WISCONSIN DEPARTMENT OF NATURAL RESOURCES

FISHERY SURVEY REPORT FOR LAKE MONTANIS, BARRON COUNTY, WISCONSIN 2024

WATERBODY IDENTIFICATION CODE: 2103200

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Executive Summary

Lake Montanis was surveyed during 2024 to determine the abundance and population demographics (size and age structure, growth and recruitment) of walleye as part of the Treaty assessment protocol for lakes within the Ceded Territory. In addition, the abundance and population demographics were assessed for other sport fish. The adult walleye population during 2024 was estimated to be 1.5 fish/acre (95% CI = 1.2 – 1.7 fish/acre), which remained similar to 2010. Walleye size structure was good with average growth rates and above average body condition, all of which remained similar to 2010. Lake Montanis supports a mixed-recruitment walleye fishery supported by both stocking and natural reproduction. The walleye management objective is to maintain the adult density ≥ 1.5 fish/acre by continuing to stock small fingerling walleye in alternate years. Too few northern pike (n = 12) were collected during the SN1 survey to calculate meaningful population metrics, thus no management actions are currently recommended. The environmental conditions during the 2024 SE2 survey were challenging which likely led to lower catch rates and insufficient sample size to accurately assess key population metrics. From a management standpoint, it is assumed that population dynamics of largemouth bass and smallmouth bass have remained consistent with those observed in 2010. Due to the lack of robust data to support alternative conclusions, no management actions for largemouth or smallmouth bass are currently recommended. Low-density populations of bluegill and black crappie were present in Lake Montanis, both of which had above-average size structures and moderate growth rates. A quality panfish fishery persists and the current harvest regulations for panfish will be maintained and no additional management actions are required at this time. Lake Montanis continues to offer anglers quality panfish fishing opportunities and supports a stable walleye population. Although survey data were limited for northern pike, largemouth bass and smallmouth bass, it is likely these population continue to support targeted angling effort.

Introduction

Lake Montanis is a 212-acre drainage lake located in east-central Barron County, Wisconsin near the city of Rice Lake. The lake is shallow and turbid with a maximum depth of 14 feet, a mean depth of 8 feet and gradual sloping shorelines. Despite being shallow and productive, winterkill has not been a problem. Bottom substrates are roughly composed of 60% muck, 35% sand and 5% gravel. Spring Creek enters Lake Montanis from the southeast and Meadow Creek exits to the southwest, which eventually flows into the Red Cedar River. At least one-third of the shoreline of Lake Montanis is natural wetland area, and the remainder is developed with 14.9 dwellings per shoreline mile. Shoreline development is relatively low compared to other nearby lakes but increased substantially over the past half-century (5.1 dwellings per shoreline mile in 1966). Lake Montanis is a fertile, eutrophic system classified as a complex-warm-dark lake (Rypel et al. 2019). More information on water quality and invasive species can be found at the DNR lake page for Lake Montanis. Lake Montanis is a popular fishing lake, due to its quality fishery and proximity to the City of Rice Lake.

The Wisconsin Department of Natural Resources (DNR) surveyed Lake Montanis to assess the status of the fishery during 2024 with early spring fyke netting (SN1), early spring (SE1) and late spring (SE2) night electrofishing and fall night electrofishing. A mark-recapture survey was completed to estimate the adult density of walleye. We assessed catch rates of largemouth bass, northern pike, bluegill and other panfish species to estimate relative abundance. We characterized population demographics, size structure and growth for all species when possible.

MANAGEMENT HISTORY

Lake Montanis was once renowned for its outstanding panfish fishery, drawing significant angler activity (Cornelius 1983, Cornelius 2001). Past surveys highlighted impressive catches of large-sized panfish, reflecting the lake's rich fishery. Additionally, northern pike have historically been abundant with desirable size structure and supported a respectable fishery. Increases in the common carp population raised concerns about water quality and the long-term health of the lake's fisheries. Between 1977 and 1981, commercial fishing efforts were implemented to target carp, successfully removing nearly 10,000 pounds. However, these efforts were insufficient to control or eradicate the population.

Historically, the walleye population in Lake Montanis remained at a low to moderate density, despite stocking efforts that began as early as 1967. However, a noticeable increase in the population was evident during the 2000 survey, attributed to both successful stocking and natural reproduction. Evidence of natural recruitment was observed when comparing stocking numbers to the adult age structure (Cornelius 2001). Despite the growing walleye population, natural recruitment was still considered low, likely due to a lack of suitable spawning habitat. Walleye spawning

has been observed in Spring Creek and along the northeast shoreline. In response, an artificial rocky “walleye spawning reef” complex was created in the mid-2000s to enhance walleye spawning conditions, with the hope of eventually achieving sufficient natural reproduction to eliminate the need for continued stocking. However, natural recruitment did not increase from the walleye spawning reef and stocking continued. The first adult walleye population estimate occurred during 2010 and had an adult (≥ 15 inches) density of 1.4 adults/acre. Small fingerling stockings continued through 2021 (Appendix table 1).

FISHING REGULATIONS

All species follow statewide or Ceded Territory regulations.

Methods

Lake Montanis was sampled during 2024, following the DNR’s comprehensive Treaty assessment protocol (Cichosz 2021) to estimate the adult walleye population abundance. Descriptions of standard DNR survey types, gear used, target water temperatures and target species are listed in Appendix Table 2. The SN1 survey occurred March 11 – April 9, 2024 (44 net-nights) and all walleye and northern pike were measured (total length), weighed, sexed and given a mark indicating capture. Catch-per-unit effort (CPUE) was estimated as catch per net-night and length-weight data were used to estimate size structure indices and growth. Adult walleye (≥ 15 inches or mature) were marked with a fin clip and juvenile walleye were marked with a different fin clip. The SE1 survey served as the recapture event and occurred the night of April 26, 2022.

The SE2 survey was conducted on May 15, 2024 to assess largemouth bass and panfish populations. The SE2 survey consisted of 0.5-mile index stations where all gamefish and panfish were captured and 1.5-mile stations where all gamefish were collected. There were two index stations and two gamefish stations completed on Lake Montanis. All fish were measured, but weights and aging structures were collected from five fish per 0.5-in length group for age and growth analysis. The CPUE (index of relative abundance) was estimated as catch per mile.

A fall night electrofishing survey was conducted on September 30, 2024 to assess the year class strength of age-0 and age-1 walleye. The entire shoreline was sampled and walleyes < 12 inches were collected. The CPUE (catch per mile) of age-0 and age-1 walleye was compared to previous fall evaluations.

Lake Class Standards CPUE were calculated by comparing Lake Montanis catch rates to the CPUEs of the other 196 complex-warm-dark lakes in Wisconsin (Rypel et al. 2019). When data were available, CPUE and size structure indices were also compared to past surveys.

Walleye and largemouth bass were aged with dorsal spines, black crappie and bluegills with otoliths and northern pike with anal fin rays. All spines and fin rays were cut with a Dremel tool and aged under a microscope by a single interpreter. Bluegill and black crappie were aged using whole otoliths or transverse thin sections under a microscope. When data were available, mean length at age was compared to previous surveys, county (Barron and Polk counties) averages and the median length at age for similar complex-warm-dark lakes (Rypel 2019).

Size structure was assessed using proportional size distribution (PSD) indices (Neumann et al. 2013). The PSD value for a species is the number of fish of a specified length and longer divided by the number of fish of stock length or longer, the result was multiplied by 100. Fish condition was assessed by estimating the relative weight (W_r) of each fish, or the actual weight of a fish divided by its standard weight (Wege and Anderson 1978). The von Bertalanffy growth model (von Bertalanffy 1938) was fit using mean length at age data, pooling sexes due to limited age data, to assess growth of walleye, bluegill and black crappie.

Results & Discussion

WALLEYE

Lake Montanis supports a low to moderate density walleye population that has remained temporally stable. The population estimate of adult walleye in 2024 was 298 fish (95% confidence interval; CI = 238 – 359 fish) or 1.5 fish/acre (CV = 0.10). Adult walleye density was similar to other stocking-dependent lakes in Barron and Polk counties (1.4 ± 0.2 adults/acre; mean PE ± mean error; estimated using data from 55 PE surveys, across 26 lakes ranging from 1995 to 2021) and the 2010 survey (1.4 adults/acre). The CPUE was 5.0 fish/net-night, which resembled the 75th percentile (5.8 adults/net-night) for similar complex-warm-dark Wisconsin lakes.

Walleyes collected during the SN1 and SE1 surveys ranged in length from 7.7 – 27.6 inches and the mean length of females and males was 20.7 inches and 16.5 inches, respectively (Figure 1). Walleye size structure was good with 64.7% of the population susceptible to harvest and PSD-15 was 84 and PSD-20 was 20. These PSD index values remained similar temporally (PSD-15 = 78 and PSD-20 = 9 during 2010) and indicated a quality size structure that was well above the generally accepted range (PSD-15 = 30-60; Anderson and Weithman 1978) for balanced walleye populations. The mean W_r was 99, which remained similar to 2010 (W_r = 94) and indicated fish condition was above average and within the suggested range of 95 – 105 by Anderson (1980) for balanced fish populations. The male to female ratio was approximately 1:1.

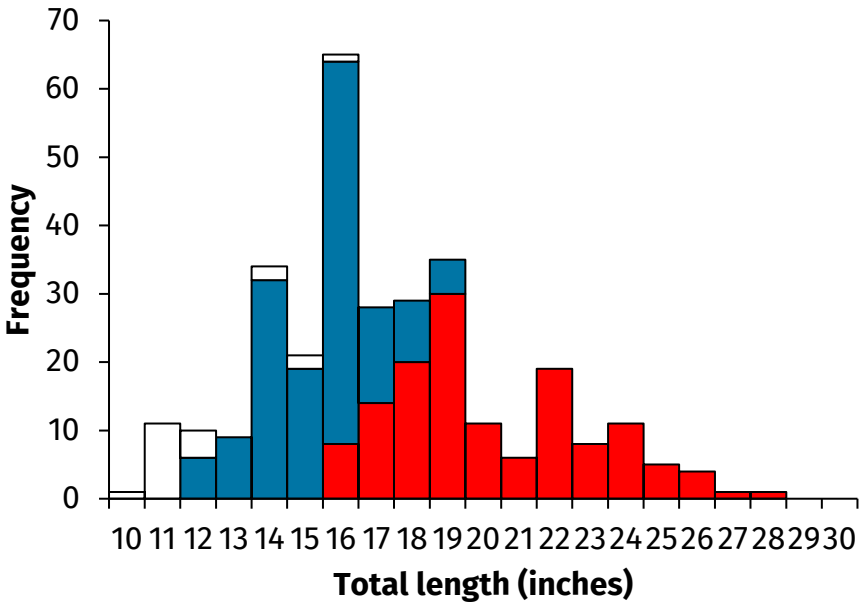

Figure 1. Length frequency of male (blue bars), female (red bars) and unknown sex (hollow bars) walleyes captured in Lake Montanis during the spring 2024 SN1 and SE1 surveys.

Walleye age structure was well distributed and multiple age classes were present. Walleye ages ranged from 1 to 14, with 12 year classes represented and 75% of the population was composed of age-3 to age-7 fish (Figure 2). Females ranged from age 2 to 14 and males from age 2 to 11. The adult population was composed of nine year classes (ages 4+), which was above management recommendations set forth by the 2022 Wisconsin walleye Management Plan (Donofrio et al. 2022). Peaks in the population age structure corresponded with stocked small fingerling year classes which suggested good survival rates and contribution of stocked fish to the adult population. Although Lake Montanis appears dependent on stocking, the contribution of natural recruitment within stocked years could not be assessed leaving uncertainty about its contribution within those years. Regardless, recruitment (via natural or stocking) appeared sufficient evident by consistent contributions to adult year classes. The breadth of adult age classes present was good and likely beneficial for future population resiliency.

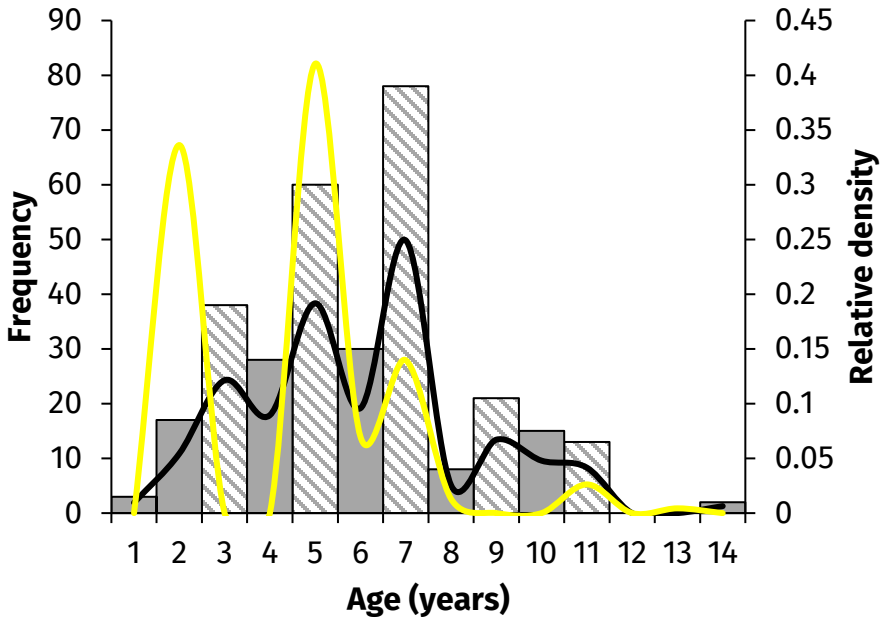

Figure 2. Age structure of walleye in Lake Montanis during the 2024 SN1 and SE1 surveys Solid grey bars represent non-stocked years and white bars represent stocked years. Lines represent relative density curves of age structures during 2024 (black line) and 2010 (yellow line).

Walleye growth in Lake Montanis was average and remained stable through time. Mean lengths at age during 2024 were similar to those observed during 2010 (average difference in mean length at age: -0.1 inches; ages 2, 5 – 8 and 11), complex-warm-dark Wisconsin lakes (average difference in mean length at age: +0.1 inches) and the Barron and Polk counties average (average difference in mean length at age: +0.1 inches; Figure 3). Comparisons to lake class standards and Barron and Polk counties used age-2 to age-11 fish. Longevity of fish sampled during 2024 was similar to 2010. The predicted theoretical maximum length for walleye using von Bertalanffy growth models was 33.1 inches, with k and t0 estimated to be 0.1 and -2.4, respectively.

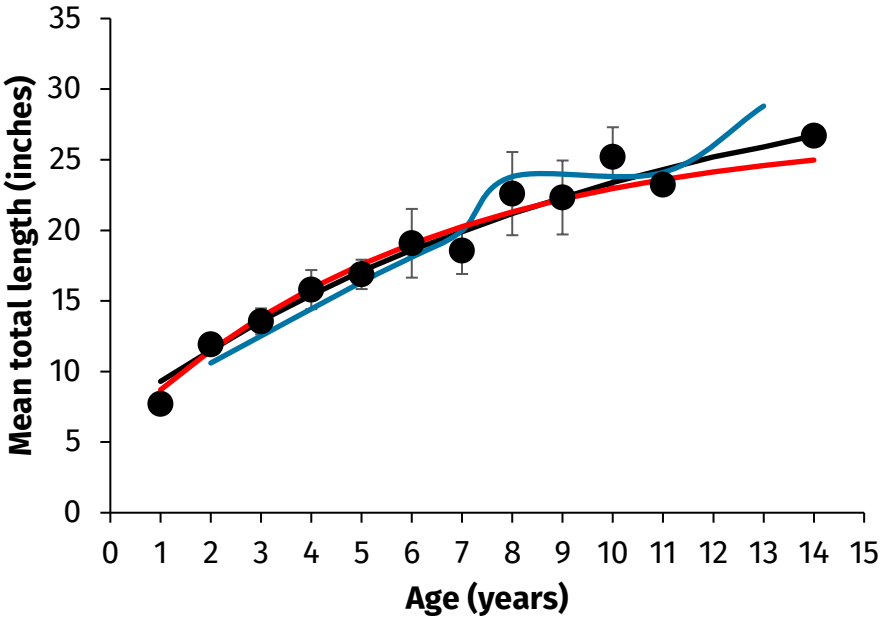

Figure 3. Mean length at age ± standard deviation and the von Bertalanffy growth curve (black line) of walleye (black circles) in Lake Montanis. Mean length at age estimates during the 2010 survey are represented by the blue line. The median length at age for similar complex-warm-dark Wisconsin lakes is represented by the red line. Mean length at age estimates for Barron and Polk counties were similar to the Lake Class estimates and not represented in the plot.

One age-0 walleye was collected during the 2024 fall electrofishing survey. which resulted in a CPUE of 0.4 fish/mile. This fish represented a natural recruit as stocking has not occurred since 2021. Consistent walleye stocking occurred through 2021 and survival of small fingerlings was evident. Stocked small fingerling year classes corresponded with peaks in the population age structure at ages 3, 5 and 7. Natural recruitment was also evident in the population age structure during non-stocked years, despite age-0 walleye remaining scarce during fall surveys. Despite this, population abundance remained stable temporally, but the lack of stocking since 2021 may impact abundance in the future. The walleye population remains a mixed-recruitment fishery sustained by stocking, natural recruitment and likely immigration from the Red Cedar River.

The walleye fishery in Lake Montanis is utilized by the public, due to its proximity to the City of Rice Lake, and should continue to be managed for walleye. The walleye fishery should be managed as a mixed-recruitment fishery to sustain adequate adult densities (≥ 1.5 adults/acre) that will continue to provide angling opportunities for the public. Biannual stocking of small fingerling walleye at 35 fish/acre is recommended to continue. The goal of small fingerling stocking would be to maintain the current fishery at an adult density of ≥ 1.5 fish/acre. This strategy has yielded a consistent walleye fishery over the past 15 years. Large fingerling stocking could be considered in the future if data suggests that small fingerling stocking no longer

contributes to the adult fishery, although the success of large fingerling stocking in mixed-recruitment fisheries is typically lower than stocking dependent systems. The year class strength of natural recruits and survival rates of stocked fingerlings will be assessed every other year during years in which walleye are not stocked. The current walleye harvest regulation (15-inch minimum length limit (MLL), fish between 20-24 inches may not be kept, 3 fish daily bag limit with only 1 fish > 24 in allowed) will be maintained as this regulation is conservative in managing harvest, promotes greater population size structure and reproductive potential by protecting larger fish, but also allows some harvest opportunity. More liberal harvest regulations were not considered due to the relatively low adult density and potential to overharvest. If management objectives are not met, then alternate management actions may be considered.

NORTHERN PIKE

Twelve northern pike were sampled during the SN1 survey and the CPUE was 0.23 fish/net-night. Northern pike CPUE was below the 25th percentile (0.6 fish/net-night) for similar complex-warm-dark Wisconsin lakes and lower than the 2010 survey (1.12 fish/net-night). Northern pike lengths ranged from 10.5 – 36.7 inches with an average length (sexes pooled; SN1 and SE2 surveys combined) of 19.9 inches, which resembled the 75th percentile for similar complex-warm-dark Wisconsin Lakes. Too few fish were collected to calculate PSD indices.

Northern pike ages ranged from 1 to 7, where females ranged from age 4 to 7 and males from age 3 to 5. Too few fish were collected for age and growth analysis. Lake Montanis supports a low to moderate density northern pike population with moderate size structure. Despite this, directed angler effort targeting northern pike is likely moderate. Northern pike will continue to be managed with a no MLL, 5 fish daily bag limit.

LARGEMOUTH BASS

There were 25 largemouth bass collected during the SE2 survey with a CPUE of 7.1 fish/mile, which was lower than 2010 (105.2 fish/mile) and resembled the 25th percentile (8.5 fish/mile) for similar complex-warm-dark Wisconsin lakes. The CPUE of largemouth bass ≥ 14 inches was 4 fish/mile and also decreased since 2010 (25.3 fish/mile).

Largemouth bass ranged in length from 11.0 – 17.5 inches with a mean length of 14.5 inches, which resembled the 99th percentile (14.0 inches) for similar complex-warm-dark Wisconsin lakes. Too few fish were collected to calculate PSD indices.

Largemouth bass growth was average and remained similar to 2010. Mean length at age was greater than the median length at age standard for similar complex-warm-dark Wisconsin lakes (average difference in length at age estimates: +1.7 inches; ages 3 – 7; Figure 4) and 2010 (average difference in mean length at age estimates: +1.7 inches; ages 3 – 7; Figure 4). During 2024, faster growth of fish was observed ≤ age 5

compared to both the 2010 and lake class estimates but remained similar for age 6 and older. However, due to limited sample sizes, it remains speculative whether these differences reflect actual changes in environmental conditions that resulted in faster growth during early life. The von Bertalanffy growth model could not be fit to the observed length at age data.

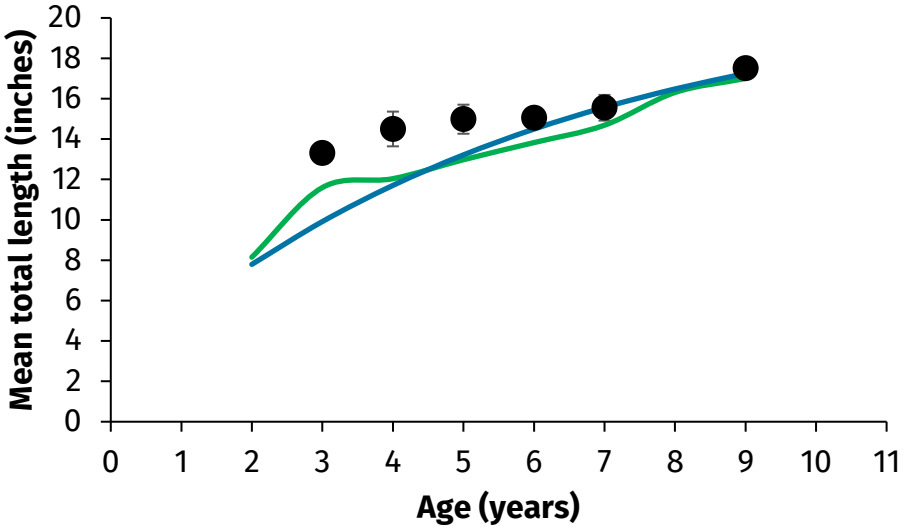

Figure 4. Largemouth bass mean length-at-age (black circles) ± standard deviation from Lake Montanis during 2024. Median length-at-age estimates for similar complex-warm-dark Wisconsin Lakes are modelled by the blue line and 2010 mean length-at-age estimates are modelled by the green line.

The environmental conditions during the 2024 SE2 survey were challenging, with high winds and low water clarity, which likely led to reduced catch rates that may not accurately reflect the current population dynamics. As a result, the relative abundance of adult fish was likely underestimated, leading to an insufficient sample size for accurately assessing key population metrics. From a management standpoint, it is assumed that population dynamics have remained consistent with those observed in 2010. Due to the lack of robust data to support alternative conclusions, no management actions are recommended currently. The 14-inch MLL, daily bag limit of 5 fish regulation will be maintained as this regulation is conservative in terms of harvest and should continue to support a quality population.

SMALLMOUTH BASS

There were 15 smallmouth bass collected during the SE2 survey with a CPUE of 4.3 fish/mile, which was lower than 2010 (9.5 fish/mile) and resembled the 75th percentile (2.7 fish/mile) for similar complex-warm-dark Wisconsin lakes. The CPUE of smallmouth bass ≥ 14 inches was 2 fish/mile, which remained similar to 2010 (1.8 fish/mile).

Smallmouth bass ranged in length from 10.7 – 20.0 inches with a mean length of 14.4 inches, which was greater than the 99th percentile (12.5 inches) for similar complex-warm-dark Wisconsin lakes. While the data collected was insufficient to calculate comprehensive PSD indices and other key population metrics, the limited information still points to a high-quality smallmouth bass population with excellent size structure. Quality smallmouth bass populations are rare in Barron and Polk counties, making Lake Montanis a unique opportunity for anglers in search of trophy-sized smallmouth bass.

BLUEGILL

A total of 98 bluegills were collected during the SE2 survey. Bluegill CPUE was 98.0 fish/mile, which was near the 50th percentile (116.9 fish/mile) for similar complex-warm-dark Wisconsin Lakes but increased since 2010 (46 fish/mile). The CPUE of quality size (≥ 6 inches) fish was 79.0 fish/mile (82.3% of catch), which also increased since 2010 (35 fish/mile; Gabelhouse 1984).

Lengths ranged from 2.7 – 8.9 inches with an average length of 6.7 inches (Figure 5). The mean length was above the 99th percentile for similar complex-warm-dark Wisconsin lakes. The PSD-6 was 82 and the PSD-8 was 13. Both PSD index values were within the generally accepted range for balanced bluegill populations (PSD-6 = 20-60, PSD-8 = 5-20; Anderson 1985). Collectively, this represented a bluegill population with above-average size structure. Despite this, fish ≥ 9 inches were not observed during the survey.

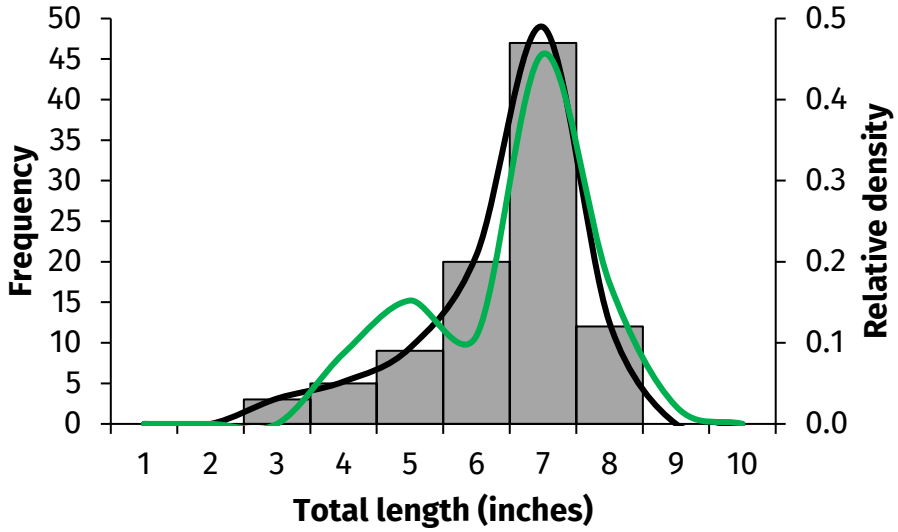

Figure 5. Length frequency of bluegill in Lake Montanis during the 2024 SE2 survey. Lines represent relative density curves of length frequencies during 2024 (black lines) and 2010 (green line).

Bluegill had average growth rates. Mean length at age was similar to median length at age estimates for similar complex-warm-dark Wisconsin lakes (average difference in

length at age estimates: -0.2 inches; ages 2 – 8; Figure 6) and the average for Barron and Polk counties (average difference in mean length at age estimates: +0.1 inches; ages 2 – 8; Figure 6). The predicted theoretical maximum length using von Bertalanffy growth models was 9.3 inches with k and t_0 estimated to be 0.21 and -0.51, respectively.

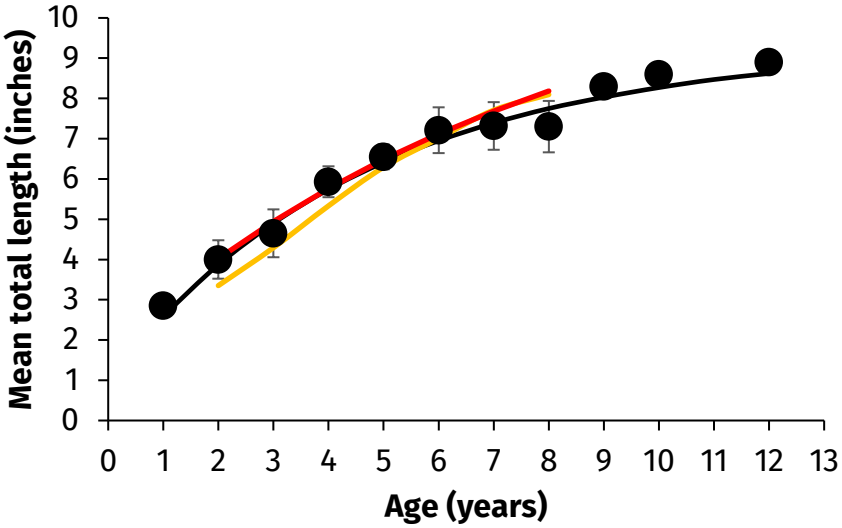

Figure 6. Bluegill mean length-at-age (blue circles) ± standard deviation from Lake Montanis during 2024. The von Bertalanffy growth model is represented by the black line. Median length-at-age estimates for similar complex-warm-dark Wisconsin Lakes and mean length-at-age estimates for Barron and Polk counties are represented by the red and orange lines, respectively.

The adult population was composed of 10 age classes that ranged from age 2 to 12. The adult population was well distributed with sustained annual recruitment, evident by the breadth of adult age classes present (Figure 7). Longevity was good with fish exceeding age 10.

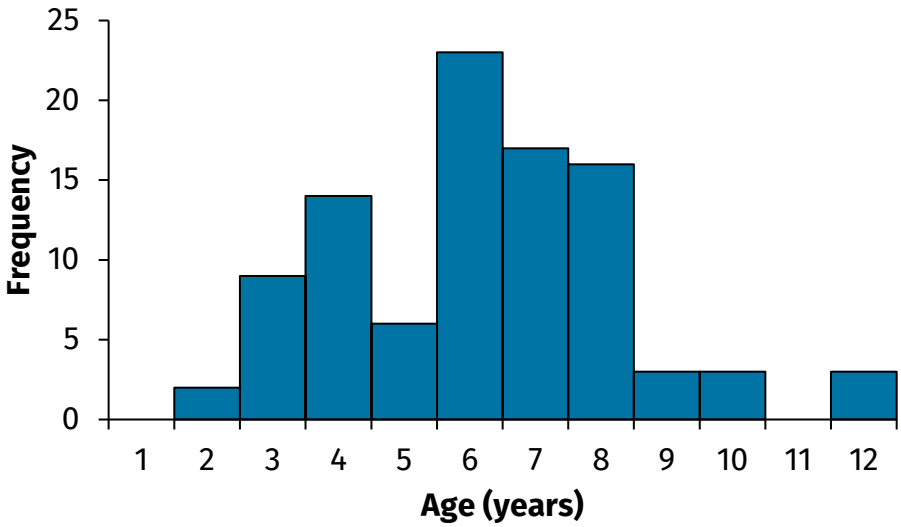

Figure 7. Age structure of bluegill in Lake Montanis during the 2024 SE2 surveys (grey bars).

A low-density bluegill population was present in Lake Montanis with above-average size structure and moderate growth rates, which likely provides anglers consistent and quality harvest opportunities. The current population does not satisfy the benchmark criteria set forth by the DNR Panfish Management Team for lakes having a size structure problem due to angler harvest (mean length < 6 inches & mean length at age-3 ≥ 4.2 inches). Thus, the current harvest regulations for panfish will be maintained and no additional management actions are required at this time.

BLACK CRAPPIE

A total of 19 black crappie were collected during the SE2 survey. Black crappie CPUE was 19.0 fish/mile, which remained similar to 2010 (24.0 fish/mile). The CPUE of quality size (≥ 8 inches) fish was 17.0 fish/mile (89.5% of catch), which remained similar to 2010 (24.0 fish/mile; Gabelhouse 1984).

Lengths ranged from 4.0 – 10.5 inches with an average length of 9.2 inches (Figure 8). The mean length was above the 99th percentile for similar complex-warm-dark Wisconsin lakes. The PSD-8 was 94 and the PSD-10 was 39. The PSD indices were greater than what is generally accepted for a balanced population (Gabelhouse 1984) Collectively, this represented a black crappie population with above-average size structure, but the sample size was low and should be interpreted with caution. Comparisons of PSD indices to 2010 were not made due to low samples sizes during both surveys, although size structure visually appeared to remain similar through time (Figure 8).

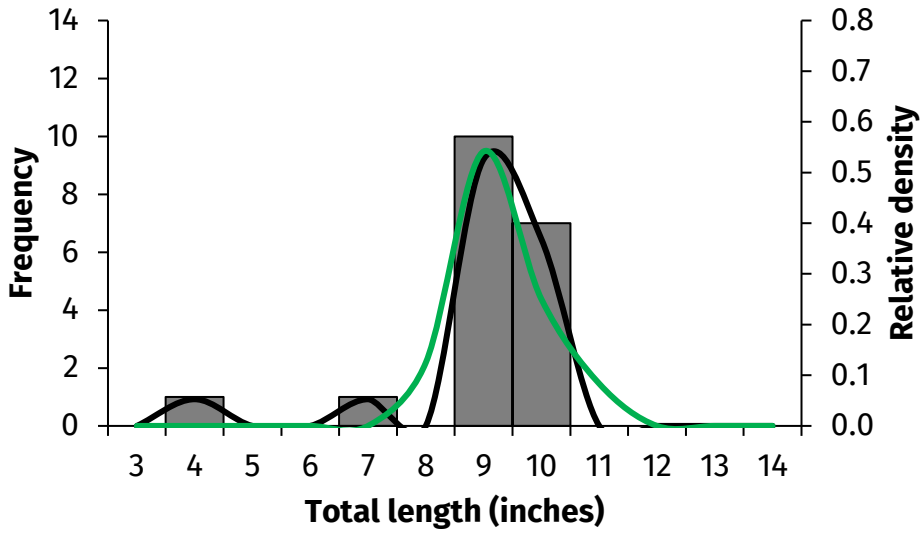

Figure 8. Length frequency of black crappie in Lake Montanis during the 2024 SE2 survey. Lines represent relative density curves of length frequencies during 2024 (black lines) and 2010 (green line).

Black crappie had average growth rates. Mean length at age was greater than the median length at age estimates for similar complex-warm-dark Wisconsin lakes (average difference in length at age estimates: +0.8 inches; ages 1 – 7; Figure 9) and the average for Barron and Polk counties (average difference in mean length at age estimates: +0.8 inches; ages 1 – 7; Figure 9). Differences were driven primarily by faster growth during early life (ages 1 – 5) whereas growth remained similar to standards beyond age-5 (Figure 9). The predicted theoretical maximum length using von Bertalanffy growth models was 10.9 inches with k and t_0 estimated to be 0.50 and -0.13, respectively.

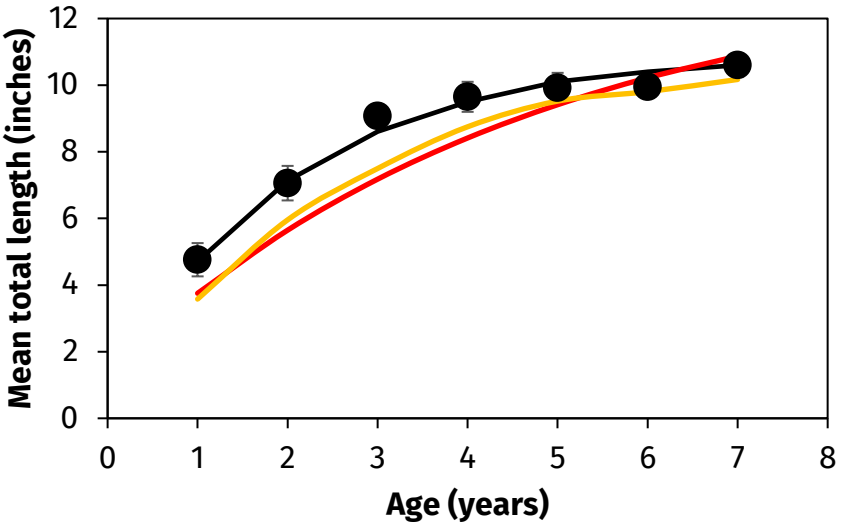

Figure 9. Black crappie mean length-at-age (black circles) ± standard deviation from Lake Montanis during 2024. The von Bertalanffy growth model is represented by the black line. Median length-at-age estimates for similar complex-warm-dark Wisconsin Lakes and mean length-at-age estimates for Barron and Polk counties are represented by the red and orange lines, respectively.

A low-density black crappie population was present in Lake Montanis with above-average size structure and moderate growth rates, which likely provides anglers consistent and quality harvest opportunities. Age structure of black crappie sampled during the SE2 survey was not assessed due to low sample size. However, drawing inferences from fish collected during the SN1 survey for aging purposes suggested consistent annual recruitment with multiple adult age classes present. Although data were limited and SE2 surveys are generally inadequate at characterizing black crappie populations, it appeared a stable, quality black crappie population was present. Thus, the current harvest regulations for panfish will be maintained and no additional management actions are required at this time.

OTHER SPECIES

Nine yellow perch and one muskellunge (48 inches) were sampled during the SE2 and SN1 surveys. A few white bass were observed during the SN1 survey. Common carp were not observed during the survey but likely remain present at low density.

Management Recommendations

1.) The adult walleye population should be maintained at a target density of ≥ 1.5 fish/acre by continuing to stock small fingerling walleyes in alternate years at a rate of 35 fish/acre. Stocking on an alternate year basis will enable us to continue fall electrofishing evaluations of natural reproduction and survival of stocked small fingerlings.

2.) The Ceded Territory base walleye regulation (15-inch MLL, 20 – 24-inch protected slot, three fish daily bag limit with only one fish > 24 inches) will be maintained as this regulation is conservative in managing harvest.
3.) No specific management actions regarding largemouth bass, smallmouth bass, northern pike, bluegill, black crappie and yellow perch are currently recommended.
4.) The next comprehensive fisheries survey should index black crappie relative abundance during the SN1 survey as opposed to the SE2 survey. Otoliths should be collected from bluegill and black crappie during the next survey to maintain the current level of aging accuracy and precision.
5.) Efforts to increase habitat complexity in Lake Montanis should also be encouraged where applicable. Inputs of coarse woody habitat, protection/promotion of aquatic vegetation and maintenance/restoration of vegetative buffers would be beneficial. This website healthylakeswi.com is a great resource to learn about this recommendation.
6.) Invasive species monitoring and control programs should continue. Efforts to keep aquatic invasive species out of a waterbody are much more effective than controlling invasive species once they are established.

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Appendices

Appendix Table 1. DNR Fish stocking records for Lake Montanis, 2001 – 2021.

YEAR	SPECIES	AGE CLASS	NUMBER STOCKED	AVG. LENGTH (IN)
2021	Walleye	Small Fingerling	7,729	1.5
2019	Walleye	Small Fingerling	8,253	1.6
2017	Walleye	Small Fingerling	8,167	1.6
2015	Walleye	Small Fingerling	7,482	1.4
2013	Walleye	Large Fingerling	1,000	6.3
2011	Walleye	Small Fingerling	7,040	1.7
2009	Walleye	Small Fingerling	7,194	1.7
2008	Walleye	Small Fingerling	7,000	1.6
2006	Walleye	Fry	300,000	0.2
2005	Walleye	Small Fingerling	10,075	1.5
2003	Walleye	Small Fingerling	10,000	1.6
2001	Walleye	Large Fingerling	10,000	3.8

Appendix Table 2. Survey types, gear used, target water temperature and target species.

SURVEY TYPE	GEAR USED	TARGET WATER TEMPERATURE (°F)	TARGET SPECIES
Spring Netting 1 (SN1)	Fyke Net	~45	Walleye, Northern Pike
Spring Electrofishing 1 (SE1)	Boat Electrofishing	45-50	Walleye
Spring Netting 2 (SN2)	Fyke Net	50-55	Muskellunge, Black Crappie, Yellow Perch
Spring Electrofishing 2 (SE2)	Boat Electrofishing	55-70	Largemouth Bass, Smallmouth Bass, Bluegill and other panfish, non-game species
Spring Netting 3 (SN3)	Fyke Net	65-80	Bluegill, Black Crappie
Fall Electrofishing (FE)	Boat Electrofishing	50-60	Juvenile Walleye and Muskellunge