Hayward Hydroelectric Project
FERC Project No. 2417

Trego Hydroelectric Project
FERC Project No. 2711

Final License Application

Appendix E-1
Documentation of Consultation

Prepared for

Northern States Power Company
a Wisconsin Corporation

Prepared by

Mead & Hunt

meadhunt.com

November 2023

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ATTACHMENTS

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LIST OF ABBREVIATIONS AND TERMS

Applicant.....Northern States Power Company, a Wisconsin corporation
ATIS .....Aquatic and Terrestrial Invasive Species
Bad River Tribe .....Bad River Band of Lake Superior Chippewa Indians
BIA.....Bureau of Indian Affairs
BLM .....Bureau of Land Management
DLA ..... Draft License Application
EPA .....Environmental Protection Agency
FERC..... Federal Energy Regulatory Commission
FLA..... Final License Application
GLIFWC ..... Great Lakes Indian Fish and Wildlife Commission
JAM .....Joint Agency Meeting
kW ..... kilowatt
Licensee.....Northern States Power Company, a Wisconsin corporation
NGVD .....National Geodetic Vertical Datum 1929
NPS .....National Park Service
NOAA .....National Oceanic and Atmospheric Administration
NSPW.....Northern States Power Company, a Wisconsin corporation
PAD ..... Pre-Application Document
Project .....Hayward Hydroelectric Project or Trego Hydroelectric Project
Projects .....Hayward Hydroelectric Project and Trego Hydroelectric Project
PSCW..... Public Service Commission of Wisconsin
RAW .....River Alliance of Wisconsin
TLP..... Traditional Licensing Process
USACE..... United States Army Corps of Engineers
EPA ..... United States Environmental Protection Agency
SHPO .....Wisconsin State Historic Preservation Office
USFWS ..... United States Fish and Wildlife Service
UWSP WCFU.....University of WI Stevens Point WI Cooperative Fisheries Unit
WCMP .....Wisconsin Coastal Management Program
WDNR ..... Wisconsin Department of Natural Resources

1. Listing of Stakeholder/Applicant Contacts

1.1 Listing of Stage 1 Contacts with Stakeholders

Table 1.1-1 includes contacts made between Northern States Power Company, a Wisconsin corporation (NSPW, Applicant or Licensee) and the stakeholders, beginning with NSPW's development and submittal of the Preliminary Application Document (PAD) and continuing through to the stakeholders written study requests.

Contacts were made through meetings and written correspondence, including email. The following table presents a summary of the various contacts.

Table 1.1-1 Listing of Stage 1 Contacts with Stakeholders for the Hayward and Trego Projects

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Chad Able Red Cliff Band of Lake Superior Chippewa	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Brian Bisonette Lac Courte Oreilles Band of Lake Superior Chippewa Indians of WI	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Stacie Cutbank Oneida Nation of Wisconsin	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Marvin Defoe Red Cliff Band of Lake Superior Chippewa	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Ned Daniels Forest County Potawatomi	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
David Grignon Menominee Indian Tribe of WI	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Tehassi Hill Oneida Tribe of WI	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Shannon Holsey Stockbridge-Munsee Tribe of Mohican Indians	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Mic Isham Lac Courte Oreilles Band of Chippewa Indians	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Michael LaRonge Forest County Potawatomi Community of WI	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Edith Leoso Bad River Band of Lake Superior Tribe of Chippewa Indians (Bad River Tribe)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Chris McGeshick Sokaogon Chippewa Community of WI	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020

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William Quackenbush Ho-Chunk Nation	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Lewis Taylor St. Croix Chippewa Indians of WI	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Adam Van Zile Sokaogon Chippewa Community Mole Lake Band	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Sherry White Stockbridge Munsee Tribe of Mohican Indians	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Marlin WhiteEagle Ho-Chunk Nation of WI	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Michael Wiggins Bad River Band	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Joseph Wildcat, Sr. Lac Du Flambeau Band of Lake Superior Chippewa Indians	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Melinda Young Lac du Flambeau Band of Lake Superior Chippewa Indians	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Public Service Commission of Wisconsin (PSCW)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Wisconsin Cooperative Fisheries Research Unit University of WI Stevens Point (UWSP-WCFU)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Kathleen Angel Wisconsin Coastal Management Program (WCMP)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Cheryl Laatsch Wisconsin Department of Natural Resources (WDNR)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Jeffery Schierer WDNR	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Watershed Management WDNR	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Wisconsin Office of Attorney General	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Wisconsin Office of the Governor	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Tyler Howe State Historic Preservation Office (SHPO)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Nannette Bischoff US Army Corps of Engineers (USACE)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020

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Kimberly Bose Federal Energy Regulatory Commission (FERC)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Tokey Boswell National Park Service (NPS)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Michael Connor US Dept. of Interior-Comm. US Bureau of Reclamation	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Glenn Grothman US Representative District 6	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Timothy Lapointe US Bureau of Indian Affairs (BIA)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Mary Manydeeds BIA	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Angela Tornes NPS	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Tom Tiffany US Representative District 7	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Jen Tyler US Environmental Protection Agency (EPA)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Green Bay Field Office US Fish and Wildlife Service	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Nick Utrup US Fish and Wildlife Service	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
William Allard Town of Trego	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
City Manager City of LaCrosse	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Thomas Hoff Sawyer County	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Wes Huffer Town of Trego	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Marathon County	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Lolita Olson Washburn County	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Dale Peters City of Eau Claire	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Lisa Poppe City of Hayward	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Town of Trego	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Ronald Pete Town of Superior	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020

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James Fossum River Alliance of Wisconsin (RAW)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Thomas Frost Trego Lake District (TLD)	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Northwest Regional Planning Commission	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Scott Crotty Xcel Energy	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Matthew Miller Xcel Energy	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
James Zyduck Xcel Energy	Darrin Johnson Mead & Hunt	PAD Questionnaire	Letter	7/22/2020
Darrin Johnson Mead & Hunt	Carolyn Henry Wisconsin Office of the Attorney General	Response to Questionnaire	Email	8/4/2020
Darrin Johnson Mead & Hunt	Bridget Quist Mille Lacs Band of Ojibwe	Response to Questionnaire	Email	8/5/2020
Darrin Johnson Mead & Hunt	Charlie Peterson TLD	Response to Questionnaire	Email	8/6/2020
Darrin Johnson Mead & Hunt	Town of Trego	Response to Questionnaire	Email	8/20/2020
Barb Hinkfuss Town of Trego	Darrin Johnson Mead & Hunt	Response to Questionnaire	Email	8/21/2020
Darrin Johnson Mead & Hunt	Barb Hinkfuss Town of Trego	Response to Questionnaire	Email	9/7/2020
Cheryl Laatsch WDNR	Darrin Johnson Mead & Hunt	Request for info on Projects	Email	7/17/2020
Darrin Johnson Mead & Hunt	Macaulay Haller WDNR	Background info for Projects	Email	7/20/2020
Darrin Johnson Mead & Hunt	Macaulay Haller WDNR	Response to Questionnaire	Email	7/29/2020
Darrin Johnson Mead & Hunt	McCauley Haller WDNR	Response to Questionnaire	Email	8/10/2020
Darrin Johnson Mead & Hunt	McCauley Haller WDNR	Response to Questionnaire	Email	8/17/2020
Chad Able Red Cliff Band of Lake Superior Chippewa	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Jamie Arsenault White Earth Band of the Minnesota Chippewa	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Melanie Benjamin Mille Lacs Band of Ojibwe	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Brian Bisonette Lac Courte Oreilles Band of Lake Superior Chippewa Indians of WI	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Michael Blackwolf Fort Belknap Indian Community	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Amy Burnette Leech Lake Band of Minnesota	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Alden Connor Keweenaw Bay Indian Community	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Stacie Cutbank Oneida Nation of Wisconsin	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Ned Daniels, Jr. Forest County Potawatomi Community of Wisconsin	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Marvin Defoe Red Cliff Band of Lake Superior Chippewa	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Norman Des Champe Grand Portage Band of the MN Chippewa Tribe	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Joan Delabreau Menominee Indian Tribe of Wisconsin	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Beth Drost Grand Portage Band of the MN Chippewa Indians	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Kevin Dupuis, Sr. Fond du Lac Band of the Minnesota Chippewa Tribe	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Michael Fairbanks White Earth Band of the Minnesota Chippewa	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Gary Frazer Minnesota Chippewa Tribe	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
David Grignon Menominee Indian Tribe of WI	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Tehassi Hill Oneida Tribe of WI	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Shannon Holsey Stockbridge-Munsee Tribe of Mohican Indians	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Jill Hoppe Fond du Lac Band of the Lake Superior Chippewa	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Diane Hunter Miami Tribe of Oklahoma	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020

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Farron Jackson Leech Lake Band of Indians	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Douglas Lankford Miami Tribe of Oklahoma	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Michael LaRonge Forest County Potawatomi Community of WI	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Edith Leoso Bad River Tribe	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Wanda McFaggen St. Croix Band of Lake Superior Chippewa	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Chris McGeschick Sokaogon Chippewa Community of WI	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Daisy McGeschick Lac Vieux Desert Band of Lake Superior Indians of MI	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Clinton Parish Bay Mills Indian Community of MI	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Rick Peterson Red Cliff Band of Lake Superior Chippewa	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
William Quackenbush Ho-Chunk Nation	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Jared Swader Grand Portage Band of Chippewa Indians	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Warren Swartz, Sr. Keweenaw Bay Indian Community	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Louis Taylor, Sr. Lac Courte Oreilles Band of Chippewa Indians	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Lewis Taylor St. Croix Chippewa Indians of WI	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Adam Van Zile Sokaogon Chippewa Community Mole Lake Band	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Natalie Weyaus Mille Lacs Band of Ojibwe	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
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James Williams Lac Vieux Desert Band of Lake Superior Chippewa Indians of MI	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Melinda Young Lac du Flambeau	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
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UWSP-WCFU	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Kathleen Angel WCMP	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Cheryl Laatsch WDNR	Shawn Puzen Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Wisconsin Office of the Governor	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Tyler Howe SHPO	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Nannette Bischoff USACE	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
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Tokey Boswell NPS	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Michael Connor US Dept. of Interior-Comm. US Bureau of Reclamation	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Glenn Grothman US Representative District 6	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Timothy Lapointe BIA	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
Mary Manydeeds BIA	Darrin Johnson Mead & Hunt	NOI, PAD, & TLP Request	Letter	11/27/2020
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Edith Leoso Bad River Tribe	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
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Wanda McFaggen St. Croix Band of Lake Superior Chippewa	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
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Nathan Allison Stockbridge Munsee Community	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Jamie Arsenault White Earth Band of the Minnesota Chippewa Tribe	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Michael Fairbanks White Earth Band of the Minnesota Chippewa Tribe	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
PSCW	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
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Kathleen Angel WCMP	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
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Kimberly Bose FERC	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Tammy Poitra BIA	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Nannette Bischoff USACE	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Mary Manydeeds BIA	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Michael Connor Dept of Interior Comm. US Bureau of Reclamation	James Zyduck Xcel Energy	Jam Notification	Letter	2/22/2021
Nick Utrup USFWS	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Green Bay Field Office USFWS	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Christine Gabriel NPS	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Julie Galonska NPS	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Angela Tornes NPS	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Lisa Yager NPS	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Jen Tyler EPA	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Glenn Grothman US Representative District 6	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Tom Tiffany US Representative-District 7	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Mike Arrowwood Walleyes for Tomorrow	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Brant Kucera City of Ashland	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Deb Lewis Ashland County	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Joan Harn NPS Consultant	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
James Fossum RAW	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Northwest Regional Planning Commission	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Charlie Peterson TLD	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Scott Crotty Xcel Energy	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Matthew Miller Xcel Energy	James Zyduck Xcel Energy	JAM Notification	Letter	2/22/2021
Matthew Miller Xcel Energy	Thomas Frost TLD	JAM RSVP	Letter	2/26/2021
Nick Utrup, USFWS Connie Antonuk, WDNR Cheryl Laatsch, WDNR McCauley Haller, WDNR Tyler Howe, WSHPO Julie Galonska, NPS Joan Harn, NPS Angela Tornes, NPS Charlie Peterson, TLD Thomas Frost, TLD Wes Huffer, Town of Trego Matthew Miller, Xcel Energy Scott Crotty, Xcel Energy James Zyduck, Xcel Energy Brauna Hartzell, Mead & Hunt Shawn Puzen, Mead & Hunt Arianna Schmidt, Mead & Hunt Jen Schuetz, Mead & Hunt	Darrin Johnson Mead & Hunt	Invitation to JAM	Email	3/8/2021
Matt Miller Xcel Energy	Angela Tornes, NPS	Questions for JAM	Email	3/10/2021
Brauna Hartzell, Mead & Hunt Darrin Johnson, Mead & Hunt Shawn Puzen, Mead & Hunt Arianna Schmidt, Mead & Hunt Jen Schuetz, Mead & Hunt Julie Galonska, NPS	-	JAM Meeting	Virtual Meeting	3/11/2021

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Joan Harn, NPS Consultant Angela Tornes, NPS Lisa Yager, NPS Connie Antonuk, WDNR Macauley Haller, WDNR Thomas Frost, TLD Charlie Peterson, TLD Tyler Howe, SHPO Michael Bebeau, Xcel Energy Scott Crotty, Xcel Energy Matthew Miller, Xcel Energy Ricky Reichert, Xcel Energy Randy Volbrecht, Xcel Energy James Zyduck, Xcel Energy				
Kimberly Bose FERC	Scott Crotty Xcel Energy	JAM Proof of Publication	Letter	3/22/2021
Kimberly Bose FERC	James Zyduck	JAM Audio Recording	Letter	4/9/2021
Shawn Puzen, Mead & Hunt Darrin Johnson, Mead & Hunt Scott Crotty, Xcel Energy Matt Miller Xcel Energy	Angela Tornes NPS	Post JAM Correspondence	Email	3/12/2021
Shawn Puzen Mead & Hunt Darrin Johnson, Mead & Hunt Scott Crotty, Mead & Hunt Joan Harn, NPS Angela Tornes, NPS		Post JAM Meeting with NPS	Virtual Meeting	3/19/2021
Angela Tornes NPS	Scott Crotty Xcel Energy	Post meeting email	Email	3/26/2021
Kimberly Bose FERC	Angela Tornes NPS	Letter opposing use of TLP	Letter	12/28/2020
Kimberly Bose FERC	Christine Gabriel NPS	Letter indicating NPS plans to comment on TLP for Trego Project	Letter	2/8/2021
Kimberly Bose FERC	Christine Gabriel NPS	Letter indicating NPS plans to comment on TLP for Hayward Project	Letter	2/8/2021
Kimberly Bose FERC	Richard Clark NPS	Comments on PAD and Study Requests	Letter	4/27/2021
Kimberly Bose FERC	Charlie Peterson TLD	Comments on PAD and Study Requests	Letter	5/6/2021
Kimberly Bose FERC	Cheryl Laatsch WDNR	Comments on PAD and Study Requests	Letter	5/7/2021
Michael Wiggins Bad River Tribe	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Edith Leoso Bad River Tribe	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Brian Newland Bay Mills Indian Community of Michigan	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Kevin Dupuis, Sr. Fond du Lac Band of Lake Superior Chippewa	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Jill Hoppe Fond du Lac Band of Lake Superior Chippewa	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Ned Daniels, Jr. Forest County Potawatomi Community of WI	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Michael LaRonge Forest County Potawatomi Community of WI	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Andrew Werk, Jr. Fort Belknap Indian Community	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Michael Blackwolf Fort Belknap Indian Community	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Robert Deschampe Grand Portage Band of Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Maryann Gagnon Grand Portage Band of the MN Chippewa Tribe	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Marlin WhiteEagle Ho Chunk Nation of WI	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
William Quackenbush Ho Chunk Nation of WI	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Alden Connor Keweenaw Bay Indian Community	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Warren Swartz, Sr. Keweenaw Bay Indian Community	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Louis Taylor, Sr. Lac Courte Oreilles Band of Chippewa Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Brian Bisonette Lac Courte Oreilles Band of Chippewa Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
John Johnson Lac Du Flambeau Band of Lake Superior Chippewa Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Melinda Young Lac Du Flambeau Band of Lake Superior Chippewa Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Daisy McGeshick Lac Vieux Desert Band of Lake Superior Indians of MI	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
James Williams Lac Vieux Desert Band of Lake Superior Indians of MI	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Amy Burnette Leech Lake Band of Chippewa Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Farron Jackson, Sr. Leech Lake Band of Chippewa Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Joan Delabreau Menominee Indian Tribe of WI	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
David Grignon Menominee Indian Tribe of WI	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Douglas Lankford Miami Tribe of Oklahoma	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Diane Hunter Miami Tribe of Oklahoma	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Melanie Benjamin Mille Lacs Band of Ojibwe	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Natalie Weyaus Mille Lacs Band of Ojibwe	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Gary Frazer Minnesota Chippewa Tribe	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Stacy Cutbank Oneida Tribe of WI	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Tehassi Hill Oneida Tribe of WI	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Chad Able Red Cliff Band of Lake Superior Chippewa Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Rick Peterson Red Cliff Band of Lake Superior Chippewa Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Marvin Defoe Red Cliff Band of Lake Superior Chippewa Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Chris McGeshick Sokaogon Chippewa Indian Community Mole Lake Band	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Adam Van Zile Sokaogon Chippewa Community Mole Lake Band	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Lewis Taylor St. Croix Band of Lake Superior Chippewa	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Wand McFaggen St. Croix Band of the Lake Superior Chippewa	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Shannon Holsey Stockbridge Munsee Tribe of Mohican Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Sherry White Stockbridge Munsee Tribe of Mohican Indians	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Nathan Allison Stockbridge Munsee Community	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Jamie Arsenault White Earth Band of the Minnesota Chippewa	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Michael Fairbanks White Earth Band of the Minnesota Chippewa	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
PSCW	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
UWSP-WCFU	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Kathleen Angel WCMP	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Tyler Howe SHPO	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Connie Antonuk WDNR	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Macaulay Haller WDNR	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Cheryl Laatsch WDNR	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Jeffery Schierer WDNR	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Wisconsin Office of the Governor	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Kimberly Bose FERC	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Tammy Poitra BIA	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Nannette Bischoff USACE	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Mary Manydeeds BIA	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Michael C. Connor US Department of Interior Comm. US Bureau Reclamation	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Nick Utrup USFWS	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Green Bay Field Office USFWS	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Christine Gabriel NPS	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Julie Galonska NPS	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Angela Tornes NPS	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Lisa Yager NPS	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Jen Tyler EPA	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Glenn Grothman US Representative District 6	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Tom Tiffany US Representative District 7	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Dale Peters City of Eau Claire	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
City Manager City of La Crosse	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Marathon County	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Ronald Pete Town of Superior	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Town Chairman Town of Hayward	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Thomas Hoff Sawyer County	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Wes Huffer Town of Trego	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Brian Vosberg Town of Trego	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Barb Hinkfuss Town of Trego	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Lolita Olson Washburn County	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
James Fossum RAW	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Northwest Regional Planning Commission	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Mike Arrowood Walleye for Tomorrow	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Thomas Frost TLD	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Charlie Peterson TLD	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Joan Harn NPS Consultant	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Scott Crotty Xcel Energy	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Matthew Miller Xcel Energy	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Joan Harn NPS Consultant	James Zyduck Xcel Energy	Site Visit Notification	Letter	5/27/2021
Matt Miller Xcel Energy	Connie Antonuk WDNR	Site Visit RSVP	Email	6/7/2021
Matt Miller Xcel Energy	James Yach WDNR	Site Visit RSVP	Email	6/7/2021
Matt Miller Xcel Energy	Max Wolter WDNR	Site Visit RSVP	Email	6/7/2021
Matt Miller Xcel Energy	Bob Somermayer TLD	Site Visit RSVP	Email	6/13/2021
Matt Miller Xcel Energy	Charlie Peterson TLD	Site Visit RSVP	Email	6/14/2021
Shawn Puzen, Mead & Hunt John McCue, City of Hayward Connie Antonuk, WDNR Cheryl Laatsch, WDNR Zach Lawson, WDNR Max Wolter, WDNR Lee, WDNR[1] Julie Galonska NPS Lisa Yager, NPS Jonathon Moore, NPS Charlie Peterson, TLD Bob Somermeyer, TLD Scott Crotty, Xcel Energy Ryan Tjader, Xcel Energy Matthew Miller, Xcel Energy		On-Site Visit	Meeting	6/17/2021
Jonathon Moore NPS	Shawn Puzen Mead& Hunt	Site Visit Follow-up	Email	6/21/2021
Shawn Puzen Mead & Hunt	Jonathon Moore NPS	Site Visit Follow-up	Email	6/23/2021
Jonathon Moore NPS	Darrin Johnson Mead & Hunt	Site Visit Follow-up	Email	6/23/2021
Kimberly Bose FERC	James Zyduck Xcel Energy	Site Visit Proof of Publication	Letter	6/24/2021

1.2 Listing of Stage 2 Contacts with Stakeholders

Table 1.2-1 presents contacts made between stakeholders and the Applicant, beginning after receipt of the written study requests, through consultation on the Draft License Application (DLA). Contacts were made through meetings and written correspondence. The following table presents a summary of the various contacts.

[1] Last name not recorded during site visit.

Table 1.2-1 Listing of Stage 2 Contacts with Stakeholders

Person/Agency Contacted	From	Item	Contact Type (Meeting or Letter/Email?)	Date
Cheryl Laatsch, WDNR Julie Galonska, NPS Joan Harn, NPS Susan Rosebrough, NPS David Thomson, NPS Angela Tornes, NPS Lisa Yager, NPS Thomas Frost, TLD Charlie Peterson, TLD Nick Utrup, USFWS Scott Crotty, Xcel Energy Matthew Miller, Xcel Energy Shawn Puzen, Mead & Hunt	Darrin Johnson Mead & Hunt	Draft Study Summary	Email	8/2/2021
Darrin Johnson Mead & Hunt	Charlie Peterson TLD	Comments of Draft Study Summary	Letter	8/27/2021
Darrin Johnson Mead & Hunt	Juliet Galonska NPS	Comments on Draft Study Summary	Letter	8/31/2021
Angela Tornes, NPS Cheryl Laatsch, WDNR	Shawn Puzen Mead & Hunt	Recreation Plan Consultation	Email	11/5/2021
Shawn Puzen Mead & Hunt	Theresa Hogan NPS	Comments on Draft Recreation Plan	Letter	12/3/2021
Cheryl Laatsch, WDNR Susan Rosebrough, NPS Angela Tornes, NPS	Shawn Puzen Mead & Hunt	Mussel Study Plan Consultation	Email	2/2/2022
Shawn Puzen Mead & Hunt	Craig Hansen NPS	Comments on Mussel Study Plan	Letter	3/4/2022
Shawn Puzen Mead & Hunt	Cheryl Laatsch	Comments on Mussel Study Plan	Email	1/7/2022
Cheryl Laatsch, WDNR Susan Rosebrough, NPS Lisa Yager, NPS	Shawn Puzen Mead & Hunt	Turtle Study Consultation	Email	2/3/2022
Shawn Puzen Mead & Hunt	Chery Laatsch WDNR	Comments on Turtle Study Plan	Phone Call	2/21/2022
Shawn Puzen Mead & Hunt	Craig Hansen NPS	Comments on Turtle Study Plan	Letter	3/4/2022
Cheryl Laatsch, WDNR Susan Rosebrough, NPS Angela Tornes, NPS Lisa Yager, NPS	Shawn Puzen Mead & Hunt	Water Qualtiy Study Consultation	Email	2/3/2022
Shawn Puzen Mead & Hunt	Craig Hansen NPS	Comments on Water Quality Study Plan	Letter	3/4/2022

Person/Agency Contacted	From	Item	Contact Type (Meeting or Letter/Email?)	Date
Kimberly Bose, FERC Cheryl Laatsch, WDNR Lisa Yager, NPS Charlie Peterson, TLD	Scott Crotty Xcel Energy	Final Study Plans	Letter	4/21/2022
Cheryl Laatsch WDNR	Shawn Puzen Mead & Hunt	ATIS Incident Reporting	Email	7/11/2022
Shawn Puzen Mead & Hunt	Cheryl Laatsch Mead & Hunt	ATIS Incident Reporting	Email	7/11/2022
Alexander Sell WDNR	Laura Sass GAI Consultants	ATIS Incident Reporting	Email	7/11/2022
Cheryl Laatsch WDNR	Darrin Johnson Mead & Hunt	WQ Standards Consultation	Email	1/27/2023
Darrin Johnson Mead & Hunt	Ashley Berank WDNR	WQ Standards Consultation	Email	1/27/2023
Cheryl Laatsch WDNR	Shawn Puzen Mead & Hunt	Study Report Consultation	Email	3/6/2023
Craig Hansen, NPS Jonathon Moore, NPS Lisa Yager, NPS	Shawn Puzen Mead & Hunt	Study Report Consultation	Email	3/6/2023
Thomas Frost, TLD Charlie Peterson, TLD	Shawn Puzen Mead & Hunt	Study Report Consultation	Email	3/6/2023
Matthew Miller, Xcel Energy Shawn Puzen, Mead & Hunt	Craig Hansen NPS	Study Report Consultation	Letter	4/21/2023
Cheryl Laatsch WDNR	Darrin Johnson Mead & Hunt	Fish Data	Email	3/29/2023
Darrin Johnson Mead & Hunt	Max Wolter WDNR	Fish Data	Email	3/29/2023
Darrin Johnson Mead & Hunt	Craig Roberts WDNR	Fish Data	Email	3/29/2023
Shawn Puzen Mead & Hunt	SHPO	Section 106 Consultation Hayward	Email	1/24/2023
Shawn Puzen Mead & Hunt	SHPO	Section 106 Consultation Trego	Email	2/1/2023
Tyler Howe SHPO	Shawn Puzen Mead & Hunt	Section 106 Consultation Hayward and Trego	Email	3/28/2023
Shawn Puzen, Mead & Hunt Matthew Miller, Xcel Energy	Tyler Howe SHPO	Section 106 Consultation Hayward	Email	3/28/2023
Shawn Puzen, Mead & Hunt Matthew Miller, Xcel Energy	Tyler Howe SHPO	Section 106 Consultation Hayward	Email	3/28/2023
Shawn Puzen, Mead & Hunt Matthew Miller, Xcel Energy	Tyler Howe SHPO	Section 106 Consultation Trego	Email	3/28/2023
Kathleen Angel WCMP	Matthew Miller Xcel Energy	CZMA Coordination	Email	5/24/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting or Letter/Email?)	Date
Kathleen Angel WCMP	Matthew Miller Xcel Energy	CZMA Coordination Hayward	Letter	5/24/2023
Kathleen Angel WCMP	Matthew Miller Xcel Energy	CZMA Coordination Trego	Letter	5/24/2023
Michael Wiggins Bad River Tribe	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Edith Leoso Bad River Tribe	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Whitney Gravelle Bay Mills Indian Community of Michigan	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Kevin Dupuis, Sr. Fond du Lac Band of Lake Superior Chippewa	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Jill Hoppe Fond du Lac Band of Lake Superior Chippewa	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Ned Daniels, Jr. Forest County Potawatomi Community of WI	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Benjamin Rhodd Forest County Potawatomi Community of WI	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Jeffrey Stiffarm Fort Belknap Indian Community	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Michael Blackwolf Fort Belknap Indian Community	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Robert Deschampe Grand Portage Band of Indians	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Maryann Gagnon Grand Portage Band of the MN Chippewa Tribe	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Marlin WhiteEagle Ho Chunk Nation of WI	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
William Quackenbush Ho Chunk Nation of WI	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Gary Loonsfoot Keweenaw Bay Indian Community	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Warren Swartz, Sr. Keweenaw Bay Indian Community	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting or Letter/Email?)	Date
Louis Taylor, Sr. Lac Courte Oreilles Band of Chippewa Indians	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Brian Bisonette Lac Courte Oreilles Band of Chippewa Indians	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
John Johnson Lac Du Flambeau Band of Lake Superior Chippewa Indians	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Melinda Young Lac Du Flambeau Band of Lake Superior Chippewa Indians	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Alina Shively Lac Vieux Desert Band of Lake Superior Indians of MI	Donald Hartinger Xcel Energy	DLA	Email	6/29/2023
James Williams Lac Vieux Desert Band of Lake Superior Indians of MI	Donald Hartinger Xcel Energy	DLA	Email	6/29/2023
Amy Burnette Leech Lake Band of Chippewa Indians	Donald Hartinger Xcel Energy	DLA	Email	6/29/2023
Farron Jackson, Sr. Leech Lake Band of Chippewa Indians	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Ron Corn, Sr. Menominee Indian Tribe of WI	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
David Grignon Menominee Indian Tribe of WI	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Douglas Lankford Miami Tribe of Oklahoma	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Diane Hunter Miami Tribe of Oklahoma	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Melanie Benjamin Mille Lacs Band of Ojibwe	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Natalie Weyaus Mille Lacs Band of Ojibwe	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Gary Frazer Minnesota Chippewa Tribe	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Nicolas Metoxen Oneida Tribe of WI	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Tehassi Hill Oneida Tribe of WI	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Chad Able Red Cliff Band of Lake Superior Chippewa Indians	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Chairman Red Cliff Band of Lake Superior Chippewa Indians	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting or Letter/Email?)	Date
Marvin Defoe Red Cliff Band of Lake Superior Chippewa Indians	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Robert Van Zile, Jr. Sokaogon Chippewa Indian Community Mole Lake Band	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Michael LaRonge Sokaogon Chippewa Community Mole Lake Band	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Lewis Taylor St. Croix Band of Lake Superior Chippewa	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Wand McFaggen St. Croix Band of the Lake Superior Chippewa	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Shannon Holsey Stockbridge Munsee Tribe of Mohican Indians	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Sherry White Stockbridge Munsee Tribe of Mohican Indians	Donald Hartinger Xcel Energy	DLA	Email	6/29/2023
Jeffrey Bendremer Stockbridge Munsee Community	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Jamie Arsenault White Earth Band of the Minnesota Chippewa	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Michael Fairbanks White Earth Band of the Minnesota Chippewa	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
PSCW	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
UWSP-WCFU	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Kathleen Angel WCMP	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Tyler Howe SHPO	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Connie Antonuk WDNR	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Cheryl Laatsch WDNR	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Jeffery Schierer WDNR	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Wisconsin Office of the Governor	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Kimberly Bose FERC	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting or Letter/Email?)	Date
Ann McCammon Soltis Great Lakes Indian Fish and Wildlife Commission (GLIFWC)	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Tammy Poitra BIA	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Nannette Bischoff USACE	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Mary Manydeeds BIA	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Michael C. Connor US Department of Interior Comm. US Bureau Reclamation	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Darrin Simpkins USFWS	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Green Bay Field Office USFWS	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Christine Gabriel NPS	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Craig Hansen NPS	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Alyssa Walker NPS	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Lilian Jonas NPS Consultant	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Susan Rosebrough-Jones NPS	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
David Thomson NPS	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Terri Hogan NPS	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Jonathon Moore NPS	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Lisa Yager NPS	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Jen Tyler EPA	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Glenn Grothman US Representative District 6	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Tom Tiffany US Representative District 7	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Dale Peters City of Eau Claire	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
City Manager City of La Crosse	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Marathon County	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting or Letter/Email?)	Date
Ronald Pete Town of Superior	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Town Chairman Town of Hayward	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Thomas Hoff Sawyer County	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Wes Huffer Town of Trego	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Brian Vosberg Town of Trego	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Patti Butterfield Town of Trego	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Lolita Olson Washburn County	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
James Fossum RAW	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Northwest Regional Planning Commission	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Mike Arrowood Walleye for Tomorrow	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Thomas Frost TLD	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Charlie Peterson TLD	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Joan Harn NPS Consultant	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Hayward Project Adjacent Landowners	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Trego Project Adjacent Landowners	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Scott Crotty Xcel Energy	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Matthew Miller Xcel Energy	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Joan Harn NPS Consultant	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Scott Crotty Xcel Energy	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Matthew Miller Xcel Energy	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Donald Hartinger Xcel Energy	Donald Hartinger Xcel Energy	DLA	Letter	6/29/2023
Kimberly D. Bose FERC	Craig Hansen National Park Service	Comments on DLA	Letter	9/27/2023
Kimberly D. Bose FERC	Charles Peterson Trego Lake District	Comments on DLA	Letter	9/28/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting or Letter/Email?)	Date
James Zyduck Xcel Energy	Janet Hutzel FERC	Comments on DLA	Letter	10/2/2023

1.3 Listing of Stage 3 Contacts with Stakeholders

Table 1.3-1 provides a list of stakeholders who were sent a letter with a link to an electronic copy of the Final License Application (FLA) as submitted to the Federal Energy Regulatory Commission.

Table 1.3-1 Listing of Stage 3 Contacts with Stakeholders

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Michael Wiggins Bad River Tribe	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Lawrence Plucinski Bad River Tribe	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Whitney Gravelle Bay Mills Indian Community of Michigan	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Kevin Dupuis, Sr. Fond du Lac Band of Lake Superior Chippewa	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Evan Schroeder Fond du Lac Band of Lake Superior Chippewa	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Ned Daniels, Jr. Forest County Potawatomi Community of WI	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Benjamin Rhodd Forest County Potawatomi Community of WI	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Jeffrey Stiffarm. Fort Belknap Indian Community	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Michael Blackwolf Fort Belknap Indian Community	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Robert Deschampe Grand Portage Band of Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Maryann Gagnon Grand Portage Band of the MN Chippewa Tribe	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Marlin WhiteEagle Ho Chunk Nation of WI	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
William Quackenbush Ho Chunk Nation of WI	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Gary Loonsfoot Keweenaw Bay Indian Community	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Doreen Blaker Keweenaw Bay Indian Community	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Louis Taylor, Sr. Lac Courte Oreilles Band of Chippewa Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Brian Bisonette Lac Courte Oreilles Band of Chippewa Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
John Johnson Lac Du Flambeau Band of Lake Superior Chippewa Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Melinda Young Lac Du Flambeau Band of Lake Superior Chippewa Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Alina Shively Lac Vieux Desert Band of Lake Superior Indians of MI	Donald Hartinger Xcel Energy	FLA	Email	11/30/2023
James Williams Lac Vieux Desert Band of Lake Superior Indians of MI	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Amy Burnette Leech Lake Band of Chippewa Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Farron Jackson, Sr. Leech Lake Band of Chippewa Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Ron Corn, Sr. Menominee Indian Tribe of WI	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
David Grignon Menominee Indian Tribe of WI	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Douglas Lankford Miami Tribe of Oklahoma	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Diane Hunter Miami Tribe of Oklahoma	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Melanie Benjamin Mille Lacs Band of Ojibwe	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Natalie Weyaus Mille Lacs Band of Ojibwe	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Catherine Chavers Minnesota Chippewa Tribe	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Nicolas Metoxen Oneida Tribe of WI	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Tehassi Hill Oneida Tribe of WI	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Chad Able Red Cliff Band of Lake Superior Chippewa Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Nicole Boyd Red Cliff Band of Lake Superior Chippewa Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Marvin Defoe Red Cliff Band of Lake Superior Chippewa Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Leelyn Van Zile Sokaogon Chippewa Indian Community Mole Lake Band	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Michael LaRonge Sokaogon Chippewa Community Mole Lake Band	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Lewis Taylor St. Croix Band of Lake Superior Chippewa	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Wand McFaggen St. Croix Band of the Lake Superior Chippewa	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Shannon Holsey Stockbridge Munsee Tribe of Mohican Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Sherry White Stockbridge Munsee Tribe of Mohican Indians	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Jeffrey Bendremer Stockbridge Munsee Community	Donald Hartinger Xcel Energy	FLA	Email	11/30/2023
Jamie Arsenault White Earth Band of the Minnesota Chippewa	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Michael Fairbanks White Earth Band of the Minnesota Chippewa	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
PSCW	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
UWSP-WCFU	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Kathleen Angel WCMP	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Tyler Howe SHPO	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Connie Antonuk WDNR	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Cheryl Laatsch WDNR	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Jeffery Schierer WDNR	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Wisconsin Office of the Governor	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Kimberly Bose FERC	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Ann McCammon Soltis Great Lakes Indian Fish and Wildlife Commission (GLIFWC)	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
John Fowler Advisory Council on Historic Preservation	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Kimberly Bose FERC	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Regional Engineer FERC	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Tammy Poitra BIA	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
FERC Coordinator USACE	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Mary Manydeeds BIA	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Michael C. Connor US Department of Interior Comm. US Bureau Reclamation	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Darrin Simpkins USFWS	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Green Bay Field Office USFWS	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Christine Gabriel NPS	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Craig Hansen NPS	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Alyssa Walker NPS	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Lilian Jonas NPS Consultant	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Susan Rosebrough-Jones NPS	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
David Thomson NPS	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Terri Hogan NPS	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Jonathon Moore NPS	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Lisa Yager NPS	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Jen Tyler EPA	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Glenn Grothman US Representative District 6	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Tom Tiffany US Representative District 7	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Dale Peters City of Eau Claire	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
John McCue City of Hayward	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
City Manager City of La Crosse	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Marathon County	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Ronald Pete Town of Superior	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Stephanie Laakson Town of Hayward	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Andy Albarado Sawyer County	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Paul Hartwig Town of Trego	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Kevin Allard Town of Trego	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Jenny Butterfield Town of Trego	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Patti Butterfield Town of Trego	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Alicia Swearingen Washburn County	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Ellen Voss RAW	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Northwest Regional Planning Commission	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Mike Arrowood Walleye for Tomorrow	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Hugh Duffy Lake Hayward Property Owners Association	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Thomas Frost TLD	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Charlie Peterson TLD	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Joan Harn NPS Consultant	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Angie Tornes Temporary NPS Consultant	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023

Person/Agency Contacted	From	Item	Contact Type (Meeting, Letter, Email?)	Date
Hayward Project Adjacent Landowners	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Trego Project Adjacent Landowners	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Scott Crotty Xcel Energy	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Matthew Miller Xcel Energy	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023
Scott Crotty Xcel Energy	Donald Hartinger Xcel Energy	FLA	Letter	11/30/2023

2. Consultation Summary

The following sections provide a summary of stakeholders' comments, recommendations, and concerns, and the Applicant's responses, regarding consultation following the submittal of the PAD to the stakeholders and ending in the filing of the FLA. A brief description of each Project is provided below for a basis for subsequent discussions. More detailed descriptions of each Project are included in Exhibit A of this DLA.

Hayward Project Description

The Hayward Project is a hydroelectric project located on the Namekagon River in Sawyer County, Wisconsin, with an authorized capacity of 168 kilowatts (kW). Project facilities include a dam, powerhouse with intake channel, tailrace or tailwater, transmission equipment, appurtenant equipment, 246.9-acre reservoir, surrounding land extending landward to an elevation of 1,187.5 feet National Geodetic Vertical Datum (NGVD), and NSPW-owned lands near the dam necessary for Project operations.

Under the proposed operation, NSPW will continue to operate the Project in a run-of-river mode where discharge measured immediately downstream of the Project tailrace approximates the sum of inflow into the Project reservoir. This mode of operations minimizes the potential for adverse impacts on water quality, aquatic habitat, and other aquatic resources. At all times, NSPW will continue to minimize the fluctuation of the Project reservoir and maintain the elevation between 1,187.0 and 1,187.5 feet NGVD while targeting 1,187.4 feet NGVD. NSPW will not operate the Project between the low and high elevation on a daily basis for peaking purposes.

In addition, NSPW will continue to release a minimum flow of 8 cfs or inflow, whichever is less, into the bypass reach of the Namekagon River for the protection of fish and wildlife resources and water quality.

Just prior to spring runoff, or for emergency operations, the Applicant may deviate from the maximum reservoir elevation, by no more than an increase of 0.5 feet, to remove ice from the spillway for dam safety purposes. The duration of the deviation shall be no longer than necessary, typically less than a few days, to remove the ice and will be considered a planned deviation under the requirements outlined in Section 4.5.3 of Exhibit E.

Trego Project Description

The Trego Project is a hydroelectric project located on the Namekagon River in the Town of Trego in Washburn County, Wisconsin, with an authorized capacity of 1,200 kW. Project facilities include a dam, powerhouse, tailrace or tailwater, transmission equipment, appurtenant equipment, 435.2-acre reservoir, surrounding land extending landward to an elevation of 1,035.2 feet NGVD, and NSPW-owned lands near the dam necessary for Project operations.

Under the proposed operation, NSPW will continue to operate the Project in a run-of-river mode where streamflow as measured immediately downstream of the Project tailrace approximates the sum of inflows into the Project reservoir. This mode of operation minimizes the potential for adverse impacts on water quality, aquatic habitat, and other aquatic resource values. NSPW will also continue to maintain a reservoir target elevation of 1,034.9 feet NGVD, with fluctuations limited to 0.3 feet around the target elevation (i.e., between 1,034.6 feet and 1,035.2 feet NGVD).

Just prior to spring runoff, or for emergency purposes, the Applicant may deviate from the maximum reservoir elevation by no more than 0.5 feet to remove ice from the spillway for dam safety purposes. The duration of the deviation shall be no longer than necessary, typically less than a few days, to remove the ice and will be considered as a planned deviation under the requirements outlined in Section 5.5.3 of Exhibit E.

2.1 Stage 1 Consultation Summary

Stage 1 Consultation Summary includes consultation that began with pre-licensing questionnaires for developing the PAD and ended with written comments and study requests from interested stakeholders. Formal comments and study requests were received from the following organizations/interested parties:

- National Park Service (NPS)
- Trego Lake District (TLD)
- Wisconsin Department of Natural Resources (WDNR)

Stakeholders' comments and study requests are found in Attachment A of this appendix.

2.2 Stage 2 Consultation Summary

The following provides a summary of stakeholders' comments, recommendations, and concerns, as well as NSPW's responses, regarding consultation that began after written study requests were received and ending with the stakeholder comments on the DLA. The summary is arranged by subject matter with the stakeholders' comments followed by Applicant's responses presented on a stakeholder-by-stakeholder basis.

Any additional narratives, letters, or other information provided within this application further delineate the current positions of the respective parties.

2.2.1 Study Summary

Based on the study requests submitted during the first stage of consultation, the Licensee developed a draft study summary to identify study plans to be completed along with the general study protocols.

In the study summary, the Licensee proposed to complete the following:

- Aquatic and Terrestrial Invasive Species (ATIS) Study (including the collection of bathymetric and substrate data)
- Mussel Study
- Phase 1 Archaeological Study of Project Shorelines
- Recreation Study
- Water Quality Monitoring Study
- Wood and Blanding's Turtle Nesting Habitat Study

On August 2, 2022, NSPW provided a draft study summary for comment to those agencies/entities who requested studies. Draft study plans were then developed and sent to the stakeholders for comment. Stakeholder comments were addressed in the final study plans filed with the Commission on April 21, 2022 (Accession #20220421-5093, Part 1, Part 2, Part 3, Part 4, Part 5, and Part 6). More detailed information regarding each of the study plans is provided in the following sections.

On August 2, 2021, the Licensee provided a draft study summary for comment to the agencies/entities who requested studies. WDNR provided comments on August 18, 2021. Comments received, and the Licensee's responses, are summarized in the sections below and are included in Section 3.2. A final study summary, including copies of the final study plans that addressed stakeholder comments, was submitted to FERC on April 21, 2022 and is included in Attachment B of this appendix.

2.2.1.1 Aquatic and Terrestrial Invasive Species Study Plan

WDNR requested an aquatic plant and aquatic and terrestrial invasive species survey. On January 13, 2022, NSPW sent a draft ATIS Study to NPS, TLD, and WDNR. The NPS provided comments via letter on February 9, 2022. No comments were received from the TLD or WDNR. The NPS comments, and the Applicant's responses, were addressed in the final ATIS Study Plan filed with the Commission on April 21, 2022 (Accession #20220421-5093, Part 2).

2.2.1.2 Mussel Study Plan

The WDNR requested that a mussel study be completed at each Project. On February 2, 2022, NSPW provided a draft copy of the Mussel Study Plan to the NPS and WDNR for comment. NPS provided comments via letter on March 4, 2022. WDNR provided comments via email on February 16, 2016, which were substantially accepted and incorporated into the plan. NPS and WDNR comments, and the Applicant's responses, were addressed in the final Mussel Study Plan filed with the Commission on April 21, 2022 (Accession #20220421-5093, Part 3) and included in Attachment B of this appendix.

2.2.1.3 Phase 1 Archaeological Survey of Project Shorelines

The Licensee conducted a Phase I Archaeological Survey of each Project's shoreline. Since the procedure to conduct the survey was set forth in the existing Programmatic Agreement, no specific study plan was developed for consultation. The Hayward and Trego Shoreline Survey Reports were filed with the SHPO on January 24 and February 1, 2023, respectively. The SHPO provided a letter for each Project concurring with the recommendations in each report on March 28, 2023. Copies of the SHPO's concurrence letters are included in Attachment B of this appendix.

2.2.1.4 Recreation Use Study Plan

NPS and WDNR both requested that recreation studies be completed at each Project. On November 5, 2021, NSPW provided a draft copy of the Recreation Study Plan to the NPS and WDNR. Comments were provided by NPS via letter on December 4, 2021. The WDNR did not respond with any comments. The NPS comments, and the Applicant's responses, were addressed in the final Recreation Study Plan filed with the Commission on April 21, 2022 (Accession #20220421-5093, Part 4).

2.2.1.5 Water Quality Study Plan

WDNR requested that water quality studies be completed at each Project. On February 2, 2022, NSPW provided a draft copy of the Water Quality Study Plan to the NPS and WDNR for comment. The NPS provided comments via letter on March 4, 2022. WDNR did not provide any comments. NPS comments, and the Applicant's responses, were addressed in the final Water Quality Study Plan filed with the Commission on April 21, 2022 (Accession #20220421-5093, Part 5).

2.2.1.6 Wood and Blanding's Turtle Nesting Habitat Study Plan

WDNR requested that wood and Blanding's turtle nesting habitat studies be completed at each Project. On February 3, 2022, NSPW provided a draft copy of the Wood and Blanding's Turtle Study Plan to the NPS and WDNR for comment. The NPS provided comments via letter on March 4, 2022. The WDNR provided comments verbally on February 21, 2022. NPS and WDNR comments, and the Applicant's responses, were addressed in the final Wood and Blanding's Turtle Study Plan filed with the Commission on April 21, 2022 (Accession #20220421-5093, Part 6).

2.2.2 Study Reports

The studies were completed in 2022 in accordance with the protocol identified in the final study plans. Draft study reports were provided to the stakeholders for comment. The NPS provided comments on the study reports via letter on April 21, 2022. The NPS was the only agency that provided comments. The study reports and corresponding consultation can be found in Attachment B of this appendix. NSPW's responses to NPS comments on the study reports are included in Sections 1.4.2.2.1 to 1.4.2.2.6 of Exhibit E.

2.2.3 Comments on DLA

The Licensee sent a letter that included a website link to an electronic version of the DLA to all stakeholders on the distribution list (Accession #20230629-5179). Written comments were submitted by the FERC on October 2, 2023 (Accession # 20231002-3031), the NPS on September 27, 2023 (Accession #20230927-5044), and the TLD on September 28, 2023 (Accession #20230928-5039). A summary of substantive comments and NSPW's responses are provided in the following sections.

2.2.3.1 FERC Comments on the DLA:

FERC Comment 1:

Section 2.2.2.2, Proposed Environmental Measures, of the draft license application (DLA), states that Northern States Power Company (Northern States Power) would comply with the U.S. Fish and Wildlife Service's northern long-eared bat guidance. However, there is no description of the presence of the northern long-eared bat or its habitat at the project or of current or potential operation and maintenance activities that could affect the northern long-eared or tricolored bat or their habitat. In the final license applications (license applications), please describe any potential northern long-eared bat, tricolored, and little brown bat habitat at the project (including location and description of vegetation) and a description of activities (including location, specific activity, frequency, and duration) any operation and maintenance activities that could affect the rare, threatened, or endangered (RTE) bats or their habitat at each project.

NSPW Response:

A review of the IPaC Official Species Lists for the Hayward and Trego Projects, updated on October 30, 2023, identified the potential presence of NLEB and tricolored bats in the vicinity of both Projects. The IPaC Official Species Lists did not identify the little brown bat at either project (Appendices E-21 and E-43 of Exhibit E). The little brown bat was also not identified at either project in the WDNR NHI reviews (Appendices E-22 and E-44 of Exhibit E). Therefore, no information on the little brown bat has been provided in the FLA.

Sections 4.7.1.1.3 and 4.7.1.1.4 of Exhibit E in the FLA have been revised to include the following information: At the **Hayward Project**, the wooded area south of the dam may provide maternity roosting habitat for the NLEB and tricolored bat. Vegetation management is the only activity which has the potential to impact the NLEB and tricolored bat in these wooded areas. The only vegetation management activities routinely conducted are associated with maintenance of recreation sites and Project facilities.

On the west side of the dam, NSPW maintains approximately 0.46 acres of lawn and 0.29 areas of gravel driveways/parking areas. On the east side of the dam, NSPW maintains approximately 0.4 acres of lawn at the Canoe Portage Take-out/Carry-in Access and Informal Bank Fishing Area. NSPW also maintains the gravel access road leading to the Canoe Portage Put-In (approximately 0.18 acres). The lawn is mowed at least monthly during the open water recreation season. The parking and gravel driveway areas are typically maintained once per year by grading. The Canoe Portage Put-In trail extends approximately 85 feet from the gravel road to the water's edge. NSPW maintains an approximate 10-foot wide pathway in this area by annually hand trimming woody vegetation encroaching upon the trail.

The lawn and gravel areas do not provide suitable roosting habitat for the NLEB or tricolored bat and maintenance of these sites will not adversely affect either species. The trimming of woody vegetation to maintain the canoe portage trail typically involves the removal of small diameter brush that is less than three inches in diameter. This type of vegetation does not provide roosting habitat for either bat species. Additionally, NSPW may occasionally remove dead trees that pose a hazard to human health or project facilities. Hazard trees may provide roosting habitat for both bat species. NSPW has proposed to follow the most recent USFWS guidance for removal of trees greater than three inches in diameter as a mitigation measure. No other vegetation management activities are anticipated at the Hayward Project.

Sections 5.7.1.1.3 and 5.7.1.1.4 of Exhibit E in the FLA has been revised to include the following information: At the **Trego Project**, NSPW-owned lands include wooded areas downstream of the dam on both sides of the river and upstream of the dam on the north side of the river. These areas may provide suitable roosting habitat for NLEB and tricolored bats. Vegetation management activities at these areas may impact both bat species. The only vegetation management routinely conducted is associated with the maintenance of recreation sites and Project facilities. On the south side of the dam, NSPW maintains approximately 0.49 acres of lawn and 0.12 acres of gravel/paved driveways or parking areas. On the north side of the dam, NSPW maintains approximately 1.15 acres of lawn at the North Tailwater Access and Canoe Portage and 0.1 acres of gravel parking area. The lawn and canoe portage trail are mowed at least monthly during the open water recreation season. The parking area is typically maintained once per year via grading. The lawn and gravel areas do not provide suitable roosting habitat for either bat species. Only the removal of hazard trees has a potential to impact roosting habitat. NSPW has proposed to follow the most recent USFWS guidance for the removal of trees greater than three inches in diameter as a mitigation measure. No other tree harvesting or upland vegetation management activities are anticipated at the Trego Project.

FERC Comment 2:
Section 4.7, Threatened and Endangered Species, of the DLA, describes the state and federally listed RTE species that could be found at the project including the Canada lynx and the candidate species monarch butterfly. However, there is no description of current or potential operation and maintenance

activities that could affect the RTE species and/or their habitat. In the license applications, please describe (including location, specific activity, frequency, and duration) any operation and maintenance activities that could affect RTE or candidate species or their habitat at each project.

NSPW Response:
NSPW has revised Section 4.7.1.1.1 through 4.7.1.1.5 of Exhibit E of the FLA to include information regarding operation and maintenance activities that could affect the RTE species and their habitat.

FERC Comment 3:
Section 2.2.2.2 of the Exhibit E of the DLA, describes the proposed measures including specifically for recreation resources, including conduct routine maintenance of Northern State Power's FERC-approved recreation sites, including signage, over the term of any subsequent license. However, there is no description of location specific maintenance activities that would be conducted at the recreation sites other than maintaining signage and/or how these activities could affect other resources at the project, including RTE species. In the license applications, please describe (including location, specific activity, frequency, and duration) any proposed recreation related maintenance at the project that could affect RTE species at each project, if applicable.

NSPW Response:
NSPW has added information to Sections 4.8.2.2 and 5.8.2.2 of Exhibit E of the FLA regarding the location, frequency and duration of recreation maintenance at both Projects.

FERC Comment 4:
Section 2.2.2.2 of the Exhibit E of the DLA, states that Northern State Power proposes to develop an Aquatic and Terrestrial Invasive Species Plan and conduct biennial invasive species survey. The DLA describes the invasive plant species that have either been observed or have the likelihood to be found at the project. However, there is no description of current or potential operation and maintenance activities that could affect the spread or reduction of invasive plant species and/or their habitat. In the license application, please describe (including location, specific activity, frequency, and duration) any operation and maintenance activities that could affect invasive species or their habitat at the project, if present. Please also describe any protection measures including monitoring, treatment and others that have historically, are currently, or are being proposed to manage invasive species at each project, if applicable.

NSPW Response:
NSPW has added additional information to Sections 4.5.2.1.5, 4.6.2.1.2, 5.5.2.1.5, and 5.6.2.1.2 of Exhibit E of the FLA regarding aquatic and terrestrial invasive species at both Projects.

FERC Comment 5:
Various sections of the DLA indicate differences between the current and proposed project boundaries. However, staff have determined that additional information is needed. So that staff can evaluate the proposed boundary changes, in the license application please: (1) describe all proposed changes to the project boundary, including justification; (2) provide the total acreage of lands and submerged lands within the current and proposed project boundaries; and (3) provide figures showing the current and proposed project boundaries.

NSPW Response:
NSPW has revised Exhibit E by adding Sections 4.15 and 5.15 to the FLA regarding the proposed changes to the Hayward and Trego Project boundaries, respectively.

FERC Comment 6:
Section 4.8.1.3.6, Adequacy of Existing Facilities to Address Current and Future Demand, of the DLA provides estimates for total project recreation use (in recreation days) during the open water and winter recreation seasons. However, information about current capacity utilization of existing recreation sites is not provided. So that staff can assess the adequacy of existing recreation facilities in the license application please provide estimates of the percent of capacity currently utilized for each of the six recreation sites, by recreation season, based on readily available information (e.g., spot count data).

NSPW Response:
Section 4.8.1.4.6, Adequacy of Existing Facilities to Adress Current and Future Demand, of Exhibit E of the FLA was revised to include estimates of the percent capacity for each of the recreation sites by recreation season.

FERC Comment 7:
Sections 4.8.1.3.4, Recreation Spot Counts, of the DLA states that recreation surveys resulted in a total of 84 spot count reports during which 175 users were observed. The section then states that the average spot count was 10.9 users per location. It appears that this average was calculated by dividing the total number of users observed by the number of sampling days (i.e., 175/16 = 10.9). Therefore, this average does not indicate the average number of users per location, but rather indicates the average number of users observed per sampling day at the entire project (i.e., across all sites). Please clarify this in the license application.

While reporting the average number of recreation users observed at the project per sampling day is useful, to assess the adequacy of existing recreation sites, it would also be useful to calculate and report the average number of users observed during the spot counts for each of the six recreation sites, by recreation season (i.e., open water vs. winter). Doing so could also inform an estimate of the percent of capacity currently utilized at each site. Therefore, please provide these averages in the license application.

NSPW Response:
Section 5.2 of the Recreation Study Report and Section 4.8.1.4.4 of Exhibit E of the FLA have been corrected to state that an average of 10.94 users were observed per day across all recreation sites. Section 4.8.1.4.4 of Exhibit E of the FLA was also revised to include the average number of users observed during the spot counts for each of the recreation sites by recreation season. The corrected Recreation Study Report is included in Appendix E-29 of the FLA. Changes to the report are shown in red text.

FERC Comment 8 (listed as #7 in FERC letter):
Section 5.8.1.4, Adequacy of Existing Facilities to Address Current and Future Demand, of the DLA provides estimates for total project recreation use (in recreation days) during the open water and winter recreation seasons. However, information about current capacity utilization of existing recreation sites is not provided. So that staff can assess the adequacy of existing recreation facilities, in the license

application, please provide estimates of the percent of capacity for each of the four recreation sites, by recreation season, based on readily available information (e.g., spot count data).

NSPW Response:
Section 5.8.1.5 of Exhibit E of the FLA provides estimates of the percent capacity for each recreation site by recreation season.

FERC Comment 9 (listed as #8 in FERC letter):
Section 5.8.1.3.4, Recreation Spot Counts, of the DLA states that recreation surveys resulted in a total of 84 spot counts. However, this number seems incorrect, as the study included 16 sampling days, in which spot counts were conducted at four recreation sites (i.e., 16*4 = 64). Please report the correct number of spot counts that were completed at the project in the license application.

In addition, section 5.8.1.3.4 states that the average spot count was 2.13 users per location. It appears that this average was calculated by dividing the total number of users observed by the number of sampling days (i.e., 34/16 = 2.13). Therefore, this average does not indicate the average number of users per location, but rather indicates the average number of users observed per sampling day at the entire project (i.e., across all sites). Please clarify this in the license application.

While reporting the average number of recreation users observed at the project per sampling day is useful, to assess the adequacy of existing recreation sites, it would also be useful to calculate and report the average number of users observed during the spot counts for each of the four recreation sites, by recreation season (i.e., open water vs. winter). Doing so could also inform an estimate of the percent of capacity at each site. Therefore, please provide these averages in the license application.

NSPW Response:
The Recreation Study Report and Section 5.8.1.4.4 of Exhibit E of the FLA have been revised to indicate that a total of 64 spot counts were conducted at the Trego Project. While that was the number used for the calculations in the report, it was not specifically identified in the report. Section 5.8.1.4.4 was also revised to show the average number of users observed during spot counts for each of the recreation sites by recreation season. The corrected Recreation Study Report has been included in Appendix E-29 of the FLA.

2.2.3.2 NPS Specific Comments and Questions on the DLA

NPS Comment DLA-1 (Exhibit E, Section 1.3.7, p.e-4):
Wild and Scenic Rivers Act (WSRA) needs to be rewritten as the WSRA Section 7(a) standard cited is incorrect. The 'direct and adverse effect standard' is recommended by the Interagency Wild and Scenic Rivers Coordinating Council in its 2004 Technical Guidance Paper: Wild and Scenic Rivers Act: Section 7 for instances where an existing hydroelectric facility is included in a designated river corridor, and modifying or relicensing of the facility is not prohibited by the Wild and Scenic Rivers Act. The statement should be revised to state as follows: “Section 7(a) of the Wild and Scenic Rivers Act (WSRA) (Public Law 90-542) requires federal administering agencies to make a determination as to whether the operation of a project under a license within a wild and scenic river corridor would have a direct and adverse effect on the values for which such river was designated.

NSPW Response:
Section 1.3.7 of Exhibit E in the FLA has been revised per the NPS recommendations.

NPS Comment DLA-2 (Exhibit E, Section 1.3.7, p. E-4):
Wilderness Act – The St. Croix National Scenic Riverway is not part of the National Wilderness Preservation System.

NSPW Response:
Section 1.3.7 of Exhibit E of the FLA has been revised to indicate that the St. Croix National Scenic Riverway is not part of the National Wilderness Preservation System.

NPS Comment DLA-3 (Exhibit E-Section 2.2.2.2, p. E-18):
Recommend changing "NSPW will develop an HPMP in consultation with the Wisconsin SHPO and interested Native American Nations to follow the requirements outlined in the Programmatic Agreement" to "NSPW will develop a PA and HPMP in consultation with the Wisconsin SHPO, interested Native American Nations, the NPS, and additional consulting parties." The existing language incorrectly describes the requirements of the existing PA, which actually states, "If the Wisconsin SHPO agrees with the HRMP, the Licensee will implement it." A new PA is needed.

NSPW Response:
To address the NPS concerns, Section 2.2.2.2 of Exhibit E of the FLA has been revised to state the following: "NSPW will develop an HPMP in consultation with the Wisconsin SHPO, NPS, and interested Native American Nations to generally follow the same level of post-licensing procedural and compliance monitoring, reporting, and public involvement requirements outlined in the existing Programmatic Agreement. The HPMP will supersede the existing CRMP. NSPW does not agree that a new PA is needed because the PA is short-lived (less than one year) and will be superseded by the HPMP. NSPW believes its proposed changes adequately address the NPS concerns.

NPS Comment DLA-4 (Exhibit E-Section 3.2.2.2, p. E-25):
Recommend changing "NSPW will develop an HPMP in consultation with the Wisconsin SHPO and interested Native American Nations to follow the requirements outlined in the Programmatic Agreement" to "NSPW will develop a PA and HPMP in consultation with the Wisconsin SHPO, interested Native American Nations, the NPS, and additional consulting parties." The existing language incorrectly describes the requirements of the existing PA, which actually states, "If the Wisconsin SHPO agrees with the HRMP, the Licensee will implement it." A new PA is needed.

NSPW Response:
See response to the previous NPS comment.

NPS-Comment DLA-5 (Exhibit E-Section 4.11, p. E-105):
The second paragraph states, "To meet the interests and requirements of all consulting parties". Please clarify which consulting parties this refers to, their interests and requirements, and how Xcel determined that.

NSPW Response:
Section 4.11 of Exhibit E of the FLA has been revised to state the following: "*NSPW identified historic and archaeological properties within the Project's APE in accordance with Section 106 of the NHPA and 36 CFR 800 - Protection of Historic Properties as outlined in the December 30, 1993, Programmatic Agreement (Section 1.3.4).*"

NPS Comment DLA-6 (Exhibit E, Section 4.11.1.4, p. E-106):
Recommend changing "Per the requirements of the Programmatic Agreement, an HPMP will be developed in consultation with the Wisconsin SHPO and interested Native American Nations" to "NSPW will develop a PA and HPMP in consultation with the Wisconsin SHPO, interested Native American Nations, the NPS, and additional consulting parties." The existing language incorrectly describes the requirements of the existing PA, which actually states, "If the Wisconsin SHPO agrees with the HRMP, the Licensee will implement it." A new PA is needed.

NSPW Response:
Section 4.11.1.4 of Exhibit E of the FLA has been revised to state the following: "An HPMP will be developed in consultation with the Wisconsin SHPO, NPS, and interested Native American Nations to generally follow the same level of post-licensing procedural and compliance monitoring, reporting, and public involvement requirements outlined in the existing 1993 PA."

NPS Comment DLA-7 (Exhibit E, Section 4.11.3, p. E-106):
Recommend changing "Per the requirements of the Programmatic Agreement, an HPMP will be developed in consultation with the Wisconsin SHPO and interested Native American Nations" to "NSPW will develop a PA and HPMP in consultation with the Wisconsin SHPO, interested Native American Nations, the NPS, and additional consulting parties." The existing language incorrectly describes the requirements of the existing PA, which actually states, "If the Wisconsin SHPO agrees with the HRMP, the Licensee will implement it." A new PA is needed. Recommend changing "within 10 years of license issuance" to "within 5 years of license issuance".

NSPW Response:
Section 4.11.3 of Exhibit E of the FLA has been revised to state the following: "*Within one year of license issuance, NSPW will develop an HPMP in consultation with the Wisconsin SHPO, NPS, and interested Native American Nations, to generally follow the same level of post-licensing procedural and compliance monitoring, reporting, and public involvement requirements outlined in the existing 1993 PA. The HPMP will include a requirement to survey previously documented archaeological sites and monitor the entire shoreline for any substantial shoreline erosion not previously recorded. The initial survey would be conducted within 5 years of license issuance and continue every 5 years thereafter. However, the frequency of surveys is subject to change based upon the results of the initial and subsequent surveys.*"

NPS Comment DLA-8 (Exhibit E, Section 4.14.1.6, p. E-115):
After "The Project is located within the territory ceded in 1837 (Loew, 2001)." add "Ten Ojibwe Tribes have reserved treaty rights within the 1837 ceded territory."

NSPW Response:
Section 4.14.1.6 of Exhibit E of the FLA has been revised as recommended by NPS.

NPS Comment DLA-9 (Exhibit E, Section 5.14.1.6, p. E-207):
After “The Hayward Project is located within the territory ceded in 1837 (Loew, 2001).” add “Ten Ojibwe Tribes have reserved treaty rights within the 1837 ceded territory.”

NSPW Response:
Section 5.14.1.6 of Exhibit E of the FLA has been revised as recommended by NPS.

NPS Comment DLA-10 (Exhibit E, Section 5.4.2, p. E-138):
Trego Lake Impaired Water for excess algae. If it isn't a nutrient problem, why is Trego Lake impaired due to excess algal growth, and what is the remedy?

NSPW Response:
Section 5.4.2 of Exhibit E of the FLA states that the excess algal growth is identified as being from an unknown source per the WDNR’s Impaired Waters List. Nutrient levels from the 2022 water quality monitoring study were not identified at levels that promote additional algal growth. Since the project is operated in a run-of-river mode, where outflows approximate the sum of inflows into the reservoir, and no erosion caused by project operations was noted, continued project operation is not anticipated to have any effect on algal levels within the reservoir. During relicensing proceedings, only impairments caused by project operations require mitigation (remedy).

NPS Comment DLA-11 (Exhibit E, Section 5.5.3 p. E-160):
Deviation Requirements - Compliance monitoring plan – Will any new monitoring equipment be installed within the WSR?

NSPW Response:
No new monitoring equipment has been proposed in the FLA. NPS is one of the resource agencies that must be consulted with during the development of the Operations and Compliance Monitoring Plan prior to the plan’s submittal to FERC. Any concerns the NPS may have with regard to new monitoring equipment may be addressed during consultation.

NPS Comment DLA-12 (Exhibit E, p. E-149):
The description of the location of Reach 1 of the Trego Mussel survey differs from the actual study's description in Appendix E-41, p.1. The DLA says Reach 1 extends upstream of Wagon Bridge Road, while the Mussel Study says it extends downstream.

NSPW Response:
Section 5.5.1.4.2 of Exhibit E of the FLA has been corrected to indicate that Reach 1 extends 1,000 m downstream of the Wagon Bridge Road crossing as described in the Mussel Study Report.

NPS Comment DLA-13 (Exhibit E, Section 9, p. E-219):
The replacement of boat launch hard surfaces (in-kind) should be removed from the list of activities that do not require prior authorization from resource agencies. This would require consultation with the NPS.

NSPW Response:
This section includes a list of activities that may be undertaken without prior consultation with FERC, not the resource agencies. As noted in the first bullet of Section 9.1.3 of Exhibit E of the FLA, all state, federal and local permits will be obtained prior to conducting in-kind maintenance activities that have the potential to impact aquatic resources. This section has been revised to state the following: NSPW will obtain all applicable local, state, and federal permits or authorizations prior to construction and will comply with said permits/authorizations during construction." A footnote was also added to indicate that federal permits or authorizations include USACE 404 permits and NPS WSRA authorization for work proposed below the OHWM.

NPS Comment DLA-14 (Exhibit E, Section 9.1.1, p. E-220):
Structures or Facilities: Add the following bullet:

- No changes shall be made to the structure or facilities below the ordinary high-water mark without consultation with the NPS under Section 7(a) of the WSRA.

NSPW Response:
Section 9.1.1 of Exhibit E of the FLA has been revised as recommended.

NPS Comment DLA-15 (Exhibit E, Section 9.1.3, p. E-221):
Add the following bullet:

- Prior to the activity, NSPW will consult with the NPS to ensure that wild and scenic values are protected and enhanced.

NSPW Response:
Section 9.1.3 of Exhibit E of the FLA has been revised to include language that ensures the proposed activity does not result in a "*direct adverse effect*" upon the wild and scenic values (see NPS Comment DLA-1).

NPS Comment DLA-16 (Appendix E-2):
The new detailed bathymetry map (Appendix E-2) only shows the proposed project boundary for Trego Lake, although a more general bathymetry map for the current boundary is presented (Appendix E-3, Figure 24). The NPS recommends the Licensee:

- Extend the map to include 1-foot contour depths for the area Xcel proposes to remove from the current Project boundary.
- Add a description of the changes observed from the bathymetric map presented in the PAD.
- Add in the missing 1-foot contour depth labels to the map.

NSPW Response:
Appendix E-2 of Exhibit E of the FLA has been revised to include an additional map with one-foot contours (for depths of 1-5 feet) that shows the area upstream of the proposed Project boundary. These bathymetric maps feature the most current information regarding water depths at the Project. The one-

foot contour lines are color coded in the map key to make the map easier to view without being obstructed by the map labels.

2.2.3.3 NPS 10(a) Recommendations

In their September 27, 2023, filing with the Commission (Accession #20230927-5044), the NPS also filed what they have termed as *"10(a) recommendations under the Federal Power Act."* Several of the NPS recommendations, if not all, are premature for the following reasons:

1) The recommendations are based on information found in the DLA and are not being made following a Section 7(a) determination. A Section 7(a) determination cannot be made until the filing of the FLA by NSPW.

2) The recommendations are based upon erroneous rationales that frequently rely on sedimentation in the reservoir, which originates upstream of the project, or in the case of water quality, *"the presence of the dams."* Numbered items 3-8 below provide further details on these two issues.

3) The professional opinion of the NPS is*: "Sediment deposition occurs in the impoundment because of the project impoundment's continued existence and the Project's operations. If the impoundment was not present and the Namekagon was a free-flowing river, the depositional patterns would be much different"* (Accession #20230927-5044, Page 17).

4) "The 'direct and adverse effect standard' is recommended by the Interagency Wild and Scenic Rivers Coordinating Council in its 2004 Technical Guidance Paper: Wild and Scenic Rivers Act: Section 7 for instances where an existing hydroelectric facility is included in a designated river corridor, and modifying or relicensing of the facility is not prohibited by the Wild and Scenic Rivers Act."[2]

5) The Interagency Wild and Scenic Rivers Coordinating Council's 2004 Technical Guidance Paper, on Page 5, states: *"The baseline for evaluation of existing hydroelectric facilities is the project's configuration and operation at the time of the river's designation as subsequently modified through FERC processes. The baseline against which changes in the condition of the river's ORVs due to the hydroelectric project are measured is their condition on the date of the river's designation."*

6) The St. Croix National Scenic Riverway was designated in 1968.[3]

7) The Hayward Hydroelectric Project pre-dates 1928. The Trego Hydroelectric Project was constructed in 1926 (Accession # 19940608-0296, Page 2).

8) Both hydroelectric projects were in place on the Namekagon River prior to its designation as part of the St. Croix National Scenic Riverway by Congress in 1968.

[2] NPS comment regarding Section 1.37 of Exhibit E of the DLA (Accession #20230927-5044) designated as NPS Comment DLA-1 in Section 2.2.3.2 of this Appendix E-1.
[3] https://www.nps.gov/sacn/learn/management/foundation-document.htm#Description

The NPS 10(a) recommendations under the Federal Power Act, which are based on a comparison to what the conditions were prior to the presence of the reservoirs or what conditions might have existed if the reservoirs were not in place, do not appear to be valid recommendations under Section 10(a) of the Federal Power Act. Therefore, they will only be addressed by NSPW at this time as they deem pertinent to the comments on the DLA.

NPS 10(a) Recommendation 1-Comprehensive Vegetation and Recreation Management Plan
NPS recommended that a Comprehensive Vegetation and Recreation Management Plan for the Trego Project be developed in consultation with the NPS, WDNR, and TLD that defines the roles and responsibilities of Xcel Energy and the consulting parties. NPS recommended that the plan address sedimentation, vegetation, and recreation. NPS' specific comments on the recommended plan, and NSPW's corresponding responses, are described below.

NPS 10(a) Recommendation 1, Comment 1:
Expand the Licensee's proposed aquatic and terrestrial invasive species biennial surveys to map and monitor the extent of wild rice and other native vegetation. The surveys should also include mapping the water depths and substrates to understand the sedimentation and how that affects growth patterns. After each biennial survey, evaluate the change in aquatic vegetation over time to identify trends. This would allow an understanding of the extent of all vegetation that may impede recreation access. It would also provide an understanding of changes over time in native vegetation locations and quantity, including wild rice, a significant cultural resource.

NSPW Response:
Section 5.5.3 of Exhibit E of the FLA has been revised to include aquatic plant surveys in lieu of rapid response invasive species surveys. The initial survey would be conducted in year 6 after the license is issued and continue every 6 years thereafter. The surveys would be conducted similar to the 2022 ATIS study, including a point-intercept vegetation survey, collection of water depth information for development of an updated bathymetric map, documentation of substrate type, and mapping of wild rice beds. The information collected will allow for periodic evaluation of the existing invasive species control activities to ensure that public recreational access between the upper and lower portions of the reservoir is maintained.

NPS 10(a) Recommendation 1, Comment 2:
Expand the geographic scope of the Plan and surveys to include the upstream area Xcel has proposed to remove from the Project boundary.

NSPW Response:
Since the area upstream of the proposed Project boundary is not impounded by the Trego Dam, it has not been included in the survey area.

NPS 10(a) Recommendation 1, Comment 3:
Develop the proposed aquatic and terrestrial invasive species rapid response action in consultation with NPS, WDNR, TLD and interested tribal governments. Identify management actions to address recreation access and manage wild rice in consultation with the Tribes, NPS, WDNR, and TLD. Review and

incorporate input from other plans and studies conducted by WDNR, TLD, and NPS to inform management and rapid response actions.

NSPW Response:

NSPW does not have a responsibility to provide any additional management for wild rice. Indeed, wild rice is thriving under the current operation of the facility. NSPW is proposing to continue with the same Project operation and has not proposed any additional measures that could have an adverse effect on the wild rice population. The NPS has not specifically identified any NSPW proposed measure that will have an adverse effect upon wild rice. Therefore, additional management of wild rice is unnecessary. See also the Response to NPW 10(a) Recommendation 1, Comment 1.

NPS 10(a) Recommendation 1, Comment 4:

NPS supports the recreation proposals at the Trego Project North Tailwater access/Canoe Portage and South tailwater Access identified in the DLA, and recommends the following additional measures:

- Regularly clean and maintain the take-out on Trego Lake of vegetation and sediment.
- Improve entrance to North Tailwater Access portage and tailwater fishing sites from the gravel access road and River Road shoulder.
- Include the access path in current mowing intervals to help minimize presence of ticks and create a safer environment for recreationists.
- Improve the put-in by adding signage.
- Expand the fishing area, add trash receptacles and rod holders.

NSPW Response:

The North Tailwater Access/Canoe Portage parking area is shown in **Figure 2.2.3.3-1**. The parking area is in good condition and is not in need of maintenance. However, the access through the fence is fairly narrow, making carrying a canoe through the fence difficult. NSPW has revised Section 5.8.3.1 of Exhibit E of the FLA to indicate that the opening will be widened to allow for easier carry in-access. NSPW currently periodically trims aquatic vegetation at the take-out location to ensure it remains open. **Figure 2.2.3.3-2** shows the take-out location, free of vegetation all the way to the shoreline. NSPW has not received any complaints from recreationists regarding sediment or vegetation at the canoe portage take-out.

Figure 2.2.3.3-1 North Tailwater Access/Canoe Portage Parking Area

Figure 2.2.3.3-2 Vegetation at Canoe Portage Take-out

The entire site (including the access path) is regularly mowed throughout the recreation season as part of routine maintenance. **Figure 2.2.3.3-3** shows the mowing conducted at the site. The frequency of mowing is consistent with other canoe portages in northern Wisconsin. No recreation survey respondents identified frequency of mowing or vegetation management as a concern at the site.

Section 5.8.3.1 of Exhibit E of the FLA has been revised to include the review of canoe portage directional signs along the canoe portage route and replacement if necessary.

As noted in Section 5.1 of the 2022 Recreation Study Report (see Appendix E-29 of Exhibit E) 97% of survey respondents indicated that crowding did not affect their plans. Of the 20 Trego respondents that participated in bank fishing, 2 identified conditions as being slightly crowded and one identified it as being moderately crowded. At the North Tailwater Access/Canoe Portage site, only one survey respondent recommended expansion of the fishing area and the addition of trash receptacles and rod holders on the railing. Based on this information, expansion of the site, addition of trash receptacles, and addition of rod holders, is more of a personal recommendation rather than a recreational need. Most outdoor recreation site managers do not provide garbage receptacles at their recreation sites in order to discourage dumping of residential and other waste not generated on site. Instead, they promote a "carry-in/carry-out" policy regarding trash management. This includes the downstream County Highway K access site that is owned and managed by the NPS. According to the NPS St Croix National Scenic Riverway Superintendent's Compendium webpage "*All refuse will be removed from the park by park users in accordance with the park's carry in, carry out policy. Leaving of refuse in the park is prohibited*" (National Park Service, n.d.a). The results from the Recreation Study confirm that these improvements are not warranted and, therefore, have not been included in the FLA.

Figure 2.2.3.3-3 North Tailwater Access/Canoe Portage

NPS 10(a) Recommendation 1, Comment 5:

NPS recommended the following improvements at the South Tailwater Access:

- Provide barrier free picnic tables, a viewing area, and parking spot(s).
- Install and maintain trash receptacles.
- Replace existing and add signage, expand the fishing area, and evaluate lighting needs at the stairway.

NSPW Response:

While there are no designated barrier free parking sites within the existing parking area, it is suitable for barrier free parking. There is an existing gate restricting vehicular access to the earthen embankment and powerhouse for security reasons. This area is not suitable for a designated parking/viewing area. The other areas suitable for viewing the reservoir from a vehicle are located along the shoulder of Ricci Road. NSPW has not proposed to designate a specific parking/viewing area in this location since it is located within the road right-of-way. However, that does not preclude the public from parking along the shoulder of the road or viewing Trego Lake from the existing parking area. No picnic tables have been proposed in the FLA.

As noted in the response to **NPS 10(a) Recommendation 1, Comment 4**, most outdoor recreation site managers in the area do not provide garbage receptacles at their recreation sites to avoid dumping of residential and other waste not generated on site. Instead, they promote a "carry-in/carry-out" policy regarding trash management, including the NPS. Therefore, the addition of waste receptacles has not been proposed in the FLA.

As noted in Section 5.1 of the 2022 Recreation Study Report (see Appendix E-29), 97% of Trego Project survey respondents indicated that crowding did not affect their plans. Of the 20 Trego respondents that participated in bank fishing, only 2 identified that the bank fishing was slightly crowded and only one identified it as being moderately crowded. At the South Tailwater Access site, only two survey respondents recommended expansion of the fishing area and one recommended the addition of lighting at the stairway. The results from the recreation study do not indicate that the capacity of the site is insufficient for the current or anticipated recreational usage. Therefore, no expansion of the site or changes in lighting have been proposed in the FLA.

NPS 10(a) Recommendation 1, Comment 6:

Monitor recreational use at the Project every 5 years to determine the adequacy of recreation facilities over the license term. Every ten years conduct visitor surveys. Consult with NPS and other parties on potential actions needed.

NSPW Response:

NSPW has added Sections 4.8.3.3 and 5.8.3.3 to Exhibit E of the FLA to include recreational site monitoring every 6 years as currently required under Article 414 of the existing Hayward license and Article 408 of the existing Trego license. A report with annual recreation use figures, a discussion of the adequacy of the recreation facilities at the project to meet recreation demand, a description of the methodology used to collect all study data, if there is a need for additional facilities, a recreation plan proposed by the Licensee to accommodate recreation needs in the project area, documentation of agency consultation (NPS and WDNR), and NSPW's responses to comments on the report. NSPW will continue to implement the survey methodology it uses under the current license throughout the term of the pending license. This includes an inventory of facilities, interviews with owners and operators of facilities and other key personnel, counts of recreation users, usage numbers from private facilities, and self-reporting surveys. The combination of NSPW proposed recreational site improvements and recreational monitoring every 6 years will address recreational resources throughout the license term of

the subsequent license. A six year monitoring frequency is adequate for the current level of recreation and corresponds with the proposed invasive species survey cycle.

NPS 10(a) Recommendation 1, Comment 7:
Identify management actions to address recreation access and manage wild rice in consultation with the Tribes, NPS, WDNR, and TLD.

NSPW Response:
See the response to NPS 10(a) Recommendation 1, Comment 1 and Recommendation 1, Comment 3.

NPS 10(a) Recommendation 1, Comment 8:
Monitor and document the effectiveness and impacts of implemented vegetation management actions such as mechanical harvesting, dredging, drawdowns, invasive removals on recreational navigation, and wild rice preservation. Identify triggers for management alternatives, such as the need for a new public recreation access site.

NSPW Response:
See the response to NPS 10(a) Recommendation 1, Comment 1 regarding vegetation management and NPS 10(a) Recommendation 1, Comment 6 regarding recreation management.

NPS 10(a) Recommendation 1, Comment 9:
Monitor and document the effectiveness and impacts of implemented vegetation management actions such as mechanical harvesting, dredging, drawdowns, invasive removals on recreational navigation, and wild rice preservation. Identify triggers for management alternatives, such as the need for a new public recreation access site.

NSPW Response:
As noted in NSPW's response to NPS 10(a) Recommendation 1, Comment 1, NSPW has revised Section 5.6.3 of Exhibit E of the FLA to include aquatic plant surveys similar to those completed during relicensing, including mapping of wild rice beds and bathymetric mapping. Information gathered from these periodic surveys will help determine if any changes to aquatic plant management are needed during the term of the next license.

NPS 10(a) Recommendation 1, Comment 10:
Schedule and conduct an annual coordination meeting with the NPS and other interested parties (e.g., Trego Lake District, WDNR) to discuss the measures needed to ensure public safety, manage Project recreation facilities, and use, and meet Project visitor needs, consistent with applicable laws, regulations, and policies.

NSPW Response:
As noted in the response to NPS 10(a) Recommendation 1, Comment 1, NSPW has proposed to conduct biennial rapid response invasive surveys and aquatic plant surveys every 6 years. The survey reports will be submitted to the stakeholders for comments and NSPW will address those comments in the final report to FERC. This process allows stakeholders an opportunity to provide input into aquatic plant

management every two years. As noted in the response to NPS 10(a) Recommendation 1, Comment 6, NSPW has also proposed to conduct recreational surveys every 6 years allowing for ongoing input into recreation use and needs at the Project throughout the term of the license. Since the stakeholders will already have an opportunity to provide input on the aquatic plant and recreation monitoring reports, NSPW has not proposed annual stakeholder meetings in the FLA.

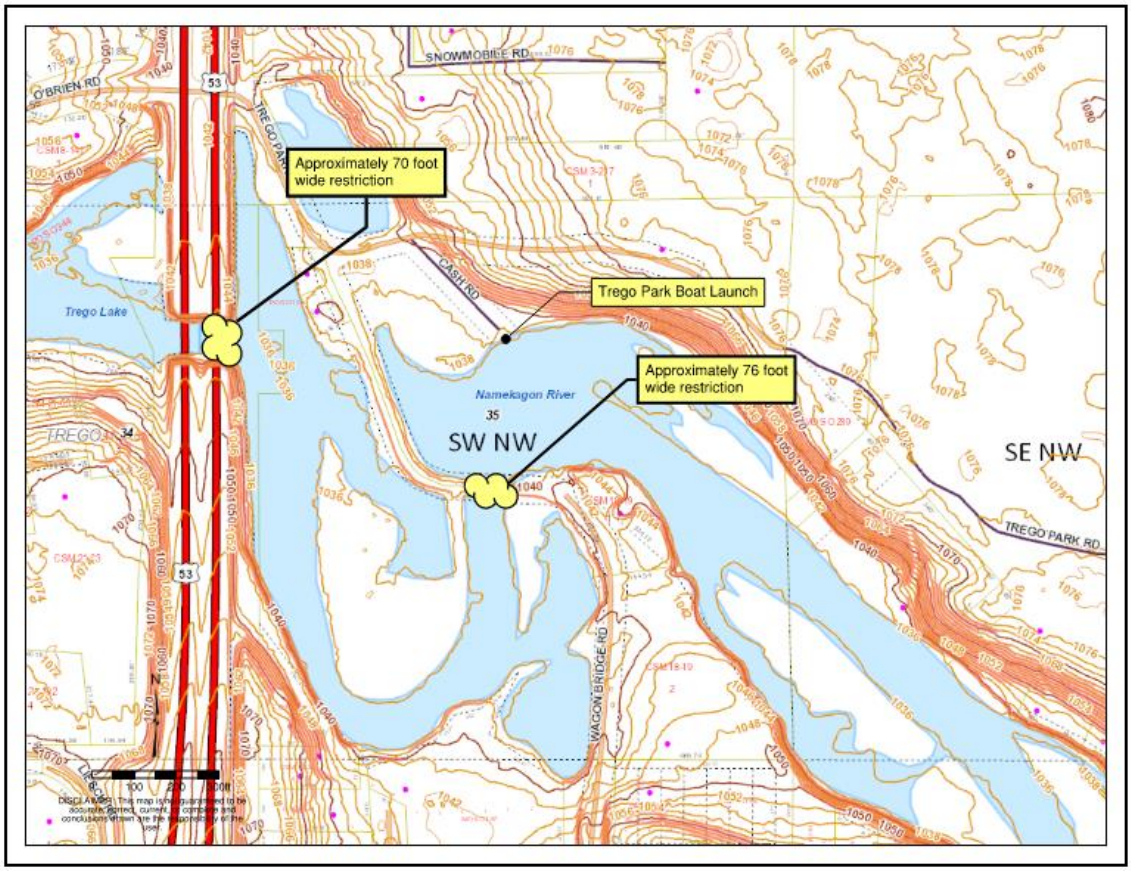
NPS 10(a) Recommendation 2-New Recreation Access Site

The NPS recommends that Xcel partner with the NPS and other interested parties to explore developing a new river access site to meet the current and projected future recreation demand.

NSPW Response:

The Recreation Study did not identify a need for additional recreation sites. There is currently an access site upstream of the proposed Project boundary (Trego Park Boat Landing) that provides a location for put-in and take-out of small watercraft. This site also serves as a take-out for paddlers or tubers who do not wish to continue downstream through Trego Lake and provides access to the upper reaches of the reservoir. Sedimentation near this recreation site is not caused by Project operation as the area is not inundated by the Project. **Figure 2.2.3.3-4** shows elevation data from Washburn County in the area upstream of US Highway 53. In this area, there are two anthropogenic constrictions within the floodway that restrict water flowing in the Namekagon River. The first is the road embankment from the old Wagon Bridge Road, just downstream of the boat landing where the river takes a 90-degree turn. This constriction slows the water and results in sediment deposition. The second constriction is the road embankment associated with the US Highway 53 crossing where the river takes another 90-degree turn. This constriction also results in sediment deposition. Both constrictions are upstream of the impoundment and have no nexus to the Trego Project. Indeed, these areas will likely continue to collect sediment regardless of the presence of the Trego Dam.

Figure 2.2.3.3-4 Topographic Map of Namekagon River Upstream of US Highway 53



NSPW has proposed to periodically monitor aquatic vegetation and recreational use over the term of the next license. NSPW further proposes to mitigate navigational impacts from excessive aquatic vegetation by providing funding to TLD for aquatic invasive species management and control. These measures will help ensure the public continues to have access to the upper reservoir. As part of the periodic surveys, the adequacy of the existing recreation facilities to provide public access will be evaluated. Therefore, NSPW has not proposed to develop any new recreation access sites in the FLA. The development of an additional access site on Trego Lake has a strong potential to adversely impact the existing wild rice population from additional boat traffic and wave action. As such, NSPW does not support such an action at this time or in the future.

As NPS noted in their Recreation Study survey response, they closed their existing access site located on Lakeside Road near the Namekagon River Visitor Center and are considering developing a new river access point to the east of the Visitor Center near the Highway 63 bridge. Since the decision to close the existing recreation site is not related to the Trego Project or its operation, NSPW is not proposing to coordinate or fund the development of an alternative access site.

NPS 10(a) Recommendation 3-Development of a Recreation Management Plan and Improvements at the Hayward Project

NPS recommended that Xcel implement a Recreation Management Plan and improve and install recreation related facilities and amenities at the Hayward Project. They recommended that the plan be developed in consultation with the NPS and WDNR that defines the roles and responsibilities of Xcel Energy and consulting parties. Specific comments on the recommended plan and improvements are described below.

NSPW Response:

The recreation enhancements do not substantiate a need for the development of a recreation management plan. The enhancements, the implementation schedule, and the consultation requirements (if necessary) can be clearly outlined in the license without the need to develop a separate recreation plan subsequent to the license issuance.

NPS 10(a) Recommendation 3, Comment 1:

NPS recommended the following improvements:

- Improve canoe portage signage and incorporate a map and safety information in a Kiosk at a location to be determined.
- Install and maintain barrier free picnic tables, a viewing area and parking spot(s).
- Install and maintain trash receptacles at the put-in, take-out, and tailwater fishing area.

NSPW Response:

Section 4.8.3.2 of Exhibit E of the FLA has been revised to include signage depicting a map showing the location of all public recreation facilities owned and managed by NSPW and other public recreational facilities that provide water access within the Hayward Project boundary. NSPW has also proposed to review and improve directional signage to better define the canoe portage. NSPW already maintains safety signage as required in its public safety plan. No new kiosk with safety information has been proposed nor is it necessary.

There is existing accessible parking, pathways, picnic facilities, restrooms, and a fishing pier at the Hayward City Beach providing accessible access and views of Lake Hayward. NSPW has not proposed to add accessible parking/viewing or picnic tables at any of its recreation facilities because they are unnecessary.

As noted in NSPW's response to NPS 10(a), Recommendation 1, Comment 4, most outdoor recreation site managers do not provide garbage receptacles at their recreation sites to avoid dumping of residential and other waste not generated on site. They instead promote a "carry-in/carry-out" policy regarding trash management, including the NPS. Therefore, the addition of waste receptacles has not been proposed in the FLA.

NPS 10(a) Recommendation 3, Comment 2:

Presently, three sites provide recreation access and opportunities to visit the flowage that Xcel does not own, including the Hayward City Boat Landing, Hayward City Beach & Barrier-Free Fishing Pier, and the Hayward Bartz's Bay Informal Ice Fishing Access. The consultants and visitors identified improvements to recreation facilities and experiences in the recreation study and visitor survey. The NPS recommends that

Xcel partner with the owners of these facilities to improve recreation access and accessibility of these sites that provide access to the flowage.

NSPW Response:

The condition of the amenities at the Hayward City Boat Landing are described in Section 4.4 of the Recreation Study Report in Appendix E-29 of the FLA. The amenities and signage were assessed as being in good condition. No survey respondents expressed dissatisfaction with the site.

The condition of the amenities at the Hayward City Beach are described in Section 4.5 of the Recreation Study Report. The condition of the amenities and signage were assessed as being in good condition. A total of 10 respondents expressed dissatisfaction with the condition of the site due to poor signage, lack of trash receptacles, or restroom conditions. Overall, the average satisfaction from all respondents regarding these three issues was between “satisfied” and “neutral.”

The Hayward City Boat Launch and Hayward City Beach sites are owned and managed by the City of Hayward. The deficiencies noted by several survey respondents do not compromise the sites’ ability to provide public access to Lake Hayward. Ultimately, the owner is responsible for the ongoing maintenance (including signage, restrooms, and trash management) of the sites. Therefore, NSPW has not proposed any enhancements at these sites.

The condition of the amenities at the Bartz’s Bay Informal Fishing Access were assessed in Section 4.6 of the Recreation Study Report. All amenities were assessed as being in good condition. No signage is located at the site. No survey respondents expressed dissatisfaction with the site. The site is not a publicly owned or managed facility; it is a trail located on private land that runs along the boundary of two residential parcels. The trail has historically been used by the public to access the reservoir during the winter. It is unknown whether this activity has been approved or authorized by the property owners. Therefore, it is misleading to identify this site as a public recreational site nor is it appropriate to recommend improvements.

NPS 10(a) Recommendation 3, Comment 3:

NPS recommends that recreation use at the project be monitored every five years to determine the adequacy of recreation facilities over the license term. Every ten years, conduct visitor surveys, consult with NPS and other parties on potential actions needed.

NSPW Response:

See the response to NPS 10(a) Recommendation 1, Comment 6.

NPS 10(a) Recommendation 3, Comment 4:

NPS recommended that the recreation plan identify management actions to address recreation access in consultation with NPS, WDNR, and the City of Hayward.

NSPW Response:

See the response to NPS 10(a) Recommendation 1, Comment 6.

NPS 10(a) Recommendation 3, Comment 5:

The Licensee will schedule periodic coordination meetings with the NPS and other interested parties (e.g., City of Hayward, WDNR) to discuss the measures needed to ensure public safety, manage Project recreation facilities, and use, and meet Project visitor needs, consistent with applicable laws, regulations, and policies.

NSPW Response:

As noted in the response to NPS Recommendation 1, Comment 1, NSPW has proposed to conduct biennial rapid response invasive surveys and aquatic plant surveys every 6 years. The survey reports will be submitted to the stakeholders for comments and those comments will be addressed by NSPW in the final report(s) to be filed with FERC. This process will afford the stakeholders the opportunity to provide input into aquatic plant management every two years. As noted in the response to NPS 10(a) Recommendation 1, Comment 6, NSPW has also proposed to conduct recreational surveys every 6 years, allowing for ongoing input into recreation use and needs at the Project throughout the term of the license. Since the stakeholders will have opportunities to provide input into aquatic plant management and recreation, periodic stakeholder meetings are unnecessary and NSPW has not proposed them in the FLA.

NPS 10(a) Recommendation 3, Comment 6:

At the Hayward project site, NPS staff examined Xcel-owned recreation sites. NPS supports Xcel reviewing and maintaining or improving signage, including a Part 8 sign, at the Canoe Portage Take-Out and Carry-In Access site. NPS recommends improvements to signage and additional signage. Signage was present for the canoe portage, but current signs are challenging to locate when portaging. Adding additional and improvements to signage to make it more visible will help recreationists understand where they need to go when portaging.

Additionally, a kiosk with safety information, natural and cultural resource information, regulations, and maps that include recreation sites within and adjacent to the project boundary will aid recreationists in understanding their surroundings and being able to orient themselves.

NSPW Response:

NSPW has revised Section 4.8.3.2 of Exhibit E of the FLA to include a map of NSPW owned and managed recreation sites and other public recreation sites that provide water access within the Project boundary. NSPW has also proposed to review and replace canoe portage directional signage if necessary. NSPW already maintains safety signage as required in its public safety plan. No new kiosk with safety or cultural information has been proposed, nor is it necessary. Any such recommendations for cultural resources information should be considered during of the development of the HPMP.

NPS 10(a) Recommendation 3, Comment 7:

Furthermore, the NPS recommends that the Licensee monitor and publicize daily flow data. Daily flow data will help stakeholders better understand flow rates, pool elevations, and inform the public and visitors of what to expect while on the reservoir and riverway. Flow data information can be used to educate visitors on river and flowage conditions and improve safety. There is only one gauge at Leonards, which creates an information gap for the public, Tribes, and stakeholders. The publication of flow information could be online, real-time postings, similar to other hydropower projects. Flow is the key

physical driver of the riverine environment and indicator for visitor use and safety. The NPS requests that the Applicant share flow data and consult with the WDNR and the NPS on the best way to communicate the information.

NSPW Response:

Section 4.5.3 of Exhibit E of the FLA has been revised to indicate that NSPW will provide daily flow and reservoir elevation information for the Hayward Project on a public webpage. Information on how to access the info will be included in the Part 8 signage at the Canoe Portage Take-out/Carry-In Access site.

Section 5.5.3 of Exhibit E of the FLA has been revised to indicate that NSPW will provide daily flow and reservoir elevation information for the Trego Project on a public webpage. Information on how to access the information will be included in the Part 8 signage at the North Tailwater Access and Canoe Portage site and the South Tailwater Access site.

NPS 10(a) Recommendation 3, Comment 8:

Survey respondents indicated a need for barrier-free amenities and facilities at the Hayward Project. While accessible sites are provided at Hayward City Beach, installing and maintaining these amenities and facilities at the Project will increase and improve accessibility at the Hayward Project. The location should be determined in consultation with the NPS, WDNR, and other interested stakeholders.

NSPW Response:

The existing facilities at the Hayward City Beach, including barrier free parking, pathways, picnic tables, and fishing platform, already provide barrier free access to the Project. During the recreation survey, only one respondent identified a need for ADA viewing and parking and that was in regard to the Canoe Portage Take-Out and Carry-In Access. Therefore, NSPW has not proposed any new accessible facilities in the FLA.

NPS 10(a) Recommendation 3, Comment 9:

There are no trash receptacles at Xcel-owned recreation sites at the Hayward Project. Installing and maintaining trash receptacles will help keep public areas clean and provide a safer site for people to recreate. Additionally, trash receptacles can potentially help minimize and mitigate trash from entering the St. Croix National Scenic Riverway.

NSPW Response:

As noted in the response to NPS 10(a) Recommendation 1, Comment 4, most outdoor recreation site managers do not provide garbage receptacles at their recreation sites to avoid dumping of residential and other waste not generated on site. Instead, they promote a “carry-in/carry-out” policy regarding trash management. Therefore, waste receptacles are unnecessary and have not been proposed in the FLA.

NPS 10(a) Recommendation 3, Comment 10:

The Hayward Project reservoir offers a variety of recreation opportunities, including, but not limited to, boating, paddling, fishing, and birding. A Recreation Management Plan would address a long-term recreation vision for the Hayward Reservoir, including opportunities for existing and potential future recreation needs. The Recreation Management Plan would also address ongoing management needs for

recreation throughout the license term, which is needed to ensure enhanced recreation experiences and protected resources. In addition, recommended improvements on the reservoir will help improve the overall recreational experience through maps, portage opportunities, signage, site improvements, barrier-free facilities, and better management of the resources.

NSPW Response:

See the response to NPS 10(a) Recommendation 1, Comment 6. The recreation enhancements do not substantiate a need for the development of a recreation plan. The enhancements, implementation schedule and consultation requirements (if necessary) can be clearly outlined in the license without requiring a separate recreation management plan to be developed after the license is issued.

NPS 10(a) Recommendation 4-Water Quality Monitoring and Management Plan for Trego and Hayward

The NPS recommends that the Licensee develop a Water Quality Monitoring and Management Plan consistent with WDNR requirements and include consultation with the NPS and WDNR.

NPS 10(a) Recommendation 4, Comment 1:

The Plan should, at a minimum, include:

- Conduct water quality monitoring on regular intervals of the flowage and river. The scope and level of effort should be similar to the baseline studies conducted during the relicensing process and follow WDNR protocols for the data.
- Based on the monitoring results, develop management actions to improve water quality parameters in consultation with the NPS and WDNR.
- Report daily discharge data annually (date/time, elevation (feet), discharge (CFS), full pool (feet), and temperature).
- The Plan shall be reviewed and updated periodically throughout the license in consultation with the NPS And WDNR.

NSPW Response:

As noted in Section 4.4.2 of Exhibit E in the FLA:

"Hayward Lake is listed as a "Healthy Waterbody" in WDNR's 2022 Water Quality Report to Congress., Appendix E-Healthy Waters List (WI Department of Natural Resources, 2022a). Water quality monitoring conducted in 2022 indicated that all analyzed water quality parameters, except upstream temperature, met Wisconsin's water quality standards. Temperature measurements at Site 1 did not meet Wisconsin cold-water temperature standards for the months of June and July. This monitoring site is located at the upstream end of the Project and is representative of the temperature of the water before entering Hayward Lake. Since the water temperature at Site 1 exceeded the temperature standard before entering the Project, Project operations were not the cause for the temperature exceedances. Therefore, the proposed operation of the Project is not expected to cause adverse impacts to water quality."

No additional water quality monitoring has been proposed in the FLA.

NPS 10(a) Recommendation 4, Comment 2:

Water quality issues have been identified in and adjacent to the project area. In its water quality study, the Licensee identified impairment of water quality due to algae but did not identify a source of the problem. Harmful algae blooms and cyanobacteria have been found downstream in the St. Croix National Scenic Riverway. Harmful algae blooms and cyanobacteria can potentially affect public use and recreation. If additional water quality problems are identified in the future, there may be a need to develop public health and safety measures.

NSPW Response:

No water quality impairments from algae were identified during the 2022 water quality monitoring at the Hayward Project. As noted in Section 5.4.2 of Exhibit E:

"Trego Lake is listed as an impaired water in the WDNR's 2022 Impaired Waters List for excess algal growth due to an unknown pollutant (WI Department of Natural Resources, 2022a). The nutrients typically associated with excessive algal growth (i.e., nitrogen, phosphorus, and chlorophyll a) were not found in levels that would promote additional algae growth. Despite Trego Lake being listed as impaired, the results from water quality sampling conducted in 2022 met all water quality standards. No material changes to Project operations are being proposed; therefore, no adverse effects to water quality are anticipated from continued operation of the Project."

Therefore, no additional water quality monitoring is necessary, nor has been proposed in the FLA.

NPS 10(a) Recommendation 4, Comment 3:

There is a potential for increased water temperatures associated with climate change, causing water quality problems. Although Xcel will utilize run-of-river to operate the projects, the presence of the dams may result in increased water retention times, exacerbating the water quality problem. Flow is the key physical driver of the riverine environment. Flow data is required to calculate concentration data and water quality loadings. Flow data is critical for analysis of water quality trends, nutrient loadings, and analysis of water quality trends (Magdalene et al. 2016). Continuing to monitor water quality and flow/discharge and consult with WDNR and NPS on potential management actions to address issues identified during the monitoring will help ensure water quality is protected and visitor safety is addressed over the life of the license.

NSPW Response:

In their May 7, 2021 comments on the PAD, the WDNR stated that the residence times at the Hayward and Trego projects were 6 days and 11 days, respectively. The combination of short residence times with the existing run-of-river operations reduces the likelihood of Project-related impacts to water temperatures. Instances of water temperatures exceeding the state standard at the Hayward Project were limited to monitoring site 1 on the upstream end of the reservoir where a cold-water temperature criteria exists. These water temperature exceedances reflect the incoming river temperatures to the Project and were not adversely affected by Project operations. The Namekagon River from Hayward Lake downstream is subject to Wisconsin's warm water temperature criteria. All other temperatures at the Hayward and Trego projects met the warm water and other water quality criteria.

According to the Interagency Wild and Scenic River Coordinating Council in its 2004 Technical Guidance Paper: Wild and Scenic Rivers Act: Section 7, "*the baseline for evaluation of existing hydroelectric facilities is the project's configuration and operation at the time of the river's designation as subsequently modified through FERC processes. The baseline for against which changes in the condition of the rivers Outstanding Resource Values (ORVs) due to the hydroelectric project are measured is their condition on the date of the river's designation…Absent changed conditions or trends of affected resources, a project proposed to operate in the same or similar manner as of the date of designation is unlikely to result in adverse effects."* (Interagency Wild & Scenic River Coordinating Council, 2004).

Both dams were already constructed and operating in their current manner or as subsequently modified through the FERC processes when the Namekagon River was first designated a National and Scenic River in 1968. Therefore, the comparison of future conditions must be made to those conditions existing at that time which included the constructed the dams, not to what the conditions were prior, or may be present if the reservoirs were not in place.

NPS 10(a) Recommendation 5-Shoreline Monitoring and Management Plan for Trego and Hayward
The NPS recommends that Xcel develop a Shoreline Monitoring and Management Plan.

NPS 10(a) Recommendation 5, Comment 1:
NPS recommended that the plan include the following:

- Develop survey protocols and methodology in consultation with the NPS, WDNR, and TLD.
- Conduct shoreline surveys within one year of licensing, followed by every five years to map and photo document the shoreline condition and erosion activity. Assess the changes over time to identify any issues with the shoreline, such as extensive erosion.
- The NPS recommends an adaptive approach based on the findings of the survey. If erosion occurs more rapidly, the NPS recommends Xcel complete the survey every two years. If the studies find little erosion, Xcel could move the survey interval to five years. Develop triggers within this Plan and the Historic Properties Management Plan that consider survey frequency in response to resource conditions, planned drawdowns, and after high-water events.
- Based on the results of the studies, develop management actions to address any issues in consultation with the NPS, WDNR, and TLD.
- The Plan should be reviewed and updated every five years in consultation with the NPS, WDNR, and TLD.

NSPW Response:
NSPW has revised Sections 4.33 and 5.33 of Exhibit E of the FLA to include a proposal for conducting shoreline erosion surveys at both Projects. NSPW has proposed to conduct erosion surveys of each Project's shoreline, including the tailwater area, within 5 years of license issuance and every 5 years thereafter. However, the frequency may be reduced based upon the results from the previous surveys. A report would then be submitted to WDNR and NPS for comment. Any agency comments received would then be addressed by NSPW in the final report to be submitted to FERC.

The shoreline survey conducted as part of the relicensing process did not identify any areas of erosion within either Project. The 1993 PA requires surveys of the reservoir bed during drawdowns and this

requirement will be included in the HPMP to be developed under the new license. The Cultural Resource Study Report noted that no areas of erosion were identified during the surveys at either Project and that little erosion is expected in the future due to the run-of-river operation and lack of erosion noted in previous surveys. None of the NPS recommendations or comments justify the development of a more-defined formal shoreline management plan.

NPS 10(a) Recommendation 5, Comment 2:

Xcel proposes to conduct periodic shoreline surveys every ten years. The NPS recommends that surveys be conducted more frequently to capture changes in the shoreline due to erosion and Licensee shoreline stabilization activities. A five-year survey timeframe is consistent with EPA National Lakes Assessment Design protocols.

NSPW Response:

See the response to NPS 10(a) Recommendation 5, Comment 1.

NPS 10(a) Recommendation 5, Comment 3:

In recent public meetings, the NPS has received comments and public concerns about the increased use and different types of boats compounding shoreline erosion. Xcel did not identify this issue in their recreation or shoreline surveys.

NSPW Response:

NPS has not provided NSPW with any information regarding public concerns about increased use and different types of boats compounding shoreline erosion at the Hayward or Trego Projects other than their general comment on the DLA. More specifically, the NPS did not provide the following:

- Information on the type of meetings held.
- Locations of the meetings and when the meetings were held.
- Context of the meetings.
- Summary of public comments received.
- Documentation that this perceived erosion has actually taken place at either project.

Information regarding erosion at both Projects was provided in the DLA and was the result of a formal designed survey developed in consultation with the resource agencies as part of the relicensing proceeding.

NPS 10(a) Recommendation 6-Aesthetic Guidelines and Best Practices

The NPS recommends that the Licensee develop guidelines and best practices for visual, night sky, and soundscape protection. The guidelines and best practices will serve as a guide to future maintenance and capital improvement projects. Xcel should develop the guidelines in consultation with the NPS. The guidelines and best practices, at a minimum, should include:

- Visual design guidelines and best practices ensure the protection of the viewshed, and that future construction and maintenance projects blend in with the landscape.
- Night Sky guidelines and best practices should address project lighting needs and replacements. Existing lighting should be evaluated to see if the lighting is necessary or could be removed. Necessary lights should be replaced with dark sky friendly lights in the next replacement cycle.
- Soundscape Protection Best Management Practices should include management strategies and

operational scenarios to minimize noise caused by Project Operations and maintenance activities to reduce noise for projects that have the potential to impact wildlife and visitor experience.

NSPW Response:
NSPW is not proposing any new facilities at either Project, as part of this application, that would impact aesthetic resources or increase noise. Lighting at both Projects is restricted to safety and security lighting near the dams which has been in place since the projects were originally developed. In an effort to follow the "*No Lighting at All*" best practice, no new lighting is being proposed at either Project. In the event new lighting is necessary, or existing light fixtures at Project facilities need to be replaced, NSPW will follow the current night sky guidelines and best practices, as long as the best practices don't compromise site security or employee and public safety.

NPS 10(a) Recommendation 7-Cultural Resources Programmatic Agreement and Historic Properties Management Plan

NPS 10(a) Recommendation 7, Comment 1:
Section 1.3.4 states that "NSPW anticipates the Commission will meet its obligations under NHPA Section 106 through the execution of the Programmatic Agreement." The NPS agrees with this statement that a new programmatic agreement (PA) should be executed for the purposes of the Hayward and Trego projects. A new PA is needed: to provide Tribal Nations the opportunity to be parties to and consult on the development of the Section 106 agreement; for the agreement to incorporate Tribal input and perspectives; and for the agreement to acknowledge reserved treaty rights and resources within the Project area. The NPS recommends developing the new PA with interested Tribal Nations, WI SHPO, the NPS, and any additional consulting parties. The NPS requested formal consulting party status to the Section 106 process for these undertakings pursuant to 36 CFR § 800.3(f) in a letter dated 4/27/21 to Secretary Kimberly Bose. As a formal consulting party to the Section 106 process, the NPS requests the opportunity to participate in the development of the PA to satisfy Section 106 for these undertakings occurring within the Congressionally-authorized boundary of this NPS unit.

NSPW Response:
On December 30, the1993 statewide PA entitled *Programmatic Agreement Between the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, the State of Wisconsin State Historic Preservation Officer, the State of Michigan Historic Preservation Officer for Managing Historic Properties that May be affected by New and Amended Licenses Issuing for the Continued Operation of Existing Hydroelectric Projects in the State of Wisconsin and adjacent portions of the State of Michigan* was implemented. The agreement applied to all hydropower projects in the State of Wisconsin and the border waters between the State of Wisconsin and State of Michigan. While the agreement did not supersede existing PA's, once the projects are relicensed, they are subject to the 1993 PA. Therefore, the 1992 Trego PA expires upon issuance of a new license and will be superseded by the 1993 PA. A copy of the 1993 PA has been included in Appendix E-51 of Exhibit E. The 1993 PA details pre and post licensing procedures to be undertaken and requires the development of a new HPMP. In order to address NPS concerns regarding cultural resources, Sections 2.2.2.2 and 4.11.3 of Exhibit E of the FLA have been revised to require consultation with the SHPO, NPS, and interested Native American Nations in the development of the HPMP. As such, NSPW does not agree that a new PA is necessary for either Project.

NPS 10(a) Recommendation 7, Comment 2:

Xcel also intends to develop a Historic Properties Management Plan (HPMP) for this Project. The HPMP should be developed in consultation with the Wisconsin SHPO, interested Tribal Nations, the NPS, and any additional consulting parties.

As a formal consulting party to the Section 106 process, the NPS requests the opportunity to participate in developing the HPMPs for these undertakings occurring within the Congressionally-authorized boundary of this NPS unit.

NSPW Response:

Sections 2.2.2.2 and 4.11.3 of Exhibit E of the FLA have been revised to require consultation with the SHPO, NPS, and interested Native American Nations in the development of the HPMP's.

NPS 10(a) Recommendation 7, Comment 3:

Xcel proposes to conduct shoreline surveys to monitor potential effects to archeological resources every ten years. The NPS recommends that surveys be conducted more frequently to capture potential erosion and changes in the shoreline due to more erratic weather events, recreational uses that create increased wake, etc. Under the ten-year cycle, erosion could occur and naturally revegetate before it is observed through regular monitoring. Given the additional stressors on the shoreline, a five-year survey timeframe would be more appropriate. For reference, the existing HRMP required shoreline monitoring every two years for the first four years of the license, followed by periodic monitoring at a frequency agreed to by the Wisconsin SHPO. The new HPMP should establish a threshold that would trigger a shoreline survey after high-water events of a certain intensity. The new HPMP should also continue stipulating the existing HRMP that archeological surveys and monitoring occur on normally inundated lands during drawdown events.

NSPW Response:

As noted in the Response to NPS 10(a) Recommendation 5, Comment 3, Sections 4.3.3, 4.11.3, 5.5.3, and 5.11.3 of Exhibit E of the FLA have been revised to propose shoreline surveys every 5 years during the license term of both Projects. Due to the lack of erosion at either Project over the term of their current licenses, this frequency will adequately address any future erosion concerns. The 1993 PA requires that the HPMP include provisions to conduct surveys of the exposed bed during reservoir drawdowns.

NPS 10(a) Recommendation 8-Interpretive Waysides

The NPS recommends that the Licensee develop and install waysides to interpret the ruins and remnants of logging mills and dams within the Project boundaries to the Public. The NPS also recommends that the licensee consult with Tribal nations to see if they would be interested in participating in the development of content for interpretive waysides sharing tribal culture and history.

NSPW Response:

If NPS believes that this type of display would provide additional information regarding the history of the WSR, it seems more appropriate to locate such a display at the NPS Namekagon River Visitor Center where more members of the public visit, including those simply travelling through the area. As manager of the WSR, this type of display aligns with the core mission of the NPS and should not be required to be planned or funded by the Licensee.

NPS 10(a) Recommendation 9-National Register Nomination

The NPS recommends that Xcel complete a National Register (NR) nomination for the Trego Hydropower District, which was previously deemed eligible for the NR. A nomination identifying the characteristics that make the property eligible for the NR would ensure Xcel is preserving what is important about the property. A nomination will also enable visitors to learn more about the unique historical features of the Project.

NSPW Response:

The Trego Project has been evaluated and determined eligible for the National Register. The 1993 PA, current CRMP, and HPMP to be developed within 1 year of license issuance requires (or will require) consultation with the SHPO, NPS and interested Native American Nations prior to making any changes to the historic property. The 1993 PA does not require that a National Register nomination occur for eligible properties. Therefore, no nomination is necessary nor has one been proposed.

NPS 10(a) Recommendation 10-Submerged Resource Study

The NPS recommends that Xcel conduct a submerged resource study during any planned drawdowns throughout the life of the license. The study should focus on the areas made dry or visible by drawdowns. Conducting a submerged resource study during any planned project drawdowns will enable the identification and documentation of submerged resources. This documentation will help identify management actions to protect important cultural resources.

NSPW Response:

According to the terms of the 1993 PA (see Appendix E-51 of Exhibit E), a survey of the submerged bed of the reservoir during a drawdown is required to be included in the HPMP. Therefore, NSPW is obligated to include this requirement in the HPMP's to be developed.

NPS 10(a) Recommendation 11-Proposed Boundary Change

NPS recommends that the Licensee revise the proposed boundary to include the inlet area in the Trego Project boundary area and develop an integrated management plan that addresses recreation access and vegetation management affected by reservoir sedimentation, including the area proposed for removal from the Project Boundary.

NSPW Response:

The area proposed for removal from the Project boundary is not inundated by the impounding effects of the Trego Dam. Therefore, this area has not been included in the proposed Project boundary. As noted in the response to NPS 10(a) Recommendation 3, any sedimentation taking place upstream of US Hwy 53 is likely the result of constrictions in the riverway caused by road embankments and not the result of Project operations. Indeed, sedimentation would likely continue regardless of the presence of the dam.

NSPW has proposed to conduct biennial invasive species surveys and aquatic plant surveys every six years. The aquatic plant surveys would include mapping of wild rice beds and updated bathymetry. This information could then be used in coordination with the TLD's aquatic plant harvesting efforts to ensure that the public continues to have navigational access to the upper reservoir.

NPS 10(a) Recommendation 12-Guidance and Coordination for Future Actions

The NPS recommends that it be explicitly identified as an agency to be consulted on all potential future maintenance activities that occur below the ordinary high-water mark due to its responsibilities under Section 7(a) of the Wild and Scenic Rivers Act (WSRA).

NSPW Response:

Sections 4.5.3 and 5.5.3 of Exhibit E of the FLA have been revised to include NPS as a consulting party regarding the proposed Rapid Response Invasive Species Plan, Shoreline Erosion Surveys, Operations and Compliance Management Plan, HPMP, and In-Kind Work (Section 9 of Exhibit E) occurring below the OHWM.

2.2.3.4 Trego Lake District Comments on the DLA

TLD Comment 1:

TLD's primary concern with Xcel Energy's draft application is the failure to address the issue of sedimentation. It is the single most important issue affecting the health of Trego Lake. Sedimentation comes down the Namekagon River and deposits in Trego Lake. The existence of the dam precludes the sedimentation passing through. Although sedimentation is building up in Trego Lake, it received only passing comments by Xcel. Other agencies also requested that the effect of sedimentation be studied as part of this relicensing.

NSPW Response:

NSPW disagrees. The DLA and FLA both address the sedimentation issue. TLD indicates that sediment comes down the Namekagon River and the mere existence of the dam precludes the sediment from passing through. NSPW agrees that sediment being deposited within the upper reservoir is originating from the Namekagon River upstream of the reservoir and the impounding effects of the Trego Dam. As a Licensee, NSPW has no control over the sediment entering the reservoir from upstream. Furthermore, Project operations (e.g., reservoir fluctuations) is not the cause of sediment, nor is it contributing to the deposition of sediment or the sediment load via shoreline erosion. In the Commission's frequently asked questions section of *A Guide to Understanding and Applying the Integrated Licensing Process Study Criteria*, the Commission indicates the following:

> "*The Commission uses current conditions as its baseline for evaluating effects and alternatives. This consists of the environment as it exists at the time of licensing, this does not include pre-project conditions, which the courts have affirmed. Consequently, the Commission does not generally require an applicant to re-create pre-project conditions"* (FERC, 2012).

Therefore, the current condition with the dams and reservoirs in place is the environmental baseline from which the Commission measures potential impacts from continued operation of the Projects.

The Hayward and Trego Projects are unique in that they are also located within a designated wild and scenic riverway. Both Projects were originally developed prior to passage of the Wild and Scenic Rivers Act, which designated the Namekagon River as part of the St. Croix Wild and Scenic Riverway. Guidance provided in the Interagency Wild and Scenic Rivers Coordinating Council's guidance paper, *Wild and Scenic Rivers Act: Section 7*, states the following:

> *"The baseline for evaluation of existing hydroelectric facilities is the project's configuration and operation at the time of the river's designation as subsequently modified through the FERC*

> *processes. The baseline against which changes in the condition of the river's ORV's[4] due to the hydroelectric project are measured is their condition on the date of the river's designation* (Interagency Wild & Scenic River Coordinating Council, 2004)."

Therefore, based on this guidance, the environmental baseline conditions to be evaluated for potential effects to the wild and scenic riverway is with the dams and reservoirs in place, not the condition prior to the development of the dams or a potential future condition that would occur if the dams were not in place.

The guidance further states the following:

> "*Absent changed conditions or trends of affected resources, a project proposed to operate in the same or similar manner as the date of designation is unlikely to result in adverse effects* (Interagency Wild & Scenic River Coordinating Council, 2004)."

No material changes to Project operations are proposed as part of this application. The operation of the Trego Project is unaffected by sediment in the upper reservoir. Project operations do not contribute to the amount of sediment within the reservoir, nor does it cause mobilization of sediment within the reservoir. Additionally, no dredging or construction activities have been proposed which could be expected to disturb reservoir sediments. NSPW reviewed existing precedent for requested sediment accumulation studies when it evaluated which studies to complete as part of this relicensing proceeding. In the Commission's Study Plan Determination for the Ottertail Hydroelectric Project (FERC No. 10853) (Accession #20170414-3016), FERC staff did not require a sediment accumulation study at the project based upon the same reasons discussed above.

TLD Comment 2:
Along with the recognition of sediment coming into Trego Lake and the study of its impact, TLD requests an action plan be developed to open channels closed because of sedimentation and to prevent additional sedimentation coming into Trego Lake.

NSPW Response:
TLD's request to prevent additional sedimentation from coming into Trego Lake is unreasonable. As discussed in NSPW's response to TLD's Comment 1, sediment coming into Trego Lake originates from the Namekagon River upstream of the Project and is not under the control of the Licensee. Additionally, Project operations are not impacted from sediment within the upper reservoir, nor do they contribute to the amount of sediment within the reservoir or cause the sediment to become mobilized. No construction activities have been proposed in the FLA that would contribute to additional sediment deposition within the upper reservoir.

The Licensee does not have a responsibility to prevent sediment that originates from upstream of the Project from depositing within the Project reservoir. Rather, the Licensee has a responsibility to provide reasonable public recreational access to the upper portion of the reservoir as a result of its operation of the Project. See NSPW's responses to NPS 10(a) Recommendation 1, Comment 1 discussing proposed mitigation measures regarding aquatic plant management and NPS 10(a) Recommendation 1, Comment

[4] ORVs are defined as outstanding resource values.

6 regarding recreation monitoring. These proposed measures will ensure that reasonable public access to the upper portion of the reservoir is maintained.

TLD Comment 3:
The National Park Service, in an April 27, 2021 letter to FERC requested and outlined three studies for the Trego Dam relicensing – Recreation Study; Shoreline Survey; and Hydraulics, Sedimentation, and Channel Change Study.

Regarding the study on Hydraulics, Sedimentation, and Channel Change, a similar study request was also submitted by the Wisconsin Department of Natural Resources (WDNR) and both are supported by the Trego Lake District. Nothing has been done on the Hydraulics, Sedimentation and Channel Change study and corresponding WDNR study. In addition, neither study has a comment or any response from the applicant or consultant in the draft application.

NSPW Response:
NSPW refutes TLD's assertion that it did not address sedimentation study requests. On August 2, 2021, a Study Summary was submitted to all consulting parties who requested studies. The study summary also included NSPW's rationale for which studies would be completed. NSPW also modified study proposals to incorporate additional recommendations from the consulting parties. As noted in the Study Summary, certain components of the Sedimentation, Hydraulics, and Channel Change Study were incorporated into the ATIS Study and Cultural Study. Likewise, components of the Shoreline Survey requested by NPS were conducted in conjunction with the ATIS Study, Cultural Resources Study, and Recreation Study.

NSPW then developed draft study plans and submitted them for comment to those parties who requested the studies. Stakeholder comments were incorporated into the final study plans which were subsequently filed with the Commission on April 21, 2022 (Accession # 20220421-5293). No parties filed additional comments with the Commission regarding the final study plans. Draft study reports were then sent to those consulting parties which requested the studies. Comments received from the stakeholders were incorporated into the final study reports which were subsequently filed with the DLA. TLD was included in all consultation associated with the Study Summary, including the ATIS Study plans and the ATIS Study report. NSPW's consultation efforts regarding studies is discussed in more detail in Section 1.4.2 of Exhibit E. Copies of all Stage 2 consultation are included in Attachment B of Appendix E-1 of Exhibit E.

TLD Comment 4:
The issue of sedimentation cannot be ignored by Xcel as part of the relicensing. In 1989, a WDNR Sediment Study Report on Trego Lake' noted that 2000 cubic yards of sediment accumulate in Trego Lake each year. The report stated: "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." Since this project was never completed, we can assume that over the last 34 years, an additional 68,000 cubic yards of sediment have accumulated in the lake. Or a total of 108.000 cubic yards. TLD's May 6, 2021, letter to FERC in support of the study reiterated these findings and concerns about the enormous impact sedimentation is having on the lake.

NSPW Response:
Information regarding the WDNR sediment study report was included in Section 5.3.1.5.2 of Exhibit E of the DLA and a copy of the report is included in Appendix E-35 of Exhibit E of the FLA. In their comments, TLD overlooks the fact that the WDNR study also indicated that the infill rate, when compared to rates observed in other impoundments in Wisconsin, is extremely low. The study also showed that while sedimentation had taken place since the reservoir was created, water depths in two transects increased and the remaining transects were relatively unchanged between 1978 and 1988 (WI Department of Natural Resources, 1989).

TLD Comment 5:
"[*A] February 27, 1992, FERC Environmental Assessment states: Since the project's construction in 1927, considerable (emphasis added), sediment deposition has occurred, creating wetlands in inlets of the Trego impoundment, particularly the upstream end where the Namekagon River enters. In this area, 3 to 8 feet of sediment has been deposited (an estimated 145,000 cubic yards). Estimates show that 2000 cubic yards of sediment per year continue to settle in the upper reaches of the impoundment (WDNR, 1969). As a result of the shallow condition, aquatic plants invade such areas, especially in the 15-acre Namekagon River inlet area*."'

The FERC environmental Assessment cited highlights the significant impact of the estimated sediment rate, not just the amount of deposit. Additionally, the 1992 Environmental Assessment goes on to recommend developing a management plan to assess an option to address sedimentation and plant growth (a rejected drawdown plan, then supported by TLD). It recommends that "the issue be reevaluated on a recurring basis every four years because of the high value of project impoundment for recreational activity as part of a National Wild and Scenic River." The conclusion from these statements is that sedimentation is an issue that needs to be reviewed and addressed.

Further, the October 31,1995 FERC Order Modifying and Approving Drawdown Needs Analysis states: "*the licensee is responsible for providing the recreating public access to the upper portion of the reservoir*." To provide this access, the licensee (Xcel Energy) must study and address the sedimentation issue, which directly affects lake access, recreation, the growth of aquatic plants, and aquatic invasive species.

NSPW Response:
See NSPW's responses to TLD Comment 3, NPS 10(a) Recommendation 1, Comment 1, and NPS 10(a), Recommendation 1, Comment 6 regarding studies completed and proposed mitigation measures to ensure recreational access to the upper portion of the reservoir is maintained over the term of the subsequent license.

TLD Comment 6:
A 2022 aerial map of the southeast end of Trego Lake (See Figure 1) shows the sediment build up. Compare that photo with a 1966 WDNR topographical map of the same area of the lake which shows open water and depths of three to five feet. (See Figure 2) Sediment has overwhelmed this area and/or is pushing further into Trego Lake. Trego Lake has already gone 32 years without significant study on the impact of sedimentation, and an additional 30-plus years after relicensing without study would be contrary to Xcel's legal obligations to address recreation and subsequent environmental impacts on the project area and inconsistent with the 1968 Wild and Scenic River designation for' the Namekagon River.

NSPW Response:
As part of the ATIS Study, an aquatic plant survey was completed for the Project. Updated bathymetric maps were then generated from the survey data collected. The updated bathymetric maps are located in Appendix E-2 of Exhibit E of the FLA. Refer to NSPW's responses to NPS 10(a) Recommendation 1, Comment 1 and NPS 10(a) Recommendation 6 for mitigation measures proposed under the subsequent license term to ensure continued reasonable public access to the upper portion of the Project reservoir.

TLD Comment 7:
In 2015, TLD applied for and received grants from the WDNR, Washburn County, and the Town of Trego to dredge navigation channels in the inlet. TLD spent $90.000 to open our channels for navigation and lake access. Xcel was asked to participate but declined. Because of a significant high-water event, the channels lasted only two years. Without more significant minding, TLD has spot-dredged the channels in the south end each year, removing about 10 to 15 cubic yards of sand. The Trego Lake District purchased a mini-dredge and supporting equipment for $19,000 and, with the help of homeowner volunteers, has spent about 200 person- hours annually to keep minimal boat channels open for recreational purposes.

Again, the issue of sedimentation cannot be ignored by Xcel as part of the relicensing. It was recognized as an issue during the prior relicensing, it has continued through the present and will continue to fill in Trego Lake during the life of this license.

Sedimentation buildup creates an environment for weeds, including Aquatic Invasive Species (AIS) to grow. Weeds are cut each year to keep channels open and control the spread to other areas of the lake. Each year, TLD continues to expand the area of weed cutting at our own expense. Additionally, TLD is exploring other methods (such as chemical herbicides) to control AIS and open up navigation channels.

NSPW Response:
Lake Districts are authorized under Wisconsin Statute Chapter 33 (Chapter 33) and classified as governmental bodies with elected or appointed leaders and annual budgets funded from tax levies or special assessments. Special assessments are typically used for larger capital projects and may only be levied against benefitted property (Wisconsin State Legislature, 2023). Under TLD's current bylaws, the district is allowed to conduct feasibility studies, adopt plans, and carry out implementation work including, but not limited to, aeration, nutrient diversion, nutrient removal or inactivation, erosion control, sediment manipulation including dredging, bottom treatments, weed and algae control, swimmer's itch control, and water level control (Trego Lake District, 2022). The activities undertaken by TLD to address sedimentation and weed control are those envisioned under NR 33. As a governmental entity, TLD has the ability to levy taxes upon its members to conduct district approved activities. It is unreasonable to expect NSPW to fund all activities undertaken by TLD. As the Licensee, NSPW is responsible for ensuring reasonable public recreation access to the entire reservoir, including the upper portion. Mitigation measures have been proposed in this application to ensure reasonable public recreation access to the entire reservoir is maintained over the term of the subsequent license.

TLD Comment 8:
TLD believes there is a need for an integrated management plan that will span the life of the licensee's contract dealing with sedimentation, recreation, and vegetation not only for the homeowners on the lake but the public.

The TLD cannot shoulder the burden of a quality Scenic Wild River lake experience on its own. Among Xcel, the National Park Service, WDNR, Washburn County, Town of Trego, and TLD, we believe there is an obligation to each party to stop the degradation of Trego Lake room where the Namekagon River enters the lake through to the Dam. The sedimentation and vegetation issues will not stop until something is done to manage sedimentation. What will happen in the near future when twenty-five percent of our lake owners are cut off from the lake? What happens to the tax base for the county and town? What about the experience on the St. Croix Scenic Riverway when canoeists cannot pass through the lake without a mile portage because we have lost water depth?

NSPW Response:
As noted in the response to NPS 10(a) Recommendation 1, Comment 1, NSPW has proposed mitigation measures to monitor aquatic plants and water depths in the upper portion of Trego Lake. More specifically, the mitigation includes a proposal to periodically conduct rapid response invasive species monitoring, aquatic plant monitoring, and water depth monitoring within the reservoir throughout the term of the next license. NSPW has also proposed to provide funding to the TLD for aquatic invasive species management activities to maintain reasonable navigational access to the upper reservoir. NSPW has further proposed several recreational improvements at its FERC-approved recreation sites as well as routine recreation monitoring (every 6 years) throughout the term of the subsequent license. These measures are sufficient to address the various environmental and recreation concerns of the TLD without the need to develop an integrated management plan.

TLD fails to discuss the benefits of vegetation within the reservoir. Rather, they imply all vegetation should be removed. The existing aquatic vegetation within Trego Lake provides quality fish and wildlife habitat, including wild rice, a plant species of cultural importance for Native Americans. Wild rice beds are shown in Figure 8 of the ATIS report (Appendix E-3 of Exhibit E in the FLA).

As previously noted, sediment deposited in the upper reservoir originates from the Namekagon River upstream of the Project and the impounding effects of the Trego Dam. Project operations neither cause nor contribute to the sediment loading. Deposition of sediment occurs when a river enters a lake and streamflow velocities are reduced, allowing heavier suspended solids to settle out or become deposited. This is a natural process that occurs in natural lakes as well as impoundments. The deposition is not caused by the operation of the Project, it is the result of the mere presence of the reservoir, which is the current condition. As noted in NSPW's response to TLD Comment 1," the Commission uses current conditions as its baseline for evaluating effects and alternatives. This consists of the environment as it exists at the time of licensing, this does not include pre-project conditions" (FERC, 2012).

Since the project is operated in a run-of-river mode, a channel through the reservoir will be maintained annually by fluvial geomorphic processes during elevated inflow events. However, that channel may shift

over time. The mitigation measures proposed by NSPW in Exhibit E adequately balance the needs of public recreation, fish and wildlife habitat, water quality, and cultural resources.

TLD Comment 9:
As part of the 1990s relicensure, Xcel has partnered with TLD to harvest aquatic plants in the large basin where sedimentation has reduced depth allowing aquatic plants to grow. Per the agreement, TLD contacts and works with the harvesting company, marks the channels, and oversees the harvesting. Xcel/NSP pays the cost of harvesting, pays for navigational buoys for channels, and has the financial responsibility for the project.

Based on Xcel's failure to meet their responsibilities under the current license, TLD is concerned that Xcel will not fulfill their responsibilities under the new licensure.

NSPW Response:
NSPW has coordinated with TLD since 1997 on funding aquatic vegetation harvesting. **Table 2.2.3.4-1** summarizes the annual reimbursements NSPW has provided to TLD. NSPW has a responsibility to provide reasonable access for recreation within the reservoir. However, NSPW is not required to fund any and all measures the TLD desires. A determination of what is required for reasonable recreation access on Trego Lake was made by NSPW during the development of its proposed mitigation measures provided in Exhibit E of the FLA. The proposed mitigation measures are reasonable based upon the effects from Project operations.

Table 2.2.3.4-1 Summary of NSPW's Annual Reimbursements to TLD for Aquatic Vegetation Harvesting

Year	Reimbursement	Contractor	Other Comments
1997	$5,500	Aquatic Nuisance Control	
1998	$5,500	Aquatic Nuisance Control	
1999	$5,379	Aquatic Nuisance Control	
2000	$5,850	Aquatic Nuisance Control	
2001	$6,500	Aquatic Nuisance Control	
2002	$5,000	Midwest Aquatics	
2003	$5,000	Midwest Aquatics	
2004	$5,000	Midwest Aquatics	
2005	$5,000	Midwest Aquatics	
2006	$5,000	Midwest Aquatics	
2007	$5,250	Midwest Aquatics	
2008	$5,250	Midwest Aquatics	
2009	$5,500	Midwest Aquatics	
2010	$5,500	Midwest Aquatics	
2011	$5,800	Midwest Aquatics	
2012	$6,000	Midwest Aquatics	
2013	$6,000	Midwest Aquatics	
2014	$1,800	Midwest Aquatics	Harvesting not completed, reimbursement of non-refundable deposit
2015	$6,000	Midwest Aquatics	
2016	$6,000	Midwest Aquatics	
2017	$6,000	Midwest Aquatics	
2018	$1,890	Midwest Aquatics	Harvesting not completed, reimbursement of non-refundable deposit
2019	$8,000	Midwest Aquatics	
2020	$2,500	Midwest Aquatics	
2021	$4,800	TSB Lakefront Restoration and Diving, LLC	
2022	$2,640	TSB Lakefront Restoration and Diving, LLC	
2023	$2,500	TSB Lakefront Restoration and Diving, LLC	
TOTAL	**$135,159**		

TLD Comment 10:

As NPS has noted, TLD questions the reasoning behind Xcel's proposed change in the Trego Project Boundary as part of this 40-year relicensure. TLD is concerned about this proposed change because it could impact the sedimentation issue. Could a change in the project boundary permit Xcel to avoid its obligation to address sedimentation? Xcel should not be permitted to redefine its project boundaries when Xcel failed to address the very sedimentation causing the changed conditions and driving its request for the project boundary change.

NSPW Response:
As previously noted, the submerged lands proposed for removal from the Project boundary are not inundated by the Project at its maximum reservoir elevation of 1035.2 feet NGVD. Any sedimentation occurring in these areas is likely the result of manmade constrictions within the riverway as discussed in NSPW's response to NPS 10(a) Recommendation 2. NSPW does not have a responsibility to address sedimentation occurring upstream of the reservoir and outside the impounding effects of the Trego Dam.

TLD Comment 11:
Buried in the Estimated Costs of Proposed Environmental Measures section of the Description of the Project document, TLD finds the language: "Provide a one-time payment not to exceed $75,000 to the TLD to cost- share up to 75% of the total cost towards the purchase of a weed harvester. This one-time commitment would be in lieu of the annual reimbursement NSPW currently provides TLD for aquatic vegetation harvesting."

This "offer" has never been communicated to TLD in any form other than what is in the description document. Additionally, the amount identified is a one-time payment in 2023 dollars and does not take into account the increase of costs over time during the 40-year lifespan of the license. Furthermore, it ignores the changing nature of a Stowage over that time and the impact to the lake, its residents, and recreators that will enjoy it. Further, the offer addresses only the symptom and not the cause of the increased aquatic and invasive plants, which is sedimentation. TLD has been responsible for addressing sedimentation. The costs for these efforts since 2010 have come to about $125,000, not including all the hours TLD has accrued to plan, conduct, and maintain all or part of the dredge operation. Funds to conduct these efforts have come from grants, loans, donations, and tax levies. Nothing from Xcel.

TLD is concerned that this offer may be a strategy for Xcel to avoid future involvement to address the effects of sedimentation. In any event, the offer deals only with the symptom and not the fundamental cause of the problem.

NSPW Response:
See **Table 2.2.3.4-1** for a summary of annual funding provided by NSPW to TLD for aquatic plant harvesting during the current license term. NSPW's proposal to provide $75,000 to TLD for the purchase of a weed harvester is discussed in Exhibit E of the DLA under Section 3.2.2.2 "*Proposed Environmental Measures*", Section 5.5.3 "*Trego Project Proposed Environmental Measures*" and Section 7.2.2 "*Proposed Operation Alternative*." The proposal was also included in Exhibit A of the DLA under Section 12 "*Estimated Costs of Environmental Mitigation Measures*". Describing the funding proposal in four locations in the DLA does not constitute an attempt to "bury" the proposal.

In response to TLD's comments on the DLA, NSPW has revised Section 5.5.3 of Exhibit E of the FLA to include a proposal for a one-time payment of $150,000 to TLD. The funding would be used for invasive species management and control activities over the term of the subsequent license. This one-time commitment would be in lieu of the annual reimbursement currently provided for aquatic vegetation harvesting and would require TLD to provide an annual report to NSPW documenting the current year's activities.

The Licensee is ultimately responsible for ensuring that the public has reasonable recreational access to the upper portion of the reservoir. However, this should not be interpreted to mean NSPW is responsible

for ensuring that all riparian owners on the reservoir have motor boat access to the reservoir. NSPW's proposed funding to TLD, in combination with the proposed aquatic plant surveys, updated bathymetric mapping, and recreation monitoring, will ensure that reasonable public recreational access to the upper portion of the reservoir continues throughout the term of the subsequent license.

TLD Comment 12:
NPS noted concerns in the closing of the Wisconsin Department of Transportation access site on the Namekagon River in Trego because of the re-routing of the intersection of U.S. Highways 63 and 53. TLD is also concerned about these closures. The loss of this access point may divert recreators to the Trego Town Park landing, which is congested with sediment and aquatic plants. In addition to the closed landings being used by those coming down the Namekagon River, it was also used by Trego riparian landowner canoeists, kayakers, and tubers to access the upper portions of Trego Lake. We think the three studies proposed by NPS are likely to document a need for improved access with the potential for modifications at the Trego Town Park landing.

NSPW Response:
The Lakeside Road access site, closed by NPS, was located near their visitor center and offered carry-in access for canoers and kayakers. NPS chose to close the site, rather than retain vehicular access, during the relocation of Highway 63. The site was primarily used as a carry-in access. A photograph of the now-closed access site is shown in **Figure 2.2.3.4-1**. The site featured a stairway extending to the river where recreationists could launch canoes, kayaks, or tubes for travel downstream to Trego Lake. The site also served as a take-out for canoers, kayakers, or tubers who launched farther upstream.

Figure 2.2.3.4-1 Former NPS Lakeside Road Access Site (Now Closed)

The Town of Trego Park Boat Landing is located on Cash Road and features a concrete plank ramp. Water depths limit the launching to small boats, canoes, kayaks and tubes. The Recreation Study Report indicated that the landing is primarily used as a put-in and take-out for canoers and kayakers (Appendix E-29 of Exhibit E). The bathymetric maps, included in Appendix E-2 of Exhibit E, show that the water depths

are suitable for use by canoers and kayakers. This site actually provides an easier carry-in access than the former NPS Lakeside Road site because it does not require the user to traverse down a set of stairs to access the river. The Town of Trego Park Boat Landing can also serve as a take-out for paddlers who launch farther upstream but do not wish to travel through Trego Lake.

Contrary to TLD's assertion, this landing is not affected by excessive aquatic plants as shown in **Figure 2.2.3.4-2** and evidenced by the results of the ATIS Study (Appendix E-29 of Exhibit E). This landing is capable of handling any additional demand for carry-in access that could result from the closure of NPS' Lakeside Road Access site and it provides additional parking.

NPS indicated in their response to the Recreation Study that they were interested in developing a new access site near the Highway 63 bridge crossing to replace the closed Lakeside Road site. Since the NPS decided to close the Lakeside Road site and not retain vehicular access, and the existing Trego Park Boat Landing can serve as an alternative access, NSPW has not proposed to coordinate or fund the development of the new site proposed by NPS.

Figure 2.2.3.4-2 Trego Park Boat Landing

TLD Comment 13:
Consequently, the decision on the boundary request needs to be either denied or deferred until the completion of the requested sedimentation study.

NSPW Response:
See NSPW's response to NPS 10(a) Recommendation 11 and the responses to TLD Comments 1, 8, and 10.

3. Documentation of Consultation

3.1 Stage 1 Consultation

Copies of Stage 1 correspondence between the stakeholders and the Applicant, beginning with the submittal of the PAD Questionnaire and ending with the written study requests, are included in **Attachment A**. The correspondence is presented in chronological order.

3.2 Stage 2 Consultation

Copies of Stage 2 correspondence between stakeholders and the Applicant, beginning with the written study requests, through consultation on the DLA, and ending just before the filing of the FLA, are included in **Attachment B**. The correspondence is presented on a stakeholder-by-stakeholder basis in chorological order.

3.3 Stage 3 Consultation

The Applicant sent a copy of the cover letter submitting the FLA to the Commission, which included a link to the Project's relicensing website, to all relevant resource agencies, tribes, non-governmental organizations, and other potentially interested parties included in the distribution list, via certified mail (including owners of any property adjacent to or within the Project boundary). From this website (http://hydrorelicensing.com/), an electronic copy of the publicly available documents of the FLA may be downloaded. Stakeholders that experience difficulty downloading the document(s) may request an electronic version on a USB drive be sent via US Mail.

4. Evidence of Holding Public Meeting

4.1 Newspaper Notice

In accordance with the schedule set by the Commission, the Licensee held a JAM on March 11, 2021. The JAM was held virtually due to COVID-19 Centers for Disease Control and corporate guidelines restricting public gatherings and discretionary travel at the time. A public notice of the JAM was published in the Sawyer County Record on February 24, 2021, and the Spooner Advocate on February 25, 2021. The Commission and stakeholders were also notified of this meeting via e-filing and U.S. Mail, respectively, on February 22, 2021. A site visit to the Project was held on June 17, 2021. A public notice of the site visit was published on June 2, 2021, in the Sawyer County Record and on June 3, 2021, in the Spooner Advocate. The Commission and stakeholders were also notified of this meeting via e-filing and U.S. Mail, respectively, on May 28, 2021.

1414 West Hamilton Avenue
PO Box 8
Eau Claire, WI 54702-0008

March 22, 2021

FERC Docket Nos. 2417-065 and 2711-024

VIA Electronic Filing

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: **Proof of Publication of Notice of Joint Meeting**
Hayward Hydroelectric Project (FERC Project No. 2417)
Trego Hydroelectric Project (FERC Project No. 2411)

Dear Secretary Bose:

Northern States Power Company-Wisconsin (NSPW), d/b/a Xcel Energy, published a notice in newspapers of general circulation in Sawyer County and Washburn County, Wisconsin announcing the March 11, 2021 Joint Meeting for the Hayward Hydroelectric Project (FERC Project No. 2417) and the Trego Hydroelectric Project (FERC Project No. 2711). The notice was published in the Sawyer County Record on February 24, 2021 and the Spooner Advocate on February 25, 2021. Copies of both public notices and Affidavits of Publication are enclosed.

Should you have any questions, please contact Matthew Miller at 715-737-1353 or matthew.j.miller@xcelenergy.com.

Sincerely,

Scott Crotty

Digitally signed by Scott Crotty
Date: 2021.03.22 11:52:03 -05'00'

For:
James Zyduck
Director, Hydro Plants

Enclosures: Affidavits of Publication

cc: Shawn Puzen – Mead & Hunt, Inc. (via e-mail)
Project Files

Fire destroys shed on Round Lake School Road

BY TERRELL BOETTCHER
News Editor

A fire reported at 9:50 a.m. Thursday, Feb. 18, destroyed a shed and its contents at the Ken Johnson residence at 10415 Round Lake School Road, south of Peninsula Road.

The fire was reported by a passerby. The owners were not home. The Town of Hayward Fire Department was paged to the scene jointly with the City of Hayward Fire Department. Upon arrival they found the unoccupied pole shed fully involved with fire and partially collapsed.

Town of Hayward Fire Chief Don Hamblin said three horses that used the barn for shelter were moved safely away from the barn and put in a nearby paddock. About 20% of the barn was occupied with hay storage and was difficult to extinguish, Hamblin added.

Mutual aid was requested from the Bass Lake and LCO fire departments for water. A hydrant near Round Lake School Road was used for a water site. About 23,000 gallons of water were applied to the fire.

A backhoe from the Town of Hayward was also used to safely pull the shed and hay apart for to extinguish the fire. Firefighters were on scene until 1:30 p.m.

Fire units returned again in the evening and the following morning to further extinguish some smoldering hay.

Hamblin said the fire is believed to have been caused by a heater or heat lamp that was in use to prevent a hydrant from freezing in the shed. The shed and contents were a complete loss.

The Town of Hayward Fire Department responded with an engine and three tenders, the City of Hayward Fire Department responded with a rescue truck, the Town of Bass Lake with a tender, and LCO Fire Department with a tender.

Some 18 firefighters were on scene along with LCO Conservation Department, the Sawyer County Sheriff's Department and Sawyer County Ambulance.

PHOTO BY FRANK ZUFALL

Fire consumes a storage shed on Round Lake School Road Thursday, Feb. 18.

Kuula acquitted of homicide charges

Woman stood trial in stabbing death of boyfriend

BY MICHELLE JENSEN
Rice Lake Chronotype

The trial for a Birchwood woman accused in the stabbing death of her boyfriend in August 2019 concluded with the jury finding her not guilty.

Melanie R. Kuula, 45, had been charged in Barron County with the second-degree intentional homicide of Brett Bents. He had died of a single stab wound near his heart, and he suffered blunt-force trauma to his face.

The trial began Feb. 15 and ended with the jury entering deliberations Friday.

Kuula herself appeared on the stand at about 1:30 p.m. Feb. 17, and took the stand again Thursday morning to plead her case about years of Bents' abusive behavior toward her.

The final witness was Melissa Scaia, an internationally known domestic violence expert from Minnesota, who testified about public misperceptions of domestic abuse. She did so without knowledge of the specifics of Kuula's case.

In the closing arguments, assistant district attorney John O'Boyle said a key part of the prosecution's case lies with the 911 call. Overheard was Kuula saying, "I don't care if I go to jail."

O'Boyle said Kuula's actions the day of Bents' death didn't make sense; she could easily have retreated and her statements lacked credibility. He said Kuula killed Bents out of anger and hurt feelings.

"This was a stabbing done out of anger, not self-defense," he concluded.

But defense attorney Ryan Joseph Raymond said the case was about self-defense and domestic abuse, just as he had asserted in his opening statement, and he said he believed the prosecution had not met the burden of proving otherwise beyond a reasonable doubt.

Raymond said Kuula feared for her life that day and would not have stabbed Bents at an upward angle if she had been angry — a stab in anger would have come downward. It was one stab wound, low to high, in and out.

"That's not an anger killing," Raymond said.

Furthermore, after years of abuse, Kuula could read the warning signs in Bents' behavior that indicated he was about to become abusive.

Glut 1 fundraiser underway for Hayward boy

Hayward area resident Ethan Neuman is again joining the Glut 1 Foundation's "Love Some1 with Glut1" campaign.

The Glut 1 Deficiency Foundation is the single source of support provided to Glut 1 families. It is run mostly by volunteers who give hours of their time to make sure that children (and adults) and their families, like the Ireland-Neuman family, have a place to go.

"We are a rare group, living with a rare disease with only approximately 1,000 people being diagnosed in the world," said Ethan's mom Kris. "The support we receive from the Glut 1 Deficiency Foundation is priceless."

To donate, people can visit fipcause.com/secure/fundraiser/[illegible]

"Please help me meet my goal of raising $10,000 to help the Glut 1 Foundation meet their goal of $100,000," Ethan said. "I appreciate all of the support you have given me in the past, it means a lot."

Ethan Neuman

» MARIJUANA
FROM PAGE 4A

Agard, who introduced a bill in 2019 to legalize medicinal marijuana and allow Wisconsin residents 21 or older to possess up to two ounces recreationally, said many Republican lawmakers have told her privately they support legalization.

"I have had closed-door conversations over the years with many of my Republican colleagues who do support the legislation but have been told by their leaders that this is not a priority," Agard said. "They'd be excited to vote for it. But at this point, they feel like it's not politically prudent."

In light of longtime pushback from some Republican lawmakers, Agard said the solution is nonpartisan redistricting, which she hopes will result in more accurate representation and eventually, legalization.

"It's unfortunate that the leaders of the Republican Party in the Wisconsin Legislature continue to be prohibitionist and standing in the way of having this conversation," Agard said. "We know that [legalization] will create jobs, revenue, support our farms [and] agricultural heritage, as well as help address racial disparities in Wisconsin."

Republican lawmakers have also criticized Evers' decision to address legalization through the state budget. They argue it should come through a separate bill.

"You're going to have pros and cons. You're going to have people for and people against. And that's not something you want to put in the budget at all," Bernier said. "It needs to be thoroughly vetted."

Evers' proposal claims legal marijuana could generate more than $165 million in 2023, but Bernier says she worries such a claim could set the stage for larger budget proposals reliant on marijuana taxes. She also raised concerns about the cost of regulating recreational marijuana.

"There are a lot of complicated issues with legalizing marijuana other than you're going to authorize it to be grown and sold," Bernier said. "And there's going to be a lot of money made."

During a recent WisPolitics.com forum, Assembly Speaker Robin Vos, R-Rochester, said he supports legalizing medicinal marijuana, but like Bernier, does not want to address the issue through the state budget.

"I'm still trying to find a way that we can do it where people accept the fact that we are not going to legalize recreational marijuana," Vos said. "I don't think we have a need to have more drugs in society."

The Capitol Report is written by editorial staff at WisPolitics.com, a nonpartisan, Madison based news service that specializes in coverage of government and politics, and is distributed for publication by members of the Wisconsin Newspaper Association.

PUBLIC NOTICE

Northern States Power Company – Wisconsin (NSPW), d/b/a Xcel Energy is holding a public meeting to discuss the relicensing process for its Hayward and Trego Hydroelectric Projects located on the Namakagon River in northwest Wisconsin. The Hayward Project is located in the Town of Hayward and City of Hayward in Sawyer County, Wisconsin. The Trego Project is located in the Town of Trego in Washburn County, Wisconsin. The Projects currently operate under separate licenses issued by the Federal Energy Regulatory Commission (FERC).

The meeting will take place on Thursday, March 11, 2021, at 10:00 a.m. Due to current COVID-19 health-related concerns, the Centers for Disease Control (CDC) guidelines recommend that social gatherings and discretionary travel be avoided. In order to abide by CDC guidelines, the meeting will be held via a conference call, rather than face-to-face. A site visit to the Projects will be scheduled in the summer of 2021. A separate notice will be provided prior to the site visit.

Please RSVP by Friday, March 5, 2021 if you plan to participate in the meeting. NSPW will send out meeting information to those that RSVP to include a call-in number, meeting agenda and a copy of the PowerPoint presentation.

The purpose of the meeting is to outline NSPW's plan for relicensing and the continued operation of the hydroelectric projects. In addition, the meeting will provide a forum designed to hear your comments and to ask questions about the process to renew the licenses and the hydroelectric projects themselves.

The agenda for the March 11, 2021, meeting is as follows:

1. Welcome and Introductions
2. Overview of Meeting Logistics and Purpose
3. Overview of FERC Traditional Licensing Process
4. Overview of Hayward Project Features and Operations
5. Overview of Trego Project Features and Operations
6. Overview of Information Provided in Preliminary Application Document
7. Next Steps
8. Comments
9. Site Visit to be Scheduled in Summer of 2021

Information on the Hayward and Trego Hydroelectric Projects is available for public review during normal business hours at the following libraries:

- Sherman and Ruth Weiss Community Library – 10788 State Hwy. 77, Hayward, Wisconsin
- Spooner Memorial Library – 421 High Street, Spooner, Wisconsin

Information is also available on the following websites:

- Hayward Project at http://hydrorelicensing.com/hayward/
- Trego Project at http://hydrorelicensing.com/trego/

If you have any questions regarding the meeting or this notice, or wish to RSVP for the meeting, please contact Mr. Matthew Miller, Hydro License Compliance Consultant at **Matthew.J.Miller@XcelEnergy.com** or by telephone at **715-737-1353.**

Xcel Energy®

Spooner Advocate

WISCONSIN NEWS TRACKER

Feb 25 2021 Page A009 Clip resized 28%

Winter Festival is March 6

SARONA– Hunt Hill Audubon Sanctuary and Lakeland Family Resource Center's Winter Festival fundraiser will take place at Hunt Hill on Saturday, March 6, from 10 a.m. to 2:30 p.m.

Staggered start times will be at 10 a.m., 11 a.m., noon, and 1 p.m. to allow for social distancing.

The Winter Festival fundraiser will include many winter activities that are fun for all ages, including sledding, snow art, and snowshoe races.

Additional activities will be available with the purchase of tickets. Participants can check out the sled dogs, test out the fat tire bikes, bid in the raffle, buy lunch, create their own hot chocolate, build their own s'more, and more.

All activities will take place outdoors with social distancing practices in place.

Registration is required by Friday, March 5, at noon. Registration is by calling 715.635.6543 or completing the online registration form on hunthill.org.

A slight program fee is charged per person or per family.

All proceeds will help support Hunt Hill Audubon Sanctuary and Lakeland Family Resource Center.

Quickly ...

Program: Winter Festival
Date: Saturday, March 6
Time: 10 a.m. - 2:30 p.m.
Location: Hunt Hill Audubon Sanctuary, Sarona
Registration: By Friday, March 5, at 12 p.m.
Contact: Sage Dunham, Program Director
Info: 715.635.6543

Enjoy activities such as sled dogs, sledding, snow art, much more at the Hunt Hill Audubon Sanctuary and Lakeland Family Resource Center's Winter Festival fundraiser on March 6.

CONTRIBUTED

Alisha Webster (left) of Anderson, Hager & Moe presents a $445 check to Rev. Susan Odegard, president of Washburn Christian Outreach. Anderson, Hager & Moe also donated to Spooner Youth Baseball as part of the CPA firm's "Jeans for Charity" program.

Anderson, Hager & Moe donates to Washburn Christian Outreach

SPOONER– Anderson, Hager & Moe, CPAs, recently presented checks to Washburn Christian Outreach and Spooner Youth Baseball.

Since 2010 the staff at Anderson, Hager & Moe have participated in a the "Jeans for Charity" program.

On the last Friday of each month and on special occasions, the staff are allowed to wear blue jeans in return for a $5 donation. Each year the staff at Anderson, Hager & Moe vote to choose the charities that will receive the donations.

'Get Out There': Program lets people experience outdoors

BIRCHWOOD– The Birchwood School District is starting a new program called "Get Out There" gear to help people be able to check-out outdoor gear for 7-days (in the same way you check-out a library book).

The Get Out There program will let people try a sport they might not be interested in without needing to buy all the expensive equipment first.

This will be open to all students and staff of the Birchwood School, with a hope for "community check-outs" in the future.

If you would like to donate any gear, here is a list of items that are needed.

Ice Fishing
> Ice rods and reels
> Ice and tip-up line
> Jigs
> Tip-ups
> Treble hooks
> Vexilar or flashes
> Buckets

Open Water Fishing
> Fishing poles
> Fishing reels
> Fishing Line
> Tackle box
> Tackle

Turkey Hunting
> Turkey calls
> Binoculars
> Turkey vest

Other Donations
> Gift cards to outdoor stores
> Cash donations

PUBLIC NOTICE

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Information is also available on the following websites:
- Hayward Project at http://hydrorelicensing.com/hayward/
- Trego Project at http://hydrorelicensing.com/trego/

If you have any questions regarding the meeting or this notice, or wish to RSVP for the meeting, please contact Mr. Matthew Miller, Hydro License Compliance Consultant at **Matthew.J.Miller@XcelEnergy.com** or by telephone at **715-737-1353**.

Xcel Energy®

ROP AFFIDAVIT

March 19, 2021

Customized Newspaper Advertising
319 E 5th Street
Des Moines, IA 50309
515-244-2145 ext 152; Fax: 1-866-440-6028
Email: media@cnaads.com

Advertiser: Xcel Energy Brand:

Order #: 21024MX0

ATTN: Michelle Carlson WI/Spooner Advocate
WI/Hayward Sawyer County Record
15464 County Rd. B
Hayward, Wisconsin 54843
V: 715-635-2181 F: 1-715-635-2186 Email: mcarlson@spooneradvocate.com

WI/Hayward Sawyer County Record (Hayward, WI)

Run Date	*Ad Size*	*Caption / Position / Special Instructions*	*Section and Page information*
Wed 02/24/21	3.00 X 10.00	**Caption:** Xcel Energy	

Media Dept 3.19.2021

ROP AFFIDAVIT

March 19, 2021

Customized Newspaper Advertising
319 E 5th Street
Des Moines, IA 50309
515-244-2145 ext 152; Fax: 1-866-440-6028
Email: media@cnaads.com

Advertiser: Xcel Energy Brand:

Order #: 21024MX0

ATTN: Michelle Carlson WI/Spooner Advocate
WI/Spooner Advocate
251 East Maple St.
Spooner, Wisconsin 54801-0338
V: 715-635-2181 F: 1-715-635-2186 Email: mcarlson@spooneradvocate.com

WI/Spooner Advocate (Spooner, WI)

Run Date	*Ad Size*	*Caption / Position / Special Instructions*	*Section and Page information*
Thu 02/25/21	3.00 X 10.00	**Caption:** Xcel Energy	

Media Dept 3.19.2021

1414 West Hamilton Avenue
PO Box 8
Eau Claire, WI 54702-0008

June 24, 2021

FERC Docket Nos. 2417-065 and 2711-024

VIA Electronic Filing

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: **Proof of Publication of Notice of Scheduled Site Visit**
Hayward Hydroelectric Project (FERC Project No. 2417)
Trego Hydroelectric Project (FERC Project No. 2711)

Dear Secretary Bose:

Northern States Power Company – Wisconsin (licensee), d/b/a Xcel Energy, published a notice in newspapers of general circulation in Sawyer County and Washburn County, Wisconsin announcing the June 17, 2021 site visits to the Hayward (FERC Project No. 2417) and Trego (FERC Project No. 2711) hydroelectric projects. The notice was published in the Sawyer County Record on June 2, 2021 and the Spooner Advocate on June 3, 2021. A copy of each public notice and Affidavit of Publication is enclosed.

Thank you for your time and consideration in this matter. If you have any questions, please contact Matthew Miller at (715) 737-1353 or matthew.j.miller@xcelenergy.com.

Sincerely,

James M Zyduck

Digitally signed by James M Zyduck
Date: 2021.06.28 13:50:47 -05'00'

James M. Zyduck
Director, Hydro Plants

Enclosures: Public Notices and Affidavits of Publication

cc: Shawn Puzen – Mead & Hunt, Inc. (via e-mail)
Project Files

OFF THE SHELF: NEWS OF THE SHERMAN & RUTH WEISS COMMUNITY LIBRARY

BY KATHY HANSON
For the Record

Message from Molly Lank-Jones, Director, Sherman & Ruth Weiss Community Library

The Library Board of Trustees is the backbone of any public library. The Trustee Essentials Handbook states that active, enthusiastic trustees govern library operations and promote library development to protect and advance the interests of the broader community. (Wisconsin Department of Public Instruction, Public Library Development Team. Trustee Essentials..., 2016)

At the Sherman & Ruth Weiss Community Library, April marked the end of terms for former Board President Matt Ostrander and former Vice President Delores Peterson. They have been exemplary in advancing the interests of our community and visitors, and in managing me! I hope they remember they only need to take one year off before they can serve on the board again.

May marks the beginning of a new term for Karen Duffy, who has taken on the role of president; Linda Hand, who serves as the City Council representative; and city resident Dave Eckstrom. The remaining roster includes Ann Schleeter, vice president; Bruce Paulsen, secretary and county representative; Kathy McCoy, treasurer; Ray Moeller, former longtime board president; and Katie Pritchett, school representative. Several of these trustees served on the library board several years ago. The library staff and I welcome them back and are happy to welcome the new trustees.

Meet the staff: Janet Rowney

Janet Rowney is one of the faces in the library who works the front desk, but she can also be found working on interlibrary loan books, shelving and shopping (searching for titles requested by library patrons and other libraries), helping patrons on the computer, assisting them in finding their items in the stacks, and working curbside with the COVID guidelines.


Rowney

Like many in the Hayward area, she is from Chicago but spent summers in the Hayward area.

Her education is as diverse as you can imagine: math/science major, theatre major, teaching degree from UW-Superior, student of drama performance with Shakespeare & Company. She has also worked as a server, bartender and hostess.

Perhaps most interesting of all is Janet's passion for working as a deckhand on a tall ship — the S/V Denis Sullivan. She has sailed all five Great Lakes, as far east as Quebec City and as far west as Duluth.

But back to the library. Here is what she told us:

"When I first took the job at the library, I was really naïve with my preconceptions of what the job would entail. The processing of books is much more complicated than it appears from the patron's perspective. And you also need to become familiar with the patrons. Plus, there is helping with computer use and printing and faxing and finding materials and research and . . .

Every day I am grateful for the staff. Molly and Ann are supportive bosses and I value each and every staff member and volunteer. My favorite part of the job is the continual challenges. Every day is a fresh experience."

To which we say, "All hands on deck, Janet!"

Maggy's Book Review

"On the House" by John Boehner

I read so much I keep a book diary. Helps me remember what I've read and to make recommendations if anybody asks. I'm going on my fifth diary in the last 10 years or so. They make for a nice gift suggestion to the kids at Christmas, too. Rectangular. Easy to wrap.

So, for the book I'm going to review this time for the library newsletter I'm going straight to my latest book diary and will give it to you straight about John Boehner's "On the House: A Washington Memoir."

Why I read it: It was hyped and promoted a lot; I had hoped for some juicy D.C. dish; I'd always wondered where former Speaker of the House John Boehner disappeared to. I pre-ordered it and counted the days 'til Amazon dropped it off on my front porch.

My review: In a word, disappointing. Too much of the content was boring and permeated with 7th grader cliches. It was surprising, however, to learn that Boehner's big birth family (11 kids!) were lifelong Democrats, though he never explains why he alone made the switch to the Grand Old Party.

Unfortunately, too much of what Boehner gives us is minutiae about his life: his inspirational high school football coach. His Catholic education. His ongoing addiction to Camels. His devotion to red wine. He's even posed on the cover with a cigarette burning in an ashtray and holding a stemmed fishbowl of Cabernet.

He provides some insights into politics and D.C. insiders from his still staunchly Republican point of view, though in the end the GOP turned him out to pasture at age 60. And even with all the tumult going on in his nearly unrecognizable party, he says he voted for Donald Trump in 2020.

That was long after he'd been dumped for the numbers genius, Paul Ryan, who's long gone now, too. Boehner laughingly recounts how Ryan had to have the speaker's office nearly fumigated before moving into it. Too many Camels got smoked in that office for the new speaker, a health nut.

Boehner's lack of spite in a book that could have been over the top with it makes me wonder whether he's leaving an opening for himself, though he claims to be enjoying himself mightily on the golf course these days.

Outdoor Storytime begins June 1 at Weiss Library

The Sherman & Ruth Weiss Community Library is bringing Outdoor Storytime to the library starting June 1, presented on the Children's Patio by Northwest Connection Family Resources.

Sessions will begin at 10:15 a.m. and will run through Aug. 24. Children of all ages are welcome to participate in the interactive, educational activity.

Library officials remind users that inside the building the library's current COVID-19 policy remains in effect. Library patrons and staff must wear a mask and use a hand sanitizer on entering. Children age 3 and older are included in the policy, and the toys and games are temporarily in storage. If people do not have a mask, the library will provide one near the entry at the "sanitation station."

Those who prefer not to mask are free to join Storytime by entering through the Children's Patio patio. During storytime, groups/pods will socially distance around the storyteller, who will be in the center of the patio. Parents and children are free to enter the library to browse either before or after storytime, but masks are required.

1,000 Books program

Participation in Storytime also makes it easier for children to complete 1,000 Books Before Kindergarten, a library challenge to read 1,000 books before the child enters kindergarten. Storytime provides excellent bonding time for children and their caregivers.

Families are invited to join the 1,000 Books challenge at the library. By reading just one book a night, families can reach the 1,000-book goal in three years and provide children with essential early literacy skills.

When children join, they receive a 1,000 Books Before Kindergarten book bag and incentives for every 100 books that are read to the child. When the child completes the program they will receive a book of their choice donated to the program by Arclin of Hayward.

The 1,000 Books program is available to all families with children between the ages of birth and 5 years. Registration is open. For more information, call the library at (715) 634-2161, or visit wwwweisscommunitylibrary.com.

Weiss Library resumes 5-day schedule

Effective this week, the Sherman & Ruth Weiss Community Library will be open Monday through Friday for indoor service, but will continue to observe its current COVID-19 policy requiring library patrons and staff to wear a mask and use a hand sanitizer as they enter.

Library hours also have been adjusted to provide more consistent service: Monday, Wednesday, Thursday and Friday from 10 a.m. to 5 p.m., and Tuesday from noon to 7 p.m. The library will continue to offer curbside pickup service on-demand during its open hours.

Library pandemic policies will remain in place at least until the library board meets June 8. People who do not have a mask are provided them near the entry at the "sanitation station."

Pickup will be available during regular hours of operation for those who prefer not to mask or who enjoy the convenience of curbside service. Users must call the library to make an appointment. Curbside pickup now will now be located at the side door facing Highway 77.

Those arriving for pickup should either call the library at (715) 634-2161 from their car or ring the doorbell at the side door. Patrons will be asked to show a library card or I.D. to confirm the order.

The library meeting room will remain unavailable until later in the summer. The Used Book Room will be open Monday through Friday during regular library hours, with purchases made on the honor system (no change will be available).

For more information, visit wwwweisscommunitylibrary.com or call the library at (715) 634-2161.

CANOE MUSEUM

JULIE HUSTVET

Sleek, well-crafted form merged with function in the canoes displayed at the Wisconsin Canoe Heritage Museum's celebration of Wisconsin Canoe Heritage Day on Saturday, May 29. The day's activities included the annual Canoe & Wooden Boat Show, live music, silent auction, and the reopening of the museum.

Spooner library: Open, ready to forward in best way it can

BY SPOONER MEMORIAL LIBRARY

As COVID-19 cases continue to drop, and with updated Centers for Disease Control recommendations, the library board, director, and team are beginning their "exit strategy" from COVID practices to move forward.

At their May 26th board meeting, the board discussed at length the Director's recommendations for moving forward.

These stated, "In March 2020, we sought out advice from Washburn County Public Health, Center for Disease Control (CDC), Department of Instruction, and specific library related entities on how to best navigate the COVID-19 pandemic. This has not changed over a year later and continues to guide us in our reopening plan.

"We are aware of CDC's statement allowing vaccinated individuals to gather unmasked. We will not be asking patrons if they are or are not vaccinated, thus we will continue to require 100% mask compliance at this time.

"However, we have a plan in place to start moving towards normalcy. One plan is to adjust our mask requirement when St. Francis de Sales school is out as students use the library almost daily. Beginning June 7, the library will adjust the mask requirement to the following: Monday-Wednesday will require 100% mask compliance in ages 5+ and Thursday-Saturday will not require 100% mask compliance.

"This change allows library patrons who are unable to be vaccinated an opportunity to still safely use the library at the beginning of the week. Once Washburn County reaches a 70% vaccinated rate, the library will no longer require 100% mask compliance as the County has approached herd immunity rates. We may make this change prior to the 70% mark if deemed appropriate by public health.

"The library will continue to host programs outside if possible or with limited seating inside. We will be opening more computer stations. More seating has already opened up. We appreciate your patience and respect as we navigate COVID-19 together."

The board voted unanimously to approve this update to the pandemic policy and will evaluate it once more at the June 22nd board meeting.

Masks will be required by everyone age 5+ on Monday-Wednesday. If a patron cannot or refuses to wear a mask those days, we will provide curbside service while the patron waits outside. (Curbside service is available Monday-Saturday.)

We will continue to have masks and hand sanitizer in our entrance as it is still the recommendation of CDC for people without their vaccinations to wear masks, but masks are not required at the end of the week. Staff will continue to wear masks (to lead by example). All six adult computer stations are open, and two spaced computer stations are open in the children's wing.

We have a mixture of spaced tables and community tables in our sitting areas on both the adult and children's sides. Children's toys will be taken out of storage and set back up on the children's wing with the understanding that we will not be able to clean them all between uses.

Returned items and items in delivery from other libraries will no longer be quarantined after a follow-up study confirming the extremely rare chance of COVID spread amongst library materials.

In the same way that we went into the pandemic with careful thought and consideration for the community, we will continue to do so with our exit strategy. No matter where our patrons stand on issues, such as masks and safety concerns, we hear you. We know we cannot make everyone happy, but we can definitely listen to the voices of the community and to science as we have been.

It is time to move forward in the best way we can. So, yes we are open!

PUBLIC NOTICE

Site Visit for the Relicensing of the Hayward Hydroelectric Project (FERC Project No. 2417) Trego Hydroelectric Project (FERC Project No. 2711)

Northern States Power Company – Wisconsin, d/b/a Xcel Energy, (hereinafter NSPW), hereby notifies resource agencies, Indian tribes and stakeholders, including interested members of the public, that it has scheduled a site visit to the Hayward (FERC Project No. 2417) and Trego (FERC Project No. 2711) Hydroelectric Projects (Projects) as part of the Federal Energy Regulatory Commission's (FERC or Commission) relicensing process. The Hayward and Trego Projects are located on the Namekagon River in the City of Hayward in Sawyer County, Wisconsin and Town of Trego in Washburn County, Wisconsin, respectively.

On Nov. 30, 2020, NSPW filed with the Commission a Pre-Application Document, Notice of Intent, and Request to Use the Traditional Licensing Process (TLP) for the relicensing of both Projects. The Commission, by letter dated Jan. 21, 2021, granted NSPW's request to use the TLP for both Projects.

In accordance with the first stage of consultation requirements under the TLP, NSPW held a Joint Agency Meeting on March 11, 2021. Due to COVID-19 health-related concerns, the meeting was held via conference call. No site visit to either Project was conducted at that time in order to abide by Centers for Disease Control and Corporate guidelines to avoid public gatherings and discretionary travel.

NSPW has scheduled a site visit to the Hayward and Trego Projects, in conjunction with a site visit to the White River Hydroelectric Project (FERC Project No. 2444), on Thursday, June 17, 2021. The site visit will begin at 9 a.m. at the White River Project located at 46720 State Hwy 112, Ashland, WI 54806. The group will then proceed to the Hayward Project for a site visit, followed by lunch on your own, and will finish the day with a site visit to the Trego Project.

An accurate number of attendees is necessary to allow NSPW to coordinate the site visit based on the most recent Wisconsin COVID-19 mandate(s) and Corporate guidelines. In addition, based upon the number of attendees, participants may need to be separated into groups, if required by the mandate(s) and guidelines.

All interested parties, including members of the public, who plan to attend the site visit on Thursday, June 17, are asked to RSVP no later than Monday, June 14, to Matt Miller at 715-737-1353 or matthew.j.miller@xcelenergy.com.

Xcel Energy®

ROP AFFIDAVIT

June 04, 2021

Customized Newspaper Advertising
319 E 5th Street
Des Moines, IA 50309
515-244-2145 ext 152; Fax: 1-866-440-6028
Email: media@cnaads.com

Advertiser: Xcel Energy Brand: **Order #: 21061MX0**

ATTN: Michelle Carlson WI/Spooner Advocate
WI/Hayward Sawyer County Record
15464 County Rd. B
Hayward, Wisconsin 54843
V: 715-939-9036 F: 1-715-635-2186 Email: mcarlson@spooneradvocate.com

WI/Hayward Sawyer County Record (Hayward, WI)

Run Date	*Ad Size*	*Caption / Position / Special Instructions*	*Section and Page information*
Wed 06/02/21	2.00 X 10.00	**Caption:** Xcel Energy **Special Instructions:** Deadline - Mon prior by noon	

Media Dept. 6.4.2021

ROP AFFIDAVIT

June 04, 2021

Customized Newspaper Advertising
319 E 5th Street
Des Moines, IA 50309
515-244-2145 ext 152; Fax: 1-866-440-6028
Email: media@cnaads.com

Advertiser: Xcel Energy Brand:

Order #: 21061MX0

ATTN: Michelle Carlson WI/Spooner Advocate
WI/Spooner Advocate
251 East Maple St.
Spooner, Wisconsin 54801-0338
V: 715-939-9036 F: 1-715-635-2186 Email: mcarlson@spooneradvocate.com

WI/Spooner Advocate (Spooner, WI)

Run Date	*Ad Size*	*Caption / Position / Special Instructions*	*Section and Page information*
Thu 06/03/21	2.00 X 10.00	**Caption:** Xcel Energy **Special Instructions:** Deadline - week prior	

Media Dept. 6.4.2021

4.2 Recording of Public Meeting

A recording of the Joint Agency Meeting was e-filed with the FERC on April 9, 2021.

ATTACHMENT A

STAGE 1 CONSULTATION

Hayward and Trego Questionnaire

Hayward Hydroelectric Project

FERC No. 2417: Namekagon River, City of Hayward, Sawyer County, WI
Licensee: Northern States Power Company - Wisconsin (d/b/a Xcel Energy)

Installed Capacity: 168 kilowatt (kW), 1 unit

License Expires: November 30, 2025

Notice of Intent to Relicense Due: November 30, 2020

Project Operation Mode: Run-of-River

Minimum Flow Requirement: 8 cubic feet per second (cfs) or inflow at all times

Reservoir Elevation Requirements:

- Target: 1,187.4 feet NGVD
- Minimum: 1,187.0 feet NGVD
- Maximum: 1,187.5 feet NGVD

Approximate Reservoir Surface Acreage: 247 acres

Northern States Power Company-Wisconsin ("NSPW") d/b/a Xcel Energy, has retained Mead & Hunt, Inc. ("Mead & Hunt") to assist with the federal relicensing process for the Hayward Hydroelectric Project ("Project") located on the Namekagon River in northwestern Wisconsin. Under Federal Energy Regulatory Commission ("FERC") regulations, NSPW is preparing a Preliminary Application Document ("PAD") that provides the FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project to help identify issues and related information needs, develop study requests and study plans, and prepare documents analyzing impacts. The PAD Information Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in NSPW's possession.

1. Information about person completing this questionnaire:

   Name: _____ Title: _____

   Organization: _____

   Address: _____

   _____

   Phone: _____ Email: _____

2. Do you or your organization plan to participate in the 3 to 5 year-long licensing proceeding for the Hayward Hydroelectric Project?

   ☐ Yes ☐ No

3. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Project?

   ☐ Yes ***(Please complete 3a thru 3f)*** ☐ No ***(Proceed to 4)***

   a. If yes, check box(es) to indicate the specific resource area(s) that the information relates to:

   ☐ Geology and soils
   ☐ Water resources
   ☐ Fish and aquatic resources
   ☐ Wildlife and botanical resources
   ☐ Wetlands, riparian, and littoral habitat
   ☐ Rare, threatened, and endangered species
   ☐ Recreational and land use
   ☐ Aesthetic resources
   ☐ Cultural resources
   ☐ Socio-economic resources
   ☐ Tribal resources
   ☐ Other resource information

Questions 3b – 3f are continued on the following pages

b. Briefly describe the information or list available documents:
(Additional information, if any, may be provided on page 4)

c. Where or how can NSPW obtain this information?

d. Please indicate whether there is a specific representative you wish to designate for potential follow-up contact by NSPW or its representative for the resource area(s) checked in 3a: ***(Additional information, if any, may be provided on page 4)***

Representative Contact Information

Name: _____ Title: _____

Address: _____

_____

Phone: _____ Email: _____

Name: _____ Title: _____

Address: _____

_____

Phone: _____ Email: _____

Questions 3e – 3f are continued on the following page

e. Are you aware of any particular issues pertaining to the specific resource area(s) identified in 3a? ***(Additional information, if any, may be provided on page 4)***

☐ Yes ***(Please list specific issues below)*** ☐ No

Resource Area	**Specific Issue**

f. Based on the issues identified in 3e, are you aware of any potential studies or information needs associated with the identified issues? ***(Additional information, if any, may be provided on page 4)***

☐ Yes ***(Please list below)*** ☐ No

Potential Studies or Information Needs

4. NSPW is considering using the Traditional Licensing Process for relicensing the Hayward Project. Do you have concerns with the use of the TLP? If so, please specify your concerns.

   ☐ Yes ***(Please describe concerns below)*** ☐ No

   Traditional Licensing Process Concerns

5. NSPW is interested in any additional comments, questions, or information you may have regarding the licensing of the Project. If the additional comments, questions, or information you provide below pertain to a particular question, please indicate the applicable question (such as 3b, 3d, 3e, 3f).

   Additional comments, questions, or information

Please return this completed questionnaire to Mead & Hunt using the enclosed self-addressed, stamped envelope **within 30 days of receipt** to allow for follow-up by NSPW or its representative.

Not responding within 30 days will indicate you are not aware of any existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Projects.

Comments and/or questions may also be sent via email to: Darrin.Johnson@meadhunt.com

Trego Hydroelectric Project

FERC No. 2711: Namekagon River, Town of Trego, Washburn County, WI
Licensee: Northern States Power Company - Wisconsin (d/b/a Xcel Energy)

Installed Capacity: 1,200 kilowatt (kW)

- Unit 1: 700 kW
- Unit 2: 500 kW

License Expires: November 30, 2025

Notice of Intent to Relicense Due: November 30, 2020

Project Operation Mode: Run-of-River

Reservoir Elevation Requirements:

- Target: 1,034.9 feet NGVD
- Minimum: 1,034.6 feet NGVD
- Maximum: 1,035.2 feet NGVD

Approximate Reservoir Surface Acreage: 470 acres

Northern States Power Company-Wisconsin ("NSPW") d/b/a Xcel Energy, has retained Mead & Hunt, Inc. ("Mead & Hunt") to assist with the federal relicensing process for the Trego Hydroelectric Project ("Project") located on the Namekagon River in northwestern Wisconsin. Under Federal Energy Regulatory Commission ("FERC") regulations, NSPW is preparing a Preliminary Application Document ("PAD") that provides the FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project to help identify issues and related information needs, develop study requests and study plans, and prepare documents analyzing impacts. The PAD Information Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in NSPW's possession.

1. Information about person completing this questionnaire:

   Name: _____ Title: _____

   Organization: _____

   Address: _____

   _____

   Phone: _____ Email: _____

2. Do you or your organization plan to participate in the 3 to 5 year-long licensing proceeding for the Trego Hydroelectric Project?

   ☐ Yes ☐ No

3. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Project?

   ☐ Yes ***(Please complete 3a thru 3f)*** ☐ No ***(Proceed to 4)***

   a. If yes, check box(es) to indicate the specific resource area(s) that the information relates to:

   ☐ Geology and soils
   ☐ Water resources
   ☐ Fish and aquatic resources
   ☐ Wildlife and botanical resources
   ☐ Wetlands, riparian, and littoral habitat
   ☐ Rare, threatened, and endangered species
   ☐ Recreational and land use
   ☐ Aesthetic resources
   ☐ Cultural resources
   ☐ Socio-economic resources
   ☐ Tribal resources
   ☐ Other resource information

Questions 3b – 3f are continued on the following pages

b. Briefly describe the information or list available documents:
(Additional information, if any, may be provided on page 4)

c. Where or how can NSPW obtain this information?

d. Please indicate whether there is a specific representative you wish to designate for potential follow-up contact by NSPW or its representative for the resource area(s) checked in 3a: ***(Additional information, if any, may be provided on page 4)***

Representative Contact Information

Name: _____ Title: _____

Address: _____

_____

Phone: _____ Email: _____

Name: _____ Title: _____

Address: _____

_____

Phone: _____ Email: _____

Questions 3e – 3f are continued on the following page

e. Are you aware of any particular issues pertaining to the specific resource area(s) identified in 3a? ***(Additional information, if any, may be provided on page 4)***

☐ Yes ***(Please list specific issues below)*** ☐ No

Resource Area	**Specific Issue**

f. Based on the issues identified in 3e, are you aware of any potential studies or information needs associated with the identified issues? ***(Additional information, if any, may be provided on page 4)***

☐ Yes ***(Please list below)*** ☐ No

Potential Studies or Information Needs

4. NSPW is considering using the use of the Traditional Licensing Process for relicensing the Trego Project. Do you have concerns with the use of the TLP? If so, please specify your concerns.

☐ Yes ***(Please describe concerns below)*** ☐ No

Traditional Licensing Process Concerns

5. NSPW is interested in any additional comments, questions, or information you may have regarding the licensing of the Project. If the additional comments, questions, or information you provide below pertain to a particular question, please indicate the applicable question (such as 3b, 3d, 3e, 3f).

Additional comments, questions, or information

Please return this completed questionnaire to Mead & Hunt using the enclosed self-addressed, stamped envelope **within 30 days of receipt** to allow for follow-up by NSPW or its representative.

Not responding within 30 days will indicate you are not aware of any existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Project.

Comments and/or questions may also be sent via email to: Darrin.Johnson@meadhunt.com

1414 West Hamilton Avenue
PO Box 8
Eau Claire, WI 54702-0008

Hayward and Trego Hydroelectric Project Licensing
FERC Project Nos. 2417 and 2711

Indian Tribes

Edith Leoso, THPO
Bad River Band of the Lake Superior
Tribe of the Chippewa
P.O. Box 39
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THPO@badriver-nsn.gov

Clinton Parish, Chairman
Bay Mills Indian Community of Michigan
12140 W. Lakeshore Dr.
Brimley, MI 49715-9319

Ned Daniels Jr., Chairman
Forest County Potawatomi Community of WI
3051 Sand Lake Rd.
Crandon, WI 54520-9801

Michael LaRonge, THPO
Forest County Potawatomi Community of WI
5320 Wensaut Lane, P.O. Box 340
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Michael.LaRonge@FCPotawatomi-nsn.gov

Marlin WhiteEagle, President
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PO Box 667
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William Quackenbush, THPO
Ho Chunk Nation of WI
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Black River Falls, WI 54615-0667
Bill.Quackenbush@Ho-Chunk.com

Mic Isham, Chairman
Lac Courte Oreilles Band of Chippewa Indians
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Brian Bisonette, THPO
Lac Courte Oreilles Band of Chippewa Indians
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Joseph Wildcat, Sr., President
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Melinda Young, THPO
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Chippewa Indians
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ldfthpo@ldftribe.com

David Grignon, THPO
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dgrignon@mitw.org

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Tehassi Hill, Chairperson
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Chad Able, Treaty Natural Resource
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Marvin Defoe, THPO
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Adam Van Zile, THPO
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Lewis Taylor, President
St. Croix Band of Lake Superior Chippewa
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Webster, WI 54893-9246

Shannon Holsey, President
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Bowler, WI 54416

Sherry White, THPO
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Federal

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888 First St. NE
Washington, DC 20426

Kimberly Bose, Secretary
FERC Office of Energy Projects
888 First St. NE
Washington, DC 20426

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Midwest Regional Office
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Nannette Bischoff, FERC Coordinator
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Field Supervisor
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Green Bay Field Office
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Angela Tornes, Midwest Hydropower Coordinator
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Jen Tyler
Mail Code: E-19J
U.S. Environmental Protection Agency
NEPA Implementation Section, Region V
77 W. Jackson Boulevard, AR-18J
Chicago, IL 60604-3507
Tyler.jennifer@epa.gov
312-886-6394

Tom Tiffany, U.S. Representative
U.S. Representative from Wisconsin District 7
1714 Longworth House Office Building
Washington, DC 20515

Glen Grothman, U.S. Representative
U.S. Representative from Wisconsin District 6
Washington, DC 20515

State

Public Service Commission of Wisconsin
P.O. Box 7894
Madison, WI 53707-7854

Wisconsin Cooperative Fishery Research Unit
U.W. Stevens Point
Stevens Point, WI 54481

Kathleen Angel, Wisconsin Coastal Management Program
Wisconsin Department of Administration
101 E. Wilson St., 10th Floor
Madison, WI 53703
kathleen.angel@wisconsin.gov

Cheryl Laatsch, FERC Coordinator
Wisconsin Department of Natural Resources
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cheryl.laatsch@wisconsin.gov

Jefftry Schierer, Watershed Management
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Watershed Management-WT/4
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Wisconsin Office of Attorney General
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Madison, WI 53702-0001

Wisconsin Office of the Governor
P.O. Box 7863
Madison, WI 53702-0001

Tyler Howe, Preservation Office
Wisconsin State Historical Society
816 State St.
Madison, WI 53706
tyler.howe@wisconsinhistory.org

Local

Dale Peters, City Manager
City of Eau Claire
203 S Farwell St., PO Box 5148
Eau Claire, WI 54702-5148

Lisa Poppe, Clerk/Treasurer
City of Hayward
P.O. Box 969
Hayward, WI 54843

City Manager
City of Lacrosse
601 Main St. W.
Ashland, WI 54806

Marathon County
500 Forest Street
Wausau, WI 54403-5554

Ronald Pete, Town Chairman
Town of Superior
4917 South State Road 35
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townofsuperior@ceturytel.net
715-339-8385

William Allard, Town Chairman
Town of Trego
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Trego, WI 54888
clerk@townoftrego.com
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Other

James Fossum
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199 Janet Marie Ln.
Winona, MN 55987
jfbio@yahoo.com

Thomas Frost, Chairman
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Trego, WI 54888
thomas.h.frost@gmail.com
(715) 416-0106

Northwest Regional Planning Commission
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Mike Arrowood, Chairman
Walleye for Tomorrow
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matthew.j.miller@xcelenergy.com

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Eau Claire, WI 54702-0008
james.zyduck@xcelenergy.com

Hayward and Trego Questionnaire

Stakeholder Responses

Office of Attorney General Comment

Darrin Johnson

From: Henry, Carolyn J. <henrycj@doj.state.wi.us>
Sent: Tuesday, August 4, 2020 10:49 AM
To: Darrin Johnson
Subject: Remove from mailing list
Attachments: 2020_07_29_07_51_13.pdf

Hi Darrin,
Please remove us from your mailing list.

Here is the address to remove:

Wisconsin Office of Attorney General
114 East State Capitol
Madison, WI 53702-0001

Thank you, Carly

Carly Henry
Legal Associate
Wisconsin Department of Justice
Division of Legal Services - Public Protection Unit
17 West Main Street
Madison, WI 53707
608-279-0239 (tel)
608-294-2907 (fax)
henrycj@doj.state.wi.us

Mille Lacs Band of Ojibwe Comment

MILLE LACS BAND OF OJIBWE
DEPARTMENT OF NATURAL RESOURCES

Mead & Hunt

2440 Deming Way

Middleton Wisconsin53562

FERC No, 2711, Namekagon River Town of Trego, Washburn County, WI

Licensee: Norther States Power company-Wisconsin (d/b/a Xcel Energy)

Dear Sir:

Thank you for the opportunity to review the referenced project. We look forward to reviewing in Section 106 pursuant to the responsibilities given the Tribal Historic Preservation Officer (THPO) by the National Historic Preservation Act of 1966, as amended in 1992 and the Procedures of the Advisory Council on Historic Preservation (36CFR800).

I have reviewed the documentation: after careful consideration of our records, I have determined that the Mille Lacs Band of Ojibwe THPO does want to consult on the above states project.

Should you have any questions please contact Terry Kemper or Bridgett Quist at the THPO Department Mille Lacs Band of Ojibwe 43408 Oodena Drive Onamia MN 56359 office 320-532-7439 cell 320-362-1393

Real Estate Director

Bridgett Quist

Bridgett Quist TK

Trego Lake District Comment

Darrin Johnson

From: Charles Petersen <cjpetersen@msn.com>
Sent: Thursday, August 6, 2020 7:30 PM
To: Darrin Johnson
Subject: Trego and Hayward Dam FERC Projects

Mr. Johnson,

Can you please email to me an electronic version of the "Licensing Preliminary Application Document Information Questionnaire?" Please send the document to cjpetersen@msn.com.

I'm on the Trego Lake District Board and would like to use the electronic version to respond for the District rather than the hand written option. The Trego Lake District is very interested in providing input on this relicensing process.

Please feel free to contact me if you have any questions or concerns.

Thank you for your interest in Trego Lake.

Charlie Petersen
Trego Lake District Chair
cjpetersen@msn.com
612-803-8765

Trego Lake District Comment

Hayward Hydroelectric Project

FERC No. 2417: Namekagon River, City of Hayward, Sawyer County, WI
Licensee: Northern States Power Company - Wisconsin (d/b/a Xcel Energy)

Installed Capacity: 168 kilowatt (kW), 1 unit

License Expires: November 30, 2025

Notice of Intent to Relicense Due: November 30, 2020

Project Operation Mode: Run-of-River

Minimum Flow Requirement: 8 cubic feet per second (cfs) or inflow at all times

Reservoir Elevation Requirements:

- Target: 1,187.4 feet NGVD
- Minimum: 1,187.0 feet NGVD
- Maximum: 1,187.5 feet NGVD

Approximate Reservoir Surface Acreage: 247 acres

Northern States Power Company-Wisconsin ("NSPW") d/b/a Xcel Energy, has retained Mead & Hunt, Inc. ("Mead & Hunt") to assist with the federal relicensing process for the Hayward Hydroelectric Project ("Project") located on the Namekagon River in northwestern Wisconsin. Under Federal Energy Regulatory Commission ("FERC") regulations, NSPW is preparing a Preliminary Application Document ("PAD") that provides the FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project to help identify issues and related information needs, develop study requests and study plans, and prepare documents analyzing impacts. The PAD Information Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in NSPW's possession.

1. Information about person completing this questionnaire:

Name: ***Charlie Petersen*** ***Text*** Title: ***Board Member***

Organization: ***Trego Lake District (TLD)***

Address: ***5504 12th Ave South***

Minneapolis, MN 55417

Phone: ***612-803-8765*** Email: ***cjpetersen@msn.com***

2. Do you or your organization plan to participate in the 3 to 5 year-long licensing proceeding for the Hayward Hydroelectric Project?

☒ Yes ☐ No

X

3. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Project?

☒ Yes ***(Please complete 3a thru 3f)*** ☐ No ***(Proceed to 4)***

a. If yes, check box(es) to indicate the specific resource area(s) that the information relates to:

- ☐ Geology and soils
- ☒ Water resources
- ☒ Fish and aquatic resources
- ☐ Wildlife and botanical resources
- ☐ Wetlands, riparian, and littoral habitat
- ☐ Rare, threatened, and endangered species
- ☒ Recreational and land use
- ☐ Aesthetic resources
- ☐ Cultural resources
- ☒ Socio-economic resources
- ☐ Tribal resources
- ☒ Other resource information

Questions 3b – 3f are continued on the following pages

b. Briefly describe the information or list available documents:
(Additional information, if any, may be provided on page 4)

- hybrid water milfoil in Trego Lake - DNR identified the source as "coming down from Hayward Lake

- 35 plus years of sedimentation build up from sand coming down Namekagon River

- reduction in DNR acreage of Trego Lake because of sedimentation; potential decrease in land values for certain property

c. Where or how can NSPW obtain this information?

Contact Trego Lake District for information on hybrid water milfoil and sedimentation history. Check historcal information on Trego Lake from DNR website.

d. Please indicate whether there is a specific representative you wish to designate for potential follow-up contact by NSPW or its representative for the resource area(s) checked in 3a: ***(Additional information, if any, may be provided on page 4)***

Representative Contact Information

Name: ***Charlie Petersen*** Title: ***Trego Lake District Board Member (2020)***

Address: ***5504 12th Ave South***

Minneapolis, MN 55417

Phone: ***612-803-8765*** Email: ***cjpetersen@msn.com***

Name: ***Tom Frost*** Title: ***Trego Lake District Board Member (2020)***

Address: ***N7558 Wood Dr***

Trego, WI 54888

Phone: ***715-733-1870*** Email: ***thomas.h.frost@gmail.com***

Questions 3e – 3f are continued on the following page

e. Are you aware of any particular issues pertaining to the specific resource area(s) identified in 3a? ***(Additional information, if any, may be provided on page 4)***

☒ Yes ***(Please list specific issues below)*** ☐ No

Resource Area	Specific Issue
Aquatic invasive species	***Hybrid water milfoil coming down from Lake Hayward***
Sedimentation	***Sedimentation coming down Namekagon River has created impassable boating channels in certain areas of Trego Lake***

f. Based on the issues identified in 3e, are you aware of any potential studies or information needs associated with the identified issues? ***(Additional information, if any, may be provided on page 4)***

☒ Yes ***(Please list below)*** ☐ No

Potential Studies or Information Needs

Same as in 3 B & C above

4. NSPW is considering using the Traditional Licensing Process for relicensing the Hayward Project. Do you have concerns with the use of the TLP? If so, please specify your concerns.

☐ Yes ***(Please describe concerns below)*** ☐ No

Traditional Licensing Process Concerns

The TLD is unfamiliar with the TLP therefore not able to comment.

5. NSPW is interested in any additional comments, questions, or information you may have regarding the licensing of the Project. If the additional comments, questions, or information you provide below pertain to a particular question, please indicate the applicable question (such as 3b, 3d, 3e, 3f).

Additional comments, questions, or information

Please feel free to contact the TLD Board members identified above for any addition question or information.

Please return this completed questionnaire to Mead & Hunt using the enclosed self-addressed, stamped envelope **within 30 days of receipt** to allow for follow-up by NSPW or its representative.

Not responding within 30 days will indicate you are not aware of any existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Projects.

Comments and/or questions may also be sent via email to: Darrin.Johnson@meadhunt.com

Trego Lake District Comment

Trego Hydroelectric Project

FERC No. 2711: Namekagon River, Town of Trego, Washburn County, WI
Licensee: Northern States Power Company - Wisconsin (d/b/a Xcel Energy)

Installed Capacity: 1,200 kilowatt (kW)

- Unit 1: 700 kW
- Unit 2: 500 kW

License Expires: November 30, 2025

Notice of Intent to Relicense Due: November 30, 2020

Project Operation Mode: Run-of-River

Reservoir Elevation Requirements:

- Target: 1,034.9 feet NGVD
- Minimum: 1,034.6 feet NGVD
- Maximum: 1,035.2 feet NGVD

Approximate Reservoir Surface Acreage: 470 acres

Northern States Power Company-Wisconsin ("NSPW") d/b/a Xcel Energy, has retained Mead & Hunt, Inc. ("Mead & Hunt") to assist with the federal relicensing process for the Trego Hydroelectric Project ("Project") located on the Namekagon River in northwestern Wisconsin. Under Federal Energy Regulatory Commission ("FERC") regulations, NSPW is preparing a Preliminary Application Document ("PAD") that provides the FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project to help identify issues and related information needs, develop study requests and study plans, and prepare documents analyzing impacts. The PAD Information Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in NSPW's possession.

1. Information about person completing this questionnaire:

Name: ***Charlie Petersen*** Title: ***TLD Board Member***

Organization: ***Trego Lake District***

Address: ***5504 12th Ave South***

Minneapolis, MN 55417

Phone: ***612-803-8765*** Email: ***cjpetersen@msn.com***

2. Do you or your organization plan to participate in the 3 to 5 year-long licensing proceeding for the Trego Hydroelectric Project?

☒ Yes ☐ No

3. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Project?

☒ Yes ***(Please complete 3a thru 3f)*** ☐ No ***(Proceed to 4)***

a. If yes, check box(es) to indicate the specific resource area(s) that the information relates to:

- ☒ Geology and soils
- ☒ Water resources
- ☒ Fish and aquatic resources
- ☒ Wildlife and botanical resources
- ☒ Wetlands, riparian, and littoral habitat
- ☒ Rare, threatened, and endangered species
- ☒ Recreational and land use
- ☒ Aesthetic resources
- ☒ Cultural resources
- ☒ Socio-economic resources
- ☒ Tribal resources
- ☒ Other resource information

Questions 3b – 3f are continued on the following pages

b. Briefly describe the information or list available documents:
(Additional information, if any, may be provided on page 4)

Archives of Trego Lake District

Archives of Wisconsin DNR

Documents from licensure of Trego Lake Dam

Personal observations from Trego Lake residents and other interested parties

c. Where or how can NSPW obtain this information?

Contact Trego Lake District (see contact information below)

d. Please indicate whether there is a specific representative you wish to designate for potential follow-up contact by NSPW or its representative for the resource area(s) checked in 3a: ***(Additional information, if any, may be provided on page 4)***

Representative Contact Information

Name: ***Charlie Petersen*** Title: ***TLD Board Member***

Address: ***5504 12th Ave South***

Minneapolis, MN 55417

Phone: ***612-803-8765*** Email: ***cjpetersen@msn.com***

Name: ***Tom Frost*** Title: ***TLD Board Member***

Address: ***N7558 Wood Dr.***

Trego, WI 54888

Phone: ***715-733-1870*** Email: ***thomas.h.frost@gmail.com***

Questions 3e – 3f are continued on the following page

e. Are you aware of any particular issues pertaining to the specific resource area(s) identified in 3a? ***(Additional information, if any, may be provided on page 4)***

☒ Yes ***(Please list specific issues below)*** ☐ No

Resource Area	Specific Issue
Aquatic vegitation	*- Weeds affecting navigation and recreational use*
Fishing	*- Reduction in sport fishing*
Aquatic invasive species	*- Hybrid water milfoil and curly leaf pondweed in Trego Lake*
Sedimentation	*- Sedimentation coming into Trego Lake from the Namekagon River and Potato Creek have created shallow area that facilitate aquatic plant growth and impassable boating channels in certain areas of Trego Lake*
	- Reduction in DNR acreage of Trego Lake because of sedimentation; potential decrease in land values for certain property
Recreation	*- Sedimentation and aquatic plants create the loss of recreation areas and/or access to recreation area*

f. Based on the issues identified in 3e, are you aware of any potential studies or information needs associated with the identified issues? ***(Additional information, if any, may be provided on page 4)***

☒ Yes ***(Please list below)*** ☐ No

Potential Studies or Information Needs

Contact TLD for current and historical documents

4. NSPW is considering using the use of the Traditional Licensing Process for relicensing the Trego Project. Do you have concerns with the use of the TLP? If so, please specify your concerns.

☐ Yes ***(Please describe concerns below)*** ☐ No

Traditional Licensing Process Concerns

The TLD is unfamiliar with the TLP therefore not able to comment.

5. NSPW is interested in any additional comments, questions, or information you may have regarding the licensing of the Project. If the additional comments, questions, or information you provide below pertain to a particular question, please indicate the applicable question (such as 3b, 3d, 3e, 3f).

Additional comments, questions, or information

TLD is vitally interest in the protection and rehabilitation of the Trego Lake resource. We were intimately involved in the last licensing process and expect to continue to be involved with dam licensing into the future.

Please feel free to contact the TLD Board members identified above for any addition question or information.

Please return this completed questionnaire to Mead & Hunt using the enclosed self-addressed, stamped envelope **within 30 days of receipt** to allow for follow-up by NSPW or its representative.

Not responding within 30 days will indicate you are not aware of any existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Project.

Comments and/or questions may also be sent via email to: Darrin.Johnson@meadhunt.com

Town of Trego Comment

Darrin Johnson

From: clerk@townoftregowi.com
Sent: Thursday, August 20, 2020 2:30 PM
To: Darrin Johnson
Subject: Trego Hydroelectric Project - FERC Project No. 2711

Please be advised of the Trego Town Board's intent to offer comment for the 'Licensing Preliminary Application Document Information Questionnaire' for the Trego Hydroelectric Project. The questionnaire was just recently received by me and presented to the town board at a meeting held on Tuesday, August 18. The envelope was address to William Allard, Chairman (William Allard is a Supervisor) and addressed to W5690 Trego River Street, Trego, WI 54888. This address is the physical location of the town hall, however there is no mail receptacle there. Luckily, with much delay, the envelope showed up in my mailbox (W6097 River Rd, Trego, WI) which is the mailing address for correspondence to the town, as I am the clerk. I am in the process of compiling information/comment as received and will be forwarding within a day or two. Please acknowledge receipt of this email.
Thank you. Barb Hinkfuss, Clerk
Town of Trego
W6097 River Rd
Trego WI 54888
clerk@townoftregowi.com

Town of Trego Comment

Darrin Johnson

From: Darrin Johnson
Sent: Friday, August 21, 2020 8:15 AM
To: clerk@townoftregowi.com
Subject: RE: Trego Hydroelectric Project - FERC Project No. 2711

Categories: Filed by Newforma

Barb,

Sorry for the mix-up on the mailing address. We look forward to your response.

Who should we list as the official Town contact for the relicensing? We will be sending out other documents to stakeholders throughout the relicensing process. I will update the stakeholder list with the official Town contact and correct the mailing address of W6097 River Rd, Trego WI 54888.

DARRIN JOHNSON
FERC COMPLIANCE AND LICENSING, WATER
Mead & Hunt
Direct: 608-443-0313 | Cell: 715-697-3130 | Transfer Files
meadhunt.com | LinkedIn | Twitter | Facebook | Instagram

From: clerk@townoftregowi.com <clerk@townoftregowi.com>
Sent: Thursday, August 20, 2020 2:30 PM
To: Darrin Johnson <Darrin.Johnson@meadhunt.com>
Subject: Trego Hydroelectric Project - FERC Project No. 2711

Please be advised of the Trego Town Board's intent to offer comment for the 'Licensing Preliminary Application Document Information Questionnaire' for the Trego Hydroelectric Project. The questionnaire was just recently received by me and presented to the town board at a meeting held on Tuesday, August 18. The envelope was address to William Allard, Chairman (William Allard is a Supervisor) and addressed to W5690 Trego River Street, Trego, WI 54888. This address is the physical location of the town hall, however there is no mail receptacle there. Luckily, with much delay, the envelope showed up in my mailbox (W6097 River Rd, Trego, WI) which is the mailing address for correspondence to the town, as I am the clerk. I am in the process of compiling information/comment as received and will be forwarding within a day or two. Please acknowledge receipt of this email.
Thank you. Barb Hinkfuss, Clerk
Town of Trego
W6097 River Rd
Trego WI 54888
clerk@townoftregowi.com

Town of Trego Comment

Darrin Johnson

From: clerk@townoftregowi.com
Sent: Monday, September 7, 2020 8:02 AM
To: Darrin Johnson
Subject: RE: Trego Hydroelectric Project - FERC Project No. 2711

Darrin
Town Offcials:

Wes Huffer, Chairman
N8521 Hwy 53
Trego WI 54888
715-635-3138
wchuffer@gmail.com

William Allard, Supervisor
N7069 Oak Hill Rd
Trego WI 54888
715-635-3120
billallard54@yahoo.com

Brian Vosberg, Supervisor
N7523 Lakeside Rd
Trego WI 54888
715-635-3112
bjvosberg@yahoo.com

Barb Hinkfuss, Clerk
W6097 River Rd
Trego WI 54888
clerk@townoftregowi.com

-----Original Message-----
From: "Darrin Johnson" <Darrin.Johnson@meadhunt.com>
Sent: Friday, August 21, 2020 9:14am
To: "clerk@townoftregowi.com" <clerk@townoftregowi.com>
Subject: RE: Trego Hydroelectric Project - FERC Project No. 2711

Barb,

Sorry for the mix-up on the mailing address. We look forward to your response.

Who should we list as the official Town contact for the relicensing? We will be sending out other documents to stakeholders throughout the relicensing process. I will update the stakeholder list with the official Town contact and correct the mailing address of W6097 River Rd, Trego WI 54888.

DARRIN JOHNSON
FERC COMPLIANCE AND LICENSING, WATER
Mead & Hunt
Direct: 608-443-0313 | Cell: 715-697-3130 | Transfer Files
meadhunt.com | LinkedIn | Twitter | Facebook | Instagram

Town of Trego Comment

From: clerk@townoftregowi.com <clerk@townoftregowi.com>
Sent: Thursday, August 20, 2020 2:30 PM
To: Darrin Johnson <Darrin.Johnson@meadhunt.com>
Subject: Trego Hydroelectric Project - FERC Project No. 2711

Please be advised of the Trego Town Board's intent to offer comment for the 'Licensing Preliminary Application Document Information Questionnaire' for the Trego Hydroelectric Project. The questionnaire was just recently received by me and presented to the town board at a meeting held on Tuesday, August 18. The envelope was address to William Allard, Chairman (William Allard is a Supervisor) and addressed to W5690 Trego River Street, Trego, WI 54888. This address is the physical location of the town hall, however there is no mail receptacle there. Luckily, with much delay, the envelope showed up in my mailbox (W6097 River Rd, Trego, WI) which is the mailing address for correspondence to the town, as I am the clerk. I am in the process of compiling information/comment as received and will be forwarding within a day or two. Please acknowledge receipt of this email.
Thank you. Barb Hinkfuss, Clerk
Town of Trego
W6097 River Rd
Trego WI 54888
clerk@townoftregowi.com

Northern States Power Company-Wisconsin ("NSPW") d/b/a Xcel Energy, has retained Mead & Hunt, Inc. ("Mead & Hunt") to assist with the federal relicensing process for the Hayward Hydroelectric Project ("Project") located on the Namekagon River in northwestern Wisconsin. Under Federal Energy Regulatory Commission ("FERC") regulations, NSPW is preparing a Preliminary Application Document ("PAD") that provides the FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project to help identify issues and related information needs, develop study requests and study plans, and prepare documents analyzing impacts. The PAD Information Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in NSPW's possession.

1. Information about person completing this questionnaire:

Name: Wes Hupfer Title: Chairman

Organization: Town of Trego

Address: N8531 Hwy 53
Trego WI 54888

Phone: 715 635 3138 Email: clerk@townoftrego wi.com

2. Do you or your organization plan to participate in the 3 to 5 year-long licensing proceeding for the Hayward Hydroelectric Project?

☑ Yes ☐ No

3. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Project?

☑ Yes ***(Please complete 3a thru 3f)*** ☐ No ***(Proceed to 4)***

a. If yes, check box(es) to indicate the specific resource area(s) that the information relates to:

- ☐ Geology and soils
- ☑ Water resources
- ☑ Fish and aquatic resources
- ☐ Wildlife and botanical resources
- ☐ Wetlands, riparian, and littoral habitat
- ☐ Rare, threatened, and endangered species
- ☑ Recreational and land use
- ☐ Aesthetic resources
- ☐ Cultural resources
- ☐ Socio-economic resources
- ☐ Tribal resources
- ☐ Other resource information

Questions 3b – 3f are continued on the following pages

b. Briefly describe the information or list available documents:
(Additional information, if any, may be provided on page 4)

Aquatic Invasive Species

Sedimentation

c. Where or how can NSPW obtain this information?

WDNR – dnr.wi.gov

NPS – nps.gov

d. Please indicate whether there is a specific representative you wish to designate for potential follow-up contact by NSPW or its representative for the resource area(s) checked in 3a: ***(Additional information, if any, may be provided on page 4)***

Representative Contact Information ΔAmo M #1.

Name: _____ Title: _____

Address: _____

_____

Phone: _____ Email: _____

Name: _____ Title: _____

Address: _____

_____

Phone: _____ Email: _____

Questions 3e – 3f are continued on the following page

e. Are you aware of any particular issues pertaining to the specific resource area(s) identified in 3a? *(Additional information, if any, may be provided on page 4)*

☑ Yes *(Please list specific issues below)* ☐ No

Resource Area	Specific Issue
A.I.S.	Hybrid Eurasian / Northern Water-Milfoil

f. Based on the issues identified in 3e, are you aware of any potential studies or information needs associated with the identified issues? *(Additional information, if any, may be provided on page 4)*

☐ Yes *(Please list below)* ☐ No

Potential Studies or Information Needs

4. NSPW is considering using the Traditional Licensing Process for relicensing the Hayward Project. Do you have concerns with the use of the TLP? If so, please specify your concerns.

☐ Yes *(Please describe concerns below)* ☐ No

Traditional Licensing Process Concerns

Would Need to know more About TLP IN Order to Respond.

5. NSPW is interested in any additional comments, questions, or information you may have regarding the licensing of the Project. If the additional comments, questions, or information you provide below pertain to a particular question, please indicate the applicable question (such as 3b, 3d, 3e, 3f).

Additional comments, questions, or information

Please return this completed questionnaire to Mead & Hunt using the enclosed self-addressed, stamped envelope **within 30 days of receipt** to allow for follow-up by NSPW or its representative.

Not responding within 30 days will indicate you are not aware of any existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Projects.

Comments and/or questions may also be sent via email to: Darrin.Johnson@meadhunt.com

Northern States Power Company-Wisconsin ("NSPW") d/b/a Xcel Energy, has retained Mead & Hunt, Inc. ("Mead & Hunt") to assist with the federal relicensing process for the Trego Hydroelectric Project ("Project") located on the Namekagon River in northwestern Wisconsin. Under Federal Energy Regulatory Commission ("FERC") regulations, NSPW is preparing a Preliminary Application Document ("PAD") that provides the FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project to help identify issues and related information needs, develop study requests and study plans, and prepare documents analyzing impacts. The PAD Information Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in NSPW's possession.

1. Information about person completing this questionnaire:

Name: Wes Huffer Title: Chairman

Organization: Town of Trego

Address: N8521 Hwy 53
Trego WI 54888

Phone: 715-635-3138 Email: clerk@townoftregowi.com

2. Do you or your organization plan to participate in the 3 to 5 year-long licensing proceeding for the Trego Hydroelectric Project?

☑ Yes ☐ No

3. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Project?

☑ Yes ***(Please complete 3a thru 3f)*** ☐ No ***(Proceed to 4)***

a. If yes, check box(es) to indicate the specific resource area(s) that the information relates to:

- ☑ Geology and soils
- ☑ Water resources
- ☑ Fish and aquatic resources
- ☐ Wildlife and botanical resources
- ☐ Wetlands, riparian, and littoral habitat
- ☐ Rare, threatened, and endangered species
- ☑ Recreational and land use
- ☑ Aesthetic resources
- ☐ Cultural resources
- ☐ Socio-economic resources
- ☑ Tribal resources
- ☐ Other resource information

Questions 3b – 3f are continued on the following pages

b. Briefly describe the information or list available documents:
(Additional information, if any, may be provided on page 4)

WI Dept of Natural Resources

National Park Service

Trego Lake District

Washburn Co Land & Water Conservation

Town of Trego

c. Where or how can NSPW obtain this information?

WDNR: dnr.wi.gov

NPS: nps.gov

TLD: tregolakedistrict.com

Washburn Co: landwtr@co.washburn.wi.us

Town of Trego: clerk@townoftregowi.com

d. Please indicate whether there is a specific representative you wish to designate for potential follow-up contact by NSPW or its representative for the resource area(s) checked in 3a: *(Additional information, if any, may be provided on page 4)*

Representative Contact Information Same As #1.

Name: _____ Title: _____

Address: _____

_____

Phone: _____ Email: _____

Name: _____ Title: _____

Address: _____

_____

Phone: _____ Email: _____

Questions 3e – 3f are continued on the following page

e. Are you aware of any particular issues pertaining to the specific resource area(s) identified in 3a? ***(Additional information, if any, may be provided on page 4)***

☒ Yes ***(Please list specific issues below)*** ☐ No

Resource Area	Specific Issue
Aquatic Invasive Species:	Curly-Leaf Pondweed
	-Eurasian Water-Milfoil
Sedimentation:	monetary contribution to TLD for Dredging
Aquatic Vegetation:	Boat landing is un-usable
Flooding:	town road closure – campground
	-closure – loss of revenue to municipality
	damage to roads/washouts
	-damage to residences/personal property

f. Based on the issues identified in 3e, are you aware of any potential studies or information needs associated with the identified issues? ***(Additional information, if any, may be provided on page 4)***

☒ Yes ***(Please list below)*** ☐ No

Potential Studies or Information Needs

4. NSPW is considering using the use of the Traditional Licensing Process for relicensing the Trego Project. Do you have concerns with the use of the TLP? If so, please specify your concerns.

☐ Yes *(Please describe concerns below)* ☐ No

Traditional Licensing Process Concerns

Would Need to Know More About TLP IN Order to Respond.

5. NSPW is interested in any additional comments, questions, or information you may have regarding the licensing of the Project. If the additional comments, questions, or information you provide below pertain to a particular question, please indicate the applicable question (such as 3b, 3d, 3e, 3f).

Additional comments, questions, or information

Please return this completed questionnaire to Mead & Hunt using the enclosed self-addressed, stamped envelope **within 30 days of receipt** to allow for follow-up by NSPW or its representative.

Not responding within 30 days will indicate you are not aware of any existing, relevant, and reasonably available information that describes the existing environment or known potential impacts of the Project.

Comments and/or questions may also be sent via email to: Darrin.Johnson@meadhunt.com

WDNR Comments

Darrin Johnson

From: Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Sent: Monday, July 20, 2020 2:05 PM
To: Darrin Johnson
Cc: Laatsch, Cheryl - DNR
Subject: RE: Hayward and Trego Hydro Project SWIMS information
Attachments: Hayward P-2417 SWIMS Pull 2020.xlsx; Trego P-2711SWIMS Pull 2020.xlsx

Hi Darrin,

I've attached a SWIMS data pull from the past 10 years. Please let me know if you need additional information provided with these datasets.

Cheryl and I will be working with program staff to compile additional data for the PAD.

Thank you,

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Macaulay Haller
Water Resources Management Specialist- Senior
Water Regulations and Zoning Specialist- Senior
Wisconsin Department of Natural Resources
Macaulay.Haller@wisconsin.gov

dnr.wi.gov

From: Darrin Johnson <Darrin.Johnson@meadhunt.com>
Sent: Friday, July 17, 2020 2:15 PM
To: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>; Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Subject: RE: Hayward and Trego Hydro Project SWIMS information

Thanks Cheryl.

DARRIN JOHNSON
FERC COMPLIANCE AND LICENSING, WATER
Mead & Hunt
Direct: 608-443-0313 | Cell: 715-697-3130 | Transfer Files
meadhunt.com | LinkedIn | Twitter | Facebook | Instagram

From: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>
Sent: Friday, July 17, 2020 2:13 PM

WDNR Comments

To: Darrin Johnson <Darrin.Johnson@meadhunt.com>; Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Subject: RE: Hayward and Trego Hydro Project SWIMS information

I also found out the fish data base may not be accurate. Ill work with Macaulay to get the process started. WE will also check on mussel data and such.

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Cheryl Laatsch
Statewide FERC Coordinator
Bureau of Environmental Analysis and Sustainability
Wisconsin Dept of Natural Resources
N7725 Hwy 28
Horicon WI 53032
(T) 920-387-7869 (Fax) 920-387-7888
Cheryl.laatsch@wisconsin.gov

dnr.wi.gov

From: Darrin Johnson <Darrin.Johnson@meadhunt.com>
Sent: Friday, July 17, 2020 2:02 PM
To: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>
Subject: RE: Hayward and Trego Hydro Project SWIMS information

Cheryl,

Yes we are beginning the PAD for the two projects now. The questionnaire has been finalized and will be mailed out early next week. I will send you an electronic version when it goes out. I typically pull fish data from the WDNR Fish Mapper Application, but that is currently being upgraded and is not accessible. I was able to find quite a bit of water quality monitoring information accessible via SWDV and the DNR Lakes Pages.

DARRIN JOHNSON
FERC COMPLIANCE AND LICENSING, WATER
Mead & Hunt
Direct: 608-443-0313 | Cell: 715-697-3130 | Transfer Files
meadhunt.com | LinkedIn | Twitter | Facebook | Instagram

120 YEARS OF SHAPING THE FUTURE

From: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>
Sent: Friday, July 17, 2020 1:47 PM
To: Darrin Johnson <Darrin.Johnson@meadhunt.com>
Subject: RE: Hayward and Trego Hydro Project SWIMS information

Hi Darrin – are we starting the existing data collection for these projects?

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Cheryl Laatsch

WDNR Comments

Statewide FERC Coordinator
Bureau of Environmental Analysis and Sustainability
Wisconsin Dept of Natural Resources
N7725 Hwy 28
Horicon WI 53032
(T) 920-387-7869 (Fax) 920-387-7888
Cheryl.laatsch@wisconsin.gov

dnr.wi.gov

From: Darrin Johnson <Darrin.Johnson@meadhunt.com>
Sent: Friday, July 17, 2020 1:34 PM
To: Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Cc: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>; Shawn Puzen <Shawn.Puzen@meadhunt.com>
Subject: Hayward and Trego Hydro Project SWIMS information

Good Afternoon,

Mead & Hunt, Inc. is assisting Xcel Energy with relicensing of the Hayward (FERC No.2417) and Trego (FERC No. 2711) Hydroelectric Projects. I am inquiring to see if we could obtain SWIMS information (similar to what we received for the White River Project) that is available for the two projects to assist us in developing the Preliminary Application Document. Just let me know if you have any questions. Thank you.

DARRIN JOHNSON
FERC COMPLIANCE AND LICENSING, WATER
Mead & Hunt
Direct: 608-443-0313 | Cell: 715-697-3130 | Transfer Files
meadhunt.com | LinkedIn | Twitter | Facebook | Instagram

120 YEARS OF SHAPING THE FUTURE

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WDNR Comments

Darrin Johnson

From: Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Sent: Wednesday, July 29, 2020 2:40 PM
To: Darrin Johnson
Cc: Shawn Puzen; Laatsch, Cheryl - DNR
Subject: WDNR Hayward Data Submission - Fisheries (Part 1 of 2)
Attachments: WDNR Fisheries Data for Xcel_Hayward P-2417_ Part 1 of 2.zip

Hi Darrin,

Please find attached part 1 of 2 Hayward Hydro Project data and reports from WDNR's fisheries biologist. Attachments include reports, fisheries survey data (recent and historical), fish stocking/spawning data, and fish habitat information.

I will continue to send data and information as it comes in from our program staff.

Thank you,

Macaulay Haller
Wisconsin Department of Natural Resources
Macaulay.Haller@wisconsin.gov

From: Darrin Johnson <Darrin.Johnson@meadhunt.com>
Sent: Wednesday, July 22, 2020 1:56 PM
To: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>; Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Cc: Shawn Puzen <Shawn.Puzen@meadhunt.com>
Subject: Hayward and Trego Questionnaire

Cheryl,

Per our discussion last week, I am sending electronic copies of the Hayward and Trego Hydroelectric Project Questionnaires and Factsheets. They were sent out in the mail today. Feel free to contact me if you have any questions.

DARRIN JOHNSON
FERC COMPLIANCE AND LICENSING, WATER
Mead & Hunt
Direct: 608-443-0313 | Cell: 715-697-3130 | Transfer Files
meadhunt.com | LinkedIn | Twitter | Facebook | Instagram

120 YEARS OF SHAPING THE FUTURE

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters	
Sawyer	Hayward	MWBC: 2725500

Sampling Objective	Number and Locations of Stations (Habitat)	
Walleye Recruitment Survey		Source
	Miles Actually Shocked = 5.7	LM
Period Fished (Dates)	Acres = 247	LM
10/03/01	Total Miles of Shoreline = 8.6	LM
	Total Miles of Shockable Shoreline = 8.6	LM

GEAR

Boomshocker (Hours)	Time	
2.8	√ Night	Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	**Time of Day**	**Trap Net (No. of Net Lifts)**	**Mesh Size**	**Depth**
Minnow Seine (No. of Hauls)	**Area Covered**	**Gill Net (No. of Feet x No. of Lifts)**	**Mesh Size**	**Depth**

Other (Hours or Lifts)		Characteristics	
Boomshocker(s): 1	Mini-boomshocker(s):	Walleye Recruitment Code:	C-NR
Dip Netter(s): 2	Dip Netter(s):		

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit
Walleye (Age 0+)	54	5.5-5.9	5.0 - 7.9	19.29 / hour 9.47 / mile
Serns Index NA YOY / acre				
Walleye (Age 1+)	12	9.0-9.4	8.5 - 10.4	4.29 / hour 2.11 / mile
Walleye (Other)	17	None	11.5 - 27.0	6.07 / hour 2.98 / mile
Smallmouth Bass	0		-	0.00 / hour 0.00 / mile
Largemouth Bass	24	None	2.0 - 19.4	8.57 / hour 4.21 / mile
Muskellunge	6	None	6.0 - 38.4	2.14 / hour 1.05 / mile
Northern Pike	37	None	6.0 - 28.9	13.21 / hour 6.49 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range
YOY Bluegill	Present		Black Crappie	Present	
Bluegill	Common		White Sucker	Common	
YOY Yellow Perch	Present		Redhorse spp.	Common	
Yellow Perch	Common		Common Shiner	Present	
Pumpkinseed	Present		Black Bullhead	Present	
YOY Black Crappie	Present		Chestnut Lamprey	Present	

1) Tank Mortality: None 2) Weather: Clear, Cold 3) Reliabilty: High

4) Stocking: 2,470 Walleye, 6.0 inches, 09/26/01, DNR

5) Comments:

Rev. 10-70

Signed (Compiler) Scott D. Plaster Date 12/10/01

WDNR Comments

of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600A-191 8-95

ayward MWB Code: 2725500 Date: 10/03/01 County: Sawyer Collector(s): Pratt, Warwick, Drabek

t Fish: Juvenile Walleye Survey Type: CPE Mark Given: None Water Temperature: 57°F Station: Portion of Shoreline

verse Conditions: None Gear Type: Boomshocker Distance Shocked: 5.7 miles

Volts: 150 Amps: 5.0 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 19:20 Shocking End Time: 23:10 Generator Start Hour: 424.6 Generator End Hour: 427.4

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			16.5-16.9	1	
3.0-3.4			17.0-17.4	2	
3.5-3.9			17.5-17.9	1	
4.0-4.4			18.0-18.4		
4.5-4.9			18.5-18.9		
5.0-5.4	19		19.0-19.4		
5.5-5.9	22		19.5-19.9		
6.0-6.4	11		20.0-20.4		
6.5-6.9			20.5-20.9		
7.0-7.4	1		21.0-21.4		
7.5-7.9	1		21.5-21.9		
8.0-8.4			22.0-22.4		
8.5-8.9	1		22.5-22.9		
9.0-9.4	6		23.0-23.4		
9.5-9.9	3		23.5-23.9		
10.0-10.4	2		24.0-24.4		
10.5-10.9			24.5-24.9		
11.0-11.4			25.0-25.4		
11.5-11.9	2		25.5-25.9		
12.0-12.4	1		26.0-26.4		
12.5-12.9			26.5-26.9		
13.0-13.4			27.0-27.4	1	
13.5-13.9	5		27.5-27.9		
14.0-14.4			28.0-28.4		
14.5-14.9	1		28.5-28.9		
15.0-15.4	2		29.0-29.4		
15.5-15.9			29.5-29.9		
16.0-16.4	1		30.0 +		
Totals:	83				

WALLEYE

WDNR Comments

f Natural Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600F-186 8-95

yward MWB Code: 2725500 Date: 10/03/01 County: Sawyer Collector(s): Pratt, Warwick, Drabek

Fish: Juvenile Walleye Survey Type: CPE Mark Given: None Water Temperature: 57°F Station: Portion of Shoreline

erse Conditions: None Gear Type: Boomshocker Distance Shocked: 5.7 miles

olts: 150 Amps: 5.0 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 19:20 Shocking End Time: 23:10 Generator Start Hour: 424.6 Generator End Hour: 427.4

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

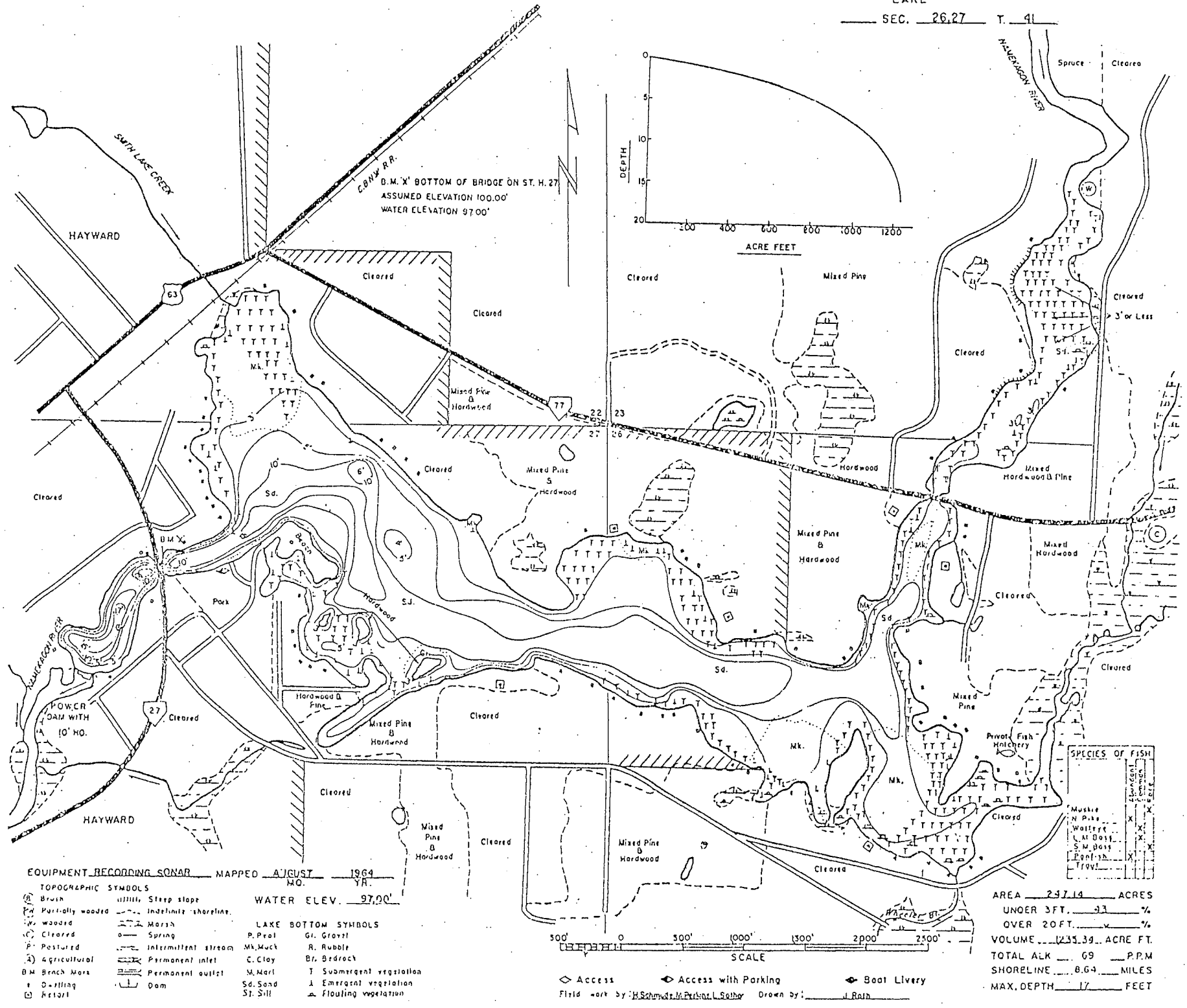
	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4				
2.0-2.4					1				25.5-25.9	2			
2.5-2.9									26.0-26.4				
3.0-3.4					1				26.5-26.9	2			
3.5-3.9									27.0-27.4				
4.0-4.4									27.5-27.9	1			
4.5-4.9					1				28.0-28.4				
5.0-5.4									28.5-28.9	1		1	
5.5-5.9									29.0-29.4				
6.0-6.4	2		1						29.5-29.9				
6.5-6.9					1				30.0-30.4				
7.0-7.4									30.5-30.9				
7.5-7.9	1								31.0-31.4				
8.0-8.4	7								31.5-31.9				
8.5-8.9	2				1				32.0-32.4				
9.0-9.4	3								32.5-32.9				
9.5-9.9									33.0-33.4				
10.0-10.4	1				2				33.5-33.9				
10.5-10.9	1				2				34.0-34.4				
11.0-11.4	1				1				34.5-34.9				
11.5-11.9	1				2				35.0-35.4				
12.0-12.4					1				35.5-35.9				
12.5-12.9	1				1				36.0-36.4				
13.0-13.4	2				1				36.5-36.9				
13.5-13.9	1				1				37.0-37.4				
14.0-14.4	1								37.5-37.9				
14.5-14.9	1				1				38.0-38.4			1	
15.0-15.4	1				1				38.5-38.9				
15.5-15.9									39.0-39.4				
16.0-16.4					1				39.5-39.9				
16.5-16.9	1		1		2				40.0-40.4				
17.0-17.4			1						40.5-40.9				
17.5-17.9			1						41.0-41.4				
18.0-18.4					1				41.5-41.9				
18.5-18.9					1				42.0-42.4				
19.0-19.4					1				42.5-42.9				
19.5-19.9	1								43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9									44.0-44.4				
21.0-21.4	1								44.5-44.9				
21.5-21.9									45.0-45.4				
22.0-22.4	1								45.5-45.9				
22.5-22.9	1								46.0-46.9				
23.0-23.4									47.0-47.9				
23.5-23.9									48.0-48.9				
24.0-24.4									49.0-49.9				
Totals:	37	0	6	0	24	0	0	0	50.0+				

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

LAKE

SEC. 26,27 T. 41



EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964
MO. YR.

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- (B) Brush
- (P) Partially wooded
- (W) Wooded
- (C) Cleared
- (P) Pastured
- (A) Agricultural
- BM Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- Emergent vegetation
- Floating vegetation

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H. Schnuder, M. Perlick, L. Sather Drawn by: J. Rain

AREA 237.14 ACRES
UNDER 3 FT. 43 %
OVER 20 FT. — %
VOLUME 1235.34 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

A-51

WDNR Comments

WDNR Comments

5'0611
125500

SUMMARY FISHING RECORD
Form 3600-63

1-18-05

Department of Natural Resources

County	Waters	
Sawyer	Hayward	MWBC: 2725500
Sampling Objective	**Number and Locations of Stations (Habitat)**	
Walleye Recruitment Survey		Source
Period Fished (Dates)	Miles Actually Shocked = 6.2	LM
10/14/02 non-stocked year	Acres = 247	LM
	Total Miles of Shoreline = 8.6	LM
	Total Miles of Shockable Shoreline = 8.6	LM

GEAR

Boomshocker (Hours)	Time	
2.4	√ Night	Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts)		Characteristics
Boomshocker(s): 1	Mini-boomshocker(s):	Walleye Recruitment Code: C-NR
Dip Netter(s): 2	Dip Netter(s):	

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	8	None	6.0 - 8.4	3.33 / hour	1.29 / mile
Sems Index NA YOY / acre					non-stocked
Walleye (Age 1+)	9	10.0-10.4	9.0 - 10.9	3.75 / hour	1.45 / mile
Walleye (Other)	9	None	11.5 - 22.4	3.75 / hour	1.45 / mile
Smallmouth Bass			-	/ hour	/ mile
Largemouth Bass	16	15.5-15.9	2.0 - 19.4	6.67 / hour	2.58 / mile
Muskellunge	7	None	8.5 - 48.9	2.92 / hour	1.13 / mile
Northern Pike	59	6.0-6.4	5.0 - 29.9	24.58 / hour	9.52 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range
Bluegill	45	3.3-8.3	White Sucker	Common	
Black Crappie	19	5.3-10.9	Redhorse spp.	Present	
Yellow Perch	15	4.8-10.7	Black Bullhead	Present	
Rock Bass	Present		Johnny Darter	Present	
Pumpkinseed	10	3.8-6.4	Central Mudminnow	Present	

) Tank Mortality: None 2) Weather: Cold, Windy 3) Reliabilty: Medium

) Stocking: 247 Muskellunge, 11.4 inches, 09/17/02, DNR

Comments:

ev. 10-70

Signed (Compiler)	Scott D. Plaster	Date	12/06/02

WDNR Comments

.nent of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600A-191 8-95

.ake: Hayward MWB Code: 2725500 Date: 10/14/02 County: Sawyer Collector(s): Pratt, Warwick, Drabek

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None Water Temperature: 46°F Station: Portion of Shoreline

Adverse Conditions: Cold, Wind/waves, Dark stained water Gear Type: Boomshocker Distance Shocked: 6.2 miles

Volts: 200 Amps: 3.0 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 19:00 Shocking End Time: 22:30 Generator Start Hour: 476.6 Generator End Hour: 479.0

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/16 inch bar H20 Clarity: 4 feet

inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			16.5-16.9		
3.0-3.4			17.0-17.4		
3.5-3.9			17.5-17.9		
4.0-4.4			18.0-18.4		
4.5-4.9			18.5-18.9	1	
5.0-5.4			19.0-19.4	1	
5.5-5.9			19.5-19.9		
6.0-6.4	1		20.0-20.4		
6.5-6.9	1		20.5-20.9		
7.0-7.4	2		21.0-21.4		
7.5-7.9	2		21.5-21.9		
8.0-8.4	2		22.0-22.4	1	
8.5-8.9			22.5-22.9		
9.0-9.4	2		23.0-23.4		
9.5-9.9	2		23.5-23.9		
10.0-10.4	4		24.0-24.4		
10.5-10.9	1		24.5-24.9		
11.0-11.4			25.0-25.4		
11.5-11.9	1		25.5-25.9		
12.0-12.4	2		26.0-26.4		
12.5-12.9	1		26.5-26.9		
13.0-13.4	1		27.0-27.4		
13.5-13.9			27.5-27.9		
14.0-14.4			28.0-28.4		
14.5-14.9			28.5-28.9		
15.0-15.4			29.0-29.4		
15.5-15.9			29.5-29.9		
16.0-16.4	1		30.0 +		
Totals:	26				

WALLEYE

WDNR Comments | Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600F-186

8-95

ce: Hayward MWB Code: 2725500 Date: 10/14/02 County: Sawyer Collector(s): Pratt, Warwick, Drabek

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None Water Temperature: 46°F Station: Portion of Shoreline

Adverse Conditions: Cold, Wind/waves, Dark stained water Gear Type: Boomshocker Distance Shocked: 6.2 miles

Volts: 200 Amps: 3.0 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 19:00 Shocking End Time: 22:30 Generator Start Hour: 476.6 Generator End Hour: 479.0

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/16 inch bar H20 Clarity: 4 feet

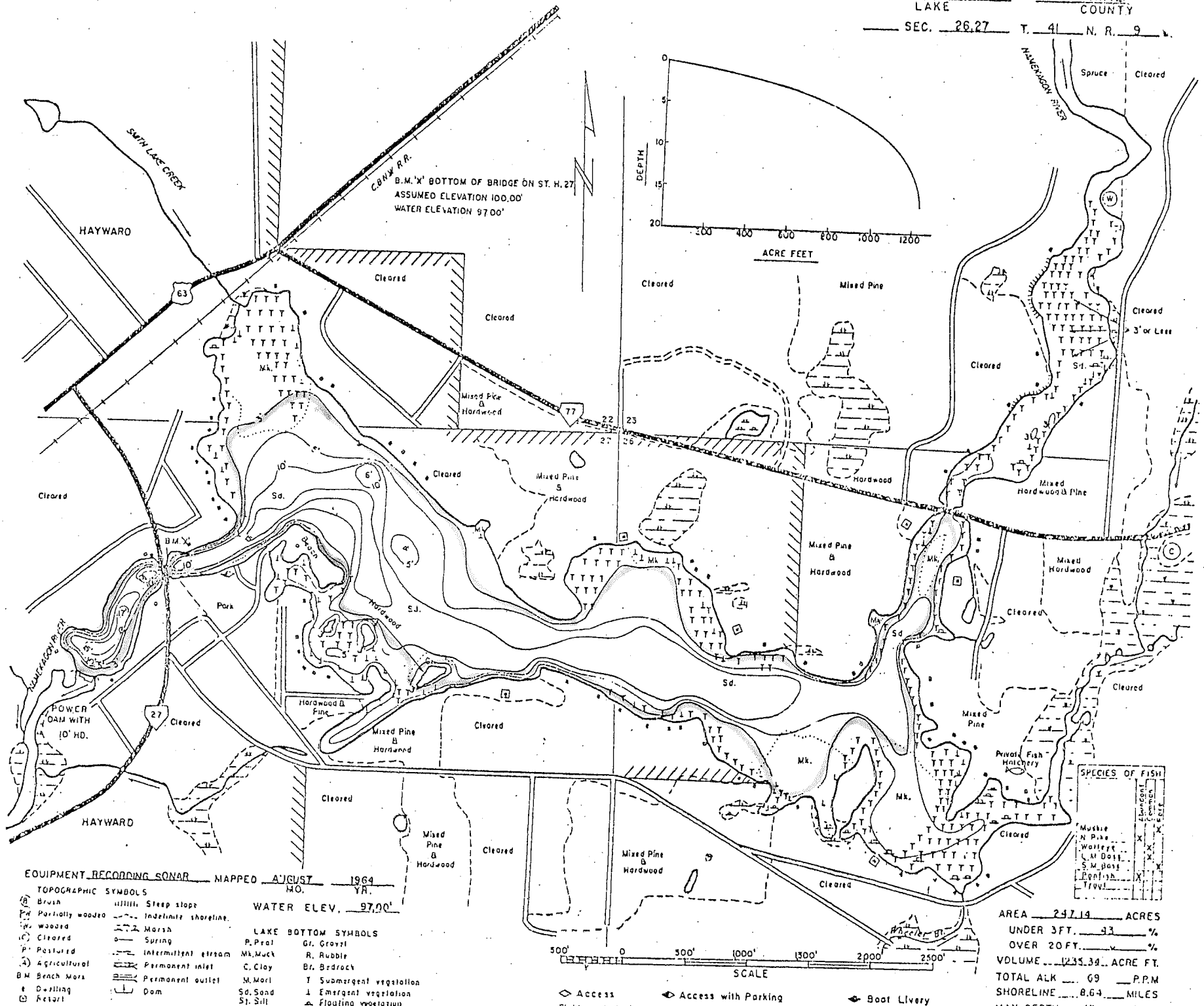
	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4				
2.0-2.4					1				25.5-25.9				
2.5-2.9									26.0-26.4				
3.0-3.4					1				26.5-26.9	1			
3.5-3.9									27.0-27.4	1			
4.0-4.4									27.5-27.9				
4.5-4.9									28.0-28.4				
5.0-5.4	1								28.5-28.9				
5.5-5.9	1								29.0-29.4				
6.0-6.4	6								29.5-29.9	1			
6.5-6.9	4								30.0-30.4				
7.0-7.4	2								30.5-30.9				
7.5-7.9	2								31.0-31.4				
8.0-8.4	1								31.5-31.9				
8.5-8.9			1						32.0-32.4				
9.0-9.4	4								32.5-32.9				
9.5-9.9	2				1				33.0-33.4				
10.0-10.4	2				1				33.5-33.9				
10.5-10.9	5								34.0-34.4				
11.0-11.4	3		2		1				34.5-34.9				
11.5-11.9	2		1						35.0-35.4				
12.0-12.4	3		1						35.5-35.9				
12.5-12.9									36.0-36.4				
13.0-13.4	1								36.5-36.9				
13.5-13.9	1								37.0-37.4				
14.0-14.4									37.5-37.9				
14.5-14.9					2				38.0-38.4				
15.0-15.4	2				2				38.5-38.9				
15.5-15.9	1				3				39.0-39.4				
16.0-16.4					1				39.5-39.9				
16.5-16.9									40.0-40.4				
17.0-17.4	3				1				40.5-40.9				
17.5-17.9			1		1				41.0-41.4				
18.0-18.4	1								41.5-41.9				
18.5-18.9	1								42.0-42.4				
19.0-19.4					1				42.5-42.9				
19.5-19.9	2								43.0-43.4				
20.0-20.4	1								43.5-43.9				
20.5-20.9	1								44.0-44.4				
21.0-21.4									44.5-44.9				
21.5-21.9	1								45.0-45.4				
22.0-22.4	1								45.5-45.9				
22.5-22.9									46.0-46.9				
23.0-23.4	2								47.0-47.9				
23.5-23.9									48.0-48.9			1	
24.0-24.4									49.0-49.9				
Totals:	59	0	7	0	16	0	0	0	50.0+				

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



EQUIPMENT RECORDING SONAR — MAPPED AUGUST (MO.) 1964 (YR.)

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- Brush
- Partially wooded
- Wooded
- Cleared
- Pastured
- Agricultural
- BM Beach Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- Submergent vegetation
- Emergent vegetation
- Floating vegetation

SCALE: 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H. Schmidt, M. Pennot, L. Gothy — Drawn by: J. Roth

AREA 247.14 ACRES
UNDER 3 FT. 93 %
OVER 20 FT. — %
VOLUME 1235.39 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

A-55

WDNR Comments

WDNR Comments

Sheet ____ of ____

Site 125500
Survey 51426
Visit 484970

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET **GAMEFISH** Wisconsin Department of Natural Resources

Waterbody Name: Hayward
MWB Code/WBIC: 2725500
Waterbody Type: Imp
County: Sawyer
Date (MM/DD/YY): Oct. 04, 2002
Station:
Start Time:
End Time:
Collectors: Pratt

Target Fish: Juvenile Walleye
Mark(s) Given:
Survey Type: CPE (Fall Shoreline)
Gear Type: Boomshocker
Weather:
Adverse Conditions:
Water Temperature: 57
Water Conductivity:
Water Level: [HI] [NORM] [LOW]
Water Clarity: 7.5

Generator Start Time: 424.6
Generator End Time: 427.4
Volts: 150
Amps: 5
Pulse Rate:
Duty Cycle:
Current Type: AC
Distance Shocked: 6.5
Entire Shoreline Shocked: Y
Number of Dippers: 2
Dipnet Mesh Size: 3/8" bar

	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clippped
<1.5							None	
1.5-1.9								
2.0-2.4					1			
2.5-2.9								
3.0-3.4					1			
3.5-3.9								
4.0-4.4								
4.5-4.9					1			
5.0-5.4					1			
5.5-5.9			1 Hyb					
6.0-6.4	2							
6.5-6.9					1			
7.0-7.4								
7.5-7.9	1							
8.0-8.4	7							
8.5-8.9	2							
9.0-9.4	3							
9.5-9.9								
10.0-10.4	1				2			
10.5-10.9	1				2			
11.0-11.4	1				1			
11.5-11.9	1				2			
12.0-12.4					1			
12.5-12.9	1				1			
13.0-13.4	2				1			
13.5-13.9	1				1			
14.0-14.4	1							
14.5-14.9	1				1			
15.0-15.4	1				1			
15.5-15.9								
16.0-16.4								
16.5-16.9	1		1					
17.0-17.4			1					
17.5-17.9			1					
18.0-18.4								
18.5-18.9								
19.0-19.4								
19.5-19.9	1							
20.0-20.4								
20.5-20.9								
21.0-21.4	1							
21.5-21.9								
22.0-22.4	1							
22.5-22.9	1							
23.0-23.4								
23.5-23.9								
24.0-24.4								
TOTALS	31				[illegible]			

	Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped
24.5-24.9				
25.0-25.4				
25.5-25.9	2			
26.0-26.4				
26.5-26.9	2			
27.0-27.4				
27.5-27.9	1			
28.0-28.4				
28.5-28.9	1		1	
29.0-29.4				
29.5-29.9				
30.0-30.4				
30.5-30.9				
31.0-31.4				
31.5-31.9				
32.0-32.4				
32.5-32.9				
33.0-33.4				
33.5-33.9				
34.0-34.4				
34.5-34.9				
35.0-35.4				
35.5-35.9				
36.0-36.4				
36.5-36.9				
37.0-37.4				
37.5-37.9				
38.0-38.4			1	
38.5-38.9				
39.0-39.4				
39.5-39.9				
40.0-40.4				
40.5-40.9				
41.0-41.4				
41.5-41.9				
42.0-42.4				
42.5-42.9				
43.0-43.4				
43.5-43.9				
44.0-44.4				
44.5-44.9				
45.0-45.4				
45.5-45.9				
46.0-46.9				
47.0-47.9				
48.0-48.9				
49.0-49.9				
50.0+	37 NP		6 Mu	

GAMEFISH

C:\DATA\FIELDFORMS\FALL\FALLFORMS.xls

WDNR Comments

Department of Natural Resources

NETTING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)
Form 3600-188 4-92

2725500

Lake Hayward MWB Code: A Date: 03 / 31 / 2000 County: Sawyer Collector: Brett/Tworb.

Target Fish: WE Survey Type: WE PE Mark Given: ALP Play H_2O Temp: 42 Time 10 : 30 AM

Adverse Conditions: Stony, current / lack access Station: Above STH '77'

Net Type: Fyke Length/Frame: 4' Bar Mesh: 1/2"

Color: 3Bl / 1 Wh. Mesh Type: W-Knotted Bl-Woven Net Nights: 1

Two nets moved upstream, north of Ulmers in fast water.

Walleye

Inches	Male	F	Unkwn						
4.4 - 4.4									
4.5 - 4.9									
5.0 - 5.4									
5.5 - 5.9									
6.0 - 6.4									
6.5 - 6.9									
7.0 - 7.9									
7.5 - 7.9									
8.0 - 8.4									
8.5 - 8.9									
9.0 - 9.4							Play Pen (L)		
9.5 - 9.9							0144	16.4	Unkwn
10.0-10.4			1				0148	14.3	Male
10.5-10.9							0147	15.6	Unknwn
11.0-11.4									
11.5-11.9									
12.0-12.4									
12.5-12.9									
13.0-13.4									
13.5-13.9									
14.0-14.4	1						RB	5.8	
14.5-14.9							NP	17.5	
15.0-15.4									
15.5-15.9			1						
16.0-16.4			1				2 Dityscis water beetle		
16.5-16.9							1 Mud puppy		
17.0-17.4							1 Green frog	tadpole	
17.5-17.9									
18.0-18.4									
18.5-18.9									
19.0-19.4									
19.5-19.9									
20.0-20.4									
20.5-20-9									
21.0-21.4									
21.5-21.9									
22.0-22.4									
22.5-22.9									
23.0-23.4									
23.5-23.9									
24.0-24.4									
24.5-24.9									
25.0-25.4									
25.5-25.9									
26.0-26.4									
26.5-26.9									
27.0-27.4									
27.5-27.9									
28.0-28.4									
28.5-28.9									
29.0-29.4		0	3						
29.5-29.9	1								

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

WDNR Comments

survey 51712
site 122431

SUMMARY FISHING RECORD

FORM 3600-63 REVISED 1-94

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

COUNTY	WATERS	MWB CODE
Sawyer	Lake Hayward	2725500
SAMPLING OBJECTIVE	**DATES FISHED**	**WATER TEMP.**
Spring Adult Panfish	June 09-15, 2003	63-70

GEAR

Pratt, Warwick,D

BOOMSHOCKER	PANFISH		NO. DIPPERS		NIGHT		AC	
HOURS	GAMEFISH		NO. MILES		VOLTS		AMPS	
FYKE NET	PANFISH	~~8~~ 18			Days- 6			
LIFTS	GAMEFISH	18	LEAD LEN:	50	FRAME:	4	MESH	1/2"
GILL NET	(NO. LIFTS)	~~18~~	NO. NETS: LENGTH:		DEPTH:		MESH:	
SEINE	(NO. PULLS)		LENGTH:		DEPTH:		MESH:	
ANGLING	(TOT. HRS.)		NO. ANGLERS:		TIME OF DAY:			

OTHER These comments go to the summary sheet under OTHER.

FISHING RESULTS

GAMEFISH	NUMBER	MODAL SIZES (IN.)	SIZE RANGE (IN.)	CATCH/EFFORT
Walleye	2		-	**0.1** per net
Musky			-	per net
Northern Pike	8		-	**0.4** per net
Largemouth Bass	5		-	**0.3** per net
Smallmouth Bass			-	per net
White Sucker	4		-	**1.3** per net
			-	#####
			-	##### #DIV/0!
			-	#DIV/0!
PANFISH	NUMBER	MODAL SIZES (IN.)	SIZE RANGE (IN.)	CATCH/EFFORT
Bluegill	731		-	~~244~~ per net
Pumpkinseed	711		-	~~237~~ per net
Black Crappie	12		-	~~4~~ per net
Yellow Perch	20		-	~~7~~ per net
Rock Bass	2		-	**0** per net
Black Bullhead	7		-	**0** per net
Brown Bullhead	8			
			-	

Observations: For panfish field-transfer to Shues Pond and NFWFHOF. Disease Certification by Eric Sawnson DVM. Supplemental a

Compiled By:	Date
~~Skip Sommerfeldt~~ E. Pratt	~~9/25/02~~ 6/26/03

WDNR Comments

State of Wisconsin
Department of Natural Resources

Water Temp: 63-70

Gamefish Length Frequency

Form 3600-65 Rev.7-93

County	Water	Date	Gear: 3 fyke nets
Sawyer	Lake Hayward	06/09-15/2003	Sets: 18 Pratt, Waterblee/Risch

Size Range Inches	Walleye	N Pike	Musky	LMB	SMB	W. Sucker		Size Range Inches	N Pike	Musky
<3.0								27.0 - 27.4		
3.0 - 3.4								27.5 - 27.9		
3.5 - 3.9								28.0 - 28.4		
4.0 - 4.4				1				28.5 - 28.9		
4.5 - 4.9				1				29.0 - 29.4		
5.0 - 5.4								29.5 - 29.9		
5.5 - 5.9								30.0 - 30.4		
6.0 - 6.4								30.5 - 30.9		
6.5 - 6.9								31.0 - 31.4		
7.0 - 7.4		1		1				31.5 - 31.9		
7.5 - 7.9		2						32.0 - 32.4		
8.0 - 8.4		1						32.5 - 32.9		
8.5 - 8.9								33.0 - 33.4		
9.0 - 9.4								33.5 - 33.9		
9.5 - 9.9								34.0 - 34.4		
10.0 - 10.4								34.5 - 34.9		
10.5 - 10.9								35.0 - 35.4		
11.0 - 11.4								35.5 - 35.9		
11.5 - 11.9								36.0 - 36.4		
12.0 - 12.4								36.5 - 36.9		
12.5 - 12.9								37.0 - 37.4		
13.0 - 13.4		1						37.5 - 37.9		
13.5 - 13.9		1						38.0 - 38.4		
14.0 - 14.4								38.5 - 38.9		
14.5 - 14.9								39.0 - 39.4		
15.0 - 15.4								39.5 - 39.9		
15.5 - 15.9								40.0 - 40.9		
16.0 - 16.4				1				41.0 - 41.9		
16.5 - 16.9								42.0 - 42.9		
17.0 - 17.4	1							43.0 - 43.9		
17.5 - 17.9								44.0 - 44.9		
18.0 - 18.4								45.0 - 45.9		
18.5 - 18.9						1		46.0 - 46.9		
19.0 - 19.4								47.0 - 47.9		
19.5 - 19.9								48.0 - 48.9		
20.0 - 20.4								49.0 - 49.9		
20.5 - 20.9								50.0 - 50.9		
21.0 - 21.4								51.0 - 51.9		
21.5 - 21.9								52.0 - 52.9		
22.0 - 22.4								53.0 - 53.9		
22.5 - 22.9								54.0 - 54.9		
23.0 - 23.4	1							55.0 - 55.9		
23.5 - 23.9								56.0 - 56.9		
24.0 - 24.4								57.0 - 57.9		
24.5 - 24.9								58.0 - 58.9		
25.0 - 25.4								59.0 - 59.9		
25.5 - 25.9		1						60.0+		
26.0 - 26.4										
26.5 - 26.9										
TOTALS	**2**			**4**	**0**	**1**	**0**	**TOTALS**	**7**	**0**

OBSERVATIONS: Walleye PSD15 = 100% (10" stock size) LMB PSD12 = 50% (6" stock size)

These comments go to the summary sheet under OTHER.
These go to the observation section - second line.

WDNR Comments

...rtment of Natural Resources

Panfish Length Frequency

Form 3600-64 Rev. 1-00

...unty	Water	Date	Gear	Sets
Sawyer	Lake Hayward	06/09-15/2003	Fyke nets	18

Size Range Inches	Species					Size Range Inches	Species				
	Bluegill	B Crap.	Y Perch	Pksd	R Bass		Blg	BC	YP	Pkd	RB
Count	634			511		**7.0**	10			4	
1.0 - 1.4						7.1					
1.5 - 2.0						7.2					
2.1						7.3					
2.2						7.4					
2.3						7.5	4		2	1	1
2.4						7.6					
2.5	8			7		7.7					
2.6						7.8					
2.7						7.9					
2.8						**8.0**	2				
2.9						8.1					
3.0	4			3		8.2					
3.1						8.3					
3.2						8.4					
3.3						8.5	1				
3.4						8.6					
3.5	2			6		8.7					
3.6						8.8					
3.7						8.9					
3.8						**9.0**	1	9	2		
3.9						9.1					
4.0	7		5	7		9.2					
4.1						9.3					
4.2						9.4					
4.3						9.5		2			
4.4						9.6					
4.5	1		3	20		9.7					
4.6						9.8					
4.7						9.9					
4.8						**10.0**		1	1		
4.9						10.2					
5.0	4			31		10.4					
5.1						10.6			1		
5.2						10.8					
5.3						**11.0**					
5.4						11.2					
5.5	10		5	48	1	11.4					
5.6						11.6					
5.7						11.8					
5.8						**12.0**					
5.9						12.2					
6.0	26		1	54		12.4					
6.1						12.6					
6.2						12.8					
6.3						**13.0**					
6.4						13.2					
6.5	17			19		13.4					
6.6						13.6					
6.7						13.8					
6.8						**14.+**					
6.9						TOTAL	**731**	**12**	**20**	**711**	**2**

Notes:

Bluegill PSD6 = 69% Bluegill RSD7 = 20%

B. Crappie PSD8 = 100% B. Crappie RSD10 = 8%

Also 7 black bullheads 8-10.5"

WDNR Comments

1-18-05 122431 52166 survey 0

SUMMARY FISHING RECORD

FORM 3600-63 REVISED 1-94

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

COUNTY	WATERS	MWB CODE
Sawyer	Lake Hayward- ST2 North	2725500
SAMPLING OBJECTIVE	DATES FISHED	WATER TEMP.
	October 1, 2003	50

GEAR

BOOMSHOCKER	PANFISH	0.2	NO. DIPPERS	1	NIGHT	X	AC	X
HOURS	GAMEFISH	0.8	NO. MILES	2.00	VOLTS	150	AMPS	1
FYKE NET	PANFISH							
LIFTS	GAMEFISH		LEAD LEN:		FRAME:		MESH:	
GILL NET	(NO. LIFTS)		LENGTH:		DEPTH:		MESH:	
SEINE	(NO. PULLS)		LENGTH:		DEPTH:		MESH:	
ANGLING	(TOT. HRS.)		NO. ANGLERS:		TIME OF DAY:			

OTHER

FISHING RESULTS

GAMEFISH	NUMBER	MODAL SIZES (IN.)	SIZE RANGE (IN.)	CATCH/EFFORT
Walleye	4		-	2.0
Musky	3		-	1.5
Northern Pike	12		-	6.0
Largemouth Bass	6		-	3.0
			-	
White Sucker	6		-	12.0
Walleye EG	1		-	
			-	
			-	

PANFISH	NUMBER	MODAL SIZES (IN.)	SIZE RANGE (IN.)	CATCH/EFFORT
BG	25		-	50
Pumpkinseed	5		-	10
Black Crappie	12		-	24
Yellow Pereh	4		-	8
Common shiner	13		-	24
Mud minnow	4		-	8
Brown Bullhead				
			-	

Observations:

Only one EG walleye this main-lake station- they were all up in the river channel. Small musky were hybrids.

Compiled By:	Date
Frank Pratt	10/1/03

WDNR Comments

...in
...partment of Natural Resources

Panfish Length Frequency

Form 3600-64 Rev. 1-00

County	Water	Date	Gear
Sawyer	LH-St2 N	10/30/2003	vv AC bs

Size Range Inches	Species					Size Range Inches	Species				
	BG	BC	YP	PS	CS		Blg	BC	YP	Pkd	
Count						**7.0**	5			1	
1.0 - 1.4					5	7.1					
1.5 - 2.0		2			6	7.2					
2.1					1	7.3					
2.2						7.4					
2.3						7.5	1	1			
2.4						7.6					
2.5					1	7.7					
2.6				1		7.8					
2.7						7.9					
2.8						**8.0**		1			
2.9						8.1					
3.0						8.2					
3.1						8.3					
3.2						8.4					
3.3						8.5					
3.4						8.6					
3.5						8.7					
3.6						8.8					
3.7						8.9					
3.8						**9.0**		1			
3.9						9.1					
4.0						9.2					
4.1						9.3					
4.2						9.4					
4.3						9.5		1			
4.4						9.6					
4.5		1				9.7					
4.6						9.8					
4.7						9.9					
4.8						**10.0**		2			
4.9				1		10.2					
5.0	2					10.4					
5.1						10.6					
5.2						10.8					
5.3						**11.0**		1			
5.4						11.2					
5.5	3			1		11.4					
5.6						11.6					
5.7						11.8					
5.8						**12.0**					
5.9						12.2					
6.0	9	1		1		12.4					
6.1						12.6					
6.2						12.8					
6.3						**13.0**					
6.4						13.2					
6.5	5	1				13.4					
6.6						13.6					
6.7						13.8					
6.8						**14.+**					
6.9					13tot	TOTAL	**25**	**12**	**4**	**5**	

Notes:

Bluegill PSD6 = Bluegill RSD7 =

B. Crappie PSD8 = B. Crappie RSD10 = 33%

S **WDNR Comments**

Department of Natural Resources

Water Temp:

Gamefish Length Frequency

Form 3600-65 Rev.7-93

County	Water	Date	Gear: vv AC
Sawyer	Lake Hayward St2 N	10/01/2003	hrs: 0.8

Size Range Inches	Walleye	N Pike	Musky	LMB		W. Sucker		Size Range Inches	N Pike	Musky
<3.0				2				27.0 - 27.4		
3.0 - 3.4				1				27.5 - 27.9		
3.5 - 3.9								28.0 - 28.4		
4.0 - 4.4								28.5 - 28.9		
4.5 - 4.9								29.0 - 29.4		
5.0 - 5.4		1	1 hybrid					29.5 - 29.9		
5.5 - 5.9								30.0 - 30.4		
6.0 - 6.4	1	1						30.5 - 30.9		
6.5 - 6.9		1	2 hybrid					31.0 - 31.4		
7.0 - 7.4								31.5 - 31.9		
7.5 - 7.9								32.0 - 32.4		
8.0 - 8.4								32.5 - 32.9		
8.5 - 8.9								33.0 - 33.4		
9.0 - 9.4		2				1		33.5 - 33.9		
9.5 - 9.9								34.0 - 34.4		
10.0 - 10.4								34.5 - 34.9		
10.5 - 10.9								35.0 - 35.4		
11.0 - 11.4								35.5 - 35.9		
11.5 - 11.9								36.0 - 36.4		
12.0 - 12.4								36.5 - 36.9		
12.5 - 12.9						1		37.0 - 37.4		
13.0 - 13.4								37.5 - 37.9		
13.5 - 13.9				1				38.0 - 38.4		
14.0 - 14.4								38.5 - 38.9		
14.5 - 14.9								39.0 - 39.4		
15.0 - 15.4		1						39.5 - 39.9		
15.5 - 15.9								40.0 - 40.9		
16.0 - 16.4	1	1						41.0 - 41.9		
16.5 - 16.9								42.0 - 42.9		
17.0 - 17.4						1		43.0 - 43.9		
17.5 - 17.9						1		44.0 - 44.9		
18.0 - 18.4				1				45.0 - 45.9		
18.5 - 18.9				1				46.0 - 46.9		
19.0 - 19.4								47.0 - 47.9		
19.5 - 19.9	1							48.0 - 48.9		
20.0 - 20.4						2		49.0 - 49.9		
20.5 - 20.9								50.0 - 50.9		
21.0 - 21.4								51.0 - 51.9		
21.5 - 21.9		1						52.0 - 52.9		
22.0 - 22.4								53.0 - 53.9		
22.5 - 22.9		1						54.0 - 54.9		
23.0 - 23.4		1						55.0 - 55.9		
23.5 - 23.9								56.0 - 56.9		
24.0 - 24.4								57.0 - 57.9		
24.5 - 24.9								58.0 - 58.9		
25.0 - 25.4								59.0 - 59.9		
25.5 - 25.9								60.0+		
26.0 - 26.4	1									
26.5 - 26.9										
TOTALS	**4**			**6**		**6**		**TOTALS**	**12**	**3**

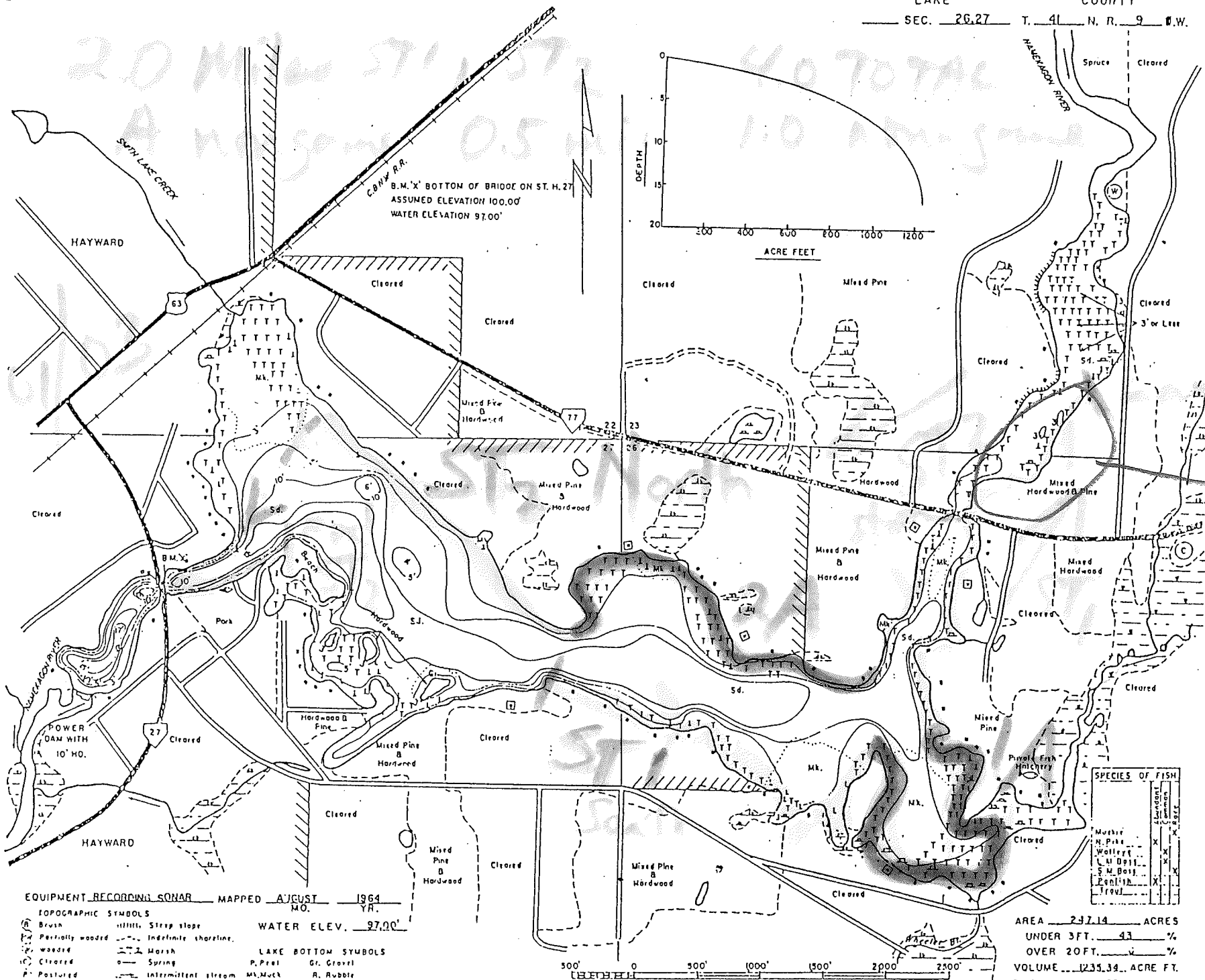
OBSERVATIONS:

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964 (MO. / YR.)

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- Brush
- Partially wooded
- Wooded
- Cleared
- Pastured
- Agricultural
- BM Bench Mark
- Drilling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- E Emergent vegetation
- Floating vegetation

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H. Schmidt, M. Perlich, L. Sather Drawn by: L. Rath

SPECIES OF FISH

	Abundant	Common	Rare
Muskie			
N. Pike			
Walleye			
L.M. Bass			
S.M. Bass			
Panfish			
Trout			

AREA 247.14 ACRES

UNDER 3FT. 43 %

OVER 20FT. — %

VOLUME 1235.39 ACRE FT.

TOTAL ALK. 69 P.P.M.

SHORELINE 8.64 MILES

MAX. DEPTH 17 FEET

WDNR Comments

A-64

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County: Sawyer	Waters: Hayward MWBC: 2725500
Sampling Objective: Baseline Monitoring	Number and Locations of Stations (Habitat)
Period Fished (Dates): 10/01/03 AM/PM	Miles Actually Shocked = 4.4 (Source: LM) Acres = 247 (LM) Total Miles of Shoreline = 8.6 (LM) Total Miles of Shockable Shoreline = 8.6 (LM)

GEAR

Boomshocker (Hours): 1.9			Time: √ Night / Day	
Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth
Other (Hours or Lifts) Boomshocker(s): 1 Dip Netter(s): 1		Mini-boomshocker(s): Dip Netter(s):	Characteristics Walleye Recruitment Code: C-NR	

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	29	7.0-7.4	6.0 - 9.4	15.26 / hour	6.59 / mile
Serns Index NA YOY / acre					
Walleye (Age 1+)	1	None	10.5 - 10.9	0.53 / hour	0.23 / mile
Walleye (Other)	6	None	13.5 - 27.4	3.16 / hour	1.36 / mile
Smallmouth Bass	0		-	0.00 / hour	0.00 / mile
Largemouth Bass	7	None	2.5 - 18.9	3.68 / hour	1.59 / mile
Muskellunge	7	None	5.0 - 9.4	3.68 / hour	1.59 / mile
Northern Pike	20	None	5.0 - 36.4	10.53 / hour	4.55 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range
Bluegill	Common	4.0-7.9	Common Shiner	Present	
Pumpkinseed	Present	2.5-7.4	Central Mudminnow	Present	
Black Crappie	Common	1.5-11.4			
Yellow Perch	Present	6.5-11.4			
White Sucker	Present	9.0-20.4			

1) Tank Mortality: None 2) Weather: NA 3) Reliabilty: Medium

4) Stocking: 2470 Walleye, 7.7 inches, 09/18/03, DNR

5) Comments:

Rev. 10-70

Signed (Compiler) Scott D. Plaster Date 11/26/03

WDNR Comments

Department of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600A-191

8-95

Lake: Hayward MWB Code: 2725500 Date: 10/01/03 County: Sawyer Collector(s): Warwick, Pratt

Target Fish: All species Survey Type: Baseline monitoring Mark Given: None Water Temperature: 50°F Station: Portion of Shoreline

Adverse Conditions: NA Gear Type: Boomshocker Distance Shocked: 4.4 miles

Volts: 150 Amps: 1.0 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: NA Shocking End Time: NA Generator Start Hour: 0.0 Generator End Hour: 1.9

Number of Dippers: [X]1 [ ]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/16 inch bar H20 Clarity: NA

inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			16.5-16.9		
3.0-3.4			17.0-17.4		
3.5-3.9			17.5-17.9		
4.0-4.4			18.0-18.4		
4.5-4.9			18.5-18.9		
5.0-5.4			19.0-19.4		
5.5-5.9			19.5-19.9	1	
6.0-6.4	2		20.0-20.4		
6.5-6.9	5		20.5-20.9		
7.0-7.4	7		21.0-21.4		
7.5-7.9	6		21.5-21.9		
8.0-8.4	5		22.0-22.4		
8.5-8.9	2		22.5-22.9		
9.0-9.4	2		23.0-23.4		
9.5-9.9			23.5-23.9		
10.0-10.4			24.0-24.4		
10.5-10.9	1		24.5-24.9		
11.0-11.4			25.0-25.4		
11.5-11.9			25.5-25.9		
12.0-12.4			26.0-26.4		
12.5-12.9			26.5-26.9		
13.0-13.4			27.0-27.4	1	
13.5-13.9	2		27.5-27.9		
14.0-14.4			28.0-28.4		
14.5-14.9			28.5-28.9		
15.0-15.4			29.0-29.4		
15.5-15.9	1		29.5-29.9		
16.0-16.4	1		30.0 +		
Totals:	36				

WALLEYE

WDNR Comments

artment of Natural Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600F-186 8-95

Lake: Hayward MWB Code: 2725500 Date: 10/01/03 County: Sawyer Collector(s): Warwick, Pratt

Target Fish: All species Survey Type: Baseline monitoring Mark Given: None Water Temperature: 50°F Station: Portion of Shoreline

Adverse Conditions: NA Gear Type: Boomshocker Distance Shocked: 4.4 miles

Volts: 150 Amps: 1.0 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: NA Shocking End Time: NA Generator Start Hour: 0.0 Generator End Hour: 1.9

Number of Dippers: [X]1 [ ]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/16 inch bar H20 Clarity: NA

	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4				
2.0-2.4									25.5-25.9				
2.5-2.9					2				26.0-26.4				
3.0-3.4					1				26.5-26.9				
3.5-3.9									27.0-27.4				
4.0-4.4									27.5-27.9				
4.5-4.9									28.0-28.4				
5.0-5.4	1		1						28.5-28.9				
5.5-5.9			1						29.0-29.4				
6.0-6.4	1		1						29.5-29.9				
6.5-6.9	2		2						30.0-30.4				
7.0-7.4			1						30.5-30.9				
7.5-7.9	1								31.0-31.4				
8.0-8.4									31.5-31.9				
8.5-8.9									32.0-32.4				
9.0-9.4	2		1						32.5-32.9				
9.5-9.9									33.0-33.4				
10.0-10.4									33.5-33.9				
10.5-10.9	1								34.0-34.4				
11.0-11.4	1								34.5-34.9				
11.5-11.9	1								35.0-35.4				
12.0-12.4	1								35.5-35.9				
12.5-12.9	1								36.0-36.4	1			
13.0-13.4									36.5-36.9				
13.5-13.9					1				37.0-37.4				
14.0-14.4									37.5-37.9				
14.5-14.9									38.0-38.4				
15.0-15.4	1								38.5-38.9				
15.5-15.9									39.0-39.4				
16.0-16.4	1								39.5-39.9				
16.5-16.9									40.0-40.4				
17.0-17.4					1				40.5-40.9				
17.5-17.9									41.0-41.4				
18.0-18.4					1				41.5-41.9				
18.5-18.9					1				42.0-42.4				
19.0-19.4									42.5-42.9				
19.5-19.9									43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9									44.0-44.4				
21.0-21.4	1								44.5-44.9				
21.5-21.9	1								45.0-45.4				
22.0-22.4									45.5-45.9				
22.5-22.9	1								46.0-46.9				
23.0-23.4	2								47.0-47.9				
23.5-23.9									48.0-48.9				
24.0-24.4									49.0-49.9				
Totals:	20	0	7	0	7	0	0	0	50.0+				

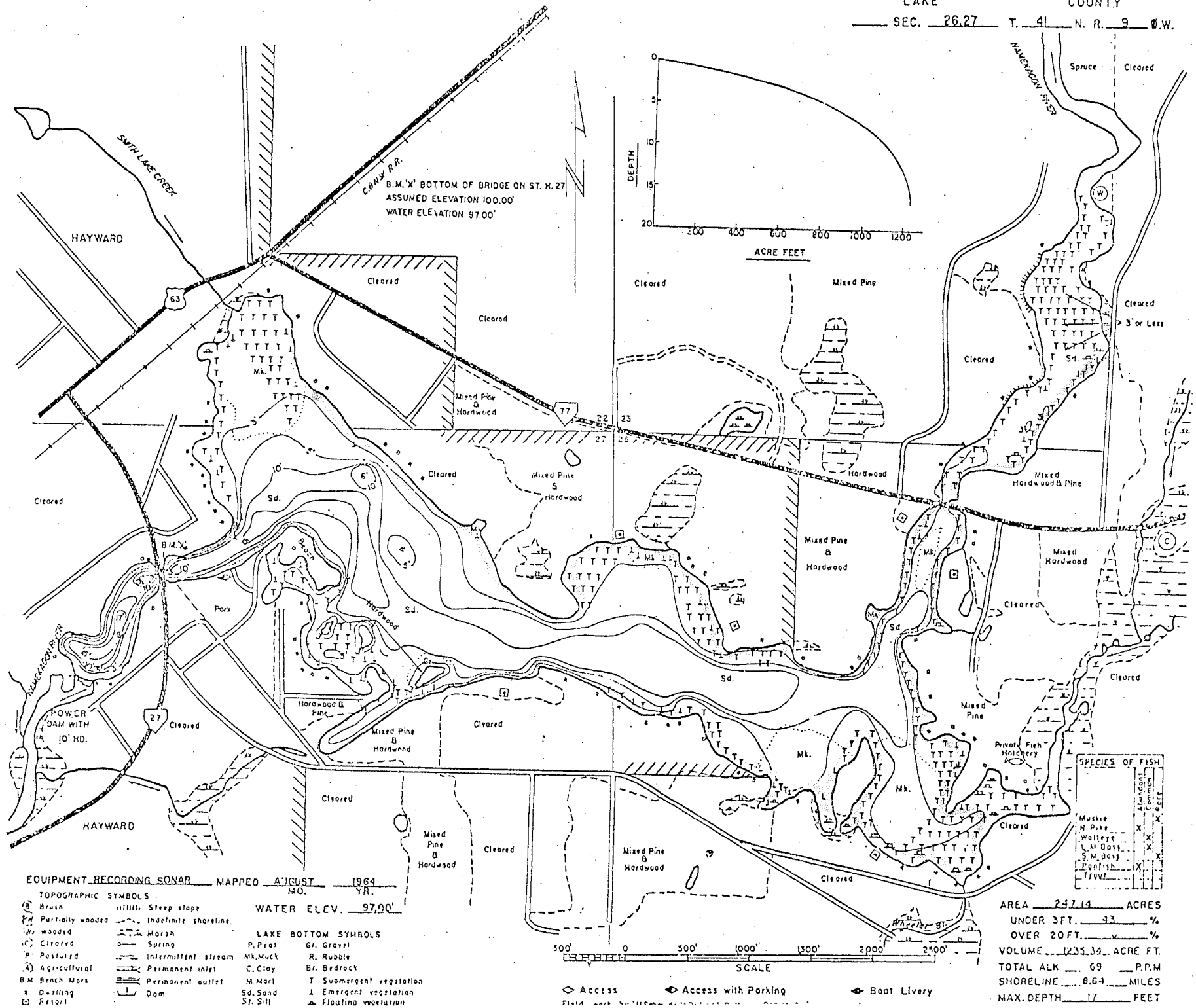
GAMEFISH

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964 (MO. YR.)

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- (B) Brush
- (PW) Partially wooded
- (W) Wooded
- (C) Cleared
- (P) Pastured
- (A) Agricultural
- BM Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- ⊥ Emergent vegetation
- Floating vegetation

AREA 247.14 ACRES
UNDER 3 FT. 33 %
OVER 20 FT. x %
VOLUME 1235.39 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

WDNR Comments

WDNR Comments

site 1255 00
survey 5-21-64
Visit 486467

SUMMARY FISHING RECORD

FORM 3600-63 REVISED 1-94

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

COUNTY	WATERS	MWB CODE
Sawyer	Lake Hayward ST1	2725500
SAMPLING OBJECTIVE	**DATES FISHED**	**WATER TEMP.**
	October 1, 2003	50

GEAR

BOOMSHOCKER	PANFISH	0.4	NO. DIPPERS	1	NIGHT	X	AC	X
HOURS	GAMEFISH	1.1	NO. MILES	2.00	VOLTS	150	AMPS	1
FYKE NET	PANFISH							
LIFTS	GAMEFISH		LEAD LEN:		FRAME:		MESH:	
GILL NET	(NO. LIFTS)		LENGTH:		DEPTH:		MESH:	
SEINE	(NO. PULLS)		LENGTH:		DEPTH:		MESH:	
ANGLING	(TOT. HRS.)		NO. ANGLERS:		TIME OF DAY:			

OTHER

FISHING RESULTS

GAMEFISH	NUMBER	MODAL SIZES (IN.)	SIZE RANGE (IN.)	CATCH/EFFORT
Walleye	32		-	**16.0**
Musky	4		-	**2.0**
Northern Pike	8		-	**4.0**
Largemouth Bass	1		-	**0.5**
Smallmouth Bass			-	
White Sucker	5		-	**10.0**
Walleye EG	28		-	14.0
			-	
ST 1A			-	

PANFISH	NUMBER	MODAL SIZES (IN.)	SIZE RANGE (IN.)	CATCH/EFFORT
BG	31		-	**62**
Pumpkinseed	3		-	**6**
Black Crappie	6		-	**12**
Yellow Perch	4		-	**8**
Common shiner	8		-	**16**
Mud minnow	2		-	**4**
Brown Bullhead				
			-	

Observations: All muskellunge were yoy hybrids. EG walleye all in river upstream of STH 77 bridge.

Compiled By:	Date
Frank Pratt	10/1/03

WDNR Comments

State of Wisconsin
Department of Natural Resources

Water Temp: 50

Gamefish Length Frequency
Form 3600-65 Rev.7-93

County	Water	Date	Gear: VV AC
Sawyer	Lk Hayward-South St1	10/01/2003	hrs: 1.3

Size Range Inches	Walleye	N Pike	Musky	LMB	W. Sucker	Size Range Inches	N Pike	Musky
<3.0						27.0 - 27.4		
3.0 - 3.4						27.5 - 27.9		
3.5 - 3.9						28.0 - 28.4		
4.0 - 4.4						28.5 - 28.9		
4.5 - 4.9						29.0 - 29.4		
5.0 - 5.4						29.5 - 29.9		
5.5 - 5.9			1hybrid			30.0 - 30.4		
6.0 - 6.4	1		1hybrid			30.5 - 30.9		
6.5 - 6.9	5	1				31.0 - 31.4		
7.0 - 7.4	7					31.5 - 31.9		
7.5 - 7.9	6	1	1 hybrid			32.0 - 32.4		
8.0 - 8.4	5					32.5 - 32.9		
8.5 - 8.9	2					33.0 - 33.4		
9.0 - 9.4	2		1hybrid			33.5 - 33.9		
9.5 - 9.9						34.0 - 34.4		
10.0 - 10.4						34.5 - 34.9		
10.5 - 10.9	1	1				35.0 - 35.4		
11.0 - 11.4		1				35.5 - 35.9		
11.5 - 11.9						36.0 - 36.4	1	
12.0 - 12.4						36.5 - 36.9		
12.5 - 12.9		1			1	37.0 - 37.4		
13.0 - 13.4						37.5 - 37.9		
13.5 - 13.9	2					38.0 - 38.4		
14.0 - 14.4					1	38.5 - 38.9		
14.5 - 14.9						39.0 - 39.4		
15.0 - 15.4						39.5 - 39.9		
15.5 - 15.9	1					40.0 - 40.9		
16.0 - 16.4						41.0 - 41.9		
16.5 - 16.9					1	42.0 - 42.9		
17.0 - 17.4						43.0 - 43.9		
17.5 - 17.9					1	44.0 - 44.9		
18.0 - 18.4				1		45.0 - 45.9		
18.5 - 18.9						46.0 - 46.9		
19.0 - 19.4						47.0 - 47.9		
19.5 - 19.9					1	48.0 - 48.9		
20.0 - 20.4						49.0 - 49.9		
20.5 - 20.9						50.0 - 50.9		
21.0 - 21.4		1				51.0 - 51.9		
21.5 - 21.9						52.0 - 52.9		
22.0 - 22.4						53.0 - 53.9		
22.5 - 22.9						54.0 - 54.9		
23.0 - 23.4		1				55.0 - 55.9		
23.5 - 23.9						56.0 - 56.9		
24.0 - 24.4						57.0 - 57.9		
24.5 - 24.9						58.0 - 58.9		
25.0 - 25.4						59.0 - 59.9		
25.5 - 25.9						60.0+		
26.0 - 26.4								
26.5 - 26.9								
TOTALS	**32**					**TOTALS**		

OBSERVATIONS:

WDNR Comments

...nsin
...artment of Natural Resources

Panfish Length Frequency

Form 3600-64 Rev. 1-00

County	Water	Date	Gear
Sawyer	LH-St1 South	10/30/2003	vv AC bs

Size Range Inches	Species					Size Range Inches	Species				
	BG	BC	YP	CS	PS		Blg	BC	YP	Pkd	
Count						**7.0**	4	1	1		
1.0 - 1.4				3		7.1					
1.5 - 2.0				3		7.2					
2.1						7.3					
2.2						7.4					
2.3						7.5	3				
2.4						7.6					
2.5				1		7.7					
2.6						7.8					
2.7						7.9					
2.8						**8.0**		1			
2.9					1	8.1					
3.0						8.2					
3.1						8.3					
3.2						8.4					
3.3						8.5					
3.4						8.6					
3.5						8.7					
3.6						8.8					
3.7						8.9					
3.8						**9.0**		1	1		
3.9						9.1					
4.0	1				1	9.2					
4.1						9.3					
4.2						9.4					
4.3						9.5		2			
4.4						9.6					
4.5						9.7					
4.6						9.8					
4.7						9.9					
4.8						**10.0**					
4.9						10.2					
5.0	3				1	10.4					
5.1						10.6					
5.2						10.8					
5.3						**11.0**			1		
5.4						11.2					
5.5	4					11.4					
5.6						11.6					
5.7						11.8					
5.8						**12.0**					
5.9						12.2					
6.0	5					12.4					
6.1						12.6					
6.2						12.8					
6.3						**13.0**					
6.4						13.2					
6.5	8		1			13.4					
6.6						13.6					
6.7						13.8					
6.8						**14.+**					
6.9						TOTAL	**31**	**6**	**4**	**3**	

Notes:

1A nongame station= 0.5 mi. Bartz' Bay

WDNR Comments

11.6 and

State of Wisconsin
Department of Natural Resources

Water Temp: 50°F

Gamefish Length Frequency

Form 3600-65 Rev.7-93

County	Water	Date	Gear: VV AC
Sawyer	Lk Hayward-South St1	10/01/2003	hrs:

Size Range Inches	Walleye	N Pike	Musky	LMB	OTHER SMB	OTHER W. Sucker	RH	WS	Size Range Inches	N Pike	Musky
<3.0					-BG-	-PS-			27.0 - 27.4		
3.0 - 3.4					1				27.5 - 27.9		
3.5 - 3.9									28.0 - 28.4		
4.0 - 4.4					2				28.5 - 28.9		
4.5 - 4.9									29.0 - 29.4		
5.0 - 5.4			1Hyb		3	1			29.5 - 29.9		
5.5 - 5.9			1Hyb						30.0 - 30.4		
6.0 - 6.4	1 1				4 1	1			30.5 - 30.9		
6.5 - 6.9	5	1							31.0 - 31.4		
7.0 - 7.4	7		1Hyb		5	1			31.5 - 31.9		
7.5 - 7.9	6	1							32.0 - 32.4		
8.0 - 8.4	5				6	3PS			32.5 - 32.9		
8.5 - 8.9	2								33.0 - 33.4		
9.0 - 9.4	2		1Hyb		7 31				33.5 - 33.9		
9.5 - 9.9									34.0 - 34.4		
10.0 - 10.4					8 BG				34.5 - 34.9		
10.5 - 10.9	1	1	1Hyb						35.0 - 35.4		
11.0 - 11.4		1	Hyb						35.5 - 35.9		
11.5 - 11.9			Hyb						36.0 - 36.4	1	
12.0 - 12.4					-YP-	-BC-			36.5 - 36.9		
12.5 - 12.9		1			1			1	37.0 - 37.4		
13.0 - 13.4									37.5 - 37.9		
13.5 - 13.9	2				2				38.0 - 38.4		
14.0 - 14.4			4Hyb						38.5 - 38.9		
14.5 - 14.9					3				39.0 - 39.4	2	
15.0 - 15.4								1	39.5 - 39.9		
15.5 - 15.9	1 1				4				40.0 - 40.9		
16.0 - 16.4									41.0 - 41.9	1M	
16.5 - 16.9					5				42.0 - 42.9		
17.0 - 17.4				1				1	43.0 - 43.9		
17.5 - 17.9					6				44.0 - 44.9		
18.0 - 18.4								1	45.0 - 45.9		
18.5 - 18.9					7 1	1			46.0 - 46.9		
19.0 - 19.4									47.0 - 47.9		
19.5 - 19.9					8	1		1	48.0 - 48.9		
20.0 - 20.4						1			49.0 - 49.9		
20.5 - 20.9					9 1	1			50.0 - 50.9		
21.0 - 21.4		1				11			51.0 - 51.9		
21.5 - 21.9					10				52.0 - 52.9		
22.0 - 22.4								5	53.0 - 53.9		
22.5 - 22.9					11 1			WS	54.0 - 54.9		
23.0 - 23.4		1							55.0 - 55.9		
23.5 - 23.9									56.0 - 56.9		
24.0 - 24.4									57.0 - 57.9		
24.5 - 24.9									58.0 - 58.9	6	
25.0 - 25.4									59.0 - 59.9	6	
25.5 - 25.9									60.0+	MP	
26.0 - 26.4											
26.5 - 26.9											
TOTALS									TOTALS		

OBSERVATIONS:

CS - 4.5 mm - 2.5 11

ST 1 include Bard 2 Bay as 0.5 mi. non-some hybrid Mu yoy 1

All CS above bridge - Plenty of food there

CS 1.5 - 2.0 111
1.0 11
<1 11

WDNR Comments

12,1

State of Wisconsin
Department of Natural Resources

Water Temp: 52

Gamefish Length Frequency

Form 3600-65 Rev.7-93

County	Water	Date	Gear: VV AC
Sawyer	Lake Hayward St2 N	10/01/2003	hrs:

Size Range Inches	Walleye	N Pike	Musky	LMB	OTHER SMB	OTHER W. Sucker	RH	WS	Size Range Inches	N Pike	Musky
<3.0				2.7 11	BG	PS			27.0 - 27.4		
3.0 - 3.4				3.3	1				27.5 - 27.9		
3.5 - 3.9									28.0 - 28.4		
4.0 - 4.4					2				28.5 - 28.9		
4.5 - 4.9						1			29.0 - 29.4		
5.0 - 5.4		1	Hyb		3				29.5 - 29.9		
5.5 - 5.9									30.0 - 30.4		
6.0 - 6.4	1	1			4				30.5 - 30.9		
6.5 - 6.9		1	Hyb 11						31.0 - 31.4		
7.0 - 7.4					5 11	1			31.5 - 31.9		
7.5 - 7.9						1			32.0 - 32.4		
8.0 - 8.4					6 1111 1111	1			32.5 - 32.9		
8.5 - 8.9									33.0 - 33.4		
9.0 - 9.4		11			7 1111	1		1	33.5 - 33.9		
9.5 - 9.9					1				34.0 - 34.4		
10.0 - 10.4					8				34.5 - 34.9		
10.5 - 10.9									35.0 - 35.4		
11.0 - 11.4					YP	BC			35.5 - 35.9		
11.5 - 11.9		1			1				36.0 - 36.4		
12.0 - 12.4		1				11			36.5 - 36.9		
12.5 - 12.9					2			1	37.0 - 37.4		
13.0 - 13.4									37.5 - 37.9		
13.5 - 13.9				1	3				38.0 - 38.4		
14.0 - 14.4									38.5 - 38.9		
14.5 - 14.9					4				39.0 - 39.4		
15.0 - 15.4		1				1			39.5 - 39.9		
15.5 - 15.9					5				40.0 - 40.9		
16.0 - 16.4	1	1							41.0 - 41.9		
16.5 - 16.9					6	1			42.0 - 42.9		
17.0 - 17.4								1	43.0 - 43.9		
17.5 - 17.9					7				44.0 - 44.9		
18.0 - 18.4				1	8 1	1			45.0 - 45.9		
18.5 - 18.9				1					46.0 - 46.9		
19.0 - 19.4									47.0 - 47.9		
19.5 - 19.9	1				9 1	1			48.0 - 48.9		
20.0 - 20.4								11	49.0 - 49.9		
20.5 - 20.9					10	11			50.0 - 50.9		
21.0 - 21.4					11 1	1			51.0 - 51.9		
21.5 - 21.9		1							52.0 - 52.9		
22.0 - 22.4									53.0 - 53.9		
22.5 - 22.9		1							54.0 - 54.9		
23.0 - 23.4		1							55.0 - 55.9		
23.5 - 23.9									56.0 - 56.9		
24.0 - 24.4									57.0 - 57.9		
24.5 - 24.9									58.0 - 58.9		
25.0 - 25.4									59.0 - 59.9		
25.5 - 25.9									60.0+		
26.0 - 26.4											
26.5 - 26.9	27.0										
TOTALS									TOTALS		

OBSERVATIONS:

ST 2 includes LP Bay as 0.5 mi.
Non-game

GS - 2.5, 2.0, 1.0 11, 1.5 11 1

MM 3.0, 3.5, 2.0, 2.5

S **WDNR Comments**

SVR 1324131
Site 814107

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET **GAMEFISH** Wisconsin Department of Natural Resources

Waterbody Name:	Hayward	Target Fish:	Juvenile Walleye	Generator Start Time:	542
MWB Code/WBIC:	2725500	Mark(s) Given:	None	Generator End Time:	543.8
Waterbody Type:	Drainage Impoundment	Survey Type:	CPE (Fall Shoreline)	Volts:	1.8
County:	Sawyer	Gear Type:	Boomshocker	Amps:	6
Date (MM/DD/YY):	06-Oct-04	Weather:	Clear, breezy, warm	Pulse Rate:	250
Station:	Entire lake and inlet	Adverse Conditions:	Weedy- walleye yoy very DEEP	Duty Cycle:	
Start Time:	1845	Water Temperature:	49 F	Current Type:	AC
End Time:	2145	Water Conductivity:	High	Distance Shocked:	6.6
Collectors:	Rw, JD, CS	Water Level:	Normal	Entire Shoreline Shocked:	Y
		Water Clarity:	L Brwn	Number of Dippers:	2
				Dipnet Mesh Size:	0.1285

	Walleye		Muskellunge		Largemouth Bass		Northern Pike			Northern Pike		Muskellunge	
inches	Above 77	Below77							inches				
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4	1			
2.0-2.4									25.5-25.9				
2.5-2.9									26.0-26.4				
3.0-3.4									26.5-26.9	2			
3.5-3.9									27.0-27.4	1			
4.0-4.4									27.5-27.9				
4.5-4.9									28.0-28.4				
5.0-5.4									28.5-28.9				
5.5-5.9							1		29.0-29.4	1			
6.0-6.4	4						3		29.5-29.9				
6.5-6.9	1				1				30.0-30.4			1	
7.0-7.4	3		1 Hybrid						30.5-30.9	1			
7.5-7.9	1				1		1		31.0-31.4				
8.0-8.4	1								31.5-31.9				
8.5-8.9	2				1		1		32.0-32.4				
9.0-9.4	1				1		3		32.5-32.9				
9.5-9.9	2				1		3		33.0-33.4			1	
10.0-10.4	1				1		2		33.5-33.9				
10.5-10.9	1						2		34.0-34.4				
11.0-11.4					1		3		34.5-34.9			1	
11.5-11.9			2				1		35.0-35.4				
12.0-12.4	2		1		2		1		35.5-35.9				
12.5-12.9	1	1	4		2		4		36.0-36.4				
13.0-13.4		1					2		36.5-36.9				
13.5-13.9					2		2		37.0-37.4				
14.0-14.4							2		37.5-37.9				
14.5-14.9					2				38.0-38.4				
15.0-15.4									38.5-38.9				
15.5-15.9	1				2				39.0-39.4				
16.0-16.4					4		2		39.5-39.9				
16.5-16.9							2		40.0-40.4				
17.0-17.4									40.5-40.9				
17.5-17.9					1				41.0-41.4				
18.0-18.4							2		41.5-41.9				
18.5-18.9							1		42.0-42.4				
19.0-19.4			1		1		1		42.5-42.9				
19.5-19.9									43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9							1		44.0-44.4				
21.0-21.4									44.5-44.9				
21.5-21.9									45.0-45.4				
22.0-22.4							1		45.5-45.9				
22.5-22.9									46.0-46.9				
23.0-23.4									47.0-47.9				
23.5-23.9									48.0-48.9				
24.0-24.4									49.0-49.9				
TOTALS	23 WE tot				23 LMB				50.0+	46NP		12 MU tot	

WDNR Comments

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET — **GAMEFISH** — Wisconsin Department of Natural Resources

Waterbody Name:	Hayward	Target Fish:	Juvenile Walleye	Generator Start Time:	543
MWB Code/WBIC:	2725500	Mark(s) Given:	None	Generator End Time:	543.8
Waterbody Type:	Drainage Impoundment	Survey Type:	CPE (Fall Shoreline)	Volts:	250
County:	Sawyer	Gear Type:	Boomshocker	Amps:	6
Date (MM/DD/YY):	06-Oct-04	Weather:	Clear, cold	Pulse Rate:	
Station:	Entire lake and inlet	Adverse Conditions:		Duty Cycle:	
Start Time:	1845	Water Temperature:	~~5 F~~ 48.8	Current Type:	AC
End Time:		Water Conductivity:		Distance Shocked:	6.6
Collectors:	Rw, JD, CS	Water Level:	Normal	Entire Shoreline Shocked:	Y
		Water Clarity:	L Brwn	Number of Dippers:	2
				Dipnet Mesh Size:	0.1285

LMB musky

inches	Walleye ~~Above 77~~	Walleye ~~Below 77~~	Muskellunge	Largemouth Bass	Smallmouth Bass	inches	Northern Pike NP	Northern Pike Y.P	Muskellunge	Muskellunge
<1.5	Below 77	Above 77				24.5-24.9				RMS 11.0
1.5-1.9						25.0-25.4				
2.0-2.4						25.5-25.9				
2.5-2.9	Lot of					26.0-26.4				LMS 40
3.0-3.4	walleye					26.5-26.9				
3.5-3.9						27.0-27.4				
4.0-4.4	But					27.5-27.9				10.9
4.5-4.9	Deep					28.0-28.4				
5.0-5.4						28.5-28.9				
5.5-5.9						29.0-29.4				10.5
6.0-6.4	IIII					29.5-29.9				
6.5-6.9	I					30.0-30.4			I	
7.0-7.4	III	to Deep	I			30.5-30.9				
7.5-7.9	I			HMY		31.0-31.4				
8.0-8.4	I		I			31.5-31.9				
8.5-8.9	II					32.0-32.4				
9.0-9.4	I		I			32.5-32.9				
9.5-9.9	II		I			33.0-33.4			I	
10.0-10.4			I			33.5-33.9				
10.5-10.9	I					34.0-34.4			I	
11.0-11.4			I	II		34.5-34.9				
11.5-11.9				I		35.0-35.4				
12.0-12.4	II		II	IIII		35.5-35.9				
12.5-12.9	I	I	II			36.0-36.4				
13.0-13.4		I				36.5-36.9				
13.5-13.9			II			37.0-37.4				
14.0-14.4						37.5-37.9				
14.5-14.9			II			38.0-38.4				
15.0-15.4						38.5-38.9				
15.5-15.9	I		II			39.0-39.4				
16.0-16.4			IIII			39.5-39.9				
16.5-16.9						40.0-40.4	Lot of			
17.0-17.4						40.5-40.9				
17.5-17.9			I			41.0-41.4	Chippie			
18.0-18.4						41.5-41.9				
18.5-18.9						42.0-42.4	Sucker			
19.0-19.4			I	I		42.5-42.9	fin			
19.5-19.9					YP	43.0-43.4				
20.0-20.4	A-B Undant				10.4	43.5-43.9	T. FIS			
20.5-20.9						44.0-44.4				
21.0-21.4	Suckers				10.2	44.5-44.9	VERY			
21.5-21.9					9.3	45.0-45.4				
22.0-22.4	Y.P YOY					45.5-45.9	A Bundant		I	
22.5-22.9						46.0-46.9				
23.0-23.4	Shiner					47.0-47.9				
23.5-23.9						48.0-48.9				
24.0-24.4	Brown					49.0-49.9				
TOTALS		5	9			50.0+				

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters	
Sawyer	Hayward	MWBC: 2725500
Sampling Objective	**Number and Locations of Stations (Habitat)**	
Walleye Recruitment Survey		Source
Period Fished (Dates)	Miles Actually Shocked = 6.6	LM
10/06/04	Acres = 247	LM
	Total Miles of Shoreline = 8.6	LM
	Total Miles of Shockable Shoreline = 8.6	LM

GEAR

Boomshocker (Hours)	Time
1.8	√ Night Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts)		Characteristics	
Boomshocker(s): 1	Mini-boomshocker(s):	Walleye Recruitment Code:	C-NR
Dip Netter(s): 2	Dip Netter(s):		

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	9	None	6.0 - 7.9	5.00 / hour	1.36 / mile
Serns Index NA YOY / acre					
Walleye (Age 1+)	*		-	/ hour	/ mile
Walleye (Other)	13	None	8.0 - 15.9	7.22 / hour	1.97 / mile
Smallmouth Bass	0		-	0.00 / hour	0.00 / mile
Largemouth Bass	22	16.0-16.4	7.0 - 19.4	12.22 / hour	3.33 / mile
Muskellunge	12	12.0-12.4	7.0 - 34.4	6.67 / hour	1.82 / mile
Northern Pike	47	None	5.5 - 30.9	26.11 / hour	7.12 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range
Bluegill	Abundant				
Black Crappie	Common				
Yellow Perch	Abundant	9.3-10.5			
White Sucker	Common	10.5-11.0			
Shorthead Redhorse	Present	11.0			

1) Tank Mortality: None

2) Weather: Clear, Breeze, Warm

3) Reliabilty: Medium

4) Stocking: 247 Muskellunge, 11 inches, 09/10/04, DNR 2460 Walleye, 6.8 inches, 09/20/04, DNR

5) Comments: *Age 1+ walleye included with Other walleye; no ageing available.

Rev. 10-70

Signed (Compiler) Jamison L. Wendel

Date 11/23/04

WDNR Comments

Department of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL)
Form 3600A-191 8-95

Lake: Hayward MWB Code: 2725500 Date: 10/06/04 County: Sawyer Collector(s): Warwick, Pratt, Drabeck

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None Water Temperature: 49°F Station: Portion of Shoreline

Adverse Conditions: Aquatic vegetation, Stained water Gear Type: Boomshocker Distance Shocked: 6.6 miles

Volts: 250 Amps: 6.0 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 18:45 Shocking End Time: NA Generator Start Hour: 542.0 Generator End Hour: 543.8

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/16 inch bar H20 Clarity: NA

inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			16.5-16.9		
3.0-3.4			17.0-17.4		
3.5-3.9			17.5-17.9		
4.0-4.4			18.0-18.4		
4.5-4.9			18.5-18.9		
5.0-5.4			19.0-19.4		
5.5-5.9			19.5-19.9		
6.0-6.4	4		20.0-20.4		
6.5-6.9	1		20.5-20.9		
7.0-7.4	3		21.0-21.4		
7.5-7.9	1		21.5-21.9		
8.0-8.4	1		22.0-22.4		
8.5-8.9	2		22.5-22.9		
9.0-9.4	1		23.0-23.4		
9.5-9.9	2		23.5-23.9		
10.0-10.4			24.0-24.4		
10.5-10.9	1		24.5-24.9		
11.0-11.4			25.0-25.4		
11.5-11.9			25.5-25.9		
12.0-12.4	2		26.0-26.4		
12.5-12.9	2		26.5-26.9		
13.0-13.4	1		27.0-27.4		
13.5-13.9			27.5-27.9		
14.0-14.4			28.0-28.4		
14.5-14.9			28.5-28.9		
15.0-15.4			29.0-29.4		
15.5-15.9	1		29.5-29.9		
16.0-16.4			30.0 +		
			Totals:	22	0

WALLEYE

WDNR Comments

Department of Natural Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)
Form 3600F-186 8-95

Lake: Hayward MWB Code: 2725500 Date: 10/06/04 County: Sawyer Collector(s): Warwick, Pratt, Drabeck

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None Water Temperature: 49°F Station: Portion of Shoreline

Adverse Conditions: Aquatic vegetation, Stained water Gear Type: Boomshocker Distance Shocked: 6.6 miles

Volts: 250 Amps: 6.0 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 18:45 Shocking End Time: NA Generator Start Hour: 542.0 Generator End Hour: 543.8

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/16 inch bar H20 Clarity: NA

	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4	1			
2.0-2.4									25.5-25.9				
2.5-2.9									26.0-26.4				
3.0-3.4									26.5-26.9	2			
3.5-3.9									27.0-27.4	1			
4.0-4.4									27.5-27.9				
4.5-4.9									28.0-28.4				
5.0-5.4									28.5-28.9	1			
5.5-5.9	1								29.0-29.4	1			
6.0-6.4	3								29.5-29.9				
6.5-6.9									30.0-30.4			1	
7.0-7.4			1		1				30.5-30.9	1			
7.5-7.9									31.0-31.4				
8.0-8.4	1				1				31.5-31.9				
8.5-8.9	1								32.0-32.4				
9.0-9.4	4				1				32.5-32.9				
9.5-9.9	3				1				33.0-33.4			1	
10.0-10.4	2				1				33.5-33.9				
10.5-10.9	2								34.0-34.4			1	
11.0-11.4	2		2		1				34.5-34.9				
11.5-11.9	1		1						35.0-35.4				
12.0-12.4	1		4		2				35.5-35.9				
12.5-12.9	1				2				36.0-36.4				
13.0-13.4	5								36.5-36.9				
13.5-13.9					2				37.0-37.4				
14.0-14.4	2								37.5-37.9				
14.5-14.9	1				2				38.0-38.4				
15.0-15.4	2								38.5-38.9				
15.5-15.9					2				39.0-39.4				
16.0-16.4	2				4				39.5-39.9				
16.5-16.9	2								40.0-40.4				
17.0-17.4									40.5-40.9				
17.5-17.9					1				41.0-41.4				
18.0-18.4	1								41.5-41.9				
18.5-18.9	1								42.0-42.4				
19.0-19.4			1		1				42.5-42.9				
19.5-19.9									43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9	1								44.0-44.4				
21.0-21.4									44.5-44.9				
21.5-21.9									45.0-45.4				
22.0-22.4	1								45.5-45.9				
22.5-22.9									46.0-46.9				
23.0-23.4									47.0-47.9				
23.5-23.9									48.0-48.9				
24.0-24.4									49.0-49.9				
Totals:	47	0	12	0	22	0	0	0	50.0+				

GAMEFISH

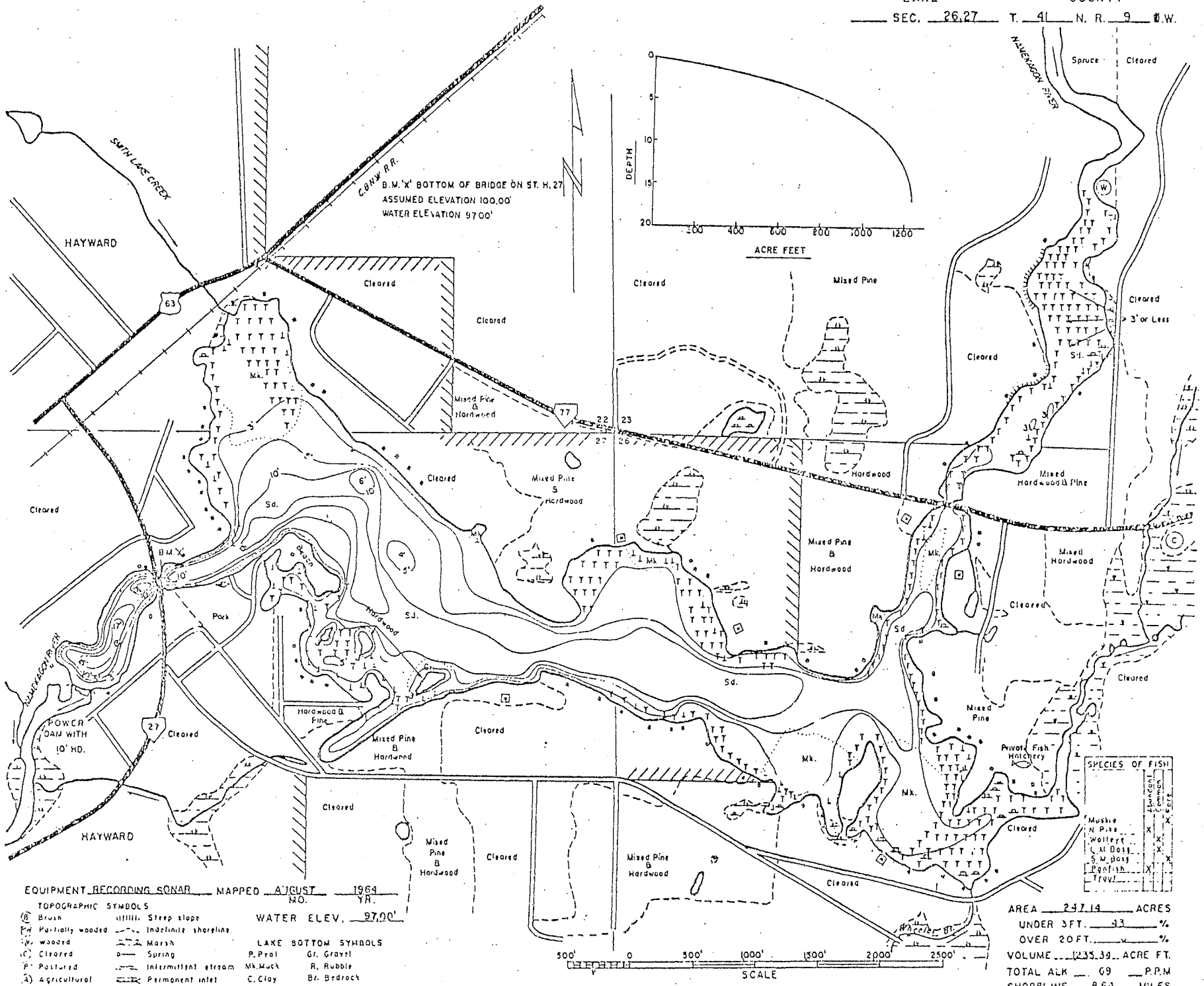
WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.

WDNR Comments



EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964 (MO. / YR.)

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- (B) Brush
- (Pw) Partially wooded
- (W) Wooded
- (C) Cleared
- (P) Pastured
- (A) Agricultural
- BM Beach Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Prot — Protected
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- ⊥ Emergent vegetation
- Floating vegetation

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H. Schmidt, W. Prichard, L. Sather Drawn by: J. Rota

AREA 237.14 ACRES

UNDER 3 FT. 33 %

OVER 20 FT. x %

VOLUME 1235.39 ACRE FT.

TOTAL ALK. 69 P.P.M.

SHORELINE 8.64 MILES

MAX. DEPTH 17 FEET

WDNR Comments

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET

GAMEFISH

Wisconsin Department of Natural Resources

Waterbody Name:	Hayward	Target Fish:	Juvenile Walleye	Generator Start Time:	542
MWB Code/WBIC:	2725500	Mark(s) Given:	None	Generator End Time:	543.8
Waterbody Type:	Drainage Impoundment	Survey Type:	CPE (Fall Shoreline)	Volts:	1.8
County:	Sawyer	Gear Type:	Boomshocker	Amps:	6
Date (MM/DD/YY):	06-Oct-04	Weather:	Clear, breezy, warm	Pulse Rate:	250
Station:	Entire lake and inlet	Adverse Conditions:	Weedy- walleye yoy very DEEP	Duty Cycle:	
Start Time:	1845	Water Temperature:	49 F	Current Type:	AC
End Time:	2145	Water Conductivity:	High	Distance Shocked:	6.6
Collectors:	Rw, JD, CS	Water Level:	Normal	Entire Shoreline Shocked:	Y
		Water Clarity:	L Brwn	Number of Dippers:	2
				Dipnet Mesh Size:	0.1285

	Walleye		Muskellunge		Largemouth Bass		Northern Pike			Northern Pike		Muskellunge	
inches	Above 77	Below77							inches				
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4	1			
2.0-2.4									25.5-25.9				
2.5-2.9									26.0-26.4				
3.0-3.4									26.5-26.9	2			
3.5-3.9									27.0-27.4	1			
4.0-4.4									27.5-27.9				
4.5-4.9									28.0-28.4				
5.0-5.4									28.5-28.9				
5.5-5.9							1		29.0-29.4	1			
6.0-6.4	4						3		29.5-29.9				
6.5-6.9	1				1				30.0-30.4			1	
7.0-7.4	3		1 Hybrid						30.5-30.9	1			
7.5-7.9	1				1		1		31.0-31.4				
8.0-8.4	1								31.5-31.9				
8.5-8.9	2				1		1		32.0-32.4				
9.0-9.4	1				1		3		32.5-32.9				
9.5-9.9	2				1		3		33.0-33.4			1	
10.0-10.4	1				1		2		33.5-33.9				
10.5-10.9	1						2		34.0-34.4				
11.0-11.4					1		3		34.5-34.9			1	
11.5-11.9			2				1		35.0-35.4				
12.0-12.4	2		1		2		1		35.5-35.9				
12.5-12.9	1	1	4		2		4		36.0-36.4				
13.0-13.4		1					2		36.5-36.9				
13.5-13.9					2		2		37.0-37.4				
14.0-14.4							2		37.5-37.9				
14.5-14.9					2				38.0-38.4				
15.0-15.4									38.5-38.9				
15.5-15.9	1				2				39.0-39.4				
16.0-16.4					4		2		39.5-39.9				
16.5-16.9							2		40.0-40.4				
17.0-17.4									40.5-40.9				
17.5-17.9					1				41.0-41.4				
18.0-18.4							2		41.5-41.9				
18.5-18.9							1		42.0-42.4				
19.0-19.4			1		1		1		42.5-42.9				
19.5-19.9									43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9							1		44.0-44.4				
21.0-21.4									44.5-44.9				
21.5-21.9									45.0-45.4				
22.0-22.4							1		45.5-45.9				
22.5-22.9									46.0-46.9				
23.0-23.4									47.0-47.9				
23.5-23.9									48.0-48.9				
24.0-24.4									49.0-49.9				
TOTALS	23 WE tot				23 LMB				50.0+	46NP		12 MU tot	

WDNR Comments

Hrs 25.7 to 26.7 2.0 hrs. entire shock

State of Wisconsin
Department of Natural Resources

H_2O -51 °F

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

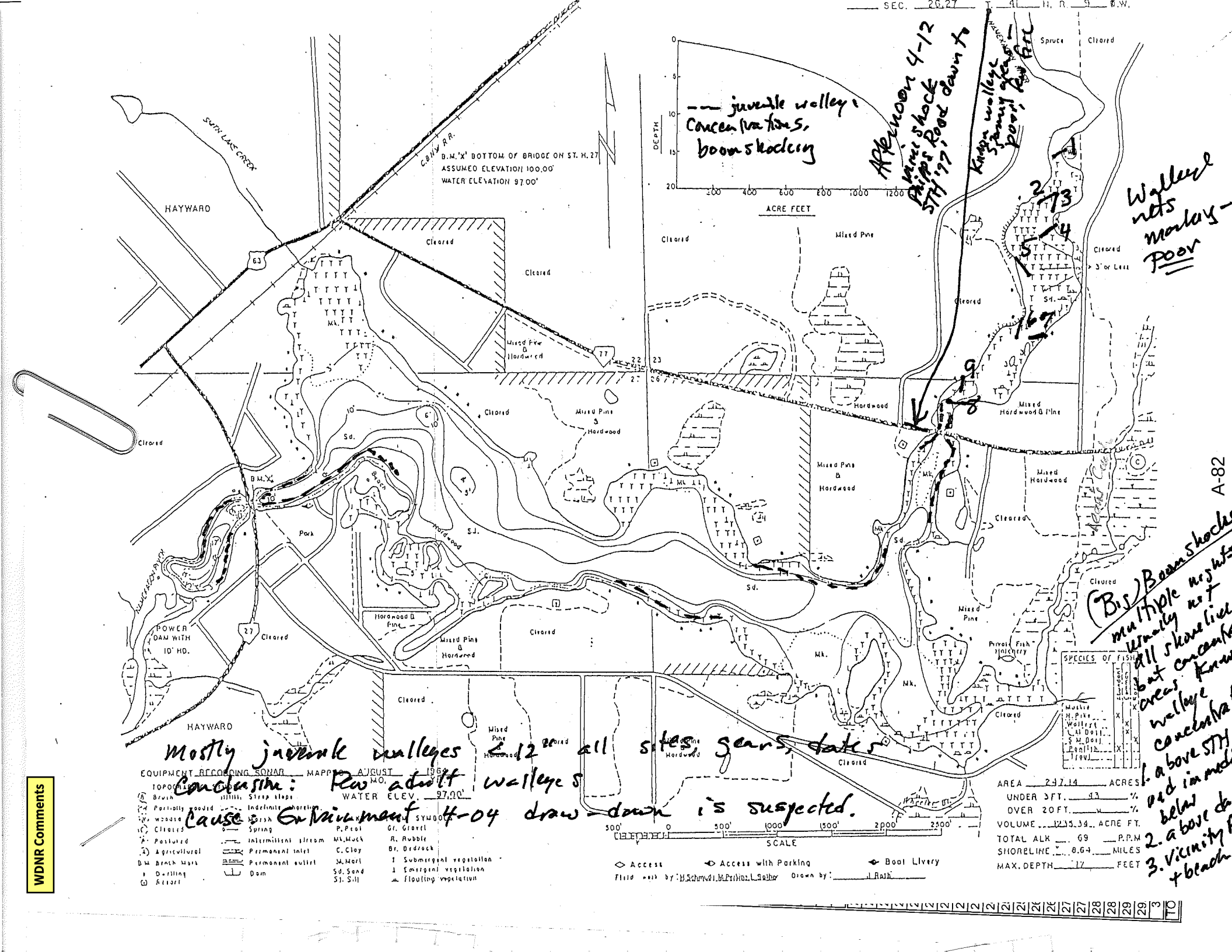
pick-up only targeted sampled

INCHES

2725500

COUNTY	WATER	DATE	GEAR
Sawyer COUNTY CODE 58	Lake Hayward WATER CODE	5-25-04	ES 200 V 2-4 / Amps

SIZE RANGE — INCHES	SPECIES				SIZE RANGE — INCHES	SPECIES		
	WE	LMB	NP	MU		NP	MU	
<3.0					27.0-27.4	1		
3.0- 3.4					27.5-27.9			
3.5- 3.9					28.0-28.4			
4.0- 4.4					28.5-28.9	1		
4.5- 4.9					29.0-29.4			
5.0- 5.4					29.5-29.9			BL - C
5.5- 5.9					30.0-30.4			RS - A
6.0- 6.4	1				30.5-30.9			YP - C
6.5- 6.9	5				31.0-31.4			RB - P
7.0- 7.4	8				31.5-31.9			WS - C
7.5- 7.9	7				32.0-32.4			RH - P
8.0- 8.4	7				32.5-32.9			
8.5- 8.9	2	2			33.0-33.4			
9.0- 9.4	1	2	1		33.5-33.9			
9.5- 9.9					34.0-34.4			
10.0-10.4	3				34.5-34.9			
10.5-10.9	1		1		35.0-35.4			
11.0-11.4	3				35.5-35.9			
11.5-11.9	1	1			36.0-36.4			SMB 4.0
12.0-12.4		4			36.5-36.9			
12.5-12.9	1	2			37.0-37.4			
13.0-13.4		1	1		37.5-37.9			
13.5-13.9		3			38.0-38.4			
14.0-14.4		3			38.5-38.9			
14.5-14.9		3			39.0-39.4			
15.0-15.4	1				39.5-39.9			
15.5-15.9		1			40.0-40.9			YP 11.6
16.0-16.4	1	1			41.0-41.9		1	9.0
16.5-16.9		1			42.0-42.9			10.0
17.0-17.4					43.0-43.9			9.9
17.5-17.9			1		44.0-44.9			8.0
18.0-18.4					45.0-45.9			RB 7.2
18.5-18.9					46.0-46.9			
19.0-19.4					47.0-47.9			
19.5-19.9					48.0-48.9			
20.0-20.4					49.0-49.9			BC 10.6
20.5-20.9					50.0-50.9			
21.0-21.4					51.0-51.9			
21.5-21.9			1		52.0-52.9			
22.0-22.4					53.0-53.9			
22.5-22.9					54.0-54.9			
23.0-23.4					55.0-55.9			
23.5-23.9					56.0-56.9			
24.0-24.4					57.0-57.9			
24.5-24.9			1		58.0-58.9			
25.0-25.4					59.0-59.9			
25.5-25.9					60.0+			
26.0-26.4								
26.5-26.9								
TOTAL	42 WE	28 LMB			TOTAL	14 NP	1 MU	



juvenile walleye concentrations, boom shocking

Afternoon 4-12 mini shock Phipps Road down to STH '27, Road down to Kaiser walleye spawning area, Rest Area

Walleye nets marking poor

(B.S.) Boomshocking multiple nights usually not all shorelines but concentrated areas. Known walleye concentrations above STH 27 and in most below 2. above dam 3. Vicinity of + beach

A-82

Mostly juvenile walleyes 4-12 all sites, years, dates

Conclusion: Few adult walleyes

Cause: Environment 4-04 drawdown is suspected.

WDNR Comments

WDNR Comments

WALLEYE

Wisconsin Department of Natural Resources

Body Name: Namekagon R @ Lk Hayward
MWB Code/WBIC:
Waterbody Type: River-nonwadeable
County: Sawyer
Date (MM/DD/YY): ####### ####### 7/11/11
Station: nonwadeable mini Phipps Rd
Start Time:
End Time:
Total Time Shocking : 1.4 hrs.
Collectors: Pratt and Warwick

Target Fish: Walleye
Mark(s) Given: LP
Survey Type: Population Estimate
Gear Type: ~~Boomshocker~~ Mini-boom
Weather: Clear, warm
Adverse Conditions: None
Water Temperature: 49 F
Water Conductivity: Moderate
Water Level: early sprin Normal [LOW]
Water Clarity: L Br

Pulser Box Meter Start Time:
Pulser Box Meter End Time:
Total Elapsed Time:
Volts/Amps: 230/2.4
Pulse Rate:
Duty Cycle:
Current Type: AC
Distance Shocked: 2.7 miles
Entire Shoreline Shocked: No
Number of Dippers: One
Dipnet Mesh Size: 3/8"

MALE			FEMALE			UNKNOWN			
inches	Unclipped	Clipped	inches	Unclipped	Clipped	inches	Unclipped	NO CLIP	Clipped Prim	Clipped Sec
<4.0			<4.0			<4.0				
4.0-4.4			4.0-4.4			4.0-4.4				
4.5-4.9			4.5-4.9			4.5-4.9				
5.0-5.4			5.0-5.4			5.0-5.4				
5.5-5.9			5.5-5.9			5.5-5.9				
6.0-6.4			6.0-6.4			6.0-6.4				
6.5-6.9			6.5-6.9			6.5-6.9				
7.0-7.4			7.0-7.4			7.0-7.4				
7.5-7.9			7.5-7.9			7.5-7.9				
8.0-8.4			8.0-8.4			8.0-8.4				
8.5-8.9			8.5-8.9			8.5-8.9				
9.0-9.4			9.0-9.4			9.0-9.4				
9.5-9.9			9.5-9.9			9.5-9.9				
10.0-10.4			10.0-10.4			10.0-10.4				
10.5-10.9			10.5-10.9			10.5-10.9				
11.0-11.4			11.0-11.4			11.0-11.4				
11.5-11.9			11.5-11.9			11.5-11.9				
12.0-12.4			12.0-12.4			12.0-12.4	1			
12.5-12.9			12.5-12.9			12.5-12.9	1			
13.0-13.4			13.0-13.4			13.0-13.4				
13.5-13.9			13.5-13.9			13.5-13.9				
14.0-14.4	1		14.0-14.4			14.0-14.4				
14.5-14.9	2		14.5-14.9			14.5-14.9				
15.0-15.4	1		15.0-15.4			15.0-15.4				
15.5-15.9	1		15.5-15.9			15.5-15.9				
16.0-16.4	1		16.0-16.4	1		16.0-16.4				
16.5-16.9	1		16.5-16.9			16.5-16.9				
17.0-17.4	2		17.0-17.4			17.0-17.4				
17.5-17.9	1		17.5-17.9			17.5-17.9				
18.0-18.4			18.0-18.4			18.0-18.4				
18.5-18.9	1		18.5-18.9	1		18.5-18.9				
19.0-19.4			19.0-19.4			19.0-19.4				
19.5-19.9			19.5-19.9			19.5-19.9				
20.0-20.4			20.0-20.4			20.0-20.4				
20.5-20.9			20.5-20.9	1		20.5-20.9				
21.0-21.4			21.0-21.4			21.0-21.4				
21.5-21.9			21.5-21.9			21.5-21.9				
22.0-22.4			22.0-22.4			22.0-22.4				
22.5-22.9			22.5-22.9	1		22.5-22.9				
23.0-23.4			23.0-23.4			23.0-23.4				
23.5-23.9			23.5-23.9			23.5-23.9				
24.0-24.4			24.0-24.4			24.0-24.4				
24.5-24.9			24.5-24.9			24.5-24.9				
25.0-25.4			25.0-25.4			25.0-25.4				
25.5-25.9			25.5-25.9			25.5-25.9				
26.0-26.4			26.0-26.4			26.0-26.4				
26.5-26.9			26.5-26.9			26.5-26.9				
27.0-27.4			27.0-27.4			27.0-27.4				
27.5-27.9			27.5-27.9			27.5-27.9				
28.0-28.4			28.0-28.4			28.0-28.4				
28.5-28.9			28.5-28.9			28.5-28.9				
29.0-29.4			29.0-29.4			29.0-29.4				
29.5-29.9			29.5-29.9			29.5-29.9				
30.0 +			30.0 +			30.0 +				
TOTALS:	11 males all LP clipped		TOTALS:	4 Females all LP clipped		TOTALS:	2 Immatures LP clipped			

WALLEYE / ELECTROFISHING / RUN: Mainstem

River Name

KOA → 77

WDNR Comments

DATA COLLECTION SHEET (3600-190-G/E/A1) **GAMEFISH** Wisconsin Department of Natural Resources

Waterbody Name: Namekagon Above LH
MWB Code/WBIC:
Waterbody Type: River
County: Sawyer
Date (MM/DD/YY): 4/11/2005 Minishock
Station: Phipps road nw mini
Start Time: 2:00 PM
End Time: 4:00 PM
Total Time Shocking : 1.4 hrs
Collectors: Pratt/Warwick

Target Fish: Spawning walleye/Brwn trout
Mark(s) Given: LP walleye only
Survey Type: Population Estimate
Gear Type: Boomshocker
Weather: suny, warm
Adverse Conditions: None
Water Temperature: 49
Water Conductivity: Moderate
Water Level: Normal
Water Clarity: L Brwn

Pulser Box Meter Start Time: MINI
Pulser Box Meter End Time:
Total Elapsed Time:
Volts/Amps: 230/2.3
Pulse Rate:
Duty Cycle:
Current Type: AC
Distance Shocked: 2.7 miles
Entire Shoreline Shocked:
Number of Dippers: [1
Dipnet Mesh Size: 3/8"

	MALrown trou Brwn Trout		FEMALE		UNKNOWN Rainbow Trout			OTHER Abundance					
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclip	Clip	Unclip	Clip	Unclip	Clip
<3.0							25.5-25.9						
3.0-3.4							26.0-26.4						
3.5-3.9							26.5-26.9	WS Abundant-spawning					
4.0-4.4							27.0-27.4	NHS-Common, spawning					
4.5-4.9							27.5-27.9	RH spp.-Common, pre-spawn					
5.0-5.4							28.0-28.4	WE-Present, post-spawn					
5.5-5.9							28.5-28.9	Brook trout- Rare					
6.0-6.4							29.0-29.4	Trout perch- Common, spawning					
6.5-6.9							29.5-29.9						
7.0-7.4	1						30.0-30.4						
7.5-7.9							30.5-30.9						
8.0-8.4	4						31.0-31.4						
8.5-8.9							31.5-31.9						
9.0-9.4	1						32.0-32.4						
9.5-9.9	1						32.5-32.9						
10.0-10.4	1						33.0-33.4						
10.5-10.9	1						33.5-33.9						
11.0-11.4	2						34.0-34.4						
11.5-11.9	1						34.5-34.9						
12.0-12.4	2						35.0-35.4						
12.5-12.9	1						35.5-35.9						
13.0-13.4	1						36.0-36.4						
13.5-13.9	3						36.5-36.9						
14.0-14.4	2						37.0-37.4						
14.5-14.9	4						37.5-37.9						
15.0-15.4	3						38.0-38.4						
15.5-15.9	4				1		38.5-38.9						
16.0-16.4							39.0-39.4						
16.5-16.9							39.5-39.9						
17.0-17.4	1						40.0-40.4						
17.5-17.9	2						40.5-40.9						
18.0-18.4	1						41.0-41.4						
18.5-18.9							41.5-41.9						
19.0-19.4							42.0-42.4						
19.5-19.9	2						42.5-42.9						
20.0-20.4	1						43.0-43.4						
20.5-20.9	1						43.5-43.9						
21.0-21.4							44.0-44.4						
21.5-21.9							44.5-44.9						
22.0-22.4							45.0-45.4						
22.5-22.9							45.5-45.9						
23.0-23.4							46.0-46.9						
23.5-23.9							47.0-47.9						
24.0-24.4							48.0-48.9						
24.5-24.9							49.0-49.9						
25.0-25.4							50.0+						
TOTALS:	40 Brwn				1 Rainbow								

_____ / ELECTROFISHIN

TROUT

WDNR Comments

Hayward Survey

Status

Status 75985
Survey 81463
WBIC 4966642 → Into Lake Hayward General

Out of Greater WE RE. Survey

Netting + MW boom Shocking for Marking

Boom shocker for recap.

Talk to Joanna

WDNR Comments

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

PANFISH LENGTH FREQUENCY
FORM 3600-64 REV. 3-81

net 1 - 150 TOT. WS - 19.5
net 2 - 50 TOT
net 3 - 30 TOT / 230 TOT - SHAES PD.

(Turtles) Soft shell - III
PT IIII II PT IIII IIII + 15 IIII
SNT - 1

NP 16.8, 30.0, 8.8, 21.0, 26.5, 17.0, 13.0, 13.5, 12.0, 7.0, 23.5, 19.0, 15.1

INCHES

COUNTY ___ COUNTY CODE 58 | WATER LH WATER CODE ____ | DATE 5/18/05 | GEAR 8 Fyke (4')

SIZE RANGE INCHES	BG	BC	YP	PS
1.0-1.4				
1.5-2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2	I			
3.3				
3.4				
3.5	I			
3.6				
3.7				
3.8	I			
3.9				
4.0				
4.1				
4.2			I	
4.3				
4.4				
4.5				
4.6				
4.7	III			
4.8				I
4.9				
5.0				
5.1	II			
5.2	II			II
5.3	II			
5.4	II			II
5.5	II			I
5.6	II			I
5.7	III		I	II
5.8	III			I
5.9				
6.0	IIII			III
6.1	I			III
6.2	III			II
6.3	☒			IIII
6.4	II			III
6.5	☒ I			☒
6.6	☒		I	II
6.7	☒			II
6.8	☒ IIII	I		II
6.9	IIII			
TOTALS				

SIZE RANGE INCHES	BG	BC	YP	PS
7.0	☒ ☒ ☒ IIII			III
7.1	☒ IIII			
7.2	☒ ☒ IIII		I	
7.3	☒ ☒ IIII			II
7.4	☒ I			
7.5	☒ ☒ IIII	I	I	
7.6	IIII			
7.7	☒ I	I		
7.8	IIII			I
7.9	IIII			
8.0	☒	I	III	
8.1	II			
8.2	IIII			
8.3		I	I	BIBH 10.0
8.4	III	I	I	
8.5	II			
8.6				
8.7	I			
8.8			II	
8.9				
9.0			IIII	
9.1				
9.2			I	WE.
9.3				
9.4				24.5 Release
9.5		I	III	19.8 Release
9.6				
9.7				
9.8				
9.9			I	
10.0		II	I	
10.2			I	
10.4		I		
10.6		I		
10.8				
11.0				
11.2				
11.4				
11.6				
11.8				
12.0				
12.2				
12.4				
12.6				
12.8				
13.0				
13.2				
13.4				
13.6				
13.8				
14.0+				
TOTALS				

net 4 - 10 | net 5 - 15 | net 6 - 20 | net 7 - 15 | net 8 - 10 | 60 to NFWF HOF

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters	
Sawyer	Hayward	MWBC: 2725500

Sampling Objective	Number and Locations of Stations (Habitat)	
Basie Inventory		Source
	Miles Actually Shocked = 5.4	LM
Period Fished (Dates)	Acres = 247	LM
09/25/06	Total Miles of Shoreline = 8.6	LM
	Total Miles of Shockable Shoreline = 8.6	LM

GEAR

Boomshocker (Hours)	Time	
1.5	√ Night	Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts)		Characteristics	
Boomshocker(s): 1	Mini-boomshocker(s):	Walleye Reeruitment Code:	C-NR
Dip Netter(s): 2	Dip Netter(s):		

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	0		-	0.00 / hour	0.00 / mile
Serns Index NA YOY / acre					
Walleye (Age 1+)	0		-	0.00 / hour	0.00 / mile
Walleye (Other)	10	None	11.0 - 23.4	6.67 / hour	1.85 / mile
Smallmouth Bass	1	None	17.0 - 17.4	0.67 / hour	0.19 / mile
Largemouth Bass	31	8.5-8.9	3.0 - 19.4	20.67 / hour	5.74 / mile
Muskellunge	5	None	10.0 - 48.9	3.33 / hour	0.93 / mile
Northern Pike	24	None	6.5 - 30.4	16.00 / hour	4.44 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range
Bluegill	Common		Bullhead spp.	Present	
Pumpkinseed	Present		Redhorse spp.	Common	
Black Crappie	Present				
Yellow Pereh	Common				
Rock Bass	Present				
White Sucker	Common				
Bluntnose Minnow	Present				
Blaeknose Shiner	Present				

1) Tank Mortality: None 2) Weather: NA 3) Reliabilty: Medium

4) Stoeking: 2469 Walleye, 6.8 inehes, 09/15/06, DNR 136 Muskellunge, 12.4 inehes, 09/21/06, DNR

5) Comments:

Rev. 10-70

Signed (Compiler)	Jamison L. Wendel	Date	12/12/06

WDNR Comments

Department of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SH
Form 3600A-191

Lake: Hayward MWB Code: 2725500 Date: 09/25/06 County: Sawyer Collector(s): Warwick, Pratt

Target Fish: All Species Survey Type: Basic Inventory Mark Given: None Water Temperature: 59°F Station: Portion of Shoreline

Adverse Conditions: NA Gear Type: Boomshocker Distance Shocked: 5.4 miles

Volts: NA Amps: NA Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: NA Shocking End Time: NA Generator Start Hour: 584.1 Generator End Hour: 585.6

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			16.5-16.9		
3.0-3.4			17.0-17.4	1	
3.5-3.9			17.5-17.9		
4.0-4.4			18.0-18.4		
4.5-4.9			18.5-18.9		
5.0-5.4			19.0-19.4	1	
5.5-5.9			19.5-19.9		
6.0-6.4			20.0-20.4		
6.5-6.9			20.5-20.9		
7.0-7.4			21.0-21.4		
7.5-7.9			21.5-21.9	1	
8.0-8.4			22.0-22.4	1	
8.5-8.9			22.5-22.9		
9.0-9.4			23.0-23.4	1	
9.5-9.9			23.5-23.9		
10.0-10.4			24.0-24.4		
10.5-10.9			24.5-24.9		
11.0-11.4	1		25.0-25.4		
11.5-11.9	2		25.5-25.9		
12.0-12.4			26.0-26.4		
12.5-12.9			26.5-26.9		
13.0-13.4	1		27.0-27.4		
13.5-13.9			27.5-27.9		
14.0-14.4			28.0-28.4		
14.5-14.9			28.5-28.9		
15.0-15.4	1		29.0-29.4		
15.5-15.9			29.5-29.9		
16.0-16.4			30.0 +		
			Totals:	10	0

WALLEYE

WDNR Comments

of Natural Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)
Form 3600F-186
8-95

ayward MWB Code: 2725500 Date: 09/25/06 County: Sawyer Collector(s): Warwick, Pratt

Fish: All Species Survey Type: Basic Inventory Mark Given: None Water Temperature: 59°F Station: Portion of Shoreline

/erse Conditions: NA Gear Type: Boomshocker Distance Shocked: 5.4 miles

/olts: NA Amps: NA Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: NA Shocking End Time: NA Generator Start Hour: 584.1 Generator End Hour: 585.6

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4				
2.0-2.4									25.5-25.9				
2.5-2.9									26.0-26.4				
3.0-3.4					2				26.5-26.9				
3.5-3.9									27.0-27.4				
4.0-4.4									27.5-27.9				
4.5-4.9									28.0-28.4				
5.0-5.4									28.5-28.9				
5.5-5.9									29.0-29.4				
6.0-6.4					2				29.5-29.9	1			
6.5-6.9	1				1				30.0-30.4	1			
7.0-7.4	1								30.5-30.9				
7.5-7.9					1				31.0-31.4				
8.0-8.4									31.5-31.9				
8.5-8.9	3				6				32.0-32.4				
9.0-9.4					1				32.5-32.9				
9.5-9.9					1				33.0-33.4				
10.0-10.4	1		1						33.5-33.9				
10.5-10.9									34.0-34.4				
11.0-11.4	3								34.5-34.9				
11.5-11.9	2		1		1				35.0-35.4				
12.0-12.4	2				4				35.5-35.9				
12.5-12.9									36.0-36.4				
13.0-13.4	3		1		3				36.5-36.9				
13.5-13.9	2		1		1				37.0-37.4				
14.0-14.4	2								37.5-37.9				
14.5-14.9	1								38.0-38.4				
15.0-15.4									38.5-38.9				
15.5-15.9	1				3				39.0-39.4				
16.0-16.4					1				39.5-39.9				
16.5-16.9									40.0-40.4				
17.0-17.4					1		1		40.5-40.9				
17.5-17.9									41.0-41.4				
18.0-18.4					2				41.5-41.9				
18.5-18.9									42.0-42.4				
19.0-19.4					1				42.5-42.9				
19.5-19.9									43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9									44.0-44.4				
21.0-21.4									44.5-44.9				
21.5-21.9									45.0-45.4				
22.0-22.4									45.5-45.9				
22.5-22.9									46.0-46.9				
23.0-23.4									47.0-47.9				
23.5-23.9									48.0-48.9			1	
24.0-24.4									49.0-49.9				
Totals:	24	0	5	0	31	0	1	0	50.0+				

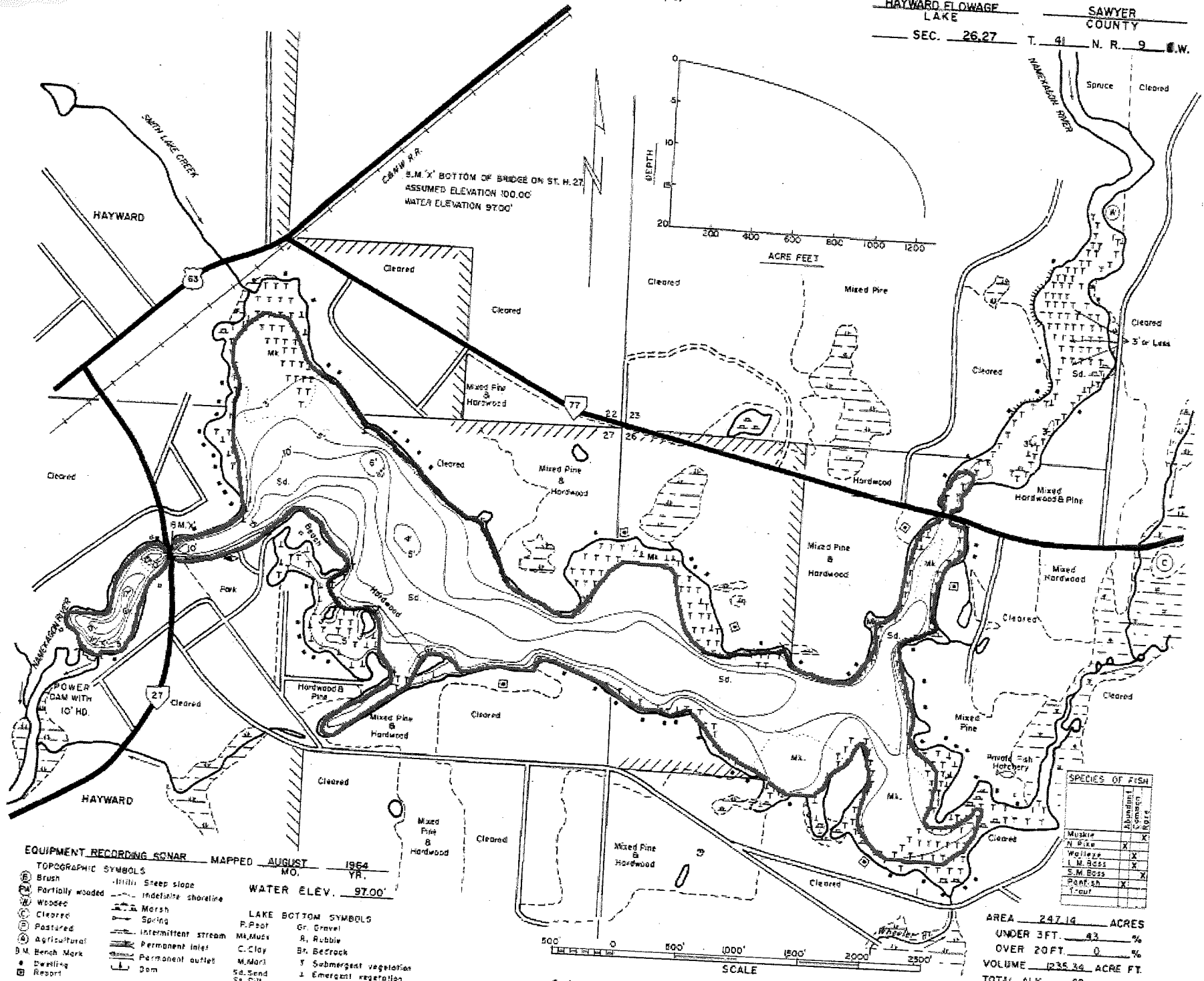
GAMEFISH

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964 (MO. / YR.)

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- (B) Brush
- (PW) Partially wooded
- (W) Wooded
- (C) Cleared
- (P) Pastured
- (A) Agricultural
- B.M. Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- Submergent vegetation
- Emergent vegetation
- Floating vegetation

SCALE: 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H.Schmude W.Perkins J.Sether Drawn by: J.Rath

SPECIES OF FISH

	Abundant	Common	Rare
Muskie			X
N. Pike	X		
Walleye		X	
L.M. Bass		X	
S.M. Bass			X
Panfish	X		
Trout			

AREA 247.16 ACRES

UNDER 3FT. 43 %

OVER 20FT. 0 %

VOLUME 1235.36 ACRE FT.

TOTAL ALK. 69 P.P.M.

SHORELINE 8.64 MILES

MAX DEPTH 17 FEET

WDNR Comments

WDNR Comments

Department of Natural Resources — Back for "A" (non-game, 0.5 mi.) substitution

Start 584.1 Stop 585.6

MONITORING STATION FISH SAMPLING SUMM.
Form 3600-57

Temp 58.7

Nongame (back)

~~STREAM~~ LAKE: Hayward

INVESTIGATOR: RW JD LN

Area Sampled:	LENGTH	~~WIDTH~~	~~AREA (ACRES)~~	STATION NO.	NO. PER ACRE	DATE
	~~[illegible]~~	TOTAL Shoreline		All		9/25/06

SIZE RANGE	Walleye	LMB	SMB	Mu	NP	Other
1						
1.0 - 1.4				36## +		
1.5 - 1.9				48.0 LV		
2.0 - 2.4	Survey ID					
2.5 - 2.9					29.5	
3.0 - 3.4	94137	||				
3.5 - 3.9					30.0	
4.0 - 4.4						
4.5 - 4.9						
5.0 - 5.4						
5.5 - 5.9						
6.0 - 6.4		||				
6.5 - 6.9		|			|	
7.0 - 7.4					|	
7.5 - 7.9		|				
8.0 - 8.4						
8.5 - 8.9		|||| |			||	
9.0 - 9.4		|				
9.5 - 9.9		|				
10.0 - 10.4				|	|	
10.5 - 10.9						
11.0 - 11.4	|				|||	
11.5 - 11.9	||				||	BG - C
12.0 - 12.4		|||			||	YP - C
12.5 - 12.9						BC - P
13.0 - 13.4	|	|||		|	|||	BNM - P
13.5 - 13.9		|		|	||	BNS - P
14.0 - 14.4					||	Bh - P
14.5 - 14.9					|	WS/RH - C
15.0 - 15.4	|					PS - P
15.5 - 15.9			|||			RB - P
16.0 - 16.4			|		|	
16.5 - 16.9						
17.0 - 17.4	|					
17.5 - 17.9			|			
18.0 - 18.4		||				
18.5 - 18.9						
19.0 - 19.4	|	|				
19.5 - 19.9						
20.0 - 20.4						
20.5 - 20.9						
21.0 - 21.4						
21.5 - 21.9	|					
22.0 - 22.4	|					
22.5 - 22.9						
23.0 - 23.4	|					
23.5 - 23.9						
24.0 - 24.4						
24.5 - 24.9						
25 + (give actual size)						
TOTAL	10 WE	26 LMB	1 SMB	5 Mu	24 NP	

Done

Proofed

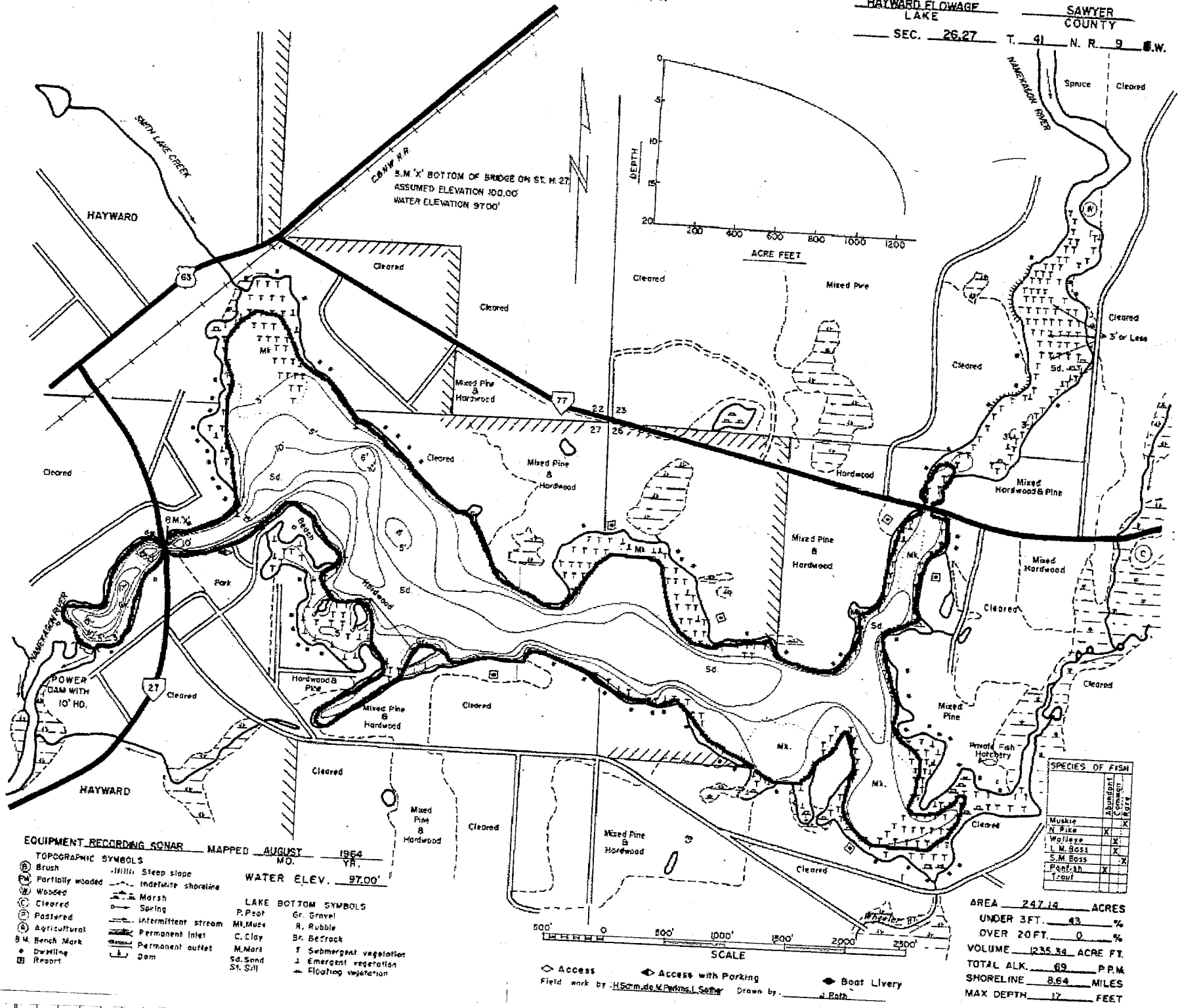
Rev. 3-75

WDNR Comments

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 E.W.



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- Permanent outlet
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- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- Submergent vegetation
- Emergent vegetation
- Floating vegetation

SCALE 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◆ Access with Parking ● Boat Livery

Field work by H.Schmude, M.Perkins, J.Sather Drawn by J. Roth

SPECIES OF FISH	Abundant	Common	Rare
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N. Pike	X		
Walleye		X	
L.M. Bass		X	
S.M. Bass			X
Panfish	X		
Trout			

AREA 247.14 ACRES

UNDER 3FT. 43 %

OVER 20FT. 0 %

VOLUME 1235.34 ACRE FT.

TOTAL ALK. 69 P.P.M.

SHORELINE 8.64 MILES

MAX DEPTH 17 FEET

1.3 hrs. / 4.0 miles ST / Swims

WDNR Comments

Wisconsin
Department of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)
Form 3600-187 Rev. 4-94

10005687

~~Tues~~ WED.

Lake Hayward MWB Code: 2725500 Date: 10 / 04 / 07 County: SAWYER Collector: RW / FBP / JD

Target Fish: All Survey Type: FERC ~~Lake Monitor~~ Mark Given: None* H_2O Temp: 58.9 Time 21 : 30

Adverse Conditions: None H_2O Conduct: High Station: 1 / 1A South

Volts: 190 Amps: 8 Current Type (AC/~~DC/Pulsed DC~~) ~~Pulse Rate:~~ ~~Duty Cycle:~~

Gear Type: VV AC BS Start Time: 20:30 End Time: Distance Shocked: 4.0 (0.5*)

# of Dippers: ~~1~~ (2) Entire Shoreline Shocked: ~~Y~~/N/I ~~Dip net mesh size:~~ 3/8" H_2O Clarity: (Clear/Turbid/Very Turbid)

Inches	W.E.	LMB	SMB	NP	Inches	NP	MU		OTHER
4.0 - 4.4		1.8			30.0 - 30.4				
4.5 - 4.9		1.9			30.5 - 30.9				17 mud minnows
5.0 - 5.4		2.5			31.0 - 31.4				2.4 - 4.2" - "A"
5.5 - 5.9		2.5			31.5 - 31.9		None		
6.0 - 6.4		II 3.9	None		32.0 - 32.4				SHRH
6.5 - 6.9		I 2.7			32.5 - 32.9				14.5
7.0 - 7.9		I			33.0 - 33.4	I			
7.5 - 7.9		I			33.5 - 33.9				Chestnut Lamprey
8.0 - 8.4		I			34.0 - 34.4				9.6"
8.5 - 8.9				I	34.5 - 34.9				
9.0 - 9.4		I			35.0 - 35.4				YBH
9.5 - 9.9		I		II	35.5 - 35.9				10.4
10.0-10.4	I	I			36.0 - 36.4				12.5
10.5-10.9	I	IIII			36.5 - 36.9				BIBH
11.0-11.4		I		I	37.0 - 37.4				11.0
11.5-11.9				II	37.5 - 37.9				
12.0-12.4		I			38.0 - 38.4				
12.5-12.9	I			I	38.5 - 39.9	17 NP	0 MU		
13.0-13.4		II		I	39.0 - 39.4				
13.5-13.9	II				39.5 - 39.9				
14.0-14.4	I				40 +				
14.5-14.9		I		I	* Nongame / PAN - 0.5 mile sub-station "A"				
15.0-15.4									
15.5-15.9						BG	BC	PS	YP
16.0-16.4		I		I	III 3 <1.0	Abundant			
16.5-16.9	III	I			1.5				
17.0-17.4	II				2.0	II 2	I		
17.5-17.9					2.5	:: 14			I
18.0-18.4		II		I	3.0	:: 4		I 1	
18.5-18.9				III	3.5	C 17			
19.0-19.4	I			I	4.0	·· 22		IIII 4	II
19.5-19.9		I			4.5	· 11		III 3	
20.0-20.4					5.0	I I		II 2	
20.5-20-9					5.5	IIII 5			
21.0-21.4					6.0	:: 15		IIII II 7	I
21.5-21.9					6.5	· 11	II	IIII 5	I
22.0-22.4					7.0	· 11			
22.5-22.9					7.5	IIII 5		I I	I
23.0-23.4				I	8.0	I I			II
23.5-23.9					8.5		III		II
24.0-24.4					9.0				I
24.5-24.9					9.5				I
25.0-25.4					10.0		I		I
25.5-25.9					10.5				I
26.0-26.4					11.0				I
26.5-26.9					11.5				
27.0-27.4					12.0				
27.5-27.9									
28.0-28.4									
28.5-28.9				NP					
29.0-29.4				16 sub					
29.5-29.9	12 W.E.	30 LMB	0 SMB	TOT			~~0 MU~~		

Proof Done

A very small <1.0" BG very abundant

Other fish: Can include rarely caught species and fish greater than 30 inches.
*Stocked GG fgl ~2500 OTC marked 93

WS - 21.0" 10.0, 13.6, 8.2
20.0" TOT. - 7 - "A"

1.0 hrs / 2.6 miles ST 2 "A" – 0.5 mi

WDNR Comments

...nt of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)
Form 3600-187 Rev. 4-94

...: Hayward MWB Code: ________ Date: 10 / 05 (WED) / 07 County: SAWYER Collector: RW / FBP / JD

...rget Fish: All Survey Type: Fall Muskie / FERC Mark Given: OTC Sp... H$_2$O Temp: 57.6 Time 22 : 00

Adverse Conditions: Cloudy, Rain H$_2$O Conduct: High Station: 2 North "A" = 0.5

Volts: 190 Amps: 8 Current Type (AC/~~DC/Pulsed DC~~) ~~Pulse Rate:~~ ~~Duty Cycle:~~

Gear Type: VV AC BS Start Time: ________ End Time: 2300 Distance Shocked: 2.6 (0.5) * A

\# of Dippers: ~~1~~ (2) Entire Shoreline Shocked: ~~(Y/N/I)~~ Dip net mesh size: 3/8" H$_2$O Clarilty: (Clear)/Turbid/Very Turbid)

Inches	W.E.	LMB	SMB	NP	Inches	NP	Mu			
4.0 - 4.4					30.0 - 30.4		41.0			
4.5 - 4.9					30.5 - 30.9					
5.0 - 5.4					31.0 - 31.4					
5.5 - 5.9					31.5 - 31.9					
6.0 - 6.4					32.0 - 32.4					
6.5 - 6.9					32.5 - 32.9					
7.0 - 7.9					33.0 - 33.4					
7.5 - 7.9					33.5 - 33.9	I				
8.0 - 8.4					34.0 - 34.4					
8.5 - 8.9					34.5 - 34.9					
9.0 - 9.4					35.0 - 35.4					
9.5 - 9.9					35.5 - 35.9					
10.0-10.4					36.0 - 36.4					
10.5-10.9					36.5 - 36.9					
11.0-11.4					37.0 - 37.4					
11.5-11.9					37.5 - 37.9		1 Mu			
12.0-12.4		I			38.0 - 38.4					
12.5-12.9		I			38.5 - 39.9					
13.0-13.4					39.0 - 39.4					
13.5-13.9					39.5 - 39.9			"A" Pan		
14.0-14.4					40 +					
14.5-14.9				I	PS	TL	BG	BC	YP	
15.0-15.4				III		1.0	*A			
15.5-15.9		I		I		1.5				
16.0-16.4	I					2.0				
16.5-16.9						2.5	II			
17.0-17.4						3.0			I	
17.5-17.9				I		3.5	~~IIII~~ I			
18.0-18.4					I	4.0	~~IIII~~ ~~IIII~~			
18.5-18.9		I				4.5	IIII			
19.0-19.4					I	5.0	IIII			
19.5-19.9					II	5.5	III		I	
20.0-20.4					II	6.0	II			
20.5-20-9					II	6.5	II	I		
21.0-21.4			O			7.0	~~IIII~~	I		
21.5-21.9						7.5	~~IIII~~		I	
22.0-22.4						8.0	I		I	
22.5-22.9	I					8.5				
23.0-23.4						9.0				
23.5-23.9						9.5				
24.0-24.4						10.0			III	
24.5-24.9						10.5		I		
25.0-25.4						11.0				
25.5-25.9						11.5				
26.0-26.4						12.0				
26.5-26.9						12.5				
27.0-27.4						13.0		*<1	BG – Cramm	
27.5-27.9										
28.0-28.4										
28.5-28.9										
29.0-29.4										
29.5-29.9										

Proofed Done

Other fish: Can include rarely caught species and fish greater than 30 inches. WS – 17.5, 18.5, 19.0 CS - 3.1
mm – 2.9 SHRH – 14.5, 10.2

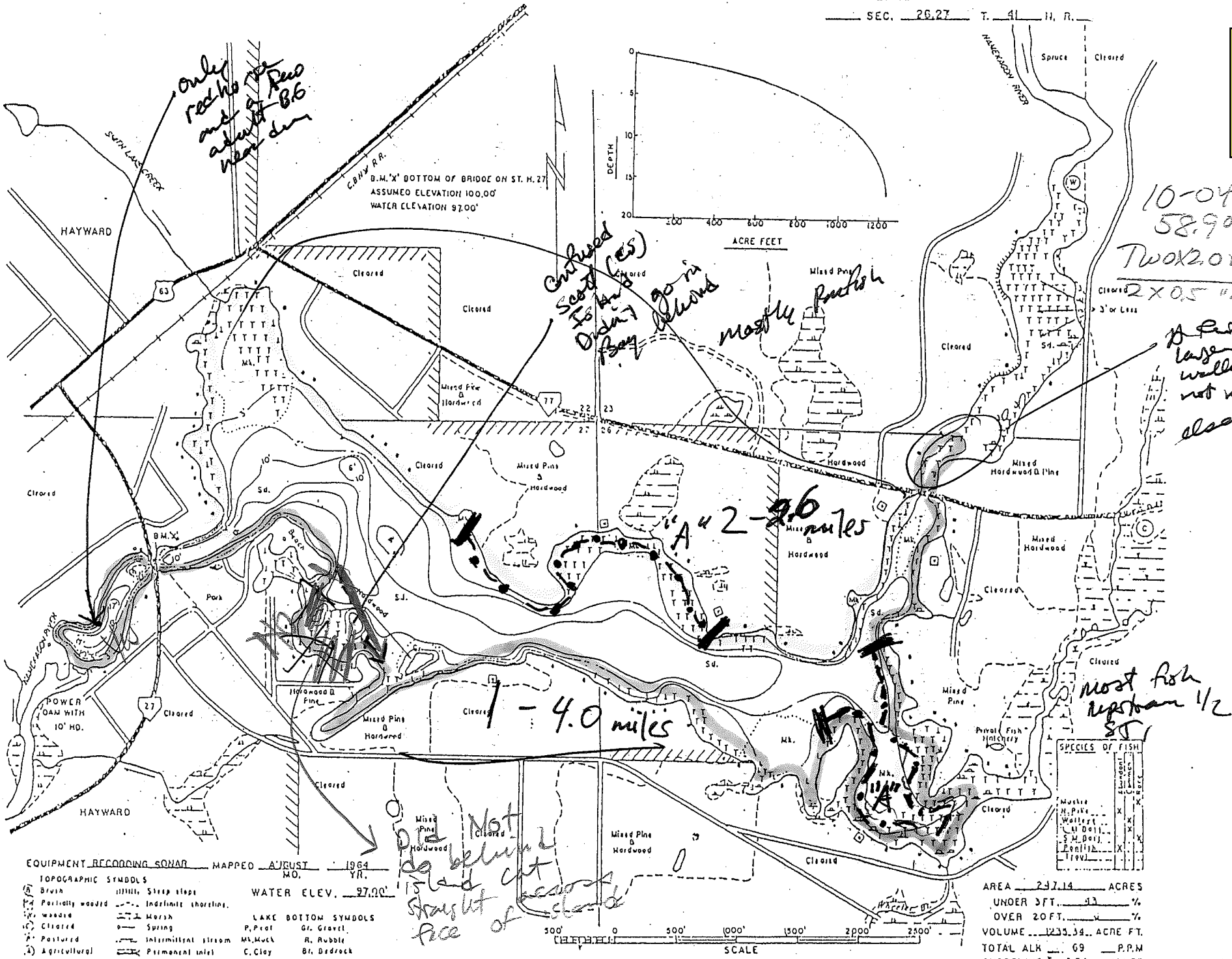
WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE

SEC. 26,27 T. 41 N. R.

WDNR Comments



10-04-07
58.9°F
Two 2.0 mi.
2 x 0.5 "A"

Added larger walleye not many else

"A" 2 - 2.6 miles

Most fish upstream 1/2 ST

EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964
MO. YR.

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS
Brush, Partially wooded, Wooded, Cleared, Pastured, Agricultural, Bench Mark, Dwelling, Resort, Steep slope, Indistinct shoreline, Marsh, Spring, Intermittent stream, Permanent inlet, Permanent outlet, Dam

LAKE BOTTOM SYMBOLS
P. Peat, Mk. Muck, C. Clay, M. Marl, Sd. Sand, Si. Silt, Gr. Gravel, R. Rubble, Br. Bedrock, Submergent vegetation, Emergent vegetation, Floating vegetation

AREA 237.14 ACRES
UNDER 3 FT. 33 %
OVER 20 FT. — %
VOLUME 1235.34 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

Field work by: H. Schmidt, M. Prince, L. Sather Drawn by: J. Rath

A-95

WISCONSIN CONSERVATION DEPARTMENT

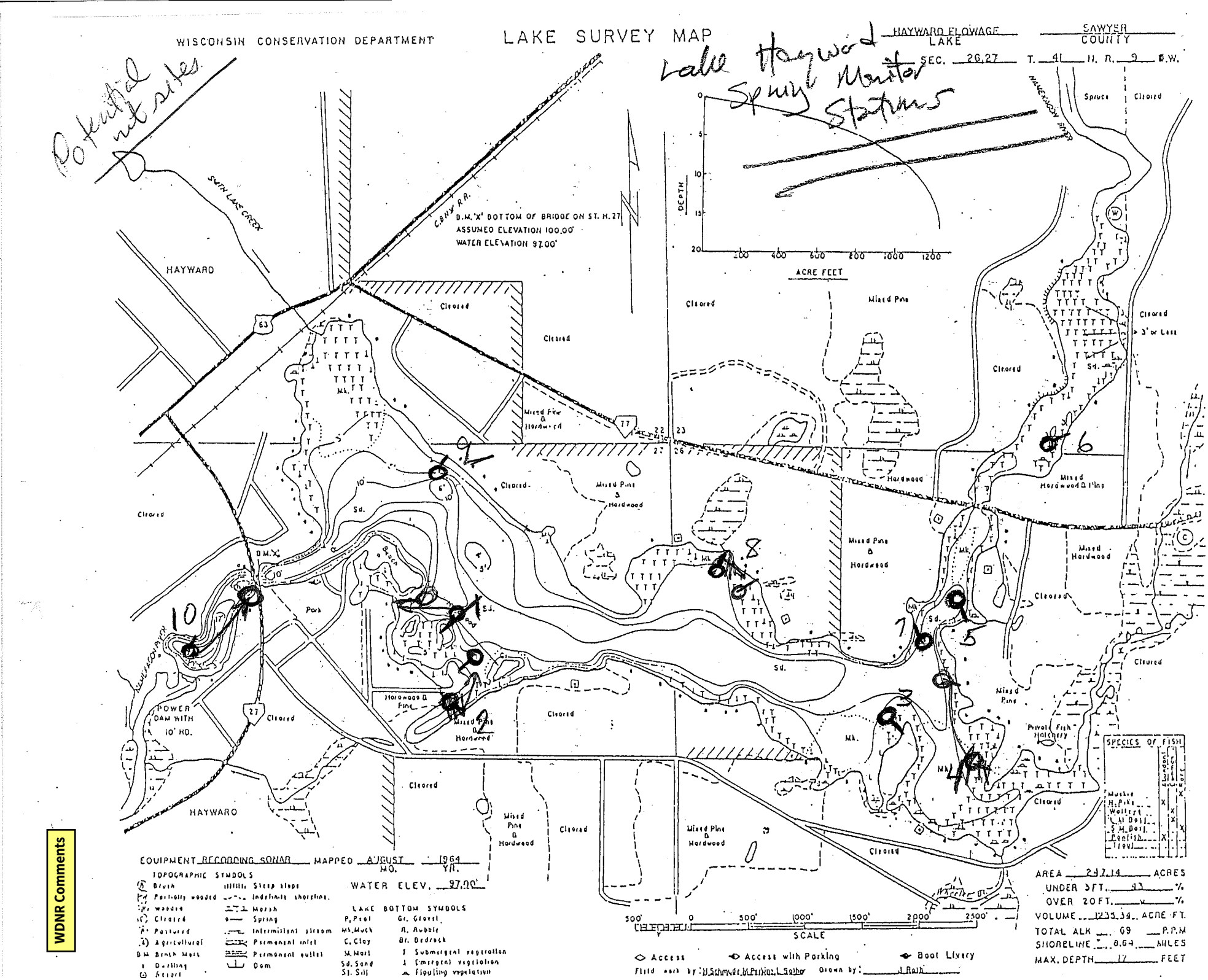
LAKE SURVEY MAP

Lake Hayward Spring Monitor Stations

Potential nit sites

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.W.



SPECIES OF FISH

	Spawning	Summer	Winter
Muskie			
N. Pike	X	X	X
Walleye			
L.M. Bass			
S.M. Bass			
Panfish	X	X	X
Trout			

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WDNR Comments

A-96

She[WDNR Comments] ... noted 1-12-09 ~~Survey~~ Station 122431 Survey 3692814 WBIC 610312

rain paper

NETTING CPE DATA COLLECTION SHEET (3600-186-CPE/N)

Wisconsin Department of Natural Resources

Waterbody Name: Lake Hayward DAY 1-PAN
MWB Code/WBIC: 2725500
Waterbody Type: Impoundment
County: Sawyer
Date (MM/DD/YY): 4/24/08
Station: 1 - 10
Start Time: 9 Am
End Time:
Collectors: JK, FBP, JD

Target Fish: BC, YP
Mark Given: None
Survey Type: Population Estimate
Gear Type: Fyke Net 3/4"
Weather: Raining
Adverse Conditions: High water
Water Temperature: 46
Water Level: (HI) [NORM] [LOW]
Water Clarity: LBr

Number of Nets: 10
Number of Nights: 1
Net Frame Height: 4
Net Frame Width: 5
Lead Length: 75'
Largest Bar Mesh Size: 3/4"
Smallest Bar Mesh Size:
Mesh Color: Green
Mesh Material: Nylon

SPECIES	Net # 6	Net # 5	Net # 7	Net # 4	Net # 3	Net # 8	Net # 2	Net # 1	Net # 9	Net # 10	Net #	Net #	TOTALS
BLG	23	38,9	22	26,13	21	23	23	12,11	22	1			~~248~~ BG
Rockbass	1	1	3	1	1	1	0	1	0	||||			13 RB
LMB	0	3	4	0	4	2	0	1	0	1			15 LMB
BLKBull	0	2	0	||	0	1	1	|||	0	0			9 BlBh
SHRH	1	0	0	0	0	0	0	0	0	0			1 SHRH
BCP	2	39	7	30	23								BC 116 TOT
~~BLG~~				~~52 / 12~~									
NPK		16	~~卌 卌~~ 1	23	6								103 NP
WAL		2						1	1	||||			9 WE
~~LMB~~						||							15 LMB
YLP		2		12	||								98 TOT YP
MSK			2	2	3								
PKS			2	卌 || 7	3	8	7	4					31 PS
CNL				1			1						2 CL
WHS					1					|||			4 WS
NHS					2			1					3 NHS
YELbull								1	1				2 YBH
~~G. ...~~													

O. virilis common, mudpuppy in #1

WDNR Comments

ment of Natural Resources

NETTING DATA COLLECTION SHEET (3.0 in. - 12.9 in.)
Form 3600-191 Rev. 5-95

Lake: Hayward MWB Code: 2725500 Date: 4 / 24 / 08 County: Sawyer Collector: JIC, FBP, JP

Target Fish: WE, E, YP, BC Survey Type: BLM Mark Given: None H_2O Temp: 46 Time: ___ : ___

Adverse Conditions: Rainy, high water Station: ______

Latitude: ______ Longitude: ______

Net Type: Fyke 3/4" Length/Frame: 4X5 Bar Mesh: 3/4"

Color: Green Mesh Type: Nylon Net Nights: 10

Inches	BCP	YLP	WHS	NHS
<3.0				
3.0			15.8	9.8
3.1			19.0	8.6
3.2			19.5	45
3.3			14.0	3NHS
3.4			17.0	
3.5				
3.6			5WS tot	
3.7				
3.8				
3.9				
4.0				
4.1				
4.2				
4.3				
4.4				
4.5				
4.6				
4.7				
4.8				
4.9				
5.0				
5.1		1		
5.2		1		
5.3		1		
5.4				
5.5		1		
5.6	1			
5.7	1	4		
5.8	2			
5.9	1			
6.0		2		
6.1	1	3		
6.2	2	4		
6.3				
6.4	2	1		
6.5	2	6		
6.6	1			
6.7	1	6		
6.8	2	4		
6.9	2	1		
7.0	2	4		
7.1	3	3		
7.2	5	5		
7.3				
7.4	2	3		
7.5	2	1		
7.6	3	2		
7.7	3	2		
7.8	2	3		
7.9	1	3		

Inches	BCP	YLP		
8.0	6	5		NET 1 Species / Count
8.1	3	2		
8.2	8	4		
8.3	5	2		Species / Count
8.4	7	2		
8.5	4			
8.6	6	3		Species / Count
8.7	4	1		
8.8	5	2		
8.9	[illegible]			NET 2 Species / Count
9.0		3		
9.1	3	1		
9.2	3	2		
9.3	3	1		Species / Count
9.4	3	2		
9.5				
9.6	3			Species / Count
9.7	[illegible]	2		
9.8	1			
9.9	3			Net 3 Species / Count
10.0		1		
10.1		1		
10.2	1	1		
10.3				Species / Count
10.4	1	1		
10.5	1			
10.6				Species / Count
10.7				
10.8				
10.9				Net 4 Species / Count
11.0				
11.1				
11.2	1			
11.3				Species / Count
11.4				
11.5				
11.6	1	1		Species / Count
11.7				
11.8				
11.9	1			Net 5 Species / Count
12.0		1		
12.1				
12.2				
12.3				Species / Count
12.4				
12.5				
12.6				Species / Count
12.7				
12.8				
12.9				

~~110 tot BC~~

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

26 30 33 35 [?] 26 32 [?]

248 BG counted/not measured

WDNR Comments

ənt of Natural Resources

NETTING DATA COLLECTION SHEET (4.0 in. - 40+ in.)

Form 3600-188 Rev. 4-94

Lake Hayward MWB Code: _____ Date: 4/24/08 County: _____ Collector: JK, FBT, JD

Target Fish: YP, E, WE, BS Survey Type: BHM Mark Given: None H_2O Temp: 46 Time 9:00 AM

Adverse Conditions: Rain, high water/flow Station: Ten (See Map

Net Type: Fyke 3/4" Length/Frame: _____ Bar Mesh: _____

Color: Green Mesh Type: Nylon Net Nights: 10 x 1

Inches	NPK	LMB	WAL	SMRH	Inches	MSK	NPK	NET 1		
13.0-13.4					30.0 - 30.4			Species		
4.5 - 4.9					30.5 - 30.9		F	Count		
5.0 - 5.4					31.0 - 31.4					
5.5 - 5.9					31.5 - 31.9		F	Species		
6.0 - 6.4					32.0 - 32.4			Count		
6.5 - 6.9					32.5 - 32.9					
7.0 - 7.9					33.0 - 33.4			Species		
7.5 - 7.9					33.5 - 33.9			Count		
8.0 - 8.4					34.0 - 34.4	F	F			
8.5 - 8.9					34.5 - 34.9			NET 2		
9.0 - 9.4					35.0 - 35.4			Species		
9.5 - 9.9					35.5 - 35.9			Count		
10.0-10.4					36.0 - 36.4		F			
10.5-10.9					36.5 - 36.9			Species		
11.0-11.4	1 1		III	1	37.0 - 37.4	M		Count		
11.5-11.9					37.5 - 37.9	F				
12.0-12.4	1 1				38.0 - 38.4			Species		
12.5-12.9	FIMII 6				38.5 - 39.9	M		Count		
13.0-13.4	IIMMIMM 7				39.0 - 39.4					
13.5-13.95	MMMMM 4				39.5 - 39.9			NET 3		
14.0-14.46	MFFMM				40 +			Species		
14.5-14.94	MMFM		1		46.2	F		Count		
15.0-15.47	IIMFMM									
15.5-15.95	IMMMF		1		28.0	M		Species		
16.0-16.45	MFMFM		1					Count		
16.5-16.96	MFMMMF		1		48.4F					
17.0-17.45	FMMMM				46.5 F			Species		
17.5-17.93	IMM				42.5 U			Count		
18.0-18.45	FIFMM									
18.5-18.96	FIMMMM				9 TOT MU			NET 4		
19.0-19.44	MIIM							Species		
19.5-19.92	FF	15 TOT LMB					103 TOT NP	Count		
20.0-20.41	I									
20.5-20-91	F							Species		
21.0-21.41	F							Count		
21.5-21.91	M									
22.0-22.41	F							Species		
22.5-22.92	FM							Count		
23.0-23.43	FFF									
23.5-23.91	F		II					NET 5		
24.0-24.43	FFM							Species		
24.5-24.91	F							Count		
25.0-25.41	F									
25.5-25.9								Species		
26.0-26.4								Count		
26.5-26.9										
27.0-27.42	FF		9 TOTAL WE					Species		
27.5-27.91	F							Count		
28.0-28.42	FF									
28.5-28.9										
29.0-29.4										
29.5-29.91	F									

Other fish: Can include rarely caught species and fish greater than 30 inches.

38.6 - 16:13 - M, 37.2 - 13:14 - M, ← MU weights lbs:oz fish are included above

Shee **WDNR Comments** provided SHK 1-12-09 Station 1122431

NETTING CPE DATA COLLECTION SHEET (3600-186-CPE/N) Survey 3092814 Visit 610313 Wisconsin Department of Natural Resources

Waterbody Name: Lake Hayward
MWB Code/WBIC:
Waterbody Type:
County:
Date (MM/DD/YY): 9/25/08
Station:
Start Time:
End Time:
Collectors:

Target Fish:
Mark Given:
Survey Type: Population Estimate
Gear Type: Fyke Net
Weather:
Adverse Conditions:
Water Temperature:
Water Level: [HI] [NORM] [LOW]
Water Clarity:

Number of Nets:
Number of Nights:
Net Frame Height:
Net Frame Width:
Lead Length:
Largest Bar Mesh Size:
Smallest Bar Mesh Size:
Mesh Color:
Mesh Material:

SPECIES	Net # 6	Net # 5	Net # 7	Net # 4	Net # 3	Net # 8	Net # 2	Net # 1	Net # 9	Net # 10	Net #	Net #	TOTALS
BLG	(4)	17,1,7 6,7,3 (41)	10,4 (14)	5,5,2 5,9,3,12 (41)	13,2,3 2 (20)	8,4,5 2,6 (25)	2	4,10,1 1 (16)	9,9,4 13,5,12 1,1 (54)	1			185 TOT BG
BC													69 BC
YP													111 YP
Mu													5 Mu
BIK bullhead	1		1					1,1,1 (3)					5 BLK H
SHRH	1			1				1					3 SHRH
Bwbst	1												1 Bulhd
Rockbass		3,2,1 (6)	2,1 (3)	1,2,3 (6)	1,1 (2)	1				8,3,1			30 RB
WAL		1							1				6 WE
LMB		1	1			1,1,1 (3)							5 LMB
PKS		1		12,1,1,7,3 (14)	1,3 (4)	2,3 (5)	3,1,1 (5)	2,1,1 (4)	1	2,			36 PS
Yellow bullhead				1				1	1				3 YBH
WHS	1									11			3 WS

Lots of Big NP

WDNR Comments

Natural Resources

NETTING DATA COLLECTION SHEET (4.0 in. - 40+ in.)

Form 3600-188 Rev. 4-94

e Hayward MWB Code: _____ Date: 4/25/08 County: 58 Collector: RW/JD/JK

arget Fish: WE, NP, YP, BG Survey Type: RLM Mark Given: None H_2O Temp: 50°F Time 8:00

Adverse Conditions: Rain / high-water / Deer Lk. schedule Station: 1-10

Net Type: Fyke Length/Frame: 4X5 Bar Mesh: 3/4"

Color: Green Mesh Type: Nylon Net Nights: 10 X 1 net

Inches	NPK		WS	Wal	Inches	MSK	NP	NET 1		
4.0 - 4.4					30.0 - 30.4		M1	Species		
4.5 - 4.9					30.5 - 30.9		1	Count		
5.0 - 5.4					31.0 - 31.4		1			
5.5 - 5.9					31.5 - 31.9			Species		
6.0 - 6.4					32.0 - 32.4			Count		
6.5 - 6.9			1		32.5 - 32.9		F1			
7.0 - 7.9					33.0 - 33.4		F	Species		
7.5 - 7.9					33.5 - 33.9		F	Count		
8.0 - 8.4					34.0 - 34.4					
8.5 - 8.9	1				34.5 - 34.9			NET 2		
9.0 - 9.4					35.0 - 35.4			Species		
9.5 - 9.9					35.5 - 35.9		1	Count		
10.0-10.4					36.0 - 36.4					
10.5-10.9					36.5 - 36.9			Species		
11.0-11.4	M				37.0 - 37.4			Count		
11.5-11.9	M				37.5 - 37.9					
12.0-12.4	1M1			1	38.0 - 38.4			Species		
12.5-12.9	1			1	38.5 - 39.9	M		Count		
13.0-13.4	M1M				39.0 - 39.4					
13.5-13.9	MMM			1	39.5 - 39.9			NET 3		
14.0-14.4 F	M1FMMMM				40 +			Species		
14.5-14.9	1MFM			F	48.5 F			Count		
15.0-15.4	MFFM				41.0 M					
15.5-15.9	MMF				45.5 M	(LV) *		Species		
16.0-16.4	MMMM		1		46.5 F			Count		
16.5-16.9	M1M1MF		1							
17.0-17.4	M1M							Species		
17.5-17.9	1M							Count		
18.0-18.4	FIMMM									
18.5-18.9	M							NET 4		
19.0-19.4	F1MFMM							Species		
19.5-19.9	MMMMM							Count		
20.0-20.4	MMMFM			M						
20.5-20-9	F1M							Species		
21.0-21.4	FF							Count		
21.5-21.9	MM									
22.0-22.4	M							Species		
22.5-22.9								Count		
23.0-23.4	F									
23.5-23.9								NET 5		
24.0-24.4	MM			1				Species		
24.5-24.9	F							Count		
25.0-25.4	F									
25.5-25.9								Species		
26.0-26.4								Count		
26.5-26.9	F1M									
27.0-27.4								Species		
27.5-27.9								Count		
28.0-28.4										
28.5-28.9	F									
29.0-29.4										
29.5-29.9										

Other fish: Can include rarely caught species and fish greater than 30 inches.

38.5 = 14:0 41.0 = 19:4 * LV-Clip 45.5 = 24:10 Tiger = 20.0

WDNR Comments

Resources

NETTING DATA COLLECTION SHEET (3.0 in. - 12.9 in.)
Form 3600-191 Rev. 5-95

Hayward MWB Code: _____ Date: 4/25/08 County: _____ Collector: RW/JD/JK

Target Fish: WE, NP, YP, BC Survey Type: BLM Mark Given: _____ H_2O Temp: 50°F Time 8 : _____

Adverse Conditions: Rain, high-water/walleye up-river Station: 1-10

Latitude: _____ Longitude: _____

Net Type: Fyke 3/4" Length/Frame: 4 x 5 Bar Mesh: 3/4"

Color: Green Mesh Type: Nylon Net Nights: 10

Inches	BCP	YP		NHS	Inches	BCP	YP		
<3.0									NET 1
3.0				9.0	8.0	II	++++ II		Species
3.1					8.1		I		Count
3.2					8.2	I	III		
3.3					8.3	III	III		Species
3.4					8.4	II	II		Count
3.5					8.5	IIII	II		
3.6					8.6	II	I		Species
3.7					8.7	I	I		Count
3.8					8.8	IIII	II		
3.9					8.9				NET 2
4.0	I				9.0	II	IIII		Species
4.1					9.1	I			Count
4.2					9.2	II	II		
4.3					9.3	II	I		Species
4.4					9.4	I			Count
4.5		II			9.5	I	I		
4.6					9.6				Species
4.7					9.7	I	I		Count
4.8					9.8				
4.9					9.9	I			Net 3
5.0	I				10.0	I			Species
5.1					10.1				Count
5.2		II			10.2				
5.3					10.3	I			Species
5.4					10.4				Count
5.5	I	II			10.5		I		
5.6					10.6				Species
5.7		II			10.7	II	I		Count
5.8		II			10.8				
5.9		II			10.9		III		Net 4
6.0		IIII			11.0	I			Species
6.1	I	II			11.1		YP		Count
6.2	II	IIII			11.2				
6.3	II	III			11.3	I			Species
6.4	I	III			11.4				Count
6.5	++++ II	++++ II			11.5				
6.6	II	II			11.6				Species
6.7		++++			11.7	69			Count
6.8		III			11.8				
6.9	IIII	I			11.9	BC			Net 5
7.0		++++ II			12.0				Species
7.1	I	II			12.1				Count
7.2		++++			12.2				
7.3	III	++++ I			12.3				Species
7.4	I	I			12.4				Count
7.5	IIII	++++			12.5				
7.6		II			12.6				Species
7.7	IIII	III			12.7				Count
7.8		I			12.8				
7.9		I			12.9				

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

SHRH = 11.0, 8.7, 8.3

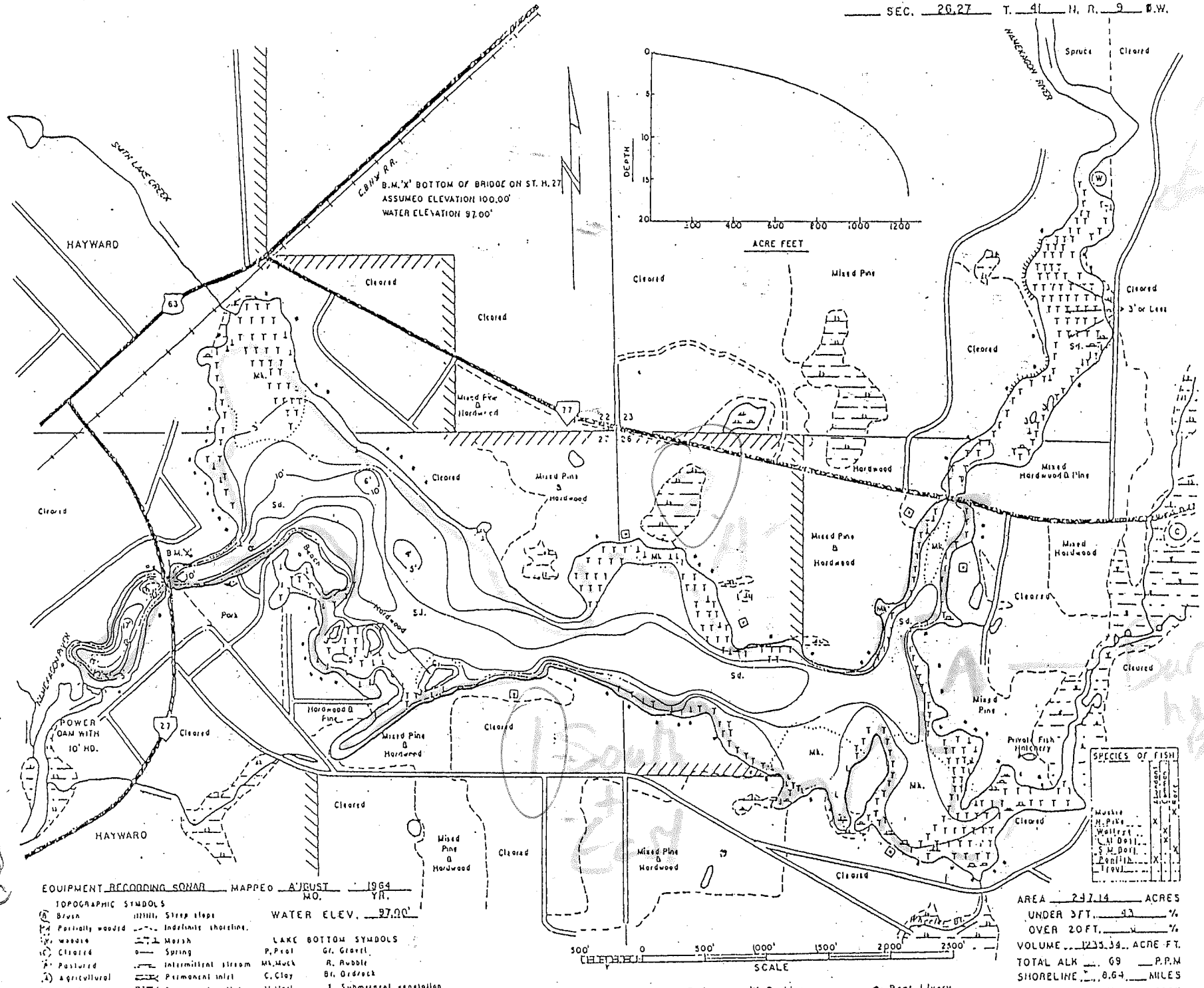
Burbot = 19.5

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



SPECIES OF FISH

	Abundant	Common	Rare
Muskie			
N. Pike			
Walleye			
S.M. Bass			
L.M. Bass			
Panfish			
Trout			

EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964 (MO. YR.)

TOPOGRAPHIC SYMBOLS

- Brush
- Partially wooded
- Wooded
- Cleared
- Pastured
- Agricultural
- B.M. Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

WATER ELEV. 97.00'

LAKE BOTTOM SYMBOLS

P. Peat	Gr. Gravel
Mk. Muck	R. Rubble
C. Clay	Br. Ordrock
M. Marl	
Sd. Sand	
Sl. Silt	

- Submergent vegetation
- Emergent vegetation
- Floating vegetation

◇ Access ◇ Access with Parking ◇ Boat Livery

Field work by: H. Schneider, M. Perlin, L. Sather Drawn by: J. Reith

AREA 247.14 ACRES
UNDER 20FT. 93 %
OVER 20FT. % %
VOLUME 1235.39 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

WDNR Comments

A-103

WDNR Comments

Department of Natural Resources

Stop 617.8 Barts Bay - Bridge @ C 1 mile

LAKE ELECTROFISHING DATA COLLECTION SHEET (3.0 in. - 13.1 in.)

Form 3600-190 Rev. 5-95

1A

Lake Haywood MWB Code: _____ Date: 6 / 9 / 08 County: Sawyer Collector: _____

Target Fish: Panfish Survey Type: _____ Mark Given: _____ H_2O Temp: 66.0 Time ____ : ____

Adverse Conditions: _____ H_2O Conduct: _____ Station: _____

Latitude: _____ Longitude: _____ 1 mile Panfish

Volts: 200 Amps: 8 Current Type (AC/DC/Pulsed DC) Pulse Rate: _____ Duty Cycle: _____

Gear Type: _____ Start Time: _____ End Time: _____ Distance Shocked: 1 mile

# of Dippers: (1/2) Entire Shoreline Shocked: (Y/N/I) Dip net mesh size: _____ H_2O Clarilty: (Clear/Turbid/Very Turbid)

Inches	BG	PS	YP	BC	Inches	BG	PS	YP		WS
<3.0	IIII IIII	II	II						SHRH	
3.0	II		I		8.0				15.0	14.5
3.1	I				8.1					14.0
3.2	I		I		8.2					
3.3	I I	II	I		8.3					15.5
3.4	II	I			8.4					8.0
3.5		I			8.5					
3.6	I	II			8.6			I		8.5
3.7	III				8.7					14.5
3.8	I I				8.8					
3.9	IIII	IIII			8.9					20.5
4.0	IIIII II	I			9.0					
4.1	II				9.1					19.5
4.2	IIII	I			9.2					
4.3	II				9.3					20.0
4.4	II	III			9.4					16.5
4.5	IIII				9.5				BC	12.5
4.6	I				9.6				7.9	10.5
4.7	III				9.7					11.0
4.8					9.8				2.5	11.5
4.9					9.9					
5.0		I			10.0				(2)	9.5
5.1			I		10.1					
5.2	I	I			10.2					8.5
5.3	I	I			10.3					(16)
5.4	I	I			10.4					
5.5	II				10.5					MM
5.6	I				10.6					(3.2)
5.7	I		I		10.7					(3.1)
5.8					10.8					(2.3)
5.9		I			10.9					(3.0)
6.0	III	I			11.0					(2.6)
6.1	II	I			11.1					
6.2	I				11.2					(2.9)
6.3	IIII	I			11.3					(3.4)
6.4	II	I			11.4					
6.5	II	I	I		11.5					(3.0)
6.6	II				11.6					(2.7)
6.7	II	I			11.7					
6.8					11.8					(9)
6.9	II				11.9					
7.0	IIII		I		12.0					
7.1					12.1					
7.2	II	I			12.2					
7.3	I		I		12.3					
7.4	II				12.4					
7.5					12.5				CMLP	
7.6	II				12.6					
7.7					12.7					
7.8					12.8					
7.9			II		12.9					

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

(93) (30) (13)

Station 122431
Survey 5957379
Visit 610515
proofed SHC 1-12-09

LP BAY – Olsen 2A

WDNR Comments

...ment of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (3.0 in. - 13.1 in.)

Form 3600-190 Rev. 5-95

...ake: L. Hayward MWB Code: ______ Date: 6/9/08 County: ______ Collector: ½ Mile

Target Fish: PanFish Survey Type: B.L Mark Given: ______ H_2O Temp: 67.1 Time ___:___

Adverse Conditions: ______ H_2O Conduct: ______ Station: ______

Latitude: ______ Longitude: ______ Stop 618.1

Volts: 200 Amps: 6 Current Type (AC/DC/Pulsed DC) Pulse Rate: ______ Duty Cycle: PANFISh

Gear Type: ______ Start Time: ______ End Time: ______ Distance Shocked: ½ mile

# of Dippers: (1/2) Entire Shoreline Shocked: (Y/N/I) Dip net mesh size: ______ H_2O Clarilty: (Clear/Turbid/Very Turbid)

Inches	BG	PS	Y.P		Inches					
<3.0	llll l	ll	llll				Redh	HOURSC	SHRH	W.S
3.0	ll	ll	l		8.0		JRH	GRH	9.5	2.0
3.1					8.1			17.0	6.5	
3.2					8.2		7.0			
3.3					8.3			9.5	7.5	
3.4					8.4					
3.5	ll				8.5					
3.6	l	l			8.6					
3.7	ll				8.7					
3.8	ll	l			8.8					
3.9	llll l				8.9					
4.0	llll	l			9.0					
4.1	llll				9.1					
4.2	llll	l			9.2					
4.3	ll		l		9.3					
4.4	ll	l			9.4					
4.5	ll	ll			9.5					
4.6	lll	l			9.6					
4.7		l			9.7					
4.8	ll	l			9.8					
4.9	ll	l			9.9					
5.0	ll		l		10.0					
5.1	ll	l			10.1					
5.2		l			10.2					
5.3	l	l			10.3					
5.4	l				10.4					
5.5		l			10.5					
5.6	lll	lll			10.6					
5.7		l			10.7					
5.8		ll			10.8					
5.9	lll				10.9					
6.0	l	llll			11.0					
6.1	ll				11.1					
6.2	l				11.2					
6.3	llll	l	l		11.3					
6.4					11.4				6.5	
6.5	lll				11.5				3.5	
6.6	l				11.6					
6.7	ll				11.7			RB	3.1	
6.8	lll	l			11.8					
6.9	l				11.9					
7.0	llll	l	l		12.0			4.7		
7.1	l	l			12.1					
7.2	lll				12.2					
7.3					12.3					
7.4	l				12.4					
7.5	l				12.5					
7.6					12.6					
7.7					12.7					
7.8					12.8					
7.9	ll		l		12.9					

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

(89) (33) (11)

TPMT 3.0

Station 122431
Survey 5957379 1-12-09
[illegible] 610514 proofed SHK

WDNR Comments

Wisconsin
Department of Natural Resources

1

LAKE ELECTROFISHING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)
Form 3600-187 Rev. 4-94

S 616.7
stop 617.8

Lake LH MWB Code: _____ Date: 6 / 9 / 08 County: Sawyer Collector: D - K W

Target Fish: X100 Survey Type: B. C Mark Given: _____ H_2O Temp: 65.5 Time _____ : _____

Adverse Conditions: _____ H_2O Conduct: _____ Station: _____

Volts: 200 Amps: 8 Current Type (AC/DC/Pulsed DC) Pulse Rate: _____ Duty Cycle: _____

Gear Type: _____ Start Time: _____ End Time: _____ Distance Shocked: 3 miles

# of Dippers: (1/2) Entire Shoreline Shocked: (Y/N/I) Dip net mesh size: _____ H_2O Clarilty: (Clear/Turbid/Very Turbid)

Inches	NP	WC	LMB	SMB	Inches					
4.0 - 4.4			2		30.0 - 30.4					
4.5 - 4.9					30.5 - 30.9					
5.0 - 5.4					31.0 - 31.4					
5.5 - 5.9					31.5 - 31.9					
6.0 - 6.4					32.0 - 32.4					
6.5 - 6.9					32.5 - 32.9					
7.0 - 7.9			1		33.0 - 33.4					
7.5 - 7.9					33.5 - 33.9					
8.0 - 8.4				1	34.0 - 34.4					
8.5 - 8.9	1				34.5 - 34.9					
9.0 - 9.4	1		111		35.0 - 35.4					
9.5 - 9.9			1111		35.5 - 35.9					
10.0-10.4		1	1		36.0 - 36.4					
10.5-10.9					36.5 - 36.9					
11.0-11.4			1		37.0 - 37.4					
11.5-11.9	1				37.5 - 37.9					
12.0-12.4	1	1	1		38.0 - 38.4					
12.5-12.9					38.5 - 39.9					
13.0-13.4		1	1		39.0 - 39.4					
13.5-13.9	1		1		39.5 - 39.9					
14.0-14.4	1	1	1		40 +					
14.5-14.9	1		111							
15.0-15.4	1		1							
15.5-15.9	1									
16.0-16.4	1									
16.5-16.9	1									
17.0-17.4	1									
17.5-17.9	1									
18.0-18.4	1		1							
18.5-18.9										
19.0-19.4										
19.5-19.9										
20.0-20.4										
20.5-20-9										
21.0-21.4										
21.5-21.9										
22.0-22.4										
22.5-22.9										
23.0-23.4										
23.5-23.9										
24.0-24.4										
24.5-24.9										
25.0-25.4										
25.5-25.9										
26.0-26.4										
26.5-26.9										
27.0-27.4										
27.5-27.9										
28.0-28.4										
28.5-28.9										
29.0-29.4										
29.5-29.9										

Other fish: Can include rarely caught species and fish greater than 30 inches.

(14) (4) (20) (1)

proofed SHH 11-2-09

Station 122431
Survey 5957380
USFT 6105716

WDNR Comments

2

nt of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)
Form 3600-187 Rev. 4-94

Start G.178

ake HAYward MWB Code: _____ Date: 06 / 9 / 08 County: Sawyer Collector: STOP G18.5

Target Fish: Z100 Survey Type: B. Line Mark Given: _____ H_2O Temp: 66O Time _____ : _____

Adverse Conditions: _____ H_2O Conduct: _____ Station: 2 GAME

Volts: 200 Amps: 8 Current Type (AC/DC/Pulsed DC) Pulse Rate: _____ Duty Cycle: _____

Gear Type: B. S. Start Time: _____ End Time: _____ Distance Shocked: 2 miles

# of Dippers: (1/2) Entire Shoreline Shocked: (Y/N/I) Dip net mesh size: _____ H_2O Clarilty: (Clear/Turbid/Very Turbid)

Inches	NP	LMB	WE		Inches
4.0 - 4.4					30.0 - 30.4
4.5 - 4.9					30.5 - 30.9
5.0 - 5.4					31.0 - 31.4
5.5 - 5.9					31.5 - 31.9
6.0 - 6.4					32.0 - 32.4
6.5 - 6.9		I			32.5 - 32.9
7.0 - 7.9					33.0 - 33.4
7.5 - 7.9					33.5 - 33.9
8.0 - 8.4		I			34.0 - 34.4
8.5 - 8.9					34.5 - 34.9
9.0 - 9.4					35.0 - 35.4
9.5 - 9.9					35.5 - 35.9
10.0-10.4		II			36.0 - 36.4
10.5-10.9					36.5 - 36.9
11.0-11.4					37.0 - 37.4
11.5-11.9		II	I		37.5 - 37.9
12.0-12.4	II		I		38.0 - 38.4
12.5-12.9	I	I			38.5 - 39.9
13.0-13.4	I	I	I		39.0 - 39.4
13.5-13.9			I		39.5 - 39.9
14.0-14.4		I	I		40 +
14.5-14.9					
15.0-15.4	II				
15.5-15.9	I				
16.0-16.4		I	I		
16.5-16.9			I		
17.0-17.4		II	II		
17.5-17.9	I	I			
18.0-18.4		I	II		
18.5-18.9					
19.0-19.4		II			
19.5-19.9	I				
20.0-20.4	I				
20.5-20-9					
21.0-21.4					
21.5-21.9					
22.0-22.4					
22.5-22.9					
23.0-23.4					
23.5-23.9					
24.0-24.4					
24.5-24.9					
25.0-25.4					
25.5-25.9					
26.0-26.4	I				
26.5-26.9					
27.0-27.4					
27.5-27.9					
28.0-28.4					
28.5-28.9					
29.0-29.4					
29.5-29.9					

MU
24.0

HY MUSK
7.5

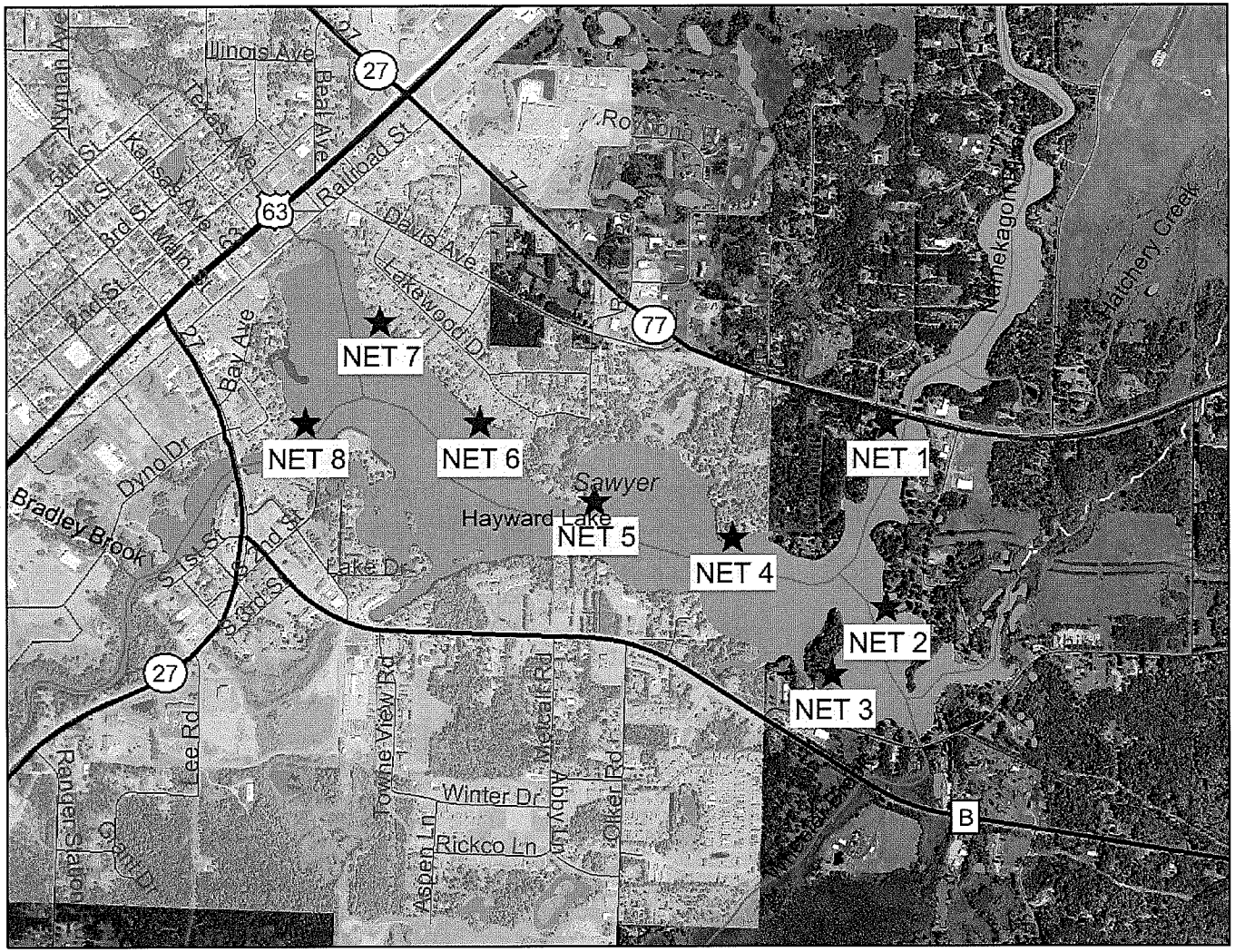
proofed SML 1-12-09

Other fish: Can include rarely caught species and fish greater than 30 inches.

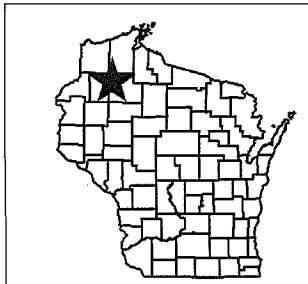
(11) (16) (11) MU (1) TIGER (1)

Station 122431
Survey 5957380

Lake Hayward SN1



0 1750 3500 5250 ft.



Legend

Major Highways
- Interstate
- State Highway
- U.S. Highways
- County Roads
- Local Roads

Rivers and Streams
- Intermittent
- Fluctuating
- Perennial

24K Open Water

County Boundary

Municipalities
- Village
- City

N

Scale: 1:18,716

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes: Net locations used in "bonus" SN1 in 2013. May not need all 8 nets in the future.

WDNR Comments

WDNR Comments Resources

NETTING DATA COLLECTION SHEET (4.0 in. - 40+ in.)

Form 3600-188 Rev. 4-94

[illegible] MWB Code: ______ Date: 5 / 2 / 13 County: Sawyer Collector: MW RW SB BS

Fish: WAE, NOP, MUE Survey Type: SN1 Mark Given: ______ H_2O Temp: 45 Time ____ : ____

Adverse Conditions: ______ Station: ______

Net Type: Fyke Length/Frame: ______ Bar Mesh: ______

Color: ______ Mesh Type: ______ Net Nights: 1 8 Nets

ALL Nets

Inches	NOP	WAE	MUE	SMB / CMB	Inches	MUE	NOP			
								NET 1		
4.0 - 4.4					30.0 - 30.4			Species		
4.5 - 4.9					30.5 - 30.9			Count		
5.0 - 5.4					31.0 - 31.4		2			
5.5 - 5.9					31.5 - 31.9			Species		
6.0 - 6.4					32.0 - 32.4		1	Count		
6.5 - 6.9					32.5 - 32.9					
7.0 - 7.9					33.0 - 33.4		1	Species		
7.5 - 7.9	1				33.5 - 33.9			Count		
8.0 - 8.4				1	34.0 - 34.4					
8.5 - 8.9	1				34.5 - 34.9			NET 2		
9.0 - 9.4					35.0 - 35.4			Species		
9.5 - 9.9	2				35.5 - 35.9			Count		
10.0-10.4	2				36.0 - 36.4					
10.5-10.9					36.5 - 36.9			Species		
11.0-11.4	2			1	37.0 - 37.4			Count		
11.5-11.9					37.5 - 37.9	1				
12.0-12.4	1	1			38.0 - 38.4	1		Species		
12.5-12.9	2			2	38.5 - 39.9			Count		
13.0-13.4	3			1	39.0 - 39.4					
13.5-13.9	3			4	39.5 - 39.9			NET 3		
14.0-14.4	4			5	40 +			Species		
14.5-14.9	1			4		48.5F		Count		
15.0-15.4	8			6		42.0m				
15.5-15.9	5			3		39.5F	[illegible]	Species		
16.0-16.4	4			3		39.0m		Count		
16.5-16.9						47.5F				
17.0-17.4						41.5F		Species		
17.5-17.9	1					44F		Count		
18.0-18.4	4	F (tight)				42.5F				
18.5-18.9	1					45.5F		NET 4		
19.0-19.4	4			1		42		Species		
19.5-19.9	1					42		Count		
20.0-20.4	3									
20.5-20-9								Species		
21.0-21.4	2							Count		
21.5-21.9	1									
22.0-22.4								Species		
22.5-22.9	2							Count		
23.0-23.4	1									
23.5-23.9	3							NET 5		
24.0-24.4	3							Species		
24.5-24.9								Count		
25.0-25.4	1									
25.5-25.9			1					Species		
26.0-26.4	2							Count		
26.5-26.9	2									
27.0-27.4	2	1						Species		
27.5-27.9	3							Count		
28.0-28.4	2									
28.5-28.9	2									
29.0-29.4	2									
29.5-29.9	1									

Other fish: Can include rarely caught species and fish greater than 30 inches.

Panfish not measured
MF mucky [illegible] common [illegible] [illegible]

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters
Sawyer	Hayward MWBC: 2725500
Sampling Objective	**Number and Locations of Stations (Habitat)**
Walleye Recruitment Survey	Source
	Miles Actually Shocked = 4.6 GPS
Period Fished (Dates)	Acres = 247 LM
09/11/14	Total Miles of Shoreline = 8.6 LM
	Total Miles of Shockable Shoreline = 8.6 LM

GEAR

Boomshocker (Hours)	Time
1.4	√ Night Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	**Time of Day**	**Trap Net (No. of Net Lifts)**	**Mesh Size**	**Depth**
Minnow Seine (No. of Hauls)	**Area Covered**	**Gill Net (No. of Feet x No. of Lifts)**	**Mesh Size**	**Depth**

Other (Hours or Lifts)		Characteristics	
Boomshocker(s): 1	Mini-boomshocker(s):	Walleye Recruitment Code:	C-ST
Dip Netter(s): 2	Dip Netter(s):		

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit
Walleye (Age 0+)	0			0.00 / hour 0.00 / mile
Serns Index NA YOY / acre				
Walleye (Age 1+)	0			0.00 / hour 0.00 / mile
Walleye (Other)	0			0.00 / hour 0.00 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range

1) Tank Mortality: None 2) Weather: Clear, Calm, Cold 3) Reliabilty: Medium

4) Stocking: 253 Muskellunge, 10.7 inches, 09/09/14, DNR

5) Comments: Only walleye <12.0" targeted.

Rev. 10-70

Signed (Compiler) Gene Hatzenbeler Date 11/26/14

WDNR Comments

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL) Department of Natural Resources
Form 3600A-191 8-95

Lake: Hayward MWB Code: 2725500 Date: 09/11/14 County: Sawyer Collector(s): Rood, Kufahl, Sunderland

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None Water Temperature: 55°F Station: Portion of Shoreline

Adverse Conditions: Aquatic vegetation Gear Type: Boomshocker Distance Shocked: 4.6 miles

Volts: 125 Amps: 2.8 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 2007 Shocking End Time: 2137 Generator Start Hour: 292.1 Generator End Hour: 293.5

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: Clear

Walleye < 12.0"			
Inches	Number	Inches	Number
<3.0		**7.5**	
3.0		**7.6**	
3.1		**7.7**	
3.2		**7.8**	
3.3		**7.9**	
3.4		**8.0**	
3.5		**8.1**	
3.6		**8.2**	
3.7		**8.3**	
3.8		**8.4**	
3.9		**8.5**	
4.0		**8.6**	
4.1		**8.7**	
4.2		**8.8**	
4.3		**8.9**	
4.4		**9.0**	
4.5		**9.1**	
4.6		**9.2**	
4.7		**9.3**	
4.8		**9.4**	
4.9		**9.5**	
5.0		**9.6**	
5.1		**9.7**	
5.2		**9.8**	
5.3		**9.9**	
5.4		**10.0**	
5.5		**10.1**	
5.6		**10.2**	
5.7		**10.3**	
5.8		**10.4**	
5.9		**10.5**	
6.0		**10.6**	
6.1		**10.7**	
6.2		**10.8**	
6.3		**10.9**	
6.4		**11.0**	
6.5		**11.1**	
6.6		**11.2**	
6.7		**11.3**	
6.8		**11.4**	
6.9		**11.5**	
7.0		**11.6**	
7.1		**11.7**	
7.2		**11.8**	
7.3		**11.9**	
7.4		**Total:**	0

Inches	Walleye	Northern Pike	Muskellunge	Largemouth Bass	Smallmouth Bass	Inches	Walleye	Northern Pike	Muskellunge
<1.5						**24.5-24.9**			
1.5-1.9						**25.0-25.4**			
2.0-2.4						**25.5-25.9**			
2.5-2.9						**26.0-26.4**			
3.0-3.4						**26.5-26.9**			
3.5-3.9						**27.0-27.4**			
4.0-4.4						**27.5-27.9**			
4.5-4.9						**28.0-28.4**			
5.0-5.4						**28.5-28.9**			
5.5-5.9						**29.0-29.4**			
6.0-6.4						**29.5-29.9**			
6.5-6.9						**30.0-30.4**			
7.0-7.4						**30.5-30.9**			
7.5-7.9						**31.0-31.4**			
8.0-8.4						**31.5-31.9**			
8.5-8.9						**32.0-32.4**			
9.0-9.4						**32.5-32.9**			
9.5-9.9						**33.0-33.4**			
10.0-10.4						**33.5-33.9**			
10.5-10.9						**34.0-34.4**			
11.0-11.4						**34.5-34.9**			
11.5-11.9						**35.0-35.4**			
12.0-12.4						**35.5-35.9**			
12.5-12.9						**36.0-36.4**			
13.0-13.4						**36.5-36.9**			
13.5-13.9						**37.0-37.4**			
14.0-14.4						**37.5-37.9**			
14.5-14.9						**38.0-38.4**			
15.0-15.4						**38.5-38.9**			
15.5-15.9						**39.0-39.4**			
16.0-16.4						**39.5-39.9**			
16.5-16.9						**40.0-40.4**			
17.0-17.4						**40.5-40.9**			
17.5-17.9						**41.0-41.4**			
18.0-18.4						**41.5-41.9**			
18.5-18.9						**42.0-42.4**			
19.0-19.4						**42.5-42.9**			
19.5-19.9						**43.0-43.4**			
20.0-20.4						**43.5-43.9**			
20.5-20.9						**44.0-44.4**			
21.0-21.4						**44.5-44.9**			
21.5-21.9						**45.0-45.4**			
22.0-22.4						**45.5-45.9**			
22.5-22.9						**46.0-46.9**			
23.0-23.4						**47.0-47.9**			
23.5-23.9						**48.0-48.9**			
24.0-24.4						**49.0-49.9**			
Totals:	0	0	0	0	0	**50.0+**			

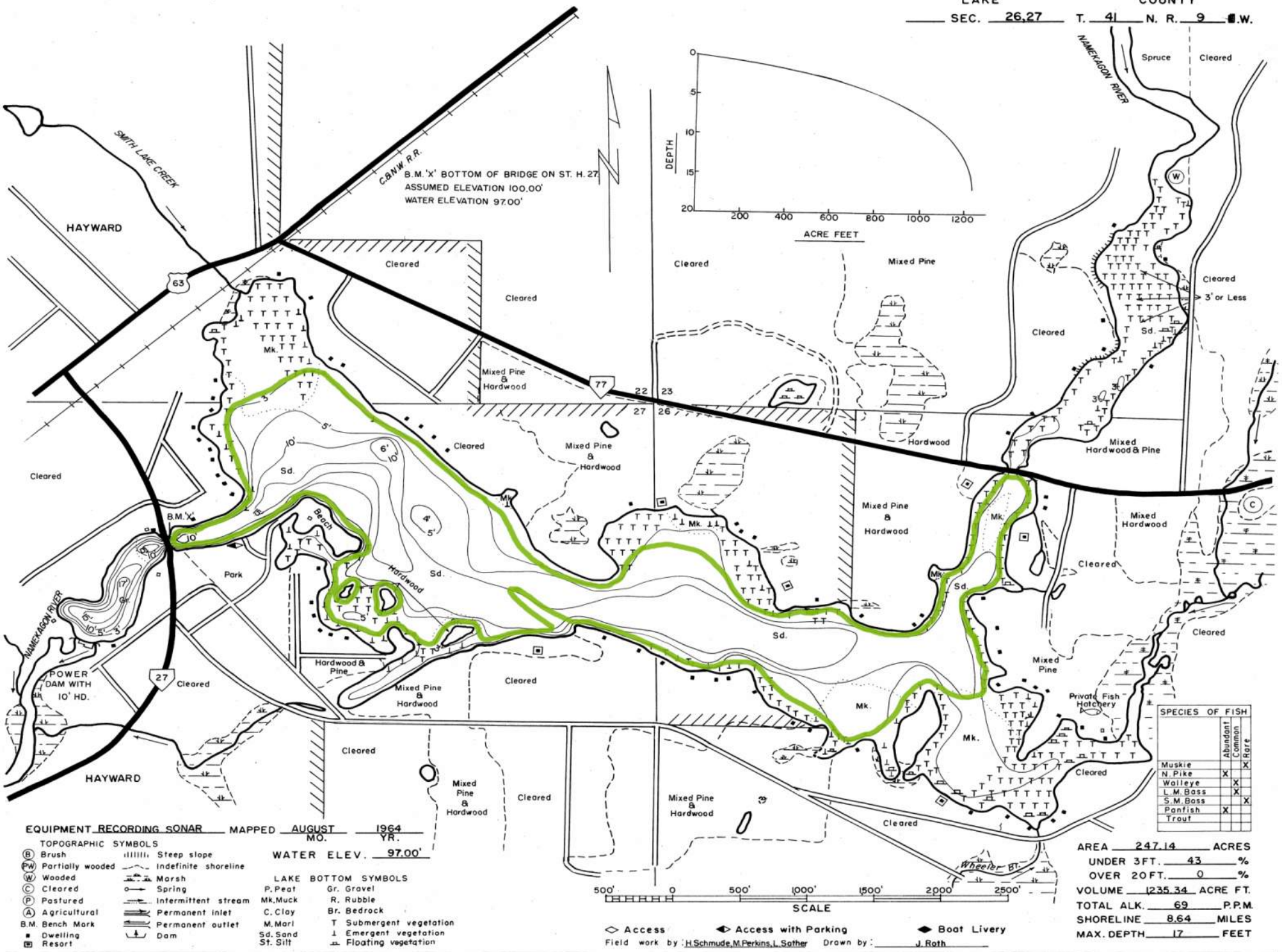
WDNR Comments

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



SPECIES OF FISH	Abundant	Common	Rare
Muskie			X
N. Pike	X		
Walleye		X	
L.M. Bass		X	
S.M. Bass			X
Panfish	X		
Trout			

EQUIPMENT RECORDING SONAR MAPPED AUGUST MO. 1964 YR.

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- (B) Brush
- (PW) Partially wooded
- (W) Wooded
- (C) Cleared
- (P) Pastured
- (A) Agricultural
- B.M. Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- Emergent vegetation
- Floating vegetation

500' 0 500' 1000' 1500' 2000' 2500'

SCALE

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H. Schmude, M. Perkins, L. Sather Drawn by: J. Roth

AREA 247.14 ACRES

UNDER 3FT. 43 %

OVER 20FT. 0 %

VOLUME 1235.34 ACRE FT.

TOTAL ALK. 69 P.P.M.

SHORELINE 8.64 MILES

MAX. DEPTH 17 FEET

WDNR Comments

Darrin Johnson

From: Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Sent: Wednesday, July 29, 2020 2:42 PM
To: Darrin Johnson
Cc: Shawn Puzen; Laatsch, Cheryl - DNR
Subject: RE: WDNR Hayward Data Submission - Fisheries (Part 2 of 2)
Attachments: WDNR Fisheries Data for Xcel_Hayward P-2417_ Part 2 of 2.zip

Hi Darrin,

Here is part 2 of 2 Hayward Hydro WDNR fisheries information.

Thanks,
Macaulay

From: Haller, Macaulay G - DNR
Sent: Wednesday, July 29, 2020 2:39 PM
To: 'Darrin Johnson' <Darrin.Johnson@meadhunt.com>
Cc: Shawn Puzen <Shawn.Puzen@meadhunt.com>; Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>
Subject: WDNR Hayward Data Submission - Fisheries (Part 1 of 2)

Hi Darrin,

Please find attached part 1 of 2 Hayward Hydro Project data and reports from WDNR's fisheries biologist. Attachments include reports, fisheries survey data (recent and historical), fish stocking/spawning data, and fish habitat information.

I will continue to send data and information as it comes in from our program staff.

Thank you,

Macaulay Haller
Wisconsin Department of Natural Resources
Macaulay.Haller@wisconsin.gov

From: Darrin Johnson <Darrin.Johnson@meadhunt.com>
Sent: Wednesday, July 22, 2020 1:56 PM
To: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>; Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Cc: Shawn Puzen <Shawn.Puzen@meadhunt.com>
Subject: Hayward and Trego Questionnaire

Cheryl,

Per our discussion last week, I am sending electronic copies of the Hayward and Trego Hydroelectric Project Questionnaires and Factsheets. They were sent out in the mail today. Feel free to contact me if you have any questions.

DARRIN JOHNSON

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Discussion of Lake Hayward Fishery Status for Inclusion in the Aquatic Plant Management Plan

Max Wolter- WDNR Fisheries Biologist

Overview of the fishery- Lake Hayward contains muskellunge (stocked), northern pike, largemouth bass, smallmouth bass, walleye (stocked), bluegill, pumpkinseed sunfish, yellow perch, black crappie, yellow and black bullhead, white sucker, and several species of redhorse that primarily inhabit the area surrounding the inlet of the Namekagon River. Brook and chestnut lamprey are also present (chestnut lamprey are parasitic on fish and can be seen on bass, pike, and muskellunge in Lake Hayward on occasion).

There is very little successful muskellunge reproduction in Lake Hayward but stocked fish appear to have high survival and reach trophy length (see accompanying report and photograph). Muskellunge in Lake Hayward benefit from the influx of forage fish from the Namekagon River (redhorse, sucker, and likely the occasional trout). Muskellunge will use aquatic vegetation as a refuge when young, and as foraging habitat as they grow.

Northern pike are entirely self-sustaining and size of pike is very good compared to many lakes in the area. Pike likely benefit from the same forage base as muskellunge. Northern pike are very reliant on aquatic vegetation for reproduction (eggs stick to aquatic plants) and foraging.

Largemouth bass are common in Lake Hayward and size structure is better than many other lakes in the area with many legal sized (>14 inches) fish present. Largemouth bass use aquatic vegetation as their primary habitat. Smallmouth bass are considerably rarer and are focused in the area around the inlet of the Namekagon River. Smallmouth bass are more keyed on rocky habitat in comparison to aquatic plants.

Walleye are relatively rare in Lake Hayward indicating that stocking success is low and natural reproduction is non-existent. Walleye of several sizes were stocked aggressively for many years with little result. Stocked walleye that do survive grow well and are a nice "bonus" species in the lake for anglers. Both walleye and muskellunge are susceptible to "dam escapement", which is movement through or over a dam in a manner that prevents their return to the lake. We suspect that many stocked walleye and muskellunge wind up in the Namekagon River below Lake Hayward. From 2005 to 2010 there was a barrier net installed seasonally (purchased by DNR and Xcel) to address this issue, but over time this project was deemed infeasible because the net had to be cleaned ~3 times a week as a result of entrainment of dead aquatic plants (primarily CLP).

Bluegill and pumpkinseed sunfish are abundant in Lake Hayward but have above average size. These species use aquatic plants as refuge from predation but excessive plant growth can pose management problems for panfish. Healthy fish populations rely on a large percentage of the panfish born each year to be eaten by predators, otherwise stunting can occur. These high levels of predation are not possible when aquatic vegetation becomes

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overly dense. Despite dense vegetation in some areas of Lake Hayward stunting of panfish has not been observed in Lake Hayward up to this point.

Yellow perch and black crappie are more rare than bluegill and do not comprise a significant portion of the fishery. Both can reach large sizes.

General comments on aquatic plants and the fish community- The fish community of Lake Hayward benefits from the diversity of the plant community and the inflowing water of the Namekagon River. Without either of these factors it is reasonable to presume that the fishery would decrease in quality. While sections of the lake certainly have aquatic plant densities that are too high for optimum fish habitat (these areas are impacted by invasive species) there has not been a noticeable impact on the overall fish community to date. Manual removal of aquatic plants if undertaken should be done after fish spawning if possible. Disturbance of the sediments and plants themselves could have negative effects on spawning success of essentially all species of fish in Lake Hayward it timed incorrectly. Chemical treatment of aquatic invasive plants should be undertaken with great caution and with intense scrutiny of any potential chemical product. Any chemical selected should ideally lead to no further restrictions on fish consumption since this is a popular lake for families to fish.

Schedule of upcoming surveys- Lake Hayward was surveyed in 2013 for early spawning species (muskellunge, northern pike, and walleye, see attached report). The next survey is scheduled for 2015 and will include a comprehensive study of the fish population including estimations of the total number of muskellunge and walleye. Lake Hayward is officially on a 7 year survey rotation based on its size, but because of its proximity to town it is typically surveyed more often.

Stocking plan- At this point in time the DNR plans to continue to stock Lake Hayward with both muskellunge and walleye when they are available. However, Lake Hayward is a lower priority stocking location than many other lakes in the area due to the low success of previous walleye stocking and lack of necessity to stock muskellunge more frequently than every few years. Private stocking of both muskellunge and walleye will be permitted if the stocking specifications match DNR protocol.

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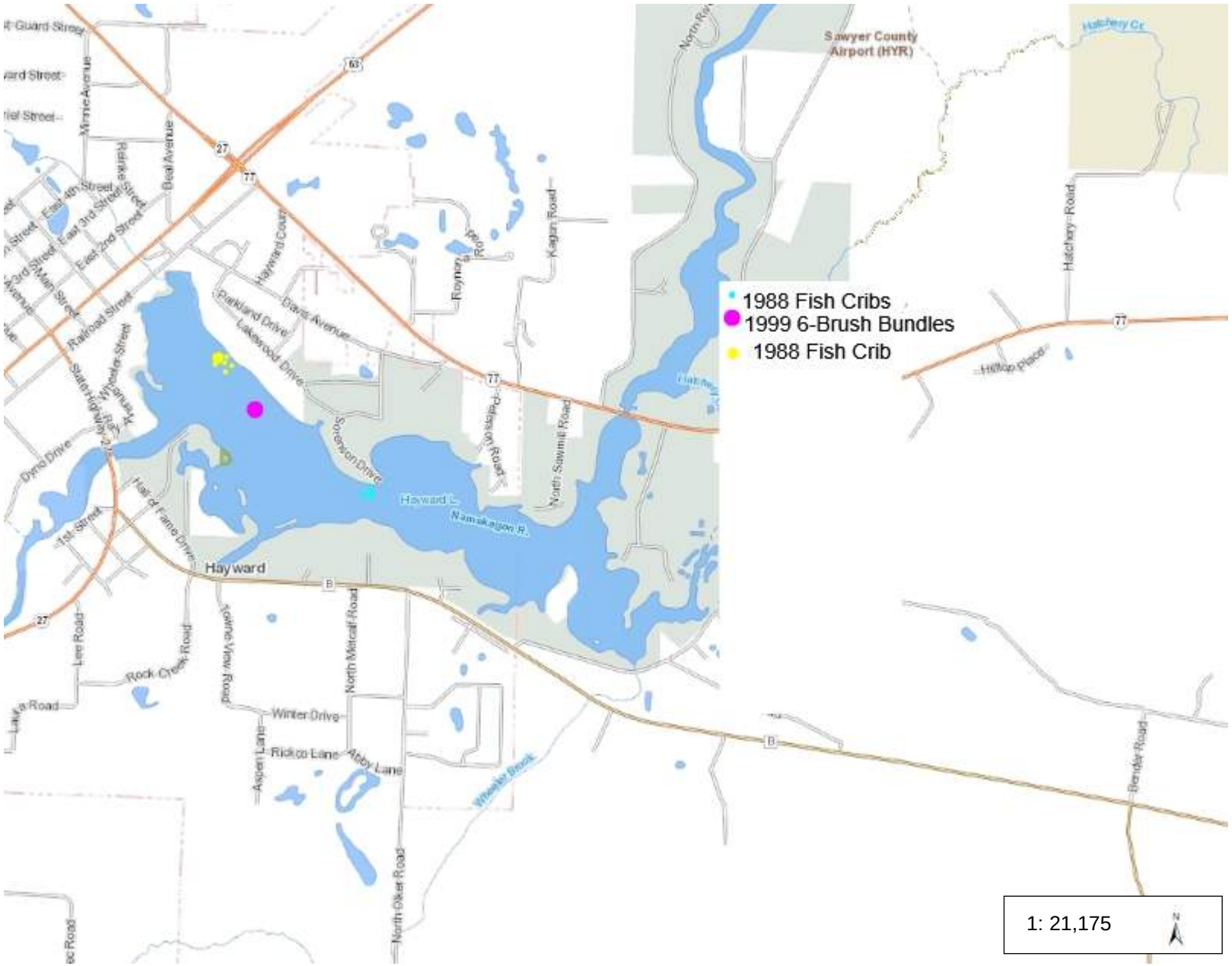
Surface Water Data Viewer Map



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Legend

- PNW-PRF Other Public Rights
- PNW-ASNRI Sensitive Areas
- PNW-ASNRI Wild and Scenic
- PNW-ASNRI Outstanding and Streams
- PNW-ASNRI Trout Streams
- PNW-ASNRI Wild Rice Stream
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- PNW-ASNRI State Natural Are
- PNW Musky Streams
- PNW Sturgeon Streams
- PNW Musky Areas
- PNW Sturgeon Areas
- PNW Walleye Areas
- PNW Lakes Less Than 50 Acr
- Municipality
  - City or Village
  - Township
- State Boundaries
- County Boundaries
- Major Roads

Notes

0.7 0 0.33 0.7 Miles

NAD_1983_HARN_Wisconsin_TM

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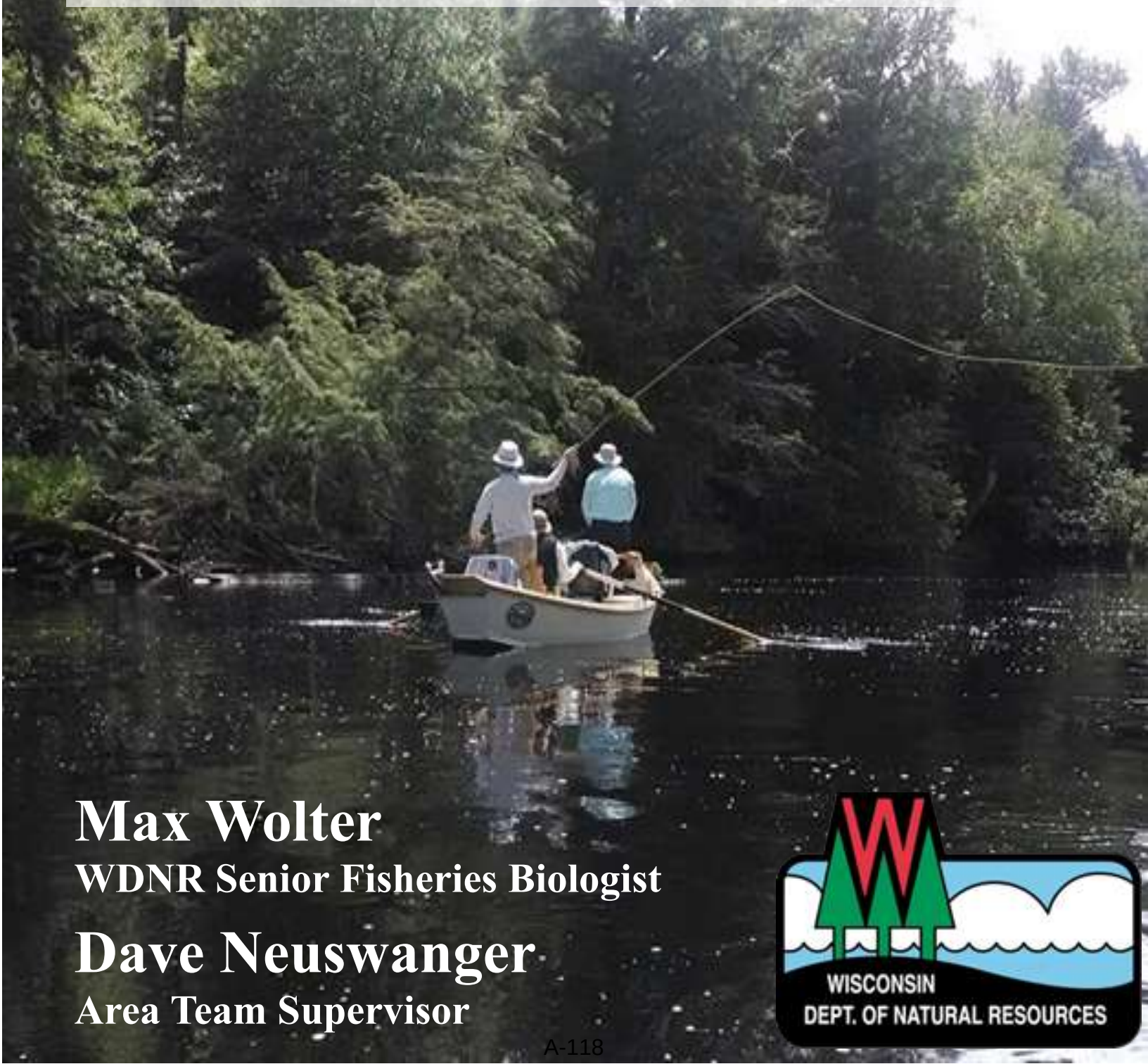
WDNR Comments

Smallmouth Bass and Muskellunge Fisheries in Northwestern Wisconsin Rivers:

A Guide to the Future Project

5-year report



Max Wolter
WDNR Senior Fisheries Biologist

Dave Neuswanger
Area Team Supervisor

WISCONSIN DEPT. OF NATURAL RESOURCES

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Foreword and Acknowledgments

The "Guide to the Future" project was initiated in 2012 to meet a data collection need for sportfish populations in some of the most popular rivers in northwest Wisconsin. Five years of partnership between the Wisconsin DNR and the Hayward Fly Fishing Company has generated 1,487 records of guided angler trips. The data from these guided trips has allowed for comparisons of catch rate for smallmouth bass, muskellunge, and other species among rivers, times of year, different river conditions, and more. Collection of this large volume of data would not be possible without the excellent participation of each of the individual guides working for the Hayward Fly Fishing Company including Wendy Williamson, Larry Mann, Stu Neville, Erik Huber, Brett Nelson, and Cory Andraschko. Rarely does science get to be as fun as this project has been. Max Wolter



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Summary of Major Findings

- Angler skill accounts for a significant amount of variation in catch rates for both smallmouth bass and muskellunge. Accounting for skill with a correction factor allows for more meaningful comparisons of catch rate, particularly when sample size is limiting.
- Smallmouth bass catch rate (relative abundance) and size structure varied among rivers. Rivers with high catch rate demonstrated smaller size of fish caught, and vice versa.
- Muskellunge catch rate varied among rivers, but size differences among rivers were generally less pronounced. The Namekagon River emerged as a better river for catching larger muskellunge (>40”) than the Chippewa or Flambeau.
- Catch rates for smallmouth bass and muskellunge appeared relatively stable from one year to the next. Smallmouth catch rates were positively related to water temperature and were highest during peak summer (July). Muskellunge catch rates appeared higher in early summer and fall compared to mid-summer, though the relationship was not statistically significant.
- Spatial trends in catch rates for both species within rivers did not demonstrate consistent increases or decreases from upstream to downstream reaches.
- The amount of discharge on a river (cubic feet per second) generally had a negative impact on both smallmouth bass and muskellunge catch rates, though the relationship was typically not statistically significant.
- Catch rates for smallmouth bass were significantly higher under flat water conditions compared to rising water. There was an indication of a similar trend for muskellunge but it was not statistically significant.
- Northern pike catch rates were significantly higher on the Namekagon compared to the Flambeau with the Chippewa being intermediate. Incidental catch of other species like walleye and largemouth bass were rare.

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Project Objectives and General Methods

Due to a variety of factors including current, water clarity, structural complexity, and access, river fish populations are often not easily (or representatively) sampled by traditional fisheries methods such as netting or electrofishing. On an experimental and voluntary basis from 2012 to 2016, the Wisconsin Department of Natural Resources (WDNR) enlisted a group of river fishing guides who completed hundreds of fishing trips on these rivers annually with their clients while targeting smallmouth bass and muskellunge using fly fishing gear. Records of the effort and catch from these fishing trips can provide important information on relative abundance and size structure of river populations of smallmouth bass and muskellunge in a manner that is efficient to the monitoring agency (WDNR) and informative to the guides, their clients, and other anglers.

WDNR personnel and guides met and developed the following protocol for data collection. For each trip, the guide recorded the catch for each client (typically two people) separately. There was no set schedule or locations that guides were asked to follow with their fishing activities. However, as a result of the use of logical access points, fishing trips were assigned to "reaches" within each river with set start and end points. Each captured fish was recorded on a labeled 12-key mechanical counter corresponding to the angler that caught the fish. Four sizes categories of smallmouth bass (7-11, 11-14, 14-17, and >17 inches) and muskellunge (20-30, 30-40, 40-50, and >50 inches) were recorded. Guides also recorded catches, but not sizes, of northern pike, walleye, and largemouth bass. "Encounters" with muskellunge were recorded whenever a fish followed but did not strike, struck and missed, or was lost after hooking but before landing.

Each guide recorded daily water temperature (degrees F), which was measured in a shaded portion of the river near noon. Guides also recorded "mitigating conditions" (inclement weather, challenging water level, off-color water, etc.) that they judged may have negatively impacted fishing success. Data on river discharge (cubic feet per second) was obtained for each day from nearby USGS or hydropower dam gauges. Short-term variation in discharge was calculated and expressed as the most recent 3-day change in discharge (noon discharge three days prior minus noon discharge on day of fishing). Based on this calculation, river conditions on each day of fishing were classified as either falling (≥15% *decrease* in discharge over 3-day period), stable (<15% change in discharge over 3 day period), or rising (≥15% *increase* in discharge over 3-day period).

Data were entered into an Excel database and analyzed using R software. Trips when guides noted "mitigating conditions", as described above, were excluded from all analyses unless specified otherwise. Similarly, only trips where at least four hours of targeted effort for a species were used for analyses of that species. A non-parametric Kruskal-Wallis test was used to make statistical comparisons of catch rates across classes of data (i.e. different rivers, months) because of non-normal shape of the catch rate data. When significant differences were found between classes, multiple comparison analysis was made using a Dunn Test with a Holm modification of the Bonferroni adjustment. Comparisons between catch rate and river discharge or temperature were made using standard linear regression. Results of statistical tests were considered significant at P values less than 0.05.

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Study Area

There was no set schedule or locations that guides were asked to follow with their fishing activities. However, as a result of the use of logical access points, fishing trips were assigned to "reaches" within each river with set start and end points. In this report these are labeled with the river name (or abbreviation) and a number corresponding to the relative downstream location of the reach within that river (e.g., Chippewa 4 is downstream from Chippewa 3). To protect the proprietary information of these guides, the specific start and end points of each reach are not presented in this report. Individual reaches were rarely fished on sequential days. Three rivers were primarily fish by the guides– the Flambeau (Figure 1, Price and Sawyer counties), Chippewa (Sawyer and Rusk counties), and Namekagon (Sawyer, Washburn, and Burnett counties). However, data was also collected on the West Fork of the Chippewa River (Sawyer County) and the St. Croix River (Burnett County). Because of smaller sample size, these two rivers are not included in all analyses.

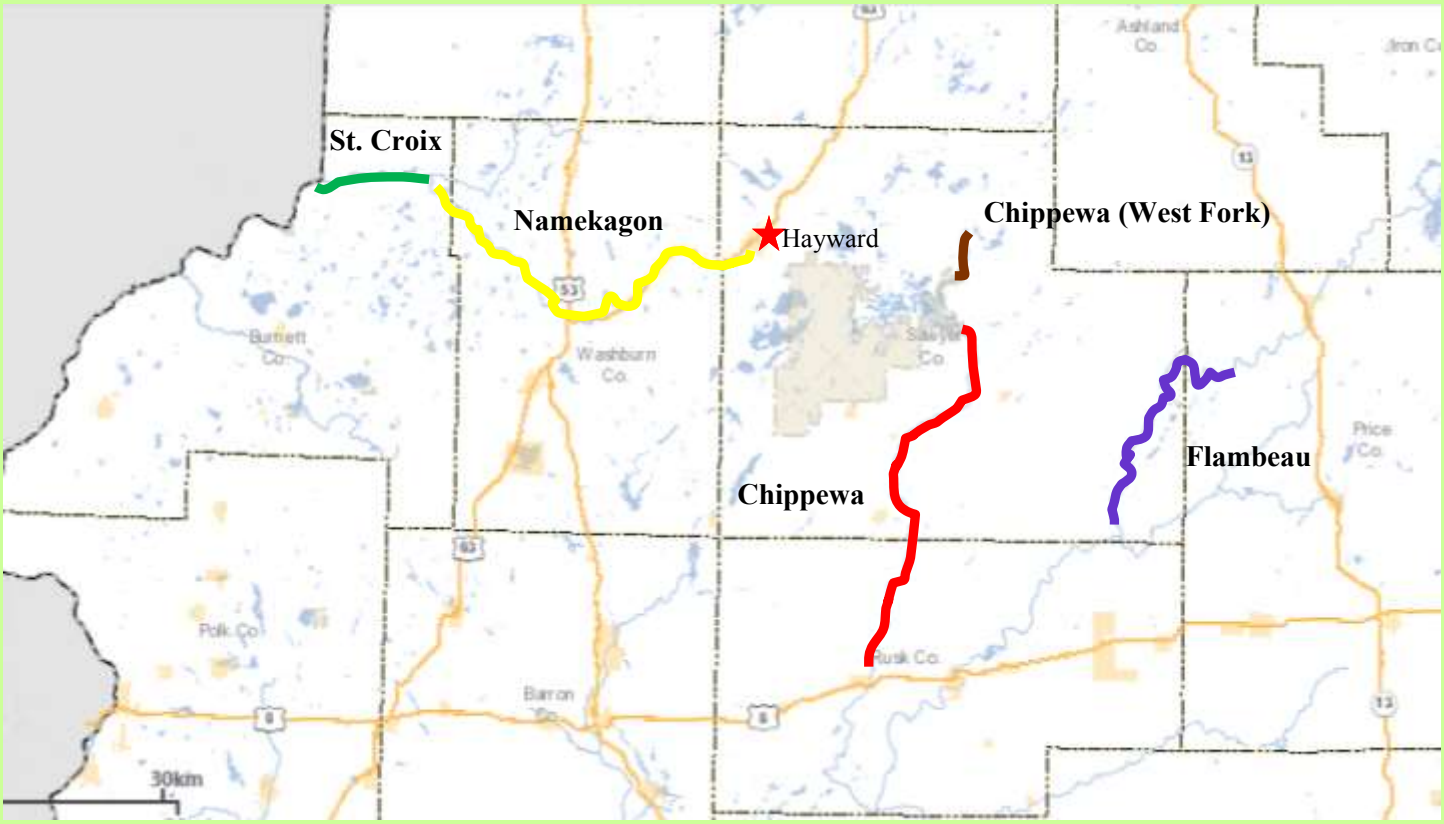

Figure 1. The sections of rivers fished by guides in the "Guide to the Future" fisheries data collection program. Each river is broken into multiple reaches that are fished for single-day float trips. Hayward, the home base for the guides, is denoted with a star.

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Description of Angling Effort and Skill

Fishing effort for guides varied considerably among rivers, with the Namekagon River receiving the most total trips and hours of targeted effort for each species (Table 1). Most guided trips took place between June and October. October had the most overall trips (353) followed by July (278) and August (224). Trips in the summer (May-August) were more likely to target smallmouth bass while trips in the fall (September-November) are more likely to target muskellunge.

Table 1. Total number of angler trips and hours spent targeting muskellunge (musky) and smallmouth bass between 2012 and 2016 as a part of the Guide to the Future project.

River	Total trips	Hours targeting musky	Hours targeting smallmouth bass
Chippewa	315	1,035	1,194
Chippewa (West Fork)	70	161	295
Flambeau	155	677	493
Namekagon	851	2,086	3,987
St. Croix	94	481	189

It was known at the onset of this project that anglers fishing with guides would have wide variation in their skill, which would likely affect catch rate data. To account for this, we asked guides to discreetly assign a skill level rating to each client. Assignment of a skill level rating was done early in the trip and was based on casting ability and prior experience so rating would not be influenced by the day's catch. The three rating categories were inexperienced/beginner, average, or expert.

As expected, catch rates for both muskellunge and smallmouth (Figure 2) differed by angler skill level. To prevent this known source of variation from influencing other comparisons, we developed a correction factor to standardize catch rates. Multipliers were applied to catch rates in each skill level (Table 2).

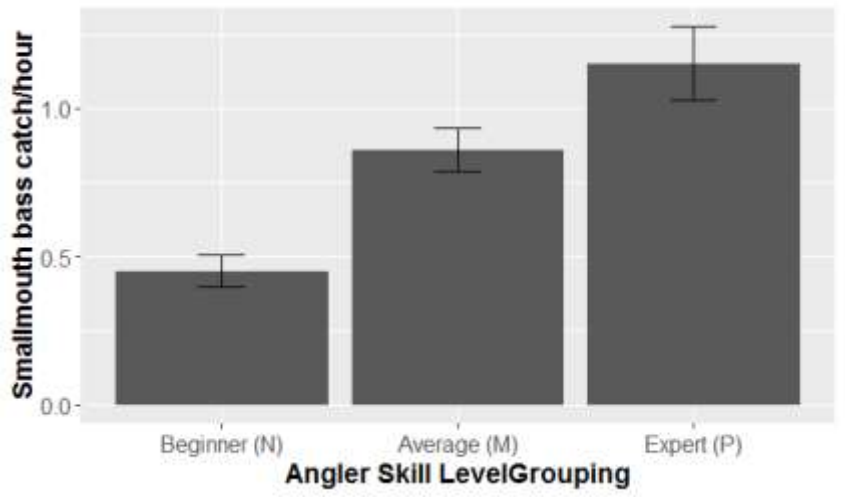

Figure 2. Catch rates (number of fish per hour of targeted angling effort) for smallmouth bass by anglers of different skill levels, shown with no correction factor applied. Error bars represent 95% confidence intervals. Skill levels were assigned by guides to account for the expected variation in catch due to individual anglers' fishing experience. Differences between the three skill levels were used to develop a correction factor to account for this variation when making other comparisons (i.e. catch rate among rivers).

Table 2. Correction factors applied to smallmouth bass and muskellunge catch rates.

	Beginner	Average	Expert
Smallmouth Bass	2.0	1.0	0.75
Muskellunge	1.5	1.0	0.5

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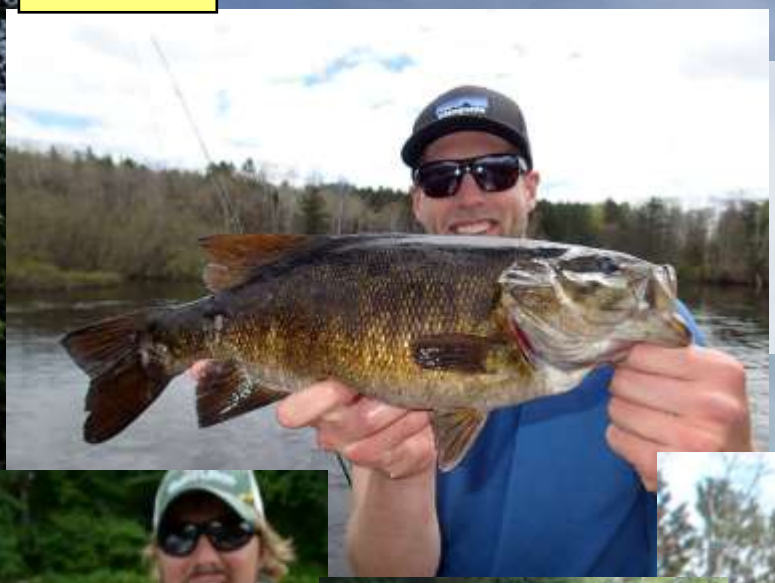
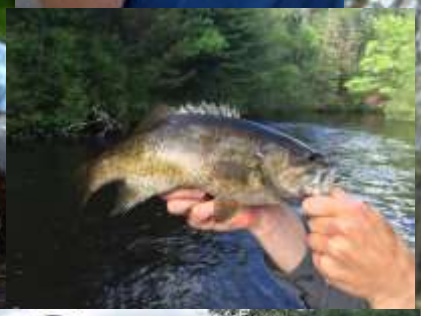
SMALLMOUTH BASS ABUNDANCE AND SIZE





WDNR Comments

Smallmouth Bass Relative Abundance and Size

Smallmouth bass are well-suited for life in shallow rocky riverine habitats and as a result they are one of the most abundant sportfish in many northern Wisconsin rivers. Smallmouth bass are a popular target for anglers fishing either from shore or on float trips, yet little is known about the relative abundance of smallmouth in one river compared to the next or how size distribution compares among rivers. Data collected by guides demonstrated significantly different catch rates for smallmouth bass among five northwestern Wisconsin Rivers (Figure 3). Differences in catch rate are assumed to reflect differences in abundance.

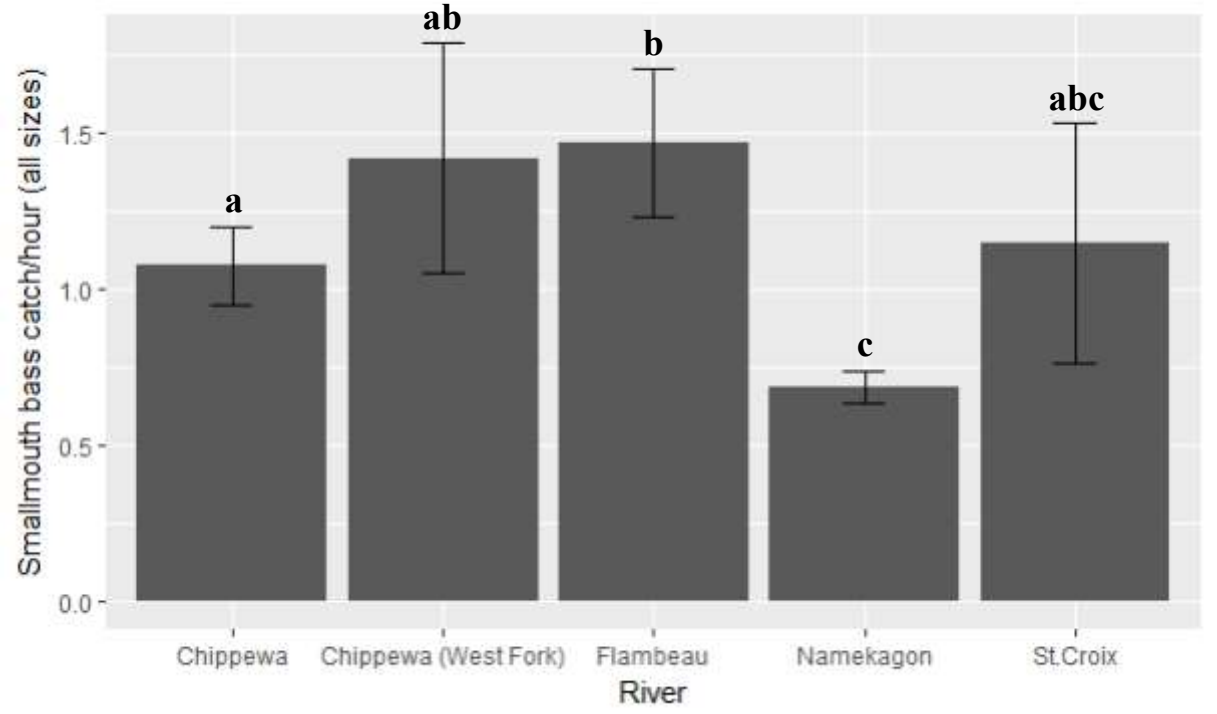


Figure 3. Skill level corrected catch rates (number of fish per hour of targeted angling effort) for smallmouth bass by river from 2012-2016. Error bars represent 95% confidence intervals. Statistically different groupings are denoted with letters.

Variation in overall catch rate of smallmouth bass among rivers is driven by variation within specific size classes. Comparing just the three rivers with the largest volume of data, the catch rates for smaller smallmouth bass was significantly higher on the Flambeau River than on the Chippewa or Namekagon (Table 3). However, catch rate for larger smallmouth bass (>17 inches) was significantly higher on the Namekagon River than the Chippewa or Flambeau. These three rivers offer differing fishing experiences. The Flambeau would be considered more of an action destination, with high overall catch rates but smaller fish, while the Namekagon is clearly more of a trophy opportunity with lower catch rates but higher catch of large smallmouth.

Table 3. Skill level corrected catch rates (number of fish per hour of targeted angling effort) of smallmouth bass by size class for three northwestern Wisconsin Rivers from 2012-2016. Statistically different groupings are denoted with letters.

Size Class	Chippewa	Flambeau	Namekagon
7-11 inches	0.38 (±0.07)[b]	0.70 (±0.16)[a]	0.10 (±0.02)[c]
11-14 inches	0.39 (±0.06)[a]	0.44 (±0.09)[a]	0.20 (0.02)[b]
14-17 inches	0.24 (±0.05)	0.30 (±0.08)	0.27 (±0.03)
>17 inches	0.07 (±0.02)[b]	0.03 (±0.02)[b]	0.11 (±0.02)[a]
All sizes	1.07 (±0.12)[b]	1.47 (±0.24)[a]	0.69 (±0.05)[c]

WDNR Comments

Smallmouth Bass Size Structure

Based on reported data from guides, size structure of smallmouth bass varied considerably among rivers. Catch in the Flambeau River was dominated by smaller bass, while catch in the Namekagon was predominantly larger fish, the Chippewa River catch was intermediate with the three smaller size classes represented fairly evenly in the catch (Figure 4). In the Flambeau, only 22% of smallmouth caught were over 14 inches, while on the Chippewa 33% were over 14 inches, and on the Namekagon 56% were over 14 inches. Interestingly, all three rivers have the same fishing regulations. It is not clear why the apparent difference in size structure among rivers exists. It appears, based on catch rate, that density of smallmouth bass is higher in the Flambeau River which may lead to slower, density-dependent growth. It is possible that prey availability differs among these three rivers independent of smallmouth bass density. Mortality may also play a role in structuring these smallmouth bass populations. If mortality of adult smallmouth bass is higher on one river compared to another it may result in differing size structure. Mortality could be due to environmental conditions, including overwintering habitat, or angler harvest, though harvest is believed to be minimal on all three rivers. A growth rate and age structure analysis would be beneficial to better understanding dynamics of these populations.

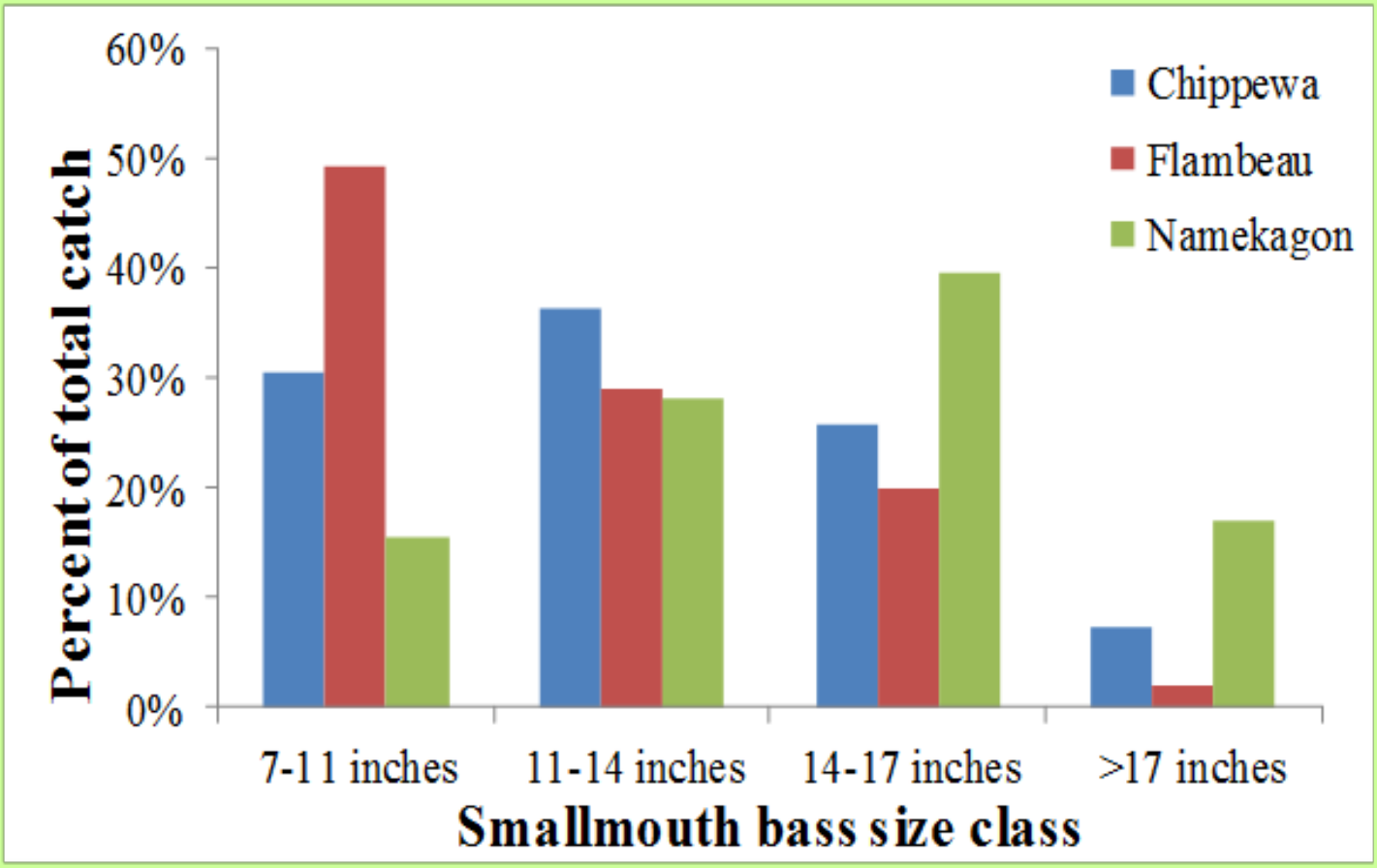


Figure 4. Smallmouth bass catch by size category for three rivers in northwestern Wisconsin fished by guides and their clients from 2012-2016.

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MUSKELLUNGE ABUNDANCE AND SIZE

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Muskellunge Relative Abundance and Size

Interpreting muskellunge catch rate data was made more difficult by the high degree of variation that inevitably exists when dealing with a species that occurs in low abundance and is challenging to catch. However, five seasons of data collection have provided enough data to start making statistical comparisons of muskellunge catch. Data collected by guides demonstrated significantly different catch rates for muskellunge among five northwestern Wisconsin Rivers (Figure 5). Differences in catch rate are assumed to reflect differences in abundance.

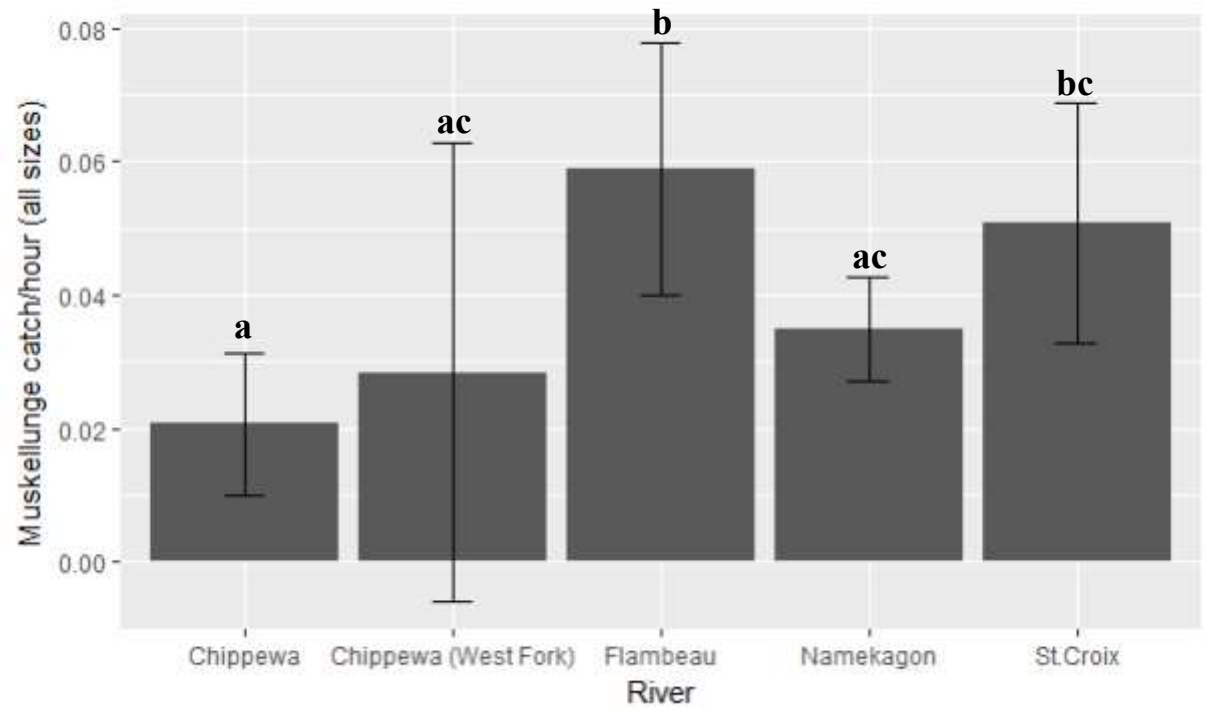

Figure 5. Skill level corrected catch rates (number of fish per hour of targeted angling effort) for muskellunge by river from 2012-2016. Error bars represent 95% confidence intervals. Statistically different groupings are denoted with letters.

Variation in overall catch rate of muskellunge among rivers was driven by variation within specific size classes. Comparing just the three rivers with the largest volume of data, the catch rates for smaller muskellunge (20-30 inches and 30-40 inches) were significantly higher on the Flambeau River than on the Chippewa or Namekagon (Table 4). However, catch rate for larger muskellunge (>40 inches) was significantly higher on the Namekagon River than the Chippewa or Flambeau. Catching a musky is rare under any circumstances, but the average catch rate of muskellunge by guided anglers as a part of this project (17.1 hours of fishing per musky) compare favorably to catch rates for anglers on lakes (~33 hours of angling per musky).

Table 4. Skill level corrected catch rates (number of fish per hour of targeted angling effort) of muskellunge by size class for three northwestern Wisconsin Rivers from 2012-2016. Statistically different groupings are denoted with letters.

Size Class	Chippewa	Flambeau	Namekagon
20-30 inches	0.008 (±0.006)^{b}	0.033 (±0.017)^{a}	0.013 (±0.005)^{b}
30-40 inches	0.011 (±0.008)^{b}	0.024 (±0.011)^{a}	0.013 (±0.005)^{b}
40-50 inches	0.002 (±0.003)^{b}	0.003 (±0.003)^{ab}	0.009 (±0.004)^{a}
>50 inches	0.000	0.000	0.001 (±0.001)
All sizes	0.021 (±0.011)^{b}	0.059 (±0.019)^{a}	0.035 (±0.008)^{b}

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Muskellunge Size Structure

Based on reported data from guides, size structure of muskellunge varied slightly among rivers. Catch in all three rives is dominated by fish in the 20-40 inch range (Figure 6). The Namekagon River has demonstrated the best size potential evidenced by a larger percentage of the catch being over 40 inches and producing the only 50 inch muskellunge recorded by guides and their clients during the span of this project.

The relative infrequency of muskellunge over 40 inches being caught by guided anglers on these rivers is of interest. Many of the rivers fished as a part of this project are connected to impoundments which generally have larger fish than what was being caught in the rivers. The discrepancy in size structure between impoundments and rivers may be due to gear selectivity where fly fishing disproportionately targets the smaller sized muskellunge. But it may also be a result of habitat selection by larger fish, slower growth of fish inhabiting rivers, higher mortality of adult muskellunge in rivers, or other factors. More exploration into these trends is warranted.

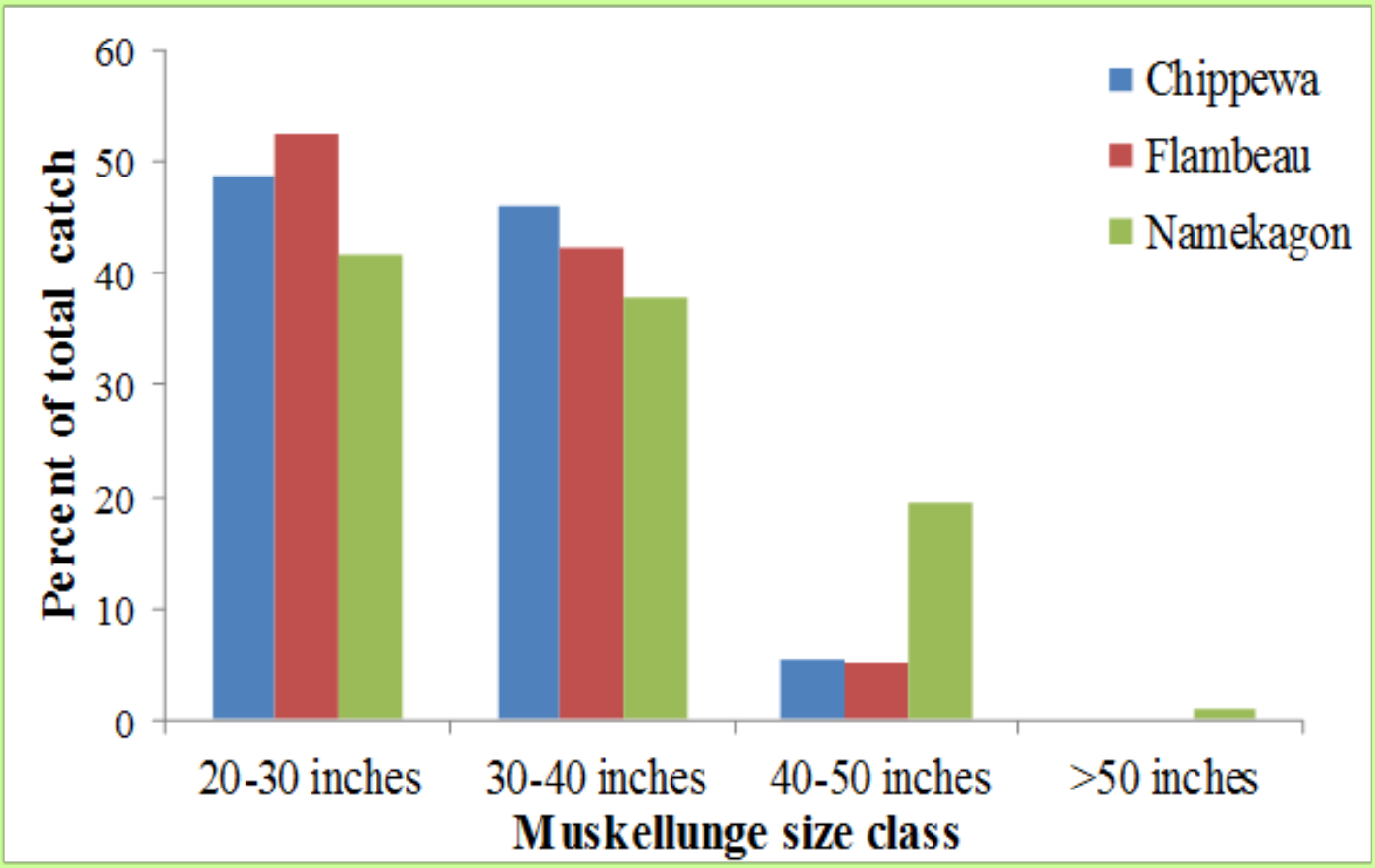

Figure 6. Muskellunge catch by size category for three rivers in northwestern Wisconsin fished by guides and their clients from 2012-2016.

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TEMPORAL TRENDS IN CATCH RATES

WDNR Comments

Catch By Year

Clear trends in catch rate by year within individual rivers were not always evident for either species. Catch rate for smallmouth bass on the Namekagon has been remarkably consistent across time. Catch rate for smallmouth bass on the Flambeau River demonstrated the greatest oscillation (Figure 7). Year-to-year data for muskellunge catch rate on the St. Croix and West Fork Chippewa rivers was limiting and therefor those rivers were excluded from that analysis. Other rivers demonstrated relatively consistent catch rates for muskellunge, with some evidence of declining catch rate for the Chippewa River. Once again, catch rate data for muskellunge was marked by a high degree of variability.

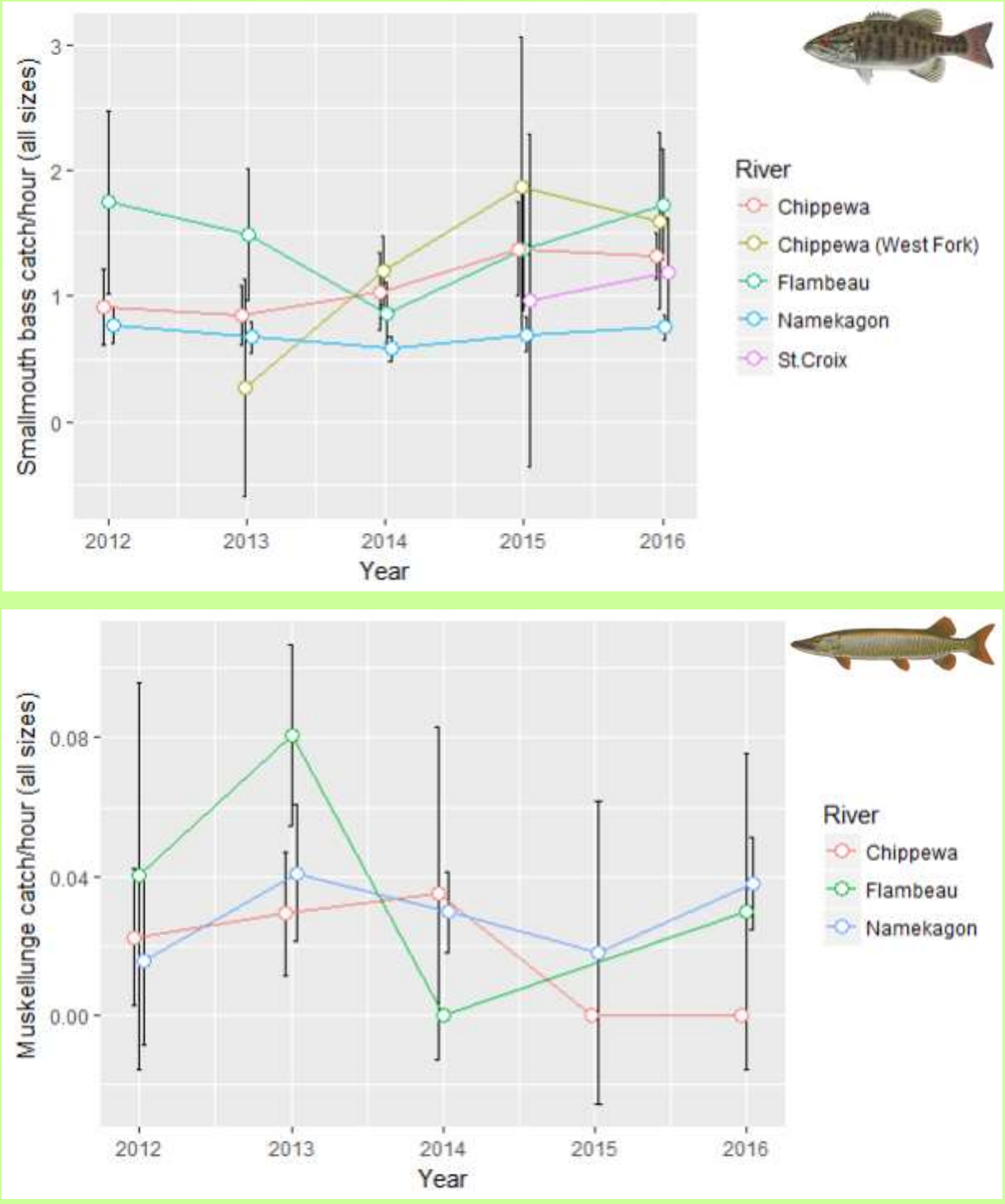

Figure 7. Smallmouth bass (top panel) and muskellunge (bottom panel) skill level corrected catch rates in three rivers in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals.

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Catch By Month

Catch rates by month showed interesting patterns for both smallmouth bass and muskellunge, though differences were not always statistically significant. For smallmouth, catch rate was higher in July than in the cooler months of June and September (Figure 8). Guides have anecdotally reported poor success targeting smallmouth in these rivers after September, and as a result very little smallmouth bass data exists for those months. Catch rates for muskellunge showed an inverse pattern to smallmouth, with generally higher catch in cooler months (early summer and fall), though there were not statistically significant differences among months. It should be noted that muskellunge catch data from summer months is more limited since guides are typically targeting smallmouth bass at that time. Trips targeting muskellunge in December have been rare, but successful.

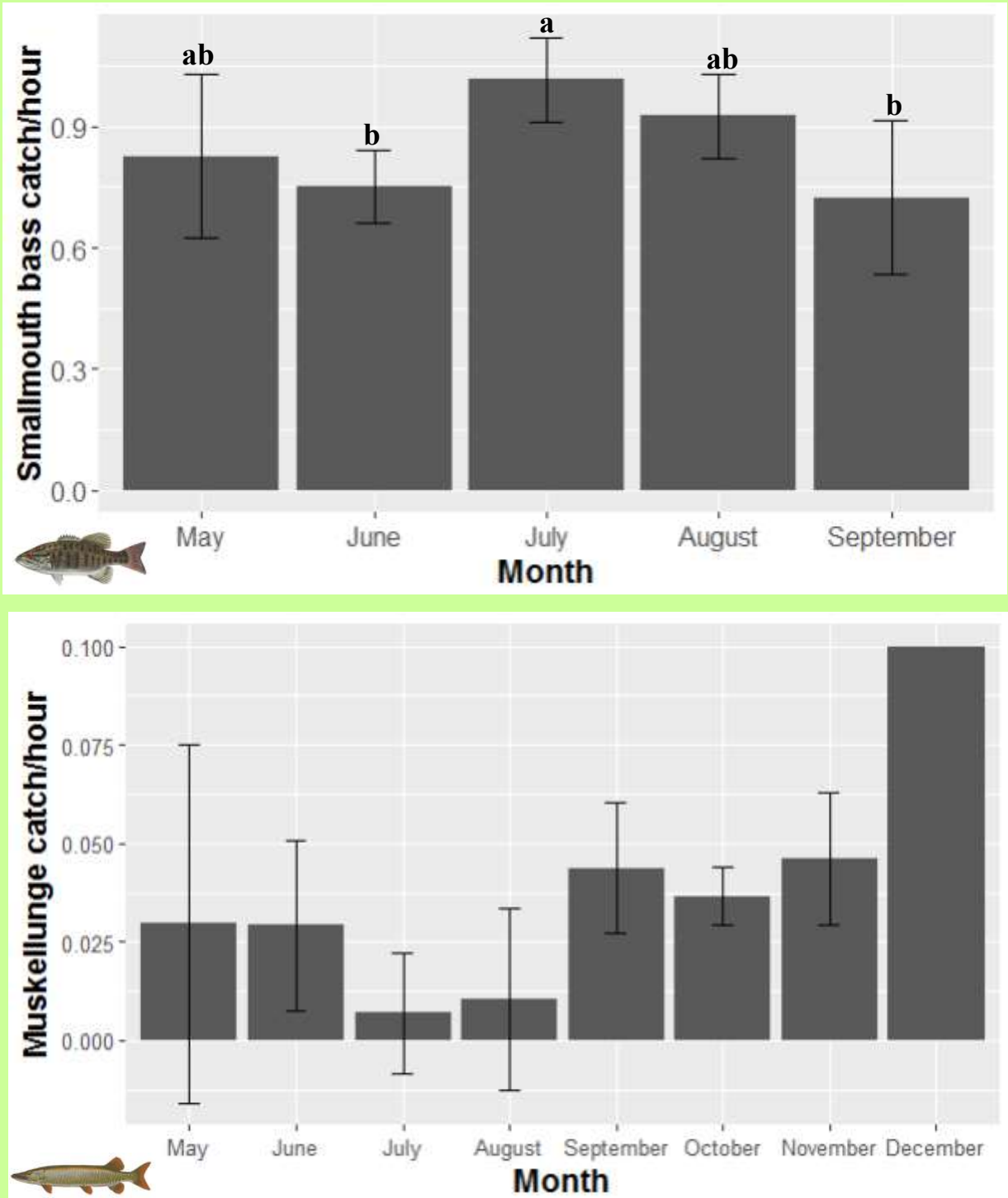

Figure 8. Smallmouth bass (top panel) and muskellunge (bottom panel) skill level corrected catch rates by month in three rivers in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals. Letters represent statistically significant groupings.

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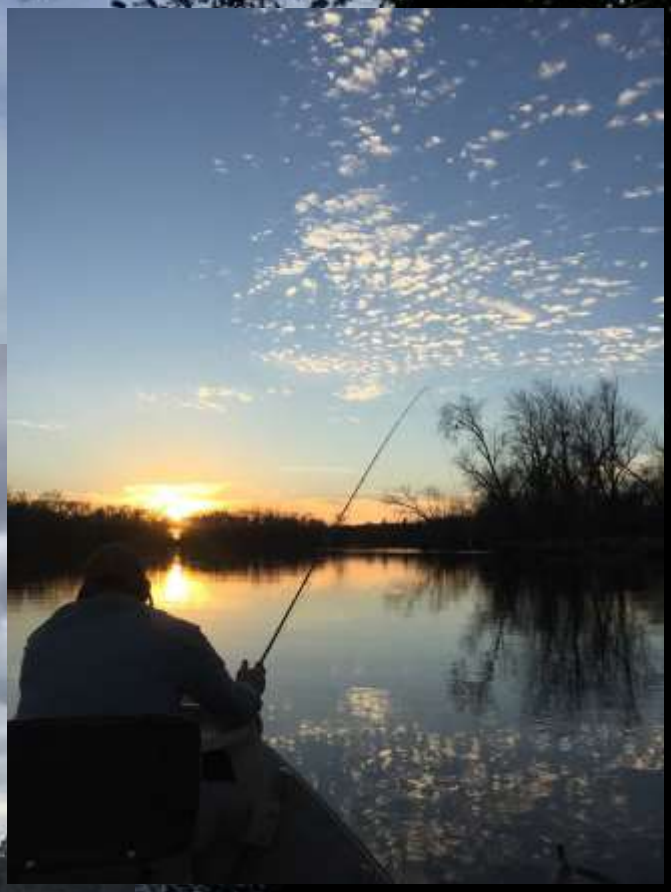
SPATIAL TRENDS IN CATCH RATES



WDNR Comments

Smallmouth Bass Catch By River Reach

Smallmouth bass catch rate across different reaches within the same river did not reveal many consistent patterns (Figure 9). For example, there was no evidence that smallmouth bass catch rate consistently increased or decreased from upstream reaches to downstream reaches. Catch rates on the Chippewa River were significantly lower at Chip3 compared to Chip1 and Chip5, but no other trends were present. Catch rates on the Flambeau and Namekagon were statistically similar across all reaches. Given that few differences in catch rate were observed, one can conclude that smallmouth bass fishing quality is generally similar along the entire stretch of each river fished by guides as a part of this project. It also indicates that there are few major habitat issues (dams, impaired discharge, etc.) that limit smallmouth bass populations in particular reaches.

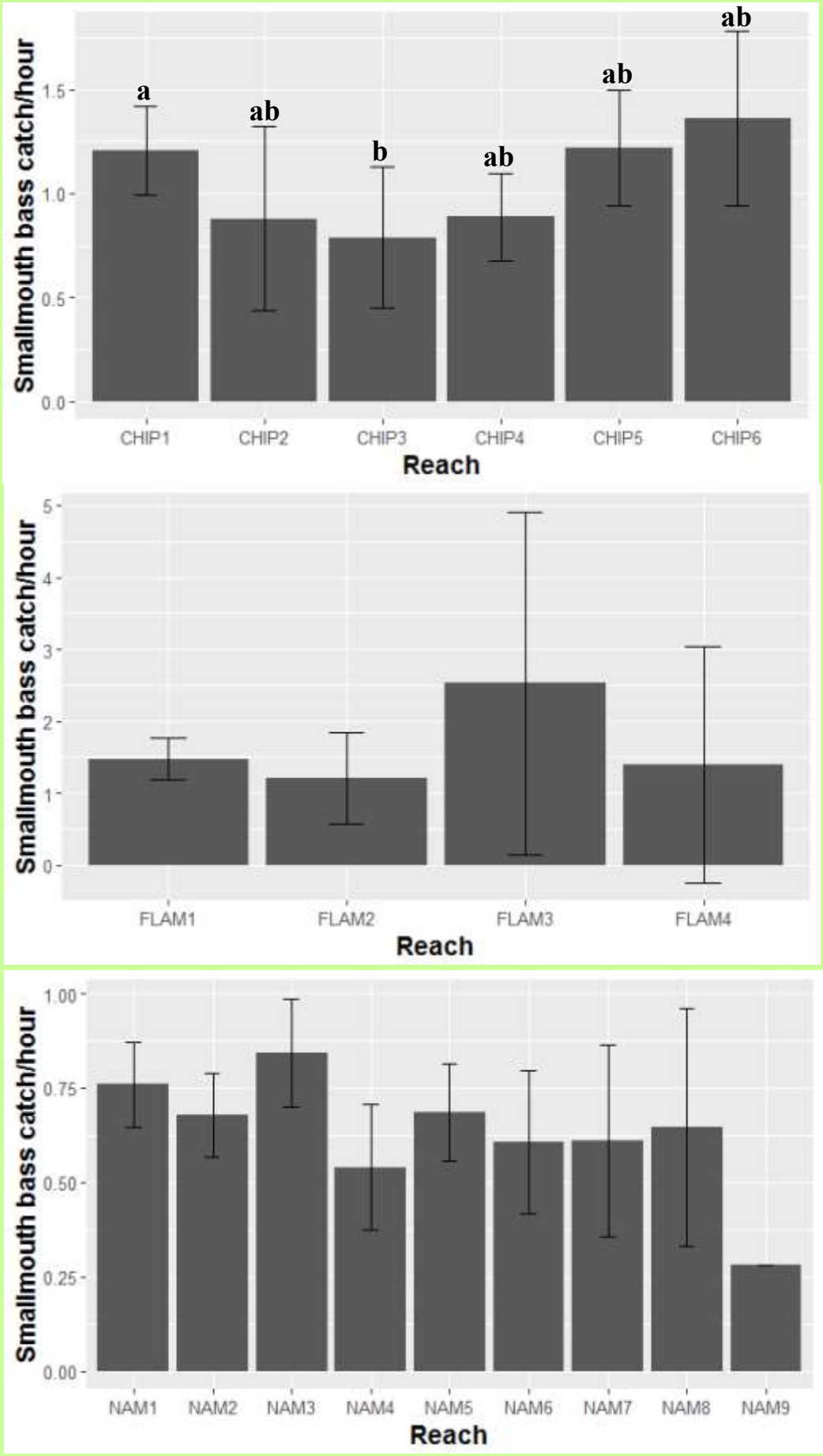


Figure 9. Smallmouth bass skill level corrected catch rates by reach in three rivers (top=Chippewa, middle=Flambeau, bottom=Namekagon) in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals. Letters represent statistically significant groupings. Reaches are arranged from upstream to downstream (i.e. CHIP1 is upstream of CHIP2 and so on).

WDNR Comments

Muskellunge Catch By River Reach

Muskellunge catch rate by river reach similarly did not reveal statistically significant patterns (Figure 10). However, several notable trends are present. Almost no muskellunge are caught on the Namekagon River upstream from Namekagon4. Muskellunge are known to inhabit these upper reaches and it is not clear why this pattern exists

As with other analyses in this report, the comparison of muskellunge catch by river reach was limited by high variation (see wide error bars in Figure 10) and was exacerbated by low sample size for some reaches. Perhaps the inclusion of more data from future years of fishing will allow for better comparisons of muskellunge catch within rivers.

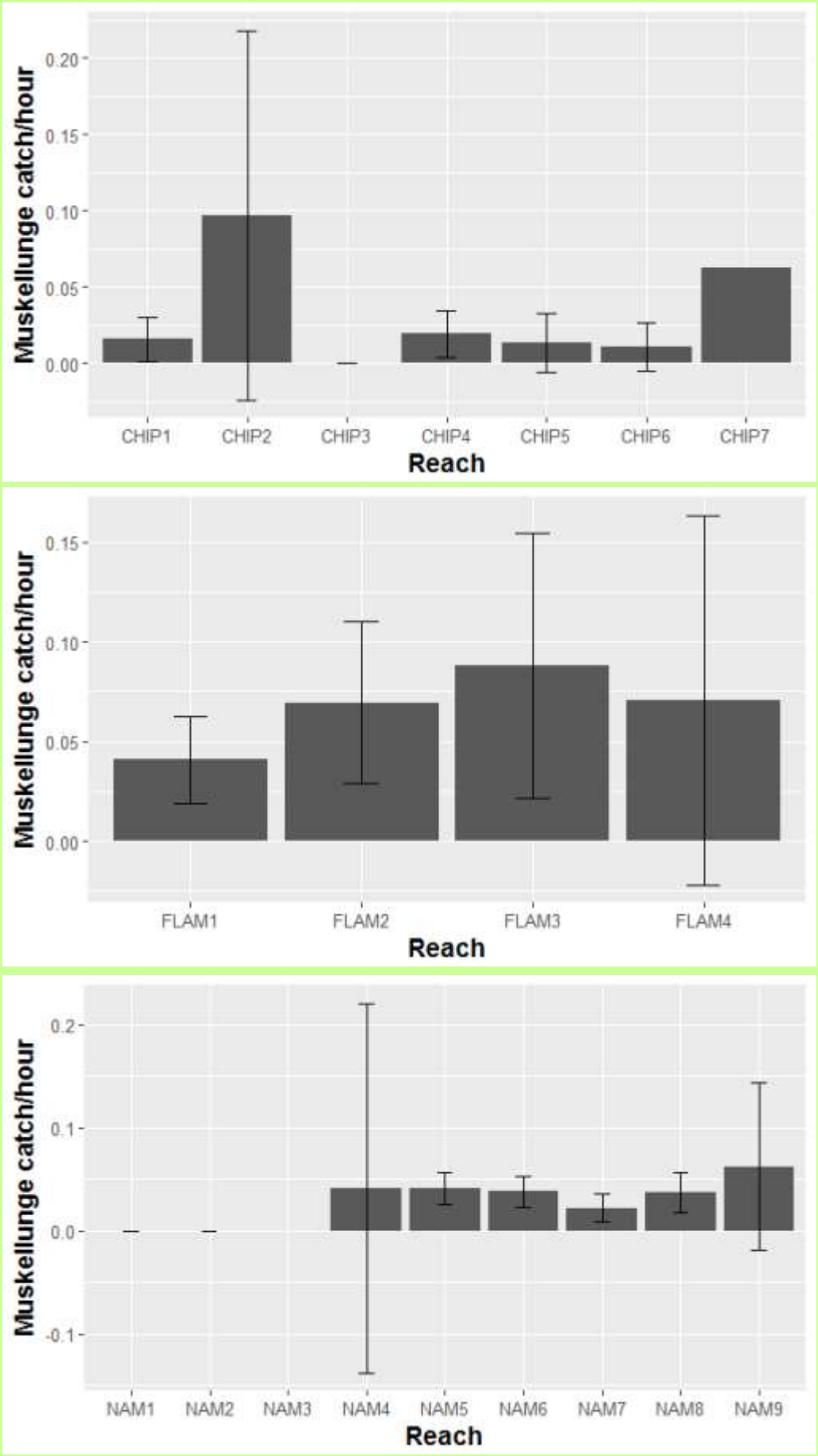
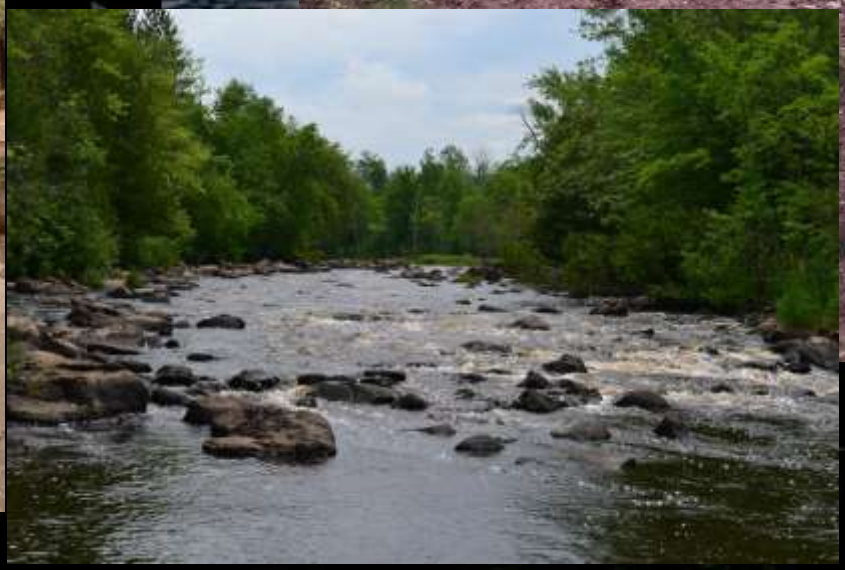


Figure 10. Muskellunge skill level corrected catch rates by reach in three rivers (top=Chippewa, middle=Flambeau, bottom=Namekagon) in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals. Letters represent statistically significant groupings. Reaches are arranged from upstream to downstream (i.e. CHIP1 is upstream of CHIP2 and so on).

WDNR Comments

INFLUENCE OF ENVIRONMENTAL CONDITIONS ON CATCH RATES



WDNR Comments

Catch Rates and River Discharge

The guides who participated in this project consider river discharge to have a considerable impact on fishing success. We conducted a regression analysis to compare catch rates for smallmouth bass and muskellunge with discharge. This analysis included days with mitigating conditions to capture fishing under extreme discharge. A separate model was constructed for each species x river combination. Generally speaking, catch rates for both smallmouth bass and muskellunge demonstrated a negative trend with increasing discharge. However, in all but one case (smallmouth bass in the Flambeau River) the trend was not statistically significant (Figure 11). Future data collection may allow us to better describe this relationship. Similarly, more data may allow for exploration of quadratic or nonlinear relationships, which may effectively allow for determination of "ideal" discharge conditions for catching each species.

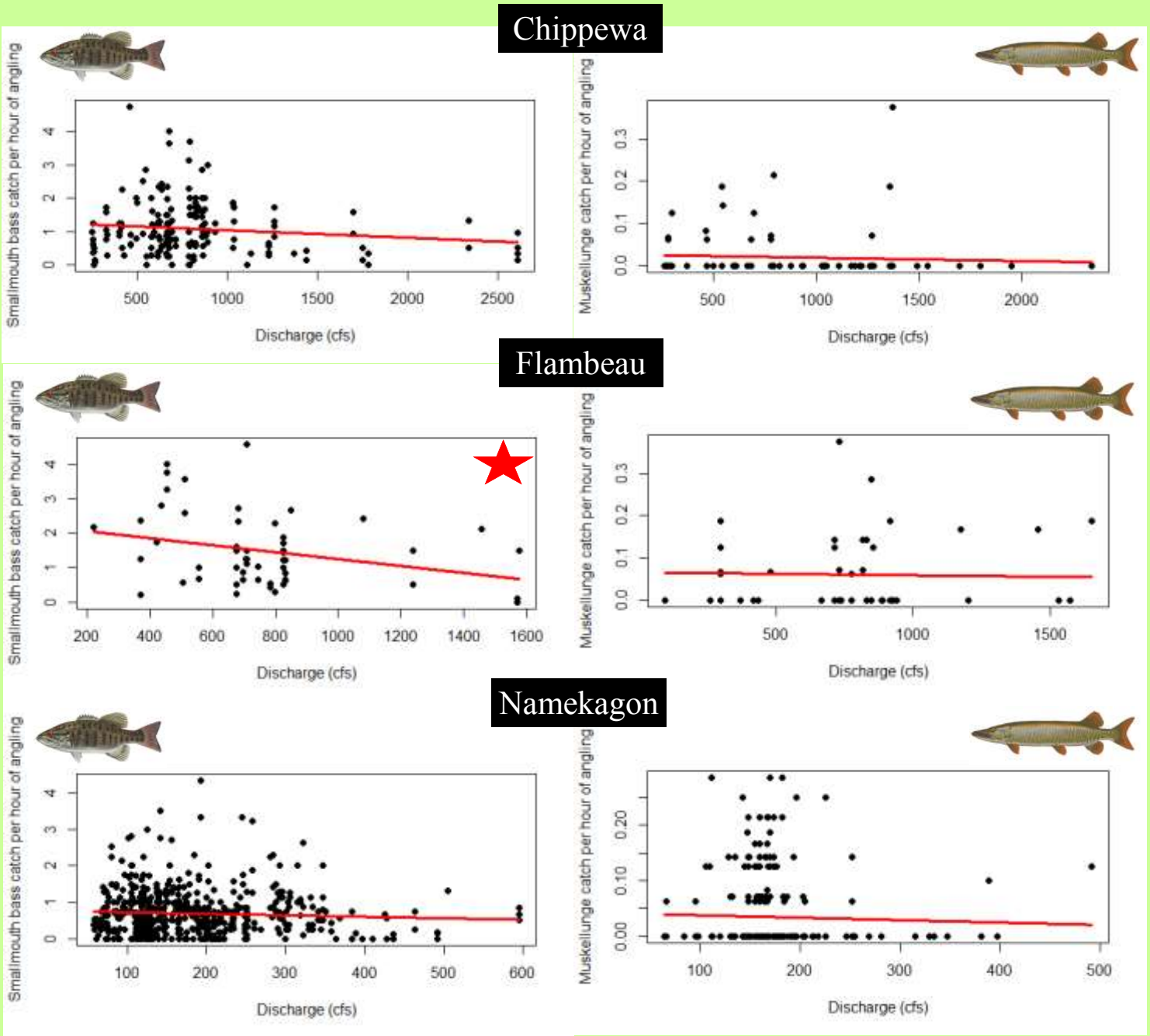


Figure 11. Comparison of skill level corrected catch rates for smallmouth bass (left column) and muskellunge (right columns) with river discharge (cubic feet per second) on the day of fishing for guided anglers on three northwestern Wisconsin rivers from 2012-2016. A red star in a panel demotes a statistically significant relationship ($P<0.05$).

WDNR Comments

Catch Rates and River Level Changes

Changing river conditions prior to a day of fishing is also considered to be an important factor determining fishing success. We compared catch rates for smallmouth bass and muskellunge from all rivers under three different conditions: falling water level (>15% drop in discharge over 3 days), flat water level (<15% change in discharge over 3 days), and rising water level (>15% increase in discharge over 3 days). Catch rates for smallmouth were significantly higher under flat water conditions compared to rising water (Figure 12). A similar pattern appears to be present for muskellunge, though it was not statistically significant.

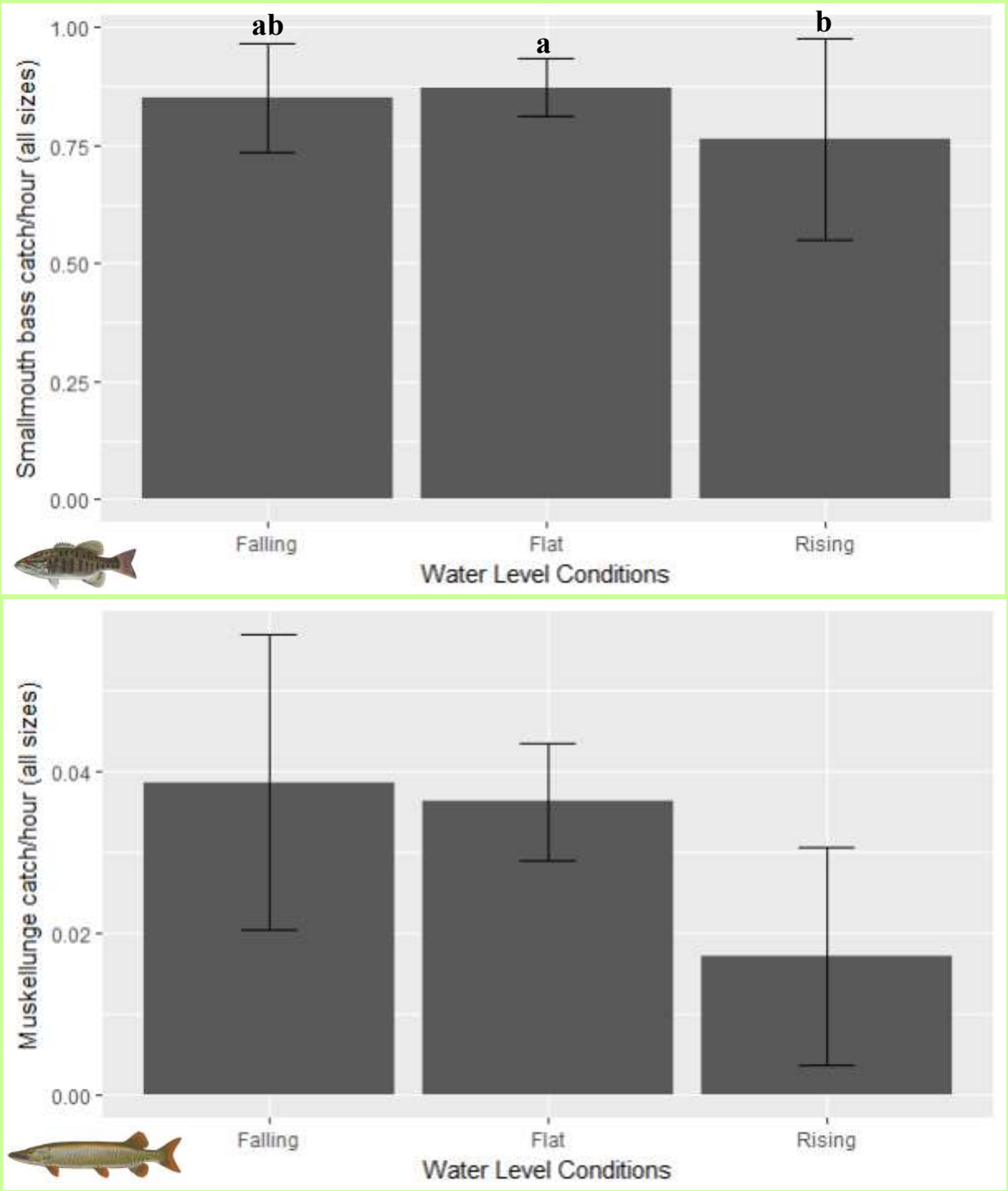


Figure 12. Skill level corrected catch rates of smallmouth bass (top panel) and muskellunge (bottom panel) under three different river conditions. Data was collected by in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals. Letters represent statistically significant groupings.

WDNR Comments

Catch Rates and Water Temperature

Water temperature is an important factor determining many aspects of fish behavior. Guides participating in this project collect daily water temperature data on-site at noon in a shaded area. We compared catch rates for smallmouth bass and muskellunge with water temperature across all rivers (Figure 13). Smallmouth bass demonstrated a significant positive relationship between water temperature and catch rate. This result matches the observed higher catch rates in peak summer months. There was no statistically significant trend between muskellunge catch rate and temperature, but there was an indication of higher catch between 50-70F.

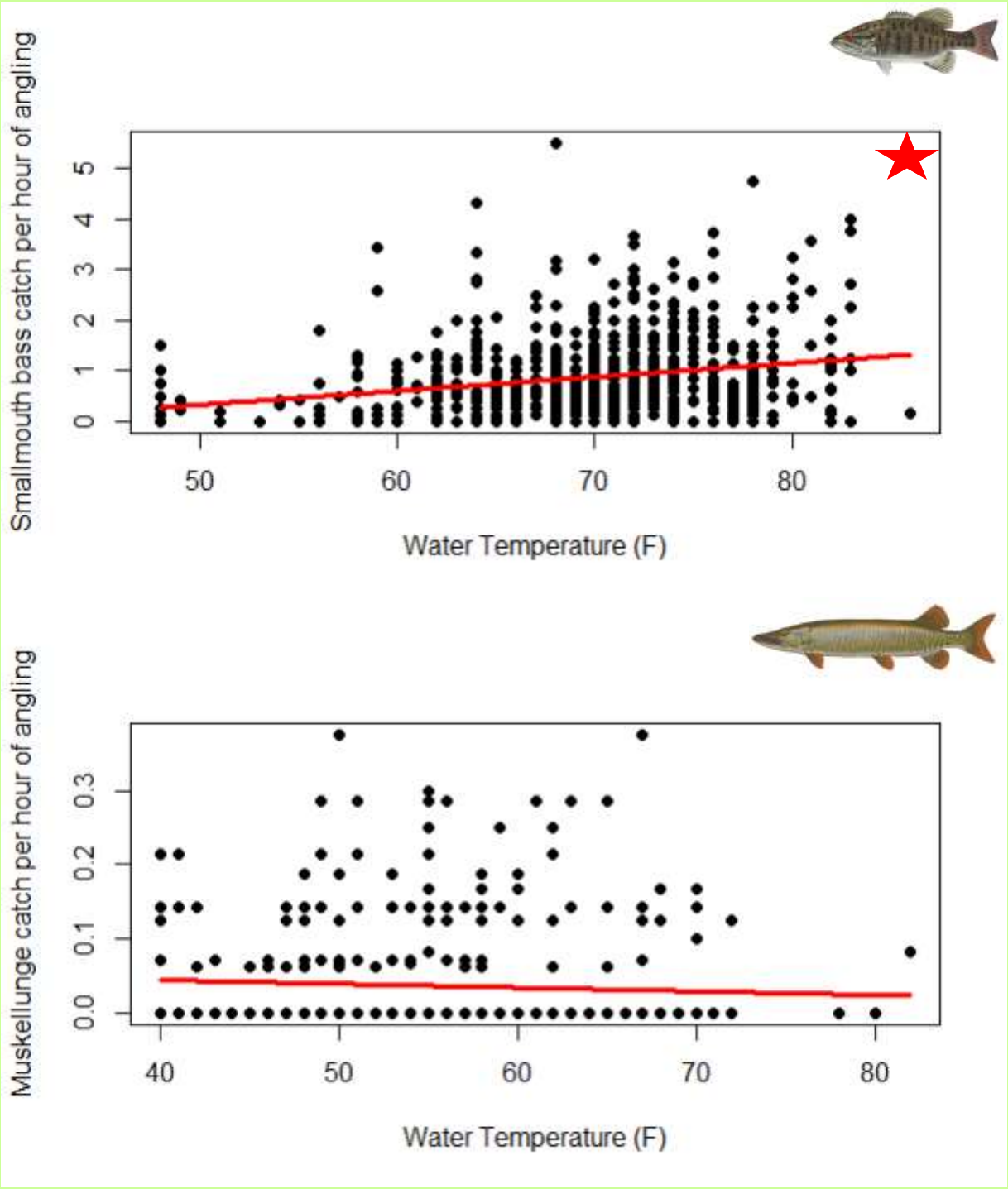


Figure 13. Comparison of skill level corrected catch rates for smallmouth bass (top panel) and muskellunge (bottom panel) with water temperature on the day of fishing for guided anglers on three northwestern Wisconsin rivers from 2012-2016. A red star in a panel demotes a statistically significant relationship ($P<0.05$).

WDNR Comments

CATCH RATES FOR OTHER SPECIES

WDNR Comments

Catch Rate of Northern Pike and Other Species

While smallmouth bass and muskellunge were the target species for all trips included in this project, other predator species were caught incidentally. Guides recorded all incidental catch which provided at least a limited amount of information on northern pike, walleye, and largemouth bass populations. Catch rates for northern pike were significantly higher on the Namekagon River in comparison to the Flambeau River, with the Chippewa River being intermediate (Figure 14). Overall, incidental catch rate of northern pike was similar to that of targeted catch rate for muskellunge. Northern pike density appears to be relatively low in these rivers in comparison to lakes in the area. Incidental catch of walleye and largemouth bass was rare. Only 22 walleye were caught in 1,486 angler days of fishing. Walleye are believed to be more common in these rivers than the low catch would indicate. As a result, we believe that fly fishing guide data may not be a representative way to sample walleye populations in rivers. Only 34 largemouth bass were captured incidentally as a part of this project. Based on their similarities to smallmouth bass we feel more confident that the low catch of largemouth bass is, in fact, representative of the populations in these rivers. Largemouth bass likely occur at a very low density in these fast, rocky rivers. Largemouth bass are generally considered to be better suited for lake environments.

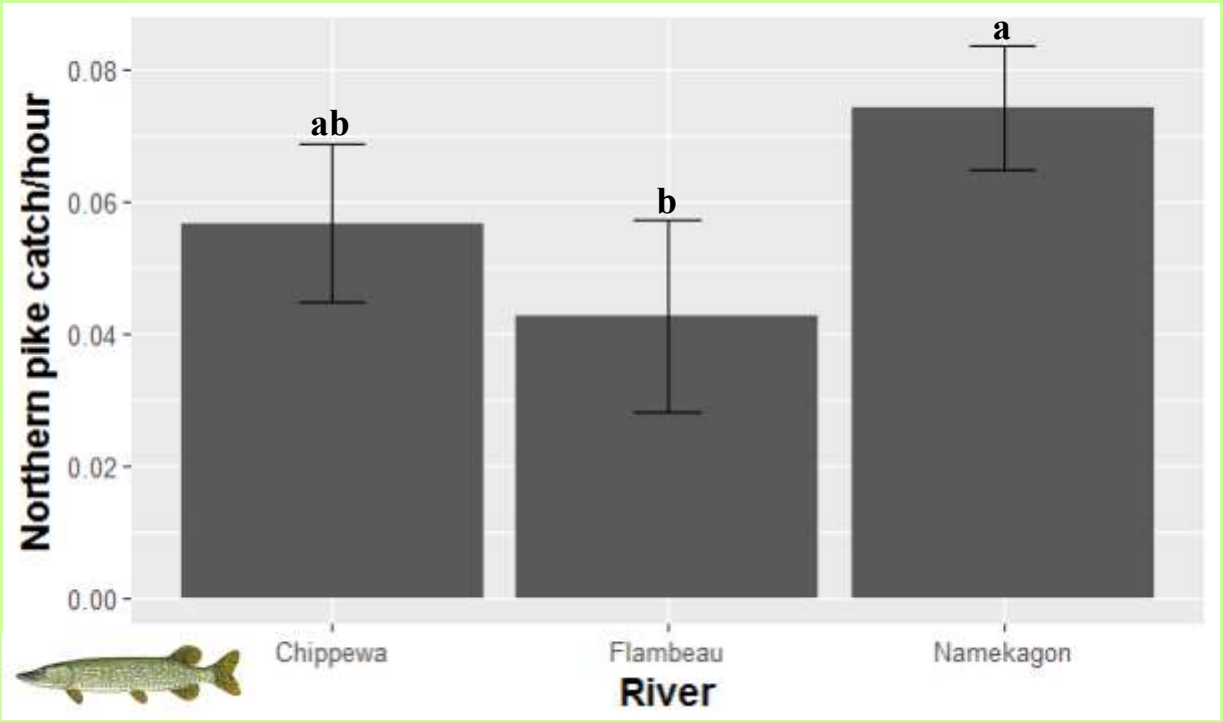


Figure 14. Northern pike incidental catch rates (number per hour of total angling) in three rivers in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals.

WDNR Comments

WISCONSIN CONSERVATION DEPARTMENT
Madison, Wisconsin 53701

Fi-320

LIMNOLOGY

County Sawyer (5 8) Waters Hayward Lake (9 1)

Location: Section 26,27 Township 41N Range 9W

Area (acres): 247.1

Type of Water: Lake ..... Stream ..... Impoundment x

Dimensions: Length (miles and tenths) 1.80 Width .33

Depth: Mean ..... Maximum (feet) 17
> 20 feet (percent) 0
< 3 feet (percent) 43

Shore Length (miles and tenths): 8.64

Littoral Bottom Types (percent): Sand 60 Clay .....
Gravel 8 Hardpan .....
Bedrock ..... Boulder .....
Silt ..... Marl ..... Rubble ..... Detritus 32

Direct Drainage Area (square miles): 1.85

Watershed Land Cover (percent): Agriculture 60
Wetland ..... Wild 40

Watershed: Area (square miles) 93.51

Inlets: Number ..... Width (feet) ..... Navigability yes Volume

Outlet: Width (feet) ..... Navigability yes Volume

Landlocked: no

Water Control Structure:
Owner ..... Height (feet) 17 Type ..... Purpose .....

Water Source: Drainage x Seepage ..... Spring ..... Drained .....

Flow of Outlet (cfs): 275.0

Water Chemistry:
Date July 1964 MPA Alkalinity (ppm) 69

pH: 8.2

Phosphates: Total ..... Dissolved .....

Conductance: C_t ..... C_{f77} 130

Watercolor: Lt. Brown ..... Med. Brown ..... Drk. Brown ..... Clear x Turbid .....

Secchi Disk (depth in feet): 15

Conditions .....

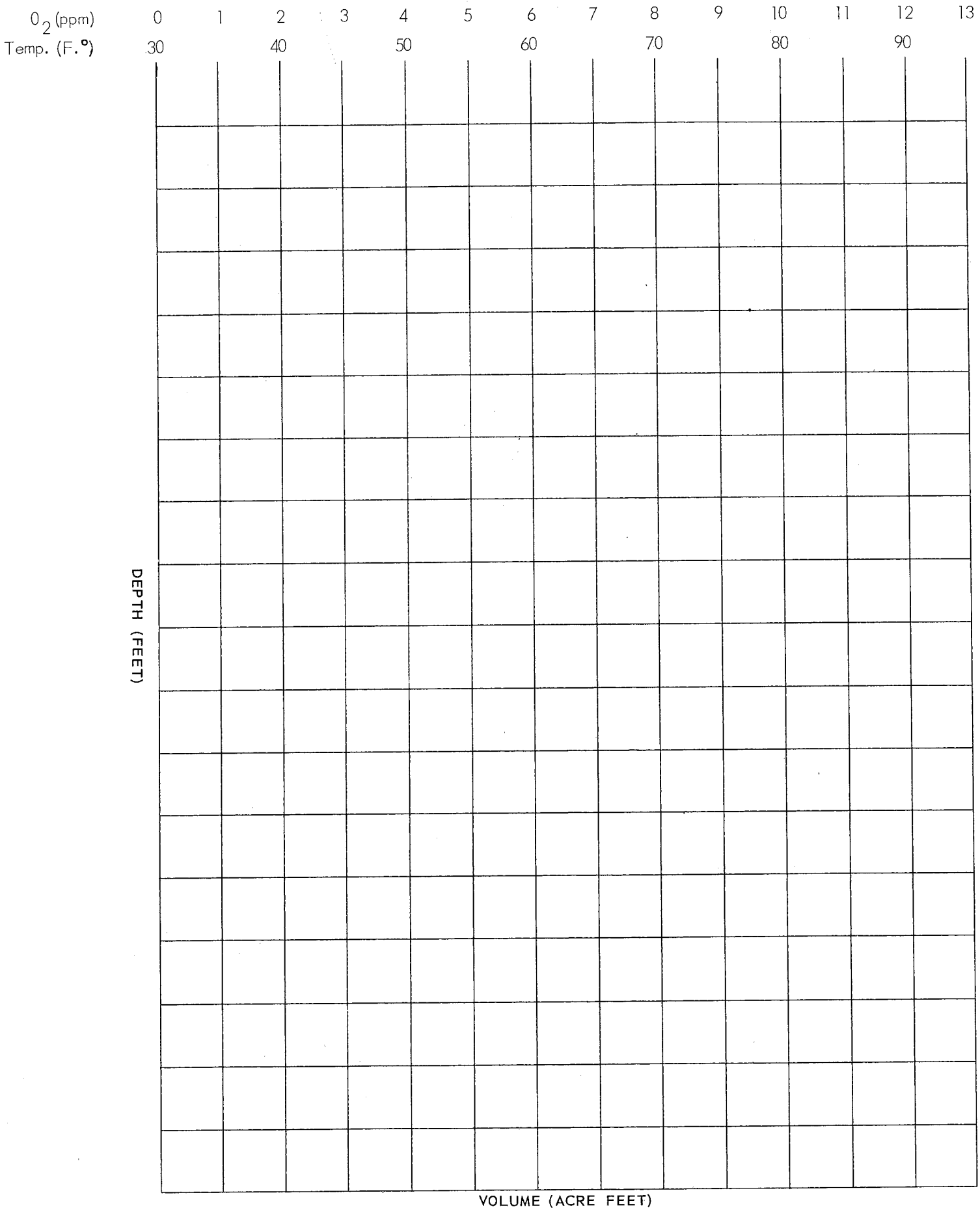
Upper Thermocline Depth (feet): ..... Chloride (ppm) .....

Comments: .....

Signed M. Perkins (Compiler) Date July 1964

WDNR Comments

OXYGEN, TEMPERATURE, VOLUME PROFILE



Date of Collection .....

WDNR Comments

WISCONSIN CONSERVATION DEPARTMENT
Madison, Wisconsin 53701

Fi-321

FISH DATA

County ..... Sawyer ..... 5 8 Waters ..... Hayward Lake 9 1

Use Problems Sec. 26, 27, T41N, R9W

Winterkill: Yes ..... No ..... X ..... Frequency .....

Macrophytic Vegetation

Yes ..... No ..... X ..... Control Measures .....

Species	Abundance	Species	Abundance	Species	Abundance

Algae: Yes ..... No ..... X ..... Species .....

Carp: Yes ..... No ..... X ..... Comment on Condition .....

.....

Stunted Panfish: Yes ..... No ..... X ..... Species .....

Pollution: Yes ..... No ..... X ..... Source .....

Fluctuating Water Levels: None ..... X ..... Man ..... Natural ..... Range .....

Basic Management: .....

Walleye, Northern Pike, Bass, and panfish.

.....

.....

.....

Fish Species: Describe as Present (P), Common (C), or Abundant (A)

Esocidae

Muskellunge	P	15
Northern pike	A	16
Mud pickerel	.....	17

Percidae

Walleye	C	18
Sauger	.....	19
Perch	C	20

Centrarchidae

Largemouth bass	C	21
Smallmouth bass	P	22
Bluegill	A	23
Black crappie	C	24
White crappie	.....	25
Rock bass	P	26
Pumpkinseed	C	27
Warmouth	.....	28
Green sunfish	.....	29

Serranidae

White bass	.....	30
Yellow bass	.....	31

Ameiuridae

Channel catfish	.....	32
Flathead catfish	.....	33
Black bullhead	C	34
Brown bullhead	.....	35
Yellow bullhead	.....	36

Salmonidae

Lake trout	.....	37
Brook trout	.....	38
Brown trout	.....	39
Rainbow trout	.....	40
Cisco	.....	41
Whitefish	.....	42

Cyprinidae

Carp	.....	43

Catostomidae

White sucker	C	44
Buffalo	.....	45
Spotted sucker	.....	46
Quillback	.....	47
Sturgeon sucker	.....	48
Redhorse	P	49
Lake chub sucker	.....	50

Lepisosteidae

Longnose gar	.....	51
Shortnose gar	.....	52

Bowfin	.....	53
Mooneye	.....	54
Gizzard shad	.....	55

Burbot	.....	56
Sheepshead	.....	57

Acipenseridae

Rock sturgeon	.....	58
Shovelnose sturgeon	.....	59

Cyprinidae

Bluntnose minnow	.....	60
Common shiner	.....	61
Golden shiner	.....	62
Redbelly dace	.....	63
Creek chub	.....	64
Emerald shiner	.....	65

Other species	.....	66
	.....	67
Johnny Darter	P	68
Bluntnose Minnow	P	69
	.....	70
	.....	71
	.....	72
	.....	73
	.....	74
	.....	75
	.....	76
	.....	77
	.....	78
Crayfish	.....	79

Signed ..... L. M. Sather ..... July 1964 ..... (Compiler)

Data Source Area File & Gen. Lake Cond.

4-66

WDNR Comments

WISCONSIN CONSERVATION DEPARTMENT
Madison, Wisconsin 53701

Fi-326

PUBLIC ACCESS AND GAME ASSETS

County Sawyer (5 8) Waters Hayward Lake (9 1)
Sec. 26,27, T41N, R9W

ACCESS

Parks (name and number): Town 0 City 1
County 0 State 0 Federal 0
Access Roads With Parking (number):
Town 0 City 1 County 0 State 0 Federal 0
Access Roads Without Nearby Parking (number): NONE
Town City County State Federal
Navigable Water Access: Yes X No Name
Unimproved or Difficult Access: Yes No X
Wilderness (describe)
Commercial and Cottage Facilities (number): Resorts 7 Boat Rentals 7
Campgrounds 0 Cottages or Dwellings 26 9 Private Camps 1
Observations:

GAME RESOURCES

Type of Wetland Area of Adjoining Wetland (acres) 2 8
Percent Woody 5 0 Percent Nonwoody
Muskrat (significant ~~or insignificant~~): Yes No
Beaver ~~(presence or absence)~~: Yes No
Waterfowl:

Broods	Yes X No		Mallard	Yes X No	
Black	Yes No X		Teal	Yes X No	
Wood	Yes No X		Hooded Merganser	Yes No X	
Coot	Yes No		Loon	Yes No X	
			Heron Rookery	Yes No X	

Other

Migration:

	Puddle Ducks	Diving Ducks	Coot	Canada Geese	Other
Spring	10-100	10-100	1-10	0	0
Fall	~~10-100~~	~~10-100~~	1-10	0	0

Restrictions on Hunting (refuges, local ordinances): YES
Observations

OTHER DATA

Access Priority (describe): Important
Public Frontage (miles and hundredths): 0.2
Watershed Number: 5
Observations:
Park 0.22
(3) Undeveloped platted accesses .03

Signed L. M. Sather (Compiler) Date July 1964

4-66

WDNR Comments

Fi-264 NWA - Lakes

County Sawyer

Water Hayward Lake

Drainage system Namekagon

Lake types:

I. Water chemistry & source (X)

Hard water drainage	x
Soft water drainage	
Hard water seepage	
Soft water seepage	
Acid bog	
Alkaline bog	
Spring pond	

II Shoreline vegetation % species

Hardwood upland	± Mixed	
Conifer upland		
Grass upland		
Hardwood swamp		
Conifer swamp		
Shrub swamp	5	
Fresh meadow		

III. Shoreline type %

Firm upland	90
Soft marsh	10
Bog	

IV. Shore Use

		%
Wild or undeveloped		20
Pastured		
Cultivated	est.	
Developed		80

V. Aquatic vegetation - Predominant

Emergent: cattails

Floating: water lily

Submergent: Pondweeds, etc.

VI. Rearing pond potential: Yes - No x

Mapped previously: '64 Yes x No

Reliable: Yes x No

Map data - Acres:

Miles shoreline:

Maximum depth:

Shore development figure: 3.92

Conservation Area: Yes ___ No x

Name

Park Facilities: Yes x No ___

Name

Acres ___ Owner

	(X)
Swimming	x
Picnicking	x
Camping	
Access	x

Private hatchery: Yes x No ___

Lic. No.

Operator:

Pollution: Yes ___ No x

Source:

Boating conflict: Yes ___ No x

Regulation

Sources of data: (X)

	Fish	Winter kill
Dist. Manager		
Area file	x	x
Local		
Gen. lake condition		x
Observation		
Other		

Extent of winterkill: (X)

Annual complete	
Occasional complete	
Occasional partial	
None	x

D. O. = ___.___ ppm ___ 19 ___

Remarks:

Possible weed problem in future.

WDNR Comments

UNIT FISHING RECORD

FORM 3600–62

DEPARTMENT OF NATURAL RESOURCES

COUNTY	WATERS
Sawyer	Lake Hayward - South shore
DATE	**TIME**
5-16-77 (First Night)	9:15 PM - 1:40 AM

SITE FISHED (STATION AND HABITAT)

Rt. 27 bridge along south shore to Rt. 77 bridge entire shoreline including one island.

GEAR

BOOM SHOCKER (HOURS)	DAYTIME	DARKNESS
2.2		X

VISUAL HOURS	TIME	HAUL SEINE (LENGTH)	AREA	MESH
ANGLING (HOURS)	TIME	TRAP NET (DIMENSIONS)	MESH	DEPTH
MINNOW SEINE (LENGTH)	DISTANCE	GILL NET (LENGTH)	MESH	DEPTH

OTHER

FISHING CONDITIONS (Describe)

Clear, calm, warm, buggy, Air 68°, H_2O 65°

FISHING RESULTS

SPECIES	NUMBER	ESTIMATED MODAL LENGTH	ESTIMATED SIZE RANGE	CPE No./hr.
Largemouth bass	9	15.0	7.0 - 18.6	4.1
Smallmouth bass	3	10.0	8.0 - 10.3	1.4
Northern pike	24	12.0,16.0,18.0	9.5 - 27.0	10.9
Muskellunge	1 seen	35"	35"	0.4
N. redhorse	134	5.0,8.0,13.0	3.5 - 18.4	Abundant
White sucker	15	6.0,14.0,17.5	4.0 - 18.9	Common
Walleye	4	11.0	10.0 - 12.3	1.8
Bluegill	268	1.6,2.8,5.2,6.0,7.2	0.9 - 8.2	121.8
Pumpkinseed	167	2.5,4.5,5.2,6.0	1.4 - 7.4	75.9
Rock bass	11	5.1,7.0	2.1 - 8.0	5.0
Bl. crappie	3	N/A	5.2 - 9.1	1.4
Y. perch	63	2.2,3.0,4.2,5.3,11.0	1.5 - 11.3	28.6

OBSERVATIONS Bob Kinney and son watched. A lot of panfish and redhorse. Gamefish don't seem to be in tonight. Warm water necessitated processing fish at frequent intervals. Rt. 77 bridge too low - couldn't sample basin just above dam. No minnow sample taken, scales not taken (no envelopes). (Must be done 5-17-77). Also common and golden shiners, johnny darters, one longear sunfish. Small creek chubs 1.5 - 2.0" common to abundant in upper river channel. Bay near Wilson Creek inlet very weedy and shallow. Slow going, but wall to wall sunfish. Hard water - drew 10-11 Amps at 230 volts, 6-8 Amps at next lower voltage.

Crew: Pratt, Kowalski, Libby	COMPILER'S SIGNATURE F. Pratt	DATE 5-17-77

REV. 2–71

RY . ISHING RECORD
3600-63

Spring Shocker Runs
Two Nights

DEPARTMENT OF NATURAL RESOURCES

COUNTY	WATERS
Sawyer	Lake Hayward
SAMPLING OBJECTIVE	NUMBER AND LOCATION OF STATIONS (HABITAT)
Running Inventory	Entire shoreline except basin between Rt. 27 bridge and dam
PERIOD FISHED (DATES)	
5/16,17/77	

GEAR

BOOM SHOCKER (HOURS)	TIME
4.1 gamefish 2.8 panfish	X NIGHT _____ DAY

VISUAL HOURS	TIME OF DAY	HAUL SEINE (LENGTH)	MESH	AREA COVERED
ANGLING (HOURS)	TIME OF DAY	TRAP NET (NO. OF NET LIFTS)	MESH	DEPTH
MINNOW SEINE (NO. HAULS)	AREA COVERED	GILL NET (NO. OF FEET X NO. OF LIFTS)	MESH SIZE	DEPTH

OTHER (HOURS OR LIFTS)	CHARACTERISTICS
	Clear, calm, unseasonably warm air and water temps.

FISHING RESULTS

NO/hr.

SPECIES	NO.	MODAL SIZE(S)	SIZE RANGE	CATCH/UNIT
Largemouth bass	22	8.5,12.0,15.0, 17.0	7.0 - 20.5	5.4
Smallmouth bass	15	10.0,13.5	7.0 - 16.8	3.7
Northern pike	45	8.5,12.5,16.0	7.0 - 27.0	11.0
Muskellunge	1 seen and 1 found dead		35 - 51.5	0.3
Walleye	6	11.0	10.0 - 16.4	1.5
Bluegill	376	1.5,2.8,5.2, 6.0	0.9 - 8.3	134.3
Pumpkinseed	292	2.8,4.5,5.2	1.4 - 7.4	104.3
Rock bass	20	5.1,7.4	1.5 - 8.0	7.1
Black crappie	5	N/A	2.1 - 9.1	1.8
Yellow perch	92	2.2,3.0,4.6, 5.3,8.7,11.0	1.5 - 11.3	32.9

OBSERVATIONS

Redhorse and sunfish appear to dominate. Gamefish not inshore in large numbers either night. Bluegills already on spawning beds. Also shiners, lamprey, darters, mudminnows.

SIGNED (COMPILER)	DATE
F. Pratt	5-18-77

REV. 10-70

WDNR Comments

FISH LENGTH FREQUENCY

DEPARTMENT OF NATURAL RESOURCES

3600-65

Crew: Pratt, Kowalski, Libby

COUNTY	WATERS	DATE	GEAR
Sawyer	Lake Hayward - South shore	5-16-77	Vari volt boomshocker

Size Range	SPECIES							
	LMB	SMB	We	NP	Musky	Lamprey	NRH	WS
3.0- 3.4								
3.5- 3.9							2	
4.0- 4.4							3	1
4.5- 4.9							9	
5.0- 5.4							28	
5.5- 5.9							8	
6.0- 6.4							9	2
6.5- 6.9						2	4	
7.0- 7.4						Attached	5	
7.5- 7.9						to two	8	
8.0- 8.4		1				redhorse	13	
8.5- 8.9							4	1
9.0- 9.4							4	
9.5- 9.9				1			1	
10.0-10.4	1	2	1				2	
10.5-10.9				2			1	1
11.0-11.4			2	1			3	
11.5-11.9							1	
12.0-12.4	1		1	2			5	
12.5-12.9				1			4	
13.0-13.4	1			1			6	
13.5-13.9	1			2			2	1
14.0-14.4				1			3	2
14.5-14.9							3	1
15.0-15.4	2			1			2	
15.5-15.9				2			1	
16.0-16.4	1			2				
16.5-16.9								
17.0-17.4							1	1
17.5-17.9				3			1	2
18.0-18.4				2			1	2
18.5-18.9	1							1
19.0-19.4								
19.5-19.9							Very	Common
20.0-20.4							Abundant!	
20.5-20.9								
21.0-21.4								
21.5-21.9								
22.0-22.4				1				
22.5-22.9								
23.0-23.4								
23.5-23.9								
24.0-24.4								
24.5-24.9								
25.0-25.4								
25.5-25.9								
26.0-26.4								
26.5-26.9								
Total	9	3	4	23 subtotal		2	134	15

Size Range	SPECIES		
	WE	NP	Musky
27.0-27.4		1	
27.5-27.9			
28.0-28.4			
28.5-28.9			
29.0-29.4			
29.5-29.9			
30.0-30.4			
30.5-30.9			
31.0-31.4			
31.5-31.9			
32.0-32.4			
32.5-32.9			
33.0-33.4			
33.5-33.9			
34.0-34.4			
34.5-34.9			
35.0-35.4			1 seen
35.5-35.9			
36.0-36.4			
36.5-36.9			
37.0-37.4			
37.5-37.9			
38.0-38.4			
38.5-38.9			
39.0-39.4			
39.5-39.9			
40.0-40.4			
40.5-40.9			
41.0-41.4			
41.5-41.9			
42.0-42.4			
42.5-42.9			
43.0-43.4			
43.5-43.9			
44.0-44.4			
44.5-44.9			
45.0-45.4			
45.5-45.9			
46.0-46.4			
46.5-46.9			
47.0-47.4			
47.5-47.9			
48.0-48.4			
48.5-48.9			
49.0-49.4			
49.5-49.9			
	4	24 grand total	1 seen

REV. 1-70

WDNR Comments

SH LENGTH FREQUENCY

DEPARTMENT OF NATURAL RESOURCES

3600-64

2.2 hours

COUNTY	WATERS	DATE	GEAR
Sawyer	Lake Hayward - South shore	5-16-77	Vari volt boomshocker

Size Range	SPECIES						Size Range	SPECIES					
	BG	PS	YP	RB	BC	B1 BH		BG	PS	YP	RB	BC	B1 BH
<1	3						7.0	9			2		
1-1.4	2	1					7.1	3					
1.5-1.9	13		1				7.2	10					
2.0			2				7.3	1			1		
2.1			3	1			7.4	2	1				
2.2			8				7.5	5					
2.3			2				7.6	2					
2.4	1		2				7.7	2					
2.5		2	1				7.8	1					
2.6							7.9	1					
2.7							8.0	1			1		
2.8	3	1	1				8.1					1	1
2.9			3				8.2	1					
3.0	2		3				8.3						
3.1	1		3				8.4						
3.2	1						8.5						
3.3	2	2					8.6						
3.4							8.7						
3.5							8.8						1
3.6	1		3				8.9						
3.7			1				9.0						
3.8			1				9.1					1	
3.9			1				9.2						3
4.0	4	2	2				9.3						5
4.1	2	4	2				9.4						1
4.2	4	5	6				9.5						1
4.3	2	2	1				9.6						2
4.4	1	2	1				9.7						2
4.5	5	7	2				9.8						
4.6	5	6	2				9.9						2
4.7	4	6	2				10.0						
4.8	2	4					10.1						1
4.9	4	3					10.2			1			
5.0	21	14					10.3						
5.1	7	7	1	3			10.4						
5.2	25	22	1		1		10.5						
5.3	7	8	3				10.6						
5.4	10	4	1				10.7						
5.5	18	11		1			10.8						
5.6	10	3					10.9			1			
5.7	11	11					11.0			1			
5.8	1	6					11.1						
5.9	2	5					11.2			1			
6.0	17	16					11.3			1			
6.1	7	3					11.4						
6.2	6	3					11.5						
6.3	2	2					11.6						
6.4	3	1					11.7						
6.5	7	1					11.8						
6.6	10						11.9						
6.7	3	1		1			>12						
6.8	5	1											
6.9	1						Total	273	167	64	11	3	20

REV. 2-70 CS - 3.2,3.7 GS - 3.6 JD - 1.8,1.9 Les - 6.3

WDNR Comments

ARY FISHING RECORD

3600-63

DEPARTMENT OF NATURAL RESOURCES

COUNTY	WATERS
Sawyer	Lake Hayward, North shore
SAMPLING OBJECTIVE	NUMBER AND LOCATION OF STATIONS (HABITAT)
	North shore from Rt 27 bridge to Namekagon river inlet channel
PERIOD FISHED (DATES)	
5-17-77	

GEAR

BOOM SHOCKER (HOURS)	TIME
0.6 hours - panfish 1.9 hours - gamefish	9:30 - 2:00 AM X NIGHT _____ DAY

VISUAL HOURS	TIME OF DAY	HAUL SEINE (LENGTH)	MESH	AREA COVERED
ANGLING (HOURS)	TIME OF DAY	TRAP NET (NO. OF NET LIFTS)	MESH	DEPTH
MINNOW SEINE (NO. HAULS)	AREA COVERED	GILL NET (NO. OF FEET X NO. OF LIFTS)	MESH SIZE	DEPTH

OTHER (HOURS OR LIFTS)	CHARACTERISTICS
	H_2O - 72° Air - 67°F Clear, calm, warm, Littoral weed growth moderate to heavy.

FISHING RESULTS

SPECIES	NO.	MODAL SIZE(S)	SIZE RANGE	CPE No/hr CATCH/ UNIT
Largemouth bass	13	8.5,12.0,17.0	7.5 - 20.5	6.8
Smallmouth bass	12	11.0,13.5	7.0 - 16.8	6.3
Northernpike	21	8.5,12.5,15.5, 19.5	7.0 - 25.0	11.1
Walleye	2	N/A	12.5 - 16.4	1.1
Bluegill	108	1.5,3.2,5.0,7.3	0.9 - 8.3	180.0
Pumpkinseed	125	2.8,4.0,5.0,5.5	2.3 - 6.7	208.3
Rock bass	9	5.8,7.4	1.5 - 7.4	15.0
Black crappie	2	N/A	2.1 - 8.7	3.3
Yellow Perch	29	3.0,4.6,8.7	2.2 - 11.3	48.3
Black Bullhead	11	8.7	3.6 - 9.7	18.3

OBSERVATIONS

Also common and golden shiners, lampreys, and mud minnows. Water extremely warm for so early in year. Bluegills and pumpkinseeds are already on their spawning beds, along most of north shore. Three other walleyes seen in deep water above Rt. 27 .

SIGNED (COMPILER)	DATE
F. Pratt	5-18-77

REV. 10-70

WDNR Comments

FISH LENGTH FREQUENCY

M 3600-65

DEPARTMENT OF NATURAL RESOURCES

Crew: Pratt, Ives, Kowalski

COUNTY	WATERS	DATE	GEAR
Sawyer	Lake Hayward - North shore	5-17-77	Vari volt Boomshocker

Size Range	SPECIES								Size Range	SPECIES		
	LMB	SMB	WE	NP	Musky	Lamprey	NRH	WS		WE	NP	M
3.0- 3.4									27.0-27.4			
3.5- 3.9									27.5-27.9			
4.0- 4.4									28.0-28.4			
4.5- 4.9									28.5-28.9			
5.0- 5.4									29.0-29.4			
5.5- 5.9									29.5-29.9			
6.0- 6.4									30.0-30.4			
6.5- 6.9						1	No pickup		30.5-30.9			
7.0- 7.4		1		1		1	effort on		31.0-31.4			
7.5- 7.9	1						suckers		31.5-31.9			
8.0- 8.4									32.0-32.4			
8.5- 8.9	3			1			Abundant		32.5-32.9			
9.0- 9.4	1			1					33.0-33.4			
9.5- 9.9									33.5-33.9			
10.0-10.4		1			None				34.0-34.4			
10.5-10.9					Seen				34.5-34.9			
11.0-11.4		2							35.0-35.4			
11.5-11.9									35.5-35.9			
12.0-12.4	1			2					36.0-36.4			
12.5-12.9	1	1	1	2					36.5-36.9			
13.0-13.4		1		2					37.0-37.4			
13.5-13.9		3		1					37.5-37.9			
14.0-14.4		2		1					38.0-38.4			
14.5-14.9									38.5-38.9			
15.0-15.4				2					39.0-39.4			
15.5-15.9	1			2					39.5-39.9			
16.0-16.4	1		1						40.0-40.4			
16.5-16.9	1	1		1					40.5- 40.9			
17.0-17.4	2								41.0-41.4			
17.5-17.9				1					41.5-41.9			
18.0-18.4									42.0-42.4			
18.5-18.9				1					42.5-42.9			
19.0-19.4									43.0-43.4			
19.5-19.9				2					43.5-43.9			
20.0-20.4									44.0-44.4			
20.5-20.9	1								44.5-44.9			
21.0-21.4									45.0-45.4			
21.5-21.9									45.5-45.9			
22.0-22.4									46.0-46.4			
22.5-22.9									46.5-46.9			
23.0-23.4									47.0-47.4			
23.5-23.9									47.5-47.9			
24.0-24.4									48.0-48.4			
24.5-24.9									48.5-48.9			
25.0-25.4				1					49.0-49.4			
25.5-25.9									49.5-49.9			
26.0-26.4										2	21	0
26.5-26.9												
Total	13	12	2	21		2						

REV. 1-70 Also - 51½" Musky found dead and brought into office. Just south of dam. Scales taken.

WDNR Comments

ISH LENGTH FREQUENCY

M 3600-64

DEPARTMENT OF NATURAL RESOURCES

COUNTY	WATERS	DATE	SEARI
Sawyer	Lake Hayward - North shore	5-17-77	Vari volt Boomshocker

Size Range	SPECIES					
	BG	RB	PS	BC	YP	BlBH
<1	1					
1-1.4	4					
1.5-1.9	8	1				
2.0						
2.1				1		
2.2					2	
2.3	1		2			
2.4						
2.5						
2.6						
2.7	1					
2.8	1		2		1	
2.9	2				1	
3.0	1				4	
3.1					1	
3.2	3				1	
3.3	1					
3.4			1			
3.5	1					
3.6	2		1			1
3.7						
3.8					1	
3.9					1	
4.0			3		2	
4.1						
4.2	1		4			
4.3			2			
4.4			3			
4.5	2		6			
4.6			3		2	
4.7	3		8			
4.8	4	1	16		1	
4.9			4			
5.0	8		16			1
5.1	2		5			
5.2	7		12			
5.3	3					
5.4			5			
5.5	7		13			
5.6	4		3			
5.7	3	1	6			
5.8	2	1	2			
5.9	2		3			
6.0	1		2			1
6.1	3					
6.2					1	
6.3						
6.4	1		1			
6.5	1	1	1			1
6.6	1					
6.7	1		1			1
6.8	6	1			1	
6.9	2					

Size Range	SPECIES					
	BG	PS	RB	BC	YP	BlBH
7.0	3		1			1
7.1						
7.2					1	
7.3	4					
7.4	2		2		1	
7.5	3					
7.6	1					
7.7	1					
7.8	1					
7.9	1					
8.0					1	
8.1	1					
8.2					1	1
8.3	1					
8.4						
8.5						
8.6					1	1
8.7				1	2	1
8.8						
8.9						
9.0						
9.1						
9.2						
9.3						
9.4						
9.5					1	
9.6						1
9.7						1
9.8						
9.9						
10.0						
10.1						
10.2						
10.3						
10.4						
10.5						
10.6						
10.7						
10.8						
10.9						
11.0						
11.1						
11.2						
11.3					1	
11.4						
11.5						
11.6						
11.7						
11.8						
11.9						
>12						
Total	108	125	9	2	28	11

WDNR Comments

PANFISH LENGTH FREQUENCY

FORM 3600-64

DEPARTMENT OF NATURAL RESOURCES

LFSF-5.2

R.B. - 2.17 - 6.0

1 CRAWFISH
3 TURTLES

COUNTY	WATERS	DATE	GEAR
SAWYER	HAYWARD L.	MAY 1981	3 FYKE NETS

Size Range	SPECIES BG	BC	PS	YP	Size Range	SPECIES BC	BBH	BG	PS
<1				7.9	7.0		6.5	IIII	III
1-1.4				7.0	7.1				
1.5-1.9				5.5	7.2		I	II	
2.0				3.8	7.3			I	
2.1				5.8	7.4		I	I	
2.2				6.0	7.5			III	
2.3				6.2	7.6				
2.4				5.2	7.7				
2.5			I	4.0	7.8				
2.6			I	5.4	7.9				
2.7			I	6.7	8.0				
2.8				5.5	8.1				
2.9				8.0	8.2		IIII		
3.0			I	4.7	8.3		II		
3.1				6.0	8.4		I		
3.2	I			5.0	8.5		II		
3.3				6.2	8.6	I			
3.4					8.7		III		
3.5					8.8		I		
3.6					8.9		I		
3.7					9.0		IIII		
3.8					9.1				
3.9					9.2				
4.0					9.3				
4.1					9.4				
4.2	I			I	9.5				
4.3					9.6				
4.4					9.7	I			
4.5					9.8				
4.6					9.9				
4.7					10.0	I			
4.8					10.1				
4.9					10.2	I	I		
5.0			II		10.3				
5.1					10.4				
5.2			IIII		10.5				
5.3					10.6				
5.4			II		10.7				
5.5	II		IIII		10.8				
5.6					10.9				
5.7	I		I		11.0		I		
5.8	I		III		11.1				
5.9					11.2				
6.0	IIIII		IIII		11.3				
6.1	I				11.4				
6.2	IIIII		IIII		11.5				
6.3					11.6				
6.4	I				11.7				
6.5	IIIII I		IIII		11.8				
6.6	I				11.9				
6.7	I				>12				
6.8	III				Total				
6.9	III								

REV. 2-70

WDNR Comments

GAME FISH LENGTH FREQUENCY

FORM 3600-65

DEPARTMENT OF NATURAL RESOURCES

1-SNAPPER - 3"

PAINTED TURTLES-10, 4, 1, 1,

LAMPREY-1, 1,
CRAYFISH-1, 1

COUNTY	WATERS	DATE	GEAR
	Lake Hayward	1982	3 FN

Size Range	NORTHERN	B.G.	PERCH	BRBA	PS
3.0- 3.4	1	5	1	1	3
3.5- 3.9	1	20	1	~~3~~ 1	20
4.0- 4.4	1	15	3	6	15
4.5- 4.9		3			5
5.0- 5.4		2			5
5.5- 5.9		5			1
6.0- 6.4		6			8
6.5- 6.9		5			6
7.0- 7.4		1			5
7.5- 7.9		1			1
8.0- 8.4		1			
8.5- 8.9					
9.0- 9.4					
9.5- 9.9					
10.0-10.4					
10.5-10.9					
11.0-11.4					
11.5-11.9					
12.0-12.4					
12.5-12.9					
13.0-13.4					
13.5-13.9					
14.0-14.4					
14.5-14.9					
15.0-15.4					
15.5-15.9			B.C.	RB	
16.0-16.4					
16.5-16.9			2	1	
17.0-17.4				1	
17.5-17.9				2	
18.0-18.4	RH	W.E.			
18.5-18.9					
19.0-19.4	2	1			
19.5-19.9	2	1			
20.0-20.4	1				
20.5-20.9	1				
21.0-21.4	1				
21.5-21.9					
22.0-22.4					
22.5-22.9					
23.0-23.4					
23.5-23.9					
24.0-24.4					
24.5-24.9					
25.0-25.4					
25.5-25.9					
26.0-26.4					
26.5-26.9					
Total					

Size Range	BCBH	
27.0-27.4		
27.5-27.9	3	
28.0-28.4	1	
28.5-28.9	3	
29.0-29.4	1	
29.5-29.9	2	
30.0-30.4	5	
30.5-30.9	6	
31.0-31.4	20	
31.5-31.9	5	
32.0-32.4	5	
32.5-32.9		
33.0-33.4		
33.5-33.9		
34.0-34.4		
34.5-34.9		
35.0-35.4		
35.5-35.9		
36.0-36.4		
36.5-36.9		
37.0-37.4		
37.5-37.9		
38.0-38.4		
38.5-38.9		
39.0-39.4		
39.5-39.9		
40.0-40.4		
40.5-40.9		
41.0-41.4		
41.5-41.9		
42.0-42.4		
42.5-42.9		
43.0-43.4		
43.5-43.9		
44.0-44.4		
44.5-44.9		
45.0-45.4		
45.5-45.9		
46.0-46.4		
46.5-46.9		
47.0-47.4		
47.5-47.9		
48.0-48.4		
48.5-48.9		
49.0-49.4		
49.5-49.9		

REV. 1-70

WDNR Comments

GAME FISH LENGTH FREQUENCY

FORM 3600-65

DEPARTMENT OF NATURAL RESOURCES

1 - BROOK LAMPREY 5 - TURTLES - 1 POLLYWOG 1 CRAYFISH

COUNTY	WATERS	DATE	GEAR
Sawyer	Lake Hayward	5-19-81	FN

Size Range	N. Pike	SMB	SMB B.C.	LMB	R.B.	B.G.	BBH
3.0- 3.4		7.0	10.5	7.0	6.4	6.2	9.2
3.5- 3.9	22.5				6.8	6.2	9.4
4.0- 4.4	12.2				6.2	6.0	9.2
4.5- 4.9						6.6	7.8
5.0- 5.4						6.4	7.1
5.5- 5.9						6.7	
6.0- 6.4						6.0	
6.5- 6.9						6.2	
7.0- 7.4						6.4	
7.5- 7.9						6.0	
8.0- 8.4						6.2	
8.5- 8.9						2.8	
9.0- 9.4						2.9	
9.5- 9.9						6.4	
10.0-10.4						7.2	
10.5-10.9						7.3	
11.0-11.4						6.5	
11.5-11.9						5.5	
12.0-12.4						6.2	
12.5-12.9						6.6	
13.0-13.4						6.5	
13.5-13.9						6.2	
14.0-14.4						7.2	
14.5-14.9						5.0	
15.0-15.4						6.1	
15.5-15.9						7.2	
16.0-16.4						5.2	
16.5-16.9						2.9	
17.0-17.4						6.6	
17.5-17.9						6.1	
18.0-18.4						6.2	
18.5-18.9						6.0	
19.0-19.4						6.5	
19.5-19.9						5.7	
20.0-20.4						5.8	
20.5-20.9						6.8	
21.0-21.4						6.2	
21.5-21.9						6.6	
22.0-22.4						7.0	
22.5-22.9						5.7	
23.0-23.4						5.7	
23.5-23.9						2.7	
24.0-24.4							
24.5-24.9							
25.0-25.4							
25.5-25.9							
26.0-26.4							
26.5-26.9							
Total							

Size Range	SPECIES P.S.	SPECIES Y.P.
27.0-27.4	5.2	4.2
27.5-27.9	6.3	7.1
28.0-28.4	6.4	5.7
28.5-28.9	6.1	3.5
29.0-29.4	6.2	4.2
29.5-29.9	6.0	5.5
30.0-30.4	4.2	5.5
30.5-30.9	6.1	4.0
31.0-31.4	6.1	5.2
31.5-31.9	5.2	6.2
32.0-32.4	5.2	7.0
32.5-32.9	4.6	4.8
33.0-33.4	5.2	4.2
33.5-33.9	6.2	6.6
34.0-34.4	6.4	4.9
34.5-34.9	4.7	5.7
35.0-35.4	6.1	
35.5-35.9	5.0	
36.0-36.4	4.9	
36.5-36.9	4.7	
37.0-37.4	6.2	
37.5-37.9		
38.0-38.4		
38.5-38.9		
39.0-39.4		
39.5-39.9		
40.0-40.4		
40.5-40.9		
41.0-41.4		
41.5-41.9		
42.0-42.4		
42.5-42.9		
43.0-43.4		
43.5-43.9		
44.0-44.4		
44.5-44.9		
45.0-45.4		
45.5-45.9		
46.0-46.4		
46.5-46.9		
47.0-47.4		
47.5-47.9		
48.0-48.4		
48.5-48.9		
49.0-49.4		
49.5-49.9		

REV. 1-70

WDNR Comments

PANFISH LENGTH FREQUENCY

FORM 3600-64

DEPARTMENT OF NATURAL RESOURCES

→ NFW FHF

COUNTY	WATERS	DATE	GEAR
Sawyer	Lake Hayward	4-28-80	VV BE

Size Range	SPECIES YP	BG	RH	BS.	Size Range	SPECIES			
<1					7.0				
1-1.4	7.2	7.0	10.2	4.2	7.1				
1.5-1.9	7.2	6.5	11.5	6.5	7.2				
2.0	6.5	6.0	9.0	5.0	7.3				
2.1	5.0	6.0	8.0	6.0	7.4				
2.2	6.0	6.0	7.5		7.5				
2.3	6.0	4.8	11.0	4	7.6				
2.4	7.0	5.0	13.5		7.7	SMB	LMB	NP	WS.
2.5	6.8		9.5		7.8				
2.6	7.8	7	12.5		7.9	13.5	17.0	22.5	20.2
2.7	5.5		11.0		8.0	12.5	17.0	14.0	19.0
2.8	6.5		13.5		8.1		10.0	16.0	6.8
2.9					8.2	2		22.5	16.5
3.0	4		11		8.3		3	15.5	
3.1					8.4			6.5	4
3.2					8.5			10.5	
3.3					8.6				
3.4					8.7			7	
3.5					8.8				
3.6					8.9				
3.7					9.0				
3.8					9.1				
3.9					9.2				
4.0					9.3				
4.1					9.4				
4.2					9.5				
4.3					9.6				
4.4					9.7				
4.5					9.8				
4.6					9.9				
4.7					10.0				
4.8					10.1	G.B.H.			
4.9					10.2				
5.0					10.3	7.5			
5.1					10.4	8.5			
5.2					10.5	8.5			
5.3					10.6	7.5			
5.4					10.7	7.0			
5.5					10.8				
5.6					10.9	6			
5.7					11.0				
5.8					11.1				
5.9					11.2				
6.0					11.3				
6.1					11.4				
6.2					11.5				
6.3					11.6				
6.4					11.7				
6.5					11.8				
6.6					11.9				
6.7					>12				
6.8									
6.9					Total				

Day [illegible]

REV. 2-70

WDNR Comments

DEPARTMENT OF NATURAL RESOURCES

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 5-78

INCHES

COUNTY	WATERS	DATE	GEAR
	Hayward	May 81	3 FN

Size Range	SPECIES					Size Range	SPECIES		
	RH	NP	MUSKY						
3.0- 3.4	~~1~~	~~1~~ 8.5	11.0			27.0-27.4			
3.5- 3.9	1	9.0				27.5-27.9			
4.0- 4.4		8.5				28.0-28.4			
4.5- 4.9		9.0				28.5-28.9			
5.0- 5.4						29.0-29.4			
5.5- 5.9						29.5-29.9			
6.0- 6.4						30.0-30.4			
6.5- 6.9						30.5-30.9			
7.0- 7.4						31.0-31.4			
7.5- 7.9						31.5-31.9			
8.0- 8.4						32.0-32.4			
8.5- 8.9						32.5-32.9			
9.0- 9.4						33.0-33.4			
9.5- 9.9						33.5-33.9			
10.0-10.4						34.0-34.4			
10.5-10.9						34.5-34.9			
11.0-11.4	1					35.0-35.4			
11.5-11.9	1					35.5-35.9			
12.0-12.4						36.0-36.4			
12.5-12.9						36.5-36.9			
13.0-13.4						37.0-37.4			
13.5-13.9						37.5-37.9			
14.0-14.4						38.0-38.4			
14.5-14.9						38.5-38.9			
15.0-15.4						39.0-39.4			
15.5-15.9						39.5-39.9			
16.0-16.4						40.0-40.4			
16.5-16.9						40.5- 40.9			
17.0-17.4						41.0-41.4			
17.5-17.9	1					41.5-41.9			
18.0-18.4						42.0-42.4			
18.5-18.9						42.5-42.9			
19.0-19.4						43.0-43.4			
19.5-19.9						43.5-43.9			
20.0-20.4						44.0-44.4			
20.5-20.9						44.5-44.9			
21.0-21.4						45.0-45.4			
21.5-21.9						45.5-45.9			
22.0-22.4						46.0-46.4			
22.5-22.9						46.5-46.9			
23.0-23.4						47.0-47.4			
23.5-23.9						47.5-47.9			
24.0-24.4						48.0-48.4			
24.5-24.9						48.5-48.9			
25.0-25.4						49.0-49.4			
25.5-25.9						49.5-49.9			
26.0-26.4									
26.5-26.9									
Total									

WDNR Comments

State of Wisconsin
Department of Natural Resources

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

INCHES

COUNTY	COUNTY CODE	WATER	WATER CODE	DATE	GEAR
Sawyer	58	Hayward		9/21/82	Varivolt AC Boom-shocker

SIZE RANGE INCHES	SPECIES					SIZE RANGE INCHES	SPECIES			
	WE	LMB	SMB	NP	Mu		WE	NP	Mu	
<3.0		1				27.0-27.4				
3.0- 3.4						27.5-27.9				
3.5- 3.9						28.0-28.4				
4.0- 4.4	3					28.5-28.9				
4.5- 4.9	6					29.0-29.4				
5.0- 5.4	12					29.5-29.9				
5.5- 5.9	3					30.0-30.4				
6.0- 6.4	2			1		30.5-30.9				
6.5- 6.9	1			1	1	31.0-31.4				
7.0- 7.4	1			1	1	31.5-31.9				
7.5- 7.9				1	1	32.0-32.4				
8.0- 8.4						32.5-32.9				
8.5- 8.9						33.0-33.4				
9.0- 9.4				1	1	33.5-33.9				
9.5- 9.9					1	34.0-34.4				
10.0-10.4						34.5-34.9				
10.5-10.9						35.0-35.4				
11.0-11.4						35.5-35.9				
11.5-11.9				1		36.0-36.4				
12.0-12.4		1				36.5-36.9				
12.5-12.9	1			1		37.0-37.4	5 Chesnut lampreys			
13.0-13.4				2		37.5-37.9	on suckers and redhorse.			
13.5-13.9	1	1		1		38.0-38.4				
14.0-14.4	2			2		38.5-38.9				
14.5-14.9		1		2		39.0-39.4	One 30+" walleye			
15.0-15.4						39.5-39.9	seen.			
15.5-15.9						40.0-40.9				
16.0-16.4		1		1		41.0-41.9				
16.5-16.9		1				42.0-42.9				
17.0-17.4						43.0-43.9				
17.5-17.9					1	44.0-44.9	Bass/panfish have			
18.0-18.4						45.0-45.9	left shallows.			
18.5-18.9	1	1				46.0-46.9				
19.0-19.4				3		47.0-47.9				
19.5-19.9						48.0-48.9				
20.0-20.4						49.0-49.9				
20.5-20.9				1		50.0-50.9				
21.0-21.4						51.0-51.9				
21.5-21.9						52.0-52.9				
22.0-22.4	1					53.0-53.9				
22.5-22.9						54.0-54.9				
23.0-23.4						55.0-55.9				
23.5-23.9						56.0-56.9				
24.0-24.4						57.0-57.9				
24.5-24.9						58.0-58.9				
25.0-25.4						59.0-59.9				
25.5-25.9						60.0+				
26.0-26.4					1					
26.5-26.9										
TOTAL	34	7	0	19	7	TOTAL				

Redhorse 15" spp. - A+ WS - 14.0
WS - C 17.5-19.7

WDNR Comments

LENGTH FREQUENCY

DEPARTMENT OF NATURAL RESOURCES

54

Sawyer (58)	WATERS Lake Hayward	DATE 9/22/82	GEAR BS

Age	SPECIES BG	PS	YP	BC	BBH
-1					9.2
-1.4					9.8
1.5-1.9					9.0
2.0					
2.1					
2.2					
2.3					
2.4					
2.5	1				
2.6					
2.7					
2.8					
2.9					
3.0	1		1		
3.1					
3.2			1		
3.3					
3.4					
3.5	1				
3.6	1				
3.7	1				
3.8	2				
3.9	1				
4.0	1	1			
4.1					
4.2					
4.3			1		
4.4					
4.5	3				
4.6	1				
4.7	1				
4.8					
4.9			1		
5.0			2		
5.1					
5.2		1	1		
5.3					
5.4		1			
5.5	1				
5.6			1		
5.7		3	1		
5.8	2	1			
5.9	1				
6.0	5				
6.1					
6.2	1	1	1		
6.3	1				
6.4	1	2			
6.5	7		1		
6.6	2				
6.7	4	1	1		
6.8	2		1		
6.9			1	1	
Total:	11		3		

Size Range	SPECIES BG	YP	BC	CS
7.0	3			4.2
7.1	1			5.0
7.2	4	1		2.8
7.3				3.5
7.4		1		3.5
7.5				7
7.6				
7.7				
7.8	1		1	
7.9	1	1		
8.0	1			
8.1				
8.2		1		
8.3		1		
8.4		1		
8.5		2	1	
8.6				
8.7				
8.8				
8.9		1		
9.0		1		
9.1				
9.2		1		
9.3				
9.4		1	1	
9.5				
9.6				
9.7			1	
9.8				
9.9				
10.0			1	
10.1				
10.2		1	1	
10.3				
10.4				
10.5				
10.6				
10.7		2		
10.8				
10.9				
11.0				
11.1				
11.2				
11.3				
11.4				
11.5		1	1	
11.6				
11.7				
11.8				
11.9				
>12				
Total	52	30	8	12

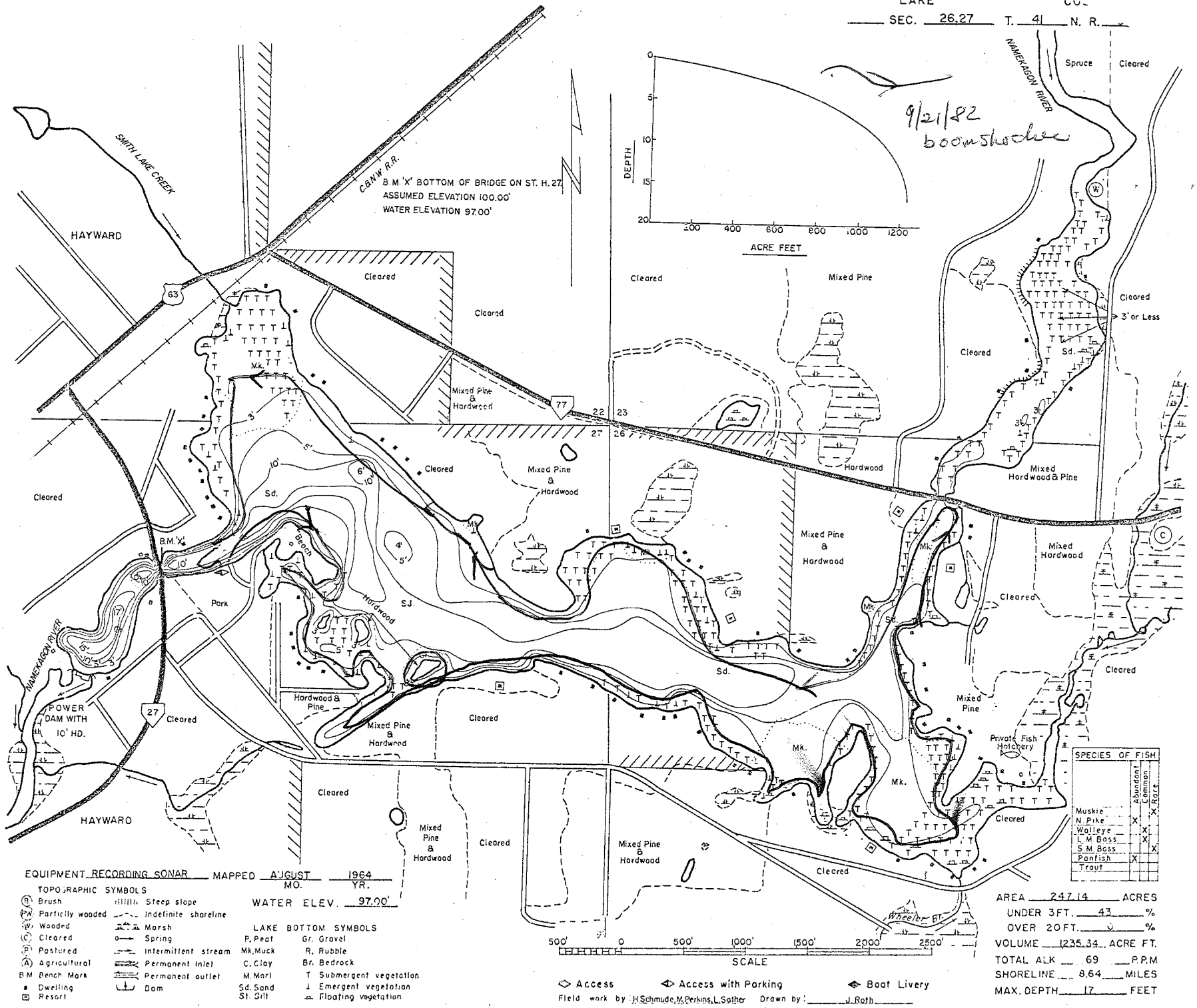
REV. 2-70

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE ____ CO.

SEC. 26,27 T. 41 N. R. ____



SPECIES OF FISH	Abundant	Common	Rare
Muskie			X
N. Pike	X		
Walleye		X	
L.M. Bass		X	
S.M. Bass			X
Panfish	X		
Trout			

EQUIPMENT RECORDING SONAR MAPPED AUGUST (MO.) 1964 (YR.)

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- (B) Brush
- (PW) Partially wooded
- (W) Woodrd
- (C) Cleared
- (P) Pastured
- (A) Agricultural
- B.M. Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- Emergent vegetation
- Floating vegetation

SCALE 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◇ Access with Parking ◇ Boat Livery

Field work by H. Schmude, M. Perkins, L. Sother Drawn by: J. Roth

AREA 247.14 ACRES

UNDER 3FT. 43 %

OVER 20FT. ____ %

VOLUME 1235.34 ACRE FT.

TOTAL ALK. 69 P.P.M.

SHORELINE 8.64 MILES

MAX. DEPTH 17 FEET

A-161

WDNR Comments

WDNR Comments

49

Lake Hayward, Sawyer Co.

DEPARTMENT OF NATURAL RESOURCES

Fish from Research's shocking Fall of 1986 9-28-86 Thru 11-2-86

L.M.B & We. Were picked up 7 of the 12 nights

Large-Mouth Bass	Walleye	Larger Muskies	Musky Hybrid
14.3"	6.5"	47.0 Male	10.6 78grams
17.0	6.0	36.0 Male	10.6 80
13.4	5.2	32.7 Male	6.5 21
4.5	6.5	15.7 —	
9.5	5.0	29.3 Female	
7.7	5.0	14.5 —	
15.1	5.1	29.5 —	
4.0	5.3	15.7 —	
3.1	5.0	17.6 Male	
2.4	5.5		
18.9	6.0		
20.1	5.0		
13.9	5.4		Small Native Muskies
13.5	9.9		7.5
15.9	5.2		10.3 73grams
7.6	6.9		7.7 26
12.9	6.0		10.3 82
14.2	5.4		9.0 46
10.0	6.0		8.8 42
12.2	5.8		9.2 31
3.3	17.9		9.3 53
7.1	6.0		
3.2	18.0		
3.6	17.4		
13.0	13.2		
8.9	5.2		
11.5	5.3		
12.0	5.8		
10.1	5.9		Brown Trout
12.4	6.0		6.0
11.8	5.7		
13.0	6.0		
12.5			
6.2			
5.4			
13.8			
9.4			
12.1			

REV. 3-71

WDNR Comments

SUMMARY FISHING RECORD
FORM 3600-63

DEPARTMENT OF NATURAL RESOURCES

COUNTY: Sawyer (58)	WATERS: Lake Hayward
SAMPLING OBJECTIVE: Field transfer to NFWFHF	NUMBER AND LOCATION OF STATIONS (HABITAT): Back bays, points.
PERIOD FISHED (DATES): 5/18-22/87	

GEAR

BOOM SHOCKER (HOURS)		TIME: _____ NIGHT _____ DAY		
VISUAL HOURS	TIME OF DAY	HAUL SEINE (LENGTH)	MESH	AREA COVERED
ANGLING (HOURS)	TIME OF DAY	TRAP NET (NO. OF NET LIFTS): 20	MESH: 1/2"	DEPTH: 4'
MINNOW SEINE (NO. HAULS)	AREA COVERED	GILL NET (NO. OF FEET X NO. OF LIFTS)	MESH SIZE	DEPTH
OTHER (HOURS OR LIFTS)		CHARACTERISTICS: H_2O - 64° (prespawn)		

FISHING RESULTS

SPECIES	NO.	MODAL SIZE(S)	SIZE RANGE	CATCH/UNIT
Walleye	3	--	9.0-26.5	0.15
N. Pike	14	10.0,12.5,17.0	8.0-29.6	0.70
Largemouth Bass	1	15.5	15.5	0.05
Shorthead Redhorse	9	18.0	7.0-18.9	0.45
White Sucker	3	--	16.4-20.0	0.15
Bluegill	280	5.6,6.6,7.0	4.0-8.3	14.00
Pumpkinseed	143	5.0	2.4-7.1	7.15
Black Crappie	11	8.2	6.8-10.6	0.55
Rock Bass	2	--	5.3-6.6	0.10
Y. Perch	34	7.0, 9.3	4.5-11.6	1.70

OBSERVATIONS

Bluegills just starting to move into shallows. Also 105 asst. bullheads (all 3 spp.). One walleye and 4 northern pike kept for mercury analysis. Other fish field transferred to NFWHF display ponds.

SIGNED (COMPILER)	DATE
F. B. Pratt	5-30-87

REV. 10-70

WDNR Comments

WISCONSIN
NATURAL RESOURCES

PANFISH LENGTH FREQUENCY

FORM 3600-64 REV. 3-81

COUNTY Sawyer COUNTY CODE 58	WATER Lake Hayward WATER CODE ____	DATE 5/18/87-5/22/87	GEAR 5, ½" fyke nets

SIZE RANGE INCHES	SPECIES					SIZE RANGE INCHES	SPECIES			
	BG	BC	PS	YP	RB		BG	BC	YP	PS
1.0-1.4						7.0	10		6	
1.5-2.0						7.1	8		3	1
2.1						7.2	5		2	
2.2						7.3	6		1	
2.3						7.4	1			
2.4			1			7.5			2	
2.5						7.6	2			
2.6						7.7	1			
2.7						7.8				
2.8						7.9				
2.9						8.0	3	2	1	
3.0						8.1				
3.1						8.2		2	1	
3.2						8.3	1		1	
3.3			1			8.4				
3.4						8.5			1	
3.5						8.6				
3.6						8.7		1		
3.7			2			8.8				
3.8						8.9				
3.9						9.0		1	1	
4.0	1		2			9.1				
4.1			4			9.2		2		
4.2			3			9.3			2	
4.3	1		6			9.4				
4.4	3		12			9.5			1	
4.5	1		9	1		9.6				
4.6	1		6			9.7		1	1	
4.7			5			9.8				
4.8			13			9.9				
4.9			2			10.0			1	
5.0	6		21			10.2			1	
5.1	4		4			10.4				
5.2	2		11			10.6		1		
5.3	4		8		1	10.8				
5.4	9		8			11.0				
5.5	13		5	1		11.2				
5.6	18		2			11.4				
5.7	4		3			11.6			1	
5.8	8		2			11.8				
5.9	3		2			12.0				
6.0	29		2			12.2				
6.1	17		1	2		12.4				
6.2	19		2			12.6				
6.3	17		1			12.8				
6.4	17					13.0				
6.5	23		1			13.2				
6.6	32		1	2	1	13.4				
6.7	4			1		13.6				
6.8	5	1	1	1		13.8				
6.9	2		1			14.0+				
TOTALS	243 Sub.	1 Sub.	142	8 Sub.	2	TOTALS	280	11	34	143

57 Black bullheads - 7.9-11.1"; 18 Yellow bullheads - 7.4-10.8"; 30 Brown bullheads - 8.0-11.2"

WDNR Comments

...te of Wisconsin
...ient of Natural Resources

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

...IES

COUNTY	WATER	DATE	GEAR
Sawyer COUNTY CODE 5 8	Lake Hayward WATER CODE — — — —	5/18-22/87	5½" fyke nets

SIZE RANGE — INCHES	SPECIES				SIZE RANGE — INCHES	SPECIES		
	WE	NP	LMB	SHRH		NP		
<3.0					27.0-27.4			
3.0- 3.4					27.5-27.9			
3.5- 3.9					28.0-28.4			
4.0- 4.4					28.5-28.9			
4.5- 4.9					29.0-29.4			
5.0- 5.4					29.5-29.9	1		
5.5- 5.9					30.0-30.4			
6.0- 6.4					30.5-30.9			
6.5- 6.9					31.0-31.4			
7.0- 7.4				1	31.5-31.9			
7.5- 7.9					32.0-32.4			
8.0- 8.4		1			32.5-32.9			
8.5- 8.9				1	33.0-33.4			
9.0- 9.4	1				33.5-33.9			
9.5- 9.9					34.0-34.4			
10.0-10.4		2			34.5-34.9			
10.5-10.9		1			35.0-35.4			
11.0-11.4				1	35.5-35.9			
11.5-11.9					36.0-36.4			
12.0-12.4		1			36.5-36.9			
12.5-12.9		2			37.0-37.4			
13.0-13.4					37.5-37.9			
13.5-13.9					38.0-38.4			
14.0-14.4					38.5-38.9			
14.5-14.9		1			39.0-39.4			
15.0-15.4		1		1	39.5-39.9			
15.5-15.9		1	1		40.0-40.9			
16.0-16.4					41.0-41.9			
16.5-16.9				1	42.0-42.9			
17.0-17.4		2			43.0-43.9			
17.5-17.9				1	44.0-44.9			
18.0-18.4	1 (Mercury sample)			2	45.0-45.9			
18.5-18.9				1	46.0-46.9			
19.0-19.4					47.0-47.9			
19.5-19.9					48.0-48.9			
20.0-20.4					49.0-49.9			
20.5-20.9					50.0-50.9			
21.0-21.4					51.0-51.9			
21.5-21.9					52.0-52.9			
22.0-22.4					53.0-53.9			
22.5-22.9					54.0-54.9			
23.0-23.4					55.0-55.9			
23.5-23.9					56.0-56.9			
24.0-24.4					57.0-57.9			
24.5-24.9					58.0-58.9			
25.0-25.4					59.0-59.9			
25.5-25.9					60.0+			
26.0-26.4								
26.5-26.9	1	1						
TOTAL	3	13 Sub.	1	9	TOTAL	14		

3 WS - 20.0", 19.0", and 16.4"

WDNR Comments ...s. are floy-tagged fish

State of Wisconsin
Department of Natural Resources

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

H_2O Temp - 66° Thundershowers

INCHES Gen. start - 62.0; Stop - 64.1

Entire shoreline.

COUNTY	WATER	DATE	GEAR
Sawyer COUNTY CODE 5 8	Lake Hayward WATER CODE — — — —	June 4, 1987	VVBS

SIZE RANGE — INCHES	SPECIES				SIZE RANGE — INCHES	SPECIES		
	LMB	NP	SMB	WE		NP		
<3.0					27.0-27.4			
3.0- 3.4					27.5-27.9			
3.5- 3.9					28.0-28.4			
4.0- 4.4					28.5-28.9			
4.5- 4.9					29.0-29.4			
5.0- 5.4				1	29.5-29.9			
5.5- 5.9					30.0-30.4	1		
6.0- 6.4				4	30.5-30.9			
6.5- 6.9		1		1	31.0-31.4			
7.0- 7.4	1	3			31.5-31.9			
7.5- 7.9					32.0-32.4			
8.0- 8.4		1			32.5-32.9			
8.5- 8.9		2			33.0-33.4			
9.0- 9.4		1	1		33.5-33.9			
9.5- 9.9	1				34.0-34.4		6 suckers with	
10.0-10.4			9812	1	34.5-34.9		lampreys attached.	
10.5-10.9					35.0-35.4		4 other lamprey seen.	
11.0-11.4	*9804	2			35.5-35.9			
11.5-11.9	9611	1	9606		36.0-36.4		Many suckers, YP, BG,	
12.0-12.4		1			36.5-36.9		PS, and BH.	
12.5-12.9	9609	1			37.0-37.4			
13.0-13.4	9351				37.5-37.9			
13.5-13.9	9608, 1				38.0-38.4			
14.0-14.4	9352				38.5-38.9			
14.5-14.9	9613	1	9614		39.0-39.4			
15.0-15.4	9610, 9605				39.5-39.9			
15.5-15.9					40.0-40.9			
16.0-16.4			0602	1	41.0-41.9			
16.5-16.9		1			42.0-42.9			
17.0-17.4				1	43.0-43.9		MU	
17.5-17.9					44.0-44.9		17.2 LV	
18.0-18.4					45.0-45.9			
18.5-18.9					46.0-46.9			
19.0-19.4					47.0-47.9			
19.5-19.9		1			48.0-48.9			
20.0-20.4					49.0-49.9			
20.5-20.9	9607	1			50.0-50.9			
21.0-21.4					51.0-51.9			
21.5-21.9					52.0-52.9			
22.0-22.4		1			53.0-53.9			
22.5-22.9					54.0-54.9			
23.0-23.4					55.0-55.9			
23.5-23.9					56.0-56.9			
24.0-24.4					57.0-57.9			
24.5-24.9					58.0-58.9			
25.0-25.4					59.0-59.9			
25.5-25.9					60.0+			
26.0-26.4								
26.5-26.9				1				
TOTAL	13	18 Sub.	5	10	TOTAL	19	1	

9603 - void.

WDNR Comments

SUMMARY FISHING RECORD

FORM 3600-63

DEPARTMENT OF NATURAL RESOURCES

COUNTY: Sawyer	WATERS: Lake Hayward
SAMPLING OBJECTIVE: FERC & Field Transfer	NUMBER AND LOCATION OF STATIONS (HABITAT): Bartz Bay and points vic. public bathing beach
PERIOD FISHED (DATES): 5/23/89 to 5/25/89	

GEAR

BOOM SHOCKER (HOURS):

TIME: _____ NIGHT _____ DAY

VISUAL HOURS	TIME OF DAY	HAUL SEINE (LENGTH)	MESH	AREA COVERED
ANGLING (HOURS): 1.5 (Bass)*	TIME OF DAY	TRAP NET (NO. OF NET LIFTS): 15	MESH: 1/2"	DEPTH: 4'
MINNOW SEINE (NO. HAULS)	AREA COVERED	GILL NET (NO. OF FEET X NO. OF LIFTS)	MESH SIZE	DEPTH

OTHER (HOURS OR LIFTS):

CHARACTERISTICS: Water temp. 69°-70°F. Warming rapidly. Air temps. low 80's.

FISHING RESULTS

SPECIES	NO.	MODAL SIZE(S)	SIZE RANGE	CATCH/UNIT NO/LIFT
Northern Pike	24	12.0	9.5-19.5	1.6
White Sucker	1	18.0	18.0	0.1
Shorthead Redhorse	5	-	9.7-17.5	0.3
Bluegill	556	6.7	2.5-8.4	37.1
Pumpkinseed	329	5.2	3.5-7.4	21.9
Black Crappie	26	-	7.8-11.2	1.7
Rock Bass	4	5.5	5.0-5.9	0.3
Yellow Perch	101	7.0, 9.0	5.0-9.5	6.7
Largemouth Bass*	3	11.5	9.5-12.0	0/lift (2.0/hr.*)
Black Bullhead	319	10.2	4.0-11.9	21.3

OBSERVATIONS

Most of these fish were field transferred to Shue's Pond and Fame ponds. Last days sample measured for LF; first two days only counted, by spp. Lake continues to have a very nice panfish population. Crappies and perch - post-spawn. Bluegills - pre-spawn. Due to timing and location of sets this effort should be considered a good representation of panfish community, but a poor index of gamefish status.

*Bass were caught hook & line to supplement gamefish sample.

SIGNED (COMPILER)	DATE
F. Pratt	5/27/89

REV. 10-70

LF Sample

WDNR Comments

State of Wisconsin
Department of Natural Resources

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-86

INCHES

COUNTY	WATER	DATE	GEAR
Sawyer COUNTY CODE 5 8	Lake Hayward WATER CODE — — — —	5/23/88 to 5/25/89	5 - 1/2" mesh fyke nets.

SIZE RANGE INCHES	SPECIES						SIZE RANGE INCHES	SPECIES		
	BG	PS	RB	BLBH	NP	YP		BC	BRBH	SHRH
<3.0	2.5						27.0-27.4	7.8	9.3	17.5
3.0- 3.4	1						27.5-27.9	10.4	9.2	9.7
3.5- 3.9		3					28.0-28.4	11.2	10.2	
4.0- 4.4		9		2			28.5-28.9		9.5	+ 3 others
4.5- 4.9	3	9		2			29.0-29.4	+ 23	9.4	
5.0- 5.4	1	13	2			3	29.5-29.9	others	9.4	
5.5- 5.9		10	2	5		3	30.0-30.4		10.0	
6.0- 6.4	10	19		5		5	30.5-30.9		10.5	
6.5- 6.9	29	10		2		5	31.0-31.4		6.4	
7.0- 7.4	30	2		7		6	31.5-31.9		9.8	
7.5- 7.9	22			3		2	32.0-32.4		9.8	
8.0- 8.4	1			6		3	32.5-32.9		9.5	
8.5- 8.9				4		1	33.0-33.4		10.6	
9.0- 9.4				6		3	33.5-33.9		9.1	
9.5- 9.9				10		1	34.0-34.4		9.8	
10.0-10.4				14	1		34.5-34.9		11.8	
10.5-10.9				6		+ 69	35.0-35.4		9.0	
11.0-11.4				3	1	others	35.5-35.9		10.5	
11.5-11.9				5	2		36.0-36.4		9.2	
12.0-12.4					2		36.5-36.9		8.1	
12.5-12.9					2		37.0-37.4		9.4	
13.0-13.4							37.5-37.9		9.5	
13.5-13.9	+ 458 others			+239	+16 others		38.0-38.4		10.2	
14.0-14.4		+254		others			38.5-38.9		10.1	
14.5-14.9		others					39.0-39.4		10.3	
15.0-15.4							39.5-39.9		10.3	
15.5-15.9							40.0-40.9		10.0	
16.0-16.4							41.0-41.9			
16.5-16.9							42.0-42.9			
17.0-17.4							43.0-43.9			
17.5-17.9							44.0-44.9	Also 3 LMB and 1 WS		
18.0-18.4							45.0-45.9			
18.5-18.9	Length frequency from last day netting.						46.0-46.9			
19.0-19.4	Two days before fish only counted prior to						47.0-47.9			
19.5-19.9	local field transfer. H_2O - 69°F.						48.0-48.9			
20.0-20.4							49.0-49.9			
20.5-20.9							50.0-50.9			
21.0-21.4							51.0-51.9			
21.5-21.9							52.0-52.9			
22.0-22.4							53.0-53.9			
22.5-22.9							54.0-54.9			
23.0-23.4							55.0-55.9			
23.5-23.9							56.0-56.9			
24.0-24.4							57.0-57.9			
24.5-24.9							58.0-58.9			
25.0-25.4							59.0-59.9			
25.5-25.9							60.0+			
26.0-26.4										
26.5-26.9										
TOTAL	556	329	4	319	24	101	TOTAL	26	27	5

WDNR Comments

FISH TRANSFERRED TO FISHING HALL OF FAME

May 23, 1989; May 24, 1989

B.G.	B.C.	P.S.	Y.P.	BLBN	N.P.	W.S.	LMB
390	22	207	57	291	12	1	3

TOTAL - 983

FISH TRANSFERRED TO SHUE'S POND IN TOWN

B.G.	P.S.	Y.P.	BLBH	B.C.	N.P.	R.B.	SHR
68	47	12	48	1	4	2	3

TOTAL - 185

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County Sawyer	**Waters** Lake Hayward MWB 2725500
Sampling Objective FERC Survey mark gamefish for P.E.S.	**Number and Location of Stations (Habitat)** Entire shoreline boomshocked, 5X Fyke net stations - see map 8-10 nets moved between 17 different sites
Period Fished (Dates) 4/05 - 4/17/91 nets 4/10, 17, 18, 21, 25/91 Boomshocker	

GEAR

Boom Shocker (Hours) 10.1 hrs; 330V AC 2 dippers - emphasis gamefish	**Time** shocker _____ **Night** nets _____ **Day**

Visual Hours	**Time of Day**	**Haul Seine (Length)**	**Mesh**	**Area Covered**
Angling (Hours)	**Time of Day**	**Trap Net (No. of Net Lifts)** 102	**Mesh** ½"	**Depth** 4'
Minnow Seine (No. Hauls)	**Area Covered**	**Gill Net (No. of Feet x No. of Lifts)**	**Mesh Size**	**Depth**

Other (Hours or Lifts)	**Characteristics** walleye/N. pike spawn and immediate post spawn H_2 0-40F-53F

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit no./hr	Catch/Unit no./lift
northern pike	260	14.0, 18.0, 22.0, 27.5	7.0 - 33.4	(113) 11.1	(147) 1.4
Largemouth bass	130	16.5 11.0, 14.0,	5.5 - 20.4	(114) 11.2	(16) 0.2
Walleye	48	5.0, 10.4 12.5, 18.5	5.0 - 29.5	(24) 2.1	(24) 0.2
Muskellunge	24	12.0, 33.5	7.5 - 42.0	(19) 1.9	(5) 0.04
Smallmouth bass	3	13.5	13.0 - 17.5	(3) 0.3	(3) ____
Yellow perch	1329	4.6, 6.0, 7.0 8.5, 10.0	2.9 - 13.0	____	13.0
Bluegill	293	5.5, 6.1, 7.0 8.0, 9.1	3.0 - 10.8	____	2.9
Bullhead (3 spp)	2073	5.5,7.5, 10.2	2.4 - 11.2	____	20.3
Black Crappie	43	4.4,9.5, 10.4	4.3 - 13.2	____	0.4
Rock Bass	32	3.9, 6.0	3.4 - 6.8	____	0.3

Observations

Walleye may have run early into Namekagon River and missed by sampling effort.

Nets were set at upper end of flowage while lower 2/3 of lake was still iced in.

Slow warm-up and cool weather kept fish out of shallows and depressed catch rates,

Rev. 10-70

Signed (Compiler) Frank Pratt	**Date** 5-15-91

WDNR Comments

especially for netting. Beautiful panfish (bluegill and perch) and considerable pre-season panfishing pressure, which was not covered by creel census. All gamefish were given a TC clip for P.E.s and exploitation monitoring in the creel census.

and May creel as recap

Mark-recapture P.E.s do date, based on last shocker run as recap., as follows:

N. Pike — m= 235 c= 25+1 R= 4
N= ~~1469~~ 1269 (~~5.9~~ 5.1/acre; 95% C.I. (895 - 1941)
585 ≥ 15"

LMB — m= 112 c= 18+21 = 39 R= 4
N= ~~403~~ 879; 3.5/acre (1.6/acre); 95% C.I. (~~333 - 1370~~) ( )
752 ≥ 12"

Walleye — m= 46 c= 4+5 R=1
N= ~~184~~ 230 (0.9/acre); 95% C.I. (~~98 - 252~~) ( )
120 ≥ 15"

Musky — m= 18 c= 6+2 R= 1
N= ~~63~~ 81 (0.3/acre); 95% C.I. (23 - 262)
34 ≥ 32"

(These should be revised at end of May based on May creel and any additional shocking.)

Revised above by added fish in other creel hours

Most of the larger panfish were field transferred to stock Shues Pond and display pond at National Freshwater Fishing Hall of Fame.

Other species sampled: 2 chestnut lamprey; 2 creek chub; 1 common shiner; 12 northern hogsucker; 4 white sucker, 10 shorthead redhorse; 2 golden redhorse.

21

WDNR Comments

...e of Wisconsin
...nt of Natural Resources

Bullhead/Suckers

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

...NTY
COUNTY CODE 58

WATER Lake Hayward
WATER CODE 2725500

DATE 4/04 - 17/91

GEAR Nets - 102 lifts

SIZE RANGE INCHES	SPECIES			
	Bullhead black	Bullhead yellow	Bullhead Brown	N. Hog Sucker
<3.0 (2.5)	3			
3.0- 3.4	4			
3.5- 3.9				
4.0- 4.4		2		
4.5- 4.9				
5.0- 5.4		1		
5.5- 5.9	3	1		
6.0- 6.4	3	4		
6.5- 6.9		1		
7.0- 7.4	10	17	1	
7.5- 7.9	18	12	6	
8.0- 8.4	26	13	9	2
8.5- 8.9	12	1	2	
9.0- 9.4	7	4	2	1
9.5- 9.9	7	1	1	4
10.0-10.4	3	2	6	1
10.5-10.9			3	1
11.0-11.4			2	1
11.5-11.9				1
12.0-12.4				1
12.5-12.9				
13.0-13.4	Count	Count	Count	
13.5-13.9	1600	212	61	
14.0-14.4				
14.5-14.9				
15.0-15.4				
15.5-15.9				
16.0-16.4				
16.5-16.9				
17.0-17.4				
17.5-17.9				
18.0-18.4				
18.5-18.9				
19.0-19.4				
19.5-19.9				
20.0-20.4				
20.5-20.9				
21.0-21.4				
21.5-21.9				
22.0-22.4				
22.5-22.9				
23.0-23.4				
23.5-23.9				
24.0-24.4				
24.5-24.9				
25.0-25.4				
25.5-25.9				
26.0-26.4				
26.5-26.9				
TOTAL	1696	271	93	12

SIZE RANGE INCHES	SPECIES		
27.0-27.4			
27.5-27.9			
28.0-28.4			
28.5-28.9			
29.0-29.4			
29.5-29.9			
30.0-30.4			
30.5-30.9			
31.0-31.4			
31.5-31.9			
32.0-32.4			
32.5-32.9			
33.0-33.4			
33.5-33.9			
34.0-34.4			
34.5-34.9			
35.0-35.4			
35.5-35.9			
36.0-36.4			
36.5-36.9			
37.0-37.4			
37.5-37.9			
38.0-38.4			
38.5-38.9			
39.0-39.4			
39.5-39.9			
40.0-40.9		2 creek chub	
41.0-41.9		1 Common Shiner	
42.0-42.9		2 Chestnut Lamprey	
43.0-43.9			
44.0-44.9			
45.0-45.9			
46.0-46.9			
47.0-47.9			
48.0-48.9			
49.0-49.9			
50.0-50.9			
51.0-51.9			
52.0-52.9			
53.0-53.9			
54.0-54.9			
55.0-55.9			
56.0-56.9			
57.0-57.9			
58.0-58.9			
59.0-59.9			
60.0+			
TOTAL			

Also 4 white Suckers - 9.5, 10.0, 10.1, 13.0
10 Shorthead redhorse 2 Golden redhorse

WDNR Comments

OF WISCONSIN
OF NATURAL RESOURCES

PANFISH LENGTH FREQUENCY
FORM 3600-64 REV. 3-81

COUNTY Sawyer COUNTY CODE 58	WATER Lk. Hayward WATER CODE 2725500	DATE 4/05 - 17/91	GEAR 102 Fyke Net Lifts

SIZE RANGE INCHES	SPECIES					SIZE RANGE INCHES	SPECIES			
	Bluegill	YP	PS	RB	BC		BG	YP	PS	BC
1.0-1.4						7.0	15	10		
1.5-2.0	52 Count	922 Count				7.1	8	6	1	1
2.1						7.2	8	2		
2.2						7.3	8	2		
2.3						7.4	5	2		
2.4						7.5	16	1		
2.5						7.6	13	5		
2.6						7.7	5	1		1
2.7						7.8		1		
2.8						7.9	1	2		
2.9		1				8.0	20	2		2
3.0	1	4				8.1	2			
3.1		1				8.2	3	1		
3.2	1	1	1			8.3	2			
3.3		1				8.4	1	4		
3.4		2		1		8.5	2	5		1
3.5	1	2	1	1		8.6		1		
3.6	1	1	1	1		8.7		1		1
3.7		1				8.8		2		
3.8		2	1	1		8.9		2		
3.9		14		2		9.0	2	3		2
4.0	2	12	3	1		9.1	2			2
4.1	1	2		2		9.2	1			2
4.2	2	9				9.3	1			
4.3	2	4	1		1	9.4	1	1		1
4.4	1	3	4		2	9.5	1	1		5
4.5	2	19	1	1	2	9.6				
4.6	1	19		1	1	9.7				
4.7		5				9.8				
4.8	1	4	1			9.9		1		
4.9	1	13	1	2		10.0		4		4
5.0	3	16	3	1		10.2		1		1
5.1	1	11	1	1		10.4				4
5.2	1	16	3	1		10.6				1
5.3	2	15	2	1		10.8	1	1		
5.4	2	13	2	2		11.0				1
5.5	0	19	5	1		11.2				
5.6	7	6	2	1		11.4		1		
5.7	4	11	1			11.6		1		1
5.8	2	13	1			11.8				1
5.9	2	17	2			12.0				1
6.0	11	20	10	5	1	12.2				1
6.1	15	10	3	1		12.4		1		
6.2	5	13	3			12.6				
6.3	4	10	1			12.8		1		
6.4	13	13	4			13.0		1		
6.5	15	17	1			13.2				1
6.6	7	2	1	1		13.4				
6.7	5	4		3		13.6				
6.8	5	6		1		13.8				
6.9	1	5	1			14.0+				
TOTALS		1279 Sub	61 Sub	32 Tot	7 Sub	TOTALS	293	1329 tot.	71 tot. 62	43 Tot.

WDNR Comments

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...ent of Natural Resources

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

...S

NTY: Sawyer COUNTY CODE 58 | WATER: Lake Hayward WATER CODE 2725500 | DATE: 4/05 - 4/17, 4/10,17,18,21,25 | GEAR: Fyke nets, Varivolt AC bomm shocker

SIZE RANGE INCHES	SPECIES				SIZE RANGE INCHES	SPECIES		
	N. Pike	LMB	Walleye	Musky		N. Pike	WE	Musky
<3.0					27.0-27.4	1		1
3.0- 3.4					27.5-27.9	3		
3.5- 3.9					28.0-28.4	21		
4.0- 4.4					28.5-28.9	2		
4.5- 4.9					29.0-29.4			
5.0- 5.4			2		29.5-29.9	2	1	
5.5- 5.9		1			30.0-30.4	2		1
6.0- 6.4					30.5-30.9			
6.5- 6.9					31.0-31.4	2		
7.0- 7.4	1				31.5-31.9			
7.5- 7.9	1			1 (hybrid)	32.0-32.4			2
8.0- 8.4	2				32.5-32.9			1
8.5- 8.9	2				33.0-33.4	1		1
9.0- 9.4	2	2		1	33.5-33.9			3
9.5- 9.9			1		34.0-34.4			
10.0-10.4	4	3	3		34.5-34.9			
10.5-10.9	4	1	3		35.0-35.4			1
11.0-11.4	12	8		1	35.5-35.9			1
11.5-11.9	6	3	2		36.0-36.4			
12.0-12.4	9	2		3	36.5-36.9			
12.5-12.9	13	5	4	3	37.0-37.4			
13.0-13.4	11	9	3		37.5-37.9			
13.5-13.9	4	15			38.0-38.4			
14.0-14.4	14	16	3		38.5-38.9			
14.5-14.9	10	9	1		39.0-39.4			
15.0-15.4	13	10	3		39.5-39.9			
15.5-15.9	3	6	2		40.0-40.9			
16.0-16.4	13	8			41.0-41.9			
16.5-16.9	7	9	1	1	42.0-42.9			1
17.0-17.4	6	7	2		43.0-43.9			
17.5-17.9	9	3	1	1	44.0-44.9			
18.0-18.4	19	3	2		45.0-45.9			
18.5-18.9	6	4	2		46.0-46.9			
19.0-19.4	4	2			47.0-47.9			
19.5-19.9	9	3	1		48.0-48.9			
20.0-20.4	7	1	1		49.0-49.9			
20.5-20.9	2				50.0-50.9			
21.0-21.4	3		1		51.0-51.9			
21.5-21.9	8		2		52.0-52.9			
22.0-22.4	9				53.0-53.9			
22.5-22.9	9				54.0-54.9			
23.0-23.4	4				55.0-55.9			
23.5-23.9	7				56.0-56.9			
24.0-24.4	1				57.0-57.9			
24.5-24.9	2			1	58.0-58.9			
25.0-25.4	4		1		59.0-59.9			
25.5-25.9	2		1		60.0+			
26.0-26.4	2		1					
26.5-26.9	2		2					
TOTAL	245 sub.	130	48 sub.	12 sub.	TOTAL	260 tot.	49 tot.	24 tot.

3 SMB - 13.0, 14.0, 17.5

10 Shorthead redhorse
2 Golden redhorse

A-174

WDNR Comments

WDNR Comments

WDNR Comments

WDNR Comments

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County Sawyer County	**Waters** Lake Hayward
Sampling Objective Juvenile fishes/recruitment	**Number and Location of Stations (Habitat)** 15 stations - 19 hauls
Period Fished (Dates) 08/15 - 16/91	

GEAR

Boom Shocker (Hours)	**Time** _____ Night X _____ Day

Visual Hours	**Time of Day**	**Haul Seine (Length)** 30'	**Mesh** 3/8"	**Area Covered** 19 hauls 0.57 acres total
Angling (Hours)	**Time of Day**	**Trap Net (No. of Net Lifts)**	**Mesh**	**Depth**
Minnow Seine (No. Hauls)	**Area Covered**	**Gill Net (No. of Feet x No. of Lifts)**	**Mesh Size**	**Depth**

Other (Hours or Lifts)	**Characteristics** H_2O 72 - 74° F Seinable areas - cover rich areas not well sampled.

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit
Largemouth bass (LMB)	84	2.2	1.0 - 12.0	4.4
Northern Pike (NP)	7	6.0	5.5 - 15.5	0.4
Bluegill	598	1.7	1.0 - 6.5	31.4
Pumpkinseed	53	5.0	2.5 - 6.0	2.8
Black Crappie	76	1.7	1.5 - 2.0	4.0
Yellow perch	34	2.5, 4.0	1.5 - 7.0	1.8
Common Shiner	294	2.5	1.0 - 3.0	15.5
Bluntnose minnow	3	2.4	2.1 - 2.4	0.2
Iowa darter	3	2.2	2.1 - 2.4	0.2

Observations
Apparently strong 1991 year class of largemouth bass and bluegill.

Bass and bluegills most widely distributed, occuring in n=17 and n=14 hauls respectively; followed by common shiner at n=11.

Signed (Compiler)	**Date**

Rev. 10-70

Also - 10.5" black bullhead
2.4" hornyhead chub

WDNR Comments

Number and Location of ... 19 hauls

STATE OF WISCONSIN
DEPT OF NATURAL RESOURCES

PANFISH LENGTH FREQUENCY

FORM 3600-64 REV. 3-81

COUNTY Sawyer (COUNTY CODE __)	WATER Lake Haywood (WATER CODE _____)	DATE 8/15 - 16/91	GEAR 30' Seine

SIZE RANGE INCHES	SPECIES LMB	SPECIES NP
1.0-1.4	2	
1.5-2.0	21	
2.1		
2.2	31	
2.3		
2.4		
2.5		
2.6	14	
2.7		
2.8		
2.9		
3.0		
3.1		
3.2	7	
3.3		
3.4		
3.5		
3.6		
3.7	4	
3.8		
3.9		
4.0		
4.1		
4.2		
4.3		
4.4		
4.5		
4.6		
4.7		
4.8		
4.9		
5.0	1	
5.1		
5.2		
5.3		
5.4		
5.5	1	
5.6		2
5.7		
5.8		
5.9		
6.0	1	
6.1		2
6.2		
6.3		
6.4		
6.5		
6.6	1	1
6.7		
6.8		
6.9		
TOTALS		

SIZE RANGE INCHES	SPECIES LMB	SPECIES NP
7.0		
7.1		
7.2		
7.3		
7.4		
7.5		1
7.6		
7.7		
7.8		
7.9		
8.0		
8.1		
8.2		
8.3		
8.4		
8.5		
8.6		
8.7		
8.8		
8.9		
9.0		
9.1		
9.2		
9.3		
9.4		
9.5		
9.6		
9.7		
9.8		
9.9		
10.0		
10.2		
10.4		
10.6		
10.8		
11.0		
11.2		
11.4		
11.6		
11.8		
12.0		
12.2		
12.4		
12.6		
12.8		
13.0		
13.2		
13.4		
13.6		
13.8		
14.0+		
TOTALS	84	15.5 / 8

WDNR Comments

...F WISCONSIN
...F NATURAL RESOURCES

PANFISH LENGTH FREQUENCY

FORM 3600-64 REV. 3-81

COUNTY CODE	WATER / WATER CODE	DATE	GEAR
Sawyer 58	Lake Hayward	8/15 - 16/91	30' Seine

...GE ...HES	SPECIES					SIZE RANGE INCHES	SPECIES				
	Bluegill	Pumpkinseed	BC	YP	CS		YP				
...0-1.4	63				10	7.0	1				
1.5-2.0	158		36	5	9	7.1					
2.1						7.2					
2.2						7.3					
2.3						7.4					
2.4						7.5					
2.5	26	1		5	92	7.6					
2.6						7.7					
2.7						7.8					
2.8						7.9					
2.9						8.0					
3.0	13	5		4	20	8.1					
3.1						8.2					
3.2						8.3					
3.3						8.4					
3.4						8.5					
3.5	10	8		6		8.6					
3.6						8.7					
3.7						8.8	Non-fish present:				
3.8						8.9					
3.9						9.0	~~Tadpoles - P~~				
4.0	1	9		6		9.1	~~Snails - C~~				
4.1						9.2	~~Bryzoan 1~~				
4.2						9.3					
4.3						9.4	~~(No crayfish sampled)~~				
4.4						9.5					
4.5	2	10		3		9.6					
4.6						9.7					
4.7						9.8					
4.8						9.9					
4.9						10.0					
5.0	1	11		1		10.2					
5.1						10.4					
5.2						10.6					
5.3						10.8					
5.4						11.0					
5.5	1	6		1		11.2					
5.6						11.4					
5.7						11.6					
5.8						11.8					
5.9						12.0					
6.0		3		1		12.2					
6.1						12.4					
6.2						12.6					
6.3						12.8					
6.4						13.0					
6.5						13.2					
6.6						13.4					
6.7	Ct. -322		Ct.- 40		Ct. - 163	13.6					
6.8						13.8					
6.9				1		14.0+					
TOTALS	598	53	76	33 Sub	294	TOTALS					

Bluntnose minnow - 2.1, 2.4, 2.4
Iowa darter - 2.1, 2.4, 2.2
Black bullhead - 10.5
Horneyhead chub- 2.4

WDNR Comments

WDNR Comments

WDNR Comments

WDNR Comments

SUMMARY FISHING RECORD

WI Department of Natural Resources

County: Sawyer	Waters: Lake Hayward
Sampling Objective: Walleye recruitment	Number/Location of Stations: Main-lake shoreline
Dates Fished: 09/23/94	Water Temperature: 61 F
Boomshocker Hours: 1.7 game (0.5 pan)	Time: 19:45
Fyke Net Days:	Angling Hours:

Species	Number	Modes	Size Range	C.P.E.
Walleye tot.	12	7.0,13.5	4.0-21.4	7.1
Walleye yoy	8	7.0	4.0-7.4	4.7
LMB	21	15.5,17.0	6.5-19.5	12.4
Northern pike	23	11.5, 14.0	7.5-27.9	13.5
Muskellunge	1	16.5	16.5	0.6
Bluegill	78	6.5	4.0-7.9	156.0
Black crappie	9	9.0	8.5-11.9	18.0
Yellow perch	27	5.5, 8.0	2.5-9.4	54.0
Pumpkinseed	4	5.0	4.5-7.4	8.0

Observations: Cool drizzle. Water high from recent rains. Very heavy vegetation inhibited manuverability in all the back bays and some of the main-lake areas. Suckers and yoy yellow perch abundant. Redhorse and bullheads present. Good largemouth and a nice run of panfish.

WDNR Comments

Wisconsin
of Natural Resources

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

ES 1-7 hrs 61°F (2)

COUNTY COUNTY CODE ___ ___

WATER Elc Hayward WATER CODE ___ ___ ___ ___

DATE 9-23-94

GEAR VV AE

SIZE RANGE INCHES	SPECIES YP	BG	BC	PS	SIZE RANGE INCHES	SPECIES		
<3.0	11 2.5				27.0-27.4			
3.0- 3.4					27.5-27.9			
3.5- 3.9					28.0-28.4			
4.0- 4.4	IIII	I			28.5-28.9			
4.5- 4.9	I			I	29.0-29.4			
5.0- 5.4	II	IIII		I	29.5-29.9			
5.5- 5.9	IIIII	IIIIIII		I	30.0-30.4			
6.0- 6.4	II	IIIIIIIIIIII			30.5-30.9			
6.5- 6.9		IIIIIIIIIIII			31.0-31.4			
7.0- 7.4	II	IIIIIIIIIII		I	31.5-31.9			
7.5- 7.9	I	III			32.0-32.4			
8.0- 8.4	IIII				32.5-32.9			
8.5- 8.9	I		I		33.0-33.4			
9.0- 9.4	III		III		33.5-33.9			
9.5- 9.9			I		34.0-34.4			
10.0-10.4			I		34.5-34.9			
10.5-10.9					35.0-35.4			
11.0-11.4			I		35.5-35.9			
11.5-11.9			I		36.0-36.4			
12.0-12.4					36.5-36.9			
12.5-12.9					37.0-37.4			
13.0-13.4					37.5-37.9			
13.5-13.9					38.0-38.4			
14.0-14.4					38.5-38.9			
14.5-14.9					39.0-39.4			
15.0-15.4					39.5-39.9			
15.5-15.9					40.0-40.9			
16.0-16.4					41.0-41.9			
16.5-16.9					42.0-42.9			
17.0-17.4					43.0-43.9			
17.5-17.9					44.0-44.9			
18.0-18.4					45.0-45.9			
18.5-18.9					46.0-46.9			
19.0-19.4					47.0-47.9			
19.5-19.9					48.0-48.9			
20.0-20.4					49.0-49.9			
20.5-20.9					50.0-50.9			
21.0-21.4					51.0-51.9			
21.5-21.9					52.0-52.9			
22.0-22.4					53.0-53.9			
22.5-22.9					54.0-54.9			
23.0-23.4					55.0-55.9			
23.5-23.9					56.0-56.9			
24.0-24.4					57.0-57.9			
24.5-24.9					58.0-58.9			
25.0-25.4					59.0-59.9			
25.5-25.9					60.0+			
26.0-26.4								
26.5-26.9								
TOTAL	27			4	TOTAL			

Yoy YP-A

WDNR Comments

A: Hay 994 Rec Disc

...onsin
...atural Resources

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

Start - 146.7 to 148.4 End H_2O - 61°F

COUNTY	WATER	DATE	GEAR
Sawyer COUNTY CODE 58	Lake Hayward WATER CODE — — — —	9-23-94	W A C

SIZE RANGE INCHES	SPECIES				SIZE RANGE INCHES	SPECIES		
	WE	LmB	NP	Mu		NP	Mu	WE
<3.0					27.0-27.4			
3.0- 3.4					27.5-27.9	1		
3.5- 3.9					28.0-28.4			
4.0- 4.4					28.5-28.9			
4.5- 4.9	1				29.0-29.4			
5.0- 5.4	2				29.5-29.9			
5.5- 5.9					30.0-30.4			
6.0- 6.4					30.5-30.9			
6.5- 6.9	1	1			31.0-31.4			
7.0- 7.4	3				31.5-31.9			
7.5- 7.9			1		32.0-32.4			
8.0- 8.4			1		32.5-32.9			
8.5- 8.9			1		33.0-33.4			
9.0- 9.4					33.5-33.9			
9.5- 9.9					34.0-34.4			
10.0-10.4			1		34.5-34.9			
10.5-10.9			2		35.0-35.4			
11.0-11.4	1		2		35.5-35.9			
11.5-11.9			3		36.0-36.4			
12.0-12.4		1			36.5-36.9			
12.5-12.9		2			37.0-37.4			
13.0-13.4		2			37.5-37.9			
13.5-13.9	1	1			38.0-38.4			
14.0-14.4	1	1	2		38.5-38.9			
14.5-14.9		2	1		39.0-39.4			
15.0-15.4		1			39.5-39.9			
15.5-15.9		3			40.0-40.9			
16.0-16.4		1			41.0-41.9			
16.5-16.9				1	42.0-42.9			
17.0-17.4		4			43.0-43.9			
17.5-17.9		1			44.0-44.9			
18.0-18.4					45.0-45.9			
18.5-18.9					46.0-46.9			
19.0-19.4			1		47.0-47.9			
19.5-19.9		1			48.0-48.9			
20.0-20.4					49.0-49.9			
20.5-20.9					50.0-50.9			
21.0-21.4	1		1		51.0-51.9			
21.5-21.9					52.0-52.9			
22.0-22.4			1		53.0-53.9			
22.5-22.9			1		54.0-54.9			
23.0-23.4					55.0-55.9			
23.5-23.9			1		56.0-56.9			
24.0-24.4					57.0-57.9			
24.5-24.9					58.0-58.9			
25.0-25.4					59.0-59.9			
25.5-25.9					60.0+			
26.0-26.4								
26.5-26.9								
TOTAL	12	21	23	1	TOTAL			

BH - P WS - A RH - P YOY YP - A

WDNR Comments

Waters	MWB Code	County
HAYWARD LAKE	2725500	SAWYER

Sampling Objective	Number and Locations of Stations (Habitat)
1) YOY WALLEYE CPE 2) GAMEFISH LF	PORTION OF SHORELINE = 5.0 MILES (SEE MAP)
Period Fished (Dates) 23 SEP 94	

GEAR

Boomshocker	Time
Hours: 1.7	X Night Day

Visual (Hours)	Time of Day	Haul Seine (Length)	Mesh	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet X No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts)	Characteristics	
	Walleye Recruitment Code:	C-ST
	Water Temperature:	61 F

FISHING RESULTS

Species	No.	Modal Sizes(s)	Size Range	Catch/Unit	
WALLEYE (AGE 0+)	8	NONE	4.5-7.4	1.6/MI	4.7/HR
WALLEYE (AGE >0+)	4	NONE	11.0-21.4	0.8/MI	2.4/HR
NORTHERN PIKE	23	10.5-11.9	7.5-27.9	4.6/MI	13.5/HR
MUSKELLUNGE	1	NONE	16.5-16.9	0.2/MI	0.6/HR
LARGEMOUTH BASS	21	NONE	6.5-19.9	4.2/MI	12.4/HR

Observations

Wisconsin Department of Natural Resources	Signed (Compiler)	Da
	SDP- RMK	

WDNR Comments

of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET

Form 3600-186 4-92

Lake: HAYWARD MWB Code: 2725500 Date: 09/23/94 County: SAWYER Collecter: PRATT

Target Fish: YOY walleye Survey Type: recruitment Mark Given: none H_2O Temp: 61 °F Time 19:45

Adverse Conditions: _____ H_2O Conduct: _____ Station: shoreline

Volts: _____ Amps: ___ Current Type ([X] AC [ ] DC [ ] Pulsed DC) Pulse Rate: _____ Duty Cycle: _____

Gear Type: AC boomshocker Total Time: 1.7 hrs Distance Shocked: 5.0 miles

# of Dippers ([ ] 1 [X] 2) Entire Shoreline Shocked: ([ ] Y [X] N [ ] I) Dip net size: 1/4" to 3/8"

H_2O Clarity: ([X] Clear [ ] Turbid [ ] Very Turbid)

Size Range (inches)	WALLEYE	N. PIKE	MUSKY	LMB	SMB	Size Range	WALLEYE	N. PIKE	LMB
< 3.0						19.5 - 19.9			1
3.0 - 3.4						20.0 - 20.4			
3.5 - 3.9						20.5 - 20.9			
4.0 - 4.4						21.0 - 21.4	1	1	
4.5 - 4.9	1					21.5 - 21.9			
5.0 - 5.4	2					22.0 - 22.4		1	
5.5 - 5.9						22.5 - 22.9		1	
6.0 - 6.4						23.0 - 23.4			
6.5 - 6.9	1			1		23.5 - 23.9		1	
7.0 - 7.4	4					24.0 - 24.4			
7.5 - 7.9		1				24.5 - 24.9			
8.0 - 8.4		1				25.0 - 25.4			
8.5 - 8.9		1				25.5 - 25.9			
9.0 - 9.4						26.0 - 26.4			
9.5 - 9.9						26.5 - 26.9			
10.0 - 10.4		1				27.0 - 27.4			
10.5 - 10.9		3				27.5 - 27.9			
11.0 - 11.4	1	3				28.0 - 28.4			
11.5 - 11.9		4				28.5 - 28.9			
12.0 - 12.4				1		29.0 - 29.4			
12.5 - 12.9				2		29.5 - 29.9			
13.0 - 13.4				1		30.0 - 30.9			
13.5 - 13.9	1			1		31.0 - 31.9			
14.0 - 14.4	1	2		1		32.0 - 32.9			
14.5 - 14.9		1		2		33.0 - 33.9			
15.0 - 15.4				1		34.0 - 34.9			
15.5 - 15.9				4		35.0 - 35.9			
16.0 - 16.4				1		36.0 - 36.9			
16.5 - 16.9			1			37.0 - 37.9			
17.0 - 17.4				4		38.0 - 38.9			
17.5 - 17.9				1		39.0 - 39.9			
18.0 - 18.4						40.0 - 40.9			
18.5 - 18.9						41.0 - 41.9			
19.0 - 19.4		1				42.0 +			
TOTAL	12	23	1	21					

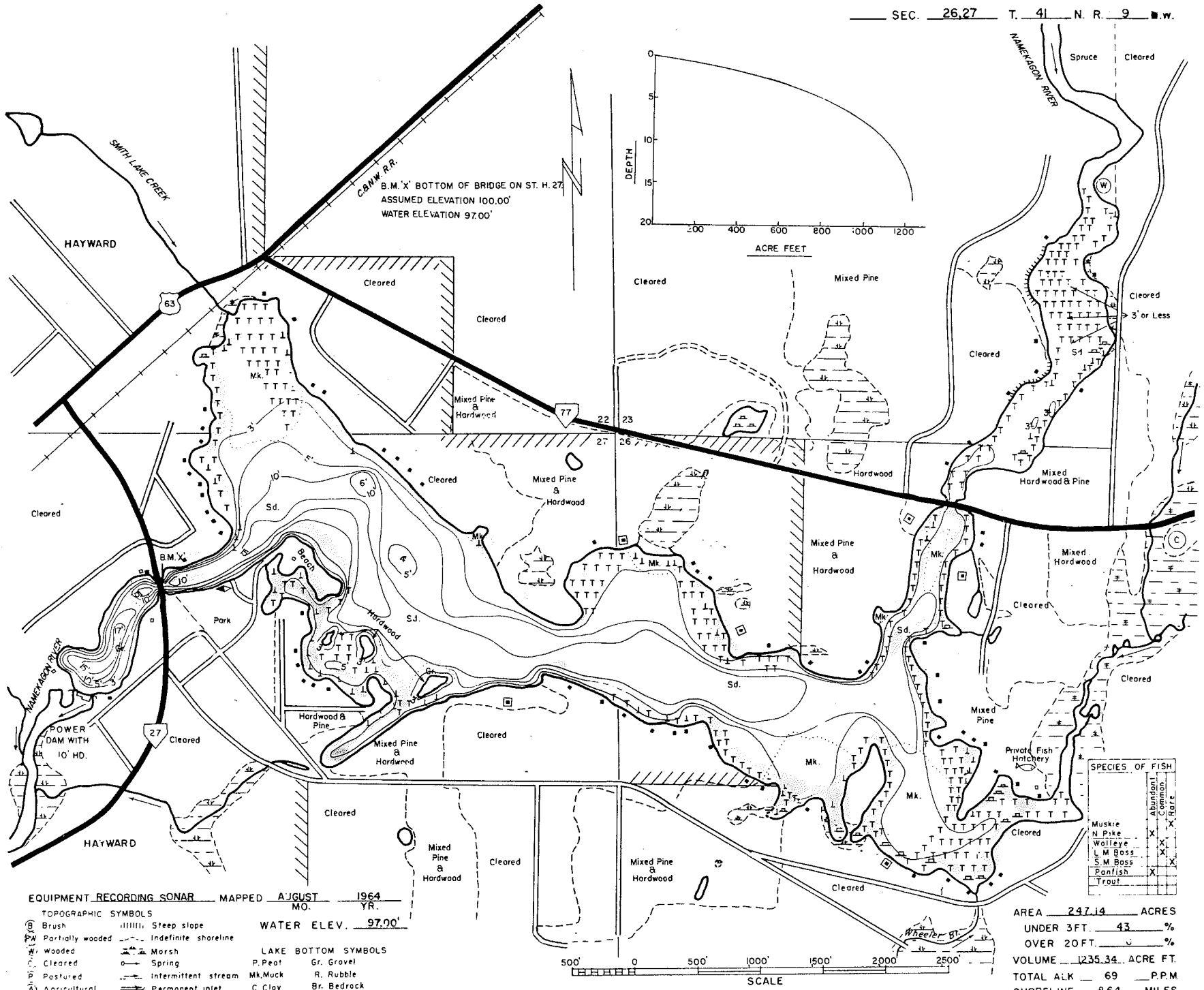
Other fish: (Can include rarely caught species and fish greater than 30 inches.)

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



SPECIES OF FISH

	Abundant	Common	Rare
Muskie			X
N. Pike	X		
Walleye		X	
L.M. Boss		X	
S.M. Boss			X
Panfish	X		
Trout			

EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964 (MO. / YR.)

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- (B) Brush
- (PW) Partially wooded
- (W) Wooded
- (C) Cleared
- (P) Pastured
- (A) Agricultural
- BM Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- ⊥ Emergent vegetation
- Floating vegetation

SCALE: 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H. Schmude, M. Perkins, L. Sather Drawn by: J. Roth

AREA 247.14 ACRES

UNDER 3FT. 43 %

OVER 20FT. 0 %

VOLUME 1235.34 ACRE FT.

TOTAL ALK. 69 P.P.M.

SHORELINE 8.64 MILES

MAX. DEPTH 17 FEET

WDNR Comments

WDNR Comments

SUMMARY FISHING RECORD
WI Department of Natural Resources

County: Sawyer	Waters: Lake Hayward
Sampling Objective: FERC- fall juveniles	Number/Location of Stations: Entire accessible shoreline
Dates Fished: 10/25/95	Water Temperature: 40 F
Boomshocker Hours: 2.2 (2 dippers-gamefish)	Time: 7:15 PM
Fyke Net Days:	Angling Hours:

Species	Number	Modes	Size Range	C.P.E.
Walleye	5	11.0	6.5-11.4	2.27
Muskellunge	6	NA	8.0-51.0	2.72
LMB	6	15.4	10.5-19.5	2.72
Northern pike	102	7.0, 11.0, 15.0	6.0-30.5	46.36
WS, BG, CS	observed common			
YP, BLBH, RH,PS,MM,BC	observed present			

Observations: Looking for acclerated growth stocked walleyes- only ones sampled were in river channel just below STH "77" bridge. Couldn't access above STH "77" or below STH "27/70" bridges- so sample was centered in main basin. Also looking for juvenile esocids- yoy and yearling northern pike were found to be abundant and widely distributed. We sampled one wild yoy and one hybrid musky. Other species (especially perch, sunfish, and bass) were not particularly abundant in shallows and have probably already moved off-shore into deeper water. Weed growth still heavy but has died back enough that even the back bay areas like Bartz and Laska Bays were easilly accessible to the boomshocker. Realtively high conductivity allowed us to shock effectively at a mid-range (240 V) voltage setting, without sacrificing any obvious sampling efficiency. Young common shiners were found massed up in giant clumps, right at the dge of the drop-off, in 3-4 areas. Crew- Sande, Pratt, Sorensen. FBP 10/25/95.

WDNR Comments

State of Wisconsin
Department of Natural Resources

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

INCHES 40°-H2O 184.5-186.7 (2.? hrs)

COUNTY: Sawyer — COUNTY CODE: 58
WATER: Hayward LK. — WATER CODE:
DATE: 10/26
GEAR: VU AC (3?)

SIZE RANGE INCHES	NP	LMB	MU	WE
<3.0				
3.0- 3.4				
3.5- 3.9				
4.0- 4.4				6.6 miles
4.5- 4.9				
5.0- 5.4				yoy
5.5- 5.9				
6.0- 6.4	|||| (4)			
6.5- 6.9	|||| (4)			1
7.0- 7.4	|||||| (6)			
7.5- 7.9	||| (3)			
8.0- 8.4	||| (3)		1 (Native)	
8.5- 8.9	| (1)			|
9.0- 9.4	|| (2)			
9.5- 9.9	| (1)			
10.0-10.4	|||| (4)			
10.5-10.9	|| (2)	|	Hyb-1	|
11.0-11.4	||||||||| (9)			||
11.5-11.9	||||| (5)			
12.0-12.4	(2)			
12.5-12.9	(5)			
13.0-13.4	||| (3)			
13.5-13.9	||| (3)			
14.0-14.4	|| (2)	|		
14.5-14.9	||| (3)	|		
15.0-15.4	|||||| (6)	|		
15.5-15.9	|| (2)	|		
16.0-16.4	|| (2)			
16.5-16.9	||| (3)			
17.0-17.4	|| (2)			
17.5-17.9				
18.0-18.4	|| (2)			
18.5-18.9	| (1)			
19.0-19.4	| (1)		|	
19.5-19.9	| (1)	|		
20.0-20.4				
20.5-20.9	|			
21.0-21.4	|| (2)			
21.5-21.9			|	
22.0-22.4				
22.5-22.9				
23.0-23.4				
23.5-23.9	|			
24.0-24.4				
24.5-24.9	|			
25.0-25.4				
25.5-25.9	||| (3)			
26.0-26.4	| (1)			
26.5-26.9	| (1)			
TOTAL	98 NP	5 LMB	[illegible]	5 WE

SIZE RANGE INCHES	NP	MU	
27.0-27.4	|| (2)		
27.5-27.9	| (1)		
28.0-28.4			
28.5-28.9			
29.0-29.4			
29.5-29.9			
30.0-30.4			
30.5-30.9	| (1)		
31.0-31.4			
31.5-31.9			
32.0-32.4			
32.5-32.9			(b) Scored
33.0-33.4			BG - C
33.5-33.9			BC - P
34.0-34.4			YP - P
34.5-34.9			CS - C
35.0-35.4			BlBh - P
35.5-35.9			WS - C
36.0-36.4			RH - P
36.5-36.9			MM - P
37.0-37.4			PS - P
37.5-37.9		|	
38.0-38.4			
38.5-38.9			
39.0-39.4			
39.5-39.9			
40.0-40.9			
41.0-41.9			
42.0-42.9			
43.0-43.9			
44.0-44.9			
45.0-45.9			
46.0-46.9			
47.0-47.9			
48.0-48.9			
49.0-49.9			
50.0-50.9			
51.0-51.9		|	
52.0-52.9			
53.0-53.9			
54.0-54.9			
55.0-55.9			
56.0-56.9			
57.0-57.9			
58.0-58.9			
59.0-59.9			
60.0+			
TOTAL	104 NP	6 Mu	

WDNR Comments

State of Wisconsin
Department of Natural Resources

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

INCHES 40°-H2O 184.5-186.7 (2.3 hrs) 2 dippers

COUNTY	WATER	DATE	GEAR
[illegible] COUNTY CODE 52	Hayward Ck. WATER CODE	10/26	VV AC - RS (3PP)

SIZE RANGE INCHES	VP	LMB	MU	WE	SIZE RANGE INCHES	NP	MU	
<3.0					27.0-27.4	2		
3.0- 3.4					27.5-27.9	1		
3.5- 3.9					28.0-28.4			
4.0- 4.4					28.5-28.9			
4.5- 4.9					29.0-29.4			
5.0- 5.4					29.5-29.9			
5.5- 5.9					30.0-30.4			
6.0- 6.4	4				30.5-30.9	1		
6.5- 6.9	4			1	31.0-31.4			
7.0- 7.4	6				31.5-31.9			
7.5- 7.9	3				32.0-32.4			
8.0- 8.4	3		1 (Native)		32.5-32.9			Observed
8.5- 8.9	1			1	33.0-33.4			BG - C
9.0- 9.4	2				33.5-33.9			BC - P
9.5- 9.9	1				34.0-34.4			YP - P
10.0-10.4	4				34.5-34.9			CS - C
10.5-10.9	2	1	Hyb-1	1	35.0-35.4			BIBH - P
11.0-11.4	9			2	35.5-35.9			WS - C
11.5-11.9	5				36.0-36.4			RH - P
12.0-12.4	12				36.5-36.9			MM - P
12.5-12.9	6				37.0-37.4			PS - P
13.0-13.4	4				37.5-37.9		1	
13.5-13.9	3				38.0-38.4			
14.0-14.4	2	1			38.5-38.9			
14.5-14.9	3	1			39.0-39.4			
15.0-15.4	6	1			39.5-39.9			
15.5-15.9	2	1			40.0-40.9			
16.0-16.4	2				41.0-41.9			
16.5-16.9	3				42.0-42.9			
17.0-17.4	2				43.0-43.9			
17.5-17.9					44.0-44.9			
18.0-18.4	2				45.0-45.9			
18.5-18.9	1				46.0-46.9			
19.0-19.4	1		1		47.0-47.9			
19.5-19.9	1	1			48.0-48.9			
20.0-20.4					49.0-49.9			
20.5-20.9	1				50.0-50.9			
21.0-21.4	2				51.0-51.9		1	
21.5-21.9			1		52.0-52.9			
22.0-22.4					53.0-53.9			
22.5-22.9					54.0-54.9			
23.0-23.4					55.0-55.9			
23.5-23.9	1				56.0-56.9			
24.0-24.4					57.0-57.9			
24.5-24.9	1				58.0-58.9			
25.0-25.4					59.0-59.9			
25.5-25.9	3				60.0+			
26.0-26.4	1							
26.5-26.9	1							
TOTAL	9[illegible]	5 LMB		5 WE	TOTAL	[illegible] NP	2 Mu	

WDNR Comments

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

PANFISH LENGTH FREQUENCY

FORM 3600-64 REV. 3-81

INCHES

Lake Hayward 8/03/95 Seine Hauls

COUNTY | COUNTY CODE — — | WATER | WATER CODE — — — — | DATE | GEAR

SIZE RANGE INCHES	SPECIES			
	Site 2 Pull 1			
1.0-1.4	CS	LMB		
1.5-2.0	2.1 2.1 2.2	2.0		
2.1	2.2 2.0 2.1	1.9		
2.2	2.2 2.3 2.2			
2.3	2.1 2.0 1.0			
2.4	2.1			
2.5				
2.6	Pull 2			
2.7	LMB			
2.8	2.8			
2.9				
3.0	Site 1 Pull 1			
3.1				
3.2	CS	LMB		
3.3	+6	3.0 2.5		
3.4	less than 1"	2.0 1.9 2.0		
3.5		2.5 1.7		
3.6				
3.7				
3.8				
3.9		NP		
4.0		6.0		
4.1	BG			
4.2	+2 +1 under 1"	YP		
4.3	+1 +1 +1 +1 BG	1.5 1.7	2.0 1.5 1.9	
4.4	YP	2.1 2.2 1.8	1.7 1.6 2.0	
4.5	21 under 1"	1.8 1.9 1.5	1.5 1.5 2.0	
4.6		1.5 1.5 1.8	1.5 1.5 1.5	
4.7	RBD	Lost		
4.8	2.0	BNM		
4.9		2.0 1.8 1.7		
5.0				
5.1		Pull 2		
5.2				
5.3	SH RH	CL	LMB	Crappie
5.4	10.0	2.5 7.0 6.8	2.0 6.5 2.5	2.5
5.5		6.2 7.5 6.5	2.8 5.5 1.7	
5.6	RBD	3.0 6.0 5.7	1.9 2.0 2.9	
5.7	1.5 1.5	4.5 5.8 4.1	2.1 3.1 1.6	
5.8		4.2 5.0 3.8	2.1 1.9 1.9 1.7	
5.9	YP	5.5 3.8 3.5	1.7	
6.0	1.5 1.5	4.5 4.1 3.8	BG	
6.1		3.1 3.5 3.5	+3 less than 1"	
6.2		2.6 4.1 3.2		
6.3		1.9 3.0 3.9		
6.4		3.1 4.0 3.6	1.9 2.0 2.0	
6.5		3.7 1.7 3.3	2.0 1.9 1.7	
6.6		2.1 1.7 2.0	2.0 2.0 1.9	
6.7		2.1 1.7 2.0	1.9 1.6 1.8	
6.8		1.5 1.7 1.9	1.8 2.0 1.8	
6.9		1.7 1.9 1.9	1.6 1.5 1.8	
TOTALS		1.7 4.2 1.9		

SIZE RANGE INCHES	SPECIES			
	Site 3			
7.0	NP	LMB	PS	YP
7.1	11.0	7.0	3.0 5.3	1.8 1.5
7.2	5.2	6.8	3.7	2.0 2.0
7.3	4.1	1.6 1.7		2.2 5.3
7.4	5.3	1.5		1.8 4.9
7.5	4.0			4.7 1.7
7.6	5.0			1.9 1.7
7.7				2.3 1.6
7.8				2.0 1.5
7.9			BG	1.9 2.7
8.0			+62	
8.1			less than 1"	
8.2				
8.3				+31
8.4				
8.5				
8.6				
8.7				
8.8				
8.9		BS	BC	BG
9.0		1.7 1.8	1.3 1.5	1.0
9.1		1.0 1.5 1.5	1.7	1.0
9.2		2.5 2.0 1.9		
9.3		2.0 2.0		
9.4		1.5 2.0		
9.5		2.5 1.7		
9.6		1.5 1.9		
9.7		2 1 1 5 3	BNM	
9.8		1.3 2.0	1.7	
9.9		1.2 2.7		
10.0		1.8 1.0		
10.2		1.9 2.0		
10.4		1.5 2.0		
10.6		1.6 1.0 1.0		
10.8		1.5 1.6		
11.0		2.1 1.0		
11.2		1.0 1.5		
11.4		2.5 2.5		
11.6		2.0 1.9		
11.8		2.0 2.3		
12.0		2.1 2.0		
12.2		2.0 2.0		
12.4		2.0 2.2		
12.6		2.1 1.7		
12.8		2.1 1.7		
13.0		+		
13.2				
13.4				
13.6				
13.8				
14.0+				
TOTALS				

WDNR Comments

PANFISH LENGTH FREQUENCY

CENTIMETERS

COUNTY	WATER	DATE	GEAR
COUNTY CODE — —	WATER CODE — — — —		

SIZE RANGE CM.	SPECIES			
	Site 4	CS		
2.0-3.4	YP +1		BNM	
3.5-5.0		2.0 2.0 2.0	2.0	
5.2		1.9 2.1	2.2	
5.4		2.0 1.1		
5.6		1.2 2.0		
5.8		2.4 1.6		
6.0		1.2 2.1		
6.2		2.1		
6.4				
6.6				
6.8				
7.0	Site 5			
7.2				
7.4	NP	CS	PS	
7.6	6.0 4.5	1.5 1.5 1.0	1.7	
7.8	11.0	+1 less than 1"		
8.0		1.2 1.3 2.2		
8.2		2.2 2.0 2.2		
8.4		1.5 2.0 1.5		
8.6	BC	BG 1.0 1.5		
8.8	1.5 1.2	+8 1.0 1.3		
9.0		1.4 1.0		
9.2		1.0		
9.4				
9.6				
9.8				
10.0	BG			
10.2	+11			
10.4	12 less than 1"	RBD		
10.6		1.5 2.3		
10.8		1.1		
11.0				
11.2	LMB			
11.4	2.2 2.3 2.0	YP		
11.6	2.2	5 17		
11.8		+6		
12.0				
12.2				
12.4		RB		
12.6		1.0		
12.8				
13.0				
13.2				
13.4				
13.6				
13.8				
14.0				
14.2				
14.4				
14.6				
14.8				
15.0				
15.2				
15.4				
15.6				
15.8				
TOTALS				

SIZE RANGE CM.	SPECIES			
		Site 6		
16.0	PS	YP	LMB	BC
16.2	7.5	+11	1.8 2.0	2.0
16.4	7.5		2.2	1.2
16.6			1.6 2.2	
16.8			2.2 2.0	
17.0			2.5 1.5	
17.2			1.8 1.5	
17.4			1.7 1.7	
17.6				
17.8			NP	
18.0			4.2	
18.2				
18.4		BG		
18.6		2.1		
18.8				
19.0				
19.2				
19.4				
19.6				
19.8				
20.0		CS		
20.2		2.0 2.0		
20.4		2.0 2.1		
20.6		2.0 1.9		
20.8		2.1 2.1		
21.0		1.5 2.0		
21.2		2.0 2.1		
21.4		1.0 ~~1.8~~		
21.6		2.0 1.9		
21.8		1.8 1.7		
22.0		2.0 1.9		
22.2		1.9 1.7		
22.4		2.0 2.0		
22.6		2.0 1.7		
22.8				
23.0				
23.5				
24.0				
24.5				
25.0				
25.5		Site 10		
26.0	BNM	BC	CS	CC
26.5	1.0 1.5	1.5	+20	1.0
27.0	2.5			
27.5				
28.0				
28.5				
29.0				
29.5				
30.0				
30.5				
31.0				
31.5				
32.0				
32.5				
33.0+				
TOTALS				

WDNR Comments

SUMMARY FISHING RECORD

WI Department of Natural Resources

County: Sawyer	Waters: Lake Hayward
Sampling Objective: EG Walleye Evaluation	Number/Location of Stations: Entire shoreline between STH bridges
Dates Fished: 10/06/96	Water Temperature: 50.7 F
Boomshocker Hours: 2.1 (2 dippers)	Time: 19:00
Fyke Net Days	Angling Hours

6.0 miles
1.8/mile

Species	Number	Modes	Size Range	C.P.E.
Walleye EG yoy	11	8.5	6.0-9.5	5.2
Walleye tot	16	8.5, 14.5	6.0-17.4	7.6
Largemouth	19	12.0	8.0-16.9	9.0
Northern pike	26	10.0	5.5-33.0	12.3
Muskellunge	7	11.5	10.5-45.0	3.3
Black crappie	26	6.5	2.5-10.9	11.9
Bluegill	78	7.0	4.0-8.5	37.1
Yellow perch	29	7.0	4.5-10.9	13.8
Pumpkinseed	5	5.5	4.5-7.0	2.4

Observations: About 2600 EG walleyes were stocked here at STH "77" bridge, one week ago. Those that we sampled were mostly downstream along mid-lake shorelines. Nice bluegills- exceptional condition factor. All the centrarchids seem to be in shallows more this week than two weeks ago. One large musky netted and two others seen in vicinity of old railroad pier. Recently stocked muskies show up at 10.5-12". Common shiners were seen sporadically in very dense clouds, mostly in Bartz's Bay. White suckers and redhorse common. Un;ike two weeks ago, when maybe 10% of the large non-game fish carried chestnut lampreys- none were observed on any fish tonight. Inshore weed growth starting to die back significantly, but still very thick in Bartz's Bay and Laska Bay. We had a problem with pulsing/dimming lights which is believed to be a malfunction in the charging system. it didn't effect the actually stunning of fish but made for poorer visibility. Diane, the front-desk secretary, helped dip for the first third of the run, and I relieved her for the second third. Crew- Frank/Diane/Jack/Russ.
FBP 10/07/96

Second of two shocking surveys - This one was AFTER EG stocked. 9/18/96 was before CPE's 1.8 vs. 0.3

WDNR Comments

State of Wisconsin
Department of Natural Resources

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

INCHES Hours 1975 to 1996 Temp 50-.7 °F

COUNTY	WATER	DATE	GEAR
Sawyer COUNTY CODE 58	Lake Hayward WATER CODE ____	10/06/96	VVAC (230V)

SIZE RANGE INCHES	SPECIES								SPECIES	
	WE	NP	WS	LMB	BG	BG	BC	YP	OTH SPP.	# TL in "
<3.0		28.0	45.0				11-2.5		PS	
3.0- 3.4		33.0								
3.5- 3.9										
4.0- 4.4										
4.5- 4.9										
5.0- 5.4										
5.5- 5.9										
6.0- 6.4										
6.5- 6.9										
7.0- 7.4										
7.5- 7.9	(HEG)									
8.0- 8.4										
8.5- 8.9									5PS	
9.0- 9.4						78				
9.5- 9.9						BG total				
10.0-10.4										
10.5-10.9										
11.0-11.4								29 YP		
11.5-11.9							25 BC			CS-C
12.0-12.4										RH SPP-C
12.5-12.9										WS-C
13.0-13.4										
13.5-13.9										
14.0-14.4										
14.5-14.9										
15.0-15.4										
15.5-15.9										
16.0-16.4										
16.5-16.9										
17.0-17.4										
17.5-17.9										
18.0-18.4				19 LMB						
18.5-18.9										
19.0-19.4	16 tot WE									
19.5-19.9										
20.0-20.4										
20.5-20.9										
21.0-21.4										
21.5-21.9										
22.0-22.4										
22.5-22.9										
23.0-23.4										
23.5-23.9										
24.0-24.4										
24.5-24.9										
25.0-25.4		26 NP								
25.5-25.9										
26.0-26.4										
26.5-26.9										
TOTAL	16 tot WE	26	7	19		78BG	25 BC	29 YP	5 PS	

RH, WS, CS-C

WDNR Comments

SUMMARY FISHING RECORD

WI Department of Natural Resources

County Sawyer	Waters Lake Hayward
Sampling Objective FERC- walleye recruitment (pre-stocking)	Number/Location of Stations Entire shoreline between STH bridges
Dates Fished 09/18/96	Water Temperature 59.6 F
Boomshocker Hours 1.9 (0.5 pan) 1 dipper	Time 20:30
Fyke Net Days	Angling Hours

Species	Number	Modes	Size Range	C.P.E.
Walleye yoy	2	6.0	5.5-6.4	1.05 (0.33)
Walleye tot.	10	9.5	5.5-17.9	5.3
Largemouth	5	10.0	8.5-16.9	2.6
Northern pike	28	9.0, 15.5	5.5-28.0	14.7
Muskellunge	5	NA	23.5-45.0	2.6
Bluegill	42	5.5, 7.5	1.0-9.5	84.0
Black crappie	32	6.5, 12.0	1.5-12.4	64.0
Yellow perch	27	8.0	1.5-10.9	54.0
White sucker	72 count	NA	NA	37.9

Observations:Pre walleye stocking survey showing small amount of reproduction in 1996. Young northerns from 1995 and 1996 year classes very abundant and widely distributed. Forage minnows and adult bullheads appear to be way down. Water very murky and dingy in Laska's Bay. Bartz's Bay had fewer fish than normal too, and an even denser than usual weed growth. Large bass conspicuously absent- Have they retreated to deeper water already ? Or- has the LMB population crashed? Big muskies- several more seen but not netted. Operating speed too slow and too weedy to effectively run them down. This year the bluegills seem especially well-conditioned for their size. Strong population of young crappie coming on and just on the verge of recruiting into the spots fishery. White suckers appeared to be much more abundant than redhorse. Three of the suckers had chestnut lampreys attached. Three car-trailer units at access site when we launched - the heaviest usage that I have ever seen at this site. At least one boat was musky fishing. Also sampled 1 common shiner, 7 pumpkinseed, and 1 yellow bullhead. CPE figures are in no./hour of target effort, except for second walleye yoy CPE which is expressed as no./shoreline mile. Crew- Pratt and Warwick. FBP 12/18/96.

WDNR Comments

State of Wisconsin
Department of Natural Resources

Pan – 0.5 hrs.
Game – entire

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

Hours 194.0 to __.__ 19hrs 60mi Temp 5_._ °F

COUNTY Sawyer COUNTY CODE __ __	WATER Lk. Hayward WATER CODE __ __ __ __	DATE 09/17/96	GEAR VVAC 230V

SIZE RANGE INCHES	WE	NP	Mu	LMB	SMB	BG	BC	YP	OTHER SPP.	TL in "
<3.0						|||-2.0	2.0	|		
3.0- 3.4						| 2.5-||	2.5			
3.5- 3.9							1.5			
4.0- 4.4						|				
4.5- 4.9						|||				
5.0- 5.4	natural yoy					卌		|		
5.5- 5.9	|	|				||		|||		
6.0- 6.4	|	|				||	|||			
6.5- 6.9						卌	卌|||	||||		
7.0- 7.4						卌|||	||||	|		
7.5- 7.9						卌卌|||	卌	|||		
8.0- 8.4		||		|			||||	卌		
8.5- 8.9	|	||		|				|		
9.0- 9.4		||||		|		|	|	||		
9.5- 9.9	|||			||			|	||||		
10.0-10.4							|			
10.5-10.9		|						|		
11.0-11.4		||								
11.5-11.9						42	||			
12.0-12.4	|									
12.5-12.9		|								
13.0-13.4		||					32			
13.5-13.9										
14.0-14.4	|	||								
14.5-14.9	|									
15.0-15.4										
15.5-15.9		||								
16.0-16.4		|								
16.5-16.9		|		|						
17.0-17.4		|								
17.5-17.9	|									
18.0-18.4		|								
18.5-18.9		|								
19.0-19.4										
19.5-19.9										
20.0-20.4										
20.5-20.9										
21.0-21.4										
21.5-21.9				5						
22.0-22.4										
22.5-22.9										
23.0-23.4			|							
23.5-23.9										
24.0-24.4										
24.5-24.9										
25.0-25.4		|								
25.5-25.9										
26.0-26.4										
26.5-26.9			5 du							
TOTAL	10 tot	28	27.0	5 mb		42				
		28.0	45.0 Mu	42.0 mb		44.0 u				

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters	
Sawyer	Hayward Lake	MWBC: 2725500

Sampling Objective	Number and Locations of Stations (Habitat)	
Walleye Recruitment Survey		Source
	Miles Actually Shocked = 6.0	LM
Period Fished (Dates)	Acres = 247	LM
09/18/96	Total Miles of Shoreline = 8.6	LM
	Total Miles of Shockable Shoreline = 6.0	LM

GEAR

Boomshocker (Hours)	Time
1.9	✓ Night Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts)	Characteristics
Boomshocker(s): 1 Mini-boomshocker(s): 0	Walleye Recruitment Code: C-ST
Dip Netter(s): 1 Dip Netter(s): 0	

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit
Walleye (Age 0+)	2	None	5.5 - 6.4	1.05 / hour 0.33 / mile
Serns Index NA YOY / acre				
Walleye (Age 1+)	4	9.5 - 9.9	8.5 - 9.9	2.11 / hour 0.67 / mile
Walleye (Other)	4	None	12.0 - 17.9	2.11 / hour 0.67 / mile
Smallmouth Bass	0		-	0.00 / hour 0.00 / mile
Largemouth Bass	5	None	8.5 - 16.9	2.63 / hour 0.83 / mile
Muskellunge	5	None	23.0 - 45.4	2.63 / hour 0.83 / mile
Northern Pike	28	9.0 - 9.4	5.5 - 28.4	14.74 / hour 4.67 / mile

Observations

1) Tank Mortality: None

2) Weather:

3) Stocking: No walleye stocked prior to this survey; 247 muskellunge (10.8") on 09/09/96

4) Reliabilty: High

Rev. 10-70	Signed (Compiler)	Date 11/15/96

WDNR Comments

Department of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600A-191 8-95

Lake: Hayward MWB Code: 2725500 Date: 09/18/96 County: Sawyer Collector(s): Warwick, Pratt

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 60 °F Station: Portion of Shoreline

Adverse Conditions: None Gear Type: Boomshocker Distance Shocked: 6.0 miles

Volts: 230 Amps: Not available Current Type: [X] AC [ ] DC [ ] Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 20:30 Shocking End Time: Not available Generator Start Hour: 194.0 Generator End Hour: 195.9

Number of Dippers: [X] 1 [ ] 2 Entire Shoreline Shocked: [ ] Y [X] N [ ] I Dip Net Mesh Size: 1/4 inch bar H2O Clarity: Not available

inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			16.5-16.9		
3.0-3.4			17.0-17.4		
3.5-3.9			17.5-17.9	1	
4.0-4.4			18.0-18.4		
4.5-4.9			18.5-18.9		
5.0-5.4			19.0-19.4		
5.5-5.9	1		19.5-19.9		
6.0-6.4	1		20.0-20.4		
6.5-6.9			20.5-20.9		
7.0-7.4			21.0-21.4		
7.5-7.9			21.5-21.9		
8.0-8.4			22.0-22.4		
8.5-8.9	1		22.5-22.9		
9.0-9.4			23.0-23.4		
9.5-9.9	3		23.5-23.9		
10.0-10.4			24.0-24.4		
10.5-10.9			24.5-24.9		
11.0-11.4			25.0-25.4		
11.5-11.9			25.5-25.9		
12.0-12.4	1		26.0-26.4		
12.5-12.9			26.5-26.9		
13.0-13.4			27.0-27.4		
13.5-13.9			27.5-27.9		
14.0-14.4	1		28.0-28.4		
14.5-14.9	1		28.5-28.9		
15.0-15.4			29.0-29.4		
15.5-15.9			29.5-29.9		
16.0-16.4			30.0 +		
Totals:	10	0			

WDNR Comments

Department of Natural Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600F-186 8-95

Lake: Hayward MWB Code: 2725500 Date: 09/18/96 County: Sawyer Collector(s): Warwick, Pratt

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 60 °F Station: Portion of Shoreline

Adverse Conditions: None Gear Type: Boomshocker Distance Shocked: 6.0 miles

Volts: 230 Amps: Not available Current Type: [X] AC [ ] DC [ ] Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 20:30 Shocking End Time: Not available Generator Start Hour: 194.0 Generator End Hour: 195.9

Number of Dippers: [X] 1 [ ] 2 Entire Shoreline Shocked: [ ] Y [X] N [ ] I Dip Net Mesh Size: 1/4 inch bar H2O Clarity: Not available

	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.0-24.4				
1.5-1.9									24.5-24.9				
2.0-2.4									25.0-25.4	1			
2.5-2.9									25.5-25.9				
3.0-3.4									26.0-26.4				
3.5-3.9									26.5-26.9				
4.0-4.4									27.0-27.4			1	
4.5-4.9									27.5-27.9				
5.0-5.4									28.0-28.4	1			
5.5-5.9	1								28.5-28.9				
6.0-6.4	1								29.0-29.4				
6.5-6.9									29.5-29.9				
7.0-7.4									30.0-30.4				
7.5-7.9									30.5-30.9				
8.0-8.4	2								31.0-31.4				
8.5-8.9	2				1				31.5-31.9				
9.0-9.4	5				1				32.0-32.4				
9.5-9.9					2				32.5-32.9				
10.0-10.4									33.0-33.4				
10.5-10.9	1								33.5-33.9				
11.0-11.4	2								34.0-34.4				
11.5-11.9									34.5-34.9				
12.0-12.4									35.0-35.4				
12.5-12.9	1								35.5-35.9				
13.0-13.4	2								36.0-36.4				
13.5-13.9									36.5-36.9				
14.0-14.4	2								37.0-37.4				
14.5-14.9									37.5-37.9				
15.0-15.4									38.0-38.4				
15.5-15.9	2								38.5-38.9				
16.0-16.4	1								40.0-40.4				
16.5-16.9	1				1				40.5-40.9				
17.0-17.4	1								41.0-41.4				
17.5-17.9									41.5-41.9				
18.0-18.4	1								42.0-42.4			1	
18.5-18.9	1								42.5-42.9				
19.0-19.4									43.0-43.4				
19.5-19.9									43.5-43.9				
20.0-20.4									44.0-44.4			1	
20.5-20.9									44.5-44.9				
21.0-21.4									45.0-45.4			1	
21.5-21.9									45.5-45.9				
22.0-22.4									46.0-46.9				
22.5-22.9									47.0-47.9				
23.0-23.4			1						48.0-48.9				
23.5-23.9									49.0-49.9				
Totals:	28	0	5	0	5	0	0	0	50.0+				

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County: Sawyer	Waters: Hayward Lake MWBC: 2725500
Sampling Objective: Walleye Recruitment Survey	Number and Locations of Stations (Habitat)
Period Fished (Dates): 10/06/96	Miles Actually Shocked = 6.0 (Source: LM) Acres = 247 (LM) Total Miles of Shoreline = 8.6 (LM) Total Miles of Shockable Shoreline = 6.0 (LM)

GEAR

Boomshocker (Hours): 2.1	Time: ✓ Night Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts)
Boomshocker(s): 1 Mini-boomshocker(s): 0
Dip Netter(s): 2 Dip Netter(s): 0

Characteristics
Walleye Recruitment Code: C-ST

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit
Walleye (Age 0+)	11	None	6.0 - 6.4	0.48 / hour 1.8 ~~0.17~~ / mile
Serns Index NA YOY / acre				
Walleye (EG Age 0+ or Age 1+)	10	8.5 - 8.9	6.5 - 9.9	4.76 / hour 1.67 / mile
Walleye (Other)	5	None	12.0 - 17.4	2.38 / hour 0.83 / mile
Smallmouth Bass	0		-	0.00 / hour 0.00 / mile
Largemouth Bass	19	None	7.5 - 16.9	9.05 / hour 3.17 / mile
Muskellunge	7	None	10.5 - 45.4	3.33 / hour 1.17 / mile
Northern Pike	26	9.0 - 9.4	5.5 - 33.4	12.38 / hour 4.33 / mile

Observations

1) Tank Mortality: None

2) Weather:

3) Stocking: 2470 walleye (7.4") on 09/25/96; 247 muskellunge (10.8") on 09/09/96 note error MOT one but 11 (eleven) young walleye in catch. CPE = 1.8/hr/be

4) Reliabilty: Medium

5) Comments: Extended growth Age0+ walleye and Age1+ walleye length ranges overlap; no ageing was done

Rev. 10-70	Signed (Compiler)	Date: 11/15/96

WDNR Comments

Department of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600A-191 8-95

Lake: Hayward MWB Code: 2725500 Date: 10/06/96 County: Sawyer Collector(s): Sande, Pratt

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 51 °F Station: Portion of Shoreline

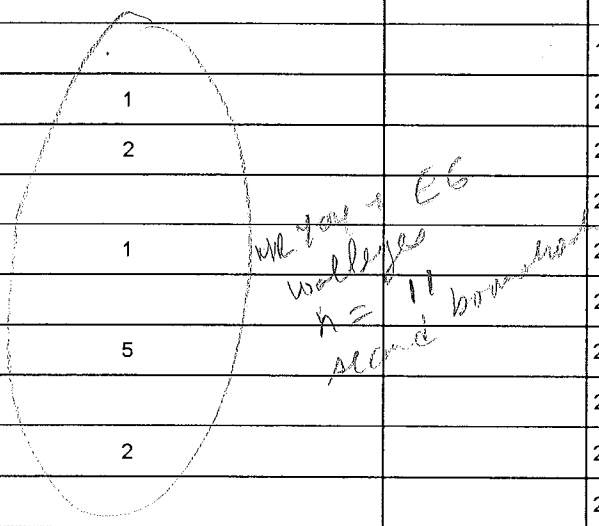
Adverse Conditions: Lights malfunctioning Gear Type: Boomshocker Distance Shocked: 6.0 miles

Volts: 230 Amps: Not available Current Type: [X] AC [ ] DC [ ] Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 19:00 Shocking End Time: Not available Generator Start Hour: 197.5 Generator End Hour: 199.6

Number of Dippers: [ ] 1 [X] 2 Entire Shoreline Shocked: [ ] Y [X] N [ ] I Dip Net Mesh Size: 1/4 inch bar H2O Clarity: Not available

inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			16.5-16.9		
3.0-3.4			17.0-17.4	1	
3.5-3.9			17.5-17.9		
4.0-4.4			18.0-18.4		
4.5-4.9			18.5-18.9		
5.0-5.4			19.0-19.4		
5.5-5.9			19.5-19.9		
6.0-6.4	1		20.0-20.4		
6.5-6.9	2		20.5-20.9		
7.0-7.4			21.0-21.4		
7.5-7.9	1		21.5-21.9		
8.0-8.4			22.0-22.4		
8.5-8.9	5		22.5-22.9		
9.0-9.4			23.0-23.4		
9.5-9.9	2		23.5-23.9		
10.0-10.4			24.0-24.4		
10.5-10.9			24.5-24.9		
11.0-11.4			25.0-25.4		
11.5-11.9			25.5-25.9		
12.0-12.4	1		26.0-26.4		
12.5-12.9			26.5-26.9		
13.0-13.4	1		27.0-27.4		
13.5-13.9			27.5-27.9		
14.0-14.4			28.0-28.4		
14.5-14.9	1		28.5-28.9		
15.0-15.4	1		29.0-29.4		
15.5-15.9			29.5-29.9		
16.0-16.4			30.0 +		
Totals:	16	0			



WDNR Comments

Department of Natural Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600F-186 8-95

Lake: Hayward MWB Code: 2725500 Date: 10/06/96 County: Sawyer Collector(s): Sande, Pratt

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 51 °F Station: Portion of Shoreline

Adverse Conditions: Lights malfunctioning Gear Type: Boomshocker Distance Shocked: 6.0 miles

Volts: 230 Amps: Not available Current Type: [X] AC [ ] DC [ ] Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 19:00 Shocking End Time: Not available Generator Start Hour: 197.5 Generator End Hour: 199.6

Number of Dippers: [ ] 1 [X] 2 Entire Shoreline Shocked: [ ] Y [X] N [ ] I Dip Net Mesh Size: 1/4 inch bar H2O Clarity: Not available

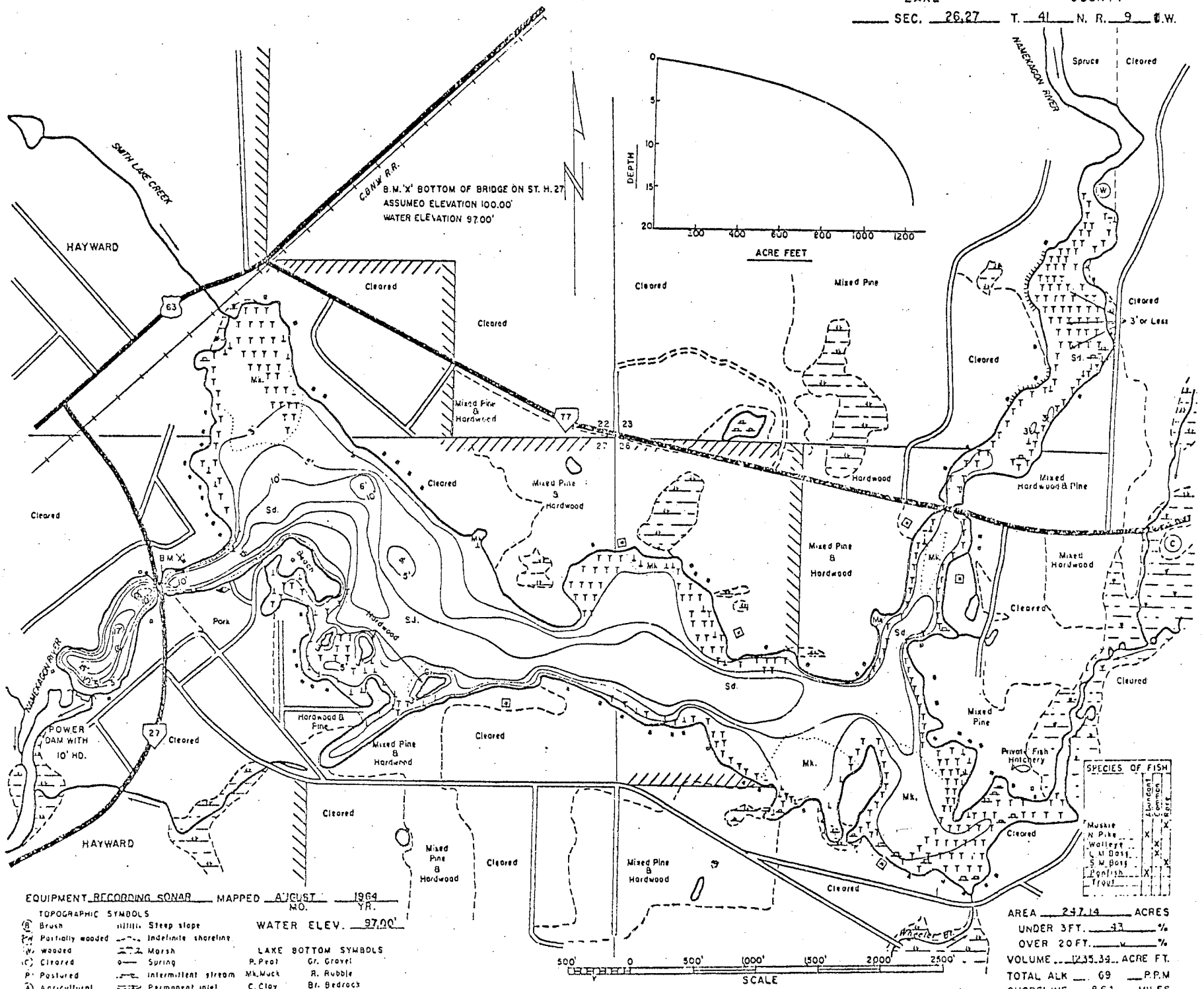
	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.0-24.4	1			
1.5-1.9									24.5-24.9				
2.0-2.4									25.0-25.4				
2.5-2.9									25.5-25.9				
3.0-3.4									26.0-26.4			1	
3.5-3.9									26.5-26.9				
4.0-4.4									27.0-27.4				
4.5-4.9									27.5-27.9				
5.0-5.4									28.0-28.4	1			
5.5-5.9	1								28.5-28.9				
6.0-6.4									29.0-29.4				
6.5-6.9									29.5-29.9				
7.0-7.4	2								30.0-30.4				
7.5-7.9	3				1				30.5-30.9				
8.0-8.4					2				31.0-31.4				
8.5-8.9					1				31.5-31.9				
9.0-9.4	4				1				32.0-32.4				
9.5-9.9	2				2				32.5-32.9				
10.0-10.4	2				1				33.0-33.4	1			
10.5-10.9	1		1		1				33.5-33.9				
11.0-11.4			1		1				34.0-34.4				
11.5-11.9	2		2		3				34.5-34.9				
12.0-12.4	1		1		2				35.0-35.4				
12.5-12.9									35.5-35.9				
13.0-13.4									36.0-36.4				
13.5-13.9	1								36.5-36.9				
14.0-14.4					1				37.0-37.4				
14.5-14.9					1				37.5-37.9				
15.0-15.4					1				38.0-38.4				
15.5-15.9									38.5-38.9				
16.0-16.4	1								40.0-40.4				
16.5-16.9					1				40.5-40.9				
17.0-17.4									41.0-41.4				
17.5-17.9									41.5-41.9				
18.0-18.4	1								42.0-42.4				
18.5-18.9									42.5-42.9				
19.0-19.4									43.0-43.4				
19.5-19.9									43.5-43.9				
20.0-20.4									44.0-44.4				
20.5-20.9	2								44.5-44.9				
21.0-21.4									45.0-45.4			1	
21.5-21.9									45.5-45.9				
22.0-22.4									46.0-46.9				
22.5-22.9									47.0-47.9				
23.0-23.4									48.0-48.9				
23.5-23.9									49.0-49.9				
Totals:	26	0	7	0	19	0	0	0	50.0+				

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964 (MO. / YR.)

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- Brush
- Partially wooded
- Wooded
- Cleared
- Pastured
- Agricultural
- BM Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- ⊥ Emergent vegetation
- Floating vegetation

SCALE: 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H. Schmudt, M. Perkins, L. Sather Drawn by: J. Roth

AREA 247.14 ACRES
UNDER 3FT. 43 %
OVER 20FT. — %
VOLUME 1235.34 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

A-206

WDNR Comments

WDNR Comments

haul	BG	BC	RB	YP	PS	BH	LMB	JD	NP	WE	WS	CS	BNM	RH	TP
1A	1	0	0	0				0	0			0			
1B	22	16	0	10				0	1	1	1	189	1	2	
2A	0	0	0	9			2	3	0		3	262			
2B	17	0	0	33			5	28	3		9	166			
3A	35	9	0	9	1		1	1	2		1	120			
3B	16	3	0	21	3	1	0	1	0						
4A	0	12	0	8	1		2		0			8	1		31
4B	0	0	0	32	2		15		0			131	1		2
5A	2	31	0	1	1		0		1			105	1		
5B	176	74	1	16			2		1	1	8	215		11	

Lake Hayward; 8/22/97 Seine hauls- juvenile fishes and recruitment. FERC..

Other species-

Species No. Station/Haul

Creek Chub- 17; stations 3-5
R darter- 1; station 1
Log perch- 3; stations 2,5
Johnny darter- 33; stations 2, 3

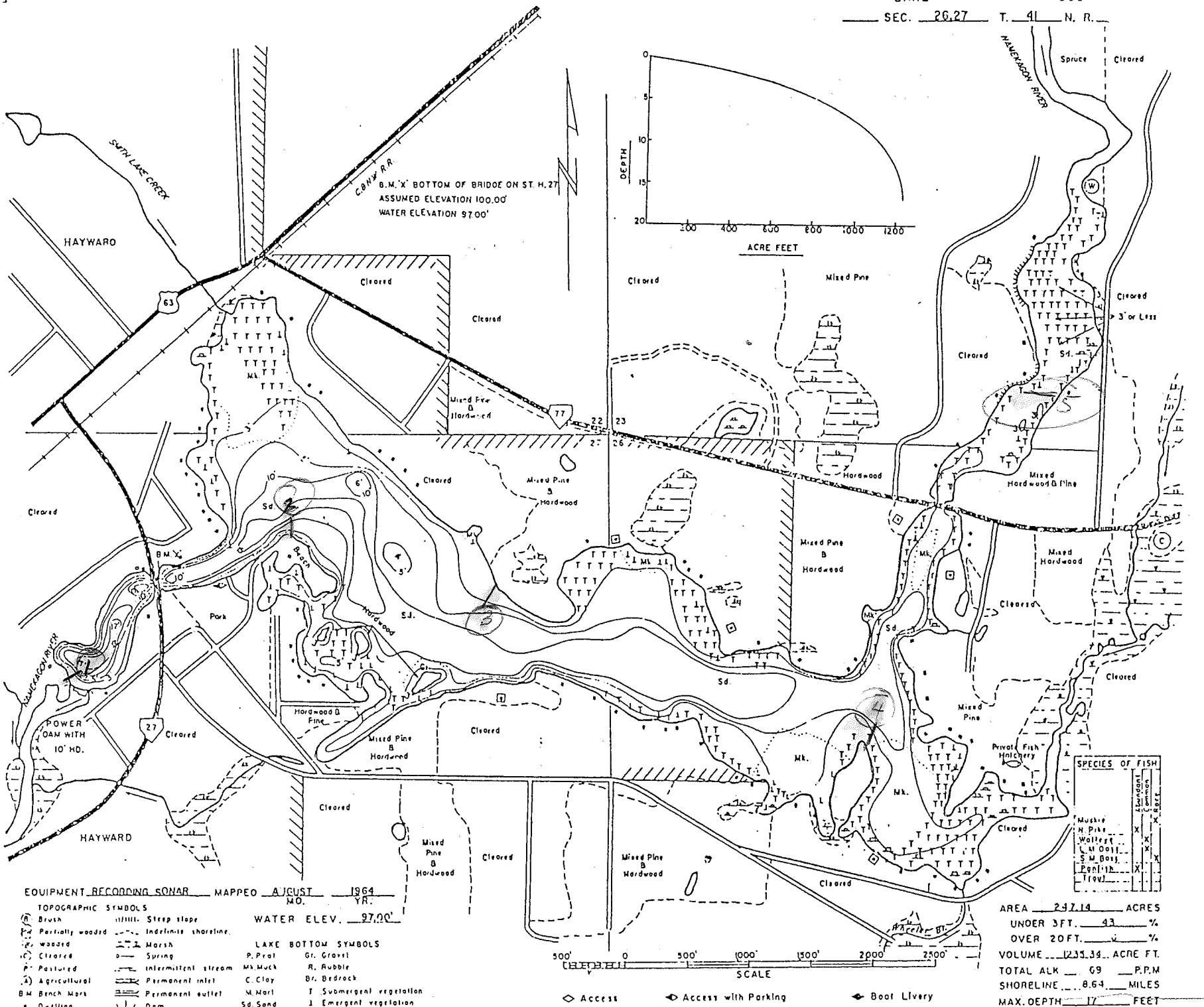
LF- measure 50 per spp.

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE ____ COU.

SEC. 26,27 T. 41 N. R.



EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964
MO. YR.

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- Brush
- Partially wooded
- Wooded
- Cleared
- Pastured
- Agricultural
- BM Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- Submergent vegetation
- Emergent vegetation
- Floating vegetation

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H. Schmidt, W. Prihoda, L. Sather Drawn by: J. Rath

AREA 247.14 ACRES
UNDER 3FT. 43 %
OVER 20FT. — %
VOLUME 1235.34 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

A-208

WDNR Comments

WDNR Comments

State of Wisconsin
Department of Natural Resources

Start - 211.2
End - [illegible]
Temp 52°

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

INCHES

COUNTY	WATER	DATE	GEAR
Sawyer COUNTY CODE __ __	Hayward & N+W Shore WATER CODE __ __ __ __	5-19-97	VV BS 200 V / 3 A

SIZE RANGE INCHES	WE-A6	WE other	NP	SMB	LMB	SIZE RANGE INCHES	NP	Mu	
<3.0						27.0-27.4			
3.0- 3.4						27.5-27.9			
3.5- 3.9						28.0-28.4			
4.0- 4.4						28.5-28.9			
4.5- 4.9						29.0-29.4			
5.0- 5.4						29.5-29.9			
5.5- 5.9						30.0-30.4			
6.0- 6.4						30.5-30.9			RB-C
6.5- 6.9	||					31.0-31.4			YB-A
7.0- 7.4	||					31.5-31.9			BC-F
7.5- 7.9	||					32.0-32.4			PB-F
8.0- 8.4	|				|	32.5-32.9			BC-F
8.5- 8.9						33.0-33.4			[illegible]
9.0- 9.4						33.5-33.9			WS-C
9.5- 9.9	|		|			34.0-34.4			RH-C
10.0-10.4	|				|	34.5-34.9		|	
10.5-10.9					|	35.0-35.4			
11.0-11.4			|			35.5-35.9			
11.5-11.9			|			36.0-36.4			
12.0-12.4					|	36.5-36.9			
12.5-12.9			|			37.0-37.4			
13.0-13.4			|			37.5-37.9			
13.5-13.9						38.0-38.4			
14.0-14.4						38.5-38.9			
14.5-14.9						39.0-39.4			
15.0-15.4						39.5-39.9			
15.5-15.9						40.0-40.9			
16.0-16.4						41.0-41.9			
16.5-16.9		|				42.0-42.9			
17.0-17.4						43.0-43.9			
17.5-17.9			|			44.0-44.9			
18.0-18.4						45.0-45.9			
18.5-18.9			|			46.0-46.9			
19.0-19.4						47.0-47.9			
19.5-19.9						48.0-48.9			
20.0-20.4						49.0-49.9			
20.5-20.9						50.0-50.9			
21.0-21.4						51.0-51.9			
21.5-21.9			||			52.0-52.9			
22.0-22.4						53.0-53.9			
22.5-22.9						54.0-54.9			
23.0-23.4						55.0-55.9			
23.5-23.9						56.0-56.9			
24.0-24.4						57.0-57.9			
24.5-24.9						58.0-58.9			
25.0-25.4						59.0-59.9			
25.5-25.9			|			60.0+			
26.0-26.4									
26.5-26.9									
TOTAL	9 A6-WE	1 other WE	10 NP	0	4 LMB	TOTAL		1 Mu	

WDNR Comments

WDNR Comments

State of Wisconsin
Department of Natural Resources

49.6°F cloudy, windy, cold
1.2 hrs / 3.2 miles (E/NE)

GAME FISH LENGTH FREQUENCY

FORM 3600-65 REV. 3-80

INCHES

COUNTY Sawyer COUNTY CODE 58

WATER Lake Hayward WATER CODE ____

DATE 05/08/97

GEAR Boomshocker 200 V – 3 Amps

SIZE RANGE INCHES	SPECIES			
	Walleye-AG	Walleye-other	LMB	NP
<3.0				
3.0- 3.4				
3.5- 3.9				
4.0- 4.4				
4.5- 4.9				
5.0- 5.4				
5.5- 5.9				
6.0- 6.4				
6.5- 6.9	2			
7.0- 7.4	2			
7.5- 7.9	2			
8.0- 8.4	1			
8.5- 8.9	2		1	
9.0- 9.4	5			
9.5- 9.9	1			
10.0-10.4	3			
10.5-10.9	2			1
11.0-11.4				
11.5-11.9				
12.0-12.4		1	1	Several other larger seen but not netted
12.5-12.9				
13.0-13.4		1		
13.5-13.9				
14.0-14.4				
14.5-14.9				
15.0-15.4				
15.5-15.9			1	
16.0-16.4				
16.5-16.9				
17.0-17.4				
17.5-17.9				
18.0-18.4		1		
18.5-18.9				
19.0-19.4			1	
19.5-19.9				
20.0-20.4				
20.5-20.9				
21.0-21.4				
21.5-21.9				
22.0-22.4				
22.5-22.9				
23.0-23.4				
23.5-23.9				
24.0-24.4				
24.5-24.9				
25.0-25.4				
25.5-25.9		1		
26.0-26.4				
26.5-26.9				
TOTAL	20 AG-WE	4 other WE	5 LMB	1 NP

SIZE RANGE INCHES	SPECIES		
	Musky	Species	Abund.
27.0-27.4		WS	C
27.5-27.9		RH	P
28.0-28.4		BG	P
28.5-28.9		BC	C
29.0-29.4		YP	P
29.5-29.9			
30.0-30.4			
30.5-30.9			
31.0-31.4	1		
31.5-31.9			
32.0-32.4			
32.5-32.9	Only one seen		
33.0-33.4			
33.5-33.9			
34.0-34.4			
34.5-34.9			
35.0-35.4			
35.5-35.9			
36.0-36.4			
36.5-36.9			
37.0-37.4			
37.5-37.9			
38.0-38.4			
38.5-38.9			
39.0-39.4			
39.5-39.9			
40.0-40.9			
41.0-41.9			
42.0-42.9			
43.0-43.9			
44.0-44.9			
45.0-45.9			
46.0-46.9			
47.0-47.9			
48.0-48.9			
49.0-49.9			
50.0-50.9			
51.0-51.9			
52.0-52.9			
53.0-53.9			
54.0-54.9			
55.0-55.9			
56.0-56.9			
57.0-57.9			
58.0-58.9			
59.0-59.9			
60.0+			
TOTAL	1 Mu		

WDNR Comments

State of Wisconsin
Department of Natural Resources

Start - 12hr
End
H_2O Temp 49.6 °F
3.2 miles
S/E Shore to STH '77'

GAME FISH LENGTH FREQUENCY
FORM 3600-65 REV. 3-80

FISHES

COUNTY	WATER	DATE	GEAR
Sawyer, COUNTY CODE 58	LK Hayward, WATER CODE ____	05/08/97	Boomshocker

SIZE RANGE INCHES	Walleye	LMB	NP	Mu
<3.0				
3.0- 3.4				
3.5- 3.9				
4.0- 4.4				
4.5- 4.9				
5.0- 5.4				
5.5- 5.9				
6.0- 6.4				
6.5- 6.9	//			
7.0- 7.4	//			
7.5- 7.9	//			
8.0- 8.4	/ (20)			
8.5- 8.9	// (A6)	/		
9.0- 9.4	/////	/		
9.5- 9.9	/		//	
10.0-10.4	///			
10.5-10.9	//			
11.0-11.4				
11.5-11.9				
12.0-12.4	/			
12.5-12.9		/		
13.0-13.4	/			
13.5-13.9				
14.0-14.4				
14.5-14.9				
15.0-15.4				
15.5-15.9		/		
16.0-16.4				
16.5-16.9				
17.0-17.4				
17.5-17.9				
18.0-18.4	/			
18.5-18.9				
19.0-19.4		/		
19.5-19.9				
20.0-20.4				
20.5-20.9				
21.0-21.4				
21.5-21.9				
22.0-22.4				
22.5-22.9				
23.0-23.4				
23.5-23.9				
24.0-24.4				
24.5-24.9				
25.0-25.4				
25.5-25.9	/			
26.0-26.4	(Rong)			
26.5-26.9				
TOTAL	24 tot	5 LMB	1 NP	

SIZE RANGE INCHES	WG	NP	Mu
27.0-27.4			
27.5-27.9			
28.0-28.4			
28.5-28.9			
29.0-29.4			
29.5-29.9			
30.0-30.4		Lonn	
30.5-30.9		Russ	
31.0-31.4		Rank	/
31.5-31.9			
32.0-32.4		Target	- A6 W.G.
32.5-32.9			
33.0-33.4			
33.5-33.9		BC	- C
34.0-34.4		BG	- P
34.5-34.9		WS	- C
35.0-35.4		RH	- R
35.5-35.9		YP	- P
36.0-36.4			
36.5-36.9			
37.0-37.4			
37.5-37.9			
38.0-38.4			
38.5-38.9			
39.0-39.4			
39.5-39.9			
40.0-40.9			
41.0-41.9			
42.0-42.9			
43.0-43.9			
44.0-44.9			
45.0-45.9			
46.0-46.9			
47.0-47.9			
48.0-48.9			
49.0-49.9			
50.0-50.9			
51.0-51.9			
52.0-52.9			
53.0-53.9			
54.0-54.9			
55.0-55.9			
56.0-56.9			
57.0-57.9			
58.0-58.9			
59.0-59.9			
60.0+			
TOTAL			1 Mu

Cold Windy Rainy D/C after 1½ hr because it was so wet + lake was miserable

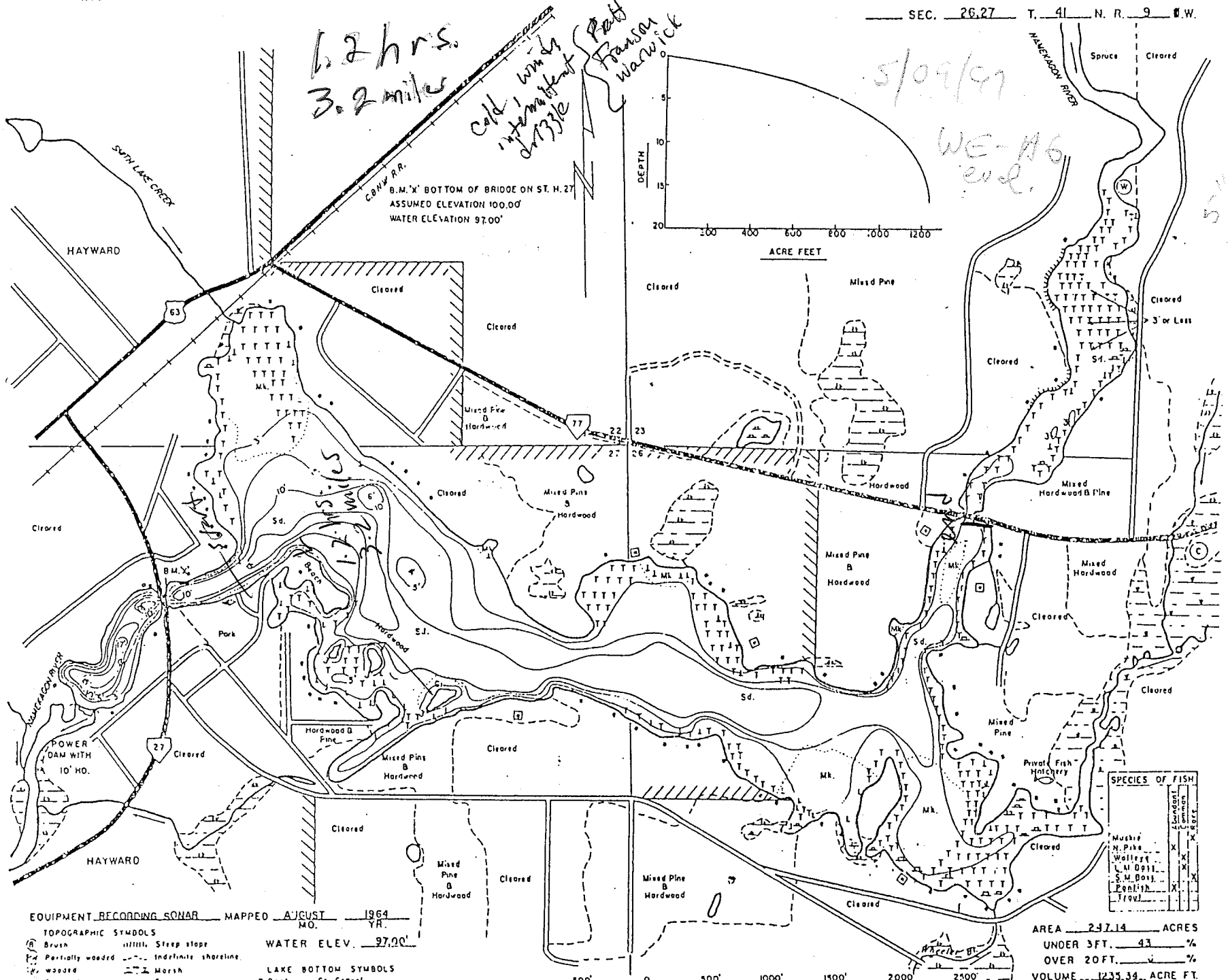
SMB - 13.5

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



AREA 247.14 ACRES
UNDER 3FT. 43 %
OVER 20FT. — %
VOLUME 1235.34 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

WDNR Comments

A-213

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County: Sawyer	Waters: Hayward Lake MWBC: 2725500
Sampling Objective: Walleye Recruitment Survey	Number and Locations of Stations (Habitat)
Period Fished (Dates): 09/21/98	Miles Actually Shocked = 6.8 (Source: LM) Acres = 247 (LM) Total Miles of Shoreline = 8.6 (LM) Total Miles of Shockable Shoreline = 6.8 (LM)

GEAR

Boomshocker (Hours): 2.3	Time: ✓ Night Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts) Boomshocker(s): 1 Mini-boomshocker(s): 0 Dip Netter(s): 2 Dip Netter(s): 0	Characteristics Walleye Recruitment Code: C-ST

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	44	7.0-7.9	6.5 - 10.9*	19.13 / hour	6.47 / mile
Serns Index 1.51 YOY / acre					
Walleye (Age 1+)	0	None	-	0.00 / hour	0.00 / mile
Walleye (Other)	7	None	13.0 - 21.9	3.04 / hour	1.03 / mile
Smallmouth Bass	5	None	4.0 - 12.9	2.17 / hour	0.74 / mile
Largemouth Bass	18	None	2.5 - 15.4	7.83 / hour	2.65 / mile
Muskellunge	4	None	10.5 - 47.9	1.74 / hour	0.59 / mile
Northern Pike	34	9.0-10.4	6.5 - 32.4	14.78 / hour	5.00 / mile

Observations

1) Tank Mortality: None

2) Weather: Mostly Cloudy, Cold

3) Stocking: 2,470 Walleye, 8.3", 09/17/98, DNR; 247 Muskellunge, 11.7", 09/04/98, DNR

4) Reliabilty: Medium

5)Comments: *Extended growth YOY walleye stocked ~1 week before survey.

Rev. 10-70	Signed (Compiler)	Date: 12/09/98

WDNR Comments

Sheet 1 of 1

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET — GAMEFISH — Wisconsin Department of Natural Resources

Waterbody Name: Lake Hayward
MWB Code/WBIC:
Waterbody Type:
County:
Date (MM/DD/YY): 09/21/98
Station:
X Start Time: 8:20 PM
X End Time: 11:00 PM
Collectors: Pratt, Warwick, Blinkwolf

Target Fish: Juvenile Walleye
Mark(s) Given: None
Survey Type: CPE (Fall Shoreline)
Gear Type: Boomshocker
Weather: Cloudy, cold
X Adverse Conditions:
X Water Temperature:
X Water Conductivity:
Water Level: [HI] [NORM] (circled) [LOW]
✓ Water Clarity:

X Generator Start Time:
X Generator End Time:
X Volts:
X Amps:
~~Pulse Rate:~~
~~Duty Cycle:~~
Current Type: [AC] (circled) [DC] [PDC]
Distance Shocked: X
Entire Shoreline Shocked: [Y] [N] (circled) * [1]
Number of Dippers: [1] [2] (circled)
Dipnet Mesh Size: 3/8

inches	W.E.	NP	Muskellunge	Largemouth Bass	Smallmouth Bass	inches	Northern Pike	Muskellunge	W.E.
<1.5						24.5-24.9			
1.5-1.9						25.0-25.4			
2.0-2.4						25.5-25.9			
2.5-2.9						26.0-26.4			
3.0-3.4						26.5-26.9			
3.5-3.9						27.0-27.4			
4.0-4.4						27.5-27.9			
4.5-4.9						28.0-28.4			
5.0-5.4						28.5-28.9			
5.5-5.9						29.0-29.4			
6.0-6.4						29.5-29.9			
6.5-6.9						30.0-30.4			
7.0-7.4						30.5-30.9			
7.5-7.9						31.0-31.4			
8.0-8.4						31.5-31.9			
8.5-8.9						32.0-32.4			
9.0-9.4						32.5-32.9			
9.5-9.9						33.0-33.4			
10.0-10.4						33.5-33.9			
10.5-10.9						34.0-34.4			
11.0-11.4						34.5-34.9			
11.5-11.9						35.0-35.4			
12.0-12.4						35.5-35.9			
12.5-12.9						36.0-36.4			
13.0-13.4						36.5-36.9			
13.5-13.9						37.0-37.4			
14.0-14.4						37.5-37.9			
14.5-14.9						38.0-38.4			
15.0-15.4						38.5-38.9			
15.5-15.9						39.0-39.4			
16.0-16.4						39.5-39.9			
16.5-16.9						40.0-40.4			
17.0-17.4						40.5-40.9			
17.5-17.9						41.0-41.4			
18.0-18.4						41.5-41.9			
18.5-18.9						42.0-42.4			
19.0-19.4						42.5-42.9			
19.5-19.9						43.0-43.4			
20.0-20.4						43.5-43.9			
20.5-20.9						44.0-44.4			
21.0-21.4						44.5-44.9			
21.5-21.9						45.0-45.4			
22.0-22.4						45.5-45.9			
22.5-22.9						46.0-46.9			
23.0-23.4						47.0-47.9			
23.5-23.9						48.0-48.9			
24.0-24.4						49.0-49.9			
TOTALS:						50.0+			

* Does not include shoreline south of STH '27' or north STH '77' bridges – ... shore is

WDNR Comments

Sheet_____of_____

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET — WALLEYE — Wisconsin Department of Natural Resources

Waterbody Name: _____
MWB Code/WBIC: _____
Waterbody Type: _____
County: _____
Date (MM/DD/YY): _____
Station: _____
Start Time: _____
End Time: _____
Collectors: _____
_____

Target Fish: Juvenile Walleye
Mark(s) Given: None
Survey Type: CPE (Fall Shoreline)
Gear Type: Boomshocker
Weather: _____
Adverse Conditions: _____
Water Temperature: _____
Water Conductivity: _____
Water Level: [HI] [NORM] [LOW]
Water Clarity: _____

Generator Start Time: _____
Generator End Time: _____
Volts: _____
Amps: _____
Pulse Rate: _____
Duty Cycle: _____
Current Type: [AC] [DC] [PDC]
Distance Shocked: _____
Entire Shoreline Shocked: [Y] [N] [I]
Number of Dippers: [1] [2]
Dipnet Mesh Size: _____

inches		inches		inches	
<3.0		7.1		11.4	
3.0		7.2		11.5	
3.1		7.3		11.6	
3.2		7.4		11.7	
3.3		7.5		11.8	
3.4		7.6		11.9	
3.5		7.7	1	12.0-12.4	1
3.6		7.8		12.5-12.9	1
3.7		7.9		13.0-13.4	1
3.8	11	8.0		13.5-13.9	
3.9		8.1		14.0-14.4	1
4.0		8.2		14.5-14.9	
4.1		8.3		15.0-15.4	
4.2	1	8.4		15.5-15.9	1
4.3		8.5		16.0-16.4	
4.4		8.6	1	16.5-16.9	
4.5		8.7		17.0-17.4	
4.6		8.8		17.5-17.9	
4.7	1	8.9	1	18.0-18.4	
4.8		9.0		18.5-18.9	
4.9		9.1		19.0-19.4	
5.0		9.2		19.5-19.9	
5.1		9.3		20.0-20.4	
5.2		9.4		20.5-20.9	
5.3	1	9.5		21.0-21.4	
5.4		9.6		21.5-21.9	
5.5		9.7		22.0-22.4	
5.6		9.8		22.5-22.9	
5.7	1	9.9		23.0-23.4	
5.8		10.0		23.5-23.9	
5.9		10.1	1	24.0-24.4	
6.0		10.2		24.5-24.9	
6.1		10.3		25.0-25.4	
6.2		10.4		25.5-25.9	
6.3		10.5		26.0-26.4	
6.4		10.6		26.5-26.9	
6.5		10.7		27.0-27.4	
6.6		10.8		27.5-27.9	
6.7		10.9	1	28.0-28.4	
6.8		11.0		28.5-28.9	
6.9		11.1		29.0-29.4	
7.0		11.2		29.5-29.9	
TOTALS:		11.3		30.0 +	

WDNR Comments

Sheet ___ of ___

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET — GAMEFISH — Wisconsin Department of Natural Resources

Waterbody Name: Lake Hayward
MWB Code/WBIC: 2725500
Waterbody Type: Imp.
County: Sawyer
Date (MM/DD/YY): 09/21/98
Station: Main Lake
X Start Time: 8:20 PM
X End Time: 11:00 PM
Collectors: Pratt, Warwick, Blinkwolf

Target Fish: Juvenile Walleye
Mark(s) Given: None
Survey Type: CPE (Fall Shoreline)
Gear Type: Boomshocker
Weather: Cloudy, cold
X Adverse Conditions: Weedy
X Water Temperature: 58.1
X Water Conductivity: Mod - Hi
Water Level: [HI] [NORM] (circled) [LOW]
X Water Clarity: Clear 6-9'

X Generator Start Time: 272.0
X Generator End Time: 274.3
X Volts: 250
X Amps: 5
~~Pulse Rate:~~ —
~~Duty Cycle:~~ —
Current Type: [AC] (circled) [DC] [PDC]
Distance Shocked: 6.84 X
Entire Shoreline Shocked: [Y] [N] (circled) [I]
Number of Dippers: [1] [2] (circled)
Dipnet Mesh Size: 3/8

6.8   PS-5.3   YP-10.2, 8.3, 8.1, ...

inches	W.E.	NP	Muskellunge	Largemouth Bass	Smallmouth Bass
<1.5					
1.5-1.9					
2.0-2.4					
2.5-2.9				||	
3.0-3.4				|	
3.5-3.9				|	
4.0-4.4					|
4.5-4.9					|
5.0-5.4					
5.5-5.9					|
6.0-6.4					
6.5-6.9	|||| 4	|		|	
7.0-7.4	13			||||	
7.5-7.9	14				|
8.0-8.4	||| 3	| 1			
8.5-8.9	||| 3	|| 2			
9.0-9.4	|| 2	|||| 5		|	
9.5-9.9	|| 2	||| 3			
10.0-10.4	|| 2	5			
10.5-10.9	| 1	|| 2	|		
11.0-11.4	44	|| 2		|	
11.5-11.9	A-G	|| 2	|	|	
12.0-12.4		|| 2		||||	
12.5-12.9				||	||
13.0-13.4	|	|| 2			
13.5-13.9	||| 4 (5)	| 1		|	
14.0-14.4	A-G	| 1			
14.5-14.9		| 1			
15.0-15.4					
15.5-15.9	|| 2	| 1		|	
16.0-16.4	|				
16.5-16.9		| 1			
17.0-17.4					
17.5-17.9					
18.0-18.4					
18.5-18.9					
19.0-19.4					
19.5-19.9					
20.0-20.4					
20.5-20.9					
21.0-21.4					
21.5-21.9	| 1				
22.0-22.4					
22.5-22.9					
23.0-23.4					
23.5-23.9					
24.0-24.4		Sub			
TOTALS:	53	30	2 Sublgl.	19	5

inches	Northern Pike	Muskellunge	W...
24.5-24.9			
25.0-25.4			
25.5-25.9			
26.0-26.4			
26.5-26.9			
27.0-27.4			
27.5-27.9			
28.0-28.4		WS-A	
28.5-28.9		RH-P	
29.0-29.4		YP-C	
29.5-29.9		PS-C	
30.0-30.4		BG-P	
30.5-30.9		LB-P	
31.0-31.4			
31.5-31.9			
32.0-32.4	|		
32.5-32.9			
33.0-33.4			
33.5-33.9			
34.0-34.4			
34.5-34.9			
35.0-35.4			
35.5-35.9			
36.0-36.4			
36.5-36.9			
37.0-37.4			
37.5-37.9			
38.0-38.4			
38.5-38.9			
39.0-39.4			
39.5-39.9			
40.0-40.4			
40.5-40.9			
41.0-41.4			
41.5-41.9		|	
42.0-42.4			
42.5-42.9			
43.0-43.4			
43.5-43.9			
44.0-44.4			
44.5-44.9			
45.0-45.4			
45.5-45.9			
46.0-46.9			
47.0-47.9		|	
48.0-48.9			
49.0-49.9			
50.0+	31 sub.	4 Tot.	

* Does not include shoreline south/north of STH '27' or STH '77' bridges — inaccessible to boomshocker due to low clearance. All the mainlake shore is

GAMEFISH

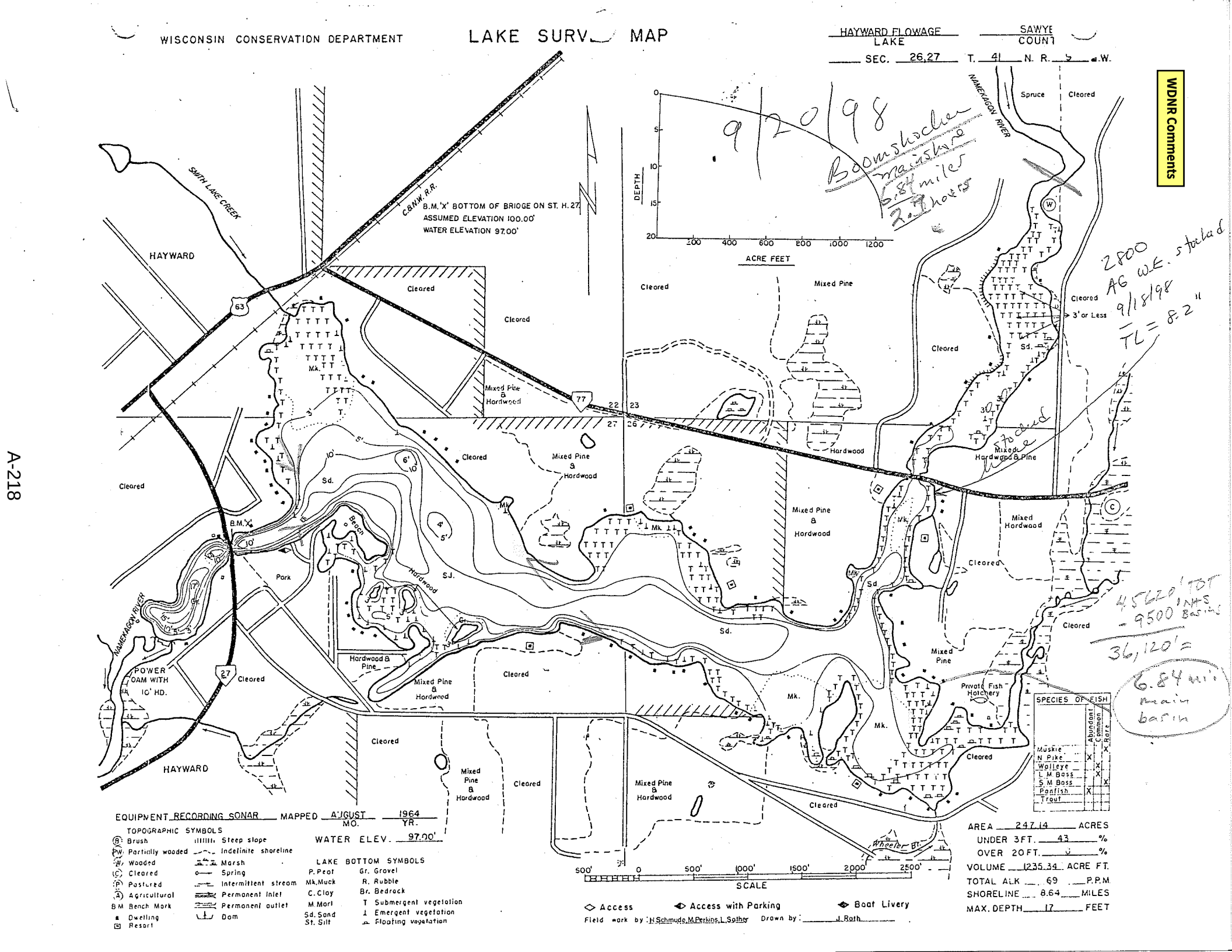
WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 5 W.

WDNR Comments



9/20/98
Boomshaker
Manashore
6.84 miles
2 shores

2900 AG W.E. stocked 9/18/98
TL = 8.2"

45620' TOT
- 9500' NMS Basin
36,120' =
6.84 mi's main basin

SPECIES OF FISH

	Abundant	Common	Rare
Muskie			
N Pike	X		
Walleye		X	
L M Bass		X	
S M Bass			X
Panfish	X		
Trout			

EQUIPMENT RECORDING SONAR MAPPED AUGUST (MO.) 1964 (YR.)

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- (B) Brush
- (PW) Partially wooded
- (W) Wooded
- (C) Cleared
- (P) Pastured
- (A) Agricultural
- BM Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- Emergent vegetation
- Floating vegetation

SCALE: 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H Schmude, M Perkins, L Sother Drawn by: J Rath

AREA 247.14 ACRES
UNDER 3FT. 43 %
OVER 20FT. 0 %
VOLUME 1235.34 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

A-218

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters
Sawyer	Hayward Lake MWBC: 2725500
Sampling Objective: Walleye Recruitment Survey	Number and Locations of Stations (Habitat)
Period Fished (Dates): 09/21/98	Miles Actually Shocked = 6.8 (Source: LM); Acres = 247 (LM); Total Miles of Shoreline = 8.6 (LM); Total Miles of Shockable Shoreline = 8.6 (LM)

GEAR

Boomshocker (Hours)	Time
2.3	✓ Night Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts)	Characteristics
Boomshocker(s): 1 Mini-boomshocker(s): 0 Dip Netter(s): 2 Dip Netter(s): 0	Walleye Recruitment Code: C-ST

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit
Walleye (Age 0+)	44	7.0-7.9	6.5 - 10.9*	19.13 / hour 6.47 / mile
Serns Index NA YOY / acre				
Walleye (Age 1+)	0	None	-	0.00 / hour 0.00 / mile
Walleye (Other)	7	None	13.0 - 21.9	3.04 / hour 1.03 / mile
Smallmouth Bass	5	None	4.0 - 12.9	2.17 / hour 0.74 / mile
Largemouth Bass	18	None	2.5 - 15.4	7.83 / hour 2.65 / mile
Muskellunge	4	None	10.5 - 47.9	1.74 / hour 0.59 / mile
Northern Pike	34	9.0-10.4	6.5 - 32.4	14.78 / hour 5.00 / mile

Observations

1) Tank Mortality: None

2) Weather: Mostly Cloudy, Cold

3) Stocking: 2,470 Walleye, 8.3", 09/17/98, DNR; 247 Muskellunge, 11.7", 09/04/98, DNR

4) Reliabilty: High

5)Comments: *Extended growth YOY walleye stocked ~1 week before survey.

Rev. 10-70	Signed (Compiler)	Date 12/03/98

WDNR Comments

ament of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600A-191 8-95

Lake: Hayward MWB Code: 2725500 Date: 09/21/98 County: Sawyer Collector(s): Pratt, Warwick

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 58°F Station: Portion of Shoreline

Adverse Conditions: Aquatic vegetation Gear Type: Boomshocker Distance Shocked: 6.8 miles

Volts: 250 Amps: 5.0 Current Type: [X] AC [ ] DC [ ] Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 20:20 Shocking End Time: 23:00 Generator Start Hour: 272.0 Generator End Hour: 274.3

Number of Dippers: [ ] 1 [X] 2 Entire Shoreline Shocked: [ ] Y [X] N [ ] Dip Net Mesh Size: 3/8 inch bar H2O Clarity: 6.0 feet

inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			16.5-16.9		
3.0-3.4			17.0-17.4		
3.5-3.9			17.5-17.9		
4.0-4.4			18.0-18.4		
4.5-4.9			18.5-18.9		
5.0-5.4			19.0-19.4		
5.5-5.9			19.5-19.9		
6.0-6.4			20.0-20.4		
6.5-6.9	4		20.5-20.9		
7.0-7.4	13		21.0-21.4		
7.5-7.9	14		21.5-21.9	1	
8.0-8.4	3		22.0-22.4		
8.5-8.9	3		22.5-22.9		
9.0-9.4	2		23.0-23.4		
9.5-9.9	2		23.5-23.9		
10.0-10.4	2		24.0-24.4		
10.5-10.9	1		24.5-24.9		
11.0-11.4			25.0-25.4		
11.5-11.9			25.5-25.9		
12.0-12.4			26.0-26.4		
12.5-12.9			26.5-26.9		
13.0-13.4	1		27.0-27.4		
13.5-13.9	3		27.5-27.9		
14.0-14.4			28.0-28.4		
14.5-14.9			28.5-28.9		
15.0-15.4			29.0-29.4		
15.5-15.9	2		29.5-29.9		
16.0-16.4			30.0 +		
Totals:	51	0			

WDNR Comments

epartment of Natural Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600F-186 8-95

Lake: Hayward MWB Code: 2725500 Date: 09/21/98 County: Sawyer Collector(s): Pratt, Warwick

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 58°F Station: Portion of Shoreline

Adverse Conditions: Aquatic vegetation Gear Type: Boomshocker Distance Shocked: 6.8 miles

Volts: 250 Amps: 5.0 Current Type: [X] AC [ ] DC [ ] Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 20:20 Shocking End Time: 23:00 Generator Start Hour: 272.0 Generator End Hour: 274.3

Number of Dippers: [ ] 1 [X] 2 Entire Shoreline Shocked: [ ] Y [X] N [ ] Dip Net Mesh Size: 3/8 inch bar H2O Clarity: 6.0 feet

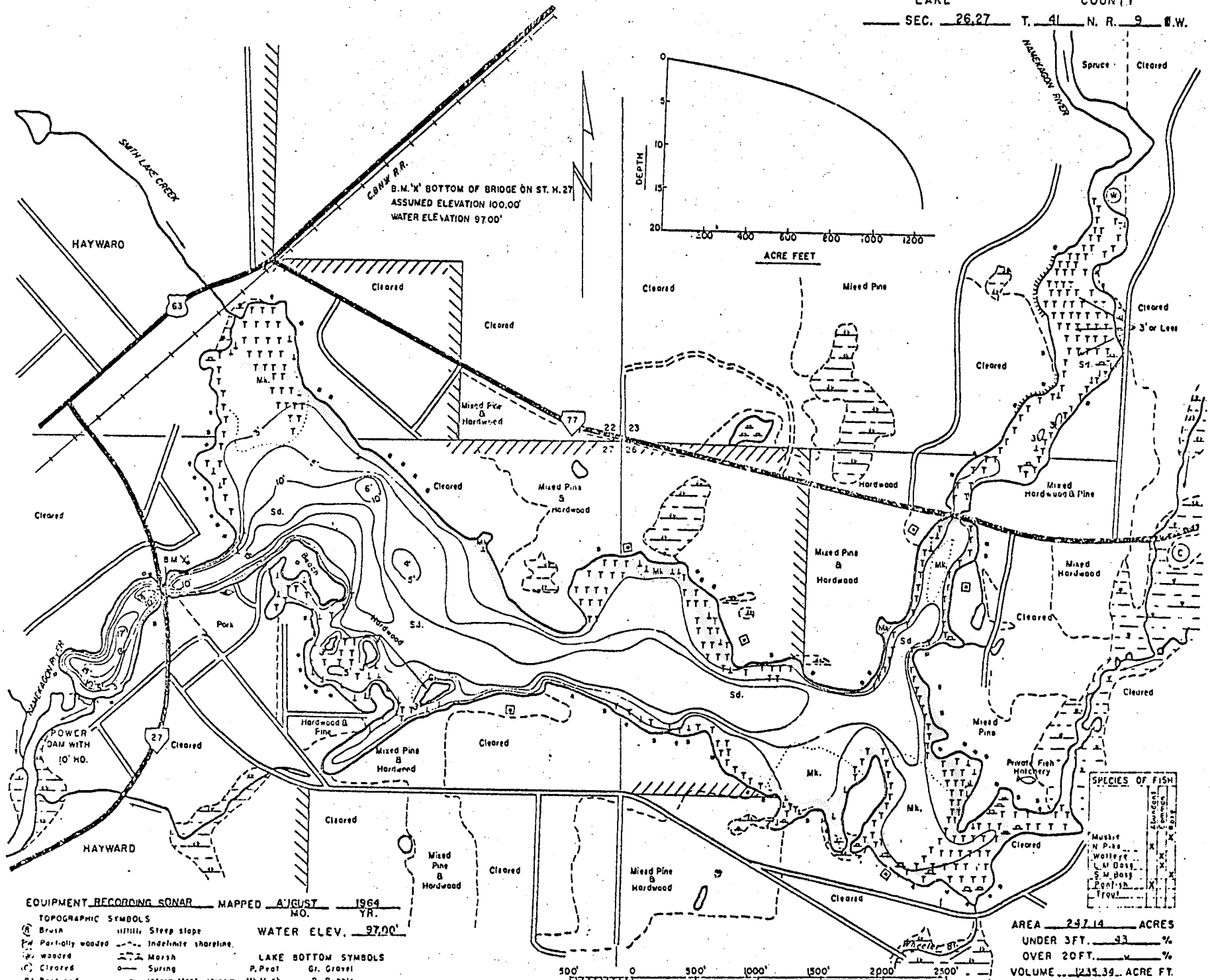
	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4				
2.0-2.4									25.5-25.9				
2.5-2.9					2				26.0-26.4				
3.0-3.4					1				26.5-26.9				
3.5-3.9					1				27.0-27.4				
4.0-4.4							1		27.5-27.9				
4.5-4.9									28.0-28.4				
5.0-5.4									28.5-28.9				
5.5-5.9							1		29.0-29.4				
6.0-6.4									29.5-29.9				
6.5-6.9	1				1				30.0-30.4				
7.0-7.4					3		1		30.5-30.9				
7.5-7.9									31.0-31.4				
8.0-8.4	1								31.5-31.9				
8.5-8.9	2				1				32.0-32.4	1			
9.0-9.4	5								32.5-32.9				
9.5-9.9	3								33.0-33.4				
10.0-10.4	5								33.5-33.9				
10.5-10.9	2		1						34.0-34.4				
11.0-11.4	2				1				34.5-34.9				
11.5-11.9	2		1		1				35.0-35.4				
12.0-12.4	3				3				35.5-35.9				
12.5-12.9					2		2		36.0-36.4				
13.0-13.4	2								36.5-36.9				
13.5-13.9	1				1				37.0-37.4				
14.0-14.4	1								37.5-37.9				
14.5-14.9	1								38.0-38.4				
15.0-15.4					1				38.5-38.9				
15.5-15.9	1								39.0-39.4				
16.0-16.4									39.5-39.9				
16.5-16.9	1								40.0-40.4				
17.0-17.4									40.5-40.9				
17.5-17.9									41.0-41.4				
18.0-18.4									41.5-41.9			1	
18.5-18.9									42.0-42.4				
19.0-19.4									42.5-42.9				
19.5-19.9									43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9									44.0-44.4				
21.0-21.4									44.5-44.9				
21.5-21.9									45.0-45.4				
22.0-22.4									45.5-45.9				
22.5-22.9									46.0-46.9				
23.0-23.4									47.0-47.9			1	
23.5-23.9									48.0-48.9				
24.0-24.4									49.0-49.9				
Totals:	34	0	4	0	18	0	5	0	50.0+				

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964 (MO. / YR.)

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- Brush
- Partially wooded
- Wooded
- Cleared
- Pastured
- Agricultural
- BM Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- ⊥ Emergent vegetation
- Floating vegetation

SCALE: 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H. Schmude, M. Perkoz, L. Sather Drawn by: J. Roth

AREA 237.14 ACRES
UNDER 3FT. 93 %
OVER 20FT. — %
VOLUME 1235.39 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

WDNR Comments

A-222

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters	
Sawyer	Hayward	MWBC: 2725500
Sampling Objective	**Number and Locations of Stations (Habitat)**	
Walleye Recruitment Survey		Source
Period Fished (Dates)	Miles Actually Shocked = 5.4	LM
09/29/99	Acres = 247	LM
	Total Miles of Shoreline = 8.6	LM
	Total Miles of Shockable Shoreline = 8.6	LM

GEAR

Boomshocker (Hours)	Time	
2.0	√ Night	Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts)		Characteristics
Boomshocker(s): 1	Mini-boomshocker(s):	Walleye Recruitment Code: C-ST
Dip Netter(s): 1	Dip Netter(s):	

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	1		7.7	0.50 / hour	0.19 / mile
Serns Index NA YOY / acre					
Walleye (Age 1+)	*		-	/ hour	/ mile
Walleye (Other)	14	None	9.1 - 15.4	7.00 / hour	2.59 / mile
Smallmouth Bass	0	None	-	0.00 / hour	0.00 / mile
Largemouth Bass	16	None	5.5 - 16.4	8.00 / hour	2.96 / mile
Muskellunge	2	None	18.0 - 20.9	1.00 / hour	0.37 / mile
Northern Pike	27	10.5-10.9	6.5 - 31.4	13.50 / hour	5.00 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range
Yellow Perch (incidental)	Common	6.7-10.0			

) Tank Mortality: None

2) Weather: Mostly Cloudy, Cool

3) Reliabilty: Medium

) Stocking: 2470 Walleye, 6.4", 08/30/99, WDNR

Comments: *Age 1+ Walleye included with Other Walleye; no ageing available.

ev. 10-70

Signed (Compiler) Scott D. Plaster

Date 03/09/00

WDNR Comments

t of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600A-191

8-95

Hayward MWB Code: 2725500 Date: 09/29/99 County: Sawyer Collector(s): Plaster

get Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 53°F Station: Portion of Shoreline

dverse Conditions: Aquatic vegetation Gear Type: Boomshocker Distance Shocked: 5.4 miles

Volts: 175 Amps: 4 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 19:45 Shocking End Time: 22:20 Generator Start Hour: 320.7 Generator End Hour: 322.7

Number of Dippers: [X]1 [ ]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: 6 ft.

inches	Unclipped	Clipped	inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			7.2			11.5		
3.0			7.3			11.6	1	
3.1			7.4			11.7		
3.2			7.5			11.8		
3.3			7.6			11.9	1	
3.4			7.7	1		12.0-12.4	2	
3.5			7.8			12.5-12.9		
3.6			7.9			13.0-13.4		
3.7			8.0			13.5-13.9		
3.8			8.1			14.0-14.4	3	
3.9			8.2			14.5-14.9		
4.0			8.3			15.0-15.4	1	
4.1			8.4			15.5-15.9		
4.2			8.5			16.0-16.4		
4.3			8.6			16.5-16.9		
4.4			8.7			17.0-17.4		
4.5			8.8			17.5-17.9		
4.6			8.9			18.0-18.4		
4.7			9.0			18.5-18.9		
4.8			9.1	1		19.0-19.4		
4.9			9.2	1		19.5-19.9		
5.0			9.3	1		20.0-20.4		
5.1			9.4			20.5-20.9		
5.2			9.5			21.0-21.4		
5.3			9.6			21.5-21.9		
5.4			9.7			22.0-22.4		
5.5			9.8			22.5-22.9		
5.6			9.9			23.0-23.4		
5.7			10.0			23.5-23.9		
5.8			10.1			24.0-24.4		
5.9			10.2			24.5-24.9		
6.0			10.3			25.0-25.4		
6.1			10.4			25.5-25.9		
6.2			10.5	1		26.0-26.4		
6.3			10.6	2		26.5-26.9		
6.4			10.7			27.0-27.4		
6.5			10.8			27.5-27.9		
6.6			10.9			28.0-28.4		
6.7			11.0			28.5-28.9		
6.8			11.1			29.0-29.4		
6.9			11.2			29.5-29.9		
7.0			11.3			30.0 +		
7.1			11.4			**Totals:**	**15**	**0**

WALLEYE

WDNR Comments

nt of Natural Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600F-186

8-95

Hayward MWB Code: 2725500 Date: 09/29/99 County: Sawyer Collector(s): Plaster

get Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 53°F Station: Portion of Shoreline

Adverse Conditions: Aquatic vegetation Gear Type: Boomshocker Distance Shocked: 5.4 miles

Volts: 175 Amps: 4 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 19:45 Shocking End Time: 22:20 Generator Start Hour: 320.7 Generator End Hour: 322.7

Number of Dippers: [X]1 [ ]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: 6 ft.

	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4				
2.0-2.4									25.5-25.9				
2.5-2.9									26.0-26.4				
3.0-3.4									26.5-26.9				
3.5-3.9									27.0-27.4				
4.0-4.4									27.5-27.9				
4.5-4.9									28.0-28.4				
5.0-5.4									28.5-28.9				
5.5-5.9					1				29.0-29.4				
6.0-6.4					1				29.5-29.9				
6.5-6.9	1				1				30.0-30.4	1			
7.0-7.4									30.5-30.9				
7.5-7.9	1								31.0-31.4	1			
8.0-8.4									31.5-31.9				
8.5-8.9									32.0-32.4				
9.0-9.4	1				1				32.5-32.9				
9.5-9.9					1				33.0-33.4				
10.0-10.4	1				3				33.5-33.9				
10.5-10.9	4				1				34.0-34.4				
11.0-11.4	3				1				34.5-34.9				
11.5-11.9					1				35.0-35.4				
12.0-12.4	1								35.5-35.9				
12.5-12.9	3								36.0-36.4				
13.0-13.4	1				1				36.5-36.9				
13.5-13.9	1								37.0-37.4				
14.0-14.4	1				1				37.5-37.9				
14.5-14.9	1								38.0-38.4				
15.0-15.4	1				1				38.5-38.9				
15.5-15.9									39.0-39.4				
16.0-16.4					2				39.5-39.9				
16.5-16.9									40.0-40.4				
17.0-17.4									40.5-40.9				
17.5-17.9	2								41.0-41.4				
18.0-18.4			1						41.5-41.9				
18.5-18.9									42.0-42.4				
19.0-19.4	1								42.5-42.9				
19.5-19.9									43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9	1		1						44.0-44.4				
21.0-21.4									44.5-44.9				
21.5-21.9									45.0-45.4				
22.0-22.4	1								45.5-45.9				
22.5-22.9									46.0-46.9				
23.0-23.4									47.0-47.9				
23.5-23.9									48.0-48.9				
24.0-24.4									49.0-49.9				
Totals:	27	0	2	0	16	0	0	0	50.0+				

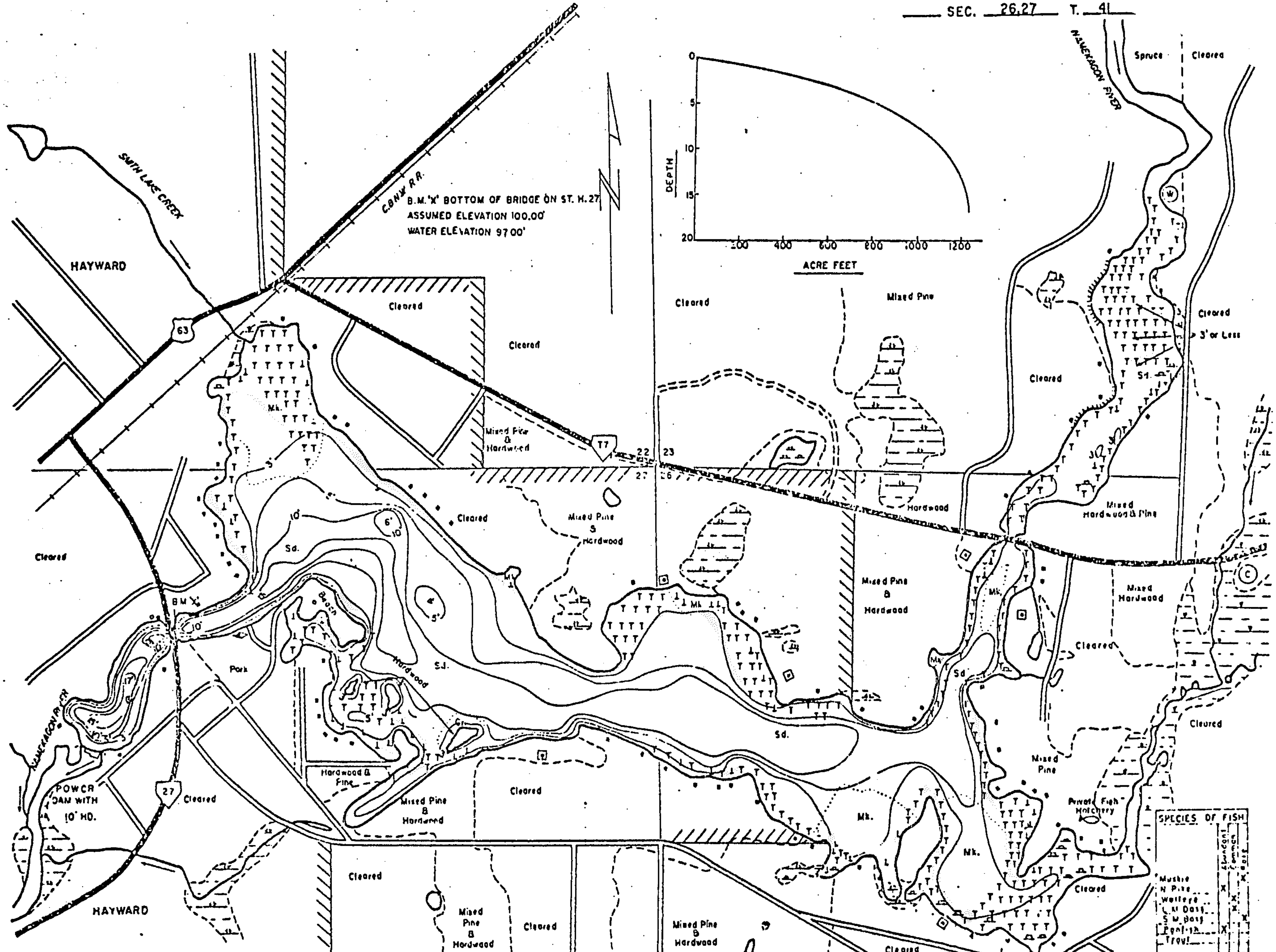
GAMEFISH

WDNR Comments

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE
LAKE
SEC. 26,27 T. 41



EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964
MO. YR.

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS
Brush; Partially wooded; Wooded; Cleared; Pastured; Agricultural; Bench Mark; Dwelling
Steep slope; Indefinite shoreline; Marsh; Spring; Intermittent stream; Permanent inlet; Permanent outlet; Dam

LAKE BOTTOM SYMBOLS
P. Peat; Mk. Muck; C. Clay; M. Marl; Sd. Sand; St. Silt
Gr. Gravel; R. Rubble; Br. Bedrock
T Submergent vegetation; ⊥ Emergent vegetation; Floating vegetation

SCALE 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H.Schmude, M.Perkins, L.Sather Drawn by: J. Roth

AREA 247.14 ACRES
UNDER 3 FT. 43 %
OVER 20 FT. — %
VOLUME 1235.39 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

WDNR Comments

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Form 3600-63

Department of Natural Resources

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Sawyer	Hayward	MWBC: 2725500

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GEAR

Boomshocker (Hours)	Time	
2.5	√ Night	Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	**Time of Day**	**Trap Net (No. of Net Lifts)**	**Mesh Size**	**Depth**
Minnow Seine (No. of Hauls)	**Area Covered**	**Gill Net (No. of Feet x No. of Lifts)**	**Mesh Size**	**Depth**

Other (Hours or Lifts)		Characteristics	
Boomshocker(s): 1	Mini-boomshocker(s):	Walleye Recruitment Code:	C-NR
Dip Netter(s): 2	Dip Netter(s):		

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	20	None	6.6 - 8.8	8.00 / hour	2.86 / mile
Serns Index NA YOY / acre					
Walleye (Age 1+)	2	None	10.4	0.80 / hour	0.29 / mile
Walleye (Other)	21	None	12.0 - 26.4	8.40 / hour	3.00 / mile
Smallmouth Bass	3	None	11.0 - 16.9	1.20 / hour	0.43 / mile
Largemouth Bass	18	3.5-3.9	3.0 - 16.9	7.20 / hour	2.57 / mile
Muskellunge	8	11.5-11.9	8.5 - 13.4	3.20 / hour	1.14 / mile
Northern Pike	39	None	5.0 - 35.4	15.60 / hour	5.57 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range

1) Tank Mortality: None

2) Weather: Clear, Calm, Cold

3) Reliabilty: Medium

4) Stocking: 124 Muskellunge, 12 inches, 09/14, WDNR

2470 Walleye, 7.5 inches, 09/20, WDNR

5) Comments:

Rev. 10-70

Signed (Compiler) Scott D. Plaster

Date 12/01/00

WDNR Comments

/epartment of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600A-191 8-95

Lake: Hayward MWB Code: 2725500 Date: 09/25/00 County: Sawyer Collector(s): Pratt, Tobias, Warwick

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 63°F Station: Portion of Shoreline

Adverse Conditions: Aquatic vegetation Gear Type: Boomshocker Distance Shocked: 7.0 miles

Volts: 175 Amps: 4 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 20:00 Shocking End Time: 23:26 Generator Start Hour: 378.6 Generator End Hour: 381.1

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

inches	Unclipped	Clipped	inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			7.2	1		11.5		
3.0			7.3	2		11.6		
3.1			7.4			11.7		
3.2			7.5			11.8		
3.3			7.6	3		11.9		
3.4			7.7			12.0-12.4	3	
3.5			7.8	1		12.5-12.9	2	
3.6			7.9			13.0-13.4		
3.7			8.0	1		13.5-13.9	1	
3.8			8.1	2		14.0-14.4	1	
3.9			8.2	1		14.5-14.9	1	
4.0			8.3			15.0-15.4	3	
4.1			8.4			15.5-15.9	1	
4.2			8.5			16.0-16.4	1	
4.3			8.6			16.5-16.9		
4.4			8.7			17.0-17.4	2	
4.5			8.8	1		17.5-17.9		
4.6			8.9			18.0-18.4		
4.7			9.0			18.5-18.9	2	
4.8			9.1			19.0-19.4	2	
4.9			9.2			19.5-19.9		
5.0			9.3			20.0-20.4		
5.1			9.4			20.5-20.9		
5.2			9.5			21.0-21.4		
5.3			9.6			21.5-21.9		
5.4			9.7			22.0-22.4		
5.5			9.8			22.5-22.9		
5.6			9.9			23.0-23.4	1	
5.7			10.0			23.5-23.9		
5.8			10.1			24.0-24.4		
5.9			10.2			24.5-24.9		
6.0			10.3			25.0-25.4		
6.1			10.4	2		25.5-25.9		
6.2			10.5			26.0-26.4	1	
6.3			10.6			26.5-26.9		
6.4			10.7			27.0-27.4		
6.5			10.8			27.5-27.9		
6.6	1		10.9			28.0-28.4		
6.7			11.0			28.5-28.9		
6.8	1		11.1			29.0-29.4		
6.9			11.2			29.5-29.9		
7.0	3		11.3			30.0 +		
7.1	3		11.4			**Totals:**	**43**	**0**

WALLEYE

WDNR Comments

partment of Natural Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600F-186 8-95

Lake: Hayward MWB Code: 2725500 Date: 09/25/00 County: Sawyer Collector(s): Pratt, Tobias, Warwick

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 63°F Station: Portion of Shoreline

Adverse Conditions: Aquatic vegetation Gear Type: Boomshocker Distance Shocked: 7.0 miles

Volts: 175 Amps: 4 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 20:00 Shocking End Time: 23:26 Generator Start Hour: 378.6 Generator End Hour: 381.1

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

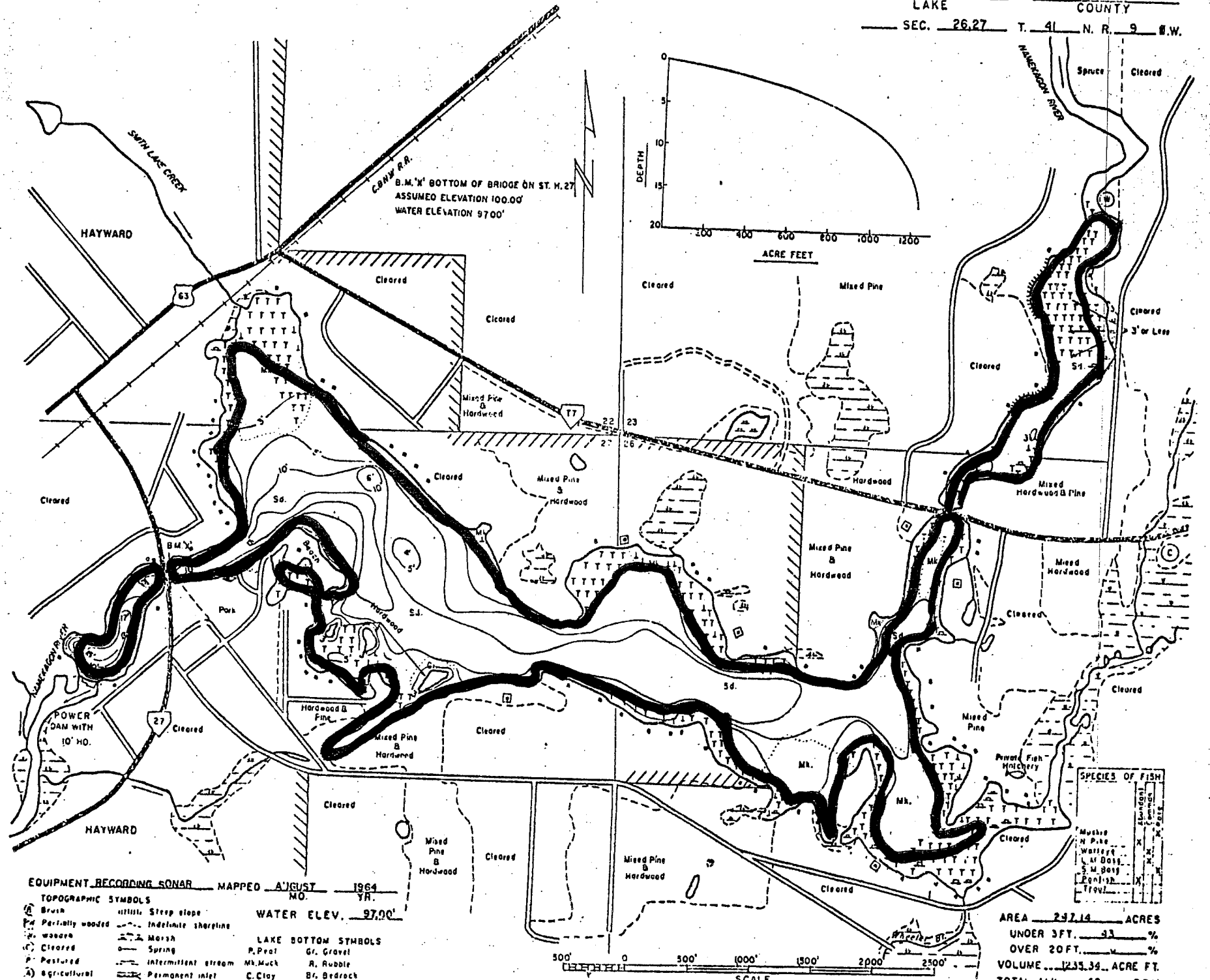
	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.5-24.9	1			
1.5-1.9									25.0-25.4				
2.0-2.4									25.5-25.9	1			
2.5-2.9									26.0-26.4				
3.0-3.4					1				26.5-26.9				
3.5-3.9					3				27.0-27.4				
4.0-4.4					2				27.5-27.9	1			
4.5-4.9									28.0-28.4	1			
5.0-5.4	1								28.5-28.9				
5.5-5.9	1								29.0-29.4				
6.0-6.4									29.5-29.9				
6.5-6.9	1								30.0-30.4				
7.0-7.4	2								30.5-30.9				
7.5-7.9									31.0-31.4	1			
8.0-8.4	2				1				31.5-31.9				
8.5-8.9			1						32.0-32.4				
9.0-9.4			1		1				32.5-32.9				
9.5-9.9			1		2				33.0-33.4				
10.0-10.4	2				1				33.5-33.9				
10.5-10.9	3		1						34.0-34.4				
11.0-11.4	2				1		1		34.5-34.9				
11.5-11.9	3		3		1				35.0-35.4	1			
12.0-12.4									35.5-35.9				
12.5-12.9									36.0-36.4				
13.0-13.4	2		1		1				36.5-36.9				
13.5-13.9									37.0-37.4				
14.0-14.4					2				37.5-37.9				
14.5-14.9	1								38.0-38.4				
15.0-15.4					1		1		38.5-38.9				
15.5-15.9									39.0-39.4				
16.0-16.4									39.5-39.9				
16.5-16.9	1				1		1		40.0-40.4				
17.0-17.4	1								40.5-40.9				
17.5-17.9									41.0-41.4				
18.0-18.4									41.5-41.9				
18.5-18.9	1								42.0-42.4				
19.0-19.4	3								42.5-42.9				
19.5-19.9	1								43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9	2								44.0-44.4				
21.0-21.4									44.5-44.9				
21.5-21.9	1								45.0-45.4				
22.0-22.4	1								45.5-45.9				
22.5-22.9	1								46.0-46.9				
23.0-23.4									47.0-47.9				
23.5-23.9	1								48.0-48.9				
24.0-24.4									49.0-49.9				
Totals:	39	0	8	0	18	0	3	0	50.0+				

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.



EQUIPMENT RECORDING SONAR — MAPPED AUGUST MO. 1964 YR.

WATER ELEV. 970.0'

TOPOGRAPHIC SYMBOLS

Brush; Steep slope; Partially wooded; Indefinite shoreline; Woods; Marsh; Cleared; Spring; Pastured; Intermittent stream; Agricultural; Permanent inlet; BM Bench Mark; Permanent outlet; Dwelling; Dam

LAKE BOTTOM SYMBOLS

P. Peat; Gr. Gravel; Mk. Muck; R. Rubble; C. Clay; Br. Bedrock; M. Marl; T Submergent vegetation; Sd. Sand; ⊥ Emergent vegetation

SCALE 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◆ Access with Parking ◆ Boat Livery

SPECIES OF FISH

	Abundant	Common	Rare
Muskie			
N. Pike			
Walleye			
L. Mouth Bass			
S. M. Bass			
Panfish			
Trout			

AREA 297.14 ACRES

UNDER 3 FT. 93 %

OVER 20 FT. — %

VOLUME 1235.34 ACRE FT.

TOTAL ALK 69 P.P.M.

SHORELINE 8.64 MILES

MAX. DEPTH 17 FEET

WDNR Comments

A-230

WDNR Comments

Sheet____of____

TAG

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET

WALLEYE

9/25/00

Wisconsin Department of Natural Resources

Waterbody Name: Lk Hay Wat 9
MWB Code/WBIC:
Waterbody Type:
County:
Date (MM/DD/YY):
Station:
Start Time:
End Time:
Collectors:

Target Fish: Juvenile Walleye
Mark(s) Given: None
Survey Type: CPE (Fall Shoreline)
Gear Type: Boomshocker
Weather:
Adverse Conditions:
Water Temperature:
Water Conductivity:
Water Level: [HI] [NORM] [LOW]
Water Clarity:

Generator Start Time:
Generator End Time:
Volts:
Amps:
Pulse Rate:
Duty Cycle:
Current Type: [AC] [DC] [PDC]
Distance Shocked:
Entire Shoreline Shocked: [Y] [N] [ ]
Number of Dippers: [1] [2]
Dipnet Mesh Size:

WE - Tags 2

inches	Unclipped	Clipped	inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0	TAG	TL	7.5			12.2		
3.0			7.6			12.3		
3.1	05501	26.0	7.7			12.4		
3.2	05505	23.1	7.8	Large Green Flags		12.5		
3.3	05506	19.0	7.9			12.6		
3.4	05507	18.5	8.0			12.7		
3.5	05508	14.5	8.1			12.8		
3.6	05509	15.0	8.2			12.9		
3.7	05510	17.0	8.3			13.0		
3.8	05996	13.5	8.4			13.1		
3.9	05995	15.9	8.5			13.2		
4.0	05994	16.0	8.6			13.3		
4.1	05993	14.2	8.7			13.4		
4.2	05992	19.3	8.8			13.5-13.9		
4.3	05991	15.0	8.9			14.0-14.4		
4.4	05990	17.0	9.0			14.5-14.9		
4.5	05989	15.0	9.1			15.0-15.4		
4.6			9.2			15.5-15.9		
4.7			9.3			16.0-16.4		
4.8			9.4			16.5-16.9		
4.9			9.5			17.0-17.4		
5.0			9.6			17.5-17.9		
5.1			9.7			18.0-18.4		
5.2			9.8			18.5-18.9		
5.3			9.9			19.0-19.4		
5.4			10.0			19.5-19.9		
5.5			10.1			20.0-20.4		
5.6			10.2			20.5-20.9		
5.7			10.3			21.0-21.4		
5.8			10.4			21.5-21.9		
5.9			10.5			22.0-22.4		
6.0			10.6			22.5-22.9		
6.1			10.7			23.0-23.4		
6.2			10.8			23.5-23.9		
6.3			10.9			24.0-24.4		
6.4			11.0			24.5-24.9		
6.5			11.1			25.0-25.4		
6.6			11.2			25.5-25.9		
6.7			11.3			26.0-26.4		
6.8			11.4			26.5-26.9		
6.9			11.5			27.0-27.4		
7.0			11.6			27.5-27.9		
7.1			11.7			28.0-28.4		
7.2			11.8			28.5-28.9		
7.3			11.9			29.0-29.4		
7.4			12.0			29.5-29.9		
TOTALS:			12.1			30.0+		

WDNR Comments

Sheet 1 of 2

2.5 hrs.

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET — GAMEFISH — Wisconsin Department of Natural Resources

Waterbody Name: Lake Hayward
WAS Code/WBIC: 272 5500
Waterbody Type: Dn R.
County: Sawyer
Date (MM/DD/YY): 09/25/2000
Station: All
Start Time: 20:00
End Time: 23.26
Collectors: Pratt, Tobias, Warwick

Target Fish: Juvenile Walleye
Mark(s) Given: None Fin Clip
Survey Type: CPE (Fall Shoreline)
Gear Type: Boomshocker
Weather: Clear, Calm, Cold
Adverse Conditions: Heavy weed growth
Water Temperature: ~~°F~~
Water Conductivity: Mod
Water Level: [HI] (NORM) [LOW]
Water Clarity: Mod.

Generator Start Time: 378.6
Generator End Time: 381.1
Volts: 175
Amps: 4.0
~~Pulse Rate:~~
~~Duty Cycle:~~
Current Type: (AC) ~~DC~~ ~~PDC~~
Distance Shocked: 6.6 mi
Entire Shoreline Shocked: (Y) [N] [I]
Number of Dippers: [1] (2)
Dipnet Mesh Size: 3/16

Inches	Northern Pike Unclipped	Northern Pike Clipped	Muskellunge Unclipped	Muskellunge Clipped	Largemouth Bass Unclipped	Largemouth Bass Clipped	Smallmouth Bass Unclipped	Smallmouth Bass Clipped	Inches	Northern Pike Unclipped	Northern Pike Clipped	Muskellunge Unclipped	Muskellunge Clipped
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4				
2.0-2.4									25.5-25.9				
2.5-2.9									26.0-26.4				
3.0-3.4									26.5-26.9				
3.5-3.9									27.0-27.4				
4.0-4.4									27.5-27.9				
4.5-4.9									28.0-28.4				
5.0-5.4									28.5-28.9				
5.5-5.9									29.0-29.4				
6.0-6.4									29.5-29.9				
6.5-6.9									30.0-30.4				
7.0-7.4									30.5-30.9				
7.5-7.9									31.0-31.4				
8.0-8.4									31.5-31.9				
8.5-8.9									32.0-32.4				
9.0-9.4									32.5-32.9				
9.5-9.9									33.0-33.4				
10.0-10.4									33.5-33.9				
10.5-10.9									34.0-34.4				
11.0-11.4									34.5-34.9				
11.5-11.9									35.0-35.4				
12.0-12.4									35.5-35.9				
12.5-12.9									36.0-36.4				
13.0-13.4									36.5-36.9				
13.5-13.9									37.0-37.4				
14.0-14.4									37.5-37.9				
14.5-14.9									38.0-38.4				
15.0-15.4									38.5-38.9				
15.5-15.9									39.0-39.4				
16.0-16.4									39.5-39.9				
16.5-16.9									40.0-40.4				
17.0-17.4									40.5-40.9				
17.5-17.9									41.0-41.4				
18.0-18.4									41.5-41.9				
18.5-18.9									42.0-42.4				
19.0-19.4									42.5-42.9				
19.5-19.9									43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9									44.0-44.4				
21.0-21.4									44.5-44.9				
21.5-21.9									45.0-45.4				
22.0-22.4									45.5-45.9				
22.5-22.9									46.0-46.9				
23.0-23.4									47.0-47.9				
23.5-23.9									48.0-48.9				
24.0-24.4									49.0-49.9				
TOTALS			8 Mu				3 SmB		50.0+				

39 NP

WDNR Comments

Sheet ___ of ___

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET 9/28/04 **WALLEYE**

Wisconsin Department of Natural Resources

Waterbody Name: HAYWARD
MWB Code/WBIC: ____
Waterbody Type: FLOWS
County: ____
Date (MM/DD/YY): ____
Station: ____
Start Time: ____
End Time: ____
Collectors: ____

Target Fish: ____
Mark(s) Given: None
Survey Type: CPE (Fall Shoreline)
Gear Type: Boomshocker
Weather: ____
Adverse Conditions: ____
Water Temperature: ____
Water Conductivity: ____
Water Level: [HI] [NORM] [LOW]
Water Clarity: ____

Generator Start Time: ____
Generator End Time: ____
Volts: ____
Amps: ____
Pulse Rate: ____
Duty Cycle: ____
Current Type: [AC] [DC] [PDC]
Distance Shocked: ____
Entire Shoreline Shocked: [Y] [N] [ ]
Number of Dippers: [1] [2]
Dipnet Mesh Size: ____

GREEN TAG

inches		inches		inches	
<3.0	TAG # LENGTH	7.5		12.2	
3.0		7.6	* RECAP 5596	12.3	
3.1	5988 15.2	7.7	" 5595 13.5	12.4	
3.2	5987 19.5	7.8		12.5	
3.3	5986 14.3	7.9	2 Recap	12.6	
3.4	5985 12.3	8.0		12.7	
3.5	5984 14.1	8.1		12.8	
3.6	5983 15.4	8.2		12.9	
3.7	5982 13.8	8.3		13.0	
3.8	5981 16.2	8.4		13.1	
3.9	5980 14.3	8.5		13.2	
4.0	5979 12.7	8.6		13.3	
4.1		8.7		13.4	
4.2		8.8		13.5-13.9	
4.3	10 new	8.9		14.0-14.4	
4.4		9.0		14.5-14.9	
4.5	recap	9.1		15.0-15.4	
4.6		9.2		15.5-15.9	
4.7		9.3		16.0-16.4	
4.8		9.4		16.5-16.9	
4.9		9.5		17.0-17.4	
5.0		9.6		17.5-17.9	
5.1		9.7		18.0-18.4	
5.2		9.8		18.5-18.9	
5.3		9.9		19.0-19.4	
5.4		10.0		19.5-19.9	
5.5		10.1		20.0-20.4	
5.6		10.2		20.5-20.9	
5.7		10.3		21.0-21.4	
5.8		10.4		21.5-21.9	
5.9		10.5		22.0-22.4	
6.0		10.6		22.5-22.9	
6.1		10.7		23.0-23.4	
6.2		10.8		23.5-23.9	
6.3		10.9		24.0-24.4	
6.4		11.0		24.5-24.9	
6.5		11.1		25.0-25.4	
6.6		11.2		25.5-25.9	
6.7		11.3		26.0-26.4	
6.8		11.4		26.5-26.9	
6.9		11.5		27.0-27.4	
7.0		11.6		27.5-27.9	
7.1		11.7		28.0-28.4	
7.2		11.8		28.5-28.9	
7.3		11.9		29.0-29.4	
7.4		12.0		29.5-29.9	
TOTALS:		12.1		30.0+	

WDNR Comments

Sheet 1 of 1

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET **WALLEYE** Wisconsin Department of Natural Resources

Waterbody Name: Howard
MWB Code/WBIC: 2072 5500
Waterbody Type: Impoundment
County: Sawyer
Date (MM/DD/YY): 9/29/2000
Station: All - between
Start Time: 20:00
End Time: 23:00
Collectors: Pratt
Tobias
Stowell (Elk Guy)

Target Fish: Juvenile Walleye
Mark(s) Given: ~~None~~ FIN
Survey Type: CPE (Fall Shoreline)
Gear Type: Boomshocker
Weather: Clear, Cool
Adverse Conditions: None
Water Temperature: 50°F
Water Conductivity: Mod
Water Level: [HI] [NORM] [LOW]
Water Clarity: Clear

Generator Start Time: 384.9
Generator End Time: 387.1
Volts: 150
Amps: 4
Pulse Rate:
Duty Cycle:
Current Type: [AC] [DC] [PDC]
Distance Shocked: 4.5
Entire Shoreline Shocked: [Y] [N] [ ]
Number of Dippers: [1] [2]
Dipnet Mesh Size: 3/8

whole shoreline between bridges

inches		inches		inches	
<3.0		7.5		12.2	
3.0		7.6	1	12.3	1
3.1		7.7	stocked	12.4	
3.2		7.8	1 17 Sep	12.5	
3.3		7.9	1 yoy	12.6	
3.4		8.0		12.7	
3.5		8.1		12.8	
3.6		8.2	1	12.9	
3.7		8.3		13.0	
3.8		8.4	1	13.1	
3.9		8.5	1	13.2	
4.0		8.6	1	13.3	
4.1		8.7		13.4	
4.2		8.8		13.5-13.9	1
4.3		8.9		14.0-14.4	11
4.4		9.0	1	14.5-14.9	
4.5		9.1		15.0-15.4	111
4.6		9.2		15.5-15.9	
4.7		9.3		16.0-16.4	
4.8		9.4		16.5-16.9	
4.9		9.5	1	17.0-17.4	
5.0		9.6		17.5-17.9	
5.1		9.7		18.0-18.4	
5.2		9.8		18.5-18.9	
5.3		9.9		19.0-19.4	
5.4		10.0	1	19.5-19.9	1
5.5		10.1		20.0-20.4	
5.6		10.2	21	20.5-20.9	
5.7		10.3		21.0-21.4	
5.8		10.4		21.5-21.9	
5.9	1	10.5		22.0-22.4	
6.0		10.6		22.5-22.9	
6.1		10.7		23.0-23.4	
6.2		10.8		23.5-23.9	
6.3	11	10.9	1	24.0-24.4	
6.4		11.0		24.5-24.9	
6.5		11.1		25.0-25.4	
6.6	1	11.2	1	25.5-25.9	
6.7	1	11.3		26.0-26.4	
6.8		11.4		26.5-26.9	
6.9		11.5		27.0-27.4	
7.0		11.6		27.5-27.9	
7.1	1	11.7		28.0-28.4	
7.2	1	11.8		28.5-28.9	
7.3		11.9		29.0-29.4	
7.4	1111	12.0		29.5-29.9	
TOTALS:		12.1		30.0+	

31 WE 40

WDNR Comments

Sheet 2 of 2

FALL GAMEFISH ELECTROFISHING DATA COLLECTION SHEET

GAMEFISH

Wisconsin Department of Natural Resources

Waterbody Name: Hayward
MWB Code/WBIC: 27B 5500
Waterbody Type: Impoundment
County: County
Date (MM/DD/YY): 09/27/2000
Station:
Start Time: 22:00
End Time: 2236
Collectors: Paul et al

Target Fish: Juvenile Walleye
Mark(s) Given: None
Survey Type: CPE (Fall Shoreline)
Gear Type: Boomshocker
Weather: Clear
Adverse Conditions: None
Water Temperature: 58 °F
Water Conductivity: Med
Water Level: [HI] (NORM) [LOW]
Water Clarity: Clear

Generator Start Time: 384.9
Generator End Time: 387.1
Volts: 150
Amps: 4
Pulse Rate:
Duty Cycle:
Current Type: (AC) [DC] [PDC]
Distance Shocked: 4.5
Entire Shoreline Shocked: [Y] (N) [1]
Number of Dippers: [1] [2]
Dipnet Mesh Size: 3/8"

→ Main bay in between bridges

inches	Northern Pike	Muskellunge	Largemouth Bass	Smallmouth Bass	inches	Northern Pike	Muskellunge
<1.5					24.5-24.9		
1.5-1.9					25.0-25.4		
2.0-2.4					25.5-25.9		
2.5-2.9					26.0-26.4		
3.0-3.4					26.5-26.9		
3.5-3.9					27.0-27.4		
4.0-4.4					27.5-27.9		
4.5-4.9					28.0-28.4		
5.0-5.4	I				28.5-28.9		
5.5-5.9					29.0-29.4		
6.0-6.4					29.5-29.9		
6.5-6.9					30.0-30.4		
7.0-7.4	I				30.5-30.9		
7.5-7.9			II		31.0-31.4		
8.0-8.4	I		I		31.5-31.9		
8.5-8.9				I	32.0-32.4		
9.0-9.4		I	III	I	32.5-32.9		
9.5-9.9			II		33.0-33.4		
10.0-10.4	I		I		33.5-33.9		
10.5-10.9	I	I	III		34.0-34.4		
11.0-11.4	II		II		34.5-34.9		
11.5-11.9	I		IIII		35.0-35.4		
12.0-12.4	I		III		35.5-35.9		
12.5-12.9	II	II			36.0-36.4		
13.0-13.4			II		36.5-36.9		
13.5-13.9	I		II		37.0-37.4		
14.0-14.4			I		37.5-37.9		
14.5-14.9	II				38.0-38.4		
15.0-15.4				I	38.5-38.9		
15.5-15.9	II		II		39.0-39.4		
16.0-16.4			I		39.5-39.9		
16.5-16.9					40.0-40.4		
17.0-17.4	I				40.5-40.9		
17.5-17.9			III		41.0-41.4		
18.0-18.4	I				41.5-41.9		
18.5-18.9					42.0-42.4		
19.0-19.4	I				42.5-42.9		
19.5-19.9			I		43.0-43.4		
20.0-20.4					43.5-43.9		
20.5-20.9					44.0-44.4		I
21.0-21.4					44.5-44.9		
21.5-21.9					45.0-45.4		
22.0-22.4	I				45.5-45.9		
22.5-22.9					46.0-46.9		I
23.0-23.4					47.0-47.9		
23.5-23.9					48.0-48.9		
24.0-24.4		I			49.0-49.9		
TOTALS	20 NP	5 Muskies	37 LMB	2 SMB	50.0+		1 MU

Muskies 5 saw 1 - 45
1 - 55?

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters
Sawyer	Hayward MWBC: 2725500
Sampling Objective	**Number and Locations of Stations (Habitat)**
Walleye Recruitment Survey	Source
	Miles Actually Shocked = 5.4 LM
Period Fished (Dates)	Acres = 247 LM
09/29/00	Total Miles of Shoreline = 8.6 LM
	Total Miles of Shockable Shoreline = 8.6 LM

GEAR

Boomshocker (Hours)	Time
2.2	√ Night Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	**Time of Day**	**Trap Net (No. of Net Lifts)**	**Mesh Size**	**Depth**
Minnow Seine (No. of Hauls)	**Area Covered**	**Gill Net (No. of Feet x No. of Lifts)**	**Mesh Size**	**Depth**

Other (Hours or Lifts)	Characteristics
Boomshocker(s): 1 Mini-boomshocker(s):	Walleye Recruitment Code: C-NR
Dip Netter(s): 2 Dip Netter(s):	

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit
Walleye (Age 0+)	18	7.4	6.3 - 9.0	8.18 / hour 3.33 / mile
Serns Index NA YOY / acre				
Walleye (Age 1+)	5	None	9.5 - 11.2	2.27 / hour 0.93 / mile
Walleye (Other)	8	15.0-15.4	12.0 - 19.9	3.64 / hour 1.48 / mile
Smallmouth Bass	2	None	8.5 - 15.4	0.91 / hour 0.37 / mile
Largemouth Bass	36	11.5-11.9	7.5 - 19.9	16.36 / hour 6.67 / mile
Muskellunge	7	None	9.0 - 46.4	3.18 / hour 1.30 / mile
Northern Pike	20	None	5.0 - 22.4	9.09 / hour 3.70 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range

1) Tank Mortality: None 2) Weather: Clear, Cool 3) Reliabilty: High

4) Stocking: 124 Muskellunge, 12 inches, 09/14, WDNR 2470 Walleye, 7.5 inches, 09/20, WDNR

5) Comments:

Rev. 10-70

Signed (Compiler) Scott D. Plaster Date 12/01/00

WDNR Comments

partment of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600A-191 8-95

Lake: Hayward MWB Code: 2725500 Date: 09/29/00 County: Sawyer Collector(s): Pratt, Tobias, Stowell

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 55°F Station: Portion of Shoreline

Adverse Conditions: None Gear Type: Boomshocker Distance Shocked: 5.4 miles

Volts: 150 Amps: 4 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 20:00 Shocking End Time: 23:00 Generator Start Hour: 384.9 Generator End Hour: 387.1

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

inches	Unclipped	Clipped	inches	Unclipped	Clipped	inches	Unclipped	Clipped
<3.0			7.2	1		11.5		
3.0			7.3			11.6		
3.1			7.4	4		11.7		
3.2			7.5			11.8		
3.3			7.6	1		11.9		
3.4			7.7			12.0-12.4	1	
3.5			7.8	1		12.5-12.9		
3.6			7.9	1		13.0-13.4		
3.7			8.0			13.5-13.9	1	
3.8			8.1			14.0-14.4	2	
3.9			8.2	1		14.5-14.9		
4.0			8.3			15.0-15.4	3	
4.1			8.4	1		15.5-15.9		
4.2			8.5	1		16.0-16.4		
4.3			8.6	1		16.5-16.9		
4.4			8.7			17.0-17.4		
4.5			8.8			17.5-17.9		
4.6			8.9			18.0-18.4		
4.7			9.0	1		18.5-18.9		
4.8			9.1			19.0-19.4		
4.9			9.2			19.5-19.9	1	
5.0			9.3			20.0-20.4		
5.1			9.4			20.5-20.9		
5.2			9.5	1		21.0-21.4		
5.3			9.6			21.5-21.9		
5.4			9.7			22.0-22.4		
5.5			9.8			22.5-22.9		
5.6			9.9			23.0-23.4		
5.7			10.0	1		23.5-23.9		
5.8			10.1			24.0-24.4		
5.9			10.2	1		24.5-24.9		
6.0			10.3			25.0-25.4		
6.1			10.4			25.5-25.9		
6.2			10.5			26.0-26.4		
6.3	2		10.6			26.5-26.9		
6.4			10.7			27.0-27.4		
6.5			10.8			27.5-27.9		
6.6	1		10.9	1		28.0-28.4		
6.7	1		11.0			28.5-28.9		
6.8			11.1			29.0-29.4		
6.9			11.2	1		29.5-29.9		
7.0			11.3			30.0 +		
7.1	1		11.4			**Totals:**	**31**	**0**

WALLEYE

WDNR Comments

artment of Natural Resources

GAMEFISH ELECTROFISHING DATA COLLECTION SHEET (FALL)

Form 3600F-186 8-95

ake: Hayward MWB Code: 2725500 Date: 09/29/00 County: Sawyer Collector(s): Pratt, Tobias, Stowell

Target Fish: Juvenile Walleye Survey Type: CPE Mark Given: None H20 Temperature: 55°F Station: Portion of Shoreline

Adverse Conditions: None Gear Type: Boomshocker Distance Shocked: 5.4 miles

Volts: 150 Amps: 4 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 20:00 Shocking End Time: 23:00 Generator Start Hour: 384.9 Generator End Hour: 387.1

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

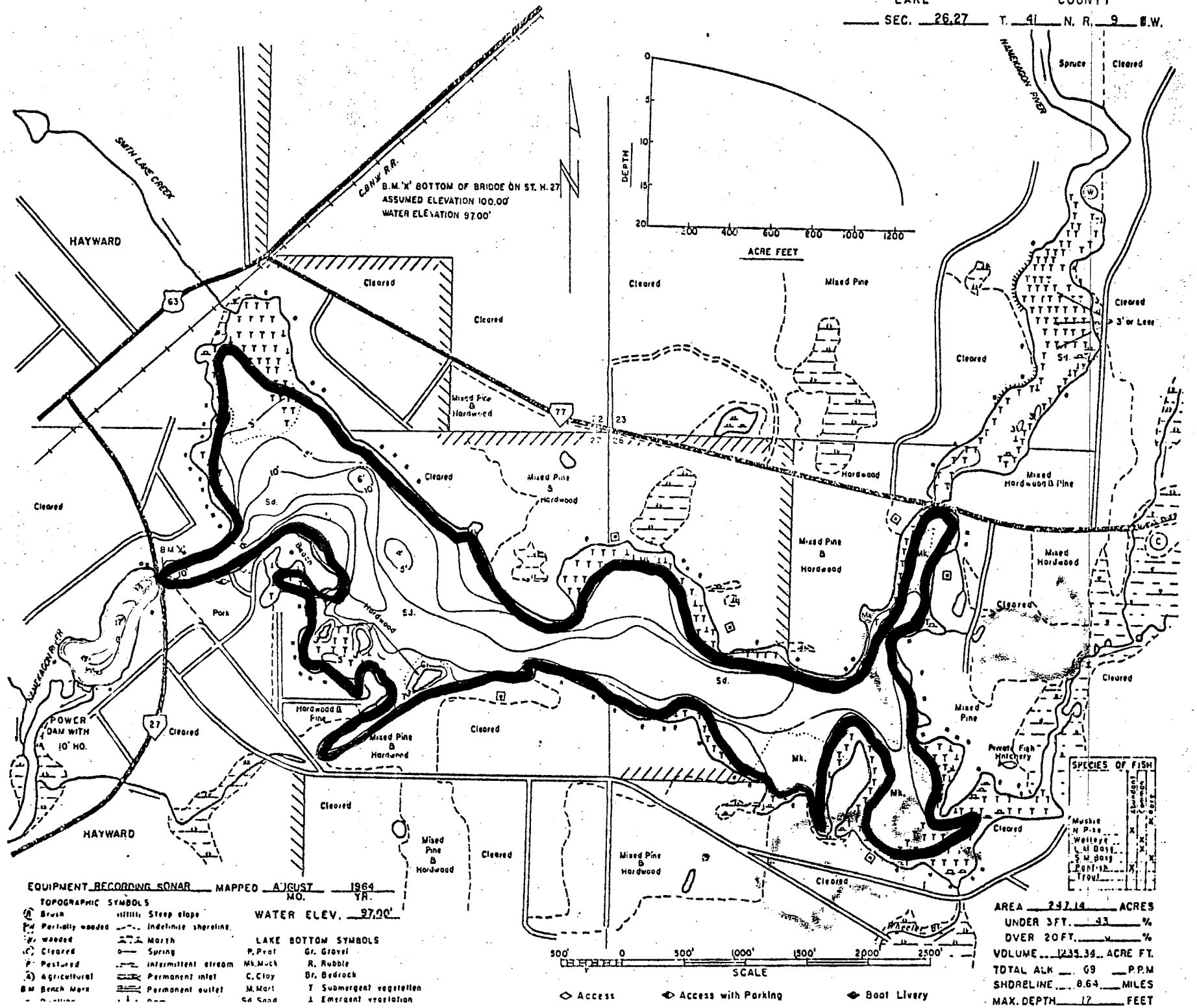
	Northern Pike		Muskellunge		Largemouth Bass		Smallmouth Bass			Northern Pike		Muskellunge	
inches	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	Unclipped	Clipped	inches	Unclipped	Clipped	Unclipped	Clipped
<1.5									24.5-24.9				
1.5-1.9									25.0-25.4				
2.0-2.4									25.5-25.9				
2.5-2.9									26.0-26.4				
3.0-3.4									26.5-26.9				
3.5-3.9									27.0-27.4				
4.0-4.4									27.5-27.9				
4.5-4.9									28.0-28.4				
5.0-5.4	1								28.5-28.9				
5.5-5.9									29.0-29.4				
6.0-6.4									29.5-29.9				
6.5-6.9									30.0-30.4				
7.0-7.4	1								30.5-30.9				
7.5-7.9					2				31.0-31.4				
8.0-8.4	1				1				31.5-31.9				
8.5-8.9							1		32.0-32.4				
9.0-9.4			1		3				32.5-32.9				
9.5-9.9					2				33.0-33.4				
10.0-10.4	1				1				33.5-33.9				
10.5-10.9	1		1		3				34.0-34.4				
11.0-11.4	2				2				34.5-34.9				
11.5-11.9	1				7				35.0-35.4				
12.0-12.4	1				3				35.5-35.9				
12.5-12.9	2		2						36.0-36.4				
13.0-13.4					2				36.5-36.9				
13.5-13.9	1				2				37.0-37.4				
14.0-14.4					1				37.5-37.9				
14.5-14.9	2								38.0-38.4				
15.0-15.4							1		38.5-38.9				
15.5-15.9	2				2				39.0-39.4				
16.0-16.4					1				39.5-39.9				
16.5-16.9									40.0-40.4				
17.0-17.4	1								40.5-40.9				
17.5-17.9					3				41.0-41.4				
18.0-18.4	1								41.5-41.9				
18.5-18.9									42.0-42.4				
19.0-19.4	1								42.5-42.9				
19.5-19.9					1				43.0-43.4				
20.0-20.4									43.5-43.9				
20.5-20.9									44.0-44.4			1	
21.0-21.4									44.5-44.9				
21.5-21.9									45.0-45.4				
22.0-22.4	1								45.5-45.9				
22.5-22.9									46.0-46.9			1	
23.0-23.4									47.0-47.9				
23.5-23.9									48.0-48.9				
24.0-24.4			1						49.0-49.9				
Totals:	20	0	7	0	36	0	2	0	50.0+				

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.W.



EQUIPMENT RECORDING SONAR MAPPED AUGUST MO. 1964 YR.

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- Brush
- Partially wooded
- Wooded
- Cleared
- Pastured
- Agricultural
- BM Bench Mark
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- ⊥ Emergent vegetation

◇ Access ◆ Access with Parking ◆ Boat Livery

AREA 247.14 ACRES
UNDER 3FT. 43 %
OVER 20FT. — %
VOLUME 1235.34 ACRE FT.
TOTAL ALK. 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

A-239

WDNR Comments

WDNR Comments

Department of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)
Form 3600-187 4-92

272 5500

Lake Hayward MWB Code: 1 Date: 04/04/2000 County: Sawyer Collector: Pratt Warwick Weiner

Target Fish: Walleye Survey Type: FERC W.E. Evel. Marking Mark Given: HLY Floy H_2O Temp: 4 °F Time 20:00

Adverse Conditions: Cold, Poor Access H_2O Conduct: 44 Station: Below STH 177

Volts: 230 Amps: _____ Current Type: (AC)/DC/Pulsed ~~DC) Pulse Rate:~~ _____ ~~Duty Cycle:~~ _____

Gear Type: Boom shocker Start Time: 338.3 End Time: 340.5 Distance Shocked: _____ mile

# of Dippers: (1)(2) Entire Shoreline Shocked: (Y)N/I) Dip net mesh size: 4' H_2O Clarity: (Clear/Turbid/Very Turbid)

* Except for above STH 77

Walleye — Tagging —

Inches	Male	Female	Unkwn	Imm.			Floy	Sex	TL
4.4 - 4.4									
4.5 - 4.9				(2)					
5.0 - 5.4				IIII (3) R	3 + 1R				
5.5 - 5.9				II (2)	2 + 0R				
6.0 - 6.4				III (3) R	3 + 1R				
6.5 - 6.9				III (3) R	3 + 1R				
7.0 - 7.9				IIII RR	5 + 2R				
7.5 - 7.9				IIII RR	7 + 2R				
8.0 - 8.4				IIII RR	7 + 2R				
8.5 - 8.9				IIII	6 + 0R				
9.0 - 9.4				I R	1 + 1R				
9.5 - 9.9				IIII	4		Mu	46.0	
10.0-10.4				II	2				
10.5-10.9				II RRR	2 + 3R		SMB	20.1	
11.0-11.4				III RRR	3 + 3R		SMB	14.0	
11.5-11.9				III	3		LMB	15.4	
12.0-12.4				IIII	5		SMB	13.5	
12.5-12.9				II	2		SMB	15.0	
13.0-13.4							LMB	15.3	
13.5-13.9			1		61 + 16 Recaps		SMB	13.2	
14.0-14.4			1						
14.5-14.9					77 C		BC	A	
15.0-15.4							BG	P	
15.5-15.9					Immature		NP	P	
16.0-16.4		II					YP	A	
16.5-16.9	I						WS	C	
17.0-17.4							CH	P	
17.5-17.9		R							
18.0-18.4							NP	C	
18.5-18.9							Mu	P	
19.0-19.4							NHS	P	
19.5-19.9		II					Lamprey	P	
20.0-20.4									
20.5-20-9									
21.0-21.4									
21.5-21.9									
22.0-22.4									
22.5-22.9									
23.0-23.4									
23.5-23.9									
24.0-24.4	Male	Female							
24.5-24.9	(1)	(4+1*)	Unknown sex (3)						
25.0-25.4									
25.5-25.9									
26.0-26.4									
26.5-26.9									
27.0-27.4									
27.5-27.9									
28.0-28.4									
28.5-28.9									
29.0-29.4									
29.5-29.9									

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

WDNR Comments

Department of Natural Resources

~~S~~ 3553
E 3580

→ Recap 2

STATION FISH SAMPLING SUMMARY
Form 3600-57

STREAM		INVESTIGATOR	
Lake Hayward - FERC Evaluation		Pratt, Worwick, Winert	
Area Sampled: LENGTH	WIDTH	AREA (ACRES)	STATION NO. / NO. PER ACRE / DATE: 4-08-2000

SIZE RANGE	Walleye Unmarked	Recap	SPECIES: SMB	LMB	NP	MU
1			8.0	7.5	31.0	18.0
1.0 - 1.4			8.5	13.0		
1.5 - 1.9				11.5		
2.0 - 2.4				14.0		
2.5 - 2.9				7.5		
3.0 - 3.4				16.0		
3.5 - 3.9				14.0		
4.0 - 4.4				9.0		
4.5 - 4.9				10.0		
5.0 - 5.4				14.5		
5.5 - 5.9				16.5		
6.0 - 6.4	IIII			17.0		
6.5 - 6.9	III	II		11.0		
7.0 - 7.4				10.5		
7.5 - 7.9	~~IIII~~					
8.0 - 8.4						
8.5 - 8.9						
9.0 - 9.4	II	II				
9.5 - 9.9	II					
10.0 - 10.4	II	I				
10.5 - 10.9	II					
11.0 - 11.4	IIII II		Hy.mu			
11.5 - 11.9	II	I	95			
12.0 - 12.4	I					
12.5 - 12.9						
13.0 - 13.4					BG - A	Spawning
13.5 - 13.9					BC - C	Post-Spawn
14.0 - 14.4	I				RS - C	Spawn
14.5 - 14.9	I					
15.0 - 15.4					YP - P	
15.5 - 15.9					RH - F	
16.0 - 16.4					WS - C	
16.5 - 16.9					BrBh - R	
17.0 - 17.4						
17.5 - 17.9						
18.0 - 18.4						
18.5 - 18.9						
19.0 - 19.4		6 Recaps			H_2O - 66°F	
19.5 - 19.9						
20.0 - 20.4						
20.5 - 20.9						
21.0 - 21.4						
21.5 - 21.9						
22.0 - 22.4						
22.5 - 22.9						
23.0 - 23.4						
23.5 - 23.9						
24.0 - 24.4						
24.5 - 24.9						
25 + (give actual size)						
TOTAL	31					

Rev. 3-75

WDNR Comments

Department of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)

Form 3600-187 4-92

Yahara Hayward Marshes 2000 April

Lake _____ MWB Code: _____ Date: ___ / ___ / ___ County: _____ Collector: _____

Target Fish: _____ Survey Type: _____ Mark Given: _____ H_2O Temp: _____ Time _____ : _____

Adverse Conditions: _____ H_2O Conduct: _____ Station: _____

Volts: _____ Amps: _____ Current Type (AC/DC/Pulsed DC) Pulse Rate: _____ Duty Cycle: _____

Gear Type: _____ Start Time: _____ End Time: _____ Distance Shocked: _____

# of Dippers: (1/2) Entire Shoreline Shocked: (Y/N/I) Dip net mesh size: _____ H_2O Clarilty: (Clear/Turbid/Very Turbid)

Inches	Male	Female	Unknown	Dmg					
4.4 - 4.4									
4.5 - 4.9									
5.0 - 5.4				:					
5.5 - 5.9				:					
6.0 - 6.4				:					
6.5 - 6.9				:					
7.0 - 7.9				:					
7.5 - 7.9				:					
8.0 - 8.4				:					
8.5 - 8.9				:					
9.0 - 9.4				:					
9.5 - 9.9				:					
10.0-10.4			:	:					
10.5-10.9				:					
11.0-11.4				:					
11.5-11.9				:					
12.0-12.4	:			:					
12.5-12.9	:			:					
13.0-13.4	:			:					
13.5-13.9			:						
14.0-14.4	:		:						
14.5-14.9	:		:						
15.0-15.4			:						
15.5-15.9	:	:							
16.0-16.4	:	:	:						
16.5-16.9	:								
17.0-17.4	:	:							
17.5-17.9		:							
18.0-18.4		:							
18.5-18.9									
19.0-19.4		:							
19.5-19.9		:							
20.0-20.4									
20.5-20-9		:							
21.0-21.4									
21.5-21.9		:							
22.0-22.4									
22.5-22.9									
23.0-23.4		:							
23.5-23.9									
24.0-24.4									
24.5-24.9									
25.0-25.4		:							
25.5-25.9									
26.0-26.4									
26.5-26.9									
27.0-27.4									
27.5-27.9									
28.0-28.4									
28.5-28.9									
29.0-29.4									
29.5-29.9									

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

WDNR Comments

Department of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)

Form 3600-187 4-92

Lake Hayward MWB Code: _____ Date: 04/03/2000 County: Sawyer Collector: Patt/Warwick

Target Fish: Walleye Survey Type: FERC Eval. Mark Given: Hip Punch Fin H_2O Temp: 4 Time _____ : _____

Adverse Conditions: Snow, rain, cold, low water H_2O Conduct: _____ Station: Airport Rd → STH 77 (map)

Volts: _____ Amps: _____ Current Type (AC/DC/Pulsed DC) Pulse Rate: _____ Duty Cycle: _____

Gear Type: DC Mini shock Start Time: _____ End Time: _____ Distance Shocked: _____

# of Dippers: (1/2) Entire Shoreline Shocked: (Y/N/I) Dip net mesh size: 3/8 H_2O Clarilty: (Clear/Turbid/Very Turbid) Light Br Stain 4'

← Walleye →

Inches	Male	Female	Unknown						
4.4 - 4.4									
4.5 - 4.9									
5.0 - 5.4									
5.5 - 5.9									
6.0 - 6.4									
6.5 - 6.9									
7.0 - 7.9									
7.5 - 7.9									
8.0 - 8.4									
8.5 - 8.9									
9.0 - 9.4									
9.5 - 9.9									
10.0-10.4									
10.5-10.9									
11.0-11.4									
11.5-11.9									
12.0-12.4									
12.5-12.9									
13.0-13.4									
13.5-13.9									
14.0-14.4	1								
14.5-14.9	III								
15.0-15.4									
15.5-15.9	1								
16.0-16.4									
16.5-16.9		1							
17.0-17.4	1	III							
17.5-17.9									
18.0-18.4									
18.5-18.9									
19.0-19.4									
19.5-19.9									
20.0-20.4									
20.5-20-9									
21.0-21.4									
21.5-21.9		1							
22.0-22.4									
22.5-22.9									
23.0-23.4		1							
23.5-23.9									
24.0-24.4									
24.5-24.9									
25.0-25.4		1							
25.5-25.9									
26.0-26.4									
26.5-26.9									
27.0-27.4									
27.5-27.9									
28.0-28.4									
28.5-28.9									
29.0-29.4									
29.5-29.9									

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

WDNR Comments

Marking (Recap 18?) 1

Department of Natural Resources

LAKE ELECTROFISHING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)
Form 3600-187 4-92

Trath

Lake Hayward MWB Code: 2725500 Date: 04 / 13 / 00 County: Sawyer Collector: Warwick

Target Fish: WE mature Survey Type: Marking Mark Given: HLV/+ Flow H_2O Temp: _____ Time 08 : 00 PM

Adverse Conditions: _____ H_2O Conduct: _____ Station: STH '77' area + Dam basin area whole lake emphasis

Volts: 230 Amps: 4.0 Current Type (AC/~~DC~~/~~Pulsed DC~~) ~~Pulse Rate~~: 2.5 hrs. Duty Cycle: _____

Gear Type: V AC BS Start Time: 344.8 End Time: 347.3 Distance Shocked: _____

# of Dippers: (1/2) Entire Shoreline Shocked: (Y/N) Dip net mesh size: 3/8" H_2O Clarity: (Clear/Turbid/Very Turbid)

↳ above STH '77' not accessible

Walleye

Inches	Male	Female	Unkwn / Imm.	N.P	M	E	U	I
4.4 - 4.4				35.0				
4.5 - 4.9				31.0				
5.0 - 5.4								
5.5 - 5.9				MV				
6.0 - 6.4			ID 2	34.5				
6.5 - 6.9			HH I 6	46.0			1	
7.0 - 7.9			I 1					
7.5 - 7.9			II 2					
8.0 - 8.4			HH 5					
8.5 - 8.9			II 2					
9.0 - 9.4			II 2					
9.5 - 9.9			IIII 4	LMB				
10.0-10.4			IIII 4	15.0				
10.5-10.9			HH 5	14.0			R	
11.0-11.4			III 3	12.5			R	
11.5-11.9				16.5			R	
12.0-12.4	1		I 1	10.0				
12.5-12.9	1	1		16.5				
13.0-13.4			I 1	10.5				
13.5-13.9	1							
14.0-14.4		1						
14.5-14.9								
15.0-15.4	II							
15.5-15.9				YP C				
16.0-16.4	1 1	1						
16.5-16.9							4 RECAPS	
17.0-17.4				WS C				
17.5-17.9								
18.0-18.4		1						
18.5-18.9				RH C				
19.0-19.4								
19.5-19.9								
20.0-20.4				BG-P				
20.5-20-9				BC-C				
21.0-21.4		4 @ 1 + 1						
21.5-21.9								
22.0-22.4								
22.5-22.9								
23.0-23.4								
23.5-23.9								
24.0-24.4								
24.5-24.9								
25.0-25.4								
25.5-25.9								
26.0-26.4								
26.5-26.9								
27.0-27.4								
27.5-27.9								
28.0-28.4								
28.5-28.9								
29.0-29.4	7	4	38					
29.5-29.9								

Recaps

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

TC = immature

4 Recaps

WDNR Comments

Department of Natural Resources

Marking Run (HLP - Adult walleye)

LAKE ELECTROFISHING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)

Form 3600-187 4-92

Lake: Hayward MWB Code: 2725500 Date: 03/28/2000 County: Sawyer Collector: Pratt / Warwick

Target Fish: WE Survey Type: Walleye FERC eval. Mark Given: Floy/or HLP H_2O Temp: 42 Time: 7:40

Adverse Conditions: Cold! H_2O Conduct: Good Station: Inlet, outlet, [illegible] Bay

Volts: 200 Amps: 4.0 Current Type (AC/DC/Pulsed DC) ~~Pulse Rate:~~ ~~Duty Cycle:~~

Gear Type: AC BS Start Time: 336.7 End Time: 338.3 1.6 hrs. Distance Shocked: 2.4 mi

# of Dippers: (1/2) Entire Shoreline Shocked: (Y/N/I) Dip net mesh size: 4' H_2O Clarity: (Clear/Turbid/Very Turbid)

Jumping around looking for concentrations to mark / net

Inches	Walleye Male	F	Unkwn		Mu	SMB	NP	YP	BG
4.4 - 4.4							P	L Spawn	P
4.5 - 4.9									
5.0 - 5.4									
5.5 - 5.9			II 2						
6.0 - 6.4			8						
6.5 - 6.9			8						
7.0 - 7.9			10	63 yoy					
7.5 - 7.9			13						
8.0 - 8.4			10						
8.5 - 8.9			3						
9.0 - 9.4			I	Fled					
9.5 - 9.9			I						
10.0-10.4	Mature		5						
10.5-10.9	HLP		11						
11.0-11.4	clip		5						
11.5-11.9			7						
12.0-12.4	I		2						
12.5-12.9	I		1						
13.0-13.4	I		1						
13.5-13.9									
14.0-14.4	I				I				
14.5-14.9	I								
15.0-15.4					34.5 M	I			
15.5-15.9	I								
16.0-16.4	I								
16.5-16.9									
17.0-17.4	I				3 others				
17.5-17.9		II			seen				
18.0-18.4							1 SMB	seen	
18.5-18.9							WS –	P	
19.0-19.4							RH –	none seen	
19.5-19.9									
20.0-20.4									
20.5-20-9									
21.0-21.4									
21.5-21.9									
22.0-22.4									
22.5-22.9									
23.0-23.4									
23.5-23.9									
24.0-24.4									
24.5-24.9									
25.0-25.4									
25.5-25.9									
26.0-26.4									
26.5-26.9									
27.0-27.4									
27.5-27.9									
28.0-28.4									
28.5-28.9									
29.0-29.4									
29.5-29.9	8 males	2 females	[illegible]						

Other fish: (Can include rarely caught species and fish greater than 30 inches.) Inlet + Outlet [illegible]

WDNR Comments

Department of Natural Resources

Markins Run (TC - juv. HLP - Adult Walleye)

LAKE ELECTROFISHING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)
Form 3600-187 4-92

2725500

Lake Hayward MWB Code: _____ Date: 03/28/2000 County: Sawyer Collector: Pratt/Warnicke

Target Fish: WE Survey Type: Walleye FERC evel. Mark Given: ~~Floy~~ HLP H_2O Temp: 42 Time 9:40

Adverse Conditions: Cold! H_2O Conduct: Good Station: Inlet, outlet, cindhalm

Volts: 200 Amps: 4.0 Current Type (AC/DC/Pulsed DC) ~~Pulse Rate:~~ _____ ~~Duty Cycle:~~ _____

Gear Type: AC BS Start Time: 336.7 End Time: 338.3 1.6 hrs. Distance Shocked: 2.4 mi

# of Dippers: (1/2) Entire Shoreline Shocked: (Y/N/I) Dip net mesh size: 4' H_2O Clarity: (Clear/Turbid/Very Turbid)

Jumping around looking for concentrations to mark / net

Inches	Walleye Male	F	Unknown		Mu	LMB	NP	YP	BG
4.4 - 4.4							P	C Spawn	P
4.5 - 4.9									
5.0 - 5.4									
5.5 - 5.9			2						
6.0 - 6.4			8						
6.5 - 6.9			8						
7.0 - 7.9			10	63 yds.					
7.5 - 7.9			13						
8.0 - 8.4			10						
8.5 - 8.9			3						
9.0 - 9.4			1						
9.5 - 9.9			1						
10.0-10.4	Marked HLP Clip		5						
10.5-10.9									
11.0-11.4			5						
11.5-11.9			7						
12.0-12.4	1		2						
12.5-12.9	1		1						
13.0-13.4	1		1						
13.5-13.9									
14.0-14.4	1				1				
14.5-14.9	1								
15.0-15.4					34.5 M	1			
15.5-15.9	1								
16.0-16.4	1								
16.5-16.9									
17.0-17.4	1				3 others seen				
17.5-17.9		11							
18.0-18.4							ISMB	seen	
18.5-18.9							W.S	P	
19.0-19.4							RH	none seen	
19.5-19.9									
20.0-20.4									
20.5-20-9									
21.0-21.4									
21.5-21.9									
22.0-22.4									
22.5-22.9									
23.0-23.4									
23.5-23.9									
24.0-24.4									
24.5-24.9									
25.0-25.4									
25.5-25.9									
26.0-26.4									
26.5-26.9									
27.0-27.4									
27.5-27.9									
28.0-28.4									
28.5-28.9									
29.0-29.4									
29.5-29.9	8 males	2 females	88 juv.						

Other fish: (Can include rarely caught species and fish greater than 30 inches.) Inlet & Outlet areas most effort + fish juveniles above dam adults upstream near STH 77

WDNR Comments

Department of Natural Resources

NETTING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)
Form 3600-188 4-92

Lake Hayward MWB Code: _____ Date: 04/03/2000 County: Sawyer Collector: Pratt/Warwick

Target Fish: Walleye Survey Type: FERC Eval. Mark Given: HLP+/- Pink Floy H_2O Temp: _____ Time _____ : _____

Adverse Conditions: Snow, cold, current Station: Airport Rd - 77

Net Type: 4' Fyke Length/Frame: 4' Bar Mesh: 1 1/2"

Color: 3 Black 1 White Mesh Type: 1/2" Wh - Knotted Black - Woven Net Nights: 1

— Walleye —

Inches	Male	FEMALE	Unkwn			N.P	Y.P	L.M.D	B.C
4.4 - 4.4						6.3	10.1	16.6	10.1
4.5 - 4.9									9.4
5.0 - 5.4							6.3		9.2
5.5 - 5.9							5.1		10.0
6.0 - 6.4									~~10.0~~
6.5 - 6.9									9.3
7.0 - 7.9									
7.5 - 7.9									
8.0 - 8.4									
8.5 - 8.9									
9.0 - 9.4									
9.5 - 9.9									
10.0-10.4									
10.5-10.9								L.P	
11.0-11.4								3.2	R.B
11.5-11.9	13.4 - 144								2.4
12.0-12.4	14.3 143	15.0 148							
12.5-12.9									
13.0-13.4	12.5 142								
13.5-13.9									
14.0-14.4									
14.5-14.9									
15.0-15.4									
15.5-15.9									
16.0-16.4									
16.5-16.9									
17.0-17.4									
17.5-17.9									
18.0-18.4									
18.5-18.9									
19.0-19.4									
19.5-19.9									
20.0-20.4									
20.5-20-9									
21.0-21.4									
21.5-21.9									
22.0-22.4									
22.5-22.9									
23.0-23.4									
23.5-23.9									
24.0-24.4									
24.5-24.9									
25.0-25.4									
25.5-25.9									
26.0-26.4									
26.5-26.9									
27.0-27.4									
27.5-27.9									
28.0-28.4									
28.5-28.9									
29.0-29.4									
29.5-29.9									

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

WDNR Comments

Department of Natural Resources

Marking Run – Net (4 fykes)

NETTING DATA COLLECTION SHEET (4.0 in. - 29.9 in.)

Form 3600-188 4-92

272500

Lake Hayward MWB Code: _____ Date: 04 / 01 / 2000 County: Sawyer Collector: Pratt

Target Fish: WE Survey Type: WE PE Mark Given: HLP FLY H_2O Temp: _____ Time _____ : _____

Adverse Conditions: strong current, poor access Station: upstream Hwy 77

Net Type: Fyke Length/Frame: 4' Bar Mesh: 1/2"

Color: 3-Bl 1-Wh Mesh Type: 1 Knot(W) 3 Woven (Black) Net Nights: 1

Walleye

Inches	Male	Female	Unknown			UP 19.0			
4.4 - 4.4									
4.5 - 4.9									
5.0 - 5.4									
5.5 - 5.9									
6.0 - 6.4									
6.5 - 6.9									
7.0 - 7.9									
7.5 - 7.9									
8.0 - 8.4									
8.5 - 8.9									
9.0 - 9.4									
9.5 - 9.9									
10.0-10.4									
10.5-10.9									
11.0-11.4									
11.5-11.9									
12.0-12.4									
12.5-12.9									
13.0-13.4									
13.5-13.9									
14.0-14.4									
14.5-14.9									
15.0-15.4									
15.5-15.9		1							
16.0-16.4	1								
16.5-16.9									
17.0-17.4									
17.5-17.9									
18.0-18.4									
18.5-18.9									
19.0-19.4									
19.5-19.9									
20.0-20.4									
20.5-20-9									
21.0-21.4									
21.5-21.9									
22.0-22.4									
22.5-22.9									
23.0-23.4									
23.5-23.9									
24.0-24.4									
24.5-24.9									
25.0-25.4									
25.5-25.9									
26.0-26.4									
26.5-26.9									
27.0-27.4									
27.5-27.9									
28.0-28.4									
28.5-28.9									
29.0-29.4									
29.5-29.9									

Other fish: (Can include rarely caught species and fish greater than 30 inches.)

Boomshaw fall 2000

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

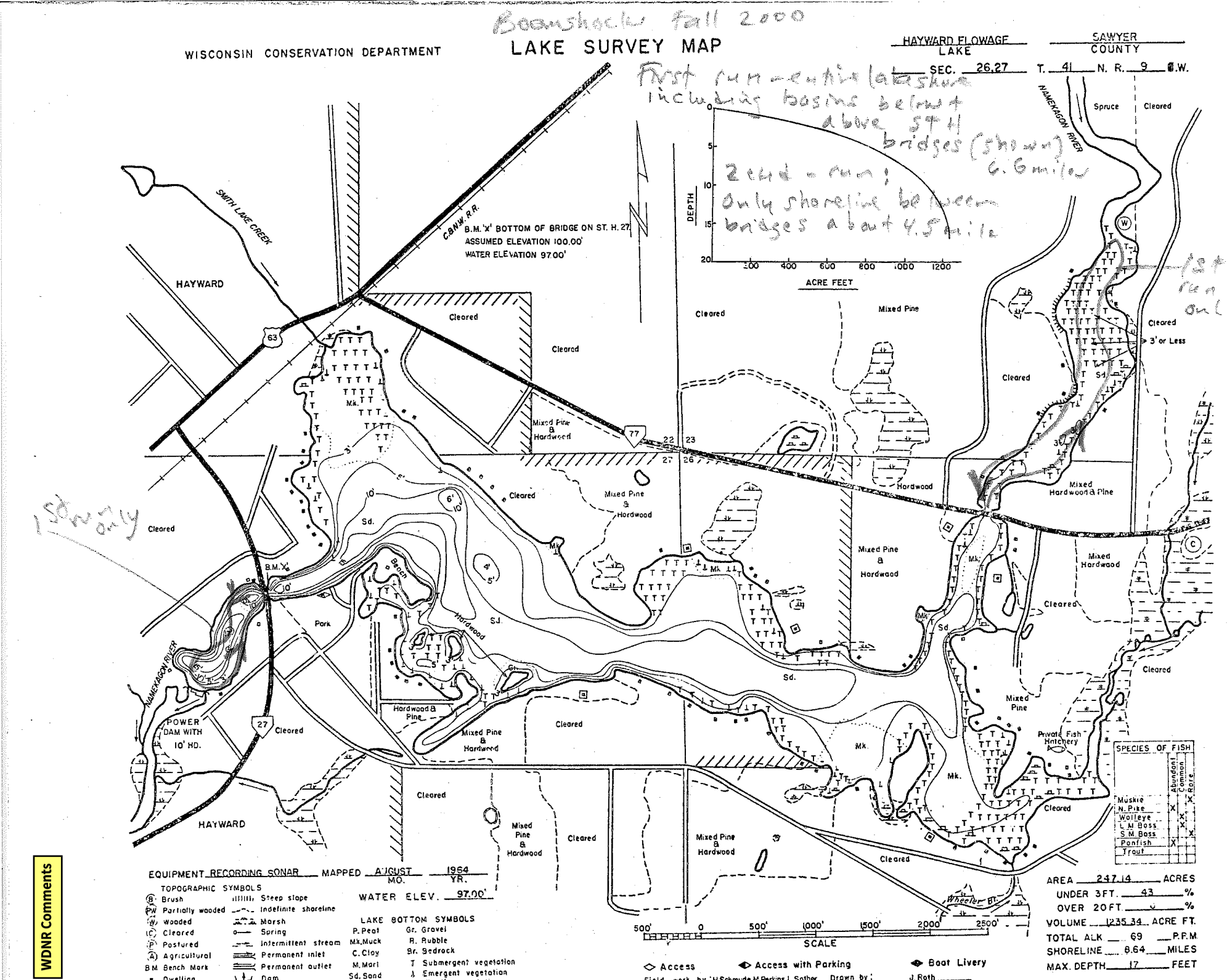
HAYWARD FLOWAGE LAKE — SAWYER COUNTY

SEC. 26,27 T. 41 N. R. 9 W.

First run - entire lake shown including basins below and above ST 11 bridges (shown) 6.6 miles

2nd run - only shoreline between bridges about 4.5 miles

1st run only



SPECIES OF FISH

	Abundant	Common	Rare
Muskie			
N. Pike	X		
Walleye		X	
L.M. Bass		X	
S.M. Bass			X
Panfish	X		
Trout			

EQUIPMENT RECORDING SONAR MAPPED AUGUST 1964 (MO. / YR.)

WATER ELEV. 97.00'

AREA 247.14 ACRES
UNDER 3FT. 43 %
OVER 20FT. 0 %
VOLUME 1235.34 ACRE FT.
TOTAL ALK 69 P.P.M.
SHORELINE 8.64 MILES
MAX. DEPTH 17 FEET

TOPOGRAPHIC SYMBOLS

(B) Brush; (PW) Partially wooded; (W) Wooded; (C) Cleared; (P) Pastured; (A) Agricultural; BM Bench Mark; ▪ Dwelling; ⊡ Resort; Steep slope; Indefinite shoreline; Marsh; Spring; Intermittent stream; Permanent inlet; Permanent outlet; Dam

LAKE BOTTOM SYMBOLS

P. Peat; Mk. Muck; C. Clay; M. Marl; Sd. Sand; St. Silt; Gr. Gravel; R. Rubble; Br. Bedrock; Submergent vegetation; Emergent vegetation; Floating vegetation

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by: H. Schmude, M. Perkins, L. Sather Drawn by: J. Roth

WDNR Comments

A-249

WDNR Comments

SUMMARY SHEET
FORM 3500-8

DEPARTMENT OF NATURAL RESOURCES

Name of Dam Hayward Dam File No. 57.4 County Sawyer

Location SW 1/4 NW 1/4 Section 27 T 41 N, R 9 W

Stream Namekagon River Name of Lake Held by Dam Hayward

Present Owner: Lake Superior District Power Company

Existing Benchmarks:

Benchmark 226-A - destroyed

Benchmark 226-C - can't find

Benchmark 226-D is a 2-inch square cut in the top of the concrete retaining wall at the left of the tailwater and 5 inches from the southwest corner of the power house. Elevation = 508.76 feet.

Benchmark 226-E is a bronze cap in a concrete post, 97 feet east of dam, 10 feet north of power pole and 54 feet west of center line of First Street on east bank of lake.

Benchmark 226-F is a chiseled square on east abutment of dam 1 foot upstream from stoplog.

Rev. 8-70

WDNR Comments

Summary Sheet

Name of Dam Hayward Dam File No. 57.4 County Sawyer

Location SW ¼ NW ¼ Section 27 T 41 N, R 9 W

Stream Namekagon River Name of Lake Held by Dam Hayward Lake

Present Owner Lake Superior District Power Company - Ashland, Wis.

Existing Bench Marks

Benchmark 226A - a bronze tablet marked Railroad Commission of Wisconsin set in top of 6½ foot concrete post on east side of north-south street and on north side of east-west street on east bank of Namekagon River at dam. Benchmark is 20.5 feet west of northwest corner of house on north side of east-west street and 80.4 feet north of northwest corner of house on side of east-west street. Elevation = 517.04 feet.

destroyed

Benchmark 226C - a square chisel cut in upstream end of east abutment of spillway. Elevation = 513.09 feet.

Can't Find

Benchmark 226D - a 2-inch square cut in the top of the concrete retaining wall at the left of the tailwater and 5 inches from the southwest corner of the power house. Elevation = 508.76 feet.

WDNR Comments

WATER LEVEL DATA
Form 3500-27

Department of Natural Resources

Hayward Pond Sawyer Co 57.04
Lake or Stream

SW¼ NW¼ Sec 27 T41N R9W
Location

Date	Taken by	Field Book No.	Lake Level or Gage Reading	Remarks
7/14/19	J. Harris	842	511.24	Shut Down At 3PM to repair wheel
5/20/27	G. Steinmetz	770	511.89	
7/17/33	W. Muegge	869	512.08	
9/23/39	W Muegge	893	511.94	
7/31/46	P. Finsland	903	512.21	
6/18/65	T. Windau	975	512.09	
4/19/74	T Ginder	1032	512.15	gage at headwall read 512.14
6-21-89	Rydberg		85.65	BM 1067-A ELEV=100.00

8-73

WDNR Comments

57.4

AUTHORIZATION - LAWS 1883 CH 11

WP-119 - PERMIT TO RECONSTRUCT DAM ISSUED.

MAX. POND ELEV. = 512.55 FT. (LOCAL DATUM)

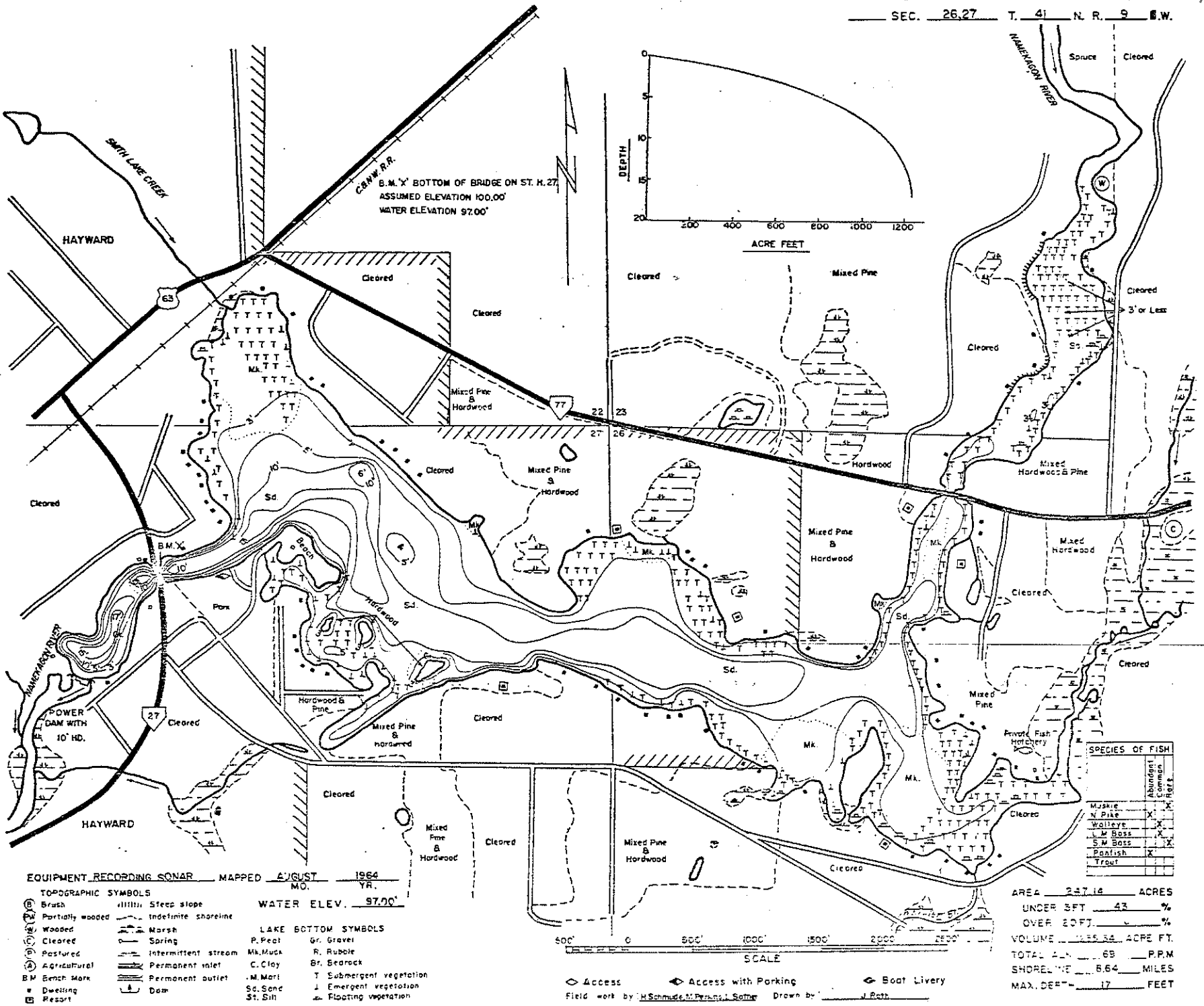
WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

HAYWARD FLOWAGE LAKE — SAWYER COUNTY — 57.4

SEC. 26,27 T. 41 N. R. 9 W.

WDNR Comments



SPECIES OF FISH	Abundant	Common	Rare
Muskie			X
N. Pike	X		
Walleye		X	
L.M. Bass		X	
S.M. Bass			X
Panfish	X		
Trout			

EQUIPMENT RECORDING SONAR MAPPED AUGUST MO. 1964 YR.

WATER ELEV. 97.00'

TOPOGRAPHIC SYMBOLS

- Brush
- Partially wooded
- Wooded
- Cleared
- Pastured
- Agricultural
- BM Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- ⊥ Emergent vegetation
- Floating vegetation

SCALE 500' 0 500' 1000' 1500' 2000' 2500'

◇ Access ◈ Access with Parking ◈ Boat Livery

Field work by H. Schmude, M. Perkins, J. Sather Drawn by J. Roth

AREA 247.14 ACRES

UNDER 3FT 43 %

OVER 20FT. — %

VOLUME 1255.34 ACRE FT.

TOTAL ALK. 68 P.P.M.

SHORELINE 8.64 MILES

MAX. DEPTH 17 FEET

A-254

WDNR Comments

57.4

Form WP1

Sheet 1
Report by C. P. Halbert

Engineering Department
Railroad Commission of Wisconsin

Date Apr 24 1914

J.M.B. 138 total 5/21/14

Mmsl

WATER-POWER DEVELOPMENT INVESTIGATION St Croix DRAINAGE BASIN

IDENTIFICATION

Name of stream on which power is located Namekagan River

County Sawyer Town Town of Hayward

SWNW Sec. 27 T. 41 N R. 9W

Distance to Hayward Wis (nearest P.O.) 1/4 Miles

Name of next tributary stream above Hayward's Pond

" " " " " below Spring creek

Local name of dam Hayward Dam

Name of mill or power station Willow River Lumber Co

Name of owner Willow River Lumber Co Address Hayward Wis

Name of operator Willow River Lumber Co Address "

HISTORICAL

Name of original grantee Anthony J Hayward

Date of original franchise or permit Feby 28 - 1883

Date and conditions of renewal none

Duration of original grant No Limit (right reserved to repeal or amend)

Where recorded Laws 1883 Chapter 11

Purpose of grant: (a) ~~Protection of navigation~~
(b) ~~Log driving~~
(Note-strike) (c) ~~Power purposes~~
(out purposes) (d) ~~Mill~~ purposes
(not obtaining) (e) For Manufacturing and other purposes

~~Year dam~~ was first constructed about 1883

Type of original dam (a) ~~Concrete~~
(b) Timber + piles
(c) ~~Earthen~~

ENGINEERING DEPT.
Received 5/4/14
Referred to:
77-1313

WDNR Comments

Form WP1 Sheet 2

Re Haywards Dam on Manitowish at or near Haywards

DESCRIPTIVE (GENERAL):

Has dam been rebuilt Yes When 1905-1908-1918 rebuilt.

Type of present dam (a) ~~Concrete~~ Concrete over stone & timber Crib
(b) Timber
(c) ~~Earthen~~

Present purpose of dam Mill (Saw) & log driving - Power

If formerly used for other purposes give details with dates

Boats first dam built about 30 yrs ago for log driving
It went out 1904 or 05

General topographic and geological conditions at site Soil sandy
with glacial stone country in vicinity low and flat

Character of stream banks Sandy

Character of stream bottom Sand & gravel

CONSTRUCTIVE FEATURES:

Note: If plans are available, arrange to have a copy prepared for the commission's files, otherwise make detailed sketches of dam, gates, and all other constructive features on blank sheets provided for the purpose, giving dimensions, etc., including typical cross-sections.

Dam: Type Timber crib Dam. Concrete Gravity,

Foundations: (a) Piles Kind Soft Wood Amount Unknown
(b) ~~Grillage~~ Kind Amount
(c) ~~Stone Masonry~~ Kind Amount
(d) ~~Concrete~~ Kind Amount

Depth below natural river bed Estimate 10-20'

Character of river bed Sand & gravel

Do foundations go to rock or impervious stratum No

Anchorage of dam or retaining walls to stream banks (describe)

cribs run well into banks

WDNR Comments

4

Form WP1 Sheet 3

Re Hayward Dam on Namekagan at or near Hayward

CONSTRUCTIVE FEATURES: Continued [concrete stone + sand + timber]

Materials in dam proper Timber cribs Rock filled Plank apron

Materials in walls cribs run well into banks Stone + sand fill'd concrete.

Methods used in construction Timber crib Rock + sand filled

drained water off thru old flume.

General condition of masonry and concrete None except E flume wall.

General condition of timber construction In dam - good [concrete good]

See page (describe) Timber cribs from sluiceway to mill and under Mill are very poor. Mill rests on old stream bed.

Height of stream banks at juncton with dam or wall construction

5'-0" above crest of Dam ? about level with fill

Provision for resisting ice pressure Piling + Berms

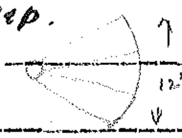
Provision aganist scouring below dam Piling + sheeting concrete apron.

Protection for gates aganist clogging by floating debris

Wooden trash rack iron trash rack

Booms: Kind Log Anchorage Pile

Gates: Number 1 Tainter gate 4 head gates. Depth 8' wide 5 x 8' deep.



Width 10' Depth 12'

Operating mechansim Hand windless OK

General condition of gates Fair

Description of approach to gates Fore bay see sketch

Fishways: Kind none Size

Locks: Kind none Size ✓

WDNR Comments

Form WP1 Sheet 4

Re Hayward Dam on Namekagon at or near Hayward

CONSTRUCTIVE FEATURES: Continued

Log chutes: Kind none Size

Ice chutes: Kind none Size

Spillways: Length 148'-6" 110'

Distance from top of spillway to low point in retaining walls or embankment 5'-0"

Flashboards: Height 3' in place now Provision for 4' Kind 2" plank

Pond or Forebay: Kind of banks Sandy - gravel

Condition of banks Good

Maximum depth Said to be 30'

Approximate area low water ? ✓

" " normal ? ✓

" " high water ? ✓

with safety factor

Capacity in cubic feet ✓

Extent of back water Estimate 2 miles

Method of Supplying water to wheels:

~~Canal~~:	Length		Dimensions		Material	
Flume:	"	150'	"	(5'-9" back x 6'-2" wide outside)	"	2" plank
~~Pipe~~:	"		"		"	

Power House

OPERATIVE FEATURES:

Purpose of operation at present Saw Mill & Elec Power for Hayward

Total operating head, forebay to tail race without flashboards:

(a) Low water 12'-6" (b) Ordinary water 12'-6" (c) High water 12'-6" ✓

about 12'-6" from crest of Dam to Tail waters Flash board raises Head water 3' = 15'-6" said to be always plenty water available

Operating capacity of canal, flume or pipe line in sec. feet:

(a) Low water (b) Ordinary water (c) High water

WDNR Comments

Sheet 4

Form WPl

Re ______ Dam on ______ at or near ______

CONSTRUCTIVE FEATURES; Continued

Log chutes: Kind ______ Size ______

Ice chutes: Kind ______ Size ______

Spillways: Length ______

Distance from top of spillway to low point in retaining walls or embankment ______

Flashboards: Height ______ Two wheels in power house

Pond or Forebay: Kind of banks 1914 Trump, 60"

Condition of banks ______ One wheel

Maximum depth ______

Approximate area low water ______

" " normal ______

" " high water ______

Capacity in cubic feet ______

Extent of back water ______

Method of Supplying water to wheels:

Canal:	Length ______	Dimensions ______	Material ______
Flume:	" ______	" ______	" ______
Pipes:	" ______	" ______	" ______

OPERATIVE FEATURES:

Purpose of operation at present ______

Total operating head, forebay to tail race without flashboards:

(a) Low water ______ (b) Ordinary water ______ (c) High water ______

Operating capacity of canal, flume or pipe line in sec. feet:

(a) Low water ______ (b) Ordinary water ______ (c) High water ______

Form WP1 Sheet 5

Re Hayward Dam on Namekagan at or near Hayward

OPERATIVE FEATURES: Continued

Water wheels: Give for each wheel the following: (1) Kind; (2) Type; (3) Maker; (4) Size - inches; (5) Number of runners; (6) Usual gate opening - inches; (7) Kind of gate; (8) Rated power at usual gate and head; (9) Kind of draft tube; (10) Date installed; (11) General Condition.

1 water wheel in service about 150 H.P.
72" dia. 23" deep old style Horizontal
1 wheel as above out of service
(This company have let contract to instal about 400 H.P. capacity of wheels - generators - power house etc. to be erected on opposite side of river from mill) The old wheel now in place is in poor condition ~~and takes but little of the flow of river.~~

Water wheel governors: State the following; (1) Kind; Type; (3) Maker; (4) Date installed; (5) General condition.

~~None~~

2. woodward governors - 1914

Generators; Give for each unit (1) Make; (2) Type; (3) KV-A. capacity; (4) R.P.M. (5) Phase; (6) Voltage; (7) Amperes; (8) Belted or direct connected; (9) Date installed; (10) General condition.

out [1 Westinghouse A.C. 100 K.W. E.M.F. 2200 A. 1 Phase speed 7200 belt connected with line shaft]

1 G.E. alt. 9½ K.W. 125 V. 975 R.P.M. shaft connected installed 1914.

WDNR Comments

Form WP1 Sheet 6

Re Hayward Dam on Namekagon at or near Hayward Wis

OPERATIVE FEATURES: Continued

Transmission lines:

From Dam To Hayward Circuit Miles 1/4
Phase 3φ Voltage 2300 Wire ______ Poles 30'

From ______ To ______ Circuit Miles ______
Phase ______ Voltage ______ Wire ______ Poles ______

From ______ To ______ Circuit Miles ______
Phase ______ Voltage ______ Wire ______ Poles ______

Auxiliary steam plant: Location ______

Owner Willow River Lumber Co Address Hayward Wis

Equipment 1 Corliss Eng 900 H P Rated (Allis)

Planing Mill 1 Westinghouse A.C. Gen 120 K W E M F 2200 Amp 3 phase speed 720 (See back of page)

Percentage of running time that power is used City use power every day

Average number of days per year that plant operates 365

Hours of operation: From ______ To ______
Saw mill / City Lt. Hours per day 10-12 / Hours per day dark Days per week 6 / dawn

Are date openings recorded? No

Are turbine performances recorded? No

Are switchboard readings recorded? No

Secure sample of station log sheet None

WATER RECORDS:

Kind of gages None How often read ______

Maximum reading None Time ______

Minimum reading None Time ______

Records of stream flow (get sample) None

What portion of fow of stream is plant entitled to Entire

For what portion of year is water supply adequate water always adequate for the 1 - 150 H P wheel

WDNR Comments

Steam and [illegible] eng in [illegible] Mill

Allis Eng about 400 HP

48" stroke — 24" bore

B[illegible] Eng 16" x 24 simple

belt connected with Generator

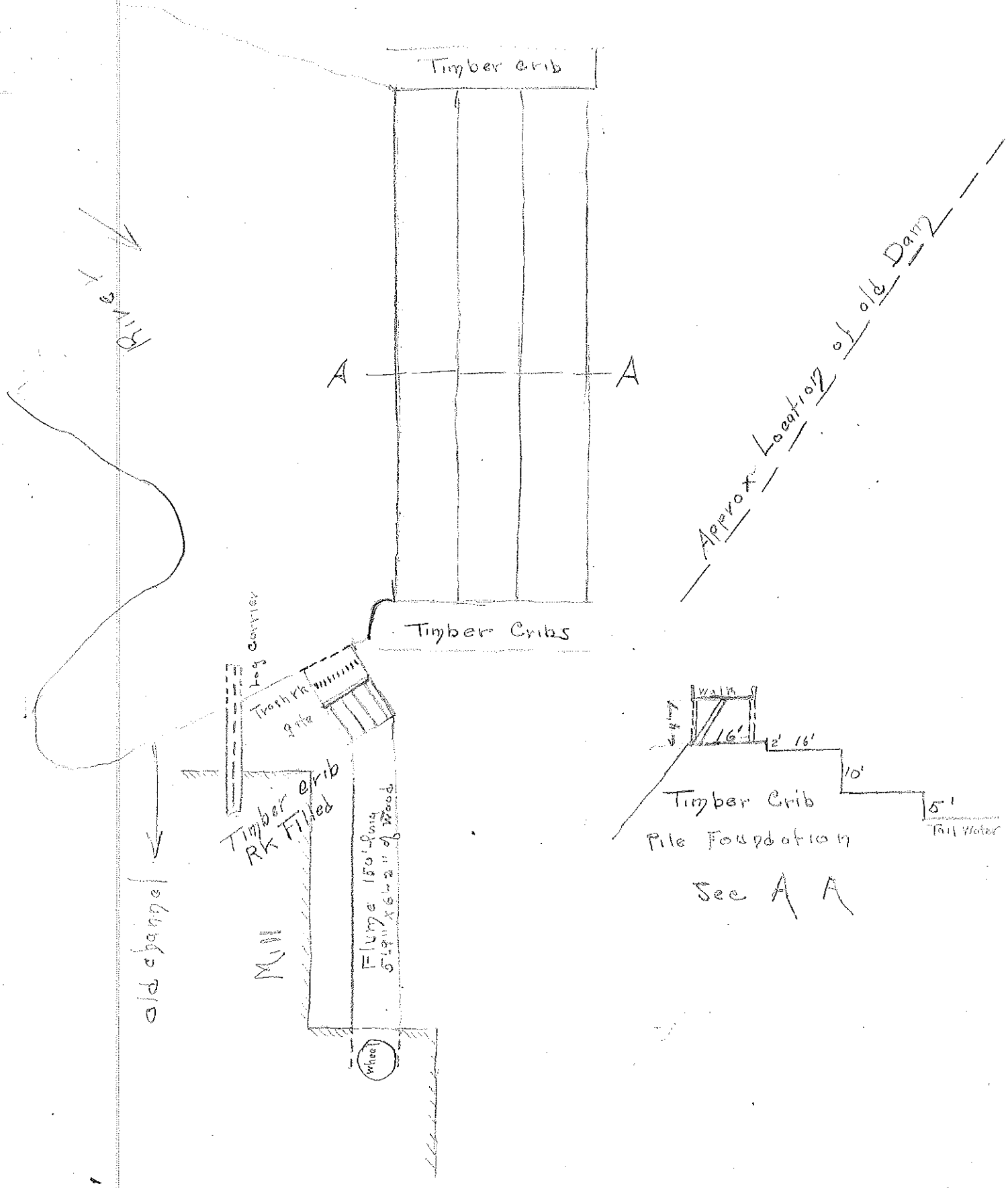
WDNR Comments

Form WP1

Insert

Re Hayward Dam on Namekagon at or near Hayward

Sketch of



WDNR Comments

One Page

Memorandum

BENCH MARKS - HAYWARD DAM 57.4
OWNED BY WILLOW RIVER LUMBER
COMPANY.
(FIELD BOOK #842)

Submitted by John W. Harris,
July 16, 1919

Bench marks were set under authority granted by Chapter 31.02 of the Wisconsin Statutes.

Dam is located on the Namakagon River in the City of Hayward.

Bench marks were set and levels taken July 14, 1919.

Bench Mark #226A is a bronze tablet marked Railroad Commission of Wisconsin set in top of 6 1/2 foot concrete post flush with gravel surface of ground on the east side of north and south street and on the north side of east and west street on the east bank of Namakagon River at dam. Bench mark is 20.5' W. of N.W. corner of house on north side of east and west street and 80.4' N. of N.W. corner of house on side of east and west street. Elevation = 516.04.

Bench Mark #226B is a square notch cut on east flume wall between spillway and flume 8.1' upstream from wheel house. Elevation = 512.53'.

Bench Mark #226C is a square notch cut in upstream end of east abutment of spillway. Elevation = 513.09'.

The following elevations are referred to the datum of bench marks 226, A, B & C.

Points Taken	Elevation
East end spillway wall gate section	513.04
East end foot bridge	514.79
Top of flashboards east gate (All boards in place)	513.24
Average of (Top of flashboard 9 gates)	511.68
Average elevation top of center piers (9)	512.76
Average elevation gate sill, spillway gates	508.57
East flume wall gate section	512.52
Average headgate sill (4 gates)	504.41
West flume wall	512.63
South flume wall auxillary flume gate section	512.78
North flume wall auxillary flume gate section	512.88
West end foot bridge	513.40
Dike between the two flumes	512.95
Pond level (3 P.M. shut down to repair wheel)	511.24
Tailwater wheels not running	495.04
Apron (Center) Top	498.77

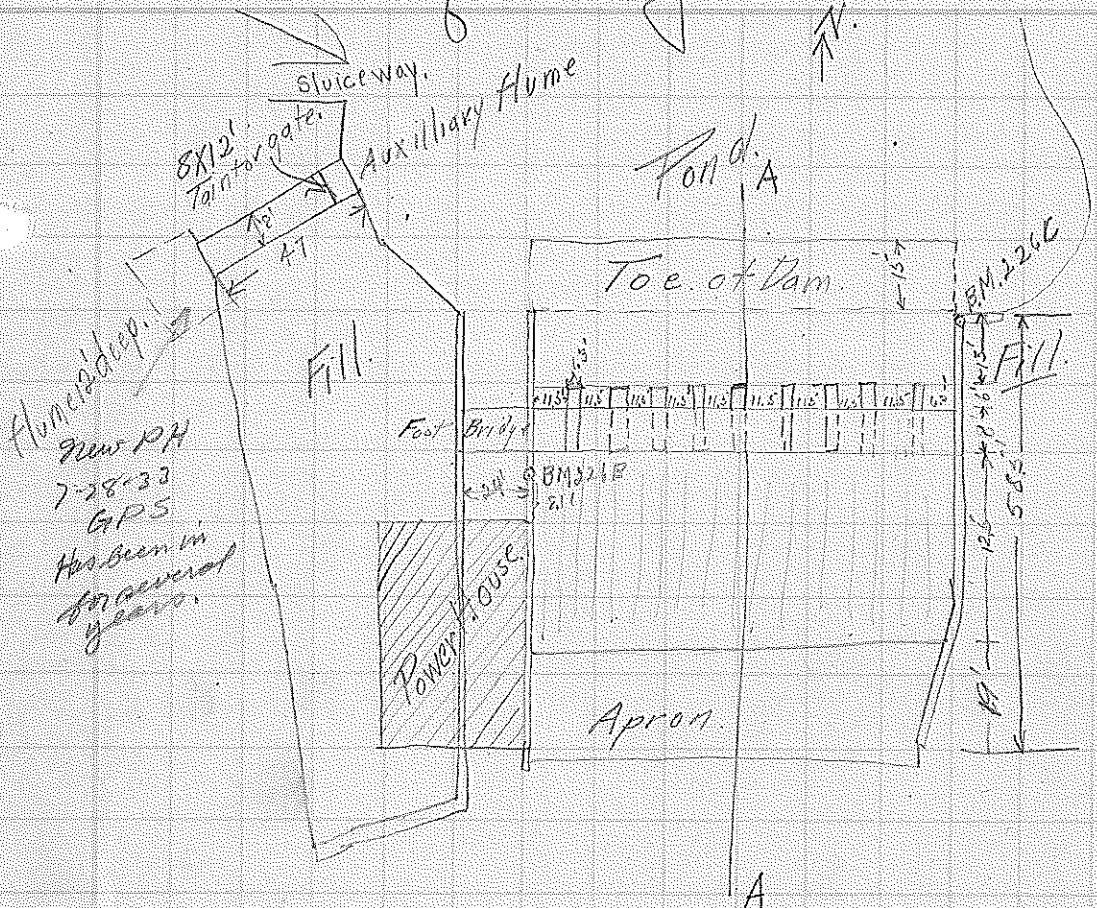
WDNR Comments

FORM 499

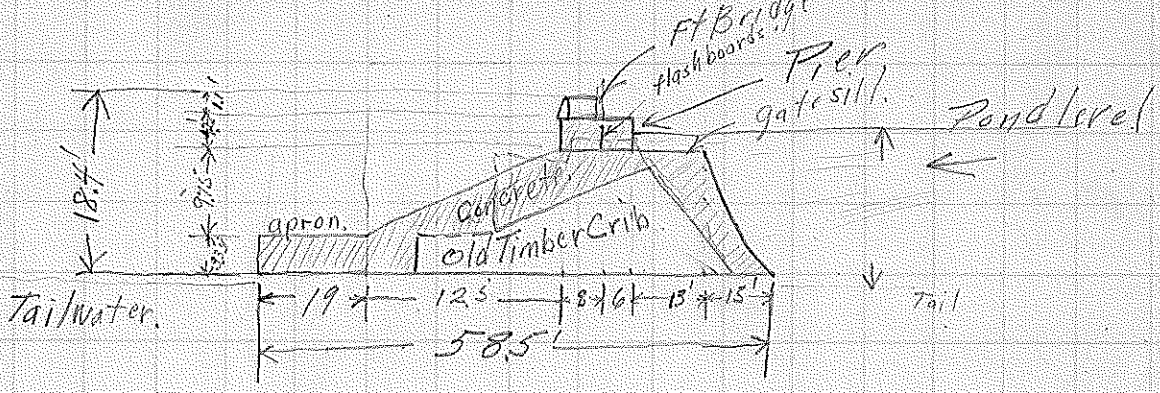
STATE OF WISCONSIN
DEPARTMENT OF ENGINEERING
RAILROAD AND UTILITIES DIVISION

Date July 16 1919 No.
Made by J. J. M. H.
Checked by J.

Refers to Sketch of New Hayward Dam.



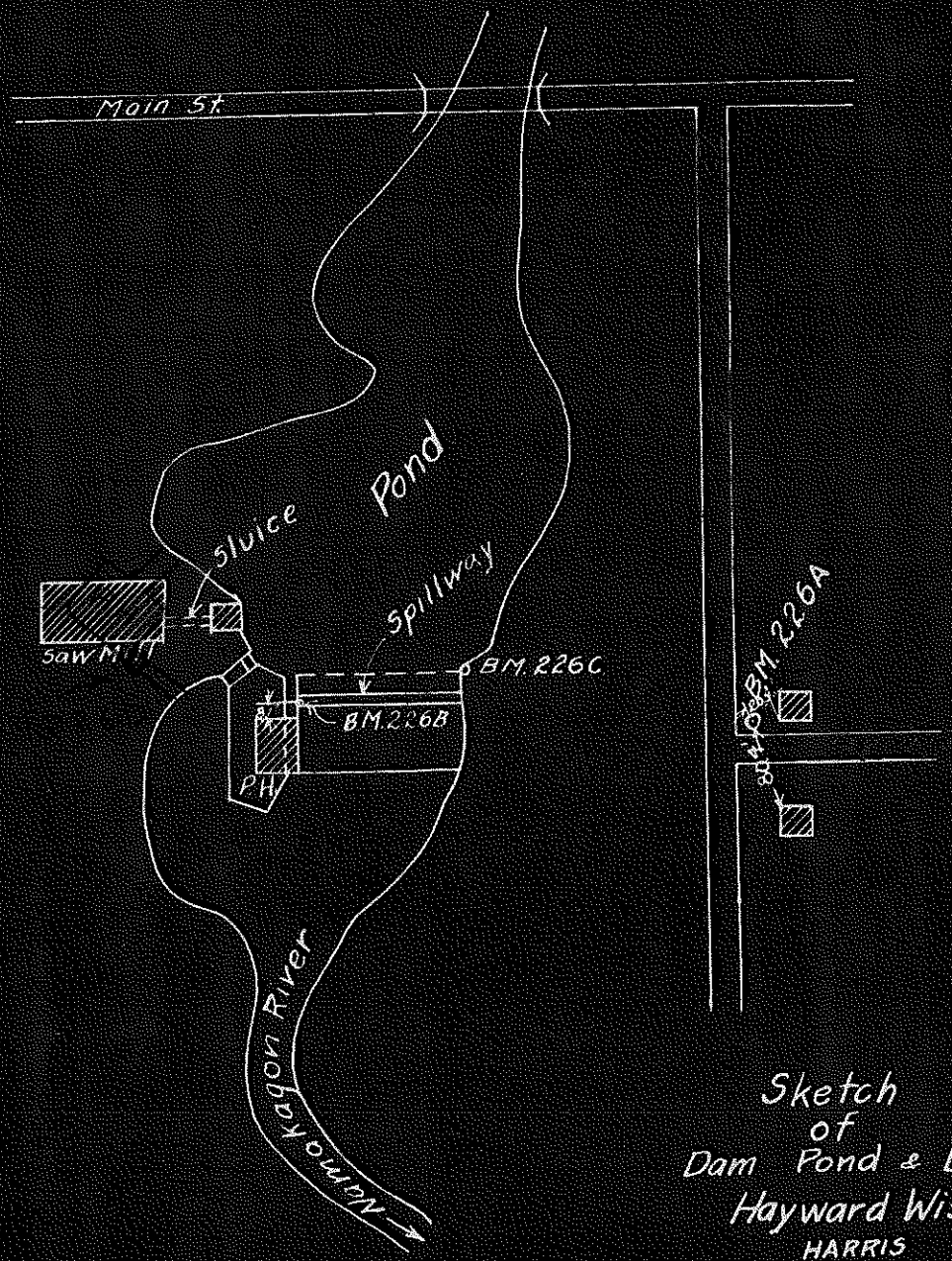
Sec thru A-A according to Mr. Rectors Description.



Probably piles under a large portion of old timber crib.

Dam file 574

WDNR Comments



Sketch
of
Dam Pond & BM's.
Hayward Wis.
HARRIS
1919

WDNR Comments

gently fix the proper elevation at which the new dam shall be built.

After completing the work at Chetek we desire you to make a special investigation of the Hayward Dam at Hayward, Wisconsin. I established a temporary bench mark at this dam on June 20, 1919, the location of which is as follows: elevation of up-stream S.W. abutment at up-stream end, square chiseled in top of concrete, elevation 513.09. Bench marks should be set at this dam using the above bench mark for your datum. The elevation of the head race wall at which elevation the owner of the dam wishes to secure permission to hold the pond level was also taken and found to be 512.22. This concrete wall is between the main spillway section and the intake to the wheels. The top of the wall was taken about 6 feet up-stream from the wheel house. While at this dam new sketches of the dam should be made and the report corrected because the dam was remodled in 1918.

In these two special investigationsit is desired that as soon as the work is completed you prepare the bench mark memoranda and write us the results of your investigation.

Yours very truly,

CAH/a

WDNR Comments

RAILROAD COMMISSION OF WISCONSIN

MADISON

IN REPLY PLEASE REFER TO FILE NO. 855--CAH April 10, 1924

ADDRESS ALL COMMUNICATIONS TO THE COMMISSION

TO OWNERS OF DAMS:

Will you kindly check the following information regarding the water power owned by you. If this information is not correct, make the necessary changes on this sheet and return it to us as promptly as possible in the enclosed stamped envelope.

Local Name of Dam Hayward

Owner Hayward Electric Light & Power Company

Address Hayward

Location of Dam Sec.27, T.41 N., R.9 W.

Use of Dam

Wheel Installation:

Number	Kind	Make	Size	Rated Capacity h.p. (total)
2	Vertical turbine	Trump	48"	300 total
1	Turbine	Br	48"	250 ~

This information is desired in connection with the administration of the Water Power Law.

Yours very truly,

RAILROAD COMMISSION OF WISCONSIN

C. M. Larson

Engineer

574

Enc. 1

WDNR Comments

Supplementary Memorandum — One page

57.4

HAYWARD DAM OWNED BY THE LAKE SUPERIOR DISTRICT POWER COMPANY
FIELD BOOK 770.

Submitted by Geo. P. Steinmetz,
May 28, 1927.

Following correspondence carried on with the Wise Land Company of Hayward concerning the height of the above dam, the writer made an inspection and took levels on the same on May 20, 1927.

The normal headwater authorized by this commission in the above dam is elevation 512.55' when referred to the datum of bench mark 225A, 226B, and 226C described in earlier memos.

Points Taken	Elevation
Bench mark 226 C	513.09'
Headwater above dam	511.34
Top of flashboards (1- 7" board was removed for the entire length of the spillway)	511.34
Top of flashboards when all in place, approx.	511.92

From the above elevations it can be seen that the maximum elevation of the flashboards is approximately 6" below the height authorized by this commission.

WDNR Comments

Supplementary Memorandum — One Page 57.4

HAYWARD DAM
OWNED BY SUPERIOR DISTRICT
POWER COMPANY
(FIELD BOOK #869)

Submitted by W.A. Muegge
July 17, 1933

Bench marks were checked and elevations taken on July 11, 1933.

It was found that, in checking over the notes of Harris, 1919 field book, an error of one foot, which would make the elevation of 226-A 517.04 ft. instead of 516.04 ft. was made. The present survey shows Bench Mark 226-A to be 517.15 ft. when referred to datum of Bench Mark 226-C.

The following elevations are referred to datum of Bench Marks 226-A and 226-C:

Pond level	512.08 ft.
Highwater mark, observed	512.28
Tailwater, wheel running	495.13
Water below dam	495.24
Crest of left section of spillway 6.2 ft. long	508.70
Flash " " " " "	512.58
Crest 2nd " " " 11.5 ft. long	508.68
Flash " " " "	512.63
Crest of 3rd " " " 11.5 " "	508.48
Flash of 3rd " " " " " "	512.40
Crest of 4th " " " " " "	508.53
Flash of 4th " " " " " "	512.35
Crest of 5th " " " " " "	508.50
Flash of 5th " " " " " "	512.39
Crest of 6th " " " " " "	508.49
Flash of 6th " " " " " "	512.46
Crest of 7th " " " " " "	508.55
Flash of 7th " " " " " "	512.42
Crest of 8th " " " " " "	508.52
Flash of 8th " " " " " "	512.53
Crest of 9th " " " " " "	508.41
Flash of 9th " " " " " "	512.57
Crest of Right " " " " " "	508.31
Flash of Right " " " " " "	512.57
Upstream wall at right of spillway	512.61

517

WDNR Comments

Memorandum One Page

BENCH MARK 226A
HAYWARD DAM, SAWYER COUNTY

Submitted by G.P. Steinmetz,
July 19, 1933.

The decision of this Commission granting authority to raise and enlarge the above dam, decided September 17, 1919, (23-W.R.C.R. page 647) gives the elevation of bench mark 226A as 516.04 feet. Upon resurveying this dam in 1933 Mr. Muegge found an error in the original field notes. When this error is corrected, the original elevation of bench mark 226A is found to be 517.04 feet and the order of this Commission should be corrected accordingly.

- - - -

adolph Williams - Mayor

WDNR Comments

ENGINEERING DEPARTMENT
PUBLIC SERVICE COMMISSION OF WISCONSIN

File 574
Inspected by LPJ
Date 7-28-33
Stream Namekagon River
Address Ashland, Wis

Name of Dam [illegible]
Owner Lake Superior Distr. Power Co

Condition of Structure:

Concrete: Spillway + gate piers good. Lt wall old PH spalled in 8" at toe (above tailwater). Rt retaining wall below old PH spalled in 4" to 6" at TW line. Conc. walls of new PH spalled badly, mostly at pour lines above H.W.

~~Stone Masonry~~: Steel exposed in 5 or 6 places. Lt wing wall of new PH spalled 2' at water line adjacent to PH apparently undermined

Timber: Stop logs + foot bridge good. Sanitary head gate & timber frame dog't at new PH good.

Earth dykes: Good

Flood gates: Stop logs OK

Flood gate hoists: By hand.

Flood capacity:

Seepage: 1 sec ft under downstream edge of retaining wall at of old P.H.

Scouring below dam: Very little. Large boulders

Flood capacity:

Repairs since 1930:

Bench Marks:

Gages: HW 13" to 15" below piers Flash 4' below piers

Headwater:
Normal Flow: Max. ______ Normal ______ Min. ______
Flood Flow: Date ______ Max. ______

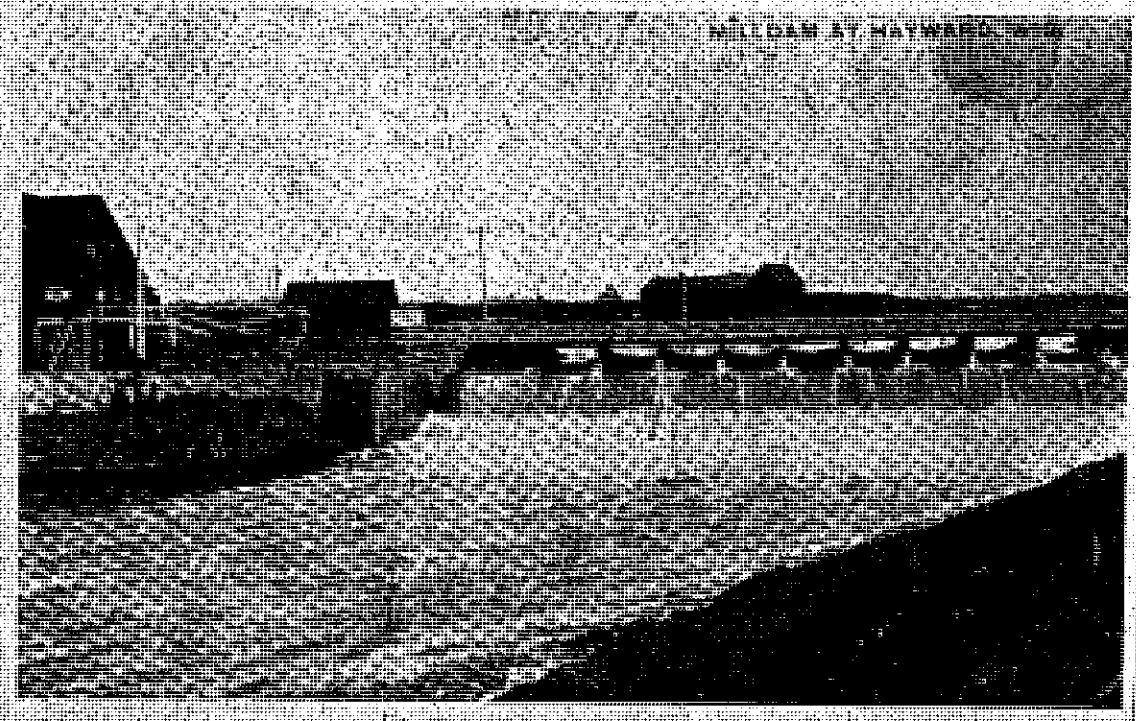
Remarks:
New PH walls should be repaired. Leakage under old PH should be checked if possible.
Head race new PH retaining!

WDNR Comments

504

SAWYER COUNTY RECORD AND HAYWARD REPUBLICAN — HAYWARD, Sawyer County, WISCONSIN 54843

MILLDAM AT HAYWARD, circa



THE DATE OF this week's "Old Time Photo" is unknown, but shows the old mill dam in Hayward.

WDNR Comments

Memorandum

HAYWARD DAM
OWNED BY LAKE SUPERIOR DISTRICT POWER CO.
FIELD BOOK #893

Submitted by W.A. Muegge
February 2, 1940

Bench marks were checked and elevations taken on September 23, 1939.

The following elevations are referred to datum of bench marks 226-A and 226-C.

Pond level	511.94 ft.
High water mark observed	512.19
Tailwater, wheel running	495.24
Water below dam	495.24
Sill of gates - left end	508.44
Sill of gates - center	508.34
Sill of gates - right end	508.19
Top of left gate 6.0 ft. wide-all others 11.5 ft. wide	511.88
Top of 2d gate	511.77
Top of 3d "	512.20
Top of 4th "	512.13
Top of 5th "	511.80
Top of 6th "	511.94
Top of 7th "	512.14
Top of 8th "	512.09
Top of 9th "	511.88
Top of right gate	509.79
Platform over flume	513.32
Dike at left of power house	513.09
Dike at left of wasteway	514.14

- - -

WDNR Comments

PUBLIC SERVICE COMMISSION OF WISCONSIN
ENGINEERING DEPARTMENT
INSPECTION OF DAM

File No. 57.4
Date 9/23/39
Inspected by W.A. Huegge.

Name of dam Hayward Stream Namakagon.

Owner of dam Lake Superior Distr. P. Co. Address Ashland.

Present purpose of dam Hydro Elec. Normal pondage ______ Acres

Type of dam gate or spillway section.

Has dam been rebuilt or repaired? (Dates?) Probably only minor repairs.

Condition of structure

Concrete Spalled about 1.0' deep reinforcing exposed at bottom of downstream side of ~~left~~ wall of dam at aprons edge. Old powerhouse wall.

Masonry —

~~Timber~~ good.

Flood Capacity

I. Gates

Number	Type	Width	Top Elevation	Sill Elevation
1	Stop log.	6.0 ft.	~~[illegible]~~ 511.88 ft.	508.44 ft.
9	" "	11.5 "	Vary "	Av 508.32 "
		"	"	"

II. Spillways

Number	Length	Crest elevation	Flash elevation
None	ft.	ft.	ft.
	"	"	"
	"	"	"

III. Fishways None

IV. Available freeboard to elevation dykes. 513.09 ft.

Operating Head

Head water elevation observed 511.99 ft. Tailwater elevation 495.24 ft.
Highwater mark observed 512.19 ft.
Headwater elevation ______ ft. Operator
Maximum ______ ft. Minimum ______ ft. Normal ______ ft.
Maximum load plant can pull-normal head ?
What is condition of tailrace? Good.
Maximum known flood:
Elevation ______ ft. No gates open ______ Date ______
Remarks:
Seepage through dyke at right wall of old powerhouse. about 60 C.F.S.

WDNR Comments

Kind of Gages: None.

Headwater reading _____ ft. Tailwater reading _____ ft.

Dykes: Condition, freeboard, length etc.? good except for seepage.

Canals: Condition, length etc.? None.

Operating features

I. Generators

Number	Make	Type	K.V.A.	K.W.	Volts	Amps. per phase	Speed

II. Exciters

III. Governors

Number	Make	Type	Size

IV. Water Wheels

Number	Make	Type	Size	Horsepower

Remarks and sketches: _____

WDNR Comments

Memorandum 57.4

HAYWARD DAM
OWNED BY LAKE SUPERIOR DISTRICT POWER COMPANY
FIELD BOOK NO. 903

Submitted by P. O. Finsland
July 31, 1946

Bench marks were checked, bench mark 226D was established, and elevations were taken on July 31, 1946.

Bench mark 226D is described as a 2-inch square cut in the top of the concrete retaining wall at the left of the tailwater and 5 inches from the southwest corner of the new power house.

The following elevations are referred to datum of bench mark 226A:

Bench mark 226C	512.92
Bench mark 226D	508.76
Pond level	512.21
High watermark observed	512.51
High water per dist. mgr. 3" over old concrete flume wall	512.67
Tailwater, wheel running	495.36
Water below gates	495.85
Sill of right stop log gate 11.2' (clear) wide	508.03
" " 2nd " " " 11.2'	508.10
" " 3rd " " " 11.3'	508.21
" " 4th " " " 11.3'	508.30
" " 5th " " " 11.1'	508.27
" " 6th " " " 11.3'	508.26
" " 7th " " " 11.2'	508.35
" " 8th " " " 11.2'	508.26
" " 9th " " " 11.2'	508.41
" " left " " " 6.2' wide	508.47
Top of right stop log gate	512.33
" " 2nd " " "	511.68
" " 3rd " " "	512.31
" " 4th " " "	511.97
" " 5th " " "	511.82
" " 6th " " "	512.22
" " 7th " " "	512.03
" " 8th " " "	512.10
" " 9th " " "	512.26
" " left " " "	512.30
Top of old concrete flume wall at right of spillway	512.42

Top of concrete wall between right & 2nd gates (over gates)		512.38
" " " " " 2nd & 3rd " " "		512.42
" " " " " 3rd & 4th " " "		512.46
" " " " " 4th & 5th " " "		512.45
" " " " " 5th & 6th " " "		512.50
" " " " " 6th & 7th " " "		512.60
" " " " " 7th & 8th " " "		512.61
" " " " " 8th & 9th " " "		512.65
" " " " " 9th & left "	(dated 1918)	512.76
Top of left abutment (over gates)		512.86
Top of concrete platform over flume now in use		513.30
Top of concrete curb over trash rack		513.57

- - -

WDNR Comments

INTERVIEWED:
District Manager
R. H. Suess
Main office - Ashland, Wisconsin

PUBLIC SERVICE COMMISSION OF WISCONSIN
ENGINEERING DEPARTMENT
INSPECTION OF DAM

File No. 57.9
Date July 31, 1946
Inspected by P.C. Finsland

Name of dam Hayward Dam Stream Namekagon River

Owner of dam Lake Superior Dist. Power Co Address HAYWARD Ashland

Present purpose of dam Hydro-elec. Normal pondage _____ Acres

Type of dam Concrete, gravity

Has dam been rebuilt or repaired? (Dates?) Not since last report

Condition of structure

Concrete abutments above waste way - poor
Sills of waste way, wing walls - good
Junction of concrete at right of waste way and old P.H. - poor
~~Masonry~~

Timber stop logs - good

Flood Capacity

I. Gates

Number	Type	Width	Top Elevation	Sill Elevation
1	Stop log	6.7 ft.	ft.	508.47 ft.
9	" "	(CLEAR) 11.2 "	LOW 511.68 "	LEFT END 508.41 "
		"	HIGH 512.33 "	RIGHT END 508.03 "

II. Spillways

Number	Length	Crest Elevation	Flash Elevation
NONE	ft.	ft.	ft.

III. Fishways NONE

IV. Available freeboard to elevation L. ABUT 512.86 ft.

Operating Head

Head water elevation observed 512.21 ft. Tailwater elevation 495.36 ft.
Highwater mark observed 512.51 ft.
Headwater elevation _____ ft. Operator
Maximum _____ ft. Minimum _____ ft. Normal _____ ft.
Maximum load plant can pull-normal head 180 about 170 K.W.
What is condition of tailrace? good
Maximum known flood:
Elevation 512.67 ft. No gates open _____ Date _____
Remarks: _____

WDNR Comments

57.4

Name of Dam HAYWARD

Date FEBRUARY 8, 1954

INSTALLED EQUIPMENT

Water Wheels			Connected To Generators		
Unit	Size	Horse Power	Kva Rating	Kw Rating	Mechanical Equipment
1		280	210	168	None

WDNR Comments

Memorandum 57.4

HAYWARD DAM
OWNED BY LAKE SUPERIOR DISTRICT POWER COMPANY
FIELD BOOK #975, p. 12

Submitted by T. D. Windau
June 22, 1965

The following survey was taken on June 18, 1965. The survey was referred to the datum of BM 226D which has an elevation = 508.76 feet.

Water level (gage read 512.0)	512.09 feet
Tailwater	495.26 feet
Top of right abutment	512.39 feet
Top of 2nd abutment	512.23 feet
Top of 3rd abutment	512.03 feet
Top of 4th abutment	512.37 feet
Top of 5th abutment	512.36 feet
Top of 6th abutment	512.43 feet
Top of 7th abutment	512.53 feet
Top of 8th abutment	512.53 feet
Top of 9th abutment	512.57 feet
Top of 10th abutment	512.70 feet
Top of left abutment	512.80 feet
Top of right spillway	512.09 feet
Top of 2nd spillway	511.68 feet
Top of 3rd spillway	511.79 feet
Top of 4th spillway	511.42 feet
Top of 5th spillway	512.30 feet
Top of 6th spillway	512.40 feet
Top of 7th spillway	512.53 feet
Top of 8th spillway	512.33 feet
Top of 9th spillway	512.05 feet
Top of left spillway	512.20 feet
Right sill	507.87 feet
2nd sill	507.91 feet
3rd sill	508.09 feet
4th sill	508.21 feet
5th sill	508.14 feet
6th sill	508.18 feet
7th sill	508.27 feet
8th sill	508.16 feet
9th sill	508.31 feet
Left sill	508.38 feet

WDNR Comments

Memorandum

57.4

HAYWARD DAM
OWNED BY LAKE SUPERIOR DISTRICT POWER CO.
FIELD BOOK #983

Submitted by R. Bubolz
August 15, 1966

On August 2, 1966, Benchmark 226-A was located along the edge of South First Street.

RB/jp

WDNR Comments

DEPARTMENT OF NATURAL RESOURCES

~~City~~ of Hayward

Location: SW 1/4 NW 1/4 Sec 27 T 41 N R 9W

Sawyer County

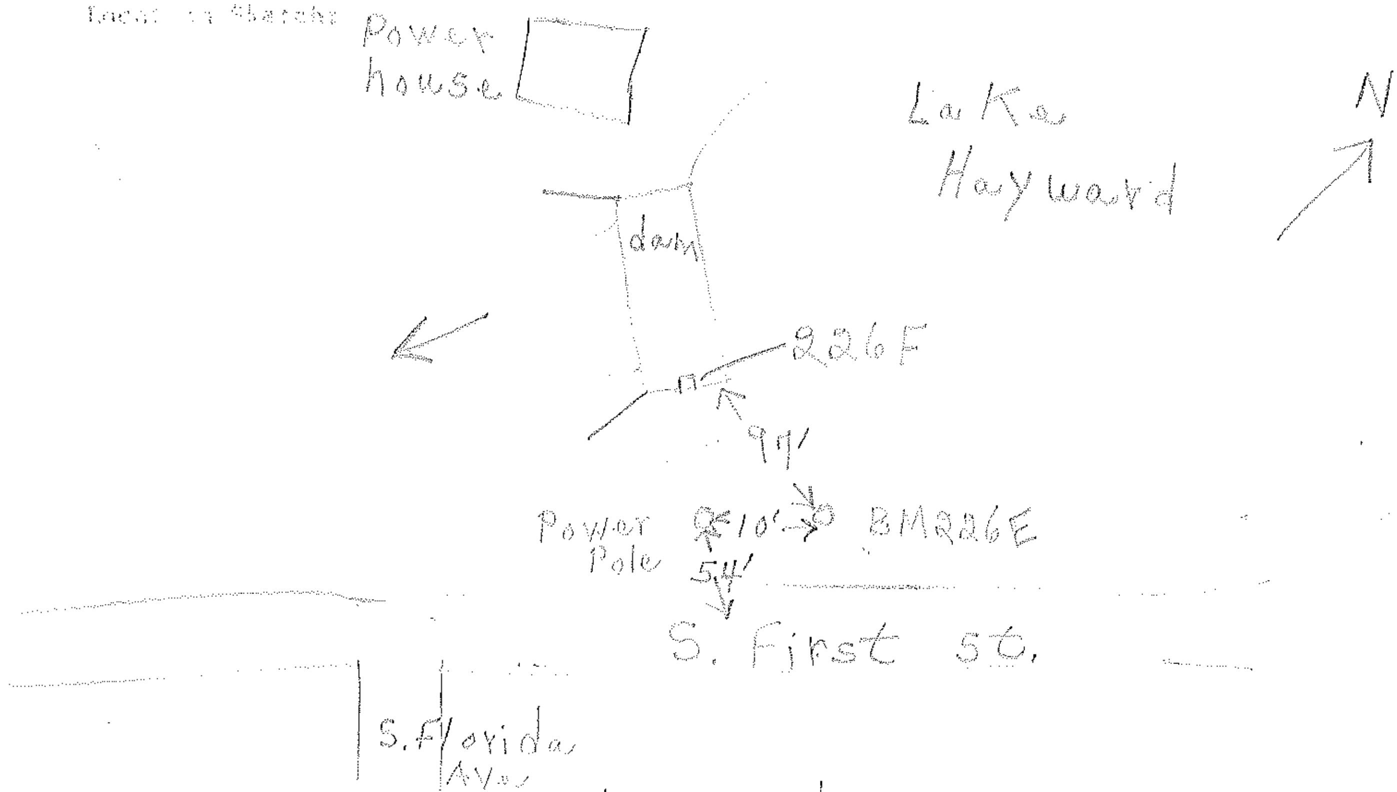
Benchmark No. 226E + F   Elevation E– F–

Set by: R.J.T., D.R.S.

Vertical Datum:

Date of survey: Aug 19, 1970

Location Sketch:



Detailed description: BM 226E is a bronze cap in a concrete post, 97' E of dam 10' N of power pole + 54' W of ℄ of First St. on E bank of lake

BM 226F is a chiseled sq. on E abutment of dam 1ft upstream from stoplog

WDNR Comments

State of Wisconsin
Department of Natural Resources

DAM INSPECTION REPORT
Form 3500-59
Rev. 5-81

1. Dam Name: Hayward Dam
2. Stream: Namekagon River
3. County: Sawyer
4. Inspection Date: 10-21-81
5. State Inspection Party: Ron O'Keefe
6. Other Persons Present: Mike Popko
7. Dam Owner: Lake Superior District Power
8. Address: Ashland, Wi.
9. Contact: Mike Popko
10. Telephone Number:
11. Field File Number: 54.4
12. Field Book Number:
13. Benchmarks Located:

14. Water Level: (Specify datum) Headwater: Gage: Tailwater: Gage:

15. How many photos taken: 2 (Prints) or slides:

16. Estimated Federal Dam **Hazard Rating (High, Significant, Low):**

CONDITION OF DAM

I. EMBANKMENTS

a. Seepage

none

b. Slope Stability

good

c. Surface Erosion

none

d. Animal Burrows

~~2~~ none

e. Embankment-Structure Junctions (at retaining walls, natural ground, etc.)

good

WDNR Comments

f. Slope Protection

some riprap

g. Vegetation

a tree at right in of spillway should be taken out

h. Repairs Since Last Inspection

piers and spillway repaired last summer

II. SPILLWAY(S)

a. Surface Condition

good

b. Cracking

good

c. Horizontal and Vertical Alignment

good

d. Exposed Reinforcement

none

e. Seepage

none

f. Joints

good

g. Repairs Since Last Inspection

spillway repaired last summer

III. GATES

a. Steel, Timber, None

WDNR Comments

b. Gate Seals

good

c. Gate Pins

good

d. Gate Hoist and Chains

good

e. Repairs Since Last Inspection

none

IV. MISCELLANEOUS

a. Debris

none

b. Walkway and Railing

good

c. Paint

good

d. Downstream Apron

new last summer

e. Stilling Basin - Scour, Undercutting

none

f. Foundation Seepage

none

g. Downstream Channel - Scour

none

h. Other Observations

WDNR Comments

V. BOATING SAFETY

a. Warning devices and signs:

signs

b. Portage signs and facilities:

signs

VI. HYDROPOWER USE

a. Last date used for power: Continuous

b. Current installed capacity: 195 KW

c. Average power output during inspection: 195 KW

VII. RECOMMENDED MAINTENANCE ACTION:

Ronald E O Kife 10-21-87
Date Signed Inspected By:

WDNR Comments

mcg

WI DNR

Jeff Scheier
Park falls

OPERATION REPORT

Federal Energy Regulatory commission
Chicago Regional Office

For the period September 11, 1996 to August 19, 1998

Licensee Northern States Power Company Project No. 2417

Project Name Hayward NATDAM No. WI00795

Location Namekagon River (waterway) Sawyer County WI State

License Issued September 1, 1995 Expires December 31, 2025

Type Minor

Date of last amendment None

Inspected by Kevin S. Richards/Adam S. Pawelek Date August 19, 1998

Parts Inspected All visible parts of the facility were inspected

Weather Cloudy, 60 degrees F.

Accompanied by Mr. Tom Ricci of Northern States Power Company

Summary

An operation inspection of the Hayward Hydroelectric Project, FERC No. 2417, was performed by Mr. Kevin Richards on August 19, 1998. All visible portions of the project water-retaining structures were inspected and found to be in satisfactory condition. No dam safety deficiencies were found that require immediate remediation. A small depression in the soil was noted behind the sheet pile near the intake, which we understand is already scheduled for repair. Minor deterioration of concrete in pier No. 6 and leaking cracks on the rollway should be monitored. The project is being operated and maintained in a safe manner.

No public safety deficiencies were found with the exception of a faded warning sign, on the downstream side of the powerhouse, which the licensee indicated would be immediately replaced.

Submitted: November 12, 1998

Kevin S. Richards

Kevin S. Richards, P.E.

WDNR Comments

A. Safety of the Project

Attached are 11 photographs that show the features and condition of the project at the time of the inspection. The approximate location and orientation of the camera for each photograph are shown on the attached exhibit. Project data is on the attached Pertinent Data Sheet.

1. Dams, Dikes and Appurtenant Structures

Spillway - Access to the spillway is fenced, a project sign is posted at the main entrance (Photograph *1*). The concrete spillway has 10 wooden stoplog bays (Photograph *2*). The concrete surfaces of the spillway ogee and downstream apron could not be observed due to water flowing over the apron (Photographs *3*, *4*, *5*, *6*). The upstream concrete and sheet piling retaining walls appeared to be in generally satisfactory condition (Photograph 7). The operator deck and the piers that support the stoplogs on top of the spillway appear to be in good condition (Photograph *8*). The downstream right training wall appeared to be in generally satisfactory condition, with some cracks and efflorescence noted on the wall. Some minor leakage was observed in the left retaining wall near a 3 inch gap between the surface of the spillway and left retaining wall. The leakage was under slight artesian pressure (Photograph *5*). A similar leak was observed along a construction joint in the center of the spillway (Photograph *4*). The cracks and spalling are not serious enough to require repair at this time. Pier No. 6 has reinforcing steel exposed and should be carefully monitored for any further deterioration. Minor leakage was observed exiting between stoplogs in gate bay No. 7.

Powerhouse - The powerhouse superstructure, intake structure and head gate appeared to be in satisfactory condition, with the exception of a large crack in the back of the powerhouse (Photographs *9*, *10* and *11*). The downstream wall of the powerhouse substructure and the left downstream retaining wall contain cracks, spalling and efflorescence. No action is required at this time other than closely monitoring the larger cracks for signs of offset or leakage. It appeared that the spalled area of concrete has not increased sufficiently during this report period to warrant any repair at this time. No leakage was observed.

Embankments - The middle earth embankment, located between the spillway and powerhouse, appears to be generally in good condition (Photograph 7). Weeds had been cleared from the middle and right embankments. The right embankment is in good condition. No soft spots or wet areas were observed. The licensee indicated two piezometers were removed from the right earth embankment.

WDNR Comments

2. Instrumentation. There is a headwater elevation recording chart which was functioning at the time of the inspection. Piezometers Nos. 1 and 2 were buried 8 years ago. Piezometric levels in Nos. 3 and 4 were consistent with water levels of the past four years. They were at 13.6 and 13.5 feet below surface, respectively. A slug test was reportedly performed on the piezometers two weeks prior to this inspection which indicated the piezometers are functioning properly. No additional instrumentation is required at this time.

3. Hazard Potential Classification. During the inspection, no changes in the downstream conditions were reported by the licensee's representative or observed from the dam by the inspector. There are no permanent structures immediately downstream. The licensee confirmed by letter dated December 23, 1997 that there were no upstream or downstream conditions which would endanger life, health, or property as a result of an emergency at the project. Therefore, the current low hazard potential rating should remain in effect.

4. Consultant's Safety Inspection Report. A consultant's safety inspection report is not required for this project.

5. Licensee's Inspection Program. There is no formal program of inspection. The spillway operator visits the project daily to check water levels and the operation of the gates. Also, the operator visually inspects the project structures once a week. The project is also inspected by Mr. Mark Fort, supervisor of project operations, every three months. Mr. Dick Rudolph, the Hydro Administrator, also inspects the project every six months. Records of the condition of the structures are kept in the licensee's Hayward office.

B. Operation and Maintenance

There were no maintenance items requested following our 1996 operation inspection.

1. Dams, Dikes and Appurtenant Structures. The drainage system on the right embankment, consisting of five, four-inch corrugated plastic pipes connected to a head pipe near the concrete retaining wall, appeared to be working satisfactorily. Approximately 1 g.p.m. was observed exiting the pipe at the downstream slope near the powerhouse wall (Photograph *10*). A new headwater monitor was reportedly installed. The licensee indicated repairs were scheduled to correct minor erosion behind the sheet pile on the center embankment. Holes will be backfilled with gravel and soil.

WDNR Comments

2. Spillway Gates and Standby Power. The spillway gate operation criteria does not apply to this stoplog spillway. There are stoplog slots in the retaining walls of the intake structure for stopping the flow. Also, a vertical steel head gate is available for emergency closure of the powerhouse intake, however a boom truck would need to be brought in to lower the slide gates. The licensee indicated they are not cindering the gates, and that the minor leakage observed was due to this fact.

3. Power Plants. There is only one generating unit in the powerhouse, which has 200 kW capacity. At the time of inspection, the unit was in operation and generating 175 kW. There were no unscheduled shutdowns or suspensions of operation during the reporting period, and no modifications to the powerhouse.

4. Reservoir. The reservoir rim in the proximity of the dam was inspected and appeared to be free of excessive debris. No signs of shoreline instability or erosion were noted.

5. Records. The operational history, piezometer readings, daily water level readings and generation records are kept at the project site. Also, Exhibit F drawings are kept in the powerhouse.

6. Emergency Action Plan. This project was exempted from filing an emergency action plan by the Regional Director on July 15, 1982. A remote alarm system has been installed to notify the licensee's Eau Claire office in the event of a high water condition. If the plant trips, the dispatcher in Eau Claire receives the alarm and pages the plant operator, who will then proceed to the project site to inspect the condition or he will call the Hayward office to investigate the problem. Based on the conversation with the licensees representative, it appears that the present arrangement is satisfactory for this project. Emergency numbers and current notification procedures were posted.

C. Environmental, Public Use and Safety

1. Public Safety Plan. By letter dated April 27, 1992, the licensee submitted a Public Safety Plan for the project. Provisions for public safety at this project include:

a. Fencing of the project structures to restrict public access.

b. Warning signs on the upstream side of the spillway and on the downstream sides of the spillway and powerhouse had recently been installed.

WDNR Comments

c. Signs warning of thin ice on the upstream face of the spillway and powerhouse intake structure.

d. A boat-restraining barrier upstream of the dam and powerhouse intake. The boat barrier was in-place during the inspection (Photograph *1*). There are reflective warning signs on the barrier, and the barrier is kept in place all year round. During the winter season, the licensee places "THIN ICE" warning signs on the floats of the barrier.

e. A canoe portage is located on the right shoreline of the reservoir a short distance upstream of the restraining barrier. A sign directs canoeists to the canoe portage.

f. A recreational facility sign is posted on the left shoreline at the left end of the spillway (Photograph *1*).

At the time of inspection, the warning sign at the downstream side of the powerhouse was faded. The licensee indicated they would immediately replace the sign. Public safety provisions are adequate at this time.

No recreational activity was observed during the inspection. The public safety aspects of the project appeared to be adequate. There are existing overhead power lines crossing the reservoir of the project. The power lines are high enough and do not present a danger to the public.

2. Need for Action. None apparent at this time.

3. Environmental and Public Use Inspection. The last environmental and public use inspection was performed by Mrs. Patricia A. Grant, Environmental Protection Specialist, on July 16, 1997. The there were no deficiencies noted requiring remediation. Her report is on file in the Chicago Regional Office. Review of the headwater chart recordings indicated the reservoir was operated in a band between 1187.4 to 1187.2 in July, with high water of 1187.6 in June. There was approximately 14 cfs minimum flow at the time of the inspection. The licensee reported that they were still working on the streamflow gage plan. The WDNR will be directing placement of boulders in the stream for the Sturgeon, the work was planned but had not been completed at the time of the inspection.

D. Matters of Commission Interest

1. Additions, Betterments, Leases, Retirements, or Needed Extensions. None.

WDNR Comments

2. Requiring Commission Action. Nothing to report.

3. Project Compliance. Based on a file review and field inspections, the licensee appears to have been in compliance with all compliance requirements in the license during this report period.

E. Findings and Follow-up Actions

No dam safety deficiencies were found that require immediate remediation. A small depression in the soil was noted behind the sheet pile near the intake which we understand is already scheduled for repair. Minor deterioration of concrete in pier No. 6 and leaking cracks on the rollway should be monitored. The project is being operated and maintained in a safe manner.

No public safety deficiencies were found with the exception of a faded warning sign on the downstream side of the powerhouse. The licensee indicated the sign would be immediately replaced. There were no other public safety deficiencies that would require immediate action. The public safety aspects of the project appeared to be adequate.

Attachments:

1. Pertinent Data Sheet
2. Set of 11 Photographs
3. Exhibit 1

Original and one copy to DIR, D2SI, OHL/RIMS
Richards, K.S./mcl (m:\ksr\wpdocs\2417\2417.op)

WDNR Comments

PERTINENT DATASHEET

Date Run: 9/21/98

----------Chicago Regional Office ... D2SI ... FERC ----------

GENERAL DATA

Dam Number: 02417-01-01
Project Name: HAYWARD
Project Owner: NORTHERN STATES POWER CO (WI
Reservoir Name: HAYWARD
Dam Name: HAYWARD
State,County: WI SAWYER
USGS Quad: HAYWARD 7.5'

LATITUDE(deg/min/sec): 46 0 24
LONGITUDE(deg/min/sec): 91 29 6

River: NAMEKAGON
Rivermile: 45
Drainage Area (sq/mi): 192
Seismic Zone: 1
DS Hazard: L
Dam Height (ft): 20
Hydraulic Height(ft):
Completion Date: 1925
DS City : HAYWARD
Distance (mi): 0

Hydrologic Data

PMF (cfs): 51,580
Flood of Record (cfs): 2,150
Date Flood of Record: 1/1/41
Average Flow (cfs): 175
Minimum Flow Required (Y/N): Y
Minimum flow (cfs): 8

Part 12 Requirements

CSIR REQUIREMENT (Y/N): N

CSIR REPORT HISTORY

Round	Due	Received

Reservoir Data

Normal Surface Area (acres):: 240
Pool Elevation Max (msl): 1,187.50
Normal (msl): 1,187.40
Minimum (msl): 1,187.00
Normal Storage (acre-ft): 1,100
Maximum Storage (acre-ft): 1,900

EAP Status: EXT
Latest EAP/Eap Mod:

PRB Required (Y/N): Y

	Mo	Day
Date In :	1	1
Date Out	12	31

Inspection History

NAME:	STAT	DATE:	TYPE:
RICHARDS	ACT	8/17/98	OP
GRANT	ACT	7/16/97	EPUI
MALHOTRA	ACT	9/10/96	OP
MALHOTRA	ACT	9/19/94	OP
DIDOS	ACT	9/24/92	OP
KLINKENBERG	ACT	6/13/90	EPUI

Project Works

Type of Dam:	ER	TC
Authorised Gen. Capacity (Kw):	168	
Number of Generating Units:	1	
Number of Gates:	10	
Number of Powerhouses:	1	
Number of Penstocks:	0	
Number of Canals:	0	
Number of Tunnels:	0	

Project Notes

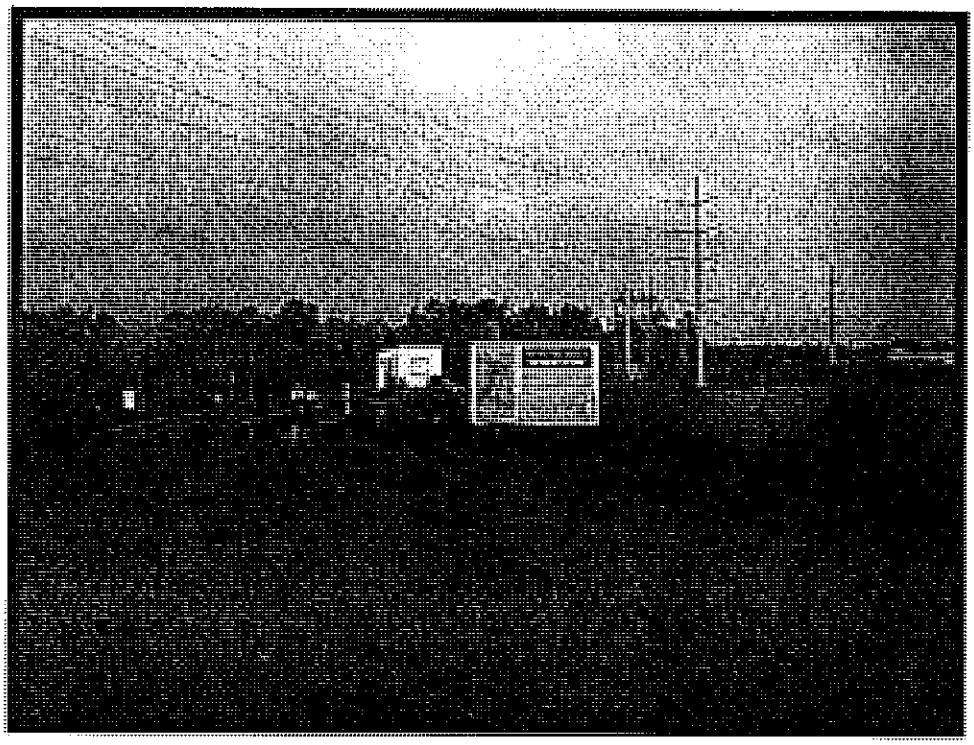
Dam & Spillway: A rock-filled timber crib dam about 300' (91m) long x 20' (6m) high with a concrete spillway 122' (37m) long which is divided into nine bays 12' (4m) wide and 4' (1m) deep and one bay 6' (2m) wide and 45' (14m) deep all closed with flashboards. Remaining portion of dam is earthfill section integral with the powerhouse. Note: Article 402 requires run-of-river operation. Article 402 also stipulates a target pool elevation of 1187.4, with fluctuations allowed between 1187.5 and 1187.0.

Conduit: None.

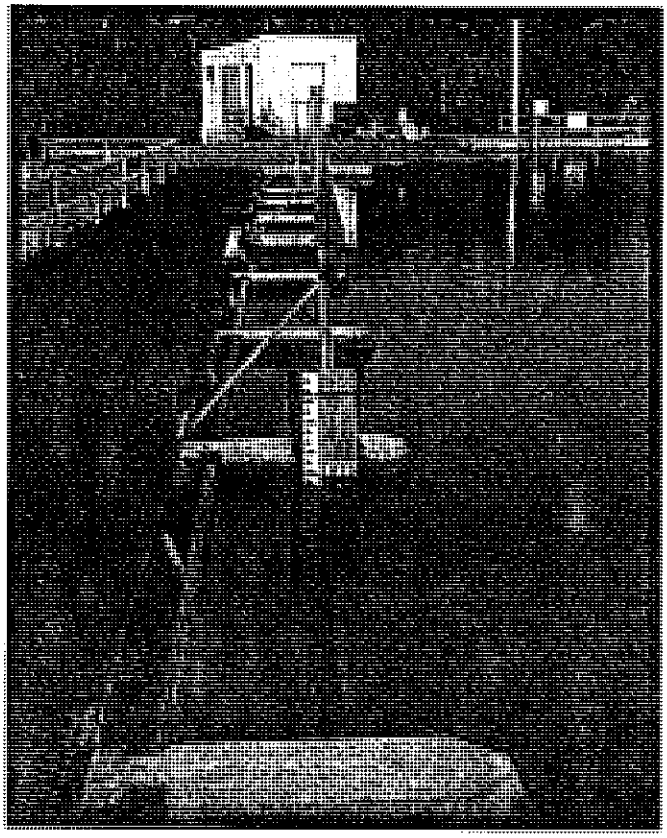
Powerhouse: Brick powerhouse contains a generator of 168 kW capacity at .8 pf and turbine rated at 280 hp (209kW) at 180 rpm.

Substation & Transmission Line(s): None.

WDNR Comments

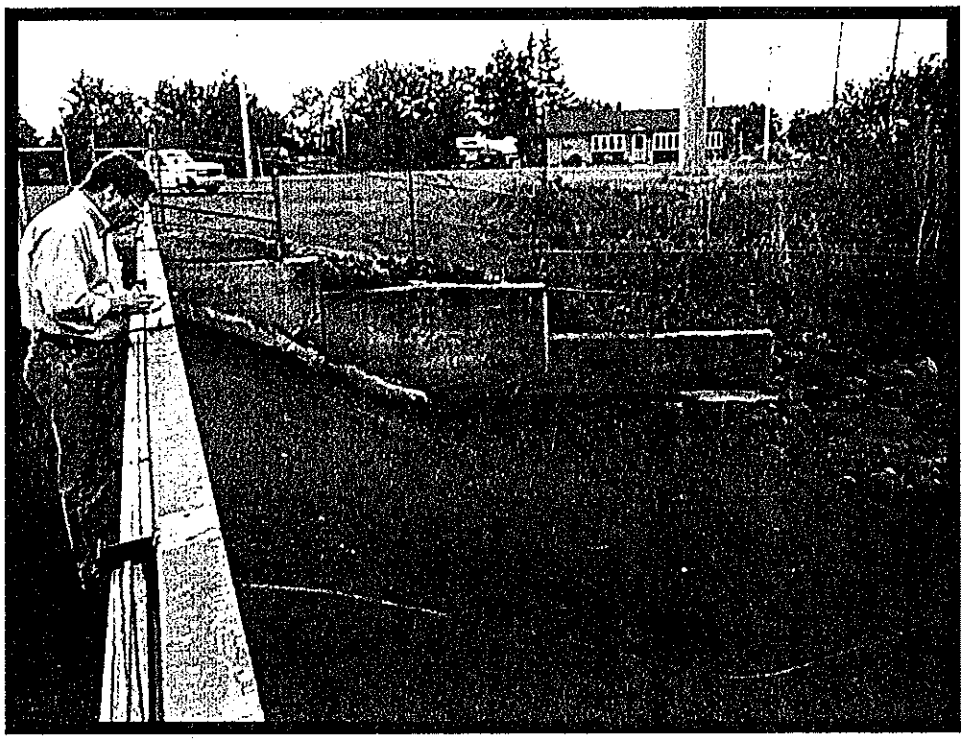


Photograph 1- Project sign, with boat barriers in background.

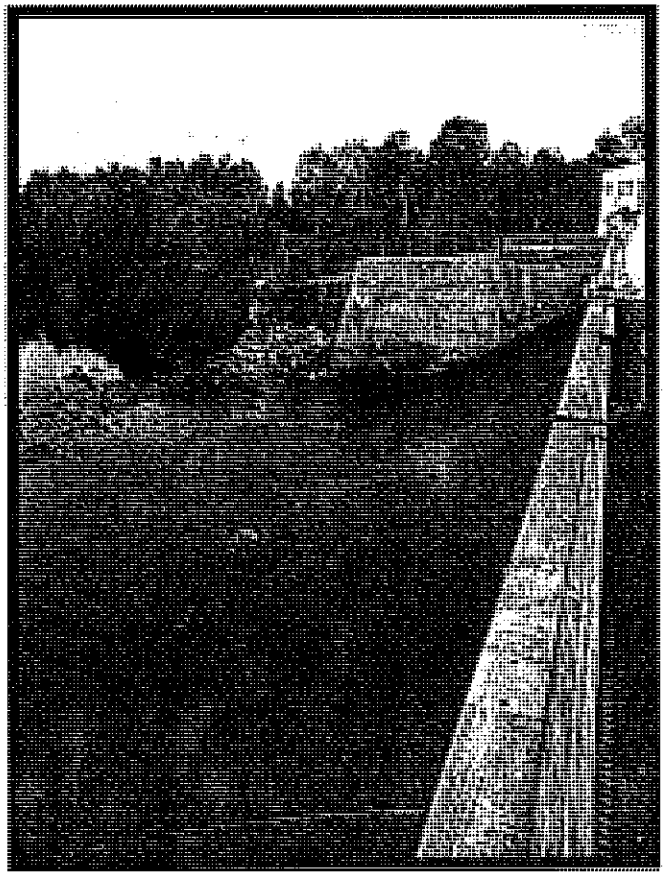


Photograph 2- Piers in good condition.

WDNR Comments

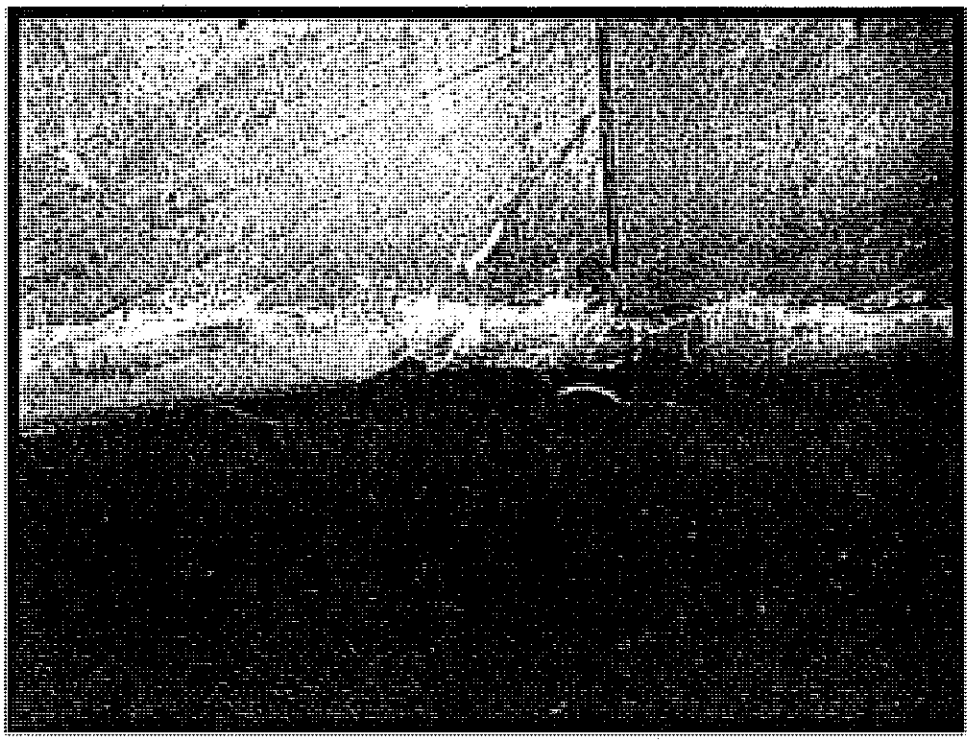


Photograph 3- Spillway and left retaining wall in fair condition, note riprap at end of left retaining wall.



Photograph 4- Leak through spillway surface, minor cracking in right retaining wall.

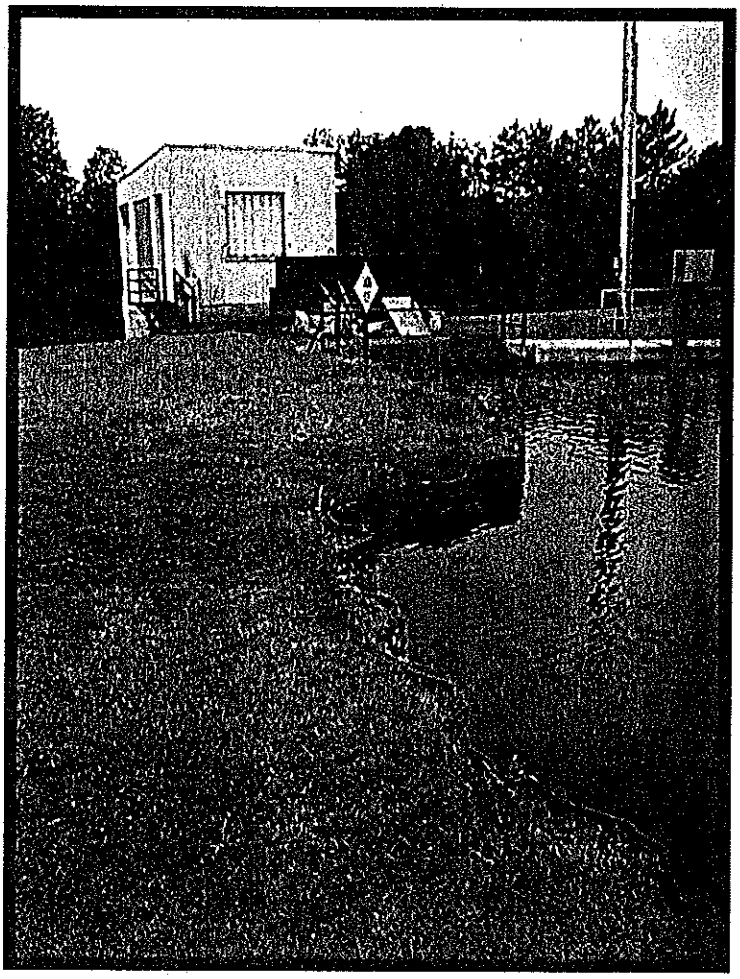
WDNR Comments



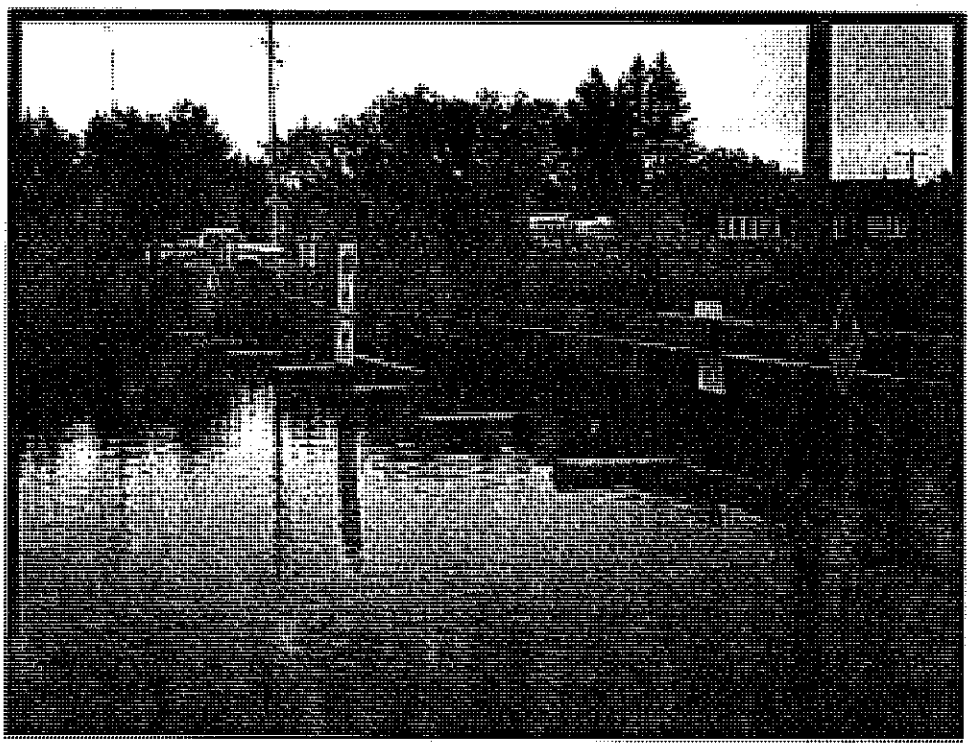
Photograph 5- Leak through spillway surface.

Photograph 6- Downstream area looks stable. WDNR have not installed Sturgeon boulders yet.

WDNR Comments

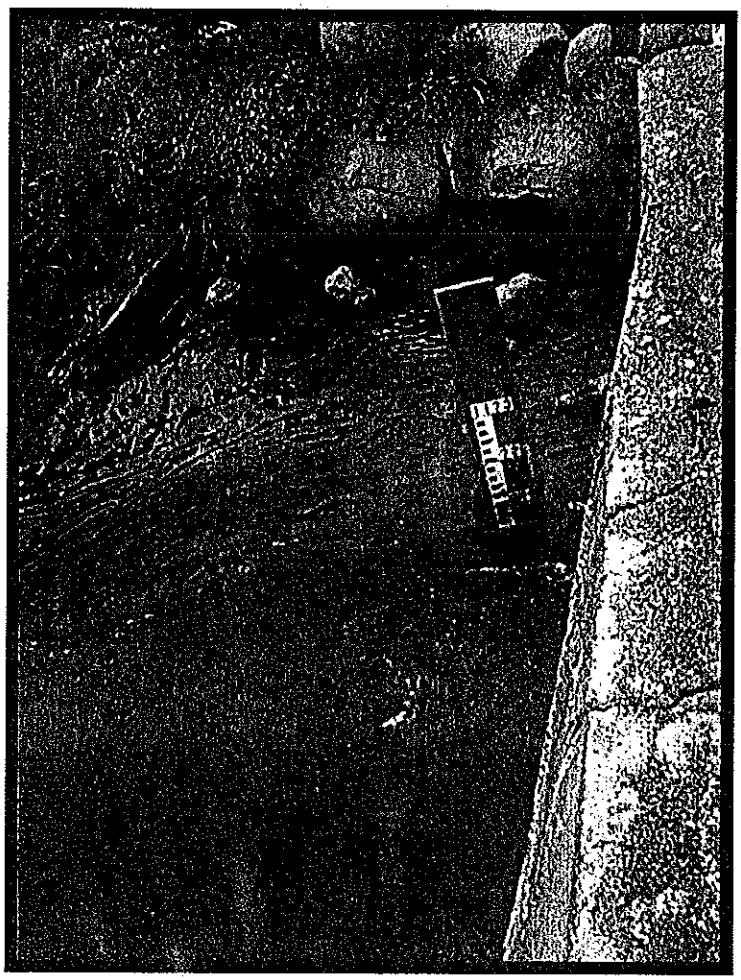


Photograph 7- Intake, left embankment and sheet pile.



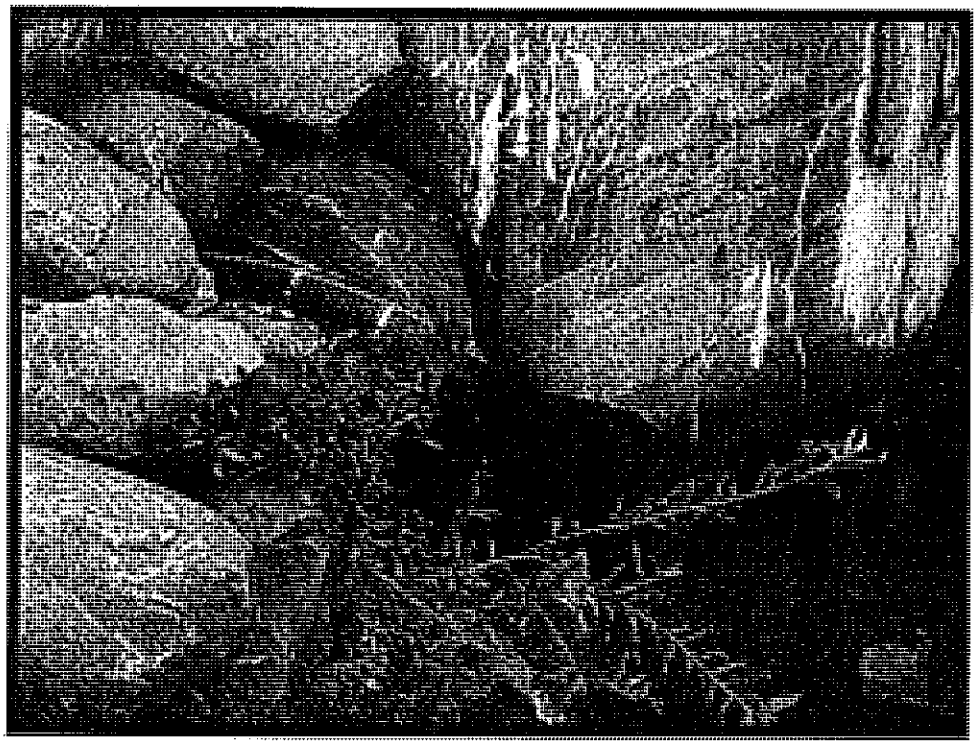
Photograph 8- Warning signs, operator deck and piers in good condition.

WDNR Comments

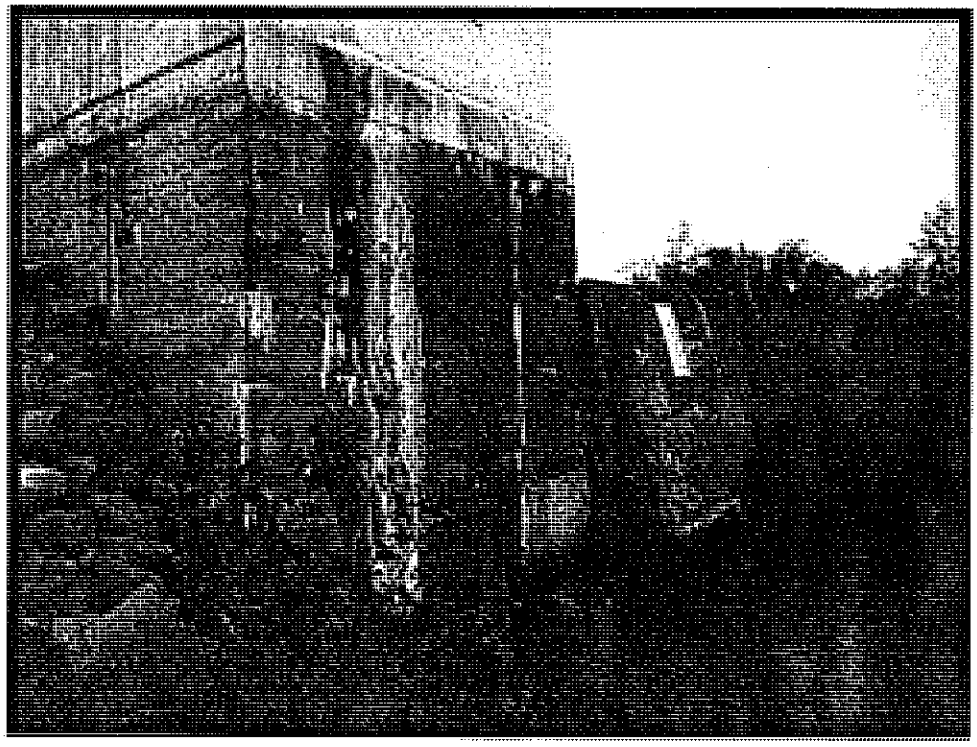


Photograph 9- Tailrace area and downstream staff gage. Note minor cracks in concrete.

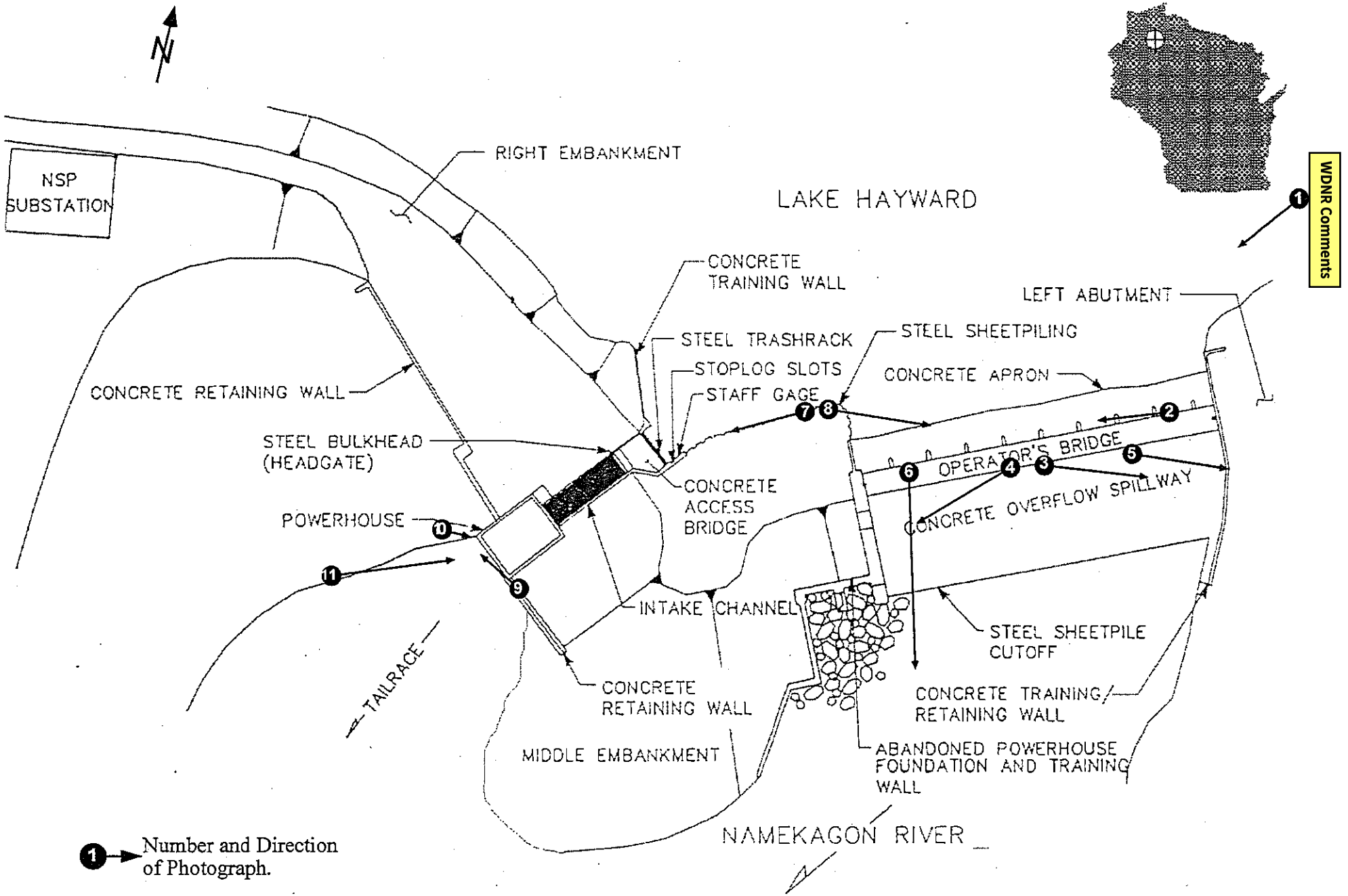
WDNR Comments



Photograph 10- Drain for right embankment flowing at approximately 1 g.p.m.. Note large crack in concrete (also visible in Photograph 11).



Photograph 11- Tailrace area and back of powerhouse. Note faded sign and large crack in concrete.



A-301

Note: Photo 11 was taken from the left bank of the river downstream of the dam.

DATE:	TITLE:	
112296	Hayward - Plan View of Project Structure Construction Inspection	**Exhibit 1** **Project No. 2417** CRO • D2SI • FERC

WDNR Comments

Summary Sheet

Name of Dam Trego Dam File No. 65.12 County Washburn

Location NW ¼ SW ¼ Section 17 T 40 N, R 12 W

Stream Namekagon River Name of Lake Held by Dam Trego Lake

Present Owner Northern States Power Company

Existing Bench Marks

BM 633-A - a bronze tablet marked Railroad Commission of Wisconsin set on the upstream portion of the right wingwall of the dam several feet upstream from the walk over the tainter gates. The elevation of this wingwall is shown on the plans as being 105.0 feet. 6-17-71

BM 633-B - a square cut in top of upper retaining wall at left of tailrace. Benchmark is in center of gateway leading to tailrace. Elevation when referred to benchmark 633-A is 90.06 feet. 6-17-71

BM 633-C - a bronze tablet marked Public Service Commission of Wisconsin set in concrete post, 55.5 feet NW of power pole, 21.8 feet north of 8-inch Jack Pine, 21.4 feet north of 4-inch Jack Pine, 155 feet NW of NW corner of fence around transformers. Elevation = 107.60 feet. 7-16-65

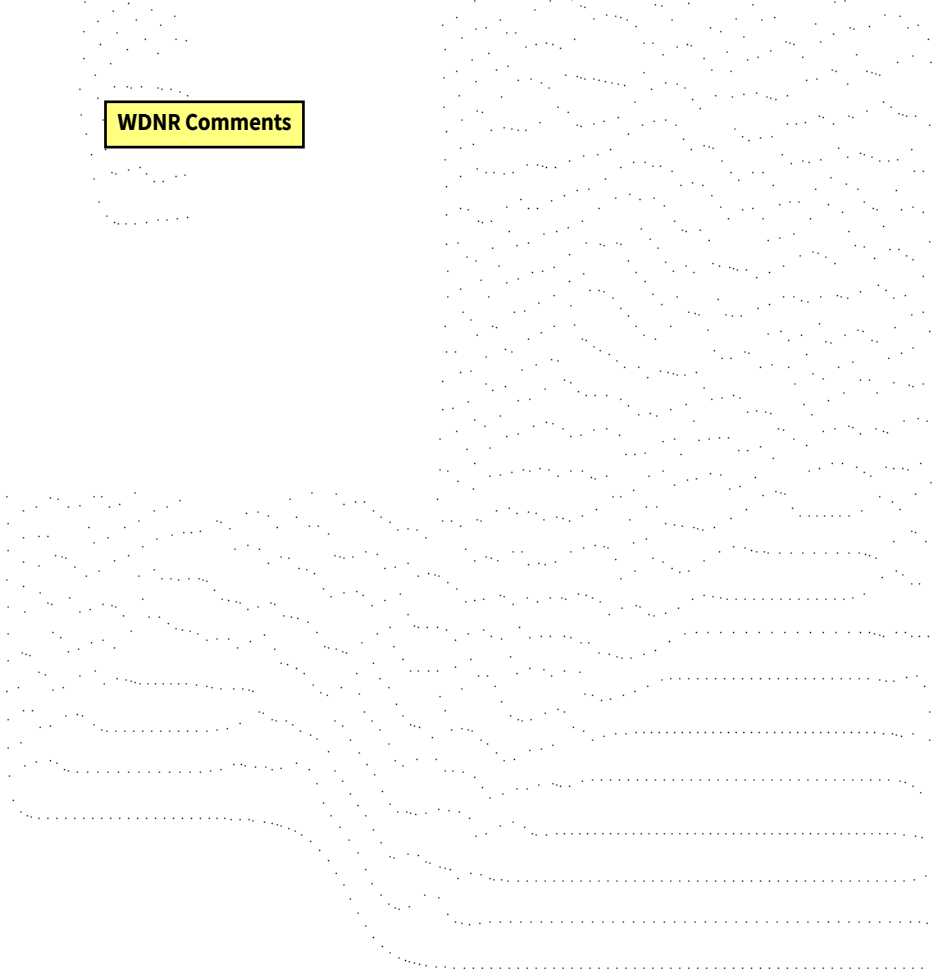
WDNR Comments

WATER LEVEL DATA

Lake or Stream Tiego Dam

Location Sec 17 T40N R12W, Washburn Co.

Date	Taken By	Field Book #	Lake Level Or Gage Reading	Observed High	Remarks
8/17/27	W.A. Muesse	817	92.79	93.79	
7/16/65	W. Murray	974	99.95		Stge - 99.90
9/7/34	W.A. Muesse	inspection form	98.80	99.00	
9/12/36	W.A. Muesse	"	99.14		Stge - 99' 1¾"
10/8/37	"	"	99.02		Stge - 99.05
8/22/45	"	"			Stge - 99' 8"
7/21/49	"	"			Stge - 100.07
8/16/51	"	"			Stge - 100.' ¼"
9/9/53	"	"			Stge - 90.9
7/9/54	"	"			Stge - 100.1
8/25/55	"	"			Stge - 99.7
7/30/57	"	"			Stge - 99.75
11/6/59	W.S.	"			Stge - 99.11
11/24/64	R.J. Knutter	"			Stge - 99-11½
7/16/65	W. Murray	974	99.95		Stge - 99.90
10/30/65	AKB	inspection form			Stge - 99' 10"
10/24/66	R.J. Knutter	"			Stge - 99.9


WDNR Comments

WDNR Comments

Memorandum

One page
65.12

NAMEKAGON DAM
OWNED BY PEOPLES WISCONSIN HYDRO-ELECTRIC CO.

Submitted by G.P. Steinmetz,
May 28, 1927.

On May 21, 1927, the writer made an inspection of the above dam which is now completed. The headwater was being carried at the elevation of the tainter gate sills or approximately a 20' head.

Several of the riparian owners above have refused to settle for the flowage rights and these lands are now in the process of condemnation. After the necessary flowage lands are acquired by the company it will be necessary to clear these lands before the water may be raised to the full head granted by the permit by this commission.

Bench marks were set under authority granted by Chapter 31.02 of the Wisconsin Statutes.

Bench mark 633A is a bronze tablet marked Railroad Commission of Wisconsin set on the upstream portion of the right wing wall of the dam several feet upstream from the walk over the tainter gates. The elevation of this wing wall is shown on the plans as being 105.0'.

The normal headwater elevation granted by the permit is 97.00' and the normal tailwater elevation is shown on the plans as 69.00'. The top of the tainter gates is shown as 101.00'. Top of walk over tainter gates 107.00'.

WDNR Comments

Memorandum — One page

65.12

BENCH MARKS 633A and 633B
TREGO DAM (NAMEKAGON)
OWNED BY PEOPLES WISCONSIN HYDRO-ELECTRIC CORPORATION
(FIELD BOOK 617)

Submitted by W.A. Muegge,
August 17, 1927.

The dam is located on the Namakagon River in Sec. 17, T. 40 N., R. 12 W., in Washburn County, Wisconsin.

The distance to Trego is about 6-1/2 miles on old S.T.H. 11.

Bench marks were set in accordance with authority granted by Chapter 31.02 of the Wisconsin Statutes, and elevations taken at various points of dam on August 17, 1927.

Bench Mark 633A is a bronze tablet marked Railroad Commission, State of Wisconsin, set in top of upstream end of right dam abutment. Elevation when referred to elevation of top of abutment (105.00) is 105.02 feet.

Bench Mark 633B is a square cut in top of upper retaining wall at left of tailrace. Bench mark is in center of gateway leading to tailrace. Elevation when referred to bench mark 633A is 90.06 feet.

The operator, John Whitmer, states that they have been keeping the water at about its present level, that the highest they have had it is a foot above present headwater, which checks with strong highwater mark.

The following elevations are referred to datum of Bench Marks 633A and B.

Points Taken	Elevations
Headwater	92.79
Highwater mark	93.79
Tailwater - full load	69.58
Top of concrete over gates - right end	106.96
" " " " " - left "	107.03
Top of right gate	101.16
" " center "	101.13
" " left "	101.14
Top of concrete over trash racks	100.92

WDNR Comments

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: January 14, 1991

FILE REF:

TO: Bill Clark

FROM: Larry Damman LD

SUBJECT: Trego Fish Survey

I don't have a lot to add or question on the NSP report. The report is what they found. We did do a fall shocker survey which tends to support some of their findings that:

1. There has been a shift in relative abundance among the species since the 1983 survey. Smallmouth and walleye became more abundant while largemouth became less dominant but still significant to the fishery. Relative increases in abundance of perch and crappie and a decline in bluegill may also be true. However, probably not to the extent indicated. They were too early in the year to get a picture of the bluegill population.

2. Some natural walleye recruitment is occurring. We found a few natural walleye young of the year, although its not certain if this represents reproduction from resident fish or immigrants from upstream areas.

The NSP survey does not address the important issue of entrainment and turbine mortality. Because of the short retention time, significant entrainment is a virtual certainty. It appears that the walleye population is most affected since year classes are weak despite excellent upstream spawning conditions and good habitat within the Flowage. I strongly suspect that walleye fry simply drift down from the spawning grounds and right through the Flowage in the first few days of life. There is no way to prevent losses of fry in such a case. Fingerling stocking appears to contribute to the population and may be necessary to sustain a fishable population.

One very interesting observation on stocked musky fingerling resulted from the fall DNR survey. Musky had been stocked one month prior at the town access near the midpoint of the Flowage. Twenty-nine of these fish were recaptured and many more were observed indicating good initial survival. However, all captures and observations were down stream of the stocking point. Future musky and walleye stockings will be made at Trego Park above the Flowage. This should maximize dispersal to suitable habitat before entrainment can occur.

Based on facility design, I suspect turbine mortality may be low and NSP's tailwater survey at least suggests that entrained fish contribute to downstream fishery. However, we have no hard data here to address entrainment or turbine mortality so additional studies on site or at comparable sites are likely to be required.

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters
Washburn	Trego MWBC: 2712000
Sampling Objective	**Number and Locations of Stations (Habitat)**
Baseline Monitoring	Source
Period Fished (Dates)	Miles Actually Shocked = 4.0 LM
10/07/03	Acres = 451 LM
	Total Miles of Shoreline = 16.9 LM
	Total Miles of Shockable Shoreline = 16.9 LM

GEAR

Boomshocker (Hours)	Time
1.9	√ Night Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts)	Characteristics
Boomshocker(s): 1 Mini-boomshocker(s):	Walleye Recruitment Code: C-ST
Dip Netter(s): 2 Dip Netter(s):	

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	7	None	5.6 - 7.6	3.68 / hour	1.75 / mile
Serns Index NA YOY / acre					
Walleye (Age 1+)	7	None	9.2 - 10.9	3.68 / hour	1.75 / mile
Walleye (Other)	19	12.0-12.4	11.7 - 19.4	10.00 / hour	4.75 / mile
Smallmouth Bass	38	3.5-3.9, 16.5-16.9	3.0 - 19.4	20.00 / hour	9.50 / mile
Largemouth Bass	9	None	3.5 - 13.9	4.74 / hour	2.25 / mile
Muskellunge	1	None	16.5 - 16.9	0.53 / hour	0.25 / mile
Northern Pike	33	9.0-9.4	7.5 - 22.4	17.37 / hour	8.25 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range
Bluegill	Common	1.0-7.5	River Redhorse	Present	12.2-23.9
Pumpkinseed	Present	5.4	Shorthead Redhorse	Present	7.2-12.6
Black Crappie	Present	2.4-9.5	Silver Redhorse	Present	13.6-22.1
Yellow Perch	Present	7.9-9.0	Golden Shiner	Present	
Rock Bass	Present	3.6-7.1	Common Shiner	Present	
White Sucker	Present	12.2	Spottail Shiner	Present	
Golden Redhorse	Common	7.3-18.5	Chestnut Lamprey	Present	8.3

1) Tank Mortality: None 2) Weather: Clear, calm 3) Reliabilty: Medium

4) Stocking: 22,548 Walleye, 1.6 inches, 06/26/03, DNR 1150 Lake Sturgeon, 3.2 inches, 08/05/03, DNR 133 Lake Sturgeon, 10.9, 08/05/03, DNR
760 Lake Sturgeon, 6.5 inches, 09/30/03, DNR

5) Comments:

Rev. 10-70

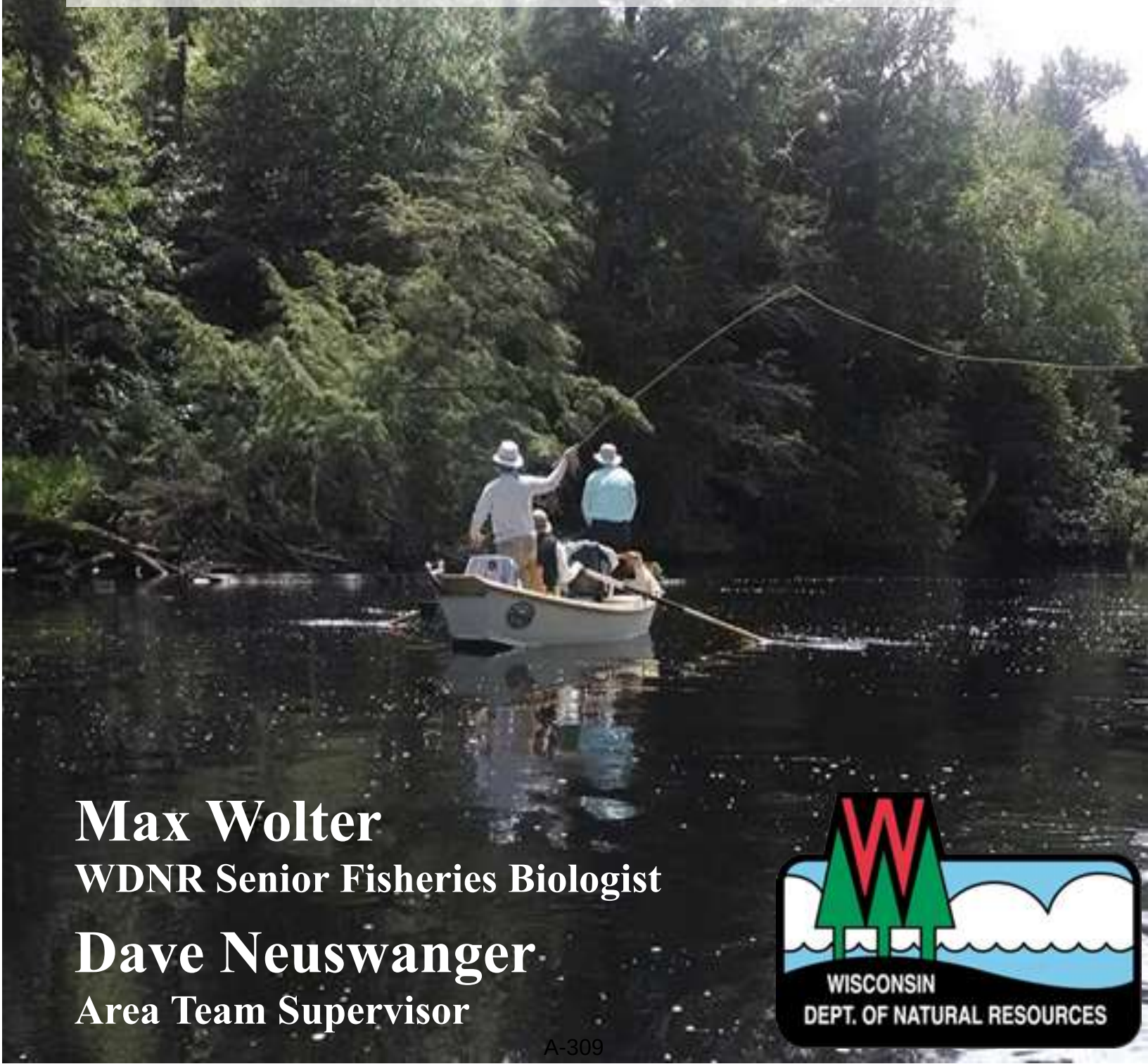
Signed (Compiler) Scott D. Plaster Date 12/04/03

WDNR Comments

Smallmouth Bass and Muskellunge Fisheries in Northwestern Wisconsin Rivers:

A Guide to the Future Project

5-year report



Max Wolter
WDNR Senior Fisheries Biologist

Dave Neuswanger
Area Team Supervisor

WISCONSIN DEPT. OF NATURAL RESOURCES

WDNR Comments

Foreword and Acknowledgments

The "Guide to the Future" project was initiated in 2012 to meet a data collection need for sportfish populations in some of the most popular rivers in northwest Wisconsin. Five years of partnership between the Wisconsin DNR and the Hayward Fly Fishing Company has generated 1,487 records of guided angler trips. The data from these guided trips has allowed for comparisons of catch rate for smallmouth bass, muskellunge, and other species among rivers, times of year, different river conditions, and more. Collection of this large volume of data would not be possible without the excellent participation of each of the individual guides working for the Hayward Fly Fishing Company including Wendy Williamson, Larry Mann, Stu Neville, Erik Huber, Brett Nelson, and Cory Andraschko. Rarely does science get to be as fun as this project has been. Max Wolter



Table of Contents

WDNR Comments

Summary of Major Findings

- Angler skill accounts for a significant amount of variation in catch rates for both smallmouth bass and muskellunge. Accounting for skill with a correction factor allows for more meaningful comparisons of catch rate, particularly when sample size is limiting.
- Smallmouth bass catch rate (relative abundance) and size structure varied among rivers. Rivers with high catch rate demonstrated smaller size of fish caught, and vice versa.
- Muskellunge catch rate varied among rivers, but size differences among rivers were generally less pronounced. The Namekagon River emerged as a better river for catching larger muskellunge (>40”) than the Chippewa or Flambeau.
- Catch rates for smallmouth bass and muskellunge appeared relatively stable from one year to the next. Smallmouth catch rates were positively related to water temperature and were highest during peak summer (July). Muskellunge catch rates appeared higher in early summer and fall compared to mid-summer, though the relationship was not statistically significant.
- Spatial trends in catch rates for both species within rivers did not demonstrate consistent increases or decreases from upstream to downstream reaches.
- The amount of discharge on a river (cubic feet per second) generally had a negative impact on both smallmouth bass and muskellunge catch rates, though the relationship was typically not statistically significant.
- Catch rates for smallmouth bass were significantly higher under flat water conditions compared to rising water. There was an indication of a similar trend for muskellunge but it was not statistically significant.
- Northern pike catch rates were significantly higher on the Namekagon compared to the Flambeau with the Chippewa being intermediate. Incidental catch of other species like walleye and largemouth bass were rare.

WDNR Comments

Project Objectives and General Methods

Due to a variety of factors including current, water clarity, structural complexity, and access, river fish populations are often not easily (or representatively) sampled by traditional fisheries methods such as netting or electrofishing. On an experimental and voluntary basis from 2012 to 2016, the Wisconsin Department of Natural Resources (WDNR) enlisted a group of river fishing guides who completed hundreds of fishing trips on these rivers annually with their clients while targeting smallmouth bass and muskellunge using fly fishing gear. Records of the effort and catch from these fishing trips can provide important information on relative abundance and size structure of river populations of smallmouth bass and muskellunge in a manner that is efficient to the monitoring agency (WDNR) and informative to the guides, their clients, and other anglers.

WDNR personnel and guides met and developed the following protocol for data collection. For each trip, the guide recorded the catch for each client (typically two people) separately. There was no set schedule or locations that guides were asked to follow with their fishing activities. However, as a result of the use of logical access points, fishing trips were assigned to "reaches" within each river with set start and end points. Each captured fish was recorded on a labeled 12-key mechanical counter corresponding to the angler that caught the fish. Four sizes categories of smallmouth bass (7-11, 11-14, 14-17, and >17 inches) and muskellunge (20-30, 30-40, 40-50, and >50 inches) were recorded. Guides also recorded catches, but not sizes, of northern pike, walleye, and largemouth bass. "Encounters" with muskellunge were recorded whenever a fish followed but did not strike, struck and missed, or was lost after hooking but before landing.

Each guide recorded daily water temperature (degrees F), which was measured in a shaded portion of the river near noon. Guides also recorded "mitigating conditions" (inclement weather, challenging water level, off-color water, etc.) that they judged may have negatively impacted fishing success. Data on river discharge (cubic feet per second) was obtained for each day from nearby USGS or hydropower dam gauges. Short-term variation in discharge was calculated and expressed as the most recent 3-day change in discharge (noon discharge three days prior minus noon discharge on day of fishing). Based on this calculation, river conditions on each day of fishing were classified as either falling (≥15% *decrease* in discharge over 3-day period), stable (<15% change in discharge over 3 day period), or rising (≥15% *increase* in discharge over 3-day period).

Data were entered into an Excel database and analyzed using R software. Trips when guides noted "mitigating conditions", as described above, were excluded from all analyses unless specified otherwise. Similarly, only trips where at least four hours of targeted effort for a species were used for analyses of that species. A non-parametric Kruskal-Wallis test was used to make statistical comparisons of catch rates across classes of data (i.e. different rivers, months) because of non-normal shape of the catch rate data. When significant differences were found between classes, multiple comparison analysis was made using a Dunn Test with a Holm modification of the Bonferroni adjustment. Comparisons between catch rate and river discharge or temperature were made using standard linear regression. Results of statistical tests were considered significant at P values less than 0.05.

WDNR Comments

Study Area

There was no set schedule or locations that guides were asked to follow with their fishing activities. However, as a result of the use of logical access points, fishing trips were assigned to "reaches" within each river with set start and end points. In this report these are labeled with the river name (or abbreviation) and a number corresponding to the relative downstream location of the reach within that river (e.g., Chippewa 4 is downstream from Chippewa 3). To protect the proprietary information of these guides, the specific start and end points of each reach are not presented in this report. Individual reaches were rarely fished on sequential days. Three rivers were primarily fish by the guides– the Flambeau (Figure 1, Price and Sawyer counties), Chippewa (Sawyer and Rusk counties), and Namekagon (Sawyer, Washburn, and Burnett counties). However, data was also collected on the West Fork of the Chippewa River (Sawyer County) and the St. Croix River (Burnett County). Because of smaller sample size, these two rivers are not included in all analyses.

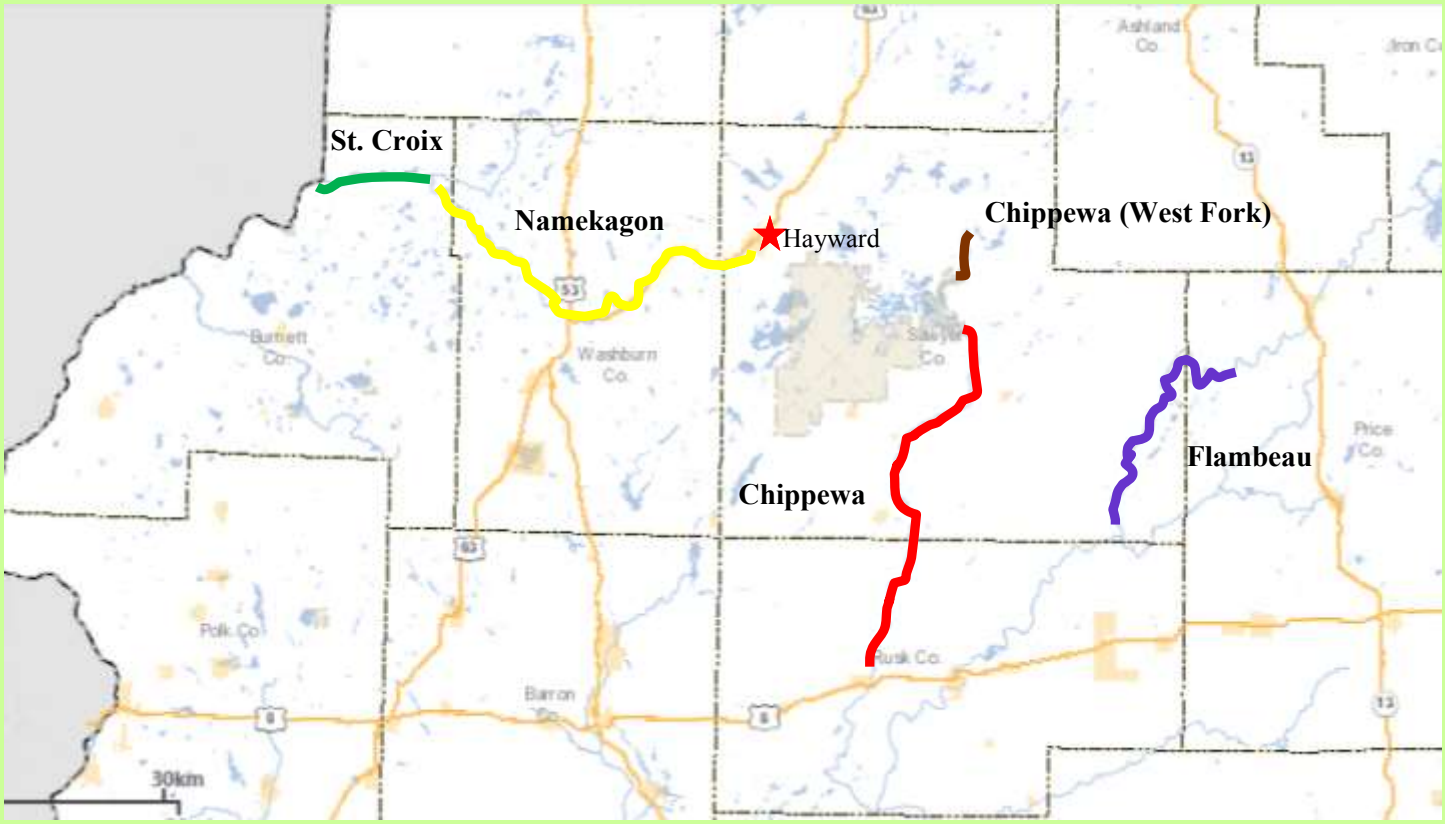


Figure 1. The sections of rivers fished by guides in the "Guide to the Future" fisheries data collection program. Each river is broken into multiple reaches that are fished for single-day float trips. Hayward, the home base for the guides, is denoted with a star.

WDNR Comments

Description of Angling Effort and Skill

Fishing effort for guides varied considerably among rivers, with the Namekagon River receiving the most total trips and hours of targeted effort for each species (Table 1). Most guided trips took place between June and October. October had the most overall trips (353) followed by July (278) and August (224). Trips in the summer (May-August) were more likely to target smallmouth bass while trips in the fall (September-November) are more likely to target muskellunge.

Table 1. Total number of angler trips and hours spent targeting muskellunge (musky) and smallmouth bass between 2012 and 2016 as a part of the Guide to the Future project.

River	Total trips	Hours targeting musky	Hours targeting smallmouth bass
Chippewa	315	1,035	1,194
Chippewa (West Fork)	70	161	295
Flambeau	155	677	493
Namekagon	851	2,086	3,987
St. Croix	94	481	189

It was known at the onset of this project that anglers fishing with guides would have wide variation in their skill, which would likely affect catch rate data. To account for this, we asked guides to discreetly assign a skill level rating to each client. Assignment of a skill level rating was done early in the trip and was based on casting ability and prior experience so rating would not be influenced by the day's catch. The three rating categories were inexperienced/beginner, average, or expert.

As expected, catch rates for both muskellunge and smallmouth (Figure 2) differed by angler skill level. To prevent this known source of variation from influencing other comparisons, we developed a correction factor to standardize catch rates. Multipliers were applied to catch rates in each skill level (Table 2).

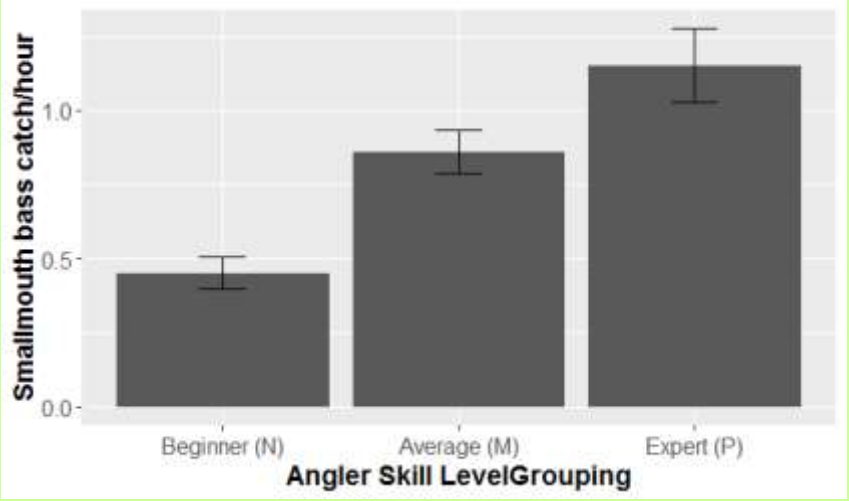


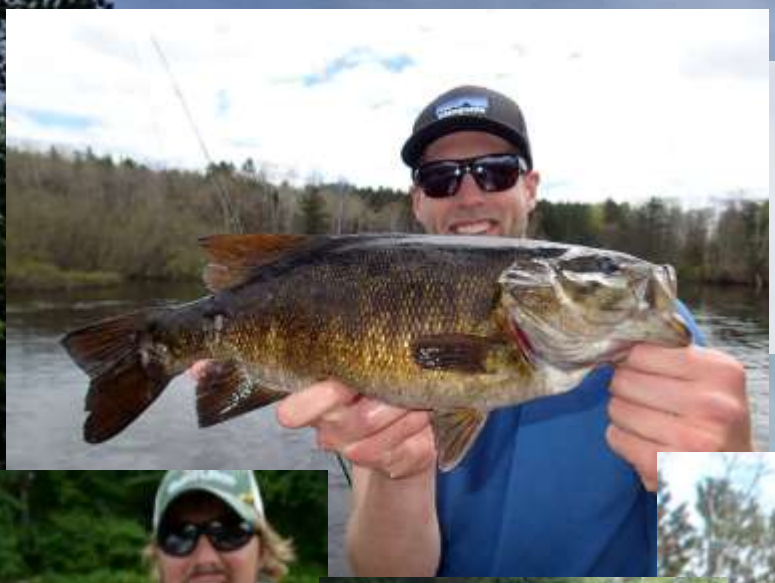
Figure 2. Catch rates (number of fish per hour of targeted angling effort) for smallmouth bass by anglers of different skill levels, shown with no correction factor applied. Error bars represent 95% confidence intervals. Skill levels were assigned by guides to account for the expected variation in catch due to individual anglers' fishing experience. Differences between the three skill levels were used to develop a correction factor to account for this variation when making other comparisons (i.e. catch rate among rivers).

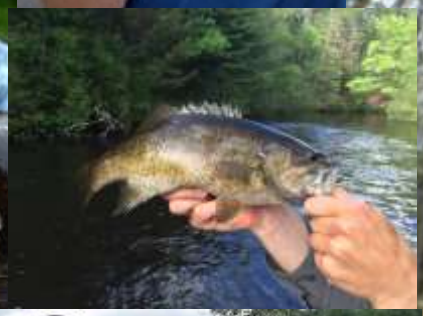
Table 2. Correction factors applied to smallmouth bass and muskellunge catch rates.

	Beginner	Average	Expert
Smallmouth Bass	2.0	1.0	0.75
Muskellunge	1.5	1.0	0.5

WDNR Comments

SMALLMOUTH BASS ABUNDANCE AND SIZE





WDNR Comments

Smallmouth Bass Relative Abundance and Size

Smallmouth bass are well-suited for life in shallow rocky riverine habitats and as a result they are one of the most abundant sportfish in many northern Wisconsin rivers. Smallmouth bass are a popular target for anglers fishing either from shore or on float trips, yet little is known about the relative abundance of smallmouth in one river compared to the next or how size distribution compares among rivers. Data collected by guides demonstrated significantly different catch rates for smallmouth bass among five northwestern Wisconsin Rivers (Figure 3). Differences in catch rate are assumed to reflect differences in abundance.

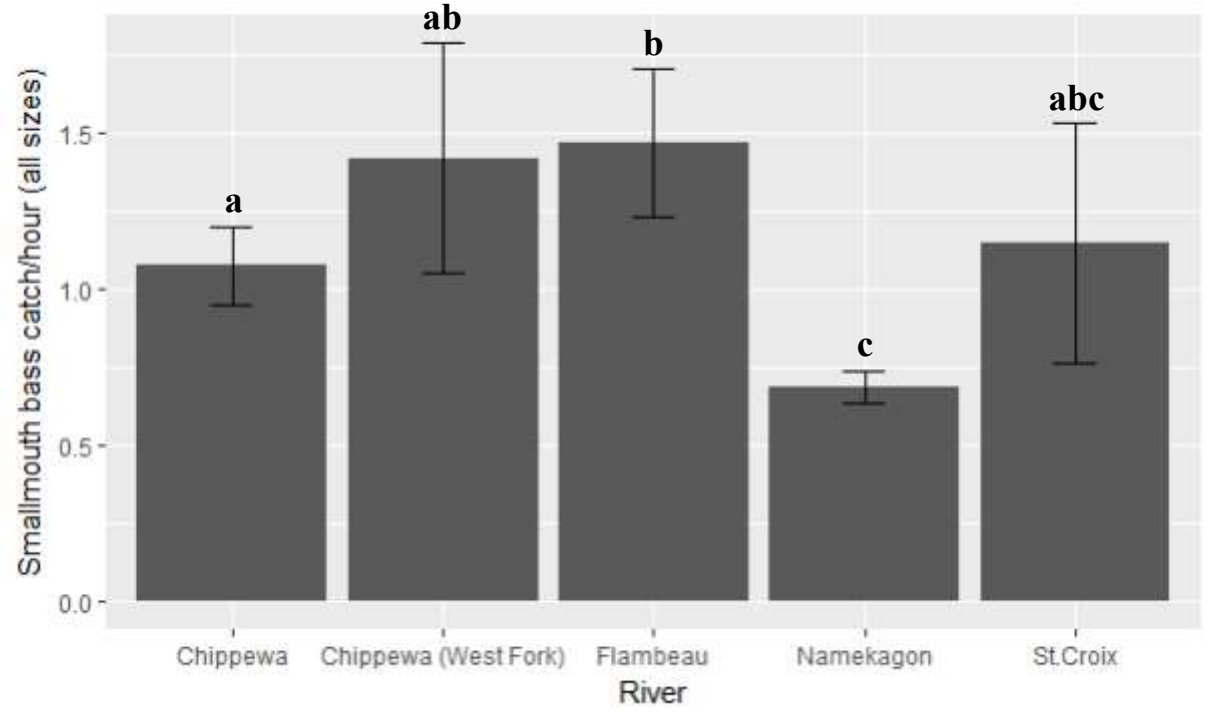


Figure 3. Skill level corrected catch rates (number of fish per hour of targeted angling effort) for smallmouth bass by river from 2012-2016. Error bars represent 95% confidence intervals. Statistically different groupings are denoted with letters.

Variation in overall catch rate of smallmouth bass among rivers is driven by variation within specific size classes. Comparing just the three rivers with the largest volume of data, the catch rates for smaller smallmouth bass was significantly higher on the Flambeau River than on the Chippewa or Namekagon (Table 3). However, catch rate for larger smallmouth bass (>17 inches) was significantly higher on the Namekagon River than the Chippewa or Flambeau. These three rivers offer differing fishing experiences. The Flambeau would be considered more of an action destination, with high overall catch rates but smaller fish, while the Namekagon is clearly more of a trophy opportunity with lower catch rates but higher catch of large smallmouth.

Table 3. Skill level corrected catch rates (number of fish per hour of targeted angling effort) of smallmouth bass by size class for three northwestern Wisconsin Rivers from 2012-2016. Statistically different groupings are denoted with letters.

Size Class	Chippewa	Flambeau	Namekagon
7-11 inches	0.38 (±0.07)[b]	0.70 (±0.16)[a]	0.10 (±0.02)[c]
11-14 inches	0.39 (±0.06)[a]	0.44 (±0.09)[a]	0.20 (0.02)[b]
14-17 inches	0.24 (±0.05)	0.30 (±0.08)	0.27 (±0.03)
>17 inches	0.07 (±0.02)[b]	0.03 (±0.02)[b]	0.11 (±0.02)[a]
All sizes	1.07 (±0.12)[b]	1.47 (±0.24)[a]	0.69 (±0.05)[c]

WDNR Comments

Smallmouth Bass Size Structure

Based on reported data from guides, size structure of smallmouth bass varied considerably among rivers. Catch in the Flambeau River was dominated by smaller bass, while catch in the Namekagon was predominantly larger fish, the Chippewa River catch was intermediate with the three smaller size classes represented fairly evenly in the catch (Figure 4). In the Flambeau, only 22% of smallmouth caught were over 14 inches, while on the Chippewa 33% were over 14 inches, and on the Namekagon 56% were over 14 inches. Interestingly, all three rivers have the same fishing regulations. It is not clear why the apparent difference in size structure among rivers exists. It appears, based on catch rate, that density of smallmouth bass is higher in the Flambeau River which may lead to slower, density-dependent growth. It is possible that prey availability differs among these three rivers independent of smallmouth bass density. Mortality may also play a role in structuring these smallmouth bass populations. If mortality of adult smallmouth bass is higher on one river compared to another it may result in differing size structure. Mortality could be due to environmental conditions, including overwintering habitat, or angler harvest, though harvest is believed to be minimal on all three rivers. A growth rate and age structure analysis would be beneficial to better understanding dynamics of these populations.

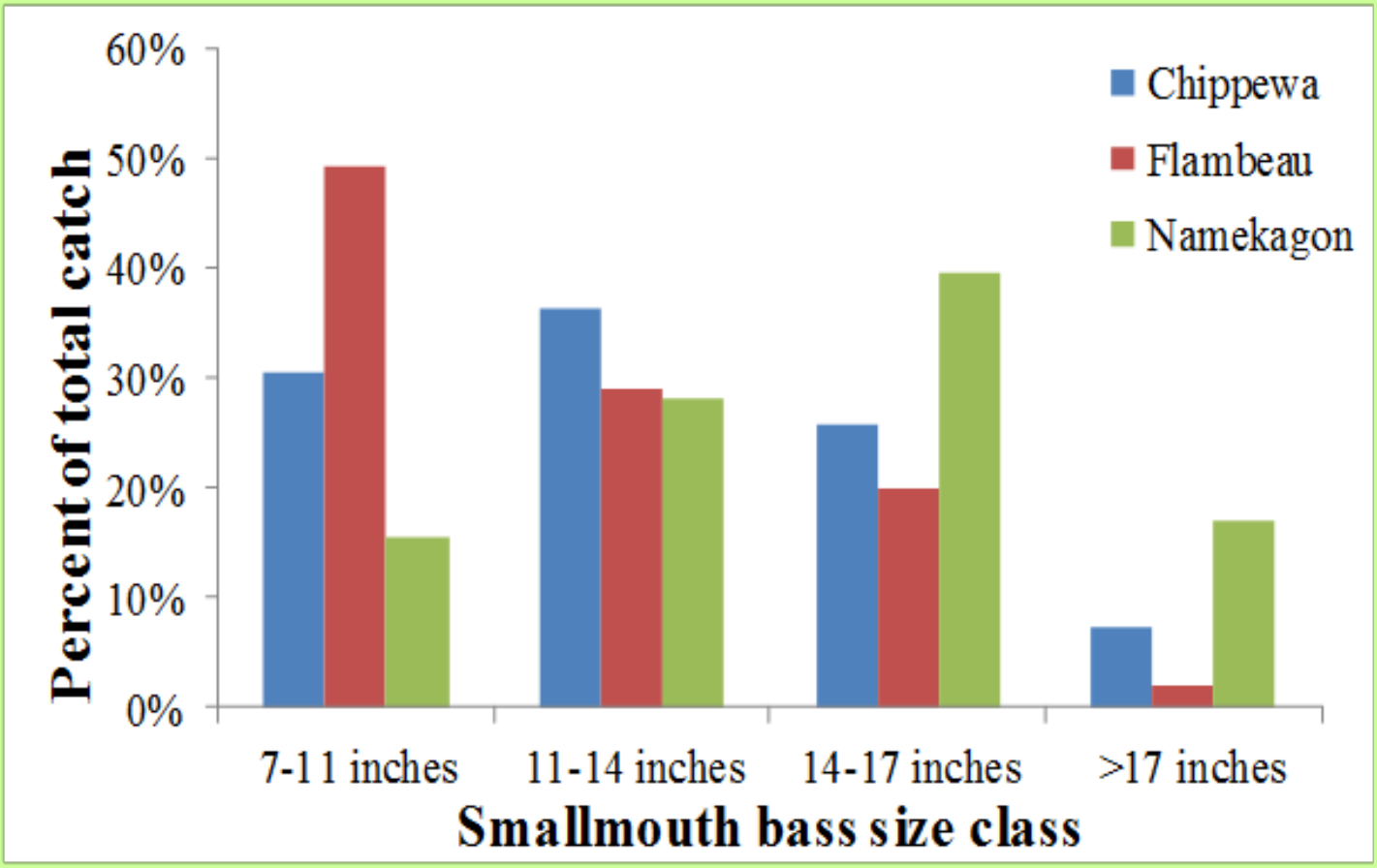


Figure 4. Smallmouth bass catch by size category for three rivers in northwestern Wisconsin fished by guides and their clients from 2012-2016.

WDNR Comments

MUSKELLUNGE ABUNDANCE AND SIZE

Muskellunge Relative Abundance and Size

Interpreting muskellunge catch rate data was made more difficult by the high degree of variation that inevitably exists when dealing with a species that occurs in low abundance and is challenging to catch. However, five seasons of data collection have provided enough data to start making statistical comparisons of muskellunge catch. Data collected by guides demonstrated significantly different catch rates for muskellunge among five northwestern Wisconsin Rivers (Figure 5). Differences in catch rate are assumed to reflect differences in abundance.

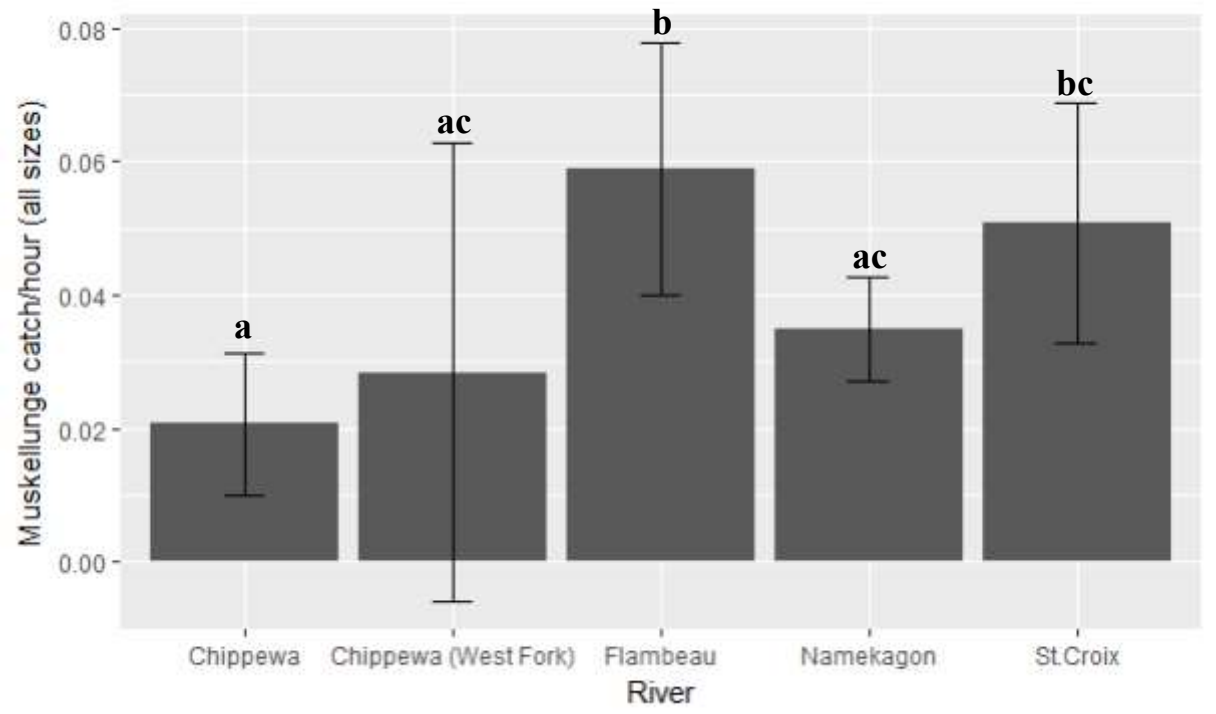


Figure 5. Skill level corrected catch rates (number of fish per hour of targeted angling effort) for muskellunge by river from 2012-2016. Error bars represent 95% confidence intervals. Statistically different groupings are denoted with letters.

Variation in overall catch rate of muskellunge among rivers was driven by variation within specific size classes. Comparing just the three rivers with the largest volume of data, the catch rates for smaller muskellunge (20-30 inches and 30-40 inches) were significantly higher on the Flambeau River than on the Chippewa or Namekagon (Table 4). However, catch rate for larger muskellunge (>40 inches) was significantly higher on the Namekagon River than the Chippewa or Flambeau. Catching a musky is rare under any circumstances, but the average catch rate of muskellunge by guided anglers as a part of this project (17.1 hours of fishing per musky) compare favorably to catch rates for anglers on lakes (~33 hours of angling per musky).

Table 4. Skill level corrected catch rates (number of fish per hour of targeted angling effort) of muskellunge by size class for three northwestern Wisconsin Rivers from 2012-2016. Statistically different groupings are denoted with letters.

Size Class	Chippewa	Flambeau	Namekagon
20-30 inches	0.008 (±0.006)^{b}	0.033 (±0.017)^{a}	0.013 (±0.005)^{b}
30-40 inches	0.011 (±0.008)^{b}	0.024 (±0.011)^{a}	0.013 (±0.005)^{b}
40-50 inches	0.002 (±0.003)^{b}	0.003 (±0.003)^{ab}	0.009 (±0.004)^{a}
>50 inches	0.000	0.000	0.001 (±0.001)
All sizes	0.021 (±0.011)^{b}	0.059 (±0.019)^{a}	0.035 (±0.008)^{b}

WDNR Comments

Muskellunge Size Structure

Based on reported data from guides, size structure of muskellunge varied slightly among rivers. Catch in all three rives is dominated by fish in the 20-40 inch range (Figure 6). The Namekagon River has demonstrated the best size potential evidenced by a larger percentage of the catch being over 40 inches and producing the only 50 inch muskellunge recorded by guides and their clients during the span of this project.

The relative infrequency of muskellunge over 40 inches being caught by guided anglers on these rivers is of interest. Many of the rivers fished as a part of this project are connected to impoundments which generally have larger fish than what was being caught in the rivers. The discrepancy in size structure between impoundments and rivers may be due to gear selectivity where fly fishing disproportionately targets the smaller sized muskellunge. But it may also be a result of habitat selection by larger fish, slower growth of fish inhabiting rivers, higher mortality of adult muskellunge in rivers, or other factors. More exploration into these trends is warranted.

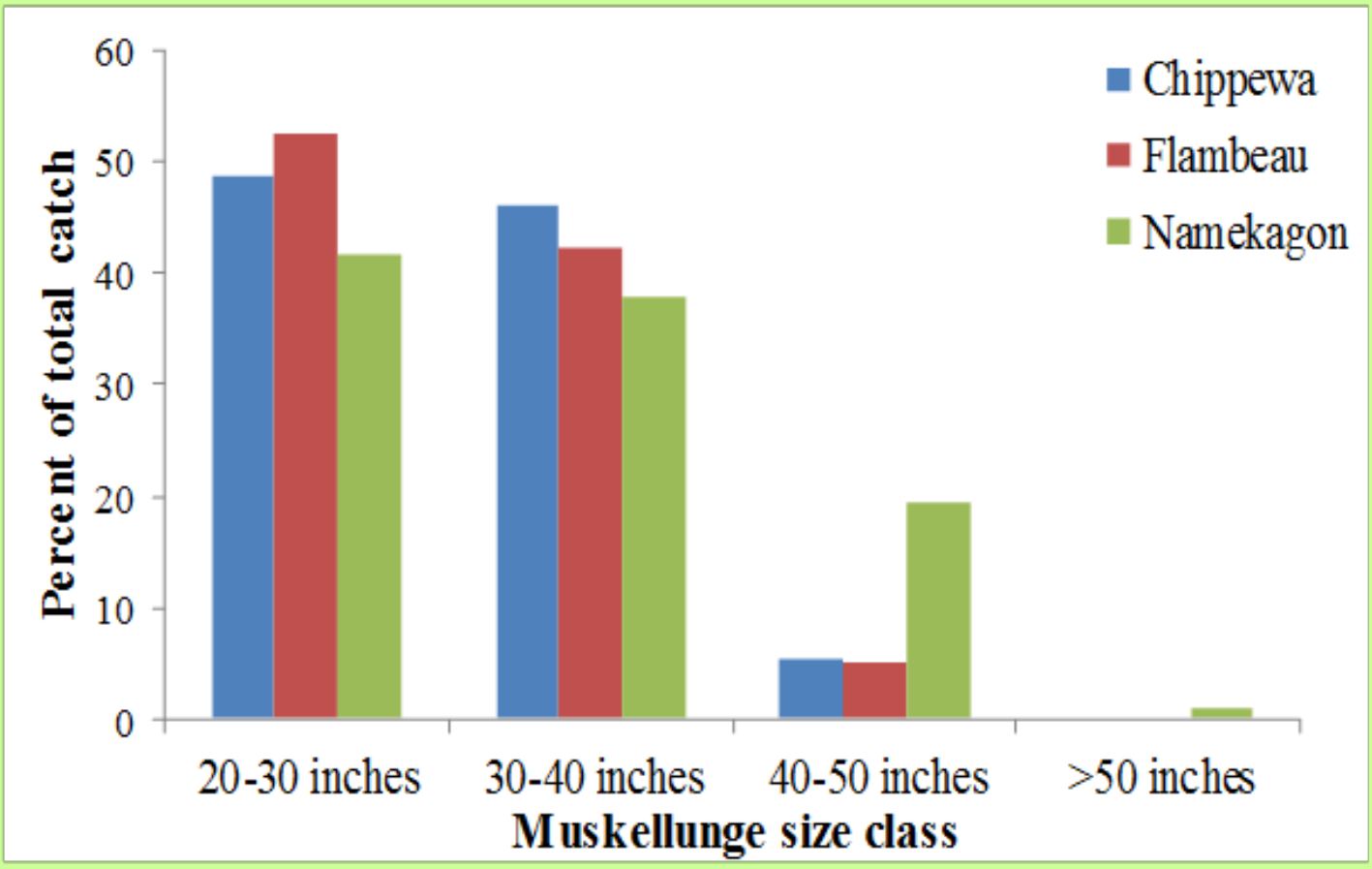


Figure 6. Muskellunge catch by size category for three rivers in northwestern Wisconsin fished by guides and their clients from 2012-2016.

WDNR Comments

TEMPORAL TRENDS IN CATCH RATES

WDNR Comments

Catch By Year

Clear trends in catch rate by year within individual rivers were not always evident for either species. Catch rate for smallmouth bass on the Namekagon has been remarkably consistent across time. Catch rate for smallmouth bass on the Flambeau River demonstrated the greatest oscillation (Figure 7). Year-to-year data for muskellunge catch rate on the St. Croix and West Fork Chippewa rivers was limiting and therefor those rivers were excluded from that analysis. Other rivers demonstrated relatively consistent catch rates for muskellunge, with some evidence of declining catch rate for the Chippewa River. Once again, catch rate data for muskellunge was marked by a high degree of variability.

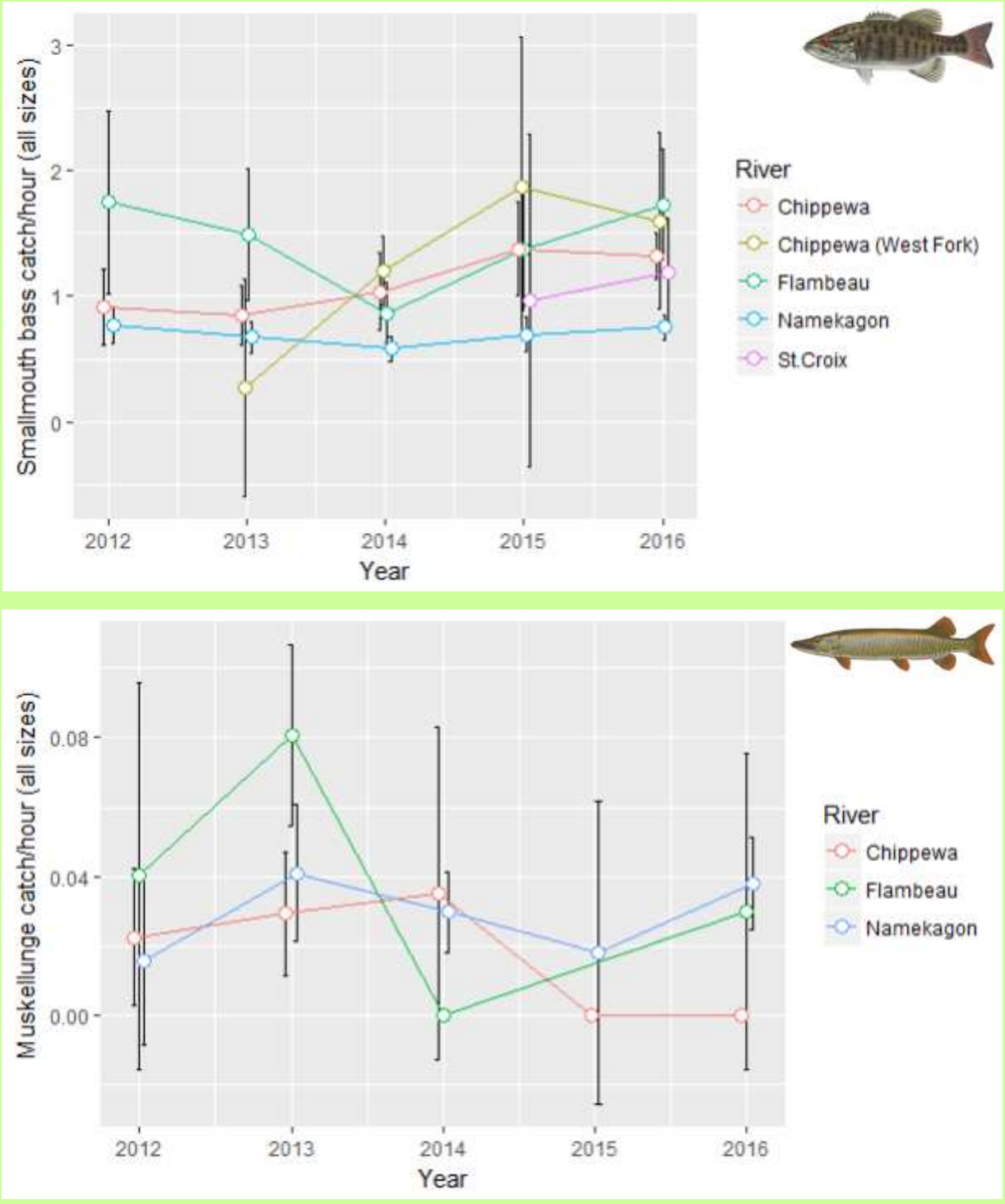


Figure 7. Smallmouth bass (top panel) and muskellunge (bottom panel) skill level corrected catch rates in three rivers in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals.

WDNR Comments

Catch By Month

Catch rates by month showed interesting patterns for both smallmouth bass and muskellunge, though differences were not always statistically significant. For smallmouth, catch rate was higher in July than in the cooler months of June and September (Figure 8). Guides have anecdotally reported poor success targeting smallmouth in these rivers after September, and as a result very little smallmouth bass data exists for those months. Catch rates for muskellunge showed an inverse pattern to smallmouth, with generally higher catch in cooler months (early summer and fall), though there were not statistically significant differences among months. It should be noted that muskellunge catch data from summer months is more limited since guides are typically targeting smallmouth bass at that time. Trips targeting muskellunge in December have been rare, but successful.

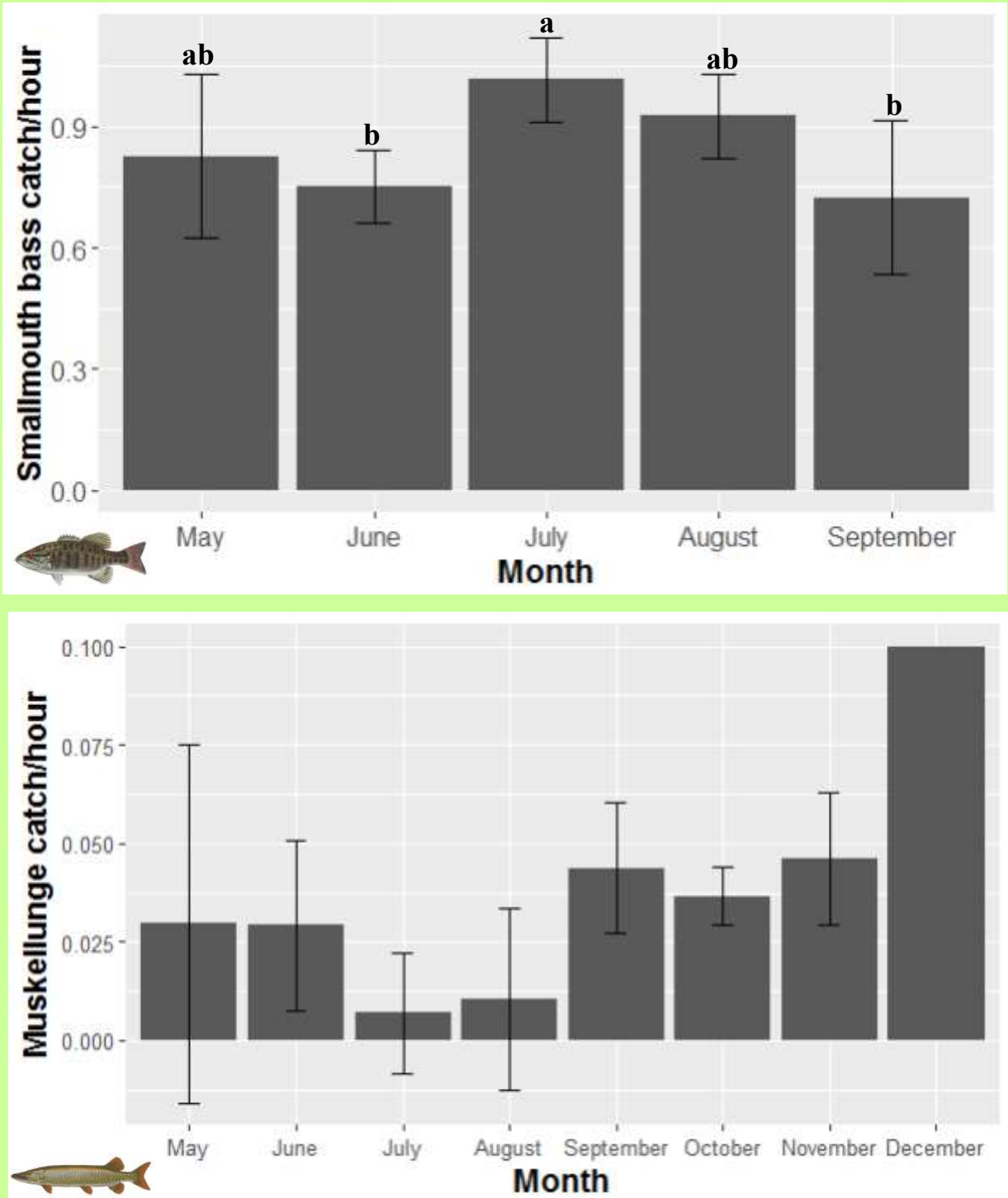
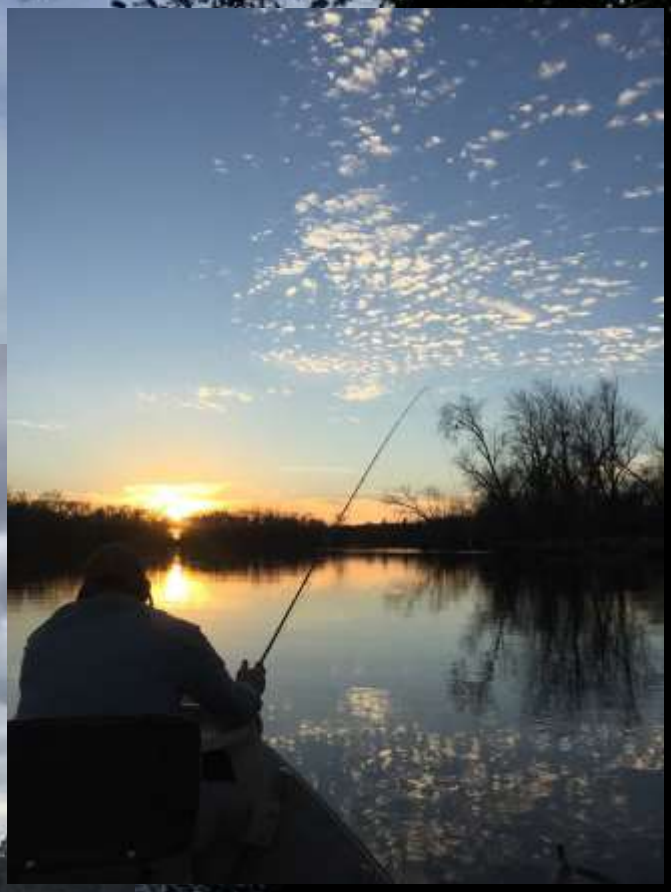


Figure 8. Smallmouth bass (top panel) and muskellunge (bottom panel) skill level corrected catch rates by month in three rivers in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals. Letters represent statistically significant groupings.

WDNR Comments

SPATIAL TRENDS IN CATCH RATES



WDNR Comments

Smallmouth Bass Catch By River Reach

Smallmouth bass catch rate across different reaches within the same river did not reveal many consistent patterns (Figure 9). For example, there was no evidence that smallmouth bass catch rate consistently increased or decreased from upstream reaches to downstream reaches. Catch rates on the Chippewa River were significantly lower at Chip3 compared to Chip1 and Chip5, but no other trends were present. Catch rates on the Flambeau and Namekagon were statistically similar across all reaches. Given that few differences in catch rate were observed, one can conclude that smallmouth bass fishing quality is generally similar along the entire stretch of each river fished by guides as a part of this project. It also indicates that there are few major habitat issues (dams, impaired discharge, etc.) that limit smallmouth bass populations in particular reaches.

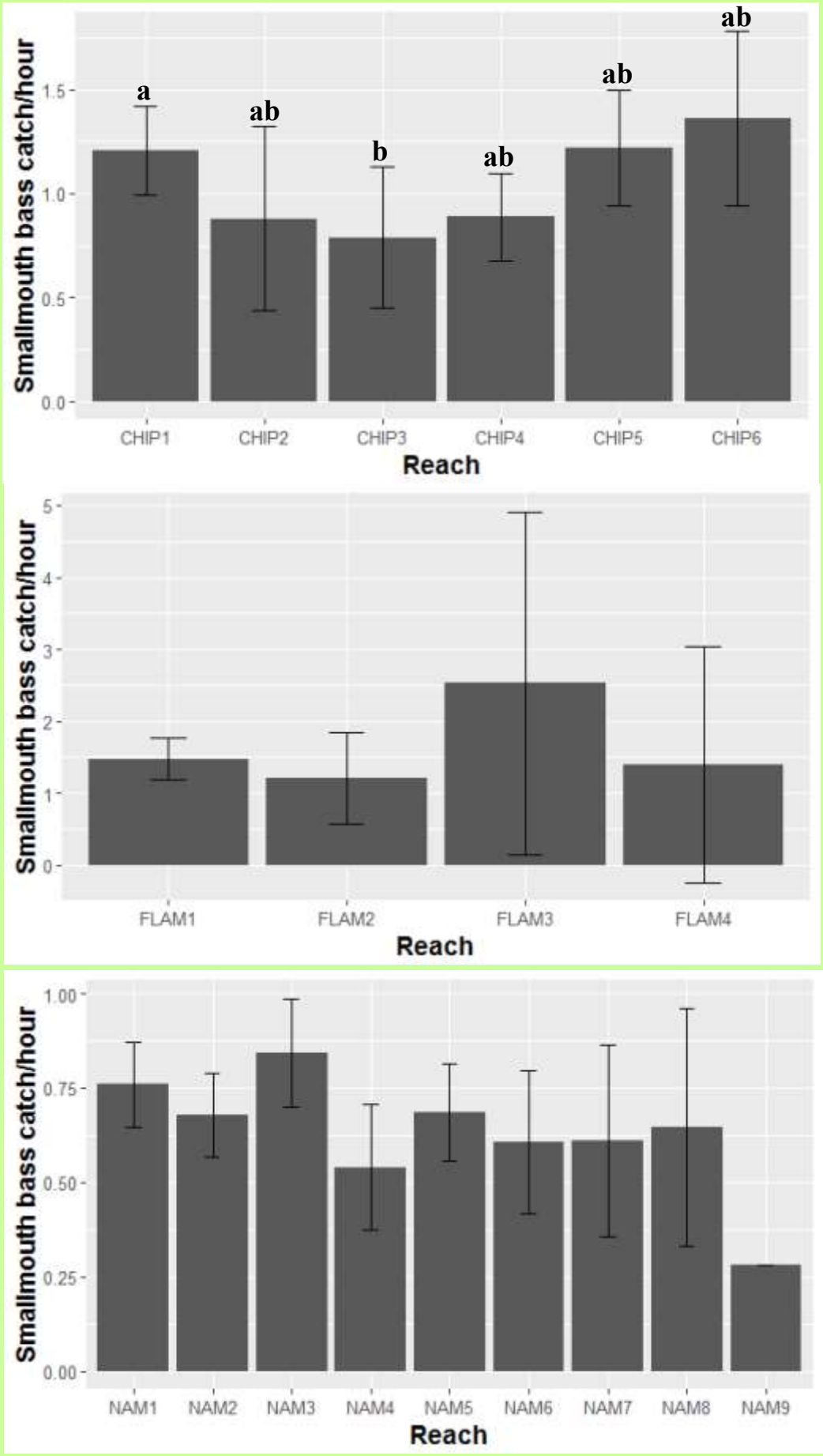


Figure 9. Smallmouth bass skill level corrected catch rates by reach in three rivers (top=Chippewa, middle=Flambeau, bottom=Namekagon) in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals. Letters represent statistically significant groupings. Reaches are arranged from upstream to downstream (i.e. CHIP1 is upstream of CHIP2 and so on).

WDNR Comments

Muskellunge Catch By River Reach

Muskellunge catch rate by river reach similarly did not reveal statistically significant patterns (Figure 10). However, several notable trends are present. Almost no muskellunge are caught on the Namekagon River upstream from Namekagon4. Muskellunge are known to inhabit these upper reaches and it is not clear why this pattern exists

As with other analyses in this report, the comparison of muskellunge catch by river reach was limited by high variation (see wide error bars in Figure 10) and was exacerbated by low sample size for some reaches. Perhaps the inclusion of more data from future years of fishing will allow for better comparisons of muskellunge catch within rivers.

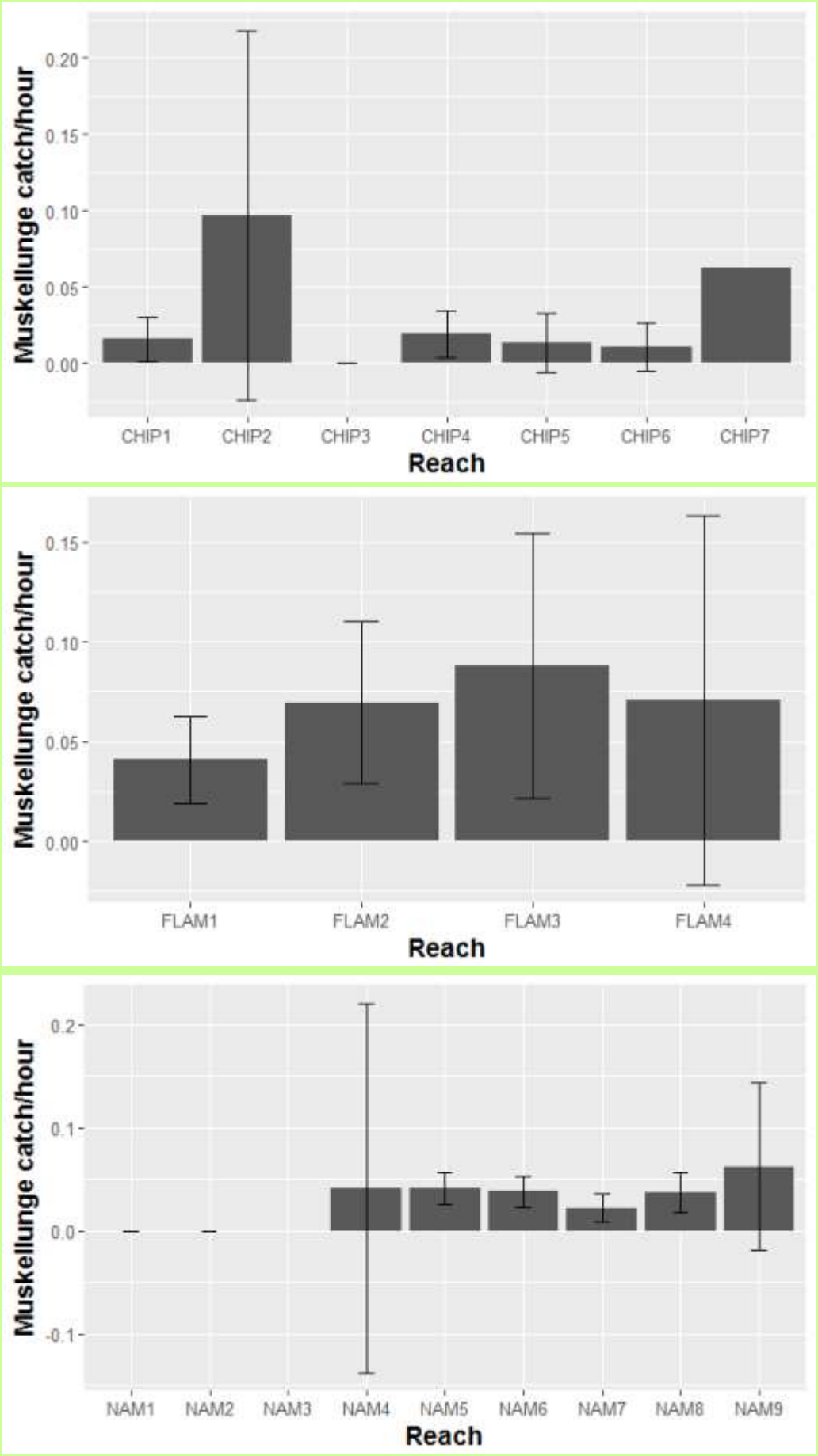


Figure 10. Muskellunge skill level corrected catch rates by reach in three rivers (top=Chippewa, middle=Flambeau, bottom=Namekagon) in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals. Letters represent statistically significant groupings. Reaches are arranged from upstream to downstream (i.e. CHIP1 is upstream of CHIP2 and so on).

WDNR Comments

INFLUENCE OF ENVIRONMENTAL CONDITIONS ON CATCH RATES

WDNR Comments

Catch Rates and River Discharge

The guides who participated in this project consider river discharge to have a considerable impact on fishing success. We conducted a regression analysis to compare catch rates for smallmouth bass and muskellunge with discharge. This analysis included days with mitigating conditions to capture fishing under extreme discharge. A separate model was constructed for each species x river combination. Generally speaking, catch rates for both smallmouth bass and muskellunge demonstrated a negative trend with increasing discharge. However, in all but one case (smallmouth bass in the Flambeau River) the trend was not statistically significant (Figure 11). Future data collection may allow us to better describe this relationship. Similarly, more data may allow for exploration of quadratic or nonlinear relationships, which may effectively allow for determination of "ideal" discharge conditions for catching each species.

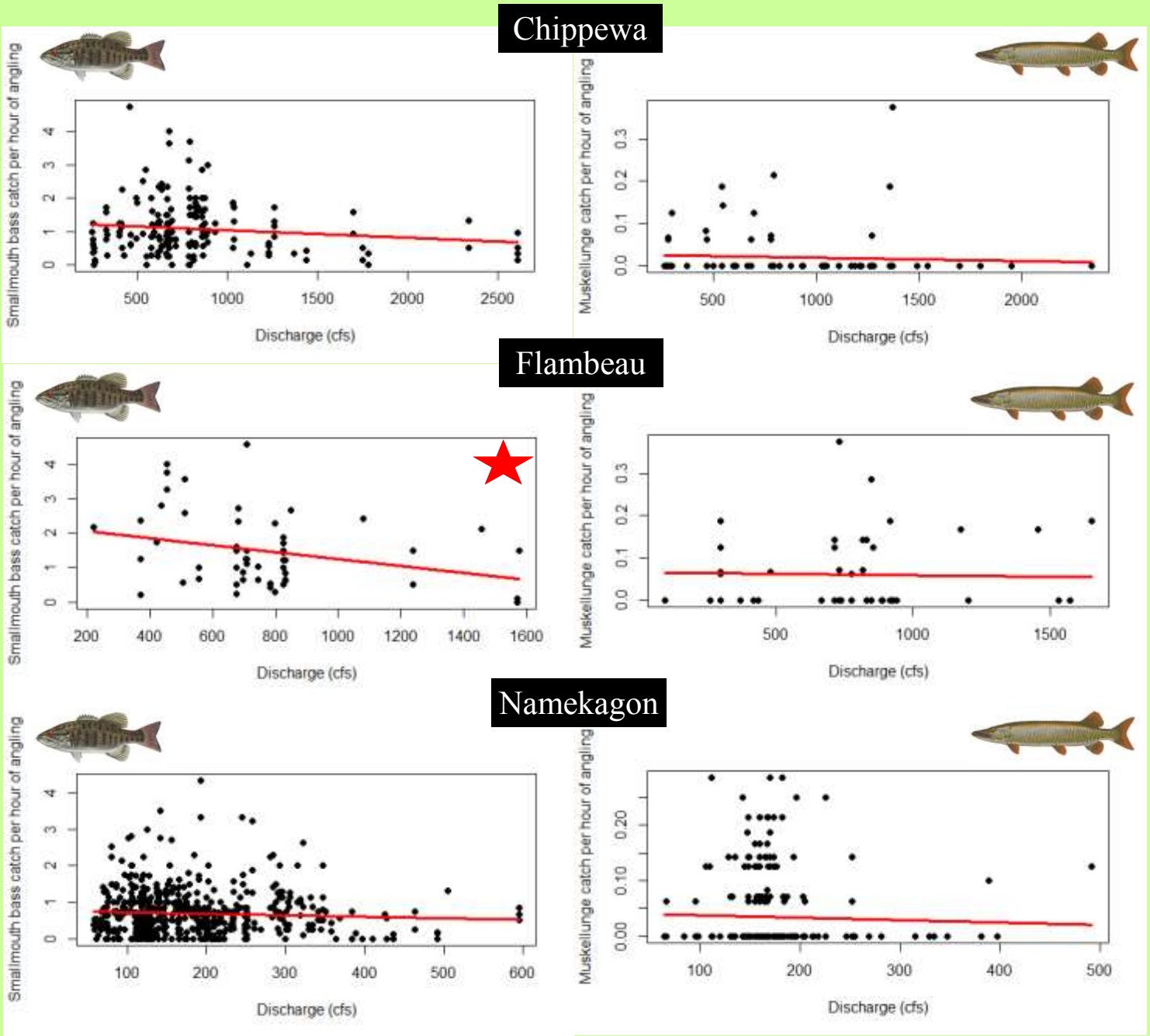


Figure 11. Comparison of skill level corrected catch rates for smallmouth bass (left column) and muskellunge (right columns) with river discharge (cubic feet per second) on the day of fishing for guided anglers on three northwestern Wisconsin rivers from 2012-2016. A red star in a panel demotes a statistically significant relationship ($P<0.05$).

WDNR Comments

Catch Rates and River Level Changes

Changing river conditions prior to a day of fishing is also considered to be an important factor determining fishing success. We compared catch rates for smallmouth bass and muskellunge from all rivers under three different conditions: falling water level (>15% drop in discharge over 3 days), flat water level (<15% change in discharge over 3 days), and rising water level (>15% increase in discharge over 3 days). Catch rates for smallmouth were significantly higher under flat water conditions compared to rising water (Figure 12). A similar pattern appears to be present for muskellunge, though it was not statistically significant.

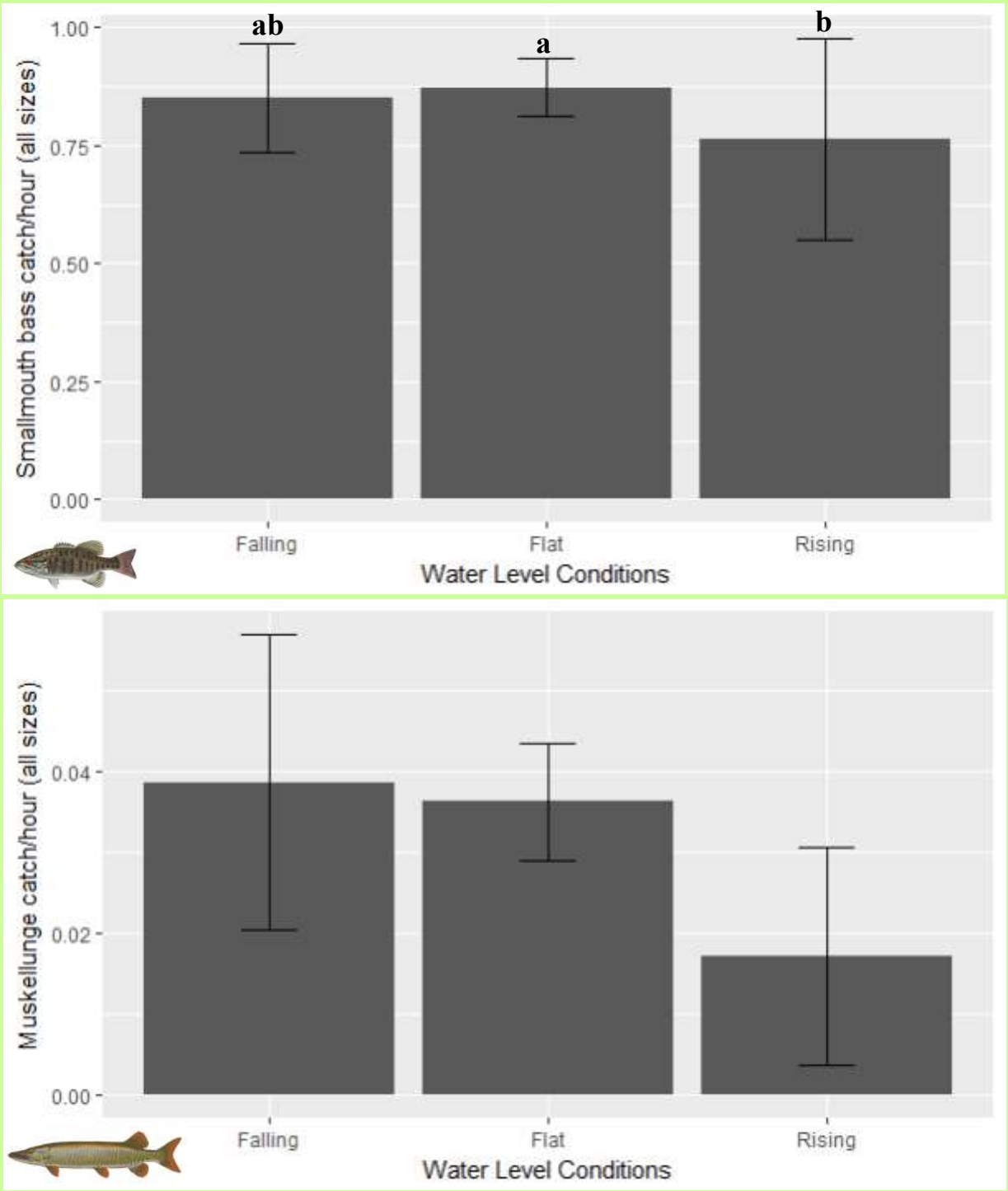


Figure 12. Skill level corrected catch rates of smallmouth bass (top panel) and muskellunge (bottom panel) under three different river conditions. Data was collected by in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals. Letters represent statistically significant groupings.

WDNR Comments

Catch Rates and Water Temperature

Water temperature is an important factor determining many aspects of fish behavior. Guides participating in this project collect daily water temperature data on-site at noon in a shaded area. We compared catch rates for smallmouth bass and muskellunge with water temperature across all rivers (Figure 13). Smallmouth bass demonstrated a significant positive relationship between water temperature and catch rate. This result matches the observed higher catch rates in peak summer months. There was no statistically significant trend between muskellunge catch rate and temperature, but there was an indication of higher catch between 50-70F.

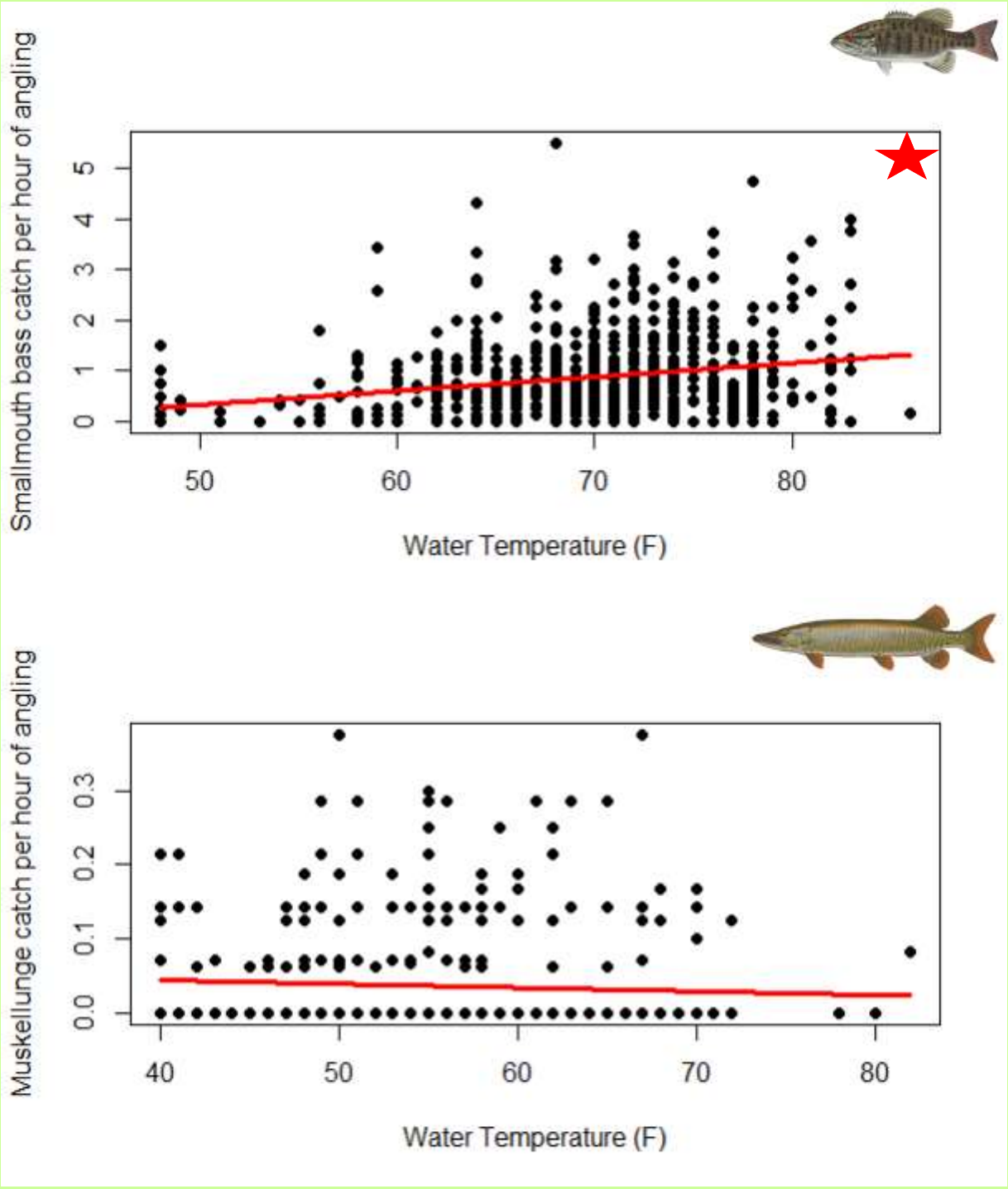


Figure 13. Comparison of skill level corrected catch rates for smallmouth bass (top panel) and muskellunge (bottom panel) with water temperature on the day of fishing for guided anglers on three northwestern Wisconsin rivers from 2012-2016. A red star in a panel demotes a statistically significant relationship ($P<0.05$).

WDNR Comments

CATCH RATES FOR OTHER SPECIES

WDNR Comments

Catch Rate of Northern Pike and Other Species

While smallmouth bass and muskellunge were the target species for all trips included in this project, other predator species were caught incidentally. Guides recorded all incidental catch which provided at least a limited amount of information on northern pike, walleye, and largemouth bass populations. Catch rates for northern pike were significantly higher on the Namekagon River in comparison to the Flambeau River, with the Chippewa River being intermediate (Figure 14). Overall, incidental catch rate of northern pike was similar to that of targeted catch rate for muskellunge. Northern pike density appears to be relatively low in these rivers in comparison to lakes in the area. Incidental catch of walleye and largemouth bass was rare. Only 22 walleye were caught in 1,486 angler days of fishing. Walleye are believed to be more common in these rivers than the low catch would indicate. As a result, we believe that fly fishing guide data may not be a representative way to sample walleye populations in rivers. Only 34 largemouth bass were captured incidentally as a part of this project. Based on their similarities to smallmouth bass we feel more confident that the low catch of largemouth bass is, in fact, representative of the populations in these rivers. Largemouth bass likely occur at a very low density in these fast, rocky rivers. Largemouth bass are generally considered to be better suited for lake environments.

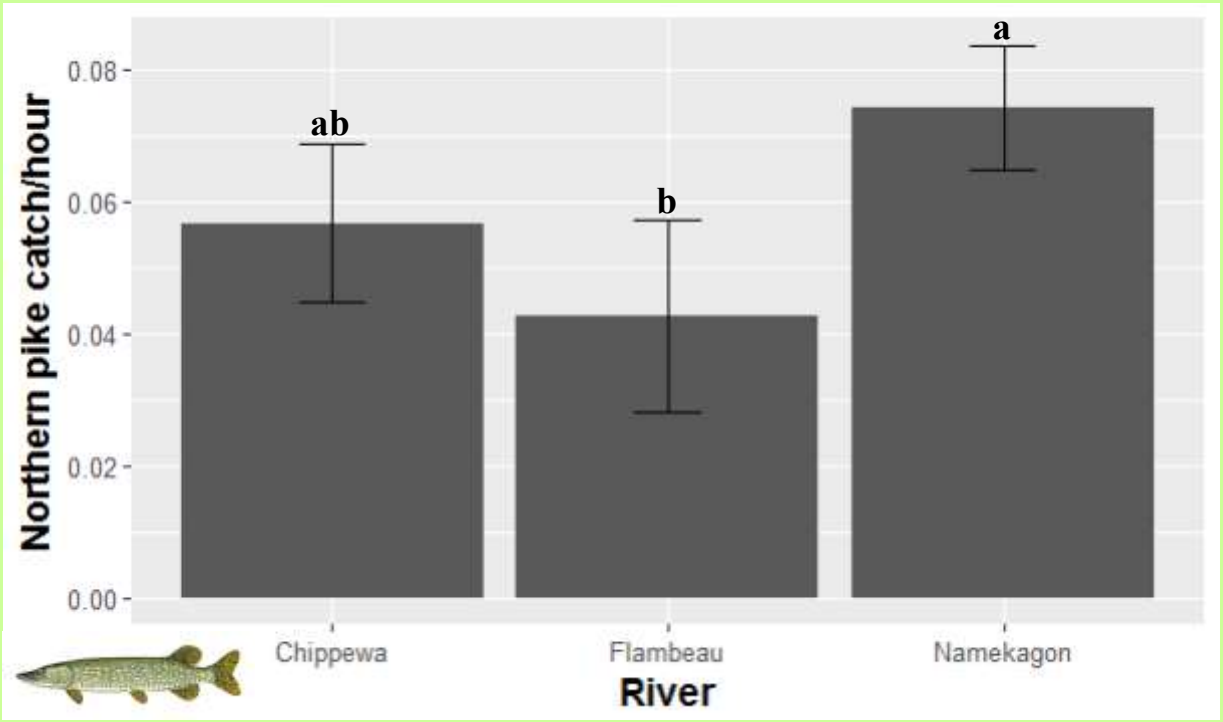


Figure 14. Northern pike incidental catch rates (number per hour of total angling) in three rivers in northwestern Wisconsin fished by guides and their clients from 2012-2016. Error bars represent 95% confidence intervals.

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters	
Washburn	Trego	MWBC: 2712000

Sampling Objective	Number and Locations of Stations (Habitat)	
Walleye Recruitment Survey		Source
	Miles Actually Shocked = 6.0	LM
Period Fished (Dates)	Acres = 451	LM
09/20/11	Total Miles of Shoreline = 16.9	LM
	Total Miles of Shockable Shoreline = 16.9	LM

GEAR

Boomshocker (Hours)	Time	
2.6	√ Night	Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	**Time of Day**	**Trap Net (No. of Net Lifts)**	**Mesh Size**	**Depth**
Minnow Seine (No. of Hauls)	**Area Covered**	**Gill Net (No. of Feet x No. of Lifts)**	**Mesh Size**	**Depth**

Other (Hours or Lifts)		Characteristics	
Boomshocker(s): 1	Mini-boomshocker(s):	Walleye Recruitment Code:	C-ST
Dip Netter(s): 2	Dip Netter(s):		

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	0		-	0.00 / hour	0.00 / mile
Serns Index NA YOY / acre					
Walleye (Age 1+)	7	None	7.8 - 10.7	2.69 / hour	1.17 / mile
Walleye (Other)	17	14.0-14.4	11.8 - 20.4	6.54 / hour	2.83 / mile
Smallmouth Bass	25	15.5 - 15.9	8.0 - 19.9	9.62 / hour	4.17 / mile
Largemouth Bass	8	13.0 - 13.4	9.0 - 14.9	3.08 / hour	1.33 / mile
Muskellunge	0		-	0.00 / hour	0.00 / mile
Northern Pike	35	12.0 - 12.4	8.0 - 24.9	13.46 / hour	5.83 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range

1) Tank Mortality: None 2) Weather: Clear, Wind, Warm 3) Reliabilty: Medium

4) Stocking: 16132 Walleye, 1.6 inches, 06/24/11, DNR 478 Lake Sturgeon, 7.5 inches, 10/19/11, DNR

5) Comments:

Rev. 10-70

Signed (Compiler)	Michael Keniry	Date	12/06/11

WDNR Comments

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL) Department of Natural Resources
Form 3600A-191 8-95

Lake: Trego MWB Code: 2712000 Date: 09/20/11 County: Washburn Collector(s): Bass, Wendel, Rood

Target Fish: Gamefish Survey Type: CPE Mark Given: None Water Temperature: 58°F Station: Portion of Shoreline

Adverse Conditions: None Gear Type: Boomshocker Distance Shocked: 6.0 miles

Volts: 110 Amps: 4.0 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 1951 Shocking End Time: 2240 Generator Start Hour: 118.9 Generator End Hour: 121.5

Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

Walleye < 12.0"			
Inches	Number	Inches	Number
<3.0		**7.5**	
3.0		**7.6**	
3.1		**7.7**	
3.2		**7.8**	1
3.3		**7.9**	
3.4		**8.0**	
3.5		**8.1**	
3.6		**8.2**	1
3.7		**8.3**	
3.8		**8.4**	1
3.9		**8.5**	
4.0		**8.6**	
4.1		**8.7**	1
4.2		**8.8**	1
4.3		**8.9**	
4.4		**9.0**	
4.5		**9.1**	
4.6		**9.2**	
4.7		**9.3**	
4.8		**9.4**	
4.9		**9.5**	1
5.0		**9.6**	
5.1		**9.7**	
5.2		**9.8**	
5.3		**9.9**	
5.4		**10.0**	
5.5		**10.1**	
5.6		**10.2**	
5.7		**10.3**	
5.8		**10.4**	
5.9		**10.5**	
6.0		**10.6**	
6.1		**10.7**	1
6.2		**10.8**	
6.3		**10.9**	
6.4		**11.0**	
6.5		**11.1**	
6.6		**11.2**	
6.7		**11.3**	
6.8		**11.4**	
6.9		**11.5**	
7.0		**11.6**	
7.1		**11.7**	
7.2		**11.8**	1
7.3		**11.9**	
7.4		**Total:**	8

Inches	Walleye	Northern Pike	Muskellunge	Largemouth Bass	Smallmouth Bass	Inches	Walleye	Northern Pike	Muskellunge
<1.5						**24.5-24.9**		1	
1.5-1.9						**25.0-25.4**			
2.0-2.4						**25.5-25.9**			
2.5-2.9						**26.0-26.4**			
3.0-3.4						**26.5-26.9**			
3.5-3.9						**27.0-27.4**			
4.0-4.4						**27.5-27.9**			
4.5-4.9						**28.0-28.4**			
5.0-5.4						**28.5-28.9**			
5.5-5.9						**29.0-29.4**			
6.0-6.4						**29.5-29.9**			
6.5-6.9						**30.0-30.4**			
7.0-7.4						**30.5-30.9**			
7.5-7.9						**31.0-31.4**			
8.0-8.4		1			3	**31.5-31.9**			
8.5-8.9						**32.0-32.4**			
9.0-9.4				1		**32.5-32.9**			
9.5-9.9		1				**33.0-33.4**			
10.0-10.4					1	**33.5-33.9**			
10.5-10.9				1		**34.0-34.4**			
11.0-11.4		1		1		**34.5-34.9**			
11.5-11.9		1				**35.0-35.4**			
12.0-12.4	1	5			1	**35.5-35.9**			
12.5-12.9	1	1		1	2	**36.0-36.4**			
13.0-13.4	1	2		2		**36.5-36.9**			
13.5-13.9	1	1			1	**37.0-37.4**			
14.0-14.4	3	2		1	1	**37.5-37.9**			
14.5-14.9		3		1	2	**38.0-38.4**			
15.0-15.4		3			3	**38.5-38.9**			
15.5-15.9	1	1			5	**39.0-39.4**			
16.0-16.4	1				2	**39.5-39.9**			
16.5-16.9	1	1				**40.0-40.4**			
17.0-17.4	1					**40.5-40.9**			
17.5-17.9	2					**41.0-41.4**			
18.0-18.4	1	1				**41.5-41.9**			
18.5-18.9		1			2	**42.0-42.4**			
19.0-19.4	1	1			1	**42.5-42.9**			
19.5-19.9		2			1	**43.0-43.4**			
20.0-20.4	1					**43.5-43.9**			
20.5-20.9		2				**44.0-44.4**			
21.0-21.4		1				**44.5-44.9**			
21.5-21.9		2				**45.0-45.4**			
22.0-22.4		1				**45.5-45.9**			
22.5-22.9						**46.0-46.9**			
23.0-23.4						**47.0-47.9**			
23.5-23.9						**48.0-48.9**			
24.0-24.4						**49.0-49.9**			
Totals:	16	35	0	8	25	**50.0+**			

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

WDNR Comments

TREGO LAKE — WASHBURN COUNTY

SEC. 17,20 T. 40 N. R. 12 E.W.

Sheet 1 of 4

Tamarack Bog

PW

A

Mixed Hardwood & Pine

Mixed Hardwood & Pine

Mixed Hardwood & Pine

Mixed Hardwood & Pine

Mixed Hardwood & Pine

N

Sheet 1
Sheet 2

Mk.

Mk.

Mk.

Sd.

Sd.

Sd.

Sd.

Sd.

5.3 Acres

1.1 Acres

.45 Acres

.18 Acres

.6 Acres

B.M.

Namekagon Ri.

Dam 29' Head
Power Dam

B.M. 'X' P.S.C. at power house - staffgage
Assumed elev. 100.00
Water elev. 99.75

K

17 18 19 20

C

A

C

A

EQUIPMENT RECORDING SONAR MAPPED JUNE (MO.) 1966 (YR.)

WATER ELEV. 99.75

TOPOGRAPHIC SYMBOLS

B Brush	Steep slope	P. Peat	Gr. Gravel
PW Partially wooded	Indefinite shoreline	Mk. Muck	R. Rubble
W Wooded	Marsh	C. Clay	Br. Bedrock
C Cleared	Spring	M. Marl	T Submergent vegetation
P Pastured	Intermittent stream	Sd. Sand	⊥ Emergent vegetation
A Agricultural	Permanent inlet	St. Silt	Floating vegetation
B.M. Bench Mark	Permanent outlet		Stumps & Snags
Dwelling	Dam		
Resort			

400' 0' 400' 800' 1200' 1600' 2000'

SCALE

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by C. Busch, G. Winter, L. Sather Drawn by: C. Holt

SPECIES OF FISH	Abundant	Common	Rare
Muskie			X
N. Pike			X
Walleye		X	
L.M. Bass			X
S.M. Bass			X
Panfish	X		
Trout			
Sturgeon			X

AREA 460.2 ACRES 451.1 WITHOUT IS.

UNDER 3FT. 6.15 %

OVER 20FT. 14.0 %

VOLUME 4770.6 ACRE FT.

TOTAL ALK. 73 P.P.M.

SHORELINE 16.9 MILES

MAX. DEPTH 36 FEET

WISCONSIN CONSERVATION DEPARTMENT

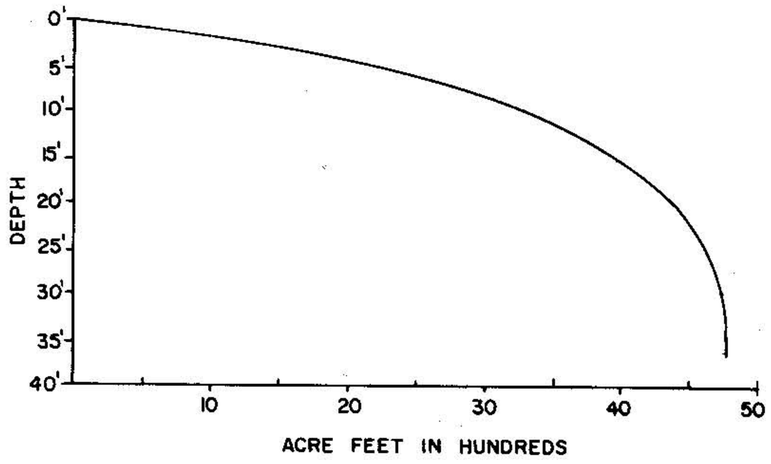
LAKE SURVEY MAP

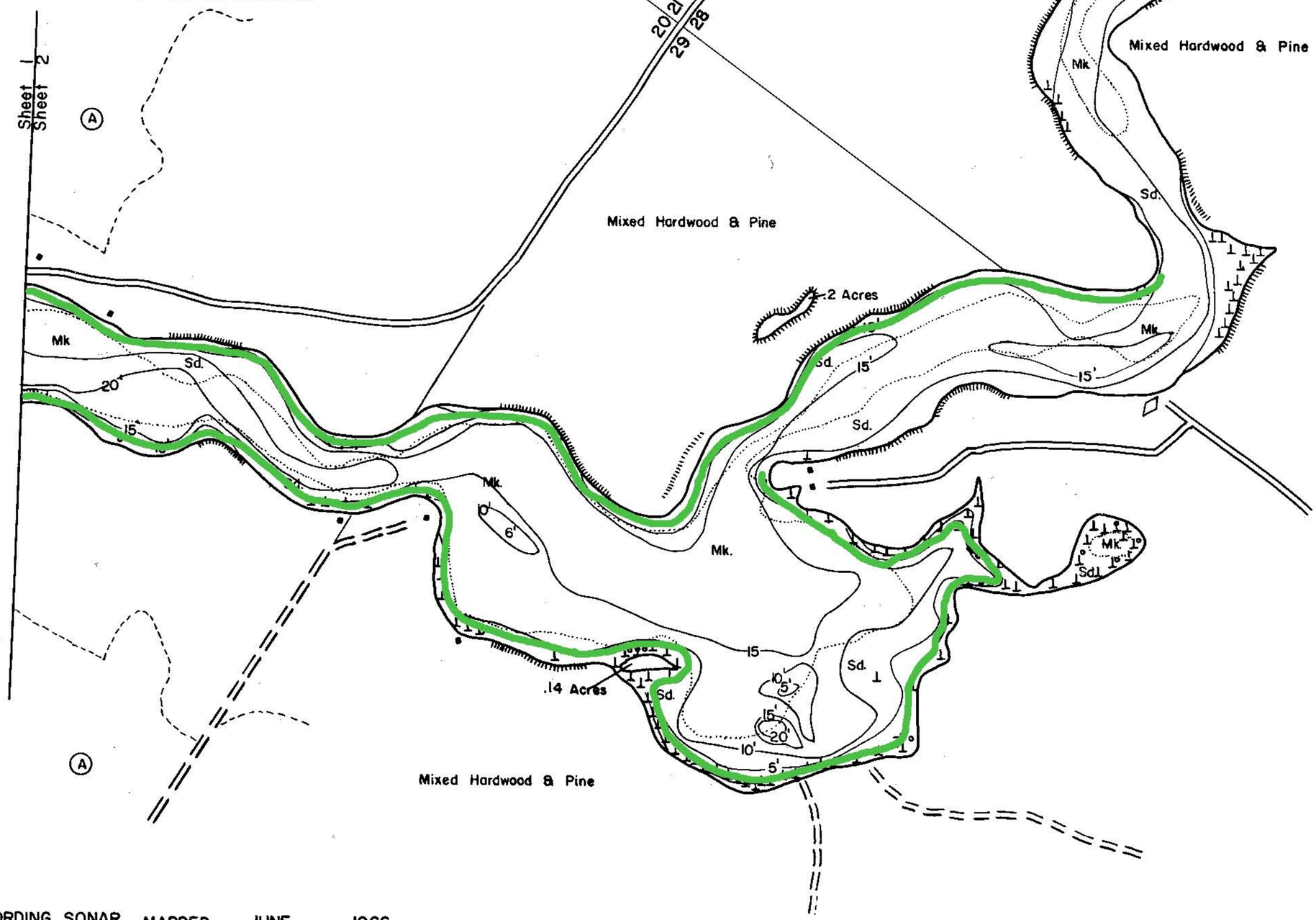
TREGO LAKE — WASHBURN COUNTY

SEC. 20,28,29 T. 40 N. R. 12 E.W.

Sheet 2 of 4

WDNR Comments





SPECIES OF FISH	Abundant	Common	Rare
Muskie			X
N. Pike			X
Walleye		X	
L.M. Bass			X
S.M. Bass			X
Panfish	X		
Trout			
Sturgeon			X

EQUIPMENT RECORDING SONAR MAPPED JUNE (MO.) 1966 (YR.)

WATER ELEV. 99.75

TOPOGRAPHIC SYMBOLS

- (B) Brush
- (PW) Partially wooded
- (W) Wooded
- (C) Cleared
- (P) Pastured
- (A) Agricultural
- B.M. Bench Mark
- Dwelling
- Resort
- Steep slope
- Indefinite shoreline
- Marsh
- Spring
- Intermittent stream
- Permanent inlet
- Permanent outlet
- Dam

LAKE BOTTOM SYMBOLS

- P. Peat
- Mk. Muck
- C. Clay
- M. Marl
- Sd. Sand
- St. Silt
- Gr. Gravel
- R. Rubble
- Br. Bedrock
- T Submergent vegetation
- ⊥ Emergent vegetation
- Floating vegetation
- Stumps & Snags

400' 0' 400' 800' 1200' 1600' 2000'

SCALE

◇ Access ◆ Access with Parking ◆ Boat Livery

Field work by C.Busch, G.Winter, L.Sather Drawn by: C.Holt

AREA 460.2 ACRES

451.1 WITHOUT IS.

UNDER 3FT. 6.15 %

OVER 20FT. 14.0 %

VOLUME 4770.6 ACRE FT.

TOTAL ALK. 73 P.P.M.

SHORELINE 16.9 MILES

MAX. DEPTH 36 FEET

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters	
Washburn	Trego	MWBC: 2712000

Sampling Objective	Number and Locations of Stations (Habitat)		
Walleye Recruitment Survey			Source
	Miles Actually Shocked =	6.0	GPS
Period Fished (Dates)	Acres =	451	LM
09/14/16	Total Miles of Shoreline =	16.9	LM
	Total Miles of Shockable Shoreline =	16.9	LM

GEAR

Boomshocker (Hours)	Time	
2.5	√ Night	Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	**Time of Day**	**Trap Net (No. of Net Lifts)**	**Mesh Size**	**Depth**
Minnow Seine (No. of Hauls)	**Area Covered**	**Gill Net (No. of Feet x No. of Lifts)**	**Mesh Size**	**Depth**

Other (Hours or Lifts)		Characteristics	
Boomshocker(s): 1	Mini-boomshocker(s):	Walleye Recruitment Code:	C-ST
Dip Netter(s): 2	Dip Netter(s):		

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	0			0.00 / hour	0.00 / mile
Serns modified NA YOY / acre					
Walleye (Age 1+)	16	8.0 - 8.4, 10.0 - 10.4	7.5 - 11.4	6.40 / hour	2.67 / mile
Walleye (Other)	14	None	13.0 - 19.4	5.60 / hour	2.33 / mile
Smallmouth Bass	30	None	5.5 - 19.9	12.00 / hour	5.00 / mile
Largemouth Bass	10	None	4.0 - 16.9	4.00 / hour	1.67 / mile
Muskellunge	1	None	12.5 - 12.9	0.40 / hour	0.17 / mile
Northern Pike	20	None	11.0 - 26.4	8.00 / hour	3.33 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range

1) Tank Mortality: None 2) Weather: NA 3) Reliability: Medium

4) Stocking: 142 Muskellunge, 12.0 inches, 09/14/16, DNR

5) Comments:

Rev. 10-70

Signed (Compiler)	Gene Hatzenbeler	Date	12/02/16

WDNR Comments

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL) Department of Natural Resources
Form 3600A-191 8-95

Lake: Trego MWB Code: 2712000 Date: 09/14/16 County: Washburn Collector(s): Bass, Roberts, Gorne

Target Fish: All Gamefish Survey Type: CPE Mark Given: None Water Temperature: 62°F Station: Portion of Shoreline

Adverse Conditions: None Gear Type: Boomshocker Distance Shocked: 6.0 miles

Volts: 160 Amps: 4.5 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 2000 Shocking End Time: 2253 Generator Start Hour: 306.1 Generator End Hour: 308.6

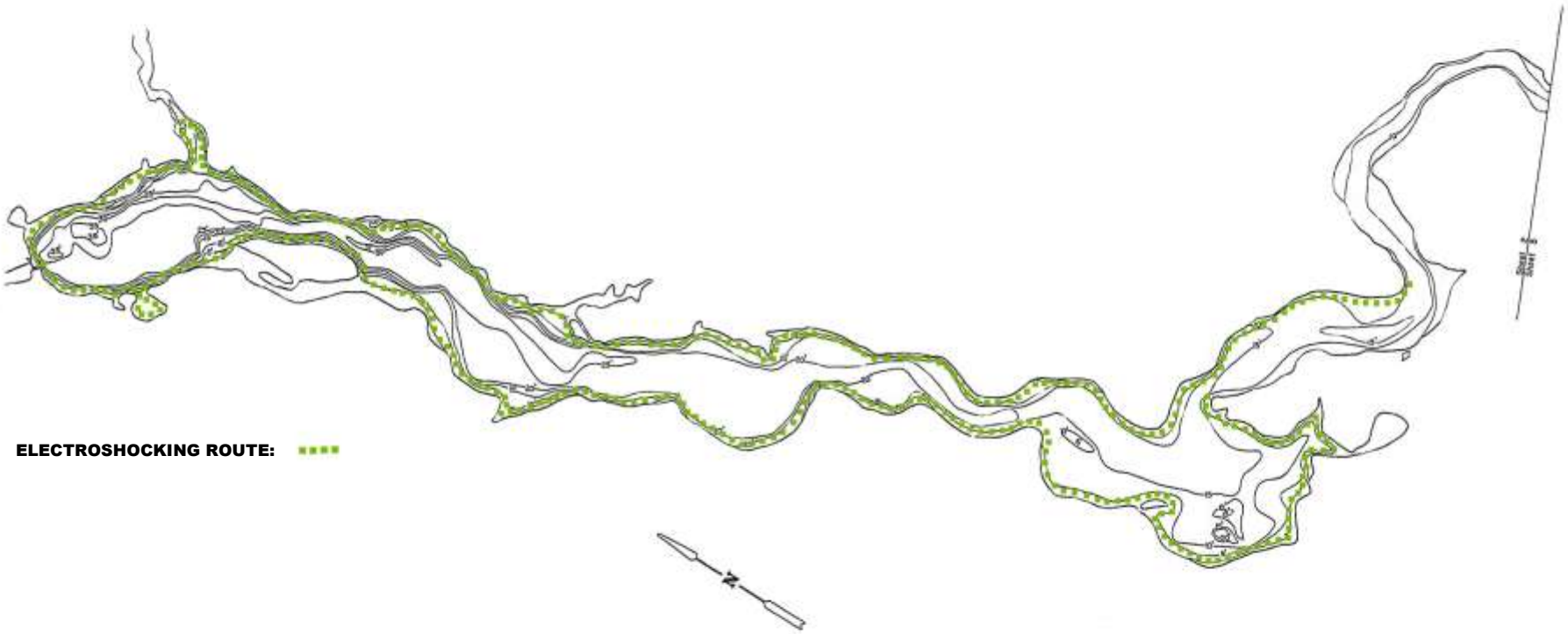
Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

Inches	Walleye	Northern Pike	Muskellunge	Largemouth Bass	Smallmouth Bass	Inches	Walleye	Northern Pike	Muskellunge
<1.5						**24.5-24.9**			
1.5-1.9						**25.0-25.4**		1	
2.0-2.4						**25.5-25.9**			
2.5-2.9						**26.0-26.4**		1	
3.0-3.4						**26.5-26.9**			
3.5-3.9						**27.0-27.4**			
4.0-4.4				1		**27.5-27.9**			
4.5-4.9						**28.0-28.4**			
5.0-5.4						**28.5-28.9**			
5.5-5.9					1	**29.0-29.4**			
6.0-6.4				1		**29.5-29.9**			
6.5-6.9						**30.0-30.4**			
7.0-7.4				1		**30.5-30.9**			
7.5-7.9	1			2		**31.0-31.4**			
8.0-8.4	4			1		**31.5-31.9**			
8.5-8.9	2					**32.0-32.4**			
9.0-9.4	1				1	**32.5-32.9**			
9.5-9.9	1				4	**33.0-33.4**			
10.0-10.4	4			1	1	**33.5-33.9**			
10.5-10.9	2					**34.0-34.4**			
11.0-11.4	1	1				**34.5-34.9**			
11.5-11.9		2			1	**35.0-35.4**			
12.0-12.4		2				**35.5-35.9**			
12.5-12.9		1	1		1	**36.0-36.4**			
13.0-13.4	1	1			1	**36.5-36.9**			
13.5-13.9		1		1	1	**37.0-37.4**			
14.0-14.4	1				1	**37.5-37.9**			
14.5-14.9	1	1			1	**38.0-38.4**			
15.0-15.4	2	2				**38.5-38.9**			
15.5-15.9	1	1		1	4	**39.0-39.4**			
16.0-16.4	1	1			1	**39.5-39.9**			
16.5-16.9	1	1		1	2	**40.0-40.4**			
17.0-17.4	2	1			2	**40.5-40.9**			
17.5-17.9	2				4	**41.0-41.4**			
18.0-18.4					2	**41.5-41.9**			
18.5-18.9	1				1	**42.0-42.4**			
19.0-19.4	1	1				**42.5-42.9**			
19.5-19.9					1	**43.0-43.4**			
20.0-20.4						**43.5-43.9**			
20.5-20.9						**44.0-44.4**			
21.0-21.4						**44.5-44.9**			
21.5-21.9						**45.0-45.4**			
22.0-22.4						**45.5-45.9**			
22.5-22.9		1				**46.0-46.9**			
23.0-23.4		1				**47.0-47.9**			
23.5-23.9						**48.0-48.9**			
24.0-24.4						**49.0-49.9**			
Totals:	30	20	1	10	30	**50.0+**			

WDNR Comments

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

TREGO LAKE
WASHBURN COUNTY
WBIC: 2712000



ELECTROSHOCKING ROUTE:

WDNR Comments

SUMMARY FISHING RECORD
Form 3600-63

Department of Natural Resources

County	Waters	
Washburn	Trego	MWBC: 2712000

Sampling Objective	Number and Locations of Stations (Habitat)		
Walleye Recruitment Survey			Source
	Miles Actually Shocked =	6.0	GPS
Period Fished (Dates)	Acres =	451	LM
09/19/19	Total Miles of Shoreline =	16.9	LM
	Total Miles of Shockable Shoreline =	16.9	LM

GEAR

Boomshocker (Hours)	Time	
2.5	√ Night	Day

Visual Hours	Time of Day	Haul Seine (Length)	Mesh Size	Area Covered
Angling (Hours)	Time of Day	Trap Net (No. of Net Lifts)	Mesh Size	Depth
Minnow Seine (No. of Hauls)	Area Covered	Gill Net (No. of Feet x No. of Lifts)	Mesh Size	Depth

Other (Hours or Lifts)		Characteristics	
Boomshocker(s): 1	Mini-boomshocker(s):	Walleye Recruitment Code:	C-ST
Dip Netter(s): 2	Dip Netter(s):		

FISHING RESULTS

Species	No.	Modal Size(s)	Size Range	Catch/Unit	
Walleye (Age 0+)	11	None	4.3 - 6.0	4.40 / hour	1.83 / mile
Serns modified NA YOY / acre					
Walleye (Age 1+)	19	7.7	7.3 - 9.4	7.60 / hour	3.17 / mile
Walleye (Other)	16	13.5 - 13.9, 15.5 - 15.9	10.7 - 20.4	6.40 / hour	2.67 / mile
Smallmouth Bass	31	15.5 - 15.9, 17.0 - 17.4	9.0 - 19.4	12.40 / hour	5.17 / mile
Largemouth Bass	8	None	2.5 - 19.4	3.20 / hour	1.33 / mile
Muskellunge	1	None	24.5 - 24.9	0.40 / hour	0.17 / mile
Northern Pike	12	None	6.0 - 25.4	4.80 / hour	2.00 / mile

OBSERVATIONS

Other Species	Abundance	Size Range	Other Species	Abundance	Size Range

1) Tank Mortality: None 2) Weather: NA 3) Reliability: Medium

4) Stocking: 383 Lake Sturgeon, 9.0 inches, 10/24/19, DNR

5) Comments:

Rev. 09-16

Signed (Compiler) Gene Hatzenbeler Date 11/26/19

WDNR Comments

LAKE ELECTROFISHING DATA COLLECTION SHEET (FALL) Department of Natural Resources
Form 3600A-191 8-95

Lake: Trego MWB Code: 2712000 Date: 09/19/19 County: Washburn Collector(s): Bass, Roberts, Gorne

Target Fish: All Gamefish Survey Type: CPE Mark Given: None Water Temperature: 68°F Station: Portion of Shoreline

Adverse Conditions: None Gear Type: Boomshocker Distance Shocked: 6.0 miles

Volts: 150 Amps: 4.0 Current Type: [X]AC [ ]DC [ ]Pulsed DC Pulse Rate: None Duty Cycle: None

Shocking Start Time: 1951 Shocking End Time: 2245 Generator Start Hour: 407.6 Generator End Hour: 410.1

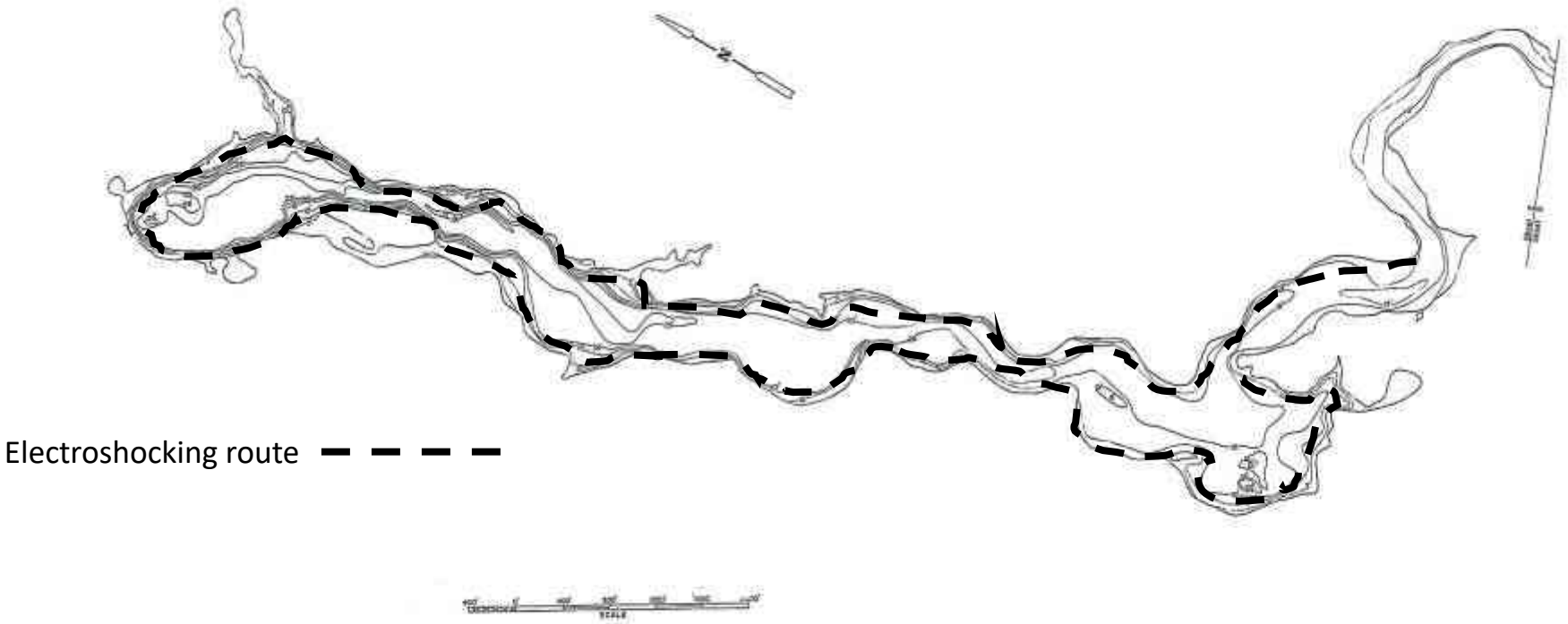
Number of Dippers: [ ]1 [X]2 Entire Shoreline Shocked: [ ]Y [X]N [ ]I Dipnet Mesh Size: 3/8 inch bar H20 Clarity: NA

Walleye < 12.0"			
Inches	Number	Inches	Number
<3.0		**7.5**	
3.0		**7.6**	
3.1		**7.7**	4
3.2		**7.8**	
3.3		**7.9**	1
3.4		**8.0**	1
3.5		**8.1**	1
3.6		**8.2**	1
3.7		**8.3**	
3.8		**8.4**	1
3.9		**8.5**	
4.0		**8.6**	1
4.1		**8.7**	2
4.2		**8.8**	1
4.3	1	**8.9**	
4.4		**9.0**	
4.5		**9.1**	1
4.6		**9.2**	1
4.7	1	**9.3**	
4.8	2	**9.4**	1
4.9	1	**9.5**	
5.0	2	**9.6**	
5.1		**9.7**	
5.2	1	**9.8**	
5.3		**9.9**	
5.4		**10.0**	
5.5		**10.1**	
5.6		**10.2**	
5.7	1	**10.3**	
5.8	1	**10.4**	
5.9		**10.5**	
6.0	1	**10.6**	
6.1		**10.7**	1
6.2		**10.8**	
6.3		**10.9**	
6.4		**11.0**	
6.5		**11.1**	1
6.6		**11.2**	
6.7		**11.3**	
6.8		**11.4**	
6.9		**11.5**	
7.0		**11.6**	
7.1		**11.7**	1
7.2		**11.8**	
7.3	1	**11.9**	
7.4	2	**Total:**	33

Inches	Walleye	Northern Pike	Muskellunge	Largemouth Bass	Smallmouth Bass	Inches	Walleye	Northern Pike	Muskellunge
<1.5						**24.5-24.9**			1
1.5-1.9						**25.0-25.4**		1	
2.0-2.4						**25.5-25.9**			
2.5-2.9				2		**26.0-26.4**			
3.0-3.4				1		**26.5-26.9**			
3.5-3.9				1		**27.0-27.4**			
4.0-4.4				2		**27.5-27.9**			
4.5-4.9						**28.0-28.4**			
5.0-5.4						**28.5-28.9**			
5.5-5.9						**29.0-29.4**			
6.0-6.4		1				**29.5-29.9**			
6.5-6.9						**30.0-30.4**			
7.0-7.4		2				**30.5-30.9**			
7.5-7.9		2				**31.0-31.4**			
8.0-8.4		1		1		**31.5-31.9**			
8.5-8.9						**32.0-32.4**			
9.0-9.4					1	**32.5-32.9**			
9.5-9.9						**33.0-33.4**			
10.0-10.4					2	**33.5-33.9**			
10.5-10.9					1	**34.0-34.4**			
11.0-11.4						**34.5-34.9**			
11.5-11.9						**35.0-35.4**			
12.0-12.4	1				2	**35.5-35.9**			
12.5-12.9	1	1			2	**36.0-36.4**			
13.0-13.4	1				2	**36.5-36.9**			
13.5-13.9	3	1			2	**37.0-37.4**			
14.0-14.4	1				1	**37.5-37.9**			
14.5-14.9					2	**38.0-38.4**			
15.0-15.4					1	**38.5-38.9**			
15.5-15.9	3				4	**39.0-39.4**			
16.0-16.4	1				3	**39.5-39.9**			
16.5-16.9					1	**40.0-40.4**			
17.0-17.4					4	**40.5-40.9**			
17.5-17.9					1	**41.0-41.4**			
18.0-18.4	1				1	**41.5-41.9**			
18.5-18.9						**42.0-42.4**			
19.0-19.4				1	1	**42.5-42.9**			
19.5-19.9						**43.0-43.4**			
20.0-20.4	1					**43.5-43.9**			
20.5-20.9		1				**44.0-44.4**			
21.0-21.4		1				**44.5-44.9**			
21.5-21.9		1				**45.0-45.4**			
22.0-22.4						**45.5-45.9**			
22.5-22.9						**46.0-46.9**			
23.0-23.4						**47.0-47.9**			
23.5-23.9						**48.0-48.9**			
24.0-24.4						**49.0-49.9**			
Totals:	13	12	1	8	31	**50.0+**			

WDNR Comments

Trego Lake
Washburn County
WBIC 2712000
Wisconsin DNR



Electroshocking route

WDNR Comments

Darrin Johnson

From: Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Sent: Monday, August 10, 2020 10:25 AM
To: Darrin Johnson
Cc: Shawn Puzen
Subject: WDNR Trego and Hayward Mussel and Wildlife Information Submission for PAD

Hi Darrin,

Please see WDNR program staff comments below, regarding mussel and wildlife information for Hayward and Trego Hydro Projects.

Wildlife Comments (Hayward)

Future study requests may relate to the following species: Blanding's Turtle, Mink Frog, Wood Turtle
Bald Eagle – there has long been a territory on Lake Hayward, with 2 nests by the Lumberjack Bowl, and a newer nest just north of Hwy 77

Wildlife Comments (Trego):

"Although I do not know exactly what water control actions would be taken, I don't have any general concerns. Of course pesticide or other waste put into the water would cause negative impact to a host of wildlife species. Runoff of chemicals and erosion, would have negative impacts to wildlife and public use of the waterway. I have no specific data to included. DNR does not own land so we do not have any wildlife or fishery area management plans for this area of land. The only survey conducted in this area was the bear snare survey (which showed we have plenty of bears). The only concerns I can think of are otter and other furbearers, if water was not managed similar to what it is now. Water management should not affect them unless the area is drained. Turtles, frogs and others would be negatively affected if water levels were drawn down after Oct 1."

Mussel Data from Namekagon River and Mussel data from Statewide Mussel Atlas (Trego)

WDNR Comments

No maps or reports specific to this location are available.
List of mussels from past surveys provided.
The occurrence of specific species is habitat dependent, river substrate dependent.
No federally or state threatened/endangered or special concern mussel species are known to occur in the impounded sections of the reservoir, however listed species may occur downstream from the dam or further upstream from the impounded reaches of the reservoir .

WDNR Comments

Washburn County - Namekagon River Native Mussels

Common Name - Scientific name (Last observed date) Status

Black Sandshell - Ligumia recta (2016)
Creeper - Strophitus undulatus (2016)
Cylindrical Papershell – Anodontoides ferussacianus (2016)
Deertoe - Truncilla truncata (2016)
Elktoe - Alasmidonta marginata (2016) State Special Concern
Fatmucket - Lampsilis siliquoidea (2016)
Fluted-shell - Lasmigona costata (2016)
Fragile Papershell - Leptodea fragilis (1995)
Giant Floater - Pyganodon grandis (1995)
Hickorynut - Obovaria olivaria (1988)
Mapleleaf - Quadrula quadrula (2016) State Special Concern
Mucket - Actinonaias ligamentina (2016)
Paper Pondshell – Utterbackia imbecilis (2016)
Pimpleback - Quadrula pustulosa (2016)
Pink Heelsplitter - Potamilus alatus (2016)
Plain Pocketbook - Lampsilis cardium (2016)
Purple Wartyback - Cyclonaias tuberculata (1995) State Endangered
Round Pigtoe - Pleurobema sintoxia (2016)
Salamander Mussel - Simpsonaias ambigua (1988) State Threatened
Spike - Elliptio dilatata (2016)
Threeridge - Amblema plicata (2016)
Wabash Pigtoe - Fusconaia flava (2016)

Have a good week,

Macaulay Haller
Wisconsin Department of Natural Resources
Macaulay.Haller@wisconsin.gov

WDNR Comments

Darrin Johnson

From: Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Sent: Monday, August 17, 2020 8:05 AM
To: Darrin Johnson
Cc: Shawn Puzen
Subject: RE: WDNR Trego and Hayward Information Submission for PAD

Hi Darrin,

Here is the list of Native Mussels Species for Sawyer County for the Namekagon River, provided by WDNR program staff.

Black Sandshell - Ligumia recta (1987)
Creek Heelsplitter - Lasmigona compressa (1995)
Creeper - Strophitus undulatus (1995)
Cylindrical Papershell - Anodontoides ferussacianus (1987)
Elktoe - Alasmidonta marginata (1987) State Special Concern
Fatmucket - Lampsilis siliquoidea (1995)
Fluted-shell - Lasmigona costata (1995)
Giant Floater - Pyganodon grandis (1987)
Mucket - Actinonaias ligamentina (1987)
Plain Pocketbook - Lampsilis cardium (1987)
Round Pigtoe - Pleurobema sintoxia (1995)
Spike - Elliptio dilatata (1987)
Wabash Pigtoe - Fusconaia flava (1995)

Have a good week,
Macaulay

From: Haller, Macaulay G - DNR
Sent: Tuesday, August 11, 2020 11:08 AM
To: 'Darrin Johnson' <Darrin.Johnson@meadhunt.com>
Cc: 'Shawn Puzen' <Shawn.Puzen@meadhunt.com>
Subject: RE: WDNR Trego and Hayward Information Submission for PAD

Hi Darrin,

Please see below WDNR comments on water resources and recreation for Trego and Hayward Hydro Projects.

Water Resources (Trego)

There is a SWIMS station at the upper end of the project boundary 10022021 that has some WQ data and a fish survey that looks like it was a wadeable survey and there may be a non-wadeable survey there as well. The station survey probably went US and outside the project boundary. There is a station DS of the project at CTH K (10037360) with a large river macroinvert sample from 2012. If it's a large river, there likely are not any wadeable fish surveys nearby but looks like there are large river fish surveys associated with SWIMS 10011080. Again these are outside the project boundary but may provide useful information about DS resources.

Recreation, Land Use (Hayward)

WDNR Comments

Hayward Lake has a boat ramp 0.3 miles upstream from the dam, just east of the Highway 27 crossing. Hayward Lake also has a recreational fishing pier approximately ½ mile upstream from the dam. These may be upgraded in the future to enhance recreation opportunities, but if/when is not clear from the county recreational plan.

Hayward Lake is an ASNRI Outstanding and Exceptional Stream designation. Below the dam is a PNW Musky water. The ASNRI designation also points to the Wild and Scenic River status for the Namekagon River, that is protected by federal law.

Recreation, Land Use (Trego)

Trego Lake, on the Namekagon River has designated ASRNI status as an Outstanding and Exceptional area. It also has Wild Rice present and retains the designation for that reason as well. Tribal consultation will be necessary to determine any changes to this waterbody and how it might impact wild rice.

Recreation: Just downstream from the Trego dam is a canoe landing popular with non-motorized watercraft that use the riverway. This area being national scenic riverway, this reach is managed for paddlers and camping where several primitive water-only access campsites are available. Trego Lake has two boat ramps for motorized boats, and a canoe/kayak launch on the east side of Trego. This area is extremely popular with non-motorized boats and tubes, with a large rental business on the east side of Trego.

Thank you,

Macaulay Haller
Wisconsin Department of Natural Resources
Macaulay.Haller@wisconsin.gov

From: Haller, Macaulay G - DNR
Sent: Monday, August 10, 2020 10:25 AM
To: Darrin Johnson <Darrin.Johnson@meadhunt.com>
Cc: Shawn Puzen <Shawn.Puzen@meadhunt.com>
Subject: WDNR Trego and Hayward Mussel and Wildlife Information Submission for PAD

Hi Darrin,

Please see WDNR program staff comments below, regarding mussel and wildlife information for Hayward and Trego Hydro Projects.

Wildlife Comments (Hayward)

Future study requests may relate to the following species: Blanding's Turtle, Mink Frog, Wood Turtle
Bald Eagle – there has long been a territory on Lake Hayward, with 2 nests by the Lumberjack Bowl, and a newer nest just north of Hwy 77

Wildlife Comments (Trego):

"Although I do not know exactly what water control actions would be taken, I don't have any general concerns. Of course pesticide or other waste put into the water would cause negative impact to a host of wildlife species. Runoff of chemicals and erosion, would have negative impacts to wildlife and public use of the waterway. I have no specific data to included. DNR does not own land so we do not have any wildlife or fishery area management plans for this area of land. The only survey conducted in this area was the bear snare survey (which showed we have plenty of bears). The only concerns I can think of are otter and other furbearers, if water was not managed similar to what it is now. Water

management should not affect them unless the area is drained. Turtles, frogs and others would be negatively affected if water levels were drawn down after Oct 1."

Mussel Data from Namekagon River and Mussel data from Statewide Mussel Atlas (Trego)

WDNR Comments

No maps or reports specific to this location are available.
List of mussels from past surveys provided.
The occurrence of specific species is habitat dependent, river substrate dependent.
No federally or state threatened/endangered or special concern mussel species are known to occur in the impounded sections of the reservoir, however listed species may occur downstream from the dam or further upstream from the impounded reaches of the reservoir .

WDNR Comments

Washburn County - Namekagon River Native Mussels

Common Name - Scientific name (Last observed date) Status

Black Sandshell - Ligumia recta (2016)
Creeper - Strophitus undulatus (2016)
Cylindrical Papershell – Anodontoides ferussacianus (2016)
Deertoe - Truncilla truncata (2016)
Elktoe - Alasmidonta marginata (2016) State Special Concern
Fatmucket - Lampsilis siliquoidea (2016)
Fluted-shell - Lasmigona costata (2016)
Fragile Papershell - Leptodea fragilis (1995)
Giant Floater - Pyganodon grandis (1995)
Hickorynut - Obovaria olivaria (1988)
Mapleleaf - Quadrula quadrula (2016) State Special Concern
Mucket - Actinonaias ligamentina (2016)
Paper Pondshell – Utterbackia imbecilis (2016)
Pimpleback - Quadrula pustulosa (2016)
Pink Heelsplitter - Potamilus alatus (2016)
Plain Pocketbook - Lampsilis cardium (2016)
Purple Wartyback - Cyclonaias tuberculata (1995) State Endangered
Round Pigtoe - Pleurobema sintoxia (2016)
Salamander Mussel - Simpsonaias ambigua (1988) State Threatened
Spike - Elliptio dilatata (2016)
Threeridge - Amblema plicata (2016)
Wabash Pigtoe - Fusconaia flava (2016)

Have a good week,

Macaulay Haller
Wisconsin Department of Natural Resources
Macaulay.Haller@wisconsin.gov

Hayward and Trego

NOI, PAD and TLP Request

1414 West Hamilton Avenue
PO Box 8
Eau Claire, WI 54702-0008

November 27, 2020

VIA Electronic Filing

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: **Preliminary Application Document, Notice of Intent, Request to Use Traditional Licensing Process, and Request for Designation of Non-Federal Representative**
Hayward Hydroelectric Project (FERC Project No. 2417)
Trego Hydroelectric Project (FERC Project No. 2711)

Dear Secretary Bose:

In accordance with 18 CFR § 16.6 and Section 15 of the Federal Power Act, Northern States Power Company-Wisconsin (NSPW or Licensee), d/b/a Xcel Energy, Licensee of the Hayward (FERC Project No. 2417) and Trego (FERC Project No. 2711) Hydroelectric Projects (Projects), is hereby electronically filing with the Commission Notices of Intent to File a License Application (NOI) and a Pre-Application Document (PAD) for the relicensing of said Projects. The current licenses for the Projects expire on November 30, 2025.

In accordance with the Commission's regulations, NSPW hereby declares its unequivocal intent to begin the relicensing process for both the Hayward and Trego Projects by filing the enclosed Notices of Intent to file applications for subsequent licenses for the Projects. Along with the NOIs, a Pre-Application Document (PAD) that includes information for both Projects is also enclosed[1].

In accordance with 18 CFR § 5.5(c), the Licensee is providing a copy of the NOI and PAD in electronic format to appropriate federal, state, and interstate resource agencies as well as Indian Tribes, local governments, and members of the public likely to be interested in the relicensing proceedings. A distribution list of all known potential stakeholders receiving copies of the NOI and PAD is enclosed. NSPW will also provide two paper courtesy copies of the NOI and PAD to Commission Staff in the Office of Energy Projects and the Office of General Counsel-Energy Projects as outlined in the Commission's filing guidelines.

Under 18 CFR § 5.3, the Licensee requests approval from the Commission for use of the Traditional Licensing Process (TLP). The TLP should provide cost and time savings to both the Licensee and stakeholders due to the limited geographic scope of the project boundaries, the limited number of anticipated stakeholders, and the lack of controversial issues brought forward in the questionnaire responses. Experience also indicates that the TLP is less costly than the Integrated Licensing Process (ILP).

Due to the limited number of responses received from the questionnaire sent out to the stakeholders and the lack of any expressed opposition, there does not appear to be any objection to the use of the TLP. There also does not appear to be any complex resource issues or anticipated controversy. Therefore, the Licensee anticipates the Commission will be able to complete the timely issuance of subsequent licenses for the Projects.

Since NSPW is the Licensee for both the Hayward and Trego Projects, one PAD for both Projects is being submitted.

Under 18 CFR § 5.3(d)(1), comments concerning this request to use the TLP must be filed with the Commission within 30 days of the filing date of this request and must include either the FERC project number or the name and address of the Licensee as depicted in the PAD.

To assist in open communication with potential stakeholders, the Licensee plans to use electronic communication as the primary method of communication when feasible. If electronic communication is not feasible, hard copy communication will be utilized. Documents filed with the Commission and provided to stakeholders will also be posted on a website at http://hydrorelicensing.com.

Under 18 CFR § 5.3(d)(2), the Licensee shall file no later than the date of this filing notices in a daily or weekly newspaper of general circulation in both Sawyer County, Wisconsin and Washburn County, Wisconsin. The notices shall include the filing date of the PAD and the request to use the TLP. The notices shall also summarize the documents filed, justification for requesting to use the TLP, Licensee's name, address, and telephone number, and indicate that comments are due within 30 days of the public notice filing date. Comments filed in response to the public notices must include the applicable project number and/or the Licensee's name and address, and state that respondents must submit comments to the Secretary of the Commission in accordance with filing procedures outlined in the Commission's website at http://FERC.gov.

The public notices shall also state that comments regarding the Licensee's request to use the TLP should address as appropriate the likelihood of timely license issuance, complexity of resource issues, level of anticipated controversy, relative cost of the TLP compared to the ILP, the amount of available information and potential for significant disputes over studies and other factors believed to be pertinent.

A public scoping meeting and site visit will be held between 30 and 60 days of the Commission's decision regarding Licensee's request to use the TLP. Written comments on the PAD must be filed with the Commission and a copy sent to NSPW within 60 days of the public scoping meeting.

Under 18 CFR § 5.5(e), the Licensee formally requests to be designated as the Commission's non-federal representative in relicensing of the Hayward Hydroelectric Project (FERC Project No. 2417) and the Trego Hydroelectric Project (FERC Project No. 2711) for the purposes of consultation under Section 7 of the Endangered Species Act and the joint regulations under 50 CFR Part 402, and National Oceanic and Atmospheric Administration under Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR § 600.920, and Section 106 of the National Historic Preservation Act and the implementing regulations under 36 CFR Part 800.

Thank you for your time and consideration in this matter. If you have any questions, please contact Matthew Miller at 715-737-1353 or matthew.j.miller@xcelenergy.com.

Respectfully Submitted,

Scott Crotty

Digitally signed by Scott Crotty
Date: 2020.11.24 06:26:18 -06'00'

For: James Zyduck
Director, Hydro Plants

Enclosures

cc: Distribution List

Certificate of Service

I hereby certify that I, on behalf of NSPW, a Wisconsin corporation, have this day served by First Class Mail the foregoing documents in electronic format upon each person designated on the attached distribution list.

Dated this 27th day of November 2020.

Darrin Johnson

Darrin M. Johnson
Mead & Hunt, Inc.

Hayward Hydroelectric Project Licensing
FERC Project No. 2417

Trego Hydroelectric Project Licensing
FERC Project No. 2711

Notice of Intent to Relicense
Request to Use the Traditional Licensing Process
Pre-Application Document
Distribution List

TRIBES

Mr. Chad Able, Treaty Natural Resource Administrator
Red Cliff Band of Lake Superior Chippewa
88385 Pike Rd., Hwy 13
Bayfield, WI 54814

Ms. Jamie Arsenault, THPO
White Earth Band of the Minnesota Chippewa
P.O. Box 418
White Earth, MN 56591

Ms. Melanie Benjamin, Chief Executive
Mille Lacs Band of Ojibwe
43408 Oodena Dr.
Onamia, MN 56359

Mr. Brian Bisonette, THPO
Lac Courte Oreilles Band of Lake Superior Chippewa Indians of WI
13394 West Trepania Road
Hayward, WI 54843

Mr. Michael Blackwolf, THPO
Fort Belknap Indian Community
656 Agency Main Street
Harlem, MT 59526-9455

Ms. Amy Burnette, THPO
Leech Lake Band of Minnesota
Chippewa Tribe
190 Sailstar Drive NE
Cass Lake, MN 56633

Mr. Alden Connor, THPO
Keweenaw Bay Indian Community
107 Beartown Rd.
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3501 Sand Lake Road
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P.O. Box 67
Lac du Flambeau, WI 54538

FEDERAL

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180 5th Street E
Suite 700
St. Paul, MN 55101

Ms. Kimberly Bose, Secretary
FERC Office of General Counsel
888 First Street NE
Washington, DC 20426

Ms. Kimberly Bose, Secretary
FERC Office of Energy Projects
888 First Street NE
Washington, DC 20426

Ms. Tokey Boswell, Regional Environmental Coordinator
U.S. Department of the Interior – National Park Service
601 Riverfront Drive
Omaha, NE 68102

Mr. Michael C. Connor
U.S. Department of the Interior-Comm. U.S. Bureau Reclamation
1849 C Street NW.
Washington, DC 20240-0001

Honorable Glenn Grothman, U.S. Representative
U.S. Representative from Wisconsin District 6
1427 Longworth H.O.B.
Washington, DC 20515

Mr. Timothy Lapointe, Regional Director
U.S. Bureau of Indian Affairs Midwest Regional Office
5600 West American Boulevard
Suite 500
Bloomington, MN 55437

Ms. Mary Manydeeds, Environmental Specialist
U.S. Department of the Interior – Bureau of Indian Affairs, Norman Pointe II Building
5600 American Boulevard W
Suite 500
Bloomington, MN 55437

Ms. Angela Tornes, Midwest Hydropower Coordinator
U.S. Department of the Interior - National Park Service
626 E Wisconsin Ave, Suite 100
Milwaukee, WI 53202

Honorable Tom Tiffany, U.S. Representative
U.S. Representative from Wisconsin District 7
1714 Longworth H.O.B.
Washington, DC 20515

Ms. Jen Tyler, Mail Code: E-19J
U.S. Environmental Protection Agency – NEPA Implementation Section, Region V
77 W Jackson Boulevard, AR-18J
Chicago, IL 60604

U.S. Department of the Interior – Fish & Wildlife Service – Green Bay Field Office
Field Supervisor
2661 Scott Tower Drive
New Franken, WI 54229

Mr. Nick Utrup, Fisheries Biologist
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STATE
Public Service Commission of Wisconsin
P.O. Box 7894
Madison, WI 53707

Wisconsin Cooperative Fishery Research Unit
UW Stevens Point
2100 Main Street
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Beaver Dam, WI 53916

Mr. Jeffrey Scheirer, Watershed Management
Wisconsin Department of Natural Resources
875 S. Fourth Ave
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Wisconsin Office of the Governor
P.O. Box 7863
Madison, WI 53702

Mr. Tyler Howe, Office
Wisconsin State Historical Society
816 State Street
Madison, WI 53706

LOCAL
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N7069 Oak Hill Rd.
Trego, WI 54888

City Manager
City of La Crosse
400 La Crosse Street
La Crosse, WI 54601

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W6097 River Road
Trego, WI 54880

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10610 Main St. Suite 23
Hayward, WI 54843

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Town of Trego
N8521 Hwy 53
Trego, WI 54880

Marathon County
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Wausau, WI 54403

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Washburn County
10 4th Avenue, P. O. Box 639
Shell Lake, WI 54871

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Eau Claire, WI 54702-5148

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Hayward, WI 54843

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Hayward, WI 54843

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Chairman
Walleye for Tomorrow
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Mr. Scott Crotty
Senior Operations Manager
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1414 W Hamilton Ave
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Mr. James Fossum
River Alliance of Wisconsin
JD Fossum Environmental Consulting
199 Janet Marie Ln.
Winona, MN 55987

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Trego Lake District
N7658 Wood Dr.
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Mr. Matt Miller
Hydro License Compliance Consultant
Xcel Energy
1414 W Hamilton Ave
Eau Claire, WI 54701-7252

Northwest Regional Planning Committee
1400 S. River St.
Spooner, WI 54801-8692

Mr. Charlie Peterson, Board Member
Trego Lake District
5504 12th Avenue South
Minneapolis, MN 55417

Mr. James Zyduck
Director of Hydro Plants
Xcel Energy
1414 W Hamilton Ave
Eau Claire, WI 54701-7252

NOTICE OF INTENT
BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION
TO FILE AN APPLICATION
FOR SUBSEQUENT LICENSE
HAYWARD HYDROELECTRIC PROJECT
FERC PROJECT NO. 2417
NORTHERN STATES POWER COMPANY-WISCONSIN, d/b/a Xcel Energy

In accordance with 18 C.F.R. § 5.5, Northern States Power Company-Wisconsin, d/b/a Xcel Energy, hereby declares its intent to file an application for a subsequent license for an existing minor hydroelectric development at the Hayward Hydroelectric Project as described below.

Information Required Pursuant to 18 C.F.R. § 5.5 and 16.6(b)

1. Potential License Applicant's Name and Address

The licensee's name and address are:

Northern States Power Company – Wisconsin (NSPW)
Attn: James M. Zyduck
Director of Hydro Plants
1414 W. Hamilton Ave.
PO Box 8
Eau Claire, WI 54702-0008
James.Zyduck@XcelEnergy.com

2. Project Number

The FERC project number is 2417.

3. License Expiration Date

The license expiration date is November 30, 2025.

4. Statement of Intent

Northern States Power Company-Wisconsin, d/b/a Xcel Energy, unequivocally intends to file an application for a subsequent license for the Hayward Hydroelectric Project (FERC No. 2417) and has requested permission to use the Commission's Traditional Licensing Process.

5. Principal Project Works and Project Description

The principal project works consist of a 424-foot long, 18-foot high dam consisting of four sections, an intake channel, a powerhouse with one generating unit, and a 0.48 kV/12.5 kV step up transformer.

The dam consists of four sections: 1) a 200-foot long right earth embankment which extends from the right bank to the powerhouse with a top width of 30 feet and a crest elevation of 1,185.5 feet; 2) an 80-foot long middle earth embankment which extends from the powerhouse to the overflow spillway section with a top width of 30 feet and crest elevation of 1,188.5; 3) a 120-foot long overflow spillway

section with 8 stoplog bays, and two slide gate bays with a crest elevation of 1,183.4 feet; and 4) a left earth embankment that extends from the left abutment of the overflow spillway to the left bank.

The intake channel includes the concrete intake structure, trashrack, steel bulkhead, access bridge, and access bridge over the channel. The 42-foot wide (upstream to downstream) intake channel varies in length from 13 feet on the upstream side to 8 feet at the intake.

The powerhouse is 18 feet long by 24 feet wide by 27.5 feet high. It contains one vertical Francis-type turbine unit manufactured by S. Morgan Smith Company with a maximum hydraulic capacity of 178 cfs that is rated at 280 hp at 17 feet of head.

The powerhouse also contains one Northwestern Electric Equipment Company, 2300-volt, 180 rpm, 0.8 power factor AC generator with a nameplate capacity of 168 kilowatts (kW).

6. Location of the Project

The location of the project is as follows:

State:	Wisconsin
County:	Sawyer County, WI
Stream:	Namekagon River approximately 60 miles upstream of its confluence with the St. Croix River and 33 miles downstream of its source at Lake Namekagon
Nearby Communities:	City of Hayward, Wisconsin; Town of Hayward, Wisconsin
Other:	Located in the City of Hayward in Sawyer County, WI; approximately 50 miles southwest of the City of Ashland, WI; and approximately 85 miles north of the City of Eau Claire, WI.

7. Installed Plant Capacity

The plant has an installed capacity of 168 kW.

8. Names and Mailing Addresses

- *Every county in which any part of the project is located, and in which any Federal facility that is used or to be used by the project is located:*

County:	Sawyer
Contact name:	Thomas Hoff, County Administrator
Mailing Address:	10610 Main St., Suite 23 Hayward, WI 54843 tom.hoff@sawyercountygov.org

The Project uses no federal facilities and occupies no federal lands.

- *Every city, town, or similar local political subdivision*

  (A) in which any part of the project is or is to be located and any Federal facility that is or is to be used by the project is located:

  Town Chairman
  Town of Hayward
  15460W State Road 77E
  Hayward, WI 54843
  townofhayward@cheqnet.net

  Lisa Poppe, Clerk/Treasurer
  City of Hayward
  PO Box 969
  Hayward, WI 54843

  The Project uses no federal facilities and occupies no federal lands.

  (B) that has a population of 5,000 or more people and is located within 15 miles of the existing proposed project dam:

  None.

- *Every irrigation district, drainage district, or similar special purpose political subdivision*

  (A) in which any part of the project is or is proposed to be located and any Federal facility that is or is proposed to be used by the project is located;

  Northwest Regional Planning Commission
  1400 S. River St.
  Spooner, WI 54801-8692

  The Project uses no federal facilities and occupies no federal lands.

  (B) that owns, operates, maintains, or uses any project facility or any Federal facility that is or is proposed to be used by the project:

  None.

- *Every other political subdivision in the general area of the project or proposed project that there is reason to believe would likely be interested in, or affected by, the notification:*

  None.

- *Indian tribes:*

  Mr. Chad Able, Treaty Natural Resource Administrator
  Red Cliff Band of Lake Superior Chippewa
  88385 Pike Rd., Hwy 13
  Bayfield, WI 54814

Ms. Jamie Arsenault, THPO
White Earth Band of the Minnesota Chippewa
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White Earth, MN 56591

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107 Beartown Rd.
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P.O. Box 365
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2051 Sand Lake Rd.
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3501 Sand Lake Road
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Red Cliff Band of Lake Superior Chippewa
88385 Pike Rd., Hwy 13
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Mr. Adam VanZile, THPO
Sokaogon Chippewa Community, Mole Lake Band
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Crandon, WI 54520
Adam.VanZile@SCC-nsn.gov

Mr. Andrew Werk, President
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
656 Agency Main St.
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Ms. Natalie Weyaus, THPO
Mille Lacs Band of Ojibwe
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Stockbridge Munsee Community of Wisconsin
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Lac Du Flambeau Band of Lake Superior Chippewa Indians
P.O. Box 67
Lac Du Flambeau, WI 54538-0067

Mr. James Williams, Chairman
Lac Vieux Desert Band of Lake Superior Chippewa Indians of MI
E23968 Pow Wow Trail
Watersmeet, MI 49969

Ms. Melinda Young, THPO
Lac du Flambeau Band of Lake Superior Chippewa Indians of WI
P.O. Box 67
Lac du Flambeau, WI 54538

NOTICE OF INTENT
BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION
TO FILE AN APPLICATION
FOR SUBSEQUENT LICENSE
TREGO HYDROELECTRIC PROJECT
FERC PROJECT NO. 2711
NORTHERN STATES POWER COMPANY-WISCONSIN, d/b/a Xcel Energy

In accordance with 18 C.F.R. § 5.5, Northern States Power Company-Wisconsin, d/b/a Xcel Energy, hereby declares its intent to file an application for a subsequent license for an existing minor hydroelectric development at the Trego Hydroelectric Project as described below.

Information Required Pursuant to 18 C.F.R. § 5.5 and 16.6(b)

1. Potential License Applicant's Name and Address

The licensee's name and address are:

Northern States Power Company – Wisconsin (NSPW)
Attn: James M. Zyduck
Director of Hydro Plants
1414 W. Hamilton Ave.
PO Box 8
Eau Claire, WI 54702-0008
James.Zyduck@XcelEnergy.com

2. Project Number

The FERC project number is 2711.

3. License Expiration Date

The license expiration date is November 30, 2025.

4. Statement of Intent

Northern States Power Company-Wisconsin, d/b/a Xcel Energy, unequivocally intends to file an application for a subsequent license for the Trego Hydroelectric Project (FERC No. 2711) and has requested permission to use the Commission's Traditional Licensing Process.

5. Principal Project Works and Project Description

The principal project works consist of a dam with two earthen embankment sections, a spillway section, a sluiceway section, and a powerhouse section with two generating units. Other project works include a 2.4 kV/23.9 kV step up transformer in an adjacent non-project substation.

From right to left the dam consists of five sections: 1) a 30-foot high by 380-foot long right earthen embankment section with a crest elevation of 1,040 feet; 2) 27-foot high by 56-foot long (right to left), by 112-foot wide Tainter gate spillway section with a gate sill elevation of 1,026 feet and a top of gate

elevation of 1,035.2 feet; 3) a 29-foot high by 6-foot long by 99-foot wide sluice gate spillway section with a crest elevation of 1,028 feet; 4) a 74-foot high by 59.5-foot long by 30.2-foot wide powerhouse section; and 5) a 25-foot high by 110-foot long left earthen embankment section with a crest elevation of 1,040 feet.

The powerhouse contains two vertical Francis-type turbines manufactured by the J. Leffel Company. Unit 1 has a 56-inch runner, a maximum hydraulic capacity of 140 cfs, and a rated capacity of 1,095 hp when operating at a constant speed of 164 rpm. Unit 2 has a 47.5-inch runner, a maximum hydraulic capacity of 100 cfs, and a rated capacity of 785 hp when operating at a constant speed of 180 rpm.

The powerhouse also contains two generators with a total rated capacity of 1,200 kW. Unit 1 consists of an 875 KVA, 700 kW (at 0.8 power factor), 2,400-volt, 60 cycle, 164 rpm alternator and direct connected 124-volt exciter. Unit 2 consists of a 625 KVA, 500 kW (at 0.8 power factor), 2,400-volt, 60 cycle, 180 rpm alternator and a direct connected 16 kW, 125-volt exciter.

6. Location of the Project

The location of the project is as follows:

State:	Wisconsin
County:	Washburn County, WI
Stream:	Namekagon River approximately 30 miles upstream of its confluence with the St. Croix River and 70 miles downstream of its source at Lake Namekagon
Nearby Communities:	City of Spooner, Wisconsin; Town of Trego, Wisconsin
Other:	Located in the Town of Trego in Washburn County, WI; approximately 8 miles north of the City of Spooner, WI; and approximately 81 miles north of the City of Eau Claire, WI.

7. Installed Plant Capacity

The plant has an installed capacity of 1.2 MW.
Unit 1: 700 kW
Unit 2: 500 kW

8. Names and Mailing Addresses

- *Every county in which any part of the project is located, and in which any Federal facility that is used or to be used by the project is located:*

County:	Washburn
Contact name:	Lolita Olson, County Clerk
Mailing Address:	10 4th Avenue, P. O. Box 639 Shell Lake, WI 54871 coclerk@washburn.wi.us

The Project uses no federal facilities and occupies no federal lands.

- *Every city, town, or similar local political subdivision*

  (A) in which any part of the project is or is to be located and any Federal facility that is or is to be used by the project is located:

  Wes Huffer, Town Chairman
  Town of Trego
  N8521 Hwy 53
  Trego, WI 54888
  wchuffer@gmail.com

  The Project uses no federal facilities and occupies no federal lands.

  (B) that has a population of 5,000 or more people and is located within 15 miles of the existing proposed project dam:

  None.

- *Every irrigation district, drainage district, or similar special purpose political subdivision*

  (A) in which any part of the project is or is proposed to be located and any Federal facility that is or is proposed to be used by the project is located;

  Northwest Regional Planning Commission
  1400 S. River St.
  Spooner, WI 54801-8692

  Trego Lake District
  Charlie Peterson, Chairman
  5504 12th Avenue South
  Minneapolis, MN 55417

  The Project uses no federal facilities and occupies no federal lands.

  (B) that owns, operates, maintains, or uses any project facility or any Federal facility that is or is proposed to be used by the project:

  None.

- *Every other political subdivision in the general area of the project or proposed project that there is reason to believe would likely be interested in, or affected by, the notification:*

  None.

- *Indian tribes:*

Mr. Chad Able, Treaty Natural Resource Administrator
Red Cliff Band of Lake Superior Chippewa
88385 Pike Rd., Hwy 13
Bayfield, WI 54814

Ms. Jamie Arsenault, THPO
White Earth Band of the Minnesota Chippewa
P.O. Box 418
White Earth, MN 56591

Ms. Melanie Benjamin, Chief Executive
Mille Lacs Band of Ojibwe
43408 Oodena Dr.
Onamia, MN 56359

Mr. Brian Bisonette, THPO
Lac Courte Oreilles Band of Lake Superior Chippewa Indians of WI
13394 West Trepania Road
Hayward, WI 54843

Mr. Michael Blackwolf, THPO
Fort Belknap Indian Community
656 Agency Main Street
Harlem, MT 59526-9455

Ms. Amy Burnette, THPO
Leech Lake Band of Minnesota
Chippewa Tribe
190 Sailstar Drive NE
Cass Lake, MN 56633

Mr. Alden Connor, THPO
Keweenaw Bay Indian Community
107 Beartown Rd.
Baraga, MI 44908

Ms. Stacie Cutbank, THPO
Oneida Nation of Wisconsin
P.O. Box 365
Oneida, WI 54155-0365

Mr. Ned Daniels, Jr., Chairman
Forest County Potawatomi Community of Wisconsin
2051 Sand Lake Rd.
Crandon, WI 54520-9801

Mr. Marvin Defoe, THPO
Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin
88385 Pike Road Hwy. 13
Bayfield, WI 54814

Ms. Joan Delabreau, Chairperson
Menominee Indian Tribe of Wisconsin
P.O. Box 910
Keshena, WI 54135

Ms. Beth Drost, Chairperson
Grand Portage Band of the MN Chippewa Indians
P.O. Box 428
Grand Portage MN 55605

Mr. Kevin Dupuis, Sr., Chairperson
Fond du Lac Band of the Minnesota Chippewa Tribe
1720, Big Lake Rd.
Cloquet, MN 55720

Mr. Michael Fairbanks, Chairperson
White Earth Band of the Minnesota Chippewa
P.O. Box 418
White Earth, MN 56591

Mr. Gary Frazer, Executive Director
Minnesota Chippewa Tribe
P.O. Box 217
Cass Lake, MN 56633

Mr. David Grignon, THPO
Menominee Indian Tribe of WI
W3426 Cty. VV
P.O. Box 910
Keshena, WI 54135-0910

Mr. Tehassi Hill, Chairperson
Oneida Tribe of Wisconsin
P.O. Box 365
Oneida, WI 54155-0365

Ms. Shannon Holsey, President
Stockbridge-Munsee Tribe of Mohican Indians
N8476 Mo He
Troy, NY 12180

Ms. Jill Hoppe, THPO
Fond du Lac Band of Lake Superior Chippewa
1720 Big Lake Road
Cloquet, MN 55720

Ms. Diane Hunter, THPO
Miami Tribe of Oklahoma
PO Box 1326
Miami, OK 74355

Mr. Farron Jackson, St., Chairperson
Leech Lake Band of Chippewa Indians
6530 U.S. Hwy. 2 NW
Cass Lake, MN 56633

Douglas Lankford, Chief
Miami Tribe of Oklahoma
P.O. Box 1326
Miami, OK 74355

Mr. Michael LaRonge, THPO
Forest County Potawatomi Community of Wisconsin
5320 Wensaut Lane
P.O. Box 340
Crandon, WI 54520

Ms. Edith Leoso, THPO
Bad River Band of Lake Superior Tribe of Chippewa Indians
P.O. Box 39
Odanah, WI 54862

Ms. Wanda McFaggen, THPO
St. Croix Band of Lake Superior Chippewa
24663 Angeline Ave
Webster, WI 54893

Mr. Chris McGeshick, Chairperson
Sokaogon Chippewa Community of Wisconsin
3501 Sand Lake Road
Crandon, WI 54520

Ms. Daisy McGeshick, THPO
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
P.O. Box 249
Watersmeet, MI 49969

Mr. Clinton Parish, Chairman
Bay Mills Indian Community of MI
12140 W. Lakeshore Drive
Brimley, MI 49715-9319

Mr. Rick Peterson, Chairperson
Red Cliff Band of Lake Superior Chippewa
88385 Pike Rd., Hwy 13
Bayfield, WI 54814

Mr. William Quackenbush, THPO
Ho-Chunk Nation
Executive Offices
P.O. Box 667
Black River Falls, WI 54615

Mr. Jared Swader, THPO
Grand Portage Band of Chippewa Indians
PO Box 428
Grand Portage, MN 55605

Mr. Warren C. Swartz, Sr., President
Keweenaw Bay Indian Community
17429 Beartown Road
Baraga, MI 49908

Mr. Louis Taylor, Sr., Chairman
Lac Courte Oreilles Band of Chippewa Indians
13394 W. Trepania Rd., Bldg. No. 1
Hayward, WI 53843-2186

Mr. Lewis Taylor, Chairman
St. Croix Chippewa Indians of WI
24663 Angeline Ave.
Webster, WI 54893

Mr. Adam VanZile, THPO
Sokaogon Chippewa Community, Mole Lake Band
3051 Sand Lake Road
Crandon, WI 54520

Mr. Andrew Werk, President
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
656 Agency Main St.
Harlem, MT 59526

Ms. Natalie Weyaus, THPO
Mille Lacs Band of Ojibwe
43408 Oodena Drive
Onamia, MN 56359

Ms. Sherry White, THPO
Stockbridge Munsee Community of Wisconsin
Tribal Office, P.O Box 70
Bowler, WI 54416

Mr. Marlin WhiteEagle, President
Ho-Chunk Nation of WI
P.O. Box 667
Black River Falls, WI 54615

Mr. Michael Wiggins, Chairman
Bad River Band of the Lake Superior Tribe of the Chippewa
P.O. Box 39
Odanah, WI 54861

Mr. Joseph Wildcat, Sr., President
Lac Du Flambeau Band of Lake Superior Chippewa Indians
P.O. Box 67
Lac Du Flambeau, WI 54538-0067

Mr. James Williams, Chairman
Lac Vieux Desert Band of Lake Superior Chippewa Indians of MI
E23968 Pow Wow Trail
Watersmeet, MI 49969

Ms. Melinda Young, THPO
Lac du Flambeau Band of Lake Superior Chippewa Indians of WI
P.O. Box 67
Lac du Flambeau, WI 54538

1414 West Hamilton Avenue
PO Box 8
Eau Claire, WI 54702-0008

November 27, 2020

Sherman and Ruth Weiss Community Library
10788 State Hwy. 77
Hayward, WI 54843

Spooner Memorial Library
421 High St.
Spooner, WI 54801

Subject: Request to Display Public Copy

To Whom it may concern:

Northern States Power Company-Wisconsin, d/b/a Xcel Energy, is beginning the Federal Energy Regulatory Commission's relicensing process for its Hayward Hydroelectric Project (FERC Project No. 2417) and Trego Hydroelectric Project (FERC No. 2711).

Therefore, it politely requests you to locate this enclosed hard copy in a location that is reasonably accessible to the public for inspection during regular business hours. Please retain this copy for public inspection until November 30, 2025.

Thank you for your time and consideration in this matter. If you have any questions, please contact me at 715-737-1353 or matthew.j.miller@xcelenergy.com.

Respectfully Submitted,

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: 2020.11.24 22:28:40 -06'00'

Matthew J. Miller
Hydro License Compliance Consultant

Enc. NOI, PAD, and TLP Request

Xcel Energy®
RESPONSIBLE BY NATURE®

1414 West Hamilton Avenue
PO Box 8
Eau Claire, WI 54702-0008

December 10, 2020

FERC Docket Nos. 2417-065 and 2711-024

VIA Electronic Filing

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: Proof of Publication of NOI, PAD, and Request to Use TLP
Hayward Hydroelectric Project (FERC Project No. 2417)
Trego Hydroelectric Project (FERC Project No. 2711)

Dear Secretary Bose:

Pursuant to 18 CFR § 5.3(d)(2), Northern States Power Company – Wisconsin, d/b/a Xcel Energy, licensee for the Hayward Project (P-2417) and the Trego Project (P-2711), published notices in newspapers of general circulation in Sawyer County and Washburn County, Wisconsin regarding our filing of the Notices of Intent (NOI), Pre-Application Document (PAD), and requests to use the Traditional Licensing Process (TLP) for said Projects. The notices were published in the Sawyer County Record on November 25, 2020 and the Spooner Advocate on November 26, 2020. Copies of both public notices and Affidavits of Publication are enclosed.

Should you have any questions, please contact Matthew Miller at 715-737-1353 or matthew.j.miller@xcelenergy.com.

Sincerely,

James M Zyduck

Digitally signed by James M Zyduck
Date: 2020.12.10 15:23:52 -06'00'

James M. Zyduck
Director, Hydro Plants

Enclosures

Cc: Shawn Puzen, Darrin Johnson – Mead & Hunt, Inc. (via e-mail)
Project Files

EDITOR'S INBOX

Give thanks for our community library

Editor:

Recently, I opened a drawer and noticed a library receipt that said "you just saved $25.00 by using the library today." I thought about how many books I have borrowed since the COVID "stay at home" order in March, and it has been at least 12.

Wow, that is a savings of at least $250 over the purchase price! I want to take a moment to express gratitude for having a responsive library that will get the books I want to read. Even during these tough times, the staff found a way to make the books available.

The library is a community asset for which we should be thankful.

Martha Zych Hayward

Women speak up for the earth

Editor:

I attended the planning committee meeting on Nov. 12 at Hayward's city hall. I noticed it was women who spoke on behalf of our local farmer's market and against the clear-cutting and brutal biomass removal between Hospital Road and Havenwood Lane.

Ever since witnessing chloroplasts moving in circles on a scraped leaf in botany class, I've been awed by the process of photosynthesis on which our lives depend. In the past year I've learned of the mycorrhizal relationships between fungi in the soil and tree root tips. (Trees communicate with each other via these underground connections.) Whether on the basis of scientific observation or compassion for a 30-40-year-old tree being bowled over by a tough machine, it seems women are willing to speak up for non-human neighbors on earth. I wish we had women on the city council and planning committee to speak for co-existence.

Hazel Jonjak Hayward

Is climate change really controversial?

Editor:

I am encouraged that climate change was an issue in this last election. And I appreciated U.S. Supreme Court Justice Amy Coney Barrett's statement that climate change is a controversial issue.

It's controversial that there were 16 U.S climate disasters in the U.S. in the first nine months of this year whose losses exceeded a billion dollars. These 16 events resulted in the deaths of 188 people and had significant economic effects on the areas impacted. Yet many leaders (but not most of the public) don't want to believe the science that clearly shows this increase in natural disasters is a result of climate change, so our country left the Paris Climate Accord and eliminated regulations that would have reduced carbon emissions.

It's controversial that the U.S. continues to subsidize the fossil fuel industry directly and indirectly, but our individual ability to receive tax incentives for renewable energy infrastructure, such as solar or wind, decreased this year and will be gone after next year.

I think it's controversial that many of our national leaders don't seem to care that we are leaving our children and grandchildren to pay the price of climate change. I have hope, though, that our citizens will push for action to reduce carbon emissions at all levels of government. I hope for incentives that will grow our renewable energy industry and allow us to significantly reduce fossil fuel use.

I have hope we will think about our grandchildren and make sacrifices ourselves to reduce their risks of facing a looming climate crisis.

Pam Dryer Mason

The Hayward senior center needs your help

Editor:

I am writing this because of the Hayward senior center. The Hayward senior center has done so much for the people in Hayward, and now it is our time to help them. The bus they have is getting to be a costly item. Working with Marketplace Foods, they have put together a coupon book to be used at the store; with it you can save money and even get some free items.

Money raised from the sale of the books will go towards a new bus and we are hoping to get a lot of help from the people here. Do you know that the center delivers 125 or more meals every day?

You can pick up a book at the Senior Center from 9 a.m. till 4 p.m. for $20 and the book has more than $100 worth of coupons. I want to say these would be a great stocking suffer or you may know of someone who could use one that may be in need, a great idea to help a person or couple.

I am hoping if you do not take a coupon book please send a donation. Every dollar counts. You will find coupon books at Lori's Cards and Gifts, Price Rite Liquor and the Senior Center.

We are here to serve anyone needs to have lunch; we still bring lunch to your door. Please call for information, 715-634-3000 or 715-634-4680. The senior center is located at 15856 5th Street, Hayward WI 54843.

MaryAnn Sebek Hayward

OFF THE TOP OF MY HEAD

Thankful to become the 'crazy old man'

BY **PAUL MITCHELL,**
General Manager

Oh, these are strange times we're living in, aren't they?

A few days ago I woke up early, started my coffee, went downstairs to the family room and plopped on the couch. I pulled out my phone and checked my email.

And there was one from my friend (and occasional contributor to the Record) Mel Kelly. The subject line was alarming: "I am sad to let you know that."

Oh, no. Why was Mel sad? What was she letting me know? I assumed it was something having to do with COVID. The email had come in at 4:46 a.m.

I opened the email:

"Our mother, Mel Lytle Kelly, died in Carrabelle, FL on ---------. She wanted us to let you know because she thought so highly, so fondly of you."

It went on to say that there would be no services, etc. , and that Mel's remains would join those of her beloved late husband, Tom.

Oh, Mel, I thought. I had just shared a few emails with her within the past couple of weeks. Was it COVID, I wondered? How odd that the date she died was blank. Weren't they sure when she actually died?

Oh, Mel, so full of life and banter and fun conversation. How could she be gone?

And then I noticed at the bottom there was a second email. I scrolled down.

"Please excuse me – this was sent in error – glad to report that Mel Kelly is still very much alive."

Oh, Mel.

She was setting up a way for her children to alert her widespread circle of friends in the event that, at SOME POINT, she passes beyond the veil. And instead of just saving the email, Mel accidentally sent it out to her widespread circle of friends.

Oh, Mel.

Thoughtful?

Yes.

Disturbing?

Kind of.

Hilarious?

Totally.

So Mel's little snafu becomes perfect Thanksgiving fodder because, of course, her friends and family are so very thankful that she's not really dead. And her family now has another story for the family archives. "Remember the time Mom told everyone she was dead?"

Last night Vaughan and I watched a movie from 1995, "Home for the Holidays." Do you know it? The movie stars Holly Hunter and Anne Bancroft and Robert Downey Jr. It's about adults going home to their crazy parents' house for Thanksgiving, where family dynamics wreak havoc on everyone.

We watched, relating to the adult children going home, and all of a sudden the truth hit me.

We're not the adults going home to the parents; our parents are gone. We have no "home" to return to.

We are now the crazy parents.

Our home is the one the adult children have to return to. They didn't grow up in our home because we've moved since my kids all went out on their own, but still. Our parents' home is always "home," even if we never lived in it.

And now Vaughan and I are the crazy old people that the kids have to struggle to relate to.

Do we have strange habits the kids don't understand?

Do we make them crazy with the nonsense that comes out of our mouths? Do we tell them stories that we think are hilarious, yet they can't even begin to relate to?

When we host holidays, do they sneak off to a corner of the basement and whisper about how nuts we are? Will I start wearing a wig and support hose soon?

Wow. What a realization, one that I'm sure that many of you — given the demographics of newspaper readers — can relate to.

We are the crazy old people that add ridiculous humor to every holiday movie.

Perhaps this Thanksgiving, given the fact that there'll be just the two of us at the table thanks to COVID, we can pretend for one more year that we're just a couple of young adults counting our blessings and stuffing our faces.

But next Thanksgiving, when things, hopefully, are back to normal and we have to once again put the leaves in the table to accommodate the crowd, I think I'm going to put on my Crazy Old Man hat and wear it with pride. I'll count not only blessings, but also the grimaces of my children as I say crazy stuff. If I need inspiration, I'll just fondly remember my father, the ultimate "Crazy Old Man."

I remember years ago, my former mother-in-law stating proudly that she had reached the age where she could say anything she darned well pleased. At that time she was probably all of 60 years old. (She's still saying her piece today at 89.)

I remember thinking, "Good lord, don't ever let me hit the point where I'm going to say whatever I want to say, people's opinions of me be damned."

But I think I'm getting there.

This Thanksgiving, I'm thankful for a lot. I'm thankful that my kids are healthy, that I have a wonderful husband to share my life with, that I have wonderful friends and co-workers to share my days with (even at a distance) and that I'm still breathing.

I'm thankful Mel's alive.

And I'm also thankful that I get to be the crazy old person. It actually sounds like fun.

Now, don't take this wrong, Mel, but sending out that email is just what I'm talking about. If I accidentally send out an email telling everyone I'm dead, get over it.

I know for a fact that Mel embraces her current station in life. Me? I'm only 54, but with my cardiac issues, perhaps 54 is the new 70. I'm going to enjoy it.

Happy Thanksgiving to all of our readers.

As always, we are most thankful for all of you. Thanks for reading, thanks for subscribing and thanks for keeping us going another year. This one hasn't been easy, but we've almost made it through.

Have a safe and healthy holiday.

Spooner Advocate

Progress made at park, big project pending

BY TERRI REITER

It's been a tough year as COVID-19 greatly challenged the landscape of our lives. We are grateful and thankful, however, that despite the challenges, the Friends of the Railroad Park (FORRP) has made a lot of progress at the Spooner Railroad Park, which is located across the tracks from the Railroad Memories Museum.

We've worked hard this past summer and fall to bring a little piece of local history to life. Thankfully, after some postponements, our contractors were able to complete the Railroad Park Picnic Pavilion in time for hunter safety and yoga classes and lots of picnics and relaxing at the Park!

FORRP wishes to thank our community, donors, and partners (thank you to Schmitz's Economart for its help with the pavilion and brick restoration), contractors and invested businesses, and the city crew for our many blessings.

FORRP aspires to provide diverse year-round leisure opportunities through the preservation of Spooner's rich railroad history, open green space, and park settings for its community and visitors. Spooner Railroad Park encourages revitalization and community pride by stimulating economic, culturally enriched experiences, and activities within and around the park.

TERRI REITER

Lighting has been added to the new pavilion at Railroad Park in Spooner, expanding its usage.

Here are our most recent accomplishments: The restored weigh station/scale is nearly complete! It was used heavily in the '40s to mid-'70s to weigh railcars to price product to transport as well as making sure the railcar wasn't overloaded.

Ken Staves and Brad Paichin have taken over where Del Salgaist left off in restoring it back to its original state, both inside and out. Looking through the windows, you'll see pictures illustrating the similarities.

The Railroad Park Picnic Pavilion is complete with outlets, lights, and three donor benches adjacent, acknowledging our awesome Yard Master donors. The volleyball court has been moved north, with much landscaping by the city crew in place.

Our plans for the future include: further landscaping both at the weigh station and the park; creating historic preservation status for the Roundhouse; installing an ATV path from the Wild Rivers Trail to the parking lot, signage indicating where ATVers can park, a walkway from the parking lot to the pavilion, "in-use" sign at the pavilion, four more historic signs; and our greatest project for spring of 2021 is to preserve and secure six critical areas of the exterior brickwork of the Roundhouse.

Lastly, we've approved the request from the Spooner Pickle Ball Fun Addicts Club to reserve space to build a pickle ball/tennis court north of the weigh station for a two-year period at Railroad Park.

We need your help to continue! FORRP is humbly asking for donations to make this a beautiful, welcoming site for all to enjoy. Here are our immediate and ongoing needs:

> Crucial need to repair and secure six areas on the roundhouse this spring, to save and preserve the building and keep bricks intact. It's a tough, old building and built like a tank, but it urgently needs the repair to secure it so exterior cleaning and spot tuck pointing can be done at a later time with more fundraising – $25,000.

> Portable toilet expense for the park: $1,500/year.

> Website and marketing: $600/year.

Spooner Railroad Park Donation Levels:

> Gandy Dancer – $250: Recognition on website

> Engineer – $250-$999: Recognition on website and 4-by-8 recognition brick

Conductor – $1,000-$4,999: Logo and recognition on website and 8-by-8 recognition brick

Yard Master – $3,000+: Logo and recognition on website, 8-by-8 recognition brick, a tree or bench

Donations can be mailed to: Friends of the Railroad Park (FORRP), PO Box 348, Spooner, WI 54801.

If you would like to know more or how to donate, please call Terri Reiter, Chair of at 715-416-2995. Blessings to you, and I thank you again, for your incredible generosity.

PUBLIC NOTICE

On or before November 30, 2020, Northern States Power Company - Wisconsin (NSPW), d/b/a Xcel Energy, 1414 West Hamilton Avenue, P.O. Box 8, Eau Claire, Wisconsin 54702-0008, 715-737-1353 will file Notices of Intent to File a License Application (NOI) and a Pre-Application Document (PAD) for Subsequent Licenses for Minor Waterpower Projects for the Hayward Hydroelectric Project (FERC Project No. 2417) and the Trego Hydroelectric Project (FERC Project No. 2711) with the Federal Energy Regulatory Commission (FERC).

The NOIs and PAD provide details of the Hayward and Trego Hydroelectric Projects as well as NSPW's intent to seek subsequent licenses for their continued operation. The Hayward Project is located on the Namekagon River in the city of Hayward in Sawyer County, Wisconsin. The Trego Project is located on the Namekagon River in the town of Trego in Washburn County, Wisconsin. NSPW will be requesting permission from the FERC to use the Traditional Licensing Process (TLP) for both Projects.

The NOIs, PAD, and requests to use the TLP for the Projects will be available for public review and reproduction at the Sherman and Ruth Weis Community Library (10788 State Hwy. 77 in Hayward, WI) and the Spooner Memorial Library (421 High Street in Spooner, WI) during normal business hours. The documents will also be available for public review on the Xcel Energy Hydroelectric Project Website at http://hydrorelicensing.com and upon appointment at the Xcel Energy office at 1414 West Hamilton Avenue in Eau Claire, WI.

Comments can be filed with the FERC within 30 days of the filing date and respondents must submit comments to the Secretary of the Commission in accordance with filing procedures outlined in the Commission's website at http://FERC.gov. Comments on the request to use the TLP should address as appropriate the likelihood of timely license issuance, complexity of resource issues, level of anticipated controversy, relative cost of the TLP compared to the integrated process, the amount of available information and potential for significant disputes over studies, and other factors believed to be pertinent.

Xcel Energy®

ROP AFFIDAVIT

December 04, 2020

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Des Moines, IA 50309
515-244-2145 ext 152; Fax: 1-866-440-6028
Email: media@cnaads.com

Advertiser: Xcel Energy Brand:

Order #: 20114MX0

ATTN: Darrin White WI/Hayward SCR
WI/Hayward Sawyer County Record
15464 County Rd. B
Hayward, Wisconsin 54843

V: 715.699.3998 F: Email: dwhite@sawyercountyrecord.net

WI/Hayward Sawyer County Record (Hayward, WI)

Run Date	*Ad Size*	*Caption / Position / Special Instructions*	*Section and Page information*
Wed 11/25/20	3.00 X 10.00	**Special Instructions:** 5" x 10"	5A

This is to certify that the ROP advertising scheduled to run in your newspaper ran as per the placement details above. Please sign and verify that all information is accurate and correct.

Signed by CNA Media Department (Advertising Manager)

Sworn to and subscribed before me this 4th day of December 2020, 2019.

Notary Public

LAURA JEAN NIEMI
Notary Public
State of Minnesota
My Commission Expires
January 31, 2022

ROP AFFIDAVIT

December 04, 2020

Customized Newspaper Advertising
319 E 5th Street
Des Moines, IA 50309
515-244-2145 ext 152; Fax: 1-866-440-6028
Email: media@cnaads.com

Advertiser: Xcel Energy Brand:

Order #: 20114MX0

ATTN: Michelle Carlson WI/Spooner Advocate
WI/Spooner Advocate
251 East Maple St.
Spooner, Wisconsin 54801-0338

V: 715-635-2181 F: 1-715-635-2186 Email: mcarlson@spooneradvocate.com

WI/Spooner Advocate (Spooner, WI)

Run Date	*Ad Size*	*Caption / Position / Special Instructions*	*Section and Page information*
Thu 11/26/20	3.00 X 10.00	**Special Instructions:** 5" x 10"	A02

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Signed by CNA Media Department (Advertising Manager)

Sworn to and subscribed before me this 4th day of December 2020, 2019.

Notary Public

LAURA JEAN NIEMI
Notary Public
State of Minnesota
My Commission Expires
January 31, 2022

Hayward and Trego

NPS Meeting-Post JAM

Darrin Johnson

From: Tornes, Angela M. <Angie_Tornes@nps.gov>
Sent: Friday, March 12, 2021 9:24 AM
To: Shawn Puzen; Darrin Johnson; Miller, Matthew J; Crotty, Scott A
Cc: Zyduck, James M; Brauna Hartzell; Jen Schuetz; cheryl.laatsch@wisconsin.gov; wchuffer@gmail.com; cjpetersen@msn.com; Haller, Macaulay G - DNR; Antonuk, Connie J - DNR; Galonska, Juliet L; Yager, Lisa A; joan.harn; Arianna Schmidt
Subject: Hayward and Trego JAM/ River Access Planning Guide

Here's the link to the RAPG I mentioned in yesterday's meeting: https://www.nps.gov/articles/river-access-planning-guide-a-decision-making-framework-for-enhancing-river-access.htm

Another boating access resource: examples from around the country: https://www.nps.gov/articles/river-access-planning-guide-a-decision-making-framework-for-enhancing-river-access.htm

River Access Planning Guide: A Decision-Making Framework for Enhancing River Access (U.S. National Park Service)

The River Access Planning Guide is an online and downloadable resource for planning river access. The step by step process guides planning for river access with recreation users in mind. This guide can assist the challenging task of providing for a variety of uses while protecting natural resources in rivers and other waterways.

www.nps.gov

From: Shawn Puzen
Sent: Thursday, February 4, 2021 9:43 AM
To: Shawn Puzen <Shawn.Puzen@meadhunt.com>; Darrin Johnson <Darrin.Johnson@meadhunt.com>; Miller, Matthew J <Matthew.j.miller@xcelenergy.com>; Crotty, Scott A <scott.a.crotty@xcelenergy.com>
Cc: Zyduck, James M <james.zyduck@xcelenergy.com>; Brauna Hartzell <brauna.hartzell@meadhunt.com>; Jen Schuetz <jen.schuetz@meadhunt.com>; Tornes, Angela M. <Angie_Tornes@nps.gov>; cheryl.laatsch@wisconsin.gov <cheryl.laatsch@wisconsin.gov>; wchuffer@gmail.com <wchuffer@gmail.com>; cjpetersen@msn.com <cjpetersen@msn.com>; Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>; Antonuk, Connie J - DNR <Connie.Antonuk@wisconsin.gov>; Galonska, Juliet L <Julie_Galonska@nps.gov>; Yager, Lisa A <Lisa_Yager@nps.gov>; joan.harn@verizon.net <joan.harn@verizon.net>; Arianna Schmidt <Arianna.Schmidt@meadhunt.com>
Subject: [EXTERNAL] Hayward and Trego Joint Agency Meeting
When: Thursday, March 11, 2021 10:00 AM-1:00 PM.
Where: Microsoft Teams Meeting

I am very sorry to announce that we have to change the meeting date to March 11th.

I apologize for any inconvenience this will cause.

Additional Information, including an agenda will be provided before the meeting.

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

Or call in (audio only)
+1 872-240-1286,,798844818# United States, Chicago

Phone Conference ID: 798 844 818#
Find a local number | Reset PIN

Learn More | Meeting options

Darrin Johnson

Subject:	Meeting with NPS-Hayward/Trego
Location:	Microsoft Teams Meeting
Start:	Fri 3/19/2021 1:00 PM
End:	Fri 3/19/2021 2:00 PM
Show Time As:	Tentative
Recurrence:	(none)
Meeting Status:	Not yet responded
Organizer:	Darrin Johnson
Required Attendees:	Angela Tornes; joan.harn; Shawn Puzen
Optional Attendees:	Crotty, Scott A; Matt Miller

Meeting to discuss NPS questions on Hayward and Trego Projects

---

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

Or call in (audio only)
+1 872-240-1286,,887646054# United States, Chicago
Phone Conference ID: 887 646 054#
Find a local number | Reset PIN

Learn More | Meeting options

Darrin Johnson

From: Crotty, Scott A <scott.a.crotty@xcelenergy.com>
Sent: Friday, March 26, 2021 1:41 PM
To: Tornes, Angela M.; Miller, Matthew J
Cc: Shawn Puzen; Darrin Johnson
Subject: RE: lighting at Trego
Attachments: streetworks-caretaker-roadway-spec.pdf

Angie as requested, here is the lighting information for Trego, thanks.

Scott Crotty
Xcel Energy
Sr. Operations Manager - Hydro East/Wheaton
1400 Western Ave Eau Claire WI 54702-0008
P: 715-737-1428 C: 715-225-2576 F: 715-737-1077
E: scott.a.crotty@xcelenergy.com

From: Tornes, Angela M. <Angie_Tornes@nps.gov>
Sent: Monday, March 22, 2021 9:24 AM
To: Crotty, Scott A <scott.a.crotty@xcelenergy.com>; Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Subject: lighting at Trego

EXTERNAL - STOP & THINK before opening links and attachments.

Good morning, Scott and Matt,

Scott, thank you again for discussing additional issues associated with the Trego and Hayward projects after the Joint Agency Meeting. As discussed, would you please send me information about the type of new LED lighting fixtures and bulbs installed at the Trego project a couple of years ago, mentioned by Ricky at the JAM? The NPS has a management goal to protect night skies and has experts that can recommend best practices. Best practice guidance is available at: https://www.nps.gov/subjects/nightskies/practices.htm

- Angie ....·¯`·......><((((*> ...·¯`·......><(((((*> ...·¯`·.......><(((((*>

Angie Tornes National Park Service - Department of Interior Regions 3, 4, and 5

Rivers, Trails, and Conservation Assistance (RTCA) Program, Wisconsin Field Office Manager

Hydropower Assistance Program, Manager, DOI Regions 3, 4, & 5

(414) 297.3605 **desk** (414) 944.3957 **fax**

626 E. Wisconsin Ave., Suite 400, Milwaukee, WI 53202

RTCA: http:\\www.nps.gov/rtca Hydropower Assistance: http://nps.gov/hydro

DESCRIPTION

The Caretaker LED roadway luminaire combines high performance, low maintenance and easy installation in a simple, extremely economical package. Designed for years of worry-free operation, the Caretaker luminaire is ideal for municipal streetlighting retrofits requiring superior optical performance and fast payback on capital.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Cast-aluminum housing and door. Access is via a single captive screw; tool-less access option available. Hinged removable power tray door for easy maintenance.

Optical
Injection-molded optics available in two full-cutoff distributions with wide, uniform light delivery. Fully compatible with standard NEMA refractor/reflector assemblies. 4000K CCT, minimum 70 CRI standard. Optional 3000K and 5000K CCT available.

Electrical
LED driver mounted to removable die-cast aluminum door. Standard driver is non-dimming, 120V only, optional dimming driver is 120-277V. Both drivers have 6kV onboard surge protection. 10kV/10kA surge protection options (meeting IEEE C62.41.2-2002 Location category C, High Exposure) are available. Luminaire is designed for efficient thermal management; heat is transferred away from the LEDs for optimal efficiency, light output, and life. Three-position tunnel-type compression terminal block. Lumen maintenance of 86% at 36,000 hours for 8-LED version. LED module is IP66 enclosure rated.

Mounting
Two-bolt slipfitter for mounting on 1-1/4" to 2" standard pipe (1-5/8" to 2-3/8" O.D.). Also available with a bracket for mounting to wood poles or walls without a pipe.

Finish
Unfinished raw aluminum standard. Optional five-stage super TGIC polyester powder coat paint, 2.5-mil nominal thickness for superior protection against fade and wear. Consult your lighting representative at Cooper Lighting Solutions for a complete selection of standard colors.

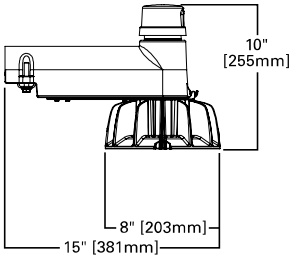
Warranty
Five-year warranty.

CRTK-R
CARETAKER LED

8 or 12 LEDs
Solid State LED

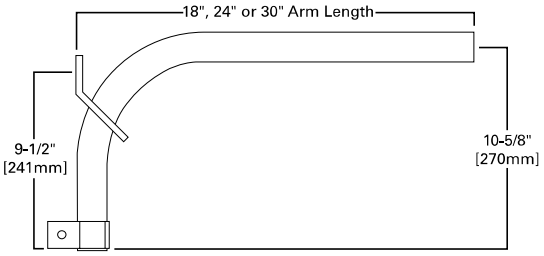
ROADWAY LUMINAIRE

DIMENSIONS



OPTIONAL WOOD POLE PIPE ARM

18", 24" or 30" Pipe Arm



CERTIFICATION DATA

ISO 9001
IP66 LED Array
3G Vibration Rated

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120/60Hz
-40°C Minimum Ambient Temperature Rating
+40°C Maximum Ambient Temperature Rating

EPA

Effective Projected Area: (Sq. Ft.) 0.67

SHIPPING DATA

Approximate Net Weight:
8.0 lbs. (3.6 kgs.)

POWER AND LUMENS

Light Engine		48W (8 LEDs)	73W (12 LEDs)
Type II	3000K Lumens / 80 CRI	3,469	4,916
	4000K Lumens / 70 CRI	4,447	6,302
	5000K Lumens / 70 CRI	4,614	6,538
	BUG Rating	B1-U0-G1	B2-U0-G2
Type V	3000K Lumens / 80 CRI	3,755	5,390
	4000K Lumens / 70 CRI	4,814	6,910
	5000K Lumens / 70 CRI	4,994	7,169
	BUG Rating	B3-U0-G1	B3-U0-G1

LUMEN MAINTENANCE (8 LEDS)

Ambient Temperature	TM-21 Lumen Maintenance (36,000 Hours)	Theoretical L70 (Hours)
25°C	> 86%	87,000
40°C	> 84%	72,000

LUMEN MAINTENANCE (12 LEDS)

Ambient Temperature	TM-21 Lumen Maintenance (36,000 Hours)	Theoretical L70 (Hours)
25°C	> 83%	69,000
40°C *	> 82%	66,000

* Painted Only.

ORDERING INFORMATION

Sample Number: CRTK-R-A08-E-120-5

Product Family	Lumen Package	Driver	Voltage	Distribution
CRTK-R=Caretaker Roadway Luminaire	**A08**=8 LEDs **A12**=12 LEDs [1]	**E**=Non-Dimming **D**=Dimming (0-10V) [2,3]	**120**=120V **U**=(120-277V) [2]	**2**=Type II **5**=Type V

Options (Add as Suffix)		**Color**	**Accessory** (Order Separately)
S=Shorting Cap **4N7**=NEMA 7-PIN Twistlock Photocontrol Receptacle [4] **5**=120V NEMA Photocontrol Included **10K**=10kV UL 1449 Surge Protection Device [5] **10MSP**=10kV MOV Surge Protector	**B18**=18" Wood Pole Pipe Arm **B24**=24" Wood Pole Pipe Arm **B30**=30" Wood Pole Pipe Arm **TH**=Tool-less Door Hardware **WPBKT**=Wall or Pole Mounting Bracket **V**=(2) 5' #14 Leads **3000**=3000K CCT (80 CRI) **5000**=5000K CCT (70 CRI)	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White **A**=Raw Aluminum Unfinished (Standard) [1]	**LLPC**=Long-life Photocontrol [6] **LLPC-FO**=Long-life Photocontrol (Fail Off) [6]

NOTE:

1. Paint required for 12 LED at 40°C ambient. Maximum ambient temperature for 12 LED unpainted is 25°C.
2. Dimming and universal voltage must be ordered together.
3. Dimming leads will be capped except when 4N7 option is specified.
4. Only available with dimming driver.
5. Not available with dimming or universal voltage.
6. Sold as accessory. Not covered under luminaire warranty.

Hayward and Trego

Comments on PAD and Study Requests

United States Department of the Interior
NATIONAL PARK SERVICE
Interior Regions 3, 4, 5
Wisconsin Field Office
626 E. Wisconsin Ave., Suite 400W
Milwaukee, WI 53207

December 28, 2020

VIA Electronic Filing

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: Preliminary Application Document, Notice of Intent, Request to Use Traditional Licensing Process, Hayward Hydroelectric Project (FERC Project No. 2417) and Trego Hydroelectric Project (FERC Project No. 2711)

Dear Secretary Bose:

The National Park Service (NPS) respectfully submits the following comments in response to Xcel Energy's (the Applicant's) filing of Preliminary Application Document (PAD), Notice of Intent, Request to Use Traditional Licensing Process, Hayward Hydroelectric Project (FERC Project No. 2417) and Trego Hydroelectric Project (FERC Project No. 2711) dated November 27, 2020.

We offer the following comments and recommendations pursuant to section 10(a) of the Federal Power Act (18 CFR 4.38(a), 5.41(f)(4)-(6), and 16.8(a); the Outdoor Recreation Act (Public Law 88-29); the National Park Service Organic Act (39 Stat. 535); and the National Wild and Scenic Rivers Act (Section 11(b)). The projects are located on the Namekagon River within the St. Croix National Scenic Riverway. Relatively free-flowing and unpolluted, the Namekagon and St. Croix Rivers flow through some of the most scenic and least developed country in the Upper Midwest. In 1968, Congress established the St. Croix National Scenic Riverway, which includes the Namekagon River, as one of the original eight rivers protected under the national Wild and Scenic Rivers Act.

It is the policy of the NPS to represent the national interest regarding recreation and to assure that hydroelectric projects subject to relicensing recognize the full potential for meeting present and future public outdoor recreation demands while maintaining and enhancing a quality environmental setting for those projects. Identifying opportunities to improve the recreation experience is consistent with NPS policy and FERC guidelines to identify future potential recreation needs.

COMMENTS

Under 18 CFR § 5.3, the Applicant requested approval from the Federal Energy Regulatory Commission (FERC) to use the Traditional Licensing Process (TLP) for the Hayward and Trego Projects (Projects). Pursuant to the Commission's regulations under this Section, a potential license applicant requesting authorization to use the TLP must address the following considerations: (1) likelihood of timely license

issuance; (2) complexity of the resource issues; (3) level of anticipated controversy; (4) relative cost of the TLP compared to the default Integrated Licensing Process (ILP); (5) the amount of available information and potential for significant disputes over studies; and (6) other factors believed by the applicant to be pertinent. We address each of these considerations below.

Likelihood of timely license issuance: Due to the complexity of legal issues surrounding uncertain jurisdiction within a National Wild and Scenic River corridor and potentially complex riverway resource impacts, the level of anticipated controversy is likely to be high. Significant disputes are likely to evolve over legal determination as well as the need for studies described in the following sections. Consequently, we recommend using the default ILP as outlined in 18 CFR § 5.3 as the more appropriate proceeding and the process more likely to provide a timely license issuance. The ILP is intended to provide a streamlined licensing process that engages FERC staff and stakeholders early in the process to collaborate in issue identification and study resolution upfront. This process avoids costly time and financial expense in conducting post-filing studies and establishes a clear framework for project management.

Complexity of the resource issues: The NPS identified park management objectives based on protecting specific resource values for each of many segments of the St. Croix and Namekagon National Wild and Scenic River. The resource values and management objectives for each river segment relevant to these proceedings needs to be evaluated, related studies determined, and appropriate mitigation identified.

Aquatic Resources. The St. Croix and Namekagon Rivers provide one of the most extensive and exemplary aquatic species assemblages within the Upper Mississippi River basin and contain naturally reproducing populations of 41 native freshwater mussels, 5 of which are federally listed, and 100 native fish species. Determining studies to assess project impacts and enhancements on selected specie populations and/or migration is likely to be complex and controversial, warranting the ILP.

Recreation Resources. Each year demand for river recreation in the Riverway increases stressing resources and management of those resources. The recreation use and condition data in the PAD is five years old (2015) and is likely outdated due to recent trajectories in outdoor recreational use particularly in paddle sports such as kayaking and stand-up paddling. The PAD includes recreation needs identified by local public land manager but lacks current facility use and condition data necessary to determine project impacts. No study is proposed yet a well-designed study tailored to recreation facilities within project boundaries is warranted. The ILP process best suits study definition leading to an assessment of potential impacts and enhancement alternatives.

Level of anticipated controversy: The St. Croix National Scenic Riverway was established when the enabling legislation, the Wild and Scenic Rivers Act, was signed into law on October 2, 1968. The purpose of the St. Croix National Scenic Riverway is to preserve, protect, and enhance the values of the St. Croix and Namekagon Rivers and their immediate environment for the benefit and enjoyment of present and future generations. The values for which the Riverway has been designated as a wild and scenic river are its free-flowing character, exceptional water quality, and the aquatic, riparian, recreational, cultural/historic, geologic, scenic, and aesthetic values present in the rivers.

It is unclear whether FERC has jurisdictional authority to issue mitigation license articles for new hydropower license for projects within a designated National Wild and Scenic River. The resolution of this issue will likely require significant investment of time and may generate considerable controversy.

Relative cost of the traditional process compared to the integrated process The ILP would be more appropriate than a TLP for these projects since a complicated jurisdictional issue needs to be resolved; complex resource issues and related studies need to be defined.

The amount of available information and potential for significant disputes over Studies: Extreme wet weather events are an insidious threat to the resources protected by the Riverway and flooding impacts on Riverway natural and cultural resources are not yet understood. Catastrophic floods in

2018 affected a large geographic area in the adjacent Lake Superior Watershed resulting in loss of life and extensive infrastructure damage to highways, bridges, streets and harbors. Similarly, record floods this year breached two hydropower dams on the Tittabawassee River in Central Michigan, forcing 11,000 residents to evacuate and left several municipalities with severe flood damage. Recommending a study to determine impacts of extreme wet weather flooding on these dams and surrounding communities is likely to be source of significant dispute. The ILP which is more suited to addressing complex issues such as extreme weather impacts.

CONCLUSION

In summary, presented with the complexity of issues state above we conclude that deviating from the default Integrated Licensing Process is not justified. The Applicant has not met the comprehensive standard for the Traditional Licensing Process set in 18 CFR §5.3(c)(1) that requires "justification for the request."

We look forward to providing additional comments on the Pre-Application Document and submitting study requests according to the schedule outlined in the licensing process determined by the Commission.

Should you have any questions regarding these comments, please feel to contact either myself at angie_tornes@nps.gov or 414.708.7075 or Ms. Julie Galonska, St. Croix National Scenic Riverway Superintendent, at Julie_Galonska@nps.gov or 715.483.2270.

Sincerely,

Angela M. Tornes, Interior Region 3, 4, 5 Manager
Hydropower Assistance Program

Cc:

Julie Galonska, NPS
Nick Utrup, USFWS
Cheryl Latsch, Wisconsin Department of Natural Resources
Allison Werner, River Alliance of Wisconsin
Jim Fossum, River Alliance of Wisconsin

United States Department of the Interior
NATIONAL PARK SERVICE
Interior Regions 3, 4, 5
Wisconsin Field Office
626 E. Wisconsin Ave., Suite 400W
Milwaukee, WI 53207

December 28, 2020

VIA Electronic Filing

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

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We look forward to providing additional comments on the Pre-Application Document and submitting study requests according to the schedule outlined in the licensing process determined by the Commission.

Should you have any questions regarding these comments, please feel to contact either myself at angie_tornes@nps.gov or 414.708.7075 or Ms. Julie Galonska, St. Croix National Scenic Riverway Superintendent, at Julie_Galonska@nps.gov or 715.483.2270.

Sincerely,

Angela M. Tornes, Interior Region 3, 4, 5 Manager
Hydropower Assistance Program

Cc:

Julie Galonska, NPS
Nick Utrup, USFWS
Cheryl Latsch, Wisconsin Department of Natural Resources
Allison Werner, River Alliance of Wisconsin
Jim Fossum, River Alliance of Wisconsin

United States Department of the Interior

NATIONAL PARK SERVICE
601 Riverfront Drive
Omaha, NE 68102

10.A.(MWR-FPI)

February 8, 2021

To: Federal Energy Regulatory Commission
Laura Washington
(202) 502-6072
Laura.Washington@ferc.gov

From: Christine Gabriel
Regional Environmental Coordinator

Re: Docket ID Number: P-2711-024
Notice of Intent to File License Application, Filing of PAD, Approving Use of TLP for the Trego Hydroelectric Project, FERC No. 2711-024, Washburn County, Wisconsin

Dear Ms. Washington,

The National Park Service has reviewed the above project and is submitting the following comments:

The Trego project, along with Hayward Project, are within the St. Croix National Scenic Riverway, a unit of the National Park Service. The National Park Service will provide comments throughout the Traditional Licensing Process (TLP); comments have not been solicited by the licensee at this time as prescribed in the TLP.

For more information contact Hector Santiago, Regional Rivers Coordinator at hector_santiago@nps.gov or (402) 661-9112.

Thank You,

CHRISTINE GABRIEL Digitally signed by CHRISTINE GABRIEL
Date: 2021.02.08 14:46:10 -06'00'

Christine Gabriel

Document Content(s)

United States Department of the Interior

NATIONAL PARK SERVICE
601 Riverfront Drive
Omaha, NE 68102

10.A.(MWR-FPI)

February 8, 2021

To: Federal Energy Regulatory Commission
Laura Washington
(202) 502-6072
Laura.Washington@ferc.gov

From: Christine Gabriel
Regional Environmental Coordinator

Re: Docket ID Number: P-2417-065
Notice of Intent to File License Application, Filing of PAD, Use TLP for the Hayward Hydroelectric Project, FERC No. 2417-065, Sawyer Country, Wisconsin

Dear Ms. Washington,

The National Park Service has reviewed the above project and is submitting the following comments:

The Hayward project, along with Trego Project, are within the St. Croix National Scenic Riverway, a unit of the National Park Service. The National Park Service will provide comments throughout the Traditional Licensing Process (TLP); comments have not been solicited by the licensee at this time as prescribed in the TLP.

For more information contact Hector Santiago, Regional Rivers Coordinator at hector_santiago@nps.gov or (402) 661-9112.

Thank You,

CHRISTINE GABRIEL Digitally signed by CHRISTINE GABRIEL
Date: 2021.02.08 14:47:56 -06'00'

Christine Gabriel

United States Department of the Interior
NATIONAL PARK SERVICE
Interior Regions 3, 4, 5
601 Riverfront Drive
Omaha, NE 68102

April 27, 2021

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington DC. 20426

Electronic Filing

Re: National Park Service Comments on the Preliminary Application Document and Study Requests for Hayward Hydroelectric Project (FERC Number P-2417) and Trego Hydroelectric Project (FERC Number P-2711)

Dear Secretary Bose:

The National Park Service (NPS) respectfully submits the following comments on the Preliminary Application Document (PAD) for the Hayward Hydroelectric Project (FERC Number P-2417) and Trego Hydroelectric Project (FERC Number P-2711). The NPS is also submitting the following study requests: 1)Recreation Study (both projects), 2) Shoreline Survey (both projects), and 3) Hydraulics, Sedimentation, and Channel Change Study (Trego).

The NPS has authority to consult with the Federal Energy Regulatory Commission (FERC) and applicants concerning a project's effects on outdoor recreation resources under the Federal Power Act (18 CFR 4.38(a), 5.41(f)(4)-(6), and 16.8(a)); the Outdoor Recreation Act (Pub Law 88-29), and the NPS Organic Act (39 Stat. 535), and the National Wild and Scenic Rivers Act (Section 11(b)). The projects are located on the Namekagon River within the St. Croix National Scenic Riverway, a unit of the National Park System.

The St. Croix National Scenic Riverway (SACN) was established when the enabling legislation, the Wild and Scenic Rivers Act, was signed into law on October 2, 1968. The purpose of the St. Croix National Scenic Riverway is to preserve, protect, and enhance the values of the St. Croix and Namekagon rivers and their immediate environment for the benefit and enjoyment of present and future generations. The values for which the Riverway has been designated as a wild and scenic river are its free-flowing character, exceptional water quality, and the aquatic, riparian, recreational, cultural, geologic, and scenic-aesthetic values present in the rivers.

In addition to the NPS's responsibility to manage the SACN according to national wild and scenic river policies and best management practices, it is the policy of the NPS to represent the national interest regarding recreation to assure that hydroelectric projects subject to the FERC

licensing process incorporate the full potential for meeting present and future public outdoor recreation demands while maintaining and enhancing a quality environmental setting for those projects. Investigating opportunities to improve the recreation experience is consistent with NPS policy and FERC guidelines to identify potential future recreation needs.

We submit the following comments on the PAD and the three study requests, attached as appendices.

A. NPS COMMENTS ON THE PAD

3.3.2 Trego Project Boundary (Proposed)

The PAD states:

The use of LiDAR data to review the current Project boundary identified that the upper extent of the existing Project boundary contains a portion of free-flowing Namekagon River that is not impounded at the maximum operating elevation of 1,035.2 feet and therefore is not necessary for project operations. Therefore, in developing the proposed Project boundary for this document, the unimpounded or free-flowing upstream reach has been removed from the proposed Project boundary.

This characterization of the impacts of the project is misleading and is not technically correct. Although FERC regulations link impoundment boundaries to the maximum operating elevation, the regulations also recognize the potential need to include other areas for project purposes, such as public recreation, shoreline control, or protection of environmental resources. The effects of the project are related to velocity, gradient (or slope) and hydraulic head. Those effects extend well beyond the maximum operating elevation. The NPS is requesting a study to determine whether the upstream reach is impacted by the project and is needed for project purposes.

4.8 Recreation and Land Use

The Applicant recently provided a 2021 "Draft Recreation Report" for each impoundment as required every six years throughout the 30-year license period. The applicant proposes to use information from these reports for relicensing purposes and proposes not to conduct a recreation study.

The 2020 Wisconsin Outdoor Recreation Economy Report found a 12% increase in outdoor recreation use and spending between 2012-2017 while overall state Gross Domestic Product grew by 7%. However, there is no *current* detailed user information for either impoundment in the Draft Recreation Report(s) that reflects this trend in increased recreation. While we agree that the Draft Recreation Reports adequately provided the *condition* of existing formal recreation facilities, the NPS finds the methodology used to determine *recreation use* in the 2021 reports insufficient for determining baseline information, mitigation and enhancement measures for the new 40-year license application.

We provided these comments regarding the 2021 reports in anticipation of relicensing activities:

> We have concerns that the methodology used to determine recreation use in 2020 may not adequately reflect current user demand since annual recreation counts were based on information collected in 2013–2014 and extrapolated using population trends.
>
> The 2013-2014 daytime recreational use information is an estimate "extrapolated from multiple sources including trail counters, estimates from outfitters, NPS usage numbers, and estimates from overnight facilities." It is not clear how trail counters related to water-based impoundment recreation use; if outfitter estimates referred to impoundment and/or river use; and if NPS usage numbers referred to impoundment and/or river use. In addition, extrapolation for 2020 recreation estimates using population change estimates may not adequately reflect outdoor recreation trends over the period. Outdoor recreation use has increased significantly over the past decade in all regions of the state, likely outpacing population growth estimates for the three local counties for which the average population increase rates was used for extrapolation.

In addition to our prior comments, the report(s) lack important information such as opportunities to modify existing facilities to improve accessibility, dispersed/informal recreational use, and the closure of two access sites that may be within the undefined existing project boundary for Trego Lake. Please note that we use existing place names of "Trego Town Park" for the access site east of Highway 53 and "Trego Landing" for the access site midway on Trego Lake's south side. We recommend including the following recreational components as part of relicensing:

- Recent closure of two paddle craft access points – the popular Wisconsin Department of Transportation site on the south side and the NPS site on the north - located in the upper impoundment area upstream/East of Highway 53 will likely divert recreational use to the Trego Park Landing, Trego Landing, or both. The impact of increased recreational pressure on the remaining two access sites has yet to be determined.
- On Hayward Lake, the popular winter recreation use of ice fishing and impacts of use on informal access were not evaluated in the report. The Hayward Recreation Report describes traffic congestion caused by parking on Chippewa Trail in winter when anglers seek to ice fish on Bartz's Bay. The congestion was identified as problematic and a recommendation was made to consider providing designated parking areas.
- On Hayward Lake, reference to the put-in downstream of the dam was omitted from the PAD and should be included in the study and report.

Lastly, the proposed boundary change excludes Trego Town Park and its landing, the sole remaining access site out of three that provides access to the upper impoundment. It is unclear from the PAD maps if this park and landing are within the existing undefined project boundaries. We note that contemporary references (2021 Trego Recreation Report) and historic documents (described below) reference this site as important for recreational access *to the impoundment* as well as experiencing project impacts of sedimentation and flooding.

Historical reports on sediment deposition in the headwaters of Trego Lake document that these sediments impact access to existing boat launches at Trego Town Park and the resort and campground across the river, both located upstream of Highway 53:

> "Although accessibility would generally be improved it is likely that in certain areas, such as that near immediately above the resort and at the site near the mouth of the bay area opposite the resort, additional sediment would have to be physically removed to achieve desired results" (Trego Flowage Study, Wisconsin Department of Natural Resources, 1989)
>
> "It is doubtful that deposition in the lake is only a recent problem. The photographs seem to indicate that the Delta extends a good way downstream of Rowan's Resort" (U.S. Army Corps of Engineers, Trego Flowage Study, WDNR 1989).

In response to the Applicant's questionnaire, the Town of Trego representative stated that the boat landing is unusable due to aquatic vegetation and that flooding recently impacted the Trego Town Park. Consequently, we include the Trego Park Landing in our Recreation Study and Hydraulics, Sedimentation, and Channel Change Study (Trego) requests to evaluate project related impacts and inform proposed boundary change decisions.

4.10 Historical and Cultural Resources

The NPS St. Croix National Scenic Riverway staff requests to be a formal consulting party with the State Historic Preservation Officer on the Programmatic Agreement addressing Section 106 of the National Historic Preservation Act.

5.1.2.2 Water Resources Trego Project

The PAD attributes flooding concerns raised by the Town of Trego to occasional ice jams in the vicinity of the Highway 53 bridge. This perspective fails to address the effects of continued sedimentation caused by the project on local river hydraulics and flooding. Annual precipitation and heavy rain events are expected to increase in Wisconsin over the life of the new license (NOAA, 2017). The NPS is requesting a study to evaluate the effect of the project on flood inundation under alternative climate scenarios.

NOAA National Centers for Environmental Information, 2017. Accessed 4/11/2021 https://statesummaries.ncics.org/chapter/wi/

5.3 Mitigation Enhancement

The Applicant proposes existing conditions of run-of-river operations, target elevations, minimum flows, and maintaining existing recreational access around their dams as mitigation and enhancement. We disagree with this definition because these measures are baseline standards: 1) run-of-river operation, target elevation, and minimum flows are required in the

State of Wisconsin's Clean Water Act Section 401permit, and 2) the existing Commission Approved Project Recreational Facilities and surrounding area are included in the existing license articles.

The NPS will use study report results to inform development of mitigation and enhancement recommendations for inclusion in the new license articles.

Corrections

Section 4.8.2.1: Correction on ownership of river landing. This site on the south side belongs to WisDOT and will be removed as part of Hwy 53/63 interchange project.

Figure 4.8.2.1-1: NPS River Access (South Side). Correct caption: This belongs to WisDOT.

Section 4.9.2.4: Correct the name of the visitor center to "Namekagon River Visitor Center"

Section 5.4: Include the St. Croix National Scenic Riverway General Management Plan (1998) as a Federal Comprehensive Waterway Plan; this plan was recently filed with FERC.

B. STUDY REQUESTS

The NPS submits as appendices the following study requests: 1) Recreation Study (both projects), 2) Shoreline Survey (both projects), and 3) Hydraulics, Sedimentation, and Channel Change Study (Trego).

C. CONCLUSION

The NPS appreciates the opportunity to provide comments on the PAD and request three studies for Hayward and Trego Hydroelectric Project relicensings. We look forward to working with the licensee, stakeholders, and FERC on this license application. For more information please contact Susan Rosebrough at susan_rosebrough@nps.gov or (206) 220-4121 should you have questions.

Sincerely,

RICHARD CLARK

Digitally signed by RICHARD CLARK
Date: 2021.04.27 15:33:32 -05'00'

Richard A. Clark
Deputy Regional Director

NPS STUDY REQUEST #1: RECREATION STUDY

Criteria 1: Study Description and Objectives 18 CFR (§5.9(b)(1))

The NPS proposes a multi-step focused recreation study; several aspects of these steps have already been completed as evidenced in the 2021 Recreation Report for each of the projects. In addition, the number of sites to be evaluated in this study is a subset of the total number of recreation facilities identified in the PAD and 2021 Recreation Reports.

The information from the comprehensive recreation study is necessary to determine potential future improvements to or new recreation facilities within the existing and proposed project boundaries. The objective of this recreation study is to determine the condition of certain existing recreational facilities, their capacity to address current and future user demand, user preferences, and to provide the basis for making recommendations for improving/enhancing recreation opportunities.

The first step involves a detailed inventory and assessment of targeted recreation facilities within the existing project boundaries to evaluate whether recreation needs are being met. These steps are followed by a demand analysis which contributes to the overall recreation study: comparing demand to the inventory and condition assessment and user preferences allows further evaluation of existing and projected recreation needs within the project areas. This recreation study will be comprised of the following elements for targeted sites:

1) Recreational Facility Inventory and Condition Assessment
2) Recreational Facilities Accessibility Assessment
3) Recreation Use and Demand Assessment
4) Recreation Needs Assessment

Criteria 2: Resource Management Goals 18 CFR (§5.9(b)(2))

The NPS Organic Act; NPS General Authorities Act; Code of Federal Regulations, Title 36; Americans with Disabilities Act; Architectural Barriers Act; Rehabilitation Act; and NPS Management Policies 2006 (§1.4, 8.1) all address the importance of park units being available to all Americans to enjoy and experience.

The NPS administers the Namekagon River as part of the National Wild and Scenic Rivers System (NWSRS) and the National Park System and is included in the St. Croix National Scenic Riverway. The NPS is required by the Wild and Scenic Rivers Act to preserve the St. Croix River and the Namekagon tributary in a natural condition, to protect and enhance the exceptional natural, scenic, and cultural resources of the riverway and to provide high-quality recreational opportunities. River values identified in the hydropower project areas include aquatic resources, cultural resources, recreation, and scenic/aesthetic resources (NPS, 2017).

The presence of the hydropower projects is recognized as the baseline condition for the National Wild and Scenic River designation. However, continuing impacts on resource values must be identified so that protection and enhancement measures can be implemented.

In addition, it is the policy of the NPS to represent the national interest regarding recreation and to assure that hydroelectric projects subject to licensing recognize the full potential for meeting present and future public outdoor recreation demands while maintaining and enhancing a quality environmental setting for those projects. It is in the public interest to analyze impacts, provide mitigation to these impacts, and evaluate opportunities for recreation in the future. The FERC guidelines and the Federal Power Act also provide direction to give equal consideration to other non-hydropower resources including recreation. As federal agencies operating in the public interest, both NPS and FERC are charged with making resource management decisions based on sound information about public needs and interests including interests in recreation resources. (18 C.F.R. 4.61).

Criteria 3: Resource Agency Status of Requestor and Relevant Public Interest 18 CFR (§5.9(b)(3))

The National Park Service is a resource agency**.**

Criteria 4: Existing Information and Need for Additional Information 18 CFR (§5.9(b)(4))

The PAD for each project provides information on developed recreation facilities within the existing project boundary including Commission Approved Project Recreation Facilities owned and maintained by the Applicant as well as facilities owned and managed by others. In addition, the Applicant recently prepared a "2021 Recreation Report" for each project. The PAD and Report include recreation facility condition descriptions; the Report includes estimates on recreation demand and needs based on estimates made in 2013.

The methodology used to determine recreation use in 2020 for the 2021 Reports likely do not adequately reflect current user demand because annual recreation counts were based on information collected in 2013–2014 and extrapolated using population trends.

The 2013-2014 daytime recreational use information is an estimate "extrapolated from multiple sources including trail counters, estimates from outfitters, NPS usage numbers, and estimates from overnight facilities. Extrapolation for 2020 recreation using population change estimates likely do not adequately reflect outdoor recreation trends over the period. Outdoor recreation use has increased significantly over the past decade in all regions of the state, outpacing population growth estimates for the three local counties for which the average population increase rates was used for extrapolation. In addition, recreation use influence by ecotourism – the Twin Cities, Minnesota, are a two-hour drive from Trego Lake - and second home use are not reflected in the average population growth of the three surrounding counties.

> "The Great Northwest Region has an abundance of natural resources such as Lake Superior, the Namekagon and St. Croix rivers, numerous inland lakes, and large forest blocks. Not surprisingly, tourism is a large and growing industry within the region. In addition to Wisconsin residents, visitors from the Twin Cities and surrounding suburban

> areas, utilize the region's recreational resources. Seasonal home development, particularly along rivers and lakes, has increased dramatically within the region." (Wisconsin Statewide Outdoor Recreation Plan 2019-2023)

The PAD does not include recreational use impacts of recent or imminent permanent closures of two access sites in the upper Trego impoundment east of U.S. Highway 53, leaving only one, which experiences limited water access due to sedimentation/vegetation, in the upper impoundment. The PAD does not include the informal access to Bartz's Bay, a popular ice fishing area in Lake Hayward.

In addition, while the PAD identifies that Americans with Disabilities Act (ADA) needs are accommodated on the Hayward impoundment it does not identify opportunities for the disabled to access its tailwaters, nor Trego Lake and its tailwaters. These opportunities need to be identified to understand current and future user accessibility needs.

Criteria 5: Nexus to Project 18 CFR (§5.9(b)(5))

A clear nexus exists between the project and recreational opportunities on the Hayward and Trego impoundments as the recreational facilities are located adjacent to the Project features and are used by visitors during their visit to the Project. Recreation is an important benefit of hydroelectric projects and FPA regulations require consideration for protection and enhancement of recreational opportunities. FERC's policies include ensuring that the ultimate development of recreation resources at licensed projects is consistent with area recreation needs and with the primary project purpose. To plan for future needs for recreation, data on existing recreation facilities and their needs and demands is necessary to make informed decisions about the development needs required through the term of the new FERC project license.

Criteria 6: Study Methodology 18 CFR (§5.9(b)(6))

An inventory of recreation opportunities and facilities; determining recreation demand using field observations, user surveys, and focus groups; and estimating recreation needs based on the data gathered is consistent with generally accepted practices employed during hydroelectric licensing proceedings. Evaluating outdoor recreation facilities per the Architectural Barriers Act Accessibility Guidelines is a common technique to establish the level of accessibility at outdoor recreation areas and recreation facilities.

The Applicant recently provided in the Recreation Reports (February 2021) for each project condition descriptions of Commission Approved Project Recreation Facilities as well as other facilities within the project boundaries. This study will identify additional information not provided in the Recreation Reports.

a. Study Area

The area of focus for the recreation facilities condition assessment and demand analysis consists of existing targeted formal and informal recreation areas within the existing project boundaries. The Applicant proposes to change the Trego Lake project boundaries therefor it is important to

include recreation facilities within the existing project boundaries in the evaluation of recreation needs and proposed project boundary changes.

b. Study Sites

The facilities and recreation sites to be inventoried for the Recreation Study should include targeted developed recreation sites and an informal access site. The inventory should identify current use, current conditions, and any impacts that the project might have on these. The study report should identify which Trego Lake recreation facilities would be omitted if the proposed project boundaries were approved.

Trego Lake: Recent permanent closures of two access sites east of U.S. Highway 53, one managed by the NPS and the other, Wisconsin Department of Transportation, leaves the Trego Town Park as the only public access site to the headwaters. The only other remaining Trego Lake access is Trego Landing located mid-impoundment, approximately 1.75 miles away. These Trego sites are recommended for study:

- Trego Town Park Landing
- Trego Landing
- Xcel's Trego Lake canoe access and nearby shoreline (possible angling)
- Xcel's tailwater fishing access (north and south)

These Hayward Lake sites are recommended for study:

- Commission approved project recreation facilities including the canoe portage, carry-in access on the impoundment, and informal shoreline fishing area
- Hayward Lake Bartz's Bay: undeveloped and informal ice fishing access site off Chippewa Trail

c. Study Methods

This recreation study has four components: (1) facility inventory and condition assessment, (2) recreational facilities accessibility assessment, (3) a recreation use and demand analysis, and (4) a recreation needs assessment.

1) Facility Inventory, Condition Assessment

The facility inventory and condition assessment portion of this recreation study consists of two steps: (1) site facility inventory and (2) field reconnaissance/condition assessment. The facility inventory and condition assessment inform the demand analysis and evaluates the condition of each of the facilities at the listed recreation sites. The inventories done in preparation for the 2021 Recreation Reports will form a base upon which to build more information.

Step 1 –Site Inventory

The existing facility inventory should include identification and location of parking spaces, picnic units, boat landings/ramps, bathrooms, and other facility components (e.g., informational

signage). Informally created user trails and sites (i.e., sites along shorelines frequented by recreation users but not identified as designated facilities) will also be identified and assessed.

Step 2 – Field Reconnaissance/Condition Assessment

The field reconnaissance should include a physical condition inspection of existing recreation facilities and trails, as identified under Step 1. The reconnaissance should also identify observable use patterns and field verify if recreation amenities are constructed and in a condition that serves user needs. Informal user created sites should be identified for observable use and wear patterns.

The following steps should be taken to complete the facilities inventory:

1. Complete reconnaissance level field research: conduct fieldwork to create a detailed inventory on the conditions of existing recreation facilities and other user created sites within the study area

2. Assemble the results and create maps of data collected in the field.

The condition assessment will be qualitative based on a range of repair/replacement/ maintenance needs to acceptable appearance and function to evaluate the condition of recreation facilities. Photos should be taken of facilities, all signs, trailheads, etc., and cataloged based on feature type or location. Other user created sites with observable wear patterns within the project areas should be cataloged for further evaluation within the recreation study.

2) Facility Accessibility Assessment

The inventory of targeted sites should identify features that do not meet current Americans with Disability Act (ADA) accessibility standards, Architectural Barriers Act (ABA), and Universal Design Principles as well as opportunities for modifications to improve accessibility.

3) Recreation Use and Demand Component

The Recreation Use and Demand Component of this Recreation Study consists of 6 steps: (1) observational survey; (2) visitor use questionnaire; (3) interviews with user/friend's groups and recreation providers; (4) review of research publications and existing information; (5) assessment of regional uniqueness and significance of the project areas' primary recreation opportunities; and (6) regional demand assessment. The steps are described in more detail below.

Step 1 – Observational Survey

Observed recreation use occurring in the project area based on observational surveys should be used to estimate existing use. Observational surveys should be conducted during seasons of use for each location e.g., winter surveys for ice fishing at Bartz's Bay on Lake Hayward. Timing and sampling frequencies should be based on estimated use levels and the survey should be conducted at peak times during the day (e.g., peak angler time of day, dawn and dusk; water skiing, afternoon), on different types of days (weekday, weekend, holiday, or opening of fishing season). The observation data that should be recorded includes vehicle counts, angler counts,

counts of each type of watercraft (canoes, kayaks, pontoons, fishing, Stand Up Paddleboards, tubes), and day use/picnic area usage.

Step 2 – Visitor Use Questionnaire

A concise questionnaire focusing on visitor use and experience should be mailed to Trego Lake riparian landowners and be fielded at the identified recreation sites when people are most likely to be present. The survey should be conducted during various days during the survey period including weekdays and weekend as well as holidays. A review of past visitor data should be assessed to determine appropriateness of target survey dates with considerations for current season use patterns and any potential unexpected conditions or events taken into account. The questionnaire should be crafted to collect information from recreationists about recreation, activity participation, accessibility needs, areas visited, user conflicts, perceived crowding and safety, visitor profile, visual impressions, and satisfaction with or desire for recreational opportunities and facilities including level and quality of interpretation and posted information in the project areas.

The questionnaire should provide an opportunity for visitors to express any potential concerns over the current condition of and future possibilities for recreation and recreation facilities in the project areas. Recommended questions for the questionnaire are provided at the end of the study request. The draft questionnaire should be shared with NPS and other interested stakeholders for comment.

Step 3 – Interviews with User Groups and Recreation Providers

Interviews should be conducted with a variety of identified regional and local recreation providers, user groups, and outdoor recreation tourism organizations associated with recreation in the project areas and in the project vicinity. Examples include Trego Lake District and the Chambers of Commerce and tourism organizations of local communities. These entities should be interviewed to gather additional information on current use, user preferences and needs, perceived regional uniqueness and significance of recreation opportunities within the project areas, existing data, and observations in the project areas for both existing and potential future users.

Step 4 – Review of Research Publications and Existing Information

Recent relevant Wisconsin-based user preference surveys and other outdoor recreation surveys about recreation demand in the project areas should be gathered and reviewed. These include the most recent state and county recreation management plans identified in the PAD including the Wisconsin Statewide Comprehensive Outdoor Recreation Plans (SCORPs). The Applicant should also search for more current surveys that analyze the project and facility areas' outdoor recreation participation rates and growth needs in northern Wisconsin to help address how the project recreation facilities are helping to meet demands of the greater area. This includes increasing population growth in the Twin Cities, Minnesota, Metropolitan Statistical Area, a two-hour drive, ecotourism and second home use trends. The newly created state Office of Outdoor Recreation in Wisconsin may provide contemporary information. Demand and user

preference studies at various scales covering Wisconsin, but especially those addressing northern sections of the state, should be reviewed for their applicability to the project areas. Recreation activity and participation trends information should be examined from the existing demand studies and reports.

Step 5 – Assessment of Regional Uniqueness and Significance of the Project Areas' Primary Recreation Opportunities

Regional uniqueness and significance of the project areas' primary recreation opportunities should be evaluated. Site-specific factors that contribute to the uniqueness of the project areas can inform the demand analysis and needs assessment. Where available, information should be gathered for sites including types of designation including water/canoe trail designation, types of recreation opportunities available, visitation statistics (including information on visitors' origin), and general popularity for regional outdoor recreation areas.

Step 6 – Regional Demand Assessment

The recreation demand analysis should compare demand with the existing supply of recreation opportunities and use patterns. A gap analysis should be performed by comparing relative demand to supply, with consideration for trends and variations in user groups based on research and forecasts of population growth. By comparing this information to a detailed inventory of existing recreation opportunities and using information gathered in the observational surveys, visitor use questionnaires, structured interviews, and focus groups, it will be possible to determine whether there is a need for modifications to existing facilities and/or for the development of additional facilities and recreation amenities.

4) Recreation Needs Assessment

A needs assessment is an analysis of all recreation-related study results. Consequently, the methods to complete the needs assessment consist of all the methods used to complete the elements of this Study Description as well as methods described in the NPS Study Request #3: Hydraulics, Sedimentation, and Channel Change Study (Trego).

d. Analysis

The information gathered by the recreation study will assess the suitability of targeted facilities in terms of meeting the changing needs of recreation users in the project areas. The analysis will include developing existing and projected visitor-use estimates, along with existing and projected demand (including unmet demand) for recreational opportunities over the 40 to 50-year license term. The facility inventory assessment data collected should be analyzed to identify short- and long-term improvement needs of the new license. The recreation demand analysis should provide relevant information about user preferences and needs as related to the targeted recreation facilities provided by the Project. The Draft Recreation Report should include recommendations for monitoring every 6 years of recreation use, visitor demand evaluation, and facility condition over the life of the license. A courtesy copy of the Draft be shared with NPS and other interested stakeholders for comment.

Criteria 7: Level of Effort and Cost 18 CFR (§5.9(b)(7)

The cost would be contingent on Applicant staff availability and/or the billing rate arrangement with the Applicant's consultants (rate is not known).

In summary, this recreation study would provide necessary information regarding the project-related recreation facilities, visitor use and demographics, demand and needs at targeted recreation facilities.

This study requests additional visitor counts and survey collection to adequately address existing use in the Project Vicinity and ensure that the results for each Recreation Area can be characterized. An alternative study on recreation has not been proposed.

Requested Survey Questionnaire

SECTION 1 - YOUR TRIP CHARACTERISTICS

1. On the enclosed map, please place an X on the location where you received this survey.

2. Below is a list of activities available. Please indicate:

(A) Which of these activities have you participated in **on your current visit** to the (area name)

(B) Which **ONE** of these activities is your **PRIMARY ACTIVITY** on this trip to the area?

ACTIVITY	(A) Participated in ON THIS TRIP (Check all that apply)	(B) PRIMARY ACTIVITY (Check only one)
Shoreline/tailwater fishing		
Fishing from a boat		
Motorized boating		
Non-motorized boating		
Swimming		
Picnicking		
Wildlife Viewing		
Other (specify)		

3. (A): Were there any activities that you and your group wanted to do on this visit to (area name) that you were not able to?

☐NO

☐YES

(B) If YES: What was it? _____ (open-ended)

(C) Which of the following reasons, if any, explain why you did not engage in the activity?

- ☐ Rules or regulations did not allow for activity
- ☐ Area was temporarily closed to the public
- ☐ Not enough time
- ☐ Safety concerns
- ☐ Not enough information about the activity
- ☐ Too crowded
- ☐ Difficult road or trail access
- ☐ No road or trail access
- ☐ Unsatisfactory conditions of facilities
- ☐ Resource damage due to overuse
- ☐ No facilities or services
- ☐ Bad weather
- ☐ Flooding or other natural hazard
- ☐ Other (please specify)

4. Does anyone in your personal group have a physical condition or personal limitation that made it difficult to access or participate in [site] activities or services?

- ☐ Yes
- ☐ No

If YES, on this visit what activities or services did the person(s) have difficulty accessing or participating in? (Please describe): _____

SECTION 2 - EXISTING CONDITIONS

5. (A) How crowded did you feel while recreating at these locations today at this recreation facility/reservoir? [Select one number for each or indicate it was not applicable to your visit.]

LOCATION/AREA

1) Not at all crowded 2) Slightly crowded 3) Moderately crowded 4) Very crowded
5) Extremely crowded (check box)Not applicable t the place you received this survey

	1	2	3	4	5	☐
In parking areas	1	2	3	4	5	☐
On the trails	1	2	3	4	5	☐
At a developed campground	1	2	3	4	5	☐
At a boat-in campsite	1	2	3	4	5	☐
While fishing from the shoreline	1	2	3	4	5	☐
While boating/fishing from a boat	1	2	3	4	5	☐

(B) If you felt crowded, did you modify your recreation plans because you felt crowded?
☐ YES ☐ NO

(C) If YES, what did you do?

☐ Moved to a new location ☐ Chose not to recreate
☐ Changed the time of day ☐ Continued with current plans
☐ Changed your activity ☐ Other:_____ _

6. During the planning process for your visit, how did the possibility of crowds affect your trip plans? (Please select one response)

☐ It did not affect my plans
☐ I visited at a time of day I thought would be less crowded
☐ I visited on a day of the week I thought would be less crowded

☐ I avoided places here I thought would be crowded today

☐ Other (please specify)

7 Did the actions or behavior of any other group or individual interfere with your enjoyment on this trip?

☐ NO ☐ YES. If YES, what type of group or person interfered with your enjoyment on this trip?

Group/Person	Reason(s)		
	Proximity	Loudness	Other (specify)
Motorized boaters	☐	☐	☐ _____
Non-motorized watercraft	☐	☐	☐ _____
Vehicles	☐	☐	☐ _____

8. How satisfied were you with the following **amenities** at this recreation facility/reservoir today.

***Important**: Please only circle a number for the items **that you used during your current visit** to this specific recreation facility/reservoir. Also, please **check** the "Did Not Use" box, if you did not use the item or it does not exist at the specific recreation facility.*

		Very Satisfied	Satisfied	Neither	Dissatisfied	Very [illegible]	Did Not Use	If you were dissatisfied for any reason, please explain why:
FACILITIES AND	Restroom	1	2	3	4	5	☐	
		1	2	3	4	5	☐	
	Picnic sites	1	2	3	4	5	☐	
		1	2	3	4	5	☐	
		1	2	3	4	5	☐	
	Trash receptacles	1	2	3	4	5	☐	

		Very Satisfied	Satisfied	Neither	Dissatisfied	Very [illegible]	Did Not Use	If you were dissatisfied for any reason, please explain why:
	Vehicle parking areas	1	2	3	4	5	☐	
	Boat launch parking area	1	2	3	4	5	☐	
	Boat launch	1	2	3	4	5	☐	
	Boat dock	1	2	3	4	5	☐	
	Other:_____	1	2	3	4	5	☐	
	Roads to the facility	1	2	3	4	5	☐	
	Trails	1	2	3	4	5	☐	
	Signage to the facility	1	2	3	4	5	☐	
	Signage within the facility	1	2	3	4	5	☐	
	Other:_____	1	2	3	4	5	☐	

9. How did you obtain information to plan your current trip? (Please select all that apply)

☐ Federal or State website
☐ City, local, or municipal website
☐ Xcel website
☐ Other websites
☐
☐ Maps, brochures, pamphlets
☐ Visitor bureaus/centers
☐ Previous visits
☐ Word of mouth
☐ Social media (e.g., Facebook, Twitter, etc.)
☐ Travel guides and tour books
☐ Newspaper/magazine article
☐ Radio/TV broadcasts
☐ Other (specify): _____

SECTION 3 - ABOUT YOU

10. What is the ZIP code where you live or country if not in the United States?

ZIP code: _____ or, country (if not the United States):

11. What is your Age: _____.

12. What is your Gender? ☐ Male ☐ Female ☐ Non-binary

13. Which of these categories best indicates your race and ethnicity? Answer only for yourself. Please select **one or more**.

☐ American Indian/Alaskan	☐ Asian	☐ White
☐ Native Hawaiian/other Pacific	☐ Hispanic or Latino	☐ Don't know
☐ Black/African-American	☐ Not Hispanic or	

14. Please let us know if you have any additional comments regarding your recreation experience during your visit: (contact information)

NPS STUDY REQUEST #2: SHORELINE SURVEY

Criteria 1: Study Description and Objectives 18 CFR (§5.9(b)(1))

The NPS proposes a comprehensive shoreline study that involves a detailed inventory of shoreline erosion, erosion controls, docks, and aquatic vegetation limiting recreational access to the shoreline within the project boundaries. The objective of this study is to determine the existing shoreline conditions and to provide the basis for making recommendations for protecting and enhancing the project shorelines.

Criteria 2: Resource Management Goals 18 CFR (§5.9(b)(2))

The NPS administers the Namekagon River as part of the National Wild and Scenic Rivers System (NWSRS) and the National Park System; the river is part of the St. Croix National Scenic Riverway. Resource management goals are to protect and enhance free flow, water quality and outstandingly remarkable river values (values) that led to the designation of the river into the NWSRS in 1968. Values identified in the hydropower project areas include aquatic resources, cultural resources, recreation, and scenic/aesthetic resources (NPS 2017).

The presence of the hydropower projects is recognized in the baseline condition for the National Wild and Scenic River designation. However, continuing impacts on resource values should be identified so that protection and enhancement measures can be implemented. In addition, the FERC guidelines and the Federal Power Act provide direction to give equal consideration to non-hydropower resources including scenic, recreational, and other environmental values of the project. As federal agencies operating in the public interest, both NPS and FERC are charged with making resource management decisions based on sound information about public needs and interests.

The NPS is responsible for reviewing shoreline protection measures that require Federal authorization to ensure that standards under Section 7 of the Wild and Scenic Rivers Act are satisfied. The applicable standard is that the project would not have a direct and adverse effect on the values for which the river was designated.

Criteria 3: Resource Agency Status of Requestor 18 CFR (§5.9(b)(3))

The NPS is a resource agency.

Criteria 4: Existing Information and Need for Additional Information 18 CFR (§518 CFR.9(b)(4))

The PAD description of aesthetic resources/visual character is very broad and does not provide detail about the visual experience for recreational users, boating or fishing on the reservoirs. The PAD provides very general information about the current land use, vegetative cover, and amount of development of the shoreline. There is no specific mention of bank stabilization measures on the impoundments although photos of project facilities included in the PAD show rock rip rap on the dams and embankments including around the Hayward canoe access.

It appears there has been significant growth in the number of structures along the Trego impoundment within a limited area causing an increase in structure density. Cumulatively, these developments may change the scenic values for which the impounded segments of the Namekagon are managed:

- DNR, 1989 – Identifies approximately 120 homes, cottages, and resorts adjacent to the Trego flowage with development comprising 25% of the shoreline.
- C. Peterson, Trego Lake District, pers. Comm. March 26, 2021 – 240 residences on the lake; there are relatively few bank stabilization measures, including some 'walls'.

Aquatic vegetation management has been a continuing activity under the current license. There is no evidence of detailed mapping to document changes over time, although the PAD identifies additional species of aquatic invasive plants that were addressed in the current license and an increase in the presence of highly valued wild rice. Maps included in the required annual 'Purple Loosestrife' Monitoring Reports for Article 410 of the Hayward project are very general, using the 1964 bathymetric map as a base; these are insufficient to determining changes over time.

Shoreline surveys by qualified archeologists are planned in accordance with Historic Properties Programmatic Agreements for the Trego and Hayward projects. To date, periodic surveys have not identified erosion concerns. Including inventory of other shoreline resources as part of these periodic assessments may enhance efficiencies.

The NPS needs more detailed information on shoreline condition and changes to coordinate with the licensee, local jurisdictions, and landowners to address management needs within the Park, including the specific requirements associated with review of water resources projects on a Wild and Scenic River.

Criteria 5: Nexus to Project 18 CFR (§5.9(b)(5))

The current licenses for Hayward and Trego include standard articles for the use and occupancy of project lands and waters. This gives the licensee authority to authorize measures such as riprap and small boat docks without approval by the FERC. However, such authorization must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project (FERC, 2012). Although the project boundary does not include a shoreline buffer, the resources to be studied extend into the water and thus have a clear nexus to project operations.

The requested study would provide current information on the status of the shoreline and identify problem areas and the need for potential management attention. It would provide a baseline for monitoring conditions and change over the life of the license.

Review of shoreline protection measures implemented by the licensee, such as the use of riprap and other construction as part of their robust program for dam safety in collaboration with the FERC Dam Safety Office, have not routinely included consultation with the NPS. The NPS has responsibility to review such water resources projects under Section 7 of the Wild and Scenic Rivers Act.

Criteria 6: Study Methodology 18 CFR (§5.9(b)(6))

Study Method Part 1 – The NPS recommends conducting a longitudinal survey of the river and its banks, using georeferenced photographic equipment (video or still). The High-Definition Stream Survey (HDSS) method (Trutta, 2019) is one method used in recent FERC hydropower licensing proceedings, which enables mapping and a visual record of stream and shoreline characteristics and data from a variety of sensors. The approach has been used to classify streambank condition, ranging from fully functional, functional, slightly impaired, and non-functional (Connell et. al. 2019). It has been used to classify streambank modification in terms of native/unmodified, modified, and highly modified. It also has been used to classify unique manmade or natural features based on type, condition, and location similar to Yetman (2001) and could be used to identify sedimentation features such as in-channel bars, vegetated islands, and in-channel vegetation. In addition, the approach has also been used with side-scan sonar to create cross-sectional bathymetric transects. Such an approach could also be integrated in the NPS requested sediment study.

Evaluate, quantify, photograph and map shoreline conditions on the Hayward and Trego project boundary shorelines, including:

- Streambank condition
- Bank stabilization types and condition
- Docks/piers
- Public access locations
- Presence/extent/type of aquatic vegetation (especially nuisance and invasive plants, but also highly valued wild rice)

Objectives include:

1. Create georeferenced photographic database and map of shoreline conditions.
2. Identify areas in need of management attention for shoreline erosion, cultural resource protection, vegetation management, and public access.
3. Facilitate evaluation of change over time to ensure protection of visual/scenic/aesthetic, recreation, cultural, and natural resources.
4. Facilitate communication between the licensee, NPS, shoreline property owners, and local jurisdictions about shoreline protection practices and NPS Wild and Scenic River Act requirements to review shoreline treatments and to protect and enhance river values.

Study Method Part 2 – In addition, the NPS recommends that the licensee review its records to document changes in shoreline conditions on lands owned by the licensee within the project boundaries that have occurred over the life of the current licenses.

Objectives include:

1. Compare existing shoreline conditions with past conditions available from the licensee's records.
2. Create a list and brief description of shoreline stabilization and other construction projects conducted by the licensee.
3. Identify whether consultation with the NPS was conducted for licensee activities.

Criteria 7: Level of Effort and Cost 18 CFR (§5.9(b)(7))

Study Method Part 1 - The complete cost for field work, video production, classification and reporting can range from approximately $2,000 to $4,000/mile. The longer the segment surveyed decreases overall per mile costs, while the overall number of different classifications requested increases the per mile cost. An alternative study incorporating a comprehensive shoreline review and assessment has not been proposed.

Study Method Part 2 – This would likely require a few hours of staff time by the licensee.

References:

Connell, B. A., Ayers, P., Ludwig, A., Neff, K., & Parham, J. E. (2019). Georeferenced Video Mapping to Classify Streambank Erosion Susceptibility. *Journal of Spatial Hydrology, 15*(2).

FERC, Guidance for Shoreline Management Planning at Hydropower Projects, July 2012. Last accessed 3/31/2021 https://www.ferc.gov/sites/default/files/2020-04/smpbook.pdf

NPS St. Croix National Scenic Riverway, *Foundation Document*, 2017. Accessed 4/5/2021 https://www.nps.gov/sacn/learn/management/foundation-document.htm

Trutta Environmental Solutions, *Tallapoosa River High Definition Stream Survey Final Report*, December 2019, included in Alabama Power filing, draft Erosion and Sedimentation Study Report for the R.L. Harris Project under P-2628-065, December 2020. Last accessed 3/31/2021: https://elibrary.ferc.gov/eLibrary/filelist?document_id=14850582&accessionnumber=20200410-5091

WI DNR, *Evaluation of Sedimentation Processes and Management Alternatives in the Trego Flowage,* May 1989. Accessed 3/27/2021 https://elibrary.ferc.gov/eLibrary/docinfo?document_id=13774147

Yetman, K.T. 2001. Stream Corridor Assessment Survey. Watershed Restoration Division Chesapeake & Coastal Watershed Services Maryland Dept. of Natural Resources Annapolis, MD.

NPS STUDY REQUEST #3: HYDRAULICS, SEDIMENTATION, AND CHANNEL CHANGE

Criteria 1: Study Description and Objectives 18 CFR (§5.9(b)(1))

The NPS requests a study to evaluate the effects of Trego hydropower project operations on river hydraulics, sediment transport, and channel morphology. The primary goal of this study is to determine whether the area proposed for removal from the Trego boundary in the vicinity of the U.S. Highway 53 bridge is influenced by project operations and is needed for project purposes such as public recreation, shoreline control, or protection of environmental resources as described in FERC regulations (18 CFR 4.41(h)(2); 18 CFR 4.51(h)(2)); 18 CFR 4.61(f)). This proposal will characterize changes in channel planform and shoreline position; update the 1989 WI DNR study, *Evaluation of Sedimentation Processes and Management Alternatives in the Trego Flowage* and bathymetry available from 1966; and build upon this existing data to determine the effects of continued hydropower project operations on sedimentation and flooding in the Namekagon River and Trego Lake. Study results will also help inform recommendations related to potential flooding and ongoing management activities (e.g., dredging and vegetation management) that are used to mitigate sediment deposition, the growth of nuisance and invasive aquatic vegetation and the related loss of recreation access particularly under changing climate scenarios.

Criteria 2: Resource Management Goals 18 CFR (§5.9(b)(2))

The NPS administers the Namekagon River as part of the National Wild and Scenic Rivers System (NWSRS) and of the National Park System and is included in the St. Croix National Scenic Riverway. The NPS is required by the Wild and Scenic Rivers Act to preserve the St. Croix River and the Namekagon tributary in a natural condition, to protect and enhance the exceptional natural, scenic, and cultural resources of the riverway and to provide high-quality recreational opportunities. River values identified in the hydropower project areas include aquatic resources, cultural resources, recreation, and scenic/aesthetic resources (NPS, 2017).

The presence of the hydro projects is recognized as the baseline condition for the National Wild and Scenic River designation. However, continuing impacts on resource values must be identified so that protection and enhancement measures can be implemented.

Criteria 3: Resource Agency Status of Requestor and Relevant Public Interest 18 CFR (§5.9(b)(3))

Requestor is a resource agency.

Criteria 4: Existing Information and Need for Additional Information 18 CFR (§5.9(b)(4))

The PAD presents information about prior studies identifying sediment sources and references studies that the sediment load is small compared with other WI rivers. However, the upper end of Trego Lake has experienced sedimentation issues and aquatic plant problems since at least the 1980s (US Corps of Engineers, as referenced by WI DNR, 1989). A 1989 evaluation of the sedimentation processes for the Trego flowage was conducted by the Wisconsin Department of Natural Resources. The 1989 study noted that without further action sedimentation problems in the inlet area, increased nuisance aquatic vegetation, and loss of recreational access would continue. The PAD includes comments from the Town of Trego and others stating that aquatic vegetation limits access to the Trego Town Park Landing upstream of U.S. Highway 53.

The PAD presents recent topographic data to justify proposed boundary changes. This raises questions about whether the upstream extent of the maximum operating elevation of the project has changed since the boundary was originally surveyed (either through reservoir sedimentation or floodplain deposition).

The PAD attributes flooding concerns raised by the Town of Trego to occasional ice jams in the vicinity of the Highway 53 bridge. This perspective fails to address the effects of continued sedimentation caused by the project on local river hydraulics and flooding. Annual precipitation and heavy rain events are expected to increase in Wisconsin over the life of the new license (NOAA, 2017).

Available information about sediment dynamics and bathymetry dates from the late 1980s and 1960s, respectively. Given continuing issues related to sediment deposition, the proposed boundary change, and changing climate conditions, updated bathymetric data and analysis is needed to evaluate the ongoing impacts of the hydropower project and provide the basis for making recommendations about hydraulic and sediment-related issues.

Criteria 5: Nexus to Project 18 CFR (§5.9(b)(5))

Reservoir sedimentation is a complex process that varies with watershed sediment production and mode of deposition. The impoundment of water associated with hydropower operations can lead to reduced flow velocities, alter sediment transport and deposition, and cause the formation of deltas at the upstream end of reservoirs. Formation of deltas may cause aggradation of sediment further upstream, elevate channel bed levels and increase flood risks. In addition, sedimentation in the reservoir can result in the establishment of nuisance aquatic vegetation and cause negative effects on recreational opportunities and access. Sedimentation and aquatic vegetation encroachment at the head of the reservoir above Trego dam have been an ongoing issue for more than 30 years. The licensee has worked cooperatively with all stakeholders under the current license to address these issues. The continuing need to address sediment-related issues under the new license requires thorough investigation.

Hydraulic and sedimentation studies can be used to answer questions pertaining to many aspects of a hydropower project including the effects on upstream and downstream geomorphic and ecological systems. Results will help determine whether or not the boundary change proposed in the PAD is justified and evaluate the need to update management plans and practices used to mitigate for ongoing impacts associated with sedimentation, such as growth of aquatic vegetation, loss of recreation access, and potential flooding.

Criteria 6: Study Methodology 18 CFR (§5.9(b)(6))

The NPS recommends conducting a study to update existing data on the effects of Trego hydropower project operations on river hydraulics, sediment transport, and channel morphology in the Namekagon River upstream of Trego Lake. The study consists of four components: (1) analysis of existing aerial imagery; (2) collection of bathymetric data; (3) hydraulic modeling; and (4) synthesis.

Specific tasks and proposed standard methods include the following:

1. Channel and shoreline change analysis:
    a. Analyze aerial imagery for the period of record, available from the University of Wisconsin map library, to evaluate change in channel planform and shoreline position through time along the reservoir and upstream from the U.S. Highway 53 bridge. Channel margins and reservoir shoreline should be digitized using geographic information system (GIS) software and applying standard methods (Gilvear and Bryant, 2003).
    b. Quantify information on patterns in sediment deposition, bank/shoreline erosion, delta growth, and changes in aerial extent of aquatic vegetation through time.

2. Bathymetric survey and analysis:
    a. Acquire a sufficiently detailed channel and lake bathymetry upstream from Trego dam to evaluate changes in bed elevation and support subsequent hydraulic modeling. Bathymetric data should be acquired using single-beam sonar integrated with GNSS positioning system and can be integrated with existing LiDAR to develop a high-resolution terrain model of the project area.
    b. Bathymetric transects should be compared to previous surveys to:
        i. Quantify volumes of sediment deposition and erosion that have occurred in the flowage since 1988 (WI DNR, 1989), and
        ii. Estimate average rate of reservoir sedimentation since 1988 and compare this rate to the rates reported previously by WI DNR for the period from dam construction to 1988.

3. Hydraulic modeling and analysis:
    a. Using data obtained from the bathymetric survey, apply the US Corps of Engineers HEC-RAS model (or similar) to develop a one-dimensional hydraulic

model extending a sufficient distance upstream from the U.S. Highway 53 bridge to accurately model hydraulics through the project site including backwater effects due to Trego hydropower project.

b. Evaluate the effect of the project on flood inundation under alternative climate scenarios. Methodologies to evaluate the impact of increasing precipitation and rainfall intensity are evolving and should be selected in consultation with the NPS.

4. Synthesis - The final study report should address the following licensing issues:
   a. Evaluate whether the upstream reach of the Namekagon River proposed for removal from the project boundary is impacted by the project and contributes to problems associated with sediment deposition in the reservoir and/or channel; vegetation growth and loss of recreation access; and flood risk to existing infrastructure and public access areas.
   b. Recommend updates to management plans and activities for sedimentation and vegetation (e.g., existing license Article 405; Barr Engineering, 1994; and WI DNR, GP-NO-2019-66-03813), and identify alternate methods to mitigate the impact of sediment deposition on aquatic plant growth, recreation access, and flooding.
   c. Evaluate the need for more detailed hydraulic and sediment transport modeling to quantify effects of sediment deposition on flood risk upstream from Trego dam.

Criteria 7: Level of Effort and Cost 18 CFR (§5.9(b)(7))

Although costs and level of effort depend on who would be conducting the work, a rough estimate is presented here:

- Channel and shoreline change analysis: $5,000
- Bathymetric surveys and analysis: $20,000 (this cost could potentially be reduced if combined with the longitudinal survey of the river and its banks, requested as part of the NPS Shoreline Survey.)
- Hydraulic modeling: $10,000
- Synthesis/Final report: 1-2 weeks of staff time.

An alternative study on channel changes and sedimentation has not been proposed. The NPS is potentially interested in partnering with the licensee and other stakeholders for a more comprehensive evaluation of hydropower power operations on river hydraulics, sediment transport, and channel processes, and the impacts on flooding, recreations uses and access, and the aquatic and riparian ecosystem.

References:

Barr Engineering, *Trego Flowage Macrophyte Survey and Vegetation Plan,* November 1994. Accessed 3/27/2021 https://tregolakedistrict.com/wp-content/uploads/2019/04/1994-Trego-Flowage-Lake-Plan.pdf

Gilvear, D. and Bryant, R., 2003, *Analysis of Aerial Photography and Other Remotely Sensed Data*, in Kondolf, F.M., and Piegay, H., Tools in Fluvial Geomorphology, John Wiley & Sons, Ltd. pp. 133-168.

NOAA National Centers for Environmental Information, 2017. Accessed 4/11/2021 https://statesummaries.ncics.org/chapter/wi/

University of Wisconsin Map Library. Accessed 4/08/2021 https://geography.wisc.edu/maplibrary/aerial-photography/

WI DNR, *Evaluation of Sedimentation Processes and Management Alternatives in the Trego Flowage,* May 1989. Accessed 3/27/2021 https://elibrary.ferc.gov/eLibrary/docinfo?document_id=13774147

WI DNR, General permit to maintenance dredge in a previous dredged area in Trego Lake, GP-NO-2019-66-03813, February 12, 2019. (Typo in permit, date corrected to February 12, 2020)

WI DNR, *Trego Lake - Washburn County, Wisconsin DNR Lake Map, Jun 1966.* Accessed 3/27/2021 https://dnr.wi.gov/lakes/maps/DNR/2712000a.pdf

Document Content(s)

NPS Comments Hayward and Trego Hydroelectric Projects.PDF 1

TREGO LAKE DISTRICT

PO Box 184 TREGO WISCONSIN 54888

May 6, 2021

Ms. Kimberly D. Bose,
Secretary Federal Energy Regulatory Commission
888 First Street, NE
Washington DC. 20426

Electronic Filing

Re: Support of National Park Service Comments on the Preliminary Application Document and Study Requests for Hayward Hydroelectric Project (FERC Number P-2417) and Trego Hydroelectric Project (FERC Number P-2711)

Dear Secretary Bose,

The Trego Lake District Board of Commissioners supports the request for studies and comments by the National Park Service (NPS) regarding the Preliminary Application Document (PAD) for the Trego Hydroelectric Project (FERC Number P-2711). Trego Lake District encourages the completion of the three studies outlined in the NPS study requests: 1) Recreation Study (both projects), 2) Shoreline Survey (both projects), and 3) Hydraulics, Sedimentation, and Channel Change Study (Trego). See TLD Resolution attached.

Our comments on the proposed NPS studies will focus on their impact to Trego Lake and Trego Lake riparian owners who make up the membership of the Trego Lake District. Trego Lake District respectfully requests to be included in any future discussions regarding the finalizing of study plans.

Trego Lake is a 383-acre lake in Northwest Wisconsin created by the Trego Dam operated by Xcel Energy. Trego Lake offers a variety of activities to the general public including boating, canoeing/kayaking, fishing, swimming and other recreational activities. Trego Lake District (TLD) was first formed as an association in the 1980s but quickly was incorporated into a Lake District in 1989 for the protection and rehabilitation of Trego Lake. TLD is a local unit of government committed to improving and enhancing the lake and recreation by protecting fish, maintaining water quality, marking navigation channels, controlling weeds and aquatic invasive species, and reducing sedimentation buildup. TLD works to enhance the lake for the general public and riparian landowners. Trego Lake District includes the riparian landowners on Trego Lake from the Trego dam to U. S. Highway 53. We will review the NPS Study Requests in reverse order based on their importance to TLD.

Support of NPS Study Request #3: Hydraulics, Sedimentation, and Channel Change Study

An average of 2000 cubic yards of sediment accumulate in Trego Lake each year, as NPS notes in its study request[1]. Sediment creates an enormous issue for Trego Lake users and land owners. The information gathered in the NPS study would be invaluable to identify issues and develop actions to mitigate sediment

[1] WI DNR, *Evaluation of Sedimentation Processes and Management Alternatives in the Trego Flowage,* May 1989.

build-up, control growth of aquatic plants including aquatic invasive species (AIS) resulting from sedimentation buildup, and prevent the loss of recreational opportunities for people visiting the lake or living on the lake.

Since its creation, TLD has worked to address the sedimentation build-up and its impact on the lake. The sediment build-up creates recreational challenges for boating, making it impossible to access certain areas of the lake. Additionally, it has led to an increase in aquatic plant growth including AIS: curly leaf pond weed and hybrid/Eurasian water milfoil. Since a 1995 Federal Energy Regulatory Commission (FERC) modification of the Trego Dam license, Xcel Energy (in 1995 Northern States Power, NSP) and TLD have worked in partnership to improve recreation by harvesting aquatic vegetation that reduces the recreation opportunities of the lake for all and particularly impedes residents from fully utilizing the value of Trego Lake. TLD organizes the harvesting and Xcel pays for one harvest per year. The cost varies: $2500 in 2020 to $8000 in 2019, depending on service availability and time of harvest.

For over 35 years, TLD has been addressing sediment build up in the lake. Management of sediment and aquatic vegetation is an ongoing problem that was considered as part of the current license for Trego Dam and should be considered in its relicensing. A variety of options have been discussed including drawdowns, sediment traps, and dredging. In 2016, after a number of years developing a workable proposal, TLD was able to dredge channels to allow for a variety of power boat traffic. During this process, TLD worked with and received permits and/or approval from the various oversight agencies including: Wisconsin Department of Natural Resources (WDNR), Army Corps of Engineers, NPS, tribes and others. Landowners in the area and others recreating on Trego Lake were able to easily access the full lake. After a significant rain event 2 years later, the channels filled in creating problems accessing the lake. The TLD has recently purchased a small suction dredge to spot-dredge problematic areas within designated channels (permitted by the WDNR, and authorized by the Army Corps of Engineers) to allow for minimal power boat traffic. This summer will be our initial effort. Nearly a quarter of the landowners on the lake (roughly 60 properties) are impacted by the sediment buildup making some areas impassable.

Support for NPS Study Request #2: Shoreline Survey

The shoreline survey will identify erosion problem areas and aquatic vegetation on Trego Lake. As we note, sedimentation is a crucial issue, likely driven by erosion and resulting in excessive aquatic vegetation. Studies will help us understand and mitigate these issues.

TLD respectfully requests a more comprehensive look at sediment sources. Specifically, we ask you to extend the shoreline study to cover the Namekagon River between Hayward and Trego. This will help determine if the amount of sediment entering Trego Lake has increased and identify sources of sediment. This, coupled with NPS Study Request #3 will provide a greater overall picture of sediment problems. With this information, mitigation actions can be reviewed and developed to improve recreational opportunities for Trego Lake and the Namekagon River.

Support for NPS Study Request #1: Recreation Study

The recreation study proposed by NPS will set the stage for future improvements or enhancements of recreation opportunities on Trego Lake. TLD is happy to support and be involved in developing the picture this study creates. In the past, the recreation survey used by Xcel and its agents relied on a questionnaire at the Trego Town Landing. However, the study method was too narrow. The people using the lake most frequently, those living around it, were not methodically surveyed. Studying this crucial issue, as part of Xcel receiving a 40-year license to continue operating the dam, would ensure the entire lake formed by the dam is available for a range of recreational activities.

The recreation study proposed by NPS would offer a more complete picture of recreation on the lake. It includes a mailed survey to each riparian landowner on Trego Lake. Gathering this information provides more complete input to determine the needs and opportunities for recreating on Trego Lake. If TLD can assist in this survey process in any way, we would be happy to do so.

Support for certain NPS comments regarding the PAD.

As NPS has noted, TLD questions the reasoning behind Xcel's proposed change in the Trego Project Boundary as part of this 40-year relicensure. TLD is concerned about this proposed change because it could impact the sedimentation issue. Could a change in the project boundary permit Xcel to avoid its obligation to address sedimentation?

Additional input on NPS comments regarding the PAD.

As noted by NPS in their comments, a concern is the closing of the Wisconsin Department of Transportation access site on the Namekagon River in Trego because of the re-routing of the intersection of U. S. Highways 63 and 53. TLD is also concerned about these closures. The loss of this access point may divert recreators to the Trego Town Park landing which is congested with sediment and aquatic plants. In addition to the closed landings being used by those coming down the Namekagon River, it was also used by Trego riparian landowner canoeist, kayakers, and tubers to access the upper portions of Trego Lake. We think the three studies proposed by NPS are likely to document a need for improved access with the potential for modifications at the Trego Town Park landing.

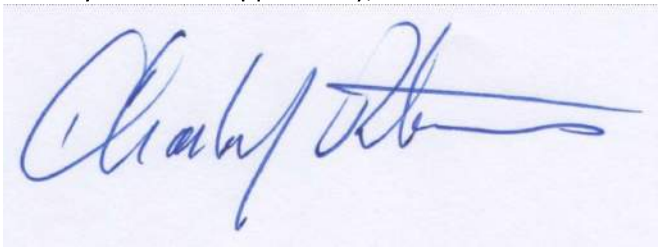
Conclusion

The TLD appreciates the opportunity to provide input on the relicensing of the dam and to support the study requests of NPS. TLD and Xcel Energy are currently in partnership to improve recreation on the lake by harvesting aquatic plants that impede boat travel and reduce the use of the lake to the general public and residents on the lake. With the discovery of AIS in the area, this effort is even more critical today.

Additionally, TLD is thankful for the work of NPS in responding to the PAD and its subsequent study requests. Their effort has been invaluable as we work to protect and rehabilitate Trego Lake. As noted earlier, TLD requests to be included in any future discussions regarding the finalizing and/or conducting of these studies.

Finally, if TLD can be of any assistance in these studies, we would be happy to do so. TLD has a website that includes current and historic documents about the lake: https://tregolakedistrict.com
If you have any question or comments, please do not hesitate to contact the district at: tld@trego.net

Thank you for this opportunity,



For the Board. . .
Charlie Petersen
TLD Board Chair

Attachment

Resolution Authorizing Trego Lake District Board of Commissioners to Support and Provide Information on National Park Service Study Requests Regarding the Relicensing of Trego Dam April 2021

WHEREAS, the Trego Lake District (TLD) is interested in the relicensing of Xcel Energy's hydroelectric dam creating Trego Lake.

WHEREAS, the process has begun for re-licensure of the dam and part of the Federal Energy Regulatory Commission's (FERC) process for re-licensure includes a request for possible areas to study that the dam project may affect.

WHEREAS, the National Park Service (NPS) has drafted three study proposals that identify key issues relating to Trego Lake and TLD concerns. The studies include: 1) Recreation Study, 2) Shoreline Survey, and 3) Hydraulics, Sedimentation, and Channel Change Study.

NOW, THEREFORE, BE IT RESOLVED, that the Trego Lake District Board of Commissioners is authorized to act in support of these study requests and submit a letter to FERC as testimony to this support. Additionally, the TLD will participate with NPS, and other interested parties, in providing information on these study areas to NPS and FERC as needed and/or requested.

Adopted this 17th day of April 2021.

Document Content(s)

TLD letter to FERC in support of NPS study requests.PDF.....1

Darrin Johnson

From: Haller, Macaulay G - DNR <macaulay.haller@wisconsin.gov>
Sent: Friday, May 7, 2021 2:40 PM
To: Miller, Matthew J
Cc: Laatsch, Cheryl - DNR; Haller, Macaulay G - DNR; Antonuk, Connie J - DNR; Shawn Puzen; Darrin Johnson; Nick Utrup; Susan Rosebrough (susan_rosebrough@nps.gov)
Subject: WDNR Comments on Hayward and Trego PAD and Study Requests - Filed with FERC
Attachments: WDNR Study Requests for Hayward and Trego.pdf

Hello,

Please find attached WDNR's comments on Xcel Energy's Hayward and Trego PAD and study requests for relicensing that was filed with FERC this afternoon.

Thank you,

Macaulay Haller
Energy Project Liaison, Office of Energy
Wisconsin Department of Natural Resources
Cell Phone: PENDING
Macaulay.Haller@wisconsin.gov

dnr.wi.gov

We are committed to service excellence.
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State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
2984 Shawano Avenue
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Tony Evers, Governor
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May 7, 2021

Federal Energy Regulatory Commission
Kimberly D. Bose, Secretary
888 First Street, N.E.
Washington, DC 20426

Matthew J. Miller
Hydro License Compliance Consultant
Northern States Power Company-Wisconsin, Xcel Energy
1414 W Hamilton Avenue, PO Box 8
Eau Claire, Wisconsin 54702-0008

RE: Wisconsin Department of Natural Resources Comments on Preliminary Application Document for the Hayward Hydroelectric Project P-2417 and Trego Hydroelectric Project P-2711

Dear Mr. Miller:

The Wisconsin Department of Natural Resources (department) appreciates the opportunity to participate in the process to relicense the Hayward and Trego hydroelectric dams as proposed in the Preliminary Application Document (PAD). These dams are licensed by Xcel Energy (Xcel), under projects P-2417 and P-2711.

The Hayward Project is located in the City of Hayward, Sawyer County, Wisconsin. The Trego Project is located in the Town of Trego, Washburn County, Wisconsin.

The department has limited information regarding natural resource information associated with the hydroelectric dams and their project areas. Studies associated with Hayward and Trego relicensing have different purposes, from a short term, long term, and cumulative impact. The department has carefully considered our responsibilities under the Clean Water Act and Navigable Waters Public Trust Doctrine for the proposed relicensing of Hayward and Trego.

We are providing comments to the PAD and are recommending that the following studies be completed. Each study is presented as appropriate for the various alternatives that could be evaluated as part of the comprehensive review and assessment of the project area. Our requests for information and studies focus on the continued operation of the Hayward and Trego dams.

As Xcel Energy begins to evaluate the array of study requests and determine their study proposal and next steps, the department will continue to provide guidance and recommendations. The licensee should continue to work with the department to collect resource information and develop study plans and protocols. If new information becomes available through the relicensing process, we reserve the rights to require additional studies to gather appropriate information.

To save time and costs, the department recommends that studies be combined, and that the licensee meet with the stakeholders who have requested studies to explore their options and still achieve desired data collection. We also recommend exploring the use of citizen monitoring groups and organizations.

Please be aware that Scientific Collectors Permits may be required to complete various surveys. Please work with the department to obtain appropriate permits and approvals prior to the collection of data.

Please note that the department cannot guarantee the accuracy of the information related to FERC project monitoring that is stored in the department's Surface Water Integrated Monitoring System (SWIMS), its repository lakes pages, and other associated department websites. Please contact the statewide FERC coordinator for the most current and accurate information on FERC projects.

The department will provide additional outreach to the tribes, as appropriate.

Please direct all inquiries to the Project Manager, Cheryl Laatsch, Statewide FERC Coordinator.

If you have any questions or comments regarding our recommendations, please contact me at 920-387-7869, or Cheryl.Laatsch@wisconsin.gov. We look forward to working with you.

Regards,

Cheryl Laatsch
Statewide FERC Coordinator
Wisconsin Department of Natural Resources

Comments on Pre-Application Document (PAD)
Relicensing of Hayward (P-2417) and Trego (P-2711) Projects

General:

Throughout the PAD, Xcel references data that is greater than 10 years old (for example, 3.2.1.1 references NSPW data from 1991). Additionally, some of the department websites that were referenced do not provide publishing or revision dates for the collected data and summaries (for example, 3.2.1.6 bathymetry data is actually from a 1964 map, 4.1.7 WDNR 2020a is data from 2010), and the department cannot verify if this data is still applicable to present day conditions at the Projects.

Please verify that the PAD reflects current project conditions.

3.2.1.1 Hayward Dam

A mixture of sand and bentonite material was placed over the apron in locations where holes have historically been seen. The downstream apron is a concrete slab located over rock-filled timber cribbing with thicknesses varying from 1 to 3 feet. The voids in the timber cribbing beneath the apron are grouted.

- Provide details on how the repairs have held up.
- Provide details on if there are ongoing monitoring of the voids and apron deficiencies.
- Provide details on the last time these voids and apron deficiencies were inspected.

3.2.2 Hayward Project Boundary

The current and proposed Project boundaries are depicted in Figure 3.2.2-1 on the following page and in the existing Exhibit G included as Appendix 3.2.2-1. The Licensee is proposing to increase the acreage within the Project boundary an additional 2.8 acres. The increase includes a portion of the reservoir currently occupied by the Project, but not currently included in the Project boundary (Mead & Hunt, 2020).

- It is difficult to clearly understand the proposed project boundary on Figure 3.2.2-1. Please provide an updated map or additional side-by-side boundary comparisons.
- Provide details if flowage easements are in place for the new project boundary area.

3.3.2 Trego Project Boundary

The use of LiDAR data to review the current Project boundary identified that the upper extent of the existing Project boundary contains a portion of free-flowing Namekagon River that is not impounded at the maximum operating elevation of 1,035.2 feet and therefore is not necessary for project operations. Therefore, in developing the proposed Project boundary for this document, the unimpounded or free-flowing upstream reach has been removed from the proposed Project boundary. This results in an overall decrease of acreage within the Project boundary of 29.1 (submerged) acres.

- Please clarify why LiDAR data was not applied to the Hayward project. The department requests consistent approaches between the projects.

3.4.1.1 Current Operation (Hayward)

Under normal operating conditions, the Licensee is required to maintain the reservoir at a target elevation of 1,187.4 feet but can fluctuate around the target elevation such that the reservoir is maintained between 1,187.0 feet (minimum) and 1,187.5 feet (maximum).

- Provide details on why the target elevation of the reservoir is 1,187.4 feet, when the maximum reservoir elevation is 1,187.5 feet. This target elevations only leaves a margin of 0.1 feet.
- Provide details on why the specific reservoir elevation license requirements for Hayward are different than Trego's reservoir target elevations fluctuations (the Licensee maintains the Project reservoir at a target elevation of 1034.9 feet, with fluctuations limited to +/- 0.3 feet around the target elevation).

The plant is manually operated with controls installed for automatic shutdown in case of operational emergencies. Whenever a plant shutdown occurs or high or low headwater levels are detected, staff at the Licensee's Wissota Hydroelectric Project control center are automatically notified.

- Define the terms "high" and "low" for headwater levels.

Tailwater is monitored manually via a staff gage downstream of the powerhouse.

- Provide details on the location of the staff gage and the frequency of monitoring and calibration.

Flows in excess of the 8 cfs minimum flow are primarily passed through the powerhouse. Flows in excess of the Project's hydraulic capacity are passed through the overflow spillway.

- Clarify how this is meeting run-of-river operations. This does not appear to be equal inflow/outflow, as excess flows will go downstream.
- Clarify why excess flows are not passed through the overflow spillway.

3.4.2.1 Current Operation

The Project currently operates in a run-of-river mode where discharge measured immediately downstream of the Project tailrace approximates the sum of inflows to the Project reservoir

- Provide more information on how sum of inflow is calculated.
- Provide details on water usage for the spillway and powerhouse and the amount of water flowing into these areas versus flowing out of these areas.

Headwater and tailwater elevations are continuously monitored electronically and manually confirmed with staff gages mounted on the Project headworks and tailwater.

- Provide the locations of where elevations are being electronically and manually collected.

4.1 General Description of the Project Area (18 CFR § 5.6(d)(3)(xiii))

There are two FERC-licensed hydroelectric projects and three state-regulated dams on the Namekagon River; all are listed from upstream to downstream in ***Table 4.1-1*** *and are shown in* ***Figure 4.1-1****. The FERC-regulated*

dams include the Hayward and Trego Projects. The state-regulated facilities do not generate power and are regulated by the State of Wisconsin.

- Provide details on how these state-regulated facilities impact or effect the Hayward and Trego projects.
    - Department database shows that Phipps and Pac-Wa-Wong are owned by the U.S. Department of Interior. The most recent files we have are from 1995 for Phipps Dam.

    - Namekagon is State regulated and located 27 miles upstream of Hayward Project. This is a run of river dam with 17-ft fixed crest weir and two 4-ft stoplog bays. The dam was designed to pass the Q1000-yr event with 2.4 feet of freeboard before overtopping.

4.2.3.1 Hayward Project, 4.2.3.2 Trego Project

The combination of NSPW shoreline ownership, minimization of reservoir fluctuation, existing native riparian vegetation buffers, local shoreland regulations, and Upper St. Croix and Namekagon River Management Plan provide adequate protection from wide-spread shoreline erosion and over development in the vicinity of the Hayward Project.

- Provide a map and table of Xcel ownership, public lands, and private ownership within the Hayward and Trego FERC boundaries.

4.3.2 Streamflow, Gage Data, and Flow Statistics

- Provide a map showing all gauge locations for the Hayward and Trego projects.

Monthly flow duration curves for the Trego Project were developed based on discharge information collected by the Licensee. While there is a USGS gage in the vicinity of the Trego Project, it does not record daily flow data needed to develop flow duration curves and the USGS gage at Leonards is not located close enough to provide statistically accurate flow information

- Provide greater detail on these two gauging stations and why these gauges cannot provide relevant flow data.

4.3.2.2 Trego Project

There is a drainage area of 488 square miles at the Trego Project. Based on the data for the analyzed period, the average annual calendar year flow at Trego Project was 540 cfs, the maximum annual average calendar year flow was 579 cfs in 2019, and the minimum annual average calendar year flow was 469 cfs in 2015.

- Provide the relevancy and significance of the years 2015 and 2019.
- The department requests flow data from the past 20 years for the Hayward and Trego projects. This includes duration curves, low flows, high flows, spring run-off, dry years, wet years, etc.

4.3.4 Instream flow

- Discuss and evaluate current instream flow data for the Hayward and Trego projects.

4.3.7.1 River Water Quality Standards

- The upper confidence bound for Hayward Lake residence time is 6 days, therefore, Hayward Lake is considered an impounded flowing water.
- The upper confidence bound for Trego Lake residence time is 11 days, therefore, Trego Lake is considered an impounded flowing water.
- Verify if state standards are being met at the Hayward and Trego project.
- Trego Lake is considered an impaired water and is 303(d) listed for the Recreation designated use, due to high chlorophyll-a concentrations, and will addressed as part of the St. Croix Nutrient TMDL expiring in 2025.
- Trego Project should be subject to the Warm-Large temperature criteria (see table below from Chapter NR 102.2 – Water Quality Standards for Wisconsin Surface Waters)
- Hayward Projec =t should be subject to Coldwater temperature criteria (see table below from Chapter NR 102.2 – Water Quality Standards for Wisconsin Surface Waters)

Table 2
Ambient Temperatures and Water Quality Criteria for Temperature for Non–Specific Waters
(All values are expressed as degrees Fahrenheit)

	Cold[4]			Warm — Large[5]			Warm — Small[6]			LFF[7]		
Month	Ta[1]	SL[2]	A[3]	Ta	SL	A	Ta	SL	A	Ta	SL	A
JAN	35	47	68	33	49	76	33	49	76	37	54	78
FEB	36	47	68	33	50	76	34	50	76	39	54	79
MAR	39	51	69	36	52	76	38	52	77	43	57	80
APR	47	57	70	46	55	79	48	55	79	50	63	81
MAY	56	63	72	60	65	82	58	65	82	59	70	84
JUN	62	67	72	71	75	85	66	76	84	64	77	85
JUL	64	67	73	75	80	86	69	81	85	69	81	86
AUG	63	65	73	74	79	86	67	81	84	68	79	86
SEP	57	60	72	65	72	84	60	73	82	63	73	85
OCT	49	53	70	52	61	80	50	61	80	55	63	83
NOV	41	48	69	39	50	77	40	49	77	46	54	80
DEC	37	47	69	33	49	76	35	49	76	40	54	79

1 Ta = ambient temperature
2 SL = sub–lethal criteria
3 A = acute criteria
4 Cold = waters with a fish and aquatic life use designation of "cold water community"
5 Warm – Large = waters with a fish and aquatic life use designation of "warm water sport fish community" or "warm water forage fish community" and unidirectional 7Q10 flows ≥ 200 cfs (129 mgd)
6 Warm – Small = waters with a fish and aquatic life use designation of "warm sport fish community" or "warm water forage fish community "and uni–directional 7Q10 flows < 200 cfs (129 mgd)
7 LFF = waters with a fish and aquatic life use designation of "limited forage fish community"

4.4.1.1 Fish Stocking Data

- Describe the purpose of fish stocking at these projects, including information on frequency, methods, and timelines of stocking events.

4.4.1.2 Mussels

- Data provided by the department included the year of observation, but this is not included in table 4.4.1.2-1

4.4.3.1 Hayward Project

The WDNR further acknowledged that Hayward Lake did not provide good walleye habitat, and even in the absence of fish entrainment, the original goal of 3 walleye per/acre would not be possible to achieve. The WDNR also concluded there was no compelling resource-based reason to plan for drawdowns

- This information should be updated since the FERC 2012 statement.
- Provide current status of walleye and walleye habitat at the Hayward Project.

4.5.1 Botanical Species

- Boreal Forest was not a forest type in the NW Sands Ecological Landscape historically.

4.5.2. Wildlife

- Acknowledge which species have NHC-listed status.
- Identify species that are state or federally listed under 4.7 Rare, Threatened and Endangered Species.
- There is an inconsistency of the 4.5 list of species and the list in 4.7 (for example, the Northern Long-Eared Bat is listed in 4.5.2, however, 4.7.2.3 states that the species is not found within the vicinity of the projects).
- Marten and white tailed jackrabbit do not occur in the vicinity of these project boundaries.

4.5.3 Invasive Species

- Please update the references and reference lists for consistency.
- *Selected Regulated AIS* in WI may have been updated since 2016, and this flyer should only serve as a reference.

4.8.1.6 Hayward Project Informal Shoreline Fishing Area

The unimproved shoreline areas downstream of the spillway and powerhouse, which are owned by the Licensee, are often used as informal fishing areas

- Xcel should work with local municipality to maintain and enhance recreational opportunities, especially in areas that are known to have active use.

4.8.2.3 Town of Trego Park Landing

- Photo 4.8.2.3-1 shows presence of active erosion at the boat landing and will need repair.

Study Requests

Relicensing of Hayward (P-2417) and Trego (P-2711) Projects

(Study requests to be applied to both Hayward and Trego Projects, unless otherwise noted)

ASSESSMENT OF CURRENT DAM OPERATIONS

• Goals and Objectives: Determine if the Project is meeting the requirements of minimum flows and run-of-river operations; including documenting how downstream river flows are managed appropriately to limit water level fluctuations.

• Relevant DNR Management Goals: Review the current operations relative to maintaining consistent reservoir elevations and downstream flows that mimic background hydrology, as achieved by run-of-river operations.

• Existing Information: For the Hayward Project, a minimum flow of 8 cfs or inflow, whichever is less, is released at all times into the bypass reach, as stated in the current license. The Trego Project does not have minimum flow requirements.

• Operation nexus to resource and how informs license: Ensure Project operates within limits of hydrologic modification through run-of-river, and not causing divergence in flows that harm the downstream aquatic ecosystem.

• Methodology: Desktop review of existing inflow and outflow data, including an evaluation report of run-of-river and operations requirements.

• Level of Effort and Cost: Staff time is expected to be 20-40 hours at $125 per hour equaling $2,500-$5,000 for data analysis and report.

ASSESSMENT OF MINIMUM FLOW, DRAWDOWNS, AND RESOURCE IMPACTS DOWNSTREAM OF THE TAILWATER

• Goals and Objectives: Provide an assessment of the average range of flows, including minimums and maximums and their relevance, associated with run-of-river operations and facility capacity. Determine if the project minimum flow of 8 cfs at the Hayward Project and target reservoir elevations of the Trego Project are providing sufficient flows and environment for aquatic resources.

• Relevant DNR Management Goals: Evaluate the current minimum flow and ensure that the minimum flow does not have an adverse impact on the aquatic resources within the Project boundary and downstream of the Project. Ensure that the aquatic environment is maintained in a healthy state, which includes protection of rare and listed species. Consideration for impacts to wildlife that will be hibernating would be adversely affected by drawdowns. Sediment loading impacts from frequent drawdowns and loss of recreational opportunities, due to limited access, are affected by drawdowns. If a drawdown or refill is performed too quickly, turbid water can flow down river, depending on the water flow rate. Sediment can also settle out at the base of the dam, creating water quality and habitat issues.

• Existing Information:

> **Hayward**: For the Hayward Project, a minimum flow of 8 cfs or inflow, whichever is less, is released at all times into the bypass reach, as stated in the current license.

Trego: The Trego Project does not have minimum flow requirements and does not have a bypassed reach.

The department has concerns for otters, furbearers, and other wildlife if water levels are not managed similar to current operations. Turtles, frogs, and other herps would be negatively affected if water levels are drawndown after October 1st.

• Operation nexus to resource and how informs license: Ensure Project is meeting the intent of run-of-river, and not causing divergence in flows that harm the downstream aquatic ecosystem.

• Methodology: In-stream flow study, which includes a description of current habitat conditions within the bypass channel under current operation and flows to determine if the current minimum flows are impacting available habitat, fish, and macroinvertebrate communities. Assess various flow regimes to determine what is appropriate to minimize and avoid adverse impact on the cold-water resource.

• Level of Effort and Cost: Staff time is expected to be 20-40 hours of field work at $125 per hour, plus costs for equipment.

ASSESSMENT OF STREAM FLOWS, CHANNEL DIMENSIONS, AND LINEAR GRADIENT

• Goals & Objective: Determine impacts the Project has on the existing stream flows, channel dimensions and linear gradient of Namekagon River downstream of the Project.

• Relevant DNR Management Goals: The proposed study would investigate the impacts the Project would have on the existing stream flows, channel dimensions, and linear gradient of the Namekagon River. The impacts that the Project may cause on the existing stream flows, channel dimensions and linear gradient may alter resources and recreational and developmental management plans for the future.

• Existing Information: Data is limited relating to flow, channel dimensions, and linear gradient impacts within the Project boundary.

• Operation nexus to resource and how informs license: The relicensing of Hayward and Trego has the potential to have short term and long-term impacts on the aquatic community downstream of the impoundment. These impacts include, but are not limited to, dewatering and limiting available aquatic habitat in the downstream river channel depending on stream discharge and dam operation. These impacts can vary by season as well as daily. Proper management of the resource will help ensure that adequate flows are available to aquatic life at the proper time and thermal regime.

• Methodology: Conduct a flow study to determine stream morphology downstream of the Project at various flows, including width, depth, wetted perimeter and substrate composition. The study should identify any wetlands that are flooded. This should include available aquatic habitat under current operation through flood flow conditions. Quantitative Habitat Assessment Methodology should be used to document habitat conditions. Refer to existing management efforts (recreational, resource, habitat) to investigate the impacts the proposed Project would have.

• Level of Effort and Costs: 40 hours of fieldwork and 40 hours of report writing at $125 per hour, plus equipment costs.

ASSESSMENT OF WATER QUALITY

• Goals & Objectives: The department is requesting at least one year of water quality data collection. Depending on the first year of data, a second year of water quality studies may be requested. Assess and monitor the following water quality parameters:

Total Phosphorus	Sulfate, Total Mercury	Total Suspended Solids
Chlorophyll-a	Methyl Mercury	Sediment Accumulation
Dissolved Oxygen (DO)	Dissolved Phosphorus	Alkalinity
Temperature	Nitrate (plus nitrite)	Secchi Depth
Conductivity	Ammonia	Color
pH	Chloride	Iron, Manganese, and/or Sulfide
Total Nitrogen	Bacteria	Cyanobacteria

• Relevant DNR Management Goals:

Total Phosphorus: One of the primary causes of eutrophication and most widespread pollutant in waterbodies statewide and nationally. Impoundments are unlikely to raise the concentration of phosphorus in the downstream river but play a role in the transformation, such as the ratio of dissolved phosphorus to total phosphorus. Dam operation might influence internal phosphorus loading to the impoundment by affecting the mixing regime as water levels change.

Chlorophyll-a: A measurement of the amount of algae in a waterbody, one of the primary manifestations of eutrophication. As impoundments increase surface area, slow and warm water are likely to produce more chlorophyll-a, per unit phosphorus/nitrogen, than the upstream or downstream river. Impoundments may produce chlorophyll-a in the lake environment that is then passed to the downstream river.

Dissolved Oxygen: Dissolved oxygen is critical for the health and survival of aquatic organisms. Deep impoundments may stratify and become oxygen depleted in deep water. Impoundments may then cause a decrease in dissolved oxygen in the downstream river, especially if there is bottom withdrawal of a eutrophic impoundment, or an impoundment that stratifies. Additionally, eutrophic impoundments may transform nutrients into organic matter (mainly algae) that then flows into the river, decomposes and reduces oxygen.

Temperature: Temperature regime of a waterbody structures community composition of fish, invertebrates, plants, etc. Temperature also effects rates of chemical reactions, ecosystem productivity and the ability for gasses to dissolve in water. Impoundments can increase water temperatures by slowing water velocity and increasing surface area to absorb solar radiation. Additionally, deep impoundments may cause deep water temperatures to decrease if there is stratification. Dam operations can influence downstream temperature by changing/mixing withdrawal location, top versus bottom draw (among others).

Conductivity: High concentrations of dissolved ions, measured as conductivity, can impair the osmoregulation of organisms with gills and other semipermeable membranes. Sources of elevated conductivity are likely from nonpoint and certain point source discharges. However, conductivity is important for classifying the impoundment and stream and is therefore needed as background information.

pH: pH can control the biologic availability, solubility and speciation of chemicals in water. Although wild rice does well in slightly acidic waters (pH 5.9 – 6.2), even moderately acidic water may irritate the gills of aquatic fish and insects or reduce the hatching success of fish eggs. Eutrophication increases swings in pH during the algal growth and die-off phases. Highly eutrophic impoundments may release high or low pH to the river downstream. In addition, fluctuating water levels can acidify the impoundment by exposing the waterbody bed to air and then flushing sulfate into the water when lake levels rise again or when it rains. Dam operation probably has very little opportunity to mitigate dramatic pH swings at short timescales, but operations that cause sufficient changes in water levels may affect pH at a seasonal or interannual time scale.

Total Nitrogen: An oversupply of nitrogen is one of the primary causes of eutrophication. A lack of nitrogen limits wild rice development. Impoundments are unlikely to raise the concentration of nitrogen in the downstream river. Although some planktonic algae can fix atmospheric nitrogen, this amount is likely overwhelmed by the amount of nitrogen coming in from the watershed via tributary streams. Impoundments do play a role in the transformation, such as the ratio of dissolved inorganic nitrogen to organic nitrogen.

Sulfate, Total Mercury, Methyl Mercury: Dam operations can influence the sulfur and ultimately the mercury cycle. In short, long-term drawdowns can eventually lead to increased sulfate runoff when it rains. This acidifies the water and can then enhance methyl mercury concentrations in water and methyl mercury in fish. Sulfate can also be converted to toxic sulfide which affects the mitochondria of plants. When sulfate is high, sulfides are also usually high and therefore toxic to wild rice and other plants. This process has been demonstrated in formation of new reservoirs and in the regulation of existing reservoirs. Impoundments can cause this process to happen. Water levels will need to be managed to prevent increased total mercury and high sulfate levels.

Dissolved Phosphorus: An oversupply of phosphorus is one of the primary causes of eutrophication and most widespread pollutant in waterbodies, statewide and nationally. Low phosphorus levels limit wild rice seedling success and development. Impoundments are unlikely to raise the concentration of phosphorus in the downstream river, but play a role in the transformation, such as the ratio of dissolved phosphorus to total phosphorus. Dam operation might influence internal phosphorus loading to the impoundment by affecting the mixing regime as water levels change.

Nitrate (plus nitrite): One of the bioavailable forms of nitrogen, a primary cause of eutrophication. Impoundments are unlikely to raise the concentration of nitrate in the downstream river. Although some planktonic algae can fix atmospheric nitrogen, this amount is likely overwhelmed by the amount of nitrate coming in from the watershed via tributary streams.

Ammonia: One of the bioavailable forms of nitrogen, a primary cause of eutrophication. Impoundments are unlikely to raise the concentration of ammonia in the downstream river.

Chloride: Chloride, at elevated levels is toxic to fish, invertebrates and amphibians. At lower levels, it can negatively affect diversity, productivity, and increase the density of water. Chloride is increasing statewide and nationally in waterbodies that have even small percentages of their watershed in urbanized land use. The impoundment is unlikely to transform or change chloride levels from the incoming tributaries (assuming long-term stable water levels). The major exception being if the shore is heavily developed and there are major applications of road salt or point sources with high chlorides.

Bacteria: Bacterial indicators, such as E. coli, are used to detect the presence of fecal contamination in waterbodies to protect recreational uses. Impoundments are unlikely to increase E. coli in downstream

rivers, unless there is heavy recreation (campgrounds, beaches, non-sewered sanitation) on the impoundment.

Total Suspended Solids (TSS): High concentrations of TSS can inhibit visibility for predators, damage gill structure of fishes, and lead to high rates of sedimentation in streams and alter benthic habitat. Impoundments are likely to lower TSS concentrations in the downstream river. In extreme cases where sediment build-up behind a dam structure is high, there may be some chance of increased concentrations of TSS. Dam operation is unlikely to influence TSS unless there is a catastrophic event, drawdown or using ash cinders as a sealant.

Sediment Accumulation Behind Dam: Dams trap sediments upstream. Ecological concerns include increasing turbidity upstream and smothering spawning beds in the reservoir and upstream. Sediment build up can also threaten the longevity of the dam itself.

Alkalinity: Alkalinity itself is not regulated, but it is important for determining sensitivity to acidification and the biological communities that can live there. Alkalinity does not have criteria or thresholds; it is used to help understand lake characteristics. Alkalinity can be measured in concert with conductivity and pH with a single water sample.

Secchi Depth: Secchi depth measures water clarity and is a general indicator of lake health. The impoundment could affect Secchi depth through its effects on eutrophication and suspended sediments. Dam operations can influence internal nutrient loading and chlorophyll *a* (see above), and thus, also water clarity.

Color: Color refers to how much colored organic matter is in the water, staining it brown. Water color is important for understanding the ecology of the lake. Highly stained waters reduce water clarity and in turn, can affect algal and plant growth and even fish growth. The impoundment is unlikely to affect color, but color will be important for understanding the ecology of the impoundment. Color does not have criteria or thresholds; it is used to help understand lake characteristics.

Iron, Manganese, and/or Sulfide: These are reducing substances that can have high concentrations in the hypolimnion of reservoirs under anoxic conditions. They use oxygen through their own chemical transformations and can further increase oxygen demand. In addition, iron binds phosphorus under oxic conditions, but releases phosphorus under anoxic conditions. Therefore, reservoirs with high iron could be prone to internal phosphorus loading if they go anoxic in the hypolimnion. May be necessary to manage impoundments that stratify and become anoxic. May be necessary to manage impoundments that stratify and become anoxic. Dam operations can impact stratification and mixing, and thus, the concentration of these substances and internal nutrient loading. The department does not have criteria or thresholds for these substances; they would be used to help understand cycling of nutrients, mercury, etc., and oxygen dynamics within a lake

Cyanobacteria cell counts and cyanotoxins: Harmful Algal Blooms are of concern for human health, recreation, and fish and aquatic life. High concentrations of chlorophyll *a* are often correlated with high concentrations of cyanobacteria and cyanotoxins, but not in all cases. These indicators need to be measured independently for evaluation. As impoundments increase surface area, slow and warm water they likely to produce more chl *a* per unit phosphorus/nitrogen, than the upstream or downstream river. This could also include more cyanobacteria and cyanotoxins as well. Recent studies of dams across wide geographic areas show that cyanobacterial blooms are more prevalent when dams are drawn down. Temperatures increase along with water residence times and nutrient concentrations, all of which favor

cyanobacteria. Dam operations can influence the likelihood of cyanobacterial blooms. The department recommends following EPA's recommended cyanobacteria thresholds. The department's standard operating procedures and assessment methodology should be followed for monitoring, reporting and review. Highly recommended in reservoirs/impoundments that are known to suffer from harmful algal blooms. In addition to routine monitoring, samples may be taken in response to reports of algal blooms/sickness. Not necessary where chlorophyll concentrations are low and there are no reports of algal blooms.

• Existing Information:

Hayward: Water quality monitoring is not required in the current license. Water clarity data was collected at the Hayward Project 2010-2017. Hayward Lake is a designated Area of Special Natural Resources Interest (ASNRI) as an Outstanding and Exceptional Area, a Priority Navigable Waterway (PNW) Musky Area, and a PNW Walleye Area. The Namekagon River that flows through the Hayward Project is an ASNRI Wild and Scenic River, ASNRI Trout Stream, and a PNW Musky Area.

Trego: Water quality monitoring is not required in the current license. Water quality parameters were collected at the Trego Project 2010-2014 and 2016-2020. Satellite water clarity was collected at the Trego Project in 2015. Trego Lake is an ASNRI Outstanding and Exceptional Area and ASNRI Wild Rice Area. The Namekagon River that flows through the Trego Project is a PNW Musky Area.

• Operation nexus to resource and how informs license: Ensure compliance of state water quality standards and how operations are meeting those standards. The operation of the dam affects the water quality of the impoundment and downstream resources. The overall goal of the request is to further understand the current water quality conditions of the reservoir and river resources which will help inform management decisions in the future. Limited water quality data presented in the PAD is not representative of current or future water quality conditions.

• Methodology: The department classifies Hayward Lake as an impounded flowing water, where a water residence time is less than 14 days. According to current department information, the upper confidence limit for water residence time for Hayward Lake is 6 days. This means that river monitoring protocols should be applied instead of lake protocols upstream of the impounded area and downstream of the dam. Lake protocols should be applied within the deep hole of the impounded area.

The department classifies Trego Lake as an impounded flowing water, where a water residence time is less than 14 days. According to current department information, the upper confidence limit for water residence time for Trego Lake is 11 days. This means that river monitoring protocols should be applied instead of lake protocols upstream of the impounded area and downstream of the dam. Lake protocols should be applied within the deep hole of the impounded area.

River monitoring methods (including continuous monitoring) should be performed in at least three locations within the project area (or best appropriate location), including one location downstream of the dam, one location within the impounded area (within the deep area of the impoundment, typically near the dam), and one location upstream of the impounded area.

Data should be collected or analyzed using the DNR WISCALM Guidance, surface water grab sampling protocols, and the Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures, 2020). A list of standard operating procedures can be found in the appendix of the most current department Wisconsin Consolidated Assessment and Listing Methodology (WisCALM,

https://dnr.wisconsin.gov/topic/SurfaceWater/WisCALM.html), in addition to protocols listed in the table below:

One (1) sample location upstream of the impounded area and one (1) sample location downstream of the dam			
Parameter	**Method**	**Frequency – At least one year of studies requested**	**DNR Protocols**
Total phosphorus	Grab samples	Monthly, May – Oct **6 total**	Nutrient Grab Sample Protocol
Chlorophyll *a*	Grab samples	Monthly, July 15 – September 15 **3 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures, 2020)
Dissolved Oxygen	Field measurement	Continuous, July – September	Use instruction manual from manufacturer
Temperature	Field measurement	Continuous, year-round	Use instruction manual from manufacturer
Conductivity	Field measurement	Continuous, July – September	Use instruction manual from manufacturer
pH	Field measurement	Continuous, July – September	Use instruction manual from manufacturer
Dissolved Phosphorus	Grab samples	Monthly, May – Oct **6 total**	Nutrient Grab Sample Protocol
Total Nitrogen	Grab samples	Monthly, May – Oct **6 total**	Nutrient Grab Sample Protocol
Sulfate, Total Mercury	Grab samples	Possibly 1x in spring	Nutrient Grab Sample Protocol
Methyl Mercury	Fish Tissue Samples	Possibly 1x in spring	Contact DNR Fisheries Biologist
TSS	Grab samples	Monthly, May – Oct **6 total**	Nutrient Grab Sample Protocol
Nitrate (plus nitrite)	Grab samples	Monthly, May – Oct **6 total**	Nutrient Grab Sample Protocol
Ammonia	Grab samples	Monthly, May – Oct **6 total**	Nutrient Grab Sample Protocol
Chloride	Grab samples	Monthly, May – Oct **6 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Bacteria	Grab samples	Monthly, May – Oct **6 total**	Citizens Monitoring Bacteria: A training manual for monitoring E. coli http://dnr.wi.gov/lakes/forms/ecoli_may162005.pdf
Nutrient Grab Sample Protocol:https://dnr.wi.gov/water/wsSWIMSDocument.ashx?documentSeqNo=114118765 **Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures, Revised 2020):** **https://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/programs/CLMN/ChemistryMan.pdf**			

One (1) sample location within the impounded area (deep hole			
Parameter	**Method**	**Frequency – At least one year of studies requested**	**DNR Protocols**
Total Phosphorus (TP)	Field fixed, persulfate digestion	Spring turnover + 3x July 15 - Sep 15 **4 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Chlorophyll *a*	Water filtered in facility's lab or mail to SLH	3x July 15 - Sep 15 **3 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Dissolved Oxygen	Field, Profile at 1 m intervals	Spring turnover + 3x July 15 - Sep 15 **4 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Temperature	Field, Profile at 1 m intervals	Spring turnover + 3x July 15 - Sep 15 **4 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Conductivity & pH (optional)	Profile at 1 m intervals	Spring turnover + 3x July 15 - Sep 15 **4 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Conductivity, pH, Alkalinity	Field collected, then sent to lab	1x during July 15 - Sep 15 **1 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Dissolved Phosphorus	Field collected, then sent to lab	Spring turnover + 3x July 15 - Sep 15 **4 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Clarity (Secchi)	Field	Spring turnover + 3x July 15 - Sep 15 **4 total**	Wisconsin Citizen Lake Monitoring Training Manual (Secchi Disk Procedures)
Color	Field collected, then sent to lab	1x during July 15 - Sep 15 – **1 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Total Nitrogen	Field fixed (sulfuric acid)	1x during July 15 - Sep 15 **1 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Sulfate, Total Mercury	Field collected, then sent to lab	Possibly 1x in spring	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Methyl Mercury	Fish tissue. See appendix for explanation.	Possibly 1x in spring	Contact DNR Fisheries Biologist
Nitrate (plus nitrite)	Field fixed (sulfuric acid)	1x during July 15 - Sep 15 – **1 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)

Ammonia	Field collected, then sent to lab	Probably 1x July 15 - Sep 15 – **1 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Chloride	Field collected, then sent to lab	Spring turnover + 3x July 15 - Sep 15 **4 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Iron, Manganese, and/or Sulfide	Field collected, then sent to lab	Spring turnover + 3x July 15 - Sep 15 **4 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Total suspended solids (TSS)	Field collected, then sent to lab	Spring turnover + 3x July 15 - Sep 15 **4 total**	Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures)
Cyanobacteria/ cyanotoxins	Contact DNR Water Quality Biologist		
Bacteria	Field collected, then sent to lab	Dependent on system & tied to public beaches – Contact Water Quality Biologist	Citizens Monitoring Bacteria: A training manual for monitoring E. coli http://dnr.wi.gov/lakes/forms/ecoli_may162005.pdf

Wisconsin Citizen Lake Monitoring Training Manual (Secchi Disk Procedures, Revised 2020):
https://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/programs/CLMN/SecchiMan.pdf

Wisconsin Citizen Lake Monitoring Training Manual (Chemistry Procedures, Revised 2020):
https://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/programs/CLMN/ChemistryMan.pdf

For the analytes without state standards, they should be analyzed by mean and median values and reported in a table by date and time annually.

Sediment accumulation should be assessed and mapped behind the dam. This includes estimated depth and volume of sediment held within the impoundment.

Sampling Locations: Apply river monitoring methods in the river in the impounded area, downstream of the dam, and upstream of the impounded area.

- **In the Impounded Area:** One or more stations within the main impounded area. At least one station should be located in the deep area of the impoundment, which would typically be near the dam. However, it must be located outside of the hazard zone demarcated by buoys. For large impoundments an additional station or two may be required in the middle and upper reaches of the impounded area, along the thalweg, to characterize water quality throughout the impoundment. For those with a more complex system of tributary arms or large bays, additional monitoring stations may be recommended to characterize those areas.

- **Downstream of the dam:** One station. In cases where some of a river's flow is diverted through the dam and another portion of the flow is not, the station should be located below the mixing zone (see the DNR's "Guidance for Mixing Zones, Zones of Initial Dilution, and Rapid Mixing"). It should also be placed in an area that is safe to access (some areas may be too swift-flowing) and if possible where vandalism of equipment is less likely.
    - In certain cases, a second station immediately below the dam may be required if low DO is expected to be an issue due to bottom draw releases and/or low DO in the impounded area.

- **Upstream of the impounded area:** Monitoring inflows can provide a point of comparison with waters in the impoundment and downstream and help identify pollution sources. One river station upstream of the impounded area may be required if:
    - There is not another station upstream of the facility's impounded area that is being monitored by another facility upstream (in areas with several consecutive dams).
    - There is a water quality problem identified downstream or in the impounded area which needs additional upstream data to determine the cause of the issue.

• Level of Effort and Costs: Six field days plus with two people $125 per hour plus costs for equipment. Estimated 40 hours for report writing and chemical analysis. Additional field work may be required to monitor/maintain continuous monitoring sensors.

ASSESSMENT OF SEDIMENATION AT TREGO DAM

• Goals & Objectives: Assess sedimentation upstream of Trego Dam near where the boundary is proposed to be removed.

• Relevant DNR Management Goals: Dams trap sediments upstream. Ecological concerns include increasing turbidity upstream and smothering spawning beds in the reservoir and upstream. Sediment build up can also threaten the longevity of the dam itself.

• Existing Information: During the JAM presentation, the local Trego Lake association shared concerns with sedimentation at the Trego dam, as well as where the proposed FERC boundary is being removed. The lake association also has concerns of flooding in this portion of the project boundary.

• Operation nexus to resource and how informs license: Ensure compliance of state water quality standards and how operations are meeting those standards. The operation of the dam affects the water quality of the impoundment and downstream resources. The overall goal of the request is to further understand the current water quality and sedimentation conditions of the reservoir and river resources which will help inform management decisions in the future.

• Methodology: Sediment accumulation should be assessed and measured downstream of HWY 53 through the project area that is being proposed for removal. Assessments of sediment deposits and sediment depth measurements can be collected along multiple transects, including the bay areas north and west of Leisch Road.

• Level of Effort and Costs: 40 hours of desktop review, and data summary at an estimated $125 per hour, plus equipment costs.

ASSESSMENT OF WILDLIFE AND WILDLIFE HABITAT

• Goals & Objectives: Document wildlife presence and diversity, habitat types, and general wildlife and vegetation abundance within the Project area. The goal of this study is to evaluate the distribution and composition of vegetation, wildlife, and wildlife habitats, including wetlands, and the effects operations of those

• Relevant DNR Management Goals: The department has responsibility to manage wildlife, including listed species. This information will be beneficial to understanding the current environment, and potential needs for resource management associated with the Project.

• Existing Information: Limited or no wildlife surveys or data have been collected within the Project boundary. Additionally, the PAD does not include any field assessment or surveys of wildlife habitat or use.

> **Trego:** The department does not own land so we do not have any wildlife or fishery area management plans for this area of land. The only survey conducted in this area was the bear snare survey (which showed an abundance of bears).
>
> The department has concerns for otters, furbearers, and other wildlife if water levels are not managed similar to current operations. Turtles, frogs, and other herps would be negatively affected if water levels are drawn down after October 1st.
>
> **Hayward**: From a game species standpoint, wildlife impacts are presumed to be low. The game "species" that would see the largest direct impact would be waterfowl and furbearers. The Waterfowl Management Plan was approved by the department and Wisconsin Natural Resources Board as of January 2020 and lays out the goals for Wisconsin's waterfowl.
>
> Water dwelling or using furbearers could also be impacted in water conditions changes from its current state. Like the waterfowl plan, the department Beaver Management Plan can be used for reference.
>
> There is bald eagle territory on Lake Hayward, with two nests by the Lumberjack Bowl and a newer nest just north of Hwy 77.
>
> Waterfowl Management Plan (2020): https://p.widencdn.net/uffph8/WisconsinWaterfowlPlan
>
> Beaver Management Plan (2015): https://p.widencdn.net/axlcfq/WM0610

• Operation nexus to resource and how informs license: The relicensing of the Project has the potential to have short term and long-term impacts on habitat and wildlife use of affected habitats. Proper management of the resource will help to minimize any adverse impacts associated with the removal, restoration, and relicensing activities.

• Methodology: Using a qualified biologist or ecologist knowledgeable in local vegetation, identify, classify, and delineate on a map major vegetation cover types within project area. Existing aerial photography, on the ground surveys, or a combination of the two to identify and map the cover types may be used. The biologist/ecologist will record all wildlife present.

During the summer and fall (migration), ground-truth any remote-sensing mapping efforts, record all wildlife observed (directly or indirectly) and document any terrestrial invasive species detected during survey efforts. Describe each cover type by species composition, successional stage, and aerial extent (acreage) within the survey area, including invasive species. As an example, the methodology expressed in the following reference could be used: https://www.fs.fed.us/research/publications/gtr/gtr_wo89/gtr_wo89.pdf

• Level of Effort and Costs: 80 hours of desktop review, field work, and data summary at an estimated $125 per hour, plus equipment costs.

ASSESSMENT OF FISHERIES AT TREGO PROJECT

• Goals & Objectives: Define the diversity and abundance of the fish community within the Trego Project.

• Relevant DNR Management Goal: Understand the existing environment. The department manages public water for recreational use, such as fishing, protection and management of species, and the overall health of the fishery of the state.

• Existing Information: The PAD states that department data was provided for upstream of Trego Lake, downstream of Trego Lake, and within Trego Lake for 2003-2019. Trego Lake is an ASNRI Outstanding and Exceptional Area and ASNRI Wild Rice Area. The Namekagon River that flows through the Trego Project is a PNW Musky Area.

The department has concerns on Lake Sturgeon entrainment at the Trego Dam. Lake Sturgeon are currently stocked by the department in the Namekagon River (above Trego Lake) and within Trego Lake in hopes of re-establishing this population, however, with entrainment, larger adult sturgeon can leave the lake but cannot return.

• Operation nexus to resource and how informs license: Having current fish survey information will help department staff make informed management decisions regarding the fishery.

• Methodology:

Seasonal catch per unit effort (CPUE) surveys in the spring, summer, and fall to quantify fish population relative abundance and summary report to document the species available to recreational fishers and general fish community composition.

Early Spring Fyke Netting: Three to five fyke nets (front frame 4'x6'), set the week of ice out.

Early Spring Electroshocking: Maxi boom to survey the entire shoreline with two dippers, when water temps are between 45-55 degrees

Late Spring Electroshocking: Maxi boom to survey the entire shoreline with two dippers, when water temps are between 60 – 70 degrees.

Summer Fyke netting (June-early August): Three to five fyke nets (front frame 4'x6'), set when water temps are approaching 70 degrees.

Fall Electroshocking: Maxi boom to survey the entire shoreline with two dippers, when water temps are between 55-65 degrees

• Level of Effort and Costs: Estimated $125 per hour, plus equipment costs.

Early Spring Fyke Netting: Nets would be checked for 3 - 5 days, approximately 2 - 4 hours a day to set, check, move and workup the fish.

Early Spring Electroshocking: Approximately 1-2 nights of electrofishing (depending on 2 or 4 boats), approximately 6 hours per boat/night, 8 2-mile stations.

Late Spring Electroshocking: Approximately 2-4 nights of electrofishing (depending on 1 or 2 boats), approximately 4 hours per night

Summer Fyke Netting: Approximately 2 to 4 hours a day to set, check, move and workup the fish. The nets would be deployed for 3 to 4 net nights , usually set on a Monday, checked daily and removed Thursday or Friday of that same week.

Fall Electroshocking: Approximately 2-4 nights of electrofishing (depending on 1 or 2 boats), approximately 4 hours per night, 4 stations

ASSESSMENT OF FISH ENTRAINMENT AND FISH MOVEMENT

• Goals & Objectives: The department has concerns on Lake Sturgeon entrainment at Trego dam. Assess fish entrainment at the Trego Project and Hayward Project and better understand fish movement from above to below the dams. The department has concerns with Lake Sturgeion entra

• Relevant DNR Management Goals: Understand the existing environment. The department manages public water for recreational use, such as fishing, protection and management of species, and the overall health of the fishery of the state.

• Existing Information:

Trego: The department has documented at least seven lake sturgeon that have entrained the dam (from Trego Lake to Namekagon River below) and survived to be recaptured below Trego Dam. There are likely many more sturgeon and other fish species that are entraining below Trego Dam and surviving. The department suspects that muskellunge are also doing this but haven't been able to document that through our fish surveys.

This dam is a major block to fish passage and migration for the Namekagon River, the most notable species that is impacted are lake sturgeon. Lake Sturgeon are currently stocked by the department in the Namekagon River (above Trego Lake) and Trego Lake in hopes of re-establishing this population. However, with entrainment, larger adult sturgeon can leave the lake but cannot return.

Trego Project has 1.5" spacing for both trash racks (one for each turbine), with a 1.2 feet/second intake velocity at maximum flow.

Hayward: Department fisheries biologists are interested in the fishery below the Hayward dam, and some of the most popular fish species are species coming from Hayward Lake upstream.

Hayward Project has 1.5" trash rack spacing with a 1.5 feet/second intake velocity at full gate.

• Operation nexus to resource and how informs license: Having current fish movement information (e.g. when fish are passing the dam, how many fish are passing the dam) and survival information will help department staff make informed management decisions regarding the fishery.

• Methodology: Model a tagging study after existing research to look at entrainment of sturgeon, muskie, and walleye. This research could use radio tagging or hydroacoustic telemetry.

• Level of Effort and Costs: Fieldwork and data reporting at $125 per hour, plus equipment costs

MACROINVERTEBRATE SURVEY

• Goals & Objectives: Assess the water quality using macroinvertebrate bio-indicators downstream of the impoundment.

• Relevant DNR Management Goals: The department is charged with managing the water quality of the waters of the state and meeting designated criteria under the Clean Water Act.

• Existing Information: Macroinvertebrate data is not available for the Hayward and Trego Projects.

• Operation nexus to resource and how informs license: Macroinvertebrates are likely impacted by segmentation of the river, and impoundments can impact communities due to changing thermal and/or flow regimes. These bio-indicators are used to assess the health of the resource.

• Methodology: Collect a wadable macroinvertebrate sample, if possible, downstream of the flowage using the department's Guidelines for Collecting Macroinvertebrate Samples from Wadable Streams (2017). If the stream is not wadeable, a large river macroinvertebrate sample should be collected. Data should be analyzed using the current department WISCALM Guidance. Wisconsin DNR Guidelines for Collecting Macroinvertebrate Samples from Wadable Streams (2017) and Large River Macroinvertebrate Sampling (2015), as appropriate. Data should be analyzed using the current department WISCALM Guidance. Macroinvertebrates should be collected upstream of the reservoir in the riverine reach, in the bypass channel and downstream of the powerhouse in the fully mixed zone.

Large River Macroinvertebrate Sampling (2015)
https://dnr.wi.gov/water/wsSWIMSDocument.ashx?documentSeqNo=120273145

Wadable Streams Macroinvertebrate Sampling (2017)
http://dnr.wi.gov/water/wsSWIMSDocument.ashx?documentSeqNo=150708168

• Level of Effort and Costs: One day of field work with an estimated 20 hours of field and data analysis at $125 per hour equals $2,500. Lab analysis at state certified lab estimated to cost $1,000. Mobilization, travel, and equipment is estimated at $2,000.

AQUATIC AND TERRESTRIAL INVASIVE SPECIES SURVEY

• Goals & Objectives: Evaluate the presence/absence of invasive species listed in NR40, including habitat preferences, within the Project area.

• Relevant DNR Management Goal: Minimize the transport and establishment of existing invasive species and establish management practices to reduce new invasive species. Compliance with NR40.

• Existing Information: Chinese mystery snail, curly-leaf pondweed, Eurasian water milfoil, and hybrid Eurasian/northern water milfoil have been observed at the Hayward Project. Zebra mussel eDNA, qPCR analysis was conducted in 2019; results were negative. Chinese mystery snails, curly-leaf pondweed, Eurasian water milfoil, and Japanese mystery snails have been observed at the Trego Project. Early Detection Monitoring was conducted at the Trego Project in 2017. Purple loosestrife is monitored annually and is observed at Hayward Project. Purple loosestrife is not monitored in the current license for Trego Project.

• Operation nexus to resource and how informs license: The Project may influence invasive species that have the potential to directly or indirectly cause economic or environmental harm or harm to human health, including harm to native species, biodiversity, natural scenic beauty and natural ecosystem structure, function or sustainability; harm to the long−term genetic integrity of native species; harm to recreational, commercial, industrial and other uses of natural resources in the state; and harm to the safety or wellbeing of humans, including vulnerable or sensitive individuals. – per NR40.

• Methodology: Use department Early Detection Early Response Protocols. Additional methodology may be needed for terrestrial species, and other methodologies such as point-intercept may be appropriate if combing this study with other studies.

• Level of Effort and Costs: 40 hours of field work and reporting at $125 per hour equals $5,000. Mobilization, equipment, and supplies are estimated at $10,000.

AQUATIC PLANT SURVEY

• Goals & Objectives: The goal of the aquatic plant study is to provide baseline data on the condition of the aquatic plant community in the Project.

• Relevant DNR Management Goals: The proposed aquatic plant study will provide baseline aquatic plant information to determine if management practices would be needed to enhance the existing aquatic plant community, and overall health of the Project reservoir as a bio indicator. Water levels can influence aquatic vegetation.

• Existing Information: In-water plant community data is limited within the Project boundary.

• Operation nexus to resource and how informs license: The study results will provide baseline aquatic plant data. The data informs the Department of the effects on the surface water resource and would be used to formulate management options. Plant density and diversity of aquatic and native species are important for establishing varies management plans and protecting the resource.

• Methodology: The information collected from this study includes an assessment of the density and diversity of macrophytes, which includes frequencies of occurrence of different plant species, as well as estimates of species richness, abundance, and maximum depth of plant colonization. The aquatic invasive species study should be conducted according to the department's Recommended Baseline Monitoring of Aquatic Plants in Wisconsin.

• Level of Effort and Costs: 40 hours of fieldwork and 40 hours of reporting at $125 per hour, plus equipment costs.

MUSSEL STUDY

• Goals & Objectives: Determine the effects of barriers to mussel distribution and diversity within the Project area and Namekagon River. Determine freshwater mussel density and diversity, including characterizing mussel habitat within the Project area. The study would provide information on freshwater mussel species present, their diversity, density, and a better understanding of baseline conditions and associated management needs for the Project area.

• Relevant DNR Management Goals: This information will help the resource agencies determine if any best management practices are needed to protect listed species, as well as any management measures to protect or enhancement the existing freshwater mussel population.

• Existing Information: No federally or state threatened/endangered or special concern mussel species are known to occur in the impounded sections of the reservoirs, however listed species may occur downstream from the dams or further upstream from the impounded reaches of the reservoirs.

• Operation nexus to resource and how informs license: The operations of the Project could influence the freshwater mussel species located within the Project boundary. The results of the survey will provide essential information to determine if any protection measures, restoration, or enhancements would be necessary as a management requirement associated with the relicensing of the dam.

• Methodology: A qualitative and quantitative survey for freshwater mussels should be conducted within the Project area and downstream of the dam structure, on the Namekagon River. Some methods that can be used are the department's Guidelines for Sampling Freshwater Mussels in Wadable Streams and the department's Quantitative Habitat Assessment Methodology. Methodology should be discussed with the department for quantitative surveys. A Mussel Survey Plan should be submitted to the department for review at least 2 weeks (1 month preferred) prior to implementation.

Mussel sampling should be conducted when water temperatures exceed 50°F to minimize thermal stress to the resource. This period will allow mussels disturbed during sampling to re-establish themselves into the substrate.

Qualitative timed searches should first be conducted to assess habitat suitability and presence of freshwater mussels. Sites will be located below each barrier within the study area, plus one site upstream of the Project area. Starting locations should be representative of available habitat within the sampling reach. As a minimum, timed searches will be 4 per/hrs or a total search distance of 200 m in riverine sections of the project area and up to 8 per/hrs within reservoirs.

Based on results of qualitative surveys, quantitative surveys may be required. Quantitative sampling using quadrat samples will be used to determine population density, community composition, age and total length distributions, living/dead and sex ratios. One quantitative site will be located on the Project area where mussel habitat is determined suitable and where past sampling has occurred. The sampling unit will consist of a 30m transect with 10 equally spaced 1/4m2 quadrats every three meters along the unit. Each transect extends perpendicular from shore. Up to 300 1/4 m2 quadrats are sampled, collecting all living bivalves and empty shells. Mussels are brought to the surface in a 3 mm mesh-sized bag where they are identified to species, aged, and shell measurements recorded. All live mussels are then returned along the same transect they were collected.

• Level of Effort and Cost: An estimate of 80 hours of field work and 40 hours to analyze data and draft a report at an estimated $125 per hour, plus equipment costs.

ASSESSMENT OF RARE AND ENDANGERED SPECIES

• Goals & Objectives: Rare plants and animals have been found within, adjacent to, and in habitats similar to the study area. It would be recommended to complete plant and animal surveys for these species to determine if they occur within the study area and to further our understanding of their populations within this area. This will also inform the licensee as to where these plant and animal locations are.

• Relevant DNR Management Goals: The department has responsibility to manage plants and animals, including listed species. This information will be beneficial to understanding the current environment, and potential needs for resource management associated with the Project. The licensee is also required to follow state Endangered Species laws.

• Existing Information: An Endangered Resources Review has been performed for current Hayward and Trego Project boundaries, but will need to be updated with proposed project boundary changes that are presented within the PAD.

• Operation nexus to resource and how informs license: The relicensing of the Project has the potential to have short term and long-term impacts on vegetation and animals-- in particular, wood turtles and their habitat. Proper management of the resource will help to minimize any adverse impacts associated with the removal, restoration, and relicensing activities.

• Methodology: Using a qualified botanist knowledgeable in area vegetation and specific species, identify, classify, and delineate on a map rare, threatened, or endangered plant species within the Project area. Using a qualified biologist or ecologist, conduct presence/absence surveys for specific rare, threatened, or endangered animal species.

• Level of Effort and Cost: 40 hours of desktop review and 40 hours of fieldwork, plus equipment costs.

WOOD TURTLE SURVEYS

• Goals & Objectives: Wood turtles are listed as Threatened in Wisconsin. In an effort to better understand the abundance and distribution of this species, several survey and management efforts are taking place across northern Wisconsin within a number of different river systems. Presence/absence surveys, population modelling and natural nest site surveys are three examples of existing work that is being done across the range of this species in Wisconsin, which is primarily the northern one-third of the state. The main goal of this study request is to determine whether any wood turtle nest sites occur within the Project boundary at either Hayward or Trego.

• Relevant DNR Management Goals: The department has responsibility to manage wildlife, which includes the wood turtle. This study will be beneficial to understanding the current environment and potential needs for resource management associated within both Project boundaries. Two of the main threats to wood turtles across their range are: 1. Adult mortality due to vehicle collisions 2. Predation of eggs and hatchlings at nest sites, resulting in poor recruitment in many river systems. Wood turtles are particularly susceptible to nest predation due to their tendency to nest colonially and nest in the same location every year, providing a pattern that is recognizable by nest predators, such as raccoon and fox. In an effort to improve recruitment, the department has employed several strategies to protect existing nest sites and create protected artificial nest sites. If any

natural nest sites are found within the Project boundaries at Hayward or Trego, the department will work with the licensee to protect these nest sites from predation as well as from negative human-related impacts.

• Existing Information: Wood turtles are known to be present near this Project boundary, however, survey data is limited.

• Operation nexus to resource and how informs license: The relicensing of these Projects has the potential to have short term and long-term impacts on wood turtles and habitat use. Proper management of the resources will help to minimize any adverse impacts associated with the restoration and relicensing activities. Examples of possible impacts to wood turtles are related to seasonal water level fluctuations during vulnerable life history stages, both upstream and downstream. If nest sites are present downstream of the dam, increasing downstream water levels during the period following egg laying in June until hatchling emergence in August/September could cause nest failure if nests become submerged for extended periods of time. Depending on timing, winter drawdowns could have impacts on wood turtles upstream of the dam if the water level is lowered to a point where overwintering turtles are exposed to the elements due to low water levels where they are hibernating.

• Methodology: Using a qualified biologist or ecologist, wood turtle nesting site surveys are requested, following the protocol listed below.

Wood turtle nesting site surveys: Beginning in early to mid-June, and extending until approximately the first week in July, wood turtle nesting activity can be surveyed by conducting daily searches for adult wood turtles and/or evidence of recent nesting activity in suitable nesting habitat. Suitable nesting habitat includes a sand or sand/gravel substrate that is either unvegetated or sparsely vegetated, receives sun exposure for most of the day during late spring/summer and is within approximately 200 feet of the river's edge. Note that this can include gravel parking areas, roads or shoulders of paved roads. Many portions of the project boundary can likely be eliminated from these nesting surveys due to a lack of suitable conditions for turtle nesting.

• Level of Effort and Costs: 40-60 hours at $125 per hour, plus equipment costs.

1. Wood turtle nesting site surveys: Assess nest site suitability within the project boundary, focusing on free-flowing river stretches. Desktop review followed by ground truthing.
2. Wood turtle nesting site surveys, Spring/Summer: Daily surveys of suitable nesting sites (if any are found) for four weeks (Assume 1 hour per survey).

BLANDING'S TURTLE SURVEYS AT HAYWARD PROJECT

• Goals & Objectives: Blanding's turtles are a Special Concern species in Wisconsin. In an effort to better understand the abundance and distribution of this species, we are requesting that Blanding's turtle surveys are conducted within the Hayward and Trego project boundaries. The overall goal of this survey request is to determine whether any Blanding's turtle nest sites occur within the Project boundaries.

• Relevant DNR Management Goals: The department has responsibility to manage wildlife, which includes the Blanding's turtle. This study will be beneficial to understanding the current environment and potential needs for resource management associated within the Project boundary. Two of the main threats to Blanding's turtles across their range are: 1. Adult mortality due to vehicle collisions 2. Predation of eggs and hatchlings at nest sites, resulting in poor recruitment in many systems. If any natural nest sites are found within the current or proposed Project boundary, the department will work with the licensee to protect these nest sites from predation as well as from negative human-related impacts.

• Existing Information: Blanding's turtles are known to be present near these Project boundaries, however, survey data is limited.

• Operation nexus to resource and how informs license: The relicensing of these Projects has the potential to have short term and long-term impacts on Blanding's turtles and habitat use. Proper management of the resources will help to minimize any adverse impacts associated with the restoration and relicensing activities. Examples of possible impacts to Blanding's turtles are related to seasonal water level fluctuations during vulnerable life history stages. If nest sites are present downstream of the dam, increasing downstream water levels during the period following egg laying in June until hatchling emergence in August/September could cause nest failure if nests become submerged for extended periods of time. Depending on timing, winter drawdowns could have impacts on Blanding's turtles upstream of the dam if the water level is lowered to a point where overwintering turtles are exposed to the elements due to low water levels where they are hibernating.

• Methodology: Using a qualified biologist or ecologist, Blanding's turtle nesting site surveys are requested, following the protocol listed below.

1. Blanding's turtle nesting site surveys: Beginning in early to mid-June, and extending until approximately the first week in July, Blanding's turtle nesting activity can be surveyed by conducting daily searches for adult Blanding's turtles and/or evidence of recent nesting activity in suitable nesting habitat. Suitable nesting habitat includes a sand or sand/gravel substrate that is either unvegetated or sparsely vegetated, receives sun exposure for most of the day during late spring/summer and is within approximately 200 feet of the water's edge. Note that this can include gravel parking areas, roads or shoulders of paved roads. Many portions of the project boundary can likely be eliminated from these nesting surveys due to a lack of suitable conditions for turtle nesting.

• Level of Effort and Costs: 40-60 hours at $125 per hour, plus equipment costs.

1. Blanding's turtle nesting site surveys: Assess nest site suitability within the project boundary. Desktop review followed by ground truthing.
2. Blanding's turtle nesting site surveys, Spring/Summer: Daily surveys of suitable nesting sites (if any are found) for four weeks (Assume 1 hour per survey).

MINK FROG SURVEYS AT HAYWARD PROJECT

• Goals & Objectives: Mink Frogs are listed as a species of Special Concern in Wisconsin. In an effort to better understand the abundance and distribution of this species, several survey and management efforts are taking place across northern Wisconsin within a number of different river systems. Presence/absence surveys are an example of existing work that is being done across the range of this species in Wisconsin, which is primarily the northern one-third of the state. The overall goal of this survey request is to further our knowledge of the distribution of Mink Frogs within the watershed more broadly. The main objectives of this study request are to determine if Mink Frogs are present within the Project boundary of the dam.

• Relevant DNR Management Goals: The department has responsibility to manage wildlife, which includes the Mink Frog. This survey study will be beneficial to understanding the current environment and potential needs for resource management associated within the Project boundary.

• Existing Information: Mink Frogs are known to be present within this Project boundary, however, survey data is limited.

• Operation nexus to resource and how informs license: The relicensing of the Project has the potential to have short term and long-term impacts on Mink Frogs and habitat use. Proper management of the resources will help to minimize any adverse impacts associated with the restoration and relicensing activities. Examples of possible impacts to Mink Frogs are related to seasonal water level fluctuations during vulnerable life history stages, both upstream and downstream.

• Methodology: Using a qualified biologist or ecologist, conduct calling (presence/absence) surveys for Mink Frogs.

1. Calling or presence/absence surveys for Mink Frogs: Follow the Mink Frog Survey Protocols where suitable habitat is present: https://wiatri.net/inventory/frogtoadsurvey/Volunteer/Mink/MinkFrogSurveyProtocols.pdf.

• Level of Effort and Costs: 20 hours at $125 per hour, plus equipment costs.

1. Presence/absence surveys for Mink Frogs, June 6 – July 15, 2021: Two surveys per week for four weeks (assume 2 hours per survey). These surveys should focus on free-flowing river stretches where adjacent bog habitat is present.

ASSESSMENT OF RIVERINE AND RESERVOIR HABITAT

• Goals & Objectives: Define, measure, and assess the stream habitat conditions upstream and downstream of the hydropower facilities at current and proposed elevations. Define, measure, and assess the reservoir habitat, including upstream and downstream of the reservoir at current and proposed elevations. Determine if degradation is occurring and if resources are affected.

• Relevant DNR Management Goals: Obtaining recent habitat assessment information is critical for future management actions and establishing baseline data. Water level fluctuations due to drawdowns may affect aquatic habitat; impacts of drawdowns on the resource should be assessed. Obtaining information on how/if new water levels will cause shoreline erosion as a new ordinary high water mark is established

• Existing Information: The PAD states that "the Lake Hayward shoreline was surveyed for archaeological evidence in 1998 and 2003. The surveys concluded the reservoir shoreline was very stable and well vegetated with little or no erosion." The PAD states that "the Trego Lake shoreline was surveyed for archaeological evidence in 1998 and 2003. The surveys concluded the reservoir shoreline was very stable and well vegetated with little or no erosion." The PAD stats that "riparian habitat is heavily developed on Hayward Lake and moderately developed on Trego Lake."

• Operation nexus to resource and how informs license: Having updated habitat assessment information is critical for evaluating the effects of the project on the reservoir and downstream ecosystem. It will provide baseline data to current conditions and assist with management recommendations of any current or future needs. The data can be used to help guide water resource management associated with the Project.

• Methodology: The riverine habitat within the project area downstream from the dam should be evaluated with the department Quantitative Habitat Assessment methodology in the wadable stretches of the Project at the time of each fish survey, as well as in the wadeable stretches of the Namekagon River at various flows or estimates. For the reservoir, department shoreland habitat protocol should be used. Newly impounded areas and any wetlands that could be affected by the new water level should be mapped. Please work with the department do determine which protocol should be used for different locations.

• Level of Effort and Costs: 80 hours of field work and 40 hours of data analysis and reporting at $125 per hour, plus equipment costs.

ASSESSMENT OF RECREATION

• Goals & Objectives: Evaluate current recreational uses, including opportunities for low flow and high flow events, public access, natural scenic beauty, trails, water sports, and fishing, with consideration for the different seasonal uses.

• Relevant DNR Management Goals: The Department supports a wide array of recreational use. We support the need for recreational use surveys that consider a broad array of users. A quantitative recreational use survey completed within the Project boundary will evaluate potential changes associated with any modifications to water levels and operations. Information needs to be gathered in order to understand the current use, and potential future uses.

• Existing Information:

Hayward Project: Hayward Lake is an ASNRI Outstanding and Exceptional Stream designation. Below the dam is a PNW Musky water. The ASNRI designation also points to the Wild and Scenic River status for the Namekagon River, that is protected by federal law. Hayward Lake has a boat ramp 0.3 miles upstream from the dam, just east of the Highway 27 crossing. Hayward Lake also has a recreational fishing pier approximately ½ mile upstream from the dam.

Trego: Trego Lake, on the Namekagon River has designated ASRNI status as an Outstanding and Exceptional area. It also has Wild Rice present and retains the designation for that reason as well. Tribal consultation will be necessary to determine any changes to this waterbody and how it might impact wild rice.

Just downstream from the Trego dam is a canoe landing popular with non-motorized watercraft that use the riverway. This area being national scenic riverway, this reach is managed for paddlers and camping where several primitive water-only access campsites are available. Trego Lake has two boat ramps for motorized boats, and a canoe/kayak launch on the east side of Trego. This area is extremely popular with non-motorized boats and tubes, with a large rental business on the east side of Trego.

• Operation nexus to resource and how informs license: Hydro operations, management of impoundments, water level changes, and sufficient public access can have a significant impact on recreational value. Adequate information is necessary to determine what impacts may be occurring from the hydro operations, and what recreational opportunities may be enhanced.

• Methodology: Desktop assessment, including review of the State of Wisconsin 2019 to 2023 Statewide Comprehensive Outdoor Recreation Plan (SCORP), released in March 2019, public surveys, and existing recreational sites. This includes assessment of current uses, level of use, evaluation for additional recreational features.

• Level of Effort and Cost: 40 hours of desktop review and fieldwork at $125 per hour, plus equipment costs.

ASSESSMENT OF PROPOSED PROJECT BOUNDARY

• Goals & Objectives: Quantitative assessment of acres of wildlife habitat and surface water that would be modified with a proposed change in Project boundary. This includes impacts to public access and recreational activities.

• Relevant DNR Management Goals: Protection of natural resources and providing public recreational opportunities are part of the Department's mission.

• Existing Information: The PAD states for the Hayward Project that "the Licensee is proposing to increase the acreage within the Project boundary an additional 2.8 acres. The increase includes a portion of the reservoir currently occupied by the Project, but not currently included in the Project boundary." The PAD states for the Trego Project that "The use of LiDAR data to review the current Project boundary identified that the upper extent of the existing Project boundary contains a portion of free-flowing Namekagon River that is not impounded at the maximum operating elevation of 1,035.2 feet and therefore is not necessary for project operations. Therefore, in developing the proposed Project boundary for this document, the unimpounded or free-flowing upstream reach has been removed from the proposed Project boundary. This results in an overall decrease of acreage within the Project boundary of 29.1 (submerged) acres."

• Operation nexus to resource and how informs license: The riparian areas are critical in protecting water quality and fish and wildlife habitat in the Namekagon system. Recreation and public access, along with natural resource protection are all part of the Public Trust Doctrine in Wisconsin.

• Methodology: Desktop evaluation of wetland and riparian habitat. Identify changes in acreage in wetland and habitat, as well as changes in acreage and use in reactional features. Additionally, identify if any of the areas proposed to be exclude from the Project boundary provide habitat for listed species.

• Level of Effort and Cost: 40 hours of desktop review at $125 per hour.

Hayward and Trego Hydroelectric Projects

Site Visit

1414 West Hamilton Avenue
PO Box 8
Eau Claire, WI 54702-0008

May 27, 2021

FERC Docket Nos. 2417-065 and 2711-024

VIA Electronic Filing

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: **Proof of Publication - Notification of Scheduled Site Visit**
Hayward Hydroelectric Project (FERC Project No. 2417)
Trego Hydroelectric Project (FERC Project No. 2711)

Dear Secretary Bose:

On November 20, 2020, Northern States Power Company – Wisconsin (NSPW), d/b/a Xcel Energy, filed with the Federal Energy Regulatory Commission (FERC or Commission) a Notice of Intent (NOI), Pre-Application Document (PAD), and Request to Use the Traditional Licensing Process (TLP) for the relicensing of the Hayward Hydroelectric Project (FERC Project No. 2417) and Trego Hydroelectric Project (FERC Project No. 2711). The Commission, by letter dated January 21, 2021, granted NSPW's request to use the TLP for both Projects.

In accordance with the first stage of consultation requirements of the TLP, NSPW held a Joint Agency Meeting on March 11, 2021. Due to COVID-19 health related concerns, the meeting was held via conference call. No site visit to either Project was conducted at that time in order to abide by Centers for Disease Control and Corporate guidelines to avoid public gatherings and discretionary travel.

NSPW has scheduled a site visit to the Hayward and Trego Projects, in conjunction with a site visit to the White River Hydroelectric Project (FERC Project No. 2444), on Thursday, June 17, 2021. The site visit will begin at 9:00 a.m. at the White River Project located at 46720 State Hwy 112, Ashland, WI 54806. The group will then proceed to the Hayward Project for a site visit, followed by lunch on your own, and finish the day with a site visit to the Trego Project.

NSPW requests those interested in participating in the June 17, 2021 Site Visit RSVP by Monday, June 14, 2021 to Mr. Matt Miller at (715) 737-1353 or matthew.j.miller@xcelenergy.com.

The Site Visit agenda includes the following:

- Welcome and Introductions at the White River Project
- Tour of the White River Project Facilities
- Tour of the Hayward Project Facilities

- Lunch on your own in the Hayward area
- Tour of the Trego Project Facilities

NSPW will publish a notice in the Sawyer County Record and Spooner Advocate, newspapers of general circulation in Sawyer and Washburn Counties, respectively, announcing the June 17, 2021 site visit. Copies of both public notices, and the corresponding Affidavits of Publication, will be submitted to the Commission once they are received.

NSPW is distributing this correspondence to the stakeholder list provided in the NOI/PAD (updated based on return mail or by request) via US Mail.

Thank you for your time and consideration in this matter. Should you have any questions, please contact Matthew Miller at (715) 737-1353 or matthew.j.miller@xcelenergy.com.

Respectfully Submitted,

James M Zyduck Digitally signed by James M Zyduck
Date: 2021.05.27 17:25:53 -05'00'

James M. Zyduck
Director, Hydro Plants

Enclosure: Certificate of Service
Stakeholder List

cc: Stakeholder List
Shawn Puzen – Mead & Hunt, Inc. (via email)
Project Files

Certificate of Service

I hereby certify that I, on behalf of Xcel Energy, have this day served (via first class mail) the foregoing documents upon each person designated on the attached Master Address Distribution List.

Dated this 27th day of May 2021.

Darrin Johnson

Darrin Johnson
MEAD & HUNT, Inc.

1414 West Hamilton Avenue
PO Box 8
Eau Claire, WI 54702-0008

Hayward and Trego Hydroelectric Project Licensing Stakeholder List
FERC Project Nos. 2417 and 2711

Indian Tribes

Edith Leoso, THPO
Bad River Band of the Lake Superior
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Odanah, WI 54861-0039

Mike Wiggins, Chairman
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Grand Portage, MN 55605

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Black River Falls, WI 54615-0667

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Indian Tribes (continued)

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Daisy McGeshick, THPO
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James Williams, Jr., Chairman
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Watersmeet, MI 49969

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Cass Lake, MN 56633

Faron Jackson, Sr., Chairman
Leech Lake Band of Ojibwe
190 Sailstar Dr NE
Cass Lake, MN 56633

Joan Delabreau, Chairman
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Keshena, WI 54135

David Grignon, THPO
Menominee Indian Tribe of Wisconsin
W3426 Cty. VV W, P.O. Box 910
Keshena, WI 54135-0910

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Cass Lake, MN 56633

Stacie Cutbank, THPO
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Oneida, WI 54155-0365

Tehassi Hill, Chairperson
Oneida Tribe of Wisconsin
P.O. Box 365
Oneida, WI 54155-0365

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88385 Pike Road, Hwy. 13
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Rick Peterson, Chairman
Red Cliff Band of Lake Superior Chippewa Indians
88385 Pike Road, Hwy. 13
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Chris McGeshick, Chairman
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Mole Lake Band
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Indian Tribes (continued)

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Lewis Taylor, President
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Bowler, WI 54416-0070

Nathan Allison, THPO
Stockbridge Munsee Community
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86 Spring Street, Williamstown, MA 01267

Jamie Arsenault, THPO
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Michael Fairbanks, Chairman
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White Earth, MN 56591

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Kimberly Bose, Secretary
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888 First Street NE
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Comm. U.S. Bureau Reclamation
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Fish & Wildlife Service
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Glen Grothman, U.S. Representative
U.S. Representative from Wisconsin District 6
Washington, DC 20515

Field Supervisor
U.S. Department of the Interior
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Green Bay Field Office
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U.S. Department of the Interior
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Julie Galonska, St. Croix National Scenic Riverway
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Jen Tyler
Mail Code: E-19J
U.S. Environmental Protection Agency
NEPA Implementation Section, Region V
77 W Jackson Boulevard, AR-18J
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Tom Tiffany, U.S. Representative
U.S. Representative from Wisconsin District 7
1714 Longworth House Office Building
Washington, DC 20515

State
Public Service Commission of Wisconsin
P.O. Box 7894
Madison, WI 53707-7854

Wisconsin Cooperative Fishery Research Unit
U.W. Stevens Point
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Kathleen Angel, Wisconsin Coastal
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Wisconsin State Historical Society
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City Manager
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Lacrosse, WI 54601

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Brian Vosberg, Town Supervisor
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Charlie Petersen, Chairman
Trego Lake District
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Director, Hydro Plants
1414 W Hamilton, P.O. Box 8
Eau Claire, WI 54702-0008

Darrin Johnson

From: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Sent: Monday, June 7, 2021 10:40 AM
To: Antonuk, Connie J - DNR
Cc: Laatsch, Cheryl - DNR; Yach, James A - DNR; Shawn Puzen; Darrin Johnson
Subject: RE: Thur, June 17, Xcel Hayward and Trego Site Visit Invite

Thanks Connie. We will add you the attendance list.

From: Antonuk, Connie J - DNR <Connie.Antonuk@wisconsin.gov>
Sent: Monday, June 7, 2021 9:09 AM
To: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Cc: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>; Yach, James A - DNR <JamesA.Yach@wisconsin.gov>
Subject: Thur, June 17, Xcel Hayward and Trego Site Visit Invite

Hi Matt:

I wanted to confirm my attendance for the on-site visits of the White River, Hayward and Trego dam facilities scheduled for Thursday, June 17. I see from your letter that we are to be at the White River Dam at 0900 on Thursday, June 17 to begin the tour. From the White River, the tour will move to the Hayward dam and then Trego dam. I am looking forward to seeing these facilities and getting back out into the field. I hope the weather is nice. Thank you. Connie in Rhinelander

Darrin Johnson

From: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Sent: Monday, June 7, 2021 10:58 AM
To: Yach, James A - DNR; Antonuk, Connie J - DNR
Cc: Laatsch, Cheryl - DNR; Shawn Puzen; Darrin Johnson
Subject: RE: Thur, June 17, Xcel Hayward and Trego Site Visit Invite

Thanks James. We will list you as tentative.

From: Yach, James A - DNR <JamesA.Yach@wisconsin.gov>
Sent: Monday, June 7, 2021 10:53 AM
To: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>; Antonuk, Connie J - DNR <Connie.Antonuk@wisconsin.gov>
Cc: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>; Shawn Puzen <Shawn.Puzen@meadhunt.com>; Darrin Johnson <Darrin.Johnson@meadhunt.com>
Subject: RE: Thur, June 17, Xcel Hayward and Trego Site Visit Invite

Hi Matt,

I'm hopeful of being able to join at the Trego location. I'm not convinced my schedule will allow as I will be in Grantsburg earlier, but I will try to squeeze it into my schedule.

James.

From: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Sent: Monday, June 7, 2021 10:40 AM
To: Antonuk, Connie J - DNR <Connie.Antonuk@wisconsin.gov>
Cc: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>; Yach, James A - DNR <JamesA.Yach@wisconsin.gov>; Shawn Puzen <Shawn.Puzen@meadhunt.com>; Darrin Johnson <Darrin.Johnson@meadhunt.com>
Subject: RE: Thur, June 17, Xcel Hayward and Trego Site Visit Invite

Thanks Connie. We will add you the attendance list.

From: Antonuk, Connie J - DNR <Connie.Antonuk@wisconsin.gov>
Sent: Monday, June 7, 2021 9:09 AM
To: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Cc: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>; Yach, James A - DNR <JamesA.Yach@wisconsin.gov>
Subject: Thur, June 17, Xcel Hayward and Trego Site Visit Invite

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Darrin Johnson

From: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Sent: Friday, June 11, 2021 1:29 PM
To: Wolter, Max H - DNR
Cc: Darrin Johnson; Shawn Puzen; Laatsch, Cheryl - DNR
Subject: RE: Response Requested for Site Visits: White River, Hayward, and Trego Hydros

Hello Max,

Feel free to call my cell phone 715-225-8841. It might be helpful if I have your number as well as I can call you when we leave White River.

Matthew Miller
Xcel Energy
Hydro License Compliance Consultant
1414 W. Hamilton Ave., P.O. Box 8, Eau Claire, WI 54702
P: 715.737-1353 **F**: 715.737.1077
E: matthew.j.miller@xcelenergy.com

XCELENERGY.COM

From: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>
Sent: Friday, June 11, 2021 10:33 AM
To: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Cc: Darrin Johnson <Darrin.Johnson@meadhunt.com>; Shawn Puzen <Shawn.Puzen@meadhunt.com>
Subject: FW: Response Requested for Site Visits: White River, Hayward, and Trego Hydros

See below. Can you provide a cell phone or info on how Max can plan to meet up with the group?

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Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Cheryl Laatsch
Statewide FERC Coordinator
Bureau of Environmental Analysis and Sustainability
Wisconsin Dept of Natural Resources
N7725 Hwy 28
Horicon WI 53032
(T) 920-387-7869 (Fax) 920-387-7888
Cheryl.laatsch@wisconsin.gov

dnr.wi.gov

From: Wolter, Max H - DNR <Max.Wolter@wisconsin.gov>
Sent: Friday, June 11, 2021 10:13 AM
To: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>; Antonuk, Connie J - DNR <Connie.Antonuk@wisconsin.gov>

Cc: Roberts, Craig M - DNR <Craig.Roberts@wisconsin.gov>
Subject: RE: Response Requested for Site Visits: White River, Hayward, and Trego Hydros

I will attend for Fisheries for the Hayward and Trego sites. I will probably just meet up with the group in Hayward. If you are able to get an approx. time and meet up location for that leg it would be helpful. Thank you!

Max H. Wolter
Fisheries Biologist
Hayward Service Center
Bureau of Fisheries Management
Wisconsin Department of Natural Resources
(☎) phone: (715) 634-7429
(☎) fax: (715) 634-9232
(✉) e-mail: Max.wolter@wisconsin.gov

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Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

From: Laatsch, Cheryl - DNR <Cheryl.Laatsch@wisconsin.gov>
Sent: Thursday, June 10, 2021 3:29 PM
To: Rowe, Stacy A - DNR <Stacy.Rowe@wisconsin.gov>; Wolter, Max H - DNR <Max.Wolter@wisconsin.gov>; Kitchel, Lisie E - DNR <Lisie.Kitchel@wisconsin.gov>; Walker, Nathan K - DNR <nathan.walker@wisconsin.gov>; Spiegel, Joshua O - DNR <Joshua.Spiegel@wisconsin.gov>; Van Egeren, Scott J - DNR <Scott.VanEgeren@wisconsin.gov>; Beringer, Patrick S - DNR <Patrick.Beringer@wisconsin.gov>; Kenyon, Marc W Jr - DNR <Marc.KenyonJr@wisconsin.gov>; Kleist, Jon J - DNR <Jon.Kleist@wisconsin.gov>; Magana, Ryan J - DNR <Ryan.Magana@wisconsin.gov>; Weinzinger, Jesse J - DNR <Jesse.Weinzinger@wisconsin.gov>; Holsclaw, Jacob A - DNR <Jacob.Holsclaw@wisconsin.gov>; Roberts, Craig M - DNR <Craig.Roberts@wisconsin.gov>; Christel, Nancy M - DNR <Nancy.Christel@wisconsin.gov>; Toshner, Pamela J - DNR <Pamela.Toshner@wisconsin.gov>; Toshner, Scott T - DNR <Scott.Toshner@wisconsin.gov>; Michels, Dan R - DNR <Dan.Michels@wisconsin.gov>; Cunningham, Joseph L - DNR <Joseph.Cunningham@wisconsin.gov>; Piszczek, Paul P - DNR <Paul.Piszczek@wisconsin.gov>; Aartila, Tom P - DNR <Tom.Aartila@wisconsin.gov>; Druffner, Jacob D - DNR <jacob.druffner@wisconsin.gov>; Brady, Ryan S - DNR <Ryan.Brady@wisconsin.gov>; Folstad, Jason P - DNR <Jason.Folstad@wisconsin.gov>; Lawson, Zachary J - DNR <Zachary.Lawson@wisconsin.gov>; Mesalk, Tyler J - DNR <tyler.mesalk@wisconsin.gov>
Cc: Yach, James A - DNR <JamesA.Yach@wisconsin.gov>; Antonuk, Connie J - DNR <Connie.Antonuk@wisconsin.gov>
Subject: Response Requested for Site Visits: White River, Hayward, and Trego Hydros

Hi everyone: Please forward to additional staff as appropriate.

Xcel has scheduled site visits for the Trego and Hayward hydro dams. If you want to attend, please check with your supervisor and be sure to follow COVID requirements for site visits, and let me and Connie know so we can provide information to Xcel. RESPOND ASAP

Date: June 17th

The site visit will begin at 9:00 a.m. at the White River Project located at 46720 State Hwy 112, Ashland, WI 54806.

The Site Visit agenda includes the following:
- Welcome and Introductions at the White River Project
- Tour of the White River Project Facilities
- Tour of the Hayward Project Facilities
- Lunch on your own in the Hayward area
- Tour of the Trego Project Facilities

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Cheryl Laatsch
Statewide FERC Coordinator
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N7725 Hwy 28
Horicon WI 53032
(T) 920-387-7869 (Fax) 920-387-7888
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Darrin Johnson

From: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Sent: Sunday, June 13, 2021 10:11 PM
To: Somermeyer
Cc: Shawn Puzen; Darrin Johnson
Subject: RE: Trego dam tour RSVP

Hi Bob,

We will add you as an attendee and contact you at the number below regarding the meeting time. The White River and Hayward tours precede the Trego site visit.

From: Somermeyer <mozzib53@protonmail.com>
Sent: Saturday, June 12, 2021 5:22 PM
To: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Subject: Trego dam tour RSVP

My name is Bob Somermeyer and I live on Ross Rd in Trego. I would like to attend the Trego dam tour on Friday the 17th.
Regards,
Bob
608-438-7240

Sent from ProtonMail for iOS

Darrin Johnson

From: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Sent: Monday, June 14, 2021 8:33 AM
To: Charles Petersen
Cc: Shawn Puzen; Darrin Johnson
Subject: RE: Trego Dam Site Visit

Thanks Charlie. Feel free to call my cell phone (715-225-8841) on Thursday to confirm the meeting time as it is entirely dependent on the White River and Hayward visits that precede it.

Matthew Miller
Xcel Energy
Hydro License Compliance Consultant
1414 W. Hamilton Ave., P.O. Box 8, Eau Claire, WI 54702
P: 715.737-1353 **F**: 715.737.1077
E: matthew.j.miller@xcelenergy.com

XCELENERGY.COM

-----Original Message-----
From: Charles Petersen <cjpetersen@msn.com>
Sent: Monday, June 14, 2021 8:25 AM
To: Miller, Matthew J <Matthew.J.Miller@xcelenergy.com>
Subject: Trego Dam Site Visit

EXTERNAL - STOP & THINK before opening links and attachments.

Mr. Miller,

I will be attending the Trego Dam Site Visit. I will be at the dam at 1:00 p.m. and await the arrival of the group. Because of other commitments, I will not be able to attend other tours.

Thank you for allowing me to learn about the Trego Dam. I look forward to meeting you on Thursday. If you have any questions or comments, please do not hesitate to contact me.

Charlie Petersen
Trego Lake District

Charlie Petersen
cjpetersen@msn.com
612-803-8765

White River, Hayward, Trego Site Visit Participants

June 17, 2021

Name	Organization	White River	Hayward	Trego
Zach Lawson	WDNR	X		
Connie Antonuk	WDNR	X	X	X
Scott Crotty	Xcel	X	X	X
Matt Miller	Xcel	X	X	X
Shawn Puzen	Mead & Hunt	X	X	X
Jessica Strand	Bad River Tribe	X		
Nathan Kilger	Bad River Tribe	X		
Tim Hudak	Xcel	X		
Abi Fergus	Bad River Tribe	X		
John McCue	City of Hayward		X	
Max Walter	WDNR		X	X
Lee	WDNR		X	X
Julie Galonska	NPS		X	X
Lisa Yaeger	NPS		X	X
Jonathon Moore	NPS		X	X
Charlie Peters	Trego Lake District			X
Bob Somermeyer	Trego Lake District			X
Ryan Tjader	Xcel			X

Darrin Johnson

From: Shawn Puzen
Sent: Monday, June 21, 2021 3:27 PM
To: jonathan_moore@nps.gov
Cc: Darrin Johnson; Miller, Matthew J; Crotty, Scott A
Subject: Trego Documents
Attachments: Programmatic Agreement.PDF

Hi Jonathan,

It was nice to meet you last week.

Per your request, we have added you to the address list for Hayward and Trego.

In addition, attached is a copy of the Programmatic Agreement we talked about.

Lastly, the FERC contact for relicensing is Laura Washington. 202- 502-6072 laura.washington@ferc.gov.

Please do not hesitate to contact Matt, Scott or me if you have any additional questions.

Thanks,

SHAWN PUZEN
FERC HYDROPOWER LICENSING AND COMPLIANCE, WATER
Mead & Hunt
Direct: 920-593-6865 | Cell: 920-639-2480 | Transfer Files
meadhunt.com | LinkedIn | Twitter | Facebook | Instagram

PROGRAMMATIC AGREEMENT
AMONG
THE FEDERAL ENERGY REGULATORY COMMISSION,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
THE STATE OF WISCONSIN, STATE HISTORIC PRESERVATION OFFICER,
AND
THE STATE OF MICHIGAN, STATE HISTORIC PRESERVATION OFFICER,
FOR MANAGING HISTORIC PROPERTIES
THAT MAY BE AFFECTED BY NEW AND AMENDED LICENSES ISSUING
FOR THE CONTINUED OPERATION OF
EXISTING HYDROELECTRIC PROJECTS IN
THE STATE OF WISCONSIN
AND ADJACENT PORTIONS OF
THE STATE OF MICHIGAN

WHEREAS, the Federal Energy Regulatory Commission (hereinafter, "Commission") proposes to issue new and amended licenses, pursuant to Part I of the Federal Power Act, 16 U.S.C. Sections 791(a) through 825(r), for the continued operation of existing hydroelectric projects (hereinafter, "Projects") in the State of Wisconsin and in adjacent portions of the State of Michigan's Upper Peninsula; and,

WHEREAS, the Commission has determined that issuing new and amended licenses for Projects may affect properties included in, or eligible for inclusion in, the National Register of Historic Places (hereinafter, "Historic Properties"); and,

WHEREAS, the Commission has consulted with the Advisory Council on Historic Preservation (hereinafter, "Council"), the State of Wisconsin, State Historic Preservation Officer (hereinafter, "Wisconsin SHPO"), and the State of Michigan, State Historic Preservation Officer (hereinafter, "Michigan SHPO"), pursuant to Section 106, National Historic Preservation Act, as amended (16 U.S.C. Section 470f; hereinafter, "the Act") and the Council's regulations implementing this Section, 36 C.F.R. Part 800, concerning such Projects and their potential effects; and,

WHEREAS, the Commission, the Council, the Wisconsin SHPO, and the Michigan SHPO are the executing parties to this Programmatic Agreement (hereinafter, "Parties"); and,

WHEREAS, for the purposes of this Programmatic Agreement, the Michigan SHPO agrees to coordinate its responsibilities for review and comment through the Wisconsin SHPO, and the Wisconsin SHPO agrees to coordinate and cooperate on all decisions regarding cultural resources in the State of Michigan with the Michigan SHPO; and,

WHEREAS, the contents of the documents appended to this Programmatic Agreement are herewith incorporated entirely by reference and held to be integral to it; and,

WHEREAS, this Programmatic Agreement does not supersede Programmatic Agreements executed prior to the date of its execution;

NOW, THEREFORE, the Commission, the Council, the Wisconsin and Michigan SHPOs agree that Projects will be administered according to the following stipulations, thus satisfying the Commission's responsibilities under the Act for the individual Projects to which they apply.

S t i p u l a t i o n s

The Commission will ensure that the following measures are carried out by applicants for new or amended licenses (hereinafter, "Licensees") for Projects located entirely in the State of Wisconsin or in the States of Wisconsin and Michigan.

Licensees whose applications are tendered the Commission after the date this Programmatic Agreement is executed will comply with all parts of this Programmatic Agreement.

Licensees whose applications, as of the date this Programmatic Agreement is executed, are already tendered, may omit Part I, herein.

I. PRE-LICENSING PROCEDURE

The following steps will be completed by Licensees before tendering the Commission an application, in consultation with the Wisconsin SHPO, and in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (published in the Federal Register, Vol. 48, No. 190, pages 44716 through 44742; hereinafter, "Secretary's Standards"). [1] Moreover, these steps will be completed by or under the direct supervision of a person or persons whose qualifications at least meet the Secretary's Standards, as applicable to the relevant preservation discipline.

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[1] See Appendix One of this Programmatic Agreement.

A. Identification of Historic Buildings, Structures, and Objects: Licensees will identify historic buildings, structures, and objects associated historically, structurally, spatially, or functionally with their Projects and within their Projects' Areas of Potential Effects [2] (hereinafter, "APE"). Upon completing this identification, Licensees will submit two copies of the resulting reports, prepared in accordance with the guidelines, Architecture/History Survey Report Specifications For Compliance-Driven Surveys, [3] to the Wisconsin SHPO pursuant to 36 C.F.R. Part 800, at Section 800.4.

B. Identification of Archaeological Properties: Licensees will survey Project shoreline areas within their APEs, except that no Licensee will be required by the stipulations of this Programmatic Agreement to survey shoreline areas within another Licensee's Project boundary, to identify archaeological sites currently subject to erosion, in accordance with the Wisconsin Archaeological Survey Guidelines For Conservation Archaeology in Wisconsin; [4] prepare reports based on the results of surveys; and submit these reports, in duplicate copies, along with all appropriate documentation to the Wisconsin SHPO for review and comment. All supporting photographic documentation will be submitted as original prints.

C. Evaluation of Identified Properties: Licensees will apply the Criteria of Evaluation, 36 C.F.R. Part 60, at Section 60.4, and, as appropriate, the principles set forth in

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[2] For purposes of this Programmatic Agreement, the APE for Projects for which a new or amended license issues, as APE is defined in 36 C.F.R. Part 800, at § 800.2(c), includes all the following: (a) lands enclosed by the project boundary as delineated in the existing License, (b) attached or associated buildings and structures extending beyond the project boundary, which contribute to the National Register for Historic Places eligibility of the hydroelectric generating facility, (c) lands or properties outside the project boundary, where the project may cause changes in the character or use of Historic Properties, if any Historic Properties exist.

[3] See Appendix Two of this Programmatic Agreement.

[4] See Appendix Three of this Programmatic Agreement.

Hydroelectric Development in the United States, 1880-1940, [5] to every historic building, structure, object, and archaeological property identified in fulfillment of this Part of this Programmatic Agreement, in accordance with 36 C.F.R. Part 800, at Section 800.4.

1. For each individual property to which the Criteria of Evaluation is applied the Licensee will report its results in written form. For each individual property that the Licensee finds to be eligible for listing on the National Register of Historic Places, the Licensee will report these results on a National Park Service Form 10-900; (hereinafter, "Form").

2. Licensees will complete the Forms according to National Register Bulletin Nos. 15 and 16, and the Wisconsin Supplementary Manual, [6] and submit to the Wisconsin SHPO an original and two copies of each Form completed, with other supporting materials. Other supporting materials will include the following.

a. For archaeological properties, Licensees will include a professionally-written report detailing the results of the Phase 1 Survey, stipulated at Part I.B, herein, describing any analysis and interpretation of the data undertaken subsequent to the Phase 1 Survey.

b. Licensees will include all supporting photographic documentation, as original prints, for each of the three copies submitted to the Wisconsin SHPO, submitted as physically separate documents.

c. Licensees will include a cover letter summarizing the Licensee's determination of eligibility for each of the properties documented on the Forms.

3. Licensees may avoid this requirement for eroding archaeological properties by consulting with the Wisconsin SHPO and employing means acceptable to the Wisconsin SHPO for stabilizing such properties and preserving them in place.

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[5] This reference is to a 1991 nationwide historic context on the development of hydroelectric power generation by Dr. Duncan Hay, for the Edison Electric Institute. See Appendix Four of this Programmatic Agreement for the relevant portions of this document.

[6] See Appendix Five of this Programmatic Agreement.

4. Licensees may seek additional assistance in the evaluation of archaeological properties from National Register Bulletin Nos. 12, 36, and 38.

5. If the Wisconsin SHPO deems the documentation to be incomplete, the Wisconsin SHPO may return it to the Licensee to be revised. If the Wisconsin SHPO deems the documentation complete, the Wisconsin SHPO will apply the Criteria for Evaluation, 36 C.F.R. Part 60, at Section 60.4, in accordance with 36 C.F.R. Part 800, at Section 800.4; sign the completed Form formalizing the determination of eligibility; retain the original Form; and return two signed copies to the Licensee.

6. The Licensee will file a copy of the completed Form bearing the Wisconsin SHPO's signature with the Commission, for information, with all supporting materials.

II. POST LICENSING PROCEDURE

In fulfilling the requirements of this Part of this Programmatic Agreement, Licensees, in consultation with the Wisconsin SHPO, will address all issues regarding Historic Properties that were not resolved prior to a license's issue, and will ensure that Historic Properties are considered in the continued operation and maintenance of hydroelectric facilities during the term of their licenses in accordance with the following stipulations. To further this purpose, Licensees will develop Historic Resources Management Plans (hereinafter, "HRMP").

A. Interim Procedures: Until a Licensee's HRMP has been approved, the Licensee will comply with 36 C.F.R. Part 800, at Sections 800.4 through 800.6, with respect to any proposed ground-disturbing activities.

B. Historic Resources Management Plan: Each Licensee, within one year of a license issuing, will develop an HRMP that addresses each of the following subjects, or that provides documentation sufficient to justify any omissions, based on the irrelevance of the omitted subject. The Licensee will file one copy of the HRMP with the Commission and one with the Wisconsin SHPO for review. If the Wisconsin SHPO agrees with the HRMP, the Licensee will implement it.

1. Shoreline Monitoring: The HRMP will include a procedure for monitoring the Project shoreline on a periodic basis and reporting the results of monitoring by submitting an archaeological report in two copies to the Wisconsin SHPO. If archaeological properties are identified during monitoring, the

Licensee will implement Part I.C, herein.

2. Unsurveyed Lands Within the Project Boundary: At Projects where no prior archaeological survey has been conducted, including lands normally inundated by the Project reservoir and property owned by someone other than the Licensee (hereinafter, "Private Property"), the HRMP will include the following procedures:

a. For unsurveyed lands that are not normally inundated by the project reservoir, the Licensee will include one of the following procedures in the HRMP.

(1) The Licensee may include a procedure for ensuring that an archaeological survey is conducted in the planning stage of any significant ground-disturbing activity (including, but not limited to, land management, timber management, recreational development, and lease or sale) proposed to be carried out by the Licensee on these lands that may disturb Historic Properties.

(2) Alternatively, the Licensee may include a procedure for completing archaeological surveys for these lands within ten years of the date the license issues.

b. For unsurveyed lands that are normally inundated by the project reservoir, the HRMP will include a procedure for developing appropriate methods and techniques to identify Historic Properties which become accessible during periods of Project reservoir drawdown or dewatering, and a tentative schedule for conducting the surveys. Fulfilling this requirement will not cause, occasion, or prolong a period of drawdown or dewatering.

c. The Licensee, in the HRMP, will include the following procedure for taking into account effects to archaeological properties on Private Property to which the Licensee may be unable to gain access to conduct archaeological research.

(1) The Licensee, if unable to gain access to Private Property to conduct archaeological research, will notify the Wisconsin SHPO of the inability to gain access, identifying the property owners by name and address.

(2) The Licensee will provide the Wisconsin SHPO with a copy of all relevant correspondence demonstrating the Licensee's reasonable attempts to gain access for the purpose of conducting archaeological research.

(3) The Licensee will furnish the Wisconsin SHPO with a copy of the appropriate USGS topographic map showing the exact location of the Private Property.

(4) The Licensee, in the event shoreline monitoring, conducted pursuant to Part II.A.1, herein, discloses a change in an archaeological site located on Private Property to which the Licensee has been unable to gain access for conducting archaeological research, or if the Licensee learns that the ownership or control of such Private Property is transferred, will make further attempts to gain access and inform the Wisconsin SHPO of these further attempts and of their results.

3. Archaeological Properties on Non-Managed Lands Within the Project Boundary: Previously-recorded archaeological properties on lands for which no ground-disturbing activities are contemplated (hereinafter, "Non-managed Lands") will be listed as such in the HRMP.

C. In-Place Preservation At Shorelines: In general, Licensees will give priority to preserving Historic Properties in place through shoreline stabilization, in developing HRMPs, and may use shoreline stabilization for other purposes.

1. Shoreline Stabilization: Where stabilization efforts may disturb Historic Properties, the Licensee will describe or specify the type of stabilization proposed, such as placement of rip-rap or revegetation, the provisions for archaeological data recovery, if any are warranted, and a budget and a schedule for implementing the plan. If the Wisconsin SHPO does not respond within forty-five days of receiving the submission, or responds with no objections to the Licensee's plan, the Licensee will implement the plan.

2. Data Recovery Plans: Where preservation in place is deemed not to be feasible and data recovery is found to be necessary, Licensees will develop all plans for recovering archaeological data in consultation with the Wisconsin SHPO, ensure that such plans are consistent with the Secretary's Standards and generally consistent with, Treatment of Archaeological Properties (Advisory Council on Historic Preservation, 1980). Archaeological data recovery plans will, at a minimum, include the following information.

a. The Licensee will identify the property, properties, or portions of properties where data recovery is to be carried out, as well as any property, properties, or portions of properties that will be destroyed or already have been affected without the benefit of data recovery.

b. The Licensee will specify the research questions that are to be addressed through data recovery and explain their relevance and importance.

c. The Licensee will specify the means to recover, analyze, manage, and disseminate data to the professional archaeological community and the general public, and, explain the relevance of these means to the research questions; involve the interested public in the data recovery project; and, as appropriate, keep Indian tribes informed of the data recovery project and afford them the opportunity to participate.

d. The Licensee will include a schedule for implementing the data recovery plan.

e. The Licensee will include a plan for the disposition of recovered materials and records, according to Part IV.D. herein.

f. The Licensee will propose a schedule for submitting progress reports to the Wisconsin SHPO, where such reports are appropriate.

3. Implementing a Data Recovery Plan: The Licensee will submit the data recovery plan to the Wisconsin SHPO and, if the Wisconsin SHPO does not object within 30 days, implement the data recovery plan at the earliest opportunity.

4. Final Reports of Data Recovery: After a data recovery plan has been implemented, the Licensee will submit two copies of a final report detailing the results of the data recovery efforts to the Wisconsin SHPO for review and approval.

D. In-Place Preservation of Historic Hydroelectric Generating Facilities and Other Structures: Licensees will operate and maintain National Register eligible hydroelectric generating facilities (hereinafter, "Facilities") according to 36 C.F.R. Part 67, Guidelines for Rehabilitating Historic Buildings (revised 1990), and applicable National Park Service Preservation Briefs.

1. During the term of a license, the Licensee will take every reasonable precaution to preserve Facilities as Historic Properties; guarantee their integrity of design, materials, workmanship, location, setting, feeling, and association, to the extent that each of these qualities is relevant to National Register eligibility; and ensure public safety. To further these purposes, Licensees will adhere closely

to the following guidelines.

2. Specifically, Licensees will avoid destroying, demolishing, or otherwise altering their Facilities, any distinguishing qualities or characters of their Facilities, or any stylistic features or examples of skilled craftsmanship which may characterize their Facilities. Licensees will similarly avoid such effects upon their Facilities' environments within the Projects' boundaries. Licensees will avoid damage to their Facilities resulting from cleaning surfaces, and will repair rather than replace deteriorated features of their Facilities.

3. The Licensee proposing to alter its Facilities or its Facilities' environment contrary to the clear aim and intent of this Programmatic Agreement to preserve intact such Facilities and their environments, may do so only upon notice of any such proposal given to the Wisconsin SHPO and the Secretary of the Commission.

a. The Licensee will afford the Wisconsin SHPO and the Commission forty-five days, commencing on the date on which they all receive the notice of such proposal, to review the notice of such proposal, during which time the Licensee will take no actions that would foreclose the Wisconsin SHPO's and the Commission's full opportunity to object.

b. The Licensee will attach to the notice of such proposal such plans and specifications for such proposals as the Wisconsin SHPO and the Commission may require, and will respond with such further or clarified plans and specifications as the Wisconsin SHPO or the Commission may request. Required plans and specifications will include a description of the proposed undertaking, including relevant photographs and other needed documentation; a description of alternatives and mitigation measures, both considered and proposed; and a project plan and schedule.

c. If, after this forty-five days, there is no objection, the Licensee may implement the plans and specifications. Any party desiring to object within forty-five days will do so according to Part V.B, herein.

4. In cases of emergency, Licensees will respond in a manner ensuring public safety, and will notify the Wisconsin SHPO as soon as circumstances permit, but not more than seven days following the emergency, to explain any major modifications to Historic Properties required to cope with the emergency.

5. Licensees will not be required to seek the

Wisconsin SHPO's comments for completing routine repair and replacement in kind at their Facilities. Such routine repair and replacement in kind includes concrete repair work, maintenance and overhaul of existing generating and hydraulic equipment (except for equipment identified in the Form as a contributing element to its Facilities' National Register eligibility), maintenance of existing buildings and structures, dike repair and maintenance, maintenance and improvement of electrical systems, replacement of substation and transmission components, compliance with Commission mandated safety improvements not requiring structural modifications, development and maintenance of exterior public recreation components not requiring structure modifications, and placement and maintenance of public safety devices and signs.

6. Facilities that, at the time of licensing, are not National Register eligible, but become eligible, will become subject to the stipulations of this Programmatic Agreement as of the time they become eligible.

E. Public Interpretation: In their HRMPs, Licensees will propose, in detail, ways to interpret Historic Properties for the benefit of the public.

III. COMPLIANCE MONITORING, REPORTS, AND PUBLIC INVOLVEMENT

The purpose of this Part is to ensure compliance with the stipulations of this Programmatic Agreement through reporting.

A. Compliance Monitoring: The Commission and the Wisconsin SHPO have the right to monitor activities carried out pursuant to this Programmatic Agreement, and the Council will review such activities if requested. Licensees will cooperate with the Commission and the SHPO in carrying out this responsibility.

B. Annual Reports: Licensees, on January 31 of every year, will submit annual reports to the Wisconsin SHPO and the Commission outlining all activities associated with implementing the HRMP and this Programmatic Agreement, and undertaken in the preceding year and planned during the ensuing year.

C. Archaeological Report Dissemination: Licensees will submit all archaeological reports prepared according to the terms of this Programmatic Agreement to the Commission and the Wisconsin SHPO within six months of completing the report. Upon receiving written request, the Licensee may furnish copies of reports to other interested parties. The Licensee will ensure that precise locational data is withheld if it appears that its release might jeopardize Historic Properties (See National

Register Bulletin No. 29).

D. Public Involvement: Licensees will consult with the Wisconsin SHPO and the Commission to determine whether interested persons, as defined at 36 C.F.R. Part 800, at Section 800.1(c)(2), should be informed of effects to Historic Properties.

IV. TREATMENT OF HUMAN REMAINS AND GRAVE-ASSOCIATED ARTIFACTS; CURATION OF ARCHAEOLOGICAL COLLECTIONS, NOTES, MAPS, AND OTHER DOCUMENTATION; AND COMPLIANCE WITH THE NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT

Licensees will ensure that the following stipulations are implemented.

A. Tribal Reservations and Lands of the United States: Licensees will ensure that all human remains and other cultural items [7] encountered on lands embraced within the exterior boundaries of Indian reservations or in dependent Indian communities (hereinafter, "Tribal Lands), or lands controlled or owned by the United States (hereinafter, "U.S. Lands") are treated in accordance with the Native American Graves Protection and Repatriation Act (hereinafter, "NAGPRA"), 25 U.S.C. Section 3001, et seq.

1. NAGPRA creates rights for certain parties that go beyond the right merely to be consulted, set forth in the Act, that are pertinent to the inadvertent discovery, intentional removal, ownership, and repatriation of human remains and other cultural items recovered from Tribal and U.S. Lands. Thus archaeological data recovery and similar mitigative actions developed pursuant to the Act must also meet NAGPRA requirements when they occur on Tribal or U.S. Lands.

2. Licensees using Tribal or U.S. Lands for purposes

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[7] NAGPRA defines "cultural items" as (a) human remains, (b) funerary objects "reasonably believed" to have been associated with human remains or, "by a preponderance of the evidence," a specific burial site, (c) sacred religious objects, and (d) cultural patrimony, defined as material remains of "historical, traditional, or cultural importance to the Native American group or culture itself ...." "Unassociated" funerary objects were, according to the Senate Select Committee report accompanying NAGPRA, specifically excluded from its protections.

requiring the issue of a license, will, within one (1) year of such a license issuing, prior to and apart from the discovery of any human remains or other cultural items, identify the following items in consultation with the Wisconsin SHPO.

a. the specific Native American organizations with a proprietary interest in any human remains and other cultural items that may be encountered and recovered,

b. the kinds of artifacts that will be considered to be cultural items as defined in NAGPRA, including associated and unassociated funerary objects, sacred objects, or objects of cultural patrimony,

c. the kinds of analysis and curation to which the material will be subjected, along with a schedule for any disposition of the material, and

d. a specific course of action to be taken if human remains and other cultural items are encountered unexpectedly during project operation or project development, including recreational development.

3. Before excavating or removing discovered human remains or other cultural items from U.S. Lands, the Licensee will make every reasonable effort to protect the property and consult with the appropriate Native American groups. The Licensee will secure the consent of the appropriate Native American groups before removing any human remains or other cultural items from Tribal Lands.

B. Consistency With NAGPRA's Purpose: Licensees will ensure that any action taken is consistent with NAGPRA's purpose of protecting Native American's interred human remains and other cultural items.

C. Other Than Tribal and U.S. Lands: Licensees will ensure that all human remains and grave-associated artifacts encountered on lands that are neither Tribal nor U.S. Lands are treated according to Section 157.70, Wisconsin Statutes, with consideration given to the Council's policy on the treatment of human remains.

D. Curation of Archaeological Collections, Notes, Maps, and Other Documentation: Licensees will ensure that, except as otherwise required above, all artifacts, notes, records, reports, maps, and any other type of documentation that are, respectively, recovered, written, made, drawn, or otherwise generated according to this Programmatic Agreement, are curated in the State of

Wisconsin, unless the Michigan SHPO specifically requests that items pertaining to Michigan be delivered to the Michigan SHPO for curation, in a facility that meets the requirements of 36 C.F.R. Part 79, insofar as this purpose can be achieved consistent with the rights of Private Property owners.

V. DISPUTE RESOLUTION

A. Foundational Considerations: The Commission alone is statutorily mandated to ensure compliance with the National Historic Preservation Act and the Federal Power Act, notwithstanding this or any other Programmatic Agreement.

1. In all matters arising under this Programmatic Agreement, the Commission reserves to itself the sole right and authority to determine, consistent with the Council's regulations, the means of taking into account the effects of undertakings on Historic Properties, and, consistent with its own regulations, the best adapted use of a waterway.

2. Neither this Programmatic Agreement, nor any part of it will be interpreted to give any other party this right or authority.

3. While a Licensee may implement measures and adopt findings, where a consensus with the SHPO for such measures or findings is found to exist, a Licensee's right to seek the Commission's resolution of any matter disputed between it and any other Party to this Programmatic Agreement will not be abridged.

B. Procedures: If the SHPO, a Licensee, Licensees or the Council objects to any action or any failure to act on the part of any Party to this Programmatic Agreement, any Licensee, or Licensees within 45 days of such action or failure to act, the objecting Party, Licensee, or Licensees will file written objections with the Commission.

1. The Commission will consult with the Parties any interested parties, Licensee, or Licensees to resolve the objection.

2. The Commission may initiate sua sponte such consultation to resolve any of its objections to actions or to failure to act on the part of any Party, Licensee, or Licensees.

C. Council Comments: If the Commission determines that the matter cannot be resolved by consultation, the Commission will request the Council's further comments pursuant to 36 C.F.R. Part 800, at Section 800.6(b).

1. Any Council comment provided in response to such a request will be taken into account by the Commission in accordance with 36 C.F.R. Part 800, at Section 800.6(c)(2), with reference to the subject of dispute.

2. After consultation and review of written responses the Commission will issue a decision on the matter.

D. Status of Actions Not In Dispute: The Commission's responsibility to carry out all actions under this Programmatic Agreement that are not the subject of dispute will remain unchanged.

VI. EXECUTING, AMENDING, AND TERMINATING THIS PROGRAMMATIC AGREEMENT

This Programmatic Agreement will continue in full force and effect in its present form until it is amended or terminated.

A. Execution: Execution and implementation of this Programmatic Agreement evidences conclusively that the Commission has satisfied its Section 106 responsibilities for all individual Projects in the State of Wisconsin or the States of Wisconsin and Michigan issued new or amended licenses after the date whereon this Programmatic Agreement is executed.

B. Amending This Programmatic Agreement

1. The Commission, the Wisconsin SHPO, the Michigan SHPO, the Council, or any interested party may request an amendment to this Programmatic Agreement, whereupon the Parties will consult in accordance with 36 C.F.R. Part 800, at Section 800.13.

2. This Programmatic Agreement will be amended only upon the agreement of the Commission, the Wisconsin SHPO, the Michigan SHPO, and the Council.

3. Historic Properties affected by a new license issuing to Wisconsin Power & Light for its continued operation of the Shawano Project, Project No. 710, in Shawano and Menominee Counties, are protected under a Programmatic Agreement for that project. Some of those Historic Properties are on lands belonging to the Menominee Indian Tribe of Wisconsin. If the Programmatic Agreement for the Shawano Project is terminated or amended with the result that the Shawano Project is administered under this Programmatic Agreement, the Parties will consult together and with the Menominee, both directly and through counsel, to amend this Programmatic Agreement sufficient to

afford their interests in Historic Properties located on their lands protection equal or superior to that stipulated in the Programmatic Agreement for the Shawano Project alone.

C. Terminating This Programmatic Agreement: The Commission, the Wisconsin SHPO, the Michigan SHPO, or the Council may terminate this Programmatic Agreement by giving notice to the Parties at least thirty days before the desired termination date, provided that the Parties will have consulted in good faith before notice is given to avoid termination by amendment or by other actions.

FEDERAL ENERGY REGULATORY COMMISSION

By _____ Date 12/1/93
Fred E. Springer, Director
Office of Hydropower Licensing

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By _____ Date 12/30/93
Robert D. Bush, Ph.D., Executive Director

STATE HISTORICAL SOCIETY OF WISCONSIN

By _____ Date _____
Jeff Dean, State Historic Preservation Officer

MICHIGAN DEPARTMENT OF STATE, BUREAU OF HISTORY

By _____ Date _____
Dr. Kathryn Eckert, State Historic Preservation Officer

Darrin Johnson

From: Moore, Jonathan D <Jonathan_Moore@nps.gov>
Sent: Wednesday, June 23, 2021 12:39 PM
To: Shawn Puzen
Cc: Darrin Johnson; Miller, Matthew J; Crotty, Scott A
Subject: Re: [EXTERNAL] Trego Documents

Shawn,

Thank you to Xcel Energy and Mead & Hunt for hosting the site visits of the Hayward and Trego facilities on the 17th. It was helpful to see both facilities and to meet all of you. Thank you also for forwarding the statewide programmatic agreement (1993).

Would it also be possible for you to send the following documents:

- Trego PA (1992)
- Historic Resources Management Plan, Hayward
- Cultural Resources Management Plan, Trego

I looked through the appendices at the hydrorelicensing.com site. If they are there and I missed them, I apologize.

Thank you again for your assistance.

Regards,

Jonathan Moore
Cultural Resources Program Manager
St. Croix National Scenic Riverway
National Park Service
401 North Hamilton Street
St. Croix Falls, WI 54024
715-491-6839

From: Shawn Puzen <Shawn.Puzen@meadhunt.com>
Sent: Monday, June 21, 2021 3:27 PM
To: Moore, Jonathan D <Jonathan_Moore@nps.gov>
Cc: Darrin Johnson <Darrin.Johnson@meadhunt.com>; Miller, Matthew J <Matthew.j.miller@xcelenergy.com>; Crotty, Scott A <scott.a.crotty@xcelenergy.com>
Subject: [EXTERNAL] Trego Documents

Hi Jonathan,

It was nice to meet you last week.

Per your request, we have added you to the address list for Hayward and Trego.

In addition, attached is a copy of the Programmatic Agreement we talked about.

Lastly, the FERC contact for relicensing is Laura Washington. 202- 502-6072 laura.washington@ferc.gov.

Please do not hesitate to contact Matt, Scott or me if you have any additional questions.

Thanks,

SHAWN PUZEN
FERC HYDROPOWER LICENSING AND COMPLIANCE, WATER
Mead & Hunt
Direct: 920-593-6865 | Cell: 920-639-2480 | Transfer Files
meadhunt.com | LinkedIn | Twitter | Facebook | Instagram

Darrin Johnson

To: Moore, Jonathan D; Shawn Puzen
Cc: Miller, Matthew J; Crotty, Scott A
Subject: RE: [EXTERNAL] Trego Documents
Attachments: 19921127 Trego programmattic agreement.pdf; 19950523 Trego CRMP sumitted to FERC.pdf; 19970110 hayward hrmp.pdf; 20071220 order approving Trego CRMP.pdf; 19970404 FERC approval of Hayward CRMP.pdf

Hi Jonathan,

Attached are the Trego PA, Trego CRMP, and Hayward HRMP per your request. I have also included the FERC orders approving the CRMP & HRMP. Please let us know if you have any further questions.

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Sent: Wednesday, June 23, 2021 12:39 PM
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Thanks,

SHAWN PUZEN
FERC HYDROPOWER LICENSING AND COMPLIANCE, WATER
Mead & Hunt
Direct: 920-593-6865 | Cell: 920-639-2480 | Transfer Files
meadhunt.com | LinkedIn | Twitter | Facebook | Instagram

120 YEARS OF SHAPING THE FUTURE

1414 West Hamilton Avenue
PO Box 8
Eau Claire, WI 54702-0008

June 24, 2021

FERC Docket Nos. 2417-065 and 2711-024

VIA Electronic Filing

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: **Proof of Publication of Notice of Scheduled Site Visit**
Hayward Hydroelectric Project (FERC Project No. 2417)
Trego Hydroelectric Project (FERC Project No. 2711)

Dear Secretary Bose:

Northern States Power Company – Wisconsin (licensee), d/b/a Xcel Energy, published a notice in newspapers of general circulation in Sawyer County and Washburn County, Wisconsin announcing the June 17, 2021 site visits to the Hayward (FERC Project No. 2417) and Trego (FERC Project No. 2711) hydroelectric projects. The notice was published in the Sawyer County Record on June 2, 2021 and the Spooner Advocate on June 3, 2021. A copy of each public notice and Affidavit of Publication is enclosed.

Thank you for your time and consideration in this matter. If you have any questions, please contact Matthew Miller at (715) 737-1353 or matthew.j.miller@xcelenergy.com.

Sincerely,

James M Zyduck

Digitally signed by James M Zyduck
Date: 2021.06.28 13:50:47 -05'00'

James M. Zyduck
Director, Hydro Plants

Enclosures: Public Notices and Affidavits of Publication

cc: Shawn Puzen – Mead & Hunt, Inc. (via e-mail)
Project Files

OFF THE SHELF: NEWS OF THE SHERMAN & RUTH WEISS COMMUNITY LIBRARY

BY **KATHY HANSON**
For the Record

Message from Molly Lank-Jones, Director, Sherman & Ruth Weiss Community Library

The Library Board of Trustees is the backbone of any public library. The Trustee Essentials Handbook states that active, enthusiastic trustees govern library operations and promote library development to protect and advance the interests of the broader community. (Wisconsin Department of Public Instruction, Public Library Development Team. Trustee Essentials..., 2016)

At the Sherman & Ruth Weiss Community Library, April marked the end of terms for former Board President Matt Ostrander and former Vice President Delores Peterson. They have been exemplary in advancing the interests of our community and visitors, and in managing me! I hope they remember they only need to take one year off before they can serve on the board again.

May marks the beginning of a new term for Karen Duffy, who has taken on the role of president; Linda Hand, who serves as the City Council representative; and city resident Dave Eckstrom. The remaining roster includes Ann Schleeter, vice president; Bruce Paulsen, secretary and county representative; Kathy McCoy, treasurer; Ray Moeller, former long-time board president; and Katie Pritchett, school representative. Several of these trustees served on the library board several years ago. The library staff and I welcome them back and are happy to welcome the new trustees.

Meet the staff: Janet Rowney

Janet Rowney is one of the faces in the library who works the front desk, but she can also be found working on interlibrary loan books, shelving and shopping (searching for titles requested by library patrons and other libraries), helping patrons on the computer, assisting them in finding their items in the stacks, and working curbside with the COVID guidelines.


Rowney

Like many in the Hayward area, she is from Chicago but spent summers in the Hayward area.

Her education is as diverse as any you can imagine: math/science major, theatre major, teaching degree from UW-Superior, student of drama performance with Shakespeare & Company. She has also worked as a server, bartender and hostess.

Perhaps most interesting of all is Janet's passion for working as a deckhand on a tall ship — the S/V Denis Sullivan. She has sailed all five Great Lakes, as far east as Quebec City and as far west as Duluth.

But back to the library. Here is what she told us.

"When I first took the job at the library, I was really naïve with my preconceptions of what the job would entail. The processing of books is much more complicated than it appears from the patron's perspective. And you also need to become familiar with the patrons. Plus, there is helping with computer use and printing and faxing and finding materials and research and . . .

Every day I am grateful for the staff. Molly and Ann are supportive bosses and I value each and every staff member and volunteer. My favorite part of the job is the continual challenges. Every day is a fresh experience."

To which we say, "All hands on deck, Janet!"

Maggy's Book Review

"On the House" by John Boehner

I read so much I keep a book diary. Helps me remember what I've read and to make recommendations if anybody asks. I'm going on my fifth diary in the last 10 years or so. They make for a nice gift suggestion to the kids at Christmas, too. Rectangular. Easy to wrap.

So, for the book I'm going to review this time for the library newsletter I'm going straight to my latest book diary and will give it to you straight about John Boehner's "On the House: A Washington Memoir."

Why I read it: It was hyped and promoted a lot; I had hoped for some juicy D.C. dish; I'd always wondered where former Speaker of the House John Boehner disappeared to. I pre-ordered it and counted the days 'til Amazon dropped it off on my front porch.

My review: In a word, disappointing. Too much of the content was boring and permeated with 7th grader cliches. It was surprising, however, to learn that Boehner's big birth family (11 kids!) were life-long Democrats, though he never explains why he alone made the switch to the Grand Old Party.

Unfortunately, too much of what Boehner gives us is minutiae about his life: his inspirational high school football coach. His Catholic education. His ongoing addiction to Camels. His devotion to red wine. He's even posed on the cover with a cigarette burning in an ashtray and holding a stemmed fishbowl of Cabernet.

He provides some insights into politics and D.C. insiders from his still staunchly Republican point of view, though in the end the GOP turned him out to pasture at age 60. And even with all the tumult going on in his nearly unrecognizable party, he says he voted for Donald Trump in 2020.

That was long after he'd been dumped for the numbers genius, Paul Ryan, who's long gone now, too. Boehner laughingly recounts how Ryan had to have the speaker's office nearly fumigated before moving into it. Too many Camels got smoked in that office for the new speaker, a health nut.

Boehner's lack of spite in a book that could have been over the top with it makes me wonder whether he's leaving an opening for himself, though he claims to be enjoying himself mightily on the golf course these days.

Outdoor Storytime begins June 1 at Weiss Library

The Sherman & Ruth Weiss Community Library is bringing Outdoor Storytime to the library starting June 1, presented on the Children's Patio by Northwest Connection Family Resources.

Sessions will begin at 10:15 a.m. and will run through Aug. 24. Children of all ages are welcome to participate in the interactive, educational activity.

Library officials remind users that inside the building the library's current COVID-19 policy remains in effect. Library patrons and staff must wear a mask and use a hand sanitizer on entering. Children age 3 and older are included in the policy, and the toys and games are temporarily in storage. If people do not have a mask, the library will provide one near the entry at the "sanitation station."

Those who prefer not to mask are free to join Storytime by entering through the Children's Patio gate. During storytime, groups/pods will socially distance around the storyteller, who will be in the center of the patio. Parents and children are free to enter the library to browse either before or after storytime, but masks are required.

1,000 Books program

Participation in Storytime also makes it easier for children to complete 1,000 Books Before Kindergarten, a library challenge to read 1,000 books before the child enters kindergarten. Storytime provides excellent bonding time for children and their caregivers.

Families are invited to join the 1,000 Books challenge at the library. By reading just one book a night, families can reach the 1,000-book goal in three years and provide children with essential early literacy skills.

When children join, they receive a 1,000 Books Before Kindergarten book bag and incentives for every 100 books that are read to the child. When the child completes the program they will receive a book of their choice donated to the program by Arclin of Hayward.

The 1,000 Books program is available to all families with children between the ages of birth and 5 years. Registration is open. For more information, call the library at (715) 634-2161, or visit www.weisscommunitylibrary.com.

Weiss Library resumes 5-day schedule

Effective this week, the Sherman & Ruth Weiss Community Library will be open Monday through Friday for indoor service, but will continue to observe its current COVID-19 policy requiring library patrons and staff to wear a mask and use a hand sanitizer as they enter.

Library hours also have been adjusted to provide more consistent service: Monday, Wednesday, Thursday and Friday from 10 a.m. to 5 p.m., and Tuesday from noon to 7 p.m. The library will continue to offer curbside pickup service on-demand during its open hours.

Library pandemic policies will remain in place at least until the library board meets June 8. People who do not have a mask are provided them near the entry at the "sanitation station."

Pickup will be available during regular hours of operation for those who prefer not to mask or who enjoy the convenience of curbside service. Users must call the library to make an appointment. Curbside pickup now will now be located at the side door facing Highway 77.

Those arriving for pickup should either call the library at (715) 634-2161 from their car or ring the doorbell at the side door. Patrons will be asked to show a library card or I.D. to confirm the order.

The library meeting room will remain unavailable until later in the summer. The Used Book Room will be open Monday through Friday during regular library hours, with purchases made on the honor system (no change will be available).

For more information, visit www.weisscommunitylibrary.com or call the library at (715) 634-2161.

PUBLIC NOTICE

Site Visit for the Relicensing of the Hayward Hydroelectric Project (FERC Project No. 2417) Trego Hydroelectric Project (FERC Project No. 2711)

Northern States Power Company – Wisconsin, d/b/a Xcel Energy, (hereinafter NSPW), hereby notifies resource agencies, Indian tribes and stakeholders, including interested members of the public, that it has scheduled a site visit to the Hayward (FERC Project No. 2417) and Trego (FERC Project No. 2711) Hydroelectric Projects (Projects) as part of the Federal Energy Regulatory Commission's (FERC or Commission) relicensing process. The Hayward and Trego Projects are located on the Namekagon River in the City of Hayward in Sawyer County, Wisconsin and Town of Trego in Washburn County, Wisconsin, respectively.

On Nov. 30, 2020, NSPW filed with the Commission a Pre-Application Document, Notice of Intent, and Request to Use the Traditional Licensing Process (TLP) for the relicensing of both Projects. The Commission, by letter dated Jan. 21, 2021, granted NSPW's request to use the TLP for both Projects.

In accordance with the first stage of consultation requirements under the TLP, NSPW held a Joint Agency Meeting on March 11, 2021. Due to COVID-19 health-related concerns, the meeting was held via conference call. No site visit to either Project was conducted at that time in order to abide by Centers for Disease Control and Corporate guidelines to avoid public gatherings and discretionary travel.

NSPW has scheduled a site visit to the Hayward and Trego Projects, in conjunction with a site visit to the White River Hydroelectric Project (FERC Project No. 2444), on Thursday, June 17, 2021. The site visit will begin at 9 a.m. at the White River Project located at 46720 State Hwy 112, Ashland, WI 54806. The group will then proceed to the Hayward Project for a site visit, followed by lunch on your own, and will finish the day with a site visit to the Trego Project.

An accurate number of attendees is necessary to allow NSPW to coordinate the site visit based on the most recent Wisconsin COVID-19 mandate(s) and Corporate guidelines. In addition, based upon the number of attendees, participants may need to be separated into groups, if required by the mandate(s) and guidelines.

All interested parties, including members of the public, who plan to attend the site visit on Thursday, June 17, are asked to RSVP no later than Monday, June 14, to Matt Miller at 715-737-1353 or matthew.j.miller@xcelenergy.com.

Xcel Energy®

CANOE MUSEUM

JULIE HUSTVET

Sleek, well-crafted form merged with function in the canoes displayed at the Wisconsin Canoe Heritage Museum's celebration of Wisconsin Canoe Heritage Day on Saturday, May 29. The day's activities included the annual Canoe & Wooden Boat Show, live music, silent auction, and the reopening of the museum.

Spooner library: Open, ready to forward in best way it can

BY SPOONER MEMORIAL LIBRARY

As COVID-19 cases continue to drop, and with updated Centers for Disease Control recommendations, the library board, director, and team are beginning their "exit strategy" from COVID practices to move forward.

At their May 26th board meeting, the board discussed at length the Director's recommendations for moving forward.

These stated, "In March 2020, we sought out advice from Washburn County Public Health, Center for Disease Control (CDC), Department of Instruction, and specific library related entities on how to best navigate the COVID-19 pandemic. This has not changed over a year later and continues to guide us in our reopening plan.

"We are aware of CDC's statement allowing vaccinated individuals to gather unmasked. We will not be asking patrons if they are or are not vaccinated, thus we will continue to require 100% mask compliance at this time.

"However, we have a plan in place to start moving towards normalcy. One plan is to adjust our mask requirement when St. Francis de Sales school is out as students use the library almost daily. Beginning June 7, the library will adjust the mask requirement to the following: Monday-Wednesday will require 100% mask compliance in ages 5+ and Thursday-Saturday will not require 100% mask compliance.

"This change allows library patrons who are unable to be vaccinated an opportunity to still safely use the library at the beginning of the week. Once Washburn County reaches a 70% vaccinated rate, the library will no longer require 100% mask compliance as the County has approached herd immunity rates. We may make this change prior to the 70% mark if deemed appropriate by public health.

"The library will continue to host programs outside if possible or with limited seating inside. We will be opening more computer stations. More seating has already opened up. We appreciate your patience and respect as we navigate COVID-19 together."

The board voted unanimously to approve this update to the pandemic policy and will evaluate it once more at the June 22nd board meeting.

Masks will be required by everyone age 5+ on Monday-Wednesday. If a patron cannot or refuses to wear a mask those days, we will provide curbside service while the patron waits outside. (Curbside service is available Monday-Saturday.)

We will continue to have masks and hand sanitizer in our entrance as it is still the recommendation of CDC for people without their vaccinations to wear masks, but masks are not required at the end of the week. Staff will continue to wear masks (to lead by example). All six adult computer stations are open, and two spaced computer stations are open in the children's wing.

We have a mixture of spaced tables and community tables in our sitting areas on both the adult and children's sides. Children's toys will be taken out of storage and set back up on the children's wing with the understanding that we will not be able to clean them all between uses.

Returned items and items in delivery from other libraries will no longer be quarantined after a follow-up study confirming the extremely rare chance of COVID spread amongst library materials.

In the same way that we went into the pandemic with careful thought and consideration for the community, we will continue to do so with our exit strategy. No matter where our patrons stand on issues, such as masks and safety concerns, we hear you. We know we cannot make everyone happy, but we can definitely listen to the voices of the community and to science as we have been.

It is time to move forward in the best way we can. So, yes we are open!

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Xcel Energy®

ROP AFFIDAVIT

June 04, 2021

Customized Newspaper Advertising
319 E 5th Street
Des Moines, IA 50309
515-244-2145 ext 152; Fax: 1-866-440-6028
Email: media@cnaads.com

Advertiser: Xcel Energy Brand:

Order #: 21061MX0

ATTN: Michelle Carlson WI/Spooner Advocate
WI/Hayward Sawyer County Record
15464 County Rd. B
Hayward, Wisconsin 54843

V: 715-939-9036 F: 1-715-635-2186 Email: mcarlson@spooneradvocate.com

WI/Hayward Sawyer County Record (Hayward, WI)

Run Date	*Ad Size*	*Caption / Position / Special Instructions*	*Section and Page information*
Wed 06/02/21	2.00 X 10.00	**Caption:** Xcel Energy **Special Instructions:** Deadline - Mon prior by noon	

Media Dept. 6.4.2021

ROP AFFIDAVIT

June 04, 2021

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319 E 5th Street
Des Moines, IA 50309
515-244-2145 ext 152; Fax: 1-866-440-6028
Email: media@cnaads.com

Advertiser: Xcel Energy Brand:

Order #: 21061MX0

ATTN: Michelle Carlson WI/Spooner Advocate
WI/Spooner Advocate
251 East Maple St.
Spooner, Wisconsin 54801-0338

V: 715-939-9036 F: 1-715-635-2186 Email: mcarlson@spooneradvocate.com

WI/Spooner Advocate (Spooner, WI)

Run Date	*Ad Size*	*Caption / Position / Special Instructions*	*Section and Page information*
Thu 06/03/21	2.00 X 10.00	**Caption:** Xcel Energy **Special Instructions:** Deadline - week prior	

Media Dept. 6.4.2021