WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Fishery Survey Summary
Musser Flowage
Price County, Wisconsin, 2025

Introduction

As part of the comprehensive surveys started in 2024, the Wisconsin Department of Natural Resources' (DNR) Fisheries Management Team from Park Falls completed fyke net surveys in the spring of 2024 and 2025 to estimate the adult density and characterize the size distribution of the muskellunge population in Musser Flowage. Our findings helped us gauge the effectiveness of stocking muskies as large fingerlings in odd-numbered years since 2001. Quality, preferred, memorable and trophy sizes referenced in this summary are based on standard proportions of world record lengths developed for each species by the American Fisheries Society.

HABITAT AND PUBLIC ACCESS CHARACTERISTICS

For information on Musser Flowage's water quality, aquatic habitat and public access, open the summary of our 2024 surveys.

SURVEY EFFORT

Our spring netting effort in 2024 was directed first at spawning walleyes immediately after the ice thawed, then toward adult muskellunge as water temperature rose. In 2025, we did not target walleyes in Musser Flowage, and we deployed our nets somewhat later in the spring as water temperature approached the optimal range for musky spawning. On April 20, 2025, we set six fyke nets at known and likely musky spawning sites. We fished the nets in two 24-hour and five 48-hour sets at 10 locations when water temperature ranged from 42 to 52° F. In this second of two consecutive spring netting surveys needed to estimate their adult population density by the mark-recapture method, we captured spawning muskies in 72 net-nights of fyke netting effort from April 20 to May 2, 2025. We scanned all muskies captured and injected a Passive Integrated Transponder (PIT) tag into the dorsal muscle of all that were not already tagged. We recorded the length and gender of all muskies and the unique identification number of all tags applied or detected by date and net location. The ratio of tagged and untagged muskies captured by fyke netting in the spring of 2025 allows us to estimate the number of adults in Musser Flowage's musky population.

Results and Discussion

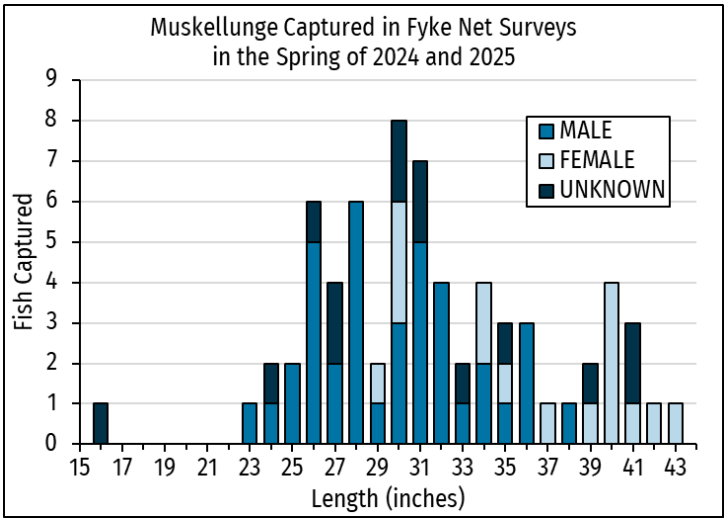
MUSKELLUNGE

Fyke netting in the spring of 2025 served as the "recapture" sample in a two-year survey to estimate the number of muskies in Musser Flowage. Applying Chapman's version of Petersen's formula[1] to fish 30 inches or longer, the muskellunge population estimate calculated for Wisconsin's Treaty Work Group (TWG) was 218 adults (95% confidence

[1] Ricker, W.E., 1975, *Computation and Interpretation of Biological Statistics of Fish Populations*, Fisheries Research Board of Canada, Bulletin 191.

interval = 43-393) or 0.39 adults per acre. However, due to its wide margin of error and high coefficient of variation (0.41), the TWG did not use this estimate to set limits on the safe tribal harvest of musky by efficient methods in Musser Flowage. For unbiased estimates of musky population number, the second-year netting sample should include at least four fish that were marked in the first-year sample. Sadly, we recaptured only three marked fish before musky spawning activity subsided and our catch dwindled in 2025.

Fyke nets captured 36 muskellunge at a rate of 0.50 per net-night in 2025, nearly matching the 75% percentile value (0.49/net-night) of the complex-riverine lake class. By comparison, the fyke netting catch rate was 0.34 muskies per net-night in spring 2024.



Several indices of the musky population's size distribution were nearly identical in netting samples from 2024 and 2025. Excluding duplicate lengths of three tagged muskies captured twice in spring 2025, their length ranged from 23.3 to 42.1 inches and averaged 32.2 inches long. In the 2024 "marking" sample, length ranged from 16.3 to 43.4 inches and averaged 32.1 inches long. In both years, the average length of muskies placed between the 75th and 90th percentiles among complex-riverine lakes. The maximum length ranked between the 90th and 95th percentiles in 2025 and exceeded the 100th percentile value in 2024. Remarkably, in both samples, two-thirds were quality-size fish 30 inches or longer, and 18% were preferred-size muskies at least 38 inches long. One memorable size fish ≥ 42 inches long comprised 2.6% of our spring netting sample in 2024 and 3.0% in 2025.

PIT tag recoveries shed light on the population's growth rate by comparing the length of individual fish between capture events. This method of growth assessment relies on length measurements at the beginning and the end of a period, rather than subjective interpretation of annular marks on bony structures. Supplementing the PIT-tag statistics reported in 2024, we injected PIT tags into 27 muskies in the spring of 2025, raising the total to 183 fish tagged and released in Musser Flowage since 2015. We detected PIT tags in four male and two female muskies captured in spring 2025. Two males gained 1.7 inches on average and one female grew 1.9 inches in about a year (344-377 days). A 40.3-inch female gained 0.4 inches in 277 days over winter, and a 22.8-inch male tagged in fall 2021 grew 9.5 inches in 3.6 years. In 2024, we were disappointed to find none of the PIT tags given to 65 muskies in spring 2017. Our sadness turned to joy when we detected one of those PIT tags in 2025. That longest period between tagging and tag detection was 2,929 days or about 8 years over which a 36.5-inch male musky gained 2.3 inches.

Musser Flowage did not receive the large fingerlings requested for fall 2025. Under the rating system used to set musky stocking priorities for 2025, Musser Flowage ranked fairly low with a score of 3.0 out of 10.0 points. In 2025, the DNR's rearing ponds at Governor Thompson

Hatchery produced enough large fingerlings to fill musky stocking requests that scored from 10.0 down to 4.0. Musky stocking priority scores are influenced by many factors, including lake size, stocking rate, type and age of the most recent survey data, statewide demands, hatchery production capacity, proximity to populated cities and similar fishing opportunities, etc. The DNR's Musky Team plans to rank musky stocking requests by a new method, beginning in 2026.

Management Recommendations

FUTURE EVALUATIONS

- At a 6-year frequency, the next fishery surveys in Musser Flowage are scheduled in 2030.

MUSKELLUNGE

- Complete consecutive spring fyke netting surveys in 2029-2030 or 2030-2031 to estimate adult musky population density by the mark-recapture method.

- Continue to request stocking muskies in odd-numbered years at a rate of 0.25 large fingerlings per acre. Then, guided by the 2030 population estimate, adjust this stocking strategy to attain our goals to have a musky population with 0.05-0.25 adults per acre that offers trophy fishing opportunity.

For questions contact:

Jeff Scheirer, Fisheries Biologist
Wisconsin Department of Natural Resources
875 4th Ave. S.
Park Falls, WI 54552
715-762-1354
jeffrey.scheirer@wisconsin.gov