August 2025

Development of a Tiered Aquatic Life Use Framework for Minnesota Lakes

Based on fish index of biological integrity scores and thresholds.

mn MINNESOTA

Pollution Control Agency
Department of Natural Resources
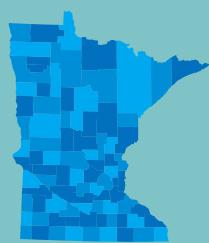
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Acronyms or abbreviations

1W1P	One Watershed One Plan
2A	Aquatic Life and Recreation – Coldwater Aquatic Life and Habitat
2Ae	Aquatic Life and Recreation – Exceptional Use Coldwater Aquatic Life and Habitat
2Ag	Aquatic Life and Recreation – General Use Coldwater Aquatic Life and Habitat
2B	Aquatic Life and Recreation – Cool and Warm Water Aquatic Life and Habitat
2Be	Aquatic Life and Recreation – Exceptional Use Cool and Warm Water Aquatic Life and Habitat
2Bg	Aquatic Life and Recreation – General Use Cool and Warm Water Aquatic Life and Habitat
BCG	Biological Condition Gradient
BWSR	Board of Water and Soil Resources
CWA	Clean Water Act (33 U.S.C. § 1251 et seq.)
DOW	Division of Waters number
EPA	U.S. Environmental Protection Agency
FIBI	Fish-based Index of Biological Integrity
FMA	Fisheries Management Area
FQI	Floristic Quality Index
GAM	Generalized additive model
HUC 8	8-digit Hydrological Unit Code
IBI	Index of Biological Integrity
IWM	Intensive Watershed Monitoring
LAT	Lake Trout
LGU	Local Government Unit
LKW	Lake Whitefish
LOBS	Lakes of Biological Significance
MBS	Minnesota Biological Survey
Minn. R.	Minnesota Rules
Minn. Stat.	Minnesota Statutes
MN	Minnesota
MNDNR	Minnesota Department of Natural Resources
MPCA	Minnesota Pollution Control Agency
NPDES	National Pollutant Discharge Elimination System
NLCD	National Land Cover Database
SID	Stressor Identification
SRT	Stream Trout spp.
TALU	Tiered Aquatic Life Uses
TLC	Cisco (Tullibee)
TMDL	Total Maximum Daily Load
TP	Total Phosphorus
U.S.C.	United States Code
WID	Waterbody identification number (Minnesota Pollution Control Agency)
WQS	Water Quality Standards
WRAPS	Watershed Restoration and Protection Strategy

Definitions

The following definitions of terms used in this document are based on standard use and are provided for the convenience of the reader. Unless otherwise specified, these definitions are specific to this document.

Antidegradation: The element of state water quality standards (WQS) that protects and maintains existing uses, prevents degradation of high-water quality unless certain conditions are met, and which protects and maintains the quality of outstanding resource waters.

Aquatic Biota: The aquatic community composed of game and nongame fish, minnows and other small fish, mollusks, insects, crustaceans and other invertebrates, submerged or emergent rooted vegetation, suspended or floating algae, substrate-attached algae, microscopic organisms, and other aquatic-dependent organisms that require aquatic systems for food or to fulfill any part of their life cycle, such as amphibians and certain wildlife species. See Minn. R. 7050.0150, subp. 4.

Aquatic Life Use: A designated use that protects aquatic biota including fish, insects, mollusks, crustaceans, plants, microscopic organisms and all other aquatic-dependent organisms. Attainment of aquatic life uses are measured directly in Minnesota using Indices of Biological Integrity (IBIs) and biological criteria. Chemical and physical standards are also used to protect aquatic life uses.

Aquatic Life Use Goals: A goal for the condition of aquatic biota; required by the Clean Water Act (CWA). Minimum aquatic life use goals are established using the CWA interim goal ("…water quality which provides for the protection and propagation of fish, shellfish, and wildlife…"). The objectives for these goals are established in Minnesota Rule using narrative standards, numeric standards, or both. Attainment of these goals is directly measured in Minnesota using IBIs and associated "Biological Criteria" or "Biocriteria."

Assemblage: A taxonomic subset of a biological community such as fish in a stream community. See Minn. R. 7050.0150, subp. 4.

Beneficial Use: A designated use described under Minn. R. 7050.0140 and listed under Minn. R. 7050.0400 to Minn. R. 7050.0470 for each surface water or segment thereof, whether or not the use is being attained. (The term "designated use" may be used interchangeably.) See also "Existing Use."

Biological Assessment: An evaluation of the biological condition of a water body using surveys of the structure and function of an assemblage of resident biota. It also includes the interdisciplinary process of determining condition and relating that condition to chemical, physical, and biological factors that are measured along with the biological sampling. Guidance for performing biological assessments in Minnesota is described in MPCA (2018a; https://www.pca.state.mn.us/sites/default/files/wq-iw1-04j.pdf). (The term "bioassessment" may be used interchangeably.)

Biological Condition Gradient (BCG): A concept describing how aquatic communities change in response to increasing levels of stressors. In application, the BCG is an empirical, descriptive model that rates biological communities on a scale from natural to highly degraded.

Biological Criteria,[1] Narrative or Biocriteria, Narrative: Written statements describing the attributes of the structure and function of aquatic assemblages in a water body necessary to protect the designated aquatic life beneficial use. See Minn. R. 7050.0150, subp. 4.

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[1] The term "biological criteria" can be used interchangeably with "biological standard." Minnesota rule uses the term "standard" to mean "*a number or numbers established for a pollutant or water quality characteristic to protect a specified*

Biological Criteria,[1] **Numeric or Biocriteria, Numeric:** Specific quantitative measures of the attributes of the structure and function of aquatic communities in a water body necessary to protect the designated aquatic life beneficial use. See definition in [Minn. R. 7050.0150, subp. 4](#).

Biological Integrity: The condition where "the biota is a balanced, integrated, adaptive system having a full range of ecosystem elements (genes, species, assemblages) and processes (mutation, demographics, biotic interactions, nutrient and energy dynamics, metapopulation dynamics) expected in areas with no or minimal human influence" (after Karr 2000).

Biological Monitoring: The measurement of a biological entity (taxon, species, assemblage) as an indicator of environmental conditions. Ambient biological surveys and toxicity tests are common biological monitoring methods. (The term "biomonitoring" may be used interchangeably.)

Clean Water Act (CWA): An act passed by the U.S. Congress to control water pollution (formally referred to as the Federal Water Pollution Control Act of 1972). [33 U.S.C. § 1251](#) et seq.

Criteria: Narrative descriptions or numerical values which describe the chemical, physical, or biological conditions in a water body necessary to protect designated uses. See also the definitions for "biological criteria/biocriteria" and "standard".

Designated Use: See "beneficial use."

Division of Waters number (DOW): The Minnesota Department of Natural Resources (MNDNR) assigns lakes a unique Division of Waters numbers (DOW) which are used to identify assessment units and track management efforts. DOWs are also used to assign and track designated uses. Numbering follows the format of XXYYYYZZ where XX is a county code (alphabetically assigned), YYYY is a random, unique basin number in that county, and ZZ is the sub-basin or embayment number. These numbers are referred to as waterbody identification numbers (WID) or assessment unit identification numbers (AUID) by the Minnesota Pollution Control Agency (MPCA). The composition of these identification numbers is similar for the MPCA and MNDNR. The only difference is the MPCA includes hyphens between the county code, basin number, and embayment number. For example, the lake identification number used by the MPCA could be "01-0001-00" and for the same lake the MNDNR will use "01000100."

Existing Use: Those uses actually attained in the surface water on or after November 28, 1975. See definition in [Minn. R. 7050.0255](#), subp. 15.

Fish Index of Biological Integrity: An index developed by the MNDNR that compares the types and numbers of fish observed in a lake to what is expected for a healthy lake (range from 0–100). More information can be found at the [MNDNR Lake Index of Biological Integrity website](#).

Floristic Quality Index: An index developed by the MNDNR that assesses anthropogenic effects on plant communities based on plant species tolerance to disturbance (range from 0–46.4, where a lower FQI indicates a less diverse community with fewer intolerant species).

Standard: Regulatory limits on a particular pollutant, or a description of the condition of a water body, presumed to support or protect the beneficial use or uses. Standards may be narrative or numeric and

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beneficial use" ([Minn. R. 7050.0218, subp. 3](#)). The EPA's use of the term "criteria" is similar to Minnesota's use of "standard." "Biological criteria" and "biocriteria" are the terms most used in the United States to refer to numerical values, which represent the biological condition or health necessary to protect designated uses. Using Minnesota rule terminology, these values would be called "biological criteria" or "biocriteria" before promulgation and "biological standards" following promulgation in rule. However, to be consistent with the terminology used by federal agencies and by other states and tribes, the terms "biological criteria" and "biocriteria" are used in this document and in rule to refer to both the promulgated and unpromulgated values.

are commonly expressed as a chemical concentration, a physical parameter, or a biological assemblage endpoint. See also the definitions for "biological criteria/biocriteria" and "criteria".

Stressors: Physical, chemical, and biological factors that can adversely affect aquatic organisms. The effect of stressors is apparent in biological responses because stressor conditions are outside the conditions for which an organism is adapted. This leads to changes in the fitness of organisms and changes in the composition of organisms found in aquatic communities. Under the effect of stressors, the normal functioning of organisms is disturbed (e.g., increased metabolism, interruption of behavior) which results in negative impacts such as decreased fitness, reduced growth, increased disease prevalence, interruption of reproductive behavior, increased emigration, and increased mortality. Examples of stressors in aquatic systems are excess nutrients, physical habitat alteration, altered interspecific competition, low dissolved oxygen, and increased temperature regimes.

Tiered Aquatic Life Uses: Tiered aquatic life uses or TALUs are designated uses assigned to water bodies based on their ecological potential and the ability to protect or restore a water body to that attainable level. This means that the assignment of a TALU tier to a specific water body is done based on reasonable restoration or protection expectations and attainability. Knowledge of the current condition of a water body and an accompanying and adequate assessment of stressors affecting that water body are needed to make these assignments.

Tiered Aquatic Life Use Framework: A TALU framework is the structure of designated aquatic life uses that incorporates a hierarchy of use subclasses. The TALUs in a TALU framework are based on representative ecological attributes reflected in the narrative description of each TALU tier and embodied in the measurements that extend to expressions of that narrative through numeric biological criteria and, by extension, to chemical and physical indicators, and standards.

Total Maximum Daily Load: The maximum amount of a pollutant that a body of water can receive while still meeting WQS. Alternatively, a TMDL is an allocation of a water pollutant deemed acceptable to still attain the beneficial use assigned to the water body. See 40 CFR § 130.7.

Water Quality Standards (WQS): A law or regulation that consists of the beneficial use or uses of a water body, the narrative or numerical WQS that are necessary to protect the use or uses of that particular water body, and antidegradation.

A. Overview

The Minnesota Pollution Control Agency (MPCA) and Minnesota Department of Natural Resources (MNDNR) have developed revisions to Minnesota's water quality rules for determining aquatic life use condition in lakes. The goal of the draft rule revisions is to establish a framework for assessing fish community health which will improve protections for biological communities and their habitats in Minnesota lakes. The draft rule revisions will implement a Tiered Aquatic Life Use (TALU) framework for classifying lakes based on their highest attainable aquatic life use. This draft framework is similar to the framework currently used to assess Minnesota streams. Currently, General Use[2] biocriteria are used as numeric translators for narrative standards to determine biological impairments for lakes based on their fish communities. These amendments would add an Exceptional Use tier with associated biocriteria for lakes with diverse and unique fish communities, as indicated by a high fish index of biological integrity (FIBI) score. Numerous lakes, both in watersheds with minimal human disturbance and in watersheds with increasing human disturbance, currently have exceptional fish communities, and would benefit from a TALU approach. Adding Exceptional Use biocriteria will limit the amount of degradation that can occur in high quality lakes before remediation is needed. In addition, the TALU framework will continue to identify lakes with degraded fish communities that do not meet Clean Water Act (CWA) minimum goals (i.e., do not meet General Use goals) and to guide restoration and protection activities for lakes that do not support exceptional fish communities.

Adoption of a TALU framework for lakes in Minnesota will meet the following needs:

1. Incorporate subcategories or tiers into the aquatic life beneficial use (Class 2) classification to address the diversity of lake resources in Minnesota. Minnesota's aquatic resources are varied and diverse and the existing "one-size-fits-all" approach fails to recognize critical differences, which can result in less effective management of these waters. The TALU framework results in attainable and appropriate goals for aquatic life beneficial uses in lakes. It is consistent with the concept of protecting existing uses while simultaneously providing higher goals for waters with demonstrated exceptional biological quality and maintaining current goals for General Use waters. To accomplish this, Class 2 aquatic life beneficial uses will be refined for lakes by the addition of Exceptional and General use tiers to the Class 2 designation. These tiers are described as follows:

   - Exceptional Use: Exceptional Use lakes are those that are near natural or undisturbed conditions. There is a need to protect and maintain high-quality lakes in Minnesota. Establishing an Exceptional Use tier will help ensure that existing water quality rules, such as antidegradation, can adequately protect high quality lakes.

   - General Use: The General Use maintains the current default aquatic life use goal (Class 2B). These waters support good biological communities consistent with the CWA's interim goal (i.e., "…water quality which provides for the protection and propagation of fish, shellfish, and wildlife…").

2. Improve standards by incorporating numeric biological criteria directly into rule. Water quality standards (WQS) can be either narrative or numeric. Narrative standards describe water quality conditions that are not allowed because the conditions negatively affect beneficial uses (e.g., "the species composition shall not be altered materially" Minn. R. 7050.0150, subp. 3). Numeric standards establish numeric thresholds for pollutants that, when violated, indicate a polluted

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[2] Although not currently defined as "General Use" in Minnesota rule, the current protections for aquatic life in lakes under Class 2 are equivalent to the draft General Use.

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condition (e.g., a minimum of 5 mg/L of dissolved oxygen). The MPCA currently uses biological criteria to quantitatively translate the narrative biological standards in Minn. R. 7050.0150, subp. 3. The TALU framework brings biological criteria directly into rule as a clear numeric standard. Numeric biological criteria stratified by lake type and TALU will be added to Minn. R. 7050.0222 to clarify the biological expectations for Minnesota's lakes. Such added clarity about biological expectations provides greater certainty to stakeholders and regulated parties. The draft TALU biological criteria for Minnesota lakes consist of General Use biological criteria for four lake types and Exceptional Use biological criteria for two lake types.

3. Create more clarity in rule by documenting the methods used to establish biological conditions and biological criteria. For clarity, consistency in application, and transparency, the draft TALU framework amendments include descriptions of each tiered aquatic life use (i.e., Exceptional and General). These revisions will also provide an explanation of the specific scientific methods used to measure biological condition and derive the biological criteria. This includes documentation of the development of Minnesota's FIBI and the Biological Condition Gradient (BCG), which together support biological condition determinations and biological criteria.

4. Improve targeting of water management resources. Biological assessments are used to make decisions about water quality management activities. Greater assessment accuracy leads to increased water quality management efficiency because resources are not used to restore waters beyond what is currently attainable nor are high quality waters under-protected. The TALU framework refines Minnesota's aquatic life use classification framework and improves the management of lakes by assigning appropriate and attainable beneficial use classifications. The TALU framework thereby recognizes the diversity of attainable conditions in Minnesota lakes so that management of these waters can be focused on managing these lakes to their highest attainable condition. This results in better use of protection and restoration resources with a goal of maintaining and improving conditions.

5. Designation of a subset of Exceptional Use lakes. A subset of lakes monitored as part of the Intensive Watershed Monitoring (IWM) framework will be reclassified where adequate existing monitoring data has demonstrated that the lake meets or met the Exceptional Use goals for fish on or after November 28, 1975. This subset of lakes provides a demonstration of how the MPCA will document these types of changes in future rulemakings and the type of data necessary to support future proposals. The MPCA intends to make future TALU proposals periodically following the IWM schedule or as needed. These future rule changes will follow the Minnesota Administrative Procedures Act (APA).

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B.   Introduction

Water quality standards in Minnesota are implemented to protect aquatic life and recreational uses in lakes using chemical and biological standards. Minnesota currently uses four FIBI models to assess the biological condition of different lake types for attainment of aquatic life use goals. FIBIs were developed for four groups of Minnesota lakes that are deep enough to support fish populations, between 100 and 10,000 acres (see Bacigalupi et al. 2021). The lake groups are referred to as groups 2, 4, 5, and 7 and were determined using a hierarchical cluster analysis that grouped lakes with similar physical features and geographic position (total area, maximum depth, percent littoral area (<4.6m or 15 ft), shoreline development index (SDI, shoreline length relative to the shoreline length of a perfectly circular lake of equal area), total alkalinity, volume, area:shoreline ratio, and growing degree days (Table 1).

Table 1. Tiered aquatic life use biological criteria for fish in Minnesota lakes (FIBI=fish index of biological integrity).

FIBI group	Lake type	Exceptional Use biocriterion	General Use biocriterion
2	Deepest, high shoreline development index, tend to stratify	64	45
4	Deep, lower shoreline development index, tend to stratify, primarily central and northern Minnesota	59	38
5	Moderate depth, often heavily vegetated, primarily central and northern Minnesota	-	24
7	Shallow (>80% littoral), primarily southern and western Minnesota	-	36

Lakes in Group 2 generally have the highest volume, a range of habitat types, low littoral area, seasonal thermal stratification, and consequently the highest species richness. They span a wide range of sizes and geographic locations. Group 4 lakes are also deep, often thermally stratify, are generally smaller with less complex habitats than Group 2 lakes, and are primarily located in central and northern Minnesota. Group 5 and 7 lakes range in size and are typically much shallower with lower species richness. Group 5 lakes are shallow to moderately deep, mostly littoral, and are primarily located in central and northern Minnesota. Group 7 lakes are the shallowest lakes, with over 80% of the lake area littoral and are primarily located in southern and western Minnesota.

Each FIBI is numbered to correspond to the lake group (i.e., FIBI 2, 4, 5, and 7). FIBIs are composed of 8 to 15 metrics, which include richness metrics and gear-specific metrics (Bacigalupi et al. 2021). Richness metrics include the number of native species or the number of species within tolerance, feeding, habitat, and family groups. Gear-specific metrics describe assemblage composition including the proportional biomass of a feeding group sampled in trap net and gill net gear types and the proportion of intolerant or habitat dependent individuals sampled with nearshore gears types (i.e., backpack electrofishing and seining) (Table 2). Metrics included in each FIBI had a significant relationship with one or more stressor variables. For richness metrics with a significant relationship to lake surface area, linear regression was used to identify the relationship, and the metric score was adjusted accordingly so that the metric response would represent differences in lake integrity rather than differences due to lake size (Bacigalupi et al. 2021). FIBI scores were calculated by summing metrics and scaling each composite FIBI from 0 – 100.

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Table 2. Fish index of biological integrity (FIBI) metrics used in some or all FIBIs and the relationship with the FIBI score (from Bacigalupi et al. 2021). A "+" indicates that a higher metric value corresponds to a higher FIBI score, a "-" indicates that a higher metric value corresponds to a lower FIBI score.

FIBI metric	Relationship
Number of species captured that are native species (all gears)	+
Number of species captured that are intolerant of stressors (all gears)	+
Number of species captured that are tolerant of stressors (all gears)	-
Number of species captured that are insectivores (all gears)	+
Number of species captured that are omnivores (all gears)	-
Number of species captured that are cyprinids (all gears)	+
Number of species captured that are small benthic-dwelling (all gears)	+
Number of species captured that are vegetation-dwelling (all gears)	+
Proportion of individuals captured in the nearshore gears that are classified as intolerant of stressors	+
Proportion of individuals captured in the nearshore gears that are classified as small benthic-dwelling	+
Proportion of individuals captured in the nearshore gears that are classified as vegetation-dwelling	+
Proportion of biomass in trap nets from insectivores	+
Proportion of biomass in trap nets from omnivores	-
Proportion of biomass in trap nets from species classified as tolerant of stressors	-
Proportion of biomass in gill nets from top carnivores	+
Presence/absence of a species classified as intolerant of stressors in the gill net	+

To use the FIBIs to assess the health of Minnesota lakes, biocriteria were developed that identified impairment and exceptional thresholds for each FIBI model. BCG models for fish assemblages in Minnesota lakes were developed independently of the FIBIs to define changes to the fish communities along a gradient of increasing anthropogenic stressors (Gerritsen and Stamp 2014). The General Use impairment biocriteria have been in use since 2015 to assess the condition of 605 lakes in 33 major watersheds from 2015 – 2021 (Figure 1).

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Figure 1. Percentage of lakes sampled within an assessed watershed that fully support aquatic life, as measured by fish indices of biological integrity (FIBI). Percentage calculations exclude lakes that had insufficient or inconclusive information to make an assessment decision.
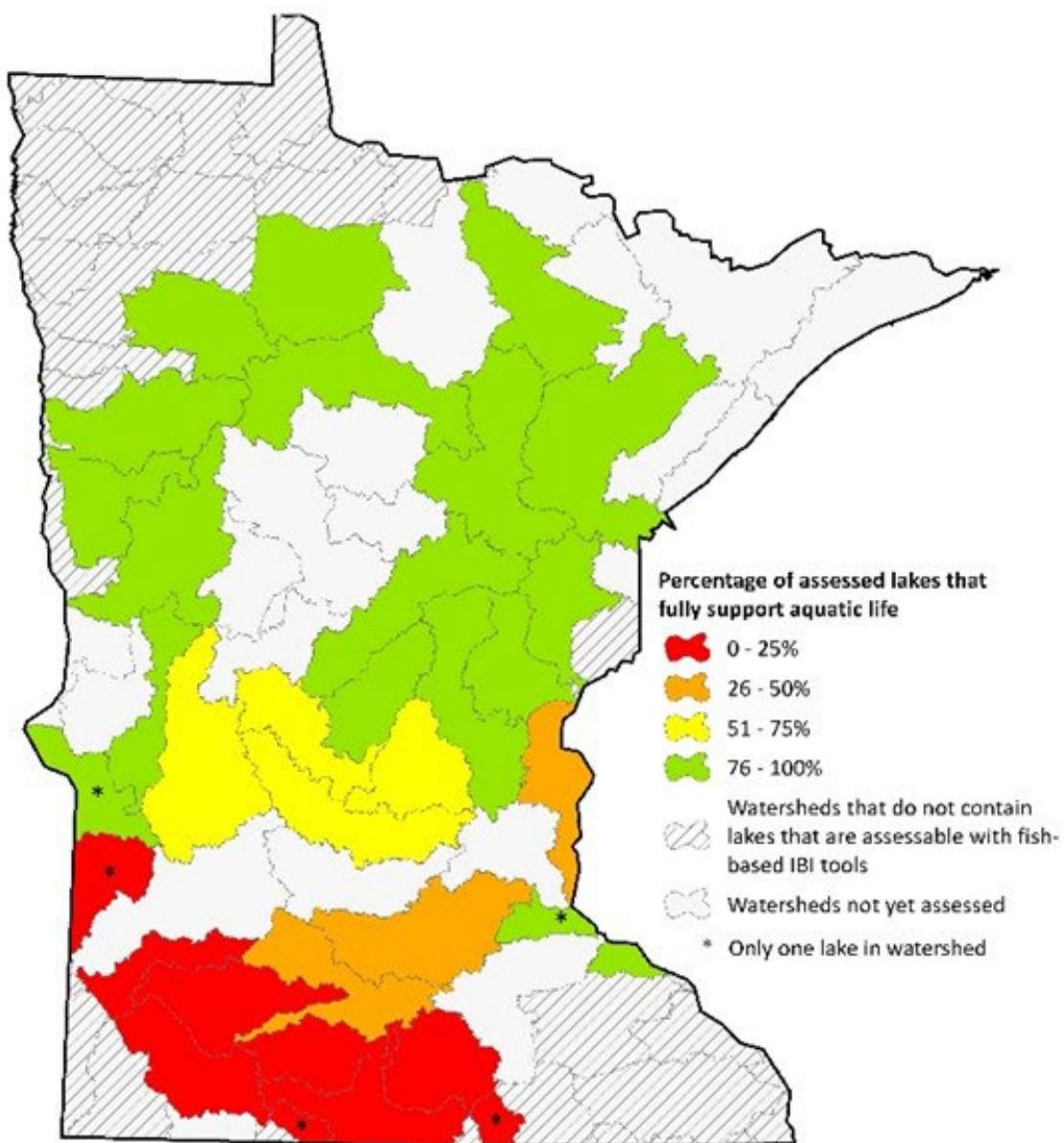
Although protective of overall good fish communities, the General Use impairment biocriteria allow for loss of species and moderate changes in community structure before an impairment is identified. As a result, the General Use biocriteria do not afford protection for lakes that support unique, high quality native fish communities. Many Minnesota lakes, particularly in the northern, forested area of the state, support high biodiversity and are nearly always associated with high quality habitat required to support fish species intolerant of disturbance. Some of the species sampled are species of greatest conservation need in Minnesota (e.g., Lake Sturgeon, Least Darter, Northern Longear Sunfish, and Pugnose Shiner). The aquatic and shoreline habitats that support exceptional fish communities also often support high quality amphibian, bird, and plant communities.

General Use impairment thresholds are developed and are in use for all FIBIs (2, 4, 5, and 7). Exceptional Use thresholds are developed for lakes scored with two of the FIBIs (FIBIs 2 and 4) and would be used in

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future assessments following the adoption of the lake TALU framework. Lakes with low human disturbance in Groups 2 and 4 have diverse fish communities that include species intolerant of disturbance, small benthic dwelling species, vegetation dwelling species, and often cold-water fish species. An Exceptional Use is not proposed for moderate depth and shallow lakes (FIBIs 5 and 7) because fish diversity is typically low and intolerant species are uncommon in shallow lakes, even shallow lakes with low disturbance and high-quality habitat. This is likely due to the lack of habitat complexity, lack of cold-water habitat, and naturally induced (recent or historical) partial winterkills in some shallow lakes.

An Exceptional Use designation within a TALU framework was established to protect Minnesota streams that contain exceptional fish communities from future degradation (Gerritsen et al. 2017). The approach proposed for lakes is similar, except that only two tiers have been developed for lakes: Exceptional and General Use. The TALU framework for streams also includes a Modified Use which applies to streams with legally altered habitat (e.g., many ditches and channelized streams). However, no Modified Use category was developed for lakes because there is not a widespread, analogous situation for lakes that meets the requirements ([40 CFR § 131.10 (g)](#)) for the removal of designated use specified in section 101(a)(2) of the CWA.

In this report, we summarize assessments on 605 lakes using the General Use impairment threshold and evaluate the application of an Exceptional Use impairment threshold within the TALU framework for lake with sufficient monitoring data. This includes lakes that have been assessed through 2021 and lakes surveyed using the FIBI methodology but not yet assessed. Two examples of TALU implementation are described. Example 1 considered 182 lakes sampled from 2010-2019 with one or more scores above the proposed Exceptional Use biocriteria. This large number of potentially Exceptional Use lakes highlights the importance and urgency of adopting an Exceptional Use threshold to adequately protect aquatic life in these unique, high-quality lakes that are often located in watersheds where little human disturbance has occurred, but not always protected from future disturbance. Example 2 describes three upcoming watershed assessments in lake-rich watersheds with very different landscapes and examines potential use classifications in each watershed.

The FIBIs and General Use thresholds are currently used to guide clean water planning, restoration, and protection efforts and to complement pollutant-based water quality sampling efforts in lakes as part of the Minnesota watershed assessment process. While the Exceptional Use biocriteria is not yet used as a formal category during assessment, MNDNR has been identifying lakes with FIBI scores above the draft Exceptional Use threshold for a couple of purposes since 2015 (Figure 2). Currently, lakes with scores above the proposed Exceptional Use threshold receive additional points in a scoring regime for potential MNDNR Fisheries acquisitions and are included on a list of lakes of biological significance (LOBS). The lakes with exceptionally high FIBI score and LOBS lists are provided to the Board of Water and Soil Resources (BWSR), MPCA, local government units (LGUs), and other interested parties for prioritization efforts. These results can be considered as part of Watershed Restoration and Protection Strategies (WRAPS), One Watershed One Plan (1W1P), forestry planning groups, and are also often considered during environmental review of projects impacting lakeshore and water quality. The formal adoption of the TALU framework for lakes and an Exceptional Use tier would enhance these existing programs and provide needed protections for high quality and sensitive lakes.

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Figure 2. Percentage of lakes sampled within an assessed watershed that contain an exceptional fish community, as measured by fish indices of biological integrity. Percentage calculations exclude lakes that had insufficient or inconclusive information to make an assessment decision.

Percentage of assessed lakes that contain exceptional fish communities

- 0%
- 1 - 20%
- 21 - 40%
- 41 - 60%

Watersheds that do not contain lakes that are assessable with fish-based IBI tools

Watersheds not yet assessed

* Only one lake in watershed

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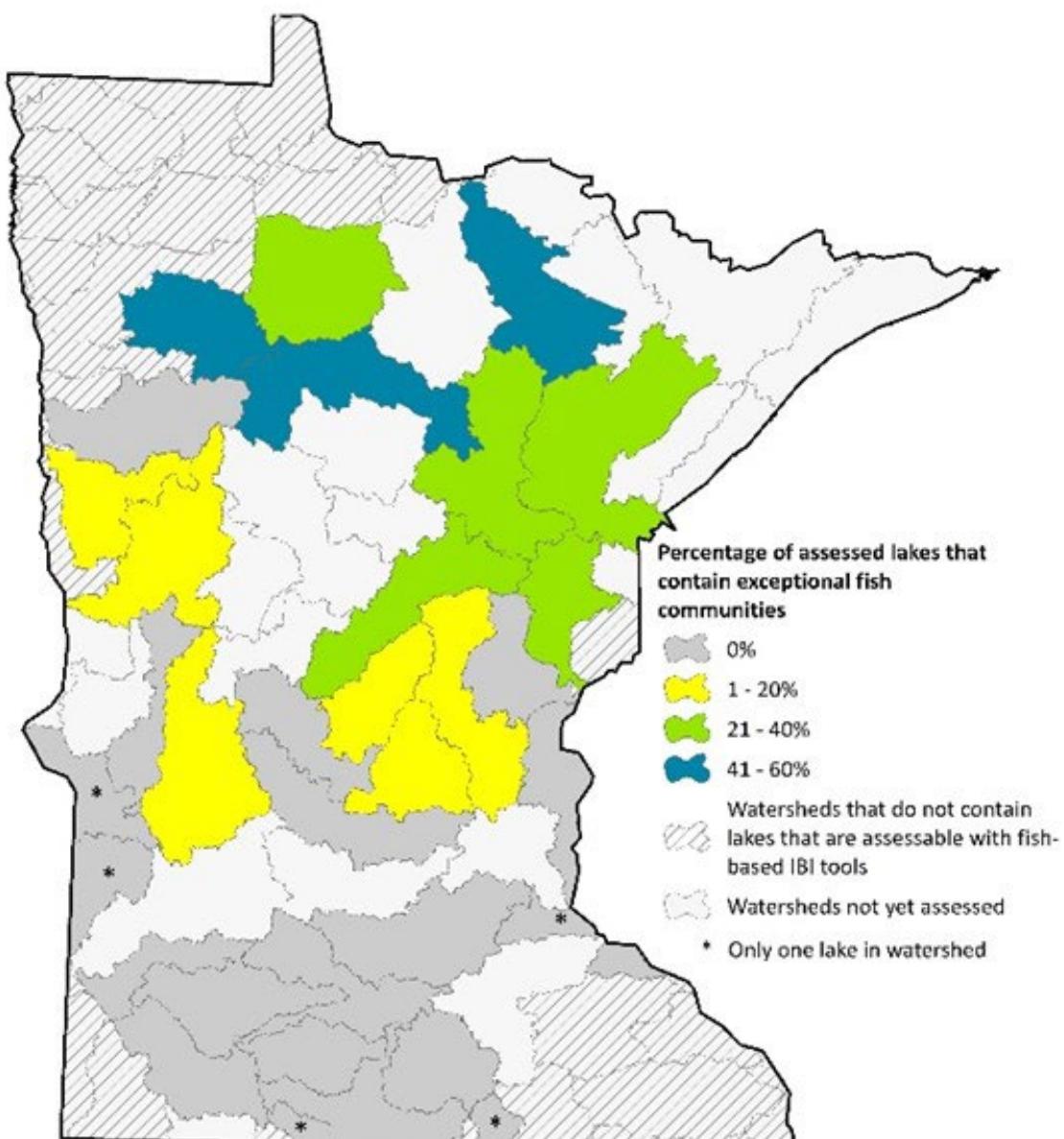
C. Development of biocriteria

Fish biocriteria for Minnesota lakes were developed by aligning BCG levels (Figure 3) with FIBI scores to determine protective thresholds for General and Exceptional uses (see Bacigalupi et al. 2021; Table 1). Lakes meeting the Exceptional Use biocriteria support fish communities that are characterized as being near the natural condition. The General Use tier applies to the remaining lakes which are characterized as having good fish communities with the function of the assemblage largely maintained although some sensitive species may have been lost and replaced by more tolerant taxa. The BCG models for Minnesota lakes were developed by Tetra Tech, Inc. with participation of aquatic biologists from MPCA, MNDNR, Midwest Biodiversity Institute, and an independent fisheries biologist (Gerritsen and Stamp 2014). Methods of calibrating BCG models and developing thresholds were similar to those used for developing biocriteria for Minnesota streams (Bouchard et al. 2016, Gerritsen et al. 2017). BCG models for each lake group were developed, calibrated, and confirmed for fish communities in lakes with FIBI survey data, and scoring for each BCG model was adjusted based on lake size (Gerritsen and Stamp 2014). FIBIs and BCG models were developed independently, and BCG assignments were compared to FIBI scores after development.

Figure 3. Biological condition gradient illustrating the location of biocriteria for protection of Minnesota's tiered aquatic life use goals for lakes.
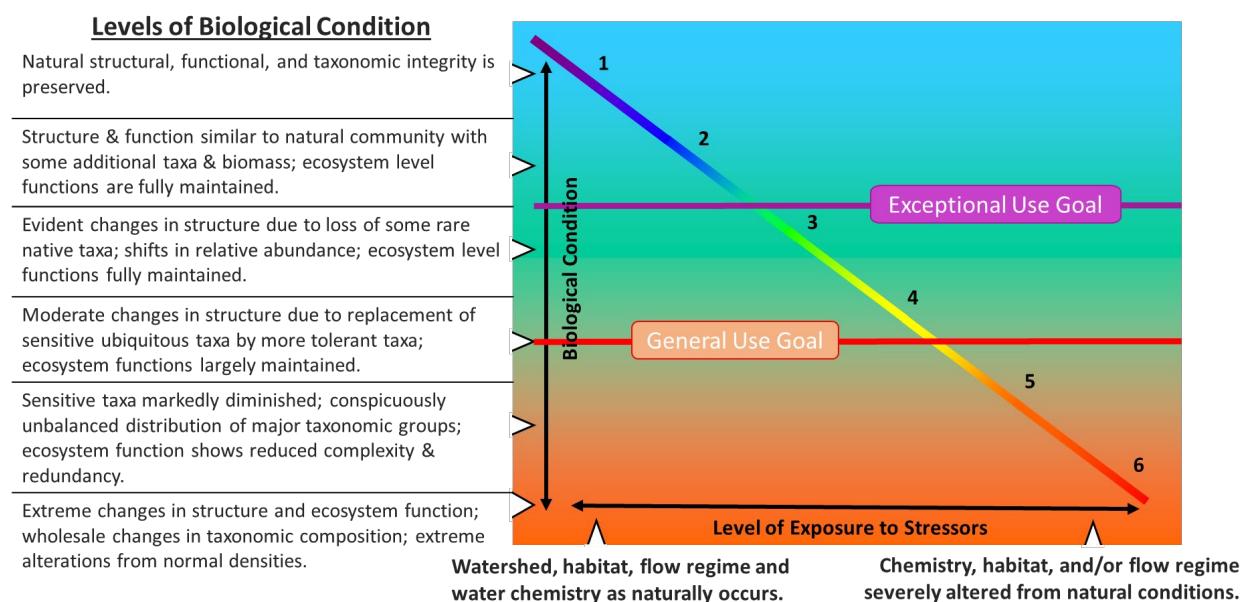
The methodology for assigning impairment thresholds to lake TALUs was similar to the approach used for Minnesota streams (Bouchard et al. 2016). In this approach, the median of BCG Level 4 was determined to be consistent good biological condition and attainment of the CWA interim goal. The 75th percentile of BCG Level 3 was consistent with a high quality, near natural biological community. The alignment of General (BCG Level 4) and Exceptional (BCG Level 3) uses was based on identifying narrative BCG Level descriptions that best aligned with the concept of General and Exceptional uses in addition to aligning these levels to waterbodies meeting goals (i.e., reference waterbodies; Bouchard et al. 2016).

For each lake group, the FIBI score corresponding to the median of BCG Level 4 was assigned as the General Use impairment threshold (Figure 4). Lakes with FIBI scores near the General Use impairment threshold generally contained a lower diversity and proportion of intolerant species, a higher proportion of biomass from tolerant species, and a higher proportion of biomass from omnivores relative to

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insectivores. These observations were consistent with the description provided by Davies and Jackson (2006), where BCG Level 4 corresponds with moderate changes in the structure of the biotic community due to replacement of some sensitive taxa by more tolerant taxa.

The proposed Exceptional Use threshold was assigned for FIBIs 2 and 4 at FIBI scores corresponding to the upper quartile of BCG Level 3, which was very similar in value to the median of BCG Level 2 (Figure 4). Lakes with FIBI scores above the Exceptional Use threshold generally contained a high number of intolerant and small benthic-dwelling species and a low number or zero tolerant species. Likewise, insectivores, top carnivores, and vegetation-dwelling species represented a large proportion of the catch in these lakes. These observations were also in alignment with the descriptions of BCG Levels 2 and 3, where either virtually all native taxa are maintained or where some changes in biotic community structure have occurred due to loss of some rare native taxa but where sensitive taxa are still common and abundant (Davies and Jackson 2006).

Repeat surveys conducted within three years were evaluated using ANOVA to calculate the 90% confidence interval around the General Use impairment threshold. The 90% confidence interval for each FIBI varied from 8 to 15 points (Figure 4). These were similar to 90% confidence intervals reported for FIBIs for Minnesota streams, which vary from 9 to 16 points, with a median of 10, on a 100-point scale (J. Sandberg, personal communication 2021).

Figure 4. Box-and-whisker plots showing the distribution of FIBI scores for each biological condition (modified from Bacigalupi et al., 2021).

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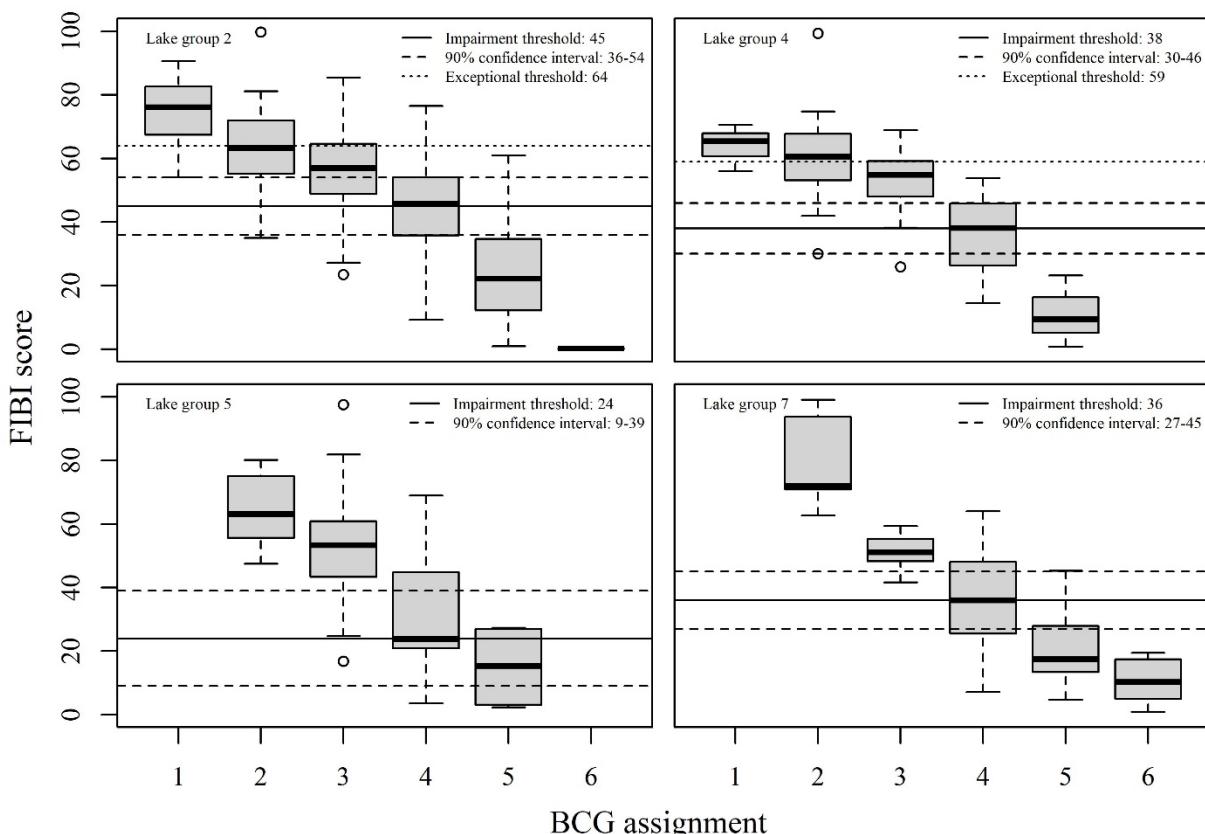
D. Implementation of TALU thresholds in assessments

In Minnesota, a major (HUC 8) watershed framework is used to monitor, assess, and restore impaired waters, and to protect unimpaired waters. Monitoring and assessment of waterbodies is led by the MPCA, in collaboration with local governments, MNDNR, other state agencies, and Tribes. A comprehensive description of the Minnesota watershed approach to monitoring and assessment can be found at https://www.pca.state.mn.us/water/water-monitoring-and-assessment. Fish surveys to support biological assessment on lakes are summarized and reviewed by MNDNR Fisheries staff and used by MPCA for lake assessments in each major watershed with suitable lakes. Assessments use FIBI data to determine biological condition of lakes including the identification of impaired lakes, lakes vulnerable to future impairment, and lakes fully supporting the aquatic life use. In some cases, the FIBI survey data is inconclusive or insufficient for an assessment determination. Currently, lakes of exceptional biological quality with scores above the proposed Exceptional Use threshold are identified but are held to the General Use impairment threshold.

1. Biological survey methodology

MNDNR staff use four traditional fisheries gears to sample the fish communities in lakes 100 – 10,000 acres (40–4,050 hectares) between mid-June and early-September. In each surveyed lake, double frame 19 mm mesh trap nets and standard graduated mesh gill nets (i.e., five 15.2 m long x 1.8 m deep panels of 19 mm, 25 mm, 32 mm, 38 mm, and 51 mm bar mesh) are used to sample littoral and limnetic areas, respectively (MNDNR 2017). All fish are identified to species, measured to the nearest mm, and a subset are weighed to the nearest gram. A combination of seines (i.e., 15.2 and 4.6 m long x 1.5 m deep with 3 mm bar mesh) and backpack electrofishers are used to sample nearshore, wadeable areas of each lake along 30.5 m stations. There are sampling protocols to address difficult to sample shorelines (e.g., boat assisted seining along steep shorelines and boat assisted backpack electrofishing among or along stands of aquatic vegetation) to ensure sufficient sampling effort in a wide variety of lakes. All fish captured in nearshore gears are identified to species and enumerated, and a subset of specimens from each species are vouchered and independently verified in a lab setting.

The numbers of gill nets and trap nets set and number of nearshore sampled followed MNDNR lake survey methods (MNDNR 2017) and are determined by the size and characteristics of the lake. Typically, trap nets are set in 9–15 locations, gill nets in 6–15 locations, and sampling with nearshore gears is completed at 10–24 locations. Net sites were chosen in historic surveys systematically to represent available habitat within each lake. Nearshore sampling stations were equally spaced around the shoreline of the lake from a random starting point. See MNDNR (2017) for further details.

2. Assessment data and methods

FIBI survey data is collected prior to assessment, typically within a six-year window just prior to assessment. For each lake, typically one or two surveys are completed within the six-year window, but occasionally more are completed when time permits, when results are ambiguous, or when randomly selected as a repeat survey (conducted on at least 10% of lakes annually). Only FIBI surveys meeting minimum sampling requirements and collected within the summer survey season (mid-June to early September) are included as primary assessable information. Older survey data or survey data collected with non-standard effort or timing is considered as supporting information to the assessment.

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Multiple scores are often considered when making an assessment on an individual lake. However, if FIBI scores are similar among surveys conducted within seasons and between years relative to the range of scores observed (Bacigalupi et al. 2021), data from just one or two survey events may be used in most cases for determining lake condition and making a biological assessment decision. When FIBI scores are disparate or fall close to a threshold (within the 90% Confidence Interval), an effort is made to collect additional survey data before an assessment determination. The FIBI survey data and assessment recommendations are reviewed first by a panel of MNDNR experts, and later by MPCA biological, water quality, and watershed experts to make a final assessment determination. In addition to FIBI scores, other factors are considered such as survey effort or timing, natural condition, or the influence of connected lakes. Lakes that are recommended to be listed as impaired by MPCA and MNDNR staff are then reviewed by local and regional water resource staff. The list of impaired waters are presented at public meetings, then open to public review and comment, and finally submitted to the United States Environmental Protection Agency (EPA) for approval. See MPCA (2021) and https://www.pca.state.mn.us/water/defining-impaired-waters for more details on the assessment and impaired waters listing process.

FIBI scores and supporting information are used to place lakes into one of the following assessment categories: fully supporting (FS), not supporting (impaired) (NS), inconclusive information (IC), insufficient information (IF), or not assessable (NA). Generally, if the FIBI scores fall above the General Use impairment threshold, a lake is assessed as fully supporting (FS) the aquatic life use. If scores fall below the General Use impairment threshold, a lake is assessed as not supporting (NS) the aquatic life use. When repeated surveys fall on either side of an impairment threshold, the lake is typically assessed as having inconclusive information (IC). When data is old or survey collection is incomplete, a lake is assessed as having insufficient information (IF). Lakes that are currently FS or IC can also be given a subcategory of vulnerable (V) indicating that scores are near the impairment threshold and stressors are present in the lake, suggesting the lake may become impaired if protective or restoration actions are not initiated. Lakes that are fully supporting with an exceptionally high score are identified (FS-E). Rarely, a lake is classified as not assessable (NA) when a lake is unrepresentative of lakes used during FIBI development (e.g., smaller than 100 acres (40 hectares) or routinely affected by severe winterkill).

In addition to assessing lakes, DNR staff study stressors affecting the biological communities found in impaired and vulnerable lakes. Numerous stressors are considered during this process, but most often, the focus is on the impacts of water quality and shoreline habitat on the fish community. Stressor identification investigations and reporting (SID) involves evaluation of several of the most likely stressors to fish communities specifically for each impaired or vulnerable lake (MNDNR 2018).

3. Water quality, land use, shoreline condition relationships with assessment decisions

FIBIs were developed to include metrics responsive to stressors impacting lake habitat (Bacigalupi et al. 2021). During FIBI development, stressors considered for metric selection included disturbance within a lake's contributing watershed (i.e., percent agriculture, percent urban, percent forested, and overall percent watershed disturbance as defined in Cross and Jacobson (2013)) as a measure of water quality, sedimentation, hypolimnetic oxygen availability, and regime shifts. Aquatic plant richness and Floristic Quality Index (FQI) were considered measures of structural fish habitat, and dock density (Beck et al. 2013) was used as a measure of shoreline disturbance and recreational pressure. For lakes used during development of each of the FIBIs, scores were negatively correlated with percent watershed disturbance and positively correlated with FQI. Scores were also negatively correlated with dock density; however, these correlations were not statistically significant (Bacigalupi et al. 2021). Since implementation of assessments, most FIBI impairments using the General Use impairment threshold are in lakes with

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watershed disturbance occurring in more than half of the upstream catchment and lakes with high levels of total phosphorus (TP). Meanwhile, most lakes that have been identified as containing exceptional fish communities are located in predominantly forested watersheds, with higher aquatic plant species richness, lower TP levels, and higher quality shorelines (Figure 5). These results demonstrate that the FIBIs, biocriteria, and assessment are appropriate and capable of accurately identifying lakes in need of restoration or protection.

Figure 5. Relationships between four variables representative of aquatic habitat stressors and aquatic life use assessments, including Exceptional Use, fully supporting, and not supporting determinations based on FIBI scores. Total phosphorus is calculated as the 10-year average of measurements obtained from MPCA and updated annually. Aquatic plant richness is summarized from MNDNR aquatic plant survey data. Percent watershed disturbance is calculated as the percentage of land in each lake's contributing watershed that was classified as developed, agricultural, or barren based on 2016 National Land Cover Database land use data. Land use categories are described in Jin et al. (2019). Calculations of watershed disturbance from Watershed Health Assessment Framework (MNDNR 2021). Shoreline habitat quality is measured by Score the Shore scores (Perleberg et al. 2019) which assess the integrity of lakeshore habitat. Letters above boxplots denote significant differences between determination categories.
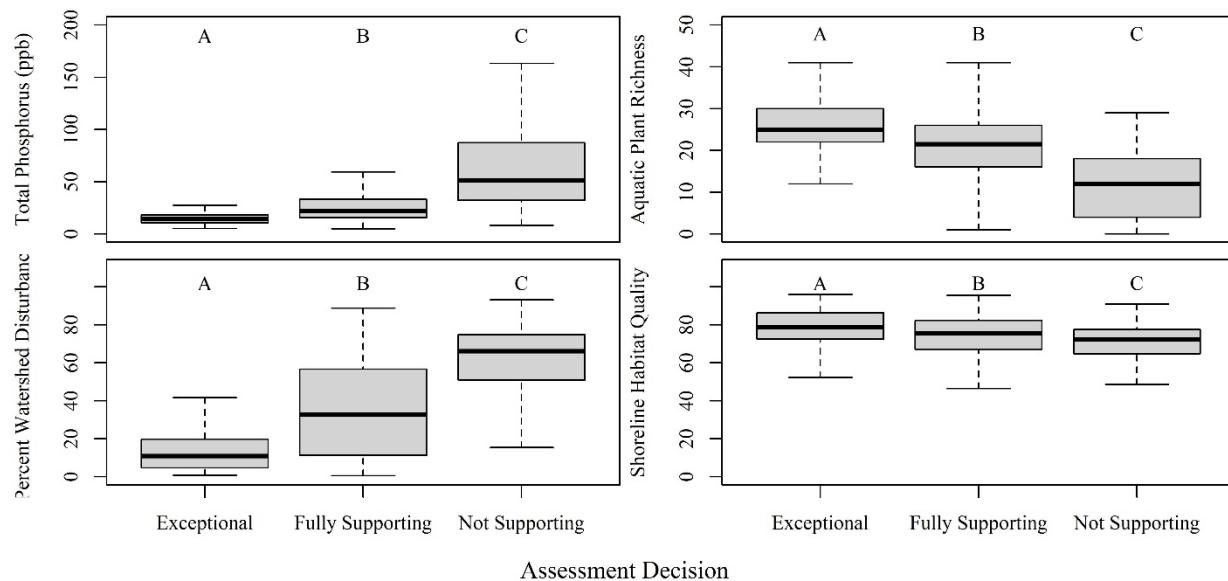
4. Exceptional Use Determination

Currently, lakes identified as having exceptionally high scores do not have strict data requirements as the category has been informal and is used primarily for prioritization. However, determination of Exceptional Use as an official assessment category and consequently a higher impairment threshold, based on the FIBI will include strict data requirements as well as professional review.

Survey data must be collected per the FIBI methodology described in the previous sections. In addition, a lake must meet one or more of the following criteria:

1. One FIBI score at least 10 points above the proposed Exceptional Use threshold (see Figure 8), or

2. Two or more surveys with scores above the Exceptional Use threshold. The surveys must be in different years and use separate trap net and nearshore data.

In addition, a professional review by MNDNR will be completed to consider supporting information such as older surveys, FQI, data on other biological communities (LOBS), and data on stressors impacting the lake (such as water chemistry data, shoreline disturbance, watershed disturbance). If any scores within

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the previous 10 years fall below the Exceptional Use threshold, in most cases, the lake will not be classified as Exceptional Use. Exceptions may include if a lower scoring survey had non-standard or low effort, if water temperatures during sampling were lower than 21°C surface temperature, or if there were other quality assurance/quality control concerns.

If a lake is classified as Exceptional Use, and then in a subsequent assessment scores below the Exceptional Use threshold, the lake will be designated as impaired and stressor identification be completed. Similarly, an Exceptional Use lake could be designated as vulnerable to future impairment and suggested as a priority for protection and/or restoration actions. A lake that was formerly designated as General Use can be changed to Exceptional Use if there is survey data and supporting information to support the designation change.

5. Examples

Between 2015 and 2021, MNDNR completed biological assessments in 605 lakes in 33 watersheds (Figure 6), and although additional assessments have since been completed, the information available at that time was used for the examples discussed in this section. MNDNR and MPCA biologists used the data during that period to determine that 21% of those lakes were not supporting the aquatic life use (i.e., not meeting standards). Another 9% of lakes were identified as vulnerable to future impairment based on fish IBI scores near the impairment threshold coupled with evidence of stressors in the watershed and/or in the shoreline zone. The MNDNR is also maintaining a list of lakes with exceptionally high FIBI scores which includes 14% of lakes assessed through 2021.

Existing General Use impairment biocriteria allow for a loss of some species and moderate changes in community structure before an impairment is identified. However, many Minnesota lakes, particularly in the northern, forested area of the state, support high biodiversity, and are nearly always associated with high quality habitat required to support fish species intolerant of disturbance. Some of the species sampled are species of greatest conservation need in Minnesota (e.g., Lake Sturgeon, Least Darter, Northern Longear Sunfish, and Pugnose Shiner). Numerous lakes currently have exceptional fish communities and would benefit from a TALU approach.

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Figure 6. The number of lakes assessed and determinations for watersheds assessed 2015 - 2021.
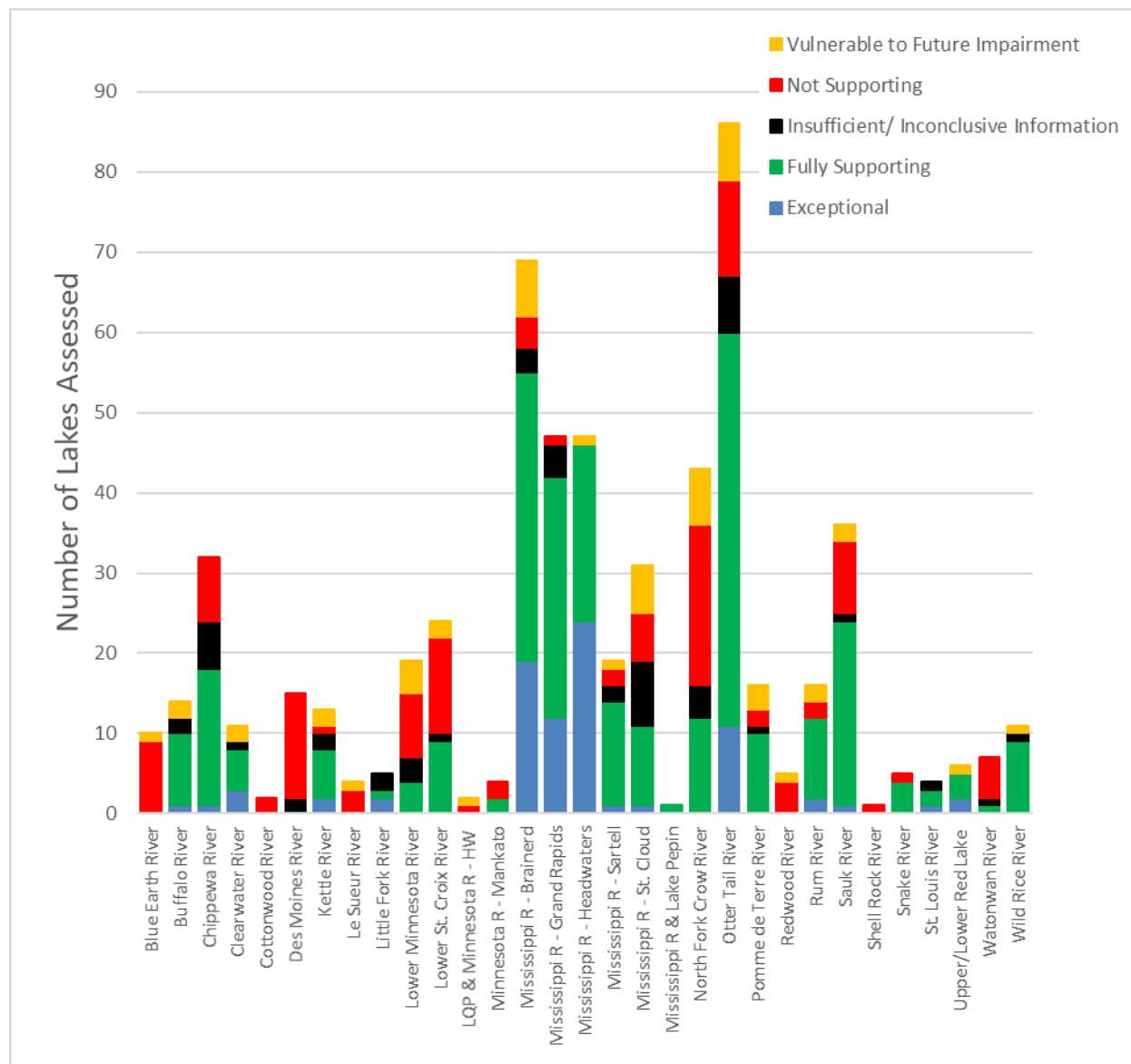
a. Example 1: Pilot assessments for Exceptional Use determination

Part of the process of evaluating the draft Exceptional Use tier and biocriteria included an assessment exercise for lakes that would be potential candidates for an Exceptional Use assignment. The exercise included evaluating all lakes that had at least one recent survey (2010 – 2019) and one or more scores above the Exceptional Use threshold (314 surveys on 182 lakes). The 182 lakes were located primarily in northern Minnesota, in 14 MNDNR Fisheries Management Areas (FMAs; Figure 7).

The 182 lakes were put into three categories for evaluation:

- Exceptional Use (77 lakes):
  - Either: 1) one FIBI score at least 10 points above the proposed exceptional threshold, or 2) two or more surveys with scores above the Exceptional Use threshold.

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- And, no recent scores (since 2013[3]) below the Exceptional Use threshold unless there were mitigating circumstances (low effort or non-standard effort, low water temperatures noted, other).
- Potential Exceptional Use, pending an additional survey (for actual assessments, we would complete an additional survey to make this determination) (86 lakes): One FIBI score above Exceptional Use threshold, but less than 10 points above.
- General Use (19 lakes): Recent, full effort FIBI scores mixed, above and below the Exceptional Use threshold or older FIBI score(s) above, but more recent score(s) below.

Two or more surveys are always preferred, but in some cases, are logistically difficult. Ten points above the threshold was used as a cut-off for making a determination for lakes with just one survey because no FIBI 4 lakes and only three FIBI 2 lakes that had one score 10 points or more above the Exceptional Use threshold also had a recent survey scoring below the Exceptional Use threshold (Figure 8). In addition, 10 points is stricter than the 90% confidence interval for each FIBI (see Figure 4).

Figure 7. Map showing the locations of lakes with one or more surveys above the Exceptional Use threshold. Exceptional Use (dark blue) indicates lakes with multiple surveys above the threshold or one survey 10 or more points above the threshold. Potential (light blue) indicates lakes with scores less than 10 points above the threshold. General Use (green) indicates lakes with scores from multiple surveys both above and below the threshold.

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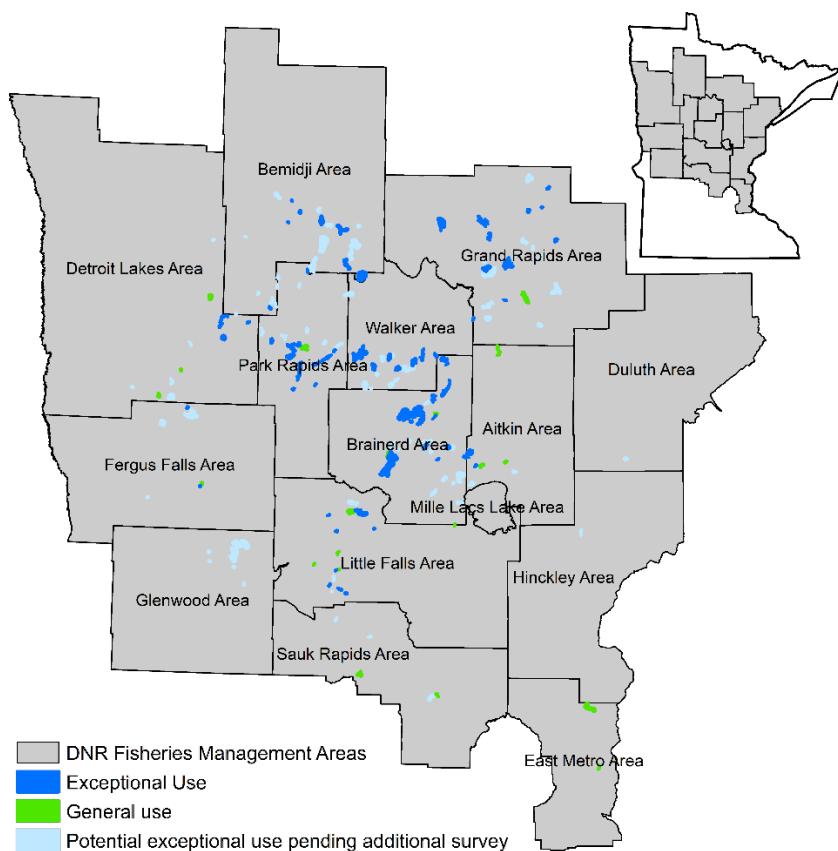
[3] No FIBI protocol changes have occurred since 2013 so data collected after this date are less likely to be affected by methodological changes versus actual changes in fish community condition.

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Figure 8. Range of FIBI scores for lakes with multiple surveys, including one or more Exceptional Use FIBI score. The dark gray boxes show the range, median, and average scores for lakes with the maximum score less than 10 Points above the respective Exceptional Use threshold. The light gray boxes show the range, median, and average scores for lakes with the maximum score 10 or more points above the respective exceptional threshold.
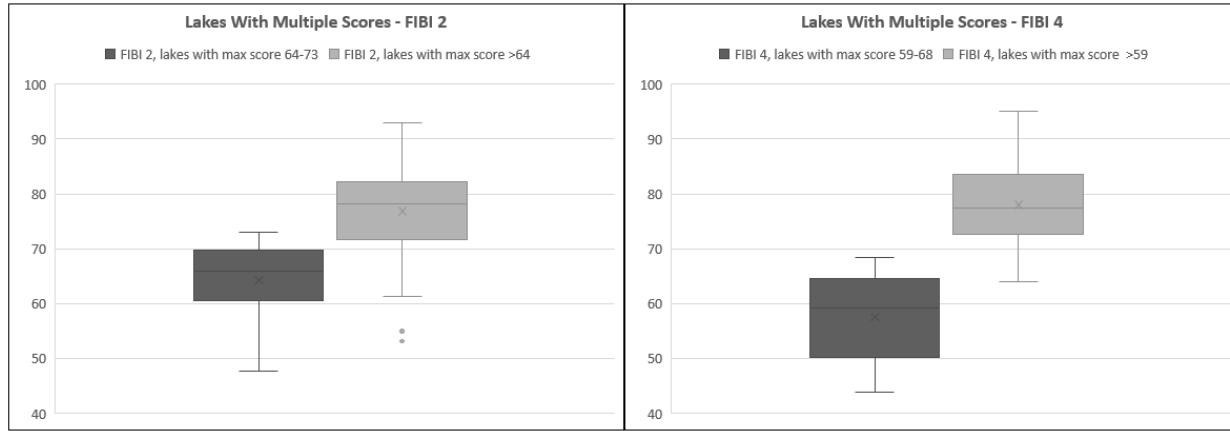
FMA Supervisors or their delegates were asked to use their professional judgement to evaluate the Exceptional Use biocriteria and comment on if the Exceptional Use designation seemed appropriate for each lake. For each lake, FIBI scores, survey notes, and stressor information were provided to the FMA Supervisor. The results of the Area review of each lake are summarized in Table 3. In 86% of the lakes, the FMA review agreed with the pilot use determination based on their local knowledge of the fish community and lake habitat. The FMA disagreed with 12% of the pilot assessment recommendations and the FMA did not have enough knowledge of the lake or gave no response for 3% of the lakes. Overall, FMA Supervisors indicated that the Exceptional Use biocriteria seemed appropriate and lined up very well with their knowledge of the fish community diversity and habitat quality. They expressed overwhelming support for adding additional recognition and protection for the highest quality lakes. Several noted that many of the Exceptional Use lakes were well connected to large chains of lakes or rivers, and that many of the Exceptional Use lakes were connected to one another. For these well-connected lakes, several FMA Supervisors indicated a preference to consider the connections in making a determination for General or Exceptional uses.

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Table 3. Summary of FMA review and response to pilot assessment, including 182 lakes with one or more surveys with scores above an Exceptional Use threshold.

Pilot assessment category	Fisheries management area review and response	Number of lakes (%)
Exceptional Use	Agree; good Exceptional Use candidate.	69 (38%)
Exceptional Use	Disagree; Area office biologists do not consider the lake a reasonable candidate for Exceptional Use due to high levels of shoreline and/or watershed disturbance or water quality problems that adversely impact fish habitat.	8 (4%)
Potential Exceptional Use pending an additional survey	Agree; good Exceptional Use candidate.	72 (40%)
Potential Exceptional Use pending an additional survey	Disagree; Area office biologists does not consider a reasonable candidate for Exceptional Use due to high levels of shoreline and/or watershed disturbance or water quality problems that adversely impact fish habitat.	8 (4%)
Potential Exceptional Use pending an additional survey	No response from Area office biologists or Area office biologists do not have enough information about the lake.	5 (3%)
General Use standards	Agree; hold to the General Use.	15 (8%)
General Use standards	Disagree; Area office biologists believe lake should be a candidate for Exceptional Use based on its habitat and fish community.	5 (3%)
Total number of lakes Reviewed		182

b. Example 2: Application of TALU in watershed assessments: Crow Wing River, Big Fork River, and Mississippi River Twin Cities watersheds

Three watersheds with numerous lakes that were assessed in 2022 and 2023 are presented as case examples for this report. Note that for several lakes in each watershed, additional survey data was collected after this exercise was completed. Final use classification and assessment recommendations were made after this exercise was completed during assessment for each watershed using professional review of the most up to date FIBI survey data and other supporting information. Final Exceptional Use designations, which were completed after this exercise had been completed, are included in Appendix A. The three watersheds presented in this exercise include: a watershed with numerous potential Exceptional Use lakes that are likely at high risk of degradation due to increasing human disturbance within the watershed, a watershed with little human disturbance and numerous potential Exceptional Use lakes, and a watershed with high human disturbance including areas of intense urban development with numerous lakes scoring below the General Use impairment threshold.

Crow Wing River Watershed (07010106)

The FIBI was used to assess 69 lakes in the Crow Wing River Watershed during winter/spring of 2022. FIBI survey data has been collected in the watershed since 1999; however, only the most recent survey data was used as primary assessment information (2016 – 2021). On lakes with recent data, older FIBI survey data was used as supporting information.

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Through 2020 (prior to assessment but for consideration during this exercise), 114 FIBI surveys were completed on 66 Lakes (77 surveys were primary information and 37 were older surveys used as supporting information). An additional 17 surveys were planned for 2021. Sixty-three lakes had recent data (2016 – 2020), of which 12 lakes had additional surveys planned in 2021. Three lakes had older data (2003 – 2012) with surveys planned in 2021 and three lakes were scheduled for their first FIBI survey in 2021.

The Crow Wing River Watershed is primarily forested land (41%) and wetland (23%), but there is substantial land use classified as developed (4%), cultivated (10%), or pasture/hay (10%) (MNDNR (2021); based on National Land Cover Database (NLCD) land cover classifications described in Homer et al. (2012)). Despite increasing agricultural, residential, and other development in the watershed, the watershed still contains numerous high quality natural resources, with 38% of lakes sampled through 2020 having at least one score above the Exceptional Use threshold. Several of the potential Exceptional Use lakes in the Crow Wing River Watershed are connected, which likely leads to higher habitat and fish species diversity. Given the increasing watershed development, the Crow Wing River watershed is a good example of a watershed where there is urgency to implement protection for exceptional lakes. Of the 66 lakes with data, 20% had an FIBI score 10 or more points above the Exceptional Use threshold, and an additional 18% of lakes had one score above the Exceptional Use threshold, with an additional FIBI survey planned in 2021 (Figure 9). Some of the lakes with a FIBI surveys completed in 2021 and/or 2022 were added to the final list found in Appendix A.

Two Lakes (Bad Medicine (03008500) and Bass (03012700)) had multiple recent surveys with scores above and below the General Use impairment threshold and are likely vulnerable for future impairment. An additional lake (Sibley (18040400)) survey had one FIBI score near the impairment threshold and was scheduled for an additional survey in 2021. These lakes should be prioritized for protection and restoration actions to prevent them from becoming impaired. One lake, West Crooked (29010103), had multiple recent FIBI scores below the General Use impairment threshold indicating nonattainment of aquatic life use goals.

Big Fork River Watershed (09030006)

The FIBI was used to assess 27 lakes in the Big Fork River Watershed during winter/spring of 2023. FIBI survey data has been collected in the watershed since 2005, however only the most recent survey data was used as primary assessment information (2016 – 2022). On lakes with recent data, older FIBI survey data was used as supporting information.

Through 2020 (prior to assessment but for consideration during this exercise), 27 FIBI surveys were completed on 20 lakes (15 surveys were primary information and 12 were older surveys used as supporting information). An additional 16 surveys were planned in 2021 and 2022. Fifteen lakes had recent data (2016 – 2020). Five lakes had older data (2005 – 2012) with surveys planned in 2021 or 2022 and seven lakes were scheduled for their first FIBI survey in 2021 or 2022.

The Big Fork River Watershed is primarily wetland (64%) and forested land (26%) with less than 3% of the land cover classified as developed or agricultural (MNDNR 2021; based on NLCD land cover classifications described in Homer et al. (2012)). As such, the watershed contains numerous high quality natural resources and is a good example of a relatively pristine watershed that will benefit from implementation of a TALU framework to ensure protection of exceptional resources into the future. Of the 20 lakes with data, 35% had scores above the Exceptional Use threshold (Figure 9). Some of the seven lakes with FIBI surveys completed in 2021 or 2022 were added to the final list in Appendix A. One lake, Round (31089600) had one recent FIBI score near the General Use impairment threshold; an additional survey was planned in 2021 to determine the FIBI assessment recommendation.

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Figure 9. Example of application of TALU in three upcoming watershed assessments: Crow Wing River, Big Fork River, and Mississippi River Twin Cities watersheds.

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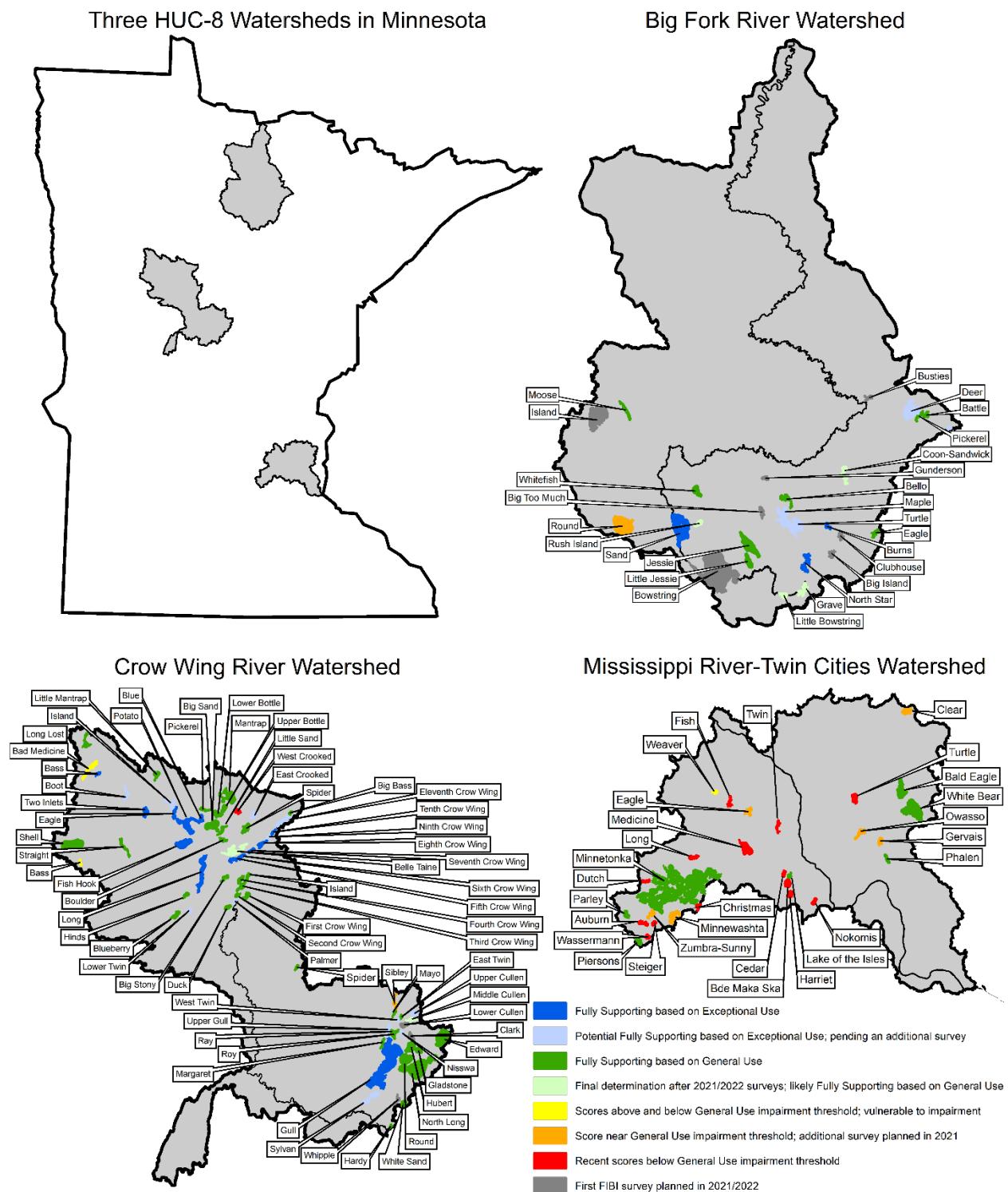
Mississippi River - Twin Cities Watershed (07010206)

The FIBI was used to assess 30 Lakes in the Mississippi River - Twin Cities Watershed during winter/spring of 2022. FIBI survey data has been collected in the watershed since 1998, however only the most recent survey data was used as primary assessment information (2016 – 2021). On lakes with recent data, older FIBI survey data was used as supporting information.

Through 2020 (prior to assessment but for consideration during this exercise), 75 FIBI surveys were completed on 30 lakes (30 surveys were primary information and 45 were older surveys used as supporting information). An additional six surveys were planned in 2021. Twenty-seven lakes had recent data (2016 – 2020), of which three lakes had additional surveys planned in 2021. Three lakes had older data (1999 – 2011) with surveys planned in 2021.

The Mississippi River - Twin Cities Watershed is primarily developed land use (54%), and also includes substantial amounts of cultivated (8%) and pasture/hay land (9%) (MNDNR 2021; based on NLCD land cover classifications described in Homer et al. (2012)). In the Mississippi River drainage, the FIBI scores generally decrease and watershed disturbance increases, from the headwaters to the lower portions of the drainage (Figure 6). Most of the drainage has the same biogeographic pool of species and therefore it is likely that the primary driver of lower FIBI scores is human disturbance. The Mississippi River Headwaters, Mississippi River – Grand Rapids, and Mississippi River – Brainerd watersheds all have numerous lakes scoring above the Exceptional Use thresholds (26-51% of assessed lakes), and few impairments. In the Mississippi River – Sartell, most lakes were fully supporting based on the General Use threshold with a few lakes vulnerable to impairment or impaired based on the FIBI, with 1 lake scoring above the exceptional threshold. Similarly, one lake had a score above the Exceptional Use threshold in the Mississippi River – St. Cloud watershed and 39% of lakes were determined to be impaired or vulnerable to impairment based on the General Use threshold.

In the Mississippi River - Twin Cities Watershed, a large proportion of the lakes were likely to be listed as impaired based on the FIBI General Use threshold. No lakes in the watershed were likely to be proposed as Exceptional Use. Of the 30 lakes with data, one lake (White Bear Lake (82016700)), had one score equal to the Exceptional Use threshold, but additional surveys scores were well below the Exceptional Use threshold. Based on data through 2020, 30% of lakes had FIBI scores above the General Use threshold, 47% of lakes had scores below the General Use threshold, and one lake (Weaver (27011700)) had scores on each side of the threshold and was likely vulnerable to future impairment. Additional surveys were planned on 6 lakes, all with older or recent scores very near the General Use impairment threshold (Figure 9).

c. Assessment summary

Examples 1 and 2 demonstrate the need for and reasonableness of a TALU framework for lakes. Within many watersheds there are many lakes that currently meet Exceptional Use thresholds especially lakes with abundant natural shoreline habitat and good water quality in the northern forested portions of the state that would benefit from a TALU framework and implementation of an Exceptional Use threshold. In addition, in central Minnesota watersheds, a smaller number of lakes remain that meet the Exceptional Use threshold and that should be prioritized for protection in landscapes experiencing land use changes and other stressors. The General Use biocriteria are suitable to protect or restore lakes in areas with greater disturbance and where the Exceptional Use is not an existing use.

In addition, Example 1 demonstrates that the proposed thresholds are appropriate. The results of the pilot assessment match expectations of Fisheries Area staff who have decades of experience and correspond with watershed disturbance and other stressors. By requiring a second survey or a score

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above the 90% Confidence limit and professional review, we can be confident that lakes determined as Exceptional Use are appropriate.

E. Use designation reviews

The MPCA routinely reviews use designations to ensure that beneficial uses assigned to streams, lakes, and wetlands are protective and attainable as defined by the CWA and Minnesota Rule. As a result of routine monitoring, the MPCA and MNDNR have identified lakes where the currently designated beneficial use does not accurately reflect an attainable use. The most important reason to assign accurate beneficial uses to these water bodies is that the designated use for each water affects many of the water quality protection and restoration efforts at the MPCA (e.g., assessment, stressor identification, National Pollutant Discharge Elimination System [NPDES] permitting, Total Maximum Daily Loads [TMDLs]). Fundamentally, assigning the correct beneficial uses to Minnesota's waters also serves to accurately document the types and condition of Minnesota's aquatic resources.

The draft use designations in this document only affect Class 2 (i.e., aquatic life and recreation) and are focused on aquatic life beneficial uses. The amendments to Minn. R. 7050.0470 described herein serve as the technical documentation for these designations. This section includes a list of lakes proposed to be designated, and Appendix A includes a technical justification for each use designation. This information is provided as part of the adoption of the TALU framework for lakes to demonstrate the process for documenting and proposing TALUs under this framework.

The use designations proposed in this document are the result of routine use reviews that are performed as part of MPCA's IWM efforts. All reviews in this document are TALU reviews in watersheds that were monitored in 2020-2022 (and subsequently assessed in 2022-2024). In addition, many warm water (Class 2B) lakes have been identified in the "Development of water quality standards to protect coldwater lake habitats in Minnesota" (MPCA 2025) that will be designated as cold water (Class 2A) for the protection of coldwater habitat for Lake Trout, Lake Whitefish, Cisco, or stream trout. These coldwater reviews are part of a separate, statewide effort to review and document the status of coldwater fish populations in Minnesota.

In total, the draft use designations in this document include TALU designations for 36 lakes (Tables 4 and 5). In Table 5 and throughout the remainder of this document, use designations are organized hierarchically by major watershed and then by HUC 8. Within HUCs, water bodies are sorted by division of waters (DOW) number. Following the use designation table, there is a description of the use designation process. In Appendix A, are descriptions of the evidence supporting the draft use designation for each water body.

Table 4. Summary of use designation proposals for lakes.

Current use	Proposed use	# of DOWs
2B	2Be	9
2B	2Ae[TLC]	25
2B	2Ae[LKW,TLC]	1
2A[SRT]	2Ae[TLC,SRT]	1

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Table 5. List of draft use designations (abbreviations: DOW = division of waters lake number, 2B = general cool and warm water aquatic life and habitat; 2Be = exceptional cool and warm water aquatic life and habitat, 2A = general cold water aquatic life and habitat, 2Ae = exceptional cold water aquatic life and habitat, TLC = Cisco coldwater habitat, LKW = Lake Whitefish coldwater habitat, SRT = stream trout coldwater habitat, TALU = tiered aquatic life use review).

DOW	Lake name	Current use class	Draft use class	Acres	County	Use review type
Minn. R. 7050.0470, subp. 2. Lake of the Woods Basin						
2.B.(5) Big Fork River Watershed (09030006)						
31016000	Mirror	2B	2Be	109.11	Itasca	TALU
31054000	Clubhouse	2B	2Ae[TLC]	265.3	Itasca	TALU
31062400	Grave	2B	2Ae[TLC]	524.65	Itasca	TALU
31065300	North Star	2B	2Ae[TLC]	831.63	Itasca	TALU
31065400	Burns	2B	2Be	181.29	Itasca	TALU
31072500	Turtle	2B	2Ae[LKW,TLC]	2125.63	Itasca	TALU
31079300	Big Too Much	2B	2Ae[TLC]	291.96	Itasca	TALU
Minn. R. 7050.0470, subp. 4. Upper Mississippi River Basin						
4.B.(6) Crow Wing River Watershed (07010106)						
03001700	Two Inlets	2B	2Ae[TLC]	577.98	Becker	TALU
03003000	Boot	2B	2Ae[TLC]	385.1	Becker	TALU
11030400[4]	Sylvan	2B	2Be	894.03	Cass	TALU
11030500	Gull	2B	2Ae[TLC]	10010.01	Cass	TALU
18037600	Upper Cullen	2B	2Ae[TLC]	434.56	Crow Wing	TALU
18037700	Middle Cullen	2B	2Ae[TLC]	396.65	Crow Wing	TALU
18040900	West Twin	2B	2Be	127.49	Crow Wing	TALU
29002500	Ninth Crow Wing	2B	2Ae[TLC]	232.4	Hubbard	TALU
29003600[5]	Eleventh Crow Wing	2B	2Ae[TLC]	750.97	Hubbard	TALU
29004500	Tenth Crow Wing	2B	2Ae[TLC]	175.21	Hubbard	TALU
29007200	Eighth Crow Wing	2B	2Be	502.97	Hubbard	TALU
29008700	Palmer	2B	2Be	146.25	Hubbard	TALU
29009100	Seventh Crow Wing	2B	2Ae[TLC]	262.4	Hubbard	TALU
29009200	Fifth Crow Wing	2B	2Ae[TLC]	400.12	Hubbard	TALU
29009300	Sixth Crow Wing	2B	2Ae[TLC]	345.63	Hubbard	TALU
29016100	Long	2B	2Ae[TLC]	1926.11	Hubbard	TALU
29018400	Blue	2A[SRT]	2Ae[TLC,SRT]	336.35	Hubbard	TALU
29024200	Fish Hook	2B	2Ae[TLC]	1642.57	Hubbard	TALU
29024300	Potato	2B	2Ae[TLC]	2096.1	Hubbard	TALU

[4] Includes both basins: 11-0304-01 and 11-0304-02.
[5] Includes both basins: 29-0036-01 and 29-0036-02.

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DOW	Lake name	Current use class	Draft use class	Acres	County	Use review type
29025400	Island	2B	2Ae[TLC]	541.25	Hubbard	TALU
29025600	Eagle	2B	2Ae[TLC]	423.53	Hubbard	TALU
80003000	Lower Twin	2B	2Be	251.91	Wadena	TALU
4.B.(8) Long Prairie River Watershed (07010108)						
21008300	Miltona	2B	2Ae[TLC]	5731.02	Douglas	TALU
21010800	Mina	2B	2Ae[TLC]	411.42	Douglas	TALU
21012300	Ida	2B	2Ae[TLC]	4445.3	Douglas	TALU
49007900	Alexander	2B	2Ae[TLC]	2708.78	Morrison	TALU
49012700	Shamineau	2B	2Be	1434.02	Morrison	TALU
49013300	Crookneck	2B	2Be	183.06	Morrison	TALU
77012000	Charlotte	2B	2Ae[TLC]	144.32	Todd	TALU

The TALU designations in this document are the result of routine monitoring during the 2020-2022 IWM efforts (Figure 10). Determination of the proposed uses were made through a review to determine the attainable aquatic life use goal for each lake. Use designation reviews begin with a review of biological condition. If the fish assemblage meets the Exceptional Use biocriteria, then the reach is eligible for designation as Exceptional Use (Figure 3 and Table 1), with habitat and stressor information considered secondarily and used as supporting evidence. If the fish assemblage does not meet the Exceptional Use criteria, the lake will be confirmed General Use. General Use is the default designation when sufficient data are unavailable for a review. Furthermore, General Use is the confirmed designation when sufficient data are available, and a lake is determined not to meet the Exceptional Use. The TALU framework for lakes differs from streams in that there is no Modified Use for lakes.

For each TALU designation, supporting evidence for the draft use designation is documented in Appendix A of this document. In addition to providing a narrative description of the TALU use designation reviews, detailed biological, habitat, and stressor information is tabulated.

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Figure 10. Map of TALU use designation review status by watershed.

TALU use review status

- Use designations evaluated
- Use designations not yet evaluated
- No applicable lakes

Tribal government

- Reservation and trust land

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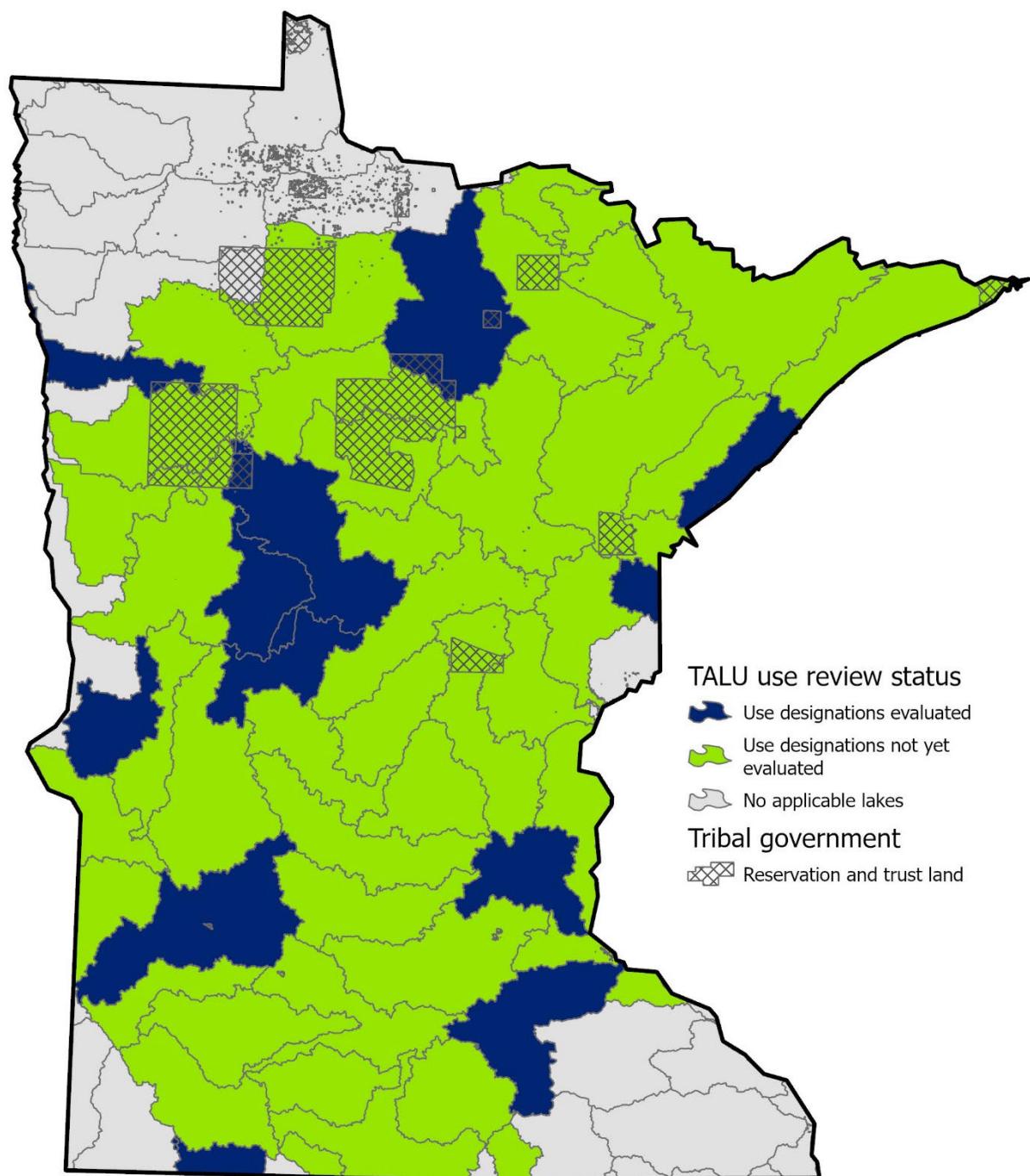
F.   Rule language changes

To adopt a TALU framework for lakes, several revisions to Minn. R. 7050 will be required. To describe the TALUs for lakes, language will need to be added to incorporate lakes into the existing narratives for each TALU tier under Classes 2A, 2Bd, and 2B in Minn. R. 7050.0222, subps. 2c, 3c, and 4c. In addition, lake-specific references will be added to detail how fish community condition is measured and how the biological criteria were developed for lakes. Amendments to Minn. R. 7050.0222, subps. 2d, 3d, and 4d will also add biological criteria for Classes 2A, 2Bd, and 2B, as well as for each lake type and TALU. These revisions will reasonably describe the expectations for each TALU, provide documentation to justify each use, and provide transparency and consistency regarding the MPCA's process of assessing aquatic life use goals for lakes. In addition to incorporating a TALU framework for lakes into rule, Exceptional Use designations will be adopted for 36 lakes into Minn. R. 7050.0470. Adoption of these use designations into rule will provide clarity regarding the aquatic life goals for these lakes and their inclusion in this rule also serves to demonstrate the process for adopting new Exceptional Uses for lakes into rule.

G.   Summary

Minnesota's TALU framework will adopt two aquatic life use tiers into rule under Class 2: General Use and Exceptional Use. Biological criteria for these two tiers will be adopted into rule along with supporting documentation incorporated by reference into rule. There is extensive experience implementing these fish monitoring and assessment tools as part of a CWA program which demonstrate their feasibility and the benefit of using fish as indicators of beneficial use attainment in Minnesota lakes. The methods have been both tested through implementation as a numeric translator for narrative standards (i.e., General Use) and through a pilot designation and assessment exercise (i.e., Exceptional Use). These efforts have demonstrated that the implementation of a TALU framework for lakes is reasonable and is supported by water quality programs in Minnesota. Adding the Exceptional Use tier to Minnesota's lake assessment tools provides additional options for the management of these waters and formally acknowledges the high quality of these lakes. Assigning Exceptional Use goals to lakes which indicate this high quality is an existing use, will provide the benefits of protecting these important and valuable resources. Protecting these lakes is also more cost effective than working to restore them once they have been degraded (Radomski and Carlson 2018). The adoption of a TALU framework for lakes will enhance the ability for the MPCA, MNDNR, local governments, other state agencies, and Tribes to manage Minnesota's lakes to their highest attainable uses which will improve water quality protection and restoration outcomes.

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Appendix A. Draft TALU designations

The following documentation of the draft use designations correspond to the list of water bodies in Table 5. The lakes are identified by DOW (i.e., division of waters lake number), which identifies the county where the stream is located, the lake number within that county, and a subbasin (if applicable). At the beginning of each HUC 8 watershed, there is a link to the MPCA webpage for that watershed, which includes available reports and other information.

The abbreviations and symbols used in the use designation descriptions and TALU tables are as follows:

Use designations

2Ag	Aquatic Life and Recreation – General Use Coldwater Aquatic Life and Habitat
2Ae	Aquatic Life and Recreation – Exceptional Use Coldwater Aquatic Life and Habitat
2Be	Aquatic Life and Recreation – Exceptional Use Cool and Warm Water Aquatic Life and Habitat
2Bg	Aquatic Life and Recreation – General Use Cool and Warm Water Aquatic Life and Habitat
[LAT]	Lake Trout
[LKW]	Lake Whitefish
[SRT]	Stream trout spp.
[TLC]	Cisco (Tullibee)

TALU table abbreviations

DOW	Division of Waters number
FIBI	Fish Index of Biological Integrity
FQI	Floristic Quality Index
STS	Score the Shore
*	Indicates supplemental survey data that was collected outside of the IWM schedule and/or prior to 2013, when FIBI methodologies became standardized. These data are given lower consideration.
†	Indicates supplemental survey data that was collected using non-standard effort. These data are given lower consideration.

1. Lake Superior Basin

a. Lake Superior – North Watershed (04010101)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/lake-superior-north

Use designations not yet evaluated.

b. Lake Superior – South Watershed (04010102)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/lake-superior-south

No draft use designations.

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c. St. Louis River Watershed (04010201)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/st-louis-river

Use designations not yet evaluated.

d. Cloquet River Watershed (04010202)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/cloquet-river

Use designations not yet evaluated.

e. Nemadji River Watershed (04010301)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/nemadji-river

No draft use designations.

2. Lake of the Woods Basin

a. Rainy River – Headwaters Watershed (09030001)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/rainy-river-headwaters

Use designations not yet evaluated.

b. Vermilion River Watershed (09030002)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/vermilion-river

Use designations not yet evaluated.

c. Rainy River – Rainy Lake Watershed (09030003)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/rainy-river-rainy-lake

Use designations not yet evaluated.

d. Little Fork River Watershed (09030005)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/little-fork-river

Use designations not yet evaluated.

e. Big Fork River Watershed (09030006)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/big-fork-river

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Table 6. Big Fork River Watershed (09030006) biological and habitat data associated with lakes that will be designated as Class 2Ae or 2Be (abbreviations: DOW=division of waters number, FIBI=fish index of biological integrity, STS=score the shore, FQI=floristic quality index, * indicates supplemental, historic survey data, † indicates supplemental, non-standard effort survey data).

DOW	Lake name	FIBI group	FIBI survey year(s)	FIBI score(s)	% watershed disturbance	STS score(s)	FQI % deviation from threshold
31016000	Mirror	2[6]	2022, 2017	71, 72	3	-	54
31054000	Clubhouse	2	2022, 2021	77, 64	3	-	66
31062400 [7]	Grave	2	2023, 2022, 2008*	65, 66, 57	5	88	55
31065300	North Star	2	2019	80	7	-	80
31065400	Burns	2	2020	78	4	-	99
31072500	Turtle	2	2017, 2010*, 2010*	64, 75, 66	4	-	114
31079300	Big Too Much	2	2022, 2021	80, 73	3	-	70

Mirror Lake (31016000): Mirror Lake will be designated Class 2Be. The biological integrity of the fish community was evaluated using a gill net survey (June 2017), two trap net surveys (July 2022 and July 2017), and two nearshore surveys (July 2022 and July 2017). The FIBI scores of 71 and 72 from the recent surveys were above the Exceptional Use threshold (64). Select stressor and habitat information was reviewed for Mirror Lake. Approximately 3% of the land use in the upstream watershed is classified as developed (NLCD 2016). The most recent aquatic plant survey, a 2000 survey conducted by the Minnesota Biological Survey (MBS), indicates that the lake supports a relatively diverse aquatic plant community (N=21), resulting in an FQI of 30, which is 54% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Mirror Lake with the Class 2Be designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Big Fork River Watershed (09030006).

Clubhouse Lake (31054000): Clubhouse Lake will be designated Class 2Ae[TLC] because it demonstrates support a coldwater species (Cisco; see MPCA 2025), and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using a gill net survey (June 2021), two trap net surveys (July 2022 and July 2021), and two nearshore surveys (July 2022 and July 2021). The FIBI scores of 77 and 64 from the recent surveys were at or above the Exceptional Use threshold (64). Select stressor and habitat information was reviewed for Clubhouse Lake. Approximately 3% of the land use in the upstream watershed is classified as developed (NLCD 2016). The most recent aquatic plant survey, a 2001 survey conducted by the MBS, indicates that the lake supports a relatively diverse aquatic plant community (N=28), resulting in an FQI of 33, which is 66% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Clubhouse Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Big Fork River Watershed (09030006).

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[6] Note: few Lake Class 20 lakes were used in FIBI development as they are relatively rare and typically have soft water and low species richness.

[7] The MPCA WID database includes both basins of Grave Lake separately (31-0624-01 and 31-0624-02). Both basins will be assigned Class 2Ae[TLC].

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Grave Lake (31062400): Grave Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using a gill net survey (August 2021), two trap net surveys (July 2022 and July 2023), and two nearshore surveys (July 2022 and July 2023). An additional survey was completed in June 2008 and is provided as supplemental historic information. The FIBI scores of 66 and 65 from the recent surveys were above the Exceptional Use threshold (64). The FIBI score of 57 from the supplemental historic survey was above the General Use threshold (45) but below the Exceptional Use threshold. Select stressor and habitat information was reviewed for Grave Lake. Approximately 5% of the land use in the upstream watershed is classified as disturbed, with 3% developed and 2% pasture and hay (NLCD 2016). A Score the Shore survey was completed in 2023 and resulted in a mean score of 88 out of 100, indicating high quality lakeshore habitat. The most recent aquatic plant survey, a 2001 survey conducted by the MBS, indicates that the lake supports a relatively diverse aquatic plant community (N=26), resulting in an FQI of 30, which is 55% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Grave Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Big Fork River Watershed (09030006).

North Star Lake (31065300): North Star Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using a gill net survey (August 2019), a trap net survey (July 2019), and a nearshore survey (July 2019). The FIBI score of 80 from the recent survey was above the Exceptional Use threshold (64). Select stressor and habitat information was reviewed for North Star Lake. Approximately 7% of the land use in the upstream watershed is classified as developed (NLCD 2016). The most recent aquatic plant survey, a 2001 survey conducted by the MBS, indicates that the lake supports a relatively diverse aquatic plant community (N=42), resulting in an FQI of 42, which is 113% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to North Star Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Big Fork River Watershed (09030006).

Burns Lake (31065400): Burns Lake will be designated Class 2Be. The biological integrity of the fish community was evaluated using a gill net survey (June 2020), a trap net survey (August 2020), and a nearshore survey (August 2020). The FIBI score of 78 from the survey was above the Exceptional Use threshold (64). Select stressor and habitat information was reviewed for Burns Lake. Approximately 4% of the land use in the upstream watershed is classified as developed (NLCD 2016). The most recent aquatic plant survey, a 2001 survey conducted by the MBS, indicates that the lake supports a relatively diverse aquatic plant community (N=18), resulting in an FQI of 28, which is 99% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Burns Lake with the Class 2Be designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Big Fork River Watershed (09030006).

Turtle Lake (31072500): Turtle Lake will be designated Class 2Ae[LKW,TLC] because it demonstrates support for coldwater species (Lake Whitefish and Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using a gill net survey (August 2017), a trap net survey (July 2017), and a nearshore survey (July 2017). Two additional surveys were completed in August 2010 and are provided as supplemental historic information. The FIBI score of 64 from the recent survey was at the Exceptional Use threshold (64). The FIBI scores of 75 and 66 from the supplemental historic surveys were above the Exceptional Use threshold. Select stressor and habitat information was reviewed for Turtle Lake. Approximately 4%

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of the land use in the upstream watershed is classified as disturbed, with 4% developed and <1% pasture and hay (NLCD 2016). The most recent aquatic plant survey, a 2013 survey conducted by the Lake Ecology Unit indicates that the lake supports a diverse aquatic plant community (N=42), resulting in an FQI of 43, which is 114% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Turtle Lake with the Class 2Ae[LKW,TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Big Fork River Watershed (09030006).

Big Too Much (31079300): Big Too Much Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using a gill net survey (June 2020), two trap net surveys (June 2020 and 2022), and two nearshore surveys (June 2022 and August 2021). The FIBI scores of 80 and 73 from the recent surveys were above the Exceptional Use threshold (64). Select stressor and habitat information was reviewed for Big Too Much Lake. Approximately 3% of the land use in the upstream watershed is classified as developed (NLCD 2016). The most recent aquatic plant survey, a 2001 survey conducted by the MBS, indicates that the lake supports a relatively diverse aquatic plant community (N=31), resulting in an FQI of 33, which is 70% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Big Too Much Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Big Fork River Watershed (09030006).

f. Rapid River Watershed (09030007)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/rapid-river

No applicable lakes.

g. Lower Rainy River Watershed (09030008)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/lower-rainy-river

No applicable lakes.

h. Lake of the Woods Watershed (09030009)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/lake-of-the-woods

No applicable lakes.

3. Red River of the North Basin

a. Bois de Sioux River Watershed (09020101)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/bois-de-sioux-river

No applicable lakes.

b. Mustinka River Watershed (09020102)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mustinka-river

No draft use designations.

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c. Otter Tail River Watershed (09020103)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/otter-tail-river

Use designations not yet evaluated.

d. Upper Red River of the North Watershed (09020104)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/upper-red-river-of-the-north

No applicable lakes.

e. Buffalo River Watershed (09020106)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/buffalo-river

Use designations not yet evaluated.

f. Red River of the North – Marsh River Watershed (09020107)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/red-river-of-the-north-marsh-river

No applicable lakes.

g. Wild Rice River Watershed (09020108)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/wild-rice-river

Use designations not yet evaluated.

h. Red River of the North – Sand Hill River Watershed (09020301)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/red-river-of-the-north-sand-hill-river

No draft use designations.

i. Upper/Lower Red Lake Watershed (09020302)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/upper-lower-red-lake

Use designations not yet evaluated.

j. Red Lake River Watershed (09020303)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/red-lake-river

No applicable lakes.

k. Thief River Watershed (09020304)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/thief-river

No applicable lakes.

l. Clearwater River Watershed (09020305)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/clearwater-river

Use designations not yet evaluated.

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m. Red River of the North – Grand Marais Creek Watershed (09020306)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/red-river-of-the-north-grand-marais-creek

No applicable lakes.

n. Snake River Watershed (09020309)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/snake-river-red-river-basin

No applicable lakes.

o. Red River of the North – Tamarac River Watershed (09020311)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/lower-red-river-red-river-of-the-north-tamarac-river

No applicable lakes.

p. Two Rivers Watershed (09020312)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/two-rivers

No applicable lakes.

q. Roseau River Watershed (09020314)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/roseau-river

No applicable lakes.

4. Upper Mississippi River Basin

a. Mississippi River – Headwaters Watershed (07010101)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mississippi-river-headwaters

Use designations not yet evaluated.

b. Leech Lake River Watershed (07010102)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/leech-lake-river

Use designations not yet evaluated.

c. Mississippi River – Grand Rapids Watershed (07010103)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mississippi-river-grand-rapids

Use designations not yet evaluated.

d. Mississippi River – Brainerd Watershed (07010104)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mississippi-river-brainerd

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Use designations not yet evaluated.

e. Pine River Watershed (07010105)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/pine-river

Use designations not yet evaluated.

f. Crow Wing River Watershed (07010106)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/crow-wing-river

Table 7. Crow Wing River Watershed (07010106) biological and habitat data associated with lakes that will be designated as Class 2Ae or 2Be (abbreviations: DOW=division of waters number, FIBI=fish index of biological integrity, STS=score the shore, FQI=floristic quality index, * indicates supplemental, historic survey data, † indicates supplemental, non-standard effort survey data).

DOW	Lake name	FIBI group	FIBI survey year(s)	FIBI score(s)	% watershed disturbance	STS score(s)	FQI % deviation from threshold
03001700	Two Inlets	2	2016, 2011*	74, 65	8	60, 66	37
03003000	Boot	2	2021, 2021, 2016	75, 79, 71	20	79, 80	37
11030400	Sylvan[8]	2	2021, 2008	72, 67	7	83	102
11030500	Gull	2	2017, 2017, 2007*	77, 68, 62	16	63	62
18037600	Upper Cullen	4	2021, 2012†*, 2003*	78, 74, 41	18	-	86
18037700	Middle Cullen	2	2021, 2003*	75, 58	17	-	72
18040900	West Twin	4	2021, 2017	59, 61	14	80	-
29002500	Ninth Crow Wing	2	2021, 2018†, 2013*	86, 58, 72	17	90	27
29003600	Eleventh Crow Wing[9]	2	2021, 2016	63, 71	13	64, 67	64
29004500	Tenth Crow Wing	4	2018, 2013†*	77, 82	12	88	21
29007200	Eighth Crow Wing	4	2018	77	17	83	27
29008700	Palmer	4	2021, 2016	66, 71	57	90, 89	34
29009100	Seventh Crow Wing	4	2019	78	20	88	22
29009200	Fifth Crow Wing	4	2019	72	16	80	45
29009300	Sixth Crow Wing	4	2019	84	19	88	33
29016100	Long	2	2019	76	40	75	30
29018400	Blue	2	2019	75	24	78	3
29024200	Fish Hook	2	2017, 2012*, 2007*	72, 68, 73	11	59	48
29024300	Potato	2	2016, 2010*	70, 74	9	74	41
29025400	Island	2	2021, 2020†, 2010*	74, 61, 71	9	66, 69	39

[8] The MPCA WID database includes both basins of Sylvan Lake separately (11-0304-01 and 11-0304-02). Both basins will be assigned Class 2Be.
[9] The MPCA WID database includes both basins of Eleventh Crow Wing separately (29-0036-01 and 29-0036-02). Both basins will be assigned Class 2Ae[TLC].

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DOW	Lake name	FIBI group	FIBI survey year(s)	FIBI score(s)	% watershed disturbance	STS score(s)	FQI % deviation from threshold
29025600	Eagle	2	2020, 2017†, 2011†*	75, 36, 61	9	77	65
80003000	Lower Twin	4	2021, 2018†	71, 80	26	83	37

Two Inlets Lake (03001700): Two Inlets Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net, gill net, and nearshore surveys (July 2016). An additional survey was completed in August 2011 and is provided as supplemental historic information. The FIBI score of 74 from the recent survey was above the Exceptional Use threshold (64). The FIBI score of 65 from the supplemental historic survey was also above the Exceptional Use threshold. Select stressor and habitat information was reviewed for Two Inlets Lake. Approximately 8% of the land use in the upstream watershed is classified as disturbed, with 3% developed, 3% pasture and hay, and 2% cultivated (NLCD 2016). Two Score the Shore surveys were completed in 2016 and 2021 and resulted in mean scores of 60 and 66 out of 100 in those respective years, indicating low to moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2011 transect survey, indicates that the lake supports a relatively diverse aquatic plant community (N=22), resulting in an FQI of 28, which is 37% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Two Inlets Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Boot Lake (03003000): Boot Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco: see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using two gill net surveys (August 2016 and August 2021), three trap net surveys (August 2016, June 2021, and August 2021), and two nearshore surveys (July 2016 and June 2021). The FIBI scores of 75, 79, and 71 were above the Exceptional Use threshold (64). Select stressor and habitat information was reviewed for Boot Lake. Approximately 20% of the land use in the upstream watershed is classified as disturbed, with 6% developed, 12% pasture and hay, and 2% cultivated (NLCD 2016). Two Score the Shore surveys were completed in 2016 and 2021 and resulted in mean scores of 79 and 80 out of 100 in those respective years, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2016 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=20), resulting in an FQI of 28, which is 37% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Boot Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Sylvan Lake (11030400): Sylvan Lake will be designated Class 2Be. The biological integrity of the fish community was evaluated using trap net and gill net surveys (June 2021) and a nearshore survey (July 2021). An additional survey was completed in July 2008 and is provided as supplemental historic information. The FIBI score of 72 from the recent survey was above the Exceptional Use threshold (64). The FIBI score of 67 from the supplemental historic survey was also above the Exceptional Use threshold. Select stressor and habitat information was reviewed for Sylvan Lake. Approximately 8% of the land use in the upstream watershed is classified as disturbed, with 7% developed and 1% pasture and hay (NLCD 2016). A Score the Shore survey was completed in 2016 and resulted in a mean score of 83 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2008 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant

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community (N=36), resulting in an FQI of 41, which is 102% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Sylvan Lake with the Class 2Be designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Gull Lake (11030500): Gull Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net and gill net surveys (July 2017) and two nearshore surveys (August 2017). An additional survey was completed in August 2007 and is provided as supplemental historic information. The FIBI scores of 77 and 68 from the recent surveys were above the Exceptional Use threshold (64). The FIBI score of 62 from the supplemental historic survey was above the General Use threshold (45) but below the Exceptional Use threshold. Select stressor and habitat information was reviewed for Gull Lake. Approximately 16% of the land use in the upstream watershed is classified as disturbed, with 5% developed, 9% pasture and hay, and 2% cultivated (NLCD 2016). A Score the Shore survey was completed in 2017 and resulted in a mean score of 63 out of 100, indicating low quality lakeshore habitat. The most recent aquatic plant survey, a 1996 transect survey, indicates that the lake supports a relatively diverse aquatic plant community (N=28), resulting in an FQI of 33, which is 62% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Gull Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Upper Cullen Lake (18037600): Upper Cullen Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net and gill net surveys (July 2021) and a nearshore survey (September 2021). Two additional surveys were completed in September 2003 and July 2012 and are provided as supplemental historic information. Abundant aquatic vegetation (e.g., bulrush, cattail, and water lilies) limited seining effort, particularly during the July 2012 survey, and thereby reduced certainty associated with interpretation of that FIBI score. The FIBI score of 78 from the recent survey was above the Exceptional Use threshold (59). The FIBI score of 74 from the 2012 supplemental historic survey was also above the Exceptional Use threshold; however, this score will be given limited consideration given the low nearshore survey effort. The FIBI score of 41 from the 2003 supplemental historic survey was above the General Use threshold (38) but below the Exceptional Use threshold. Select stressor and habitat information was reviewed for Upper Cullen Lake. Approximately 18% of the land use in the upstream watershed is classified as disturbed, with 10% developed, 6% pasture and hay, and 2% cultivated (NLCD 2016). Shoreline disturbance, as measured by dock density, is low, with approximately 3.3 docks per kilometer of shoreline. The most recent aquatic plant survey, a 2012 point-intercept survey, indicates that the lake supports a diverse aquatic plant community (N=34), resulting in an FQI of 38, which is 86% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Upper Cullen Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Middle Cullen Lake (18037700): Middle Cullen Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net and gill net surveys (July 2021) and a nearshore survey (September 2021). An additional survey was completed in September 2003 and is provided as supplemental historic information. The FIBI score of 75 from the recent survey was above the Exceptional Use threshold (64).

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The FIBI score of 58 from the supplemental historic survey was above the General Use threshold (45) but below the Exceptional Use threshold. Select stressor and habitat information was reviewed for Middle Cullen Lake. Approximately 17% of the land use in the upstream watershed is classified as disturbed, with 9% developed, 6% pasture and hay, and 1% cultivated (NLCD 2016). Shoreline disturbance, as measured by dock density, is high, with approximately 14.3 docks per kilometer of shoreline. The most recent aquatic plant survey, a 2007 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=33), resulting in an FQI of 35, which is 72% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Middle Cullen Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

West Twin Lake (18040900): West Twin Lake will be designated Class 2Be. The biological integrity of the fish community was evaluated using a gill net survey (June 2017), two trap net surveys (June 2017 and June 2021), and two nearshore surveys (July 2017 and June 2021). The FIBI scores of 61 and 59 were above or equal to the Exceptional Use threshold (59). Select stressor and habitat information was reviewed for West Twin Lake. Approximately 14% of the land use in the upstream watershed is classified as disturbed, with 8% developed, 5% pasture and hay, and <1% cultivated (NLCD 2016). A Score the Shore survey was completed in 2017 and resulted in a mean lakewide of 80 out of 100, indicating moderate quality lakeshore habitat. Aquatic plant survey information was unavailable to evaluate diversity or calculate an FQI score. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to West Twin Lake with the Class 2Be designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Ninth Crow Wing Lake (29002500): Ninth Crow Wing Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using a gill net survey (August 2018), two trap net surveys (August 2018 and August 2021), and two nearshore surveys (July 2018 and August 2021). An additional survey was completed in August 2013 and is provided as supplemental historic information. Abundant aquatic vegetation (e.g., bulrush, cattail, and water lilies) and soft substrates limited seining effort, particularly during the August 2018 survey, and thereby reduced certainty associated with interpretation of that FIBI score. The FIBI score of 86 from the 2021 survey was above the Exceptional Use threshold (64). The FIBI score of 58 from the 2018 survey was above the General Use threshold (45) but below the Exceptional Use threshold; however, this score will be given limited consideration given the low nearshore survey effort. The FIBI score of 72 from the supplemental historic survey above the Exceptional Use threshold. Select stressor and habitat information was reviewed for Ninth Crow Wing Lake. Approximately 17% of the land use in the upstream watershed is classified as disturbed, with 4% developed, 10% pasture and hay, and 2% cultivated (NLCD 2016). A Score the Shore survey was completed in 2018 and resulted in a mean score of 90 out of 100, indicating high-quality lakeshore habitat. The most recent aquatic plant survey, a 2013 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=19), resulting in an FQI of 26, which is 27% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Ninth Crow Wing Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Eleventh Crow Wing Lake (29003600): Eleventh Crow Wing Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using two trap net and gill net surveys (July 2016 and July 2021) and two

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nearshore surveys (July 2016 and August 2021). The FIBI scores of 63 and 71 were above the General Use threshold (45); both scores were above the upper limit of the 90% confidence interval (54) but only one was also above the Exceptional Use threshold (64). Select stressor and habitat information was reviewed for Eleventh Crow Wing Lake. Approximately 13% of the land use in the upstream watershed is classified as disturbed, with 5% developed, 7% pasture and hay, and 1% cultivated (NLCD 2016). Two Score the Shore surveys were completed in 2016 and 2021 and resulted in mean scores of 64 and 67 out of 100 in those respective years, indicating low to moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2016 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=21), resulting in an FQI of 27, which is 64% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Eleventh Crow Wing Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in [Minn. R. 7050.0470](#) by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Tenth Crow Wing Lake (29004500): Tenth Crow Wing Lake will be designated Class 2Ae[TLC] because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net and gill net surveys (June 2018) and a nearshore survey (August 2018). An additional survey was completed in August 2013 and is provided as supplemental historic information. Due to unspecified reasons, seining effort was limited during the August 2013 survey, and thereby reduced certainty associated with interpretation of that particular FIBI score. The FIBI score of 77 from the recent survey was above the Exceptional Use threshold (59). The FIBI score of 82 from the supplemental historic survey was also above the Exceptional Use threshold; however, this score will be given limited consideration given the low nearshore survey effort. Select stressor and habitat information was reviewed for Tenth Crow Wing Lake. Approximately 12% of the land use in the upstream watershed is classified as disturbed, with 5% developed, 7% pasture and hay, and <1% cultivated (NLCD 2016). A Score the Shore survey was completed in 2018 and resulted in a mean score of 88 out of 100, indicating high-quality lakeshore habitat. The most recent aquatic plant survey, a 2018 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=17), resulting in an FQI of 24, which is 21% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Tenth Crow Wing Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in [Minn. R. 7050.0470](#) by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Eighth Crow Wing Lake (29007200): Eighth Crow Wing Lake will be designated Class 2Be. The biological integrity of the fish community was evaluated using trap net and gill net surveys (June 2018) and a nearshore survey (July 2018). The FIBI score of 77 was above the Exceptional Use threshold (59). Select stressor and habitat information was reviewed for Eighth Crow Wing Lake. Approximately 17% of the land use in the upstream watershed is classified as disturbed, with 4% developed, 10% pasture and hay, and 2% cultivated (NLCD 2016). A Score the Shore survey was completed in 2018 and resulted in a mean score of 83 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2018 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=19), resulting in an FQI of 26, which is 27% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Eighth Crow Wing Lake with the Class 2Be designation. The MPCA will make this change in [Minn. R. 7050.0470](#) by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Palmer Lake (29008700): Palmer Lake will be designated Class 2Be. The biological integrity of the fish community was evaluated using two trap net and gill net surveys (June 2016 and June 2021) and two nearshore surveys (June 2016 and August 2021). The FIBI scores of 66 and 71 were above the

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Exceptional Use threshold (59). Select stressor and habitat information was reviewed for Palmer Lake. Approximately 57% of the land use in the upstream watershed is classified as disturbed, with 5% developed, 6% pasture and hay, and 46% cultivated (NLCD 2016). Two Score the Shore surveys were completed in 2016 and 2021 and resulted in mean scores of 90 and 89 out of 100 in those respective years, indicating high-quality lakeshore habitat. The most recent aquatic plant survey, a 2006 transect survey, indicates that the lake supports a relatively diverse aquatic plant community (N=18), resulting in an FQI of 25, which is 34% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Palmer Lake with the Class 2Be designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Seventh Crow Wing Lake (29009100): Seventh Crow Wing Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net, gill net, and nearshore surveys (July 2019). The FIBI score of 78 was above the Exceptional Use threshold (59). Select stressor and habitat information was reviewed for Seventh Crow Wing Lake. Approximately 19% of the land use in the upstream watershed is classified as disturbed, with 5% developed, 11% pasture and hay, and 3% cultivated (NLCD 2016). A Score the Shore survey was completed in 2019 and resulted in a mean score of 88 out of 100, indicating high-quality lakeshore habitat. The most recent aquatic plant survey, a 2014 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=17), resulting in an FQI of 25, which is 22% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Seventh Crow Wing Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Fifth Crow Wing Lake (29009200): Fifth Crow Wing Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net and gill net surveys (August 2019) and a nearshore survey (July 2019). The FIBI score of 72 was above the Exceptional Use threshold (59). Select stressor and habitat information was reviewed for Fifth Crow Wing Lake. Approximately 16% of the land use in the upstream watershed is classified as disturbed, with 4% developed, <1% barren, 8% pasture and hay, and 3% cultivated (NLCD 2016). A Score the Shore survey was completed in 2019 and resulted in a mean score of 80 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2019 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=22), resulting in an FQI of 29, which is 45% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Fifth Crow Wing Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Sixth Crow Wing Lake (29009300): Sixth Crow Wing Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net and gill net surveys (August 2019) and a nearshore survey (July 2019). The FIBI score of 84 was above the Exceptional Use threshold (59). Select stressor and habitat information was reviewed for Sixth Crow Wing Lake. Approximately 19% of the land use in the upstream watershed is classified as disturbed, with 5% developed, 11% pasture and hay, and 3% cultivated (NLCD 2016). A Score the Shore survey was completed 2019 and resulted in a mean score of 88 out of 100, indicating

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high quality lakeshore habitat. The most recent aquatic plant survey, a 2014 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=19), resulting in an FQI of 27, which is 33% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Sixth Crow Wing Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Long Lake (29016100): Long Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using a trap net, gill net, and nearshore surveys (July 2019). The FIBI score of 76 was above the Exceptional Use threshold (64). Select stressor and habitat information was reviewed for Long Lake. Approximately 40% of the land use in the upstream watershed is classified as disturbed, with 7% developed, 13% pasture and hay, and 20% cultivated (NLCD 2016). A Score the Shore survey was completed to assess shoreline habitat in 2019 and resulted in a mean lakewide habitat score of 75 out of 100, indicating moderate lakeshore condition. The most recent aquatic plant survey, a 2014 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=17), resulting in an FQI of 24, which is 30% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Long Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Blue Lake (29018400): Blue Lake will be designated Class 2Ae[TLC,SRT], because it demonstrates support for coldwater species (Cisco and stream trout; see MPCA 2025), and also an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net and gill net surveys (August 2019) and a nearshore survey (July 2019). The FIBI score of 75 was above the Exceptional Use threshold (64). Select stressor and habitat information was reviewed for Blue Lake. Approximately 24% of the land use in the upstream watershed is classified as disturbed, with 8% developed, 13% pasture and hay, and 3% cultivated (NLCD 2016). A Score the Shore survey was completed in 2019 and resulted in a mean score of 78 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2014 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=14), resulting in an FQI of 21, which is 3% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2A designation currently assigned to Blue Lake with the Class 2Ae[TLC,SRT] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Fish Hook Lake (29024200): Fish Hook Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net, gill net, and nearshore surveys (July 2017). Two additional surveys were completed in July 2007 and July 2012 and are provided as supplemental historic information. The FIBI score of 72 from the recent survey above the Exceptional Use threshold (64). The FIBI scores of 73 and 68 from the supplemental historic surveys were also above the Exceptional Use threshold. Select stressor and habitat information was reviewed for Fish Hook Lake. Approximately 11% of the land use in the upstream watershed is classified as disturbed, with 4% developed, 5% pasture and hay, and 2% cultivated (NLCD 2016). A Score the Shore survey was completed in 2017 and resulted in a mean score of 59 out of 100, indicating low-quality lakeshore habitat. The most recent aquatic plant survey, a 2017 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=23), resulting in an FQI of 30, which is 48% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace

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the Class 2B designation currently assigned to Fish Hook Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Potato Lake (29024300): Potato Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net, gill net, nearshore surveys (July 2016). An additional survey was completed in July 2010 and is provided as supplemental historic information. The FIBI score of 70 from the recent survey was above the Exceptional Use threshold (64). The FIBI score of 74 from the supplemental historic survey was also above the Exceptional Use threshold. Select stressor and habitat information was reviewed for Potato Lake. Approximately 9% of the land use in the upstream watershed is classified as disturbed, with 3% developed, 5% pasture and hay, and 2% cultivated (NLCD 2016). A Score the Shore survey was completed in 2016 and resulted in a mean score of 74 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2006 MBS survey, indicates that the lake supports a relatively diverse aquatic plant community (N=25), resulting in an FQI of 28, which is 41% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Potato Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Island Lake (29025400): Island Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using trap net and gill net surveys (July 2020) and two nearshore surveys (July 2020 and July 2021). An additional survey was completed in July 2010 and is provided as supplemental historic information. Abundant aquatic vegetation (e.g., bulrush, cattail, water lilies, and wild rice) and soft substrates limited seining effort, particularly during the July 2020 survey, and thereby reduced certainty associated with interpretation of that particular FIBI score. The FIBI score of 74 from the 2021 survey was above the Exceptional Use threshold (64). The FIBI score of 61 from the 2020 survey was above the General Use threshold (45) but below the Exceptional Use threshold; however, this score will be given limited consideration given the low nearshore survey effort. The FIBI score of 71 from the supplemental historic survey was above the Exceptional Use threshold. Select stressor and habitat information was reviewed for Island Lake. Approximately 9% of the land use in the upstream watershed is classified as disturbed, with 3% developed, 4% pasture and hay, and 2% cultivated (NLCD 2016). Two Score the Shore surveys were completed in 2015 and 2020 and resulted in mean scores of 66 and 69 out of 100 in those respective years, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2020 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=19), resulting in an FQI of 28, which is 39% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Island Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Eagle Lake (29025600): Eagle Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using a gill net survey (July 2017), two trap net surveys (July 2017 and July 2020), and two nearshore surveys (August 2017 and July 2020). An additional survey was completed in August 2011 and is provided as supplemental historic information. Abundant aquatic vegetation (e.g., bulrush, cattail, and water lilies) and soft substrates limited seining effort, particularly during the August 2011 and July 2017 surveys, and thereby reduced certainty associated with interpretation of those FIBI scores. The FIBI score of 75 from

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the 2020 survey was above the Exceptional Use threshold (64). The FIBI score of 36 from the 2017 survey was below the General Use threshold (45) and the FIBI score of 61 from the supplemental historic survey was above the General Use threshold but below the Exceptional Use threshold. The 2017 and 2011 scores will be given limited consideration given the lower than required nearshore survey effort. Select stressor and habitat information was reviewed for Eagle Lake. Approximately 9% of the land use in the upstream watershed is classified as disturbed, with 3% developed, 4% pasture and hay, and 2% cultivated (NLCD 2016). A Score the Shore survey was completed in 2017 and resulted in a mean score of 77 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2017 point-intercept survey, indicates that the lake supports a relatively diverse aquatic plant community (N=29), resulting in an FQI of 33, which is 65% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Eagle Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

Lower Twin Lake (80003000): Lower Twin Lake will be designated Class 2Be. The biological integrity of the fish community was evaluated using a gill net survey (July 2018), two trap net surveys (July 2018 and July 2021), and two nearshore surveys (July 2018 and July 2021). Abundant aquatic vegetation (e.g., bulrush, cattail, and water lilies) and soft substrates limited seining effort, particularly during the July 2018 survey, and thereby reduced certainty associated with interpretation of that FIBI score. The FIBI scores of 71 in 2021 and 80 in 2018 were above the Exceptional Use threshold (59); however, the 2018 score will be given limited consideration given the low nearshore survey effort. Select stressor and habitat information was reviewed for Lower Twin Lake. Approximately 26% of the land use in the upstream watershed is classified as disturbed, with 4% developed, 8% pasture and hay, and 13% cultivated (NLCD 2016). A Score the Shore survey was completed in 2018 and resulted in a mean score of 83 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2006 MBS survey, indicates that the lake supports a relatively diverse aquatic plant community (N=22), resulting in an FQI of 26, which is 37% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Lower Twin Lake with the Class 2Be designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Crow Wing River Watershed (07010106).

g. Redeye River Watershed (07010107)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/redeye-river

No draft use designations.

h. Long Prairie River Watershed (07010108)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/long-prairie-river

Table 8. Long Prairie River Watershed (07010108) biological and habitat data associated with lakes that will be designated as Class 2Ae or 2Be (abbreviations: DOW=division of waters number, FIBI=fish index of biological integrity, STS=score the shore, FQI=floristic quality index, * indicates supplemental, historic survey data, † indicates supplemental, non-standard effort survey data).

DOW	Lake name	FIBI group	FIBI survey year(s)	FIBI score(s)	% watershed disturbance	STS score(s)	FQI % deviation from threshold
21008300	Miltona	2	2023, 2019, 2007*	67, 79, 63	50	60	52

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DOW	Lake name	FIBI group	FIBI survey year(s)	FIBI score(s)	% watershed disturbance	STS score(s)	FQI % deviation from threshold
21010800	Mina	2	2023, 2022, 2020†	74, 66, 51	51	91	32
21012300	Ida	2	2022, 2019, 2007*	67, 68, 58	51	66	5
49007900	Alexander	2	2018, 2010*	70, 79	9	65	101
49012700	Shamineau	2	2022, 2021†, 2010*, 2008*	68, 62, 64, 70	23	65	55
49013300	Crookneck	4	2023, 2022, 2021	60, 60, 65	18	71	49
77012000	Charlotte	2	2022, 2018, 2012*	71, 64, 48	74	67	68

Miltona Lake (21008300): Miltona Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using two gill net surveys (August 2023 and 2019), two trap net surveys (July 2023 and August 2019), and two nearshore surveys (July 2023 and 2019). An additional survey was completed in July 2007 and is provided as supplemental historic information. The FIBI scores of 67 and 79 from the recent survey were above the Exceptional Use threshold (64). The FIBI score of 63 from the supplemental historic survey was just below the Exceptional Use threshold. Select stressor and habitat information was reviewed for Miltona Lake. Approximately 50% of the land use in the upstream watershed is classified as disturbed, with 4% developed, 11% pasture and hay, and 35% cultivated (NLCD 2016). A Score the Shore survey was completed in 2017 and resulted in a mean score of 60 out of 100, indicating low quality lakeshore habitat. The most recent aquatic plant survey, a 2004 survey conducted by the MBS, indicates that the lake supports a relatively diverse aquatic plant community (N=25), resulting in an FQI of 28, which is 52% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Miltona Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Long Prairie River Watershed (07010108).

Mina Lake (21010800): Mina Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using a gill net survey (July 2020), two trap net surveys (July 2023 and 2022), and two nearshore surveys (July 2023 and 2022). An additional survey was completed in 2020 but is considered as supporting information only as the survey effort was lower than protocol. The FIBI scores of 74 and 66 from the recent surveys were above the Exceptional Use threshold (64). The FIBI score of 51 from the supplemental historic survey was above the General Use threshold (45) but below the Exceptional Use threshold. Select stressor and habitat information was reviewed for Mina Lake. Approximately 51% of the land use in the upstream watershed is classified as disturbed, with 6% developed, 12% pasture and hay, and 34% cultivated (NLCD 2016). A Score the Shore survey was completed in 2020 and resulted in a mean score of 91 out of 100, indicating high quality lakeshore habitat. The most recent aquatic plant survey, a 1997 survey conducted by the Fisheries program, indicates that the lake supports a relatively diverse aquatic plant community (N=17), resulting in an FQI of 24, which is 32% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Mina Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in Minn. R. 7050.0470 by updating the beneficial use table for the Long Prairie River Watershed (07010108).

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Ida Lake (21012300): Ida Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using two gill net surveys (August 2023 and 2019), two trap net surveys (July 2022 and August 2019), and two nearshore surveys (July 2022 and 2019). An additional survey was completed in June 2007 and is provided as supplemental historic information. The FIBI scores of 67 and 68 from the recent surveys were above the Exceptional Use threshold (64). The FIBI score of 58 from the supplemental historic survey was below the Exceptional Use threshold. Select stressor and habitat information was reviewed for Ida Lake. Approximately 51% of the land use in the upstream watershed is classified as disturbed, with 4% developed, 11% pasture and hay, and 36% cultivated (NLCD 2016). A Score the Shore survey was completed in 2019 and resulted in a mean score of 66 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2004 survey conducted by the MBS, indicates that the lake supports a relatively diverse aquatic plant community (N=12), resulting in an FQI of 20, which is 5% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Ida Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in [Minn. R. 7050.0470](#) by updating the beneficial use table for the Long Prairie River Watershed (07010108).

Alexander Lake (49007900): Alexander Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using gill net and trap net surveys (August 2018) and a nearshore survey (July 2018). An additional survey was completed in August 2010 and is provided as supplemental historic information. The FIBI score of 70 from the recent survey was above the Exceptional Use threshold (64). The FIBI score of 79 from the supplemental historic survey was also above the Exceptional Use threshold. Select stressor and habitat information was reviewed for Alexander Lake. Approximately 9% of the land use in the upstream watershed is classified as disturbed, with 4% developed, 3% pasture and hay, and 2% cultivated (NLCD 2016). A Score the Shore survey was completed in 2017 and resulted in a mean score of 65 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2014 survey conducted by the Fisheries program, indicates that the lake supports a relatively diverse aquatic plant community (N=41), resulting in an FQI of 41, which is 101% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Alexander Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in [Minn. R. 7050.0470](#) by updating the beneficial use table for the Long Prairie River Watershed (07010108).

Shamineau Lake (49007900): Shamineau Lake will be designated Class 2Be. The biological integrity of the fish community was evaluated using a gill net survey (July 2021), two trap net surveys (June 2022 and July 2021), and two nearshore surveys (June 2022 and July 2021). The 2021 nearshore survey had lower effort due to high water. Two additional surveys were completed in July 2010 and August 2008 and are provided as supplemental historic information. The FIBI scores of 68 and 62 from the surveys were above the General Use threshold (45) and near or above the Exceptional Use threshold (64). Two older FIBI scores of 64 and 70 from the supplemental historic survey were also equal to or above the Exceptional Use threshold. Select stressor and habitat information was reviewed for Shamineau Lake. Approximately 23% of the land use in the upstream watershed is classified as disturbed, with 5% developed, 5% pasture and hay, and 13% cultivated (NLCD 2016). A Score the Shore survey was completed in 2017 and resulted in a mean score of 65 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2014 survey conducted by the MBS, indicates that the lake supports a relatively diverse aquatic plant community (N=26), resulting in an FQI of 30, which is 55% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to

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Shamineau Lake with the Class 2Be designation. The MPCA will make this change in [Minn. R. 7050.0470](#) by updating the beneficial use table for the Long Prairie River Watershed (07010108).

Crookneck Lake (49012700): Crookneck Lake will be designated Class 2Be. The biological integrity of the fish community was evaluated using a gill net survey (June 2021), two trap net surveys (July 2023 and June 2021), and three nearshore surveys (July 2023, June 2022, and July 2021). The FIBI scores of 60, 60, and 65 from the recent surveys were above the Exceptional Use threshold (59). Select stressor and habitat information was reviewed for Crookneck Lake. Approximately 18% of the land use in the upstream watershed is classified as disturbed, with 16% developed, <1% pasture and hay, and 1% cultivated (NLCD 2016). A Score the Shore survey was completed in 2022 and resulted in a mean score of 71 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2014 survey conducted by the MBS, indicates that the lake supports a relatively diverse aquatic plant community (N=27), resulting in an FQI of 29, which is 49% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Crookneck Lake with the Class 2Be designation. The MPCA will make this change in [Minn. R. 7050.0470](#) by updating the beneficial use table for the Long Prairie River Watershed (07010108).

Charlotte Lake (77012000): Charlotte Lake will be designated Class 2Ae[TLC], because it demonstrates support for a coldwater species (Cisco; see MPCA 2025) and an exceptional cool- and warmwater fish community. The biological integrity of the cool- and warmwater fish community was evaluated using a gill net survey (June 2018), two trap net surveys (June 2022 and 2018), and two nearshore surveys (June 2022 and 2018). An additional survey was completed in June 2012 and is provided as supplemental historic information. The FIBI scores of 70 and 64 from the recent surveys were at or above the Exceptional Use threshold (64). The FIBI score of 48 from the supplemental historic survey was above the General Use threshold (45) but below the Exceptional Use threshold. Select stressor and habitat information was reviewed for Charlotte Lake. Approximately 74% of the land use in the upstream watershed is classified as disturbed, with 8% developed, 22% pasture and hay, and 44% cultivated (NLCD 2016). A Score the Shore survey was completed in 2019 and resulted in a mean score of 67 out of 100, indicating moderate quality lakeshore habitat. The most recent aquatic plant survey, a 2006 survey conducted by the Fisheries program, indicates that the lake supports a relatively diverse aquatic plant community (N=26), resulting in an FQI of 31, which is 68% higher than the threshold identified to represent the minimum accepted state of biological condition. Considering this information, it is reasonable to replace the Class 2B designation currently assigned to Charlotte Lake with the Class 2Ae[TLC] designation. The MPCA will make this change in [Minn. R. 7050.0470](#) by updating the beneficial use table for the Long Prairie River Watershed (07010108).

i. Mississippi River – Sartell Watershed (07010201)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mississippi-river-sartell

Use designations not yet evaluated.

j. Sauk Rapids Watershed (07010202)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/sauk-river

Use designations not yet evaluated.

k. Mississippi River – St. Cloud Watershed (07010203)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mississippi-river-st-cloud

Use designations not yet evaluated.

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l. North Fork Crow River Watershed (07010204)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/north-fork-crow-river

Use designations not yet evaluated.

m. South Fork Crow River Watershed (07010205)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/south-fork-crow-river

Use designations not yet evaluated.

n. Mississippi River – Twin Cities Watershed (07010206)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mississippi-river-twin-cities

No draft use designations.

o. Rum River Watershed (07010207)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/rum-river

Use designations not yet evaluated.

5. Minnesota River Basin

a. Minnesota River - Headwaters Watershed (07020001)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/minnesota-river-headwaters

Use designations not yet evaluated.

b. Pomme de Terre River Watershed (07020002)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/pomme-de-terre-river

Use designations not yet evaluated.

c. Lac qui Parle River Watershed (07020003)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/lac-qui-parle-river

Use designations not yet evaluated.

d. Minnesota River – Yellow Medicine River Watershed (07020004)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/minnesota-river-yellow-medicine-river-hawk-creek

No draft use designations.

e. Chippewa River Watershed (07020005)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/chippewa-river

Use designations not yet evaluated.

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f. Redwood River Watershed (07020006)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/redwood-river

Use designations not yet evaluated.

g. Minnesota River – Mankato Watershed (07020007)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/minnesota-river-mankato

Use designations not yet evaluated.

h. Cottonwood River Watershed (07020008)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/cottonwood-river

Use designations not yet evaluated.

i. Blue Earth River Watershed (07020009)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/blue-earth-river

Use designations not yet evaluated.

j. Watonwan River Watershed (07020010)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/watonwan-river

Use designations not yet evaluated.

k. Le Sueur River Watershed (07020011)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/le-sueur-river

Use designations not yet evaluated.

l. Lower Minnesota River Watershed (07020012)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/lower-minnesota-river

Use designations not yet evaluated.

6. Saint Croix River Basin

a. Upper St. Croix River Watershed (07030001)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/upper-st-croix-river

No applicable lakes.

b. Kettle River Watershed (07030003)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/kettle-river

Use designations not yet evaluated.

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c. Snake River Watershed (07030004)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/snake-river-st-croix-basin

Use designations not yet evaluated.

d. Lower St. Croix River Watershed (07030005)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/lower-st-croix-river

Use designations not yet evaluated.

e. Mississippi River – Lake Pepin Watershed (07040001)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mississippi-river-lake-pepin

Use designations not yet evaluated.

f. Cannon River Watershed (07040002)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/cannon-river

No draft use designations.

g. Mississippi River – Winona Watershed (07040003)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mississippi-river-winona

No applicable lakes.

h. Zumbro River Watershed (07040004)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/zumbro-river

No applicable lakes.

i. Mississippi River – La Crescent Watershed (07040006)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mississippi-river-la-crescent

No applicable lakes.

j. Root River Watershed (07040008)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/root-river

No applicable lakes.

k. Mississippi River – Reno Watershed (07060001)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/mississippi-river-reno

No applicable lakes.

l. Upper Iowa River Watershed (07060002)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/upper-iowa-river

No applicable lakes.

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7. Cedar-Des Moines Rivers Basin

a. Upper Wapsipinicon River Watershed (07080102)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/upper-wapsipinicon-river

No applicable lakes.

b. Cedar River Watershed (07080201)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/cedar-river

No applicable lakes.

c. Shell Rock River Watershed (07080202)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/shell-rock-river

Use designations not yet evaluated.

d. Winnebago River Watershed (07080203)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/winnebago-river

No applicable lakes.

e. Des Moines River - Headwaters Watershed (07100001)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/des-moines-river-headwaters

Use designations not yet evaluated.

f. Lower Des Moines River Watershed (07100002)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/lower-des-moines-river

No applicable lakes.

g. East Fork Des Moines River Watershed (07100003)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/east-fork-des-moines-river

Use designations not yet evaluated.

8. Missouri River Basin

a. Upper Big Sioux River Watershed (10170202)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/upper-big-sioux-river

No applicable lakes.

b. Lower Big Sioux River Watershed (10170203)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/lower-big-sioux-river

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No applicable lakes.

c. Rock River Watershed (10170204)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/rock-river

No applicable lakes.

d. Little Sioux River Watershed (10230003)

MPCA webpage: https://www.pca.state.mn.us/watershed-information/little-sioux-river

No draft use designations.

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Appendix B: Confirmed General Use designations

In addition to the proposed Exceptional Use designations in this document, the TALU reviews also determined that 202 lake WIDs (129,446 acres) that were monitored in 2020-2022 (and subsequently assessed in 2022-2024) should be confirmed as General Use waters (Table 8). The list of these lakes is provided in Table 9.

Table 9. List of lakes from the 2020, 2021 and 2022 Intensive Watershed Monitoring framework watersheds with confirmed General Use designations. Abbreviations: WID = waterbody identification code; 2Bg = General Use cool/warm water habitat; 2Bdg = General Use cool/warm water habitat also protected as a source for drinking water; 2Ag = General Use cold water habitat.

WID	Waterbody name	Use	Acres	County
Minn. R. 7050.0470, subp. 1. Lake Superior Basin				
1.A.(1) Lake Superior - North (04010101)				
None				
1.A.(2) Lake Superior - South (04010102)				
None				
1.A.(3) St. Louis River (04010201)				
None				
1.A.(4) Cloquet River (04010202)				
None				
1.A.(5) Nemadji River (04010301)				
09-0008-00	Chub - 2 MI SW OF CARLTON	2Bg	302.99	Carlton
Minn. R. 7050.0470, subp. 2. Lake of the Woods Basin				
2.A.(1) Rainy River - Headwaters (09030001)				
None				
2.A.(2) Vermilion River (09030002)				
None				
2.A.(3) Rainy River - Rainy Lake (09030003)				
None				
2.A.(4) Little Fork River (09030005)				
None				
2.A.(5) Big Fork River (09030006)				
31-0805-00	Arrowhead - 6.5 MI SE OF WIRT	2Bg	129.32	Itasca
31-0197-00	Battle - EFFIE	2Bg	236.93	Itasca
31-0726-00	Bello - 8 MI SW OF BIGFORK	2Ag[TLC]	502.17	Itasca
31-0671-00	Big Island - 5 MI E OF MARCELL	2Bg	245.08	Itasca
31-0813-00	Bowstring - 14 MI NW OF DEER RIVER	2Bg	9198.42	Itasca
31-0524-01	Coon - 4 SE OF BIGFORK	2Bg	374.96	Itasca
31-0543-00	Crooked - MARCELL	2Bg	132.68	Itasca
31-0334-00	Deer - 14 MI NE OF BIGFORK	2Ag[TLC]	1830.48	Itasca
31-0454-00	Eagle - 20 MI N OF COLERAINE	2Bg	276.91	Itasca
31-0782-00	Gunderson - 6 MI SW OF BIGFORK	2Bg	175.02	Itasca
31-0913-00	Island - 4 MI S OF NORTHOME	2Bg	2935.99	Itasca
31-0786-00	Jessie - 18 MI N OF DEER RIVER	2Ag[TLC]	1742.71	Itasca
31-0758-00	Little Bowstring - 3 MI SE OF BOWSTRING	2Ag[TLC]	316.17	Itasca
31-0784-00	Little Jessie - 1 MI NNW OF BOWSTRING	2Ag[TLC]	614.54	Itasca
31-0773-00	Maple - 2 MI SW OF JAYNES	2Ag[TLC]	244.56	Itasca
31-0898-00	Moose - 7 MI E OF ORTH	2Bg	400.69	Itasca; Koochiching
31-0339-00	Pickerel - 15 MI NE OF BIGFORK	2Ag[TLC]	233.65	Itasca
31-0524-02	Sandwick - 4 SE OF BIGFORK	2Bg	211.19	Itasca

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WID	Waterbody name	Use	Acres	County
31-0910-00	Shallow Pond - ALVWOOD	2Bg	217.22	Itasca
31-0843-00	Whitefish - WIRT	2Ag[TLC]	506.94	Itasca
2.A.(6) Rapid River (09030007)				
None				
2.A.(7) Rainy River - Lower (09030008)				
None				
2.A.(8) Lake of the Woods (09030009)				
None				
Minn. R. 7050.0470, subp. 3. Red River of the North Basin				
3.A.(1) Bois de Sioux River (09020101)				
None				
3.A.(2) Mustinka River (09020102)				
26-0185-00	Cottonwood - 5 MI NW OF DONNELLY	2Bg	247.48	Grant; Stevens
3.A.(3) Otter Tail River (09020103)				
None				
3.A.(4) Upper Red River of the North (09020104)				
None				
3.A.(5) Buffalo River (09020106)				
None				
3.A.(6) Red River of the North - Marsh River (09020107)				
None				
3.A.(7) Wild Rice River (09020108)				
None				
3.A.(8) Red River of the North - Sandhill River (09020301)				
60-0202-00	Sarah - 4 MI S OF ERSKINE	2Bg	310.49	Polk
60-0217-00	Union - 7 MI SE OF MENTOR	2Bg	798.58	Polk
3.A.(9) Upper/Lower Red Lake (09020302)				
None				
3.A.(10) Red Lake River (09020303)				
None				
3.A.(11) Thief River (09020304)				
None				
3.A.(12) Clearwater River (09020305)				
None				
3.A.(13) Red River of the North - Grand Marais Creek (09020306)				
None				
3.A.(14) Snake River (09020309)				
None				
3.A.(15) Red River of the North - Tamarac River (09020311)				
None				
3.A.(16) Two Rivers (09020312)				
None				
3.A.(17) Roseau River (09020314)				
None				
Minn. R. 7050.0470, subp. 4. Upper Mississippi River Basin				
4.A.(1) Mississippi River - Headwaters (07010101)				
None				
4.A.(2) Leech Lake River (07010102)				
None				
4.A.(3) Mississippi River – Grand Rapids (07010103)				

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WID	Waterbody name	Use	Acres	County
None				
4.A.(4) Mississippi River - Brainerd (07010104)				
None				
4.A.(5) Pine River (07010105)				
None				
4.A.(6) Crow Wing River (07010106)				
03-0127-00	Bass - 1 MI N OF SNELLMAN	2Bg	125.54	Becker
29-0146-00	Belle Taine - 3 MI E OF DORSET	2Bg	1488.04	Hubbard
29-0032-00	Big Bass - 8 MI SW OF AKELEY	2Bg	131.87	Hubbard
29-0185-00	Big Sand - 5 MI NE OF PARK RAPIDS	2Ag[TLC]	1628.76	Hubbard
29-0143-00	Big Stony - 5 MI NE OF HUBBARD	2Bg	351.99	Hubbard
80-0034-00	Blueberry - 3 MI N OF MENAHGA	2Bg	548.58	Wadena
29-0162-00	Boulder - 1 MI NE OF DORSET	2Bg	323.52	Hubbard
18-0374-00	Clark - AT LAKE HUBERT (TOWN)	2Bg	301.31	Crow Wing
29-0110-00	Dead - 5 MI NE OF NEVIS	2Bg	133.29	Hubbard
29-0142-00	Duck - 9 MI SE OF PARK RAPIDS	2Bg	329.50	Hubbard; Wadena
29-0101-01	East Crooked - 3 MI NW OF NEVIS	2Ag[TLC]	360.90	Hubbard
18-0407-00	East Twin - NISSWA	2Bg	154.93	Crow Wing
18-0305-00	Edward - 8 MI N OF BRAINERD	2Ag[TLC]	2579.39	Crow Wing
29-0086-00	First Crow Wing - 5 MI W OF BADOURA	2Bg	521.34	Hubbard
29-0078-00	Fourth Crow Wing - 5 MI S OF NEVIS	2Bg	456.69	Hubbard
18-0338-00	Gladstone - 4 MI NE OF NISSWA	2Bg	432.31	Crow Wing
11-0209-00	Hardy - IN BAXTER	2Bg	100.80	Cass; Crow Wing
29-0249-00	Hinds - 6 MI S OF PARK RAPIDS	2Bg	306.22	Hubbard
18-0375-00	Hubert - 2 MI SE OF NISSWA	2Ag[TLC]	1287.61	Crow Wing
29-0088-00	Island - 7 MI S OF NEVIS	2Bg	222.61	Hubbard
29-0313-00	Little Mantrap - 15 MI NW OF PARK RPDS	2Bg	366.54	Becker; Hubbard
29-0150-00	Little Sand - 2 MI NE OF DORSET	2Ag[TLC]	408.01	Hubbard
15-0068-00	Long Lost - 9 MI S OF ZERKEL	2Bg	379.98	Clearwater
29-0180-00	Lower Bottle - 8 MI NE OF PARK RAPIDS	2Ag[TLC]	402.62	Hubbard
18-0403-00	Lower Cullen - 1 MI N OF NISSWA	2Ag[TLC]	562.96	Crow Wing
29-0151-01	MANTRAP (EAST BASIN) - 8 MI N OF DORSET	2Ag[TLC]	649.31	Hubbard
29-0151-05	MANTRAP (HOME BAY) - 8 MI N OF DORSET	2Ag[TLC]	74.78	Hubbard
29-0151-02	Mantrap (Middle Basin - 8 MI N OF DORSET	2Ag[TLC]	749.33	Hubbard
29-0151-03	MANTRAP (MIRROR BAY) - 7 MI N OF DORSET	2Ag[TLC]	34.67	Hubbard
29-0151-04	MANTRAP (WEST ARM) - 8 MI N OF DORSET	2Ag[TLC]	191.61	Hubbard
11-0222-00	Margaret - AT LAKE SHORE (TOWN)	2Ag[TLC]	242.63	Cass
18-0408-00	Mayo - 3 MI S OF PEQUOT LAKES	2Bg	161.58	Cass; Crow Wing
18-0387-02	Middle Whipple - AT BAXTER MN	2Bg	156.00	Crow Wing
18-0399-00	Nisswa - AT NISSWA	2Bg	216.93	Crow Wing
18-0372-00	North Long - 6 MI N OF BRAINERD	2Ag[TLC]	6132.80	Crow Wing
29-0178-00	Pickerel - PARK RAPIDS	2Bg	292.15	Hubbard
11-0220-00	Ray - 1 MI E OF LAKE SHORE	2Bg	141.14	Cass; Crow Wing
18-0373-00	Round - 3 MI S OF NISSWA	2Ag[TLC]	1651.61	Crow Wing
18-0398-00	Roy - 1 MI W OF NISSWA	2Bg	315.17	Crow Wing; Cass
29-0085-00	Second Crow Wing - 8 MI S OF NEVIS	2Ag[TLC]	224.13	Hubbard
03-0102-00	Shell - 4 MI NW OF SNELLMAN	2Bg	3108.61	Becker
18-0404-00	Sibley - AT PEQUOT LAKES	2Bg	417.85	Crow Wing; Cass
11-0500-00	Spider - PINE RIVER	2Bg	136.78	Cass
29-0117-02	SPIDER (EAST BAY) - 2 MI N OF NEVIS	2Ag[TLC]	104.23	Hubbard

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WID	Waterbody name	Use	Acres	County
29-0117-01	SPIDER (NE/SW BAY) - 2 MI N OF NEVIS	2Ag[TLC]	478.61	Hubbard
03-0010-00	Straight - AT OSAGE	2Ag[TLC]	479.23	Becker
29-0077-00	Third Crow Wing - 6 MI S OF NEVIS	2Ag[TLC]	643.96	Hubbard
29-0148-00	Upper Bottle - 9 MI NE OF PARK RAPIDS	2Ag[TLC]	326.51	Hubbard
11-0218-00	Upper Gull - AT LAKE SHORE (TOWN)	2Ag[TLC]	418.24	Cass
29-0101-03	West Crooked - 3 MI NW OF NEVIS	2Bg	245.13	Hubbard
18-0379-00	White Sand - AT BAXTER	2Bg	426.73	Crow Wing
4.A.(7) Redeye River (07010107)				
56-0031-00	Adley - PARKERS PRAIRIE	2Bg	208.13	Otter Tail
56-0200-00	Donalds - OTTERTAIL CITY	2Bg	184.18	Otter Tail
56-0116-02	East Leaf - 6 MI N OF HENNING	2Ag[TLC]	411.60	Otter Tail
56-0116-01	Middle Leaf - 6 MI N OF HENNING	2Ag[TLC]	396.20	Otter Tail
56-0140-01	Portage (main bay) - AT OTTERTAIL MN	2Bg	257.82	Otter Tail
56-0114-00	West Leaf - 7 MI NW OF HENNING	2Ag[TLC]	696.90	Otter Tail
4.A.(8) Long Prairie River (07010108)				
21-0053-00	Agnes - IN ALEXANDRIA	2Bg	135.28	Douglas
21-0085-00	Andrew - 2 MI SW OF ALEXANDRIA	2Ag[TLC]	948.09	Douglas
21-0151-00	Blackwell - HOLMES CITY	2Bg	293.77	Douglas
21-0102-00	Brophy - 3 MI W OF ALEXANDRIA	2Ag[TLC]	290.05	Douglas
21-0049-00	Burgen - 3 MI SE OF ALEXANDRIA	2Ag[TLC]	171.20	Douglas
21-0057-00	Carlos - 2 MI W OF CARLOS	2Ag[TLC]	2611.03	Douglas
77-0046-00	Coal - BROWERVILLE	2Bg	165.21	Todd
21-0103-00	Cowdrey - 1 MI NW OF ALEXANDRIA	2Ag[TLC]	239.29	Douglas
21-0199-02	Crooked (East Crooked) - 1 MI NW OF HOLMES CITY	2Bg	108.99	Douglas
21-0199-01	Crooked (Northwest Bay) - 1 MI NW OF HOLMES CITY	2Bg	164.52	Douglas
21-0080-00	Darling - 1 MI NW OF ALEXANDRIA	2Ag[TLC]	1043.96	Douglas
77-0076-00	Fawn - LINCOLN	2Bg	120.89	Todd
49-0137-00	Fish Trap - 7 MI S OF MOTLEY	2Ag[TLC]	1150.87	Morrison
21-0052-00	Geneva - AT ALEXANDRIA	2Ag[TLC]	650.78	Douglas
21-0150-00	Grants - HOLMES CITY	2Bg	173.80	Douglas
21-0051-00	Henry - AT ALEXANDRIA	2Bg	149.74	Douglas
77-0128-00	Horseshoe - 3 MI NE OF BROWERVILLE	2Bg	113.01	Todd
21-0076-00	Irene - 1 MI NW OF MILTONA	2Ag[TLC]	641.94	Douglas
21-0055-00	Jessie - 4 MI E OF ALEXANDRIA	2Bg	113.90	Douglas
77-0105-00	Latimer - 3 MI S OF LONG PRAIRIE	2Bg	200.36	Todd
21-0106-01	LATOKA (NORTH BAY) - 4 MI W OF ALEXANDRIA	2Ag[TLC]	568.41	Douglas
21-0106-02	LATOKA (SOUTH BAY) - 4 MI W OF ALEXANDRIA	2Ag[TLC]	192.37	Douglas
21-0056-00	Le Homme Dieu - AT ALEXANDRIA	2Ag[TLC]	1798.27	Douglas
21-0144-01	LOBSTER (EAST BAY) - 6 MI S OF GARFIELD	2Ag[TLC]	703.21	Douglas
21-0144-02	LOBSTER (WEST BAY) - 6 MI S OF GARFIELD	2Ag[TLC]	601.98	Douglas
21-0094-00	Louise - 4 MI NW OF ALEXANDRIA	2Ag[TLC]	208.99	Douglas
21-0092-00	Mary - 2 MI SW OF ALEXANDRIA	2Bg	2433.43	Douglas
21-0180-00	Mill - 7 MI S OF GARFIELD	2Ag[TLC]	438.25	Douglas
77-0050-00	Mill - LONG PRAIRIE	2Bg	161.65	Todd
21-0095-00	North Union - 3 MI NW OF ALEXANDRIA	2Ag[TLC]	116.58	Douglas
21-0140-00	Pocket - 7 MI N OF LOWRY	2Bg	255.74	Douglas
49-0131-00	Round - PILLAGER	2Bg	94.72	Morrison
77-0066-00	Thunder - BROWERVILLE	2Bg	208.62	Todd
77-0088-00	Turtle - BROWERVILLE	2Ag[TLC]	109.37	Todd
21-0041-00	Union - 2 MI N OF FORADA	2Bg	104.65	Douglas

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WID	Waterbody name	Use	Acres	County
21-0073-00	Vermont - 5 MI NW OF MILTONA	2Bg	319.95	Douglas
21-0054-00	Victoria - AT ALEXANDRIA	2Ag[TLC]	417.55	Douglas
21-0081-00	Winona - IN ALEXANDRIA	2Bg	211.26	Douglas
4.A.(9) Mississippi River - Sartell (07010201)				
None				
4.A.(10) Sauk River (07010202)				
None				
4.A.(11) Mississippi River - St. Cloud (07010203)				
None				
4.A.(12) North Fork Crow River (07010204)				
None				
4.A.(13) South Fork Crow River (07010205)				
None				
4.A.(14) Mississippi River - Twin Cities (07010206)				
62-0002-00	Bald Eagle - AT WHITE BEAR LAKE	2Bg	1011.93	Anoka; Ramsey; Washington
27-0031-00	Bde Maka Ska - IN MINNEAPOLIS	2Bg	419.88	Hennepin
27-0039-00	Cedar - IN MINNEAPOLIS	2Bg	169.60	Hennepin
27-0137-00	Christmas - IN SHOREWOOD	2Bg	259.93	Carver; Hennepin
82-0163-00	Clear - 1 MI SW OF FOREST LAKE	2Bg	432.97	Washington
27-0181-00	Dutch - AT MOUND	2Bg	160.59	Hennepin
27-0111-01	Eagle - IN MAPLE GROVE	2Bg	282.23	Hennepin
10-0044-02	East Auburn - IN VICTORIA	2Bg	136.31	Carver
27-0118-00	Fish - IN MAPLE GROVE	2Bg	229.16	Hennepin
27-0139-00	Forest - 1 MI N OF SPRING PARK	2Bg	87.73	Hennepin
62-0007-00	Gervais - IN LITTLE CANADA	2Bg	228.77	Ramsey
02-0053-00	Ham - AT HAM LAKE	2Bg	169.20	Anoka
27-0016-00	Harriet - IN MINNEAPOLIS	2Bg	340.31	Hennepin
27-0040-00	Lake of the Isles - IN MINNEAPOLIS	2Bg	119.77	Hennepin
27-0160-00	Long - AT LONG LAKE	2Bg	277.53	Hennepin
27-0042-03	Lower Twin - AT CRYSTAL	2Bg	29.37	Hennepin
27-0104-00	Medicine - IN MEDICINE LAKE	2Bg	907.12	Hennepin
27-0042-02	Middle Twin - AT CRYSTAL	2Bg	56.00	Hennepin
27-0133-06	Minnetonka-Black Lake - IN MOUND	2Bg	97.44	Hennepin
27-0133-03	Minnetonka-Carsons Bay - IN DEEPHAVEN	2Bg	108.92	Hennepin
27-0133-10	Minnetonka-Crystal Bay - AT ORONO	2Bg	805.18	Hennepin
27-0133-08	Minnetonka-Emerald Lake - IN MOUND	2Bg	13.91	Hennepin
27-0133-01	Minnetonka-Grays Bay - AT WAYZATA	2Bg	184.23	Hennepin
27-0133-09	Minnetonka-Halsteds Bay - 1 MI SW OF MOUND	2Bg	571.26	Hennepin
27-0133-15	Minnetonka-Jennings Bay - AT MOUND	2Bg	300.23	Hennepin
27-0133-02	Minnetonka-Lower Lake - AT ORONO	2Bg	5908.59	Hennepin
27-0133-11	Minnetonka-Maxwell Bay - IN ORONO	2Bg	300.92	Hennepin
27-0133-13	Minnetonka-North Arm - IN ORONO	2Bg	314.10	Hennepin
27-0133-07	Minnetonka-Seton Lake - IN MOUND	2Bg	42.72	Hennepin
62-0057-00	Josephine - IN ROSEVILLE	2Bg	111.32	Ramsey
27-0133-04	Minnetonka-St. Albans Bay - 1 MI NE EXCELS'R	2Bg	160.12	Hennepin
27-0133-12	Minnetonka-Stubbs Bay - IN ORONO	2Bg	196.94	Hennepin
62-0078-00	Johanna - IN ARDEN HILLS	2Bg	206.16	Ramsey
27-0133-05	Minnetonka-Upper Lake - 1.5 MI SE OF MOUND	2Bg	4229.20	Carver; Hennepin
27-0133-14	Minnetonka-West Arm - AT MOUND	2Bg	807.78	Hennepin

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WID	Waterbody name	Use	Acres	County
10-0009-00	Minnewashta - 2 MI E OF ZUMBRO HGHTS	2Bg	659.60	Carver
27-0019-00	Nokomis - IN MINNEAPOLIS	2Bg	201.25	Hennepin
62-0056-00	Owasso - IN SHOREVIEW	2Bg	366.65	Ramsey
10-0042-00	Parley - 3 MI S ST BONIFACIUS	2Bg	253.20	Carver; Hennepin
62-0013-00	Phalen - IN ST. PAUL	2Bg	191.56	Ramsey
10-0053-00	Piersons - 2 MI SW OF VICTORIA	2Bg	255.64	Carver
10-0045-00	Steiger - AT VICTORIA	2Bg	162.19	Carver
27-0141-00	Tanager - 2.5 MI SW OF WAYZATA	2Bg	51.24	Hennepin
62-0061-00	Turtle - IN SHOREVIEW	2Bg	439.28	Ramsey
27-0042-01	Upper Twin - AT CRYSTAL	2Bg	116.19	Hennepin
10-0048-00	Wassermann - 1 MI SW OF VICTORIA	2Bg	169.08	Carver
27-0117-00	Weaver - IN MAPLE GROVE	2Bg	144.53	Hennepin
10-0044-01	West Auburn - AT VICTORIA	2Bg	137.90	Carver
82-0167-00	White Bear - IN WHITE BEAR LAKE	2Bg	2408.67	Ramsey; Washington
10-0041-00	Zumbra-Sunny - 1 MI N OF VICTORIA	2Bg	259.85	Carver; Hennepin
4.A.(15) Rum River (07010207)				
None				
Minn. R. 7050.0470, subp. 5. Minnesota River Basin				
5.A.(1) Minnesota River – Headwaters (07020001)				
None				
5.A.(2) Pomme de Terre River (07020002)				
None				
5.A.(3) Lac qui Parle River (07020003)				
None				
5.A.(4) Minnesota River - Yellow Medicine River (07020004)				
34-0171-00	Eagle - 1 MI N OF WILLMAR	2Bg	837.15	Kandiyohi
34-0192-00	Long - 2 MI N OF WILLMAR	2Bg	1522.78	Kandiyohi
41-0067-00	Perch - IVANHOE	2Bg	163.06	Lincoln
41-0089-00	Shaokatan - 7 MI SW OF IVANHOE	2Bg	984.93	Lincoln
5.A.(5) Chippewa River (07020005)				
None				
5.A.(6) Redwood River (07020006)				
None				
5.A.(7) Minnesota River - Mankato (07020007)				
None				
5.A.(8) Cottonwood River (07020008)				
None				
5.A.(9) Blue Earth River (07020009)				
None				
5.A.(10) Watonwan River (07020010)				
None				
5.A.(11) Le Sueur River (07020011)				
None				
5.A.(12) Minnesota River – Lower (07020012)				
None				
Minn. R. 7050.0470, subp. 6. Saint Croix River Basin				
6.A.(1) Upper St. Croix River (07030001)				
None				
6.A.(2) Kettle River (07030003)				
None				

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WID	Waterbody name	Use	Acres	County
6.A.(3) Snake River (07030004)				
None				
6.A.(4) Lower St. Croix River (07030005)				
None				
Minn. R. 7050.0470, subp. 7. Lower Mississippi River Basin				
7.A.(1) Mississippi River - Lake Pepin (07040001)				
None				
7.A.(2) Cannon River (07040002)				
74-0023-00	Beaver - 5 MI NW OF ELLENDALE	2Bg	95.24	Steele
66-0052-00	Cedar - 5 MI W OF FARIBAULT	2Bg	879.40	Rice
81-0014-01	Clear - Near Waseca	2Bg	631.51	Waseca
66-0014-00	Dudley - 5.5 MI NW OF FARIBAULT	2Bg	62.38	Rice
40-0092-01	East Jefferson - 5 MI SE OF CLEVELAND	2Bg	661.45	Le Sueur
40-0051-00	Fish - 2 MI NNE OF ELYSIAN	2Bg	73.64	Le Sueur
66-0029-00	Fox - 2 MI S OF MILLERSBURG	2Bg	306.57	Rice
40-0057-00	Frances - 1 MI NW OF ELYSIAN	2Bg	862.68	Le Sueur
66-0038-00	French - 4 MI NW OF FARIBAULT	2Bg	873.48	Rice
40-0063-00	German - 4 MI NW OF ELYSIAN	2Bg	783.86	Le Sueur
66-0047-00	Hunt - 9 MI NW OF FARIBAULT	2Bg	174.20	Rice
66-0015-00	Kelly - 4 MI NW OF FARIBAULT	2Bg	63.24	Rice
66-0039-00	Mazaska - AT SHIELDSVILLE	2Bg	669.19	Rice
40-0056-00	Rays - ELYSIAN	2Bg	151.12	Le Sueur
66-0018-00	Roberds - 2 MI NW OF FARIBAULT	2Bg	618.89	Rice
40-0039-00	Roemhildts - ELYSIAN	2Bg	67.34	Le Sueur
66-0055-00	Shields - 7 MI NW OF FARIBAULT	2Bg	933.01	Rice
40-0031-00	Tetonka - AT WATERVILLE	2Bg	1336.64	Le Sueur
40-0002-00	Upper Sakatah - AT WATERVILLE	2Bg	879.65	Le Sueur; Rice
40-0033-00	Volney - 4 MI SE OF LE CENTER	2Bg	259.29	Le Sueur
40-0092-02	West Jefferson - 6 MI SE O CLEVELND	2Bg	382.77	Le Sueur
7.A.(3) Mississippi River – Winona (07040003)				
None				
7.A.(4) Zumbro River (07040004)				
None				
7.A.(5) Mississippi River - La Crescent (07040006)				
None				
7.A.(6) Root River (07040008)				
None				
7.A.(7) Mississippi River - Reno (07060001)				
None				
7.A.(8) Upper Iowa River (07060002)				
None				
Minn. R. 7050.0470, subp. 8. Cedar-Des Moines Rivers Basin				
8.A.(1) Upper Wapsipinicon River (07080102)				
None				
8.A.(2) Cedar River (07080201)				
None				
8.A.(3) Shell Rock River (07080202)				
None				
8.A.(4) Winnebago River (07080203)				
None				

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WID	Waterbody name	Use	Acres	County
8.A.(5) Des Moines River - Headwaters (07100001)				
None				
8.A.(6) Lower Des Moines River (07100002)				
None				
8.A.(7) East Fork Des Moines River (07100003)				
None				
Minn. R. 7050.0470, subp. 9. Missouri River Basin				
9.A.(1) Upper Big Sioux River (10170202)				
None				
9.A.(2) Lower Big Sioux River (10170203)				
None				
9.A.(3) Rock River (10170204)				
None				
9.A.(4) Little Sioux River (10230003)				
32-0022-00	Clear - 3 MI W OF JACKSON	2Bg	426.05	Jackson
32-0024-00	Little Spirit - 10 MI SW OF JACKSON	2Bg	599.06	Jackson
32-0020-00	Loon - 8 MI SW OF JACKSON	2Bg	698.48	Jackson
53-0028-00	Okabena - AT WORTHINGTON	2Bg	759.20	Nobles
32-0069-00	Round - 3 MI NE OF ROUND LAKE	2Bg	905.96	Jackson

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