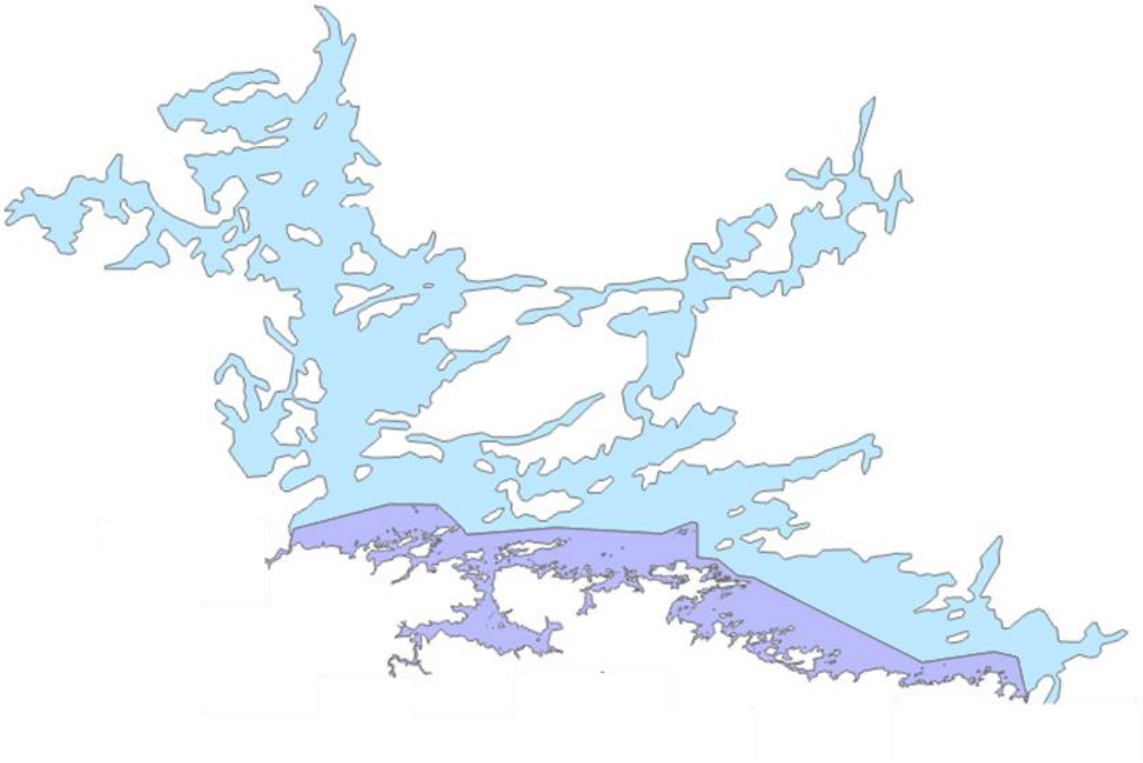
Fisheries Management Plan for Rainy Lake

2026 – 2036



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Executive Summary

Rainy Lake is a large lake found in northeastern Minnesota, spanning 220,800 acres along the Minnesota-Ontario border, with 54,140 acres in Minnesota, including significant waters within Voyageurs National Park (VNP). The Minnesota portion of Rainy Lake is managed by the Minnesota Department of Natural Resources (DNR) International Falls fisheries management area. The DNR produces plans for many of the resources it manages, including the state's ten largest lakes. Large lake plans are updated every five to ten years; notable updates in the 2026 – 2036 Rainy Lake plan include additional background and current conditions information, updated goals and objectives, updated survey schedules, and updated management actions. Primary sportfish management species for Rainy Lake include walleye, black crappie, northern pike, and smallmouth bass.

Plan purpose and development:

The purpose of the Rainy Lake management plan is to guide fisheries management from 2026 – 2036. The plan:

- Provides background information on Rainy Lake's fish populations and distribution, management authority and public involvement, and fisheries management activities.
- Summarizes management questions, opportunities and challenges the DNR seeks to address through this plan, and angler preferences for the fishery.
- Outlines strategic direction by describing goals, objectives, and activities for the DNR's approach to fisheries management that will be used to prioritize agency resources and activities; and
- Defines the activities and management actions that will be used to track and manage fish populations and distribution during plan implementation.

This plan will guide Rainy Lake fisheries management for 10 years and will be evaluated and revised if necessary five years after adoption.

Background and current conditions

The background and current conditions section of the plan provides an overview of the history of the Rainy Lake region, the habitat around the lake, water-level management, aquatic invasive species, climate change impacts, fish community status and trends, angler pressure, harvest, current regulations and management activities, and social and economic characteristics.

Management direction: goals, objectives, and strategies

The plan's two goals to support fisheries management are to:

1. Maintain Rainy Lake as a high-quality multi-species fishery
2. Protect and enhance valuable habitats within Rainy Lake

Objectives are nested within each goal. Objectives include activities that can be tracked to determine progress through the life of the plan. Additionally, Goal 2 contains strategies within each objective that include specific activities the DNR will use to achieve its goal and objectives.

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Purpose and Scope

The Minnesota Department of Natural Resources (DNR) produces plans for many of the resources it manages, including the state's ten largest lakes. Of all the lakes managed by the DNR, Rainy Lake is the state's third largest lake after Lake Superior and Lake of the Woods in surface area, totaling 220,800 acres, with 54,140 acres in Minnesota and the remaining acres in Ontario, Canada. This plan guides the State of Minnesota's fisheries management for the Minnesota waters of Rainy Lake from 2026 – 2036.

The plan's approach to fisheries management synthesizes ecological, economic, political, and sociocultural information to determine actions (e.g., regulations, population monitoring) to achieve fish resource goals. It uses a fish community approach to maintain ecological integrity and to enable adaptive fisheries management. The plan's goals, objectives, and management actions support the DNR mission statement below and are designed to protect fish populations, enhance habitat, and maintain sustainable harvests; these are intended to be flexible and adaptive to changes to the fishery or citizen utilization of the resource. This plan will guide effective and efficient allocation of staff and fiscal resources to protect and enhance fisheries resources and provide for its sustained use. This plan is written for use by both the DNR and citizens that are interested in the management of the Rainy Lake fishery resource.

Efficient description of some aspects of fisheries management requires the use of technical language. Definitions for many of these terms can be found in the Common Acronyms (Appendix 1) and Glossary (Appendix 2).

Management plans focus on work within the DNR's authority, with this plan specifically focusing on fisheries management for the Minnesota waters of Rainy Lake. This plan includes an overview of the lake's background, current conditions, and strategic issues, as well as identifies management goals, objectives, and strategies that will guide fisheries management.

Minnesota Department of Natural Resources Mission Statement

The mission of the Minnesota Department of Natural Resources (DNR) is to work with Minnesotans to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.

Plan Development

This plan was developed by the DNR International Falls area fisheries office in collaboration with several internal and external partners. Additional input was received from a variety of stakeholder groups through various methods. The subsequent sections describe the plan development process in further detail.

Internal Coordination

The plan was developed by an interdisciplinary project team within the DNR's Fish and Wildlife Division and was largely developed by fisheries staff from the International Falls area fisheries office in collaboration with DNR leadership. The plan development included an iterative process of content development and review by DNR fisheries staff and leadership.

External Coordination

DNR Fisheries frequently collaborates with the Ontario Ministry of Natural Resources (OMNR) and Voyageurs National Park (VNP) on monitoring, projects, and planning efforts. The DNR discussed the management plan drafting process with the OMNR and VNP at the annual Ontario-Minnesota Fisheries Committee meetings in the spring of 2025 and 2026. A draft of the plan was shared with OMNR and VNP to review the draft plan and provide comments prior to the public comment period in March 2026. Local government interests have also been involved in planning efforts, with both Koochiching and St. Louis County Board members serving as members on the Rainy Lake Fisheries Input Group (RLFIG; described in the subsequent section).

Public Input

Throughout 2025 and 2026, the DNR used a variety of methods to gather input from individuals and groups to inform this plan. DNR staff received input through annual stakeholder meetings with the Rainy Lake Fisheries Input Group. Additionally, the DNR received input on angler values and preferences regarding regulation change to a "special regulation" in 2025. This effort reached a statewide audience through a widely shared news release, use of an online survey, and provided opportunity for a broad range of the public to share their thoughts on not only the regulation under review but management of Rainy Lake's fishery as a whole. General comments related to both the regulation and management were consistent with the goals, objectives, and management actions in this plan.

Rainy Lake Fisheries Input Group

The DNR's Rainy Lake Fisheries Input Group (RLFIG; Table 1) advised on and reviewed plan content. RLFIG is similar in composition and function to advisory groups the DNR has established to inform its management of other Minnesota resources. The RLFIG was formed in early 2025 and includes appointments by stakeholder partners as well as selected participants from a statewide application process. Meetings with the RLFIG will be conducted annually to update the group on monitoring efforts and management considerations. Ongoing communication with RLFIG ensures that management remains responsive, collaborative, and grounded in shared stewardship of the resource.

Organization/Affiliation	Representative
International Falls Convention and Visitor Bureau	Katrina Heibel
Koochiching County	Adam McIntyre
St. Louis County	Ryan Logan
Rainy Lake Sport Fishing Club	Jason Ellman
Statewide Walleye Work Group	Karry Kyllo
Resort/Lake Business Owner	Tom Dougherty
Resort/Lake Business Owner	Greg Williams
Local Business Owner	Aaron Shuff
Local Angler	Wes Peterson
Local Angler	Tom Biondich
Non-Local Angler	Chris Parrucci
Non-Local Angler	Zach Wittl

Table 1: Rainy Lake Fisheries Input Group slots and representatives.

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Public Review

A draft of the plan was released for public review in March 2026. Staff reviewed comments and evaluated where changes should be made resulting in this final plan. This process is described further in Appendix 2.

Background and Current Conditions

This section summarizes background on the social, historical, and biological influences on Rainy Lake to provide context for the goals, objectives, and strategies for fisheries management.

Habitat

Rainy Lake is located in St. Louis and Koochiching Counties along the international border between Minnesota and the Province of Ontario, Canada (Figure 1). The lake is a natural reservoir of a drainage system that begins in northeastern Minnesota and ends at Hudson Bay in Canada. Rainy Lake encompasses 220,800 acres, with 54,140 acres (one quarter) lying in Minnesota. Approximately 35,142 acres (65 percent) of the Minnesota waters lie within the boundaries of Voyageurs National Park (VNP). The length of Minnesota's portion of shoreline is about 973 miles in total; the greatest length from east to west is 46 miles, and the maximum width from north to south is 33 miles. The maximum depth is 161 feet; however, 35 percent of the Minnesota waters are less than 15 feet deep. Rainy Lake is typical of lakes on the Canadian Shield – characterized by rocky, forested, irregular shorelines and numerous islands, soft and infertile waters, and little aquatic vegetation. The lake is mesotrophic and contains an intermediate level of nutrients, maintaining a productive environment for aquatic animal and plant life. The southwestern portion of the lake is dominated by a low area that was historically a part of the bed of glacial Lake Agassiz.

Prior to the construction of the dam in 1909, water levels were controlled by Koochiching Falls on the Rainy River near International Falls. During periods of high water, water levels backed up behind the restricted channel located at Ranier Rapids. In 1909, a dam was constructed between International Falls, Minnesota and Fort Frances, Ontario and controls current water levels for the lake. The operation of this structure, relative to pre-dam conditions, raises water levels, delays the peak high-water level in the spring, and extends the period of summer high-water into the fall. Prior to a rule curve change in 2001, water levels fluctuated an average of 3.6 feet per year, which is 2.6 feet less than pre-dam conditions (Flug 1986). Additional details related to water-level management can be found in the next section.

The habitat within Rainy Lake includes both protected shorelines and ecosystems within the boundaries of Voyageur's National Park and development along the lake outside of VNP. The park was established in 1975 and includes the Minnesota waters of Rainy Lake from east Black Bay to Kettle Falls. Shoreline development has been limited within park boundaries and provides protection of quality aquatic habitats. Outside of the park boundaries, shoreline development in the Minnesota waters of Rainy Lake is concentrated within areas accessible by road or boat. Between Ranier and VNP, notable development on Rainy Lake includes five resorts, two houseboat rental outfitters, three campgrounds, several private group facilities, and many private homes.

A sufficient quantity and quality of habitat exist in Rainy Lake to support its diverse, high-quality fishery. Rainy Lake fisheries management efforts have focused on restoring and protecting critical habitat, improving data-driven assessment tools, and preparing for emerging environmental challenges. Cooperative partner projects have enhanced walleye spawning habitat through artificial reefs, log-jam removal, and shoreline stabilization, supported by significant Legacy Grant funding. A notable collaborative project with the Rainy Lake Sportfishing Club involved construction of several artificial reefs in Black Bay between 1966 and 1993 to increase spawning opportunities for walleye. A spawning reef evaluation found that walleye egg densities on enhanced and natural reefs in Black Bay were quite low (Radomski 1991). The study recommended there is no need for further enhancement of walleye spawning areas on Black Bay or the south arm of Rainy Lake at present spawning stock biomass.

Additionally, the DNR worked on a cooperative project to restore the walleye spawning habitat on the Rat Root River from 2010 to 2012. The Rainy Lake Sportfishing Club worked collaboratively with the Koochiching County Soil and Water Conservation district (SWCD) to receive a Conservation Partner Legacy Grant for habitat improvement through the Lessard-Sams Outdoor Heritage Council, receiving $22,500 in 2010 and $215,000 in 2011. The project began in 2011 and included contracted log-jam removal to improve flow and fish passage and continued in 2012 with grant funding. Additional habitat improvement projects include two erosion control efforts and the development of four riffles for walleye spawning site enhancement.

Current and ongoing habitat protection work includes the review of shoreline and aquatic plant management permits and promotion of best practices. Climate change and water-level variability increasingly influence spawning success, habitat availability, and long-term population resilience, underscoring the need for close coordination with hydrologic regulators under International Joint Commission (IJC) rule curves. Continued monitoring of and support for partner efforts surrounding invasive species remain essential to safeguard recruitment and ecosystem health.

Figure 1: Map depicting the location of Rainy Lake along the Minnesota-Ontario border.

Water-Level Management

Water-level management on Rainy Lake is shared between Minnesota and Ontario and is governed by the International Joint Commission (IJC) through its established rule curves, which specify the target range of lake water levels throughout the year. These rule curves are designed to balance multiple interests, including flood control, hydropower generation, navigation, recreation, cultural, and ecological protection. Water levels are especially important for fisheries management because they influence spawning habitat availability, nearshore nursery areas, aquatic vegetation structure, and water temperature, all of which affect fish productivity and survival. DNR Fisheries participates in IJC discussions and is a member of the Adaptive Management Committee that evaluates potential changes and post change responses as it pertains to fisheries and aquatic resources.

During spring, stable or gradually rising water levels support successful spawning for species like northern pike and walleye, whose eggs rely on inundated shoreline vegetation or rocky substrates. Conversely, rapid rises in the water level can flood nests and deplete oxygen, while sharp drawdowns can expose eggs and strand juvenile fish. Throughout summer, water levels affect the extent of littoral (shallow) habitat that many fish species depend on for feeding and refuge. The IJC rule curves attempt to moderate extreme fluctuations, but under changing climate conditions, such as heavier rainfall events or prolonged droughts, managers may face increasing pressure to adjust these curves to protect human infrastructure, cultural resources, and ecological integrity.

Water Quality and Productivity

While Rainy Lake does stratify, its waters provide deep and cool water habitat. Water-quality monitoring, including dissolved oxygen and temperature profiles, is collected annually through collaborative efforts between DNR and VNP. Collected data are then used to inform productivity models and release mortality for several fish species. Productivity models include the Thermal Optical Habitat Area (TOHA) for walleye and the

Morphoedaphic Index (MEI) for other species. Data collection for MEI/TOHA continues to advance with expanded monitoring of key physical parameters. Additional details about MEI and TOHA can be found in the Harvest Management and Release Mortality section.

Aquatic Invasive Species

Aquatic invasive species can impact lake productivity – when a species invades a lake, its population first grows slowly before dramatically increasing to a level that often exceeds the water body's carrying capacity. Invasive species abundance then drops and remains stable at a lower abundance (Jones and Montz 2020). Spiny water-fleas and rusty crayfish have both invaded Rainy Lake, and zebra mussel veligers, or larvae, have been observed, although no adult zebra mussels have been discovered as of the writing of this plan. Spiny water-fleas have been present for the last 20 years, and their existence in the lake ecosystem has resulted in decreased young-of-the-year (YOY) walleye growth, which could impact walleye recruitment in the recreational fishery (Hanson et. Al. 2020). To minimize the risk of additional invasions, invasive species inspectors are stationed at high-use public boat access sites.

Climate Change

Climate change poses a growing risk to fisheries management and healthy fish populations on Rainy Lake, including potential impacts from changing water temperature, ice cover and growing season duration, and precipitation patterns. Warmer waters can stress cold and cool-water fish species such as walleye, lake whitefish, and burbot, shifting their habitat ranges and affecting spawning success and recruitment. Changes in seasonal ice cover can disrupt long-standing patterns of angler access and fish behavior, while more intense storm events may increase runoff and flooding. These shifts complicate management decisions, making it harder to determine and maintain sustainable harvest levels and protect the ecological balance of the Rainy Lake fishery. Consequently, management actions need to consider application and impact in the changing climate.

Commercial Fishery

While currently very limited in Minnesota waters, commercial fishing has been allowed on Rainy Lake for more than 100 years. Commercial fishing continued for a variety of species through 1984, especially walleye and lake whitefish receiving most substantial harvest. The commercial harvest for walleye was gradually reduced through the increased permit conditions, specifically an increase to the minimum gill net mesh size and by a reduction to the amount of nets per license. Legislation eliminated commercial gill netting after the 1987 season, except for one permit issued for lake whitefish. The complete elimination of commercial fishing for game fish by any gear was scheduled for 1992, however, all remaining licensed commercial game fishermen accepted the terms of a buyout offered in 1985. Commercial walleye quotas were also bought out on the Canadian side of the South Arm in 1990.

Currently, there is one commercial fisherman licensed to operate in the Minnesota waters of Rainy Lake under a harvest quota for lake whitefish. The average annual take of this fishery has been 18,132 pounds since 1985. In 1999, the quota was reduced from 32,000 pounds to 25,440 pounds of dressed lake whitefish. The highest harvest post quota reduction occurred in 2012, with an estimated 23,040 pounds harvested. In 2004, the

Minnesota-Ontario Boundary Waters Fisheries Atlas set a harvest target of 26,680 pounds of dressed lake whitefish.

The current commercial fisherman is also allowed to operate within the boundaries of the national park. A letter from VNP Superintendent Benton J. Clary to DNR Commissioner Rod Sando in 1994 states that Federal Regulations (36 CFR 2.3(d)(4) specifically prohibit commercial fishing within a National Park and reaffirmed the Park's desire to move in a direction that would ultimately eliminate commercial fishing within VNP. However, Superintendent Clary agreed to "phase out the activity over a time span in which he (Joe Arnold) is no longer personally in the operation. Once Mr. Arnold decides that he will no longer be personally involved in the fishing operation, the permit will not be reissued to Mr. Arnold or any other individual."

Quotas and seasons may be adjusted as necessary in the future to maintain lake whitefish population health, avoid non-target catches, and minimize sport angler conflicts. Annual commercial reports are compiled each year, and Fish Community Index Netting (FCIN) sampling is carried out on a two-of four-year rotation.

Fish Community Status and Trends

Rainy Lake has a diverse fish community (over 50 fish species) that supports recreational fisheries. Species commonly targeted by anglers on the Minnesota portion of Rainy Lake include walleye, northern pike, black crappie, and smallmouth bass. Northern pike, smallmouth bass, and black crappie are targeted by anglers in similar numbers in creel surveys. Other species that are present in Rainy Lake that are encountered by anglers include yellow perch, burbot, sturgeon, tullibee (cisco), sauger, and lake whitefish. The status and trends of the managed sportfish species (walleye, northern pike, black crappie, and smallmouth bass) and other species are discussed in the subsequent sections.

Walleye

Walleye are the most popular and sought-after species on Rainy Lake. Walleye are managed to provide a diverse, high-quality size structure with high angler catch and harvest rates. Walleye population and abundance have fluctuated over time; from a significant decline from commercial overexploitation and high pressure to more recent recovery through regulation changes and management. The walleye population is monitored annually through various surveys that include netting and creel surveys.

Several investigations and studies were completed in the 1950s in response to declining walleye abundance and a decrease in fishing quality. Results indicated that the decline may have been caused by inadequate spring water levels at time of spawn combined with the overexploitation from commercial fishing, particularly as it related to brood stock abundance. As a result of these initial investigations and studies, additional research examining the effects of water levels was completed. After the decline seen in the 1950s, several surveys were completed on the lake between 1959 and 1981. Results indicated a decline in walleye abundance through the 1960s, followed by an increase through the 1970s, then returning to a sharp decline between 1981 and 1986.

The walleye population was also significantly impacted by several years of overexploitation through commercial harvest. The commercial walleye fishery ended through attrition in 1985 on the Minnesota waters of Rainy Lake, with commercial harvest continuing on the Ontario waters into the early 1990s. Today, there is no commercial fishing for walleye on Rainy Lake, with net fishing restricted to subsistence harvest.

Additionally, the establishment of VNP in the 1970s resulted in increased popularity and pressure on the recreational fishery. As the fishery recovered during the 1990s and into the early 2000s, recreational pressure and harvest also increased, resulting in the implementation of experimental regulations in 1994 to keep harvest within sustainable levels and protect the spawning stock.

Walleye catch rates have since leveled off overall in recent years to a new normal range. Prior to the 1990s, Rainy Lake walleye produced a strong year-class once every four years; since 1990, walleye catch rates have increased and reached record highs in the mid-2000s. Since 2007, catch rates have ranged between 4.6 and 7.7 and averaged 6.2 walleye per net from gill net surveys. Consistent recruitment and stable spawning stock has driven consistent walleye catch rates in recent years, with strong year-classes produced every two to three years on average. Additionally, year-classes produced in recent years are stronger than previous year-classes prior to the 1990s. The gill net catch rate of walleye greater than 18-inches in length increased from an average of 0.67 per net between 1986 and 1994 to 1.10 per net between 2016 and 2025.

DNR Fisheries staff have continued to track walleye recovery through survey data, which has indicated a rapid increase in abundance since the 1990s and has reached a new normal population level (Figure 2). The recovery was largely accomplished through a reduction in harvest and establishment of protective slot regulations, which resulted in more consistent recruitment (Figure 3). Regulations have evolved over the years and have provided protection for walleye from overharvest and continue to be an important management tool to sustain the population.

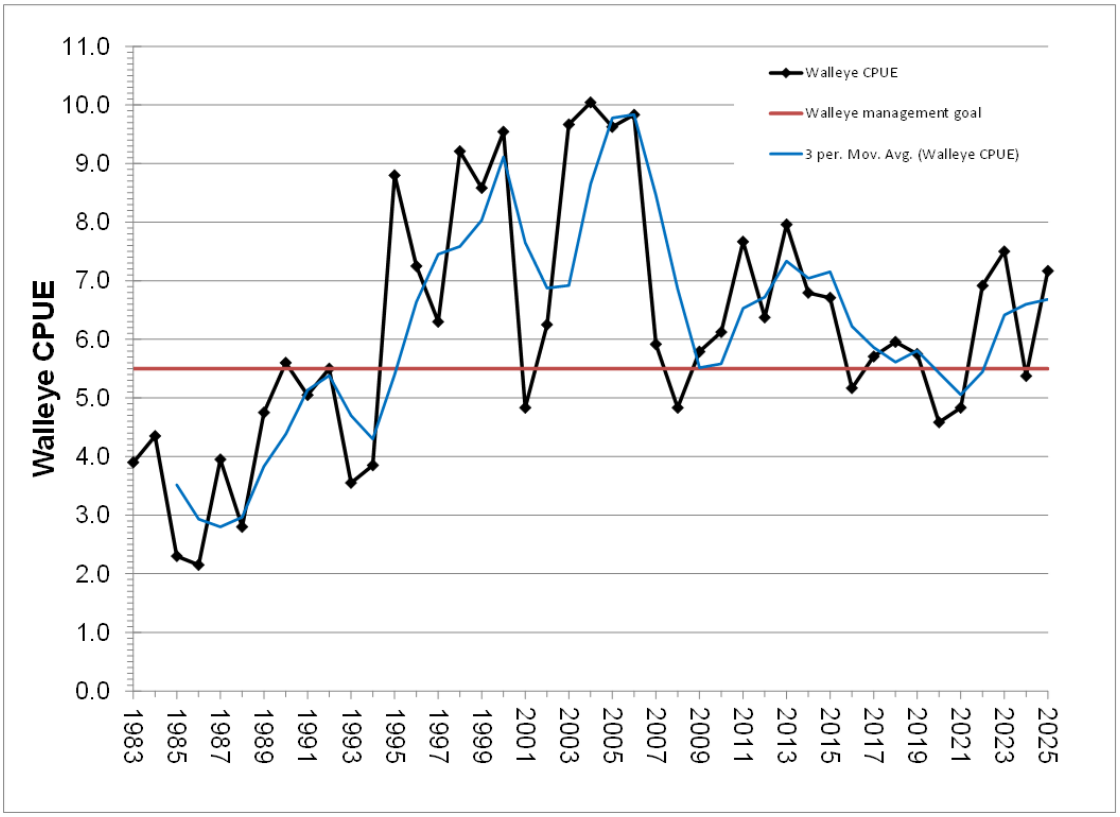

Figure 2: Catch per unit effort of walleye in September gill nets from 1983 through 2025. The blue line denotes the 3-year average from 1985 to 2025. The red line denotes the management goal of 5.5 walleye per lift (25th percentile), while the black line denotes the annual catch per net.

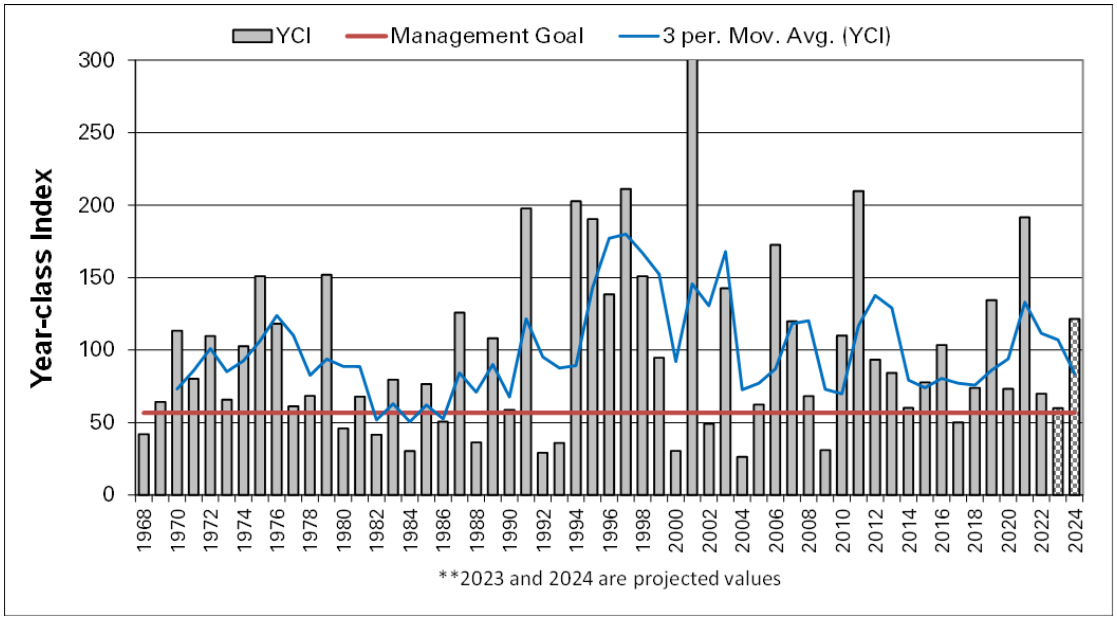

Figure 3: Year-class strength of walleye from 1968 through 2025.
*The 2023 and 2024 values are predicted. The blue line represents the 3-year average from 1970 to 2025. The red line represents the management goal of 57 Year Class Index (25th percentile) from 1983 to 2022.

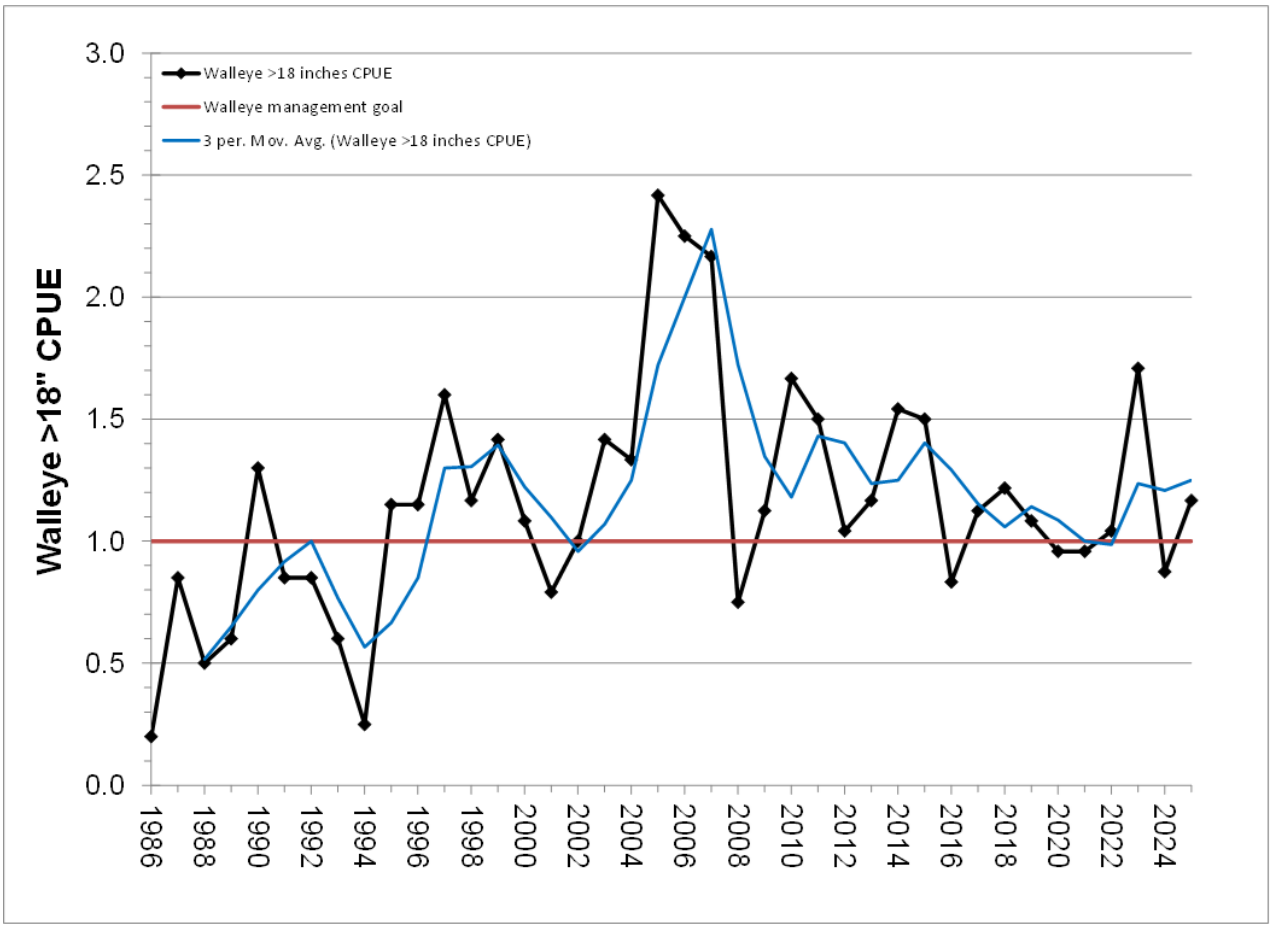

Figure 4: Catch rate of walleye over 18 inches sampled in fall gill nets, 1986 to 2025. The black line represents annual catch rate, while the blue line represents the 3-year moving average. The red line represents the management goal of 1.0 per net.

Northern Pike

Rainy Lake supports a high-quality northern pike fishery with exceptional fishing opportunities for pike over 30 and 40 inches. Population estimates of northern pike are primarily assessed through fall gill netting. Northern pike catch rates have fluctuated since 1983 with no prominent trend, ranging from periods of higher catch rates to more frequent variability. In recent years, catch rates have been stable, ranging between 1.50 and 2.71 per net since 2008 (Figure 5).

Currently, Rainy Lake has a stable and strong population of northern pike. 2025 gill net catches yielded strong results, with an average size of 26.9 inches, as well as fish up to 39.4 inches. There has been an increasing trend of large northern pike (greater than or equal to 30 inches) captured in the fall gill nets over the last 20 years, with 2025 results of 0.75 fish per net (Figure 6). In recent years, northern pike harvest has declined below the target harvest level (Figure 12), but remain a popular fish targeted by anglers.

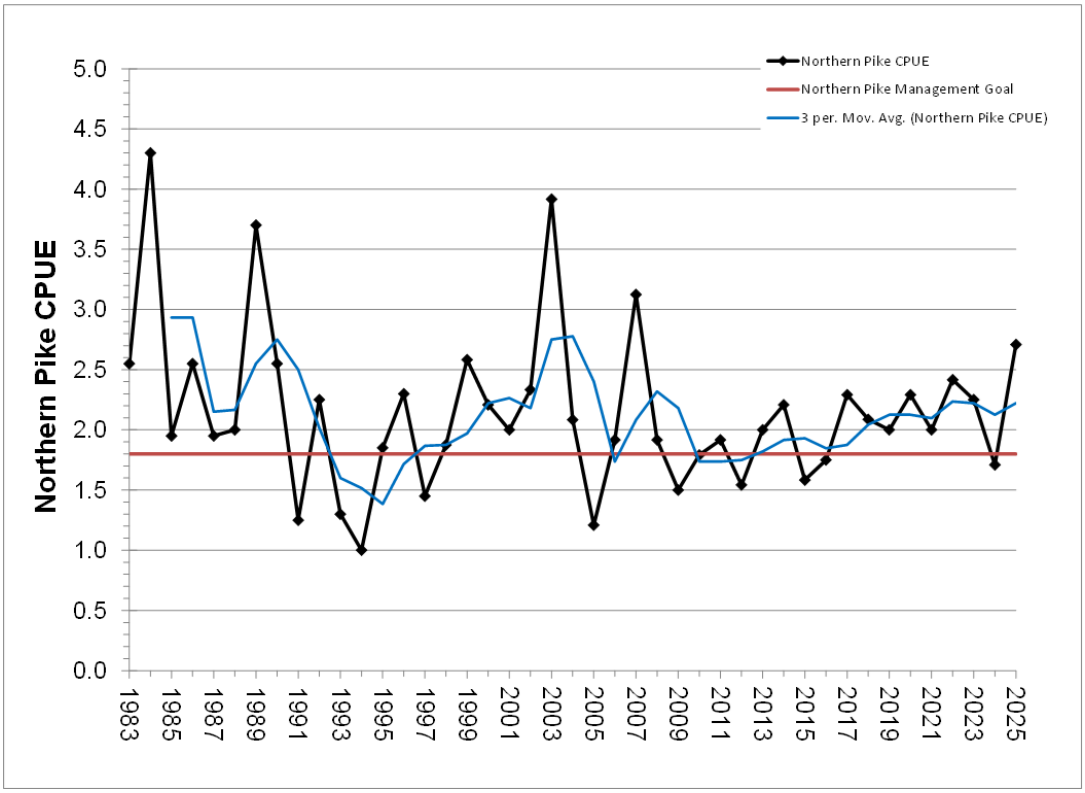

Figure 5: Catch per unit effort of northern pike in September gill nets from 1983 through 2025. The blue line denotes the 3-year average from 1985 to 2025. The red line denotes the management goal of 1.8 northern pike per lift (1st quartile), while black line denotes the annual catch per net.

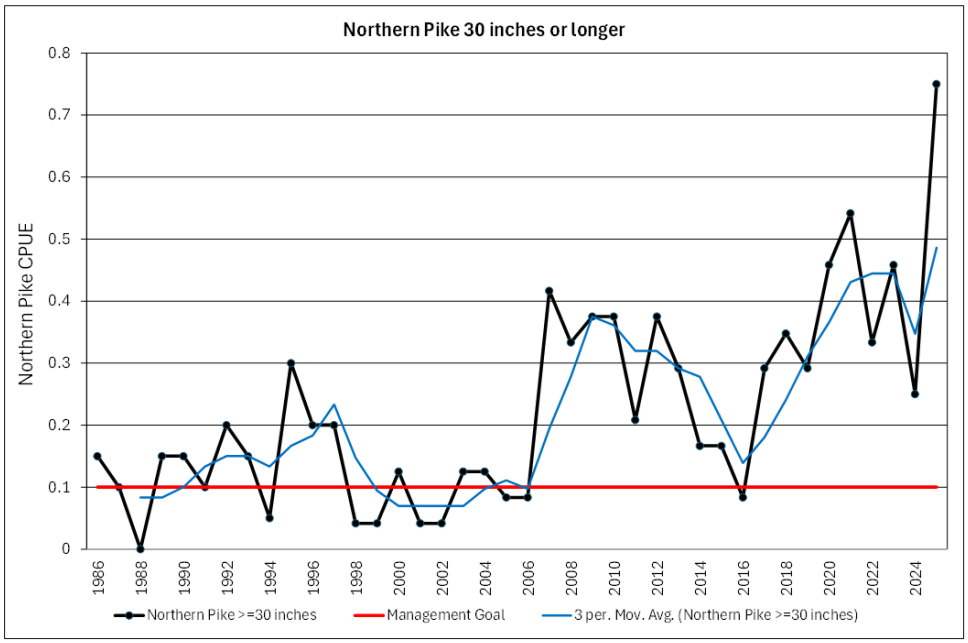

Figure 6: Catch rate of northern pike over 30 inches sampled in fall gill nets from 1986 to 2025. The black line represents the annual catch rate, while the blue line represents the 3-year moving average. The red line represents the management goal of 0.1 per net.

Black Crappie

The black crappie population in Rainy Lake has appeared to increase in recent years. Targeted fisheries surveys of the species began in 1992 and continue to be completed annually. Early surveys yielded about 2 black crappie per trap net, with catch rates increasing notably in the last ten years (Figure 7). Results from spring trap netting indicate above average catch rates in seven of eight recent surveys.

The primary driver of increased black crappie catch rates is increased consistent recruitment that has been documented in recent years (Figure 8). There were two strong year classes documented in the 1990s and 2000s, and since 20210, there have been five strong year classes (not including younger year classes that have not fully recruited to the gear or have been sampled for enough years). Strong black crappie production and recruitment have been observed from the 2016, 2017, 2019, and 2020-year classes. This strong recruitment has resulted in more large fish in the lake, as evidenced by trap net results of fish over 10 inches (Figure 9).

The increase in the black crappie population has resulted in increased harvest from anglers, observed by record high numbers and pounds harvested in the 2025 creel survey. While the target harvest was exceeded, the 5-year average remains below the target. The black crappie population has a strong size structure, with a median catch rate of 3.52 fish over 10 inches per trap net. The 2025 survey saw 7.5 fish over 10 inches per trap net.

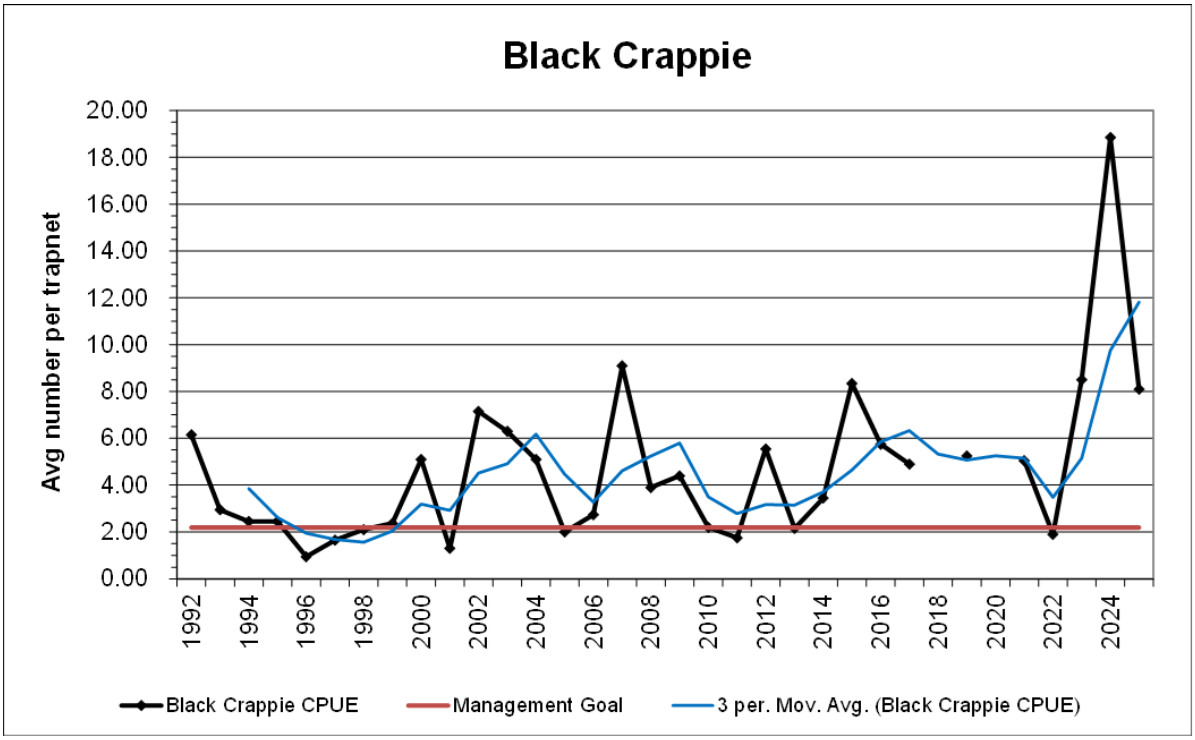

Figure 7: Catch per unit effort of black crappie in spring trap nets from 1992 through 2025. The blue line denotes the 3-year average from 1992 to 2025. The red line denotes the management goal of 2.2 per lift (1st quartile), while the black line denotes the annual catch per net.

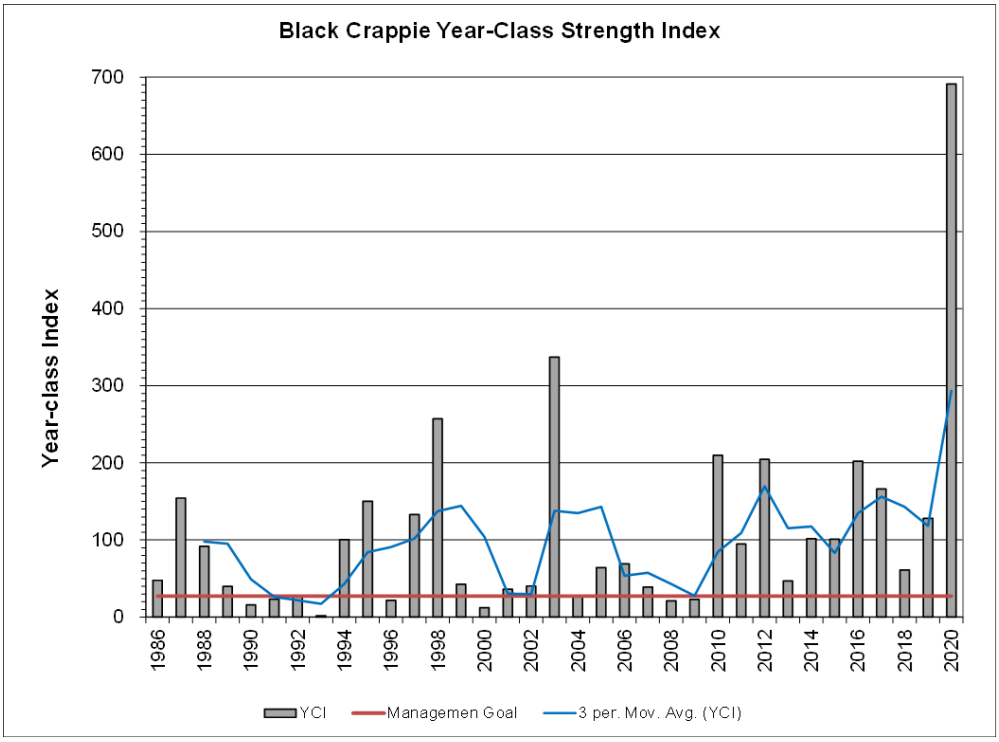

Figure 8: Year-class strength of black crappie from 1986 through 2020. The blue line represents the 3-year average from 1988 to 2020. The red line represents the management goal of 27 Year Class Index (25th percentile).

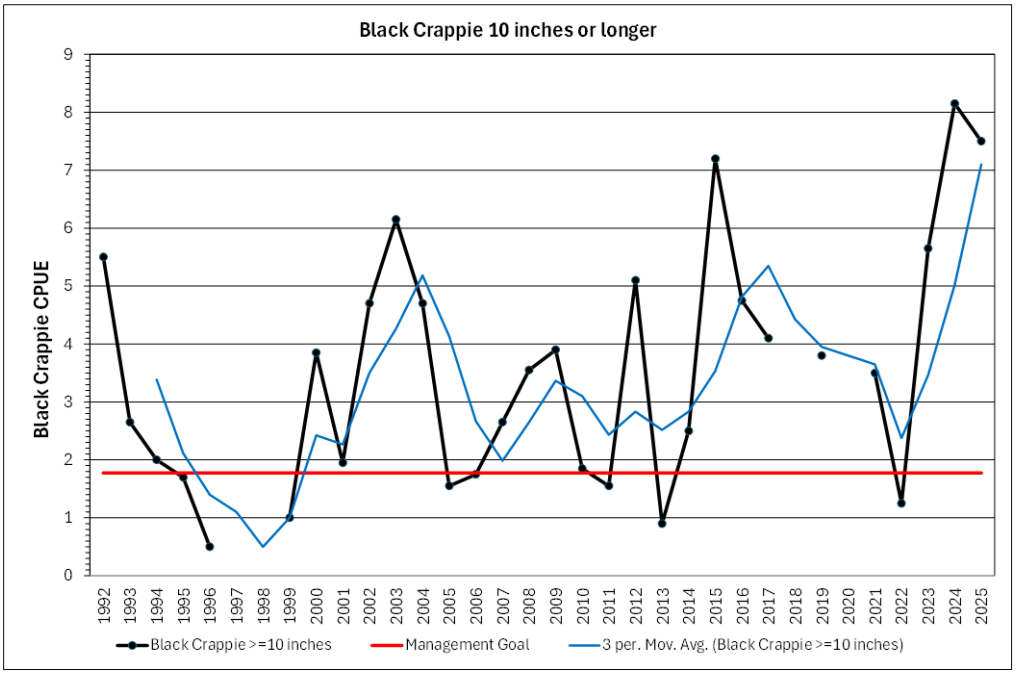

Figure 9: Catch rate of black crappie greater than 10 inches from 1992 to 2025. The blue line represents 3-year moving average. The red line represents the management goal of 1.7 fish per net.

Smallmouth Bass

Rainy Lake maintains a good smallmouth bass fishery in both population and size structure. The lake has become a destination for its high-quality smallmouth bass fishery, with anglers reporting good catch rates and size structure. Annual spring bass electrofishing serves as the primary assessment tool for monitoring the bass population. The size structure indicates a good portion of the bass from electrofishing are over 17 inches (Figure 10).

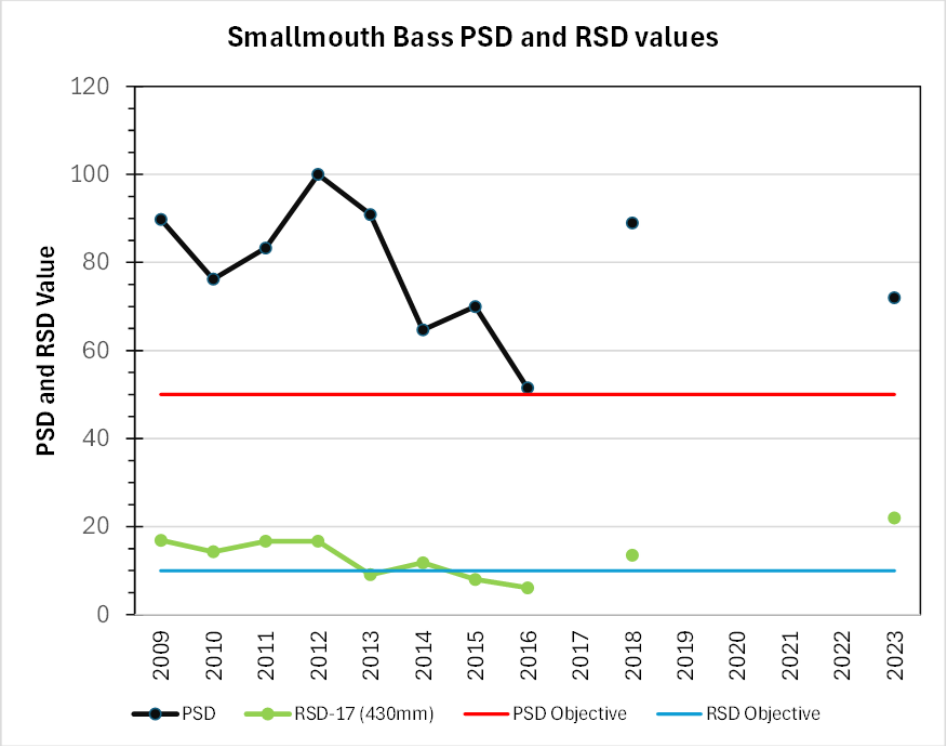

Figure 10: Smallmouth bass proportional stock densities from 2019 to 2023. The black line represents the Proportional Stock Density (PSD) from spring sampling, while the green line represents the Relative Stock Density (RSD-17) or proportion over 17 inches. The red and blue lines represent the respective management goals.

Harvest Management and Release Mortality

The DNR manages several fish species in Rainy Lake and works closely with the Ontario Ministry of Natural Resources (OMNR) in this process. Previous studies conducted by the DNR and the OMNR have demonstrated that many of the angled species are a shared resource (MNDNR and OMNRF 2017). Resource managers from both agencies collaborated on the development of a methodology to determine sustainable and science-based target harvest levels for the sport fishery on Rainy Lake. Sustainable harvest levels are determined using the Thermal Optical Habitat Area (TOHA) model for walleye and the Morphoedaphic Index (MEI) for other species. The resulting combined target yield for the Minnesota waters of Rainy Lake is 136,500 pounds annually, apportioned among key species to maintain long-term population health.

Target harvests, by species, are calculated through a multi-step process. The Thermal Optical Habitat Area (TOHA) is used for walleye (Table 1). TOHA uses several physical and chemical parameters to define productivity for walleye (Lester et al. 2004). For all other species, the Morphoedaphic Index (MEI: Ryder 1965) is partitioned to determine potential yield. For the MEI calculation, total dissolved solids of 51 mgl-1 and a mean depth of 10.7

m (Carlander 1942) yield a MEI of 4.77 (Schupp and Macins 1977), for a potential yield of 2.52 pounds per acre (1.4 (MEI)^0.45). For Minnesota waters, this equals 136,500 lbs./year. Additional partitioning determined the percentage distribution of that total available for harvest of each species based on previous research and knowledge of population status (Table 1).

Species	%	Potential Yield (kg.)	Potential Yield (lbs.)	Annual Target (lbs.)
Walleye	32	18,404	40,600	40,600
Northern Pike	25	15,484	34,100	34,100
Smallmouth Bass	8	4,955	10,900	10,900
Black Crappie	11	6,813	15,000	15,000
Lake Whitefish	24	14,865	32,700	32,700
Lake Sturgeon	0.04	590	1,300	1,300

Table 2: Potential yield estimates, by species, for the Minnesota waters of Rainy Lake; determined using the Thermal Optical Habitat Area for walleye and Morphedaphic Index for all other species. Percentages listed are the percentages of the total potential yield.

In addition to the TOHA and MEI, the DNR also utilizes release mortality data to determine safe harvest levels. Release mortality (also referred to as hooking mortality) occurs when a fish that is caught and released dies due to factors related to its capture. Release mortality is an important consideration for harvest levels on Rainy Lake, as there is an extensive history of catch and release fishing driven by protective slot limits. For length-based regulations to be effective, an acceptable rate of survival of released fish must be observed (Radomski 2003). To further investigate hooking mortality rates from deep waters like Rainy Lake, research has been conducted on Rainy Lake to develop a model to estimate the rate of hooking mortality during open water fishing (Talmage and Staples 2011). This model is consequently used to estimate annual hooking mortality on Rainy Lake. Currently, the annual hooking mortality averages around 15% of the total annual mortality (Vondra 2026).

The subsequent section contains a detailed analysis of angler harvest of the managed fish species on Rainy Lake.

Walleye

Walleye are the most targeted species and account for the majority of the annual harvest by anglers, and are managed to provide a diverse high-quality size structure with high angler catch and harvest rates. Despite good walleye angler catch rates, the average walleye harvest is around 30,000 pounds, according to creel survey results from 2005 to present. The target harvest level set for walleye is 40,600 pounds, with the average harvest falling below the target harvest. In addition to harvest management, regulations have resulted in Rainy Lake having good numbers of large walleye and adequate female spawning stock to uphold reproduction (Figure 11).

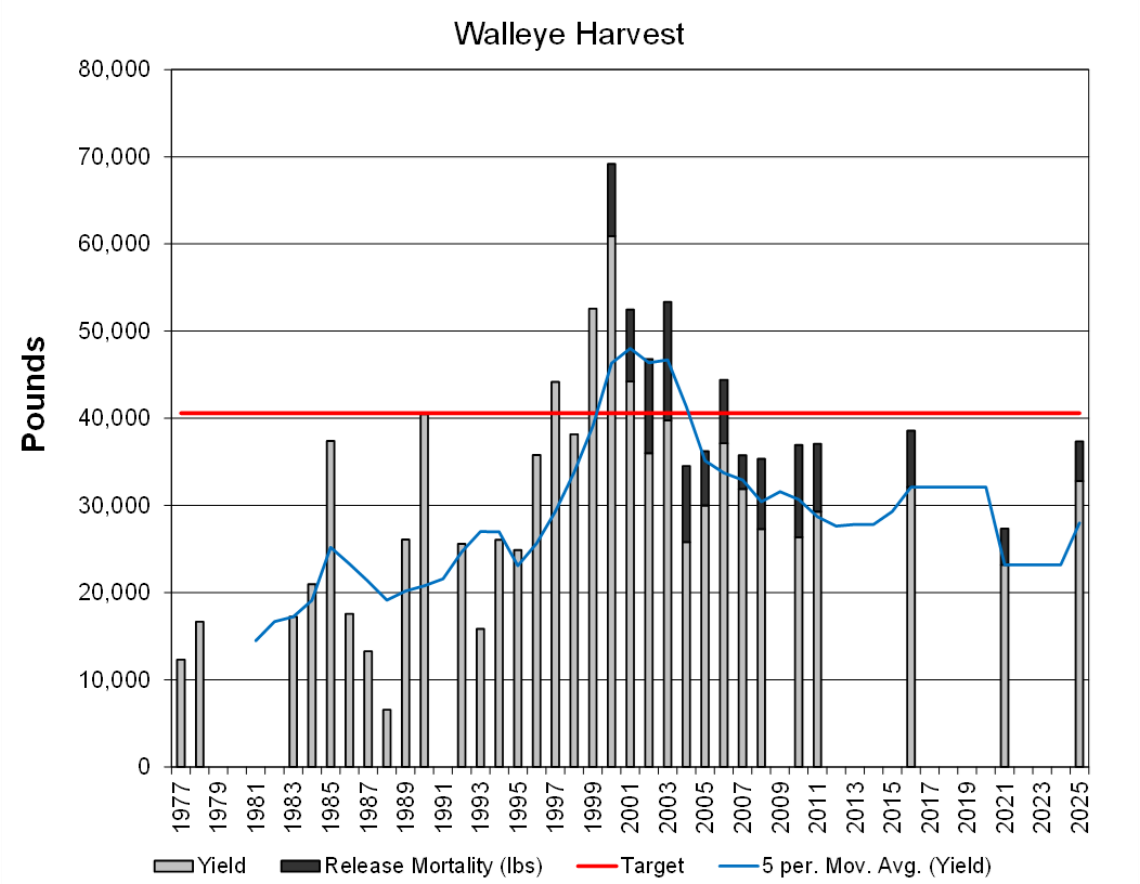

Figure 11: Harvest of Walleye from Rainy Lake, MN from 1977 to 2025. The red line represents the target harvest of 40,600 pounds, while the blue line represents the 5-year moving average. Harvest totals are broken into estimated harvest (gray) and release mortality (black).

Black Crappie

Black crappie are managed to provide a diverse, high-quality size structure with moderate angler catch and harvest rates. The population, harvest, and angler effort for black crappie has increased in recent years on Rainy Lake. In the past, black crappie were primarily targeted by anglers in the spring, but now anglers continue to target and harvest crappies throughout the year. Creel surveys and anecdotal reports indicate an increased harvest of black crappies during recent years (Figure 12). The average black crappie harvest from 2005 to 2021 totaled 4,100 pounds. In 2025, the preliminary estimate of black crappie harvest was 15,400 pounds, which exceeded the target harvest level; however, the 5-year mean remains below the target harvest.

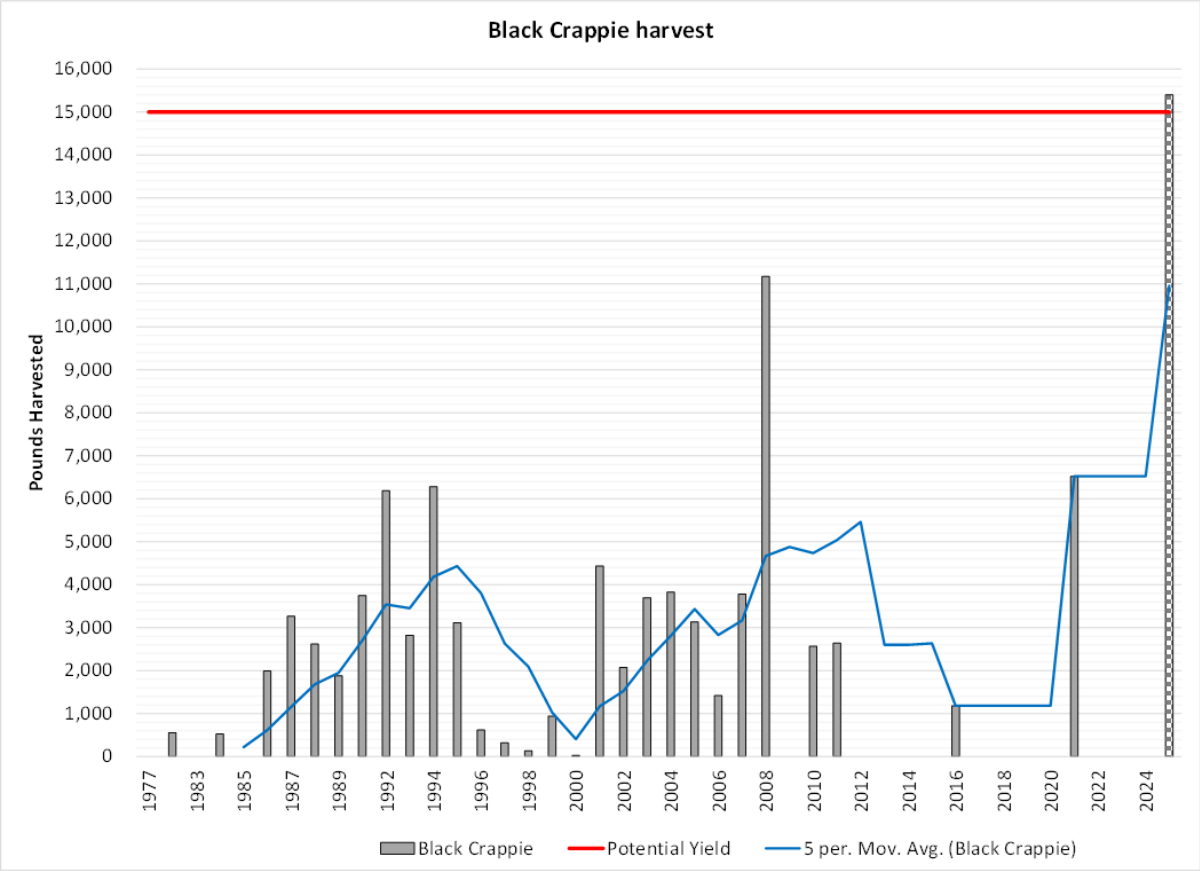

Figure 12: Black crappie harvest estimates from 1977 to 2025 (various years). The blue line represents the 5-year average, while the red line represents the target harvest of 15,000 pounds set forth by the ONT-MN Border Waters Atlas.

Northern Pike

Northern pike are managed to provide a diverse high-quality size structure with opportunities for angler harvest. Harvest levels for northern pike reached as high as 36,400 pounds throughout the 1980s and 1990s. More recently, northern pike harvest has decreased since 2005, averaging 11,500 pounds, which is well below the target harvest level of 34,100 pounds.

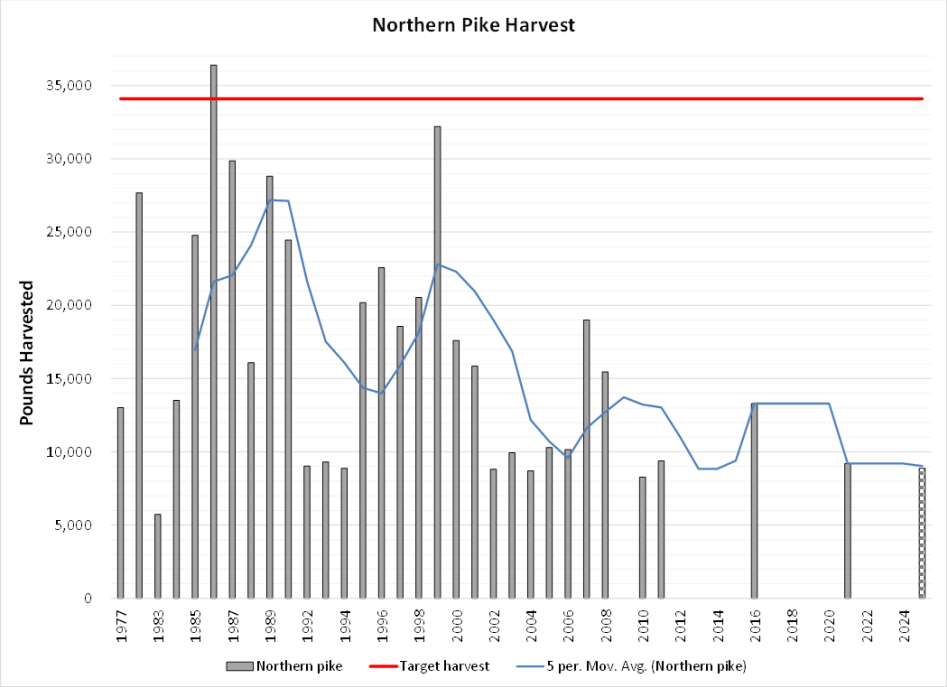

Figure 13: Harvest of Northern pike from 1977 to 2025. The red line represents the target harvest of 34,100 pounds, while the blue line represents the 5-year moving average.

Smallmouth Bass

Smallmouth bass are managed to provide a diverse high-quality size structure with high angler catch rate. Smallmouth bass over 19 inches are often caught in our sampling gear and by anglers. Smallmouth bass harvest on Rainy Lake has been consistently low. Since 2005, smallmouth bass harvest has averaged 1,400 pounds, which is under the potential target harvest of 10,900 pounds. This level of harvest is typical of Rainy Lake over the past 20 years (Figure 14).

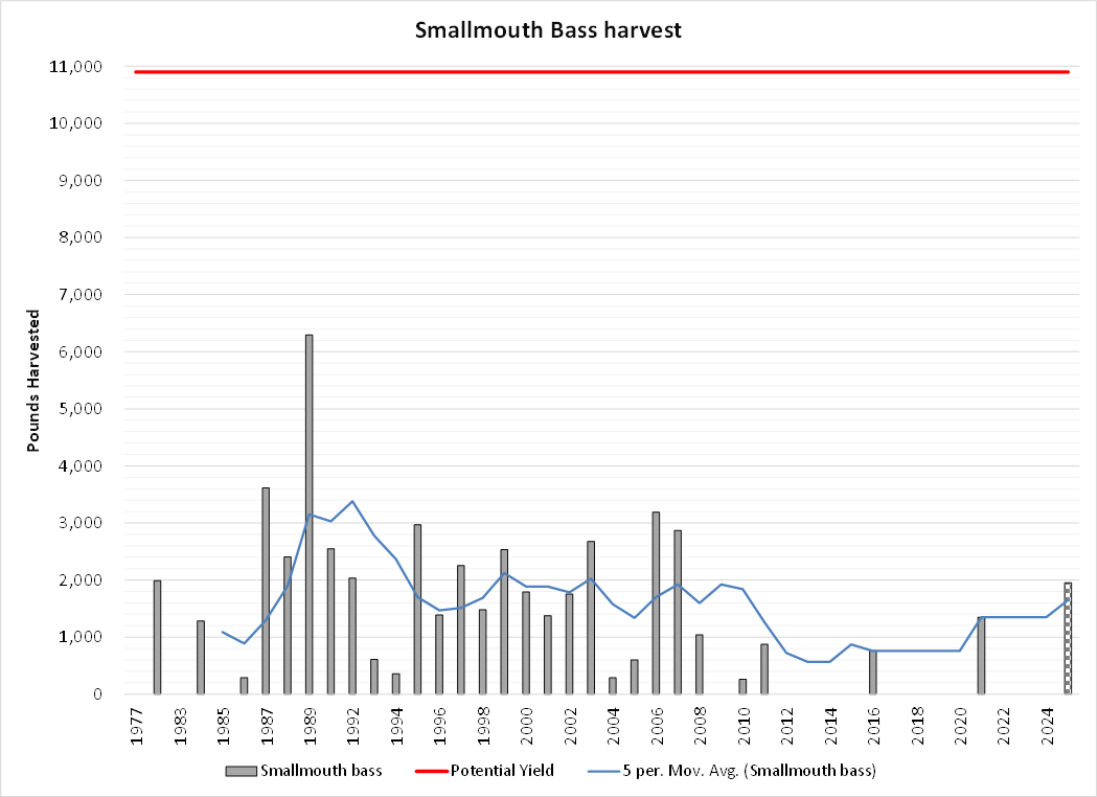

Figure 14: Harvest of smallmouth bass from 1977 to 2025. The red line represents the target harvest of 10,900 pounds, while the blue line represents the 5-year moving average.

Angling Pressure

Rainy Lake's recreational fishery, particularly for walleye, black crappie, northern pike, and smallmouth bass, attracts anglers from across the region. Angling pressure, harvest, and yield are estimated using creel surveys, which were first conducted on Rainy Lake and neighboring lakes during the summers of 1977 and 1978 (Ernst and Osborn, 1980). Additional creel surveys were conducted from 1983 to 1990, 1992 to 2008, 2010 to 2011, 2016, 2021, and 2025. Angling pressure increased considerably in the first 20 years after the commercial fishery buy-outs but has since stabilized (Vondra 2026). The most targeted species by anglers on Rainy Lake is walleye, with black crappie, smallmouth bass, and northern pike also receiving attention. The five-year mean annual open water (fishing opener through September) pressure is 200,810 angling hours. Winter pressure and harvest during the ice fishing season has been minimal (Eibler 2005).

Cooperative Management

Fisheries management on Rainy Lake relies on cooperation among agencies, including information sharing between VNP, the DNR, and Ontario resource managers. Social, political, and cultural factors shape management decisions, reflecting the lake's international setting, diverse recreational users, and the longstanding cultural and treaty connections of indigenous nations. These dynamics require balanced, transparent engagement to ensure regulations and management actions maintain ecological sustainability while respecting community values and rights.

Management Actions

Fishing Regulations

DNR Fisheries utilizes fishing regulations as a science-based management tool to ensure sustainable fish populations and manage harvest. Specific regulations have been implemented for the managed sportfish species on Rainy Lake, which include walleye, sauger, black crappie, northern pike, smallmouth bass, yellow perch, burbot, and lake sturgeon.

Walleye and Sauger

Rainy Lake has a long history of protected slots and reduced bag limits to achieve management goals. The first experimental regulation was enacted in 1994, which was a 17 – 25-inch protected slot. Over time, this has evolved to its status as a special regulation. Walleye and sauger are currently managed with a possession limit of eight walleye and sauger combined, with a maximum of four walleye. Walleye currently have an 18 – 26-inch protected slot, prohibiting the harvest of fish within this protected slot size. Only one walleye over 26 inches is allowed in possession. The harvest season for walleye begins on the statewide walleye season opener (the Saturday two weeks prior to Memorial Day weekend) and is open through April 14 of the following year.

Black Crappie

The current regulation for black crappie is a possession limit of 10. The angling season is continuous, and open year-round.

Northern Pike

Current regulations allow the harvest of three northern pike, with only one fish over 30 inches in possession. The angling season is continuous, and open year-round.

Smallmouth Bass

The current regulation for smallmouth bass is a possession limit of 6. The angling season is continuous, and open year-round.

Yellow Perch

The current regulation for yellow perch is 20 daily, with a possession limit of 40. The angling season is continuous, and open year-round.

Burbot

The current regulation for burbot is a possession limit of 4. The angling season is continuous, and open year-round.

Lake Sturgeon

Current sturgeon regulations are listed in detail below. To harvest a lake sturgeon, anglers must purchase a tag from the DNR, put a field tag on the harvested fish, and register the fish with DNR Fisheries within 48 hours of harvest.

- October 1 – April 23: Catch and release only. No tag required.
- April 24 – May 7: One fish per calendar year (fish must be 45 – 50 inches inclusive, or over 75 inches). Tag must be purchased to harvest a sturgeon.
- May 8 – 15: Catch and release only. No tag required.
- May 16 – June 30: Closed.
- July 1 – September 30: One fish per calendar year (fish must be 45 – 50 inches inclusive, or over 75 inches). Tag must be purchased to harvest a sturgeon.

Survey History

Lake surveys and evaluations are important management tools to monitor fish populations. Surveys conducted on Rainy Lake include annual gill netting, trap netting, seining, electrofishing, water-quality sampling, and periodic deep-water Fish Community Index Netting (FCIN); creel surveys have also been conducted regularly since the 1970s to track angler effort, harvest, and trends. Detailed description of all current Rainy Lake surveys can be found in the Operational Plan Detail section.

Several fisheries surveys and investigations have been conducted on Rainy Lake since the 1950s. Initially, these surveys were in response to declining walleye abundance and angler complaints of poor fishing. Fish stocks were first assessed with experimental gill nets in 1959 (Bonde et al. 1961). Additionally, the DNR and Ontario Department of Lands and Forests completed joint investigations from 1957 to 1967, which revealed a decline in walleye abundance during this period (Bonde et al. 1961, Bonde et al. 1965, Johnson et al. 1966, Johnson 1967).

Annual gill net assessments were conducted during August from 1970 to 1981. Beginning in 1983, annual fisheries assessments including fall experimental gill netting were standardized under the Minnesota Large Lake Assessment Program (Wingate and Schupp 1985). Annual shoreline seining has been conducted as part of the large lake program since 1983; additional periodic seining events occurred between 1966 and 1983. Annual fall electrofishing assessments have been conducted since 1991. Annual spring trap netting in Black Bay has occurred since 1992. FCIN has been conducted two of four years since 2003. Forty-two fish species have been captured and identified from the Minnesota waters of Rainy Lake.

Stocking

Rainy Lake fisheries are managed sustainably as naturally reproducing populations. For this reason, no recent stocking of any species has been conducted. Walleye stocking on Rainy Lake has not been necessary, as natural reproduction consistently sustains a healthy population without the introduction of supplemental fish. Long-term assessments show that spawning habitat, recruitment, and adult abundance remain strong, meaning artificial stocking would offer little biological benefit and could even disrupt natural population dynamics.

Social Aspects

Fisheries management on Rainy Lake is influenced by a complex mix of social, political, and cultural considerations, given the lake's international location, diverse user groups, and long-standing indigenous connections.

Social considerations include the expectations of anglers, resort owners, local communities, and tourism-dependent businesses that rely on a stable and high-quality fishery. As a major recreational destination, public perception of fish abundance, regulations, and access can shape support for management decisions. Stakeholder engagement through public meetings, advisory groups, news releases, and open communication helps ensure that management actions maintain trust and reflect community values.

Political considerations stem from the lake's shared governance between the US and Canada, as well as a large portion of the lake falling within VNP boundaries. Consequently, coordination with Ontario agencies, the IJC, and VNP regarding water levels and habitat conditions are important to ensure healthy fish populations. Fisheries management must align with state and federal policies, interstate and international agreements, and legislative priorities.

Cultural considerations are especially important because Rainy Lake lies within the traditional territories of indigenous nations in Ontario. Tribal fishing rights, treaty obligations, and cultural relationships with fish and water must be respected and integrated into management planning. This includes honoring subsistence practices, incorporating traditional ecological knowledge, and collaborating with tribal natural resource departments when appropriate. The cultural value of species such as walleye and lake sturgeon further shapes management priorities.

Together, these social, political, and cultural dynamics require management in a way that supports ecological sustainability while honoring the perspectives and rights of diverse communities who rely on and value the lake.

Public Amenities

Rainy Lake is a popular attraction for a variety of recreational activities. Fishing is one of the most common reasons people come to the area (Littlejohn 1998, Kallemeyn 1986). The Rainy Lake fishery draws anglers from throughout the Midwest and beyond (Vondra 2026). There are several accesses to Rainy Lake from a variety of entities, providing diverse options to access the resource. These include four state accesses and one VNP access, as well as private access at resorts.

Economic Impact

Rainy Lake serves a wide variety of stakeholders, including individual anglers and large recreational angling businesses (resorts, tourism, etc.). Rainy Lake contributes substantially as a statewide resource, and is one of the most popular destination fisheries in the State. To the local community of International Falls, Rainy Lake is very important, bringing in over $60 million in 2024 (Explore Minnesota County Spend by Industry 2024 report).

Goals, Objectives, and Strategies

Goal 1 – Maintain Rainy Lake as a high-quality multi-species fishery

Objectives Overview

The objectives to evaluate this goal are targeted at the managed sportfish species on Rainy Lake, including walleye, black crappie, northern pike, and smallmouth bass. Fish population status will be monitored annually through the Large Lake Survey Program (Wingate and Schupp 1985), with biological performance indicators and long-term species trends tracked to evaluate progress toward management objectives. Objective attainment or shortfalls will be reviewed each year to guide management decisions. Using an adaptive management framework, managers will investigate causes of objective failure and determine appropriate actions, which may include regulatory changes or maintaining current management when warranted by system complexity.

Walleye

Species Goal

To maintain a high-quality walleye fishery that has recovered from prior overharvest by the protection spawning stock through special regulations and maintenance of population metrics above the 25th-percentile benchmarks.

Objectives

1. **Abundance:** Maintain gill net catch rate of at least 5.5 walleye per net (25th percentile) on a three-year moving average.
2. **Size structure:** Maintain a gill net catch rate of one walleye greater than 18-inches (with female fish equal to or greater than 0.75) per net on a three-year moving average.
3. **Recruitment:** Maintain a year class strength index greater than 57 (25th percentile) on a three-year moving average.
4. **Harvest:** Sustain an annual total walleye harvest at or below the target harvest of 40,600 pounds on a five-year moving average.

Black Crappie

Species Goal

To maintain a diverse, high-quality size structure with moderate angler catch and harvest rates.

1. **Abundance:** Maintain a trap net catch rate of at least 2.2 fish per net (25th percentile) on a three-year moving average.
2. **Size structure:** Maintain a trap net catch rate of at least 1.7 fish greater than or equal to 10-inches on a three-year moving average.

3. **Recruitment:** Maintain a year class strength index greater than 27 (25th percentile) on a three-year moving average. Power of predication decline/failure (parameters to be set).
4. **Harvest:** Sustain an annual total black crappie harvest at or below the target harvest of 15,000 pounds on a five-year moving average.

Northern Pike

Species Goal

Maintain quality-size fish and harvest below the target thresholds while managing consistent abundance and strong size structure.

Objectives

1. **Abundance:** Maintain a gill net catch rate of at least 1.8 fish/net (25th percentile) on a three-year moving average.
2. **Size structure:** Maintain a gill net catch rate of at least 0.1 fish (1st quartile) greater than 30-inches on a three-year moving average.
3. **Harvest:** Sustain an annual total northern pike harvest at or below the target harvest of 34,100 pounds on a five-year moving average.

Smallmouth Bass

Species Goal

Maintain the high-quality trophy opportunity that bass provide to anglers while allowing low harvest.

Objectives

1. **Size structure:** Maintain quality smallmouth bass size structure with Proportional Stock Density (PSD: percentage of catchable sized fish greater than 14 inches) greater than 50 and Relative Stock Density (RSD: percentage of catchable sized fish greater than 17 inches) greater than 10.
2. **Harvest:** Sustain an annual smallmouth bass harvest at or below the target harvest of 10,900 pounds.

Other Species

Yellow perch, sauger, lake whitefish, tullibee (cisco), burbot, and many minnow species are important species within the Rainy Lake fishery and support ecosystem health and sportfish dynamics. These species will continue to be monitored through annual sampling and FCIN netting.

Goal 2: Protect and enhance valuable habitats within Rainy Lake.

Overview

Aquatic habitat in Rainy Lake is in good condition. The following objectives and strategies aim to protect or enhance the resource condition of Rainy Lake and enable continued cooperative management among partners.

Objective 2A: Provide timely review of applications for permits while carefully considering potential impacts of issuing the permit.

Strategies:

1. **Perform environmental review for proposed projects and development:** All permit applications will be reviewed to ensure rules and regulations are being met, and the best conservation practice is being opted for. This will include reviewing permits promptly and coordinating responses with the area hydrologist.

Objective 2B: Participate in processes and project teams that improve habitat conditions and shoreline protection.

Strategies:

1. **Continue to work with Local Government Units (LGUs) and partners:** Shoreline and habitat projects will be evaluated in coordination with LGUs and partners (e.g., SWCD, VNP, and the Rainy Lake Sportfishing Club) to ensure that projects are improving or protecting shoreline and habitat conditions, as well as encouraging shoreline best management practices.

Objective 2C: Collaborate with the IJC and partners on research to guide and inform water level management in Rainy Lake and the Namakan Reservoir.

Strategies:

1. **Participate in the IJC:** Area staff will participate in IJC efforts, meetings, and information gathering projects that are relevant to Rainy Lake. Understanding how the IJC's mandated ranges interact with fish life cycles help agencies predict habitat conditions, regulate, protect, and restore important habitat.
2. **Participate in the IJC Adaptive Management Committee:** Area staff will participate in this committee to inform and evaluate future water level adjustments. As climate variability increases, coordination between hydrologic regulators and resource managers is critical to ensure that water level decisions support the long-term resilience of Rainy Lake's fish populations.

Objective 2D: Collaborate with the DNR's Aquatic Plant Management (APM) Specialist to protect and enhance aquatic communities and diversify plant communities within Rainy Lake.

Strategies:

1. **Provide thorough review and comment on APM applications:** Area staff will coordinate through the regional APM specialist and review permit applications for aquatic plant management and alterations to the lakebed.
2. **Provide proactive guidance on APM issues:** Area staff will inform APM specialists of emerging issues as they arise on Rainy Lake (e.g., floating bog mat).
3. **Continue support for partner efforts:** Area staff will continue to support partner efforts related to the management of invasive plants (e.g., hybrid cattails).

Objective 2E: Conduct AIS monitoring and share results with partners in a timely fashion to inform AIS spread prevention efforts annually.

Strategies:

1. **Continue to conduct AIS monitoring:** Area staff will continue AIS monitoring efforts through the collection of zooplankton samples for identification and analysis. With the potential for new and expanded presence of AIS (e.g., zebra mussels), it will be important to be prepared for increased monitoring of physical parameters (e.g., water clarity). Additionally, staff will continue to monitor walleye recruitment for early signs of failure.
2. **Support aquatic plant restoration efforts:** Area staff will support partner projects that involve aquatic plant restoration following the invasion of hybrid cattail in Rainy Lake. Example projects include hybrid cattail removal paired with native vegetation restoration, as well as efforts to return shoreline and near-shore habitat to its natural state. Additionally, staff will engage in cooperative agreements regarding the management of hybrid cattail bogs that have been caused by variable water levels.

Operational Plan Detail

Stocking

No stocking is proposed during the life of this plan. Private stocking proposals should be rejected, as adding hatchery fish can introduce density-dependence issues such as competition for food and habitat that may reduce growth rates or survival of naturally produced walleye. No other species should be stocked, as introducing additional fish could alter predator-prey relationships, compete with native species, or impact the ecological balance that currently supports a self-sustaining fish community. Maintaining Rainy Lake's naturally reproducing fish populations is the most effective and responsible management approach.

Regulation Change

At this time, no regulation changes are proposed. There is some public interest in a bag limit reduction for black crappie and smallmouth bass; however, no regulation changes are being considered at this time, as neither species is showing signs of overexploitation and are meeting management goals.

Surveys and Evaluations

A variety of annual and intermittent sampling programs will be conducted to monitor fish populations, angler usage, zooplankton, and water quality which will be used to guide management decisions. These targeted fishery assessments, in combination with the creel survey, are conducted to provide comprehensive information that will help track progress towards goals, determine objective success, and inform adaptive management.

Annual Assessments and Surveys

Spring Trap Netting

This survey will be conducted annually in Black Bay and the Rat Root River to monitor abundance, recruitment, and size structure of adult black crappie. It will be conducted in mid-to-late May when water temperatures are in the upper 50 degrees Fahrenheit. Data collected will include length, gender, stage of maturity, and aging structures. Black crappie is the primary focus for this survey, but other species sampled will be counted and measured.

Spring Bass Electrofishing

This survey will be conducted annually at historical sites throughout the western part of Rainy Lake to monitor the size structure of smallmouth bass. It will be conducted in June through dip netting. Data collected will include length and ageing structures.

Summer Seining

This survey will be conducted annually to monitor abundance and summer growth of YOY walleye, sauger, yellow perch, and forage species. It will be conducted around July 1 and will be completed weekly through July until walleye catch rates begin to fall, typically near late July or early August. All gamefish species caught will be counted, measured, and weighed. Subsampling will be done in accordance with the Large Lake Survey Manual (Wingate and Schupp 1984).

Water-Quality Sampling

This survey will be conducted annually in mid-July to provide long-term monitoring for basic water quality parameters.

Fall Gill Net Sampling

This survey will be conducted annually to monitor trends in abundance, growth, size structure, and biological performance indicators for juvenile and adult walleye, sauger, yellow perch, northern pike, cisco, and white sucker. It will be conducted through annual fall gill netting at 24 sites, with overnight sets beginning the day after Labor Day. All fish will be identified, measured, and weighed. Regarding gamefish species, gender and stage of maturity will be documented and aging structures will be collected. Fall gill netting will follow the standardized protocols highlighted in the Large Lake Sampling Guide (Wingate and Schupp 1984). In addition to standard analyses and monitoring, biological performance indicators should be evaluated and monitored annually to monitor for signs of exploitation or system stress (Gangl 2001).

Fall Young-of-Year Electrofishing

This survey will be conducted annually at historical sites in the Sand Bay area and western end of VNP to monitor abundance and growth in YOY walleye. It will be conducted in September to early October when water clarity is acceptable, and water temperatures are falling. Only suspected YOY Walleye will be dip netted, measured, and scale samples collected (if of questionable age).

Intermittent Assessments and Surveys

Fish Community Index Netting

This survey will be conducted on a 2 out of 4-year schedule (back-to-back years) to monitor abundance and size structure of populations of deep-water fish communities, including lake whitefish, cisco, burbot, and rainbow smelt. Sampling will be conducted at 12 sites in August. Netting will follow protocols developed by the Lake Nipigon Fisheries Assessment Unit (LNFAU 2001).

Rat Root River Survey

This survey will be conducted every five years to monitor the spawning walleye on the Rat Root River. Sampling will take place shortly after the ice goes out on the Rat Root River and water temperatures reach low 40 degrees Fahrenheit. Electrofishing runs will begin approximately two river miles upstream of the Galvin Line bridge and

continue downstream to the Highway 53 bridge. All walleye will be measured, gender and stage of maturity determined, and given a caudal fin clip to identify within year recaps. Monitoring of the run will continue until it is clear the peak of the run is over, or water temperatures begin to consistently reach 50 degrees Fahrenheit, and few walleyes are caught.

Open-Water Creel Surveys

Open water creel surveys will be conducted on a one of four-year schedule rotation using an access-based creel design with aerial flights for pressure estimates (boat counts). One creel clerk will conduct completed trip interviews at eleven sites. The data collected during the interviews and boat counts are used to calculate angling effort, harvest, yield, and other angling statistics.

Tournament Permitting

Currently, two permitted tournaments are conducted on Rainy Lake out of the Minnesota waters: one summer bass fishing tournament and an ice fishing derby. The DNR will continue to work with tournament applicants to develop consistent tournament rules that equitably balance demand for participation with potential biological impact. When feasible, encourage tournament permittees to conduct Catch Photograph and Release (CPR) format.

Continued Data Collection

Area staff will continue to collect data to inform MEI and TOHA models, as well as identify potential updated collection methods to refine parameters. These data include, but are not limited to, temperature, light penetration, GDD, and TDS.

Plan Review and Revision Schedule

The maximum life of this plan is ten years. The full review and revision process should begin in 2035 with a target completion of 2036. Though the maximum life of this plan is ten years, if necessary, the review and revision process can be instituted prior to 2035.

Approvals

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Leslie George
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Fisheries Section Manager

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Appendices

Appendix 1: Commonly Used Acronyms

A

- AIS – Aquatic Invasive Species
- APM – Aquatic Plant Management

C

- CFR – Code of Federal Regulations
- CPR – Catch Photograph Release

D

- DNR/MN DNR – Minnesota Department of Natural Resources

F

- FCIN – Fish Community Index Netting

G

- GDD – Growing Degree Days
- GN – Gill Net

I

- IJC – International Joint Commission

L

- LGU – Local Government Units
- Lbs. – Pounds (weight unit)

M

- MEI – Morphoedaphic Index
- MSH – Maximum Sustained Harvest
- MN – Minnesota
- Mgl-1/Mg l-1 – Milligrams per liter (water-quality unit)

N

- N/A – not applicable

O

- OMNR/OMNRF – Ontario Ministry of Natural Resources/Forestry

P

- PSD – Proportional Stock Density

R

- RSD/RSD-17 – Relative Stock Density (≥ 17-inches for bass)

S

- SD – Secchi Depth (in TOHA variables)
- SWCD – Soil and Water Conservation District

T

- TDS – Total Dissolved Solids
- TOHA – Thermal Optical Habitat Area
- TN – Trap Net

V

- VNP – Voyageurs National Park

Y

- YOY – Young-of-the-year (juvenile fish)

Appendix 2: Public Review Methods

Draft plan public review (2026)

A draft of the management plan was released for a 30-day public review period in March – April 2026. During that period, the DNR held an online webinar to present the plan and take questions and comments, published an online questionnaire, and received comments via phone and email. Comments are summarized below.