# Appendix 1 – Environmental Review

# Appendix 1. Environmental Review

# 1. Introduction

The Gile Flowage Storage Reservoir Project (Gile Flowage or Project) is a headwater storage reservoir owned and operated by Northern States Power Company – Wisconsin (NSPW or Applicant). The Project is located on the West Fork of the Montreal River (West Fork) approximately 20 miles upstream of the Saxon Falls Hydroelectric Project within the Town of Pence and Town of Carey in Iron County, Wisconsin and approximately 2.5 miles southwest of the neighboring cities of Hurley and Ironwood located in Wisconsin and Michigan, respectively. The Project provides seasonally uniform streamflow for hydroelectric generation at NSPW's downstream Saxon Falls (FERC No. 2610) and Superior Falls (FERC No. 2587) hydroelectric projects.

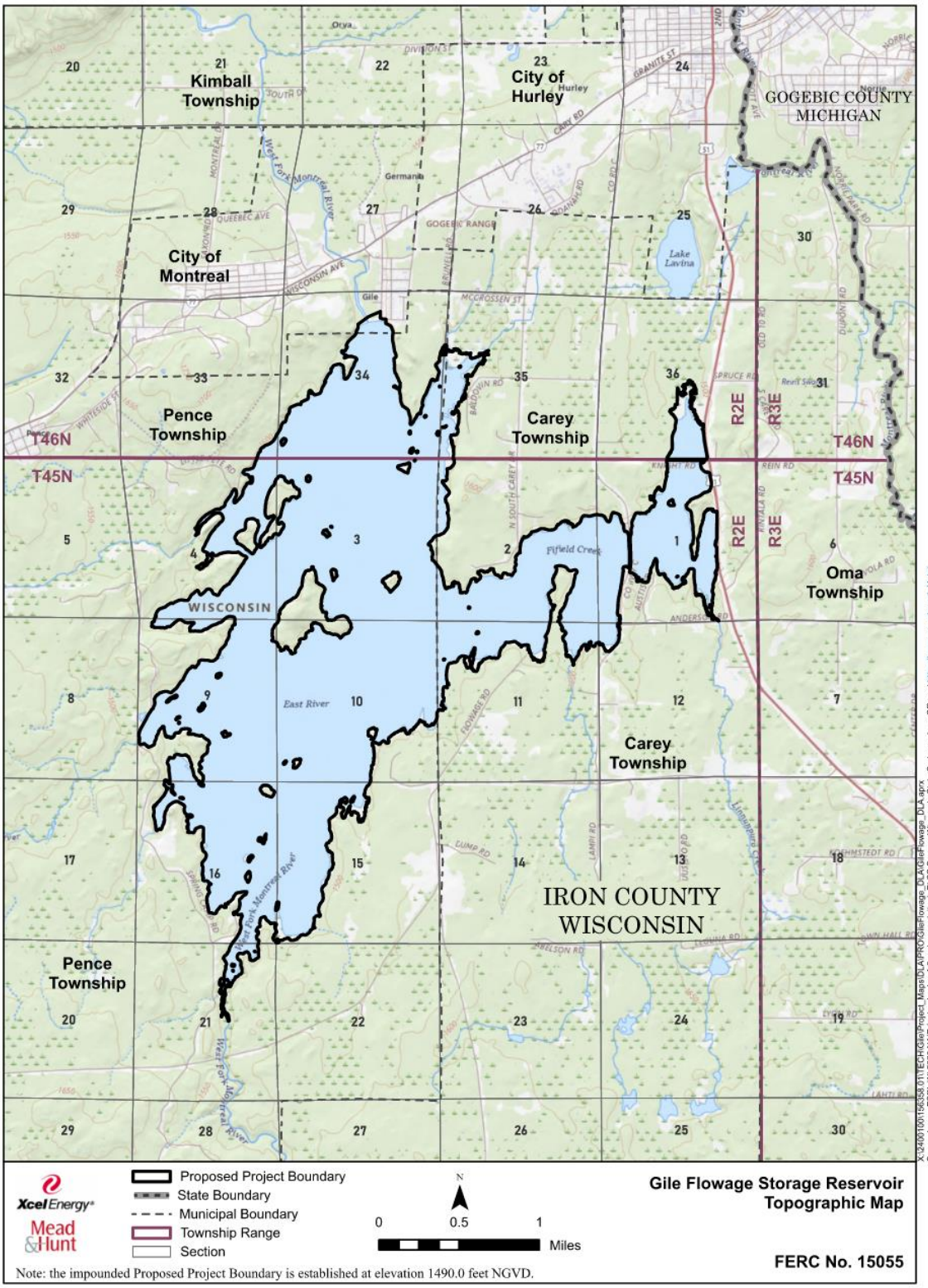
In early 2020, the Federal Energy Regulatory Commission (FERC or Commission) opened an inquiry to determine if the Gile Project is subject to the Commission's mandatory licensing jurisdiction under Section 23 of the Federal Power Act (FPA). On August 19, 2020, the inquiry found the Gile Project contributes to generation at the Saxon Falls and Superior Falls hydroelectric projects well beyond the required 2 percent. The Commission's inquiry further determined the Gile Project is a part of a development that includes NSPW's two aforementioned downstream licensed hydroelectric projects. Therefore, the Gile Flowage Storage Reservoir is required to be licensed.

On November 17, 2020, NSPW submitted to the Commission a notice of intent (NOI) to license the Gile Project (FERC No. 15055). The NOI included a schedule for submitting a final license application (FLA), conforming to Part 4 and Part 5 of the Commission's regulations, no later than August 18, 2023. In accordance with the required schedule for the FLA, as outlined in NSPW's Initial Study Report (ISR) dated September 28, 2022, NSPW submitted the FLA on August 18, 2023. NSPW submitted a response to the Commission's September 19, 2023 Deficiency of License Application and Request for Additional Information on December 18, 2023.

The Project reservoir has a surface area of 3,325 acres at an elevation of 1,490 feet NGVD.[1] Under the current operation, the reservoir elevation is maintained between 1,475 and 1,490 feet NGVD. The reservoir has a maximum depth of 25 feet, a gross storage volume of 32,713 acre-feet, and a usable storage volume of 32,031 acre-feet.

[1] Excludes 29.0 acres of islands currently owned in fee by NSPW that were originally included in the proposed project boundary as part of the reservoir. NSPW is now seeking to transfer ownership of the islands to Iron County; therefore, the reservoir acreage was recalculated in 2024 using GIS and the most current LiDAR information to exclude all islands above elevation 1490.0 feet NGVD. The recalculated acreage results in a less than one percent change in reservoir size and is insignificant with respect to the stage-storage curves and flow routing model results. Therefore, the stage-storage curves and model runs, and the analyses derived therefrom, have not been updated with the revised reservoir acreage.

**Figure 1-1: Project Map**



# 2. Proposed Action

NSPW is proposing to remove its island ownership above elevation 1490.0 feet National Geodetic Vertical Datum 1929 (NGVD) from the proposed Project boundary. The islands, along with NSPW's upland ownership around the reservoir, are in the process of being sold to Iron County with the stipulation that they remain open to the public in perpetuity for recreational purposes. The reasons supporting the removal of the islands from the project boundary include:

- They are not necessary for Project operations,
- They will not be under NSPW's ownership or control,
- They will remain open to the public in perpetuity for recreational use.

The area of potential effect (APE) for the proposed action includes the reservoir, its immediate shoreline, and for the purposes of water quantity, the river immediately downstream of the Gile Dam.

# 3. Environmental Setting and Resources

The Gile Project is located on the West Fork of the Montreal River (West Fork) approximately 8 miles upstream of its confluence with the main branch of the Montreal River. It is a headwater storage reservoir that provides seasonally uniform streamflow for hydroelectric generation at the downstream Saxon Falls and Superior Falls projects. The Montreal River basin has a total drainage area of approximately 264 square miles (NSPW, 1991). The river drops approximately 1,000 feet in elevation from its headwaters to its confluence with Lake Superior (US Geological Survey, n.d.).

The West Fork is the largest tributary of the Montreal River and is located within the Montreal River basin. The West Fork flows approximately 26 miles from its headwaters until it reaches the Montreal River (NSPW, 2020). The Gile Flowage has a total drainage area of approximately 70 square miles (Ayres Associates, 2016).

The Gile Flowage has approximately 36.5 miles of shoreline with numerous areas of exposed bedrock.[2] Approximately 90% of the shoreline is under public or NSPW ownership and is maintained in a natural, forested state, reducing the likelihood of erosion (Whitewater Associates, 2005).

### 3.1 Geology and Soils

The Project area is part of the Gogebic Range and Trap Range, just north of the Northern Highlands geologic province. The ranges form two prominent ridges in Ashland and Iron counties in Wisconsin that extend across the Wisconsin-Michigan border to near the City of Ironwood. Both ridges are composed of relatively steeply north-dipping rock layers which are more resistant to erosion than the surrounding rock units underlying the valley separating the two ridges. The southern ridge is the Gogebic Range which is composed of interbedded iron-rich and silica-rich layers about 650 feet thick. The Precambrian bedrock is approximately 1.9 billion years old. The northern ridge is the Trap Range, which is composed of younger volcanic rock, primarily basaltic lava flows, which is approximately 1.1 billion years old. The basaltic lava intruded the older Gogebic Range rock as a part of the activity associated with the Midcontinent Rift

[2] Shoreline distance measured via GIS is based upon the maximum reservoir elevation of 1,490 feet NGVD and does not include the island shorelines.

System, an extension of the earth's crust extending from Lake Superior in a gentle arc through Michigan's Upper Peninsula, Wisconsin, and Minnesota (Ayres Associates, 2016).

The surficial deposits are mainly glacial deposits characterized by ground moraines and end moraines. The thicknesses of unconsolidated materials in the vicinity of the Project are mapped at the transition between 0-50 feet deep and 50-100 feet deep (Ayres Associates, 2016).

The four most prevalent soil series identified in the Project vicinity include Gogebic-Peshekee complex (18.4%), Tula-Gogebic complex (11.7%), Gogebic silt loam (4.6%), and Gogebic-Michigamme rock outcrop complex (3.2%) (USDA Natural Resources Conservation Service, n.d.).

The Gile Flowage has approximately 36.5 miles of shoreline with numerous areas of exposed bedrock.[3] Approximately 90% of the shoreline is under public or NSPW ownership and is maintained in a natural, forested state, reducing the likelihood of erosion (Whitewater Associates, 2005).

Project operations affect the elevation of the Gile Flowage and the river flows downstream and have the potential to cause shoreline erosion or instability, which in turn could impact environmental resources. In order to understand the Project's influence on shoreline erosion, a Shoreline Stability Assessment was conducted on August 9 and 29, 2022. The objective of the assessment was to identify areas of shoreline erosion, mass soil movement, slumping, or other forms of instability within the Project's APE. None of the developed shorelines along the reservoir showed evidence of erosion. Only six non-developed sites along the entire 36.5 miles of shoreline appeared to have active erosion with evidence of soil movement or slumping. Seven sites were scored using the BEPI worksheet[4], which included the six noted erosion sites and one control site. All the erosion sites along the reservoir ranked in the low energy category (BEPI score of 0-47). Five of the six sites were located on small islands where the erosion was limited to the thin soil layer atop the bedrock. No additional investigation or mitigation was recommended at these sites (Great Lakes Environmental Center, 2022a). Additional investigation of the sixth site indicated that the erosion was not related to Project operations. In addition to the erosion sites documented along the reservoir shoreline, one additional erosion site was noted downstream of the dam in the tailwater area. NSPW stabilized this area in August 2023. The results of the shoreline stability assessment are described in more detail in Section 3.3.1.4 of Exhibit E. The full report is located in Appendix E-4 of Exhibit E.

### 3.2 Water Quantity and Quality

Water Quantity

The Project, located on the West Fork, has a drainage area of 70 square miles. Mean monthly flows at the Gile Dam, based on streamflow data from January 1994 to December 2021, are shown in **Table 3.2-1**.

*Table 3.2-1 Mean Monthly Flows at the Gile Project, 1994-2021*

| Month | Mean Monthly Flow (cfs) |
|---|---|
| January | 84 |
| February | 86 |
| March | 166 |

[3] Shoreline distance measured via GIS is based upon the maximum reservoir elevation of 1,490 feet NGVD and does not include the island shorelines.

[4] The Bank Erosion Potential Index (BEPI) score worksheet is used by WDNR to measure the intensity of erosion.

| Month | Mean Monthly Flow (cfs) |
|---|---|
| April | 390 |
| May | 284 |
| June | 158 |
| July | 138 |
| August | 92 |
| September | 117 |
| October | 93 |
| November | 78 |
| December | 79 |

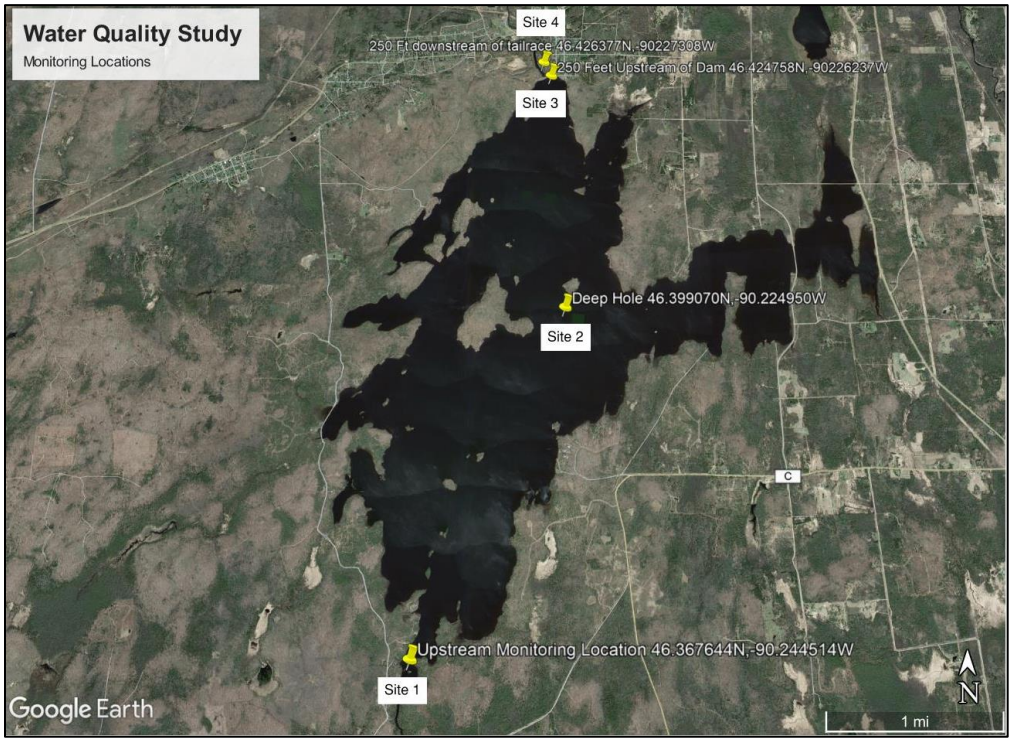
Source: (Mead & Hunt, 2023)

Water Quality

In 2022, Great Lakes Environmental Center (GLEC) conducted a water quality monitoring study on behalf of NSPW to determine if waters within the proposed Project boundary meet current State water quality standards. The study included water quality monitoring at the following four locations within the proposed Project boundary (shown in **Figure 3.2-1**):

- Site 1 - Riverine area upstream of the main impoundment
- Site 2 - Existing deep hole monitoring station
- Site 3 - Approximately 250 feet upstream of the Gile Dam
- Site 4 - Downstream of the tailwater mixing zone

*Figure 3.2-1 Water Quality Study Monitoring Locations at the Gile Project*



A summary of the laboratory analyses and field data is provided in **Table 3.4.1.2.3-2** and **Table 3.4.1.2.3-3**, respectively, of Exhibit E. The complete Water Quality Study Report is found in Appendix E-9 of Exhibit E.

The Gile Flowage is listed as a "Healthy Waterbody" in WDNR's 2022 Healthy Waters List (WI Department of Natural Resources, 2022a). The water quality monitoring conducted within the reservoir and tailwater in 2022 indicated that all water quality parameters analyzed met or exceeded Wisconsin's water quality standards (Great Lakes Environmental Center, 2022b).

## 3.3 Fish and Aquatic Resources

### 3.3.1 Aquatic Vegetation

In order to obtain information on the aquatic and terrestrial plant species found within the vicinity of the Project, including invasive species, an Aquatic and Terrestrial Invasive Species (ATIS) Study was conducted in 2022. Aquatic plants were sampled using WDNR's point-intercept protocols as listed in *Recommended Baseline Monitoring of Aquatic Plants in Wisconsin* (WI Department of Natural Resources, 2010).

To account for both early and late season species, two aquatic vegetation surveys were conducted in 2022, one in mid-June and one in late July. The June surveys were conducted on the 13th, 14th, and 17th and the July surveys on the 26th, 27th, and 28th. The WDNR provided a point-intercept grid with 957 sample points distributed evenly throughout the Gile Flowage.

During the June survey, the three most predominant species were variable leaf pondweed (*Potamogeton gramineus*), alternate-flowered water milfoil (*Myriophyllum alterniflorum*), and Narrow-leaf bur-reed (*Sparganium angustifolium*). During the July survey, the predominant species were various leaved watermilfoil (*Myriophylum heterophyllum*), slender waterweed (*Elodea nutallii*), and common waterweed (*Elodea canadensis*) (GAI Consultants, Inc., 2022).

The ATIS Study Report concluded the aquatic plant community in the Gile Flowage is unique. Several uncommon species were observed, and although plant abundance was low, the quality of species was high as evidenced by the Floristic Quality Index scores. A more thorough discussion of the study results is found in Section 3.5.1.1 of Exhibit E. The full study report is included in Appendix E-10 of Exhibit E.

The low plant density can be explained by the size and depth of the waterbody. Plants were primarily found growing in shallow, near shore areas and in protected bays. The depth of much of the flowage, combined with the tannin-stained waters and wind fetch, makes only the shallow, protected areas conducive to plant growth (GAI Consultants, Inc., 2022).

### 3.3.2 Wetlands

The National Wetland Inventory was used to determine the types of wetlands and their acreages within the originally proposed Project boundary and the amended Project boundary as shown in **Table 3.3.2-1**. Wetlands identified, in order of abundance, were as follows: lacustrine, freshwater forested shrub, freshwater emergent, freshwater pond, and riverine. A map illustrating the wetlands within the proposed Project boundary is found in Appendix E-11 of Exhibit E.

*Table 3.3.2-1 Wetlands Identified within the Proposed Gile Project Boundary With and Without Islands Included*

| Wetland Type | Originally Proposed Project Boundary – Including Islands | | Amended Project Boundary – Excluding Islands | |
|---|---|---|---|---|
| | Upstream of Dam | | Upstream of Dam | |
| | Acres | Percentage | Acres | Percentage |
| Lacustrine | 3,073.5 | 96.5 | 3,069.6 | 96.5 |
| Freshwater Forested/Shrub | 87.5 | 2.7 | 87.0 | 2.7 |
| Freshwater Emergent | 23.8 | 0.7 | 23.3 | 0.7 |
| Freshwater Pond | 0.3 | <0.1 | 0.3 | <0.1 |
| Riverine | 0.2 | <0.1 | 0.2 | <0.1 |
| **Total Wetlands** | **3,185.3** | **100.00** | **3,180.4** | **100.00** |

Source: (Mead & Hunt, 2024)

### 3.3.3 Fisheries

Fish survey data was collected in 2000, 2003, and each year between 2008 and 2019 at the Gile Project. Of the 27,803 fish collected during that timeframe, the five most predominant species included:

- Walleye at 16,797 or 60.4%
- Pumpkinseed at 2,709 or 9.7%
- Smallmouth bass at 2,267 or 8.2%
- Black bullhead at 1,685 or 6.1%
- Bluegill at 1,108 or 4%

Section 3.5.2.1.4 of Exhibit E concluded that the fish populations currently found in the reservoir are healthy and have adjusted to the seasonal reservoir fluctuations.

### 3.3.4 Mussels

In order to characterize mussel habitat and determine mussel abundance and species richness in the Project vicinity, NSPW conducted mussel surveys between June 22 and June 26, 2022. Surveys were conducted in a riverine area within the upper reaches of the reservoir, a riverine area downstream of the Gile Dam, and eight locations within the reservoir.

The mussel study concluded that within the reservoir, mussel abundance was higher in the shallower areas versus the deeper areas despite being subject to periodic drawdowns. This was likely due to the deeper areas featuring a deep silt substrate as observed in samples farther from the shore. The limited quantitative sampling completed supported the results of the Phase 1 sampling which indicated mussel density was very low, even in those locations that had the highest abundance (Enviroscience, 2022). The results of the mussel study are described in more detail in Section 3.5.1.5.2 of Exhibit E. The full mussel study report is included in Appendix E-13 of Exhibit E.

### 3.3.5 Aquatic Invasive Species

NSPW inspected the APE for invasive species as part of the ATIS Study described in Section 3.3.1. The number of aquatic invasive plant species on the reservoir was minimal. No aquatic invasive species were identified at any of the points sampled. However, two individual purple loosestrife plants (*Lythrum salicaria*) were observed at one location. The flower heads from those plants were removed and disposed

of appropriately to prevent future spread of the species. One observation of suspected narrow-leaf cattail was made; however, it was not confirmed since the population had not yet gone to seed at the time of the survey and seed heads are required for positive identification. Sediment samples taken during the study did not identify and invasive macroinvertebrates. Visual inspections of public access sites identified Chinese and banded mystery snails, both of which were already known to occur at the project (GAI Consultants, Inc., 2022). Spiny water fleas were also previously documented within the reservoir.

## 3.4 Terrestrial Resources

### 3.4.1 Botanical Resources

The ATIS Study included a survey of terrestrial areas within the proposed Project boundary to characterize the plant communities. The survey was conducted by boat or on foot where use of a boat was not feasible. An overall characterization of the terrestrial plant composition was made using the *Wisconsin Natural Heritage Inventory Recognized Natural Communities Natural Working Document.* The study revealed a largely undeveloped shoreline marked by bedrock outcrops and large boulders. The majority of the shoreline (85.53%) is comprised of forested communities. Among the various forest types, the greatest percentage is comprised of Northern Mesic/Wet Mesic Forest (32.12%) followed by Northern Mesic Forest (28.42%), Northern Mesic/Talus Forest (13.88%) and Talus Forest (11.11%). A total of 26 islands were identified in the ATIS report. The terrestrial vegetation on the islands was comprised of Northern Mesic Forest (12 islands), Northern Mesic Forest/Talus (6 islands), Northern Mesic Forest/Boulder (5 islands), and boulder (3 islands) (GAI Consultants, Inc., 2022). A more thorough description of the terrestrial community is included in Section 3.6.1.1.1 of Exhibit E. The full ATIS Study report is included in Appendix E-10 of Exhibit E.

### 3.4.2 Terrestrial Invasive Species

During the ATIS study, few terrestrial invasive species were documented in the Project vicinity. Distribution and density varied among species observed. Honeysuckle was the most common species and was found sporadically along the reservoir shoreline and most of the islands as individual plants or small populations. Glossy buckthorn (*Frangula alnus*) was also found on the islands but in lower density. Cattails (*Typha* spp.) suspected to be of the invasive narrow-leaf species, were scattered throughout the Project at low density, with a single high-density patch at the north end of the reservoir. Purple loosestrife was observed in only one location and spotted knapweed (*Centaurea stoebe*) and tansy were limited to higher traffic areas such as roadsides (GAI Consultants, Inc., 2022). The report concluded that the Project overall appears to support a healthy terrestrial and aquatic plant community with low populations of invasive plants and high floristic quality index values.

### 3.4.3 Wildlife Resources

#### *3.4.3.1 Mammal Species*

The Project is located in the North Central Forest Ecological Landscape. Mammal species typically found in this ecological landscape include the American black bear (*Ursus americanus*), gray wolf (*Canis lupus*), fisher (*Martes pennanti*), American beaver (*Castor canadensis*), North American river otter (*Lontra canadensis*), snowshoe hare (*Lepus americanus*), raccoon (*Procyon lotor*), and several fox, squirrel, and bat species (NSPW, 1988) (NSPW, 1991) (WI Department of Natural Resources, 2015). A full listing of mammals likely to occur within the Project vicinity is found in Section 3.6.1.2.1 of Exhibit E.

#### *3.4.3.2 Avian Species*

According to eBird, waterfowl, shorebirds, and blackbirds most often observed at the reservoir including bufflehead (*Bucephala albeola*), mallard (*Anas platyrhynchos*), hooded merganser (*Lophodytes cucullatus*), lesser scaup (*Aythya affinis*), rusty blackbird (*Euphagus carolinus*), ring-necked duck (*Aythya collaris*), red-breasted merganser (*Mergus serrator*), trumpeter swan (*Cygnus buccinator*), greater scaup (*Aythya marila*), and killdeer (*Charadrius vociferus*) (Cornell Ebird, 2023).

Raptor species identified at the reservoir include bald eagle (*Haliaeetus leucocephalus*), broad-winged hawk (*Buteo platypterus*), Cooper's hawk (*Accipiter cooperii*), osprey (*Pandoin haliaetus*), sharp-shinned hawk (*Accipiter striatus*), and red-tailed hawk (*Buteo jamaicensis*) (Cornell Ebird, 2023).

The Gile Flowage provides summer feeding and breeding habitat for many avian species. Gulls, herons, woodpeckers, flycatchers, and swallows are among the non-game birds found at the reservoir each year. A diverse array of waterfowl such as geese, dabbling and diving ducks, shorebirds, and perching birds are also present at the reservoir. The complete ebird.com checklist is found in Appendix E-16 of Exhibit E.

#### *3.4.3.3 Herptile Species*

The iNaturalist online citizen science platform (iNaturalist.org) contains publicly sourced observations of flora and fauna throughout the world. Reported herptile observations in the Project vicinity include the northern leopard frog (*Lithobates pipiens*), green frog (*Lithobates clamitans*), spring peeper (*Pseudacris crucifer*), American toad (*Anaxyrus americanus*), and blue-spotted salamander (*Ambystoma laterale*). One snake was observed, the red-bellied snake (*Storeria occipitomaculata*), and there was one reported observation of a painted turtle (*Chrysemys picta*) (iNaturalist, 2023). A more thorough discussion on herptile species presumed to be in the Project vicinity is found in Section 3.6.1.2.3 of Exhibit E.

## 3.5 Threatened and Endangered Resources

### 3.5.1 Federally Listed Species

The USFWS Information for Planning and Conservation (IPaC) website was accessed on February 27, 2023 to develop an Official Species List for the Gile Project. The list identified the potential presence of three federally listed species, one proposed species, and one candidate species in the Project vicinity. In addition to the threatened, endangered, proposed, and candidate species, the official species list also identified the potential presence of the bald eagle within the Project vicinity. The IPaC Species List is summarized in **Table 3.5.1-1** below and described in the following sections. The official species list is found in Appendix E-17 of Exhibit E.

*Table 3.5.1-1 Threatened, Endangered, Candidate, and Proposed Species Identified in IPaC Official Species List*

| Common Name | Scientific Name | Group | Status |
|---|---|---|---|
| Canada Lynx | *Lynx canadensis* | Mammal | Threatened |
| Gray wolf | *Canis lupus* | Mammal | Endangered |
| Northern long-eared bat | *Myotis septentrionalis* | Mammal | Endangered |
| Tricolored bat | *Perimyotis subflavus* | Mammal | Proposed Endangered |
| Monarch butterfly | *Danaus plexippus* | Insect | Candidate |

Source: (US Fish and Wildlife Service, 2023)

#### *3.5.1.1 Canada Lynx*

The Canada lynx is a federally endangered mammal species associated with moist, cool, boreal spruce-fir forests with rolling terrain. They are dependent upon snowshoe hare populations and need persistent deep powdery snow, which limits competition from other predators. There is no designated critical habitat for the species in Wisconsin (USFWS, 2021a). A breeding population has never been discovered in Wisconsin and it is believed that most occurrences are drifters coming through Michigan or Minnesota. Wisconsin removed the lynx from the state's endangered species list due to the lack of a breeding population in the state. The species is now listed as protected by the state (UW Stevens Point, n.d.). While it is possible that lynx may pass through the Project vicinity, it is unlikely. Therefore, the proposed operation of the Project is not expected to impact the species.

#### *3.5.1.2 Gray Wolf*

The gray wolf was removed from the Wisconsin state endangered species list in 2004. In 2007, the USFWS delisted the Western Great Lakes wolf population (including Wisconsin and Michigan). The delisting rule was challenged in federal court and vacated in 2008 resulting in the gray wolf being relisted as federally endangered in Wisconsin and Michigan. In 2009, the USFWS again delisted the Western Great Lakes wolf population. Due to the failure to hold public hearings on the delisting, the rule was vacated via a federal court order in 2009, and wolves were relisted as endangered in Wisconsin and Michigan. Wolves retained this status until 2011 when the USFWS issued a new delisting rule. The rule was vacated by a federal court and wolves reverted back to federally endangered status in 2014. In 2020, the gray wolf was again delisted by a USFWS delisting rule. On February 10, 2022, the order was again vacated by a federal court restoring the endangered status for wolves in Wisconsin and Michigan, which remains in effect (WI Department of Natural Resources, 2022b).

The gray wolf is a federally endangered mammal that lives in family groups or packs. The wolf is a habitat generalist. During the winter of 2020-2021, there were an estimated 292 wolf packs in Wisconsin with an average territory size of 63.4 square miles (WI Department of Natural Resources, 2022b). They prefer areas which consist primarily of forestland and other wildland areas. They are common in northern Wisconsin and the Upper Peninsula of Michigan. Although wolves were not identified in Wisconsin's Natural Heritage Inventory review for the Project vicinity, they may occasionally pass through the Project.

#### *3.5.1.3 Northern Long-Eared Bat*

The NLEB is a federally and state threatened mammal. The species was reclassified from a federally threatened status to federally endangered status on November 30, 2022 (US Fish and Wildlife Service, 2022). The NLEB roosts during the summer months underneath loose bark or in cavities or crevices of both live and dead trees. Non-reproducing females and males may also roost in cool places such as caves or mines. The NLEB feeds in the forest interior and hibernates in caves and mines during the months of October through April. The location of hibernacula and maternity roost trees are tracked in Wisconsin's NHI. Iron County, Wisconsin is within the NLEB range. However, there are no known hibernacula or roost trees in the Project vicinity (WI Department of Natural Resources, 2022c). Project operations that involve removal of hazardous trees may impact unknown maternity roosts. There are no current or proposed plans to remove non-hazardous trees. However, NSPW has been directed by the FERC Division of Dam Safety and Inspections (D2SI) to remove four trees on the right earthen embankment for dam safety purposes. Any hazardous tree removal will follow the proposed mitigation measures discussed in Section 3.7.3 to prevent adverse impacts to the NLEB.

#### *3.5.1.4 Tricolored Bat*

On September 13, 2022, the USFWS proposed to list the tricolored bat as an endangered species under the Endangered Species Act. The bat faces extinction due to the impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the country (US Fish and Wildlife Service, n.d.). The tricolored bat is active from spring to fall, primarily roosting among live and dead leaf clusters of live or recently dead hardwood trees. The bat has also been known to roost in other areas including among pine needles, eastern red cedar, and within artificial roosts like barns, bridges, concrete bunkers, and rarely within caves. Female bats return to the same summer roosting locations year after year. The bat typically hibernates in caves and mines during the winter. Where caves are not common, it often hibernates in road culverts and sometimes in tree cavities and abandoned wells. The tricolored bat typically returns to the same hibernaculum each year (US Fish and Wildlife Service, n.d.).

The tricolored bat is also a state threatened species whose location is tracked in Wisconsin's NHI database. However, there are no known occurrences of the species within the Project vicinity (WI Department of Natural Resources, 2022c). Project operations that involve hazardous tree removal may impact unknown roost trees. There are no current or proposed plans to remove non-hazardous trees. NSPW has been directed by the FERC Division of Dam Safety and Inspections (DDSI) to remove four trees on the right earthen embankment for dam safety purposes. Any hazardous tree removal will follow the proposed mitigation measures in Section 3.7.3 to prevent adverse impacts to the tricolored bat.

#### *3.5.1.5 Monarch Butterfly*

On December 17, 2020, the USFWS announced the listing of the monarch butterfly as endangered or threatened was warranted but was precluded from making a formal announcement because of higher priority listing actions. The decision is the result of extensive species status review that evaluated the monarch's current and future status. The monarch is now a candidate species under the ESA. As a candidate species, its status will be reviewed annually until a listing decision is made (US Fish and Wildlife Service, 2020).

The monarch butterfly is one of the most recognized North American butterflies with its 3.5- to 4-inch-long orange and black wings. Wisconsin's monarchs are migratory, journeying to central Mexico for the winter each year. Adults feed on nectar collected from flowers (WI Department of Natural Resources, n.d.c).

### 3.5.2 State Listed Species

A review of the Wisconsin NHI database, conducted on December 22, 2022 by the WDNR, indicated three state threatened species are likely to be found in the vicinity of the Project. It also noted several bald eagle (Haliaeetus leucocephalus) nests located within the Project vicinity (WI Department of Natural Resources, 2022c). The threatened and endangered species likely to occur in the vicinity of the Project are shown in **Table 3.7.1.2-1** and the NHI review is found in Appendix E-18 (privileged document).

*Table 3.5.2-1 State Threatened or Endangered Species Likely to Occur in the Project Vicinity*

| Common Name | Scientific Name | Group | State Status |
|---|---|---|---|
| Little Brown Bat | *Myotis lucifugus* | Mammal | Threatened |
| Wood turtle | *Glyptemys insculpta* | Reptile | Threatened |
| Bald eagle | *Haliaeetus leucocephalus* | Bird | Federally Protected |
| Broad-leaved Twayblade | *Listera convallarioides* | Plant | Threatened |

Source: (WI Department of Natural Resources, 2022b)

#### *3.5.2.1 Little Brown Bat*

The little brown bat is a state threatened mammal species. It is insectivorous and forages primarily over open water and along edge habitat feeding on soft-bodied aquatic insects. The bat roosts in warm microclimates provide by tree snags, bat houses, and buildings during the summer and hibernates in caves and mines from October through April (WI Department of Natural Resources, n.d.h). Tree removal activities or construction work on structures occupied by the bat may impact the species.

#### *3.5.2.2 Wood Turtle*

The wood turtle is a state threated reptile species that prefers rivers and streams with adjacent riparian wetlands and upland deciduous forests. The species often forages in open wet meadows or shrub-carr habitats dominated by speckled alder. They overwinter in streams and rivers in deep holes or undercut banks where there is enough water flow to prevent freezing. The species typically remains within 300 meters of rivers and streams. The species nests in open or semi-open canopy areas containing gravel or sandy soils, typically within 60 meters (200 feet) of the water (WI Department of Natural Resources, n.d.a). Several tributaries entering the Gile Flowage may provide suitable habitat for the species.

A wood turtle study was completed in 2022 to provide additional information regarding the presence or absence of wood turtles within the Project boundary. The report was included in Appendix E-21 of Exhibit E and was filed as privileged information per the WDNR's request in order to protect sensitive locational information.

The objective of the study was to determine if wood turtles, wood turtle nesting habitat, or evidence of wood turtle nesting was present in three specific areas identified by the WDNR as having suitable habitat. The report concluded that while the study area provides foraging habitat for wood turtles, it is unlikely that they are nesting in the impounded areas studied (GAI Consultants, Inc., 2022b). It is more likely that nesting wood turtles would be limited to the free-flowing areas upstream of the reservoir and the areas studied.

#### *3.5.2.3 Bald Eagle*

The bald eagle lives near rivers, lakes, and marshes. In winter, birds congregate near open water in tall trees to locate prey and roost at night for sheltering. The bird mates for life and chooses the tops of large trees to build nests, which they typically use and enlarge each year. They may have one or more alternate nests within their breeding territory. Bald eagles typically return to breeding grounds within 100 miles of where they were raised. Project activities (e.g., maintenance, construction, etc.) that involve disturbance within 660 feet of a nest during the nesting season may cause impacts to the species (US Fish and Wildlife Service, 2021).

Several bald eagle nests have been recorded within the Project vicinity. Vegetation management and construction activities[5] that may occur between January 15 and July 30 within 660 feet of an active bald eagle nest may cause impacts to the species (WI Department of Natural Resources, 2022b).

[5] There are no construction activities being proposed as part of the license application. The only proposed recreation measure is the installation of additional or new canoe portage signs. Current and proposed vegetation management activities include as-needed removal of hazard trees (hand cutting) at the area open to the public on NSPW-owned property near the dam (0.6 acres), mowing on the earthen embankments at least annually during the growing season (0.9 acres), lawn mowing at least twice per month during open water season (0.3 acres-which includes the newly proposed portage trail), as-needed sign replacement, and annual grading of existing gravel driveways and parking areas (0.2 acres).

#### *3.5.2.4 Boad-leaved Twayblade*

Broad-leaved twayblade is a Wisconsin threatened plant found on seepage slopes and ravine bottoms in hardwoods or mixed forests. Blooming occurs from early June through late July and fruiting occurs from early July through late August. The optimal identification period for this species is from late June through late July (WI Department of Natural Resources, n.d.b). Ground disturbing or vegetation management activities occurring within areas of suitable habitat may impact the species.

## 3.6 Recreation Resources

The Gile Flowage provides opportunities for fishing, wildlife viewing, and water sports. It is also popular for ice fishing and snowmobiling in the winter season and acts as an all-terrain vehicle destination. During the open-water season, the flowage is used for sportfishing, pleasure boating, and swimming (EA Engineering, Science, and Technology, Inc., 2023). The West Fork downstream of the Gile Dam and the Montreal River downstream of the Saxon Falls Project are popular for whitewater boating when higher flows are available. Although neither of these popular whitewater boating reaches are part of the Gile Project, water releases from the Gile Dam have direct effect on the navigability of both.

NSPW operates and maintains the canoe portage at the Gile Dam. Four additional non-project recreation sites are located at the Project, however, none of these are operated or owned in their entirety by NSPW. The canoe portage is listed in **Table 3.6-1** and the four non-project sites are listed in **Table 3.6-2**. The locations of all recreation sites are shown in **Figure 3.6-1**. There are no formal recreation sites on any of the islands within the reservoir.

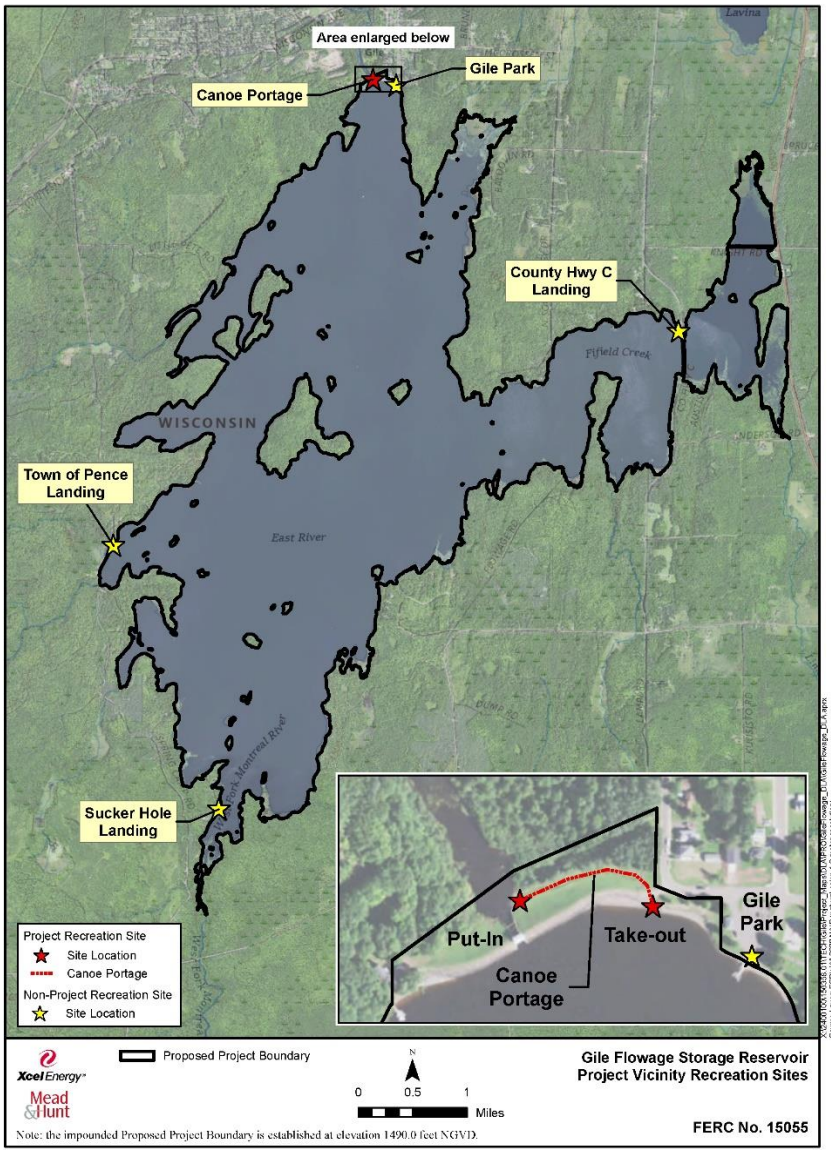
*Table 3.6-1 FERC-Approved Recreation Sites within the Gile Flowage Storage Reservoir Project Boundary*

| Recreation Site | Type | County | Owner | Operator |
|---|---|---|---|---|
| Gile Dam Canoe Portage | Project Recreation Site | Iron | NSPW | NSPW |

*Table 3.6-2 Non-Project Recreation Sites in the Gile Flowage Storage Reservoir Project Vicinity*

| Recreation Site | Type | County | Owner | Operator |
|---|---|---|---|---|
| Sucker Hole Landing | Non-Project Recreation Site | Iron | Iron County | Iron County |
| Town of Pence Landing | Non-Project Recreation Site | Iron | Town of Pence | Town of Pence |
| County Hwy C Landing | Non-Project Recreation Site | Iron | Iron County | Iron County |
| Gile Park | Non-Project Recreation Site | Iron | City of Montreal | City of Montreal |

*Figure 3.6-1 Recreation Sites Gile Flowage Storage Reservoir Project*




Pursuant to the study plan determination issued on September 24, 2021, NSPW conducted a Recreation Study that included an evaluation of existing recreation on undeveloped islands within the reservoir.

Recreational use was evaluated on the islands owned by NSPW or the public through spot counts and interviews during the July 4th holiday weekend. Observations included evidence of beaching or mooring of boats, shoreline fishing, picnicking, or the location of any erosion caused by recreational access and user-developed facilities.

Of the 43 islands surveyed, 22 exhibited no sign of past or present recreational use. Five islands had obvious landing areas, eight exhibited user-created hiking trails, 13 had at least one fire ring, 11 showed signs of at least one camp, and several had trash. One island had a duck blind while another island had a memorial plaque fixed to a rock. Those islands under private ownership were only viewed from the water (EA Engineering, Science, and Technology, Inc., 2023).

Given the rocky nature of many islands, erosion was limited. The only likely examples of human-caused erosion were observed on two islands, both of which were likely related to landing boats and foot traffic. Specific information about each island is enclosed in the Recreation Study Report in **Appendix E-23** of Exhibit E (EA Engineering, Science, and Technology, Inc., 2023).

Spot counts were conducted on all islands. Active recreational activity was absent from all islands except one. That activity involved an individual camping on an island and was interviewed on July 2, 2022. The individual had been camping there since June 30, 2022 and expected to leave on July 4, 2022 (EA Engineering, Science, and Technology, Inc., 2023).

### 3.7 Aesthetic Resources

The Gile Dam forms the 3,325-acre Gile Flowage Storage Reservoir. The reservoir features a primarily undeveloped wooded shoreline with numerous rock outcrops and bedrock islands that greatly enhances the aesthetics. There are also several waterfalls accessible to the public downstream of the Project on both the West Fork and the Montreal River below its confluence with the West Fork. A more thorough discussion of aesthetic resources at the Project is included in Section 3.10 of Exhibit E.

### 3.8 Land Use

The Project is located within the Town of Carey and Town of Pence in Iron County, Wisconsin. Major land uses in the Town of Carey consist of 98.9% woodlands or other natural areas, 0.6% open space, 0.3% agriculture, and 0.1% residential (Town of Carey, 2005a). The Town of Pence has similar land uses with 99.7% woodlands or other natural areas, 0.1% primary residential, 0.1% open space and less than 0.1% each for parks and recreation, industrial, commercial, and government and institutional (Town of Pence, 2005b).

### 3.9 Archaeological, Historic, and Cultural Resources

Per the requirements of the Programmatic Agreement, an investigation of historical properties identified the Gile Dam as a property within the Area of Potential Effect (APE).[6] The Archaeological Shoreline Monitoring Study identified one known cultural resource site adjacent to and overlapping the APE (Montreal Company Historic District) and one Government Land Office-mapped trail within the APE. The field survey effort did not identify any archaeological properties impacted by Project operations. The Archaeological Shoreline Monitoring Study report concluded there are no properties eligible for the NRHP within the Project APE. The report is found in Appendix E-26 of Exhibit E.

### 3.10 Socioeconomic Resources

The two largest cities in the vicinity of the Project are the neighboring cities of Hurley (Iron County, Wisconsin) and Ironwood (Gogebic County, Michigan). Data from the 2020 census indicated the population of the City of Hurley was 1,561 and the population of the City of Ironwood was 5,045.

[6] On December 30, 1993, the Programmatic Agreement among the FERC, 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 was executed (Programmatic Agreement).

The 2020 census indicated the population of Iron County, Wisconsin was 6,137, resulting in an average population density of 8.1 persons per square mile and an average of 2.13 persons per household (US Census Bureau, n.d.).

The 2020 census indicated the population of Gogebic County, Michigan was 14,380, resulting in an average population density of 13.0 persons per square mile and an average of 2.09 persons per household (US Census Bureau, n.d.).

The largest employment sectors for Iron County, include the following in order of prevalence: educational services, health care, and social assistance; manufacturing; arts, entertainment, recreation, accommodation, and food services; and construction.

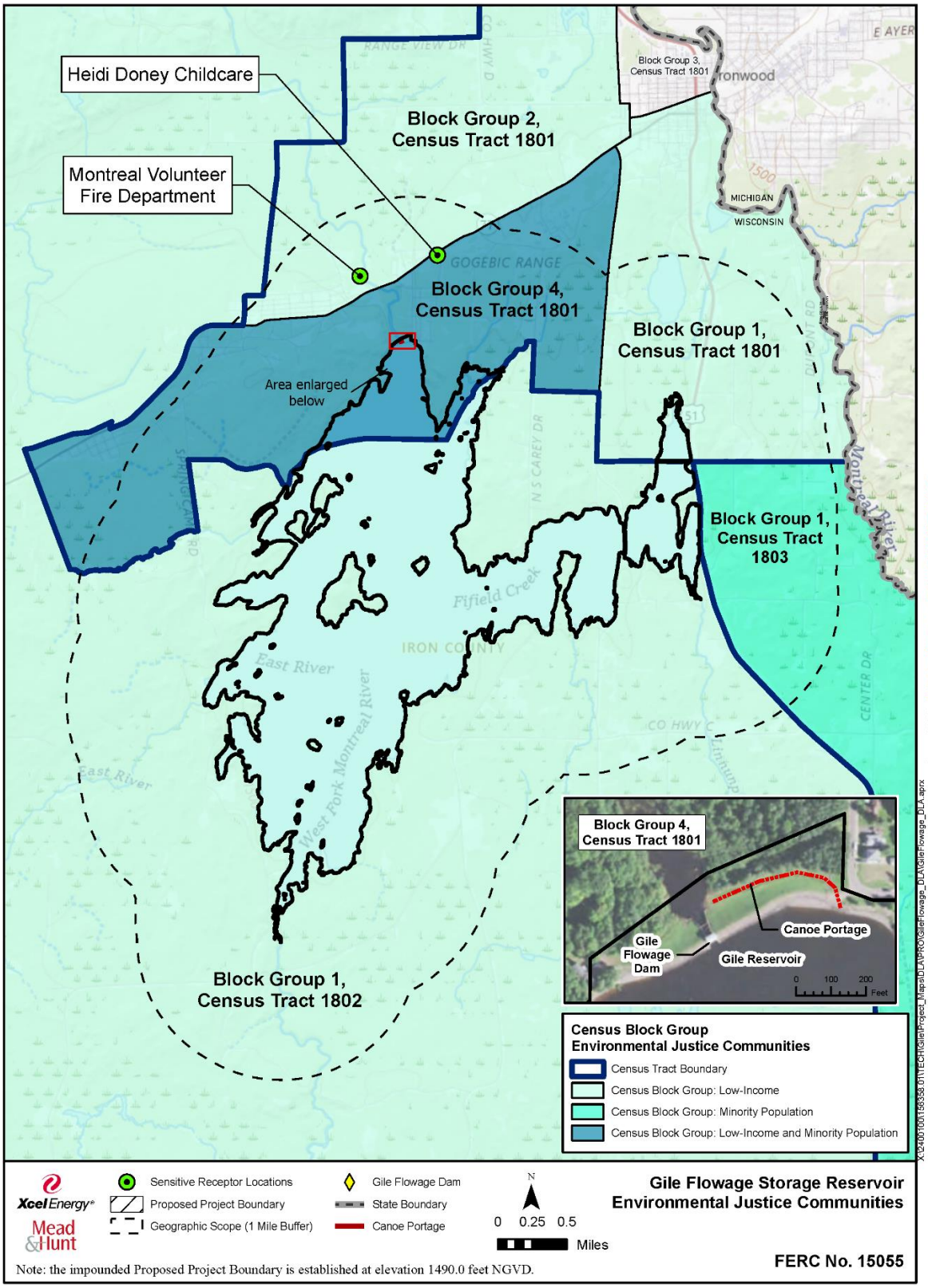
The largest employment sectors for Gogebic County, Michigan include the following in order of prevalence: educational services, health care, and social assistance; manufacturing; retail trade; and arts, entertainment, recreation, accommodation, and food services.

The Project has a beneficial effect to the socioeconomic resources in the Project vicinity by providing outdoor recreational opportunities on the reservoir as well as downstream in the West Fork. These recreational opportunities contribute to the local economy.

### 3.11 Environmental Justice

NSPW conducted an analysis of Environmental Justice (EJ) communities within the geographic scope of the Project when developing the FLA. The analysis identified five EJ communities as shown in **Figure 3.11-1**. Three were identified as EJ communities due to low income, one due to minority population, and one due to both minority population and low income. The full EJ analysis is located in Section 3.13 of Exhibit E.

*Figure 3.11-1 EJ Communities within the Geographic Scope of the Project*



The EJ review conducted during development of the FLA did not identify any adverse impacts to any EJ communities as a result of continued operation of the Project.

# 4. Anticipated Effects

The proposed action consists of removing NSPW's island ownership above elevation 1490.0 feet NGVD from the Project boundary. The islands, along with NSPW's mainland ownership adjacent to the reservoir, are being sold to Iron County with the stipulation that they remain open to the public in perpetuity for recreational purposes. The anticipated effects from the proposed action, including the procedures to mitigate any adverse impacts of said action, are discussed in the following paragraphs.

## 4.1 Geology and Soils

As noted in Section 3.1, the 2022 soil stability study identified 5 erosion sites on NSPW's islands. The erosion was limited to the thin soil layer atop the bedrock. No additional investigation or mitigation was recommended at any of the sites. Additionally, NSPW has proposed to monitor the project shoreline for erosion, including the islands, every 5 years over the term of the license. NSPW will forward the results of the erosion survey to Iron County in the event any erosion is identified along their shoreline ownership.

The proposed action is unlikely to cause adverse impacts to geology, soil resources, or water quality as the islands will continue to be managed in a natural state. The limited erosion currently identified on the islands, and the minimal sedimentation resulting therefrom, is unlikely to result in adverse water quality impacts. Furthermore, the shoreline erosion monitoring, as proposed above, will ensure that any significant erosion is identified in a timely fashion and mitigated as appropriate.

## 4.2 Water Quantity and Water Quality

The proposed action will have no effect on water level management or operation of the Project. As noted above, sedimentation from the limited amount of erosion identified on the islands is unlikely to result in adverse effects to water quantity or quality.

## 4.3 Fish and Aquatic Resources

### 4.3.1 Aquatic Vegetation

The proposed action will have no effect on water level management or operation of the Project. Therefore, no adverse impacts to aquatic vegetation are anticipated.

### 4.3.2 Wetlands

As noted in Section 3.3.2, the removal of the islands from the proposed Project boundary will result in 4.9 acres less of wetlands located within said boundary. Since the islands will be maintained in their natural state by Iron County, and the wetlands will remain under various local, state, and federal protections, their removal from the proposed Project boundary is not anticipated to result in adverse impacts.

### 4.3.3 Fisheries

The proposed action will have no effect on water level management or operation of the Project. Therefore, no impacts to fish habitat or fish populations are anticipated.

#### 4.3.4 Mussels

The proposed action will have no effect on water level management or operation of the Project. Therefore, no impacts to mussel habitat or mussel populations are anticipated.

#### 4.3.5 Aquatic Invasive Species

The proposed action will have no effect on water level management or operation of the Project. Therefore, no effects to aquatic invasive species are anticipated.

### 4.4 Terrestrial Resources

#### 4.4.1 Botanical Resources

No adverse impacts to botanical resources are anticipated as Iron County will maintain the islands in their current natural state and no changes to water level management or operations are being proposed.

#### 4.4.2 Terrestrial Invasive Species

Iron County will continue to maintain the islands in their natural state. While existing recreational use of the islands is light, it has the potential to spread invasive species. In the FLA, NSPW proposed to develop a rapid response invasive species monitoring plan to monitor for the introduction of new invasive species and limit the dispersal of established species. The plan will incorporate measures for both aquatic and terrestrial invasive species and include a proposal for biennial surveys. The surveys will include an inspection of the Project shoreline, including that of the islands, for terrestrial invasive species. NSPW will forward results of the biennial surveys to Iron County in the event invasive species are identified on their ownership. The proposed action is not anticipated to result in any additional impacts to terrestrial invasive species with the implementation of the proposed environmental measures.

#### 4.4.3 Wildlife Resources

The proposed action will have no effect on water level management or operation of the Project. As Iron County plans to maintain the islands in their natural state, no adverse impacts to terrestrial mammal, avian, or herptile species are anticipated.

### 4.5 Threatened and Endangered Species

#### 4.5.1 Federally Listed Species

##### *4.5.1.1 Canada Lynx*

While it is possible that lynx may pass through the Project vicinity, including the islands when the reservoir is ice-covered, it is unlikely. Therefore, the proposed action is not expected to impact the species.

##### *4.5.1.2 Gray Wolf*

Although wolves were not identified in Wisconsin's Natural Heritage Inventory review for the Project vicinity, they may occasionally pass through the Project. However, it is unlikely that wolves passing through the Project would utilize the islands. Therefore, the proposed action is not expected to impact the species.

#### *4.5.1.3 Northern Long-eared Bat*

No roost trees or hibernacula have been identified within the Project APE. The proposed action is not anticipated to result in the removal of any roosting trees or result in the loss of any roosting habitat. Therefore, the proposed action is not expected to adversely impact the species.

#### *4.5.1.4 Tricolored Bat*

No roost trees or hibernacula have been identified within the Project APE. The proposed action is not anticipated to result in the removal of any roosting trees or result in the loss of any roosting habitat. Therefore, the proposed action is not expected to adversely impact the species.

#### *4.5.1.5 Monarch Butterfly*

The islands within the Project reservoir are heavily wooded or consist of bedrock outcrops that do not provide suitable habitat for the species. Therefore, the proposed action is not expected to adversely impact the species.

### 4.5.2 State Listed Species

#### *4.5.2.1 Little Brown Bat*

The proposed action does not involve tree removal or construction activities on structures that may be occupied by the species. Therefore, no adverse effects to the species are anticipated.

#### *4.5.2.2 Wood Turtle*

As noted in Section 3.5.2.2 above, the 2022 Wood Turtle Study concluded that while the study area provided foraging habitat for wood turtles, it is unlikely that they are nesting on the islands proposed for transfer to Iron County. Therefore, the proposed action is not expected to have any adverse effect on the species.

#### *4.5.2.3 Bald Eagle*

A review of the NHI database identified three eagle nests within a 660-foot buffer of the proposed Project boundary. However, none of the nests are located within a 660-foot buffer of any islands to be transferred to Iron County. The proposed action also does not involve any ground disturbing or vegetation management activities that have the potential to impact the species. Therefore, no adverse impacts to the species are anticipated.

#### *4.5.2.4 Broad-leaved Twayblade*

The islands proposed for transfer to Iron County do not feature the seepage slopes or ravine bottoms that are preferred by the species. Therefore, the proposed action is expected to have no effect on the species.

## 4.6 Recreation Resources

As noted in Section 3.6 above, there are no formal recreation sites located on the islands and recreational use is light. Iron County will continue to maintain the islands in their natural state while keeping them open to the public in perpetuity for recreation.

NSPW has withdrawn its proposal to develop a land management plan for its island ownership because once the lands are transferred to Iron County, NSPW will have no authority to manage them. There are

no formal recreation sites on the islands and recreational use is light. Therefore, the proposed action is not expected to result in any adverse impacts to recreation.

### 4.7 Aesthetic Resources

The proposed action will have no effect on water level management or operation of the Project and Iron County plans to maintain the islands in their natural state. Therefore, no adverse impacts to aesthetic resources are anticipated.

### 4.8 Land Use

The proposed action will have no effect on water level management or operation of the Project and Iron County plans to maintain the islands in their current natural state. Therefore, no adverse impacts to land use are anticipated.

### 4.9 Archaeological, Historic, and Cultural Resources

As noted in Section 3.6 above, field surveys did not identify any properties eligible for the NRHP within the project APE. Additionally, in the FLA, NSPW proposed to develop a Historic Properties Management Plan (HPMP) in consultation with the Wisconsin SHPO, Sokaogon Chippewa Community Mole Lake Band, and Fond-Du-Lac Band of the Lake Superior Chippewa following the requirements of the Programmatic Agreement. The HPMP will include a requirement to monitor the Project shoreline for the occurrence of any substantial shoreline erosion not previously documented within 5 years of license issuance. The HPMP will also include measures to protect, mitigate, or enhance cultural, historical, and archaeological resources such that the Project operation does not adversely impact cultural/archaeological/historic properties currently identified and properties that may be identified in the future. These proposed environmental measures will ensure that any currently unknown cultural sites identified in the future that may be impacted by Project operations will be protected. Therefore, the proposed action is not expected to adversely impact archaeological, historic, or cultural resources.

## 5. Conclusion

The proposed action is not expected to result in adverse impacts to any of the resources evaluated in this assessment.

# 6. Works Cited


Ayres Associates. (2016). *2016 Consultant Safety Inspection Report for Gile Reservoir Dam-WDNR Field File No 26.09.*

Citypopulation. (n.d.). *USA:Wisconsin Counties and Towns*. Retrieved March 6, 2023, from Citypopulation: http://www.citypopulation.de/en/usa/wisconsin/admin/

Cornell Ebird. (2023). *Ebird Field Checklist, Gile Flowage, Iron County Wisconsin, US*. Retrieved February 20, 2023, from Cornell Ebird: https://ebird.org/printableList?regionCode=L913526&yr=all&m=,

EA Engineering, Science, and Technology, Inc. (2023). *Recreation Report for the Gile Flowage Storage Project (FERC Project No. 15055).* January, 2023.

Enviroscience. (2022). *Freshwater Mussel Study for the Gile Flowage Storage Reservoir FERC No. 15055.* September 16, 2022.

GAI Consultants, Inc. (2022). *Aquatic and Terrestrial Invasive Species Study Report.* September 2022.

Great Lakes Environmental Center. (2022a). *Initial Study Report for Gile Flowage Storage Project (FERC Project No. 15055) Minimum Flow and Habitat Evaluation Study and Shoreline Stability Assessment.* September 22, 2022.

Great Lakes Environmental Center. (2022b). *Initial Study Report for Gile Flowage Storage Reservoir (FERC Project No. 15055) Water Quality Monitoring.* September 22, 2022.

Mead & Hunt. (2023). *Flow Duration for West Fork of Montreal River at Gile Dam (period of record 1994-2021) Gile Flowage Storage Reservoir Project.* March 1, 2023.

Mead & Hunt. (2024). *Geographic Information System derived proposed Project boundary and associated wetland acreages.* September 4. 2024.

NSPW. (1988). *Application for a Minor Water Power Project Pursuant to Section 4(e) of the Federal Power Act for the Saxon Falls Hydro Project FERC No. 2610.* December 16, 1988.

NSPW. (1991). *Application for a License for a Minor Water Power Project, Superior Falls Hydroelectric Project, FERC Project No. 2587. FERC Accession No 19991123-0323.* December 16, 1991.

NSPW. (2020). *Notice of Intent and Pre-Application Document of Northern States Power Company-Wisconsin Under P-15055. FERC Accession No. 20201117-5181.* November 17, 2020.

Town of Carey. (2005a). *Town of Carey Comprehensive Plan, Element 8 Land Use*. Retrieved February 23, 2023, from Northwest Regional Planning Commission: http://www.nwrpc.com/DocumentCenter/View/309/Element-8---Land-Use---Carey

Town of Pence. (2005b). *Town of Pence Comprehensive Plan, Element 8 Land Use*. Retrieved from Northwest Regional Planning Commission: http://www.nwrpc.com/DocumentCenter/View/513/Element-8---Land-Use

US Census Bureau. (n.d.). *Quickfacts Ironwood city, Michigan; Gogebic County, Michigan; Iron County, Wisconsin*. Retrieved February 22, 2023, from US Census Bureau: https://www.census.gov/quickfacts/fact/table/ironwoodcitymichigan,gogebiccountymichigan,ironcountywisconsin,US/PST045222

US Fish and Wildlife Service. (2020). *Endangered and Threatened Widlife and Plants, 12-Month Finding for the Monarch Butterfly.* Federal Register, Vol. 85, No. 243, Pg. 8183, December 17, 2020.

US Fish and Wildlife Service. (2021). *Bald Eagle (Haliaeetus leucocephalus).* February 2021. Retrieved July 11, 2022, from https://www.fws.gov/media/bald-eagle-fact-sheet-0

US Fish and Wildlife Service. (2023). *Gile Flowage Storage Project Licensing Official Species List.* February 27, 2023.

US Geological Survey. (n.d.). *The National Map Viewer*. Retrieved February 21, 2023, from USGS: https://apps.nationalmap.gov/viewer/

USDA Natural Resources Conservation Service. (n.d.). *Web Soil Survey*. Retrieved September 12, 2019, from USDA Natural Resources Conservation Service: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

UW Stevens Point. (n.d.). *Lynx canadensis - Canadian Lynx*. Retrieved July 31, 2023, from Vertebrate Collection: https://www3.uwsp.edu/biology/VertebrateCollection/Pages/Vertebrates/Mammals%20of%20Wisconsin/Lynx%20canadensis/Lynx%20canadensis.aspx

Whitewater Associates. (2005). *Gile Flowage Watershed Project Report, Environmental Information Review, and Water Quality Monitoring (Iron County, Wisconsin).* November 17, 2005.

WI Department of Natural Resources. (2010). *Recommended Baseline Monitoring of Aquatic Plants in Wisconsin.* March, 2010. Retrieved Febraury 28, 2023, from https://www3.uwsp.edu/cnr-ap/UWEXLakes/Documents/ecology/Aquatic%20Plants/PI-Protocol-2010.pdf

WI Department of Natural Resources. (2015). *The Ecological Landscapes of Wisconsin an assessment of the ecological resources and a guide to planning sustainable managment. Chapter 12 North Central Forest Ecological Landscape. PUB-SS-1131J2014.* Madison.

WI Department of Natural Resources. (2022a). *Appendix E, 2022 Healthy Waters List*. Retrieved February 26, 2023, from file:///C:/Users/2314dmj/Downloads/AppendixE_HWL2022.pdf

WI Department of Natural Resources. (2022b). *Gile Project Endangered Resources Review (ERR Log # 19-734).* December 22, 2022.

WI Department of Natural Resources. (n.d.a). *Wood Turtle (Glyptemys insculpta)*. Retrieved February 1, 2023, from WDNR: https://dnr.wi.gov/topic/EndangeredResources/Animals.asp?mode=detail&SpecCode=ARAAD02020

WI Department of Natural Resources. (n.d.b). *Broad-leaved Twayblade (Listera convallarioides)*. Retrieved March 1, 2023, from WDNR: https://dnr.wi.gov/topic/EndangeredResources/Plants.asp?mode=detail&SpecCode=PMORC1N050

WI Department of Natural Resources. (n.d.c). *Monarch (Danaus plexxippus)*. Retrieved February 28, 2023, from https://dnr.wi.gov/topic/EndangeredResources/Animals.asp?mode=detail&SpecCode=IILEPP2010