

2016 Muskie Creel Project Report



**Illini
Muskies
Alliance**



**Illinois
Department of
Natural
Resources**



Muskie Creel Project Summary Report - 2016

Division of Fisheries

June 2017



INTRODUCTION AND ACKNOWLEDGEMENTS

Muskellunge (muskie) *Esox masquiongy* are highly-valued sportfish because of their trophy-size potential, unique fighting abilities, and their elusive behavior. Muskie were historically found from the St. Lawrence and Hudson River drainages west through the Great Lakes, the eastern upper Mississippi basin, and the Ohio basin. As a result of their popularity, the species has been introduced into many lakes and reservoirs beyond their native range.

One of the biggest tasks for successful muskie management is population monitoring. The Muskie Creel Project was modeled after the very successful voluntary creel survey which Mike Sule, former District Fisheries Manager, designed and implemented on Pierce and Shabbona Lakes in 1985 and 1986. The Illini Muskie Alliance (IMA) quickly partnered with IDNR on the creel survey and gave it their support. As the creel survey project gained traction, the IDNR and IMA implemented the program on a statewide basis in April of 1987. Originally focusing on only 27 lakes, the scope of the study widened and now includes over 65 waters statewide from which muskie anglers reported catch data annually. Funds for the project were originally provided by the IMA.

Initial stockings of muskies in Illinois were made with fingerlings. These fingerlings were either purchased from various sources or were fish traded from numerous states across the muskie range, including MN, WI, MI, IA, IN, OH, PA, KY, TN and NY. These collected sources of muskies eventually established a unique "Illinois strain" of fish in Spring Lake North, which the IDNR then used as their brood stock lake. Fish were collected from Spring Lake North, spawned and stocked from then on throughout Illinois. However, the yearly Illinois stockings were supplemented periodically by other strains purchased by some of the IMA clubs, or fish obtained by the IDNR to replace lost hatchery fish due to disease or predation.

The IMA has been and continues to be instrumental in the progression of the muskie program in Illinois. The IMA provided funding for the original printing of the green creel cards to report muskie catches, and has also provided funding for barrier nets at state hatcheries and lakes, paddle wheel aeration pumps at Jake Wolf Hatchery, and with Tri-Esox Productions purchased replacement muskie creel signs for posting at muskie waters. Various Muskies, Inc. (MI) chapters affiliated with IMA have purchased fingerlings and minnow forage to facilitate stocking and rearing efforts in addition to numerous donations of equipment necessary for muskie management, production, and transport. We would also like to recognize the Illinois Muskie Tournament Trail (IMTT) for donating funds for fish habitat enhancement projects, muskie genetic research, and numerous items for muskie field sampling.

METHODS AND RESULTS

Originally there were 27 lakes ranging from 25.0 - 24,580.0 acres selected for inclusion in the statewide Muskie Creel Project. Lakes which were stocked with muskies (both pure and/or hybrid muskies) for several years were selected. However, as the muskie program has expanded, anglers are now reporting catching fish from over 65 water bodies throughout the state, as well as some unidentified areas.

In order to alert anglers to the project, two types of signs have been posted. "Point of Purchase" signs (8"x 11") with smaller mail in creel cards (4"x 5") attached are displayed at site offices, concessions, and local bait and tackle dealers. Larger (18"x25") heavy plastic signs have been placed at boat launches, concessions, and site offices. In addition, anglers can also report their muskie catch at the following web address:

http://www.ifishillinois.org/science/muskie_survey.php

Muskie catches from annual catch records from Muskies, Inc. have been provided to IDNR and added to the creel project database. However, for purposes of reporting the public submissions of annual catch, the MI records and records from the IMTT, and independent muskie clubs are not used as part of this report in an effort to maintain consistency throughout time. As such, information presented in the annual muskie creel project report consists solely of volunteer reporting data.

During the 1987 to 2016 period, a total of 12,075 muskies were reported caught from 68 water bodies (388 muskies reported on average). The numbers of muskie increased over the years from 1987 to a peak of 1,181 reports in 2006 (Figure 1). The number of muskie reported for 2016 showed an increase in catches with 276 total muskies reported. Catch reports have been below 200 total fish since 2010 when 292 muskies were reported.

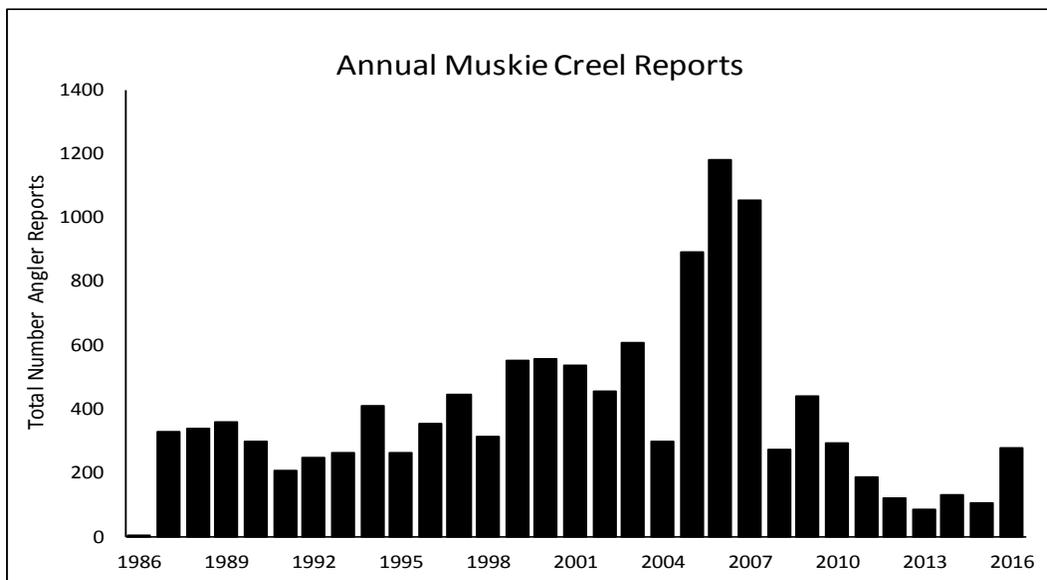


Figure 1. Annual reported muskie catches from 1987 to 2016 - the year of greatest catch reported was 2006.

Table 1. Total number of muskie caught from the top 20 waters of greatest catch from the years of 1987 through 2016.

Water Body	Total for All Years
Kinkaid Lake	2824
Fox Chain O'Lakes	1766
Lake Shelbyville	1226
Lake Carlton	921
Shabbona Lake	842
Heidecke Lake	751
Spring Lake North	739
Kaskaskia River	450
Lake Evergreen	357
Otter Lake	356
Lake George	182
Lake Storey	178
Pierce Lake	165
Banner Marsh	147
Prairie Lake	136
Loon Lake	123
Lake McMaster	122
Shelbyville Spillway	112
Fox River	99

The average length of fish caught and reported has increased from 29 inches in 1987 to greater than 34 inches in 2016 (Figure 2).

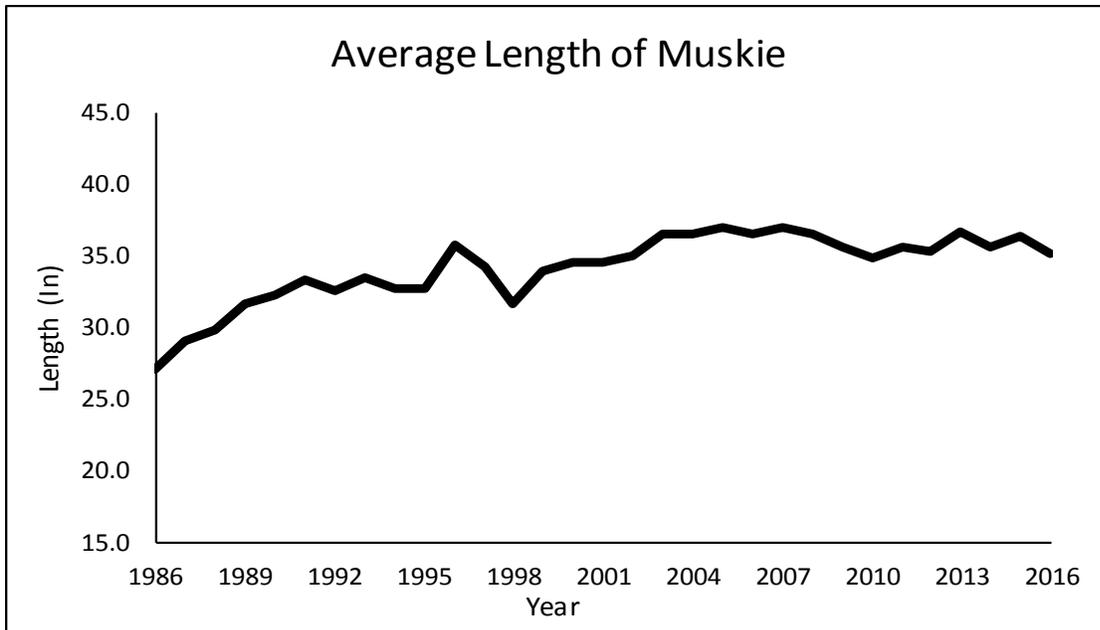


Figure 2. Average annual length of muskie (in inches) reported from 1987 to 2016.

The study has shown that the largest maximum annual length of muskie increased from 1987 to 2011 before declining slightly as catch reports also declined (Figure 3). The average annual maximum size of reported muskie through 2016 is 49.2 inches. The largest muskie reported in 2016 was 50.0 inches caught in Kinkaid Lake in Jackson County. The largest muskie reported caught during this project is a 60 inch fish from Shabbona Lake in 2001.

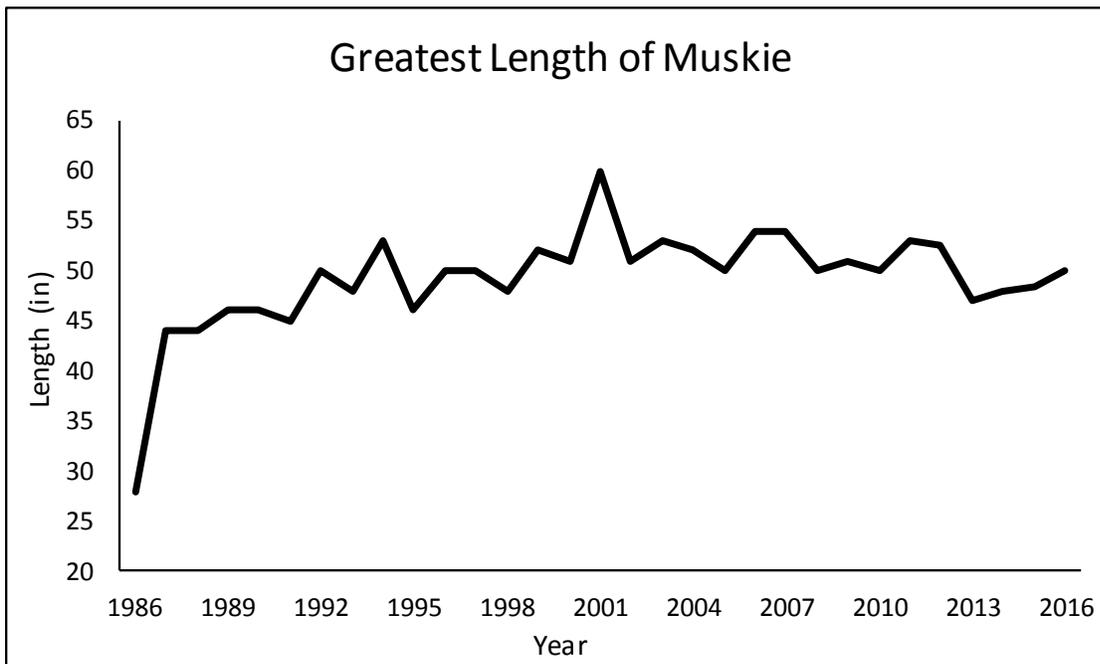


Figure 3. Greatest maximum length (in inches) overall of muskie reported annually from 1987 to 2016.

A total of 26 water bodies had muskie catches reported in 2016 (Table 2). Kinkaid Lake in southern Illinois and Lake Shelbyville in east central Illinois have consistently produced quality muskies over the years and provide some of the highest reports to catches. However, in recent years Lake McMaster, Evergreen Lake, and Prairie Lake have shown increases in average length of reported muskie catches and are among the top five waters for average length (Table 3; catches from Shelbyville Spillway and the Kaskaskia River are presumed to be contributions from Lake Shelbyville).

Table 2. Water bodies with muskie catches reported in 2015 in order of most muskie reported per water.

Water Body	Total for 2016
Kinkaid Lake	126
Spring Lake North	31
Prairie Lake	25
Evergreen Lake	13
Super Lake	13
Mill Creek Lake	12
Johnson Lake	10
Lake McMaster	10
Fox Chain O'Lakes	6
Kaskaskia River	3
Lake Carlton	3
Lake Marie	3
Lake Storey	3
Shovel Lake	3
Fox River	2
Heidecke Lake	2
Lake Sule	2
Channel Lake	1
Indian Creek	1
Johnson Sauk Trail	1
Lake Cathrine	1
Goldeneye Lake	1
Rock River	1
Shabbona Lake	1
Lake Shelbyville	1
Sterling Lake	1
Grand Total	276

Table 3. Average length in inches of muskie for water bodies with greater than 100 fish reported over time.

Water Body	Ave Ln
Lake Shelbyville	39.7
Lake McMaster	39.2
Kaskaskia River	38.5
Shelbyville Spillway	38.5
Fox Chain O'Lakes	38.1
Lake Evergreen	36.7
Kinkaid Lake	35.9
Lake Carlton	35.4
Banner Marsh	35.4
Prairie Lake	35.1
Otter Lake	34.9
Lake George	34.9
Lake Storey	34.5
Loon Lake	34.4
Shabbona Lake	33.8
Spring Lake North	33.3
Pierce Lake	28.9
Heidecke Lake	27.4

Overall, April, May, June, September, and October continues to be the most productive months to catch muskie as 70% are caught during these months. This also indicates that anglers are expending more fishing effort during these months. The top ten lakes (based on percent catch) generally reflect this pattern in varying degrees with some exceptions. The monthly catch is higher during April thru June at lakes located in the northern part of the state (Fox Chain O'Lakes, Heidecke Lake, Lake Carlton, and Shabbona Lake); whereas the monthly catch is as high or higher in September and October at lakes located in the southern part of the state (Kinkaid Lake and Lake Shelbyville). This is probably a function of anglers taking advantage of seasonal differences in climate that afford longer fishing opportunities in the fall for the southern lakes. Spring Lake North also appears to provide good late winter early spring fishing opportunities as 50% of the muskie caught were taken in January through April.

CONCLUSION

Over the past 28 years the Illinois muskie fishery has evolved into one of the better fisheries in the Midwest, which is evident in the fact that Illinois has hosted several professionally sanctioned tournaments. This could not have been accomplished without the dedication and resolve of IDNR Fisheries Biologists, Hatchery Managers, and Technicians, and without the ongoing support and assistance of the IMA, Illinois Muskies, Inc. Chapters, IMTT, and the muskie anglers who have participated in this project.

As the muskie range has been artificially expanded by more widespread stocking, it becomes increasingly important to understand the potential impacts of muskie introduction on existing fisheries and aquatic communities. The information derived from this creel project is very important relative to monitoring and gauging the status of established and developing muskie populations, and will enable the IDNR Division of Fisheries to continue to maintain and improve quality muskie angling opportunities. However, angler participation is essential to ensure the continued success of this project and the declining trend of angler reports over the past four to five years is somewhat alarming to the Division of Fisheries. Please make every effort to report your muskie catch!

Equal opportunity to participate in programs of the Illinois Department of Natural Resources (IDNR) and those funded by the U.S. Fish and Wildlife Service and other agencies is available to all individuals regardless of race, sex, national origin, disability, age, religion or other non-merit factors. If you believe you have been discriminated against, contact the funding source's civil rights office and/or the Equal Employment Opportunity Officer, IDNR, One Natural Resources Way, Springfield, IL 62702-1271; 217/785-0067; TTY 217/782-9175

This information may be provided in an alternative format if required. Contact the DNR Clearinghouse at 217/782 - 7498 for assistance.

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