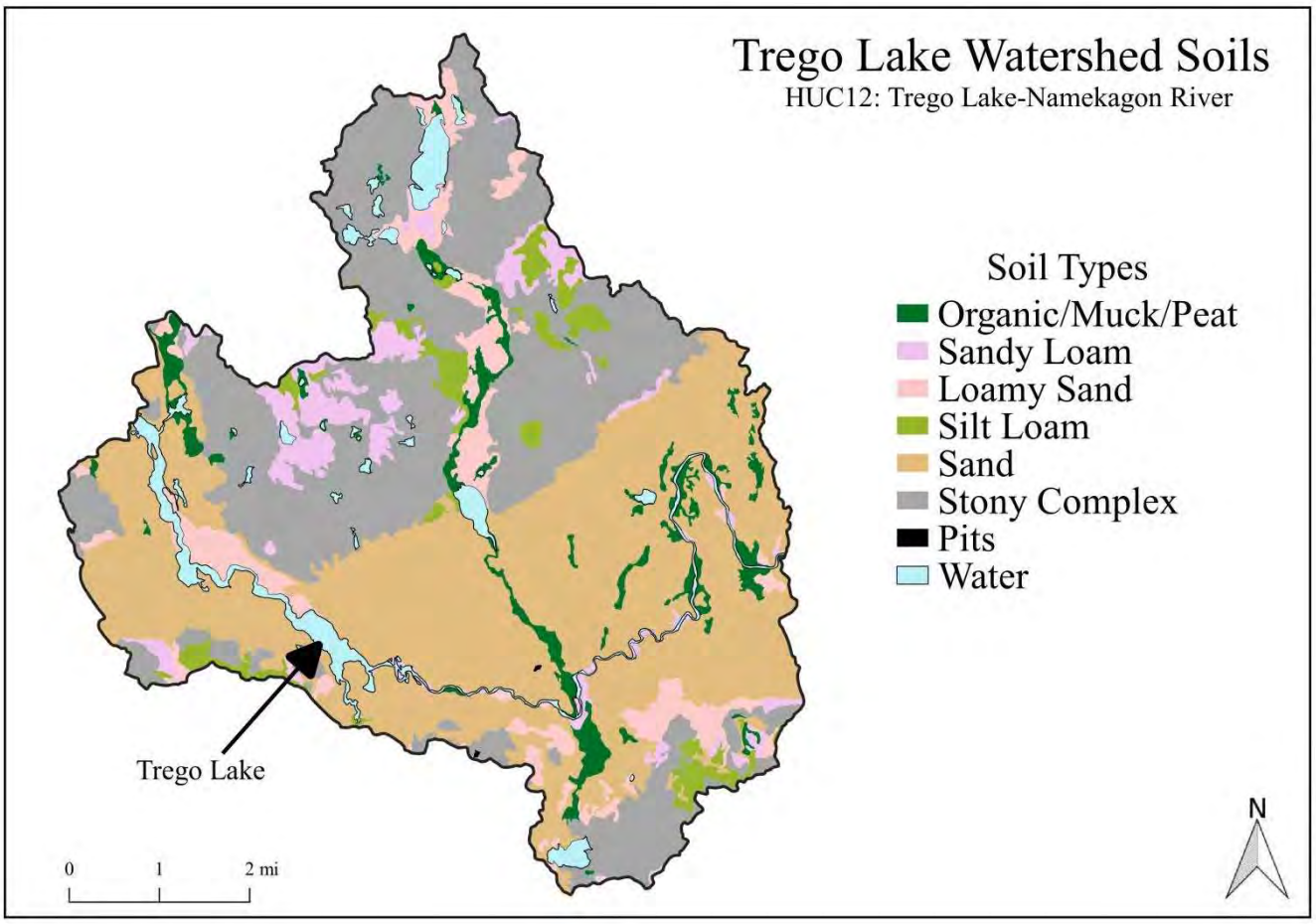


Figure 2: Soil types within the Trego Lake watershed

4.3 Water Quality

Water clarity and water chemistry are important indicators of water quality. Secchi disk readings of water clarity have been collected by Wisconsin Citizen Lake Monitoring Network (CLMN), formerly the Self-help Lake Monitoring Program, volunteers since 1987. The WDNR website indicates CLMN volunteers have collected consistent water quality data from 2003-2012, then sporadically thereafter. In the last full year of CLMN expanded volunteer monitoring (2012), the Deep Hole Near Dam site was sampled 16 different days. Parameters sampled included water clarity, temperature, total phosphorus, and chlorophyll.

The average summer (July-Aug) secchi disk reading in 2012 was 8.33 feet. The average for the Northwest Georegion was 8 feet. Typically the summer (July-Aug) water was reported as clear and brown. This suggests that the Secchi depth may have been mostly impacted by tannins, stain from decaying matter. Tannins are natural and not a result of pollution. Tannins can be distinguished from suspended sediment because the water, even though it's brown, it looks clear, like tea. Though tannins are not harmful per se, they are often not perceived as aesthetically pleasing as clear water. Tannins can also be important for decreasing light penetration into the water and decreasing algal growth.

Figure 3 shows the average total and summer (July-August) Secchi disk readings on Trego Lake between 2003 and 2012.

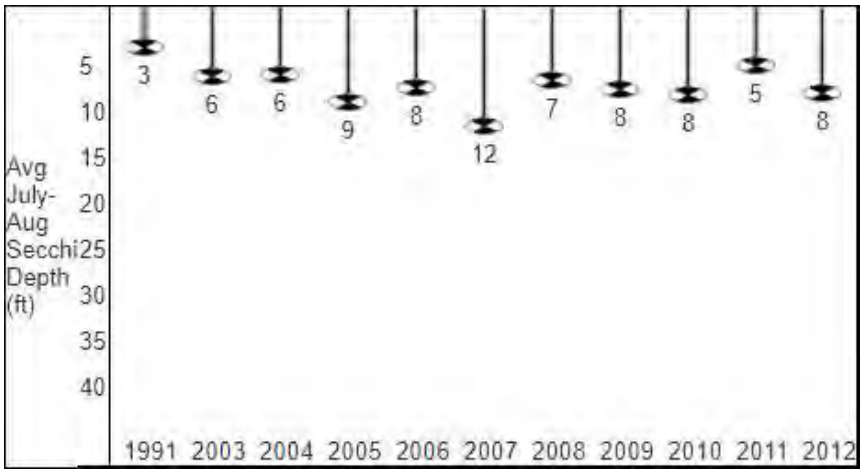


Figure 3: Average summer (July-August) Secchi disk readings at the Deep Hole Near Dam

The average summer chlorophyll in 2012 was 8.9µg/l, compared to a Northwest Georegion summer average of 26.4µg/l. The 2012 summer Total Phosphorus average was 25µg/l. Lakes that have more than 20 µg/l and impoundments that have more than 30 µg/l of total phosphorus may experience noticeable algae blooms.

The overall Trophic State Index (based on chlorophyll) for Trego Lake in 2012 was 51. The TSI suggests that Trego was eutrophic. This TSI usually suggests decreased clarity, fewer algal species, oxygen-depleted bottom waters during the summer, plant overgrowth evident, warm-water fisheries (pike, perch, bass, etc.) only.

4.3.1 Trophic State Index

One of the most commonly used metrics of water quality is the trophic state of a lake. The trophic state is defined as the total load of biomass in a waterbody at any given time (Carlson & Simpson, 1996). To determine the trophic state of any given lake, the Tropic State Index (TSI) is generally used. This index uses the three main variables for water quality measurement in WI: Secchi depth (water clarity), total phosphorus (nutrients in the water), and chlorophyll concentration (the amount of algae in the water). TSI values are technically limitless, but when applied, they almost always fall between 0 and 100. To make sense of these values, they are broken into different trophic states. The four main trophic states are oligotrophic (TSI<40), mesotrophic (TSI 40-50), eutrophic (TSI 50-70), and hypereutrophic (TSI>70) (Figure 4). Oligotrophic lakes are usually very clear, clean lakes with low nutrient levels. Mesotrophic lakes are moderately clear with some nutrients and more plants present within the system. Eutrophic lakes have excess nutrients that support a great deal of algae growth, and may have a large aquatic plant community. Hypereutrophic lakes are typically very green with dense algae and limited plant growth.

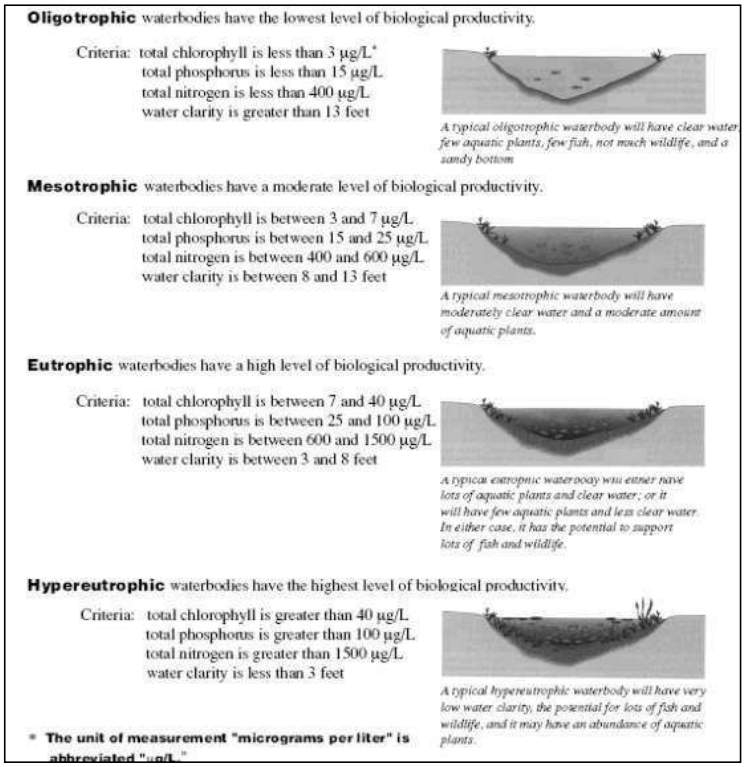


Figure 4: Trophic status in lakes

From 2003 to 2012, Trego Lake was listed as mesotrophic bordering on eutrophic in nature (Figure 5). Generally, the levels of chlorophyll within a lake are considered the most accurate indication of that lake's trophic status. However, with Trego Lake being a flowage with many riverine characteristics including quick movement of water through the system, algae may not as readily form before being carried through and out of the system.

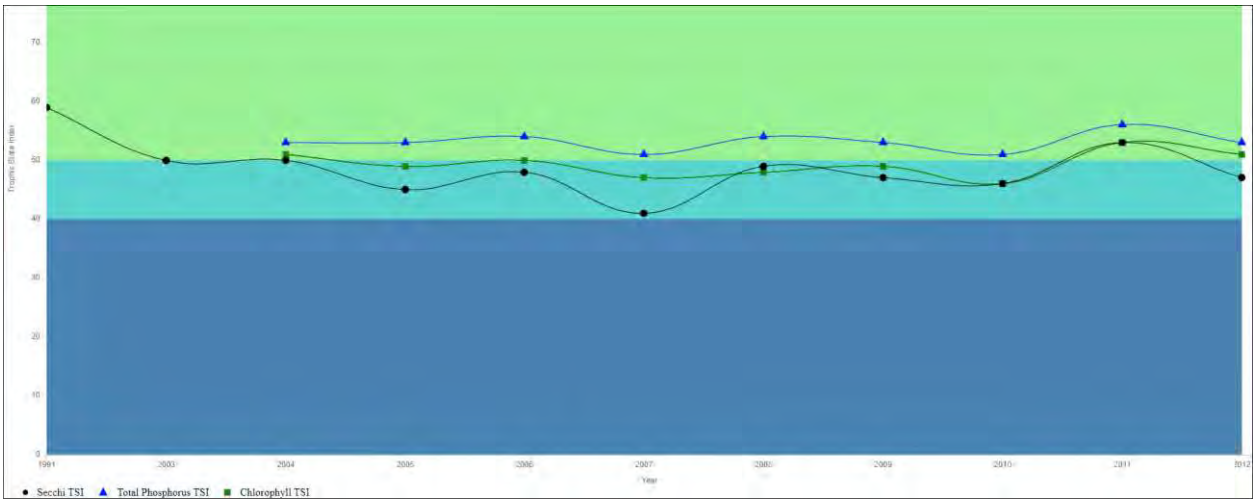


Figure 5: Average Summer (July-August) Trophic State Index for Trego Lake

4.3.2 Dissolved Oxygen

Dissolved oxygen is essential for the survival of most aquatic animals, just like atmospheric oxygen is essential for most terrestrial animals. Surface waters (also called the epilimnion) exchange oxygen with the atmosphere and are

usually oxygen-rich. In deeper lakes, or smaller lakes that are generally sheltered from prevailing winds, the water in the lake stratifies (or separates) into distinct zones during the summer months, impacting water quality and affecting biota. These zones are the epilimnion (usually oxygen-rich surface waters), the thermocline (the layer separating the surface and bottom waters), and the hypolimnion (oxygen-depleted bottom waters). Drainage lakes, like Trego, typically do not stratify. This was confirmed through CLMN temperature profiling completed at the Deep Hole near the dam between 2003 and 2012. This means that the lake has sufficient oxygen to support life at all depths, and the lake is relatively uniform in temperature from top to bottom.

4.4 Fisheries and Wildlife

A fisheries survey was completed in 2019. According to WDNR Fisheries Biologist Craig Roberts, the Trego Lake fishery basically acts as a "complex riverine system" with lots of brushy habitat and vegetation. Walleye fry and fingerlings were stocked between 1979 and 2011. But in 2011, the WDNR fisheries biologist at that time cut stocking. According to Roberts, 2019 survey results continue to support that move saying that stocking is ineffective because current data indicates that

- Current catch of young walleye is comparable to years with stocking,
- Multiple year classes of natural walleye exist without stocking,
- Past surveys show poor stocking survival, and
- Fish leave the flowage (Trego Lake) to the river below.

According to 2019 fisheries survey results, smallmouth bass are the most abundant game fish. Largemouth bass are present, but rare. Northern pike and muskellunge are also present. Musky are stocked during even years but many of the stocked fish may get below the dam and support the downstream fishery. Stocking of lake sturgeon occurs during odd years and is primarily done as a restoration activity. Bluegills are the most abundant panfish.

Bald eagles, loons, and furbearers can be found on or near the lake on a regular basis. The Natural Heritage Inventory (Table 1) mostly lists animals including two mussel species, four fish species, two turtles, and a lizard. Wild rice is abundant in the system.

Table 1: Natural Heritage Inventory Report for T40N, R12W (last accessed 11-7-2021)

Scientific Name	Common Name	WI Status	Federal Status	Group
Acipenser fulvescens	Lake Sturgeon	SC/H		Fish~
Alasmidonta marginata	Elktoe	SC/P		Mussel~
Boechera missouriensis	Missouri Rock-cress	SC		Plant
Cyclonaias tuberculata	Purple Wartyback	END		Mussel~
Empidonax minimus	Least Flycatcher	SC/M		Bird
Emydoidea blandingii	Blanding's Turtle	SC/P	SOC	Turtle~
Etheostoma microperca	Least Darter	SC/N		Fish~
Glyptemys insculpta	Wood Turtle	THR	SOC	Turtle~
Moxostoma carinatum	River Redhorse	THR		Fish~
Northern dry-mesic forest	Northern Dry-mesic Forest	NA		Community
Northern hardwood swamp	Northern Hardwood Swamp	NA		Community~
Percina evides	Gilt Darter	THR		Fish~
Platanthera hookeri	Hooker's Orchid	SC		Plant
Plestiodon septentrionalis	Prairie Skink	SC/H		Lizard

4.5 Shorelands

How the shoreline of a lake is managed can have big impacts on the water quality and health of that lake. Natural shorelines prevent polluted runoff from entering lakes, help control flooding and erosion, provide fish and wildlife habitat, may make it harder for aquatic invasive species to establish themselves, muffle noise from watercraft, and preserve privacy and natural scenic beauty. Many of the values lake front property owners appreciate and enjoy about their properties - natural scenic beauty, tranquility, privacy, relaxation - are enhanced and preserved with good shoreland management. And healthy lakes with good water quality translate into healthy lake front property values.

Shorelands may look peaceful, but they are actually the hotbed of activity on a lake. 90% of all living things found in lakes - from fish, to frogs, turtles, insects, birds, and other wildlife - are found along the shallow margins and shores. Many species rely on shorelands for all or part of their life cycles as a source for food, a place to sleep, cover from predators, and to raise their young. Shorelands and shallows are the spawning grounds for fish, nesting sites for birds, and where turtles lay their eggs. There can be as much as 500% more species diversity at the water's edge compared to adjoining uplands.

Lakes are buffered by shorelands that extend into and away from the lake. These shoreland buffers include shallow waters with submerged plants (like coontail and pondweeds), the water's edge where fallen trees and emergent plants like rushes might be found, and upward onto the land where different layers of plants (low ground cover, shrubs, trees) may lead to the lake. A lake's littoral zone is a term used to describe the shallow water area where aquatic plants can grow because sunlight can penetrate to the lake bottom. Shallow lakes might be composed entirely of a littoral zone. In deeper lakes, plants are limited where they can grow by how deeply light can penetrate the water.

4.5.1 Threats To Shorelands

When a landowner develops a waterfront lot, many changes may take place including the addition of driveways, houses, decks, garages, sheds, piers, rafts and other structures, wells, septic systems, lawns, sandy beaches and more. Many of these changes result in the compaction of soil and the removal of trees and native plants, as well as the addition of impervious (hard) surfaces, all of which alter the path that precipitation takes to the water.

Building too close to the water, removing shoreland plants, and covering too much of a lake shore lot with hard surfaces (such as roofs and driveways) can harm important habitat for fish and wildlife, send more nutrient and sediment runoff into the lake, and cause water quality decline.

Changing one waterfront lot in this fashion may not result in a measurable change in the quality of the lake or stream. But cumulative effects when several or many lots are developed in a similar way can be enormous. A lake's response to stress depends on what condition the system is in to begin with, but bit by bit, the cumulative effects of tens of thousands of waterfront property owners "cleaning up" their shorelines, are destroying the shorelands that protect their lakes. Increasing shoreline development and development throughout the lake's watershed can have undesired cumulative effects.

4.5.2 Shoreland Preservation and Restoration

If a native buffer of shoreland plants exists on a given property, it can be preserved and care taken to minimize impacts when future lake property projects are contemplated. If a shoreline has been altered, it can be restored. Shoreline restoration involves recreating buffer zones of natural plants and trees. Not only do quality wild shorelines create higher property values, but they bring many other values too. Some of these are aesthetic in nature, while others are essential to a healthy ecosystem. Healthy shorelines mean healthy fish populations, varied plant life, and the existence of the insects, invertebrates and amphibians which feed fish, birds and other creatures. Figure 6 shows the difference between a natural and unnatural shoreline adjacent to a lake home. More information about healthy shorelines can be found at the following website: https://healthylakeswi.com/ (last accessed 11-11-2021).

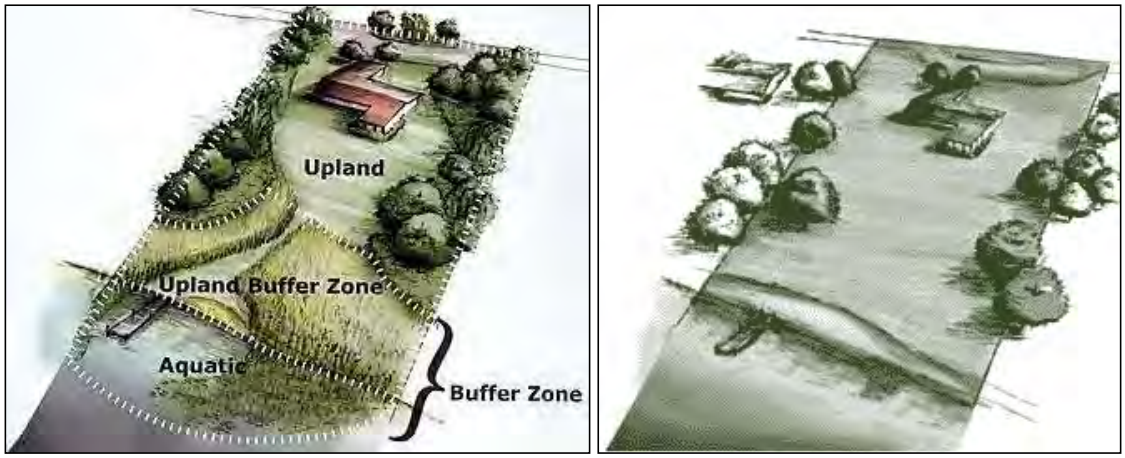


Figure 6: Healthy, AIS Resistant Shoreland (left) vs. Shoreland in Poor Condition

4.5.3 Septic System Contributions

Related to shoreland conditions is the status of private onsite waste treatment systems (POWTS) also known as septic systems. Malfunctioning systems may be adding pollutants to the lake. At present, no information has been collected related to the status of the POWTS around Trego Lake, but maintaining properly functioning systems is an important part of maintaining lake health.

4.6 Shoreland Habitat Assessment

One way to determine the health of the shoreland adjacent to Trego Lake is to complete a Shoreland Habitat Assessment. Using protocol developed by the WDNR, the survey is intended to provide management recommendations for individual property owners based on the evaluation of their property. The assessment involves photographing each parcel from the lake which is then matched to land use information collected from the riparian zone, defined as the strip of land, along the shore, from the high water level mark inland to 35 feet. The information collected includes ground cover (lawn, impervious surfaces, and native plants), the number of human structures in the riparian zone, and various other runoff concerns. This protocol also assesses the amount of coarse woody habitat (see next section) present in the lake however this is done on a whole lake level rather than for each individual parcel. Woody debris in the water provides habitat for fish, birds, and numerous other types of wildlife as well in addition to providing some protecting from bank erosion.

Completing a shoreland habitat assessment of Trego Lake would quantify the current level of development and make recommendations on how to improve the shoreland for the benefit of water quality, fish, and other fauna. In addition, it has been requested by the National Park Service as a part of the current hydro-dam relicensing process currently going on.

4.7 Coarse Woody Habitat (Wolter, 2012)

Coarse woody habitat (CWH) in lakes is classified as trees, limbs, branches, roots, and wood fragments at least 4 inches in diameter that enter a lake by natural (beaver activity, toppling from ice, wind, or wave scouring) or human means (logging, intentional habitat improvement, flooding following dam construction). CWH in the littoral or near-shore zone serves many functions within a lake ecosystem including erosion control, as a carbon source, and as a surface for algal growth which is an important food base for aquatic macro invertebrates. Presence of CWH has also been shown to prevent suspension of sediments, thereby improving water clarity. CWH serves as important refuge, foraging, and spawning habitat for fish, aquatic invertebrates, turtles, birds, and other animals. The amount of littoral CWH occurring naturally in lakes is related to characteristics of riparian forests and likelihood of toppling. However, humans have also had a large impact on amounts of littoral CWH present in lakes through time. During the 1800's the amount of CWH in northern lakes was increased beyond natural levels as a result of logging practices. But changes in the logging industry and forest composition along with increasing shoreline development have led to reductions in CWH present in many northern Wisconsin lakes over the last century.

CWH is often removed by shoreline residents to improve aesthetics or select recreational opportunities (swimming and boating). Jennings et al. (2003) found a negative relationship between lakeshore development and the amount of CWH in northern Wisconsin lakes. Similarly, Christensen et al. (1996) found a negative correlation between density of cabins and CWH present in Wisconsin and Michigan lakes. While it is difficult to make precise determinations of natural densities of CWH in lakes it is believed that the value is likely on the scale of hundreds of logs per mile. The positive impact of CWH on fish communities have been well documented by researchers, making the loss of these habitats a critical concern.

Adding coarse woody habitat to a lake is relatively easy to do particularly when private landowners and lake associations are willing to partner with county, state, and federal agencies. Large-scale CWH projects, called "fishsticks", are currently being completed by lake associations and local governments with assistance from the WDNR (Figure 7).

Figure 7: Coarse woody habitat-Fishsticks projects

4.8 Healthy Lakes and Rivers Program

The WDNR supports a grant program specifically designed to provide funding for small projects that can help improve shoreland habitat and increase CWH in a lake. The grant program offers up to $1,000.00 per practice including native plantings, rain gardens, diversions, infiltration trenches, and fishsticks projects.

4.9 Dam Relicensing

The license (FERC No. 2711) held by Northern States Power Company – Wisconsin (NSPW) d/b/a Xcel Energy for the hydroelectric dam on the Namekagon River that forms Trego Lake expires as of November 30, 2025. The dam relicensing process has already begun with NSPW sending out a Preliminary Application Document (PAD) that provides the FERC and other entities with existing, relevant, and reasonably available information not already in the possession of NSPW, pertaining to the Project to help identify issues and related information needs, develop study requests and study plans, and prepare documents analyzing impacts. This document was sent to multiple stakeholders in the dam relicensing project including the TLD and NPS.

The NPS responded to the PAD with requests for several additional studies of Trego Lake to be completed before the dam license is renewed. These study requests included a Hydraulics, Sedimentation, and Channel Change Study; a Recreational Study; and a Shoreline Survey Study. All three of these requested studies would benefit current and future management planning for Trego Lake and are highly supported by the TLD.

One issue with the proposed dam relicensing is changing the current boundaries that make up Trego Lake. The proposal from NSPW removes a portion of lake surface area east of Hwy 53 reducing the size of the lake. This change would not impact the current taxing district area of the TLD, but it is still not supported by the TLD.

The TLD has been monitoring the dam relicensing process and provides updates to its membership, as they themselves learn more.

5.0 Native Aquatic Plant Surveys

In 2020, Endangered Resources Services, LLC completed a whole-lake, point-intercept (PI), aquatic plant survey on Trego Lake. Prior to 2020, the last official whole-lake point-intercept (PI) aquatic plant survey was completed in 2011 by the WDNR and volunteers from the TLD. Some key findings from the 2011 survey are listed below:

- The survey was completed in late June.
- Aquatic plants grow to a maximum depth of about 9 feet in Trego Lake.
- 55% of the lake's area is shallow enough to support aquatic plant growth (littoral zone)
- 270 sites were sampled in the area shallow enough to support aquatic plant growth
- 84% of these sites had aquatic plants present
- Thirty-nine species of aquatic plants were found
- Curly-leaf pondweed (*Potamogeton crispus*), an aquatic invasive species that has been present in Trego Lake for many years, was found at 12% of the sites sampled.
- Wild rice (*Zizania palustris*) was found at 17% of the sites sampled
- The three most commonly occurring aquatic plants were: coontail (*Ceratophyllum demersum*), 41% of sites; flat-stem pondweed (*Potamogeton zosteriformis*), 37% of sites; and common waterweed (*Elodea Canadensis*), 24% of sites.
- Two other non-native aquatic plants were found - narrow-leaved cattail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*).

Key findings from the 2020 survey are listed below:

- The survey was completed in late July.
- Aquatic plants grow to a maximum depth of 10-ft.
- 66% of the lake's area is shallow enough to support aquatic plant growth
- 325 sites were sampled in the area shallow enough to support aquatic plant growth
- 71% of these sites had aquatic plants
- 52 different plant species were found
- During a survey in mid-June curly-leaf pondweed was found at 24% of the sites in the littoral zone
- During a survey in mid-June, Eurasian watermilfoil (*Myriophyllum spicatum*) was found at 8% of the sites in the littoral zone
- Wild rice was found at 26% of the sites sampled within the littoral zone, and at 37% of the sites sampled with vegetation.
- The three most commonly occurring aquatic plants were: wild celery (*Vallisneria americana*), 43% of sites, coontail (*Ceratophyllum demersum*), 32% of sites; and flat-stem pondweed (*Potamogeton zosteriformis*), 29% of sites.
- Three other non-native aquatic plants were found – Eurasian watermilfoil, narrow-leaved cattail, and reed canary grass.

Summary statistics from both aquatic plant surveys are presented in Table 2. The total sites with vegetation are nearly identical. The number of different species identified is way up in 2020, but it is not known whether this is because Trego Lake is showing increased diversity or if it is because of the different surveyors used each year. Furthermore, during the 2011 survey, only points considered to be in the littoral zone were sampled. In the 2020, all points that were accessible were surveyed which could have increased the number of species identified.

Table 2: Aquatic plant survey statistics – 2011 (WDNR) and 2020 (ERS)

SUMMARY STATS:	2011	2020
Total number of sites visited	274	493
Total number of sites with vegetation	226	231
Total number of sites shallower than maximum depth of plants	270	325
Frequency of occurrence at sites shallower than maximum depth of plants	83.70	71.08
Simpson Diversity Index	0.90	0.92
Maximum depth of plants (ft)**	9.30	10.00
Number of sites sampled using rake on Rope (R)	0	0
Number of sites sampled using rake on Pole (P)	274	0
Average number of all species per site (shallower than max depth)	2.30	1.98
Average number of all species per site (veg. sites only)	2.75	2.79
Average number of native species per site (shallower than max depth)	2.19	1.94
Average number of native species per site (veg. sites only)	2.62	2.75
Species Richness	25	42
Species Richness (including visuals)	34	47
Species Richness (including visuals and boat survey)	41	52
Mean depth of plants (ft)	3.56	3.23
Median depth of plants (ft)	3.50	3.00
Mean rake fullness (veg. sites only)	1.54	2.05

5.1 Simpsons Diversity Index

Plant diversity was very high in 2011 with a Simpson Index value of 0.90. It was even higher in 2020 at 0.92. The Simpson's diversity index allows the entire plant community at one location to be compared to the entire plant community at another location. It also allows the plant community at a single location to be compared over time thus allowing a measure of community degradation or restoration at that site. With Simpson's diversity index, the index value represents the probability that two individuals (randomly selected) will be different species. The index values range from 0 to 1 where 0 indicates that all the plants sampled are the same species to 1 where none of the plants sampled are the same species. The greater the index value, the higher the diversity in a given location. Although many natural variables like lake size, depth, dissolved minerals, water clarity, mean temperature, etc. can affect diversity, in general, a more diverse lake indicates a healthier ecosystem.

5.2 Floristic Quality Index

This index measures the impact of human development on a lake's aquatic plants. The 124 species in the index are assigned a Coefficient of Conservatism (C) which ranges from 1-10. The higher the value assigned, the more likely the plant is to be negatively impacted by human activities relating to water quality or habitat modifications. Plants with low values are tolerant of human habitat modifications, and they often exploit these changes to the point where they may crowd out other species. Statistically speaking, the higher the index value, the healthier the lake's aquatic plant community is assumed to be.

In 2011, a total of 22 native index species were identified in the rake during the point-intercept survey. They produced a mean C of 6.4 and a FQI of 29.8. In 2020, a total of 35 native index plants were identified in the rake during the point-intercept survey. They produced a mean C of 5.8 and a FQI of 34.3. Neither survey identified any plants with a C-value of 10. In 2011, 6 species had a C-value of 8 or 9. In 2020, 10 species had a C-value of 8 or 9. Nichols (1999) reported an average mean C for the Northern Central Hardwood Forests Region of 5.6 identifying Trego Lake as slightly above average for this part of the state. The FQI was in both years was much higher than the median of 20.9 for the Northern Central Hardwood Forests Region (Nichols, 1999).

5.3 Littoral Zone, Species Richness, and Density

The total species richness in Trego Lake is quite high, with 52 species identified including on the rake and both boat and visual surveys in 2020. In 2011, there were 41 species identified. Mean total rake fullness increased in 2020 from

1.54 to 2.05. The littoral zone was slightly deeper in 2020, but the mean and median depth of plant growth was both down about a half foot in 2020. Despite the increase in native species richness from 2011 to 2020, the number of different species at each survey site pretty much stayed the same. Seven species showed significant declines from 2011 to 2020; however four species showed significant increase from 2011 to 2020, with at least 11 new species identified in 2020 (Figure 8).

The timing of these two surveys was different with the 2011 survey completed in late June and the 2020 survey completed in late July. In 2020, the plant surveyor looked at more points in the system. Two different plant surveyors completed the survey work. All of these factors, as well as changes in growing conditions in different years, likely contribute to the changes that were identified.

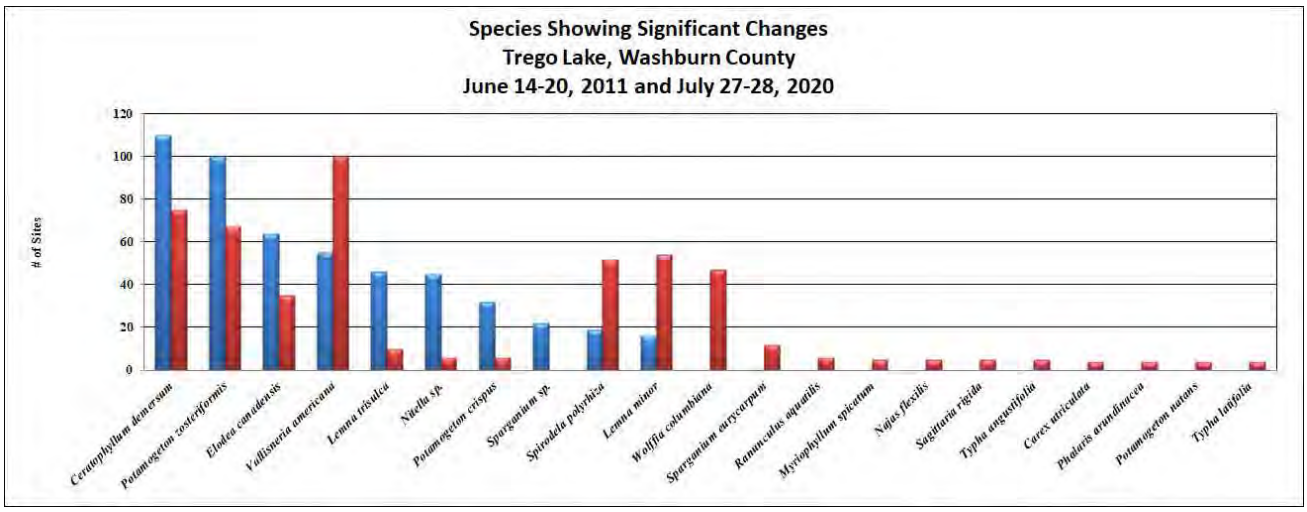


Figure 8: Species that showed significant changes between 2011 and 2020 (ERS)

The four most abundant plant species during the 2020 PI survey were Water celery (Figure 9), Coontail (Figure 10), Flat-stem pondweed (Figure 11), and Northern wild rice (Figure 12).

Figure 9: *Valisneria americana* (water celery) Present at 104/231 sites with vegetation

Figure 10: *Ceratophyllum demersum* (Coontail) Present at 89/231 sites with vegetation

Figure 11: *Potamogeton zosteriformis* (Flat-stem pondweed) Present at 82/231 sites with vegetation

Figure 12: *Zizania palustris* (Northern wild rice) Present at 85/231 sites with vegetation

Figure 13 shows the extent of the 2020 littoral zone and Figure 14 shows aquatic plant diversity at individual survey points. Figure 15 shows the density of vegetation at each point. From these figures, it is clear that the majority of

aquatic plant related problems – aquatic invasive species and native species – are focused in the east basin and Potato Creek area of the lake.

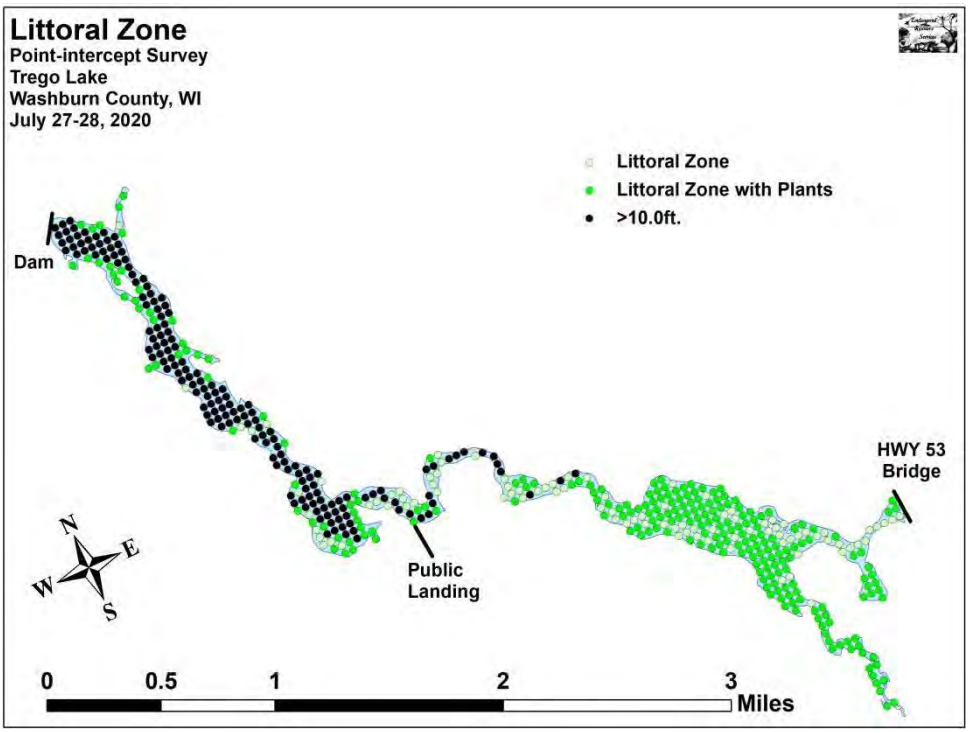


Figure 13: 2020 littoral zone (ERS)

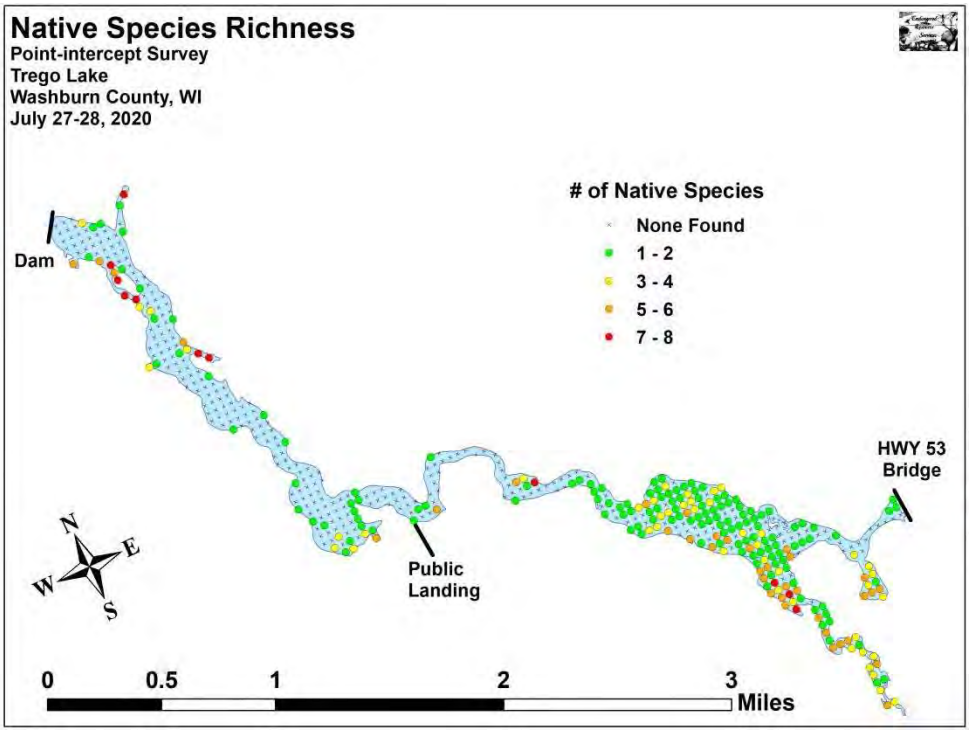


Figure 14: 2020 native species richness (ERS)

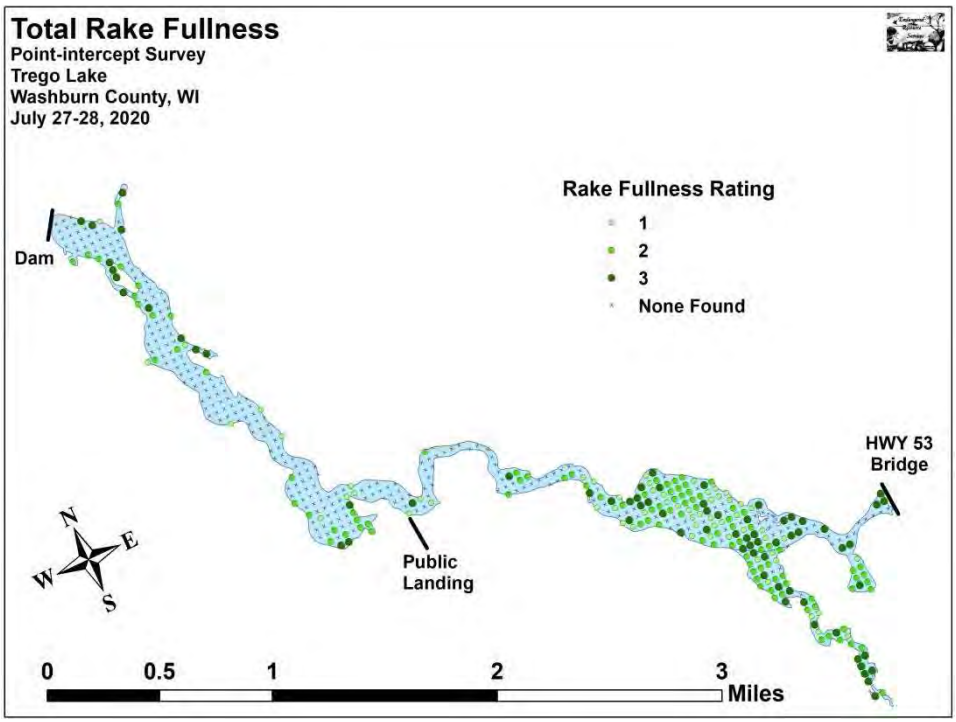


Figure 15: 2020 total rake fullness values (ERS)

5.4 Wild Rice

Wild rice is an annual aquatic grass that produces seed that is a nutritious source of food for wildlife and people (Figure 16). As a native food crop, it has a tremendous amount of cultural significance to the Wisconsin and Minnesota Native American Nations. Wild rice pulls large amounts of nutrients from the sediment in a single year and the stalks provide a place for filamentous algae and other small macrophytes to attach and grow. These small macrophytes pull phosphorous in its dissolved state directly from the water. Wild rice can benefit water quality, provide habitat for wildlife, and help minimize substrate re-suspension and shoreland erosion.

In Wisconsin, wild rice has historically ranged throughout the state. Declines in historic wild rice beds have occurred statewide due to many factors, including dams, pollution, large boat wakes, and invasive plant species. Renewed interest in the wild rice community has led to large-scale restoration efforts to reintroduce wild rice in Wisconsin's landscape. Extensive information is available on wild rice from GLIFWC and the WDNR.

In Wisconsin, wild rice is highly protected under DNR Rule NR 19.09 Wild Rice Conservation (Appendix C).

Figure 16: Wild rice

According to a 2010 report from the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) (David, 2010), significant beds of wild rice exist on Trego Lake/Flowage, and at least in 2010 they seemed to be expanding. Most of the rice is present in the primary inlets to the Flowage from the Namekagon River and Little Mackay/Potato Creeks on the east end of the Flowage. Figure 17 shows a photo from the plant surveyor going through wild rice in 2020. Figure 18 shows all the points in Trego Lake with wild rice during the 2020 PI survey. Figure 19 reflects an aerial photo of wild rice in Potato Creek and the east basin of Trego Lake from 2009.

Figure 17: Wild rice in the east basin of Trego Lake, July 2020 (ERS)

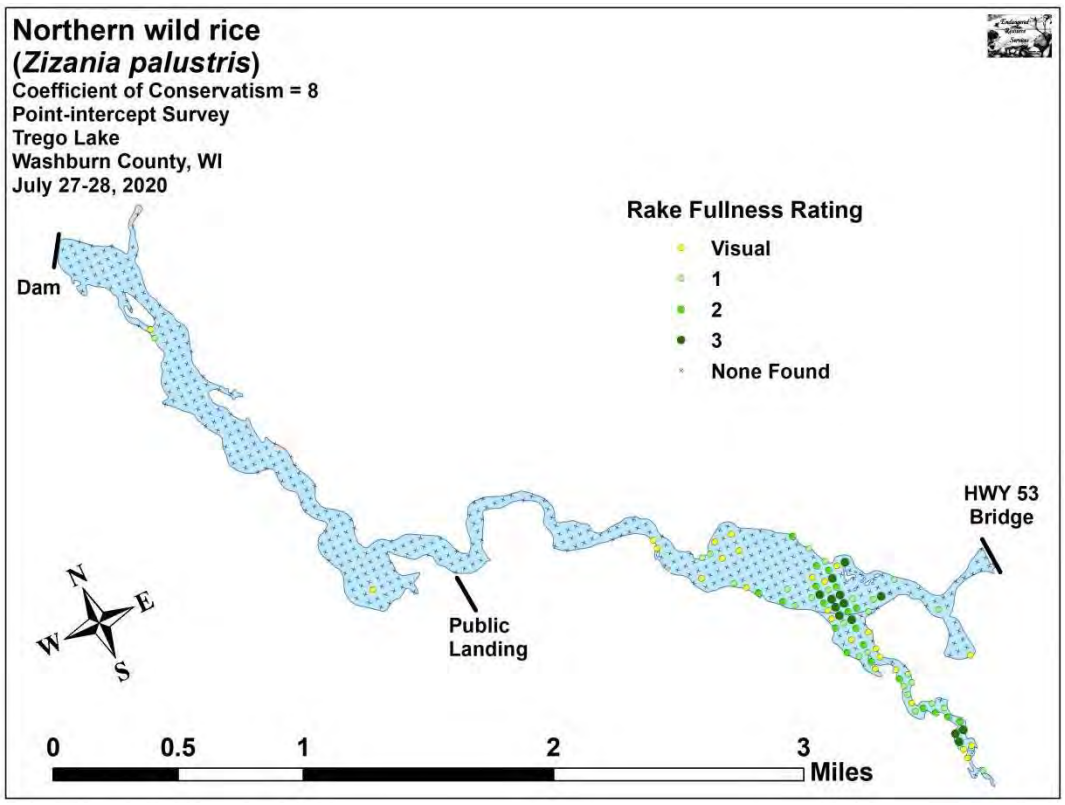


Figure 18: 2020 point-intercept survey results for wild rice (ERS)

Figure 19: Wild rice in Potato Creek and the east basin of Trego Lake in 2009 (GLIFWC)

As reported in the recently completed WDNR Strategic Analysis of Wild Rice Management in WI (WDNR, 2021), between 2005 through 2014 an average of 716 ricers harvested 59,000 pounds of wild rice a year, or 82 pounds per ricer each year. On an individual basis, Ojibwe tribal ricers harvest nearly twice as much as their non-tribal counterparts. According to data assembled by GLIFWC, the average tribal ricer harvested just over 130 pounds a year between 2005 and 2014. Since 2010, the total statewide off-reservation harvest has generally ranged between 40,000 and 80,000 pounds per year, with a high harvest of 118,000 pounds in 2009 followed by a low harvest of under 17,000 pounds in 2010.

Wild rice growth and abundance is impacted by many factors including changes in water level, water quality, competition from other native plants and invasive species, excessive herbivory (primarily by geese), disease, shoreland development, waterway recreation, and chemical herbicides. Many of these factors are being driven by changes in climate (WDNR, 2021). When present in a waterbody, any management that takes place in that waterbody is subject to review by the State and by Tribal Resources. Even physical removal is regulated.

6.0 Aquatic Invasive Species

Currently there are several invasive species within or around Trego Lake: curly-leaf pondweed (CLP), Eurasian and hybrid watermilfoil (EWM), Chinese mystery snails, and reed canary grass.

6.1 Curly-leaf Pondweed

Curly-leaf pondweed (CLP) is an invasive aquatic perennial that is native to Eurasia, Africa, and Australia (Figure 20). The leaves are reddish-green, oblong, and about 3 inches long, with distinct wavy edges that are finely toothed. The stem of the plant is flat, reddish-brown and grows from 1 to 3 feet long. CLP is an annual with new plants growing from burr-like winter buds called turions (Figure 20) deposited on the lake bottom when the water is cool, even under the ice in winter. It is one of the first nuisance aquatic plants to emerge in the spring, growing rapidly as sunlight becomes more available. Dense mats of early growth vegetation often interfere with or out-compete native aquatic plant growth that begins a little later when water temperatures rise. At peak growth, mats of CLP at and just under the surface can interfere with aquatic recreation. CLP usually completes its annual life cycle in June depositing new turions on the bottom of the lake. By early July the plant dies, dropping to the bottom to decompose, releasing nutrients back into the water as it does so. Large-scale die-offs may result in a critical loss of dissolved oxygen. Floating mats of dead and dying CLP can inundate shallow water areas and foul shorelines and beaches. In the fall, when water temperature begins to cool, turions start to sprout again.

Figure 20: CLP Plants and Turions

6.1.1 CLP in Trego Lake

From as early as 1993, property owners and users of the lake have indicated nuisance and navigation issues caused by excessive growth of CLP in the spring and early summer of the year. The 1994 Aquatic Plant Management Plan mentions CLP but does not make any management recommendations for it. Finding EWM in the lake in 2019 was the main impetus behind developing this new plan, but the issues caused by EWM pale in comparison to those caused by CLP.

CLP mapping in 2020, identified more than 32-acres of dense growth CLP, with more than 30 of those acres in the east basin (Figure 21). Figure 22 reflects what 30-acres of dense growth surface matting looks like. From mid-May to the end of June, CLP dominated in 3 to 6-feet of water. Though not officially mapped in 2021, anecdotally, CLP was as bad as or worse than it was in 2020.

While the majority of CLP is located in the east basin and Potato Creek inlet, this is not the only place dense growth CLP is located. Further downstream, just before the narrow-most area of the lake and where the lake opens up again also supports dense growth CLP, just not as much. These areas, and areas even further downstream closer to the dam should be monitored on a regular basis to document nuisance aquatic plant growth.

This level of CLP interferes with early season navigation, shades out more beneficial native plants later in the season, and contributes nutrients to the lake when it dies and decays in early July.

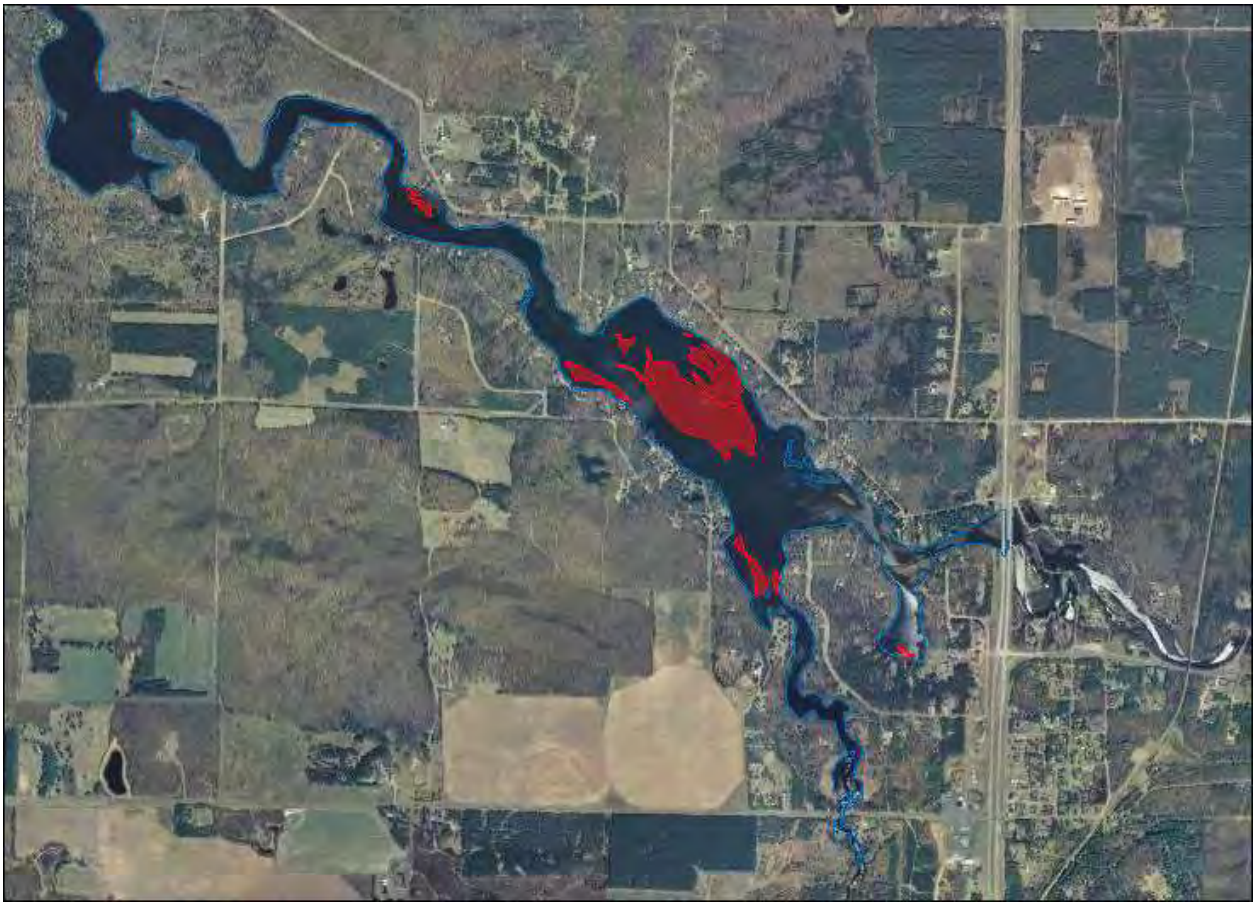


Figure 21: 2020 CLP bedmapping (ERS)

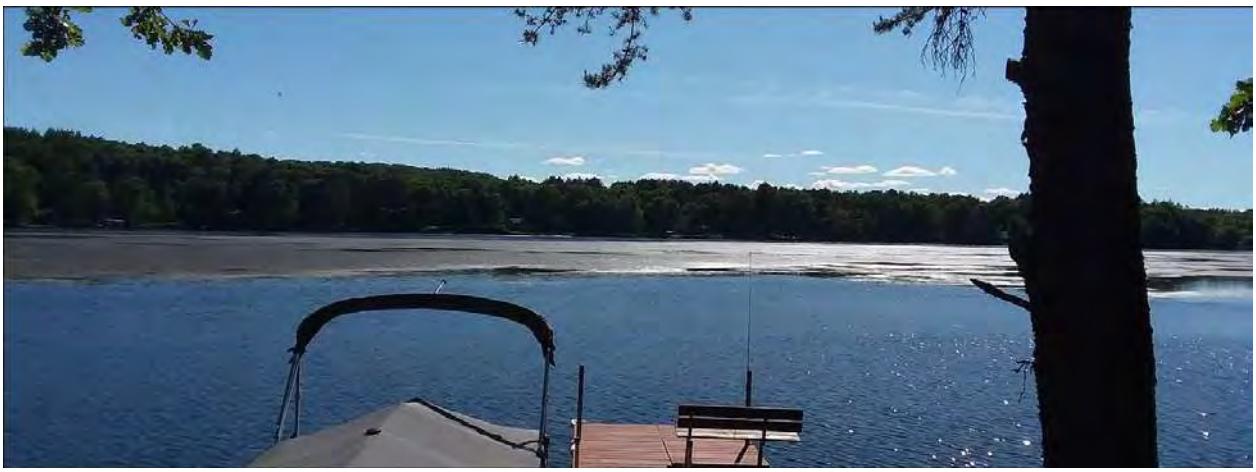


Figure 22: Dense 2020 CLP surface water mats in Trego Lake (ERS)

6.2 Eurasian Watermilfoil

EWM (Figure 23) is a submersed aquatic plant native to Europe, Asia, and northern Africa. It is the only non-native milfoil in Wisconsin. Like the native milfoils, the Eurasian variety has slender stems whorled by submersed feathery leaves and tiny flowers produced above the water surface. The leaves are threadlike, typically uniform in diameter, and

aggregated into a submersed terminal spike. EWM has 9-21 pairs of leaflets per leaf, while Northern milfoil typically has 7-11 pairs of leaflets.

EWM grows best in fertile, fine-textured, inorganic sediments. In less productive lakes, it is restricted to areas of nutrient-rich sediments. It has a history of becoming dominant in eutrophic, nutrient-rich lakes, although this pattern is not universal. It is an opportunistic species that prefers highly disturbed lake beds, lakes receiving nitrogen and phosphorous-laden runoff, and heavily used lakes.

Unlike many other plants, EWM does not rely on seed for reproduction. Its seeds germinate poorly under natural conditions. It reproduces by fragmentation, allowing it to disperse over long distances. The plant produces fragments after fruiting once or twice during the summer. These shoots may then be carried downstream by water currents or inadvertently picked up by boaters. EWM is readily dispersed by boats, motors, trailers, bilges, live wells, and bait buckets; and can stay alive for weeks if kept moist.

Once established in an aquatic community, milfoil reproduces from shoot fragments and stolons (runners that creep along the lake bed). As an opportunistic species, EWM is adapted for rapid growth early in spring. Stolons, lower stems, and roots persist over winter and store the carbohydrates that help milfoil claim the water column early in spring, photosynthesize, divide, and form a dense leaf canopy that shades out native aquatic plants. Its ability to spread rapidly by fragmentation and effectively block out sunlight needed for native plant growth often results in monotypic stands. Monotypic stands of EWM provide only a single habitat, and threaten the integrity of aquatic communities in a number of ways; for example, dense stands disrupt predator-prey relationships by fencing out larger fish, and reducing the number of nutrient-rich native plants available for waterfowl.

Dense stands of EWM also inhibit recreational uses like swimming, boating, and fishing. Some stands have been dense enough to obstruct industrial and power generation water intakes. Cycling of nutrients from sediments to the water column by EWM may lead to deteriorating water quality and algae blooms in infested lakes.

Figure 23: EWM plant and a floating fragment with new roots

6.2.1 EWM in Trego Lake

EWM and hybrid EWM was first discovered in Trego Lake in 2019. This was not entirely a surprise given that upstream waters on the Namekagon River also have EWM. EWM was identified in Lake Hayward in 2011. Movement of fragments from Lake Hayward to Trego Lake is the mostly likely cause of the new introduction.

In order to determine the level of EWM infestation, a late-summer EWM bedmapping survey was completed by ERS in 2020. On August 25, 2020 more than 22 miles of boating transects were completed covering the entire visible littoral zone of the lake. During that survey, three low density beds of EWM covering 6.37 acres (1.66% of the lake's surface area) were documented (Figure 24). Outside of these areas, ten additional isolated plants were identified mostly in the same area as the beds, but with one isolated plant found near the public boat landing. Downstream from the boat landing, only a single fragment of EWM was found near the dam. All EWM was found in 3-5 feet of water and mixed with other, native plants. EWM bedmapping was not completed in 2021, but EWM was found in the areas identified in 2020 with a few new plants identified in that area known as Sunfish Bay (Figure 20).

In his 2020 EWM mapping report (Berg M. , 2020) the surveyor described the EWM in this way.

EWM currently occupies a small percentage of Trego Lake's surface area, but it is well established making eradication an unrealistic expectation. During our 2020 surveys, EWM seemed to be struggling to gain a foothold on the lake. Although it was widely distributed and we saw numerous floating fragments in the upstream "lake" region near the Namekagon Inlet, we noted that rooted plants were almost universally unhealthy. It may be that the lake's stained water is the main reason for this poor growth, or it could be that the low-nutrient sandy muck is suboptimal for EWM. Strong competition from canopied mats of Curly-leaf pondweed in the spring and dense native plant growth later in the summer might also be factors in EWM's limited coverage. Regardless if it's one of these factors, a combination of them, or something different entirely, EWM seemed to be unable to take advantage of the large patches of substrate left barren after CLP's early summer senescence. As it currently stands, EWM is more of a nuisance in the "lake" region than a true navigation impairment in the way that CLP is in the spring. Because of this, active management beyond the current harvesting program may be unnecessary.

Downstream from the "lake" region, the narrow littoral zone and sugar sand shorelines don't appear to offer EWM much habitat. Although we saw fragments in July as far downstream as the boat landing and in August just upstream from the dam, it seems likely most of these fragments are either going over the dam or dying in the depths.

Despite this, EWM will likely continue to slowly spread downstream and become more common in the few sheltered bays that exist. However, it seems equally unlikely that these plants will ever grow dense enough to cause significant navigation impairment for residents as the best habitat in these downstream areas occur along largely uninhabited shorelines. Because of this, continued monitoring with no active management is the most likely course of action in these areas – at least in the near future.

Figure 24: 2020 EWM beds in the east basin of Trego Lake

6.3 Purple Loosestrife

Purple loosestrife (Figure 25) is a perennial herb 3-7 feet tall with a dense bushy growth of 1-50 stems. The stems, which range from green to purple, die back each year. Showy flowers that vary from purple to magenta possess 5-6 petals aggregated into numerous long spikes, and bloom from August to September. Leaves are opposite, nearly linear, and attached to four-sided stems without stalks. It has a large, woody taproot with fibrous rhizomes that form a dense mat.

This plant's optimal habitat includes marshes, stream margins, alluvial flood plains, sedge meadows, and wet prairies. It is tolerant of moist soil and shallow water sites such as pastures and meadows, although established plants can tolerate drier conditions. Purple loosestrife has also been planted in lawns and gardens, which is often how it has been introduced to many of our wetlands, lakes, and rivers.

Purple loosestrife spreads mainly by seed, but it can also spread vegetatively from root or stem segments. A single stalk can produce from 100,000 to 300,000 seeds per year. Seed survival is up to 60-70%, resulting in an extensive seed bank. Mature plants with up to 50 shoots can grow over 2 meters high and produce more than two million seeds a year. Germination is restricted to open, wet soils and requires high temperatures, but seeds remain viable in the soil for many years.

Purple loosestrife displaces native wetland vegetation and degrades wildlife habitat. As native vegetation is displaced, rare plants are often the first species to disappear. Eventually, purple loosestrife can overrun wetlands thousands of

acres in size, and almost entirely eliminate the open water habitat. The plant can also be detrimental to recreation by choking waterways.

By law, purple loosestrife is a nuisance species in Wisconsin. It is illegal to sell, distribute, or cultivate the plants or seeds, including any of its cultivars.

Purple loosestrife is widespread in Washburn County including the area in and around Trego Lake.

Figure 25: Purple Loosestrife

6.4 Reed Canary Grass

Reed canary grass (Figure 26) is a large, coarse grass that reaches 2 to 9 feet in height. It has an erect, hairless stem with gradually tapering leaf blades 3 1/2 to 10 inches long and 1/4 to 3/4 inch in width. Blades are flat and have a rough texture on both surfaces. The lead ligule is membranous and long. The compact panicles are erect or slightly spreading (depending on the plant's reproductive stage), and range from 3 to 16 inches long with branches 2 to 12 inches in length. Single flowers occur in dense clusters in May to mid-June. They are green to purple at first and change to beige over time. This grass is one of the first to sprout in spring, and forms a thick rhizome system that dominates the subsurface soil. Seeds are shiny brown in color.

Reed canary grass is a cool-season, sod-forming, perennial wetland grass native to temperate regions of Europe, Asia, and North America. The Eurasian ecotype has been selected for its vigor and has been planted throughout the U.S. since the 1800's for forage and erosion control. It has become naturalized in much of the northern half of the U.S., and is still being planted on steep slopes and banks of ponds and created wetlands.

Reed canary grass can grow on dry soils in upland habitats and in the partial shade of oak woodlands, but does best on fertile, moist organic soils in full sun. This species can invade most types of wetlands, including marshes, wet prairies, sedge meadows, fens, stream banks, and seasonally wet areas.

Reed canary grass reproduces by seed or creeping rhizomes. It spreads aggressively. The plant produces leaves and flower stalks for 5 to 7 weeks after germination in early spring and then spreads laterally. Growth peaks in mid-June and declines in mid-August. The shoots collapse in mid to late summer, forming a dense, impenetrable mat of stems and leaves. The seeds ripen in late June and shatter when ripe. Seeds may be dispersed from one wetland to another by waterways, animals, humans, or machines.

This species prefers disturbed areas, but can easily move into native wetlands. Reed canary grass can invade a disturbed wetland in just a few years. Invasion is associated with disturbances including ditching of wetlands, stream channelization, and deforestation of swamp forests, sedimentation, and intentional planting. The difficulty of selective control makes reed canary grass invasion of particular concern. Over time, it forms large, monotypic stands that harbor few other plant species and are subsequently of little use to wildlife. Once established, reed canary grass dominates an area by building up a tremendous seed bank that can eventually erupt, germinate, and recolonize treated sites.

Reed canary grass is located in a few locations along the shoreland of Trego Lake, but these have not become monotypic stands that impair the normal function of wetlands. While this should be monitored with other AIS, this is not considered an issue at this time.

Figure 26: Reed Canary Grass

6.5 Non-native Aquatic Invasive Animal Species

Currently, Chinese/Japanese mystery snails are the only non-native aquatic animal species found in Trego Lake. These were documented in 2007. There are several other non-vegetative, aquatic, invasive species that are in nearby lakes and streams, but have not been identified in Lower Turtle Lake. It is important for lake property owners and users to be knowledgeable of these species in order to identify them.

6.5.1 Chinese Mystery Snails

Chinese mystery snails and banded mystery snails (Figure 27) are non-native snails that have been found in a number of Wisconsin lakes. There is not a lot yet known about these species, however, it appears that they have a negative effect on native snail populations. The mystery snail's large size and hard operculum (a trap door cover which protects the soft flesh inside), and their thick hard shell make them less edible by predators and less susceptible to pesticides.

The female mystery snail gives birth to live crawling young. This may be an important factor in their spread as it only takes one impregnated snail to start a new population. Mystery snails thrive in silt and mud areas although they can be found in lesser numbers in areas with sand or rock substrates. They are found in lakes, ponds, irrigation ditches, and slower portions of streams and rivers. They are tolerant of pollution and often thrive in stagnant water areas. Mystery snails can be found in water depths of 1.5 to 15 feet. They tend to reach their maximum population densities around 3-6 feet of water depth. Mystery snails do not eat plants. Instead, they feed on detritus and in lesser amounts algae and phytoplankton. Thus removal of plants in the shoreline area will not reduce the abundance of mystery snails.

Lakes with high densities of mystery snails often see large die-offs of the snails. These die-offs are related to the lake's warming coupled with low oxygen (related to algal blooms). Mystery snails cannot tolerate low oxygen levels. High temperatures by themselves seem insufficient to kill the snails as the snails could move into deeper water.

Many lake residents are worried about mystery snails being carriers of the swimmer's itch parasite. In theory they are potential carriers, however, because they are an introduced species and did not evolve as part of the lake ecosystem, they are less likely to harbor the swimmer's itch parasites.

Figure 27: Chinese Mystery Snails (left) and Banded Mystery Snails (right)

6.5.2 Rusty Crayfish

Rusty crayfish have not been identified in Trego Lake.

Rusty crayfish (Figure 28) live in lakes, ponds and streams, preferring areas with rocks, logs and other debris in water bodies with clay, silt, sand or rocky bottoms. They typically inhabit permanent pools and fast moving streams of fresh, nutrient-rich water. Adults reach a maximum length of 4 inches. Males are larger than females upon maturity and both sexes have larger, heartier, claws than most native crayfish. Dark "rusty" spots are usually apparent on either side of the carapace, but are not always present in all populations. Claws are generally smooth, with grayish-green to reddish-brown coloration. Adults are opportunistic feeders, feeding upon aquatic plants, benthic invertebrates, detritus, juvenile fish and fish eggs.

Rusty crayfish reduce the amount and types of aquatic plants, invertebrate populations, and some fish populations--especially bluegill, smallmouth and largemouth bass, lake trout and walleye. They deprive native fish of their prey and cover and out-compete native crayfish. Rusty crayfish will also attack the feet of swimmers. On the positive side, rusty crayfish can be a food source for larger game fish and are commercially harvested for human consumption.

Rusty crayfish may be controlled by restoring predators like bass and sunfish populations. Preventing further introduction is important and may be accomplished by educating anglers, trappers, bait dealers and science teachers of their hazards. Use of chemical pesticides is an option, but does not target this species and will kill other aquatic organisms.

It is illegal to possess both live crayfish and angling equipment simultaneously on any inland Wisconsin water (except the Mississippi River). It is also illegal to release crayfish into a water of the state without a permit.

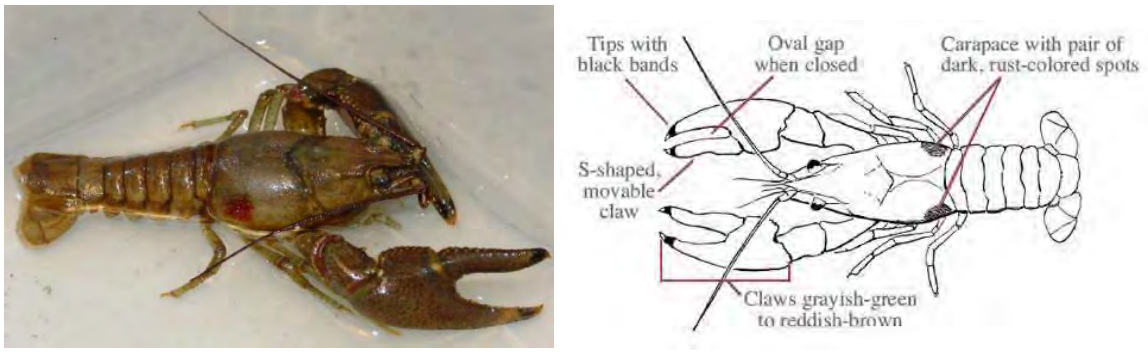


Figure 28: Rusty Crayfish and identifying characteristics

6.5.3 Zebra Mussels

Zebra mussels have not been identified in Trego Lake. The closest population is in Big and Middle Mckenzie lakes on the Burnett/Washburn County line just a few miles west of Trego Lake.

Zebra mussels (Figure 29) are an invasive species that have inhabited Wisconsin waters and are displacing native species, disrupting ecosystems, and affecting citizens' livelihoods and quality of life. They hamper boating, swimming, fishing, hunting, hiking, and other recreation, and take an economic toll on commercial, agricultural, forestry, and aquacultural resources. The zebra mussel is a tiny (1/8-inch to 2-inch) bottom-dwelling clam native to Europe and Asia. Zebra mussels were introduced into the Great Lakes in 1985 or 1986, and have been spreading throughout them since that time. They were most likely brought to North America as larvae in the ballast water of ships that traveled from fresh-water Eurasian ports to the Great Lakes.

Zebra mussels look like small clams with a yellowish or brownish D-shaped shell, usually with alternating dark- and light-colored stripes. They can be up to two inches long, but most are under an inch. Zebra mussels usually grow in clusters containing numerous individuals.

Figure 29: Zebra Mussels

6.6 AIS Prevention Strategy

The Trego Lake District supports watercraft inspection through the Clean Boats Clean Water program at the public boat landing. It also supports AIS monitoring efforts throughout the system. Several links are listed below that offer more information on aquatic invasive species in general, and how to prevent their introduction and spread in Trego Lake and to other lakes.

For general information on aquatic invasive species:
https://dnr.wi.gov/topic/invasives/species.asp?filterBy=Aquatic&filterVal=Y

Common regulated aquatic invasive species in WI:
https://dnr.wi.gov/topic/Invasives/documents/NR40Aquatics.pdf

Invasive Species Rule NR 40:
https://dnr.wisconsin.gov/topic/invasives/classification.html

Reporting invasive species:
https://dnr.wisconsin.gov/topic/Invasives/report.html

Preventing the spread of AIS:
https://dnr.wisconsin.gov/topic/Invasives/prevention.html

Eurasian watermilfoil fact sheet:
https://dnr.wisconsin.gov/topic/Invasives/fact/EurasianWatermilfoil.html

7.0 Past Management

7.1 Aquatic Plants

The last full aquatic plant management plan, developed in 1994 recommended aquatic plant harvesting primarily in the area referred to as the east basin or upstream third of the lake. The purpose of harvesting, as listed in the WDNR mechanical harvesting permits, is to "maintain navigation channels for common use." Access channels connecting shoreland residents to open water were predetermined and for the most part, have not changed in more than 20-years (Figure 30). These access lanes are generally 30-ft wide and all together cover approximately 1.7-acres. The TLD has an agreement with the Xcel Energy, the owner of the dam, whereby Xcel covers the cost of harvesting the predetermined navigation channels.

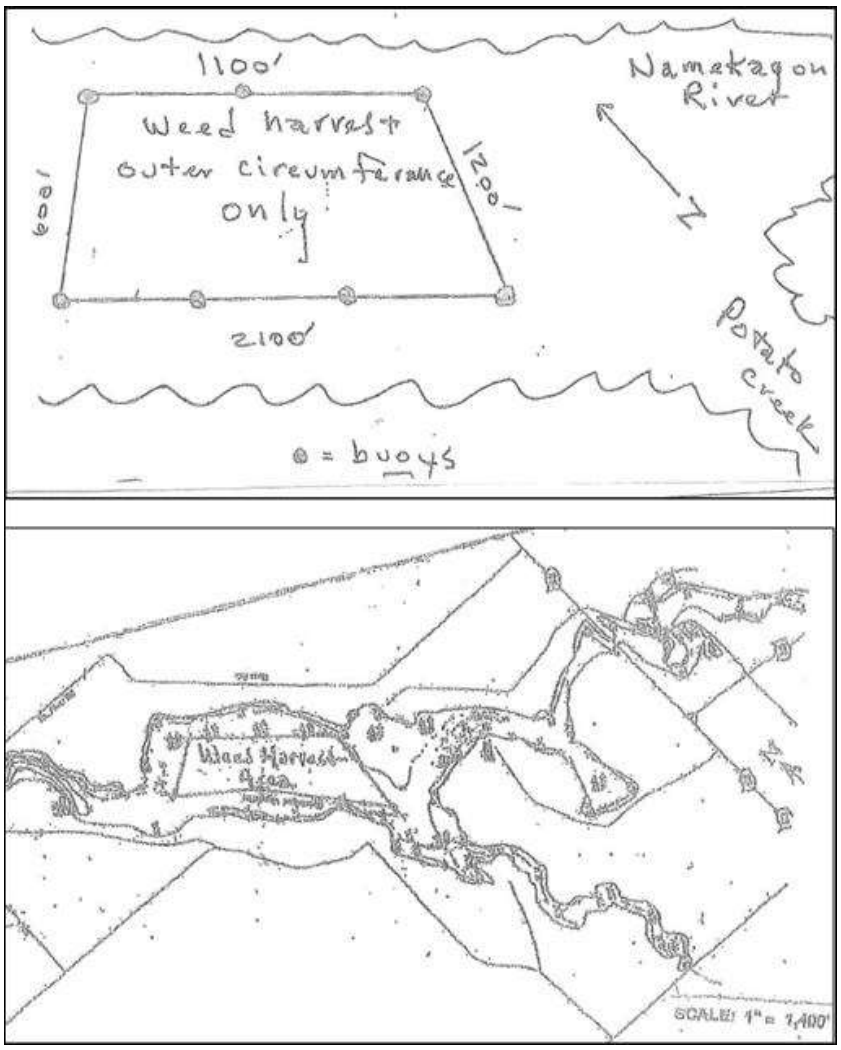


Figure 30: Navigation access lanes included with the last several WDNR mechanical harvesting permits (TLD)

GPS mapping in 2021 documented the current location of the buoys used to guide mechanical harvesting operations (Figure 31). Up until 2021, harvesting was completed in late July or August and generally only once a year. It was not done to provide any relief from CLP, only dense growth native vegetation. In 2021, harvesting of the access lanes was completed in mid-June to provide some navigation relief from CLP. Initially it was thought that harvesting might occur again in late July or August, but this was not needed in 2021.

Each year, the TLD provides a harvesting summary report to the WDNR. In 2019 and 2021, it was estimated that harvested vegetation totaled about 12 cubic yards of plant material each year. In 2021, due to the earlier harvest date, an estimated 66 cubic yards of plant material was removed, mostly CLP. Currently, harvested vegetation is taken to a dump site approximately a mile from the lake off County Hwy E near Trego.

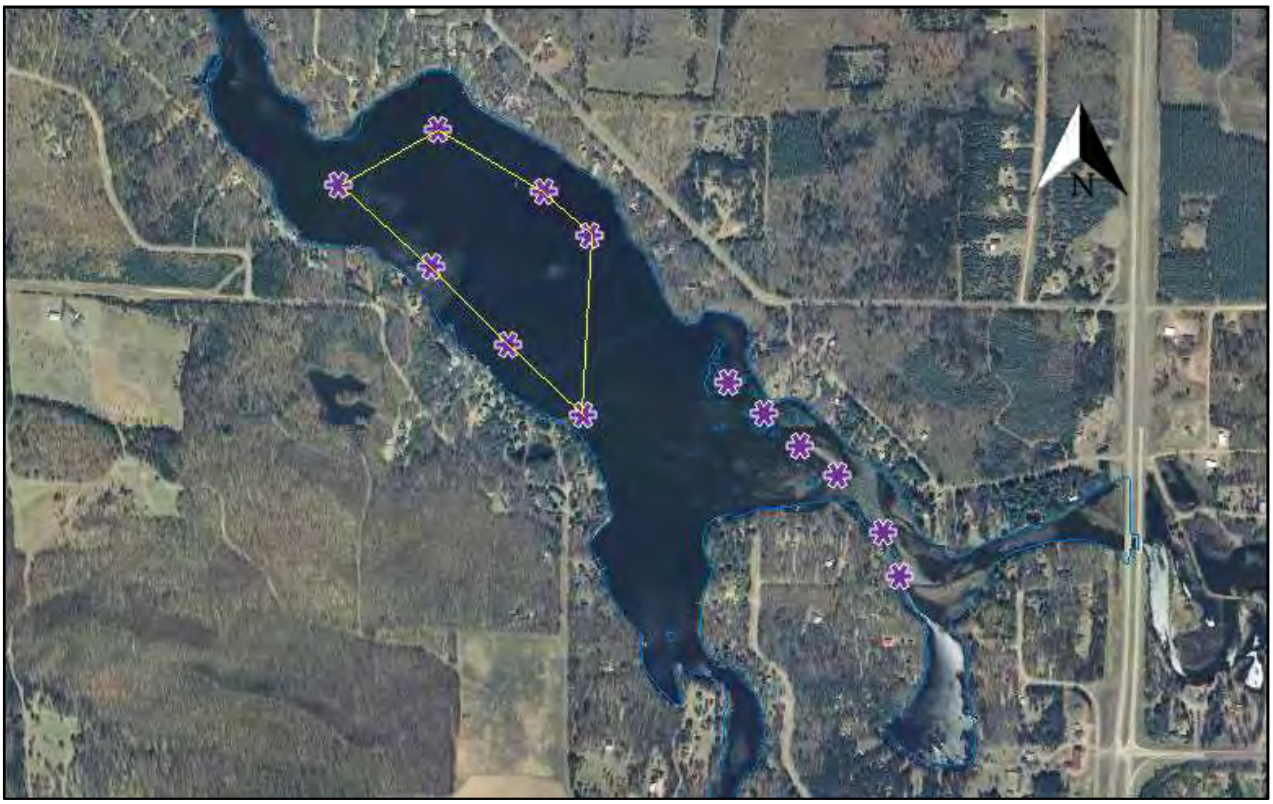


Figure 31: 2021 location of navigation buoys (purple stars), and proposed harvesting lanes (yellow lines)

7.2 Dredging

While not directly a part of this plan, dredging within Trego Lake is relative to the conversation. Dredging in Trego Lake has been a hot topic of discussion since at least 1987. Ultimately it is the amount of deposited sediment that restricts access within the lake both directly (shallow water) and indirectly (providing a place for wild rice and other plants to grow). Managing sediment is outside of the realm of this APM Plan but is something that the TLD continues to study and wishes to address. At present, no dredging has been completed for the purpose of aquatic plant control. The following lists actions already taken by the TLD related to dredging.

- 2002 – Trego Lake District Sediment Committee created
- 2006 – Sediment Committee makes dredging recommendations
- 2009 – First planned dredging project – did not happen
- 2011 – Decision by TLD to continue moving forward with dredging planning using TLD funds
- 2012 – Reauthorization to complete a dredging project with donated funds
- 2014 – WDNR dredging permits are extended
- 2015 – Another resolution to move forward with a dredging project
- 2016 – Dredging project is finally completed
- 2020 – New dredging permit is requested, and the TLD purchases a Piranha mini suction dredge
- 2021 – Limited dredging for the purpose of deepening navigation channels was completed at several locations

For more information about past management actions both dredging and aquatic plant harvesting, go to Appendix D.

8.0 Need for Management

There are at least four major concerns related to the aquatic vegetation in Trego Lake – wild rice, curly-leaf pondweed, Eurasian watermilfoil, and dense growth native plants. While the entire Trego Lake system encompasses well over 300 acres of surface water, the majority of aquatic plant issues occur in the east basin and Potato Creek inlet which encompasses only about 165 acres or about half of the lake. The entire basin, the Potato Creek inlet included, is considered littoral zone, most of it supporting abundant plant growth. In this area, wild rice covers more than a third of what would otherwise be open water and needs to be protected. Dense growth curly-leaf pondweed in the spring and early summer covers more than 20% of the area. Eurasian watermilfoil is present covering about 4% of the area. Most of the EWM is in the same areas where CLP is growing. Finally, dense growth native aquatic vegetation takes over once CLP completes its life cycle in early July. It is also the area of Trego Lake with the most shoreland development. Adding to the issues, but not addressed in this plan, is sedimentation in the inlet area of the Namekagon River. Sedimentation is likely the main reason for all aquatic plant growth in this area, but is a much more difficult issue to address.

For the past 20-years the TLD has managed this area of the lake, primarily for the purpose of establishing navigation lanes to open water through dense vegetation (CLP, wild rice and other native plants) for the good of common use. Efforts include contracted harvesting to open the navigation lanes and some selective dredging completed by members of the TLD. Some level of physical removal is implemented by shoreland property owners.

Aquatic vegetation in the rest of Trego Lake is less of an issue with only a couple of areas with problems. Deeper water, a sandy shoreline, and a narrow littoral zone provides limited habitat for nuisance level aquatic plant growth.

Because of wild rice and substantial water movement through this area, the use of aquatic herbicides is not recommended. A combination of physical removal and mechanical harvesting are the best management options, but could be expanded from previous levels to provide more relief and control non-native invasive species. An expanded harvesting program could reduce CLP and EWM and provide more, much desired, access to and through open water without harming wild rice.

8.1 No Management

Regardless of the target plant species, native or non-native, sometimes no management is the best management option. Plant management activities can be disruptive to areas identified as critical habitat for fish and wildlife and should not be done unless it can occur without ecological impacts. This management alternative is not recommended for Trego Lake because current management actions have been less than satisfactory for both lake users and property owners. Aquatic invasive species are present and will likely continue to spread without management of some kind. As aquatic invasive species increase, so too will the negative impacts to native aquatic plants including wild rice caused by them.

9.0 Integrated Pest Management

Integrated Pest Management (IPM) is an ecosystem-based aquatic plant management strategy that focuses on long-term prevention and/or control of a species of concern. IPM considers all the available control practices such as: prevention, biological control, biomanipulation, nutrient management, habitat manipulation, substantial modification of cultural practices, pesticide application, water level manipulation, mechanical removal and population monitoring (Figure 32). In addition to monitoring and considering information about the target species' life cycle and environmental factors, groups can decide whether the species' impacts can be tolerated or whether those impacts warrant control. Then, an IPM-based plan informed by current, comprehensive information on pest life cycles and the interactions among pests and the environment can be formed.

After monitoring and considering information about the target species' life cycle and environmental factors, groups can decide whether the species' impacts can be tolerated or whether those impacts warrant control. If control is needed, data collected on the species and the waterbody will help groups select the most effective management methods and the best time to use them.

The most effective, long-term approach to managing a species of concern is to use a combination of methods. Approaches for managing pests are often grouped in the following categories:

- **Assessment –** is the use of learning tools and protocols to determine a waterbodies' biological, chemical, physical and social properties and potential impacts. Examples include: point-intercept (PI) surveys, water chemistry tests and boater usage surveys. This is the most important management strategy on every single waterbody.
- **Biological Control –** is the use of natural predators, parasites, pathogens and competitors to control target species and their impacts. An example would be beetles for purple loosestrife control.
- **Cultural controls –** are practices that reduce target species establishment, reproduction, dispersal, and survival. For example, a Clean Boats, Clean Waters program at boat launches can reduce the likelihood of the spread of species of concern.
- **Mechanical and physical controls –** can kill a target species directly, block them out, or make the environment unsuitable for it. Mechanical harvesting, hand pulling, and diver assisted suction harvesting are all examples.
- **Chemical control –** is the use of pesticides. In IPM, pesticides are used only when needed and in combination with other approaches for more effective, long-term control. Groups should use the most selective pesticide that will do the job and be the safest for other organisms and for air, soil, and water quality.

(Additional information on each method is outlined in the following section).

IPM is a process that combines informed methods and practices to provide long-term, economic pest control. A quality IPM program should adapt when new information pertaining to the target species is provided or monitoring shows changes in control effectiveness, habitat composition and/or water quality.

While each situation is different, eight major components should be established in an IPM program:

1. Identify and understand the species of concern
2. Prevent the spread and introduction of the species of concern
3. Continually monitor and assess the species' impacts on the waterbody
4. Prevent species of concern impacts
5. Set guidelines for when management action is needed

6. Use a combination of biological, cultural, physical/mechanical and chemical management tools
7. Assess the effects of target species' management
8. Change the management strategy when the outcomes of a control strategy create long-term impacts that outweigh the value of target species control.

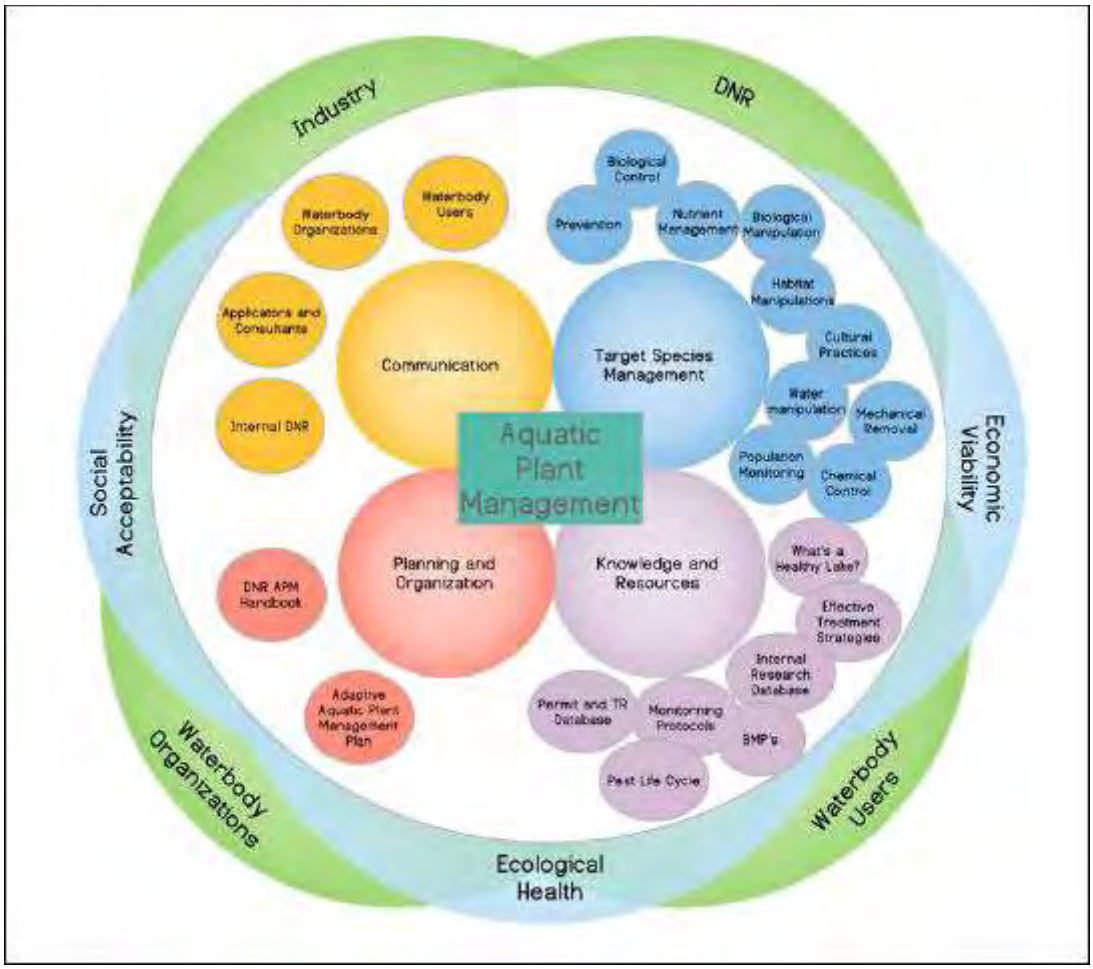


Figure 32: Wisconsin Department of Natural Resources: Wisconsin Waterbodies – Integrated Pest Management March 2020

9.1 Aquatic Plant Management Alternatives

Protecting native plants and limiting negative impacts caused by CLP and EWM is a primary focus of plant management in Trego Lake. A secondary focus is maintaining access to open water for property owners and other lake users. Generally, control methods for nuisance aquatic plants can be grouped into five categories:

- Physical control: hand-pulling, cutting, or raking
- Mechanical: Diver Aided Suction Harvest (DASH), large and small-scale mechanical harvesting
- Aquatic plant habitat manipulation: dredging, drawdowns, bottom barriers, and shading
- Biological control: the use of species that compete successfully with the nuisance species for resources
- Chemical control: use of herbicides

9.1.1 Physical/Manual Removal

Manual or physical removal of aquatic plants by means of a hand-held rake or cutting implement; or by pulling the plants from the lake bottom by hand is allowed by the WDNR without a permit per NR 109.06 Waivers under the following conditions:

- Removal of native plants is limited to a single area with a maximum width of no more than 30 feet measured along the shoreline provided that any piers, boatlifts, swimrafts and other recreational and water use devices are located within that 30-foot wide zone and may not be in a new area or additional to an area where plants are controlled by another method (Figure 33)
- Removal of nonnative or invasive aquatic plants as designated under s. NR 109.07 is unlimited if performed in a manner that does not harm the native aquatic plant community
- Removal of dislodged aquatic plants that drift on-shore and accumulate along the waterfront is completed.
- The area of removal is not located in a sensitive area as defined by the department under s. NR 107.05 (3) (i) 1, or in an area known to contain threatened or endangered resources or floating bogs
- Removal does not interfere with the rights of other riparian owners
- If wild rice is involved, the procedures of s. NR 19.09 (1)a are followed:

(1) Removal or destruction of wild rice.

(a) No person may remove or destroy by hand, mechanical or chemical means wild rice growing in navigable lakes unless the department has approved the removal or destruction under par. (b).

(b) In addition to harvest in accordance with s. 29.607, Stats., and subs. (2) to (8), the department may authorize by written approval the removal of wild rice growing in navigable lakes upon a finding that:

1. The wild rice resource in the navigable lake will not be substantially affected. The department may consider cumulative effects of an approval on such a lake under this paragraph; and

2. The removal or destruction is necessary to allow reasonable access to the lake by the riparian owner.

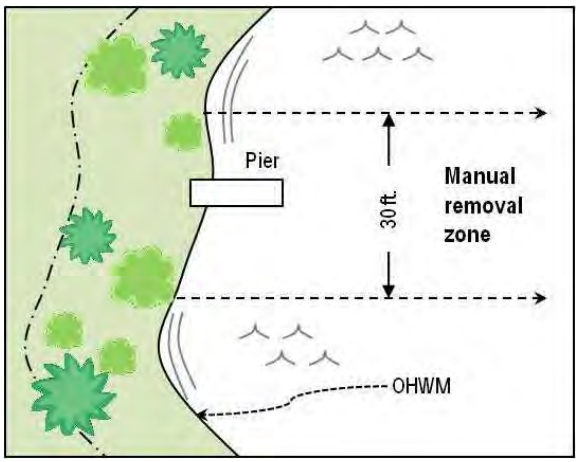


Figure 33: Aquatic vegetation manual removal zone

Although up to 30 feet of aquatic vegetation can be removed, removal should only be done to the extent necessary. There is no limit as to how far out into the lake the 30-ft zone can extend, however clearing large swaths of aquatic plants not only disrupts lake habitats, it also creates open areas for non-native species to establish. Physical removal of aquatic plants requires a permit if the removal area is located in a "sensitive" or critical habitat area previously designated by the WDNR. Manual or physical removal can be effective at controlling individual plants or small areas of plant growth. It limits disturbance to the lake bottom, is inexpensive, and can be practiced by many lake residents. In shallow, hard bottom areas of a lake, or where impacts to fish spawning habitat need to be minimized, this is the best form of control. If water clarity in a body of water is such that aquatic plants can be seen in deeper water, pulling aquatic invasive species while snorkeling or scuba diving is also allowable without a permit according to the conditions in NR 106.06(2) and can be effective at slowing the spread of a new aquatic invasive species infestation within a lake when done properly.

9.1.2 Diver Assisted Suction Harvesting

Diver assisted suction harvesting or DASH, as it is often called, is a fairly recent aquatic plant removal technique. It is called "harvesting" rather than "dredging" because, although a specialized small-scale dredge is used, bottom sediment is not removed from the system. The operation involves hand-pulling of weeds from the lake bed and inserting them into an underwater vacuum system that sucks up plants and their root systems taking them to the surface. It requires water pumps on the surface (generally on a pontoon system) to move a large volume of water to maintain adequate suction of materials that the divers are processing. Only clean water goes through the pump. The material placed by the divers into the suction hose along with the water is deposited into mesh bags on the surface with the water leaving through the holes in the bag. The bags have a large enough 'mesh' size so that silts, clay, leaves and other plant material being collected do not immediately clog them and block water movement. If a fish or other living marine life is sucked into the suction hose it comes out the discharge unharmed and is returned to the body of water. According to Eichler et al. (1993) it can have some negative impacts to other nearby non-target plants if not done carefully, particularly those plants that are perennials and expand their populations by sub-sediment runners.

DASH removal is not recommended for CLP or EWM control on Trego Lake.

9.1.3 Mechanical Removal

Mechanical removal involves the use of devices not solely powered by human as a means to aid removal. This includes gas and electric motors, ATV's, boats, tractors, etc. Using these instruments to pull, cut, grind, or rotovate aquatic plants is illegal in Wisconsin without a permit. DASH is also considered mechanical removal. To implement mechanical removal of aquatic plants a Mechanical/Manual Aquatic Plant Control Application is required annually. The application is reviewed by the WDNR and other entities and a permit awarded if required criteria are met. Using repeated mechanical disturbance such as bottom rollers or sweepers can be effective at control in small areas, but in Wisconsin these devices are illegal and generally not permitted.

9.1.3.1 Large-Scale Mechanical Harvesting

Large-scale mechanical harvesting is commonly used for control of CLP, and in the absence of other alternatives or conditions that prevent other alternatives, can also be an effective way to reduce EWM biomass in a water body, particularly if the EWM is in the same area as the CLP being harvested. With harvesting of EWM, there is substantial risk of increasing fragmentation, so the risk of doing so should be weighed appropriately.

Aquatic plant harvesters are floating machines that cut and remove vegetation from the water. The size, and consequently the harvesting capabilities, of these machines vary greatly. As they move, harvesters cut a swath of aquatic plants that is between 4 and 20 feet wide, and can be up to 10 feet deep. The on-board storage capacity of a harvester ranges from 100 to 1,000 cubic feet (by volume) or 1 to 8 tons (by weight). Most harvesters can cut between 2 and 8 acres of aquatic vegetation per day, and the average lifetime of a mechanical harvester is 10 years.

Mechanical harvesting of aquatic plants presents both positive and negative consequences to any lake. Its results - open water and accessible boat lanes - are immediate, and can be enjoyed without the restrictions on lake use which follow herbicide treatments. In addition to the human use benefits, the clearing of thick aquatic plant beds may also increase the growth and survival of some fish. By eliminating the upper canopy, harvesting reduces the shading caused

by aquatic plants. The nutrients stored in the plants are also removed from the lake, and the build-up of organic material that normally occurs as a result of the decaying of this plant matter is reduced. Additionally, repeated treatments may result in thinner, more scattered growth.

Aside from the obvious effort and expense of harvesting aquatic plants, there are many environmentally-detrimental consequences to consider. The removal of aquatic species during harvesting is non-selective. Native and invasive species alike are removed from the target area. This loss of plants results in a subsequent loss of the functions they perform, including sediment stabilization and wave absorption. Shoreline erosion may therefore increase. Other organisms such as fish, reptiles, and insects are often displaced or removed from the lake in the harvesting process. This may have adverse effects on these organisms' populations as well as the lake ecosystem as a whole.

Much like mowing a lawn, harvesting must be conducted numerous times throughout the growing season. Although the harvester collects most of the plants that it cuts, some plant fragments inevitably persist in the water. This may allow the invasive plant species to propagate and colonize in new, previously unaffected areas of the lake. Harvesting may also result in re-suspension of contaminated sediments and the excess nutrients they contain.

Disposal sites are a key component when considering the mechanical harvesting of aquatic plants. The sites must be on shore and upland to make sure the plants and their reproductive structures don't make their way back into the lake or to other lakes. The number of available disposal sites and their distance from the targeted harvesting areas will determine the efficiency of the operation, in terms of time and cost.

Timing is also important. The ideal time to harvest, in order to maximize the efficiency of the harvester, is just before the aquatic plants break the surface of the lake. For CLP, it should also be before the plants form turions (reproductive structures) to avoid spreading the turions within the lake. If the harvesting work is contracted, the equipment should be inspected before and after it enters the lake. Since these machines travel from lake to lake, they may carry plant fragments with them, and facilitate the spread of aquatic invasive species from one body of water to another.

Contracted harvesting, or purchase and operation of a smaller mechanical harvester by the TLD remains a good alternative to the use of herbicides to maintain use of the lake and protect water quality and native plants.

9.1.3.2 Small-Scale Mechanical Harvesting

There are a wide range of small-scale mechanical harvesting techniques, most of which involve the use of boat mounted rakes, scythes, and electric cutters. As with all mechanical harvesting, removing the cut plants is required. Commercial rakes and cutters (Figure 34) range in prices from $200 for rakes to around $3000 for electric cutters with a wide range of sizes and capacities. Using a weed rake or cutter that is run by human power is allowed without a permit, but the use of any device that includes a motor, gas or electric, would require a permit. Dragging a bed spring or bar behind a boat, tractor or any other motorized vehicle to remove vegetation is also illegal without a permit. Incidental plant disruption by normal boat traffic is not considered mechanical management and is a legal method of management. Active use of an area is often one of the best ways for riparian owners to gain navigation relief near their docks. Most aquatic plants won't grow well in an area actively used for boating and swimming. It should be noted that purposefully navigating a boat to clear large areas is not only potentially illegal it can also re-suspend sediments, encourage aquatic invasive species growth, and cause ecological disruptions.

Figure 34: Aquatic Mower & Weedshear Weed Cutter (weedersdigest.com)

Small-scale harvesting could be used effectively to manage CLP and nuisance native vegetation in certain areas of Trego Lake. For a small investment to purchase a boat mounted type weed cutter and some volunteer time, the areas of greatest impact to navigation could be improved.

9.1.4 Dredging

Dredging is the removal of bottom sediment from a lake. Its success as an aquatic plant management strategy is based on altering the target plant's environment. It is not usually performed solely for aquatic plant management but rather to restore lakes that have been filled in with sediment, have excess nutrients, inadequate pelagic and hypolimnetic zones, need deepening, or require removal of toxic substances (Peterson, 1982). In shallow lakes with excess plant growth, dredging can make areas of the lake too deep for plant growth. It can also remove significant plant root structures, seeds turions, rhizomes, tubers, etc. In Collins Lake, New York the biomass of curly-leaf pondweed remained significantly lower than pre-dredging levels 10-yrs after dredging according to Tobiessen et al. (1992). Dredging is very expensive, requires disposal of sediments, and has major environmental impacts. It is not a selective procedure so it can't be used to target any one particular species with great success except under extenuating circumstances. Dredging at any level must be permitted by the WDNR. It should not be performed for aquatic plant management alone. It is best used as a multipurpose lake remediation technique (Madsen, 2000).

With the exception of limited dredging to maintain adequate depth in frequently traveled boating lanes, dredging as a plant management action, is not a recommended Trego Lake.

9.1.5 Drawdown

Drawdown, like dredging, alters the plant environment, in this case by removing water in a water body to a certain depth, exposing bottom sediments to seasonal changes including temperature and precipitation. A winter drawdown is a low cost and effective management tool for the long-term control of certain susceptible species of nuisance aquatic plants. A winter drawdown controls susceptible aquatic plants by dewatering a portion of the lake bottom over the winter, and subsequently exposing vascular plants to the combined effect of freezing and desiccation (drying). The effectiveness of drawdown to control plants hinges first on being able to draw the water down far enough to dewater the areas of most concern; and then on the combined effect of the freezing and drying. If freezing and dry conditions are not sustained for 4-6 weeks, the effectiveness of the drawdown may be reduced. Winter drawdowns are most effective for plants like EWM and lily pads that reproduce from rhizomes and vegetative runners under the sediment. They are much less effective for controlling plants that grow annually from seeds or turions like CLP and other pondweeds. In some cases, pondweed species may actually benefit from a winter drawdown, as competition with other plants species may be reduced following a drawdown. This can aide certain native species like wild rice, but it could also result in CLP doing better in a lake.

In a literature review completed in 2017, (Carmignani & Roy, 2017) identify other negative impacts that can be caused by winter drawdowns. The dewatering, freezing, and increased erosion of exposed lakebeds drive changes in the littoral zone. Shoreline-specific physicochemical conditions such as littoral slope and shoreline exposure further

induce modifications. Loss of fine sediment decreases nutrient availability over time, but desiccation may promote a temporary nutrient pulse upon re-inundation. Annual winter drawdowns can decrease taxonomic richness of macrophytes and benthic invertebrates and shift assemblage composition to favor taxa with r-selected life history strategies and with functional traits resistant to direct and indirect drawdown effects. Fish assemblages, though less directly affected by winter drawdowns (except where there is critically low dissolved oxygen), experience negative effects via indirect pathways like decreased food resources and spawning habitat.

While it is possible to complete a winter drawdown on Trego Lake, it is not a recommended management action. The 1994 Aquatic Plant Management Plan does a pretty job at explaining why. A drawdown is a whole-lake management approach and not appropriate when the whole lake is not impacted by aquatic plant issues. Past use of drawdowns have demonstrated that this technique only provides limited benefits as within 2 to 3 years aquatic plant growth returns to pre-drawdown levels. Past drawdowns have transferred sediment from the upstream portion of Trego Lake to the downstream portion of the lake. While there may have been some temporary increase in depth for boating upstream, shortly after refilling the areas were filled in again. Both CLP and EWM are growing in some of the deepest parts of the littoral zone requiring a substantial reduction in water level to impact the target species.

9.1.6 Bottom Barriers and Shading

Physical barriers, fabric or other, placed on the bottom of the lake to reduce plant growth may provide temporary relief, but also inhibits fish spawning, affects benthic invertebrates, and could cause anaerobic conditions which may release excess nutrients from the sediment. Gas build-up beneath these barriers can cause them to dislodge from the bottom; and sediment can build up on them allowing vegetation to re-establish. Bottom barriers are typically used for very small areas and provide only limited relief. Currently the WDNR does not permit this type of control.

Creating conditions in a lake that may serve to shade out aquatic plant growth has also been tried with mixed success. The general intention is to reduce light penetration in the water which in turns limits the depth at which plants can grow. Typically dyes have been added to a small water body to darken the water. Bottom barriers and attempts to further reduce light penetration in Trego Lake are not recommended.

9.1.7 Biological Control

Biological control involves using one plant, animal, or pathogen as a means to control a target species in the same environment. The goal of biological control is to weaken, reduce the spread, or eliminate the unwanted population so that native or more desirable populations can make a comeback. Care must be taken however, to insure that the control species does not become as big a problem as the one that is being controlled. A special permit is required in Wisconsin before any biological control measure can be introduced into a new area.

Currently, there are no biological controls available for CLP. It was thought at one time that the introduction of plant eating carp could help control CLP and EWM. It has since been shown that these carp have a preference list for certain aquatic plants. CLP is very low on this preference list (Pine & Anderson, 1991). Use of "grass carp" as they are referred to in Wisconsin is illegal as there are many other environmental concerns including what happens once the target species is destroyed, removal of the carp from the system, impacts to other fish and aquatic plants, and preventing escapees into other lakes and rivers. Several pathogens or fungi are currently being researched that when introduced by themselves or in combination with herbicide application can effectively control CLP and lower the concentration of chemical used or the time of exposure necessary to kill the plant Sorsa et al. (1988). None of these have currently been approved for use in Wisconsin.

9.1.7.1 Purple Loosestrife Bio-Control with Galerucella Beetles

Galerucella beetles are currently approved for the control of purple loosestrife in Wisconsin (Figure 35). The entire lifecycle of Galerucella beetles is dependent on purple loosestrife. In the spring, adults emerge from the leaf litter below old loosestrife plants. The adults then begin to feed on the plant for several days until they begin to reproduce. Females lay their eggs on loosestrife leaves and stems. When the larvae emerge from these eggs they begin feeding on the leaves and developing shoots. When water levels are high these larvae will burrow into the loosestrife stems to

pupate into adult beetles. These new adults emerge and begin feeding on the loosestrife again (Sebolt, 1998). Galerucella beetles do not forage on any plants other than purple loosestrife. Because of this the populations, once established, are self-regulating. When the purple loosestrife population drops off, the beetle population also declines. When the loosestrife returns, the beetle numbers will usually increase. These beetles do not eradicate purple loosestrife entirely, but do help to reduce its dominance which will allow other native plants to recover.

Figure 35: Galerucella Beetle

Biological control is not recommended for CLP or EWM control, but could be used for control of purple loosestrife if large areas of the plant exist in or around Trego Lake. Washburn County already has a well-established purple loosestrife bio-control program.

9.1.8 Chemical Control

Aquatic herbicides are granules or liquid chemicals specifically formulated for use in water to kill plants or cease plant growth. Herbicides approved for aquatic use by the U.S. Environmental Protection Agency are considered compatible with the aquatic environment when used according to label directions. Some individual states, including Wisconsin, also impose additional constraints on herbicide use.

The Wisconsin Department of Natural Resources evaluates the benefits of using a particular chemical at a specific site vs. the risk to non-target organisms, including threatened or endangered species, and may stop or limit treatments to protect them. The Department frequently places conditions on a permit to require that a minimal amount of herbicide be used to reduce potential non-target effects, in accordance with best management practices for the species being controlled. For example, certain herbicide treatments are required by permit conditions to be in spring because they are more effective, require less herbicide and reduce harm to native plant species. Spring treatments also means that, in most cases, the herbicide will be degraded by the time peak recreation on the water starts.

The WDNR encourages minimal herbicide use by requiring a strategic Aquatic Plant Management Plan for management projects over 10 acres or 10% of the water body or any projects receiving state grants. WDNR also requires consideration of alternative management strategies and integrated management strategies on permit applications and in developing an APM Plan, when funding invasive species prevention efforts, and by encouraging the use of best management practices when issuing a permit. The Department also supervises treatments, requires that adjacent landowners are notified of a treatment and are given an opportunity to request a public meeting if they want, requires that the water body is posted to notify the public of treatment and usage restrictions, and requires reporting after treatment occurs.

The advantages of using chemical herbicides for control of aquatic plant growth are the speed, ease and convenience of application, the relatively low cost, and the ability to somewhat selectively control particular plant types with certain herbicides. Disadvantages of using chemical herbicides include possible toxicity to aquatic animals or humans, oxygen

depletion after plants die and decompose which can cause fishkills, a risk of increased algal blooms as nutrients are released into the water by the decaying plants, adverse effects on desirable aquatic plants, loss of fish habitat and food sources, water use restrictions, and a need to repeat treatments due to existing seed/turion banks and plant fragments. Chemical herbicide use can also create conditions favorable for non-native aquatic invasive species to outcompete native plants (for example, areas of stressed native plants or devoid of plants).

When properly applied, the possible negative impacts of chemical herbicide use can be minimized. Early spring to early summer applications are preferred because exotic species are actively growing and many native plants are dormant, thus limiting the loss of desirable plant species; plant biomass is relatively low minimizing the impacts of de-oxygenation and contribution of organic matter to the sediments; fish spawning has ceased; and recreational use is generally low limiting human contact. The concentration and amount of herbicides can be reduced because colder water temperatures enhance the herbicidal effects. Selectivity of herbicides can be increased with careful selection of application rates and seasonal timing. Lake characteristics must also be considered; steep drop-offs, inflowing waters, lake currents and wind can dilute chemical herbicides or increase herbicide drift and off-target injury. This is an especially important consideration when using herbicides near environmentally sensitive areas or where there may be conflicts with other water uses in the treatment vicinity.

At the present time, the use of aquatic herbicides on any level to control CLP, EWM, and/or nuisance native vegetation in Trego Lake is not recommended. The two main reasons for this is the abundant wild rice present in the treatable areas, and the movement of water through the system.

10.0 Management Discussion

Through the course of this project, several meetings of the TLD and its constituency have been held. The purpose was to identify priorities related to the management of aquatic plants. Under the 1994 Plan and over the course of the last 25 years, the only aquatic plant management completed was harvesting of navigation and access channels as described in Section 7. Only twice during that time (2014 and 2018) was harvesting suspended due to minimal plant growth. Harvesting costs were covered by Xcel Energy (NSP) based on an agreement reached between Xcel and the TLD in 1997. In the original agreement, Xcel would cover the cost of harvesting up to two times per year, however, rarely has harvesting been done twice a year due in part to continued hesitation on the part of Xcel to pay for it. As a result, the timing of the harvesting shifted from once in the early summer and once in the mid-summer, to just one harvest mid to late summer.

10.1 CLP

Prior to the development of the 1994 Plan, the Trego Lake residents noted that nuisance growth of CLP during the spring and early summer inhibited recreational usage. Despite this, the 1994 Plan made no special reference to management of CLP, instead referring to all management as just "macrophyte management." Recommendations were made for harvesting of interconnected channels from residences to open water at least one and perhaps two times during the year; and hand raking by individual residents adjacent to their properties. There is some indication in the 1994 Plan that harvesting in the early summer with follow-up management later in the year was the best implementation approach.

10.2 EWM

Plant survey work completed in 2020 as a result of the need to update the existing APM Plan, highlighted the need for additional discussion related to plant management. Tasked at determining the distribution and impact of EWM, survey work instead documented CLP as the major issue impacting Trego Lake and the people who use it. EWM was present, and probably expanding, but it was doing so within the same area already dominated by CLP. Most of this area is outside of the access and navigation lanes kept open by the current harvesting program. 2020 mapping did lead to harvesting these lanes earlier in 2021 reversing the trend that had been established in previous years. However, the limited harvesting completed did little to address the distribution and density of CLP or the new infestation of EWM.

10.3 Dense Growth Native Vegetation

10.3.1 Wild Rice

Thick beds of wild rice during the late summer that restrict boat use were a concern back in 1994, and are still a concern today, except that most residents have accepted that any management specifically targeting the removal of wild rice is not allowable. During the 2011 and 2020 PI survey, 74 and 85 points respectively had wild rice present (Figure 36). In 2021, nearly 50 acres of wild rice were mapped in the east basin of Trego Lake (Figure 36). A majority of these acres were dense growth that prevented nearly all boating navigation except through river channels and approved harvesting lanes. Individual plants and small clumps of wild rice are scattered throughout Trego Lake.

10.3.2 Other Plants

Several other native plant species are dominant in the east basin and Potato Creek area of Trego Lake once CLP completes is life cycle. Larger, rooted plants including water celery and flat-stem pondweed, and coontail - a large suspended plant, form moderate to dense beds of vegetation in the mid to late summer throughout Trego Lake, but particularly in the east basin and Potato Creek inlet (Figure 37). The density of plants in these areas may appear worse than it is due to very abundant small floating plants including the duckweeds and watermeal that tend to get caught in the surface mats of the larger plant species (Figure 38). During mid to late summer harvesting it is these few plants that are removed most frequently and in abundance.

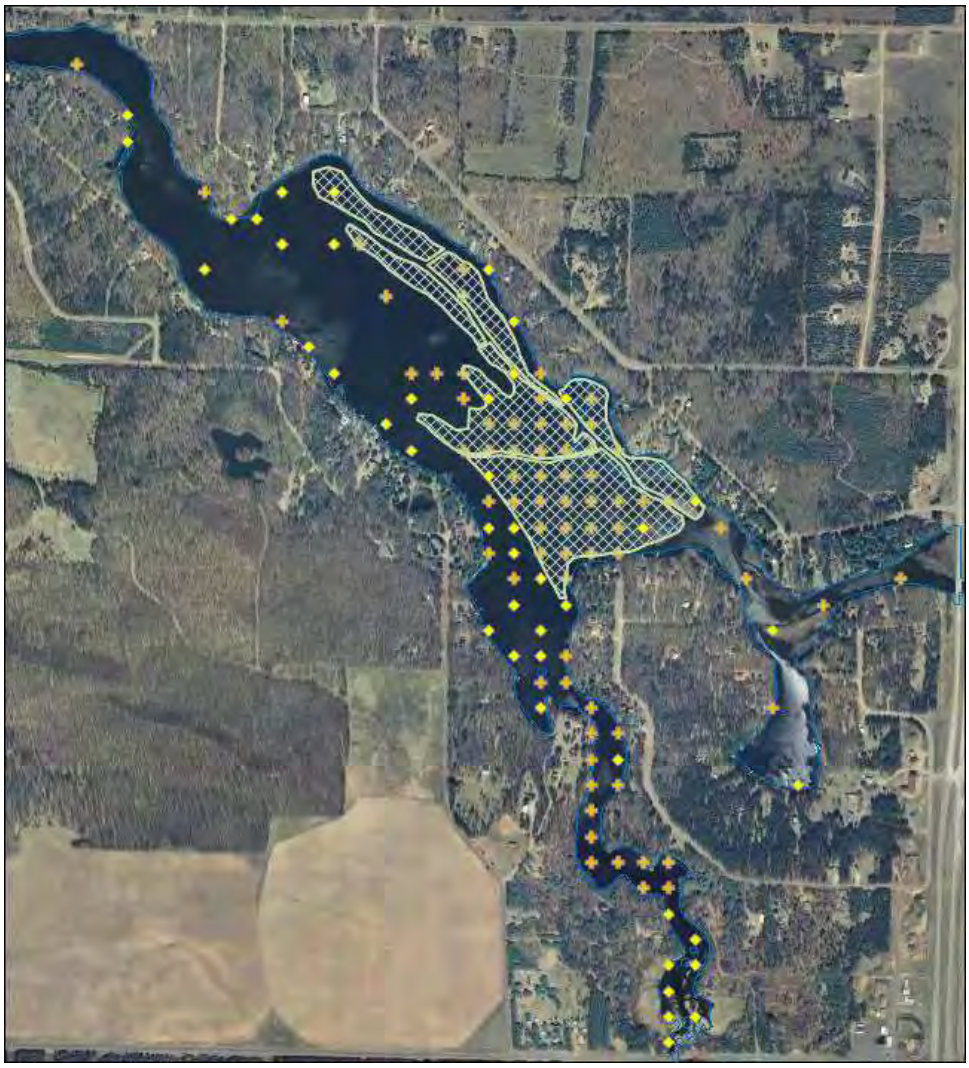


Figure 36: Wild rice in Trego Lake. Orange crosses (2011 WDNR PI), Yellow squares (2020 ERS PI), Green hash – 2021 bedmapping only in the east basin (LEAPS)

Figure 37: 2020 water celery distribution (left), coontail distribution (center), and flat-stem pondweed distribution (right)

Figure 38: *Lemna minor* (small duckweed) and *Wolfia Columbiana* (watermeal) (left), and *Spirodela polyrhiza* (large duckweed) (right) (ERS)

10.4 Changes to the Harvesting Plan

Until the discovery of EWM/HWM in 2019, few changes in the harvesting program were discussed. Instead, most of the concern was focused on navigation impairment as a result of sedimentation issues (see Section 7.2). Aquatic plant management that has taken place over the last 25 years has been based on opening up certain access and navigation lanes and what Xcel Energy would pay for per the 1997 agreement. All harvesting has been completed using contracted services.

10.4.1 Open Water (CLP, EWM, and Native Vegetation) Harvest

Given the recreational impairment and ecological harm caused by CLP particularly in the east basin and Potato Creek inlet, focusing more on its removal in the spring and early summer would be beneficial to the lake and lake users. In addition, most of the EWM in the system is located in the same areas as the CLP. CLP is located in water from 1.5 to 5.5 feet deep, but is most dense at about 3.75 feet. EWM is located in water from 3.5 to 5.5 feet deep, but is most dense at about 4.75 feet. Focusing early season management efforts on areas where both CLP and EWM are removed simultaneously reduces the impact of both. Late season nuisance native aquatic plant growth in areas without wild rice is most dense at depths between 3.5 and 6.5 feet. In areas deeper than this, native aquatic plant growth is limited. Designating an area within the east basin in the 4 to 6 foot range that can be harvested early in the season for CLP and EWM, and again later in the season (if needed) for native vegetation (and EWM) serves multiple purposes: 1) it removes CLP; 2) it removes EWM; and 3) it reduces navigation impairment caused by dense growth native vegetation. If the designated harvesting area is kept in water greater than 3.5 feet, almost all of the wild rice in the system will be unaffected.

In this plan, three areas within the east basin and Potato Creek inlet totaling about 23 acres have been designated as harvesting areas (Appendix E). All fall under the guidelines in the previous paragraph. While not all the CLP is included in the harvesting areas, all of the EWM is. With the harvested areas and deep water, the amount of open water in the east basin approaches 60 acres increasing recreational access.

10.4.2 Access and Navigation Lanes

Depending on which map that is used, the maximum length of the current access and navigation lanes harvested by the TLD each year is between 5,000 and 5,400 feet. WDNR permitting indicates that the access lanes will be harvested with 15 feet on either side of the marker buoys making the channels/lanes 30 feet wide. Using GPS and 2021 placement of the marker buoys, the total length harvested is 5,565 feet. This means that the total acreage currently included in the existing harvesting plan is between 3.44 and 3.83 acres. Of note though, harvesting is often not needed along the entire length between the buoys. The access and navigation lanes currently harvested do not include any area in the Potato Creek inlet or anywhere else in the lake, only the east basin.

In this plan the access and navigation lanes are extended within the east basin, and lanes are added in the Potato Creek inlet, Sunfish Bay, and in a couple other locations (Appendix E). The total distance of these new access and navigation

lanes is 17,487 feet (3.3 miles) and at 30 feet wide would cover 12.0 acres. However, like the current access and navigation lanes, not all of these lanes would need to be harvested all the time. Some are kept open by the natural flow of water through the system, and some are on the edge of deep water and the previously proposed open water harvesting areas, so likely harvesting would not be needed.

10.4.3 Harvesting Totals and Estimated Costs (Owning versus Contracting Services)

Between these two new proposals, a maximum of 35 acres of Trego Lake, mostly in the east basin and Potato Creek inlet area could be harvested in any given year. It is a huge increase in what is currently completed and funded by Xcel Energy. In the following sections, an estimate of costs is made for both owning a harvester, and contracting harvesting services.

Costs per acre vary with numbers of acres harvested, accessibility of disposal sites to the harvested areas, density and species of the harvested plants, and whether a private contractor or public entity does the work. However, using a report from Dane County, WI prepared by Koegel et al. (1974), and extrapolating their costs to current costs, an estimate of cost per acre of harvesting can be made when owning the equipment. Their calculations include paid operator cost, gas and lubrication, repair and maintenance and a mechanic to do the work, supervision of operators, storage and transportation, and the annual investment cost over 15 years. They estimated the cost of a mechanical harvester to be about $55,000.00. That value was upped to $255,000.00 in 2021. Their calculations estimated the cost in 1974 to be about $68.50/acre. When updating their numbers to 2021, the estimated cost is about $418.50/acre. If the TLD harvests 35 acres during the season, the cost is about $14,650.00. This number does not include the cost of any additional equipment like trailers or elevators or the cost of insurance.

For comparison purposes, the Rice Lake Protection and Rehabilitation District harvests up to 160 acres of CLP and another 60 acres of navigation lanes later in the season. They run three harvesters with 10-ft cutting heads. Their 2022 estimated annual budget to support its harvesting program is $130,000.00 and does include investment costs (as they just purchased a new harvester two years ago), the cost of other equipment, operating expenses, maintenance, insurance, and supporting consultant fees. At 220 acres, the cost is about $590.91/acre. At 35 acres, this would be a cost of $20,681.85 annually on Trego Lake.

In 2021, the TLD did request a bid for the purchase of an Eco-Harvester and a trailer to haul it. The total was $92,131.00. An Eco-harvester is a small mechanical harvester with only a 4-ft cutting/rolling head.

Local private harvesting contractors generally charge around $2,000 per day for harvesting services. There is one locally available contractor in NW Wisconsin. It is estimated that a large harvester (10-ft cutting head) can harvest about 0.78 acres per hour or 7.8 acres in a 10 hour day. It would take 4.5 days for a contractor to harvest 35 acres for a total of $9,000.00. If the harvesting was needed twice in the same year, the cost would be about $18,000.00 annually. The contractor used on Trego Lake in 2021 only has a harvester with a 5-ft cutting head. As such it would likely take twice as long to harvest 35 acres, so the cost could be as high as $18,000.00 for one time, and $36,000.00 for two. Actual contracted harvesting in 2021, took two full days to harvest what was likely about 3 acres of dense growth CLP. The contractor cost for this service was $4,800.00. Under this scenario, contracted harvesting could have a cost upwards of $48,000.00 for one time if all 35 acres were harvested.

Disposal sites are a key component when considering the mechanical harvesting of aquatic plants. The sites must be on shore and upland to make sure the plants and their reproductive structures don't make their way back into the lake or to other lakes. The number of available disposal sites and their distance from the targeted harvesting areas will determine the efficiency of the operation, in terms of time and cost.

10.4.4 Benefits and Drawbacks

There are benefits and drawbacks for both contracted harvesting and purchasing a harvester outright. With contracted harvesting, the cost per acre can vary depending on vegetation density, distance between the area being harvesting and the off-loading site, and the distance to the designated disposal site. Another issue presented by contracting is that the timing of the harvesting is entirely dependent upon the contractor's schedule which can result in the vegetation being harvested after the optimal time. However there are many benefits to contracted harvesting, the biggest one being the

reduced upfront costs associated with contracting. There is also no maintenance and storage costs, and there are reduced or no costs if less or no harvesting is completed in any given year.

Purchasing, on the surface, is the more expensive option due not only to the initial cost of purchase, but also insurance, storage, maintenance, and an operator's salary (unless volunteer operated). However, depending on the actual cost of the contractor and the efficiency in which the contractor can handle the harvesting project, purchasing may be less expensive overall. There are many benefits to purchasing as well. Purchasing a harvester eliminates the potential for new AIS to be introduced to the lake from the harvester, the cost per acre tends to go down the longer a harvester is operational, and these costs will not increase dramatically if the amount of vegetation being harvested increases. This also allows harvesting to be done during the best times as well as providing a way to maintain navigation channels throughout the summer. The biggest drawbacks to purchasing a harvester are the increased up-front cost and the annual costs associated with maintaining the harvester. Even during years with less harvesting, the maintenance, storage, and other miscellaneous costs will remain around the same as those costs would be during years that require large amounts of harvesting.

10.5 Operating a Mechanical Harvester on Trego Lake

While a majority of the proposed harvesting area is accessible with a harvester, there are a couple of areas that may not be. One such area is Sunfish Bay. Harvesting to open a navigation channel in Sunfish Bay is not the problem. It is getting the harvester into the bay in the first place. Shallow, rapidly moving water and sediment deposition may make it difficult or impossible to drive the harvester into the bay. It may be necessary to purchase a small, boat/pontoon mounted sickle blade cutter as described in Section 9.1.3.2 to cut vegetation in Sunfish Bay. At the same time, it would require additional effort to remove the cut vegetation from the lake by hand, as the cutter itself would not do that. The access lane that parallels the southern shore between the inlets of the Namekagon River and Potato Creek may also pose issues with appropriate depth. Limited, small-scale dredging to keep this access lane open may be all that is necessary. Several of the proposed access/navigation lanes follow natural river channels through the wild rice beds and will likely stay open on their own.

Harvesting operations are generally required to stay in at least 3-ft of water, so portions of some of the recommended access/navigation lanes may be restricted. This is particularly true the further into the Potato Creek inlet the harvester would go.

11.0 Wisconsin Department of Natural Resources Grant Programs

The WDNR Surface Water Grant Program can provide cost-sharing for aquatic plant management actions assuming they are being implemented under the guidelines of a WDNR approved Aquatic Plant Management Plan. Under the Aquatic Invasive Species (AIS) Population Control grant category, up to 75% of management and planning costs can be reimbursed. Through the Recreation and Boating Facilities grant program, the WDNR often will reimburse up to 35% of the cost to purchase aquatic plant harvesting equipment. Both of these grant programs require sponsor match and formal application for the funding. Funding awards are not a sure thing, as WDNR grants are a competitive program with way more funding requests each year than there is money to give.

For more information about WDNR Surface Water Grants go to: https://dnr.wisconsin.gov/aid/SurfaceWater.html.

For more information about Recreational Boating Facilities Grants go to: https://dnr.wisconsin.gov/aid/RBF.html.

12.0 Trego Lake Aquatic Plant Management Goals, Objectives, and Actions

There are nine general aquatic plant management goals for Trego Lake. Associated with the nine goals are 15 objectives and numerous actions to help meet the objectives. The goals, objectives, and actions are intended to act as a guide for the TLD to follow in at least the next five years to protect the health of the aquatic plant community and maintain/improve access and navigability for all lake users. All of the goals, objectives, and actions and additional management discussion are included in Appendix B.

- Protect, preserve, and enhance native aquatic plant communities including wild rice.
- Reduce the impact of AIS on the native plant community and on access and navigation.
- Improve access to open water through dense growth non-native and native aquatic vegetation for property owners and other lake users.
- Determine how best to implement the changes in the harvesting program laid out in this Plan.
- Minimize opportunities for new AIS to enter and become established in Trego Lake.
- Reduce pollutant loading into Trego Lake.
- Provide property owner and lake user education and awareness of issues impacting Trego Lake.
- Collect lake related data to enhance and support current and future lake management planning and implementation in Trego Lake.
- Implement this plan following Integrated Pest Management guidelines from the WDNR.

13.0 Implementation and Evaluation

This plan is intended to be a tool for use by the TLD to move forward with aquatic plant management actions that will maintain the health and diversity of Trego Lake and its aquatic plant community. This plan is not intended to be a static document, but rather a living document that will be evaluated on an annual basis and updated as necessary to ensure goals and community expectations are being met. This plan is also not intended to be put up on a shelf and ignored. Implementation of the actions in this plan through funding obtained from the WDNR, other stakeholders, and/or TLD funds is highly recommended. An Implementation and Funding Matrix is provided in Appendix F.

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Appendix A

WDNR Northern Region Aquatic Plant Management Strategy

APPENDIX A

AQUATIC PLANT MANAGEMENT STRATEGY
Northern Region WDNR

ISSUES

- Protect desirable native aquatic plants.
- Reduce the risk that invasive species replace desirable native aquatic plants.
- Promote "whole lake" management plans
- Limit the number of permits to control native aquatic plants.

BACKGROUND

As a general rule, the Northern Region has historically taken a protective approach to allow removal of native aquatic plants by harvesting or by chemical herbicide treatment. This approach has prevented lakes in the Northern Wisconsin from large-scale loss of native aquatic plants that represent naturally occurring high quality vegetation. Naturally occurring native plants provide a *diversity of habitat* that *helps maintain water quality*, helps *sustain the fishing* quality known for Northern Wisconsin, supports common lakeshore wildlife from loons to frogs, and helps to provide the *aesthetics* that collectively create the "up-north" appeal of the Northwoods lake resources.

In Northern Wisconsin lakes, an inventory of aquatic plants may often find 30 different species or more, whereas a similar survey of a Southern Wisconsin lake may often discover less than half that many species. Historically, similar species diversity was present in Southern Wisconsin, but has been lost gradually over time from stresses brought on by cultural land use changes (such as increased development, and intensive agriculture). Another point to note is that while there may be a greater variety of aquatic vegetation in Northern Wisconsin lakes, the vegetation itself is often *less dense*. This is because northern lakes have not suffered as greatly from nutrients and runoff as have many waters in Southern Wisconsin.

The newest threat to native plants in Northern Wisconsin is from invasive species of aquatic plants. The most common include Eurasian Water Milfoil (EWM) and Curly Leaf Pondweed (CLP). These species are described as *opportunistic invaders*. This means that these "invaders" benefit where an opening occurs from removal of plants, and without competition from other plants may successfully become established in a lake. Removal of native vegetation not only diminishes the natural qualities of a lake; it *may increase the risk that an invasive species can successfully invade onto the site where native plants have been removed*. There it may more easily establish itself without the native plants to compete against. This concept is easily observed on land where bared soil is quickly taken over by replacement species (often weeds) that crowd in and establish themselves as new occupants of the site. While not a providing a certain guarantee against invasive plants, protecting and allowing the native plants to remain may reduce the success of an invasive species becoming established on a lake. Once established, the invasive species cause far more inconvenience for all lake users, riparian and others included; can change many of the natural features of a lake; and often lead to *expensive annual control plans*.
Native vegetation may cause localized concerns to some users, but as a natural feature of lakes, they generally do not cause harm.

To the extent we can maintain the normal growth of native vegetation, Northern Wisconsin lakes can continue to offer the water resource appeal and benefits they've historically provided. A regional position on removal of aquatic plants that carefully recognizes how native aquatic plants benefit lakes in Northern Region can help prevent a gradual decline in the overall quality and recreational benefits that make these lakes attractive to people and still provide abundant fish, wildlife, and Northwoods appeal.

GOALS OF STRATEGY:

1. Preserve native species diversity which, in turn, fosters natural habitat for fish and other aquatic species, from frogs to birds.
2. Prevent openings for invasive species to become established in the absence of the native species.
3. Concentrate on a "whole-lake approach" for control of aquatic plants, thereby fostering systematic documentation of conditions and specific targeting of invasive species as they exist.
4. Prohibit removal of wild rice. WDNR – Northern Region will not issue permits to remove wild rice unless a request is subjected to the full consultation process via the Voigt Tribal Task Force. We intend to discourage applications for removal of this ecologically and culturally important native plant.
5. To be consistent with our WDNR Water Division Goals (work reduction/disinvestment), established in 2005, to "not issue permits for chemical or large-scale mechanical control of native aquatic plants – develop general permits as appropriate or inform applicants of exempted activities." This process is similar to work done in other WDNR Regions, although not formalized as such.

BASIS OF STRATEGY IN STATE STATUTE AND ADMINISTRATIVE CODE

State Statute 23.24 (2)(c) states:
"The requirements promulgated under par. (a) 4. may specify any of the following:

1. The **quantity** of aquatic plants that may be managed under an aquatic plant management permit.
2. The **species** of aquatic plants that may be managed under an aquatic plant management permit.
3. The **areas** in which aquatic plants may be managed under an aquatic plant management permit.
4. The **methods** that may be used to manage aquatic plants under an aquatic plant management permit.
5. The **times** during which aquatic plants may be managed under an aquatic plant management permit.
6. The **allowable methods** for disposing or using aquatic plants that are removed or controlled under an aquatic plant management permit.
7. The requirements for plans that the department may require under sub. (3) (b).

State Statute 23.24(3)(b) states:
"The department may require that an application for an aquatic plant management permit contain a plan for the department's approval as to how the aquatic plants will be introduced, removed, or controlled."

Wisconsin Administrative Code NR 109.04(3)(a) states:
"The department may require that an application for an aquatic plant management permit contain an aquatic plant management plan that describes how the aquatic plants will be introduced, controlled, removed or disposed. Requirements for an aquatic plant management plan shall be made in writing stating the reason for the plan requirement. In deciding whether to require a plan, the department shall consider the potential for effects on protection and development of diverse and stable communities of native aquatic plants, for conflict with goals of other written ecological or lake management plans, for cumulative impacts and effect on the ecological values in the body of water, and the long- term sustainability of beneficial water use activities."

APPROACH

1. After January 1, 2009* no individual permits for control of native aquatic plants will be issued. Treatment of native species may be allowed under the auspices of an approved lake management plan, and only if the plan clearly documents "impairment of navigation" and/or "nuisance conditions". Until January 1, 2009, individual permits will be issued to previous permit holders, only with adequate documentation of "impairment of navigation" and/or "nuisance conditions". No new individual permits will be issued during the interim.

2. Control of aquatic plants (if allowed) in documented sensitive areas will follow the conditions specified in the report.

3. Invasive species must be controlled under an approved lake management plan, with two exceptions (these exceptions are designed to allow sufficient time for lake associations to form and subsequently submit an approved lake management plan):
   a. Newly-discovered infestations. If found on a lake with an approved lake management plan, the invasive species can be controlled via an amendment to the approved plan. If found on a lake without an approved management plan, the invasive species can be controlled under the WDNR's Rapid Response protocol (see definition), and the lake owners will be encouraged to form a lake association and subsequently submit a lake management plan for WNDR review and approval.
4. Individuals holding past permits for control of *invasive* aquatic plants and/or "mixed stands" of native and invasive species will be allowed to treat via individual permit until January 1, 2009 if "impairment of navigation" and/or "nuisance conditions" is adequately documented, unless there is an approved lake management plan for the lake in question
5. Control of invasive species or "mixed stands" of invasive and native plants will follow current best management practices approved by the Department and contain an explanation of the strategy to be used. Established stands of invasive plants will generally use a control strategy based on Spring treatment (typically, a water temperature of less than 60 degrees Fahrenheit, or approximately May 31st, annually).
6. Manual removal (see attached definition) is allowed (Admin. Code NR 109.06).

DOCUMENTATION OF IMPAIRED NAVIGATION AND/OR NUISANCE CONDITIONS

Navigation channels can be of two types:

- Common use navigation channel. This is a common navigation route for the general lake user. It often is off shore and connects areas that boaters commonly would navigate to or across, and should be of public benefit.

- Individual riparian access lane. This is an access lane to shore that normally is used by an individual riparian shore owner.

Severe impairment or nuisance will generally mean vegetation grows thickly and forms mats on the water surface. Before issuance of a permit to use a regulated control method, a riparian will be asked to document the problem and show what efforts or adaptations have been made to use the site. (This is currently required in NR 107 and on the application form, but the following helps provide a specific description of what impairments exist from native plants).

Documentation of *impairment of navigation* by native plants must include:

a. Specific locations of navigation routes (preferably with GPS coordinates)
b. Specific dimensions in length, width, and depth
c. Specific times when plants cause the problem and how long the problem persists
d. Adaptations or alternatives that have been considered by the lake shore user to avoid or lessen the problem
e. The species of plant or plants creating the nuisance (documented with samples or a from a Site inspection)

Documentation of the *nuisance* must include:

a. Specific periods of time when plants cause the problem, e.g. when does the problem start and when does it go away?
b. Photos of the nuisance are encouraged to help show what uses are limited and to show the severity of the problem.
c. Examples of specific activities that would normally be done where native plants occur naturally on a site but cannot occur because native plants have become a nuisance.

DEFINITIONS

Manual removal: Removal by hand or hand-held devices without the use or aid of external or auxiliary power. Manual removal cannot exceed 30 ft. in width and can only be done where the shore is being used for a dock or swim raft. The 30 ft. wide removal zone cannot be moved, relocated, or expanded with the intent to gradually increase the area of plants removed. Wild rice may not be removed under this waiver.

Native aquatic plants: Aquatic plants that are indigenous to the waters of this state.

Invasive aquatic plants: non-indigenous species whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

Sensitive area: Defined under s. NR 107.05(3)(i) (sensitive areas are areas of aquatic vegetation identified by the department as offering critical or unique fish and wildlife habitat, including seasonal or life stage requirements, or offering water quality or erosion control benefits to the body of water).

Rapid Response protocol: This is an internal WDNR document designed to provide

guidance for grants awarded under NR 198.30 (Early Detection and Rapid Response Projects). These projects are intended to control pioneer infestations of aquatic invasive species before they become established.

Appendix B

Trego Lake – Goals, Objectives, and Actions

Appendix B - 2022-26 Aquatic Plant/Lake Management Goals, Objectives, and Actions for Trego Lake

Overall Management Goal

The primary goal of this plan is to protect Trego Lake's ecosystem and native plant community for the benefit of the general public and all lake users through management efforts that will control invasive aquatic plant species and maintain lake usability. The last Aquatic Plant Management Plan was completed in 1994 and has not been updated until now. Management recommendations in that plan did not specifically mention aquatic invasive species, although curly-leaf pondweed (CLP) was already an issue of concern at that time. There was no Eurasian watermilfoil (EWM) in the system at that time. The last whole-lake, point-intercept, survey was completed in 2011, but did not lead to any changes in management.

In the 1994 Plan, management actions were only recommended to open and maintain property owner and lake user access through dense growth aquatic vegetation primarily in that area of the lake known as the east basin. The east basin is the first large open water basin immediately downstream of both the Namekagon River and Potato Creek inlets. In this area, wild rice is abundant, pretty much dominating any part of the basin that is 3-ft or less in depth. CLP dominates at water depths between 3.5 and 5.5 feet in spring and early summer. EWM is now present at roughly the same water depths as CLP and in the same areas. Dense growth native aquatic vegetation (other than wild rice) dominates to varying degrees, the area vacated after CLP completes its life cycle in late June and early July and drops out of the water column. In water depths greater than 6-ft, aquatic vegetation of any kind is much less of an issue.

In areas outside of the east basin and Potato Creek inlet, aquatic vegetation, both non-native and native is less of an issue. However, continued monitoring of these areas for CLP and EWM, and possible navigational impairment annually is necessary.

Goal 1: Protect, preserve, and enhance native aquatic plant communities including wild rice.

Between 2011 and 2020, there were few changes in the aquatic plant community in Trego Lake, other than the discovery of Eurasian/Hybrid watermilfoil in 2019. Measurements of plant community health including SDI, FQI, Mean C and the number of aquatic plant species identified are all very good to excellent.

Trego Lake is a high producing wild rice waterbody. Maintaining the wild rice beds in a similar or better state is not only recommended, but required.

1. Objective: Maintain or increase four measurements of the quality and health of the native aquatic plant community: SDI, FQI, Mean C, and # of native aquatic plant species w/visual and boat survey, based on values from the 2020 whole-lake, summer PI, aquatic plant survey (Table 1).

Table 1: Survey values from 2020 point-intercept survey

Trego Lake
SDI – 0.92
FQI – 34.3
Mean C – 5.8
# of aquatic plant species - 47

    1. Action: Complete management planning annually with the intent to minimize negative impacts of management implementation on native aquatic vegetation.
    2. Action: Continue education efforts aimed at changing attitudes of lake property owners and lake users as it relates to the importance of aquatic vegetation in the Trego Lake for water quality, invasive species control, and improved fish and wildlife habitat.
2. Objective: Maintain the distribution and density of wild rice in Trego Lake at 2020 levels or better
    1. Action: Support efforts to protect, maintain, and enhance wild rice beds
    2. Action: Continue property owner and lake user education efforts aimed at establishing the importance of wild rice as a resource in Trego Lake

Measurement: The 2020 whole-lake, summer PI survey of all aquatic plants will be repeated in 2025.

Goal 2: Reduce the impact of AIS on the native plant community and on access and navigation.

The second goal of this project is to provide relief from AIS (primarily CLP) in Trego Lake that is limiting early season native aquatic plant growth and causing navigation impairment in the east basin and Potato Creek inlet. Others areas may be included if prior year monitoring has identified a need. At the same time that CLP is removed, EWM will also be removed. Property owners on Trego Lake will be trained to identify and how to physically remove EWM found in other locations in Trego Lake. If larger beds of EWM are located, management actions could include the use of divers, DASH, or under very tight guidelines/restrictions – possibly herbicides.

1. Objective: Reduce the negative impact of CLP and EWM on native aquatic plant growth and on recreational access limited by access and navigational impairment.
    1. Action: Complete annual CLP and EWM survey and mapping in that area of Trego Lake outside of the east basin and the Potato Creek inlet.
        i. Complete CLP survey work between June 1 and June 30
        ii. Complete EWM survey work between August 1 and September 15
            1. Document any CLP or EWM found with GPS
    2. Action: Harvest all CLP and early season EWM in predetermined areas annually
        i. May 1 – June 15
            1. Approximately 23 acres in water 4-6ft deep
            2. Cut to maximum depth of 2ft
            3. CLP and EWM will be removed regardless of density
    3. Action: Implement physical/manual removal of EWM
        i. Local property owners will be trained to identify and properly remove EWM from their nearshore area
            1. Physical removal will be focused on in areas outside of the east basin and Potato Creek inlet – downstream shoreland all the way to the dam
            2. If an area of EWM is located that is too large for physical removal, other actions including diver removal and DASH will be discussed. While the use of herbicides is not recommended, it may be a possibility in downstream portions of the lake
    4. Action: Prepare a WDNR Aquatic Plant Control Mechanical / Manual Permit Application annually, and once approved, implement large-scale harvesting under the following guidelines:
        i. Harvesting of CLP will take place before the onset of turion production
        ii. Harvesters must stay in at least 3-ft of water and operate cutters at a maximum depth of 2-ft

iii. When harvesting close to shore, harvesters must operate parallel to shore and remain in at least 3-ft of water.
iv. At off-loading sites, efforts to return game fish, turtles, and other wildlife back to the water will be made by the harvesting crew
v. Harvesting crew will identify and record the species and quantity (estimated % of total plant biomass removed) of aquatic plants removed by the harvesters

Measurement: Harvesting records will be kept and submitted to the WDNR annually.

Goal 3: Improve access to open water through dense growth non-native and native aquatic vegetation for property owners and other lake users.

Opening and maintaining access to open water for navigational and recreational purposes is necessary in the east basin, Potato Lake inlet, and Sunfish Bay areas of Trego Lake. These three areas cover a bit more than 50% of the lake and are all considered littoral zone, supporting abundant growth of aquatic vegetation, both native and non-native. This growth causes significant navigation impairment when attempting to access open water from docks and when traveling through these areas.

Wild rice is extremely dense in the upstream third of and along the shallow shores of the east basin and along the shores of the Potato Creek inlet. Where wild rice is not growing, other native aquatic plants and CLP grow to levels that cause impairment. Harvesting is recommended to open and maintain several narrow (up to 30-ft wide) access and navigation lanes through these areas. Where possible, and logical, these access and navigation lanes follow existing river channels, previously harvested lanes, or the edges of the larger open water harvest area and as such may not need more than touch-up removal at any given time.

In addition, the same area harvested in the spring/early summer for CLP and EWM can be harvested throughout the season to maintain open water free of surface matting.

1. Objective: Improve access to open water for property owners and lake users.
    1. Action: Open up and maintain a combined 12.0 miles of navigation and access lanes
        i. May 1 – September 15
            1. Harvesters must stay in at least 3-ft of water and follow predetermined (marked) paths.
            2. Channels up to 30-ft wide can be cut to a maximum of 2-ft in depth.
    2. Action: Maintain open water (without surface matting) in the same area where early summer harvesting of CLP and EWM takes place.
        i. May 1 – June 15
            1. Approximately 23 acres in water 4-6ft deep
            2. Cut to maximum depth of 2ft
            3. Surface mats and vegetative growth can be removed regardless of density
    3. Action: Prepare a WDNR aquatic plant harvesting permit annually, and once approved, implement large-scale harvesting under the following guidelines:
        i. Harvesters must stay in at least 3-ft of water and operate cutters at a maximum depth of 2-ft.
        ii. When harvesting close to shore, harvesters must operate parallel to shore and remain in at least 3-ft of water.

iii. At off-loading sites, efforts to return game fish, turtles, and other wildlife back to the water will be made by the harvesting crew
iv. Harvesting crew will identify and record the species and quantity (estimated % of total plant biomass removed) of aquatic plants removed by the harvesters

Measurement: Harvesting records will be kept each year. A survey could be sent out at the end of each season seeking property owner satisfaction and input into the actions completed.

Goal 4: Determine how best to implement the changes in the harvesting program laid out in this Plan.

Increasing the amount of area harvested, be it for CLP/EWM removal or removal of dense growth native aquatic vegetation, will require greater resources than the current management actions. The total acreage included in this plan (35 acres) should be considered a maximum amount of surface area to harvest. Once a permit for harvesting has been approved, actual harvesting within the area included is not limited in terms of how often the area can be harvested. It may be necessary to harvest any or all of the area included more than once in a season. Or, only one time or possibly no harvesting may be necessary. In most cases the type of growing season experienced and available resources determines how many times an area is harvested.

The TLD is going to have to determine what resources they can tap into to complete whatever portion of, or all of these management recommendations. Contracted harvesting may be a starting point, but in the end may not be the best or most economical way to implement this plan. In this Plan, it is recommended that aquatic vegetation only be harvested to a depth of 2-ft below the surface. This depth was established as it removes much of the biomass, opens up the surface for boat traffic, and at the same time leaves behind enough plant material to provide cover habitat for young of the year fishes. It will also likely limit the time necessary, therefore likely the cost, to complete harvesting.

1. Objective: Determine how and at what level the harvesting actions in this Plan can be most efficiently implemented.
    1. Action: Determine level of constituent support, grant funding availability, and outside support for implementation of management actions
        i. Contracted harvesting versus owning the equipment

Goal 5: Minimize opportunities for new AIS to enter and become established in Trego Lake.

Trego Lake already has several established AIS (CLP, EWM, and Chinese Mystery Snails). Purple loosestrife is likely present in the area, as is yellow iris. These and other AIS should be monitored for on a regular basis. There is also a significant risk for the introduction of zebra mussels as the nearest lake with a current infestation is only 7 miles to the west. Having an educated and informed lake constituency is the best way to keep non-native aquatic invasive species at bay in Trego Lake. Implementation of a watercraft inspection program can reduce the risk that new AIS get introduced but it cannot prevent it entirely. Additional monitoring efforts within the lakes and along the shoreline will help identify new invaders before they become a problem.

1. Objective: Improve the level of knowledge lake property owners and lake users have related to AIS and how they are and could impact the lake.
    1. Action: Host and/or sponsor annual lake community events including AIS identification and management workshops.
    2. Action: Distribute education and information materials to lake property owners and lake users through the newsletter, webpage, social media, and general mailings.
2. Objective: Implement a watercraft inspection and AIS signage program at all public access sites.
    1. Action: Incorporate a CLMN/UW-Extension Lakes Clean Boats, Clean Waters program at the Public Boat Landing
    2. Action: Evaluate and update signage at all public access points on the lakes
    3. Action: Work with resorts, lake related businesses, and others to post signage and encourage watercraft inspection
    4. Action: Consider the installation of an AIS Decontamination Station at the Public Boat Landing
3. Objective: Implement an in-lake and shoreland AIS monitoring program in the lakes
    1. Action: Participate in the CLMN/UW-Extension Lakes AIS Monitoring Program to support in-lake monitoring efforts

Measurement: The best measurement of this goal is keeping Trego Lake free of AIS that are not already present and minimizing the spread of existing AIS.

Goal 6: Reduce pollutant loading into Trego Lake.

Shoreland improvement planning is used on many lakes to reduce erosion, increase and improve native habitat, and improve water quality. Restoration not only improves the lake aesthetic enjoyed by so many, it filters runoff and can keep invasive species at bay. There are many improvement projects that could be implemented. Property owners can create shoreline buffer strips, establish no-mow areas, install rain gardens, plant native species, divert surface runoff away from the lakes, reduce impervious surfaces, or even complete a full shoreland restoration project which may include all of these things and more.

As a riverine system, long and narrow, there are several areas of Trego Lake that fall under "no wake" restrictions. Waves, both natural and those caused by boat use, stir up sediments in shallow water and erode shoreline, particularly in places where aquatic vegetation is limited. Prop wash from boat motors used in shallow areas of the lakes stir up sediment. Reducing these disturbances will reduce the amount of phosphorus readily available to grow algae.

Assuming most septic systems are in good working order and appropriately maintained, they generally contribute a very small percentage of the nutrient loading occurring in a body of water. While the contribution may be limited, making sure all systems on the lake are up-to-date and functioning properly is an easy thing to promote and do.

Land use practices in the watershed surrounding the lakes can contribute significant sediment and nutrient loading to a body of water. Changing poor land use practices can reduce what is contributed. Cover crops, no till, manure storage, field buffers, and nutrient management planning are just a few examples of agricultural best management practices that are and should be implemented throughout the watershed. The logging industry also has accepted best management practices that are and should be implemented throughout the watershed. Actions designed to reduce the amount of sediment blown from the land adjacent to the lakes, like road watering to reduce dust from unimproved roads should be implemented. Reducing the amount of ice melting agents and other pollutants on roadways and driveways will also benefit the lakes.

1. Objective: Promote shoreland improvement projects in the nearshore area that will reduce surface runoff and pollutants entering the lakes.
    1. Action: Promote property owner participation in projects supported by the Healthy Lakes and Rivers grant program
        i. Native plantings, rain gardens, diversions, and infiltration trenches
        ii. Work with a local contractor other qualified person to help property owners plan shoreland improvement projects
        iii. Implement at least 5 projects over a 5 year period

    2. Action: Recognize property owners who participate in and/or complete runoff and pollutant reduction practices
        i. Examples: post signs at the site, articles in the newsletter or on the webpage, social media outlets, and in local news publications
2. Objective: Reduce shoreland erosion caused by boat wakes and disturbances to bottom sediments caused by prop wash including power loading.
    1. Action: Provide education and informational materials to lake property owners and users related to “no wake” restrictions, prop wash, and power loading
        i. Examples: post signs at the landing, articles in the newsletter or on the webpage, social media outlets, and in local news publications
3. Objective: Encourage septic system inspection, maintenance, and repair
    1. Action: Send out reminders to property owners to have their septic system inspected
    2. Action: Encourage property owners to replace or repair septic systems not functioning properly
4. Objective: Encourage the use of agricultural, logging, and other industry best management practices to reduce sediment and nutrient loading from the watershed
    1. Action: Work with the Washburn County Land and Water Conservation Department and other entities to identify problem sites in the watershed and to develop plans to address them
    2. Action: Consider offering financial assistance to the County or other entities to implement first time and additional best management practices throughout the watershed
    3. Action: Encourage business and private property owners around the lake to implement best management practices that will reduce sediment and pollutant loading from the watershed

Measurement: The objectives in this goal can be measured by the number of properties/projects that are implemented through the WDNR Healthy Lakes and Rivers program, and documentation of education and information efforts.

Goal 7: Provide property owner and lake user education and awareness of issues impacting Trego Lake.

Public involvement and input is essential if management actions on a given body of water are to be successful. The lake community must be aware of the issues facing the lake and how those issues impact the lake. They need to know that what they do on a daily basis matters. Encouraging participation and providing ample opportunities to do so is important. Workshops, lake fairs, annual organization events, on-lake monitoring and data collection projects, distribution of educational and informational materials, and sharing of lake data are just a few examples of how to keep the lake community involved.

1. Objective: Continue public outreach and education programs on issues facing Trego Lake.
    1. Action: Facilitate AIS, aquatic plants, and water quality, and wildlife public education opportunities annually
        i. Examples: Lake Fair, Workshops, Public Speakers
        ii. Maintain a TLD webpage, Facebook page, and or newsletter
    2. Action: Promote sustainable and multi-use recreational opportunities on the lake
        i. Hold open forums to discuss lake use issues with interested parties
        ii. Monitor patterns of recreational use in the lake to identify potential conflicts and guide management activities
        iii. Determine the need for a lake-use plan and what that plan should include

Measurement: The best measurement is a record of each of the education and awareness events that are held/sponsored annually.

Goal 8: Collect lake related data to enhance and support current and future lake management planning and implementation in Trego Lake.

There can never be too much data when it comes to determining the best way to manage a lake so that it meets all of its intended uses. Compiling existing data and collecting additional data to document current and future conditions of the lake is important.

1. Objective: For management planning and assessing general lake health, collect lake data that will provide a better understanding of the issues impacting the lakes.
    1. Action: Reinstitute a TLD volunteer driven water quality testing program through the CLMN water quality monitoring program
        i. Secchi disk (water clarity) and temperature
        ii. Total phosphorus, chlorophyll-a, and dissolved oxygen
    2. Action: Begin precipitation monitoring
        i. Participate in the Community Collaborative Rain, Hail, and Snow (CoCoRaHS) monitoring program

Measurement: CLMN water quality data will be entered into the WDNR SWIMS database. Precipitation data will be collected and stored within digital project files.

Goal 9: Implement this plan following Integrated Pest Management guidelines from the WDNR.

This document is not intended to be a static, once and for all plan, but rather one that makes room for management changes that still fall under the guise of the stated goals. As the plan is implemented there may be things that would make attaining plan goals easier and more efficient. Integrated Pest Management (IPM) is an ecosystem-based management strategy that focuses on long-term prevention and/or control of a species of concern. IPM considers all the available control practices such as: prevention, biological control, biomanipulation, nutrient management, habitat manipulation, substantial modification of cultural practices, pesticide application, water level manipulation, mechanical removal, and population monitoring. Integrated pest management projects should be informed by current, comprehensive information on pest life cycles and the interactions among pests and the environment.

1. Objective: Follow an adaptive management strategy that measures and analyzes the effectiveness of management activities and modify the management plan as necessary to meet goals and objectives.
    1. Action: The TLD will continue active participation in all discussions related to management of Trego Lake
    2. Action: Annual reports will be completed summarizing actions and results and presenting revisions for future management actions.
        i. Reports will be completed by the TLD or its retainers and shared with its constituency, SCTES, NPS, WDNR, County, and other local resources
    3. Action: Evaluate results and revise management actions in this plan as needed to help meet the needs of the lakes.

Measurement: The measurement for this will be based on actual documents produced each year.

Appendix C

WDNR Rule NR 19.09 Wild Rice Conservation

NR 19.09 Wild Rice Conservation.

(1) Removal or destruction of wild rice.

(a) No person may remove or destroy by hand, mechanical or chemical means wild rice growing in navigable lakes unless the department has approved the removal or destruction under par. (b).

(b) In addition to harvest in accordance with s. 29.607, Stats., and subs. (2) to (8), the department may authorize by written approval the removal of wild rice growing in navigable lakes upon a finding that:

1. The wild rice resource in the navigable lake will not be substantially affected. The department may consider cumulative effects of an approval on such a lake under this paragraph; and

2. The removal or destruction is necessary to allow reasonable access to the lake by the riparian owner.

(c) Persons requesting an approval under this subsection, shall apply on department forms and provide information requested by the department.

Note: The forms may be obtained from department regional offices.

(2) A closed season is established for the harvesting or gathering of wild rice in the following described areas at all times except as hereinafter provided and it is unlawful for any person to harvest or gather wild rice in any manner or at any time during such closed season.

(3) The secretary is authorized and directed, after determining by investigation and study that the wild rice is ripe, to designate the open season for harvesting or gathering wild rice in each of the areas described in sub. (4). The open season in any area may continue in effect for not more than 60 days. The open season in any area as designated by the secretary pursuant to this subsection shall be put into effect by posting of proper notice of the open season on the shores of, and at places of public access to, the lakes and streams in which the open season is effective at least 24 hours before the beginning of the open season.

(4) There is no closed season for the harvesting of wild rice in any other area of the state of Wisconsin not herein described:

(a) *Ashland county.* All waters north of highway 2 including outlying waters.

(aa) *Barron county.* Bear lake, Beaver Dam lake and Red Cedar lake.

(b) *Bayfield county.* Totogatic lake.

(c) *Burnett county.* Bashaw lake, Big Clam lake, Big Sand lake, Briggs lake, Gaslyn lake, Long lake, Mud lake, town of Oakland, Mud lake, town of Swiss, Mud Hen lake, Spencer lake and Trade lake.

(d) *Douglas county.* In Allouez Bay in the city of Superior and Mulligan lake.

(e) *Forest county.* Atkins lake, Riley lake, Big Rice lake and Wabigon lake.

(g) *Oneida county.* Atkins lake, Big lake and Big lake thoroughfare, Gary lake, Little Rice lake, Rice lake and Spur lake.

(h) *Polk county.* Balsam Branch, Big Round lake, East lake, Glenton lake, Little Butternut lake, Nye lake, Rice lake and White Ash lake.

(i) *Sawyer county.* Musky Bay located in sections 10 and 11, T39N, R9W, on Big Lac Court Oreilles lake.

(j) *Vilas county.* Allequash lake, Little Rice lake, Nixon lake, Irving lake, Aurora lake, West Plum lake, Devine lake, West Ellerson lake, Micheys Mud lake, Frost lake, Rice lake, Sand lake and Sugar Bush Chain.

(k) *Washburn county.* Bear lake, Gilmore lake, Little Mud lake, Long lake, Mud lake, Nancy lake, Rice lake, Spring lake and Tranus lake.

(5) No person may harvest or gather any wild rice in any area of the state of Wisconsin between sunset and the following 10:00 a.m. central daylight time.

(6) No person may harvest or gather any wild rice in any navigable lake by the use of any method other than smooth, rounded, wooden rods or sticks not more than 38 inches in length and which are held and operated by hand.

Note: Section 29.607, Stats., prohibits the use of any mechanical device in any water of the state for harvesting or gathering wild rice.

(7) No person may harvest or gather any wild rice in any navigable lake by the use of any boat longer than 17 feet or greater than 38 inches in width or by the use of any boat propelled by other than muscular power using only a push-pole or canoe paddle.

(8)

(a) All licensed wild rice dealers shall file reports on forms furnished by the department covering the license period with the Department of Natural Resources, Box 7924, Madison, 53707, prior to obtaining a wild rice dealer's license.

(b) Such reports shall summarize the book records required and shall include the total number of transactions and the total amount of wild rice bought, sold or processed during the period covered by such license.

(9) Nothing in the provisions of this section shall prohibit authorized agents of the department from harvesting or gathering wild rice in the performance of their official duties.

History: Cr. Register, July, 1960, No. 55, eff. 8-1-60; r. and recr. Register, July, 1964, No. 103, eff. 8-1-64; renum. from WCD 19.09 to be NR 19.09 and am. (2), intro. par., (6) and (7), Register, April, 1971, No. 184, eff. 5-1-71; am. (2) (c), (k) and (m), Register, November, 1976, No. 251, eff. 12-1-76; am. (5), Register, April, 1978, No. 268, eff. 5-1-78; am. (1) (c), Register, December, 1978, No. 276, eff. 1-1-79;

r. and recr. (2) (a) to (m), and am. (6), Register, August, 1979, No. 284, eff. 9-1-79; am. (2m) (c), Register, September, 1983, No. 333, eff. 10-1-83; emerg. cr. (2m) (aa), am. (2m) (c), (d), (g), (h) and (k), eff. 8-13-84; emerg. am. (3) eff. 8-27-84, cr. (2m) (aa), am. (2m) (c), (d), (e), (g), (h), (k) and (3), Register, May, 1985, No. 353, eff. 6-1-85; r. (8), renum. (1) to (7) to be (2) to (9) and am. (6) and (7), cr. (1), Register, August, 1985, No. 356, eff. 9-1-85; am. (3), Register, July, 1987, No. 379, eff. 8-1-87; am. (3), Register, July, 1988, No. 391, eff. 8-1-88; CR 16-037: r. (4) (f) Register April 2017 No. 736, eff. 5-1-17.

NR 19.11 Scientific collectors permits and scientific research licenses.

Appendix D

TLD Historical Management Document

Trego Lake District – Timeline (on issues with sedimentation and aquatic plants)
This time line is created primarily from documents located on the Trego Lake website: https://tregolakedistrict.com

- 1927 – Trego Lake is created by placing a hydroelectric dam on the Namekagon River. The dam was constructed by the Wisconsin Hydro Electric Company to provide electricity.

- March 9, 1987 – Trego Lake Association formed to address sedimentation and weed growth in Trego Lake.

- Summer 1987 – First controlled harvest of weeds from Trego Lake. (manual harvest?)

- September/October 1987 – Senator Bob Jauch forwarded a sedimentation study to University of Wisconsin for a "Pilot Program for the purpose of studying sedimentation which effects all flowages in Wisconsin."

- October 19, 1987 – Drawdown of Trego Lake and aerial photos taken to study the sedimentation problem. Department of Transportation and Engineer Rod Ripley developed report due early 1988.

- May 1989 – Wisconsin Department of Natural Resources (WDNR) completes latest study and recommends a drawdown and dredging. Need for funding such project is determined.

- October 1, 1989 – Trego Lake Association transfers all of its records and funds to the Trego Lake District.

- May 24, 1991 – TLD Annual Meeting – Noted that Northern States Power (NSP) and WDNR grant applications to pay for dredge work not "honored." NSP stated they would try to solve the sedimentation problem but no date or process identified.

- May 24, 1991 – TLD Annual Meeting – notes regarding ongoing weed harvesting using Aquatic Nuisance Control of Amery, Wisconsin. Harvesting paid for by individual property owners(?).

- March 1992 – Mention of aquatic invasive species (AIS) curly leaf pondweed being a nuisance and a need for a program for weed control.

- July 26, 1993 – Notice of Trego Lake dam relicensing

- December 16, 1993 – Spooner Advocate article on Trego Lake sedimentation issue: https://drive.google.com/file/d/1c-Ngu2Np4msNg76oTav01NxX_MSGwIru/view

- February 3, 1994 – Spooner Advocate article regarding stadium proposal at "Trego Junction"

- May 28, 1994 – TLD Annual Meeting – ongoing work/communication with local, state, and federal elected officials on funding for dredging

- November 1994 – Trego Flowage Macrophyte Survey and Management Plan; prepared for NSP/Wisconsin as directed by Article 405 of its FERC Operating License for the Trego Hydro Project (FERC No. 2711)
    - Macrophyte Management Plan: https://tregolakedistrict.com/wp-content/uploads/2019/04/1994-Trego-Flowage-Lake-Plan.pdf

- January 5, 1995 – Trego Lake Sedimentation Meeting with various officials from local, state and federal offices. Many options considered - summary: https://drive.google.com/file/d/120rtjzeNCBzhTCFfb_fj3ZXGuqOXzp6s/view

- May 27, 1995 – TLD Annual Meeting – vote on dissolution of TLD failed. Discussion on development of a five-year plan. Continuation of weed harvesting plus TLD will consider grants to pay for harvesting.

- May 25, 1996 – TLD Annual Meeting – Weed Harvesting Committee researching grants to pay for harvesting activities.

- May 25, 1996 – TLD Annual Meeting – Statement that dam has been relicensed for 33 years and that one of the provisions of the license is that NSP file a detailed vegetation management plan to enhance public access within the upper reservoir. Plan should be prepared with input from local, state and federal entities.

- January 18, 1997 – NSP and TLD agree on weed harvesting activities. They have been submitted to FERC for approval. They include:
    - NSP agrees to:
        - Pay for cost of harvesting twice a year
        - Pay for cost of navigational buoys for marking channels
        - Pay for most of the financial responsibility of the project
    - TLD agrees to:
        - Contacting and working with harvesting company
        - Making sure the channels are marked properly
        - Overseeing the harvesting

- May and July 1998 – Weed Harvesting done under new agreement. NSP, in the future, is unwilling to finance a second cutting/harvest.

- July 1999 – Weed harvesting done in July (single harvest?) - Xcel (NSP) reimbursed TLD for cost

- July 2000 – Weed harvest completed. - Xcel (NSP) reimbursed TLD for cost

- June 2001 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- July 2002 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- Summer 2002 – TLD Sedimentation Committee created

- January 2003 – WDNR states they would not support a draw-down of Trego Lake to research/address sedimentation issues

- June/July 2003 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- January 24, 2004 – TLD submits conceptual drawings and discussion of proposed channel and wetland improvements to address sedimentation to US Army Corps of Engineers (at the Corps request). Channels are described as approximately 25 feet wide and 4 feet deep.

- May 29, 2004 – Sedimentation Committee proposes to form wetlands by moving some of the sedimentation from the boat channels to other areas in the lake. DNR responded that movement of sedimentation in the lake is not permitted.

- July 2004 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- June 2005 – weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- July 2005 – Army Corps identifies design concepts for sedimentation removal. TLD starts to develop plan to meet concepts identified.

- October 2005 – Application for WDNR dredging permit ($500) paid for voluntarily by impacted property owners.

- June 2006 – Sedimentation Committee proposes the following recommendations:
    - Establish and maintain channels in the upper end of the lake and address the symptoms of sedimentation. Need to obtain permit to do.
        - Cost of the permit and maintaining channels would be paid by property owners who use the channel
    - Remove sedimentation east of Highway 53 bridge. This would address the sedimentation coming into Trego Lake. Approximately 2000 cubic yards of sand

flow down the river into the lake each year (Army Corps of Engineers' 1988 study).
    - Cost for regular removal of sedimentation before it enters the lake would be paid for by property tax on all property owner in the district.

- June 2006 – At TLD Annual Meeting, motion to obtain WDNR permits for dredging proposal passes 49 votes yes to 18 votes no.

- July 2006 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- June 16, 2007 – At TLD Annual meeting, motion for dissolution of district fails.

- June 16, 2007 – Permit paperwork in process for dredging work on Trego Lake

- June 29, 2007 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- January 2008 – WDNR dredging permits received

- June/July 2008 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- October 2008 – dredging spoils sites area prepared; possible dredging summer of 2009

- January 2009 – TLD Sedimentation Checking account created to hold funds donated to TLD for dredging purposes

- July 2009 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- Summer 2009 – Dredging company was trying out a new dredge and offered to use Trego Lake as a test site for no or minimal cost. Demand for new dredge was great so dredging did not take place because equipment was not available.

- July 2010 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- Summer 2010 – Waiting for dredge equipment availability

- October 2010 – TLD AIS Committee created to assess aquatic plants in lake and develop an AIS rapid response plan.

- June 2011 – Sedimentation Committee research and addressing insurance questions on use of dredging equipment.

- July 2011 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- July 2011 – Point survey completed of aquatic plants in Trego Lake.

- July 22, 2011 – Special Board Meeting: Resolution - Further consideration of Sedimentation Committee proposal for dredging; to be funded entirely with private funds. Resolution passed. Meeting minutes: https://drive.google.com/file/d/1dIPj4AxDl8HyICZFWj62Tb3nlTEw1Ara/view

- June 2012 – Plant survey summary presented to TLD. See for details: https://tregolakedistrict.com/wp-content/uploads/2019/04/2011-TREGO-LAKE-AQUATIC-PLANT-SURVEY-SUMMARY.pdf

- June 2012 – Reauthorization of dredging project with donated funds. Waiting on dredge company to have availability of dredge for Trego Lake.

- July 2012 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- Notes for 2013 not available

- January 2014 – Sedimentation permits with WDNR are requested to be extended. Also, the committee discusses the purchase of a dredge.

- July 2014 – Weed harvesting not completed because of minimal weeds to harvest

- July 2014 – Sedimentation Committee discusses hiring a commercial dredger to carry out the dredging permits. Cost is a large factor to consider.

- Fall 2014 – Commercial dredge company out of South Dakota has been identified to do the dredge work once funding is in place.

- January 2015 – Funds are identified from the Town of Trego, Washburn County and WDNR to conduct the dredge work.

- June 2015 – TLD annual meeting approves a resolution to authorize the TLD Board to implement the dredging project. Resolution, including particulars: https://drive.google.com/file/d/12KwD3UMyqRjsRJ0pfpcOazbew1Y6hS-K/view

- July 2015 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- January 2016 – Contract for dredging – bids advertised as required and an acceptable bid was received, contract negotiated, and signed.

- July 2016 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- July – September 2016 – Dredging work completed. 8.75 million gallons of water pumped. Channels 25 feet wide and 4 feet deep. Recent map shows channels dredged in 2016: https://tregolakedistrict.com/wp-content/uploads/2020/06/Top-View-of-Proposed-2020-Spot-Dredging-of-Previously-Dredged-Channels-in-2016.pdf

- July 2017 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- July 2018 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- August 2018 – Sedimentation Committee is re-created to deal with additional sedimentation and channel issues. Channels dredged in 2016 are filling in with sand.

- July 2019 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

- August 2019 – Eurasian or hybrid watermilfoil is identified by WDNR staff in Trego Lake. (Later determined to be hybrid watermilfoil (HWM)). Hybrid watermilfoil has been observed in Lake Hayward which feeds into the Namekagon River and Trego Lake.

- October 2019 – TLD approves applying for WDNR Rapid Response Grant and for Lake Management Plan grant. Also, the Board authorizes engaging a consultant to assist TLD in addressing AIS and Lake Management Plan issues. Handout on AIS: https://tregolakedistrict.com/wp-content/uploads/2019/10/October-12-2019-Trego-Lake-District-meeting-PP-Presentation.pdf

- February 2020 – TLD is granted WDNR permit to dredge portions of Trego Lake. Maps shows dredge location options: https://tregolakedistrict.com/wp-content/uploads/2020/06/Top-View-of-Proposed-2020-Spot-Dredging-of-Previously-Dredged-Channels-in-2016.pdf

- June 2020 – TLD is awarded WDNR Rapid Response Grant.

- June 2020 – TLD adopts resolution for completing dredge project on Trego Lake. https://tregolakedistrict.com/wp-content/uploads/2020/06/UPDATED-Resolution-implementing-2020-2021-budget-on-dredging.pdf

- July 2020 – Weed harvest completed - Xcel (NSP) reimbursed TLD for cost

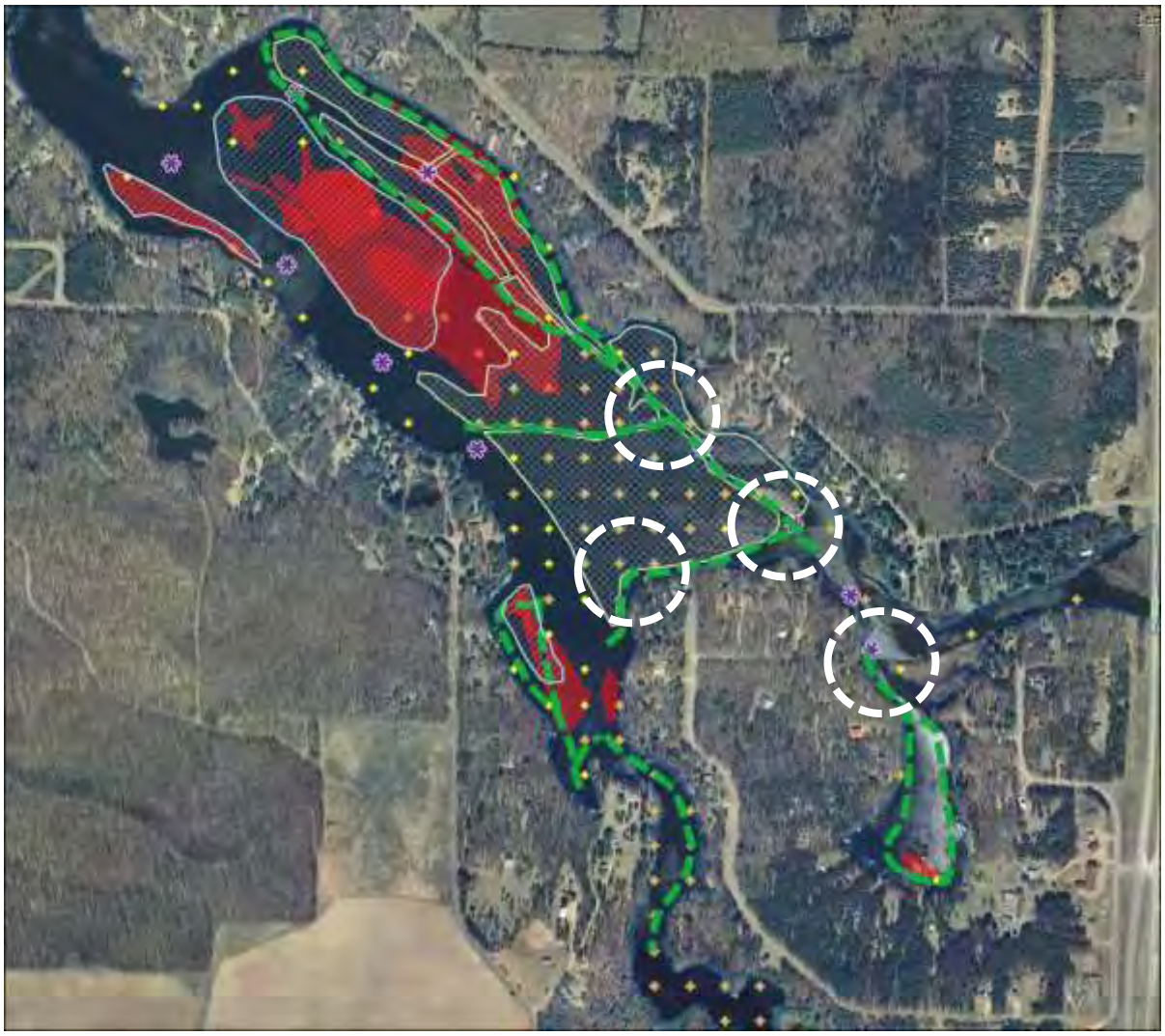
- August 2020 – Update on Weed Project: https://tregolakedistrict.com/wp-content/uploads/2020/08/Trego-Lake-Weeds-Project-Update-08-21-2020.pdf

- Fall 2020 – TLD purchases a Piranha mini suction dredge and other equipment to allow TLD members to dredge permitted locations in Trego Lake.

Appendix E

2022-26 Harvesting Map

2022-26 Trego Lake – East Basin and Potato Creek Inlet Plant Management Plan (LEAPS, 2021)



Purple Stars – 2021 Location of channel marker buoys

Orange Crosses and Yellow Squares – 2011 and 2021 summer PI points with wild rice

Light Green Polygons – 2021 Wild rice bedmapping (east basin only) (≈47.0 acres)

Dark Red Polygons – 2020 CLP beds (≈32.0 acres)

Bright Red Polygons – 2020 EWM beds (≈6.0 acres)

Dashed Green Line – Approximately 3.3 miles of 30-ft wide navigation and access lanes (≈12.0 acres)

Light Blue Polygons – Proposed harvesting areas (≈23.0 acres)

Dashed White Circles – Possible sediment dredging areas

Appendix F

2022-26 APM Plan Implementation Matrix

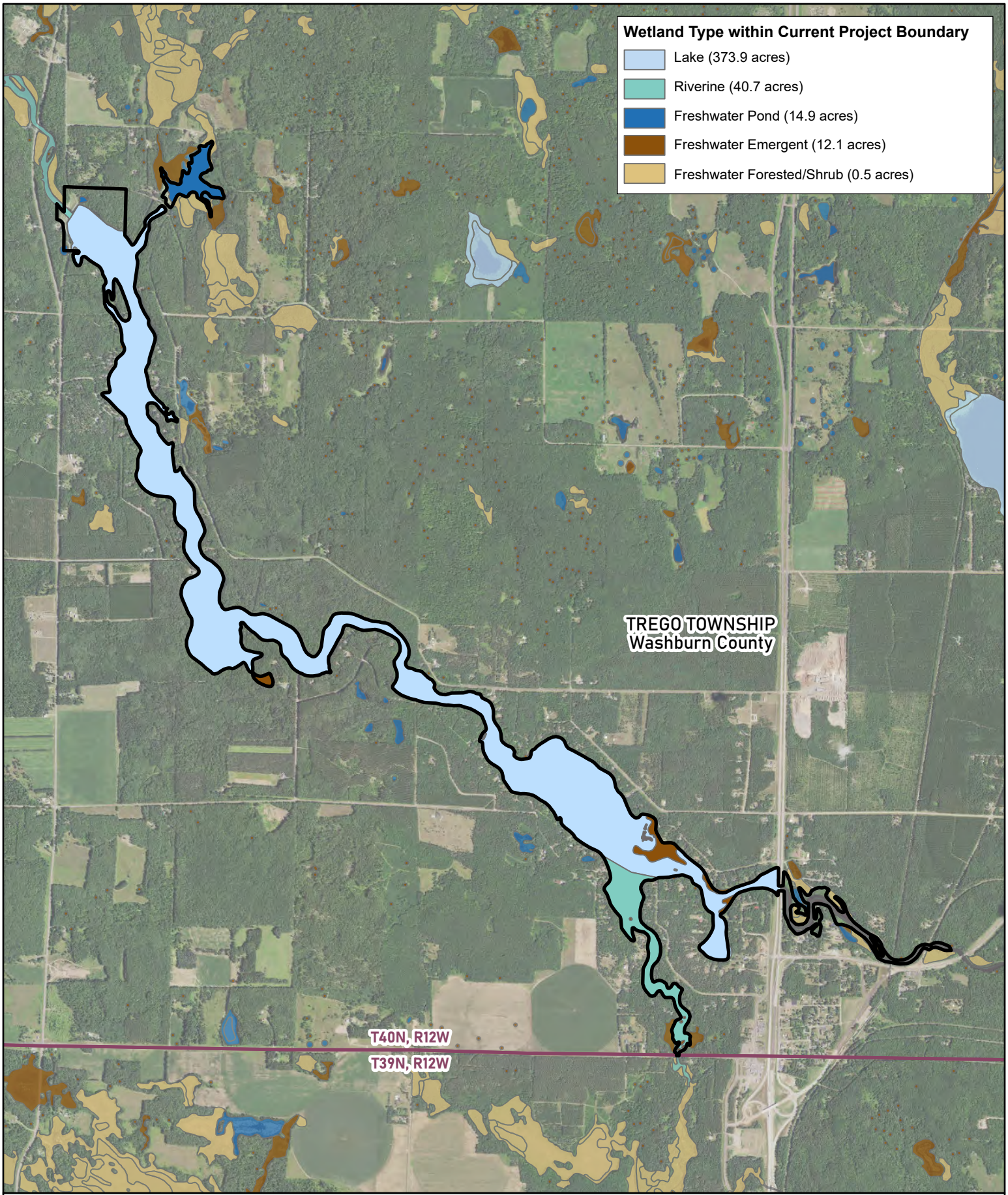
Recommended Implementation, Funding, and Priority Plan for the Trego Lake Aquatic Plant Management Plan (2022-26)

	Goals/Objectives/Actions	Priority Placement			Primary Implemeneters	Year of Implementation					WDNR Surface Water Education and Planning Grants								WDNR Surface Water Restoration and Management Grants					Other
		High (1st)	Med (2nd)	Low (3rd)		2022	2023	2024	2025	2026	Education	Planning	Comprehensive Planning	AIS Prevention	Clean Boats Clean Waters	Population Management	Early Detection & Response	Research and Demonstration	Healthy Lakes & Rivers	Restoration	Management Plan Implementation	Fee Simple Land Easement and Acquisition	Wetland Restoration Incentives	Recreational Boating Facilities
Goal 1: Protect, preserve, and enhance native aquatic plant communities including wild rice.																								
1 Maintain or increase four measurements of the quality and health of the native aquatic plant community: SDI, FQI, Mean C, and # of native aquatic plant species w/visual and boat survey																								
1	Complete management planning annually with the intent to minimize negative impacts of management implementation on native aquatic vegetation.				**TLD, RP**	x	x	x	x	x	x	x												
2	Continue education efforts aimed at changing attitudes of lake property owners and lake users as it relates to the importance of aquatic vegetation in the Trego Lake for water quality, invasive species control, and improved fish and wildlife habitat.				**TLD**	x	x	x	x	x	x	x												
2 Maintain the distribution and density of wild rice in Trego Lake at 2020 levels or better																								
1	Support efforts to protect, maintain, and enhance wild rice beds				**TLD, SCTES**	x	x	x	x	x														
2	Continue property owner and lake user education efforts aimed at establishing the importance of wild rice as a resource in Trego Lake				**TLD, SCTES**	x	x	x	x	x	x													
Goal 2: Reduce the impact of AIS on the native plant community and on access and navigation.																								
1 Reduce the negative impact of CLP and EWM on native aquatic plant growth and on recreational access limited by access and navigational impairment.																								
1	Complete annual CLP and EWM survey and mapping in that area of Trego Lake outside of the east basin and the Potato Creek inlet.				**TLD, RP**	x	x	x	x	x		x				x								
2	Harvest all CLP and early season EWM in predetermined areas annually				**TLD, RP**	x	x	x	x	x						x								
3	Implement physical/manual removal of EWM				**TLD**	x	x	x	x	x						x								
4	Prepare a WDNR Aquatic Plant Control Mechanical / Manual Permit Application annually, and once approved, implement large-scale harvesting				**TLD, RP**	x	x	x	x	x		x				x								
Goal 3: Improve access to open water through dense growth non-native and native aquatic vegetation for property owners and other lake users.																								
1 Improve access to open water for property owners and lake users.																								
1	Open up and maintain a combined 12.0 miles of navigation and access lanes				**TLD**	x	x	x	x	x						x								
2	Maintain open water (without surface matting) in the same area where early summer harvesting of CLP and EWM takes place.				**TLD**	x	x	x	x	x						x								
3	Prepare a WDNR aquatic plant harvesting permit annually, and once approved, implement large-scale harvesting				**TLD, RP**	x	x	x	x	x		x				x								
Goal 4: Determine how best to implement the changes in the harvesting program laid out in this Plan.																								
1 Determine how and at what level the harvesting actions in this Plan can be most efficiently implemented.																								
1	Determine level of constituent support, grant funding availability, and outside support for implementation of management actions				**TLD**	x	x	x	x	x						x								x
Goal 5: Minimize opportunities for new AIS to enter and become established in Trego Lake.																								
1 Improve the level of knowledge lake property owners and lake users have related to AIS and how they are and could impact the lakes.																								
1	Host and/or sponsor annual lake community events including AIS identification and management workshops.				**TLD, WashCo, RP**	x	x	x	x	x	x			x										
2	Distribute education and information materials to lake property owners and lake users through the newsletter, webpage, social media, and general mailings.				**TLD, WashCo, RP**	x	x	x	x	x	x			x										
2 Implement a watercraft inspection and AIS signage program at all public access sites																								
1	Incorporate a CLMN/UW-Extension Lakes Clean Boats, Clean Waters program at the Public Boat Landing				**TLD, WashCo, WDNR**	x	x	x	x	x					x									
2	Evaluate and update signage at all public access points on the lakes				**TLD**	x	x							x	x									
3	Work with resorts, lake related businesses, and others to post signage and encourage watercraft inspection				**TLD**	x					x			x										
4	Consider the installation of an AIS Decontamination Station at the Public Boat Landing				**TLD**	x					x			x										
3 Implement an in-lake and shoreland AIS monitoring program in the lakes																								

1	Participate in the CLMN/UW-Extension Lakes AIS Monitoring Program to support in-lake monitoring efforts				**TLD, RP, WashCo, WDNR**	x	x	x	x	x														
Goal 6: Reduce pollutant loading into Trego Lake.																								
1 Promote shoreland improvement projects in the nearshore area that will reduce surface runoff and pollutants entering the lakes.																								
1	Promote property owner participation in projects supported by the Healthy Lakes and Rivers grant program				**TLD, WashCo**	x	x	x	x	x	x									x				
2	Recognize property owners who participate in and/or complete runoff and pollutant reduction practices				**TLD, WDNR**		x	x	x	x	x									x				
2 Reduce shoreland erosion caused by boat wakes and disturbances to bottom sediments caused by prop wash including power loading.																								
1	Provide education and informational materials to lake property owners and users related to "no wake" restrictions, prop wash, and power loading				**TLD, RP**	x	x	x	x	x	x													
3 Encourage septic system inspection, maintenance, and repair																								
1	Send out reminders to property owners to have their septic system inspected to see if they are functioning properly				**TLD**		x		x		x													
2	Encourage property owners to replace or repair septic systems not functioning properly				**TLD**	x	x	x	x	x	x													
4 Encourage the use of agricultural, logging, and other industry BMPs to reduce sediment and nutrient loading from the watershed																								
1	Work with the Washburn County Land and Water Conservation Department and other entities to identify problem sites in the watershed and to develop plans to address them				**TLD, WashCo**		x	x	x	x		x									x	x		
2	Consider offering financial assistance to the County or other entities to implement first time and additional best management practices throughout the watershed				**TLD, WashCo**		x	x	x	x											x	x		
3	Encourage business and private property owners around the lake to implement best management practices that will reduce sediment and pollutant loading from the watershed				**TLD, RP**	x	x	x	x	x	x	x									x	x		
Goal 7: Provide property owner and lake user education and awareness of issues impacting Trego Lake.																								
1 Continue public outreach and education programs on issues facing Trego Lake.																								
1	Facilitate AIS, aquatic plants, and water quality, and wildlife public education opportunities annually				**TLD, WashCo, F**	x	x	x	x	x	x													
2	Promote sustainable and multi-use recreational opportunities on the lakes				**TLD**	x	x	x	x	x	x													
Goal 8: Collect lake related data to enhance and support current and future lake management planning and implementation in Trego Lake.																								
1 For management planning and assessing general lake health, collect lake data that will provide a better understanding of the issues impacting the lakes.																								
1	1. Action: Reinstitute a TLD volunteer driven water quality testing program through the CLMN water quality monitoring program				**TLD, WDNR**	x	x	x	x	x														
3	Begin precipitation and lake level monitoring				**TLD**	x	x	x	x	x														
Goal 9: Implement this plan following Integrated Pest Management guidelines from the WDNR.																								
1 Follow an adaptive management strategy that measures and analyzes the effectiveness of management activities and modify the management plan as necessary to meet goals and objectives.																								
1	The TLD will continue active participation in all discussions related to management of Trego Lake				**TLD, RP**	x	x	x	x	x		x												
2	Annual reports will be completed summarizing actions and results and presenting revisions for future management actions.				**TLD, RP**	x	x	x	x	x		x												
3	Evaluate results and revise management actions in this plan as needed to help meet the needs of the lakes.				**TLD, RP**	x	x	x	x	x		x												

Implementers: TLD, Trego Lake District; RP, resource professionals/consultant; SCTES, St. Croix Tribal Environmental Resources; WashCo,Washburn County; WDNR, Wisconsin Department of Natural Resources; CLMN, Citizen Lake Monitoring Network; AIS, aquatic invasive species; CLP, curly-leaf pondweed; EWM, Eurasian watermilfoil; BMPs, best management practices; LPL, lake management planning; SDI, Simpson's Diversity Index; FQI, Floristic Quality Index; Mean C, Mean Coefficient of Conservatism

APPENDIX E-36 Wetlands in the Trego Project Vicinity



Current Project Boundary

Township Range

N

0 1,000 2,000

Feet

Xcel Energy

Mead & Hunt

Note: the impounded Proposed Project Boundary is established at elevation 1,035.2 feet NGVD 1929.

Trego Hydroelectric Project
Wetlands in Vicinity of
Current Project Boundary

FERC No. 2711

Source Layer: US Fish & Wildlife Service National Wetland Inventory, WI 2022 NAIP (natural color, 0.6-meter resolution)

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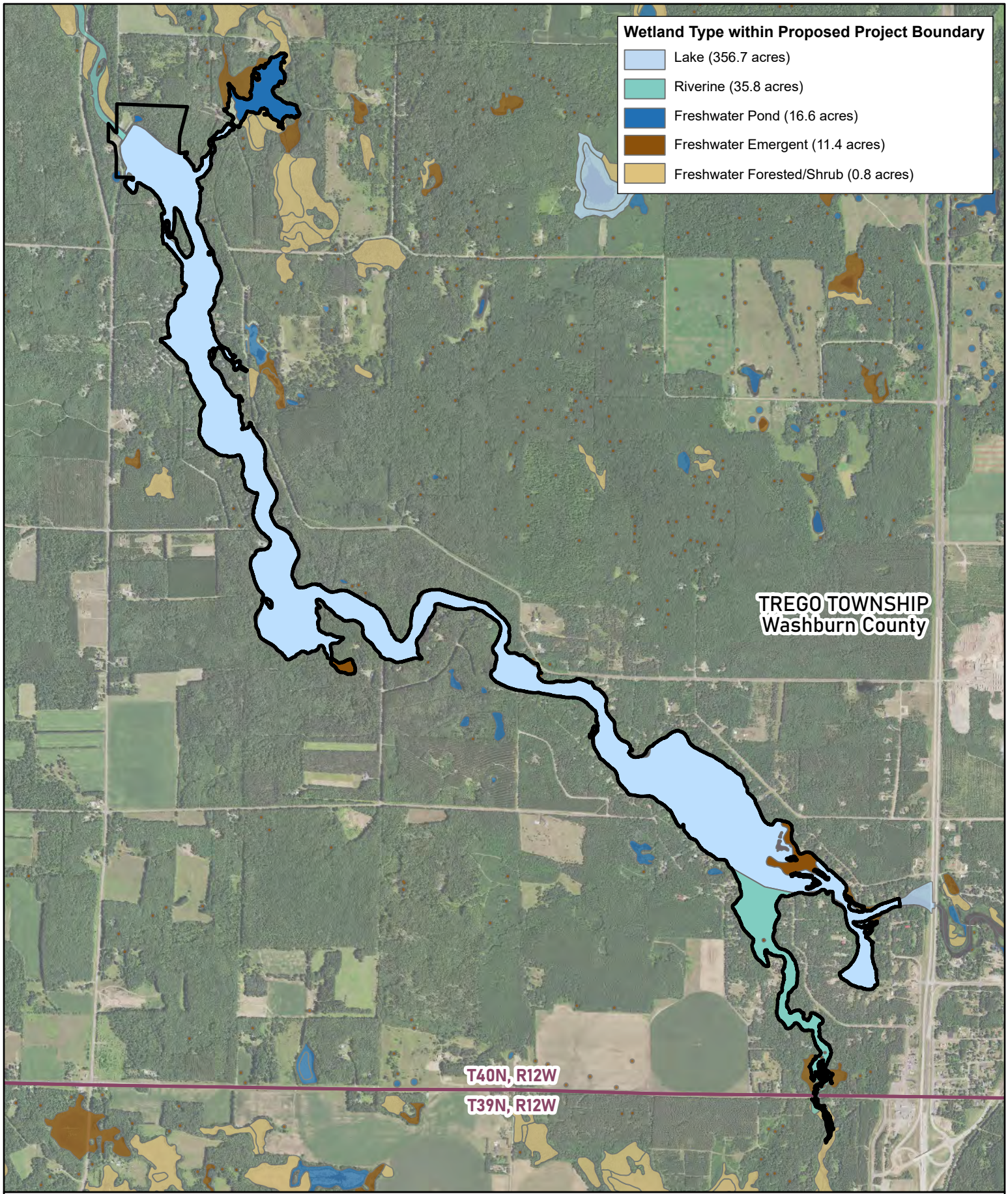

Proposed Project Boundary

Township Range

N

0 1,000 2,000

Feet

Xcel Energy®

Mead & Hunt

Note: the impounded Proposed Project Boundary is established at elevation 1,035.2 feet NGVD 1929.

Trego Hydroelectric Project
Wetlands in Vicinity of
Proposed Project Boundary

FERC No. 2711

Source Layer: US Fish & Wildlife Service National Wetland Inventory, WI 2022 NAIP (natural color, 0.6-meter resolution)

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APPENDIX E-37 WDNR Trego Project Fish Data

WDNR Trego Lake Fish Survey Data

Visit Type	Gear	Sample Date	Target Species	Net Number	Species	Number of Fish	Total #	% of Total
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	4	BLACK BULLHEAD	1	1	0.05%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	1	BLACK CRAPPIE	5		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	2	BLACK CRAPPIE	8		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	3	BLACK CRAPPIE	12		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	4	BLACK CRAPPIE	4		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	5	BLACK CRAPPIE	5		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	6	BLACK CRAPPIE	158		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	7	BLACK CRAPPIE	5		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	8	BLACK CRAPPIE	3		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
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ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	4		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
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NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLACK CRAPPIE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	BLACK CRAPPIE	1		

ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLACK CRAPPIE	1	260	12.74%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		1	BLUEGILL	92		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		1	BLUEGILL	2		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		2	BLUEGILL	76		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		2	BLUEGILL	12		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		3	BLUEGILL	11		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		3	BLUEGILL	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		4	BLUEGILL	66		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		4	BLUEGILL	4		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		5	BLUEGILL	48		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		5	BLUEGILL	14		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		6	BLUEGILL	22		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		7	BLUEGILL	2		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		7	BLUEGILL	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		8	BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		BLUEGILL	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		BLUEGILL	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		BLUEGILL	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		BLUEGILL	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		BLUEGILL	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		BLUEGILL	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		BLUEGILL	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		BLUEGILL	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		BLUEGILL	2		

NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	4
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	8
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	4
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	4
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	3
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	6
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	6
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	4
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	3
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	5
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	4
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	4
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	5
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	3
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	3
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	4
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	5
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	3
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	4
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	7
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	5
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	3
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	3
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	3
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	6
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	4
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	1
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	3
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	3
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	2
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	BLUEGILL	3

NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS		BLUEGILL	3		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS		BLUEGILL	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS		BLUEGILL	4		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	3		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	3		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	3		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	2		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	2		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	4		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	3		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	2		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	2		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	2		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	3		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	4		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	2		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	2		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	3		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	2		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-		BLUEGILL	1	660	32.34%
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS		BOWFIN	1	1	0.05%
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS		BROWN BULLHEAD	2	2	0.10%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		3	CENTRAL STONEROLLER	1	1	0.05%
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		CHESTNUT LAMPREY	1	1	0.05%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		4	COMMON SHINER	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		4	COMMON SHINER	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		6	COMMON SHINER	20		

NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		7	COMMON SHINER	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		8	COMMON SHINER	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		COMMON SHINER	1	25	1.22%
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		FATHEAD MINNOW	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		FATHEAD MINNOW	1	2	0.10%
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN REDHORSE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		GOLDEN REDHORSE	2		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS		GOLDEN REDHORSE	3	32	1.57%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		1	GOLDEN SHINER	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		2	GOLDEN SHINER	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		4	GOLDEN SHINER	2		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		4	GOLDEN SHINER	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		6	GOLDEN SHINER	4		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN SHINER	4		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		GOLDEN SHINER	9		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS		GOLDEN SHINER	1	23	1.13%
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		GREATER REDHORSE	5		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS		GREATER REDHORSE	3	8	0.39%
OTHER	HOOK AND	23-Aug-10	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	26-Aug-10	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	26-Aug-10	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	26-Aug-10	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	28-Jul-11	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	28-Jul-11	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	17-Aug-11	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	13-Sep-11	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	13-Sep-11	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	24-Jun-13	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	24-Jun-13	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	24-Jun-13	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	24-Jun-13	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	25-Jun-13	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	25-Jun-13	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	25-Jun-13	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	27-Jun-13	LAKE STURGEON	-		LAKE STURGEON	1		

OTHER	HOOK AND	27-Jun-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	1-Aug-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	1-Aug-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	1-Aug-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Oct-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Oct-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Oct-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Oct-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Oct-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	10-Oct-13	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	3-Jul-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	3-Jul-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	24-Jul-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	24-Jul-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	24-Jul-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	24-Jul-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	1-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	1-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	15-Sep-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	15-Sep-14	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	26-May-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	26-May-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	26-May-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	26-May-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	26-May-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	9-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	9-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	9-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	13-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	13-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	13-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	13-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	13-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	13-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	16-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	16-Jul-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	3-Aug-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	10-Aug-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Aug-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Aug-15	LAKE STURGEON	-	LAKE STURGEON	1

OTHER	HOOK AND	31-Aug-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	31-Aug-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	15-Sep-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	15-Sep-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	15-Sep-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	15-Sep-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	14-Oct-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	14-Oct-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	14-Oct-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	14-Oct-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	14-Oct-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	14-Oct-15	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jun-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jun-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jun-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jun-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jun-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jun-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	29-Jun-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Jul-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Jul-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Jul-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Jul-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Jul-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Jul-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Jul-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	10-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	10-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	10-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	10-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	23-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	23-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	23-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	23-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	30-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	30-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	30-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	30-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	30-Aug-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Sep-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	22-Sep-16	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Jun-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	8-Jun-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	14-Jun-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	14-Jun-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	14-Jun-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	14-Jun-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	23-Jun-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	11-Jul-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	11-Jul-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	11-Jul-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	20-Jul-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	20-Jul-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	20-Jul-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	9-Aug-17	LAKE STURGEON	-	LAKE STURGEON	1

OTHER	HOOK AND	9-Aug-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	9-Aug-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	9-Aug-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Aug-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Aug-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Aug-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	31-Aug-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	31-Aug-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	31-Aug-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	21-Sep-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	21-Sep-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	21-Sep-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	21-Sep-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	10-Oct-17	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	12-Jun-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	12-Jun-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	12-Jun-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	12-Jun-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Jun-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Jun-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jun-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jun-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jul-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jul-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jul-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jul-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jul-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	27-Jul-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	17-Aug-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	17-Aug-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	17-Aug-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	17-Aug-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	17-Aug-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	17-Aug-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	17-Aug-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	17-Aug-18	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	12-Jun-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	12-Jun-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	12-Jun-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	12-Jun-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Jun-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Jun-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Jun-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	18-Jun-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	11-Jul-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	11-Jul-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	29-Jul-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	29-Jul-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	29-Jul-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	29-Jul-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	6-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	6-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	6-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	6-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	12-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	12-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	19-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1
OTHER	HOOK AND	28-Aug-19	LAKE STURGEON	-	LAKE STURGEON	1

OTHER	HOOK AND	19-Sep-19	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	19-Sep-19	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	19-Sep-19	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	19-Sep-19	LAKE STURGEON	-		LAKE STURGEON	1		
OTHER	HOOK AND	17-Oct-19	LAKE STURGEON	-		LAKE STURGEON	1	205	10.04%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		1	LARGEMOUTH BASS	11		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		2	LARGEMOUTH BASS	14		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		3	LARGEMOUTH BASS	12		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		4	LARGEMOUTH BASS	2		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		5	LARGEMOUTH BASS	3		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		6	LARGEMOUTH BASS	4		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		6	LARGEMOUTH BASS	2		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		7	LARGEMOUTH BASS	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		8	LARGEMOUTH BASS	3		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-		LARGEMOUTH BASS	2		
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-		LARGEMOUTH BASS	2		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		LARGEMOUTH BASS	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		LARGEMOUTH BASS	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		LARGEMOUTH BASS	1	87	4.26%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		5	MIMIC SHINER	1	1	0.05%
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		MUSKELLUNGE	1		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-		MUSKELLUNGE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		MUSKELLUNGE	1	3	0.15%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		2	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		NORTHERN PIKE	1		

ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	NORTHERN PIKE	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	NORTHERN PIKE	1
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	5
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	2
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	2
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	3
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	3
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	2
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	2
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	2
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1

ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	NORTHERN PIKE	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	NORTHERN PIKE	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	NORTHERN PIKE	1	113	5.54%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	1	PUMPKINSEED	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	2	PUMPKINSEED	2		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	4	PUMPKINSEED	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	5	PUMPKINSEED	2		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	6	PUMPKINSEED	2		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	7	PUMPKINSEED	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	PUMPKINSEED	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	3		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	6		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	5		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	5		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	6		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	6		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	9		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	4		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	4		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	3		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	3		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	7		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	5		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	3		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	4		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		

NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	3		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	3		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	3		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	3		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	2		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	PUMPKINSEED	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	PUMPKINSEED	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	PUMPKINSEED	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	PUMPKINSEED	1	148	7.25%
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	RIVER REDHORSE	1	16	0.78%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	2	ROCK BASS	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	2	ROCK BASS	3		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	3	ROCK BASS	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	4	ROCK BASS	3		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	4	ROCK BASS	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	5	ROCK BASS	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	5	ROCK BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	ROCK BASS	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	ROCK BASS	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	ROCK BASS	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	ROCK BASS	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	ROCK BASS	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	ROCK BASS	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	ROCK BASS	1		

NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	ROCK BASS	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	ROCK BASS	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	ROCK BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	ROCK BASS	2		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	ROCK BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	ROCK BASS	1	36	1.76%
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SHORTHEAD REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SHORTHEAD REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SHORTHEAD REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SHORTHEAD REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SHORTHEAD REDHORSE	1	5	0.24%
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SILVER REDHORSE	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	SILVER REDHORSE	14		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	SILVER REDHORSE	6	37	1.81%
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1		

ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	SMALLMOUTH BASS	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	3
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	2
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	2
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	3
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	5
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	2
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	2
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	4
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	4
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	4
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	SMALLMOUTH BASS	2
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	SMALLMOUTH BASS	2
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	SMALLMOUTH BASS	1

ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	3		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	4		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	3		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	4		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-		SMALLMOUTH BASS	1	156	7.64%
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		SPOTTAIL SHINER	1	1	0.05%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES		5	TADPOLE MADTOM	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS		TADPOLE MADTOM	2	3	0.15%
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	GAMEFISH SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		WALLEYE	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-		WALLEYE	1		

ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	WALLEYE	1
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	WALLEYE	4
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	3
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	2
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	20-Sep-11	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	4
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	4
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	2
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	14-Sep-16	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	2
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	4
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	4
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	2
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	2

ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	4		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	2		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	4		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	13-Jun-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	4		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	2		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	3		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	3		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1		
ELECTROFI!	BOOM SHC	19-Sep-19	GAMEFISH SPECIES	-	WALLEYE	1	180	8.82%
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	WHITE SUCKER	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	WHITE SUCKER	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	WHITE SUCKER	1	3	0.15%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	6	YELLOW BULLHEAD	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	YELLOW BULLHEAD	1	2	0.10%
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	1	YELLOW PERCH	4		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	1	YELLOW PERCH	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	2	YELLOW PERCH	1		
NETTING	MINI FYKE	19-Aug-03	ALL SPECIES	5	YELLOW PERCH	2		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	YELLOW PERCH	1		
ELECTROFI!	BOOM SHC	7-Oct-03	ALL SPECIES	-	YELLOW PERCH	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	2		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	1		
NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	1		

NETTING	FYKE NET	10-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	2		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	1		
NETTING	FYKE NET	11-Jun-04	PANFISH	ALL NETS	YELLOW PERCH	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	YELLOW PERCH	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	YELLOW PERCH	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	YELLOW PERCH	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	YELLOW PERCH	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	YELLOW PERCH	1		
ELECTROFI!	BOOM SHC	13-Jun-19	PANFISH - GAMEFISH	-	YELLOW PERCH	1	29	1.42%
							2041	

WDNR Upstream of Trego Lake Fish Survey Data

SWIMS Sta	Visit Type	Gear	Date	Target Species	Species	Number	Total	% of Total	
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	BLACKSIDE DARTER	27			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	BLACKSIDE DARTER	25			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	BLACKSIDE DARTER	43			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	BLACKSIDE DARTER	83			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	BLACKSIDE DARTER	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	BLACKSIDE DARTER	3			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	BLACKSIDE DARTER	1	183	8.34%	4
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	BLUEGILL	2			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	BLUEGILL	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	BLUEGILL	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	BLUEGILL	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	Bluegill 6.1	6			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	BLUEGILL-5.5	6			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	BLUEGILL	5	22	1.00%	
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	BLUNTNOSE MINNOW	2			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	BLUNTNOSE MINNOW	5	7	0.32%	
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	CENTRAL MUDMINNOW	3			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	CENTRAL MUDMINNOW	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	CENTRAL MUDMINNOW	1	5	0.23%	
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	CHESNUT LAMPREY (AMMOCOETE)	20			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	CHESTNUT LAMPREY	4			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	CHESTNUT LAMPREY	18			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	CHESTNUT LAMPREY	9			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	CHESTNUT LAMPREY	2			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	CHESTNUT LAMPREY	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	CHESTNUT LAMPREY	1	55	2.51%	
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	COMMON SHINER	101			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	COMMON SHINER	15			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	COMMON SHINER	31			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	COMMON SHINER	50			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	COMMON SHINER	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	COMMON SHINER	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	COMMON SHINER	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	COMMON SHINER	2			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	COMMON SHINER	2			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	COMMON SHINER	3	207	9.44%	3
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	CREEK CHUB	54			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	CREEK CHUB	23			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	CREEK CHUB	19			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	CREEK CHUB	63	159	7.3%	
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	GOLDEN REDHORSE	28			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	GOLDEN REDHORSE	1			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	GOLDEN REDHORSE	6			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	GOLDEN REDHORSE	25			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	GOLDEN REDHORSE	24			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	GOLDEN REDHORSE	10			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	GOLDEN REDHORSE	12			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	GOLDEN REDHORSE	26			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	GOLDEN REDHORSE	15			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	GOLDEN REDHORSE	7			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	GOLDEN REDHORSE	6			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	ALL SPECIES	GOLDEN REDHORSE	13			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	GREATER REDHORSE	3			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	GREATER REDHORSE	3			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	GREATER REDHORSE	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	GREATER REDHORSE	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	GREATER REDHORSE	1	182	8.30%	5
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	HORNYHEAD CHUB	32			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	HORNYHEAD CHUB	26			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	HORNYHEAD CHUB	60			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	HORNYHEAD CHUB	114			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	HORNYHEAD CHUB	8			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	HORNYHEAD CHUB	3			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	HORNYHEAD CHUB	1	244	11.13%	1
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	JOHNNY DARTER	7			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	JOHNNY DARTER	4			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	JOHNNY DARTER	15			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	JOHNNY DARTER	21			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	JOHNNY DARTER	1	48	2.19%	
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	LARGEMOUTH BASS	1			

10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	LARGEMOUTH BASS	1		
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	LARGEMOUTH BASS	4		
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	LARGEMOUTH BASS	1		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LARGEMOUTH BASS	1		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LARGEMOUTH BASS	2		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LARGEMOUTH BASS	2		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LARGEMOUTH BASS	2		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LARGEMOUTH BASS	1		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LARGEMOUTH BASS	1		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LARGEMOUTH BASS	2		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LARGEMOUTH BASS	1	19	0.87%
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	LARGESCALE STONEROLLER	37		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LARGESCALE STONEROLLER	58	95	4.33%
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	LOGPERCH	18		
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	LOGPERCH	3		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	LOGPERCH	12		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LOGPERCH	22		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	LOGPERCH	5		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	LOGPERCH	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	LOGPERCH	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	LOGPERCH	8		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	LOGPERCH	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	LOGPERCH	4		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	LOGPERCH	7		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	ALL SPECIES	LOGPERCH	5	87	3.97%
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	LONGNOSE DACE	1		
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	LONGNOSE DACE	5		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	LONGNOSE DACE	11		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	LONGNOSE DACE	7		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	LONGNOSE DACE	1	25	1.14%
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	MUSKELLUNGE	1	1	0.05%
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	NORTHERN HOG SUCKER	6		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	NORTHERN HOG SUCKER	21		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	NORTHERN HOG SUCKER	18		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	NORTHERN HOG SUCKER	22		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	NORTHERN HOG SUCKER	20		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	NORTHERN HOG SUCKER	10		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	NORTHERN HOG SUCKER	9		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	NORTHERN HOG SUCKER	9		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	NORTHERN HOG SUCKER	11		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	NORTHERN HOG SUCKER	24		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	NORTHERN HOG SUCKER	15		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	ALL SPECIES	NORTHERN HOG SUCKER	16	181	8.25%
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	GAMEFISH SPE	NORTHERN PIKE	1		
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	NORTHERN PIKE	1		
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	NORTHERN PIKE	1		
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	NORTHERN PIKE	1		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	NORTHERN PIKE	1		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	SMALLMOUTH	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	SMALLMOUTH	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	GAMEFISH SPE	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	NORTHERN PIKE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	GAMEFISH SPE	NORTHERN PIKE	1	28	1.28%

10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	RIVER REDHORSE	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	RIVER REDHORSE	1	2	0.09%	
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	ROCK BASS	36			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	ROCK BASS	8			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	ROCK BASS	6			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	ROCK BASS	17			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	ROCK BASS	2			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	ROCK BASS	2			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	ROCK BASS	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	ROCK BASS	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	ROCK BASS	2			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	ALL SPECIES	ROCK BASS	2	77	3.51%	
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	SHORTHEAD REDHORSE	6			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	SHORTHEAD REDHORSE	9			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	SHORTHEAD REDHORSE	4			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SHORTHEAD REDHORSE	2			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	SHORTHEAD REDHORSE	29			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	SHORTHEAD REDHORSE	25			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	SHORTHEAD REDHORSE	16			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	SHORTHEAD REDHORSE	29			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	SHORTHEAD REDHORSE	23			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	SHORTHEAD REDHORSE	10			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	SHORTHEAD REDHORSE	25			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	SHORTHEAD REDHORSE	15			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	ALL SPECIES	SHORTHEAD REDHORSE	26	219	9.99%	2
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SILVER REDHORSE	4			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	SILVER REDHORSE	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	SILVER REDHORSE	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	SILVER REDHORSE	2			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	SILVER REDHORSE	1			
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	ALL SPECIES	SILVER REDHORSE	2	11	0.50%	
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	SMALLMOUTH BASS	2			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	SMALLMOUTH BASS	4			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	GAMEFISH SPE	SMALLMOUTH BASS	2			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	SMALLMOUTH BASS	3			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	SMALLMOUTH BASS	2			
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	SMALLMOUTH BASS	2			
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	SMALLMOUTH BASS	2			
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	SMALLMOUTH BASS	3			
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	22-Aug-08	GAMEFISH SPE	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	SMALLMOUTH BASS	2			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	SMALLMOUTH BASS	2			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	SMALLMOUTH BASS	1			
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	2			

10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	5
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	6
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	3
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	5
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	3
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	7
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	SMALLMOUTH	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	GAMEFISH SPE	SMALLMOUTH BASS	2
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	GAMEFISH SPE	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	SMALLMOUTH BASS	1
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	SMALLMOUTH BASS	1

10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	GAMEFISH SPE	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	GAMEFISH SPE	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	GAMEFISH SPE	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	GAMEFISH SPE	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	GAMEFISH SPE	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	GAMEFISH SPE	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	ALL SPECIES	SMALLMOUTH BASS	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	ALL SPECIES	SMALLMOUTH BASS	1	172	7.84%
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	STONEROLLERS	4		
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	STONEROLLERS	15		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	STONEROLLERS	6		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	STONEROLLERS	6		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	STONEROLLERS	3		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	STONEROLLERS	9		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	16-Aug-18	ALL SPECIES	STONEROLLERS	20		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	ALL SPECIES	STONEROLLERS	1	64	2.92%
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	TADPOLE MADTOM	1	1	0.05%
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	SMALLMOUTH	WALLEYE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	WALLEYE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	WALLEYE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	9-Aug-16	ALL SPECIES	WALLEYE	1		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	WALLEYE	1	5	0.23%
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	WESTERN BLACKNOSE DACE	6		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	WESTERN BLACKNOSE DACE	1	7	0.32%
10021156	ELECTROFISHING	STREAM SHOCKER	11-Jul-07	ALL SPECIES	WHITE SUCKER	4		
10021156	ELECTROFISHING	STREAM SHOCKER	20-Aug-08	ALL SPECIES	WHITE SUCKER	1		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-09	ALL SPECIES	WHITE SUCKER	16		
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	WHITE SUCKER	32		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-11	ALL SPECIES	WHITE SUCKER	10		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	24-Aug-12	ALL SPECIES	WHITE SUCKER	7		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	13-Aug-13	ALL SPECIES	WHITE SUCKER	3		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	5-Aug-14	ALL SPECIES	WHITE SUCKER	2		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	11-Aug-15	ALL SPECIES	WHITE SUCKER	5		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	23-Aug-17	ALL SPECIES	WHITE SUCKER	4		
10021156	ELECTROFISHING	MINI BOOM SHOCKER	14-Aug-19	ALL SPECIES	WHITE SUCKER	1	85	3.88%
10021156	ELECTROFISHING	STREAM SHOCKER	10-Sep-10	ALL SPECIES	YELLOW PERCH	2	2	0.09%
							2193	

WDNR Downstream of Trego Lake Fish Survey Data

Survey Yea	Station Name	Swims Stat	Visit Type	Gear	Sample Date	Target Spe	Species	Number of Fish			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-06	ALL SPECIE	BLACK CRAPPIE	1	1	0.04%	
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	BLACKSIDE DARTER	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	BLACKSIDE DARTER	2			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-06	ALL SPECIE	BLACKSIDE DARTER	2			
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-07	ALL SPECIE	BLACKSIDE DARTER	1	6	0.25%	
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-06	ALL SPECIE	BLUEGILL	1	1	0.04%	
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	GAMEFISH	CHANNEL CATFISH	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	GAMEFISH	CHANNEL CATFISH	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	GAMEFISH	CHANNEL CATFISH	1			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	GAMEFISH	CHANNEL CATFISH	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	GAMEFISH	CHANNEL CATFISH	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	CHANNEL CATFISH	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	CHANNEL CATFISH	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	CHANNEL CATFISH	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	GAMEFISH	CHANNEL CATFISH	1	9	0.38%	
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-06	ALL SPECIE	CHESNUT LAMPREY (AMMOCOETE)	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	CHESTNUT LAMPREY	2			
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-07	ALL SPECIE	CHESTNUT LAMPREY	2			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	9-Sep-08	ALL SPECIE	CHESTNUT LAMPREY	3			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	3-Sep-09	ALL SPECIE	CHESTNUT LAMPREY	4			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	ALL SPECIE	CHESTNUT LAMPREY	1	13	0.54%	
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	COMMON SHINER	7			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	COMMON SHINER	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	COMMON SHINER	16			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	COMMON SHINER	44			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-06	ALL SPECIE	COMMON SHINER	54			
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-07	ALL SPECIE	COMMON SHINER	4	126	5.25%	5
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GILT DARTER	2			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GILT DARTER	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GILT DARTER	1			
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-07	ALL SPECIE	GILT DARTER	2			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	9-Sep-08	ALL SPECIE	GILT DARTER	3			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	ALL SPECIE	GILT DARTER	2	11	0.46%	
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	2			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			

2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	GOLDEN REDHORSE	1			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	GOLDEN REDHORSE	32			
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	ALL SPECIE	GOLDEN REDHORSE	29			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	GOLDEN REDHORSE	74			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	GOLDEN REDHORSE	119			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	GOLDEN REDHORSE	79			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	GOLDEN REDHORSE	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	GOLDEN REDHORSE	12			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	GOLDEN REDHORSE	6			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	GOLDEN REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	GOLDEN REDHORSE	3			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	GOLDEN REDHORSE	4			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	GOLDEN REDHORSE	6			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	GOLDEN REDHORSE	1	428	17.84%	3
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	ALL SPECIE	GREATER REDHORSE	3			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	GREATER REDHORSE	2			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	GREATER REDHORSE	4			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	GREATER REDHORSE	6			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	GREATER REDHORSE	2			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	GREATER REDHORSE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	GREATER REDHORSE	2			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	GREATER REDHORSE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	GREATER REDHORSE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	GREATER REDHORSE	2	24	1.00%	3
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	HORNYHEAD CHUB	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	HORNYHEAD CHUB	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	HORNYHEAD CHUB	1			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	HORNYHEAD CHUB	13			
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	ALL SPECIE	HORNYHEAD CHUB	1			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	HORNYHEAD CHUB	2	19	0.79%	
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	LAKE STURGEON	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	LAKE STURGEON	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	LAKE STURGEON	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	LAKE STURGEON	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	LAKE STURGEON	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	18-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	18-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	18-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	31-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	31-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	31-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	31-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	31-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	31-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	31-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	31-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	31-Jul-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	7-Aug-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	7-Aug-18	LAKE STUR	LAKE STURGEON	1			
2018	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	9-Aug-18	LAKE STUR	LAKE STURGEON	1			
2019	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	28-Aug-19	LAKE STUR	LAKE STURGEON	1			
2019	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	28-Aug-19	LAKE STUR	LAKE STURGEON	1			
2019	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	28-Aug-19	LAKE STUR	LAKE STURGEON	1			
2019	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	28-Aug-19	LAKE STUR	LAKE STURGEON	1			
2019	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	28-Aug-19	LAKE STUR	LAKE STURGEON	1	26	1.08%	
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	LOGPERCH	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	LOGPERCH	1	2	0.08%	
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	LONGNOSE DACE	1	1	0.04%	
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	MUSKELLUNGE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	MUSKELLUNGE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	MUSKELLUNGE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	MUSKELLUNGE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	MUSKELLUNGE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	MUSKELLUNGE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	MUSKELLUNGE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	MUSKELLUNGE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	MUSKELLUNGE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	MUSKELLUNGE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	MUSKELLUNGE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	MUSKELLUNGE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	MUSKELLUNGE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	MUSKELLUNGE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	MUSKELLUNGE	1			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	MUSKELLUNGE	1			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	GAMEFISH	MUSKELLUNGE	1			

2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	GAMEFISH	MUSKELLUNGE	1		
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	ALL SPECIE	MUSKELLUNGE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	MUSKELLUNGE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	MUSKELLUNGE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	MUSKELLUNGE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	MUSKELLUNGE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	MUSKELLUNGE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	MUSKELLUNGE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	MUSKELLUNGE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	MUSKELLUNGE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	MUSKELLUNGE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	MUSKELLUNGE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	MUSKELLUNGE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	MUSKELLUNGE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	MUSKELLUNGE	1		
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	MUSKELLUNGE	1		
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	MUSKELLUNGE	1		
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	MUSKELLUNGE	1		
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	MUSKELLUNGE	1		
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	MUSKELLUNGE	1		
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	MUSKELLUNGE	1		
2016	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	1-Jun-18	MUSKELLU	MUSKELLUNGE	1		
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	MUSKELLUNGE	1		
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	MUSKELLUNGE	1		
2019	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	6-Oct-19	MUSKELLU	MUSKELLUNGE	1		
2019	NAMEKAGON RIVER - CTH K	10011080	OTHER	HOOK AND	30-Oct-19	MUSKELLU	MUSKELLUNGE	1	43	1.79%
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1		

2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	NORTHERN HOG SUCKER	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-06	ALL SPECIE	NORTHERN HOG SUCKER	87
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	29-Aug-07	ALL SPECIE	NORTHERN HOG SUCKER	50
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	9-Sep-08	ALL SPECIE	NORTHERN HOG SUCKER	93
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	3-Sep-09	ALL SPECIE	NORTHERN HOG SUCKER	45
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	8-Sep-10	ALL SPECIE	NORTHERN HOG SUCKER	59
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	25-Aug-14	ALL SPECIE	NORTHERN HOG SUCKER	4
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	25-Aug-14	ALL SPECIE	NORTHERN HOG SUCKER	8

2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	29-Aug-18	ALL SPECIE	NORTHERN HOG SUCKER	16			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	29-Aug-18	ALL SPECIE	NORTHERN HOG SUCKER	1	498	20.76%	2
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	NORTHERN PIKE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	NORTHERN PIKE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	NORTHERN PIKE	1			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-06	ALL SPECIE	NORTHERN PIKE	1			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-06	GAMEFISH	NORTHERN PIKE	1			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	9-Sep-08	ALL SPECIE	NORTHERN PIKE	1			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	9-Sep-08	ALL SPECIE	NORTHERN PIKE	1			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	9-Sep-08	ALL SPECIE	NORTHERN PIKE	1			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	9-Sep-08	GAMEFISH	NORTHERN PIKE	1			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	9-Sep-08	GAMEFISH	NORTHERN PIKE	1			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	3-Sep-09	ALL SPECIE	NORTHERN PIKE	1			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	3-Sep-09	GAMEFISH	NORTHERN PIKE	1			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	8-Sep-10	GAMEFISH	NORTHERN PIKE	1			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	8-Sep-10	GAMEFISH	NORTHERN PIKE	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	25-Aug-14	ALL SPECIE	NORTHERN PIKE	1	15	0.63%	
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	ALL SPECIE	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	ALL SPECIE	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-03	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	ALL SPECIE	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	1-Sep-04	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	ALL SPECIE	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	6-Sep-05	GAMEFISH	RIVER REDHORSE	1			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOI	11-Sep-06	ALL SPECIE	RIVER REDHORSE	1			

2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	GAMEFISH	RIVER REDHORSE	5			
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	ALL SPECIE	RIVER REDHORSE	8			
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	GAMEFISH	RIVER REDHORSE	7			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	RIVER REDHORSE	7			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	RIVER REDHORSE	30			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	RIVER REDHORSE	11			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	RIVER REDHORSE	7			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	RIVER REDHORSE	8			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	RIVER REDHORSE	9			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	3			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	3			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	3			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	3			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	3			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	3			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	5			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	5			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	4			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	RIVER REDHORSE	3			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	GAMEFISH	RIVER REDHORSE	3			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	RIVER REDHORSE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	RIVER REDHORSE	3			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	RIVER REDHORSE	2			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	RIVER REDHORSE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	RIVER REDHORSE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	RIVER REDHORSE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	RIVER REDHORSE	2			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	RIVER REDHORSE	2			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	RIVER REDHORSE	3			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	RIVER REDHORSE	2			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	RIVER REDHORSE	2			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	RIVER REDHORSE	3			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	RIVER REDHORSE	3			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	RIVER REDHORSE	3	266	11.09%	4
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	ROCK BASS	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	ROCK BASS	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	ROCK BASS	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	ROCK BASS	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	ROCK BASS	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	ROCK BASS	1			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	ROCK BASS	4			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	ROCK BASS	1	11	0.46%	
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1			

2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1

2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	2			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	2			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	2			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SHORTHEAD REDHORSE	1			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-06	ALL SPECIE	SHORTHEAD REDHORSE	47			
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-07	ALL SPECIE	SHORTHEAD REDHORSE	28			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	9-Sep-08	ALL SPECIE	SHORTHEAD REDHORSE	86			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	3-Sep-09	ALL SPECIE	SHORTHEAD REDHORSE	75			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	ALL SPECIE	SHORTHEAD REDHORSE	76			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SHORTHEAD REDHORSE	13			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SHORTHEAD REDHORSE	14			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SHORTHEAD REDHORSE	11			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SHORTHEAD REDHORSE	7			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SHORTHEAD REDHORSE	16			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SHORTHEAD REDHORSE	8			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SHORTHEAD REDHORSE	4			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SHORTHEAD REDHORSE	13			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SHORTHEAD REDHORSE	17			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SHORTHEAD REDHORSE	14			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SHORTHEAD REDHORSE	2			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SHORTHEAD REDHORSE	11			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SHORTHEAD REDHORSE	11			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SHORTHEAD REDHORSE	3			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SHORTHEAD REDHORSE	4			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SHORTHEAD REDHORSE	6			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SHORTHEAD REDHORSE	7			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SHORTHEAD REDHORSE	12			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SHORTHEAD REDHORSE	4	629	26.22%	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	6-Sep-05	ALL SPECIE	SILVER REDHORSE	1			
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-06	ALL SPECIE	SILVER REDHORSE	3			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	9-Sep-08	ALL SPECIE	SILVER REDHORSE	4			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	3-Sep-09	ALL SPECIE	SILVER REDHORSE	6			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	ALL SPECIE	SILVER REDHORSE	2			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SILVER REDHORSE	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SILVER REDHORSE	3			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	ALL SPECIE	SILVER REDHORSE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SILVER REDHORSE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SILVER REDHORSE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	ALL SPECIE	SILVER REDHORSE	2	25	1.04%	
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	ALL SPECIE	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	GAMEFISH	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	GAMEFISH	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	GAMEFISH	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	GAMEFISH	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	GAMEFISH	SMALLMOUTH BASS	1			
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	11-Sep-03	GAMEFISH	SMALLMOUTH BASS	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	GAMEFISH	SMALLMOUTH BASS	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	GAMEFISH	SMALLMOUTH BASS	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	GAMEFISH	SMALLMOUTH BASS	1			
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	1-Sep-04	GAMEFISH	SMALLMOUTH BASS	1			

2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	SMALLMOUTH BASS	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	SMALLMOUTH BASS	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	SMALLMOUTH BASS	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	SMALLMOUTH BASS	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	SMALLMOUTH BASS	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	SMALLMOUTH BASS	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	SMALLMOUTH BASS	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	SMALLMOUTH BASS	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	SMALLMOUTH BASS	1
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	GAMEFISH	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	GAMEFISH	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	GAMEFISH	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	GAMEFISH	SMALLMOUTH BASS	1
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	GAMEFISH	SMALLMOUTH BASS	1
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	ALL SPECIE	SMALLMOUTH BASS	1
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	ALL SPECIE	SMALLMOUTH BASS	1
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	ALL SPECIE	SMALLMOUTH BASS	1
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	GAMEFISH	SMALLMOUTH BASS	1
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	SMALLMOUTH BASS	2
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	2
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	2
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	SMALLMOUTH BASS	1
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	SMALLMOUTH BASS	1
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	SMALLMOUTH BASS	1

2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	SMALLMOUTH BASS	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	SMALLMOUTH BASS	1		
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	25-Aug-14	ALL SPECIE	SMALLMOUTH BASS	1		
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	ALL SPECIE	SMALLMOUTH BASS	1		
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	SMALLMOUTH BASS	1		
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-18	GAMEFISH	SMALLMOUTH BASS	1	121	5.04%
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	STONEROLLERS	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	STONEROLLERS	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	STONEROLLERS	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	STONEROLLERS	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	STONEROLLERS	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	STONEROLLERS	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	STONEROLLERS	7		
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	STONEROLLERS	24		
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	ALL SPECIE	STONEROLLERS	5		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	STONEROLLERS	12	54	2.25%
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	ALL SPECIE	WALLEYE	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	WALLEYE	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	WALLEYE	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	WALLEYE	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	WALLEYE	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	WALLEYE	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	WALLEYE	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	WALLEYE	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	WALLEYE	1		
2003	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-03	GAMEFISH	WALLEYE	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	ALL SPECIE	WALLEYE	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	WALLEYE	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	WALLEYE	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	WALLEYE	1		
2004	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	1-Sep-04	GAMEFISH	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	ALL SPECIE	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	WALLEYE	1		
2005	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	6-Sep-05	GAMEFISH	WALLEYE	1		
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	WALLEYE	1		
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	ALL SPECIE	WALLEYE	1		
2006	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	11-Sep-06	GAMEFISH	WALLEYE	1		
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	29-Aug-07	GAMEFISH	WALLEYE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	WALLEYE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	ALL SPECIE	WALLEYE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	WALLEYE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	WALLEYE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	WALLEYE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	WALLEYE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	WALLEYE	2		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	WALLEYE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	WALLEYE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	WALLEYE	1		
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	9-Sep-08	GAMEFISH	WALLEYE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	WALLEYE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	WALLEYE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	ALL SPECIE	WALLEYE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	WALLEYE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	WALLEYE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	WALLEYE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	WALLEYE	1		
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	3-Sep-09	GAMEFISH	WALLEYE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	WALLEYE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	WALLEYE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	ALL SPECIE	WALLEYE	1		
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOOM	8-Sep-10	GAMEFISH	WALLEYE	1		

2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	GAMEFISH	WALLEYE	1			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	GAMEFISH	WALLEYE	1			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	GAMEFISH	WALLEYE	1			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	GAMEFISH	WALLEYE	1			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	GAMEFISH	WALLEYE	1			
2010	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	8-Sep-10	GAMEFISH	WALLEYE	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	GAMEFISH	WALLEYE	1			
2014	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	25-Aug-14	GAMEFISH	WALLEYE	1			
2018	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-18	GAMEFISH	WALLEYE	1	66	2.75%	
2007	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	29-Aug-07	ALL SPECIE	WHITE SUCKER	2			
2008	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	9-Sep-08	ALL SPECIE	WHITE SUCKER	1			
2009	NAMEKAGON RIVER - CTH K	10011080	ELECTROFISHING	MINI BOON	3-Sep-09	ALL SPECIE	WHITE SUCKER	1	4	0.17%	
									2399		

APPENDIX E-38 WDNR Trego Project Fish Stocking Data

Year	Species	Source		Number	Size	Total
1972	BLUEGILL	UNSPECIFIED	ADULT	500	5	
1974	BLUEGILL	UNSPECIFIED	ADULT	500	5	
1975	BLUEGILL	UNSPECIFIED	ADULT	521		
1977	BLUEGILL	UNSPECIFIED	ADULT	204		
1979	BLUEGILL	UNSPECIFIED	ADULT	450		
1994	BLUEGILL	UNSPECIFIED	ADULT (FIELD TRANSFE	1144	6	3319
1984	CRAPPIES	UNSPECIFIED	ADULT	7000	7	7000
1995	LAKE STURGEON	UNSPECIFIED	FINGERLING	11406	5.75	
2002	LAKE STURGEON	YELLOW RIVER	LARGE FINGERLING	1011	6.4	
2003	LAKE STURGEON	YELLOW RIVER	LARGE FINGERLING	760	6.5	
2003	LAKE STURGEON	YELLOW RIVER	SMALL FINGERLING	1150	3.2	
2003	LAKE STURGEON	YELLOW RIVER	YEARLING	133	10.9	
2005	LAKE STURGEON	YELLOW RIVER	LARGE FINGERLING	253	6	
2006	LAKE STURGEON	YELLOW RIVER	LARGE FINGERLING	2248	5.3	
2010	LAKE STURGEON	YELLOW RIVER	LARGE FINGERLING	240	7.8	
2011	LAKE STURGEON	YELLOW RIVER	LARGE FINGERLING	478	7.5	
2012	LAKE STURGEON	YELLOW RIVER	LARGE FINGERLING	225	8.3	
2013	LAKE STURGEON	YELLOW RIVER	LARGE FINGERLING	158	8.6	
2015	LAKE STURGEON	YELLOW RIVER	LARGE FINGERLING	195	10.3	
2017	LAKE STURGEON	YELLOW RIVER	LARGE FINGERLING	1375	8.5	19632
1979	MUSKELLUNGE	UNSPECIFIED	FINGERLING	500	13	
1983	MUSKELLUNGE	UNSPECIFIED	FINGERLING	900	11	
1984	MUSKELLUNGE	UNSPECIFIED	FINGERLING	15	10	
1985	MUSKELLUNGE	UNSPECIFIED	FINGERLING	850	11	
1987	MUSKELLUNGE	UNSPECIFIED	FINGERLING	1350	10	
1988	MUSKELLUNGE	UNSPECIFIED	FINGERLING	400	11	
1990	MUSKELLUNGE	UNSPECIFIED	FINGERLING	450	9	
1991	MUSKELLUNGE	UNSPECIFIED	FINGERLING	409	12	
1992	MUSKELLUNGE	UNSPECIFIED	FINGERLING	450	8	
1993	MUSKELLUNGE	UNSPECIFIED	FINGERLING	450	12	
1996	MUSKELLUNGE	UNSPECIFIED	FINGERLING	450	10.9	
1998	MUSKELLUNGE	UNSPECIFIED	LARGE FINGERLING	450	11.6	
2000	MUSKELLUNGE	UNSPECIFIED	LARGE FINGERLING	450	11	
2002	MUSKELLUNGE	UNSPECIFIED	LARGE FINGERLING	220	10.7	
2004	MUSKELLUNGE	UNSPECIFIED	LARGE FINGERLING	225	10.8	
2006	MUSKELLUNGE	UPPER CHIPPEWA RI	LARGE FINGERLING	130	11.525	
2008	MUSKELLUNGE	UPPER CHIPPEWA RI	LARGE FINGERLING	225	10.1	
2010	MUSKELLUNGE	UPPER CHIPPEWA RI	LARGE FINGERLING	100	11.7	
2012	MUSKELLUNGE	UPPER CHIPPEWA RI	LARGE FINGERLING	225	12.6	
2014	MUSKELLUNGE	UPPER CHIPPEWA RI	LARGE FINGERLING	135	11.03333	
2016	MUSKELLUNGE	UPPER CHIPPEWA RI	LARGE FINGERLING	142	12	
2018	MUSKELLUNGE	UPPER CHIPPEWA RI	LARGE FINGERLING	108	12.2	8634
1983	NORTHERN PIKE	UNSPECIFIED	FRY	58523	1	58523
1976	PANFISH	UNSPECIFIED	ADULT	500		
1978	PANFISH	UNSPECIFIED	ADULT	500		
1980	PANFISH	UNSPECIFIED	ADULT	450		

1981	PANFISH	UNSPECIFIED	ADULT	580		2030
1979	WALLEYE	UNSPECIFIED	FRY	1000000		
1980	WALLEYE	UNSPECIFIED	FRY	500000		
1982	WALLEYE	UNSPECIFIED	FINGERLING	3336	5	
1982	WALLEYE	UNSPECIFIED	FRY	200000		
1983	WALLEYE	UNSPECIFIED	FRY	256000	1	
1984	WALLEYE	UNSPECIFIED	FINGERLING	10080	3	
1986	WALLEYE	UNSPECIFIED	FINGERLING	22618	3	
1989	WALLEYE	UNSPECIFIED	FINGERLING	22475	3	
1991	WALLEYE	UNSPECIFIED	FINGERLING	21410	2.666667	
1993	WALLEYE	UNSPECIFIED	FINGERLING	22550	2	
1995	WALLEYE	UNSPECIFIED	FINGERLING	22538	2.45	
1997	WALLEYE	UNSPECIFIED	SMALL FINGERLING	22550	1.6	
1999	WALLEYE	UNSPECIFIED	SMALL FINGERLING	22550	1.3	
2001	WALLEYE	UNSPECIFIED	SMALL FINGERLING	22550	1.5	
2003	WALLEYE	MISSISSIPPI HEADW	SMALL FINGERLING	22548	1.6	
2005	WALLEYE	MISSISSIPPI HEADW	SMALL FINGERLING	22745	1.4	
2009	WALLEYE	MISSISSIPPI HEADW	SMALL FINGERLING	15807	1.7	
2011	WALLEYE	MISSISSIPPI HEADW	SMALL FINGERLING	16132	1.6	2225889

APPENDIX E-39 Trego Project Mussel Study Report

FRESHWATER MUSSEL STUDY FOR THE TREGO HYDROELECTRIC PROJECT

FERC No. 2711

Prepared for:

Mead & Hunt

1702 Lawrence Drive
De Pere, WI 54115

Project No.: 16082
Date: 1/25/2023

Prepared by:

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Freshwater Mussel Study for the Trego Hydroelectric Project

Initial Study Report

Document Date: 1/25/2023
Project No.: 16082

Prepared for: Mr. Shawn Puzen
Mead & Hunt

Authorization for Release

The analyses, opinions, and conclusions in this document are based entirely on EnviroScience's unbiased, professional judgment. EnviroScience's compensation is not in any way contingent on any action or event resulting from this study.

To the best of their knowledge, the undersigned attest that this document and the information contained herein are accurate and conform to EnviroScience's internal Quality Assurance standards.

Emily Grossman
Senior Scientist | Field Manager

Becca Winterringer
Senior Scientist | Project Manager

TABLE OF CONTENTS

1.0 INTRODUCTION 1
2.0 METHODS 1
2.1 Riverine Surveys 1
2.2 Data and Mussel Handling 2
3.0 RESULTS AND DISCUSSION 2
3.1 Reach 1 (Upstream) 2
3.2 Reach 2 (Downstream) 3
4.0 CONCLUSIONS 4
5.0 REFERENCES 5

LIST OF TABLES

Table 1. Mussel species reported from the Namekagon River in Washburn County, Wisconsin 6

Table 2. Habitat characteristics observed in Trego riverine surveys, Namekagon River, 2022. .. 7

Table 3. Summary of effort and mussels collected in Trego riverine surveys, Namekagon River, 2022 9

LIST OF FIGURES

Figure 1. Trego Project Location on USGS 7.5-minute Topographic Map of Dunn Lake and Trego Quadrangles. Washburn County, Wisconsin 10

Figure 2. Substrate and Depth for the Trego Project Reach One on the Namekagon River. Washburn County, Wisconsin. 11

Figure 3. Mussel Abundance for the Trego Project Reach One on the Namekagon River. Washburn County, Wisconsin. 12

Figure 4. Cumulative species curve for Trego Project Reach One on the Namekagon River. Washburn County, Wisconsin. 13

Figure 5. Substrate and Depth for the Trego Project Reach Two on the Namekagon River. Washburn County, Wisconsin. 14

Figure 6. Mussel Abundance for the Trego Project Reach Two on the Namekagon River. Washburn County, Wisconsin. 15

Figure 7. Cumulative species curve for Trego Project Reach Two on the Namekagon River. Washburn County, Wisconsin. 16

LIST OF APPENDICES

Appendix A. Scientific Collecting Permits and Survey Plan

Appendix B. Photographic Record

ACKNOWLEDGEMENTS

Xcel Energy provided funding for the project through Mead & Hunt. Mr. Shawn Puzen was the point of contact for Mead & Hunt, and Mr. Matthew Miller was the point of contact for Xcel Energy. The project manager for EnviroScience, Inc. was Ms. Becca Winterringer. Wisconsin permitted malacologist Ms. Emily Grossman led the survey effort. Also assisting with the survey effort were Mr. Robert Williams, Mr. Ben Ebert, Mr. Paul Moreno, and Mr. Matt Gilkay. Ms. Grossman authored the report, which was reviewed by Ms. Winterringer and Ms. Melissa Vaccarino.

1.0 INTRODUCTION

EnviroScience, Inc. was contracted by Mead & Hunt to perform freshwater mussel studies at the Trego Hydroelectric Project (Project) in Washburn County, Wisconsin. The Project is located on the Namekagon River near Trego, Wisconsin (Figure 1). Northern States Power Company – Wisconsin, a Wisconsin corporation (NSPW or Licensee/Applicant), holds a current license issued by the Federal Energy Regulatory Commission (FERC) to operate and maintain the Project. The current license expires in November 2025. NSPW must submit a final license application no later than November 30, 2023, to obtain a subsequent license (FERC Project No. 2711).

The Namekagon River is a tributary of the St. Croix River and harbors a diverse mussel assemblage. Twenty-three (23) species have been reported from the Namekagon River in Washburn County, including several Wisconsin listed species: Purple Wartyback (*Cyclonaias tuberculata*; endangered), Salamander Mussel (*Simpsonaias ambigua*; threatened), Mapleleaf (*Quadrula quadrula*; species of special concern), and Elktoe (*Alasmidonta marginata*; species of special concern). No federally listed threatened or endangered species are known to occur in this reach of the Namekagon River (Table 1).

Freshwater mussels residing near the Project may be affected by operation of the facility. Flow modifications upstream or downstream of the Project may alter habitat for mussels, and mussels occurring in the reservoir may become stranded during drawdown events. Therefore, the Wisconsin Department of Natural Resources (WDNR) requested that a mussel survey be completed as part of the FERC relicensing process. The objective of the survey was to characterize mussel habitat and determine mussel abundance and species richness in the Project vicinity. Data collected in this survey provides information on the baseline conditions for mussel density, diversity, and habitat in the Project area.

2.0 METHODS

Mussel survey methods were developed following the 2015 WDNR Guidelines for Sampling Freshwater Mussels in Wadeable Streams (Guidelines; Piette, 2015). Mussel studies included field surveys of two riverine reaches, one above and one below the Trego Dam. Surveys were led by a Wisconsin permitted malacologist and were conducted according to the survey plan approved by WDNR (Appendix A).

2.1 RIVERINE SURVEYS

Mussel studies were conducted within riverine habitat near the Project location. Reach 1 (upstream reach) began at the Wagon Bridge Road crossing and extended 1,000 meters (m) downstream. Reach 2 (downstream reach) began 45 m downstream of Trego Dam and extended 1,000 m downstream (Figure 1).

Within each reach, a series of transects extending bank to bank was established every 100 m, creating a series of 10 possible transects per reach. Transects were numbered sequentially from downstream to upstream, and a random number function in Microsoft Excel was used to select five transects for the survey within each reach.

Searches along each transect were conducted in 10-m segments and extended 0.5 m on each side of the transect. Each transect was evaluated for mussels using an adaptive sampling approach. First, a rapid visual search was conducted and entailed an initial search of 0.2 minutes

per m^2 (min/m^2) along each 10-m segment to determine if mussels were present (living or shell material). If mussels were present in a segment, a semi-quantitative search was triggered and the search time was extended to 1 min/m^2. If no mussels or evidence of mussels was observed in the rapid visual search, no additional effort was expended in that segment. During the semi-quantitative search, divers visually searched, probed the substrate, and turned over rocks to detect small, burrowed mussels.

General stream conditions and morphology were recorded within the study area. Water depth and river bottom substrate composition using the Wentworth Scale (% observed of silt, sand, gravel, etc.; Wentworth, 2022) were recorded for each 10-m transect segment. In addition, a general description of mussel habitat characteristics in the Project boundary was recorded. The Aquatic Habitat Classification on the St. Croix National Scenic Riverway (Wan et al., 2007) was referenced for habitat and substrate classification.

2.2 DATA AND MUSSEL HANDLING

Live mussels were kept submersed in ambient river water and kept cool and moist during processing. All live mussels were identified to species and counted. The original survey plan also called for all individuals to be measured (length in millimeters), aged (external annuli count), and sexed (sexually dimorphic species only) by the team malacologist. Due to high mussel abundance, WDNR approved modifying the scope of work to measure and age only a representative subset of individuals from each species. Individuals not measured and aged were identified and categorized as adult (>5 external annuli) or juvenile (≤5 external annuli). Dead shell specimens were scored as fresh dead (dead less than one year, lustrous nacre), weathered dead (dead one to many years; chalky nacre, fragmented, and worn periostracum), or subfossil (dead many years to many decades; severely worn and fragmented). Detailed digital images of the study area and representative mussel species were recorded and reported. Datasheets were populated and summarized per the Mussel Survey Summary Tables provided in Appendix 2 of the mussel study plan provided by Mead & Hunt. Mussel taxonomy followed the names presented by Williams et al., 2017.

3.0 RESULTS AND DISCUSSION

The mussel survey was conducted on June 20, 2022. Discharge on the Namekagon River at Leonards, WI (USGS 05331833) was 112 cubic feet per second. Maximum visibility was greater than 1 m, and the water temperature was approximately 20.6° Celsius (69° Fahrenheit). Photographs of sampling sites and species encountered are provided in Appendix B.

3.1 REACH 1 (UPSTREAM)

Reach 1 was a slow-flowing, impounded riverine reach with fine substrate. Current velocity was slow, although there was discernible flow (i.e., the water was not stagnant). The surrounding land cover consisted primarily of forest (65%) and residential area (14%; USEPA, 2022a). U.S. Highway 53 crossed the river near the midpoint of Reach 1. The streambanks were gently to moderately sloped, and no substantial bank erosion was observed. Large patches of cattails (*Typha* spp.) were present along one or both banks throughout much of the reach.

Transects 3, 4, 5, 7, and 9 were randomly selected for sampling in Reach 1. Substrate in most transect segments was primarily sand, with some silt near the banks, and most closely aligned with substrate composition code 1 (abundant fine substrate) in Wan et al. (2007). Boulder, cobble,

gravel, and submerged vegetation were occasionally present in small quantities along the bank, but these constituents were typically absent mid-channel (Figure 2). Water depth ranged from 0.3 m (1 foot [ft]) to 1.4 m (4.5 ft; Table 2; Figure 2).

The Reach 1 survey yielded 120 live mussels of 10 species. Fatmucket (*Lampsilis siliquoidea*; 45.0%) and Plain Pocketbook (*Lampsilis cardium*; 27.5%) together comprised over half of the mussels collected. The remaining eight species each represented <7% of the total (Table 3). No Wisconsin listed species were collected in Reach 1, and no additional species were collected as dead shells.

Mussel abundance was highest in Transect 4 (70 individuals) and considerably lower in the remaining four transects (7 – 23 individuals per transect). Surface density ranged from 0.23 mussels/m^2 in Transects 5 and 7 to 1.75 mussels/m^2 in Transect 4 and averaged 0.60 mussels/m^2 over the entire reach. Mussel distribution generally corresponded with habitat type. Numerous Fatmucket individuals were collected in the vertical silty banks formed by the edges of cattail stands, and most other mussel species were collected near the banks in patches of more heterogeneous substrate. Mussels were scarce in the pure sand substrate mid-channel (Figure 3).

Mussel community metrics are presented in Table 3. Most mussels were classified as adults (>5 external annuli), which may be due in part to the inherent bias of semi-quantitative sampling toward larger individuals. Simpson's diversity was 0.71 and Pielou's evenness was 0.33. Low evenness is attributed to the high relative abundance of Fatmucket and Plain Pocketbook and low relative abundance of the remaining species. The cumulative species curve suggests that additional species could occur in this reach. Based on the trendline equation, only 18 additional individuals would be required to collect one new species (Figure 4).

3.2 REACH 2 (DOWNSTREAM)

Reach 2 primarily consisted of glide/run habitat. Current velocity was moderate, and the maximum observed depth was 1.2 m (4 ft; Table 2; Figure 5). The surrounding land was primarily forested (63%; USEPA, 2022b) with a bridge crossing and canoe launch located in the downstream portion of the reach. Streambanks were gently to moderately sloped throughout most of the reach but were steeper near the Project tailrace.

Transects 3, 4, 5, 7, and 10 were randomly selected for sampling in Reach 2. Although some fine-scale habitat variation was observed among the sampled transects, conditions were generally similar at all five transects. Substrate consisted primarily of mixed boulder, cobble, gravel, and sand and most closely aligned with substrate composition code 6 (abundant fine substrate, gravel, and pebbles, and present but not abundant cobbles and boulders), code 7 (abundant fine substrate, gravel, pebbles, and cobbles), and code 8 (abundant fine substrate, gravel, pebbles, and cobbles, and present but not abundant boulders) in Wan et al. (2007). Boulder and cobble comprised a larger percentage of the substrate constituents in the upstream portion of the reach (Transects 7 and 10), while substrate in the remaining transects was a more even mix of cobble, gravel, and sand with some boulder.

A total of 1143 live mussels of 16 species were collected in Reach 2 (Table 3). Mucket (77.6%) was by far the most abundant species collected along all five transects. Fluted Shell (7.4%) was the only other species that comprised more than 5% of the total. One Wisconsin protected species, Purple Wartyback (endangered; 0.3%), and one Wisconsin special concern species,

Elktoe (2.4%), were collected. Some live mussels were extensively eroded on the umbo and both valves. Abundant dead shell material was present in the substrate throughout the reach.

Mussel abundance and species richness were lowest in Transect 10, along which only 28 individuals of four species were collected. Abundance was considerably higher in the remaining transects, with the live number of mussels ranging from 112 to 382 individuals per transect. Surface density ranged from 0.70 mussels/m^2 in Transect 10 to 9.55 mussels/m^2 in Transect 4 and averaged 5.86 mussels/m^2 over all sampled transects (Table 3). Live mussels were present in all transect segments sampled, though abundance per segment varied widely from 1 to 156 individuals (Figure 6).

Mussel community metrics for Reach 2 are summarized in Table 3. As in Reach 1, the proportion of individuals with ≤5 external annuli was low, likely due to the inherent bias toward large individuals with this sampling method. Simpson's diversity was 0.61 and Pielou's evenness was 0.14. Although species richness was higher than in Reach 1, both diversity and evenness were lower due to the very high abundance of Mucket relative to all other species. The cumulative species curve suggests that additional species may be present in the reach. Based on the trendline equation, 259 additional individuals would need to be collected to yield one additional species (Figure 7).

4.0 CONCLUSIONS

Mussels were present in low abundance in Reach 1 upstream of the impoundment. A total of 120 live individuals of 10 species were collected in this reach, and average surface density was 0.60 mussels/m^2. Most species were only collected in pockets of more heterogeneous substrate near the banks, while Fatmucket was more widely distributed and was found in vegetated banks adjacent to *Typha* stands, as well as in patches with other species. The sand substrate present across most of the channel width does not provide high-quality mussel habitat; patches of more suitable habitat are present along the stream margins.

In contrast, a total of 1143 live mussels of 16 species were collected in Reach 2, including one Wisconsin endangered species and one species of special concern. Surface density was relatively high, averaging 5.86 mussels/m^2 for the entire reach and reaching a maximum of 9.55 mussels/m^2 in Transect 4. Mussels were present along all five sampled transects, and numerous relic shells and live individuals were observed in the substrate while walking between transects. Habitat along the transects was characterized by heterogeneous substrate (boulder, cobble, gravel, sand) and moderate flow, and most of this reach appears to provide high quality mussel habitat.

5.0 REFERENCES

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Table 1. Mussel species reported from the Namekagon River in Washburn County, Wisconsin.

Species	Common Name	Status [1]	Year of Observation [2]
Amblemini			
Amblema plicata	Threeridge		2016
Pleurobemini			
Eurynia dilatata	Spike		2016
Fusconaia flava	Wabash Pigtoe		2016
Pleurobema sintoxia	Round Pigtoe		2016
Quadrulini			
Cyclonaias pustulosa	Pimpleback		2016
Cyclonaias tuberculata	Purple Wartyback	E	1995
Quadrula quadrula	Mapleleaf	SC/P	2016
Lampsilini			
Actinonaias ligamentina	Mucket		2016
Lampsilis cardium	Plain Pocketbook		2016
Lampsilis siliquoidea	Fatmucket		2016
Leptodea fragilis	Fragile Papershell		1995
Ligumia recta	Black Sandshell		2016
Obovaria olivaria	Hickorynut		1988
Potamilus alatus	Pink Heelsplitter		2016
Truncilla truncata	Deertoe		2016
Anodontini			
Alasmidonta marginata	Elktoe	SC/P	2016
Anodontoides ferussacianus	Cylindrical Papershell		2016
Lasmigona compressa	Creek Heelsplitter		2016
Lasmigona costata	Fluted Shell		2016
Pyganodon grandis	Giant Floater		1995
Simpsonaias ambigua	Salamander Mussel	T	1988
Strophitus undulatus	Creeper		2016
Utterbackia imbecillis	Paper Pondshell		2006
Total No. Species	23		

[1] E = Wisconsin endangered, T = Wisconsin threatened, SC/P = Wisconsin species of special concern (protected; WDNR, 2021)

[2] WDNR (2018)

Table 2. Habitat characteristics observed in Trego riverine surveys, Namekagon River, 2022.

				Substrate Composition (%)									
Reach	Transect	Segment	Depth (m)	Bedrock	Boulder	Cobble	Gravel	Sand	Silt	Clay	LWD	Veg.	Shell
Reach 1 (US)	T3	0-10	0.61	0	0	0	0	85	5	0	5	5	0
	T3	10-20	0.91	0	0	0	0	100	0	0	0	0	0
	T3	20-30	0.91	0	0	0	0	90	10	0	0	0	0
	T3	30-40	0.91	0	0	0	0	100	0	0	0	0	0
	T3	40-50	0.91	0	0	0	0	90	0	0	10	0	0
	T3	50-55	0.61	0	0	0	0	40	30	0	30	0	0
Reach 1 (US)	T4	0-10	0.91	0	0	0	0	85	5	0	5	5	0
	T4	10-20	0.91	0	0	0	0	100	0	0	0	0	0
	T4	20-30	0.91	0	0	0	0	100	0	0	0	0	0
	T4	30-40	1.22	0	0	20	0	40	25	5	0	10	0
Reach 1 (US)	T5	0-10	0.30	0	0	0	0	75	20	0	0	5	0
	T5	10-20	0.76	0	0	0	0	90	10	0	0	0	0
	T5	20-30	1.07	0	0	0	0	100	0	0	0	0	0
	T5	30-40	0.91	0	20	20	0	50	0	0	0	10	0
Reach 1 (US)	T7	0-10	1.37	0	0	10	10	40	20	0	0	20	0
	T7	10-20	1.37	0	0	0	0	100	0	0	0	0	0
	T7	20-30	0.76	0	0	0	0	80	10	0	10	0	0
Reach 1 (US)	T9	0-10	0.61	0	0	0	0	70	20	0	10	0	0
	T9	10-20	0.91	0	0	0	0	80	10	0	10	0	0
	T9	20-30	0.91	0	0	0	0	80	10	0	10	0	0
	T9	30-35	0.61	0	0	0	0	80	10	0	10	0	0
Reach 2 (DS)	T3	0-10	0.46	0	20	30	30	20	0	0	0	0	0
	T3	10-20	1.22	0	20	40	30	10	0	0	0	0	0
	T3	20-30	0.61	0	10	30	40	20	0	0	0	0	0
Reach 2 (DS)	T4	0-10	0.30	0	0	10	20	60	0	0	0	10	0
	T4	10-20	1.07	0	0	40	20	40	0	0	0	0	0
	T4	20-30	1.07	0	20	30	40	10	0	0	0	0	0
	T4	30-40	0.46	0	0	40	20	40	0	0	0	0	0

Table 2. Habitat characteristics observed in Trego riverine surveys, Namekagon River, 2022.

				Substrate Composition (%)									
Reach	Transect	Segment	Depth (m)	Bedrock	Boulder	Cobble	Gravel	Sand	Silt	Clay	LWD	Veg.	Shell
Reach 2 (DS)	T5	0-10	0.61	0	0	20	40	20	0	0	10	0	10
	T5	10-20	0.61	0	0	20	50	20	0	0	0	0	10
	T5	20-30	0.61	0	0	30	20	50	0	0	0	0	0
	T5	30-40	0.61	0	0	40	30	20	0	0	0	0	10
	T5	40-50	0.61	0	0	30	50	10	0	0	0	0	10
Reach 2 (DS)	T7	0-10	1.07	0	10	60	10	20	0	0	0	0	0
	T7	10-20	0.91	0	20	50	10	20	0	0	0	0	0
	T7	20-30	0.61	0	0	40	20	10	0	0	10	0	20
	T7	30-35	0.30	0	10	40	20	20	10	0	0	0	0
Reach 2 (DS)	T10	0-10	0.61	0	30	50	10	10	0	0	0	0	0
	T10	10-20	0.61	0	30	50	10	10	0	0	0	0	0
	T10	20-30	0.61	0	20	40	30	10	0	0	0	0	0
	T10	30-40	0.61	0	20	40	30	10	0	0	0	0	0

US = upstream; DS = downstream; LWD = large woody debris

Table 3. Summary of effort and mussels collected in Trego riverine surveys, Namekagon River, 2022.

		Reach 1 (Upstream)							Reach 2 (Downstream)							Total	
Species	Common Name	T3	T4	T5	T7	T9	Total	%	T3	T4	T5	T7	T10	Total	%	Total	%
Amblemini																	
Amblema plicata	Threeridge	-	-	-	-	-	-	-	2	6	1	-	-	9	0.8	9	0.7
Pleurobemini																	
Eurynia dilatata	Spike	-	4	1	-	1	6	5.0	-	4	3	-	-	7	0.6	13	1.0
Fusconaia flava	Wabash Pigtoe	2	3	1	-	2	8	6.7	-	8	3	-	-	11	1.0	19	1.5
Pleurobema sintoxia	Round Pigtoe	-	1	1	-	-	2	1.7	1	-	-	-	-	1	0.1	3	0.2
Quadrulini																	
Cyclonaias pustulosa	Pimpleback	-	-	-	-	-	-	-	-	2	1	-	-	3	0.3	3	0.2
Cyclonaias tuberculata	Purple Wartyback	-	-	-	-	-	-	-	-	-	3	1	-	4	0.3	4	0.3
Lampsilini																	
Actinonaias ligamentina	Mucket	-	3	1	3	1	8	6.7	78	300	252	240	17	887	77.6	895	70.9
Lampsilis cardium	Plain Pocketbook	7	18	4	2	2	33	27.5	6	10	15	9	7	47	4.1	80	6.3
Lampsilis siliquoidea	Fatmucket	9	37	1	2	5	54	45.0	2	1	7	7	2	19	1.7	73	5.8
Ligumia recta	Black Sandshell	4	-	-	-	-	4	3.3	2	2	6	5	-	15	1.3	19	1.5
Obovaria olivaria	Hickorynut	-	-	-	-	-	-	-	-	1	1	-	-	2	0.2	2	0.2
Potamilus alatus	Pink Heelsplitter	-	-	-	-	-	-	-	-	1	-	-	-	1	0.1	1	0.1
Anodontini																	
Alasmidonta marginata	Elktoe	-	-	-	-	-	-	-	8	3	13	4	-	28	2.4	28	2.2
Lasmigona costata	Fluted Shell	-	1	-	-	-	1	0.8	11	41	18	13	2	85	7.4	86	6.8
Pyganodon grandis	Giant Floater	1	-	-	-	-	1	0.8	1	-	-	-	-	1	0.1	2	0.2
Strophitus undulatus	Creeper	-	3	-	-	-	3	2.5	1	3	15	4	-	23	2.0	26	2.1
Total Abundance		23	70	9	7	11	120	100.0	112	382	338	283	28	1143	100.0	1263	100.0
Live Species		5	8	6	3	5	10		10	13	13	8	4	16		16	
Effort (m^2)		55	40	40	30	35	200		30	40	50	35	40	195		395	
Surface Density (no./m^2)		0.42	1.75	0.23	0.23	0.31	0.60		3.73	9.55	6.76	8.09	0.70	5.86		3.20	
% ≤5 external annuli							1.67							0.96			
Simpson's Diversity							0.71							0.61			
Pielou's Evenness							0.33							0.14			

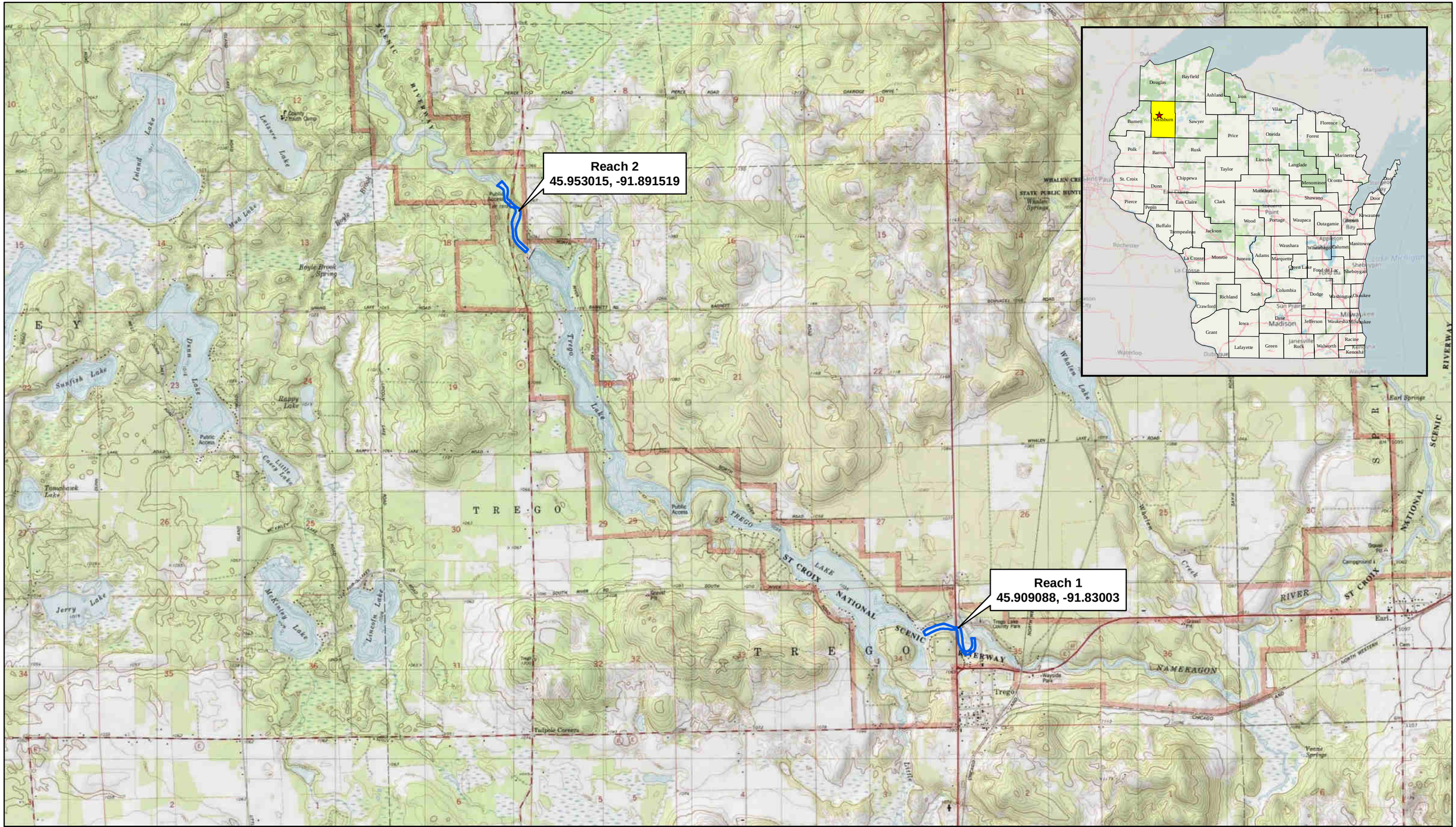

Figure 1. Trego Project Location on USGS 7.5-minute Topographic Map of Dunn Lake and Trego Quadrangles. Washburn County, Wisconsin.

Riverine Reach Study Area

0 2,500 5,000 10,000 Feet

0 750 1,500 3,000 Meters

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Path: C:\Users\Anna Giordano\Desktop\GIS_Projects\MMead-and-Hunt\16082_Wisconsin_MusselsMap1_Location_Trego.mxd

Date: 8/17/2022

Basemap courtesy of Esri.

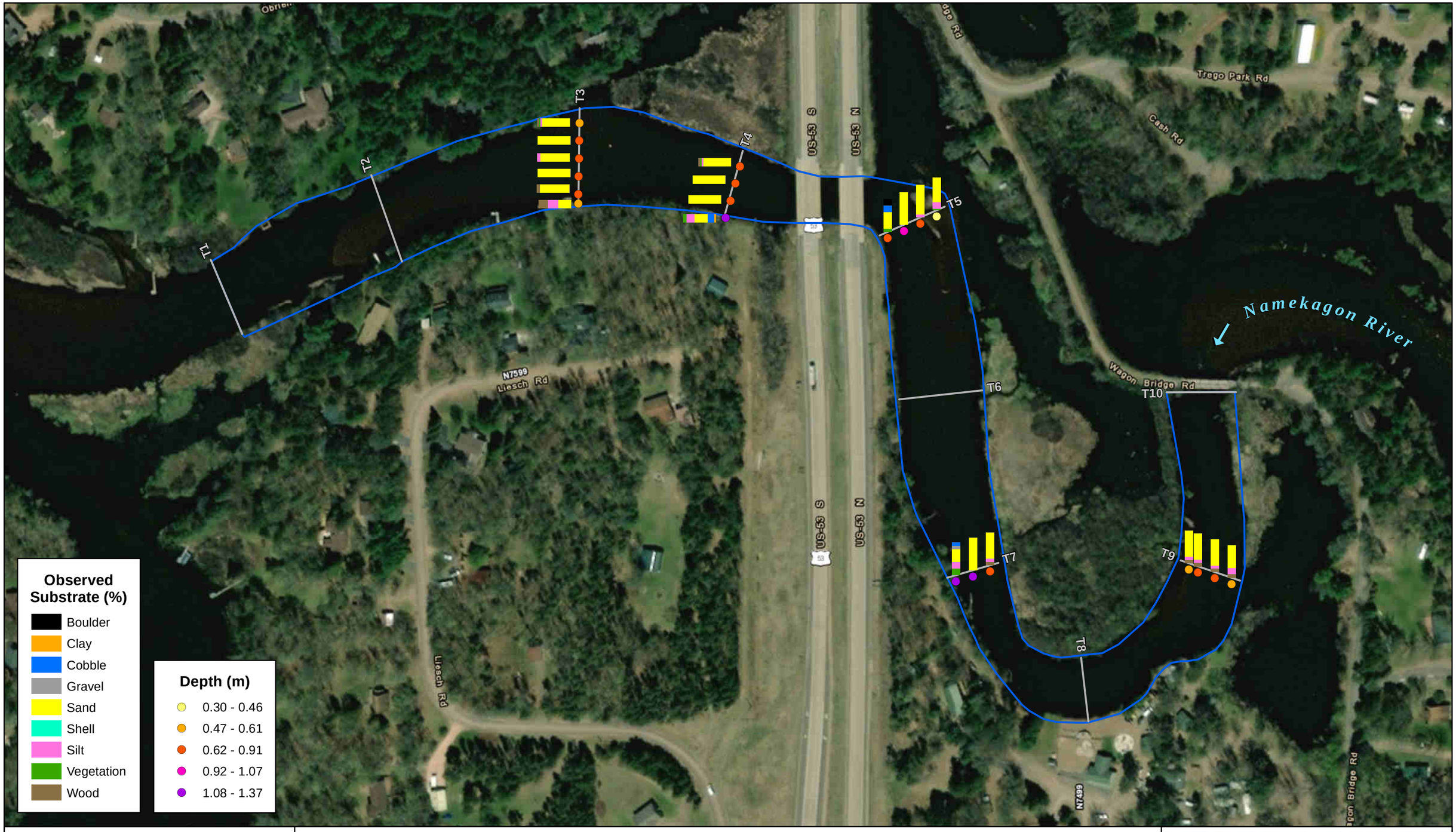

Figure 2. Substrate and Depth for the Trego Project Reach One on the Namekagon River. Washburn County, Wisconsin.

Survey Transect

Riverine Reach Study Area

0 150 300 600 Feet

0 50 100 200 Meters

EnviroScience
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Date: 8/18/2022 Path: P:\10_Projects\MMead-and-Hunt\480M\116082_Wisconsin_Mussels\16082_GIS\Map2_Substrate_R1_Trego.mxd

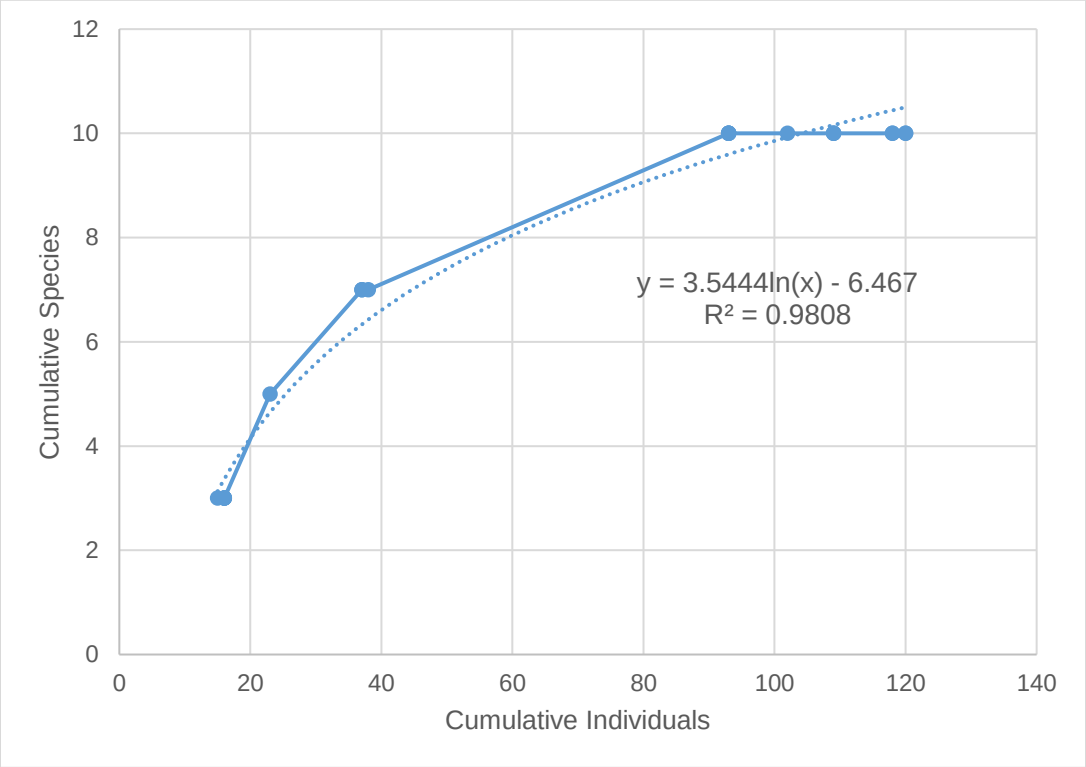
Basemap courtesy of Esri.

Figure 3. Mussel Abundance for the Trego Project Reach One on the Namekagon River. Washburn County, Wisconsin.

Basemap courtesy of Esri.

Date: 8/7/2022 Path: C:\Users\Anna Giordano\Desktop\GIS_Projects\MMead-and-Hunt\16082_Wisconsin_Mussels\Map4_Mussels_R1_Trego.mxd

Figure 4. Cumulative species curve for Trego Project Reach One on the Namekagon River. Washburn County, Wisconsin.



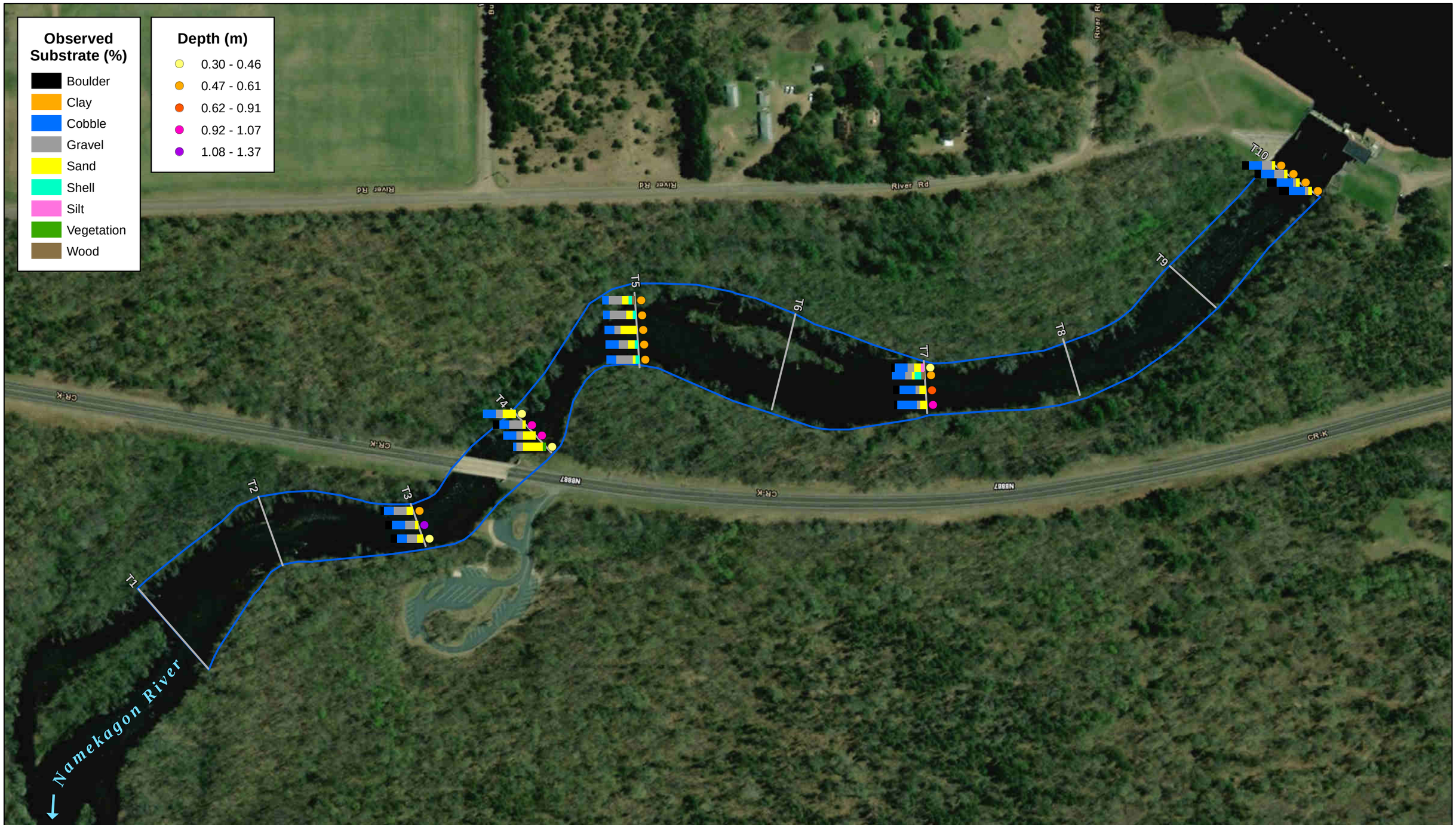


Figure 5. Substrate and Depth for the Trego Project Reach Two on the Namekagon River. Washburn County, Wisconsin.

Survey Transect

Riverine Reach Study Area

0 150 300 600 Feet

0 50 100 200 Meters

EnviroScience
Excellence In Any Environment

Date: 8/18/2022 Path: P:\10_Projects\MMead-and-Hunt\480M\16082_Wisconsin_Mussels\16082_GIS\Map3_Substrate_R2_Trego.mxd

Basemap courtesy of Esri.

Figure 6. Mussel Abundance for the Trego Project Reach Two on the Namekagon River. Washburn County, Wisconsin.

Survey Transect

0 150 300 600 Feet

0 50 100 200 Meters

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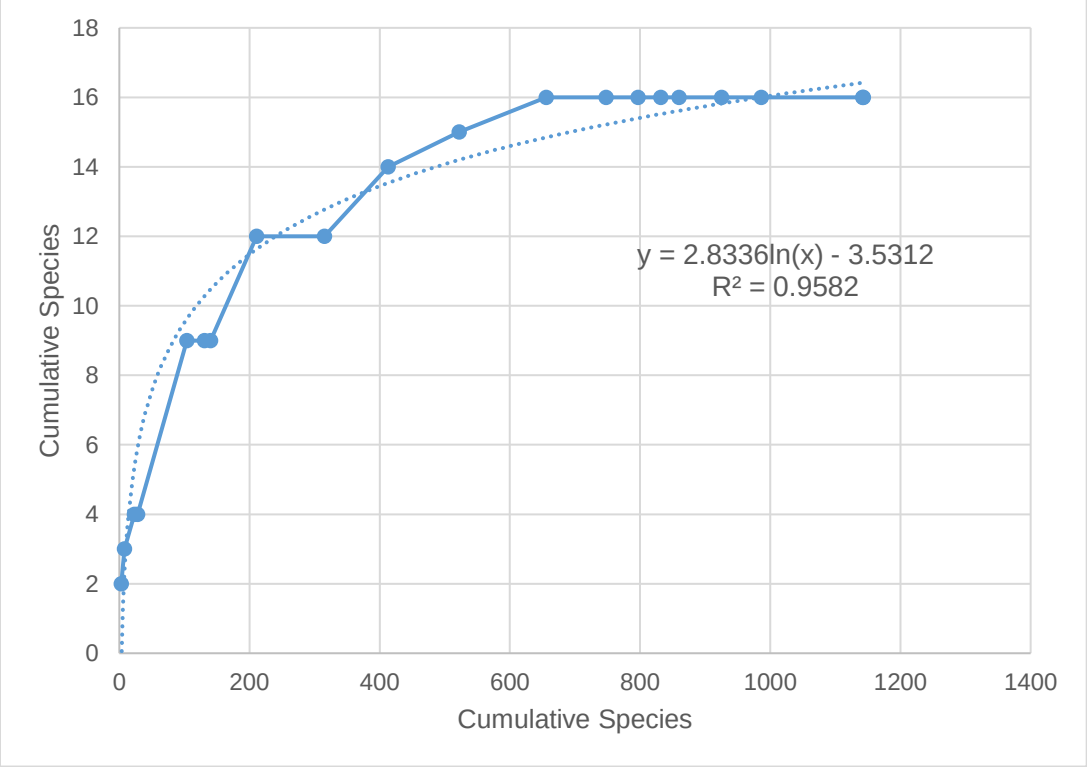
Date: 8/7/2022 Path: C:\Users\Anna Giordano\Desktop\GIS_Projects\MMead-and-Hunt\16082_Wisconsin_Mussels\Map5_Mussels_R2_Trego.mxd

Basemap courtesy of Esri.

Figure 7. Cumulative species curve for Trego Project Reach Two on the Namekagon River. Washburn County, Wisconsin.



Appendix A

Scientific Collecting Permits and Survey Plan

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463

July 30, 2021

Emily Grossman
EnviroScience, Inc
2977 Hwy K #226
O'Fallon, MO 63368

Subject: WI E/T Permit Enclosed

Dear Emily:

With this letter we are updating your **ET Species Permit #1130**, per your request, as follows:

Species added to permit for removal and relocation to nearest suitable habitat outside impacted area:

- All Wisconsin threatened/endangered mussel species, collected as encountered on projects. Live mussels will be returned to the wild. Dead shells may be retained as vouchers and deposited in a reference collection, if permitted.

These updates are now part of your WI E/T Permit and will expire along with your original permit. Updated conditions are attached to this letter.

Please keep this letter and your E/T permit with you when conducting activities involving species listed on your permit.

Thank you for your efforts on behalf of Wisconsin's endangered and threatened resources.

Sincerely,

Drew Feldkirchner
Bureau Director

Wisconsin Endangered and Threatened Species Permit Conditions

The following conditions apply to Wisconsin E/T Species Permit **#1130** issued to **Emily Grossman**:

1. Bureau of Natural Heritage Conservation Mussels should not be surveyed when water temperatures are less than 40 º F and air temperatures are less than 32º F.
2. Permit holder must follow equipment disinfection protocols at outlined in WDNR Manual Code 9183.1, found online at the DNR public site.
3. Permit holder agrees to follow Mussel Relocation Protocol (if applicable) and Wisconsin Wadeable Protocol for Mussel Sampling unless approved by the DNR species expert.
4. If you anticipate encountering a federally listed mussel species while conducting mussel surveys, a federal permit may also be required. For further information, contact U.S. Fish and Wildlife Service, Twin Cities Field Office at (952) 252-0092.
5. If a federally listed species is not anticipated, but is encountered during a survey or relocation, the surveyor must contact the U.S. Fish and Wildlife Service's Twin Cities Field Office (612) 725-3548 ext. 2206) within 24 hours of the encounter, unless the surveyor is already authorized to handle the species under a federal permit.
6. Permit holder must contact Lisie Kitchel (608) 266-5248) prior to conducting field work for each new project.

USACE GUIDELINES

1. Target and non-target species should be returned to point of capture, unless the project involves relocation. If the project involves relocation, please contact Lisie Kitchel (608) 266-5248).
2. Mussels should not be surveyed when water temperatures are less than 40 º F and air temperatures are less than 32º F.
3. It is recommended to follow the equipment disinfection protocols for aquatic invasives as outlined in WDNR Manual Code 9183.1, found online at the DNR public site.
4. It is recommended to follow the Mussel Relocation Protocol (if applicable) and Wisconsin Wadeable Protocol for Mussel Sampling.

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921

Endangered and Threatened Species Permit

Form 1700-002 (R 3/06)

The below named person is authorized by the Wisconsin Department of Natural Resources, pursuant to section 29.604, Wis. Stats., and Chapter NR 27, Wis. Adm. Code, to conduct the described activities for scientific or educational purposes.

DNR Permit Number	DNR Metal Tag Number
1130	
Date DNR Permit Issued	**Date DNR Permit Expires**
07/24/2018	01/31/2024
Federal Permit Number	**Date Federal Permit Expires**

Permittee Information

Last Name	First
Grossman	Emily

Street or Route	City	State	ZIP Code
21 Fort Zumwalt Dr	O'Fallon	MO	63366

Phone Number	Email Address	Date of Birth	Eye Color	Hair Color	Weight	Height
(847) 269-4159	egrossman@enviroscienceinc.com	3/19/1987	Blue	Brown	150	5'6"

Species or Study Information

County(ies) of Activity

Statewide

Name and Number of Specimens or Description of Study

All Wisconsin threatened/endangered mussel species
Mussels will be collected as encountered on projects; specific numbers of each species are not known at this time

Source of Species or Area of Study	Where Species or Item Will Be Kept
Aquatic systems (rivers/streams/lakes) throughout Wisconsin	Live mussels will be returned to the wild. Dead shells may be retained as vouchers and deposited in a reference collection, if permitted.
Method of Taking and/or Transporting	**During the Following Period of Time**
Mussels will be collected by hand via wading/ snorkeling/diving.	Duration of permit validity.

Purpose for Obtaining or Collection

Mussel surveys and possible translocation for construction and/or ecological monitoring projects

Final Disposition of Specimens

Live mussels will be returned to the wild. Dead shells may be retained as vouchers, if permitted.

Scientific Qualification of Permittee

See permit file.

Additional Conditions of This Permit

See attached letter with conditions.

Permittee Certification

I hereby certify that I have read, am familiar, and agree to comply with the regulations described herein. This permit is not transferable and must be exhibited to any authorized agent of the Department of Natural Resources on demand.

Permittee Signature	Date Signed
DocuSigned by: Emily Grossman BCABDB7B5AC8410...	8/3/2021 | 12:23 PM CDT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

By: DocuSigned by: Drew Feldkirchner F8586A547FC44E3... Date: 7/30/2021 | 12:00 PM C

Address updated on 1/14/2022 by NRR.

Emily Grossman

From: Kitchel, Lisie E - DNR <Lisie.Kitchel@wisconsin.gov>
Sent: Monday, June 6, 2022 3:00 PM
To: Emily Grossman; Weinzinger, Jesse J - DNR
Cc: Becca Winterringer
Subject: RE: Mussel survey plans

Emily – all three look good, the only thing I would add would be to please note if there is an obvious 'drawdown zone' in any of the river reaches as a result of either consistent drawdownd or seasonal drawdownd where no mussels are present due to being dewatered, the classic 'bathtub ring', to document habitat that is impacted by operation or seasonal maintenance. This is especially important for the Gile Flowage which has a significant drawdown.
By document I mean not just if its present but the extent to which it occurs, 1 foot, 2 feet, 1 meter, etc. in width, or however best to describe it, not if it is not present.
Hope that is clear, give me a call if you want to discuss.

Have fun in northern Wisconsin!!

Lisie Kitchel
Conservation Biologist
Bureau of Natural Heritage Conservation
Wisconsin Department of Natural Resources
101 S. Webster St.
Madison, WI 53707
Cell Phone: (608-220-5180

dnr.wi.gov

From: Emily Grossman <egrossman@enviroscienceinc.com>
Sent: Monday, June 6, 2022 11:26 AM
To: Kitchel, Lisie E - DNR <Lisie.Kitchel@wisconsin.gov>; Weinzinger, Jesse J - DNR <Jesse.Weinzinger@wisconsin.gov>
Cc: Becca Winterringer <bwinterringer@enviroscienceinc.com>
Subject: Mussel survey plans

Lisie and Jesse,

EnviroScience was recently contracted by Mead and Hunt to conduct mussel surveys for four hydropower licensing/relicensing projects in northern Wisconsin. The locations and survey plans include:

- Hayward Lake and Trego Lake, Namekagon River near Hayward & Trego
- White River Flowage, White River near Ashland
- Gile Flowage, W. Fork Montreal River near Gile

Fieldwork will be led by either me (WI E/T permit #1130) or Becca Winterringer (WI E/T permit #1164). Per our permits, we wanted to notify you that we'll be conducting the surveys and request your review of the survey plans to ensure they're adequate. Based on the RFP we received, it looks like Mead and Hunt may have already discussed the survey methods with WIDNR, but please take a look at the attached plans and let me know if you have any comments or questions. We are hoping to start fieldwork in the next couple weeks, if possible, in order to complete the White River site before a planned drawdown of this reservoir in early July.

Again, please let me know if you have any questions/comments or need any additional info.

Thank you!

Emily Grossman
Senior Scientist/Project Manager

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5070 Stow Road, Stow, OH 44224 | EnviroScienceInc.com
O. 800.940.4025 | C. 847.269.4159 | 24-HR 888.866.8540
OH | TN | VA | WV | NC
Meet our new team in North Carolina!

SCIENTIFIC RESEARCH AND COLLECTING PERMIT

Grants permission in accordance with the attached general and special conditions

United States Department of the Interior
National Park Service
Saint Croix

Study#: SACN-00158
Permit#: SACN-2022-SCI-0013
Start Date: Jun 20, 2022
Expiration Date: Jul 08, 2022
Coop Agreement#:
Optional Park Code:

Name of principal investigator:

Name: Rebecca Winterringer **Phone:**6365444754 **Email:**bwinterringer@enviroscienceinc.com

Name of institution represented:
EnviroScience, Inc.

Additional investigators or key field assistants:

Name: Emily Grossman	**Phone:** 847-269-4159	**Email:** egrossman@enviroscienceinc.com
Name: Robert Williams	**Phone:** 423-802-3237	**Email:** rwilliams@enviroscienceinc.com
Name: Matt Gilkay	**Phone:** 763-222-5107	**Email:** mgilkay@enviroscienceinc.com
Name: Paul Moreno	**Phone:** 54-317-1740	**Email:** m256moreno@gmail.com
Name: Ben Ebert	**Phone:** 517-899-3403	**Email:** bebert@enviroscienceinc.com

Study Title:
Mussel Studies for the Hayward (FERC No. 2417) and Trego (FERC No. 2711) Hydroelectric Projects, Namekagon River, Sawyer and Washburn Counties, Wisconsin.

Purpose of study:
The objective of the mussel studies is to provide data on freshwater mussel species and habitat within each of the Project areas. These studies aim to collect current mussel information to supplement historical data near the Project areas and document the resident mussel community above and below each dam. Coordination of the mussel studies has been undertaken by the Project owner and EnviroScience's client (Mead and Hunt). The mussel studies will follow the approved study plans submitted by Mead and Hunt related to correspondence from the NPS dated March 2, 2022.

Subject/Discipline:
Inventory Natural Resources
Water Resources

Locations authorized:
Hayward Hydroelectric Project - Reach 1 will begin approximately 430 m above the Highway 77 bridge (approx. coordinates: 46.013296, -91.453639) and extend 1,000 m upstream. Reach 2 will begin at the canoe portage put-in (approximate coordinates: 46.002513, -91.489114) and will extend 1,000 m downstream.

Trego Hydroelectric Project - Reach 1 will begin at the Wagon Bridge Road crossing (approx. coordinates: 45.908514, -91.824905) and extend 1,000 m downstream. Reach 2 will begin 45 m below the Trego Dam (approx. coordinates: 45.948372, -91.888830) and extend 1,000 m downstream.

Transportation method to research site(s):
Access to each survey area will be via public boat or canoe launches in public parking designated areas.

Collection of the following specimens or materials, quantities, and any limitations on collecting:

Name of repository for specimens or sample materials if applicable:

Repository type: Temporarily captured or handled (may include marking) and then released undamaged in place
Objects collected:
All freshwater mussels encountered will be inventories and released to their point of collection. Live mussels found will be kept submersed in ambient river water and kept cool and moist during processing. All live mussels will be identified to species, counted, measured (length in millimeters), aged (external annuli count), and sexed (sexually dimorphic species only) by the team malacologist. Dead shell specimens will be scored as fresh dead (dead less than one year, lustrous nacre), weathered dead (dead one to many years; chalky nacre, fragmented, and worn periostracum), or subfossil (dead many years to many decades; severely worn and fragmented). Detailed digital images of the study area and representative mussel species will be recorded and reported.Species likely to be encountered based on Wisconsin Observation by County and Waterbody:

Black Sandshell - Ligumia recta
Creek Heelsplitter - Lasmigona compressa
Creeper - Strophitus undulatus
Cylindrical Papershell - Anodontoides ferussacianus
Deertoe - Truncilla truncata
Elktoe - Alasmidonta marginata
Fatmucket - Lampsilis siliquoidea
Fluted-shell - Lasmigona costata
Fragile Papershell - Leptodea fragilis
Giant Floater - Pyganodon grandis
Hickorynut - Obovaria olivaria
Mapleleaf - Quadrula quadrula
Mucket - Actinonaias ligamentina
Paper Pondshell - Utterbackia imbecillis
Pimpleback - Quadrula pustulosa
Pink Heelsplitter - Potamilus alatus
Plain Pocketbook - Lampsilis cardium
Purple Wartyback - Cyclonaias tuberculata
Round Pigtoe - Pleurobema sintoxia
Salamander Mussel - Simpsonaias ambigua
Spike - Elliptio dilatata
Threeridge - Amblema plicata
Wabash Pigtoe - Fusconaia flava

NPS General Conditions for Scientific Research and Collecting Permit (available at the RPRS HELP page) apply to this permit. The following specific conditions or restrictions, and any attached conditions, also apply to this permit:

Plot Marking
Route marking such as painting, blazing, or flagging is prohibited. Materials used to mark plots must be pre-approved by the Resource Management Specialist and must be as subtle as possible. Biodegradable flagging should be used to temporarily mark plots. All tags must have the researcher s name, project name, and date. Whenever possible, markers must not be readily visible to visitors.

Aquatic Collecting
All equipment must be free of zebra mussels.
Decontamination procedures are visual inspection, removal of plants, shells, etc., and a hot water rinse of 140 degrees F or out of water for at least 5 days.

Other Permits
This permit does not negate or replace other permits that may be required from local, state or other federal agencies.

Summary of permitted field methods and activities:

Mussel studies will include field surveys of two riverine reaches at each of the two Project locations. Mussel study methods were developed based on the Wisconsin Department of Natural Resources' (WDNR) Guidelines for Sampling Freshwater Mussels in Wadable Streams (Piette, 2015).
Mussel studies within riverine habitat will be conducted at each Project location. The survey area for each Project will include two riverine reaches, one upstream of the impoundment and one downstream of the Project powerhouse outside of the mixing zone. The upstream and downstream boundaries of each reach will be defined as follows:
Hayward Hydroelectric Project - Reach 1 will begin approximately 430 m above the Highway 77 bridge and extend 1,000 m upstream. Reach 2 will begin at the canoe portage put-in and will extend 1,000 m downstream.
Trego Hydroelectric Project - Reach 1 will begin at the Wagon Bridge Road crossing and extend 1,000 m downstream. Reach 2 will begin 45 m below the Trego Dam and extend 1,000 m downstream.
Within each reach, a series of transects extending bank to bank will be established every 100 m, creating a series of 10 possible transects per reach. Transects will be numbered sequentially from downstream to upstream, and a random number selector will be used to select five transects for the survey within each reach.
Searches along each transect will be conducted in 10-m segments and will extend 0.5 m on each side of the transect. A rapid visual search for signs of freshwater mussels (living or shell material) will be performed within each segment. The rapid visual search will entail an initial search of 0.2 minutes per m2 (min/m2) along each 10-m segment to determine if mussels are present. If mussels are present in a segment, a semi-quantitative search will be triggered, and the time will be extended to 1 min/m2. During the semi-quantitative search, divers will visually search, probe the substrate, and turn over rocks to detect small, burrowed mussels.
EnviroScience will record general stream conditions and morphology within the study area and reference the Aquatic Habitat Classification on the St. Croix National Scenic Riverway for methodology and classifications. Water depth and river bottom substrate composition using the Wentworth Scale (% observed of silt, sand, gravel, etc.) will be recorded. The survey will be conducted only

when visibility at depth is at least 20 inches. In addition, a general description of mussel habitat in the Project boundary will be provided in reporting.
Live mussels found will be kept submersed in ambient river water and kept cool and moist during processing. All live mussels will be identified to species, counted, measured (length in millimeters), aged (external annuli count), and sexed (sexually dimorphic species only) by the team malacologist. Dead shell specimens will be scored as fresh dead (dead less than one year, lustrous nacre), weathered dead (dead one to many years; chalky nacre, fragmented, and worn periostracum), or subfossil (dead many years to many decades; severely worn and fragmented). Detailed digital images of the study area and representative mussel species will be recorded and reported. Datasheets will be populated and summarized per the Mussel Survey Summary Tables provided in Appendix 2 of each mussel study plan. Mussel taxonomy will follow the names presented by Williams et al., 2017.
If any living or dead federal or state-listed species are encountered, EnviroScience will notify Mead & Hunt immediately; per surveyor collection permits, WDNR, National Park Service (NPS), and the U.S. Fish & Wildlife Service (USFWS) will be notified within 24 hours. No live mussels will be harmed or taken during this Project. Any specimens of federally listed species that are encountered will be individually hand placed in their original locations.

Recommended by park staff(name and title):

Reviewed by Collections Manager:

Yes____ No____

Approved by park official:

Date Approved:

Title:

Superintendent

I Agree To All Conditions And Restrictions Of this Permit As Specified
(Not valid unless signed and dated by the principal investigator)

(Principal investigator's signature) (Date)

THIS PERMIT AND ATTACHED CONDITIONS AND RESTRICTIONS MUST BE CARRIED AT ALL TIMES WHILE CONDUCTING RESEARCH ACTIVITIES IN THE DESIGNATED PARK(S)

GENERAL CONDITIONS
For
SCIENTIFIC RESEARCH AND COLLECTING PERMIT

United States Department of the Interior
National Park Service

1. **Authority** - The permittee is granted privileges covered under this permit subject to the supervision of the superintendent or a designee, and shall comply with all applicable laws and regulations of the National Park System area and other federal and state laws. A National Park Service (NPS) representative may accompany the permittee in the field to ensure compliance with regulations.

2. **Responsibility** - The permittee is responsible for ensuring that all persons working on the project adhere to permit conditions and applicable NPS regulations.

3. **False information** - The permittee is prohibited from giving false information that is used to issue this permit. To do so will be considered a breach of conditions and be grounds for revocation of this permit and other applicable penalties.

4. **Assignment** - This permit may not be transferred or assigned. Additional investigators and field assistants are to be coordinated by the person(s) named in the permit and should carry a copy of the permit while they are working in the park. The principal investigator shall notify the park's Research and Collecting Permit Office when there are desired changes in the approved study protocols or methods, changes in the affiliation or status of the principal investigator, or modification of the name of any project member.

5. **Revocation** - This permit may be terminated for breach of any condition. The permittee may consult with the appropriate NPS Regional Science Advisor to clarify issues resulting in a revoked permit and the potential for reinstatement by the park superintendent or a designee.

6. **Collection of specimens (including materials)** - No specimens (including materials) may be collected unless authorized on the Scientific Research and Collecting permit.

The general conditions for specimen collections are:

- Collection of archeological materials without a valid Federal Archeology Permit is prohibited.

- Collection of federally listed threatened or endangered species without a valid U.S. Fish and Wildlife Service endangered species permit is prohibited.

- Collection methods shall not attract undue attention or cause unapproved damage, depletion, or disturbance to the environment and other park resources, such as historic sites.

- New specimens must be reported to the NPS annually or more frequently if required by the park issuing the permit.Minimum information for annual reporting includes specimen classification, number of specimens collected, location collected, specimen status(e.g., herbarium sheet, preserved in alcohol / formalin, tanned and mounted, dried and boxed, etc.), and current location.

- Collected specimens that are not consumed in analysis or discarded after scientific analysis remain federal property.The NPS reserves the right to designate the repositories of all specimens removed from the park and to approve or restrict reassignment of specimens from one repository to another. Because specimens are Federal property, they shall not be destroyed or discarded without prior NPS authorization.
- Each specimen (or groups of specimens labeled as a group) that is retained permanently must bear NPS labels and must be accessioned and cataloged in the NPS National Catalog.Unless exempted by additional park - specific stipulations, the permittee will complete the labels and catalog records and will provide accession information.It is the permittee's responsibility to contact the park for cataloging instructions and specimen labels as well as instructions on repository designation for the specimens.

- Collected specimens may be used for scientific or educational purposes only, and shall be dedicated to public benefit and be accessible to the public in accordance with NPS policies and procedures.

- Any specimens collected under this permit, any components of any specimens (including but not limited to natural organisms, enzymes or other bioactive molecules, genetic materials, or seeds), and research results derived from collected specimens are to be used for

scientific or educational purposes only, and may not be used for commercial or other revenue - generating purposes unless the permittee has entered into a Cooperative Research And Development Agreement(CRADA) or other approved benefit - sharing agreement with the NPS.The sale of collected research specimens or other unauthorized transfers to third parties is prohibited.Furthermore, if the permittee sells or otherwise transfers collected specimens, any components thereof, or any products or research results developed from such specimens or their components without a CRADA or other approved benefit-sharing agreement with NPS, permittee will pay the NPS a royalty rate of twenty percent(20 %) of gross revenue from such sales or other revenues. In addition to such royalty, the NPS may seek other damages to which the NPS may be entitled including but not limited to injunctive relief against the permittee.

7. **Reports** - - The permittee is required to submit an Investigator's Annual Report and copies of final reports, publications, and other materials resulting from the study. Instructions for how and when to submit an annual report will be provided by NPS staff.Park research coordinators will analyze study proposals to determine whether copies of field notes, databases, maps, photos, and / or other materials may also be requested.The permittee is responsible for the content of reports and data provided to the National Park Service

8. **Confidentiality** - - The permittee agrees to keep the specific location of sensitive park resources confidential. Sensitive resources include threatened species, endangered species, and rare species, archeological sites, caves, fossil sites, minerals, commercially valuable resources, and sacred ceremonial sites.

9. **Methods of travel** - Travel within the park is restricted to only those methods that are available to the general public unless otherwise specified in additional stipulations associated with this permit.

10. **Other permits** - The permittee must obtain all other required permit(s) to conduct the specified project.

11. **Insurance** - If liability insurance is required by the NPS for this project, then documentation must be provided that it has been obtained and is current in all respects before this permit is considered valid.

12. **Mechanized equipment** - No use of mechanized equipment in designated, proposed, or potential wilderness areas is allowed unless authorized by the superintendent or a designee in additional specific conditions associated with this permit.

13. **NPS participation** - The permittee should not anticipate assistance from the NPS unless specific arrangements are made and documented in either an additional stipulation attached to this permit or in other separate written agreements.

14. **Permanent markers and field equipment** - The permittee is required to remove all markers or equipment from the field after the completion of the study or prior to the expiration date of this permit. The superintendent or a designee may modify this requirement through additional park specific conditions that may be attached to this permit. Additional conditions regarding the positioning and identification of markers and field equipment may be issued by staff at individual parks.

15. **Access to park and restricted areas** - Approval for any activity is contingent on the park being open and staffed for required operations. No entry into restricted areas is allowed unless authorized in additional park specific stipulations attached to this permit.

16. **Notification** - The permittee is required to contact the park's Research and Collecting Permit Office (or other offices if indicated in the stipulations associated with this permit) prior to initiating any fieldwork authorized by this permit.Ideally this contact should occur at least one week prior to the initial visit to the park.

17. **Expiration date** - Permits expire on the date listed. Nothing in this permit shall be construed as granting any exclusive research privileges or automatic right to continue, extend, or renew this or any other line of research under new permit(s).

18. **Other stipulations** - This permit includes by reference all stipulations listed in the application materials or in additional attachments to this permit provided by the superintendent or a designee. Breach of any of the terms of this permit will be grounds for revocation of this permit and denial of future permits.

SURVEY PLAN:

FRESHWATER MUSSEL STUDIES FOR THE HAYWARD AND TREGO HYDROELECTRIC PROJECTS

(FERC Nos. 2417 and 2711)

Prepared for:

WISCONSIN DEPT. OF NATURAL RESOURCES

On Behalf of :

Mead & Hunt

Prepared by:

EnviroScience
Excellence In Any Environment

5070 Stow Rd.
Stow, OH 44224
800-940-4025
www.EnviroScienceInc.com

ES Project No. 16082

Date: June 6, 2022

TABLE OF CONTENTS

1.0 PROJECT OVERVIEW 1
2.0 MUSSEL SURVEY SCOPE OF WORK 1
Task One: Mussel Studies 1
Task Two: Reporting 2
Mussel Survey Schedule 2
3.0 LITERATURE CITED 3

1.0 PROJECT OVERVIEW

EnviroScience, Inc. is pleased to submit this survey plan to the Wisconsin Department of Natural Resources (WDNR) on behalf of Mead & Hunt to perform freshwater mussel studies associated with the Federal Energy Regulatory Commission (FERC) relicensing process for the Hayward Hydroelectric Project (FERC Project No. 2417) and Trego Hydroelectric Project (FERC Project No. 2711). Northern States Power Company – Wisconsin, d/b/a Xcel Energy (Licensee/Applicant), is required to evaluate existing freshwater mussel resources and potential impacts to freshwater mussel resources associated with continued project operations. The Hayward project is located on the Namekagon River near Hayward, Sawyer County, Wisconsin. The Trego project is located on the Namekagon River near Trego, Washburn County, Wisconsin.

2.0 MUSSEL SURVEY SCOPE OF WORK

TASK ONE: MUSSEL STUDIES

Mussel survey methods were developed following the 2015 WDNR Guidelines for Sampling Freshwater Mussels in Wadeable Streams (Guidelines; Piette, 2015). Mussel studies will include field surveys of two riverine reaches at each project location. One reach will be located upstream of the impoundment, and one will be downstream of the project powerhouse. The upstream and downstream boundaries of each reach will be defined as follows:

- Hayward Hydroelectric Project (22 MHT Work Scope): Reach 1 will begin approximately 430 m above the Highway 77 bridge and extend 1,000 m upstream. Reach 2 will begin at the canoe portage put-in and will extend 1,000 m downstream.
- Trego Hydroelectric Project (22 MHT Work Scope): Reach 1 will begin at the Wagon Bridge Road crossing and extend 1,000 m downstream. Reach 2 will begin 45 m below the Trego Dam and extend 1,000 m downstream.

Within each reach, a series of transects extending bank to bank will be established every 100 m, creating a series of 10 possible transects per reach. Transects will be numbered sequentially from downstream to upstream, and a random number selector will be used to select five transects for the survey within each reach.

Searches along each transect will be conducted in 10-m segments and will extend 0.5 m on each side of the transect. A rapid visual search for signs of freshwater mussels (living or shell material) will be performed within each segment. The rapid visual search will entail an initial search of 0.2 minutes per m^2 (min/m^2) along each 10-m segment to determine if mussels are present. If mussels are present in a segment, a semi-quantitative search will be triggered, and the time will be extended to 1 min/m^2. During the semi-quantitative search, divers will visually search, probe the substrate, and turn over rocks to detect small, burrowed mussels.

EnviroScience will record general stream conditions and morphology within the study area and will reference the Aquatic Habitat Classification on the St. Croix National Scenic Riverway (Wan et al., 2007) for methodology and classifications. Water depth and river bottom substrate composition using the Wentworth Scale (% observed of silt, sand, gravel, etc.) will be recorded. The survey will be conducted only when visibility at depth is at least 20 inches. In addition, a general description of mussel habitat in the project boundary will be provided.

Data and Mussel Handling

Live mussels found will be kept submersed in ambient river water and kept cool and moist during processing. All live mussels will be identified to species, counted, measured (length in millimeters), aged (external annuli count), and sexed (sexually dimorphic species only) by the team malacologist. Dead shell specimens will be scored as fresh dead (dead less than one year, lustrous nacre), weathered dead (dead one to many years; chalky nacre, fragmented, and worn periostracum), or subfossil (dead many years to many decades; severely worn and fragmented). Detailed digital images of the study area and representative mussel species will be recorded and reported. Datasheets will be populated and summarized per the Mussel Survey Summary Tables provided in Appendix 2 of each mussel study plan provided by Mead & Hunt. Mussel taxonomy will follow the names presented by Williams et al., 2017.

If any living or dead federal or state-listed species are encountered, EnviroScience will notify Mead & Hunt immediately; per surveyor collection permits, WDNR, the National Park Service (NPS), and the U.S. Fish & Wildlife Service (USFWS) will be notified within 24 hours. No live mussels will be harmed or taken during this project. Any specimens of federally listed species that are encountered will be individually hand placed in their original locations.

TASK TWO: REPORTING

EnviroScience will provide Mead & Hunt with draft reports for the Hayward and Trego projects for review within 30 days of completion of fieldwork or by October 31, 2022, whichever occurs first. Final draft reports for each project for distribution to the relicensing participants will be completed within seven days after receiving Mead & Hunt's comments. EnviroScience will review and address participant comments and provide a final study report within 30 days of receiving participant comments from Mead & Hunt.

Each report will include a description of mussel survey activities and the prescribed Mussel Survey Summary Tables of all data collected, including mussel species numbers, sizes, and distribution within the study area. GIS-based mapping will provide further visual presentations of the findings of the survey. Geo-referenced photos and GIS shapefiles will be provided electronically to Mead & Hunt.

MUSSEL SURVEY SCHEDULE

Field work will be initiated following coordination with WDNR, receipt of permits, and when suitable weather and river conditions allow. Normal to low water conditions and good visibility must occur to conduct field work; project activities will be planned accordingly. Fieldwork is tentatively planned for mid-June 2022.

3.0 LITERATURE CITED

Piette, R. R. (2015). Guidelines for sampling freshwater mussels in wadable streams. Wisconsin Department of Natural Resources. 50pp.

Wan, H., Perry, J., Ferrin, R., Moraska-LaFrancois, B., Wan, H., Perry, J., ... & Moraska-LaFrancois, B. (2007). Aquatic habitat classification on the St. Croix National Scenic Riverway. In Research report to the US National Park Service. University of Minnesota.

Williams, J. D., Bogan, A. E., Butler, R. S., Cummings, K. S., Garner, J. T., Harris, J. L., ... & Watters, G. T. (2017). A revised list of the freshwater mussels (Mollusca: Bivalvia: Unionida) of the United States and Canada. *Freshwater Mollusk Biology and Conservation, 20*(2), 33-58.

Appendix B

Photographic Record

Appendix B. Index of photo locations, Trego Mussel Survey, June 2022.

	Coordinates				
	UTM Zone 15N		NAD 1983		
Photo No.	Northing	Easting	Latitude	Longitude	View direction
Photo 1	5084683	590792	45.90972	-91.82936	East
Photo 2	5084459	591014	45.90767	-91.82655	South
Photo 3	5084461	591140	45.90768	-91.82492	South
Photo 4	5084461	591140	45.90768	-91.82492	Northeast
Photo 5	5089498	585906	45.95367	-91.89148	Southeast
Photo 6	5089429	585972	45.95304	-91.89065	Southeast
Photo 7	5089345	586008	45.95229	-91.89019	East
Photo 8	5089152	585988	45.95056	-91.89049	North
Photo 9	5088917	586139	45.94842	-91.88859	Northwest
Photo 10	5088917	586139	45.94842	-91.88859	Southwest
Photo 11	5089345	586008	45.95229	-91.89019	N/A
Photo 12	5089152	585978	45.95055	-91.89062	N/A
Photo 13	5089345	586008	45.95229	-91.89019	N/A
Photo 14	5089429	585972	45.95304	-91.89065	N/A
Photo 15	5089345	586008	45.95229	-91.89019	N/A
Photo 16	5089345	586008	45.95229	-91.89019	N/A
Photo 17	5089345	586008	45.95229	-91.89019	N/A
Photo 18	5084668	590792	45.90959	-91.82937	N/A
Photo 19	5084668	590792	45.90959	-91.82937	N/A
Photo 20	5089429	585972	45.95304	-91.89065	N/A
Photo 21	5084668	590792	45.90959	-91.82937	N/A
Photo 22	5089345	586008	45.95229	-91.89019	N/A
Photo 23	5084649	590966	45.90939	-91.82713	N/A
Photo 24	5089429	585972	45.95304	-91.89065	N/A
Photo 25	5084668	590792	45.90959	-91.82937	N/A
Photo 26	5089498	585906	45.95367	-91.89148	N/A
Photo 27	5089152	585978	45.95055	-91.89062	N/A
Photo 28	5089429	585972	45.95304	-91.89065	N/A

Photo 1. Reach 1, view looking upstream from Transect 3.

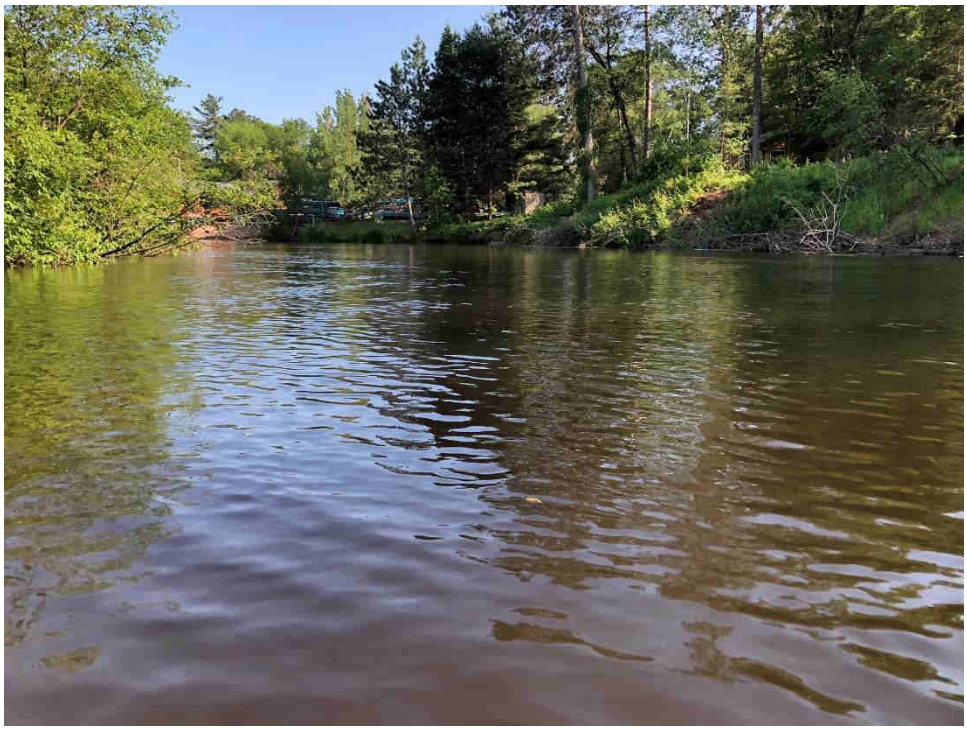


Photo 2. Reach 1, view looking upstream from Transect 7.

Photo 3. Reach 1, view looking downstream from Transect 9.

Photo 4. Reach 1, view looking upstream from Transect 9.

Photo 5. Reach 2, view looking upstream from Transect 3.

Photo 6. Reach 2, view looking upstream from Transect 4.

Photo 7. Reach 2, view looking across the river from the left descending bank near Transect 5.

Photo 8. Reach 2, view looking downstream from Transect 7.

Photo 9. Reach 2, view looking downstream from Transect 10.

Photo 10. Reach 2, view of divers searching for mussels on Transect 10.

Photo 11. Representative photo of Mucket (*Actinonaias ligamentina*) collected in the study area.

Photo 12. Representative photo of Elktoe (*Alasmidonta marginata*) collected in the study area.

Photo 13. Representative photo of Threeridge (*Amblema plicata*) collected in the study area.

Photo 14. Representative photo of Pimpleback (*Cyclonaias pustulosa*) collected in the study area.

Photo 15. Representative photo of Purple Wartyback (*Cyclonaias tuberculata*) collected in the study area.

Photo 16. Representative photo of Spike (*Eurynia dilatata*) collected in the study area.

Photo 17. Representative photo of Wabash Pigtoe (*Fusconaia flava*) collected in the study area.

Photo 18. Representative photo of Plain Pocketbook (*Lampsilis cardium*) collected in the study area.

Photo 19. Representative photo of Fatmucket (*Lampsilis siliquoidea*) collected in the study area.

Photo 20. Representative photo of Fluted Shell (*Lasmigona costata*) collected in the study area.

Photo 21. Representative photo of Black Sandshell (*Ligumia recta*) collected in the study area.

Photo 22. Representative photo of Hickorynut (*Obovaria olivaria*) collected in the study area.

Photo 23. Representative photo of Round Pigtoe (*Pleurobema sintoxia*) collected in the study area.

Photo 24. Representative photo of Pink Heelsplitter (*Potamilus alatus*) collected in the study area.

Photo 25. Representative photo of Giant Floater (*Pyganodon grandis*) collected in the study area.

Photo 26. Representative photo of Creeper (*Strophitus undulatus*) collected in the study area.

Photo 27. Representative photo of shell erosion observed on some live mussels in the project area.

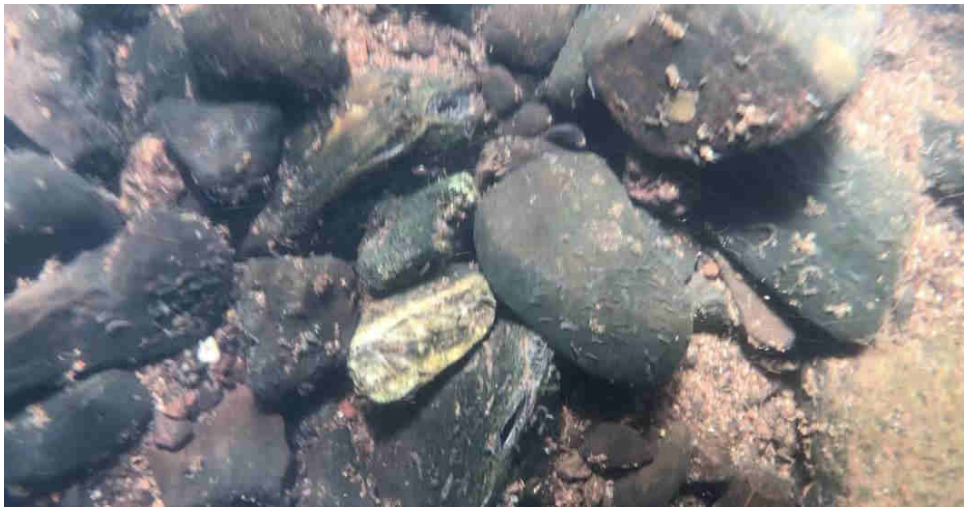


Photo 28. Representative photo of live mussels in the substrate with siphons visible.

APPENDIX E-40 WDNR Trego Project Macroinvertebrate Sampling Data

Monitoring Station

Station ID 10037360
Station Name Namekagon River 100ft Below CTH K

Show specific parameter: <Show All>

Sample Results

Previous 1-25 of 197 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPHEMEROPTERA BAETIDAE		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPHEMEROPTERA BAETIDAE PLAUDITUS DUBIUS		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPHEMEROPTERA HEPTAGENIIDAE		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPHEMEROPTERA HEPTAGENIIDAE MACCAFFERTIUM		38			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPHEMEROPTERA HEPTAGENIIDAE MACCAFFERTIUM MEDIOPUNCTATUM		23			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPHEMEROPTERA ISONYCHIIDAE ISONYCHIA		59			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE		14			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CHEUMATOPSYCHE		22			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE HYDROPSYCHE		5			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE HYDROPSYCHE PHALERATA		18			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE HYDROPSYCHE SCALARIS		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE MACROSTEMUM ZEBRATUM		3			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CERATOPSYCHE		4			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CERATOPSYCHE ALHEDRA		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CERATOPSYCHE MOROSA BIFIDA FORM SCHMUDE, HILSENHOFF 1986		5			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CERATOPSYCHE MOROSA MOROSA FORM SCHMUDE, HILSENHOFF 1986		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CERATOPSYCHE WALKERI		16			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CERATOPSYCHE MOROSA		24			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPTILIDAE		5			

Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA HYDROPTILIDAE HYDROPTILA	3
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA LEPTOCERIDAE OECETIS	4
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA PHILOPOTAMIDAE	12
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA PHILOPOTAMIDAE CHIMARRA OBSCURA	19
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA POLYCENTROPODIDAE NEURECLIPSIS	12

Monitoring Station

Station ID 10037360
Station Name Namekagon River 100ft Below CTH K

Show specific parameter: <Show All>

Sample Results

Previous 26-50 of 197 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	TRICHOPTERA PSYCHOMYIIDAE PSYCHOMYIA FLAVIDA		2			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	COLEOPTERA ELMIDAE STENELMIS		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ATHERICIDAE ATHERIX VARIEGATA		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA EMPIDIDAE HEMERODROMIA		2			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA SIMULIIDAE SIMULIUM		3			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA TIPULIDAE ANTOCHA		4			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA CHIRONOMIDAE		2			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA TANYPODINAE 0		2			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA TANYPODINAE 0 CONCHAPELOPIA		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1		10			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 CARDIOCLADIUS		4			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 CRICOTOPUS (CRICOTOPUS)		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 ORTHOCLADIUS (ORTHOCLADIUS)		9			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 SYNORTHOCLADIUS		8			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 THIENEMANNIELLA		47			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 TVETENIA BAVARICA GROUP BODE 1983		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA CHIRONOMINAE 4		2			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA CHIRONOMINAE 4 RHEOTANYTARSUS		60			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA CHIRONOMINAE 4 RHEOTANYTARSUS -- PUPA		1			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	HAPLOTAXIDA NAIDIDAE		1			

Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 CRICOTOPUS (CRICOTOPUS) BICINCTUS	8
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 CRICOTOPUS (CRICOTOPUS) TRIFASCIA	3
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 CRICOTOPUS (CRICOTOPUS) ANNULATOR "COMPLEX" EPLER 2001	1
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 CRICOTOPUS/ORTHOCLADIUS FERRINGTON ET AL. 2008	7
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA CHIRONOMINAE 4 PHAENOPSECTRA OBEDIENS GROUP EPLER 2001	1

Monitoring Station

Station ID 10037360
Station Name Namekagon River 100ft Below CTH K

Show specific parameter: <Show All>

Sample Results

Previous 51-75 of 197 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA CHIRONOMINAE 4 POLYPEDILUM (URESIPEDILUM) FLAVUM		17			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 TVETENIA DISCOLORIPES GROUP BODE 1983		7			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPHEMEROPTERA BAETIDAE BAETIS FLAVISTRIGA GROUP		2			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Index of Biological Integrity (IBI), Wadable					
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	HILSENHOFF'S BIOTIC INDEX (HBI)		4.31			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	FAMILY-LEVEL BIOTIC INDEX (FBI)		4.671			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	HBI Max 10		4.389			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	SPECIES RICHNESS		38			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	GENERA RICHNESS		30			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT EPT INDIVIDUALS		59			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT EPT GENERA		43			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT CHIRONOMIDAE INDIVIDUALS		38			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	SHANNON'S DIVERSITY INDEX		3.967			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT SCRAPERS		13			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT FILTERER		56			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT SHREDDERS		6			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT GATHERERS		21			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Family Rank 1		CHIRONOMIDAE			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Family Rank 2		HYDROPSYCHIDAE			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Family Rank 3		HEPTAGENIIDAE			

Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Family Rank 4	ISONYCHIIDAE
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Family Rank 5	PHILOPOTAMIDAE
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Genus Rank 1	MACCAFFERTIUM
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Genus Rank 2	RHEOTANYTARSUS
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Genus Rank 3	ISONYCHIA

Monitoring Station

Station ID 10037360
Station Name Namekagon River 100ft Below CTH K

Show specific parameter: <Show All>

Sample Results

Previous 51-75 of 197 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA CHIRONOMINAE 4 POLYPEDILUM (URESIPEDILUM) FLAVUM		17			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DIPTERA ORTHOCLADIINAE 1 TVETENIA DISCOLORIPES GROUP BODE 1983		7			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPHEMEROPTERA BAETIDAE BAETIS FLAVISTRIGA GROUP		2			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Index of Biological Integrity (IBI), Wadable					
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	HILSENHOFF'S BIOTIC INDEX (HBI)		4.31			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	FAMILY-LEVEL BIOTIC INDEX (FBI)		4.671			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	HBI Max 10		4.389			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	SPECIES RICHNESS		38			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	GENERA RICHNESS		30			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT EPT INDIVIDUALS		59			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT EPT GENERA		43			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT CHIRONOMIDAE INDIVIDUALS		38			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	SHANNON'S DIVERSITY INDEX		3.967			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT SCRAPERS		13			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT FILTERER		56			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT SHREDDERS		6			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	PERCENT GATHERERS		21			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Family Rank 1		CHIRONOMIDAE			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Family Rank 2		HYDROPSYCHIDAE			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Family Rank 3		HEPTAGENIIDAE			

Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Family Rank 4	ISONYCHIIDAE
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Family Rank 5	PHILOPOTAMIDAE
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Genus Rank 1	MACCAFFERTIUM
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Genus Rank 2	RHEOTANYTARSUS
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Genus Rank 3	ISONYCHIA

Monitoring Station

Station ID 10037360
Station Name Namekagon River 100ft Below CTH K

Show specific parameter: <Show All>

Sample Results

Previous 76-100 of 197 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Genus Rank 4		CERATOPSYCHE			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Genus Rank 5		THIENEMANNIELLA			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Mean Pollution Tolerance Value		4.514			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Macroinvertebrate Index of Biotic Integrity (IBI), Non-Wadable		90			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DEPO Percent Individuals (DEP_PC_CNT)		6.413			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DEPO Genera (DEPO_G)		10			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	DEPO, percent genera (DEP_PC_GEN)		27.027			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPT Genera (EPT_GENERA)		13			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPT Individuals (EPT_COUNT)		297			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPT Percent Individuals (EPT_PC_CNT)		59.519			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Amph Percent Individuals (AMP_PC_CNT)		0			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPT Percent Genera (EPT_PC_GEN)		44.828			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Isop Percent Individuals (ISO_PC_CNT)		0			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Isop Genera (ISOP_G)		0			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Isop Percent Genera (ISO_PC_GEN)		0			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Dipt Percent Genera (DIP_PC_GEN)		51.724			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Dipt Percent Individuals (DIP_PC_CNT)		40.281			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Chir Percent Individuals (CHI_PC_CNT)		38.277			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Chir Percent Genera (CHI_PC_GEN)		37.931			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Gatherers Percent Individuals (GAT_PC_CNT)		20.363			

Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Gatherers Percent Genera (GAT_PC_GEN)	31.034
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Scrapers Percent Individuals (SCR_PC_CNT)	12.903
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Shredders Percent Individuals (SHR_PC_CNT)	6.048
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Insect Taxa (INSECT_T)	37
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Insect Percent Individuals (INSECT_PI)	99.8

Monitoring Station

Station ID 10037360
Station Name Namekagon River 100ft Below CTH K

Show specific parameter: <Show All>

Sample Results

Previous 101-125 of 197 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	EPT Taxa (EPT_T)		18			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Dominance 3 Percent Individuals (DOM3_PI)		33.2			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Intolerant EPT 2 Percent Individuals (INTOL_EPT2_PI)		19.4			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Tolerant Chir Percent Individuals (TOL_CHIR8_PI)		0			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Functional Trait Niches (ECOFTN)		12			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Amph Isop Percent Individuals (A_I_PC_CNT)		0			
Large River Macroinvertebrate Sampling	09/11/2012 12:00 AM	Species Richness (Wadable IBI Intermediate)		38			
2018 CWA Impairment Assessments	09/11/2012 12:00 AM	Non-Wadeable Stream 10 Year Mean mIBI Assessment Value		90			
2018 CWA Impairment Assessments	09/11/2012 12:00 AM	Assessment River Station Natural Community		LARGE RIVER			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	PLECOPTERA PERLIDAE		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	PLECOPTERA PERLIDAE PARAGNETINA MEDIA		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	PLECOPTERA PTERONARCYIDAE PTERONARCYS		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA BAETIDAE		4			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA BAETIDAE BAETIS		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA BAETIDAE BAETIS INTERCALARIS		7			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA BAETIDAE PLAUDITUS DUBIUS		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA BAETIDAE HETEROCLOEON CURIOSUM		8			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA BAETIDAE ACENTRELLA TURBIDA		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA BAETIDAE PLAUDITUS		3			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA HEPTAGENIIDAE MACCAFFERTIUM		2			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA HEPTAGENIIDAE MACCAFFERTIUM EXIGUUM		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point	08/06/2003 12:00 AM	EPHEMEROPTERA HEPTAGENIIDAE		17			

Macroinvertebrate Analyses		MACCAFFERTIUM MEDIOPUNCTATUM	
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA ISONYCHIIDAE ISONYCHIA	24
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE	21

Monitoring Station

Station ID 10037360
Station Name Namekagon River 100ft Below CTH K

Show specific parameter: <Show All>

Sample Results

Previous 126-150 of 197 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE HYDROPSYCHE		4			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE HYDROPSYCHE PHALERATA		7			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE HYDROPSYCHE SCALARIS		2			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE MACROSTEMUM ZEBRATUM		4			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CERATOPSYCHE		15			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CERATOPSYCHE ALTERNANS		41			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CERATOPSYCHE BRONTA		2			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE CERATOPSYCHE MOROSA BIFIDA FORM SCHMUDE, HILSENHOFF 1986		30			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA HYDROPSYCHIDAE -- PUPA		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA PHILOPOTAMIDAE		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	TRICHOPTERA PHILOPOTAMIDAE CHIMARRA OBSCURA		4			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	COLEOPTERA GYRINIDAE DINEUTUS		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA SIMULIIDAE		1			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA SIMULIIDAE SIMULIUM		74			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA SIMULIIDAE SIMULIUM LUGGERI		10			

Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA SIMULIIDAE SIMULIUM -- PUPA	7
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA TANYPODINAE 0	1
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA ORTHOCLADIINAE 1 CARDIOCLADIUS	1
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA ORTHOCLADIINAE 1 NANOCLADIUS (NANOCLADIUS) CF. RECTINERVIS EPLER 2001	1
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA ORTHOCLADIINAE 1 SYNORTHOCLADIUS	1
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA CHIRONOMINAE 4	10
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA CHIRONOMINAE 4 RHEOTANYTARSUS	139
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA CHIRONOMINAE 4 STEMPELLINELLA	1
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA CHIRONOMINAE 4 TANYTARSUS	1
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	VENEROIDA PISIDIIDAE	1

Monitoring Station

Station ID 10037360
Station Name Namekagon River 100ft Below CTH K

Show specific parameter: <Show All>

Sample Results

Previous 151-175 of 197 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA CHIRONOMINAE 4 POLYPEDILUM (URESIPEDILUM)		12			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA ORTHOCLADIINAE 1 TVETENIA DISCOLORIPES GROUP BODE 1983		63			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DIPTERA CHIRONOMIDAE -- PUPA		2			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPHEMEROPTERA BAETIDAE BAETIS FLAVISTRIGA GROUP		6			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	HILSENHOFF'S BIOTIC INDEX (HBI)		4.756			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	FAMILY-LEVEL BIOTIC INDEX (FBI)		5.362			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	HBI Max 10		4.023			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	SPECIES RICHNESS		29			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	GENERA RICHNESS		24			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	PERCENT EPT INDIVIDUALS		41			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	PERCENT EPT GENERA		50			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	PERCENT CHIRONOMIDAE INDIVIDUALS		43			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	SHANNON'S DIVERSITY INDEX		2.959			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	PERCENT SCRAPERS		5			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	PERCENT FILTERER		74			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	PERCENT SHREDDERS		3			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	PERCENT GATHERERS		17			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Mean Pollution Tolerance Value		3.654			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Macroinvertebrate Index of Biotic Integrity (IBI), Non-Wadable		75			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DEPO Percent Individuals (DEP_PC_CNT)		3.295			

Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DEPO Genera (DEPO_G)	5
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	DEPO, percent genera (DEP_PC_GEN)	17.857
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPT Genera (EPT_GENERA)	12
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPT Individuals (EPT_COUNT)	210
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPT Percent Individuals (EPT_PC_CNT)	40.698

Monitoring Station

Station ID 10037360
Station Name Namekagon River 100ft Below CTH K

Show specific parameter: <Show All>

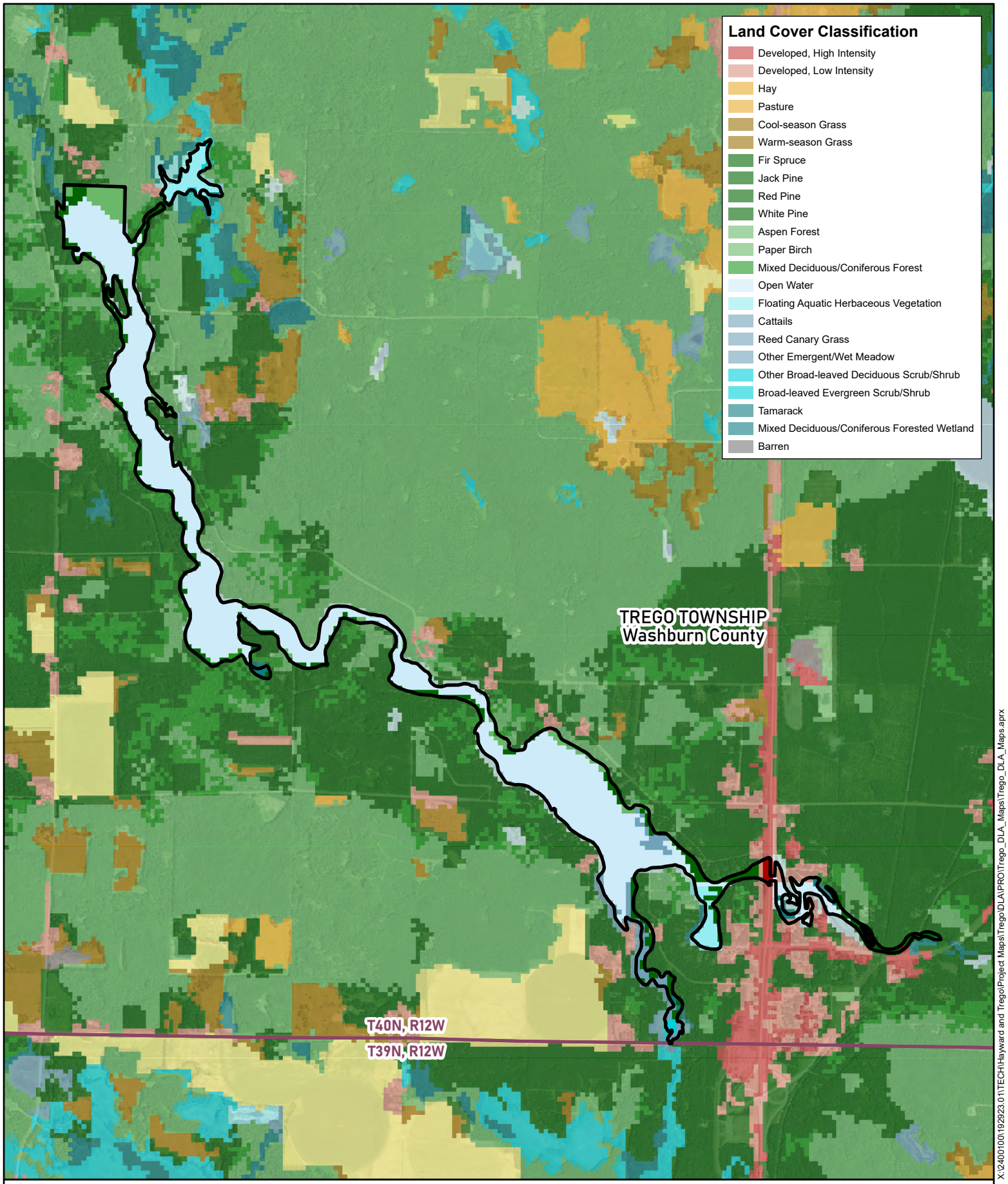
Sample Results

Previous 176-197 of 197 Next

Project	Date/Time	DNR Parameter	Species	Result	Units	Present/Absent	Lab Comments
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Amph Percent Individuals (AMP_PC_CNT)		0			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPT Percent Genera (EPT_PC_GEN)		52.174			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Isop Percent Individuals (ISO_PC_CNT)		0			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Isop Genera (ISOP_G)		0			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Isop Percent Genera (ISO_PC_GEN)		0			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Dipt Percent Genera (DIP_PC_GEN)		43.478			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Dipt Percent Individuals (DIP_PC_CNT)		59.109			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Chir Percent Individuals (CHI_PC_CNT)		42.636			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Chir Percent Genera (CHI_PC_GEN)		39.13			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Gatherers Percent Individuals (GAT_PC_CNT)		17.121			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Gatherers Percent Genera (GAT_PC_GEN)		27.273			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Scrapers Percent Individuals (SCR_PC_CNT)		5.447			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Shredders Percent Individuals (SHR_PC_CNT)		2.529			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Insect Taxa (INSECT_T)		28			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Insect Percent Individuals (INSECT_PI)		99.807			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	EPT Taxa (EPT_T)		17			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Dominance 3 Percent Individuals (DOM3_PI)		53.385			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Intolerant EPT 2 Percent Individuals (INTOL_EPT2_PI)		8.511			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Tolerant Chir Percent Individuals (TOL_CHIR8_PI)		0			
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Functional Trait Niches (ECOFTN)		11			

Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Amph Isop Percent Individuals (A_I_PC_CNT)	0
Large River Macroinvertebrate Sampling 2003-2006, 2009 , UW Stevens Point Macroinvertebrate Analyses	08/06/2003 12:00 AM	Species Richness (Wadable IBI Intermediate)	29

APPENDIX E-41 Trego Project WISCLAND 2 Cover Type Maps



Current Project Boundary

Township Range

N

0 1,000 2,000

Feet

Xcel Energy

Mead & Hunt

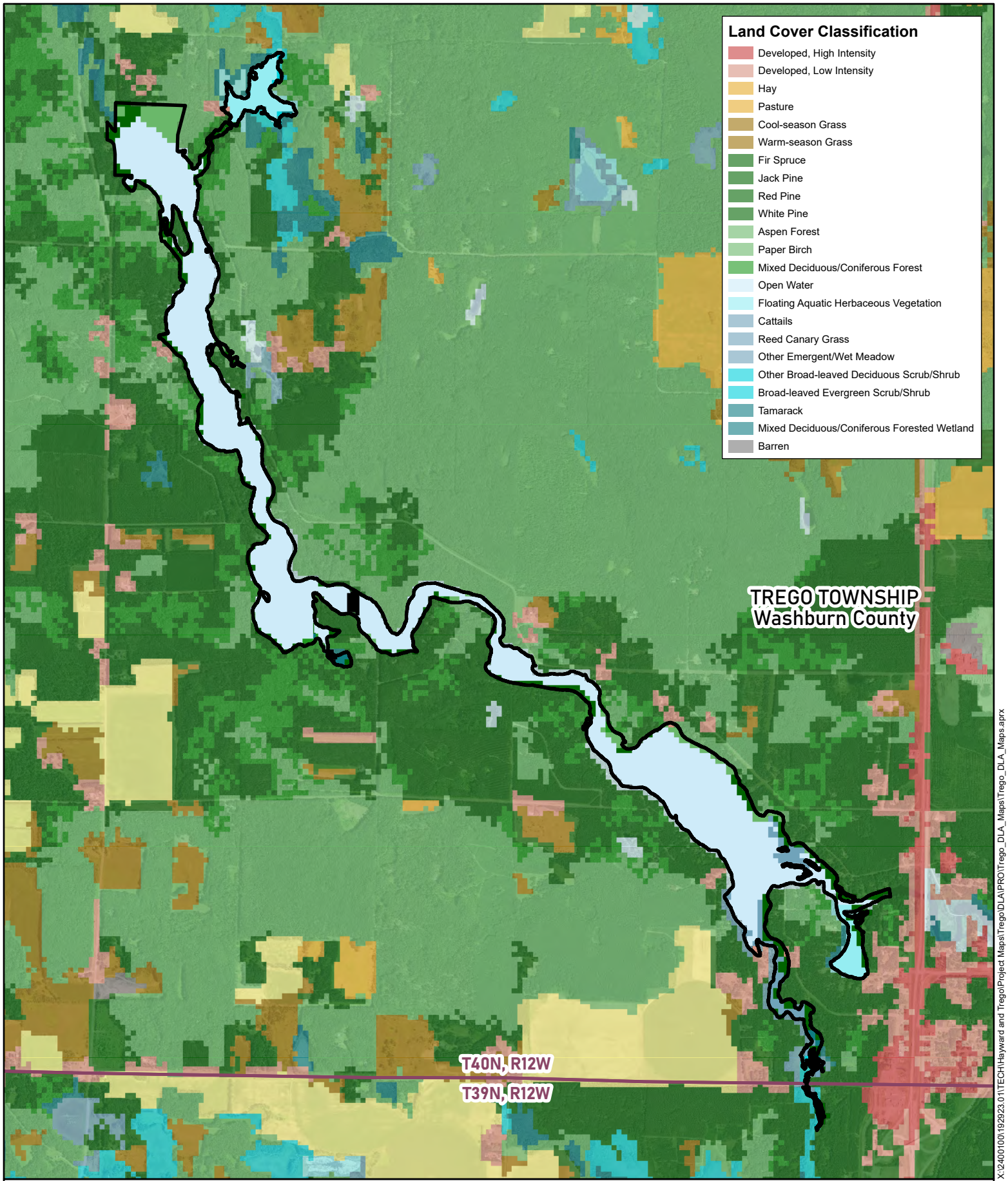
Note: the impounded Proposed Project Boundary is established at elevation 1,035.2 feet NGVD 1929.

Trego Hydroelectric Project
Major Land Cover in Vicinity of
Current Project Boundary

FERC No. 2711

Source Layer: Wisconsin Department of Natural Recourses WISCLAND 2019 update, WI 2022 NAIP (natural color, 0.6-meter resolution)

X:\24001000\192923.011\TECH\Hayward and Trego\Project Maps\Trego\DLA\PRO\Trego_DLA_Maps\Trego_DLA_Maps.aprx



Proposed Project Boundary

Township Range

N

0 1,000 2,000

Feet

Xcel Energy

Mead & Hunt

Note: the impounded Proposed Project Boundary is established at elevation 1,035.2 feet NGVD 1929.

Trego Hydroelectric Project
Major Land Cover in Vicinity of
Proposed Project Boundary

FERC No. 2711

Source Layer: Wisconsin Department of Natural Recourses WISCLAND 2019 update, WI 2022 NAIP (natural color, 0.6-meter resolution)

X:\24001000\192923.011\TECH\Hayward and Trego\Project Maps\Trego\DLA\PRO\Trego_DLA_Maps\Trego_DLA_Maps.aprx

APPENDIX E-42 Trego Project eBird Checklists

eBird Field Checklist

Trego Nature Trail (Washburn Co.)

Washburn, Wisconsin, US

ebird.org/hotspot/L463671

102 species (+3 other taxa) - Year-round, All years

Date: _____
Start time: _____
Duration: _____
Distance: _____
Party size: _____
Notes:

This checklist is generated with data from eBird (ebird.org), a global database of bird sightings from birders like you. If you enjoy this checklist, please consider contributing your sightings to eBird. It is 100% free to take part, and your observations will help support birders, researchers, and conservationists worldwide.

Go to ebird.org to learn more!

Waterfowl

___Canada Goose
___Trumpeter Swan
___Wood Duck
___Blue-winged Teal
___Mallard
___Common Goldeneye
___Hooded Merganser
___Red-breasted Merganser

Grouse, Quail, and Allies

___Wild Turkey
___Ruffed Grouse

Pigeons and Doves

___Mourning Dove

Cuckoos

___Black-billed Cuckoo

Nightjars

___Common Nighthawk
___Eastern Whip-poor-will

Hummingbirds

___Ruby-throated Hummingbird

Rails, Gallinules, and Allies

___Sora

Shorebirds

___Killdeer
___Spotted Sandpiper

Loons

___Common Loon

Herons, Ibis, and Allies

___Green Heron

Vultures, Hawks, and Allies

___Turkey Vulture
___Osprey
___Sharp-shinned Hawk
___Bald Eagle
___Broad-winged Hawk

Kingfishers

___Belted Kingfisher

Woodpeckers

___Yellow-bellied Sapsucker
___Downy Woodpecker
___Hairy Woodpecker
___Downy/Hairy Woodpecker
___Pileated Woodpecker
___Northern Flicker

Tyrant Flycatchers: Pewees, Kingbirds, and Allies

___Eastern Wood-Pewee
___Alder Flycatcher
___Least Flycatcher
___Eastern Phoebe
___Great Crested Flycatcher
___Eastern Kingbird

Vireos

___Yellow-throated Vireo
___Blue-headed Vireo
___Red-eyed Vireo

Jays, Magpies, Crows, and Ravens

___Blue Jay
___American Crow
___Common Raven

___crow/raven sp.

Tits, Chickadees, and Titmice

___Black-capped Chickadee

Martins and Swallows

___Northern Rough-winged Swallow
___Tree Swallow
___Barn Swallow

Kinglets

___Ruby-crowned Kinglet
___Golden-crowned Kinglet

Nuthatches

___Red-breasted Nuthatch
___White-breasted Nuthatch

Treecreepers

___Brown Creeper

Gnatcatchers

___Blue-gray Gnatcatcher

Wrens

___House Wren
___Sedge Wren

Catbirds, Mockingbirds, and Thrashers

___Gray Catbird
___Brown Thrasher

Thrushes

___Eastern Bluebird
___Veery
___Gray-cheeked Thrush
___Swainson's Thrush
___Hermit Thrush
___Wood Thrush
___American Robin

Waxwings

___Cedar Waxwing

Finches, Euphonias, and Allies

___Purple Finch
___Common Redpoll
___Pine Siskin
___American Goldfinch

New World Sparrows

___Chipping Sparrow
___Fox Sparrow
___Dark-eyed Junco
___White-throated Sparrow
___Song Sparrow
___Swamp Sparrow
___Eastern Towhee

Blackbirds

___Baltimore Oriole
___Red-winged Blackbird
___Brown-headed Cowbird
___Common Grackle

Wood-Warblers

___Ovenbird
___Golden-winged Warbler
___Black-and-white Warbler
___Tennessee Warbler
___Nashville Warbler
___Common Yellowthroat
___American Redstart
___Northern Parula
___Magnolia Warbler
___Bay-breasted Warbler
___Blackburnian Warbler
___Yellow Warbler
___Chestnut-sided Warbler
___Blackpoll Warbler
___Pine Warbler
___Yellow-rumped Warbler
___Black-throated Green Warbler
___Canada Warbler
___new world warbler sp.

Cardinals, Grosbeaks, and Allies

___Scarlet Tanager
___Northern Cardinal
___Rose-breasted Grosbeak
___Indigo Bunting

eBird Field Checklist

Namekagon River--County K Landing

Washburn, Wisconsin, US

ebird.org/hotspot/L768244

58 species (+2 other taxa) - Year-round, All years

Date: _____
Start time: _____
Duration: _____
Distance: _____
Party size: _____
Notes:

This checklist is generated with data from eBird (ebird.org), a global database of bird sightings from birders like you. If you enjoy this checklist, please consider contributing your sightings to eBird. It is 100% free to take part, and your observations will help support birders, researchers, and conservationists worldwide.

Go to ebird.org to learn more!

Waterfowl

___Canada Goose
___Mallard
___Common Merganser
___Common/Red-breasted Merganser

Grouse, Quail, and Allies

___Wild Turkey
___Ruffed Grouse

Pigeons and Doves

___Mourning Dove

Nightjars

___Eastern Whip-poor-will

Hummingbirds

___Ruby-throated Hummingbird

Loons

___Common Loon

Herons, Ibis, and Allies

___Great Blue Heron
___Green Heron

Vultures, Hawks, and Allies

___Turkey Vulture
___Osprey
___Bald Eagle

Kingfishers

___Belted Kingfisher

Woodpeckers

___Downy Woodpecker
___Hairy Woodpecker
___Pileated Woodpecker
___Northern Flicker

Tyrant Flycatchers: Pewees, Kingbirds, and Allies

___Eastern Wood-Pewee
___Alder Flycatcher
___Least Flycatcher
___Eastern Phoebe
___Great Crested Flycatcher
___Eastern Kingbird

Vireos

___Yellow-throated Vireo
___Red-eyed Vireo

Jays, Magpies, Crows, and Ravens

___Blue Jay
___American Crow
___Common Raven

Tits, Chickadees, and Titmice

___Black-capped Chickadee

Kinglets

___Golden-crowned Kinglet

Nuthatches

___Red-breasted Nuthatch
___White-breasted Nuthatch
___nuthatch sp.

Wrens

___House Wren

Catbirds, Mockingbirds, and Thrashers

___Gray Catbird

Thrushes

___Veery
___American Robin

Waxwings

___Cedar Waxwing

Finches, Euphonias, and Allies

___American Goldfinch

New World Sparrows

___Chipping Sparrow
___Dark-eyed Junco
___Song Sparrow
___Eastern Towhee

Blackbirds

___Baltimore Oriole

Wood-Warblers

___Ovenbird
___Northern Waterthrush
___Golden-winged Warbler
___Black-and-white Warbler
___Nashville Warbler
___Common Yellowthroat
___Yellow Warbler
___Chestnut-sided Warbler
___Pine Warbler
___Yellow-rumped Warbler

Cardinals, Grosbeaks, and Allies

___Scarlet Tanager
___Northern Cardinal
___Indigo Bunting

APPENDIX E-43 Trego Project IPaC Official Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793 Fax: (952) 646-2873

In Reply Refer To: March 21, 2023
Project Code: 2023-0058043
Project Name: Trego Hydroelectric Project Relicensing

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

Threatened and Endangered Species
The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance
Please refer to refer to our Section 7 website for guidance and technical assistance, including step-by-step instructions for making effects determinations for each species that might be present and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, USDA Rural Development projects, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

We recommend running the project (if it qualifies) through our **Minnesota-Wisconsin Federal Endangered Species Determination Key (Minnesota-Wisconsin ("D-key"))**. A demonstration video showing how-to access and use the determination key is available. Please note that the Minnesota-Wisconsin D-key is the third option of 3 available d-keys. D-keys are tools to help Federal agencies and other project proponents determine if their proposed action has the potential to adversely affect federally listed species and designated critical habitat. The Minnesota-Wisconsin D-key includes a structured set of questions that assists a project proponent in determining whether a proposed project qualifies for a certain predetermined consultation outcome for all federally listed species found in Minnesota and Wisconsin (except for the northern long-eared bat- see below), which includes determinations of “no effect” or “may affect, not likely to adversely affect." In each case, the Service has compiled and analyzed the best available information on the species’ biology and the impacts of certain activities to support these determinations.

If your completed d-key output letter shows a "No Effect" (NE) determination for all listed species, print your IPaC output letter for your files to document your compliance with the Endangered Species Act.

For Federal projects with a “Not Likely to Adversely Affect” (NLAA) determination, our concurrence becomes valid if you do not hear otherwise from us after a 30-day review period, as indicated in your letter.

If your d-key output letter indicates additional coordination with the Minnesota-Wisconsin Ecological Services Field Office is necessary (i.e., you get a “May Affect” determination), you will be provided additional guidance on contacting the Service to continue ESA coordination outside of the key; ESA compliance cannot be concluded using the key for “May Affect” determinations unless otherwise indicated in your output letter.

Note: Once you obtain your official species list, you are not required to continue in IPaC with d-keys, although in most cases these tools should expedite your review. If you choose to make an effects determination on your own, you may do so. If the project is a Federal Action, you may want to review our section 7 step-by-step instructions before making your determinations.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **no effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species on our office website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **no effect**. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

Northern Long-Eared Bats
Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

This species hibernates in caves or mines only during the winter. In Minnesota and Wisconsin, the hibernation season is considered to be November 1 to March 31. During the active season (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A monoculture stand of shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:

- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or
- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No**

Effect determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

If any of the above activities are proposed, and the northern long-eared bat appears on the user's species list, the federal project user will be directed to either the northern long-eared bat 4(d) D-key or the Federal Highways Administration, Federal Railways Administration, and Federal Transit Administration Indiana bat/ Northern long-eared bat D-key, depending on the type of project and federal agency involvement. Similar to the Minnesota-Wisconsin D-key, these d-keys helps to determine if prohibited take might occur and, if not, will generate an automated verification letter. The 4(d) D-key streamlines consultation under the 2016 range-wide programmatic biological opinion for the 4(d) rule.

Please note: On November 30, 2022, the Service published a proposal final rule to reclassify the northern long-eared bat as endangered under the Endangered Species Act. On January 26, 2023, the Service published a 60-day extension for the final reclassification rule in the Federal Register, moving the effective listing date from January 30, 2023, to March 31, 2023. This extension will provide stakeholders and the public time to preview interim guidance and consultation tools before the rule becomes effective. When available, the tools will be available on the Service's northern long-eared bat website (https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis). Once the final rule goes into effect on March 31, 2023, the 4(d) D-key will no longer be available (4(d) rules are not available for federally endangered species) and will be replaced with a new Range-wide NLEB D-key (range-wide d-key). For projects not completed by March 31, 2023, that were previously reviewed under the 4(d) d-key, there may be a need for reinitiation of consultation. For these ongoing projects previously reviewed under the 4(d) d-key that may result in incidental take of the northern long-eared bat, we recommend you review your project using the new range-wide d-key once available. If your project does not comply with the range-wide d-key, it may be eligible for use of the Interim (formal) Consultation framework (framework). The framework is intended to facilitate the transition from the 4(d) rule to typical Section 7 consultation procedures for federally endangered species and will be available only until spring 2024. Again, when available, these tools (new range-wide d-key and framework) will be available on the Service's northern long-eared bat website.

Whooping Crane
Whooping crane is designated as a non-essential experimental population in Wisconsin and consultation under Section 7(a)(2) of the Endangered Species Act is only required if project activities will occur within a National Wildlife Refuge or National Park. If project activities are proposed on lands outside of a National Wildlife Refuge or National Park, then you are not required to consult. For additional information on this designation and consultation requirements, please review "Establishment of a Nonessential Experimental Population of Whooping Cranes in the Eastern United States."

Other Trust Resources and Activities
Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically

authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

State Department of Natural Resources Coordination
While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.

Minnesota
Minnesota Department of Natural Resources - Endangered Resources Review Homepage
Email: Review.NHIS@state.mn.us

Wisconsin
Wisconsin Department of Natural Resources - Endangered Resources Review Homepage
Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
(952) 858-0793

PROJECT SUMMARY

Project Code: 2023-0058043
Project Name: Trego Hydroelectric Project Relicensing
Project Type: Dam - Operations
Project Description: Relicensing of the existing Trego Hydroelectric Project to continue operating the facility in a run-of-river mode. License application is due in 2023.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@45.9250056,-91.8709923057813,14z

Counties: Washburn County, Wisconsin

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Canada Lynx *Lynx canadensis* Population: Wherever Found in Contiguous U.S. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652	Threatened
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is **final** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black Tern *Chlidonias niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20

NAME	BREEDING SEASON
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see

below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

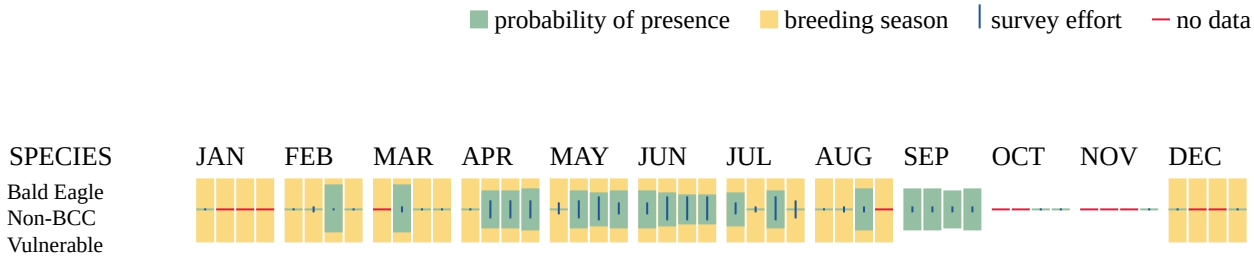
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding

in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1Bg
- PSS3Bg
- PFO2B
- PFO1C
- PFO1/SS1Bg
- PSS1/EM1Bg
- PSS1F

RIVERINE

- R2UBH
- R5UBH

LAKE

- L1UBH
- L2AB3H

FRESHWATER EMERGENT WETLAND

- PEM1C
- PEM1/ABF
- PEM1F

FRESHWATER POND

- PUBH

IPAC USER CONTACT INFORMATION

Agency: Mead & Hunt
Name: Darrin Johnson
Address: 2440 Deming Way
City: Middleton
State: WI
Zip: 53562
Email darrin.johnson@meadhunt.com
Phone: 6084430313

1414 West Hamilton Avenue
PO Box 8
Eau Claire, WI 54702-0008

February 26, 2021

VIA Electronic Mail

Ms. Cheryl Laatsch
Wisconsin DNR
N7725 Hwy 28
Horicon, WI 53032

Ms. Angela Tornes
National Park Service
626 E. Wisconsin Ave., Suite 400
Milwaukee, WI 53202

Mr. Nick Utrup
U.S. Fish & Wildlife Service
4101 American Boulevard East
Bloomington, MN 55425

Subject: **Recreation Report**
Trego Hydro – FERC Project No. 2711

Dear Ms. Laatsch, Ms. Tornes, and Mr. Utrup:

Enclosed for your review is the 2021 Recreation Report for the Trego Hydroelectric Project (Project). Pursuant to Article 408 of the Federal Energy Regulatory Commission's license for the Project, Northern States Power Company (licensee), d/b/a Xcel Energy, is required to monitor recreational use every six years to determine whether existing recreation facilities are meeting recreation needs. License Article 408 further directs licensee to allow the agencies 30 days to provide comment on the recreation report.

Please provide any comments you may have by **March 28, 2021**. If I do not hear from you by then, I will assume that you are satisfied with the report and will file it with the Commission accordingly. Should you have any questions, please feel free to contact me at (715) 225-8841 or matthew.j.miller@xcelenergy.com.

Sincerely,

Matthew J. Miller

Digitally signed by Matthew J. Miller
DN: cn=Matthew J. Miller, o=Xcel Energy, ou=Energy Supply, email=matthew.j.miller@xcelenergy.com, c=US
Date: 2021.02.25 21:39:51 -06'00'

Matthew Miller
Hydro License Compliance Consultant

Enclosure: Trego Recreation Report

c: Marty Sneen – EA Associates (via e-mail)
Scott Crotty, Rob Olson – Xcel Energy (via e-mail)
Trego Project Files

APPENDIX E-45 2021 NSPW Trego Project Recreation Report

Recreation Report for the Trego Hydroelectric Project

(FERC Project No. 2711)

Prepared for

Northern States Power Company – Wisconsin
(d/b/a Xcel Energy)

Prepared by

EA Engineering, Science, and Technology, Inc., PBC
444 Lake Cook Road, Suite 18
Deerfield, Illinois 60015
847-945-8010

February 2021
Version: DRAFT
EA Project No. 1605201

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Recreation Report for the Trego Hydroelectric Project (FERC Project No. 2711)

Prepared for

Northern States Power Company – Wisconsin
(d/b/a Xcel Energy)

Prepared by

EA Engineering, Science, and Technology, Inc., PBC
444 Lake Cook Road, Suite 18
Deerfield, Illinois 60015
847-945-8010

Name 1 Title	Date
Name 2 Title	Date

February 2021
Version: DRAFT
EA Project No. 16052.01

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CONTENTS

Page

LIST OF FIGURES ii
LIST OF TABLES iii
LIST OF ACRONYMS AND ABBREVIATIONS iv
1. INTRODUCTION 1-1
2. METHODS 2-1
2.1 INVENTORY OF FACILITIES 2-1
2.2 INTERVIEWS WITH OWNERS AND OPERATORS OF FACILITIES AND OTHER KEY PERSONNEL 2-1
2.3 COUNTS OF RECREATIONAL USERS 2-1
2.4 SELF-REPORTING SURVEYS 2-2
3. DESCRIPTIONS OF RECREATIONAL FACILITIES AT TREGO FLOWAGE 3-1
3.1 TOWN OF TREGO BOAT LANDING 3-1
3.2 TREGO TOWN PARK AND LANDING 3-1
3.3 TAILWATER ACCESS AND CANOE PORTAGE 3-1
3.4 NPS NAMEKAGON RIVER ACCESS 3-2
4. SUMMARIES OF INTERVIEWS WITH KEY PERSONNEL 4-1
4.1 CHRIS ROMPORTL, NPS 4-1
4.2 CRAIG ROBERTS, WDNR 4-2
4.3 RICKY REICHERT, XCEL ENERGY 4-2
4.4 JONATHON HAGEN, WDNR 4-2
5. RECREATIONAL USE ESTIMATES 5-1
6. RESULTS OF SELF-REPORTING SURVEYS 6-1
6.1 POPULAR ACTIVITIES 6-1
6.2 VISITOR SATISFACTION 6-1
6.3 REPORTED RECREATIONAL USE 6-3
7. DISCUSSION OF ADEQUACY OF CURRENT FACILITIES 7-1
8. RECOMMENDATIONS FOR FUTURE USE 8-1
9. REFERENCES 9-1

APPENDIX A: AGENCY CORRESPONDENCE

LIST OF FIGURES

Number	Title	Page
1-1	Location of Trego Lake	1-3
2-1	Trego Flowage self-reporting recreational use survey form	2-3
2-2	Examples of survey boxes installed at select recreational facilities	2-4
3-1	Map of Trego Flowage showing location of recreational facilities, 2020	3-3
5-1	Daytime recreational use estimates by month, Trego Flowage (January–December 2020)	5-6
5-2	Overnight recreational use estimates by month, Trego Flowage (January–December 2020)	5-7
6-1	Reported changes in recreational use of Trego Flowage due to the COVID-19 pandemic, January–December 2020 (n = 4)	6-7

LIST OF TABLES

Number	Title	Page
2-1	Estimated local population change, Trego Flowage tri-county area (2013/2014–2019)	2-2
5-1	Estimated count for daytime recreational use (in recreation days), Trego Flowage (January–December 2020)	5-3
5-2	Estimated count of daytime recreational use by type of day, Trego Flowage (January–December 2020)	5-4
5-3	Estimated count of overnight recreational use by type of day, Trego Flowage (January–December 2020)	5-7
6-1	Percentage of respondents (n = 4) who checked off listed activities in which they usually participate, Trego Flowage (January–December 2020)	6-1
6-2	Summary statistics for ratings of recreational facilities (on a scale of 1 to 5) and overall recreational experiences (on a scale of 1 to 10), Trego Flowage (January–December 2020)	6-2
6-3	Facility-specific visitor ratings and comments, Trego Flowage (January–December 2020)	6-2
6-4	General visitor comments, Trego Flowage (January–December 2020)	6-3
6-5	Proportions reported by respondents across listed modes of travel to Trego Flowage (January–December 2020)	6-3
6-6	Summary statistics for percent of recreation time (0–100%) spent at facilities, Trego Flowage (January–December 2020)	6-4
6-7	Average number of days and nights spent recreating, Trego Flowage (January–December 2020) (n = 3)	6-5
6-8	Summary statistics for proportion of recreation time at Trego Flowage (0–100%) spent during weekdays or weekends and holidays (January–December 2020)	6-5
6-9	Summary statistics for average number of hours spent at Trego Flowage during listed time periods (January–December 2020)	6-6
6-10	Summary statistics for average length of stay and average number of visitors per party, Trego Flowage (January–December 2020)	6-6

LIST OF ACRONYMS AND ABBREVIATIONS

a.k.a.	Also known as
ATV	All-terrain vehicle
COVID-19	Coronavirus Disease 2019
FERC	Federal Energy Regulatory Commission
NPS	National Park Service
WDNR	Wisconsin Department of Natural Resources

1. INTRODUCTION

Trego Flowage is a 460-acre impoundment of the Namekagon River located within the Township of Trego, Washburn County, Wisconsin (Figure 1-1). The impoundment contains 16.9 miles of shoreline, with approximately 14 percent of the shoreline accessible to the public. Recreation including canoeing, kayaking, and tubing are popular on the Namekagon River; however, much of this activity occurs outside the Trego Project boundary. Local outfitters rent equipment and offer shuttle services for these activities. The entirety of Trego Flowage is located within the St. Croix National Scenic Riverway, a unit of the National Park Service (NPS). Since the river is protected as a scenic waterway, personal watercraft (jet skis) are not permitted. During the winter season, snowmobiles and all-terrain vehicles (ATVs) may only cross the frozen river at locations along designated trails; they are not permitted to travel the length of the river. At the time of this report, no designated trails existed in the study area; therefore, ice travel by snowmobile or ATV is prohibited on Trego Flowage.

The Trego Hydroelectric Project (FERC Project No. 2711) operates under a 30-year license issued by the Federal Energy Regulatory Commission (FERC). License Article 408 requires that the Licensee (Xcel Energy) monitor recreational use of the Trego Hydroelectric Project area to determine whether existing recreational facilities are meeting recreational needs. In December 2018, FERC amended their regulations to remove §8.11, eliminating the requirement for licensees to file a Licensed Hydropower Development Recreation Report, designated as FERC Form No. 80 (Form 80). Form 80 solicited information on the use and development of recreational facilities at hydropower projects licensed by the Commission under the Federal Power Act. Therefore, a Trego Recreation Study was conducted in 2020 to comply with both the license article and amended FERC regulations.

The goals of the 2020 Trego Recreation Study were to:

- provide updates on the inventory and condition of the recreational facilities at Trego Flowage;
- estimate the recreational usage on Trego Flowage both as a whole and at specific recreational facilities;
- determine the adequacy of each of the recreational facilities and their ability to meet the current recreational demand; and
- obtain feedback from users of the recreational facilities to help gauge facility adequacy and receive input from the public on recommended improvements to facilities.

The results of the Trego Recreation Study are presented in this Recreation Report which includes the following items:

- annual recreation counts based on the data collected in 2013–2014 and the 2020 population and recreation trends;

- a discussion of the adequacy of the Licensee's recreational facilities in the study area to meet recreational demand;

- a description of the methodology used to extrapolate the 2013–2014 data to determine the recreational use of Trego Flowage in 2020; and

- recommendations to accommodate recreational needs in the study area.

Figure 1-1 Location of Trego Lake

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2. METHODS

This section describes the methods used to collect, summarize, and extrapolate the raw data acquired during the study. Each subsection focuses on the different types of data/information collected.

2.1 INVENTORY OF FACILITIES

A list and inventory of public and private recreational facilities located on Trego Flowage was created using previous recreation studies, maps/aerial images of the area, internet resources, and interviews. Section 3 describes each of the following public recreational facilities in detail:

- North Landing (Trego Landing Road), also known as (a.k.a.) Town of Trego Boat Landing
- Trego Lake County Park, a.k.a. Trego Town Park Landing
- Tailwater Access and Canoe Portage
- NPS Namekagon River Access.

2.2 INTERVIEWS WITH OWNERS AND OPERATORS OF FACILITIES AND OTHER KEY PERSONNEL

Phone interviews with key personnel associated with the recreational facilities on Trego Flowage were conducted during Fall 2020. Interviews were conducted with hydroelectric project operators, NPS, and the Wisconsin Department of Natural Resources (WDNR). The goals of these interviews were to characterize current recreation, assess the adequacy of the recreational facilities, identify any changes that have occurred since the 2013–2014 Recreation Study, and discuss improvements that are planned over the next several years. Details of each interview are contained in Section 4.

2.3 COUNTS OF RECREATIONAL USERS

No field surveys or passive counting efforts were conducted on Trego Flowage in 2020. Instead, estimated counts of recreational users are based on the local population change occurring since data were collected for the 2013–2014 Recreation Study. For a detailed description of the data collection and analysis methodologies used to produce the 2013–2014 Recreation Study, see Great Lakes Environmental Center (2015).

In order to quantify how recreational use of Trego Flowage may have changed between the 2013–2014 study period and the 2020 study period, estimates of population change at the county level were applied to the data reported in the 2013–2014 Recreation Study. Population estimates for three counties were obtained from the U.S. Census Bureau (2020) for the years 2013, 2014, and 2019 (being the most recent year for which estimates are available). The counties selected

were Washburn County, where Trego Flowage is located, and two neighboring counties nearest to Trego Flowage, i.e., Burnett and Sawyer counties. Population estimates were summed for all counties for the years 2013, 2014, and 2019 (Table 2-1). The tri-county population estimate averaged between years 2013 and 2014 was subtracted from the tri-county 2019 population estimate to yield the population change across all counties. The percent population change relative to the 2013–2014 average was then applied to the recreational use data reported in the 2013–2014 Recreation Study to produce estimates for recreational use in 2020 (see Section 5).

Table 2-1 Estimated local population change, Trego Flowage tri-county area (2013/2014–2019)

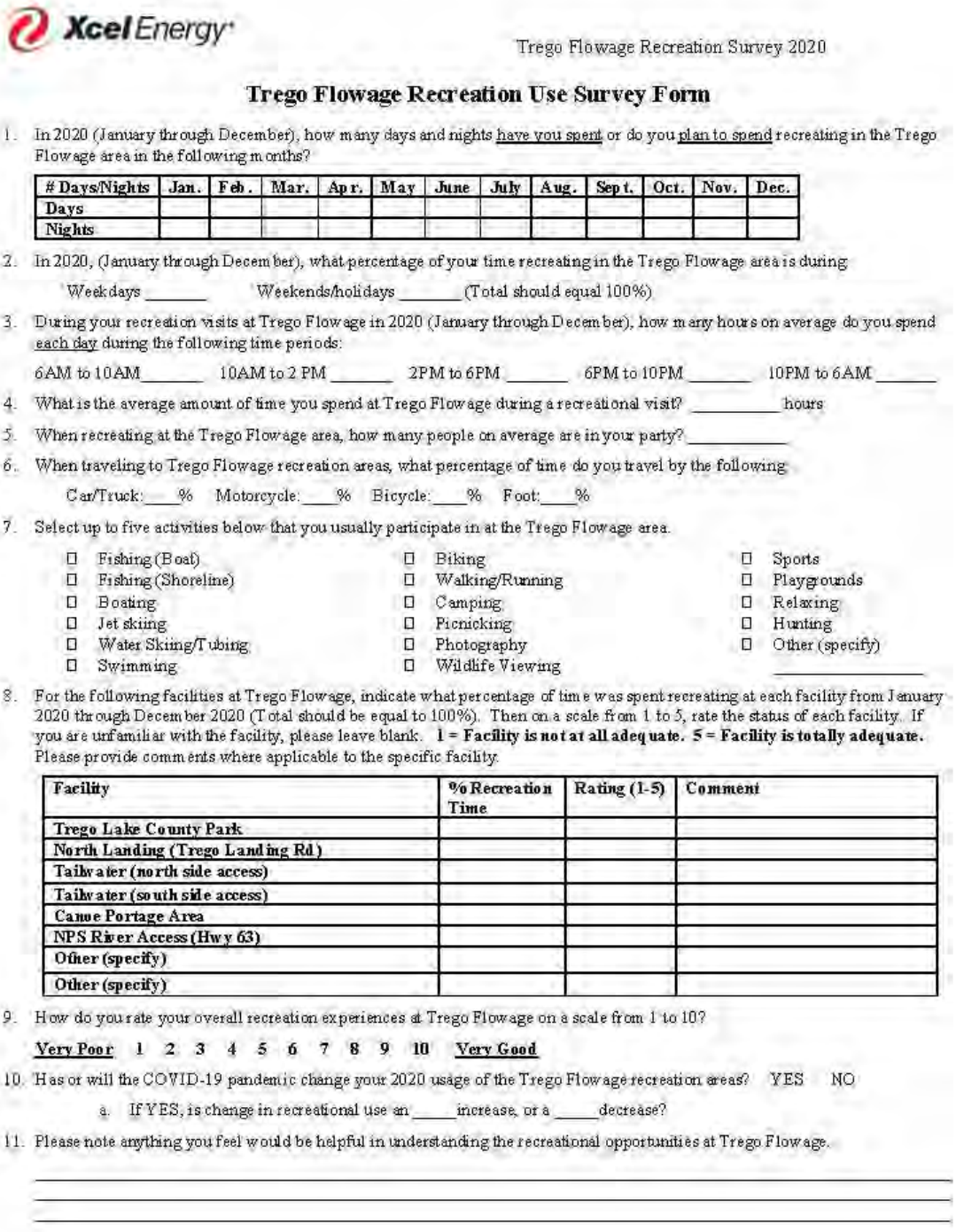
	Population, 2013	Population, 2014	Average Population, 2013–2014	Population, 2019	Population Change, 2013/14–2019	Population Change (percent)
Washburn County	15,661	15,658	15,660	15,720	+61	+0.4%
Burnett County	15,269	15,232	15,251	15,414	+164	+1.1%
Sawyer County	16,474	16,357	16,416	16,558	+143	+0.9%
All Counties	**47,404**	**47,247**	**47,326**	**47,692**	**+367**	**+0.8%**
Note: Due to rounding, sums may not add up as presented.						

2.4 SELF-REPORTING SURVEYS

A self-reporting survey form was developed to capture detailed information on visitor use and satisfaction with the recreational facilities located on the Trego Flowage (Figure 2-1). Weatherproof survey boxes that housed the blank forms and completed survey forms were placed at various facilities around Trego Flowage (Figure 2-2). Completed forms were removed by the Trego operator on a regular basis. The goals of the self-reporting surveys were to:

- collect and characterize information about visitors including party size, length of stay, types of recreational activities, and mode of travel;
- collect opinions of the adequacy of facilities at Trego Flowage and obtain suggestions for improvements to any of the facilities or recreational opportunities in general; and
- determine how Coronavirus Disease 2019 (COVID-19) has influenced visitors recreational experience.

Data collected were used to support extrapolation of visitor use data and to identify improvements needed in the future. Summaries of the self-reporting surveys can be found in Section 6.



Xcel Energy

Trego Flowage Recreation Survey 2020

Trego Flowage Recreation Use Survey Form

1. In 2020 (January through December), how many days and nights have you spent or do you plan to spend recreating in the Trego Flowage area in the following months?

# Days/Nights	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Days												
Nights												

2. In 2020, (January through December), what percentage of your time recreating in the Trego Flowage area is during:

   Weekdays _____ Weekends/holidays _____ (Total should equal 100%)

3. During your recreation visits at Trego Flowage in 2020 (January through December), how many hours on average do you spend each day during the following time periods:

   6AM to 10AM_____ 10AM to 2 PM _____ 2PM to 6PM _____ 6PM to 10PM _____ 10PM to 6AM _____

4. What is the average amount of time you spend at Trego Flowage during a recreational visit? _____ hours

5. When recreating at the Trego Flowage area, how many people on average are in your party? _____

6. When traveling to Trego Flowage recreation areas, what percentage of time do you travel by the following:

   Car/Truck:____% Motorcycle:____% Bicycle:____% Foot:____%

7. Select up to five activities below that you usually participate in at the Trego Flowage area.

   - ☐ Fishing (Boat)
   - ☐ Fishing (Shoreline)
   - ☐ Boating
   - ☐ Jet skiing
   - ☐ Water Skiing/Tubing
   - ☐ Swimming
   - ☐ Biking
   - ☐ Walking/Running
   - ☐ Camping
   - ☐ Picnicking
   - ☐ Photography
   - ☐ Wildlife Viewing
   - ☐ Sports
   - ☐ Playgrounds
   - ☐ Relaxing
   - ☐ Hunting
   - ☐ Other (specify) _____

8. For the following facilities at Trego Flowage, indicate what percentage of time was spent recreating at each facility from January 2020 through December 2020 (Total should be equal to 100%). Then on a scale from 1 to 5, rate the status of each facility. If you are unfamiliar with the facility, please leave blank. **1 = Facility is not at all adequate. 5 = Facility is totally adequate.** Please provide comments where applicable to the specific facility.

Facility	% Recreation Time	Rating (1-5)	Comment
Trego Lake County Park			
North Landing (Trego Landing Rd)			
Tailwater (north side access)			
Tailwater (south side access)			
Canoe Portage Area			
NPS River Access (Hwy 63)			
Other (specify)			
Other (specify)			

9. How do you rate your overall recreation experiences at Trego Flowage on a scale from 1 to 10?

   Very Poor 1 2 3 4 5 6 7 8 9 10 Very Good

10. Has or will the COVID-19 pandemic change your 2020 usage of the Trego Flowage recreation areas? YES NO

    a. If YES, is change in recreational use an _____increase, or a _____decrease?

11. Please note anything you feel would be helpful in understanding the recreational opportunities at Trego Flowage.

_____

_____

_____

Figure 2-1 Trego Flowage self-reporting recreational use survey form

Figure 2-2 Examples of survey boxes installed at select recreational facilities

3. DESCRIPTIONS OF RECREATIONAL FACILITIES AT TREGO FLOWAGE

The public recreational facilities located on Trego Flowage are described below with a discussion of their use and adequacy following in subsequent sections of this report. Figure 3-1 includes a map depicting the location of each of the recreational facilities present on Trego Flowage.

Additional facilities such as parks, ski trails, and other recreational areas are present in the general area of Trego Flowage. However, these facilities are not located within the Project boundary and therefore are not discussed in this report.

3.1 TOWN OF TREGO BOAT LANDING

The Town of Trego owns and maintains a single-lane boat launch along the south shore of the middle portion of Trego Flowage. It is the only public landing on the flowage and consists of a single cement launch, paved approach, and dock. The landing is sufficient to launch larger motorized boats. Parking is available along the shoulder of Trego Landing Road and there is sufficient space for the typical amount of use at this site. There is no user fee for this launch. No other amenities (i.e., bathroom, trash receptacles, etc.) are present at this site. The landing is in good condition and is adequate for the light to moderate use it receives. |It may be difficult for some members of the public to locate the landing as there is no directional signage for the site.

3.2 TREGO TOWN PARK AND LANDING

The Town of Trego owns and maintains a campground along the north shore of the east end of the Trego Flowage, upstream of Highway 53. It consists of 19 seasonal recreational-vehicle sites, 29 campsites, 3 pavilions, showers, picnic areas, and shore fishing opportunities. The Town also owns and maintains a small boat landing adjacent to the Town Park that consists of a single unpaved landing with no dock. There is no user fee for the landing. The gravel parking area can accommodate 8–12 vehicles. The landing is small and shallow and is primarily used as a take-out for canoers and kayakers before they enter the flowage proper. Shallow water between this landing and the main flowage excludes the use of larger motorized watercraft. The area receives light use most of which occurs in the summer. Overall, the facility is adequate for the current usage. However, comments were received that the landing and parking area could be improved with more frequent grading and leveling.

3.3 TAILWATER ACCESS AND CANOE PORTAGE

Xcel Energy owns and maintains this area which features tailwater fishing access on both sides of the river and a canoe portage along the north shore. The take-out for the canoe portage is located along the north shore of Trego Flowage just north of the Trego Dam and is well signed. From the take-out, the canoe portage follows a general southwesterly direction for approximately 325 ft. to the downstream put-in site. The portage enables canoeists travelling from upstream-to-downstream to safely bypass the dam. There are no fees associated with the use of this area. A

garbage receptacle is available on the north side (near the canoe portage trail), but no additional amenities are provided. Overall, the area is adequate for the light use it receives.

3.4 NPS NAMEKAGON RIVER ACCESS

The NPS maintains an access area located near the upper portion of the flowage along U.S. Highway 63. It consists of a -carry-in access point on the north bank of the Namekagon River. The access point has steps that lead to the river where users can launch or land canoes, kayaks, or inner tubes. An area for picnicking is available; however, a grill is the only available amenity.

An NPS Visitor Center is located across the river on the south side of U.S. Highway 63. Due to COVID-19 precautions, the Visitor Center has been closed since Spring 2020. However, when open, it offers additional facilities such as trash receptacles and restrooms, as well as information on area attractions.

The Wisconsin Department of Transportation owns and maintains a similar river access and historical marker on the south bank of the Namekagon. When combined with the NPS' two facilities, these three areas include parking for more than 30 vehicles and offer opportunities for shoreline fishing, swimming, or wading. The access areas, while rustic, are in good condition and receive moderate to heavy use, primarily as a take-out area for visitors.

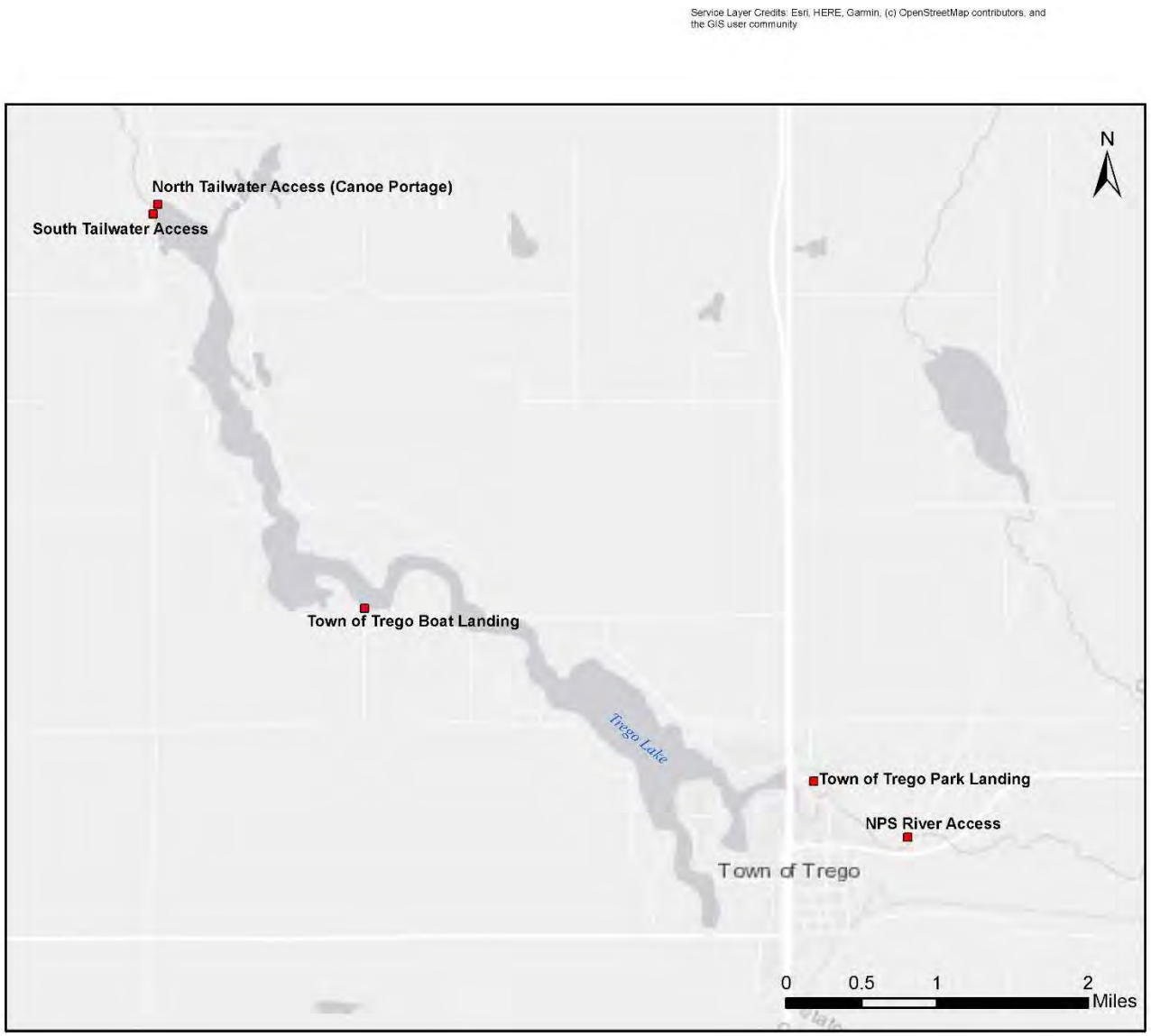


Figure 3-1 Map of Trego Flowage showing location of recreational facilities, 2020

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4. SUMMARIES OF INTERVIEWS WITH KEY PERSONNEL

This section provides a brief summary of the interviews with owners/operators of recreational facilities and other key personnel that have detailed knowledge of the recreational facilities and recreational opportunities on Trego Flowage.

4.1 CHRIS ROMPORTL, NPS

Mr. Chris Romportl has been with the NPS for 18 years, primarily working on the Namekagon River and in the NPS Visitor Center in Trego, Wisconsin. Mr. Romportl stated that the use of Lake Trego and its associated recreational resources has remained steady in the past 5 years. He said most activity on the lake is on the weekends and he has not observed much traffic during the weekdays. Mr. Romportl suspects the activity on the lake is mostly related to residential use. He said the primary use is recreational boating and that COVID-19 has resulted in increased use based on his observations of activity both upstream and downstream on the river.

Mr. Romportl does not have any specific information related to the use of the Town of Trego Boat Landing, nor does he have any information on the Trego Town campground. However, he stated that the Trego Town Landing parking area is in poor condition and needs to be graded and leveled. Depending on how people park at the landing and the number of trailers, the parking area can easily accommodate 12 vehicles. There are no accommodations for larger boats and there is no user fee. The area currently receives little use; however, this may change with the construction of a new interchange at Highway 53 and Highway 63 planned for 2021.

The Tailwater Access and Canoe Portage area features exclusion buoys and signage allowing canoeists to safely navigate around the Trego Dam. There have been no improvements to the area, and Mr. Romportl is not aware of any planned improvements. Use remains light at this site since there are not many visitors that choose to canoe the lake, portage around the dam, and then continue their float downstream. Most people choose to avoid Trego Lake in their canoe paddling plans.

NPS owns and maintains a picnic area and river access on the north bank of the Namekagon River. The facilities at this site are in good condition and adequate for the moderate seasonal use they receive. Mr. Romportl also added that potential highway construction at the intersection of Highway 53 and Highway 63 may affect future use due to the relocation of resources.

Mr. Romportl clarified past reports regarding ownership of the south river access. He stated that most of this area (e.g., parking area, historical marker, majority of steps to river) is actually owned by the Wisconsin Department of Transportation. NPS installed the steps to the river many years ago but only owns the last two or three steps above the river. The steps remain safe despite the moderate to heavy seasonally use they receive. The planned construction of the Highway 63 and Highway 53 interchange may impact future use of the site.

Finally, with regard to the NPS Visitor Center, there have been no upgrades. The center has been closed to the public due to COVID-19 restrictions.

4.2 CRAIG ROBERTS, WDNR

Mr. Craig Roberts is a Fishery Biologist for WDNR and works in the counties of Washburn and Burnett. He has been familiar with Trego Flowage for 6 years. Mr. Roberts stated that sites located north and south of the tailrace receive a fair amount of shoreline fishing pressure and this use has been consistent over the past 5 years. Overall, since the COVID-19 outbreak, there has been an increase in recreational use at the facilities around Trego Flowage.

The Town of Trego Boat Landing includes a single cement launch and dock and is currently in good condition. Use of this landing is considered light to moderate. The NPS maintains an access area further upstream on the Namekagon River and this area receives moderate to heavy use during the summer season (Memorial Day to Labor Day). Canoeing is popular in this area and there is one access point on each side of the river. The steps leading to the water's edge are in good condition with the exception of their sides. This area is not used as a swimming beach.

4.3 RICKY REICHERT, XCEL ENERGY

Mr. Ricky Reichert (Xcel Energy) is the operator for the Trego Dam. He is responsible for maintaining facilities, managing pond (i.e., Flowage) levels, checking wells, and recording daily operations. Overall, use of Trego Flowage has been consistent or slightly higher since COVID-19. The most popular uses at Trego Flowage are recreational fishing, canoeing, and boating. Weekends and evenings are busiest during the summer. Some ice fishing occurs during the winter months.

The Town of Trego Boat Landing is in good condition and is free to the public. Mr. Reichert stated that the landing receives light to moderate use despite that no additional signage was added directing visitors to the landing.

Trego Town Park and Landing is open to the public free of charge and receives light use. The condition of the area is considered fair to good.

The Tailwater Access and Canoe Portage receives light to moderate use. Canoeists are able to safely bypass the dam when navigating upstream to downstream. The garbage receptacles are often overfilled and trash is left at the site.

4.4 JONATHON HAGEN, WDNR

Mr. Jonathon Hagen has been a Conservation Warden with WDNR for 20 years and has worked at the Trego Flowage for 12 years. Over the past 5 years, use has increased some on the flowage and the increased use in 2020 may be a result of COVID-19. Recreational boating and fishing are the most popular activities at Trego Flowage.

The Town of Trego Boat Landing is in good condition and the no-fee facility receives light to moderate use. Mr. Hagan has observed maintenance being performed at the landing.

The Town of Trego Park and Landing receives light use most of the year, but this can vary with the season. Tubing is popular on the Namekagon River during the summer. Mr. Hagen stated that the parking lot is adequate for the use at this site.

The Tailwater Access and Canoe Portage allows canoeists to safely bypass the dam. This area receives light but consistent use. A few years ago, the landing and landing pad, and steps going down to the river were improved.

The Namekagon River Access areas along Highway 63 receives moderate to heavy use during the summer. The picnic area on the east side receives higher use as visitors park in this area and then return to this area after tubing.

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5. RECREATIONAL USE ESTIMATES

For the 2013–2014 Recreation Study, daytime recreational use estimates were extrapolated from multiple sources including trail counters, estimates from outfitters, NPS usage numbers, and estimates from overnight facilities. Use estimates are in "recreation days" which is defined as each visit by a person to a development (e.g., facility) for recreational purposes during any portion of a 24-hour period. Overnight use was estimated from information provided by each of the lodging facilities on Trego Flowage. Use estimates are divided into "daytime" and "overnight."

Fieldwork in 2020 did not attempt to replicate the data collection methods used in 2013 and 2014. Instead, in order to report daytime and overnight use values across Trego Flowage facilities, months and days of the week estimates were extrapolated from the data reported in the 2013–2014 Recreation Study. Use values were based on local population change estimates obtained from the U.S. Census Bureau (see Methods in Section 2).

Total annual daytime use for the study period was estimated at 75,099 recreation days, representing an increase of 574 recreation days above the value reported for 2013–2014 (Table 5-1). Facility use was estimated to range from 1,024 recreation days at the Canoe Portage Area (up by 8 since 2013–2014) to 39,599 recreation days at the controlled facilities (i.e., resorts, hotels, and campgrounds) (up by 342 since 2013–2014). Monthly use across all facilities was estimated to range from zero 06 recreation days in January, February, March, April, and December (unchanged since 2013–2014) to 23,131 recreation days in July (up by 177 since 2013) (Table 5-1).

During the summer months, the average daytime recreational use (in recreation days) was estimated to be 324 per weekday, 760 per day on weekends, and 990 per day on peak weekends (Table 5-2). These estimates represent increases of 3 visitors per weekday, 6 per day on weekends, and 8 per day on peak weekends since 2013–2014. Highest day-use on weekdays was in the summer (i.e., July), weekend use was also highest in the summer (i.e., July and August), and peak use varied throughout summer (Figure 5-1). During the winter months, the average number of recreation days (i.e., visitors) was estimated to be 12 per weekday and 19 per day on weekends (Table 5-2). These estimates represent no increase in day-use since 2013–2014.

During the summer months, the average for overnight recreational use (in recreation days) was estimated to be 167 per weekday, 395 per day on weekends, and 497 per day on peak weekends (Table 5-3). These estimates represent increases of 1 visitor per weekday, 3 per day on weekends, and 4 per day on peak weekends since 2013–2014. Highest overnight use on weekdays was in summer (i.e., July), weekend use was highest in early summer (i.e., June), and peak use varied throughout summer (Figure 5-2). During the winter months, the average number of nighttime recreation days (i.e., overnight visitors) was estimated to be 10 per weekday and 14 per day on weekends (Table 5-3). These estimates represent no increase overnight use since 2013–2014.

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Table 5-1 Estimated daytime recreational use (in recreation days), Trego Flowage (January–December 2020)

Month	North Landing (Trego Landing Road)[1]	Trego Lake County Park[2]	Tailwater Fishing Areas[3]	Canoe Portage Area	NPS River Access[4]	All Outfitters	All Controlled Sites	Total by Month
January	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-
May	523	164	829	230	510	75	5,233	7,564
June	413	250	1,118	195	2,442	2,386	7,791	14,595
July	528	465	971	79	3,799	7,917	9,372	23,131
August	451	187	685	357	3,371	5,658	8,862	19,572
September	350	103	406	99	99	179	5,980	7,215
October	300	81	255	64	-	-	1,817	2,517
November	-	-	-	-	-	-	506	506
December	-	-	-	-	-	-	-	-
Total by Facility	2,566	1,250	4,265	1,024	10,220	16,216	39,559	75,099

Notes:
[1] a.k.a. Town of Trego Boat Landing
[2] a.k.a. Trego Town Park Landing
[3] Includes North and South side access areas
[4] a.k.a. NPS Namekagon River Access

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Table 5-2 Estimated daytime recreational use (in recreation days) by type of day, Trego Flowage (January–December 2020)

	Weekdays	Weekends	Peak Weekends
Summer Months			
May	3,407	2,226	1,931
June	7,558	7,037	0
July	11,046	8,501	3,583
August	8,821	8,053	2,697
September	3,469	3,047	699
TOTAL	*34,301*	*28,864*	*8,910*
# of Days	*106*	*38*	*9*
Average per Day	*324*	*760*	*990*
Winter Months			
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
October	1,592	925	0
November	272	234	0
December	0	0	0
TOTAL	*1,864*	*1,159*	*0*
# of Days	*153*	*60*	*0*
Average per Day	*12*	*19*	*N/A*
Year			
TOTAL	*36,165*	*30,022*	*8,910*
# of Days	*259*	*98*	*9*
Average per Day	*140*	*306*	*990*

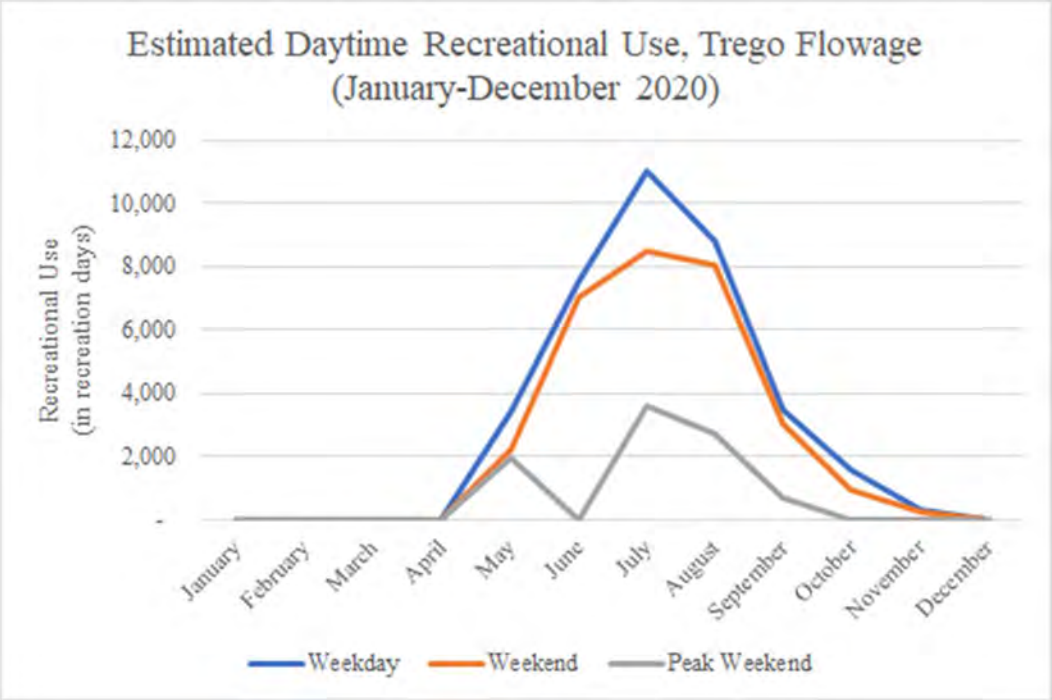

Figure 5-1 Daytime recreational use estimates by month, Trego Flowage (January–December 2020)

Table 5-3 Estimated overnight recreational use (in recreation days) by type of day, Trego Flowage (January–December 2020)

	Weekdays	Weekends	Peak Weekends
Summer Months			
May	2,383	1,578	1,272
June	3,454	4,336	0
July	4,866	2,885	1,620
August	4,172	3,609	1,080
September	2,869	2,612	500
TOTAL	*17,745*	*15,020*	*4,472*
# of Days	*106*	*38*	*9*
Average per Day	*167*	*395*	*497*
Winter Months			
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
October	1,194	623	0
November	272	234	0
December	0	0	0
TOTAL	*1,466*	*857*	*0*
# of Days	*153*	*60*	*0*
Average per Day	*10*	*14*	*N/A*
Year			
TOTAL	*19,211*	*15,876*	*4,472*
# of Days	*259*	*98*	*9*
Average per Day	*74*	*162*	*497*

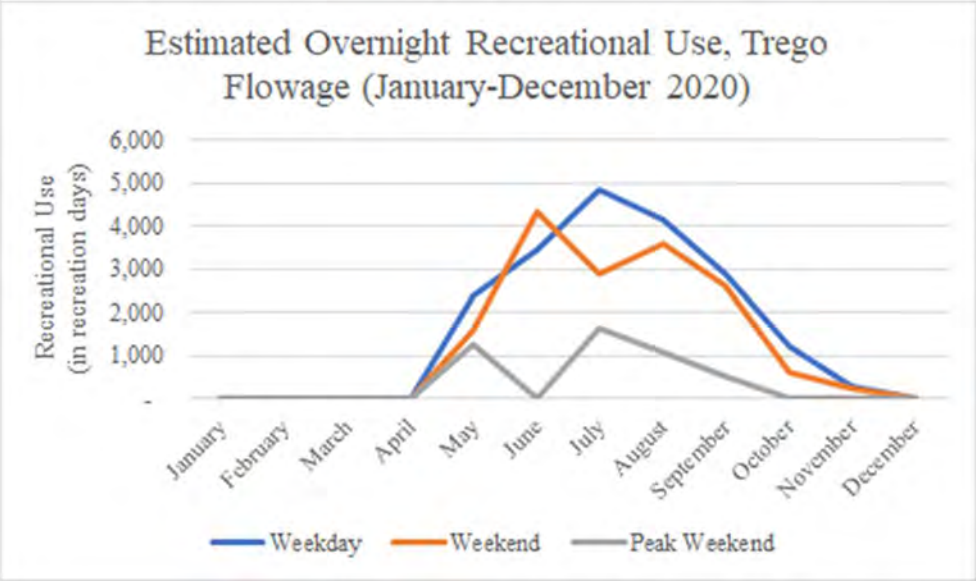

Figure 5-2 Overnight recreational use estimates by month, Trego Flowage (January–December 2020)

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6. RESULTS OF SELF-REPORTING SURVEYS

A total of four surveys were collected during the course of the study. Three of the four surveys had all sections of the form completed. Survey boxes were located at the following sites: Town of Trego Boat Landing, Town Park Landing, North Tailwater/Canoe Portage, and South Tailwater.

6.1 POPULAR ACTIVITIES

Survey respondents were provided a list of recreational activities and asked to select up to five of them that they typically participate in at Trego Flowage. They were also given the option to write in activities not listed on the form. Respondents selected anywhere from one to five activities. Shoreline fishing was the most popular activity, followed by boating, shoreline fishing, and relaxing (Table 6-1). These results were similar to the results from the 2013–2014 Recreation Study, in which the top four activities reported were boating, enjoying nature, boat fishing, and shore fishing.

Table 6-1 Percentage of respondents (n = 4) who checked off listed activities in which they usually participate, Trego Flowage (January–December 2020)

Activity	Respondents Reported
Fishing (Shoreline)	100%
Boating	50%
Fishing (Boat)	50%
Relaxing	50%
Photography	25%
Walking/Running	25%

6.2 VISITOR SATISFACTION

Overall, visitors were moderately satisfied with the recreational facilities on Trego Flowage. In addition to the six facilities listed on the survey form, two other facilities were written in and rated by two respondents. The eight facilities include:

- Trego Lake County Park
- North Landing (Trego Landing Road)
- Tailwater (North side access)
- Tailwater (South side access)
- Canoe Portage Area
- NPS River Access (Highway 63)
- Other: Boat Landing on North Road
- Other: The Dam.

Three respondents rated facilities that were listed or written in on the survey form. North Landing received ratings of 0 and 4, and The Dam (written in) received a rating of 3 (Table 6-2). For the purpose of analytical consistency, the rating of 0 was transformed to a rating of 1.

When compared with the results of the 2013–2014 Recreation Study, it is difficult to draw conclusions about facility popularity given the small sample size in 2020.

All four respondents rated their overall recreational experience at Trego Flowage. Ratings ranged from 3 to 10, with an average rating of 7 (Table 6-2). Previous ratings for Trego Flowage as a whole are not available for comparison.

Table 6-2 Summary statistics for ratings of recreational facilities (on a scale of 1 to 5) and overall recreational experiences (on a scale of 1 to 10), Trego Flowage (January–December 2020)

	Trego Lake County Park	North Landing	Tailwater (North side access)	Tailwater (South side access)	Canoe Portage Area	NPS River Access	Other: Boat Landing on North Rd.	Other: The Dam	OVERALL RECREATIONAL EXPERIENCES
Minimum Rating	n/a	1	n/a	n/a	n/a	n/a	n/a	3	3
Median Rating	n/a	2.5	n/a	n/a	n/a	n/a	n/a	3	7.5
Maximum Rating	n/a	4	n/a	n/a	n/a	n/a	n/a	3	10
Average Rating	n/a	**2.5**	n/a	n/a	n/a	n/a	n/a	**3**	**7**
Standard Deviation	n/a	2.1	n/a	n/a	n/a	n/a	n/a	n/a	2.9
Number of Responses	0	2	0	0	0	0	0	1	4

The comments provided by two survey respondents (both facility-specific and general) provided valuable information about the public's perception of the adequacy of the recreational facilities on Trego Flowage. Respondents made recommendations for repairs and additional amenities and criticized the boating practices of other users. Facility-specific comments are listed in Table 6-3; general comments are listed in Table 6-4. Comments that are similar to those previously received in 2013-2014 are marked with an asterisk.

Table 6-3 Facility-specific visitor ratings and comments, Trego Flowage (January–December 2020)

Comment	Percent of Time User Spent at the Facility	User's Rating of Facility	Topic	Topic 2
North Landing				
Repair	n/a	0 (1)	Maintenance	Boat ramp

Table 6-4 General visitor comments, Trego Flowage (January–December 2020)

Comment	User's Rating of Trego Flowage	Topic	Topic 2
We need a boat landing on the north side of Flowage. Landing for fishing boats on south side is jammed on many weekends.	3	Add amenities	Crowded
Shoreline is being eroded by many speeding boaters who don't appear to know boating regulations and create large wakes near shore.	8	Erosion	Boating

6.3 REPORTED RECREATIONAL USE

Survey respondents were asked to provide information on how they usually travel to Trego Flowage. All four respondents provided proportional estimates across four modes of transport (Table 6-5). All respondents report arriving by car or truck at least some of the time. One respondent reported living on the Flowage.

Table 6-5 Proportions reported by respondents across listed modes of travel to Trego Flowage (January–December 2020)

	Car/ Truck	Motorcycle	Bicycle	Foot
Minimum Percent	50%	0%	0%	0%
Median Percent	95%	0%	0%	5%
Maximum Percent	100%	0%	0%	50%
Average Percent	85%	0%	0%	15%
Standard Deviation	23.8%	0%	0%	23.8%
Number of Responses	4	4	4	4

Two respondents indicated the percentage of their time that was spent at any given recreational facility(Table 6-6). One reported spending 100 percent of his/her time at North Landing, and the other, 100 percent at The Dam (written in).

The 2013–2014 Recreation Study extrapolated daytime recreational use estimates for each facility from trail counters, estimates from outfitters, NPS usage numbers, and estimates from overnight facilities, rather than collecting data using survey forms. When compared with the results of the 2013–2014 Recreation Study, it is difficult to draw conclusions about facility popularity given the small sample size in 2020.

Table 6-6 Summary statistics for percent of recreation time (0–100%) spent at facilities, Trego Flowage (January–December 2020)

	Trego Lake County Park	North Landing	Tailwater (North side access)	Tailwater (South side access)	Canoe Portage Area	NPS River Access	Other: Boat Landing on North Rd.	Other: The Dam
Minimum Percent	n/a	100%	n/a	n/a	n/a	n/a	n/a	100%
Median Percent	n/a	100%	n/a	n/a	n/a	n/a	n/a	100%
Maximum Percent	n/a	100%	n/a	n/a	n/a	n/a	n/a	100%
Average Percent	n/a	100%	n/a	n/a	n/a	n/a	n/a	100%
Standard Deviation	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Number of Responses	0	1	0	0	0	0	0	1

Survey respondents were asked to provide estimates of their time spent at Trego Flowage in general, broken down by month, day vs. night, weekdays vs. weekend days and holidays, and time of day.

Three respondents provided the number of days and nights spent at Trego Flowage each month (Table 6-7). In general, visitors spend more time at Trego Flowage in the summer (May through September) than in the winter (January through April and October through December). Respondents report spending an average of 7.7 days per month at Trego Flowage in the summer and 4.1 days per month in the winter. May and October are the most popular summer and winter months, respectively. Daytime use is more popular than overnight use during both summer and winter. Respondents reported recreating at Trego Flowage an average of 67.3 days and 29 overnights in 2020.

Table 6-7 Average number of days and nights spent recreating, Trego Flowage (January–December 2020) (n = 3)

	Days	Nights
Summer Months		
May	9	4.7
June	8.3	4
July	8	4
August	7.3	4.7
September	6	3.3
Summer Monthly Average	*7.7*	*4.1*
Winter Months		
January	0	0
February	3.3	0
March	5	1.7
April	4.7	4
October	7.7	2.7
November	4.7	0
December	3.3	0
Winter Monthly Average	*4.1*	*1.2*
Year		
2020 Annual Average	*67.3*	*29*

Three respondents reported the percentage of their time spent at Trego Flowage between weekdays and weekends or holidays (Table 6-8). On average, respondents reported visiting Trego Flowage 46.7 percent during weekdays and 53.3 percent during weekends and holidays, demonstrating a slight preference for weekends and holidays over weekday visits.

The 2013–2014 Recreation Study extrapolated recreational use estimates for weekdays, weekends, and peak weekends from multiple sources including trail counters, estimates from outfitters, NPS usage numbers, and estimates from overnight facilities, rather than collecting data from survey forms. A comparison of recreational use (in daytime recreation days) between the 2013-2014 Recreation Study and the 2020 survey confirms that visitors consistently prefer to visit Trego Flowage on weekends and holidays.

Table 6-8 Summary statistics for proportion of recreation time at Trego Flowage (0–100%) spent during weekdays or weekends and holidays (January–December 2020)

	Weekdays	Weekends and Holidays
Minimum Percent	10%	10%
Median Percent	40%	60%
Maximum Percent	90%	90%
Average Percent	46.7%	53.3%
Standard Deviation	40.4%	40.4%
Number of Responses	3	3

Respondents were asked to report the number of hours typically spent at Trego Flowage during various time periods. Two respondents recorded a precise number or range of hours (Table 6-9). One respondent indicated spending an even amount of his/her time at Trego Flowage across the four daytime periods. Among the respondents who provided information, the average number of hours spent at Trego Flowage ranged from 1 hour (between 10 AM and 2 PM) to 3 hours (between 6 PM and 10 PM). No respondents reported spending time at Trego Flowage between 10 PM and 6 AM.

Table 6-9 Summary statistics for average number of hours spent at Trego Flowage during listed time periods (January–December 2020)

	6 AM to 10 AM	10 AM to 2 PM	2 PM to 6 PM	6 PM to 10 PM	10 PM to 6 AM
Minimum hours	1	0	0	2	0
Median hours	2.5	1	2	3	0
Maximum hours	4	2	4	4	0
Average hours	2.5	1	2	3	0
Standard Deviation	2.1	1.4	2.8	1.4	n/a
Number of Responses	2	2	2	2	

Respondents provided estimates of the average length of stay and average party size while recreating at Trego Flowage Table 6-10). All four respondents provided the average amount of time spent at Trego Flowage during a recreational visit and a precise party size or range. Where a range of values was provided, the average party size was used in the analysis below. Average reported length of stay ranged from 3 to 24 hours and average party size ranged from 1 to 10 people. On average, visitors spend 3.3 hours at Trego Flowage in an average party size of 2 to 3 (2.5) people.

Table 6-10 Summary statistics for average length of stay and average number of visitors per party, Trego Flowage (January–December 2020)

	Average time spent	Party size
Minimum	2 hours	2 people
Median	3.5 hours	2 people
Maximum	4 hours	4 people
Average	3.3 hours	2–3 (2.5) people
Standard Deviation	1 hours	1 person
Number of Responses	4	4

Finally, the survey asked respondents whether the COVID-19 pandemic changed their 2020 usage of the Trego Flowage recreational areas. All four respondents indicated that the pandemic has not affected their usage of Trego Flowage (Figure 6-1).

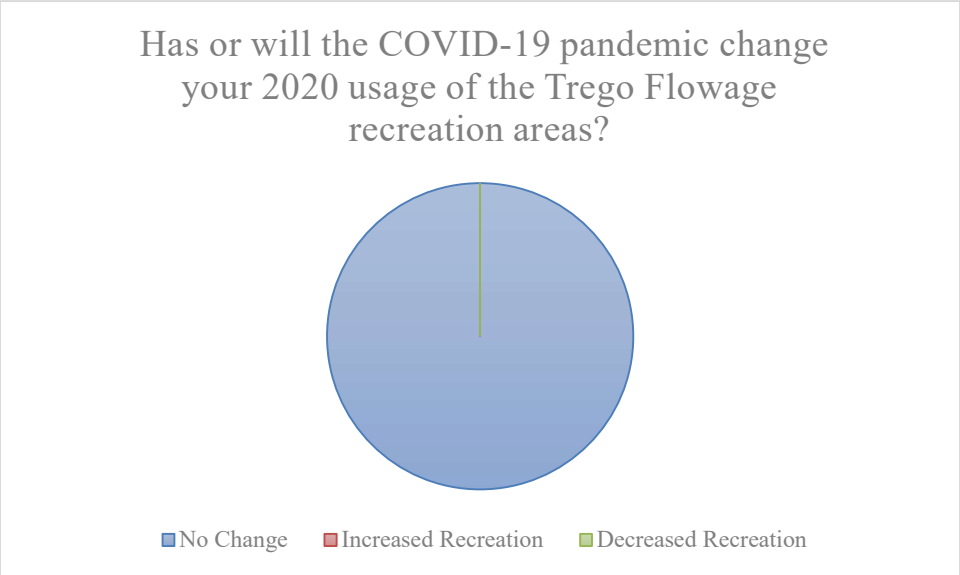

Figure 6-1 Reported changes in recreational use of Trego Flowage due to the COVID-19 pandemic, January–December 2020 (n = 4)

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7. DISCUSSION OF ADEQUACY OF CURRENT FACILITIES

Overall, the Trego Flowage area offers reasonable opportunities for both water and land-based recreational activities, including opportunities for overnight recreation (i.e., camping, night fishing, etc.). Although the number of recreational facilities is limited, most are in good condition and receive routine maintenance. The number and capacity of the facilities appear sufficient to accommodate current recreational use on all but the busiest days, despite the apparent observed increase in recreational activity related to COVID-19.

Recreational pressure in the vicinity of the Trego Hydroelectric Project over the past 5-6 years was described as stable or slightly increasing. Contrary to the survey respondents who indicated that the COVID-19 pandemic was unlikely to affect their use, those interviewed suggested that the pandemic did in fact result in an increase in recreational pressure. Total recreational use throughout 2020 was estimated at 75,099 recreation days (Table 5-1); however, this number, which is based on changes in population growth, may underestimate the acute visitor pressure exerted on the Trego Hydroelectric Project facilities during the pandemic. Cars and trucks are consistently the most popular modes of transport when visiting the Trego Flowage resources (Table 6-5), which indicates a sustained demand for parking.

Based on survey responses and personnel interviews, recreational facilities near the Trego Hydroelectric Project are generally considered adequate for meeting the recreational demand of the community. Recreational use near the Trego Hydroelectric Project is most concentrated in the daytime hours and on weekends, and visitation is highest in the summer months. The average number of visitors per day in 2020 was estimated at 140 on weekdays, 306 on weekends, and 990 on peak weekends (Table 5-2). The upper portion of Trego Flowage is popular for Namekagon River visitors (e.g., canoeists, kayakers, and inner tubers). It is estimated that nearly 90 percent of the day-use occurs in the upper flowage, upstream of Highway 53 (Table 5-1). All facilities near the Trego Hydroelectric Project provide opportunities for recreation that are well suited to social distancing, especially fishing, swimming, canoeing, kayaking, and boating. The four survey respondents indicated that the pandemic has not affected their recreational use at Trego Flowage (Figure 6-1).

Past surveys indicated that overnight use at Trego Flowage had increased slightly. Based on interviews and observations throughout northwest Wisconsin, 2020 overnight use was likely similar to or higher than recent years. Again, this was likely due to the increased demand for outdoor leisure activities brought about by the COVID-19 pandemic. As with daytime use, estimates of overnight use indicate that summer weekends and peak weekends are when demand was highest (Table 5-3). Overall, it appears that the overnight facilities are in good condition and adequate to meet the typical recreational demand use of this area.

While the facilities near the Trego Hydroelectric Project are generally considered adequate, there may be areas for improvement. One survey respondent suggested that an additional boat landing was needed on Trego Lake (Table 6-4). However, this was not supported by the interviews, which characterized use of the Town of Trego Boat Landing as light to moderate during most months. When rating overall recreational experience, two of the three survey respondents gave

negative ratings ranging from 1 to 3, while the third respondent rated their experience as an 8 (Tables 6-3 and 6-4). Respondents complained that the Town of Trego Boat Landing is crowded on weekends and that the Trego Flowage shoreline was eroding from the effects of heavy boat traffic. One person that was interviewed suggested that additional trash receptacles or more frequent trash collection may be helpful at the Trego Dam and North Tailwater Access and Canoe Portage.

8. RECOMMENDATIONS FOR FUTURE USE

Based on the results of this Recreation Study, including the evaluation of existing recreational facilities, and discussions with key personnel familiar with the Trego Project area, the following recommendations are presented below. Please note that these recommendations are solely the opinion of the author(s) and do not necessarily reflect those of Xcel Energy, the applicable resource agencies, or any of the organizations/persons referenced in this report.

Town of Trego

- Periodically grade and level the Trego Town Park Landing.

- Work with WDNR to post additional information, signage, or markers associated with existing lake boating restrictions.

Xcel Energy

- Add a trash receptacle or empty the existing receptacle more frequently at the Trego Dam North Tailwater Access and Canoe Portage during periods of higher use.

NPS

- No recommendations were received on the surveys or during interviews for the NPS recreational facilities.

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Appendix A

Agency Correspondence
(pending)

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APPENDIX E-46 Washburn County Forest Comprehensive Land Use Plan

WASHBURN COUNTY FOREST COMPREHENSIVE LAND USE PLAN

CHAPTER 900 – RECREATION

TABLE OF CONTENTS

900 RECREATION..... 900-5

905 PLANNING..... 900-5

910 AUTHORITY..... 900-5

915 RECREATIONAL SERVICE AGREEMENTS..... 900-6

920 ORGANIZED RECREATIONAL EVENTS/USES..... 900-6

925 ENTRANCE AND USER FEES..... 900-6

930 UNDESIGNATED RECREATIONAL USE OF THE FOREST..... 900-6

930.1 HUNTING..... 900-6

930.2 FISHING..... 900-7

930.3 PICNICKING/DAY USE..... 900-7

930.4 CAMPING..... 900-8

930.5 MOTORIZED TRAVEL..... 900-8

930.6 OTHER USES..... 900-9

930.6.1 Electric Bicycles..... 900-9

935 DESIGNATED RECREATION AREAS/USES..... 900-9

935.1 CAMPGROUNDS..... 900-10

935.1.1 Totogatic Park..... 900-10

935.1.2 Sawmill Park..... 900-10

935.1.3 Dugan Run Equestrian Trailheads..... 900-10

935.1.4 Ordinances..... 900-10

935.2 LEISURE LAKE YOUTH CAMP..... 900-11

935.3 PICNIC / DAY USE AREAS..... 900-11

935.4 SWIMMING AREAS / BEACHES..... 900-11

935.5 BOAT LANDINGS..... 900-12

935.5.1 Undeveloped Water Access Points..... 900-12

935.6 MINONG RIFLE RANGE..... 900-13

935.7 FORMER CABIN PERMIT SITES..... 900-13

940 DESIGNATED RECREATION TRAILS..... 900-13

940.1 TRAIL PLANNING, CONSTRUCTION AND MAINTENANCE..... 900-14

940.2 NON-MOTORIZED RECREATION TRAILS..... 900-14

940.2.1 Hiking Trails..... 900-14
940.2.1.1 Ice Age National Scenic Trail..... 900-14
940.2.2 Bicycle Trails..... 900-16
940.2.3 Horseback Trails..... 900-17
940.2.4 Ski Trails..... 900-17
940.2.5 Canoe Portage Trails..... 900-18
940.2.6 Future Non-Motorized Trails..... 900-19
940.2.7 Committee Approved Future Trails..... 900-20
940.3 MOTORIZED RECREATION TRAILS..... 900-20
940.3.1 Snowmobile Trails..... 900-20
940.3.1.1 Categories..... 900-20
940.3.1.2 Snowmobile Trail Maintenance..... 900-21
940.3.1.3 Ordinances Relating to Snowmobile Trails..... 900-21
940.3.1.4 Future Snowmobile Trail Projects..... 900-22
940.3.2 ATV/UTV Trails..... 900-23
940.3.2.1 Trail Categories..... 900-23
940.3.2.2 ATV/UTV Trail Maintenance..... 900-24
940.3.2.3 County and Club Roles..... 900-25
940.3.2.4 Ordinances Relating to ATV/UTV Trails..... 900-26
940.3.2.5 Future Summer Use ATV/UTV Trails..... 900-26
940.3.2.6 Future Winter Use ATV Trails..... 900-27
940.3.3 State Trails / Wild River Trail..... 900-28
940.3.4 Other Motor Vehicle Trails..... 900-28
945 RECREATION RELATED PERMITS..... 900-29
945.1 STORM WATER DISCHARGE..... 900-29
945.2 CHAPTER 30 PERMITS..... 900-30
945.3 WETLAND FILL..... 900-30
950 RECREATION PROGRAM FUNDING AND GRANTS..... 900-30
950.1 FUNDING FOR RECREATIONAL FACILITIES OR AREAS..... 900-30
950.2 RECREATION TRAIL FUNDING..... 900-30
950.2.1 Non-Motorized Trail Systems..... 900-30
950.2.2 Motorized Trail Systems..... 900-30
955 PLAN RECOMMENDATIONS FOR THE RECREATION PROGRAM..... 900-31
955.1 ENFORCEMENT..... 900-31

955.2 STAFFING NEEDS..... 900-31
955.3 CAMPGROUNDS..... 900-32
955.4 YOUTH CAMP..... 900-32
955.5 TRAILS..... 900-33
955.6 OTHER RECREATION RECOMMENDATIONS..... 900-33

Approved by Washburn County Board of Supervisors October 19, 2021

No Revisions

900 RECREATION

Recreation is an integral part of the management of the County Forest and recreational uses are a part of many of the previous Sections. Due to the tremendous growth in recreation demands over the duration of the last planning period, the County continues to recognize the importance of recreational considerations as part of forest management prescriptions and activities and the need for continued intensive recreational planning as contained in this Chapter.

905 PLANNING

The Washburn County Outdoor Recreation Plan also guides the Washburn County Forest recreation program. This plan is revised every five years and is made part of this Plan. The Washburn County Outdoor Recreation Plan includes, but is not limited to recreational activities on the Forest. It incorporates snowmobile and ATV/UTV, campgrounds, parks and boat landings, recreational maintenance and development plans and other recreation surveys and reports.

The Outdoor Recreation Plan, Wisconsin Statewide Comprehensive Outdoor Recreation Plan (SCORP), public input, and other local or regional planning documents will be used as resources in recreational planning and development efforts. The responsibility for recreational planning, development and maintenance on the County Forest will rest with the Committee.

910 AUTHORITY

The Washburn County Code of Ordinances and s.28.11, Wis. Stats. authorize the Washburn County Forestry, Parks and Recreation Committee to provide recreational opportunities for the public. This authority is further recognized in the mission statement for the Washburn County Forest (Section 100), which specifically identifies outdoor recreational opportunities. The mission statement also charges the Committee to conduct activities in a manner that prevents or minimizes the degradation of the natural resource.

Maps of recreational facilities are appended in Chapter 1000.

Chapter 50 of the Washburn County Code of Ordinances regulates activities on the County Forest. Many of the following sections reference the Ordinance and the full text can be found at:

https://library.municode.com/wi/washburn_county/codes/code_of_ordinances

915 RECREATIONAL SERVICE AGREEMENTS

Under this Plan, the Committee is authorized to contract with organizations or individuals to provide recreational services for the public. Under this Plan, Washburn County contracts the following services:

1. Snowmobile trail maintenance on County Forest, private lands and the Wild River Trail.
2. ATV/UTV trail maintenance on the County Forest, private lands and the Wild River Trail
3. Agreement with local clubs to maintain the Wildcat Mountain Bike Trail
4. Agreement with individuals to maintain the Minong Rifle Range.

920 ORGANIZED RECREATIONAL EVENTS/USES

Any event on the Forest which is advertised to the public, for which a fee is charged, or is otherwise organized as an event, requires a permit or authorization by the Committee. Permits may be issued provided the use is consistent with the County Forest Law and management activities on the Forest and will not cause resource damage. The Committee shall require appropriate levels of event liability insurance for each event.

925 ENTRANCE AND USER FEES

The Committee is empowered and shall have responsibility for the establishment of entrance, camping and other user fees on recreational facilities maintained by the County Forestry Department. Fees shall be comparable with those charged by similar private parties, if such private services exist. User generated fees shall be utilized, where appropriate, to assist with the maintenance of the facility where collected.

930 UNDESIGNATED RECREATIONAL USE OF THE FOREST

Undesignated recreation includes those informal activities for which the County generally does not provide a facility or service. These uses include activities such as hunting, fishing, biking, hiking and others. Such uses do not normally require a permit but must be conducted in compliance with the Washburn County Code of Ordinances. The Forest Administrator and the Committee shall periodically review such uses and enact ordinances as necessary to protect the resource.

930.1 HUNTING

The entire County Forest is open for regulated hunting, with the exception of designated areas that are developed for high levels of public use, such as Leisure Lake Youth Camp, Totogatic Park, and Sawmill Campground. The boundaries of these areas are signed indicating closure. Hunting and/or firearms are also prohibited with 1700 feet of the Northwood School located in NW ¼ Section 1 T42N-R12W (s.29.22, Wis. Stats.)

The Washburn County Code of Ordinances regulates activities relating to hunting. In general, the following activities are regulated:

1. Tree stands are permitted provided they do not damage the tree and are either,
   a. Completely removed at the end of hunting hours each day or
   b. Are marked with the owners name and address or DNR customer ID number and are completely removed after 9 days.
   c. The use of nails, lag screws, screw steps or other damaging devices is not permitted.

2. Commercially made, or hand-made blinds are permitted provided they are either:
   a. Completely removed at the end of hunting hours each day or
   b. Are marked with the owners name and address or DNR customer ID number and are completely removed after 9 days

   Blinds made of 100% natural, on-site vegetation are not regulated.

3. ATV/UTV use is regulated. Please refer to Chapter 700 for Road and Access Plan information; Section 940.3 for ATV/UTV Trails; and Chapter 4000 for unit restrictions.
4. Cutting or harvesting vegetation is prohibited. This includes pruning trees or cutting shooting lanes.

930.2 FISHING

All lakes, rivers and streams within or adjacent to the Forest are available for fishing unless otherwise identified in state regulations.

930.3 PICNICKING / DAY USE

Picnicking and other day uses, outside of established facilities, is allowed. The Washburn County Code also regulates day use. In general, the following activities are regulated:

1. All litter, trash or rubbish must be removed
2. Cutting or harvesting live vegetation is not permitted

3. Fires may not be left unattended unless the ground is 100% snow covered
4. Fires may not be ignited unless the ground is 100% snow covered in the towns of Casey, Chicog, Minong or Springbrook

930.4 CAMPING

A permit is required to camp outside of developed campgrounds on the County Forest. Permits are available from the Washburn County Forestry Office or may be obtained online at:

https://www.washburncountyparks.us/parks/permits_and_products/permits_category/purchase/

Permits may be denied for specific areas at the discretion of the Forest Administrator. The Washburn County Code of Ordinances regulates camping, and the following restrictions are enumerated in Code:

1. Camping is permitted with a tent or lesser facility
2. Camping use may not exceed 14 consecutive days
3. A permit must be acquired
4. Camping in the Towns of Casey, Chicog, Springbrook or Minong is not permitted during the months of April or May.
5. Campers may not leave an open fire unless it has no smoke and the entire coal or ash bed is cool enough to touch by hand
6. Campers may not ignite a fire unless the ground is 100% snow covered in the Towns of Casey, Chicog, Minong or Springbrook
7. Camping during the first nine days of the gun deer season, in a camper, is permitted within 200 feet of a Town Road or County Forest Road. A permit is required.

930.5 MOTORIZED TRAVEL

The Washburn County Code of Ordinances and the Washburn County Road and Access Plan regulate motorized uses on the Forest. The full text of these regulations is included in Chapter 700. Unit specific maps of open roads are available in Chapter 4000. In general, the following regulations apply to motorized travel outside of developed recreational trail systems.

1. It is illegal to operate a motor vehicle on a trail designated closed with a gate, earthen berm, sign or other closure.
2. It is illegal to operate a motor vehicle off the surface of a trail that is designated open to motor vehicles by the Committee. *Cross country travel is not permitted anywhere.*
3. Two-wheeled motorized travel (motorcycles, mini-bikes, dirt bikes) is not permitted unless the machine is street legal and operation is on a County Forest Road (gas tax)
4. ATV's/UTV's are not allowed anywhere on the County Forest from April 1 through the first Friday before Memorial Weekend.

930.6 OTHER USES

Other uses of the County Forest are permitted provided they are not specifically addressed within the County Code of Ordinances. Mountain biking, horseback riding, and other non-motorized uses are currently not regulated. The Committee may, at any time, enact ordinances, or rules, to protect the County Forest should damage, or user conflict, begin to occur.

930.6.1 Electric Vehicles

At the time of the drafting of this Plan, the popularity of electric bicycles (E-bikes) is on the rise. For the purpose of this plan, any bicycle with a motor (electric or otherwise) is considered a motorized vehicle and subject to the same Ordinance restrictions as any other motor vehicle. These technically fall under the definition of two-wheeled motorized vehicle and are not permitted on the County Forest.

As other electric vehicles are developed and emerge in the market, they are considered as a motorize vehicle and subject to the same ordinance language as motorized uses.

935 DESIGNATED RECREATION AREAS / USES

Designated recreation areas are those for which the County provides a facility. The Washburn County Forest has developed sites and areas to accommodate a fairly high level of public use. The Committee may prohibit other recreation activities that are not compatible with the intent of the developed facilities.

The County has noted increasing demands for developed recreational facilities. Washburn County will maintain most currently developed trails and facilities and may develop additional

as demand warrants and available funding permits. Maps of existing facilities are included in the appendix of this Plan.

935.1 CAMPGROUNDS

935.1.1 Totogatic Park

Totogatic Park is located on the Minong Flowage, northwest of Minong. The park facilities include 75 campsites, electricity, electric wells, shower house, pit toilets, beach, handicap accessible fishing pier, boat landing, dump station, fish cleaning station, firewood vending, pavilion, playground, basketball court, volleyball court, and caretaker's residence.

At the time of the drafting of this Plan, the County is undertaking an expansion project that will add up to 30 additional sites to the Park. The expansion also includes provisions for an additional shower building, expanded boat landing parking, and a new maintenance shop building.

935.1.2 Sawmill Park

Sawmill Campground is located on Sawmill Lake, north of Birchwood. The park facilities include 25 campsites, hand pumps, 2 pit toilets, fishing pier, nature trail, and pavilion.

935.1.3 Dugan Run Equestrian Trailheads

Washburn County maintains camping facilities at the north and south trailheads of the Dugan Run horse trails. The north trailhead, located on Dugan Lake Road, has parking, a pit toilet, pavilion, hand pump, and an open area for camping. The south trailhead, located off the intersection of Harmon Lake Road and Hawthorne Drive has parking, pit toilet, pavilion, well, 8 campsites with electricity.

935.1.4 Ordinances

The Washburn County Code of Ordinances regulates use of designated campgrounds on the Forest. In accordance with this Ordinance, no person within a campground area shall:

1. Camp anywhere other than at established campsites
2. Dispose of trash other than in provided containers

3. Discharge or possess an uncased firearm or weapon
4. Ignite a fire unless in a designated fire ring
5. Keep a pet unleashed
6. Use the area between the hours of 11:00 p.m. and 6:00 a.m. unless a registered camper
7. Keep horses, livestock, or other domesticated animals not considered a household pet. Horses are permitted at the Dugan horse trails
8. Leave animal excrement within a developed area

935.2 LEISURE LAKE YOUTH CAMP

Washburn County operates and maintains a youth camp at Leisure Lake in the Town of Casey. This facility includes a main lodge, craft building, six cabins, bathroom, beach, ball field, picnic area, communal fire ring, boat landing and nature trail. The facility is rented on a donation basis with first reservation opportunities given to local youth groups.

935.3 PICNIC / DAY USE AREAS

Picnic and day use areas maintained by the County include (these may be part of other park facilities previously listed):

a. Slim Creek Flowage
b. Leisure Lake
c. Hallstrom Woods
d. Harmon Lake
e. Totogatic Park
f. Sawmill Park
g. Stony Brook Rest Area
h. Berry Road Rest Area
i. Casey Loop Rest Area
j. Sarona Wild River Trail Parking Area
k. Trego Wild River Trail Parking Area

935.4 SWIMMING AREAS / BEACHES

Washburn County maintains swimming areas and beaches at the following facilities. Official swimming areas are marked with swim ropes and buoys. Lifeguards are not provided.

a. Totogatic Park beach
b. Leisure Lake beach

935.5 BOAT LANDINGS

At several locations, both on and off the County Forest, areas have been developed for water access. These generally include a parking lot and an approach to water. These are provided for public access to waters for recreational purposes and are shown on recreation maps included in Chapter 1000. Water access is also discussed in Chapter 700. These landings are not to be considered boat mooring sites and camping directly on the landing site is not permitted. This list includes landing on or near the County Forest and are not all maintained by the County:

a. Loyhead Lake
b. Wolf Lake
c. Sawmill Lake
d. Big McKenzie Lake
e. Elbow Lake
f. Harmon Lake
g. Chippanazie Creek (Davis Flowage)
h. Spider Lake
i. Red Lake
j. Loon Lake
k. Leisure Lake
l. Casey Lake
m. Tranus Lake
n. Chippanazie Lake
o. Minong Flowage (Totogatic Park)
p. Slim Creek Flowage

These landings, including maintenance jurisdiction, are further described in Section 735.

935.5.1 Undeveloped Water Access Points

Other undeveloped water access points for canoes and boats currently exist on the Forest. These are used to hand launch boats or canoes but have not been developed for launching with a boat trailer. These sites are not routinely maintained and may be

evaluated for either repair, upgrade or closure in the future. All new developed water access sites must be approved by the Committee.

935.6 MINONG RIFLE RANGE

Ranges for public use are permitted on County Forest lands. The Minong Rifle range is maintained both by the County and local volunteers and is open to the public. Amenities include ranges to 400 yards, backstops, shooting benches, shooting shelter, pit toilet, trap range and pavilion. In general, the range is open for target shooting of typical sporting firearms and weapons. Bombs, incendiary devices, explosives, and fully automatic weapons are not permitted. Range use is limited to the use of black powder, rim fire, or center fire weapons that are considered as a typical sporting weapon.

935.7 CABIN PERMIT SITES

Starting in the 1960's, Washburn County offered a permit system to allow private cabins to be placed on County Forest lands. Over time, this program resulted in conflict since only a selected group of people were allowed to have these cabins. Legal review by the Wisconsin Department of Natural Resources resulted in a determination that cabin permits were in conflict with the County Forest Law. A sunset clause of December 31, 2010 was enacted and all cabins were removed from the forest.

The prior Plan included a recommendation that some of these cabin sites be considered for establishment of remote camping sites. The intention was to create campsites where individuals could camp with larger than a tent facility (restricted in Washburn County Code, except for 9 day gun deer season). This would provide for similar hunting access on the forest and would be allowable provided everyone had equal access to utilize the site. This Plan recommends that a remote campsites policy be considered for feasibility and possible implementation.

940 DESIGNATED RECREATION TRAILS

Designated recreation trails are those for which the County provides a trail and/or facility. The County currently provides trail systems that accommodate a fairly high level of public uses. The Committee may prohibit other activities or uses that are not compatible with the intent of the trail system.

Whenever possible, multiple uses of various trail systems are encouraged and are subject to policy review by the Committee. Wherever possible, attempts should be made to avoid user conflicts. Recreational users, however, may encounter forest management activities. Maps of trail systems are included in Chapter 1000.

940.1 TRAIL PLANNING, CONSTRUCTION AND MAINTENANCE

The Forestry, Parks and Recreation Committee will review all requests for additional recreation trails. Groups, or individuals requesting specific trail development or specific use, must present a plan for the long-term funding and maintenance of proposed trails. New trail proposals must comply with County policy, plans and standards. Trail construction plans shall incorporate all necessary federal, state or local permits and shall adhere to Wisconsin's Best Management Practices for Water Quality.

940.2 NON-MOTORIZED RECREATION TRAILS

The Washburn County Forest is a multiple use forest. Non-motorized recreation trails are a legitimate use of this forest. Design and maintenance of these trails may highlight natural features present on the Forest and should minimize damage and user conflicts. Trail use and development must be compatible with the characteristics of the landscapes and be as sustainable as practical. It is the policy of the Washburn County Forestry, Parks and Recreation Committee to manage non-motorized trails on the Forest.

940.2.1 Hiking Trails

All trails on the Forest are open for use by hikers. The County Forest does, however, maintain the following official hiking/nature trails:

a. Sawmill Campground Nature Trail
b. Leisure Lake Nature Trail

These trails have varying levels of maintenance. The Forestry Department continues to look for volunteer individuals, clubs or organizations to assist with routine trail maintenance.

940.2.1.1 Ice Age National Scenic Trail

The National Trails System Act was authorized by Congress in 1968. In October 1980, Congress amended the Act to authorize and establish the Ice Age National

Scenic Trail as part of the National Trails System. A Memorandum of Understanding exists between the Triad, composed of the National Parks Service, the Wisconsin Department of Natural Resources and the Ice Age Trail Alliance, Inc. with the purpose of cooperating in the completion and long-term management of the Ice Age National Scenic Trail in Wisconsin.

Washburn County entered into a Land Use Agreement with the Ice Age Park and Trail Foundation (now known as the Ice Age Trail Alliance) in 1995 for the purpose of managing approximately 7 miles of trail on the Washburn County Forest. This agreement expired in 2005 and no updated agreement was executed for trail management.

Through the 2006-2020 County Forest Plan duration, many different local volunteers were in contact with the Forestry Department regarding trail maintenance activities. There did not, however, appear to be consistent representation from an organized club or other entity that was taking responsibility for trail operations and maintenance.

The Ice Age Trail Alliance, based in Cross Plains, WI, has staff who perform trail development and management roles, as well as marketing and partner relations. Discussions took place between Washburn County and the Alliance during the drafting of this Chapter, specifically relating to trail operations and maintenance. It is a recommendation of this Plan that staff continue to work with the Alliance to build an effective working relationship as a means to provide a high-quality trail. The working relationship includes a goal of entering into a new land use agreement for the Ice Age Trail on the Forest.

While the Ice Age Trail footprint may remain on the Forest, improvements, relocations, or special projects will not be permitted until a new land use agreement is executed. Routine maintenance will be allowed. It is a recommendation of this Plan that the following conditions be met before the Committee considers approval of an agreement:

1. A meeting between statewide representatives of the "Triad" and Forestry Department staff will be held to discuss which entity is most appropriate to be the main managing group for trail operations.
2. At least annual meetings will be planned in order to facilitate communication between the parties.
3. A list of main points of contacts and their responsibilities will be developed (and maintained)
4. Ice Age Trail representatives will draft and submit a document that outlines the expectations for the type of trail that is desired, including signage, amenities, and other factors.

940.2.2 Bicycle Trails

Any trail located on the forest is open to bicycle use, with the exception of winter use on snowmobile trails. "Fat tire" bicycles are not permitted on groomed snowmobile trails.

Washburn County provides for the Wildcat Mountain Bike Trail on County Forest lands in the towns of Madge and Beaverbrook. Approximately 20 miles of mountain bike trail are maintained by local volunteers. These trails are a mix of single track, logging trails and a portion on the ATV/UTV trail surface. Portions of these trails are groomed for winter use by fat-tire bicyclists. At the time of this Plan drafting, the only facility on site is the parking lot. This Plan recognizes the value of adding other amenities such as bathroom(s), well, pavilion, picnic tables, etc.

This trail system receives a fairly high degree of use and usage is expected to increase. This Plan recommends continued operation and possible expansion of this trail system.

Electric Bicycles / E-bikes are considered a motor vehicle and are regulated as a two-wheeled motorized vehicle. These are not permitted on the bike trails or anywhere on the Forest.

At the time of the drafting of this Plan, local bike enthusiasts are working towards authorizing and developing a single track mountain bike trail parallel to the east side of the Wild River Trail running from Spooner to the ATV/UTV trail crossing the

Beaverbrook Wildlife Area. The County, as managing entity of the Wild River Trail, will participate and help facilitate this trail connection where feasible.

940.2.3 Horseback Trails

Any trail located on the Forest is open to equestrian use, with the exception of winter groomed trails (ski and fat tire bike). The Forestry Parks and Recreation Committee, by Ordinance, has the ability to further regulate horse use and can do so by adoption of rule. The County will monitor for damages and conflicts and implement rules as necessary.

Washburn County manages the Dugan Run Horse Trail in the towns of Madge, Birchwood, Crystal and Stone Lake. Approximately 30 miles of designated horse trail utilize a mixture of single track, logging trails, County Forest Roads and a portion of ATV/UTV trail. Maintenance on these trails is conducted jointly between local volunteers and County staff. This trail system includes two trailheads, one on the north off of Dugan Lake Road and one on the south off of Hawthorne Drive. The north trailhead has parking, bathroom, pavilion, well with hand pump, picnic areas and a large area for camping. The south trailhead has parking, bathroom, pavilion, electric well, and 8 campsites.

This trail system receives varying levels of usage and generally far below what was expected when the trail system was developed. This Plan recommends continued operation of this trail along with monitoring of use levels. It may be advisable to further promote this trail system. This plan does not recommend any expansion of these trails. A plan should be implemented to develop a septic system and sanitary dump station at the south trailhead.

This Plan also recommends developing some level of invasive species monitoring of the horse trail systems. Horses can spread invasive species fairly easily and the County may consider adopting a requirement for weed free feed, or other similar program to minimize risk of invasives. If invasives are found relating to horse trail use, the County may consider closure of the trail complex, or other mitigating measures.

940.2.4 Ski Trails

Washburn County maintains two regularly groomed ski trails.

a. Nordic Ski Trail is an 8 mile trail system located in the Town of Birchwood. The trail has parking facilities on the north and south ends, off of State Highway 70 and County Highway B. The system is groomed by the County for classical skiing.
b. Totogatic Ski Trail is an 8 mile trail system in the Town of Minong. Parking is located on the west side of 53, just north of Minong. The system is groomed by the County for classical skiing.

Both of these trails are used fairly heavily during good snow conditions and the Plan recommends continued operation and maintenance. This Plan also recommends upgrading at least one of these trails to accommodate both free-style (skating) and traditional skiing. The addition of bathrooms, Adirondacks (replace) or other amenities would also greatly enhance these facilities.

In the past, trails were groomed by the National Parks Service at the Leisure Lake Youth Camp and also by the County at Hallstrom Woods. One or both of these trail systems could be added into the County grooming schedule if the use is expected to be sufficient to warrant the additional workload.

940.2.5 Canoe Portage Trails

The County currently maintains two canoe portage trails in the Birchwood area. Both of these are located in high-density lake areas and include short portage trails connecting lakes.

a. Sawmill Lake Canoe Portage Trail

This route starts at Sawmill Lake, either at the Campground or the boat landing. Nine short portage trails connect Sawmill, Fawn, Beartrap, Tadpole, Telstar, Mallard, Otter and Deep Lakes. The longest portage is approximately 1000 feet while most are 300 feet or less.

b. Loyhead Lake Canoe Portage

This trail starts at Loyhead Lake boat landing adjacent to the Birchwood Firelane. The route includes seven portage trails that connect Loyhead, Bear, Lost, Bluebill,

Pine Point and Deep Lakes. The longest portage is 500 feet while most are 300 feet or less.

This Plan recommends continued maintenance of both canoe portage trails. They are an extremely unique experience in northwest Wisconsin and attract many visitors. This Plan also recommends increased levels of maintenance. The routes were cleared and re-signed in 2017 and the County should inspect the portages at least annually.

940.2.6 Future New Non-Motorized Trails

Proposals to construct additional or new trails or trail facilities will be considered only if they meet all of the following criteria (as determined by the Forestry, Parks and Recreation Committee):

a. The trail must be identified as a recommendation within this Plan or within the Washburn County Outdoor Recreation Plan and must be presented to the Forestry, Parks and Recreation Committee for approval.
b. It must be shown that a significant demand exists and that there will be sufficient trail use to justify the creation of a new trail or trail system. A direct benefit to the local community and/or County must also be documented.
c. An organized club, or user group, must make a commitment to maintain or assist in maintenance of the trail.
d. Trail proposals are to include provisions documenting that undue resource damage will not occur or will be avoided.
e. Trail proposals are to identify any potential user conflicts and provisions for mitigation.
f. Trail proposals are to include construction and design plans that comply will all applicable laws, ordinances and also include plans to secure all necessary permits.
g. Trail proposals are to include revenue sources for trail development costs as well as an itemized annual budget acceptable to the County.

The County may also consult with the Statewide Comprehensive Outdoor Recreation Plan or other regional planning documents to determine the feasibility of allowing for additional trail systems. It is also important to note that non-motorized trail systems are generally not supported by any reliable grant programs. Because of this, it is very

important to research and evaluate revenue sources and expenditure estimates as part of any trail proposal evaluation.

940.2.7 Forestry, Parks and Recreation Committee Approved Future Non-Motorized Trails

1. There appears to be a demand for hiking trails, especially close to municipalities.
2. There appears to be a demand for interpretive/nature trails.
3. There may be an opportunity to develop non-motorized trail systems adjacent to the Northwood School.
4. There may be opportunity to develop trail opportunities near Totogatic Park.
5. The area east and south of the Slim Creek Flowage and potentially as far as Sawmill Park could provide an opportunity for an extensive non-motorized trail complex.
6. The Barronett area could provide opportunity for looped hiking trail systems, possibly in conjunction with the Ice Age Trail.
7. Demand for mountain bike trails appears to be growing rapidly and expansion of Wildcat Trails appears to be a legitimate proposal.

940.3 MOTORIZED RECREATION TRAILS

940.3.1 Snowmobile Trails

The Forestry Department recognizes and manages approximately 260 miles of snowmobile trail in Washburn County. Trails are routed across County Forest, private lands, DNR owned rail grades and others. There are 3 types of official snowmobile trails recognized by the County and authorized either on the Forest or sponsored by the County on private or other properties.

940.3.1.1 Categories

a. Funded Trails – A system of state approved and funded snowmobile trails authorized by the County. This system is part of the statewide network of snowmobile trails that link Washburn County to other counties and areas of the state. Snowmobile registrations, trail passes and a portion of the gas tax are used to support trail operations. As of 2020, there are approximately 243 miles of official, funded trails within Washburn County. Approximately 124 miles of these are on County Forest lands and 40 miles are on the Wild River Trail (operated under easement to the County).

b. Club Trails – A smaller system of club sponsored trails is also in place on both County and private lands. Many of these connect to local business, cross waterways or connect road routes. There are approximately 27 miles of club/local trails recognized by Washburn County, and 5 miles of these are on County Forest lands. These are not included in grant funded programs and are generally groomed or maintained at the expense of local clubs.

c. Unfunded Trails – In the past, Washburn County has identified and designated trails that were eligible to be funded under DNR grant programs but were unable to secure maintenance grants due to funding shortfalls. In 2018, the County was able to "transfer" mileage from other trails as a correction to funded miles allocated by DNR versus actual miles calculated by GPS inventory. As of 2020, there are no remaining trails in this category.

940.3.1.2 Snowmobile Trail Maintenance

Snowmobile trail grants are applied for and administered by the County. A majority of snowmobile trail maintenance, especially grooming, is done by local clubs. Washburn County contracts with the Minong, Rolling Hills, and Birchwood Bobcats clubs for maintenance of official snowmobile trails. The County will assist with non-grooming trail maintenance activities as needed and be reimbursed when sufficient grant funds are available to do so.

The County shall inspect and monitor bridges and other infrastructure on the trail system periodically and attempt to secure grants to replace or rehabilitate as needed.

940.3.1.3 Ordinances Relating to Snowmobile Trails

The Washburn County Code of Ordinances and the Washburn County Road and Access Plan regulate County snowmobile trails. A summary of the regulations relating to designated snowmobile trails is as follows:

a. All snowmobile trails are closed to cars and trucks December 1 through April 1, including County Forest Roads designated as snowmobile trails

b. The Forest Administrator will make the determination to officially open and close snowmobile trails based on snow and maintenance conditions.

c. The official closure of the snowmobile trail system does not prohibit the use of motor vehicles that are permitted to operate on winter use trails on County

Forest Lands. Users may travel those portions of the designated snowmobile trails on County Forest lands, as permitted by ordinance (generally motor vehicles under 900 pounds) and at their own risk.

d. The Ordinance allows the Committee to establish speed limits on general trail sections and allows the Forest Administrator to establish speed limits where trails intersect active timber sales.

940.3.1.4 Future Snowmobile Trails

The Forestry, Parks and Recreation Committee shall have jurisdiction over any snowmobile trail development proposals. It is recommended that future trail proposals include a careful consideration of costs, benefits, and impacts and as part of a larger planning effort. Trail projects will be avoided in cases where annual maintenance funding is not available.

This Plan recognizes, in general, that the existing snowmobile trail mileage and network in the County is sufficient. Proposals for additional trails will be discouraged by the Forest Administrator and the Committee unless they meet any of the following criteria:

a. The trail reconnects Trail 140 from the Fenander Road Area to Trego. This section of trail was abandoned as a result of lost trail agreements.
b. Trail connection that eliminates snowmobile road route on Waggoner Road.
c. Trail connection that eliminates wet area between Highway 53 and the Popple Island Road area.
d. Relocations due to lost trail agreements on private lands.
e. New trail construction to move snowmobile traffic off of roadways.
f. Adjustments to address issues of public safety or environmental damage.

940.3.2 ATV/UTV Trails

Washburn County recognizes approximately 168 miles of official summer use ATV/UTV trail. Trails are routed primarily on County Forest, the Wild River Trail, Shell Lake Grade, some private lands, and road routes that connect trail systems. Washburn County also recognizes approximately 146 miles of winter use ATV trails. There are several classification of ATV/UTV trails recognized by the County.

940.3.2.1 Trail Categories

a. Funded Winter ATV Trails – a majority of the state funded snowmobile trails that lie on County Forest are also funded and designated as winter use ATV trails. Not all snowmobile trails on Washburn County Forest are funded as such, but all snowmobile trails on the Forest are also open to ATV from December 1 to April 1. Washburn County does not permit UTV use on winter trails, with the exception of the Wild River Trail and Shell Lake Grade. There are approximately 146 miles of winter funded ATV trails. There are approximately 46 miles of winter UTV riding opportunities.

b. Summer ATV/UTV Trails – for the purpose of summer ATV trails, ATV and UTV's are treated as the same type of vehicle, as all summer funded ATV trails managed by Washburn County are also open to UTV's. Summer use ATV/UTV trails lie primarily on County Forest Lands and also on the Wild River Trail, which is owned by the DNR and managed under easement granted to Washburn County. There are approximately 116 miles of summer funded ATV/UTV trails.

c. Troute Trails – A Troute is a combination of trail and route. These trails receive partial funding from the ATV/UTV program and there are several sections of County Forest Gas Tax roads, designated as ATV/UTV trail, included in this category. Washburn County manages approximately 18 miles as Troute.

d. Hybrid Trails – these are ATV/UTV trails that are open to highway vehicles, not receiving gas tax, that receive 50% funding. Hybrid trails established prior to 2012 are "grandfathered" as fully funded ATV trails and Washburn County has approximately 10 miles that are included in the summer ATV/UTV funding category. There are no other sections of trail with the Hybrid classification and this Plan does not recommend establishing new ATV/UTV trails that mix with highway traffic.

e. Connecting Routes – for the purpose of this Plan, a Connecting Route is meant to be a section of public roadway, open to ATV/UTV use that is used to connect designated ATV/UTV trails within Washburn County. In general, these are short sections where using the roadway is the only way to connect trails. While there are hundreds of miles of road routes open to ATV/UTV in Washburn County, only those sections considered necessary, at the discretion of the Forestry, Parks and Recreation Committee, to connect trail systems will be mapped on the official ATV/UTV map sanctioned by Washburn County.

While there are abundant opportunities to legally operate ATV's and UTV's on public roadways (routes), this Plan recommends promoting **trail** use and recognizing only those sections of route necessary to connect trail systems.

As of 2020, the following road routes (approximately 34 miles) are considered necessary trail connectors and are authorized to be included in the official ATV/UTV map developed and sanctioned by the County:

Wild River Trail to Casey Loop Routes	14 miles
Stony Brook Trail to Sawyer County	6 miles
Stony Brook Trail – Taylor Lake Road	.5 miles
Trail 39 – Cty F and Tranus Lake Road	1 mile
Beaverbrook to Harmon Trails – Leesome/Harmon	4.5 miles
Harmon Trails to Birchwood – Long Lake Rd	.5 miles
Harmon Trails to Birchwood – Birchwood Firelane	1 mile
Spider Loop – Shoreline Drive	.5 miles
Spider Loop to Sawyer County – Thayer/Outpost	1 mile
Spider Loop – Crystal Point	1.5 miles
Spider Loop to Birchwood – Berry/Nice/Elbow Lk Rds	3.5 miles
Spider Loop to Birchwood – Dalen / 30th	.75 miles

f. Club Trails – these are sections of trail that are maintained by clubs but are not designated under the state funding system. In general, club trails will not be sanctioned or permitted on County Forest Lands. There are, however, situations where the local clubs have established route connections to local businesses on County Forest gas tax roads. In particular, there is a short connection from Trail 39, north to County F that connects to a business establishment. Other club trails on private lands may be maintained by the local clubs but will not generally be included on the official ATV/UTV map.

940.3.2.2 ATV/UTV Trail Maintenance

For the purpose of summer use ATV/UTV trails, Washburn County's goal is to manage trail systems in a sustainable manner. For the purpose of this Plan and for trail development and maintenance, the term sustainable/sustainability is intended to

mean the development of a trail surface that is maintainable. It appears evident that there are very limited circumstances where a summer use ATV/UTV trail can be considered sustainable without intensive and routine maintenance. Of primary importance, trail surfaces need to be conducive to periodic grading or restoration that promotes water runoff from the trail surface and minimizes the opportunity for water flow to gain velocity and cause erosion.

Trail maintenance and rehabilitation projects will generally comply with the guidelines established in the WCFA ATV/UTV Sustainable Trail Guidance. This guidance can be found in Chapter 1000.

940.3.2.3 County and Club Roles

ATV/UTV maintenance and rehabilitation grants will be applied for and administered by the County. The County shall also periodically inspect and monitor trails, bridges and other infrastructure and replace/rehabilitate as necessary. Certain trail maintenance activities are done by the local ATV/Snowmobile clubs under contract with the County. Washburn County contracts with the Minong, Rolling Hills, and Birchwood Bobcats clubs. In addition, certain grant funds are retained, at the County's discretion, to fund trail maintenance activities conducted by the Forestry Department. The County will also assist with trail maintenance activities as needed and be reimbursed when sufficient grant funds are available to do so. The general maintenance plans for the Washburn County summer use ATV/UTV trail system include:

a. Local clubs to provide routine trail surface grading as necessary to provide for safe riding conditions
b. County is to periodically inspect trail signing, trail conditions, bridges, infrastructure, etc.
c. Clubs to provide for all trail signing
d. Clubs to provide for mowing and brushing
e. Clubs to provide for minor gravel, spot rehabilitation projects
f. County to undertake major rehabilitation, gravel projects.
g. County to apply for any necessary Chapter 30, Storm Water or other permits
h. County to grade trail systems at least annually.

940.3.2.4 Ordinances Relating to ATV/UTV Trails

The Washburn County Code of Ordinances and the Washburn County Road and Access Plan regulate County ATV/UTV trails. A summary of the regulations relating to trails is as follows:

a. Trails are closed from April 1 through the first Friday before Memorial Weekend, with the exception of the Wild River Trail and Shell Lake Grade. The Forest Administrator may adjust this closure as conditions permit.
b. ATV/UTV operation is not permitted off the surface of any trail unless on a trail established open by the County.
c. Operation in any wetland or riparian area is prohibited
d. Trails are closed at any time that DNR fire danger is listed at very high or higher.
e. Two-wheeled motorized travel is prohibited.
f. Tracked or otherwise modified ATV's or UTV's are not permitted.
g. UTV's are not permitted on groomed snowmobile trail surfaces, except for the Wild River Trail and Shell Lake Grade.

940.3.2.5 Future Summer Use ATV/UTV Trails

Washburn County has recognized that motorized trails are a legitimate use of the multiple use Forest. ATV/UTV's trails are an appropriate use, provided they are designed in a sustainable manner and can be maintained in a way that minimizes resource damage and reduces user conflicts. Over the prior 15 year planning period, Washburn County made significant progress in developing trails in accordance with an ATV Master Plan. This Plan recognizes that the ATV Master Plan has substantially been completed as much as practical. The original ATV Master Plan is included in the appendix.

Existing trails receive a very high level of use and it is proving difficult to keep up with trail maintenance, especially given the increasing size, weight and horsepower of UTV's. As a result, the County recognizes that the current footprint of the ATV/UTV trail system within Washburn County, and especially on County Forest lands, is deemed as an appropriate amount of miles to offer the riding public. This Plan identifies the following as appropriate and desired new trails/trail connections:

a. Connect the City of Shell Lake to the village of Barronett / Barron County via the abandoned railroad grade, Old Highway 63, or Shingle Camp Fire Lane, or a combination thereof.
b. Take over operational maintenance of the Tuscobia Trail from 30th Avenue east to Sawyer County (under easement transfer from Wisconsin Department of Natural Resources)
c. Look for opportunities to relocate the Waggoner Road/Wozny road route connection in the Town of Frog Creek onto an off-road trail system.

While the projects listed above represent the limit of acceptable new ATV/UTV projects, other, minor trail relocations will be permitted at the discretion of the Committee and/or Forest Administrator. These minor projects include proposals such as relocations due to lost private landowner agreements; projects to improve safety; or proposals to eliminate short sections of road route. Other projects may only be undertaken as an amendment to this Plan by the Washburn County Board of Supervisors.

In order to protect the integrity of the trail system, avoid user conflicts, and prevent unplanned and unregulated ATV/UTV trail system growth, this Plan specifically recommends that the following type of trail projects will not be permitted or sanctioned by the County:

a. Trail proposals not specifically identified above.
b. New trail connections on County Forest land that dead end at private land, residences or businesses.
c. New trail connections that are intended to connect road route systems.
d. Loop trails that are not part of the larger trail system.
e. Intensive use/play areas.

940.3.2.6 Future Winter Use ATV Trails

Given that winter use ATV trails are much less maintenance intensive (other than grooming of snow), they are exempt from the new ATV/UTV trail requirements listed in Section 940.3.2.4. New winter ATV trails may be added wherever/whenever grooming efforts are supported by the local club. Winter ATV trail funding may be authorized on County Forest lands if the connections to other

trail systems are available and are primarily off road. Local clubs are responsible for securing updated land use agreements with private landowners that allow for winter use ATV's. The County may apply for new winter ATV miles as trail connections are approved by the Forestry, Parks and Recreation Committee. New winter use ATV trails will generally not be open for UTV use to reduce conflict and safety issues.

940.3.3 State Trails / Wild River Trail

The Wild River Trail is the 40 mile abandoned railroad grade running north and south through Washburn County. It is part of a larger State Trail system that connects Rice Lake to Superior. This trail is owned by the State of Wisconsin, primarily by the Department of Natural Resources but also a section between Spooner and Trego that is owned by the Department of Transportation. The State of Wisconsin granted an easement to Washburn County to maintain and operate a multiple use motorized recreation trail on this property in 1995.

The 40 miles of this trail in Washburn County is managed as a snowmobile and ATV/UTV trail, but is also open to multiple recreational uses. This trail is the "backbone" of the motorized trail system in the County and nearly all other trail sections ultimately connect here. This Plan recommends the following actions relating to this trail:

a. Continue to maintain the easement and MOA status of the County having the responsibility of maintaining the trail surface and State having responsibility for sub-grade, structures, reconstruction, etc.
b. Continue to push for inspections of bridges and culverts to assure structural integrity
c. Work with the Department of Transportation and the excursion train operations to promote better relationships between trail use and railroad operations between Spooner and Trego.

A copy of the MOA and Easement can be found in Chapter 1000.

940.3.4 Other Motor Vehicle Trails

No other motorized vehicle trails have been developed on the Washburn County Forest. This plan does not recognize a need, or a feasibility to establish trails for motorcycles,

off-road trucks or other motorized uses. These uses may pose too much risk for environmental damage and user conflict to justify any potential tourism benefit. This Plan also recognizes that as UTV's continue to be manufactured as larger and more powerful units, the County will likely need to establish maximum sizes, by Ordinance, which may be more restrictive than vehicle definitions adopted by State Statute. This Plan restricts the county from developing any of the following on County Forest:

a. Motorcycle, dirt-bike, mini-bike trails
b. Intensive use ATV/UTV parks (play areas)
c. Off-road vehicle courses or trails (4 x 4 truck)
d. Trail system specifically for or allowing e-bikes

945 RECREATION RELATED PERMITS

The following permits may apply to recreational trail and facility development or rehabilitation projects:

945.1 STORM WATER DISCHARGE

In general, any trail construction or rehabilitation activities that disturb one acre or more of land will require a Storm Water Discharge Permit. There have been instances of inconsistent application of permit requirements statewide. In order to further define the County's understanding and implementation of permit requirements, the following currently acceptable process will be used for determining when a permit is needed:

a. The 1-acre threshold will be determined by measuring/estimating new disturbance or disturbance of previously grass/undisturbed surfaces.
b. Periodic grading of impervious or non-grassed trail surfaces is not considered disturbance
c. Restoration of water filtration/diversion devices, such as sediment traps or catch basins is considered maintenance and not disturbance.
d. Reconstruction of previously grassed ditch lines as part of trail rehabilitation is considered disturbance.
e. For the purpose of a Storm Water Permit, the technical standards are difficult to directly apply to a linear trail system. Best Management Practices for Water Quality may be used as a substitute to these technical standards.

945.2 CHAPTER 30

Permits are required for bridges or culvert crossings of navigable waterways. These permits will either be classified as general or individual depending on site conditions. These permits are not required for culvert or bridge crossings of non-navigable or intermittent streams, nor are they required to install a clear span bridge over wetlands.

945.3 WETLAND FILL

Permits are required at any time that fill is placed in wetlands. Permits are available to fill small wetlands for recreation trail purposes. Wetland fill must be less than 10,000 square feet and the permit does not require wetland mitigation. Clear span bridge and boardwalks placed on pilings generally do not require a wetland fill permit. Puncheon style bridges do require a wetland fill permit.

950 RECREATION PROGRAM FUNDING AND GRANTS

950.1 FUNDING FOR RECREATION FACILITIES OR AREAS

Program funding for recreation facilities, such as campgrounds and parks, are generally fee based. Revenues generated from camping registration and other fees help offset costs of operation. Funds are available through the Aid for Development of Local Parks (ADLP) program for facility develop or enhancement. Competition for these grants is very high and grant awards to Washburn County are somewhat infrequent. Cost share matches for ADLP and funding for other projects may also be secured from timber revenue.

950.2 RECREATION TRAIL FUNDING

950.2.1 Non-Motorized Trail Systems

At the time of the Plan draft, there is very limited access to any grant funds that will assist with non-motorized recreational trail maintenance. Funds are allocated to certain trail maintenance activities directly from timber sale revenues in the budget. At this time there are no user generated fees associated with non-motorized trail systems.

950.2.2 Motorized Trail Systems

There are numerous grant programs available to fund motorized trail system development and maintenance. In general, the County currently does not budget any non-grant funds to motorized trail maintenance. Washburn County utilizes the following motorized grant funding sources:

a. State Snowmobile Maintenance Funds

b. ATV/UTV Summer Maintenance
c. ATV Winter Maintenance
d. UTV Winter Maintenance
e. ATV/UTV and Snowmobile Rehabilitation
f. ATV/UTV and Snowmobile Development
g. Troute Maintenance
h. Recreational Trail Aids grants

955 PLAN RECOMMENDATIONS FOR THE RECREATION PROGRAM

955.1 ENFORCEMENT

Washburn County currently assigns a full time Sheriff's Department Deputy as a Recreation Officer. The position is supervised by the Sheriff, but the day to day enforcement duties are established by the Forest Administrator. This Plan recognizes that this position is critical to County recreation programs and provides for the safety of recreational users on the forest. This Plan also recognizes that this full time position is the minimum level necessary for providing an adequate and appropriate level of law enforcement on the County Forest and associated recreational trails and facilities.

955.2 STAFFING NEEDS

As of 2020, Washburn County's Recreation staff consists of a full time Assistant Recreation Administrator, as the program manager under the Forest Administrator, and ½ full time equivalent (FTE) allocated to parks and recreation operations from the Natural Resources Technician. Washburn County also employs an LTE Groundskeeper position and 2 parks caretaker/host positions at Totogatic during the camping season. The two Forestry Technician positions are allocated to assist with parks projects as necessary.

With the Totogatic Park expansion project that is underway as of 2020, along with the ever increasing recreational demands and uses on the Forest, this Plan recognizes adding a minimum of 0.5 FTE directly to the recreation program by the year 2023 and another 1.0 FTE by 2025. This Plan also identifies a need to develop another Campground Host to help manage the campground expansion area.

955.3 CAMPGROUNDS

At the time of this Plan drafting, an expansion project is underway at Totogatic Park. Phase 1 of this project includes the addition of approximately 30 sites. The proposed development also includes the ability to add up to 50 or more sites. This Plan recommends evaluating usage at the Park and adding more capacity at such time that usage warrants. This Plan also provides for the following general campground recommendations:

1. Redevelop/redesign nature trail at Totogatic Park.
2. Improve directional signage (from Highways) to both Sawmill and Totogatic Parks.
3. Registration booth/kiosk at entrance to Totogatic Park.
4. Restore the old shelter building at Totogatic Park.
5. Develop some type of firewood vending at Sawmill Park.
6. Develop campground host position for Sawmill Park.
7. Add a sanitary dump station and other amenities at Harmon Lake
8. Ensure that all campgrounds are licensed as appropriate.
9. Continue to assist municipalities with ATV campgrounds and potential future expansion. (Minong, Shell Lake)
10. Upgrade amenities at Sawmill, especially the pavilion and dock

Other recommendations may be found in the Washburn County Outdoor Recreation Plan.

955.4 YOUTH CAMP

The Leisure Lake Youth Camp receives a great deal of use and is in high demand. The facility is, however, quite old and beginning to show its age. By policy, the County has operated this facility on a suggested donation basis, primarily due to determinations that the kitchen would need to meet certain inspection standards if it were fee based. This Plan identifies a need to rectify the kitchen issues as well as upgrading the facility as follows:

1. Develop bathroom facilities that include running water and possibly showers.
2. Renovate the kitchen facility in the main lodge with new appliances cabinets, water heater, etc.
3. Install tile, or other flooring in the main lodge
4. Repair/restore the rock fireplace
5. Repair any deteriorating foundations and update/repair cabins.
6. Provide for more feasible access to the cabins uphill from the main lodge. It may be feasible to construct road access from the ball field area and a parking area closer to the cabins.

7. Upgrade electrical
8. Work with the Town of Casey to upgrade entrance road
9. General remodeling and upgrades
10. Restructure usage fees to increase revenues at the facility.

955.5 TRAILS

1. Work towards establishing a better working relationship with Ice Age Trail organizations and developing a better support system for trail management/maintenance.
2. Monitor trail use for invasive species introduction. Attempt eradication/management of invasives and develop regulations as necessary to minimize risk of additional infestations.
3. Consider reopening Hallstrom Woods as non-motorized trail system (mountain bike/ski).
4. Consider reopening Leisure Lake Ski Trail.
5. Consider expanding grooming operations at one of the ski trails to accommodate skating/freestyle skiing.
6. Make attempts to secure a reliable funding source for non-motorized trail systems, including developing trail or parking passes.
7. Continue to maintain and consider upgrading nature trails and canoe portage trails.
8. Work towards ATV/UTV trail connections as identified within this Chapter.

955.6 OTHER RECREATION RECOMMENDATIONS

1. Periodically review undesignated uses, both motorized and non-motorized, to determine need for additional regulations.
2. Periodically review use of undesignated boat launches to determine repair needs
3. Clarify jurisdiction of boat landings (County, Town, State)
4. Continue to research mechanisms to exercise reversionary clause at Ernie Swift Youth Camp and develop or find a non-profit program to utilize the facility
5. Add bathrooms and other amenities at ski trail and mountain bike trail parking areas
6. Evaluate certain sites that once had cabin permits to allow for dispersed camping with hard side campers (larger than tent as identified in Ordinance).
7. Add sanitary dump station and other amenities at horse trails
8. Consider adding campground host at Sawmill Park

The Washburn County Forest Outdoor Recreation Plan contains more detailed information on recreation program recommendations

APPENDIX E-47 Mussel Relocation BITP/A

Broad Incidental Take Permit/Authorization for Common Activities

Mussel Relocations
(*all state listed mussel species***)**

Background

The Broad Incidental Take Permit/Authorization for Common Activities, as provided for under s. 29.604 Wis. Stats., allows for the incidental taking (mortality) of certain endangered and threatened species that may occur as a result of activities occurring regularly across the landscape. The Department recognizes that mussel relocations are often required under individual incidental take permits/authorizations with similar minimization and mitigation measures, and therefore has issued this broad incidental take permit (used by non-state agencies and individuals) and broad incidental take authorization (used by state agencies) to cover this regularly occurring activity if the associated conservation measures are implemented. An incidental take permit or authorization is typically issued on a project-by-project basis, however a broad incidental take permit/authorization (BITP/A) was created for this situation so that an application, permit fee and public notice period is not required for each individual project.

Please note that this BITP/A for Common Activities does not legally cover a project unless all conditions listed below (project definition, process, reporting and conservation measures) are met.

Additional federal approvals for species that are both state and federally listed may also be needed.

Project Definition

This BITP/A covers relocating mussels from a project area where take could occur to a location outside of the impact area. These mussel relocations may occur in conjunction with a variety of projects, including bridge replacements, dam repairs, rip rap or seawall projects, instream habitat projects, stream crossings (fords), etc.

Process

The first step in determining whether a mussel relocation is necessary is to have an Endangered Resources (ER) Review or Certified ER Review conducted. Please note that if you are requesting another DNR permit or approval (e.g., Chapter 30 Permit, Stormwater Permit), the ER Review may be conducted as part of this process. If an ER Review or Certified ER Review has indicated the likely presence of threatened or endangered mussels within the project area and avoidance is not possible, this Broad Incidental Take Permit/Authorization (BITP/A) can be utilized.

If this process is not followed, the property owner and/or project applicant are liable for any and all take that may occur.

Reporting

In order for a project to be covered under this BITP/A, all measures listed below under "Conservation Measures" must be followed. This includes submitting a Relocation Plan prior to beginning the relocation and a closing report within 60 days of completion of the project. If project activities cannot follow the measures below, the project does not qualify for a BITP/A and must apply for an individual Incidental Take Permit/Authorization.

Conservation Measures

All projects conducting mussel relocations must submit a **Relocation Plan** to the Endangered Resources Review Program (DNRERReview@wi.gov) or appropriate ER Review Liaison and have it approved prior to beginning the relocation.

The Relocation Plan must include the following project-specific information:

- Project Name
- Project Location (e.g., address, GPS location, Township/Range/Section)
- Planned date(s) of mussel relocations
- Map indicating the location and extent of both temporary and permanent instream disturbance
- Map indicating the transplant location if determined prior to the Relocation Plan submittal
- Possible mitigation, marking, monitoring

In addition to the project-specific information listed above, the following measures are required of all projects and must be included in the Relocation Plan:

- Relocation Team: The relocation team provides personnel and equipment needed to complete all Conservation Measures in this document and the Relocation Plan. Sufficient staff must be available to ensure safety and quality of work and minimize stress to the mussels during all phases of the relocation effort. A malacologist experienced in unionid collection and monitoring techniques will coordinate collection and relocation efforts and monitoring as part of the relocation team, when required. The malacologist must be familiar with the identification of Wisconsin unionid mussel fauna and have expertise in the identification of rare species. **In addition, the relocation team will need state/federal permits to handle the mussels.**

- Timing: Relocations will occur in a timeframe that allows completion of all relocation work prior to initiation of activities that impact the streambed. This is to ensure that mussels do not move back into the relocation area before construction is initiated. The relocation schedule may be modified to occur in advance of project activities if mussels are not expected to move into the impact area (i.e., mussel moved in the late fall for an activity starting in early spring).

- Water Temperature: To minimize thermal stress to the mussels, air temperatures should be above 32°F and water temperature should be above 40°F.

- Impact Area Delineation: Mussels will be relocated from all areas of temporary or permanent instream impact. If the impact is a bridge, the new bridge structure and any temporary structures used to construct the bridge (i.e., causeways, temporary bridge, barging staging areas) should be

considered in the area of impact. All impact areas must include an appropriate buffer as dictated by substrate and flow conditions at that site. The impact area should be clearly marked, and the markers may remain in place throughout the length of the project (not just the relocation) if deemed necessary (*determined on a project-by-project basis*). This is to ensure that impacts to the streambed are contained within the areas where mussels were removed.

- Mussel Collection from the Impact Area: Following delineation of the impact area, the relocation team will establish transects or a grid within the collection area. All mussels in the impact area will be collected. Collecting from downstream to upstream is recommended as the most efficient approach. All mussels will be collected into mesh bags that will be maintained in the water. The number of mussels collected in each bag will be based on the size and number of mussels and adjusted to avoid overcrowding. All areas will be traversed at least twice to ensure all or an acceptable percentage of the total number of mussels within the area are collected.

- Holding, Processing & Transport of Mussels: Following collection of mussels from the substrate, the mussels will be maintained in water at ambient temperature during holding and subsequent transport to the relocation site. Out of water time during processing should be kept to the minimum required to identify and process. Water temperatures should be monitored throughout the relocation. At a minimum, all mussels collected will be identified, counted, and relocated. If required (*determined on a project-by-project basis*), mussels may also be measured, sexed, aged and/or uniquely marked on one or both valves. Gravidity of females should be noted only if appropriate and conducted cautiously.

- Transplant Area Delineation: The location of the transplant area will be approved in the Relocation Plan (listed above). The transplant area must include all of the following:
    1. Be close to the collection area with sufficient habitat to support a viable population.
    2. Have similar or better water quality, substrate, and fish fauna to the collection site.
    3. Not be influenced by factors detrimental to unionids (e.g., point discharge, dredging, navigation).
    4. Have an existing or historical mussel population with similar species composition.
    5. If required (*determined on a project-by-project basis*), samples may be collected within the transplant site to determine existing unionid density and substrate composition before relocating. Mussels collected during sampling will be returned to the transplant area.

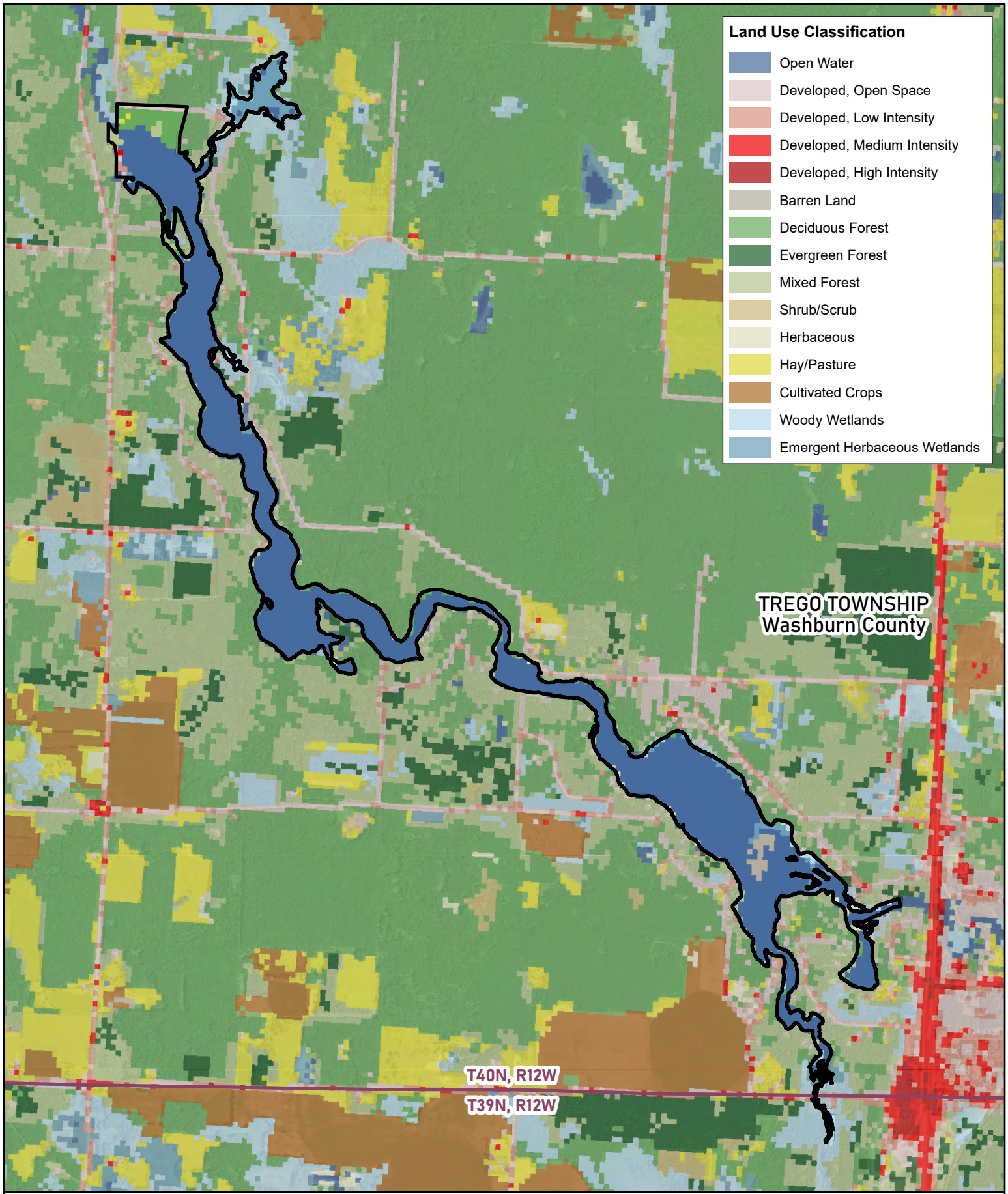
- Placement of Mussels at Transplant Site: All endangered/threatened mussel species will be hand placed in a natural position within the substrate. The remaining mussels (not endangered/threatened) may be distributed by hand along the surface of the substrate above suitable substrate, or hand placed in the substrate. Mussels should be distributed evenly (by boat, diver, or wading) in suitable habitat. An initial swimover may be required at completion of the relocation efforts to make sure mussels are distributed evenly and to collect any fresh dead from initial mortality.

Closing Report

A closing report must be submitted to the Endangered Resources Review Program (DNRERReview@wi.gov) or appropriate ER Review Liaison **within 60 days of completion of the mussel relocation**. The closing report must include the following information:

- Project Name
- Project Location (e.g., address, GPS location, Township/Range/Section)
- Date(s) of mussel relocations
- Map indicating the location and extent of both temporary and permanent instream disturbance
- Map indicating the transplant location
- Species observed and any additional information collected
- Number of individuals of each species observed

APPENDIX E-48 Land Use in the Trego Project Vicinity



Proposed Project Boundary

Township Range

N

0 1,000 2,000

Feet

Xcel Energy

Mead & Hunt

Note: the impounded Proposed Project Boundary is established at elevation 1,035.2 feet NGVD 1929.

Trego Hydroelectric Project
Major Land Use in Vicinity of
Proposed Project Boundary

FERC No. 2711

Source Layer: National Land Cover Database 2019, WI 2022 NAIP (natural color, 0.6-meter resolution)

X:\24001000\192923.011\TECH\Hayward and Trego\Project Maps\Trego\DLA\PRO\Trego_DLA_Maps\Trego_DLA_Maps.aprx

APPENDIX E-49 Wisconsin Construction Site Erosion Control Field Guide


WISCONSIN
CONSTRUCTION SITE
EROSION CONTROL
FIELD GUIDE
NASECA
WISCONSIN

Table of Contents

Background 4
BMP Matrix 6
Land Application of Additives for Erosion Control (WDNR T.S. 1050) 8
Water Application of Additives for Sediment Control (WDNR T.S. 1051) 10
Non-Channel Erosion Mat (WDNR T.S. 1052) 12
Channel Erosion Mat (WDNR T.S. 1053) 14
Vegetative Buffer for Construction Sites (WDNR T.S. 1054) 16
Sediment Bale Barrier (WDNR T.S. 1055). 18
Silt Fence (WDNR T.S. 1056) 20
Trackout Control Practices (WDNR T.S. 1057) 22
Mulching for Construction Sites (WDNR T.S. 1058) 24
Seeding (WDNR T.S. 1059) 26
Storm Drain Inlet Protection for Construction (WDNR T.S. 1060) 28
Dewatering (WDNR T.S. 1061) 30
Dewatering Practice Selection Matrix 32
Ditch Checks (WDNR T.S. 1062) 34
Sediment Trap (WDNR T.S. 1063) 36
Sediment Basin (WDNR T.S. 1064) 38
Construction Site Diversion (WDNR T.S. 1066) 40
Grading Practices for Erosion Control (WDNR T.S. 1067) 42
Dust Control (WDNR T.S. 1068) 44
Turbidity Barriers (WDNR T.S. 1069) 46
Silt Curtain (WDNR T.S. 1070) 48
Interim Manuf. Perimeter Ctrl. and Slope Breaks (WDNR T.S. 1071). 50
Channel Erosion Control Matrix 52
Slope Erosion Control Matrix 58
WisDOT Erosion Mat Categories. 63
General Inspection and Maintenance Guidance. 64

ACRONYMS

- **WDNR T.S.** Wisconsin Department of Natural Resources Stormwater Management Technical Standard
- **WisDOT PAL** Wisconsin Department of Transportation Product Acceptability List
- **BMP** Best Management Practice

CONTACTS

- **NASECA-Wisconsin**
  P.O. Box 70714 | Madison, WI 53707-0714
  info@nasecawi.org | www.nasecawi.org

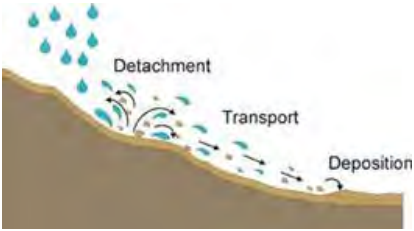
- **Emmons & Olivier Resources**
  119 S. Main Street | Cottage Grove, WI 53527
  bnelson@eorinc.com | www.eorinic.com

ACKNOWLEDGEMENTS

- Wisconsin Department of Natural Resources (WDNR)
- Wisconsin Department of Transportation (WisDOT)
- Dane County Land and Water Resources Department
- Gil Layton, Layton Environmental
- Tony Vandermuss, Capital Area Regional Planning Commission
- U.S. Environmental Protection Agency (EPA)

This guide is current as of October 2, 2019.

Background



As our society has become more environmentally aware, federal, state and local regulatory agencies have recognized the impacts of sediment pollution on our lakes, streams and wetlands and have established rules to reduce those impacts.

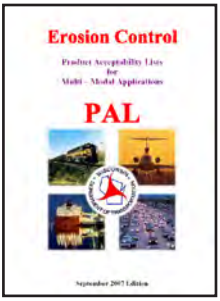
Project owners and contractors are required to meet the standards prescribed in the rules during construction. Consequently, erosion control Best Management Practices (BMPs) have become a standard part of the construction process.

Erosion control BMPs are designed to limit off-site effects of erosion, aid in project construction while minimizing overall cost, and to comply with federal, state, and local laws and regulations.

BMPs can be generally classified into two categories, erosion control and sediment control.

- Erosion Control - Directly protect the disturbed soil surface from erosion. They are the best measure for preventing erosion.
- Sediment Control - Aid in removal of sediments from water after the erosion process has already begun. This is accomplished by using barriers, containments, or other devices to filter or reduce the velocity of the water so soil particles can no longer remain suspended.

This guide is intended to aid designers, inspectors and contractors in selecting and correctly installing BMPs to reduce erosion, by following technical standards developed by the Wisconsin DNR.



WISCONSIN DEPARTMENT OF TRANSPORTATION PRODUCT ACCEPTABILITY LIST (PAL)

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/pal/default.aspx

This list provides guidance in selecting and proper application of erosion and sediment control products. The Product Acceptability List pages are for the guidance of design engineers, technicians, and inspection personnel, municipalities, counties, contractors, and suppliers engaged in bridge and highway design, plan preparation, and construction.

Categories include tackifiers, erosion mats, soil stabilizers, inlet protection, and temporary ditch checks. Projects permitted by the State of Wisconsin shall utilize products listed on the PAL when appropriate.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES STORMWATER CONSTRUCTION AND POST-CONSTRUCTION TECHNICAL STANDARDS

http://dnr.wi.gov/topic/stormwater/standards

Stormwater Construction and Post-Construction Technical Standards are minimum requirements needed to plan, design, install and maintain a wide array of conservation practices aimed at preserving the land and water resources of Wisconsin. The WDNR recommends that these technical standards be used for erosion/sediment control or stormwater management as they have been determined to be adequate and effective to implement the performance standards of subch. III or IV of ch. NR 151 and Trans 401.06, WI Administrative Code.

BMP Matrix

WDNR T.S.	Best Management Practice	Construction		Site Features		
		Summer	Winter	Steep Slopes	Ditches or Channels	Sensitive Features
		May-September	October-April	Slopes >10%	Concentrated Flow	Wetlands, Waterways, Streams
Erosion Control						
1050	Land Application of Additives	OK	OK	OK	✗	✗
1052	Non-Channel Erosion Mat	OK	OK	OK	✗	✗
1053	Channel Erosion Mat	OK	OK	✗	OK	✗
1058	Mulch	OK	OK	OK	✗	✗
1059	Seeding	OK	✗	OK	✗	✗
1067	Temporary Grading Practices	OK	OK	OK	✗	✗
1068	Dust Control	OK	OK	✗	✗	✗

WDNR T.S.	Best Management Practice	Construction		Site Features		
		Summer	Winter	Steep Slopes	Ditches or Channels	Sensitive Features
		May-September	October-April	Slopes >10%	Concentrated Flow	Wetlands, Waterways, Streams
Sediment Control						
1051	Water Application of Additives	OK	OK		OK	OK
1054	Vegetative Buffer	OK		OK		OK
1055	Sediment Bale Barrier	OK	OK	OK		OK
1056	Silt Fence	OK	OK	OK		OK
1057	Trackout Control Pracitices	OK	OK			
1060	Storm Drain Inlet Protection	OK	OK			
1061	Dewatering	OK	OK			
1062	Temporary Ditch Check	OK	OK		OK	OK
1063	Sediment Trap	OK	OK		OK	
1064	Sediment Basin	OK	OK		OK	
1066	Construction Site Diversion	OK	OK	OK	OK	
1069	Turbidity Barrier	OK	OK			OK
1070	Silt Curtain	OK	OK			OK
1071	Temporary Slope Breaks	OK	OK	OK		

Land Application of Additives WDNR T.S. 1050

DEFINITION

The land application of products containing water soluble and non-soluble additives to temporarily reduce erosion.

PURPOSE

To reduce erosion from wind and water on construction sites and agricultural lands until vegetation is established.

CONDITIONS WHERE PRACTICE APPLIES

Intended for direct soil surface application to sites where the timely establishment of vegetation may not be feasible or where vegetative cover is absent or inadequate. Such areas may include agricultural lands where plant residues are inadequate to protect the soil surface and construction sites where land disturbing activities or winter shutdown prevent establishment or maintenance of a cover crop.

This practice is not intended for application to surface waters of the state as defined by WDNR ch. NR 102.

LAND APPLICATION OF ADDITIVES INSTALLATION

Application

- Selected from the approved list in the WisDOT PAL. This product is defined as "Soil Stabilizer, Type B" on the WisDOT PAL.
- Apply additives by the methods and at the rates specified by manufacturer.
- The additive may be used either alone as a temporary stabilization measure or in conjunction with seeding and mulching for permanent restoration.
- Additives may be particularly applicable for temporary stabilization of disturbed areas that will receive intermittent periods of disturbance throughout a construction project.
- May be applied with conventional hydraulic seeding equipment or through dry spreading. Choose application method for uniform coverage and to minimize drift to non-target areas. Prevent over-spray from reaching pavement (pavement becomes slippery).

Restrictions

- Application rates shall not exceed manufacturer's written application rate or WDNR allowable application rate (expressed in lbs/ac).
- Do not use in areas within 30 feet of wetlands, waterways, or channels.
- Use of additives shall be restricted to slopes 3 horizontal : 1 vertical or flatter unless used in conjuction with other surface stabilization methods.

Documentation

- Document and keep with the erosion control plan and inspection notes:
  - » Name of person performing the application;
  - » Date, location of application, and weather conditions;
  - » Type of additive applied (manufacturer, product name, concentration);
  - » Application rate per acre, amount of material used, and method.

INSPECTION AND MAINTENANCE

Reapply after disturbance, large rain events, or where wind/rill erosion is apparent since the last application. May lose effectiveness in 2 months.

Water Application of Additives (WDNR T.S. 1051)

DEFINITION

The application of products containing water-soluble additives to remove suspended solids in sediment control structures.

PURPOSE

To clarify water prior to discharge by settling suspended solids within sediment control structures for construction or post-construction process systems.

CONDITIONS WHERE PRACTICE APPLIES

- Use to improve the sediment removal efficiency of self-contained sediment control structures (such as a detention basin) on a temporary basis for construction sites or, in an emergency, for post-construction sites.
- Do not apply polymers directly to surface waters of the state.
- If used in accordance with the use restriction, polymer must meet an acceptable level of risk such that it can be used without harm to organisms that inhabit or come in contact with the aquatic environment. Every attempt shall be made to eliminate any environmentally toxic chemicals within a polymer mixture, and must be non-combustible.
- Contact WDNR Stormwater Program Coordinator at (608) 266-2621 to obtain current list of products with reviewed toxicity data and allowable application rates.

WATER APPLICATION OF ADDITIVES INSTALLATION

Application

- Maximum application rates in pounds per acre-feet shall be the lesser of WDNR's use restriction multiplied by 1.35 or manufacturer's rate.
- Neither the manufacturer's written application rate recommendations nor the application rate shall exceed the WDNR use restriction.
- The manufacturer or distributor shall provide for the applicator:
  - » Labels affixed to the polymer mixture containers that indicate the recommended application rate and the maximum application rate based on the use restriction;
  - » Product expiration date for the polymer mixture based on product expiration dates of the polymer and written application methods;
  - » Written instructions for safety, storage, and mixing of their product.
- The product must be applied uniformly and in one of the following ways:
  - » Passive Applications: Polymers applied by non-mechanically dosing the sediment laden inflow prior to it entering the impoundment area of the sediment control structure. Manufacturer must base passive application rates on the dissolution rate and/or the dead storage volume of the sediment control structure.
  - » Active or Mechanical Applications: Polymer applied by mechanically or hydraulically mixing directly into a sediment control structure.

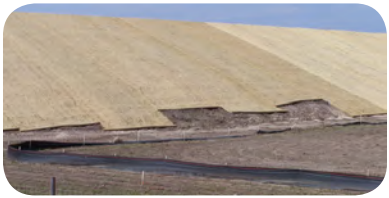
Documentation

- » Name of applicator, product type, and method of application;
- » Application rate in pounds per acre-feet of stormwater runoff;
- » Date applied and weather conditions during application; and pH in sediment control structure after application.
- » Contractor shall enter this information into a monitoring log or a project diary and must be made available upon request.

INSPECTION AND MAINTENANCE

Monitor sediment levels on the bottom of the structure to measure the loss of storage capacity due to enhanced sedimentation by the polymer mixture.

Non-Channel Erosion Mat (WDNR T.S. 1052)



DEFINITION

A protective soil cover made of straw, wood, coconut fiber or other suitable plant residue, or plastic fibers formed into a mat, usually with a plastic or biodegradable mesh on one or both sides. Rolled products are available in many varieties and combinations of material and with varying life spans.

PURPOSE

To protect the soil surface from the erosive effect of rainfall and prevent sheet erosion during the establishment of grass or other vegetation, and to reduce soil moisture loss due to evaporation. Applies to both Erosion Control Revegetative Mats (ECRM) and Turf-Reinforcement Mats (TRM).

CONDITIONS WHERE PRACTICE APPLIES

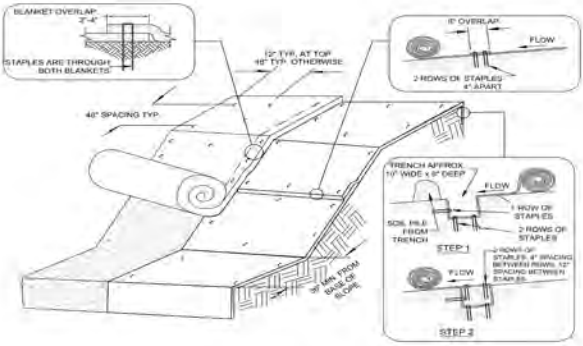
Erosion mats for use on erodible slopes. Not for channel erosion; for channel applications see WDNR T.S. Channel Erosion Mat (1053).

NON-CHANNEL EROSION CONTROL MAT INSTALLATION

- Use only products listed in the WisDOT PAL.
- Erosion mat shall be in firm and continuous contact with the soil and extend upslope one-foot from land disturbance.
- Where possible, use a single roll of EC mat to span the disturbed area.

NON-CHANNEL EROSION CONTROL MAT INSTALLATION

- Staples used for erosion mats shall be 1-2 inch wide, U-shaped, made of No.11 (3.05mm) or larger diameter steel wire, and not less than 6 inches long for firm soils and 12 inches long for loose soils.
- In areas with mowed turf or where animal entrapment is possible, use urban mats. Urban mats and associated anchoring devices shall be selected based upon the WisDOT PAL.
- Erosion mat shall be anchored, overlapped, staked and entrenched per the manufacturer's recommendations.
- This detail is an example of typical installation guidance.



INSPECTION AND MAINTENANCE

Install additional anchoring in areas of rilling and concentrated flow beneath the mat. If rilling is preventing vegetation establishment, remove erosion mat, regrade, compact, re-seed, and replace the section of mat.

Channel Erosion Mat (WDNR T.S. 1053)

DEFINITION

A protective soil cover of straw, wood, coconut fiber or other suitable plant residue, or plastic fibers formed into a mat, usually with a plastic or biodegradable mesh on one or both sides. Rolled products are available in many varieties and combination of materials and with varying life spans.

PURPOSE

To protect the channel from erosion or act as turf reinforcement during and after the establishment of grass or other vegetation in a channel. Applies to erosion control revegetative mats (ECRM) and turf-reinforcement mats (TRM).

CONDITIONS WHERE PRACTICE APPLIES

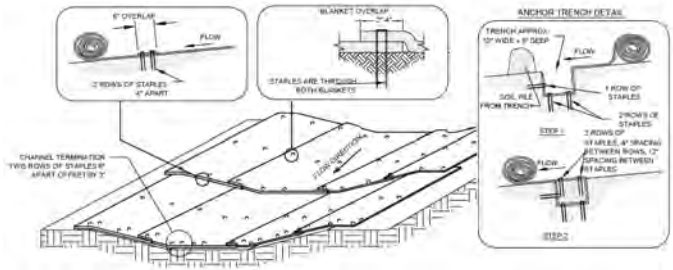
Where runoff channelizes in intermittent flow and vegetation is to be established. Some products may have limited applicability in projects adjacent to navigable waters due to potential wildlife entrapment.

- Use channel erosion mat products identified on the WisDOT PAL.
- Use WisDOT PAL classes and types to select and specify erosion mat.
- Select an erosion mat based on the calculated shear stress, given drainage area characteristics and channel geometry for the design storm depth.
- Select erosion mat that will last until turf grass or other vegetation becomes densely established.

CHANNEL EROSION MAT INSTALLATION

- Install and anchor erosion mat in accordance with manufacturer's instructions.
- At time of installation, retain material labels and manufacturer's installation instructions until the site has been stabilized.
- Install ECRMs after topsoil is placed and seeding is complete.
- Install TRMs in conjunction with placement of topsoil, followed by ECRM installation.
- Install erosion mat so that it bears completely on the soil surface.
- Use staples that are at least 6 inches long.

- This detail is an example of typical installation guidance.



INSPECTION AND MAINTENANCE

Install additional anchoring in areas of rilling and concentrated flow beneath the mat. If rilling is preventing vegetation establishment, remove erosion mat, regrade, compact, re-seed, and replace the section of mat.

Vegetative Buffer (WDNR T.S. 1054)

DEFINITION

An area of dense vegetation intended to slow runoff and trap sediment. Vegetative buffers are commonly referred to as filter or buffer strips.

PURPOSE

To remove sediment in sheet flow by velocity reduction.

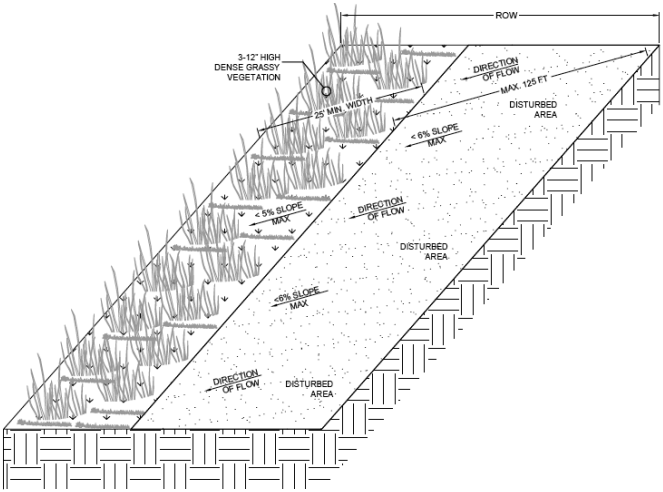
CONDITIONS WHERE PRACTICE APPLIES

Areas where sediment delivery is in the form of sheet and rill erosion from disturbed areas.

VEGETATIVE BUFFER INSTALLATION

- Shall consist of a dense stand of existing grassy vegetation or vegetation established during the project provided sufficient vegetative cover is established prior to land disturbing activities.
- Must be clearly marked as area of no disturbance, including vehicle traffic.
- Vegetative buffers are only effective if sheet flow conditions are present.

- This detail is an example of typical installation guidance.



INSPECTION AND MAINTENANCE

Look for improper distribution of flows, sediment accumulation, and rill erosion. If the vegetative buffer becomes sediment covered, shows rill erosion, or is ineffective, other practices must be implemented.

Sediment Bale Barrier (WDNR T.S. 1055)

DEFINITION

A temporary sediment barrier consisting of a row of entrenched and anchored straw bales, hay bales or equivalent material used to intercept sediment-laden sheet flow from small drainage areas of disturbed soil.

PURPOSE

To reduce slope length of the disturbed area and to intercept and retain transported sediment from disturbed areas.

CONDITIONS WHERE PRACTICE APPLIES

This standard applies to the following applications where:

- Erosion occurs in the form of sheet and rill erosion. There is no concentration of water flowing to the barrier (channel erosion).
- Where adjacent areas need protection from sediment-laden runoff.
- Effectiveness is required for less than 3 months.
- Conditions allow for the bales to be properly entrenched and staked as outlined in Criteria Section V of WDNR T.S. Sediment Bale Barrier (1055).

Under no circumstance shall products be used in the following applications:

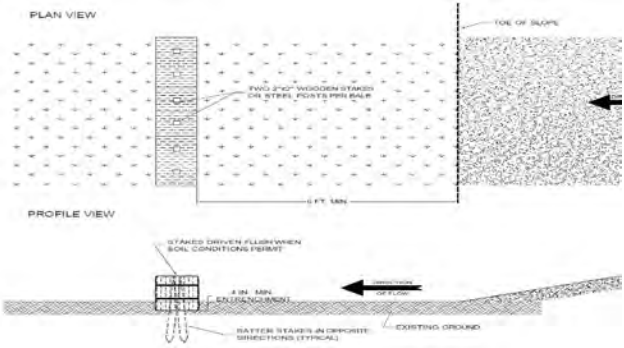
- Below the ordinary high watermark or placed perpendicular to flow in streams, swales, ditches or any place where flow is concentrated.
- Where the maximum gradient upslope of the fence is >50% (2:1).

SEDIMENT BALE BARRIER INSTALLATION

- Install materials per manufacturer's recommendations.
- When joints are necessary, overlap and secure to minimize potential for concentrated flow. Ends should tie into the slope to prevent erosion from concentrated flow around the ends.
- Should be used in conjunction with permanent restoration practices.
- When not used in conjunction with other practices, install spacing per:

Slope	Spacing
< 2 %	100 feet
2 - 5 %	75 feet
5 - 10 %	50 feet

- This detail is an example of typical installation guidance.



INSPECTION AND MAINTENANCE

Look for indicators that water is eroding around the ends, undercutting the barrier, or erosion is occurring downslope. Remove sediment from behind barrier when reaching 1/2 the height. Remove when permanent vegetation is established.

Silt Fence (WDNR T.S. 1056)

DEFINITION

Silt fence is a temporary sediment barrier of entrenched permeable geotextile fabric designed to intercept and slow the flow of sediment-laden sheet flow runoff from small areas of disturbed soil to create ponding.

PURPOSE

Reduce slope length and intercept and retain sediment from disturbed areas.

CONDITIONS WHERE PRACTICE APPLIES

This standard applies to the following applications where:

- Erosion occurs in the form of sheet and rill erosion. There is no concentration of water flowing to the barrier (channel erosion).
- Where adjacent areas need protection from sediment-laden runoff.
- Where effectiveness is required for one year or less.
- Where conditions allow for silt fence to be properly entrenched and staked as outlined in Criteria Section V of WDNR T.S. Silt Fence (1056).

Under no circumstance shall products be used in the following applications:

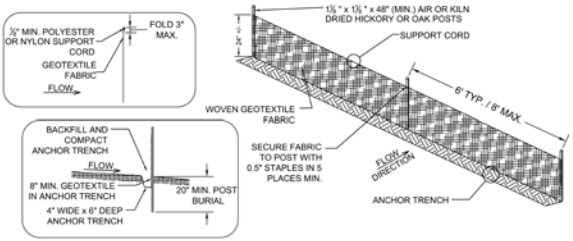
- Below the ordinary high watermark or placed perpendicular to flow in streams, swales, ditches or any place where flow is concentrated.
- Where the maximum gradient upslope of the fence is >50% (2:1).
- Lettering on the fence is not permissible on WisDOT projects.
- Must have support cord.

SILT FENCE INSTALLATION

- Construct in an arc with the ends pointing upslope to avoid erosion around ends of the fence. Best installation method is static slicing. Failure to properly anchor silt fence could result in water and sediment release beneath the silt fence. It is critical to backfill and compact the trench.
- Construct from a continuous roll of geotextile to avoid joints. Where joints are necessary, overlap to the next post or wrap adjoining fabrics together around the joint post and tightly fasten.
- When not used in conjunction with other practices and when using for slope interruption, install spacing per:

Slope	Fence Spacing
< 2 %	100 feet
2 - 5 %	75 feet
5 - 10 %	50 feet
10 - 33 %	25 feet
> 33 %	20 feet

- This detail is an example of typical installation guidance.



INSPECTION AND MAINTENANCE

Look for indicators that water is eroding around the ends, undercutting the barrier, or erosion downslope. Remove sediment behind silt fence when reaching 1/2 the height. Remove when permanent vegetation is established.

Trackout Control Practices (WDNR T.S. 1057)

DEFINITION

A practice or combination of practices used to prevent, reduce, or mitigate trackout of sediment.

GENERAL CRITERIA

Trackout is best managed by implementing controls in the order below:

1. Prevent trackout with stabilized work surfaces and reduced vehicle contact with soil;
2. Reduce trackout with stone tracking pad, manufactured trackout control devices, or tire washing;
3. Mitigate trackout with street cleaning.

INSTALLATION

Stabilized Work Surfaces

- Install aggregate, concrete, asphalt, manufactured mats, or other material in work areas and haul roads to minimize contact of vehicles with exposed soils and standing water.
- Stabilized work surfaces may be used as a stand-alone practice if vehicles leaving the site are restricted to the stabilized surface and the surface is properly maintained.

Stone Tracking Pads

- Install the stone tracking pad to ensure vehicles that drive over exposed soil exit along the full length of the pad.
- Use hard, durable, angular stone or recycled concrete meeting the gradation in Table 1. Driving surface shall be at least 12 feet wide, 1 foot thick and 50 feet long.
- Where warranted due to soil type or high groundwater, underlay the stone tracking pad with geotextile fabric to minimize migration of underlying soil into the stone. Select fabric type based on soil conditions and vehicle loading.
- Rocks lodged between the tires of dual wheel vehicles shall be removed prior to leaving the construction site.

Table 1

Sieve Size	% passing by weight
3"	100
2-1/2"	90-100
1-1/2"	25-60
3/4"	0-20
3/8"	0-5

Manufactured Trackout Control Devices

- Install the manufactured trackout control device on a surface capable of supporting anticipated loads per manufacturer recommendations.
- Provide a minimum device length of 32 feet for stand-alone installations.
- Add length if needed to reduce trackout in adverse conditions.

Tire Washing

- Shall be located on site in an area that is stabilized and drains into suitable sediment trapping or settling device;
- Monitor tire washing station for sediment accumulation, clogged hoses, appropriate water levels, and effectiveness.
- For manufactured tire washing stations, operate per manufacturer's recommendations.

Street/Pavement Cleaning

- Scrape and/or sweep pavements and gutters until a shovel-clean or broom-clean condition is obtained. Repeat as needed to maintain public safety and reduce sediment delivery to drainage infrastructure or water resources, and at the end of each work day.

Mulch (WDNR T.S. 1058)

DEFINITION

Mulching is the application of organic material to the soil surface to protect it from raindrop impact and overland flow. Mulch covers the soil and absorbs the erosive impact of rainfall and reduces the flow velocity of runoff.

PURPOSE

To reduce soil erosion, aid in seed germination and establish plant cover or conserve soil moisture.

CONDITIONS WHERE PRACTICE APPLIES

May be applied on exposed soils as a temporary control where soil grading or landscaping has taken place or in conjunction with temporary or permanent seeding. Mulching is not appropriate in areas of concentrated flow.

ACCEPTABLE MULCH TYPES

- Straw or hay in air-dry condition, wood excelsior fiber or wood chips, or other suitable material of a similar nature that the engineer approves. Use of marsh hay will not be accepted. All mulch material shall be free of noxious weeds and objectionable foreign matter.
- Wood chips or wood bark should be used for temporary stabilization only and should not be used in conjunction with seeding.

MULCH INSTALLATION

Prepare area to remove gullies/rills. If seeding, apply prior to mulch.

Wood Chips or Bark Mulch

- Apply at uniform rate of 9 tons/acre. Mulch should cover a minimum of 80% of the soil surface with an applied thickness of 0.5 - 1.5 inches.

Straw Mulch

- Apply at a uniform rate of 2 tons/acre. Mulch should cover a minimum of 70% of the soil surface with an applied thickness of 0.5 - 1.5 inches.
- If straw mulch is used without seeding, apply at a uniform rate of 3 tons/acre. Mulch should cover a minimum of 80% of the soil surface with an applied thickness of 1.5 - 3.0 inches.
- Anchor by crimping or with a tackifier.

Straw Mulch Crimping

- Just after spreading, anchor mulch using a crimper or equivalent device consisting of a series of dull flat discs with notched edges spaced approximately 8 inches apart to impress mulch in the soil to a depth of 1 - 3 inches.

Straw Mulch Tackifiers

- Select from the approved list in the WisDOT PAL. Apply at a uniform rate.
- Spray tackifier at the same time as the mulch application or just after. Do not spray during conditions preventing proper placement of adhesive.
- Apply at manufacturer's recommended rate or at the rate per acre specified below, whichever is greater:
    - » Latex base: mix 15 gallons adhesive and a minimum of 250 pounds recycled newsprint (pulp) as tracer with 375 gallons water;
    - » Guar gum: mix 50 pounds dry adhesive and a minimum of 250 pounds recycled newsprint (pulp) as tracer with 1,300 gallons water;
    - » Other tackifiers: mix 100 pounds dry adhesive and a minimum of 250 pounds recycled newsprint (pulp) as tracer with 1,300 gallons water.

INSPECTION AND MAINTENANCE

Reapply as needed.

Seeding (WDNR T.S. 1059)

DEFINITION

Planting seed to establish temporary/permanent vegetation for erosion control.

PURPOSE

Temporary Seeding reduces runoff and erosion until permanent vegetation or other erosion control practices can be established.
Permanent Seeding permanently stabilizes areas of exposed soil.
Nurse Crop is seeded with a permanent mix to provide fast-growing cover to protect the soil surface until permanent vegetation becomes established.

CONDITIONS WHERE PRACTICE APPLIES

Areas of exposed soil where the establishment of vegetation is desired.

- Temporary seeding: disturbed areas that will not be brought to final grade or on which land-disturbing activities will not be performed for a period greater than 30 days and requires vegetative cover for less than one year.
- Permanent seeding: where perennial vegetative cover is needed.

SEED

- Seed shall conform to WI statutes and WI Administrative Code ch. ATCP 20 regarding noxious weed seed content and labeling.
- Use seed within one year of test date appearing on the label.
- Store seed to protect it from damage by heat, moisture, rodents. Discard and replace previously tested and accepted seed that becomes damaged.

SEEDING INSTALLATION

Seedbed Preparation

- Permanent seeding needs a seedbed of at least 4 inches of loose topsoil.
- Necessity of fertilizer application should be based on soil testing results. Prior to seeding, work the area being seeded with appropriate equipment to prepare a tilled fine, but firm, seedbed. Remove rocks, twigs, foreign materials, and dirt clods >2 inches diameter that cannot be broken down.

Sowing

- Apply uniformly over the seedbed at the correct seeding rate. Appropriate seed mixes should be lightly incorporated into the seedbed.

DOT Seed Mixture	Sowing Rate [pounds/1,000 square feet]
10	1.5
20	3
30	2
40	2
60	equivalent seeding rate of 1.5
70 and 70A	0.4
75	0.7
80	0.8
Temporary Seeding	3
Nurse Crop Seeding	0.8

- Seed when soil temperatures remain consistently above 53° F. Avoid seeding during periods where seedlings could be damaged or killed by frost (usually late September to early November).
- Dormant seed after November 1. Do not sow seeds over snow cover.

Seed Protection

- Protect seed using mulch (WDNR T.S. 1058) or erosion mat (WDNR T.S. 1052). Limit vehicle traffic in areas that have been permanently seeded.

INSPECTION AND MAINTENANCE

Inspect per permit requirements. Verify seed germination and vegetation establishment. Maintenance includes reapplying mulch and matting, irrigating, regrading, and reseeding.

Storm Drain Inlet Protection (WDNR T.S. 1060)

DEFINITION

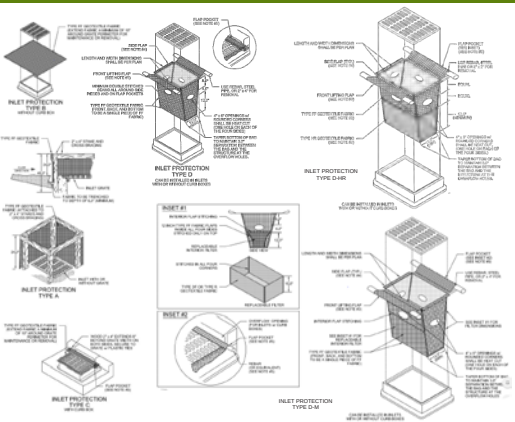
A temporary device installed around a storm drain inlet, drop inlet or curb inlet.

PURPOSE

To minimize sediment from entering storm drainage systems where the contributing drainage area is temporarily disturbed.

STORM DRAIN INLET PROTECTION GENERAL CRITERIA

- Inlet protection devices are for drainage areas of one acre or less.
- Runoff from areas >1 acre should be routed through a properly designed sediment trapping or settling practice upstream of the inlet.
- Inlet protection devices shall not interfere with the flow of traffic, create a safety hazard, or cause property damage.
- All devices shall have provisions such as overflow holes or “emergency spillways” to safely pass water if the device becomes clogged.
- No gaps shall be left in the material that would allow the flow of water to bypass the inlet protection device, except for overflow holes.
- All fabrics used as part of an inlet protection device must be selected from the list of Geotextile Fabric, Type FF in the WisDOT PAL. For Types D-M and D-HR inlet devices select Type F, R, DF or HR fabric inserts based on soil type.



TYPES B AND C

- Include a method of maintenance, using a sewn flap, hand holds, or other method to prevent sediment from entering the inlet.
- An additional 18 inches of fabric is wrapped around the wood and secured with staples. Wood shall not block the height of the curb box.

TYPE D, D-HR, & D-M

- Side flaps shall be a maximum of 2 inches long.
- Install >3 inch side clearance between the inlet walls and bag, measured at the bottom of the overflowing holes. Where necessary cinch the bag to achieve the 3 inch clearance. Place ties <4 inches from bottom of the bag.

INSPECTION AND MAINTENANCE

When removing or maintaining inlet protection, trapped sediment must not fall into the inlet. Remove fallen sediment immediately. Maintain when device is no longer functioning and dispose of sediment properly.

Dewatering (WDNR T.S. 1061)

DEFINITION

A practice or combination of practices that are used to prevent or reduce the discharge of sediment-laden water from dewatering operations.

PURPOSE

Land-disturbing construction activity can create conditions where runoff and/or groundwater accumulates in ponds, pits, trenches or other excavations and needs to be removed by pumping or other means of dewatering. The purpose of this standard is to identify common methods which may be used to prevent or reduce the discharge of sediment-laden water from dewatering operations.

CONDITIONS WHERE PRACTICE APPLIES

This standard applies where sediment-laden water needs to be removed by pumping or other means for construction operations or maintenance activities.

Dewatering practices shall meet criteria in the WDNR T.S. Dewatering (1061) Dewatering Practice Selection Matrix.

This practice does not apply to water being discharged directly to groundwater or karst features (see NR140) or well dewatering systems (see NR 812).

CONSIDERATIONS

- Municipal storm drainage system may need cleaning prior to/after discharging to prevent scouring solids from the drainage system.
- Do not use geotextile bags when discharging to Exceptional Resource Waters, Outstanding Resource Waters, waterbodies supporting cold water communities, trout streams, or susceptible wetlands.
- Pressurized filtration is most efficient for removing fine sediments.
- Portable sediment tanks may be appropriate when other sediment trapping practices cannot be installed.
- Filtration is not an efficient treatment of water with heavy sediment loads. Use a settling tank or sand filter as pretreatment when possible.
- Practices may need to be combined to achieve intended results.

DEWATERING INSTALLATION

- Select practices based on soil texture at the dewatering site with consideration of pumping or flow rates, volumes and device effectiveness.
- WDNR T.S. Dewatering (1061) Dewatering Practice Selection Matrix illustrates acceptable dewatering options and their effective ranges.
- Practices selected that are not on the matrix must provide an equivalent level of control, with justification provided to the reviewing authority.

INSPECTION AND MAINTENANCE

- If the dewatering effluent is discolored, has an odor, an oily sheen, or other toxins are present, notify the DNR immediately:
  - » **24 Hours Spills Reporting Hotline 1-800-943-0003**
- Remove sediment from devices. Properly dispose of all sediment collected.
- Document test results on a daily log and keep on site:
  - » Discharge duration and specified pumping rate;
  - » Observed water table at time of dewatering;
  - » If used, type and amount of chemical used for pH adjustment;
  - » If used, type and amount of polymer used for treatment;
  - » Maintenance activities.

DEWATERING PRACTICE SELECTION MATRIX Type of Device	Soil and Particle Size Classification		
	Coarse to Medium Sand, Loamy Sands, and Sandy Loams	Medium to Fine Loams, Silt Loams, and Silts	Fine to Very Fine Clay Loams, Silty Clays, and Clay
Clay Geotextile Bags			
Type I			
Type II			
Gravity Based Settling			
Sediment Tank (Portable)			
Sediment Trap (Temporary)			
Sediment Basin (Temporary)			
Wet Detention Basin (Permanent)			
Passive Filtration			
Filter Tank (Portable)			
Filter Basin			
Vegetative Filter			

Effective range of device:
Device applicable, may not be cost effective:
Effective range with addition of polymer:

(1) The effectiveness of many practices can be enhanced through the use of polymer mixture.
(2) Soil classification shall be done in accordance to an accepted method (i.e. USDA, AASHTO)

DEWATERING PRACTICE SELECTION MATRIX **Type of Device**	**Soil and Particle Size Classification**		
	Coarse to Medium Sand, Loamy Sands, and Sandy Loams	Medium to Fine Loams, Silt Loams, and Silts	Fine to Very Fine Clay Loams, Silty Clays, and Clay
Pressurized Filtration			
Portable Sand Filter			
Wound Cartridge Units			
Membranes and Micro-filtration			
Other Practices			
Sanitary Sewer Discharge			
Pump Truck			
Alternative Method	Discuss with regulatory authority.		

Effective range of device:
Device applicable, may not be cost effective:
Effective range with addition of polymer:

(1) The effectiveness of many practices can be enhanced through the use of polymer mixture.
(2) Soil classification shall be done in accordance to an accepted method (i.e. USDA, AASHTO)

Ditch Check (WDNR T.S. 1062)

DEFINITION

A temporary dam constructed across a swale, drainage ditch, channel or other area of concentrated flow to reduce the velocity of water. Ditch checks can be constructed out of stone, a double row of straw bales or from manufactured products found on the WisDOT PAL.

PURPOSE

To reduce flow velocity and to pond water, thereby reducing active channel erosion and promoting settling of suspended solids behind the ditch check.

GENERAL CRITERIA

- Ditch checks shall have a minimum height of 10 inches after installation.
- Ditch checks shall not cause ponding that adversely impact or damage adjacent areas.
- Design and install ditch checks to be capable of withstanding anticipated flow, volume and velocity.
- Do not use silt fencing or single rows of straw bales as ditch checks.
- Under no circumstance shall ditch checks be placed in intermittent or perennial stream without permission from WDNR. This practice may not be substituted for sediment control measures such as sediment basins.
- Do not use steel posts or rods to stake ditch checks to avoid safety hazards.

DESIGN CRITERIA

Use the following equation to calculate ditch check spacing in channels:

L = H / S

Where:

L = distance between ditch checks, in feet

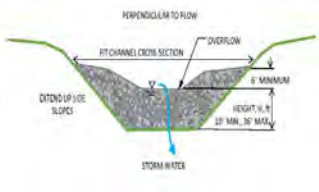
H = height of the ditch check measured from the ditch check overflow invert to the channel bottom on the downslope side of the ditch check, in feet.

S = longitudinal slope of the channel in decimal form (e.g. 2% = 0.02)

MANUFACTURED DITCH CHECKS

- Use products identified on the WisDOT PAL
- Shall be installed in accordance with manufacturer's recommendations
- Entrench manufactured products at least 2 inches or install over erosion matting

STONE DITCH CHECKS



Shall have a minimum top width of 2-ft with a maximum slope of 2:1 on the upslope and downslope sides. Stone shall meet any of the following criteria:

1. Well-graded angular stone with a D_{50} of 3 inches or greater with no more than 5% passing the #4 sieve.
2. 1-foot layer of 1-inch (#2) washed stone over 3 to 6-inch clear stone.
3. Angular stone meeting the gradation for WisDOT Specification 312 select crush or local equivalent.

Stone ditch checks may be constructed using bags or socks filled with stone.

INSPECTION AND MAINTENANCE

Look for indicators that water is eroding around the ends, undercutting, or erosion is occurring downslope. Remove sediment from behind ditch check when reaching 1/2 the height. Remove when channel permanent vegetation is established, unless part of a permanent plan.

Sediment Trap (WDNR T.S. 1063)

DEFINITION

A temporary sediment control device formed by excavation and/or embankment to intercept sediment-laden runoff and to retain the sediment.

PURPOSE

To detain sediment-laden runoff from disturbed areas for sufficient time to allow the majority of the sediment to settle out.

CONDITIONS WHERE PRACTICE APPLIES

- Areas of concentrated flow or points of discharge during construction activities. Construct sediment traps at locations accessible for clean out.
- Sediment traps are designed to be in place until the contributory drainage area has been stabilized.
- The contributory drainage area shall be a maximum of five acres. For concentrated flow areas smaller than one acre, ditch checks may be installed; refer to WDNR T.S. Ditch Check (1062).
- For larger drainage areas and/or for sediment basins requiring an engineered outlet structure refer to WDNR T.S. Sediment Basin (1064) or Wet Detention Basin (1001).

SEDIMENT TRAP CRITERIA

Timing

- Constructed prior to disturbance of up-slope areas and placed so they function during all phases of construction and in locations where runoff from disturbed areas can be diverted into the traps.
- Remove and stabilize the sediment trap after the disturbed area draining to sediment trap is stabilized.

Sizing Criteria

- Properly sized sediment traps are relatively effective at trapping medium and coarse-grained particles.
- To effectively trap fine-grained particles, the sediment trap must employ a large surface area or polymers.
- See WDNR T.S. Sediment Trap (1063) for specific design criteria. Based on:
  - » Surface area;
  - » Depth;
  - » Shape;
  - » Side slopes.

Embankments

- Not to exceed five feet in height measured from the downstream toe of the embankment to the top of the embankment. Construct with a minimum top width of four feet, and side slopes of 2:1 or flatter.
- Earthen embankments shall be compacted.
- Where sediment traps are employed as a perimeter control, the embankments shall have stabilization practices in place prior to receiving runoff.

Outlet

- Need both a principal outlet and emergency spillway and shall meet WDNR T.S. Sediment Trap (1063) design criteria.

INSPECTION AND MAINTENANCE

Remove and properly dispose of sediment deposits when it accumulates to a depth of one foot. Clean outlet when clogged.

Sediment Basin (WDNR T.S. 1064)

DEFINITION

A temporary or permanent device constructed with an engineered outlet, formed by excavation or embankment to intercept sediment-laden runoff and retain sediment.

PURPOSE

Detain sediment-laden runoff from disturbed areas for sufficient time to allow the majority of the sediment to settle out.

CONDITIONS WHERE PRACTICE APPLIES

- Utilize in areas of concentrated flow or points of discharge during construction activities. Construct at locations accessible for clean out.
- Site conditions must allow for runoff to be directed into the basin.
- Sediment basins are designed to be in place until the contributory drainage area has been stabilized. Temporary sediment basins serve drainage areas <100 acres (other practices are often more economical).
- For drainage areas <5 acres, sediment traps or ditch checks may be applicable; for design criteria refer to WDNR T.S. Sediment Trap (1063) or Ditch Check (1062). Design to WDNR T.S. Wet Detention Basin (1001) when a permanent stormwater basin is required.
- Minimum standards for design, installation and performance requirements are deemed 80% effective by design in trapping sediment.

SEDIMENT BASIN CRITERIA

Timing

- Construct prior to disturbance and place to function during all phases of construction, and in locations where runoff can be diverted into the basin.

Sizing Criteria

- Specific trapping efficiency varies based on the surface area and the particle size distribution of the sediment entering the device.
- Permanent sediment basins must be designed by an engineer.
- See WDNR T.S. Sediment Basin (1064) for specific design criteria. Based on:
  - » Treatment surface area and depth below treatment surface area;
  - » Active storage volume and shape.

Embankments

- Design earthen embankments to address potential risk and structural integrity issues such as seepage and saturation, and meet WDNR T.S. Sediment Basin (1064) design criteria.

Outlet

- Need both a principal outlet and an overflow spillway meeting WDNR T.S. Sediment Basin (1064) design criteria.

Inlet Protection

- Designed to prevent scour and reduce velocities during peak flows.
- Possible design options include flow diffusion, plunge pools, directional berms, baffles, or other energy dissipation structures.

Location

- Located to provide access for cleanout and disposal of trapped sediment.

Removal

- After the contributing drainage area has been stabilized, if temporary.
- Complete final grading and restoration according to the site plans. If standing water needs to be removed see WDNR T.S. Dewatering (1061).

INSPECTION AND MAINTENANCE

Remove and properly dispose of sediment to maintain three foot depth of the treatment surface area. Clean outlet when clogged.

Construction Site Diversion (WDNR T.S. 1066)

DEFINITION

A temporary berm or channel constructed across a slope to collect and divert runoff.

PURPOSE

To intercept, divert, and safely convey runoff at construction sites in order to divert clean water away from disturbed areas, or redirect sediment laden waters to an appropriate sediment control facility.

CONDITIONS WHERE PRACTICE APPLIES

- Where temporary surface water runoff control or management is needed.
- Locations and conditions include:
  - » Above disturbed areas, to limit runoff onto the site;
  - » Across slopes to reduce slope length;
  - » Below slopes to divert excess runoff to stabilized outlets;
  - » To divert sediment-laden water to sediment control facilities;
  - » At or near the perimeter of the construction area to keep sediment from leaving the site.
- Does not pertain to permanent diversions. Refer to appropriate design criteria and local regulations when designing permanent diversions.

CONSTRUCTION SITE DIVERSION INSTALLATION

- Shall have stable side slopes and shall not be overtopped during a 2-year frequency, 24-hour duration storm.
- The minimum berm cross section shall be as follows:
  - » Side slopes of 2:1 (horizontal:vertical) or flatter;
  - » Top width of two feet;
  - » Berm height of 1.5 feet.
- Sediment-laden runoff from disturbed areas shall be diverted into a sediment control practice. For typical sediment control practices see WDNR T.S. Sediment Trap (1063) or Sediment Basin (1065) for design criteria.
- When diverting clean water, the diversion channel and its outfall shall be immediately stabilized for the 2-year frequency, 24-hour duration storm.
- Build and stabilize clean water diversions before initiating down slope land-disturbing activities.
- Diversions shall be protected from damage by construction activities.
- At all points where diversion berms or channels will be crossed by construction equipment, the diversion shall be stabilized or shaped appropriately.
- Temporary culverts of adequate capacity may be used.
- For diversions that are to serve longer than 30 days, the side slopes including the ridge, and down slope side of the diversion shall be stabilized as soon as they are constructed.
- For diversions serving less than 30 days, the down slope side of the diversion shall be stabilized as soon as constructed.
- The diversion channel should be stabilized (i.e. erosion mat) or an additive sediment control practice, such as ditch checks, shall be installed.

INSPECTION AND MAINTENANCE

Remove sediment from behind diversion berm when reaching 1/2 the height.

Grading Practices for Erosion Ctrl. (WDNR T.S. 1067)

DEFINITION

Temporary grading practices used to minimize construction site erosion. These practices include, but are not limited to surface roughening (directional tracking and tillage) and temporary ditch sumps.

PURPOSE

To minimize erosion and sediment transport during grading operations on construction sites.

CONDITIONS WHERE PRACTICE APPLIES

Where land disturbing activities occur on construction sites, to be used in conjunction with other erosion control practices.

TEMPORARY GRADING PRACTICES INSTALLATION

- These interim practices may be employed in addition to the approved grading plan to reduce erosion and sediment transport.

Surface Roughening

- Abrading the soil surface with horizontal ridges and depressions across the slope to reduce runoff velocities.
    - » Directional tracking: the process of creating ridges with tracked vehicles by driving up and down unvegetated slopes, used for short durations on sites actively being graded. Use in conjunction with other practices, and place at the end of each workday;
    - » Tillage: utilizing conventional tillage equipment to create a series of ridges and furrows on the contour no more than 15 inches apart.

Temporary Ditch Sump

- » Temporary ditch sumps are ½ to 5 cubic yard excavations made in a drainageway during earthmoving operations. Their purpose is to slow and pond runoff during the time that drainageways are being graded;
- » Place sumps prior to anticipated rain events;
- » Construction involves excavating sumps in the rough ditch grade, and using the excavated material to form a dike on the downstream side of the sump;
- » Temporary ditch sumps are not effective perimeter controls. Utilize other sediment control practices prior to channels discharging into public waterways.

INSPECTION AND MAINTENANCE

Inspect and repair/reinstall after every runoff event.

Dust Control (WDNR T.S. 1068)

DEFINITION

Dust control includes practices used to reduce or prevent the surface and air transport of dust during construction. Includes minimization of soil disturbance, applying mulch and establishing vegetation, water spraying, surface roughening, applying polymers, spray-on tackifiers, chlorides, and barriers.

PURPOSE

- Reduce wind erosion and dust.
- Minimize deposition of dust and wind transported soils into water bodies through runoff or wind action.
- Reduce respiratory problems.
- Minimize low visibility conditions caused by airborne dust.

CONDITIONS WHERE PRACTICE APPLIES

At any construction site, but is particularly important for sites with dry exposed soils which may be exposed to wind or vehicular traffic.

DUST CONTROL INSTALLATION

- Implementation limits the area exposed for dust generation.
- Asphalt and petroleum based products cannot be used.

Mulch and Vegetation

- Mulch or seed and mulch may be applied to protect exposed soil from both wind and water erosion. Refer to WDNR T.S. Mulching (1058) and Seeding (1059) for criteria.

Water

- Water until the surface is wet and repeat as needed, applied at rates so that runoff does not occur. Treated soil surfaces that receive vehicle traffic require a stone tracking pad or tire washing at all point of egress. Refer to WDNR T.S. Trackout Control Practices (1057) for criteria.

Tillage

- Performed with chisel type plows on exposed soils, beginning on the windward side of the site. Only applicable to flat areas.

Additives

- Can be effective for areas that do not receive vehicle traffic. Dry applied additives must be initially watered for activation to be effective for dust control. Refer to WDNR T.S. Land Applied Additives for Erosion Control (1050) for criteria.

Tackifiers and Soil Stabilizers Type A

- Products must be selected from and installed at rates conforming to the WisDOT PAL. Example products include Latex-based and Guar Gum.

Chlorides

- Apply according to the Wis DOT Standard Specifications for Highway and Bridge Construction.

Barriers

- Place barriers at right angles to prevailing wind currents at intervals of about 15 times the barrier height. Solid board fences, snow fences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and blown soil.

INSPECTION AND MAINTENANCE

Inspect daily at a minimum.

Turbidity Barriers (WDNR T.S. 1069)

DEFINITION

A temporary fabric barrier with low permeability, installed parallel to the flow in or near the bed of a waterway or waterbody to minimize sediment transport.

PURPOSE

To provide sediment containment while construction activities are occurring in or directly adjacent to a waterway or waterbody.

CONDITIONS WHERE PRACTICE APPLIES

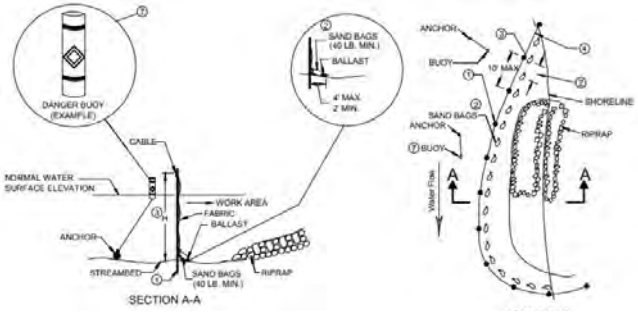
Where construction activities intrude or are directly adjacent to a waterway or waterbody. This includes but is not limited to bridge construction, rip rap placement, utility work, streambank restoration, boat launches and dredging. Use in conditions with fine soils and flow velocities not exceeding 5 feet per second, unless additional reinforcement is installed.

MATERIAL NOTES

- Reusable components of the turbidity barrier shall be clean and free of potential exotic species. Fabric cannot be reused.
- See WDNR T.S. Turbidity Barrier (1069) for detailed material specifications, per Wis DOT Spec 628.2.10.

TURBIDITY BARRIERS INSTALLATION

- Refer to WDNR T.S. Turbidity Barriers (1069) for specific criteria.
- Install before construction activities are initiated in, or adjacent to the waterway or waterbody, as close to the construction as practical.
- The ends of the barrier shall be securely anchored and keyed into the shoreline to fully enclose the area where sediment may enter the water.
- Follow guidelines outlined in WDNR T.S. Turbidity Barriers (1069) regarding posts and spacing, flotation devices, height, anchorage, and danger buoys.
- Turbidity barriers shall be installed parallel to the direction of flow and shall not be installed across channels.
- Keep in place and maintain until the construction activity is completed and the disturbed area stabilized.
- This detail is an example of typical installation guidance.



INSPECTION AND MAINTENANCE

Inspect daily and repair if necessary. Do not remove until the water behind the barrier has equal or greater clarity than the waterbody (minimum of 24 hours). When removing the silt curtain, minimize the release or re-suspension of accumulated sediment.

Silt Curtain (WDNR T.S. 1070)

DEFINITION

A temporary permeable fabric installed in a waterway or waterbody to minimize sediment transport. A silt curtain does not extend to the bottom of the channel and is placed parallel or perpendicular to the direction of flow. Use in calm, slow-moving water conditions.

PURPOSE

To provide sediment containment while construction activities are occurring in or directly adjacent to a waterway or waterbody.

CONDITIONS WHERE PRACTICE APPLIES

- Calm water conditions, not subjected to wind, wave, or current.
- To settle out coarse and granular soils where water depth at the time of construction is greater than or equal to 4 feet.
- For applications in finer sediment or moving water see WDNR T.S. Turbidity Barrier (1069).

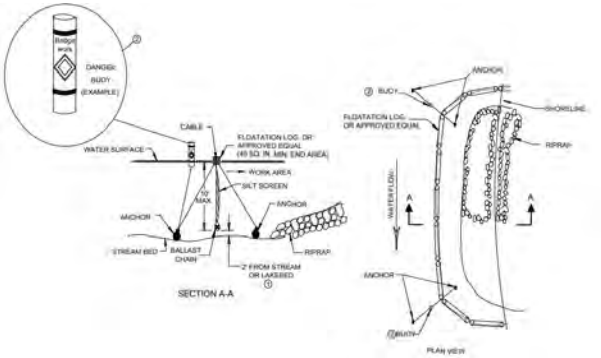
MATERIAL NOTES

- Reusable components of the silt curtain system shall be clean and free of potential exotic species. Fabric cannot be reused.
- See WDNR T.S. Silt Curtain (1070) for detailed material specifications.

SILT CURTAIN INSTALLATION

Installation

- Refer to WDNR T.S. Silt Curtain (1070) for specific criteria.
- Install in or adjacent to the waterway or waterbody before construction activities begin. Install as close to the construction as practical.
- Maintain a 2-foot gap between the weighted lower end of the curtain and the bottom of the waterway or waterbody.
- Follow guidelines outlined in WDNR T.S. Silt Curtain (1070) regarding anchorage and danger buoys.
- Must remain in place and be maintained until the construction activity is completed and the disturbed area is stabilized.
- This detail is an example of typical installation guidance.



INSPECTION AND MAINTENANCE

Inspect daily and repair if necessary. Do not remove until the water behind the curtain has equal or greater clarity than waterbody (minimum 24 hours). When removing the silt curtain, minimize the release or re-suspension of accumulated sediment.

Manufactured Slope & Perimeter (WDNR TS. 1071)

DEFINITION

Manufactured perimeter control and slope interruption products are designed to detain or slow the flow of sediment-laden sheet flow runoff from small areas of disturbed soil.

PURPOSE

To reduce uninterrupted slope length to slow the velocity of runoff so as to retain transported sediment from disturbed areas.

CONDITIONS WHERE PRACTICE APPLIES

This standard applies to the following:

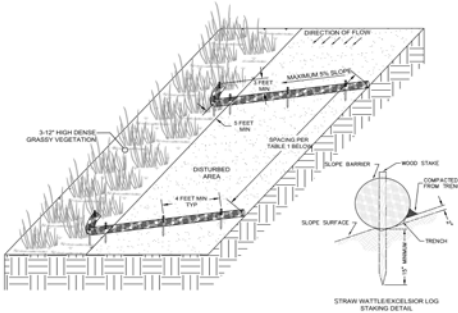
- Where only sheet and rill erosion occurs unless the product is approved for use in concentrated flow areas as a ditch check on Wis DOT PAL and is designed/installed in accordance with WDNR T.S. Ditch Checks (1062).
- Products not approved for concentrated flow that are installed on slopes that terminate in a channel shall be installed no lower than 6 inches above the design flow depth of the channel, limited to 12 months.
- Proper installation (Criteria Section V) and maintenance (Criteria Section VIII) in WDNR T.S. Temporary Slope Break (1071) must be present.

Under no circumstance should products be used in the following:

- Below ordinary high watermark or placed perpendicular to flow in streams.
- Where the maximum gradient upslope of product is greater than 50% (2:1).

TEMPORARY SLOPE BREAKS INSTALLATION

- Proprietary products shall be installed per manufacturer's requirements.
- Installed to intercept sheet water flow and direct to an undisturbed area stabilized with grassy vegetation. Entrench 2 inches with the ends facing upslope. Configure lower end to provide sediment containment.
- The sediment barrier shall be secured with wooden stakes spaced every 4 lineal feet across the length of the barrier. The stakes shall be driven through the center of the barrier into the ground a minimum of 15 inches
- This detail is an example of typical installation guidance.



Slope	Slope Break Spacing
< 2 %	100 feet
2 - 5 %	75 feet
5 - 10 %	50 feet
10 - 33 %	25 feet
33 - 50 %	20 feet
>50 %	Not Permitted

INSPECTION AND MAINTENANCE

Remove sediment from behind ditch check when reaching 1/2 the height.

Channel Erosion Control Matrix

CHANNEL EROSION CONTROL MATRIX **Type of Device**	**Ditch Grade**								
	4% - 6%			6% - 9%			9% - 12%		
	Max Length [feet]			Max Length [feet]			Max Length [feet]		
	300	600	1200	300	600	1200	300	600	1200
Seed with properly anchored mulch									
Sod ditch checks with seed and mulch									
Temporary ditch checks (hay bales or approved alternatives in WisDOT PAL)									
Sod ditch liner									
Double netted light duty (WisDOT Class I Type B) erosion mat	🟧								
Sod reinforced with a double netted jute (WisDOT Class II Type A) erosion mat									
Stone or rock ditch checks, or rock-filled filter bag	🟧	🟧	🟧						
Medium duty coconut erosion mat (WisDOT Class II Type B or C)	🟧	🟧	■	🟦					

Effective range of device for Sandy or Clayey Soil: 🟧
Device applicable, may not be cost effective: 🟦
Not applicable. Use in conjunction with other BMP's: ■

* For ditch grades over 9% special design considerations may be required.
*Use matrix in conjunction with notes on Page 57.

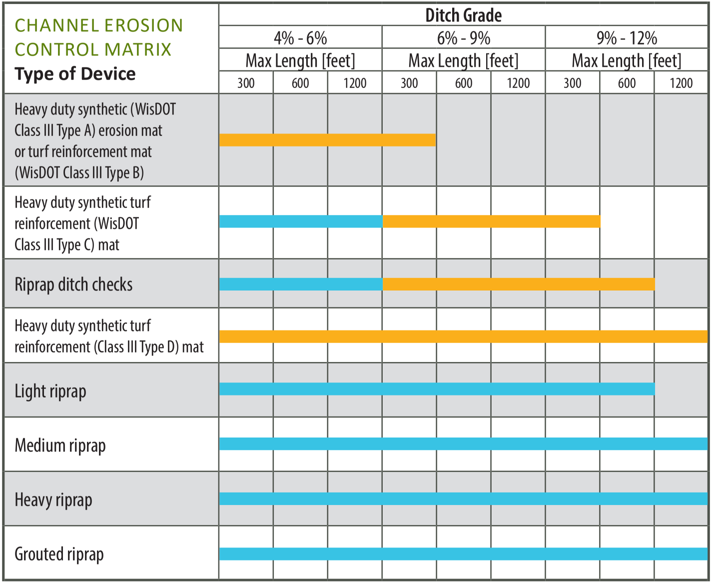
CHANNEL EROSION CONTROL MATRIX

Type of Device	Permissible Shear [lbs/ square foot]	Ditch Grade <2% Max Length [feet] 300	<2% Max Length [feet] 600	<2% Max Length [feet] 1200	2% - 4% Max Length [feet] 300	2% - 4% Max Length [feet] 600	2% - 4% Max Length [feet] 1200
Seed with properly anchored mulch	0.6						
Sod ditch checks with seed and mulch	N/A					effective for clayey soil only	
Temporary ditch checks (hay bales or approved alternatives in WisDOT PAL)	N/A						
Sod ditch liner	1.0						
Double netted light duty (WisDOT Class I Type B) erosion mat	1.5						
Sod reinforced with a double netted jute (WisDOT Class II Type A) erosion mat	1.5						
Stone or rock ditch checks, or rock-filled filter bag	N/A						
Medium duty coconut erosion mat (WisDOT Class II Type B or C)	2.0						

Effective range of device for Sandy or Clayey Soil:
Device applicable, may not be cost effective:
Not applicable. Use in conjunction with other BMP's:

* For ditch grades over 9% special design considerations may be required.
*Use matrix in conjunction with notes on Page 57.

Channel Erosion Control Matrix



CHANNEL EROSION CONTROL MATRIX **Type of Device**	Ditch Grade								
	4% - 6%			6% - 9%			9% - 12%		
	Max Length [feet]			Max Length [feet]			Max Length [feet]		
	300	600	1200	300	600	1200	300	600	1200
Heavy duty synthetic (WisDOT Class III Type A) erosion mat or turf reinforcement mat (WisDOT Class III Type B)	🟧	🟧	🟧	🟧					
Heavy duty synthetic turf reinforcement (WisDOT Class III Type C) mat	🟦	🟦	🟦	🟧	🟧	🟧	🟧		
Riprap ditch checks	🟦	🟦	🟦	🟧	🟧	🟧	🟧	🟧	
Heavy duty synthetic turf reinforcement (Class III Type D) mat	🟧	🟧	🟧	🟧	🟧	🟧	🟧	🟧	🟧
Light riprap	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	
Medium riprap	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦
Heavy riprap	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦
Grouted riprap	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦

Effective range of device for Sandy or Clayey Soil: 🟧
Device applicable, may not be cost effective: 🟦
Not applicable. Use in conjunction with other BMP's: ■

* For ditch grades over 9% special design considerations may be required.

*Use matrix in conjunction with notes on Page 57.

CHANNEL EROSION CONTROL MATRIX **Type of Device**	Permissible Shear [lbs/ square foot]	Ditch Grade					
		<2%			2% - 4%		
		Max Length [feet]			Max Length [feet]		
		300	600	1200	300	600	1200
Heavy duty synthetic (WisDOT Class III Type A) erosion mat or turf reinforcement mat (WisDOT Class III Type B)	2.0						
Heavy duty synthetic turf reinforcement (WisDOT Class III Type C) mat	3.5						
Riprap ditch checks	N/A						
Heavy duty synthetic turf reinforcement (Class III Type D) mat	5						
Light riprap	4						
Medium riprap	5						
Heavy riprap	8						
Grouted riprap	N/A						

Effective range of device for Sandy or Clayey Soil:
Device applicable, may not be cost effective:
Not applicable. Use in conjunction with other BMP's:

* For ditch grades over 9% special design considerations may be required.
*Use matrix in conjunction with notes on Page 57.

Channel Erosion Control Matrix

CHANNEL EROSION CONTROL MATRIX	Permissible Shear [lbs/ square foot]	Ditch Grade								
		< 6%			6% - 9%			9% - 12%		
		Max Length [feet]			Max Length [feet]			Max Length [feet]		
Type of Device		300	600	1200	300	600	1200	300	600	1200
Articulated Concrete Block Type A	5	🟦	🟦	🟦						
Articulated Concrete Block Type B	10	🟦	🟦	🟦	🟦	🟦	🟦	🟦		
Articulated Concrete Block Type C	15	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦
Articulated Concrete Block Type D	20	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦
Articulated Concrete Block Type E	30	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦

Effective range of device for Sandy or Clayey Soil:	🟧
Device applicable, may not be cost effective:	🟦
Not applicable. Use in conjunction with other BMP's:	■

* For ditch grades over 9% special design considerations may be required.

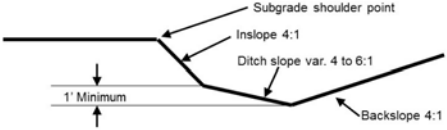
*Use matrix in conjunction with notes on Page 57.

NOTES FOR THE CHANNEL EROSION CONTROL MATRIX

1) Ditch flow rates used to develop bar chart are based on a 60 foot right of way (ROW) from pavement centerline and a 2-year rainfall event for temporary liners or a 25-year rainfall event for permanent (Class III mat or riprap) liners. If the drainage area extends outside the 60 foot ROW or unusual flows are expected, use the shear stress column values to determine the suitablity of a liner. See FDM procedures in Chapter 10 and in Section 13-30-10.
2) Erosion mats shall extend upslope 1 foot minimum vertically from the ditch bottom or 6" higher than the design flow depth. There shall be no joints within 18" of the low point.
3) Cost shall be a consideration in the selection of these devices.
4) Add sediment traps at the bottom of channel slopes.
5) Refer to FDM Chapter 10 for any channels exceeding the limits shown.
6) Approved materials for erosion products are referenced from the Wis DOT PAL: https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/pal/default.aspx
7) On long or steep channels that require a higher class mat, use the appropriate lower class mat for the first 300-600 feet of the channel.
8) Effective erosion control involves minimizing the amount of time soil is exposed and the selection of a combination of practices, and not reliance on just one practice.

STANDARD DITCH SECTION

Erosion control for ditches not conforming to the typical at right, that complies with FDM procedures 11-15-1 Figures 6 & 7 should be designed according to FDM Chapter 13.



Slope Erosion Control Matrix

SLOPE EROSION CONTROL MATRIX **Type of Device**	**Slope**								
	2.5:1			2:1			1:1		
	Slope Length [feet]			Slope Length [feet]			Slope Length [feet]		
	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120
Seed with properly anchored mulch									
Single netted light duty (WisDOT Class I Type A) erosion mat	🟧	🟧							
Light duty single netted 100% biodegradeable (WisDOT Urban Type A) erosion mat									
Light duty double netted 100% biodegradeable (WisDOT Urban Type B) erosion mat	🟦								
Bonded Mulch (WisDOT Type A Soil Stabilizer)									
Polymer (WisDOT Type B Soil Stabilizer)	Used in conjunction with other BMPs effective up to a 2:1 slope. Not effective in sand. When used alone effective up to a 3:1 slope. Stand alone use appropriate for earthen stock piles, temporary, and late season applications.								
Double netted light duty (WisDOT Class I Type B) erosion mat	🟧	🟧	■	🟧					
Sod	🟧	🟧	■	🟧					

Effective range of device for Sandy or Clayey Soil: 🟧

Device applicable, may not be cost effective: 🟦

Not applicable. Use in conjunction with other BMPs: ■

* For ditch grades over 9% special design considerations may be required.

*Use matrix in conjunction with notes on Page 62.

SLOPE EROSION CONTROL MATRIX

Type of Device	Slope								
	6:1 or flatter			4:1			3:1		
	Slope Length [feet]			Slope Length [feet]			Slope Length [feet]		
	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120
Seed with properly anchored mulch									
Single netted light duty (WisDOT Class I Type A) erosion mat									
Light duty single netted 100% biodegradeable (WisDOT Urban Type A) erosion mat									
Light duty double netted 100% biodegradeable (WisDOT Urban Type B) erosion mat									
Bonded Mulch (WisDOT Type A Soil Stabilizer)									
Polymer (WisDOT Type B Soil Stabilizer)	Used in conjunction with other BMPs effective up to a 2:1 slope. Not effective in sand. When used alone effective up to a 3:1 slope. Stand alone use appropriate for earthen stock piles, temporary, and late season applications.								
Double netted light duty (WisDOT Class I Type B) erosion mat									
Sod									

Effective range of device for Sandy or Clayey Soil:
Device applicable, may not be cost effective:
Not applicable. Use in conjunction with other BMPs:

* For ditch grades over 9% special design considerations may be required.
*Use matrix in conjunction with notes on Page 62.

Slope Erosion Control Matrix

SLOPE EROSION CONTROL MATRIX	Slope								
	2.5:1			2:1			1:1		
	Slope Length [feet]			Slope Length [feet]			Slope Length [feet]		
Type of Device	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120
Medium duty coconut erosion mat (WisDOT Class II Type B or C)	🟧	🟧	🟧	🟧	🟧				
Sod reinforced with a double netted jute (WisDOT Class II Type A) erosion mat	🟧	🟧	⬛	🟧	🟧				
Heavy duty synthetic erosion control revegetation mat (WisDOT Class III Type A)	🟦	🟦	🟦	🟧	🟧	🟧			
Riprap	🟦	🟦	🟦	🟧	🟧	🟧			
Heavy duty synthetic turf reinforcement (WisDOT Class III Type B or C) mat	🟦	🟦	🟦	🟧	🟧	🟧	🟧		
Heavy duty synthetic turf reinforcement (WisDOT Class III Type D) mat	🟦	🟦	🟦	🟧	🟧	🟧	🟧	🟧	🟧
Slope paving or grouted riprap	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦

Effective range of device for Sandy or Clayey Soil: 🟧
Device applicable, may not be cost effective: 🟦
Not applicable. Use in conjunction with other BMPs: ⬛

* For ditch grades over 9% special design considerations may be required.
*Use matrix in conjunction with notes on Page 62.

SLOPE EROSION CONTROL MATRIX **Type of Device**	Slope								
	6:1 or flatter			4:1			3:1		
	Slope Length [feet]			Slope Length [feet]			Slope Length [feet]		
	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120
Medium duty coconut erosion mat (WisDOT Class II Type B or C)									
Sod reinforced with a double netted jute (WisDOT Class II Type A) erosion mat									
Heavy duty synthetic erosion control revegetation mat (WisDOT Class III Type A)									
Riprap									
Heavy duty synthetic turf reinforcement (WisDOT Class III Type B or C) mat									
Heavy duty synthetic turf reinforcement (WisDOT Class III Type D) mat									
Slope paving or grouted riprap									

Effective range of device for Sandy or Clayey Soil:
Device applicable, may not be cost effective:
Not applicable. Use in conjunction with other BMPs:

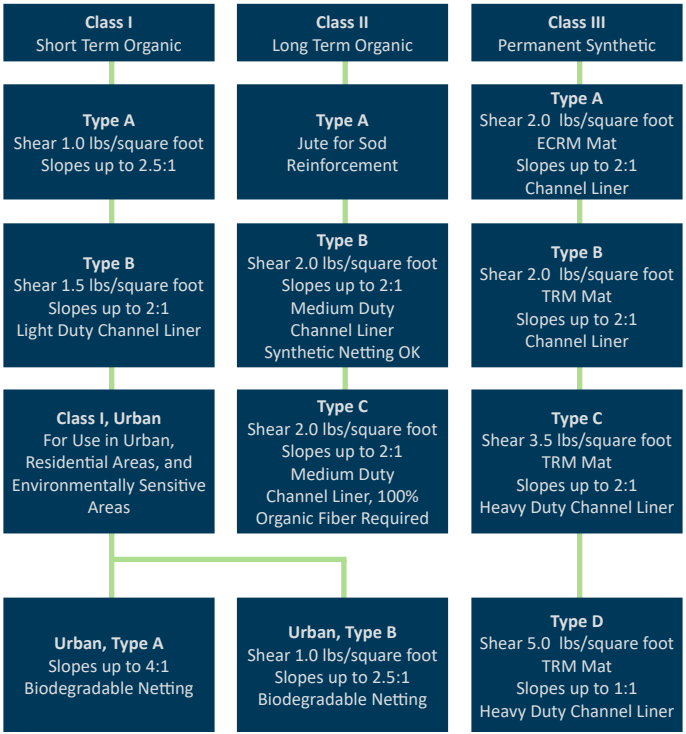
* For ditch grades over 9% special design considerations may be required.
*Use matrix in conjunction with notes on Page 62.

SLOPE EROSION CONTROL MATRIX	**Erosion Control**
Benches	Consider benches when cuts exceed 20', bench at approximately 15' vertical intervals to collect and drain water. Treat benches as channels (ditches). Adjust elevations to provide drainage. Consider flumes at transitions.
Intercepting embankments	Used to intercept runoff from abutting lands. Flumes may be necessary to direct runoff.
Silt fence	Used at toe of slopes to intercept and detain small amounts of sediment. Use only Wis DOT approved silt fence as listed in the PAL.
Temporary ditch checks or erosion bales	Used at toe of slopes to intercept and detain small amounts of sediment.
Slope drains/flumes	May be necessary on slopes (see channel matrix for design guidance).
Sediment traps	Used to trap sediment laden runoff. Could be used at the inlet or outlet end of slope drain.

NOTES FOR THE SLOPE EROSION CONTROL MATRIX

1) Cost shall be a consideration in the selection of these devices.
2) Designers should review FDM Chapter 10 prior to selection of erosion mats.
3) Install intercepting ditches to limit slope lengths to 15' vertical intervals (see FDM Chapter 10).
4) Refer to FDM Chapter 10 for any slopes exceeding the limits shown.
5) Approved materials for erosion products are referenced from the Wis DOT PAL: https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/pal/default.aspx
6) On steeper slopes that require a higher class mat, use the appropriate lower class mat or seed and mulch for the first 30-60 feet of the slope.
7) Unless project conditions require otherwise, seed and mulch all slopes that are flatter than a 5% grade, regardless of length. If practicable, bench the slopes.
8) Effective erosion control involves minimizing the duration of soil exposure and the selection of a combination of practices, and not reliance on just one practice.

WisDOT Erosion Mat Categories



General Inspection and Maintenance Guidance

- The environmental monitor will inspect erosion and sediment control practices a minimum of:
  - Once a week;
  - Within 24 hours following a rainfall of 0.5 inches or more.
- Take corrective action as soon as possible with consideration of site conditions, at the most within 24 hours of the inspection.
- Maintain written documentation of the inspection at the construction site describing:
  - Date, time, and location of construction site inspection;
  - Name of individual performing inspection;
  - Assessment of the condition of erosion and sediment controls;
  - Description of any corrective erosion and sediment control implementation or maintenance performed;
  - Description of the current location and phase of land disturbing activity.
- For a sample construction site inspection report form: **https://dnr.wi.gov/files/PDF/forms/3400/3400-187.pdf**

State of Wisconsin
Department of Natural Resources (DNR)
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

CONSTRUCTION SITE INSPECTION REPORT

Form 3400-187 (R 11/16) Page 1 of 2

Notice: This form was developed in accordance with s. NR 216.48 Wis. Adm. Code for WPDES permittees' convenience; however, use of this specific form is voluntary. Multiple copies of this form may be made to complete the inspection report. Inspections of the construction site and implemented erosion and sediment control best management practices (BMPs) must be performed weekly and within 24 hours after a rainfall event 0.5 inches or greater.

Construction Site Name and Location (Project, Municipality, and County):	**Site/Facility ID No. (FIN):**
Onsite Contact/Contractor:	**Onsite Phone/Cell:**

Note: Inspection reports, along with erosion control and storm water management plans, are required to be maintained on site in accordance with s. NR 216.48 (4) and made available upon request. PLEASE PRINT LEGIBLY.

Date of inspection:	**Time of inspection:** **Start:** _____ ○ am ○ pm **End:** _____ ○ am ○ pm	**Type of inspection:** ○ Weekly ○ Precipitation Event ○ Other (specify)
Weather/Site Conditions: ○ Dry ○ Frozen or snow covered **Temp.** _____ °F **Antecedent Soil Moisture** ○ Variable ○ Frozen (Thaw predicted in next week) ○ Wet ○ Melting Snow/slush **Last Rainfall Depth:** _____ inches **Last Rainfall Date:** _____		**Describe current phase of construction:** Scheduled Final Stabilization Date for Universal Soil Loss Equation (USLE)[1]: _____ **Project on Schedule[2]?** ○ Yes ○ No
Name(s) of individual(s) performing inspection:		**Inspector Phone/Cell:**

I certify that the information contained on this form is an accurate assessment of site conditions at the time of inspection:

Inspector Signature _____ **Date:** _____

Inspection Questions:	**Yes**	**No (Identify Actions Required):**	**Location/Comments:**	**Actions Completed by Date & Initials**
1. Is the erosion control plan accessible to operators?	☐	☐ Provide onsite copy		
2. Is the permit certificate posted where visible?	☐	☐ Post certificate		
3. Is the current phase of construction on sequence with the site-specific erosion and sediment control plan, including installation/stabilization of ponds and ditches?	☐	☐ Add sediment control ☐ Install missing ditch/pipe/pond ☐ Stabilize bare soil		
4. Are all erosion and sediment control BMPs shown on plan properly installed and in functional condition?	☐	☐ Repair ☐ Modify ☐ Install/Replace		
5. Is inlet protection properly installed and functioning in all inlets likely to receive runoff from the site?	☐	☐ Clean ☐ Replace ☐ Install		
6. Is the air free of fugitive dust resulting from construction activity and bare soil exposure?	☐	☐ Apply water ☐ Apply dust control product		

[1] The Universal Soil Loss Equation (USLE) model and the Construction Site Soil Loss and Sediment Discharge Guidance are available at: http://dnr.wi.gov/topic/stormwater/standards/const_standards.html

[2] If the project is not on schedule then the soil loss summary for the project should be reviewed and schedule, plan or practices modified accordingly.

Many thanks to Emmons and Olivier Resources for donating staff time and resources to develop this guide.

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APPENDIX E-50 **WDNR Boat, Gear, and Equipment Decontamination and Disinfection Protocol**

State of Wisconsin
Department of Natural Resources
Manual Code # 9183.1 Boat, Gear, and Equipment Decontamination and Disinfection Protocol

Ed Eberle 06/16/2016
Ed Eberle, Assistant Deputy Secretary Date

Rescinds and replaces: 9183.1 Date 04-10-2015 Approved by OMT: 04-10-2015

I. SCOPE

This manual code applies to all Department of Natural Resources employees moving boats, gear, and equipment between waterbodies and/or crossing a barrier while moving from downstream to upstream on the same waterbody or a connected waterbody, whether or not the presence of aquatic invasive species is known. This manual code outlines the minimum requirements to be followed by employees, and **does not preclude employees from taking additional actions**.

Employees will require any agents or service providers through the specific contract or agreement confering that agency status or engaging that service provision to follow this manual code. Compliance with this manual code may be considered reasonable precautions as defined by s. NR 40.02(44), Wis. Adm. Code. Manual Code 9183.1 was developed in 2007 to provide department employees boat and gear disinfection guidelines. Based on new research and discoveries, Manual Code 9183.1 was amended in 2015 to improve the department decontamination/disinfection policy. This manual code will be effective on June 16, 2016.

Employees are advised to include this manual code and associated BMPs requirements in applicable permits where allowed by the underlying regulatory authority or agreed to with the permitte. Each permitting program is subject to its own statutory and code standards that must be assessed when considering decontamination/disinfection requirements.

II. POLICY

It is the department's policy to follow proper protocol for decontamination/disinfection to ensure that employees are minimizing or eliminating the risk of spreading aquatic invasive species and/or pathogens through work activities, and to comply with ch. NR 40, Wis. Adm. Code, s. NR19.055, Wis. Adm. Code, and ch. 23, Wis. Stats.

III. DEFINITIONS

"Agent" a department or agency of this or another state, federal agency, county, town, corporation or individual that has been expressly delegated by statute, rule or written contract to act under full or partial authority of the department.
"Aquatic invasive species" has the meaning given in s. NR 40.02 (3m), Wis. Adm. Code, that aquatic invasive species are any invasive species that dwells in water or wetlands.
"Barrier" is a natural or human made structure which does not allow the migration of aquatic organisms up to the 100 year event. Examples include dams or waterfalls. Dams with locks are excluded from this definition as they allow for migration.
"Connected waterbody" A series of lakes or flowages which have a connection which is commonly navigated by motorized craft and which have a common water level shall be considered a single connected waterbody.

"Decontamination" is the process of removing invasive species or materials that may contin or transmit invasive species.
"Disinfection" is a method of decontamination that destroys or kills all forms of an invasive species that may be present, whether or not the presence is known.
"Employee" An employee is any person who receives remuneration for services rendered to the state under an employer-employee relationship (e.g. permanent classified, limited term employee (LTE), project, seasonal, unclassified employees).
"**Invasive species**" has the meaning given it in s. 23.22(1)(c), Wis. Stats., and s. NR 40.02 (24), Wis. Adm. Code, where "invasive species" means nonnative species including hybrids, cultivars, sub specific taxa, and genetically modified variants whose introduction causes or is likely to cause economic or environmental harm or harm to human health, and includes individual specimens, eggs, larvae, seeds, propagules and any other viable life-stages of such species. For "invasive species" fish, s. NR 40.04 (12a), Wis. Adm. Code, includes all nonnative species, but excludes established nonnative fish species.
"Locks" a device used for raising and lowering boats, ships, and other watercraft between stretches of water or different levels on river and canal waterways.
"Service provider" includes contractors, volunteers, intern, any non-DNR employee that requires access to networks, Information systems, data or facilities.
"Waterbody" means any spring, stream, pond, lake, or wetland.

IV. PROCEDURE

A. The following decontamination and disinfection steps are to be taken every time a boat, equipment, or gear is moved between waterbodies, wetlands, and/or crosses a barrier while moving from downstream to upstream on the same waterbody.
    1. Decontamination: The following processes must be used to clean equipment prior to moving boats, gear, and equipment from a waterbody.
        a. Inspect and manually or mechanically (preferably using a stiff bristled brush) remove aquatic plants, animals, and mud from your boat, trailer, equipment, boots, and gear.
        b. Drain all water from your boat, motor, live well, bilge, and transom wells, as well as from your equipment and gear, including but not limited to tracked vehicles, barges, silt or turbidity curtain, hoses, sheet pile and pumps.
        c. Dispose of unwanted plants and animals in an appropriate way (e.g. compost, bag and landfill, etc.). Disposal methods must ensure that no living plants, animals, or propagules are transported to other waterbodies, or rereleased into the waterbodies they came from.
    2. Disinfection: One of the below disinfection processes (a. – d.) must be used following decontamination. When working in wetlands on foot, disinfection is mandatory after returning to the vehicle and employees must be cognizant of open waters. **When working in waterbodies known to contain specific invasive species, it is mandatory to use a disinfection method that is effective for that species. See the BMPs for information on species-specific disinfection.** To determine what invasive species are present, follow the guidance on the manual code website: http://dnr.wi.gov/topic/Invasives/disinfection.html. The best disfection methods should be used when a species is suspected, but not yet confirmed. When there are no specific AIS listed on the web site for the waterbody, and there are no other AIS

suspected where work or an activity will be conducted, compliance with any of the disinfection methods below (IV.2.a.-IV.2.d.) is sufficient.

a. Store dry for 5 consecutive days after cleaning with soap and water and/or high pressure water;
b. Wash with ~212º F water (steam) or ≥140 º F water;
c. Apply a 500 ppm Chlorine (sodium hypochlorite) solution for 10-minute contact time. Household bleach is generally 5.25% sodium hypochlorite so mix 1.22 fl oz or 2.44 tablespoons per gallon water. Consult the chlorine directions in the B MP document for guidance on measuring products with different sodium hypochlorite concentrations: https://dnrx.wisconsin.gov/swims/downloadDocument.do?id=126473962 or
d. Apply a 2:100 solution (2.7 ounces or 5.4 tablespoons per gallon water) of Virkon Aquatic® for 20 minute contact time.

B. Safety Precautions for disinfectant use:

1. All employees who handle steam cleaners shall:
   a. Wear heat resistant gloves.
   b. Depending on the type of steamer used, use additional heat resistant personal protective equipment (PPE) as recommended.
   c. Refer to the equipment's operation manual for recommended PPE.
2. All employees who handle, mix, or use chlorine solution shall:
   a. Receive and be required to read a copy of the product Safety Data Sheet.
   b. Wear nitrile gloves.
   c. Have an emergency eyewash station or eye wash solution readily available in the immediate area. A permanent is preferred, but a temporary is acceptable.
   d. Wear eye protection meeting ANSI Z87 (safety glasses) while mixing and spraying solution. Safety sunglasses are acceptable.
   e. Stay upwind from the spray.
3. All employees who handle, mix, or use Virkon® Aquatic shall:
   a. Follow the same precautions listed above for the handling of chlorine solution and also splash goggles and/or a face shield while mixing and spraying solution.
   b. All employees who choose to wear a dust mask respirator when handling Virkon® Aquatic in powder form, may do so in compliance with the DNR Respiratory Protection Program Handbook MC 9180.5 Voluntary Use requirements. Specifically, Appendix D. Review entire DNR Respiratory Protection Handbook MC 9180.5 (http://intranet.dnr.state.wi.us/int/mb/hBooks/HB9180-5.pdf). These employees must complete the Dust-Mask Respirator Voluntary Use Agreement: http://intranet.dnr.state.wi.us/formscatalog/ffDispFormImage.aspx?FormID=13869.
   c. Be aware that sulfamic acid is an active ingredient in Virkon® Aquatic. Employees with allergies to sulfamic acids should consult a physician.
4. Employees working with agents, service providers, or applicable permitees, will require through permit, contracts or agreement, compliance with disinfection safety practices that meet applicable state and federal laws.

C. Special Instructions and Supplemental Information

1. Disinfection measures are not needed for law enforcement or fire suppression equipment in emergency situations.

2. In cases where boats and gear return to state hatcheries, disinfection should be done in a location away from ponds and water supplies to prevent disinfectant or untreated water from entering those areas.
3. Every effort should be made to keep debris, disinfection solution, and rinse water out of surface waters, as well as potential transport routes (e.g. ditches, storm drains, etc.). Rinse water should be obtained from a clean source (i.e. municipal, bottled, well, etc.).
4. For chlorine solution:
    a. Once mixed with water, chlorine breaks down within 24 hours and more quickly in sunlight and when in contact with organic material. Because of this, chlorine solutions must be mixed the same day they are to be used.
    b. Chlorine solutions are corrosive to metal and rubber.
    c. Chlorine solutions are toxic to fish at the required concentration, so rinse equipment after disinfection or neutralize the chlorine solution. To neutralize, spray sodium thiosulfate in an 800 ppm solution (3 grams per gallon of water) on all surfaces of equipment after the disinfection period is over. Rinse with clean water to remove any remaining sodium thiosulfate. Use the same safety measures for sodium thiosulfate as required for chlorine solution.
5. For Virkon® Aquatic solution:
    a. Virkon® Aquatic solutions are stable for seven days, but will gradually lose activity over time, especially in the presence of organic debris and UV light. Therefore, remove all sediment from equipment before disinfection, soak equipment when possible, and mix solutions once per week. Virkon® Aquatic concentration test strips are available.
    b. Virkon® Aquatic is not corrosive at the working concentration according to product labeling.
    c. Because Virkon® Aquatic contains an acid, it should not be mixed with alkaline compounds such as chlorine solutions. A clean water rinse should be applied between treatments if both methods are used.
    d. Virkon ® Aquatic does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
    e. Virkon-S is not recommended for use in aquaculture and its label will no longer carry EPA approval for aquaculture claims.

D. Sources of disinfectants and personal protective equipment (PPE) for state employees:
1. State employees should check WISBUY: (https://solutions.sciquest.com/apps/Router/Login?OrgName=WisconsinMarketPlace&tmstmp=1410786596784) to see if the product needed is available from one of the contracts.
2. If the product cannot be obtained from a contract on WISBUY, check VendorNet at: (http://vendornet.state.wi.us/vendornet/procman/prob2b.asp), to see if there is a contract that can supply the product.
3. If there is no mandatory contract or contract of convenience that can supply the products, state employees should follow the guidelines found on the DNR Purchasing Website. (http://intranet.dnr.state.wi.us/int/at/fn/pc/how/index.html)
4. Employees needing assistance navigating the systems above may contact one of the DNR the Best Management Practices document Agents at: (http://intranet.dnr.state.wi.us/int/at/fn/staff/pa/index.html)

5. See the Best Management Practices document for additional guidance and supporting references: https://dnrx.wisconsin.gov/swims/downloadDocument.do?id=113967385.

E. Further information on decontamination safety and the efficacy of disinfection methods can be found within the manual code supplemental documents located at the following link: : http://dnr.wi.gov/topic/Invasives/disinfection.html. Information on this page will be updated independently from manual code revisions whenever new information on decontamination methods becomes available