



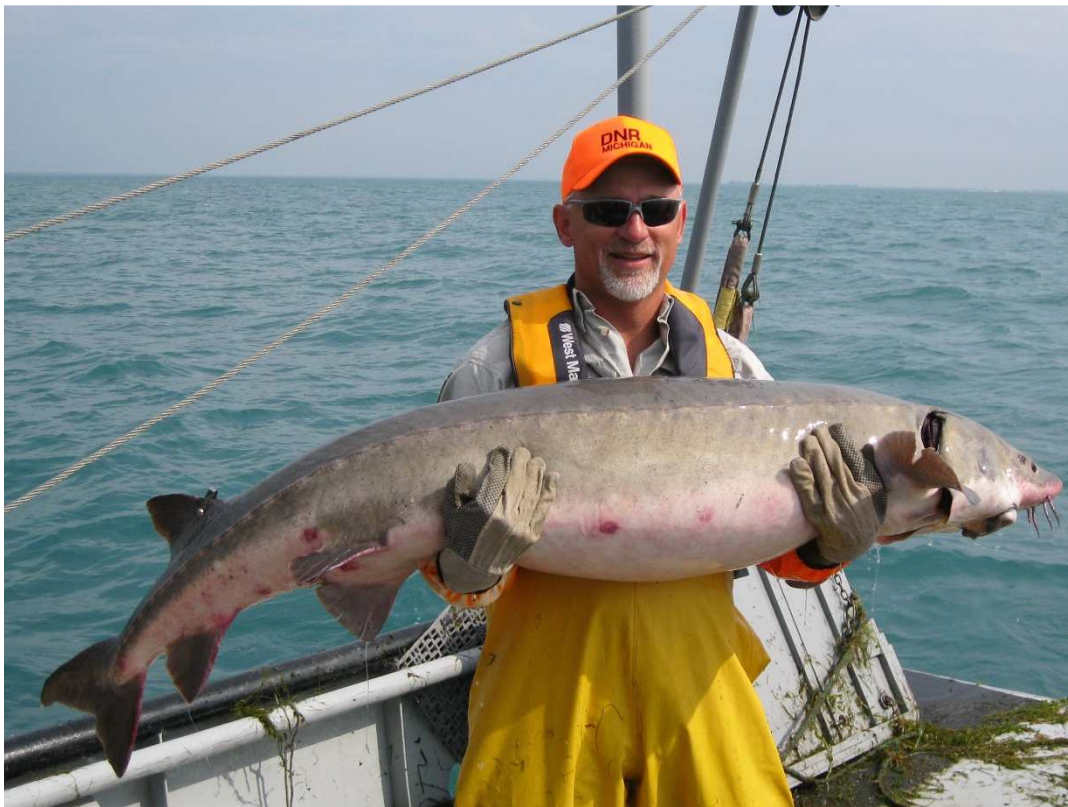
DEPARTMENT OF NATURAL RESOURCES

Status of the Fisheries in Michigan Waters of Lake Erie and Lake St. Clair, 2016

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Fisheries Research Biologist Mike Thomas (retired) holds a large Lake St. Clair Lake Sturgeon

Lake St. Clair Fisheries Research Station
Website: http://www.michigan.gov/dnr/0,4570,7-153-10364_52259_10951_11304---,00.html

FISHERIES DIVISION

Highlights for 2016

The purpose of this report is to provide an update on the status of the fisheries in the Great Lakes and connecting waters of Southeast Michigan. Sources of information used in compiling this report include creel surveys, charter boat reports, an angler diary program, the Michigan Department of Natural Resources (MDNR) Master Angler program, commercial fishery records, and fisheries survey results. Some of the highlights described in detail include:

- Michigan non-charter anglers captured over 1.5 million Lake Erie Yellow Perch and harvested over 1.2 million of these fish. This is the most fish harvested since 1989 and the second most recorded since 1986.
- The 2016 non-charter angler harvest rate for Lake Erie yellow perch was the highest recorded since 1986, while the walleye harvest rate was below the long-term average.
- Michigan non-charter anglers on Lake Erie caught 71,138 Walleye and harvested 65,816 of those fish.
- Lake St. Clair continues to be the premier Michigan water for trophy Muskellunge and Smallmouth Bass based on the number of entries recorded in the Master Angler program in 2016.
- The first annual MDNR nearshore electrofishing survey revealed excellent size distribution of Lake St. Clair panfish populations.
- Brook Silversides and Emerald Shiners were the numerically dominant species in the 2016 nearshore electrofishing survey.
- The 2016 catch of yearling Walleye in the MDNR's Lake Erie assessment gill nets was the fourth highest in the time series, indicating an extremely robust 2015 year class which should result in impressive catch rates of Walleye in Michigan waters of Lake Erie and the St. Clair-Detroit River System for years to come.

About the Lake St. Clair Fisheries Research Station

The Lake St. Clair Fisheries Research Station is a unit of the Research Section of the MDNR Fisheries Division. The station conducts research and stock assessment on fish populations of Lake Erie, the St. Clair-Detroit River System, and Saginaw Bay. Results of this work are instrumental in fisheries management decisions affecting these waters. The station works closely with fisheries managers in the MDNR's Lake Erie Management Unit and routinely collaborates in joint projects with other state and federal partner agencies, local units of government, non-government organizations, academic institutions, and stakeholder groups. Federal Sport Fish Restoration (SFR) Program dollars provide support for the majority of the station's assessment activities. The SFR Program provides grant funds to restore and better manage America's fishery resources through excise taxes on the purchase of fishing equipment, motorboat and small engine fuels, import duties, and interest. More information on the SFR Program can be found at: <http://wsfrprograms.fws.gov/Subpages/GrantPrograms/SFR/SFR.htm>.

Sport Fishery Summary

Information on angler catch rates, effort, and opinion of Michigan's sport fisheries is collected with angler surveys. An angler survey can be conducted on-site where anglers are interviewed or counted while on the water, or off-site when anglers are interviewed by mail or telephone. On-site methods, also known as creel surveys, have been used extensively by the MDNR on various Michigan waters to estimate angler effort, harvest, and catch. In Southeast Michigan, on-site creel survey data are collected each year from the non-charter recreational fishery of Lake Erie. An on-site creel survey was also conducted on Lake St. Clair during 2016. Charter boat harvest, release, and angling effort are also recorded by Lake Erie and St. Clair-Detroit River System charter operators, who are required to report this information to the MDNR on a monthly basis.

Another example of an off-site angler survey is an angler diary program, where anglers keep their own records of angling activity and success. A voluntary Sport Fishery Diary Program is used to collect catch and effort data for recreational fishing on Lake St. Clair. The program was initiated by the Ontario Ministry of Natural Resources and Forestry (OMNRF) in 1985 to monitor trends in the Muskellunge catch rate for Lake St. Clair. Five years later the program was expanded to include



other species. The MDNR became involved in the program in 1993. Since that time, the program has been a cooperative effort between the OMNRF and MDNR to provide annual estimates of catch rates for the major sport fish species in Lake St. Clair. The MDNR Master Angler program, established in 1973 to recognize anglers who catch unusually large fish, also provides information on trends in voluntary reports of “trophy” catches throughout the Great Lakes waters of Southeast Michigan.

Lake Erie non-charter recreational fishery

The annual creel survey conducted by the MDNR during 2016 produced a total harvest estimate of 1,297,684 fish (Table 1) for Michigan's Lake Erie non-charter sport fishery, representing a substantial increase when compared to harvest in 2015 (461,826) and 2014 (222,835). Yellow Perch alone accounted for 94% of the total harvest, reflecting their continued importance to the sport fishery. Non-charter anglers harvested an estimated 65,816 Walleye in Michigan waters of Lake Erie, which was very similar to the harvest in 2015 (65,740). Harvest rates of Largemouth and Smallmouth Bass by Michigan's Lake Erie anglers remained low with an estimated harvested of less than 200 fish. Angler effort in 2016 increased 35% compared to 2015 (Figure 1), likely driven by outstanding catch rates of Yellow Perch. The Walleye harvest rate in 2016 (0.13 fish/angler hour) decreased by 35% from 2015, dipping below the long term mean of 0.22 fish/angler hour (Figure 2). The Yellow Perch harvest rate (2.43 fish/angler hour) increased 54% compared to 2015, representing the highest catch rate in the time series (Figure 2). Trends in angler effort and harvest rates for Walleye and Yellow Perch since the mid-1980s suggest that the level of angler effort on Lake Erie is affected by many factors in addition to harvest rates. Other factors, including weather, prey fish abundance, fishing success on other Great Lakes waters, fuel expenses, and regional economic conditions have likely contributed to the comparatively low level of fishing effort since 1991.

Biological data were collected from Walleye and Yellow Perch during the 2016 on-site creel survey. The age composition of harvested Walleye was dominated by ages 2 through 5 (2011 to 2014 year-classes), representing 76% of the harvest; though the 2013 year class (age 3) single-handedly made up 30% of the catch. Similar to last year, age 10 and older Walleye accounted for only

12% of the harvest (Figure 3). The average length of Walleye harvested in the sport fishery in 2016 was 19.3 inches.

Yellow Perch harvest was dominated by age 2 and age 3 fish (2013 and 2014 year-classes), which in combination, accounted for 88% of the total harvest (Figure 3). Average lengths of harvested age 2 and 3 Yellow Perch were 7.9 inches and 9.0 inches respectively. The overall average length of Yellow Perch harvested in the sport fishery in 2016 was 8.7 inches. The mean length-at-age for Yellow Perch taken in the Michigan sport fishery increased for age 4 and age 5 fish in 2016 relative to 2015 (Figure 4).

Lake St. Clair non-charter recreational fishery

In 2016 the MDNR conducted a creel survey of the American waters of Lake St. Clair. This survey is the first characterization of recreational fishing on Lake St. Clair since 2002-2005. Recreational anglers spent 553,457 hours fishing the American waters of Lake St. Clair and harvested a total of 117,658 fish (Table 2). Yellow Perch were the most commonly harvested species in the American waters of Lake St. Clair during 2016, representing 63% of the total harvest. A total of 74,497 Yellow Perch were harvested, yielding a harvest rate of 0.14 fish/angler hour. Non-charter anglers harvested a total of 13,396 Walleye in 2016, representing a harvest rate of 0.02 fish/angler hour. Over 191,000 black bass (Largemouth and Smallmouth combined) were captured in the American waters of Lake St. Clair, and 98% were released. Additionally in 2016, 1,919 Muskellunge were captured and none were observed harvested.

Similar to Lake Erie, biological data were collected from Walleye and Yellow Perch during the 2016 on-site Lake St. Clair creel survey. The age composition of harvested Walleye was dominated by age 2 (2014 year-class), which accounted for 44% of the harvest (Figure 5). Age 10 and older Walleye accounted for only 4% of the harvest. The average length of Walleye harvested in the sport fishery in 2016 was 17.2 inches.

Yellow Perch harvest was dominated by age 3 fish (2013 year-class), which accounted for 51% of the total harvest (Figure 5). The average length of harvested age 3 Yellow Perch was 7.7 inches. The overall average length of yellow perch harvested in the sport fishery in 2016 was 8.2 inches.



Charter fishery

In 2016, Michigan charter boat operators reported a total harvest of 46,303 fish of all species from Lake Erie. In combination, Yellow Perch and Walleye accounted for over 99% of the total harvest. The Walleye harvest rate in 2016 was up from 2015, but remained slightly below the long-term mean harvest rate of 0.72 fish/angler hour (Figure 6). The Yellow Perch harvest rate increased substantially from 2015, exceeding the long-term mean of 0.65 fish/angler hour for the 7th consecutive year (Figure 6). The charter boat targeted Walleye harvest rate of 0.86 fish/angler hour (Table 3) was nearly 7 times higher than those estimated for non-charter anglers in 2016 (0.13 fish/angler hour), while the targeted Yellow Perch charter harvest rate of 7.3 fish/angler hour was three times higher than the rate for non-charter boat anglers (2.4 fish/angler hour).

Beginning in 2010, Michigan charter boat operators were required to report catch-and-release fishing activity as well as harvest. For Lake Erie, charter operators reported releasing 17,067 fish of all species in 2016. About 64% of the released fish were Walleyes, suggesting a high abundance of sub-legal sized fish associated with the strong 2014 and 2015 year-classes. Lake Erie charter boat operators reported the catch and release of 29 Muskellunge in 2016, more than doubling the reported catch and release of Muskellunge in Lake Erie during 2015 (13 fish).

For the St. Clair-Detroit River System, charter boat anglers reported a harvest of 14,738 fish of all species. Walleye (56%) and Yellow Perch (23%) made up the bulk of the harvest. In 2016, the charter boat harvest rate for Walleye increased when compared to 2015 and was similar to the long-term mean Walleye harvest rate of 0.20 fish/angler hour (Figure 7). The Yellow Perch harvest rate increased slightly from 2015, but remained well below the long-term mean harvest rate of 0.45 fish/angler hour (Figure 7).

Charter operators on the St. Clair-Detroit River System reported releasing 28,205 fish. Smallmouth Bass (56%) and "other species" which includes White Perch, White Bass, Freshwater Drum, and Channel Catfish (27%) accounted for the majority of the fish that were captured and released. For charters targeting Smallmouth Bass, charter operators released 93% of the 16,564 fish caught in 2016. Of the 1,228 Muskellunge reported

caught, two were harvested for an overall release rate of 99.8% (Table 4).

The number of reported Michigan charter excursions on Lake Erie increased 35% in 2016, reaching the highest levels observed since 2007 but still well below the levels reported prior to 2004 (Figure 8). In 2016, charter boat excursions on the St. Clair-Detroit River System increased 20% from 2015. This continues a trend of increased charter activity since 2012 on the St. Clair-Detroit River System. The reporting requirement of catch and release fishing implemented in 2010 may explain some of the increased activity that was reported; however, it is likely that the continuing upward trend in charter excursions since 2012 represents a true increase in charter activity. The charter fishing activity on the St. Clair-Detroit River System is primarily catch-and-release oriented, and was largely unreported prior to 2010 making long-term trends in charter effort difficult to assess in the St. Clair system.

Sport Fishery Diary and Master Angler programs

Muskellunge catch rates derived from the Sport Fishery Diary Program on Lake St. Clair improved through the late 1980's and early 1990's, but were more variable in the 2000's. In 2016, the catch rate decreased to the lowest level observed since the late 1980's (Figure 9). The decrease in Muskellunge catch rates for 2016 continues a pattern of increased variability in catch rates over the past 17 years. We suspect this increased variability may be more reflective of the lower number of Muskellunge anglers involved in the diary program, than of actual changes in the Muskellunge population.

For years, the quality of the Lake St. Clair Muskellunge fishery was reflected in the MDNR's Master Angler program. Lake St. Clair continued to dominate the statewide Master Angler entries for Muskellunge in 2016, with 29 of the 49 total entries originating from the St. Clair system. However, the number of Lake St. Clair Muskellunge Master Angler entries has generally declined since 2000 (Figure 10). We suspect this is largely a reflection of waning interest in submitting Master Angler entries for Muskellunge less than 50 inches in length, which has become a local benchmark for "trophy" status for Muskellunge from the St. Clair-Detroit River System. By all accounts, the Muskellunge population continues to provide excellent fishing opportunities. We expect that the following factors



will continue to contribute to a strong Muskellunge population and fishery in Lake St. Clair and the connecting waters: 1) a 44 inch minimum size limit (MSL) for Ontario waters and a 42 inch MSL for Michigan waters of the St. Clair system; 2) physical and biological changes in the lake such as clearer water and increased aquatic plant growth resulting in improved habitat for Muskellunge; and, 3) extensive voluntary practice of catch-and-release fishing for Muskellunge in Lake St. Clair by both charter and non-charter anglers.

Statistics from the Master Angler program indicate that Lake St. Clair is one of the premier waterbodies in the state for trophy Smallmouth Bass, with 13 entries in the Master Angler program in 2016. This represents a substantial decline from 2012 when over 40 Master Angler Smallmouth Bass were entered (Figure 11). However, the continued strong representation of Lake St. Clair Smallmouth Bass in the statewide Master Angler program is likely a reflection of an abundance of trophy-size Smallmouth Bass in the lake, a high degree of angler effort targeting the species, and widespread practice of catch-and-release among Smallmouth Bass anglers.

Commercial Fishery Summary

Since 1979 the commercial fishery in Michigan waters of Lake Erie has primarily harvested rough fish species using seines in the shallow embayments along the shoreline, although a small-mesh trap net license has been active since 2006. In 2016, a total of two Michigan commercial fishing licenses were active on Lake Erie. The 2016 commercial harvest included 11 types of fish for a total of 824,437 pounds (Table 5). In combination, Common Carp (23%), White Bass (20%), Channel Catfish (19%) and Goldfish (11%) accounted for 73% of the total harvest by weight. The total value of the 2016 Lake Erie commercial harvest from Michigan waters was estimated at \$440,918 (Table 5). The 2016 harvest of Channel Catfish was the highest reported since 1981 (Table 6). The harvest of Goldfish was the 3rd highest since 1981.

Summary of Fisheries Surveys

The MDNR conducts a number of annual assessments using a variety of gear types to target the diverse fish communities present in Lake Erie and the St. Clair-Detroit River System. Since 1978, the Lake St. Clair Fisheries Research Station has fished variable mesh multi-filament gill

nets at two fixed (index) locations in western Lake Erie each fall, as part of the interagency walleye assessment program. In 2014, a bottom trawl survey was added to our standard assessments of the Michigan waters of Lake Erie in order to measure recruitment of important fish species. Trap nets have been deployed in Anchor Bay of Lake St. Clair each spring since 2002 to sample adult fish populations, while juvenile and forage fish populations in the lake have been assessed with bottom trawls each spring and fall since 1996. A setline survey has been used to monitor the lake sturgeon population in the North Channel of the St. Clair River since 1997; beginning in 2013 the MDNR modified its bottom trawl to increase its success in capturing lake sturgeon in Lake St. Clair. Unfortunately, complications associated with the re-power of our primary work platform, the R/V *Channel Cat*, resulted in the cancellation of the annual trap net survey and greatly reduced the amount of trawling conducted in Lake St. Clair in 2016. However, in 2016 we also added a new survey utilizing our electrofishing boat, the R/V *Mooneye*, to sample the nearshore fish community of Lake St. Clair.

Lake Erie

Eight sites, including the two index gill net stations, were sampled during the 2016 Lake Erie bottom trawl fish community survey. A total of 5,325 fish representing 20 different species were captured during 8 trawl tows for an average catch-per-effort (CPE) of 710 fish/10-minute tow. Age 0 Yellow Perch had the highest average CPE (212 fish/10-minute tow) for forage-sized fish, followed by age-0 White Perch (192 fish/10-minute tow), Mimic Shiner (84 fish/10-minute tow), Trout Perch (37 fish/10-minute tow), and Spottail Shiner (11 fish/10-minute tow). Round Goby, Gizzard Shad, White Bass, Brook Silversides, Freshwater Drum, Logperch, Walleye, Smallmouth Bass, Tubenose Goby, Silver Chub, and Rock Bass were also captured. The non-forage size (adult) catch was dominated by Yellow Perch (78.5 fish/10-minute tow), followed by White Perch (54.5 fish/10-minute tow), Freshwater Drum (32.8 fish/10-minute tow), and Walleye (10.6 fish/10-minute tow). Also captured were Channel Catfish (8.9 fish/10-minute tow), White Sucker (1.1 fish/10-minute tow) and Quillback, Rock Bass, White Bass, Smallmouth Bass, and Common Carp (all less than 1 fish/10-minute tow).

In 2016 a total of 946 fish representing 13 species were captured during four net lifts at two index



sites completed during the annual October gill net survey in Michigan waters of Lake Erie. Walleye (51%), and White Perch (26%), comprised over three-quarters of the catch by number, followed by Gizzard Shad (9%), Channel Catfish (8%), White Bass (4%), Yellow Perch (1%), and Freshwater Drum (1%). The remaining six species (Shorthead Redhorse, Longnose Gar, Common Carp, Pumpkinseed, Quillback and White Sucker) accounted for less than 1% of the total catch.

The average Walleye catch rate for the two index sites (121 fish/lift) in 2016 more than doubled from 2015 (Figure 12) and was at the highest observed since 2005. The increase was due to the contribution of the 2014 and 2015 year-classes, which accounted for a combined 92% of the total catch (2014: 22% of the catch, 2015: 70% of the catch). The average catch rate of yearling Walleye (84.3 fish/lift) was roughly double the catch rate observed in 2015 and well above the average of 36 fish/lift for the 1978-2015 time series (Figure 13).

Lake St. Clair and St. Clair River

Despite the cancellation of the 2016 trap net survey in Anchor Bay, 469 Smallmouth Bass were sampled by electrofishing primarily along the “Mile Roads” area east of St. Clair Shores. Of the 469 fish sampled, 456 were tagged with jaw tags. The average length of all sampled fish was 16.7 inches, and their ages ranged from 3 to 13 years old. Electrofishing will be included as a source of fish for jaw tagging in addition to the annual trap net survey during future years.

The first annual nearshore electrofishing survey was conducted at the end of October and beginning of November, 2016. The purpose of this survey is to provide insight into the population size structure and abundance of fish species such as panfish, largemouth bass, and forage fishes that are associated with nearshore areas and may not be adequately captured by our other survey methods. Thirteen sampling stations located around the lake and deemed representative of lake-wide nearshore habitat conditions were sampled for three ten minute transects each. During the first and third ten minute transect all observed fish were netted, identified, and measured to the nearest inch. During the middle ten minute transect only age-0 Muskellunge were netted as part of a Muskellunge recruitment index initiated in 2015.

A total 3,520 individual fish representing 36 unique species were measured. Brook Silversides and Emerald Shiners were numerically dominant, each making up roughly 20% of the total catch by number. Largemouth Bass, Yellow Perch, and Brook Silversides were the most widely distributed species as each was encountered at all 13 sampling locations. Only one age 0 Muskellunge was captured for a catch rate of 0.15 fish/hour, down substantially from the 6.6 fish/hour catch rate observed in 2015 (the 2015 survey targeted age 0 Muskellunge only). Panfish populations including Black Crappie, Pumpkinseed, and Bluegill had length frequency distributions characterized by many individuals over six inches in total length (Figure 14) suggesting favorable fishing opportunities. Moving forward the nearshore survey will provide a strong basis for evaluating change in size structure and recruitment of these important fish species.

A total of 185 Lake Sturgeon were collected during assessment surveys on Lake St. Clair and the St. Clair River in 2016. Captured Lake Sturgeon averaged 40.8 inches in total length, with a range from 20.6 inches to 70.7 inches. A total of 174 Lake Sturgeon were caught in the St. Clair River during the annual setline survey, while 11 fish were caught with trawls in Lake St. Clair during July – September. The length frequency for setline and trawl-captured Lake Sturgeon in 2016 illustrates the higher proportion of large individuals in the trawl catch in the lake (Figure 15). We suspect this reflects a difference in the actual size structure of the Lake Sturgeon present in the lake during the summer, rather than a product of differences in size bias between the two survey gear types. Survey setlines were modified in 2003 to include small hooks, providing a less biased sample of the Lake Sturgeon population. In addition to sampling Lake Sturgeon, each setline is also set with two minnow traps, one attached to each end. These traps target Northern Madtom, a small catfish species endangered in the State of Michigan and Province of Ontario. Each trap is baited with earthworms, which experimentation in past years has proven to be the best bait. A total of 297 Northern Madtoms were sampled in 2016, the most ever sampled! Northern Madtoms have very specific habitat and water quality requirements, making them a sensitive indicator of environmental quality. The high catch rates of 2016 suggests high quality habitat conditions exist in the St. Clair River at this time.



Fish Tagging Studies

The MDNR uses a number of different tagging methods that are dependent upon the type of fish being tagged and the purpose for tagging, which can include estimating fish abundance, growth, mortality, exploitation, and movement. The tags most commonly used by the MDNR in the St. Clair-Detroit River System and Lake Erie are metal tags located on the jaw of Walleye and Smallmouth Bass or on the dorsal fin of Lake Sturgeon. Angler cooperation is an essential component of fish tagging programs, and all anglers are encouraged to report tagged fish by filling out the on-line form available at <http://www.michigandnr.com/taggedfish/>.

Lake Erie

Michigan placed Walleye tagging in Lake Erie on indefinite hold in 2011. During 2016, three tag returns were reported from fish previously tagged in the Huron River at Flat Rock. The long-term distribution of tag recoveries from Walleye tagged in the Huron River at Flat Rock show that these fish tend to be captured along the south and western shores of Lake Erie, in the Detroit and St. Clair rivers, and on Michigan's side of Lake St. Clair (Figure 16). In contrast to the localized movements of Smallmouth Bass tagged in Lake St. Clair, recoveries of tagged Lake Erie Walleye continue to provide evidence of substantial movement from spawning locations in Lake Erie through the connecting waters of the St. Clair-Detroit River System. For example, recoveries of Walleye tagged at the Huron River in Flat Rock show they have travelled to the Detroit River, Lake St. Clair, the St. Clair River, and even southern Lake Huron. However, it is obvious from tag recovery patterns that other individuals from the Lake Erie spawning stocks migrate within that lake, travelling as far as the Central and Eastern basins.

Lake St. Clair and St. Clair River

Since 2002, a total of 4,958 Smallmouth Bass captured in survey trap nets in Anchor Bay have been tagged and released. Smallmouth Bass movements are rather localized, with nearly all the Smallmouth Bass tag recoveries reported to date coming from the Michigan waters of Lake St. Clair. The northernmost Smallmouth Bass tag recovery has been from the Port Huron area of the St. Clair River, and the southernmost recovery came from the Bolles Harbor area of Lake Erie (Figure 16). On

average, recaptured Smallmouth Bass tagged during 2002-2016 traveled 8.2 km (5.1 mi) from the Anchor Bay tagging site. A total of 38 non-reward tags placed on smallmouth bass captured with electrofishing near the Mile Roads in Lake St. Clair during 2016 were recovered by anglers for a single-season reporting rate of 8.7%, more the double the 3.9% single-season reporting rate observed for nearby Anchor Bay smallmouth bass during 2015.

One Smallmouth Bass tagged in Anchor Bay was recovered from Whitmore Lake in Washtenaw County in 2011 (Figure 16). As there is no connection between the two water bodies this fish was illegally transported from Lake St. Clair to Whitmore Lake and released, where it was subsequently recaptured and reported. Anglers are reminded that the unauthorized transfer of fish from one water body to another poses significant risks, particularly for introduction of diseases such as viral hemorrhagic septicemia (VHS; the illness responsible for large fish die-offs in the Great Lakes region as recently as spring 2017).

A total of 3,097 Lake Sturgeon have been tagged and released in the St. Clair River and Lake St. Clair since 1996. To date, 664 tagged Lake Sturgeon have been recaptured with survey gear or reported by fishermen. A total of 429 tagged sturgeon have been recovered with survey setlines in the North Channel. One was recovered in a survey trap net in Anchor Bay, while 13 have been recaptured in assessment trawls on Lake St. Clair. Sport anglers have reported 188 recoveries, nearly all from the North Channel of the St. Clair River, except for one reported from Lake Erie, near Huron, Ohio. Twenty-five recoveries have been reported from the Ontario commercial trap net fishery in southern Lake Huron, approximately 70 km (43.5 mi) from the tag site. All other recaptures have occurred within 10 km (6.2 mi) of the tag sites.

Sport Fishing Regulations

Walleye in Lake Erie are managed cooperatively with other jurisdictions under a harvest quota system. Beginning in 2011, the Walleye daily bag limit for anglers in Michigan waters of Lake Erie is directly related to the Total Allowable Catch (TAC) for Walleye determined by the Great Lakes Fishery Commission Lake Erie Committee (LEC) in late March. The table below provides the quota thresholds used to determine the daily bag limit under this new regulation. The Walleye daily bag



limit regulation will be effective from May 1 through the end of April in the following year. For 2017, the LEC agreed upon a TAC of 5.924 million walleye, with a Michigan quota of 345,000 walleye. This quota sets the Michigan Walleye daily possession limit at 6 fish from May 1, 2017 to April 30, 2018. The Michigan Walleye minimum size limit (15 inches) and season (open all year) for Lake Erie waters remain unchanged for 2017.

Michigan Walleye quota	Daily bag limit
More than 108,364 fish	6
96,958 to 108,364 fish	5
85,551 to 96,957 fish	4
74,144 to 85,550 fish	3
62,737 to 74,143 fish	2
less than 62,737 fish	1

In 2015, Michigan's black bass fishing seasons were changed to provide year-round black bass fishing opportunities. Catch-and-immediate release black bass fishing is now legal all year. The possession season for Smallmouth and Largemouth bass fishing in the Michigan portion of the St. Clair River, Lake St. Clair, and the Detroit River is the third Saturday in June (June 17, 2017) thru December 31. The black bass possession season for the Michigan waters of Lake Erie opens on the Saturday before Memorial Day (May 27 in 2017).

The latest information on all of Michigan's fishing regulations, including those of the Great Lakes and its connecting waters in Southeast Michigan, can be found on-line at <https://www.michigan.gov/fishingguide>.

Station News - 2016

In October 2016 Fisheries Research Biologist Mike Thomas retired. Mike had served at the Lake St. Clair Fisheries Research Station since August of 1992, and retired with 30 years of State service. Mike's contributions to fisheries research have been significant and his expertise will be sorely missed. Best wishes for a happy retirement Mike!



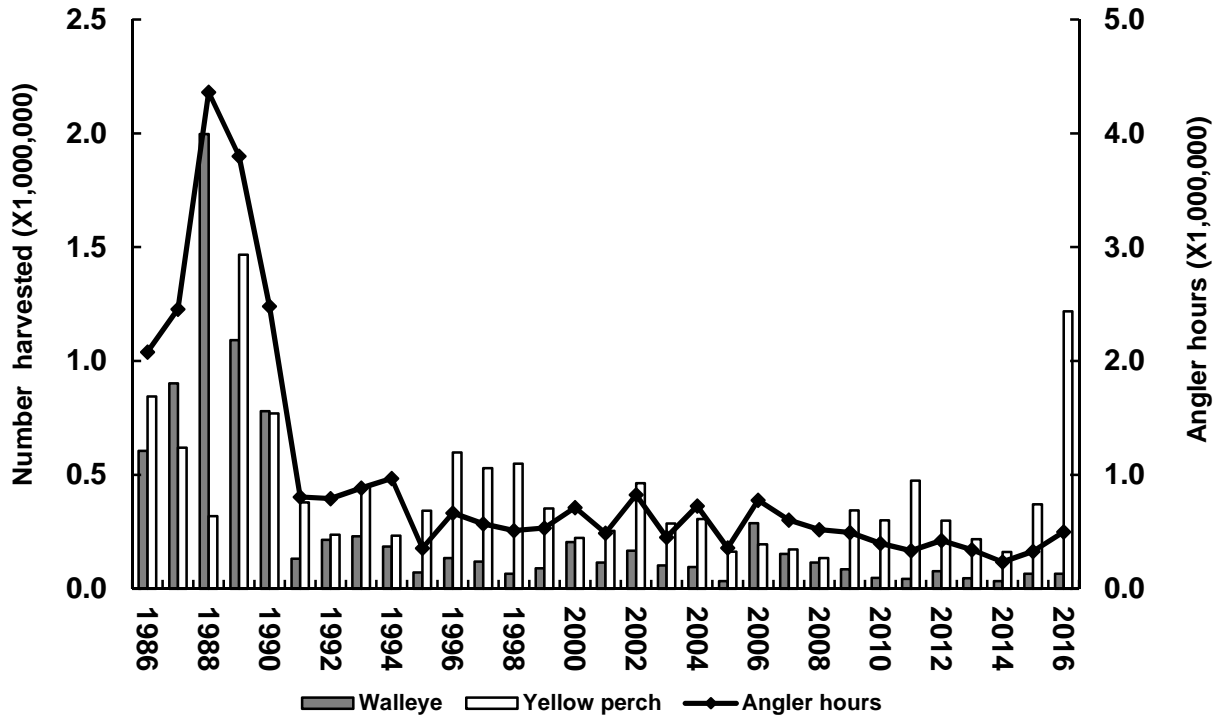


Figure 1.—Estimated harvest and effort for Michigan’s Lake Erie sport fishery, 1986-2016.

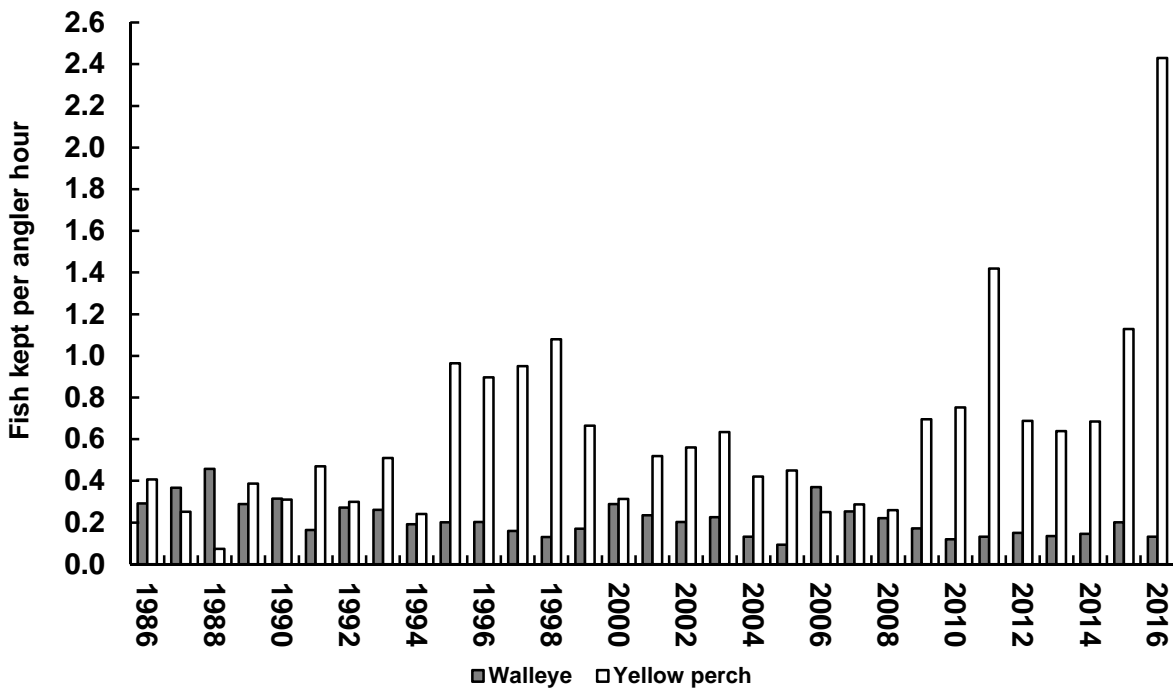


Figure 2.—Walleye and Yellow Perch harvest rates for Michigan’s Lake Erie sport fishery, 1986-2016.



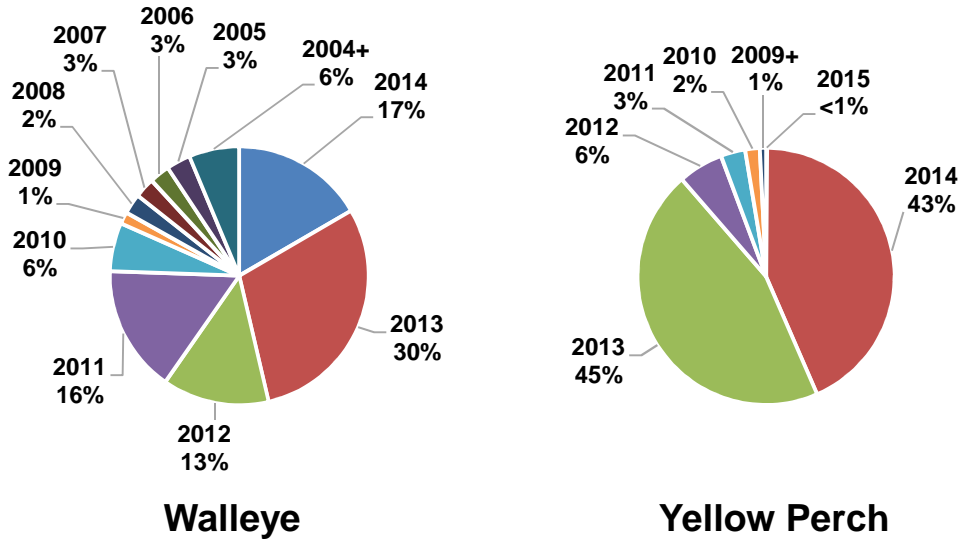


Figure 3.—Year-class contribution to Michigan sport harvest for Walleye and Yellow Perch from Lake Erie in 2016.

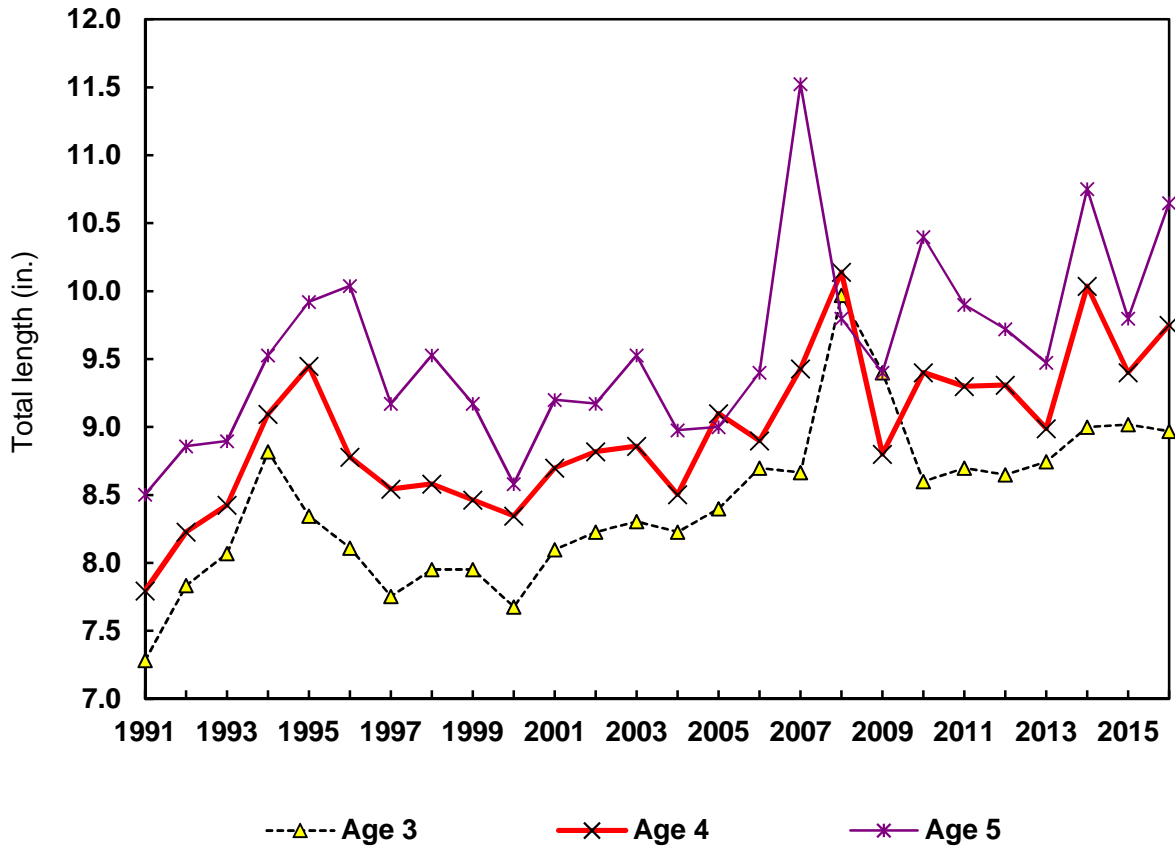


Figure 4.—Mean length at age for sport-harvested Yellow Perch from Michigan's waters of Lake Erie, 1991-2016.



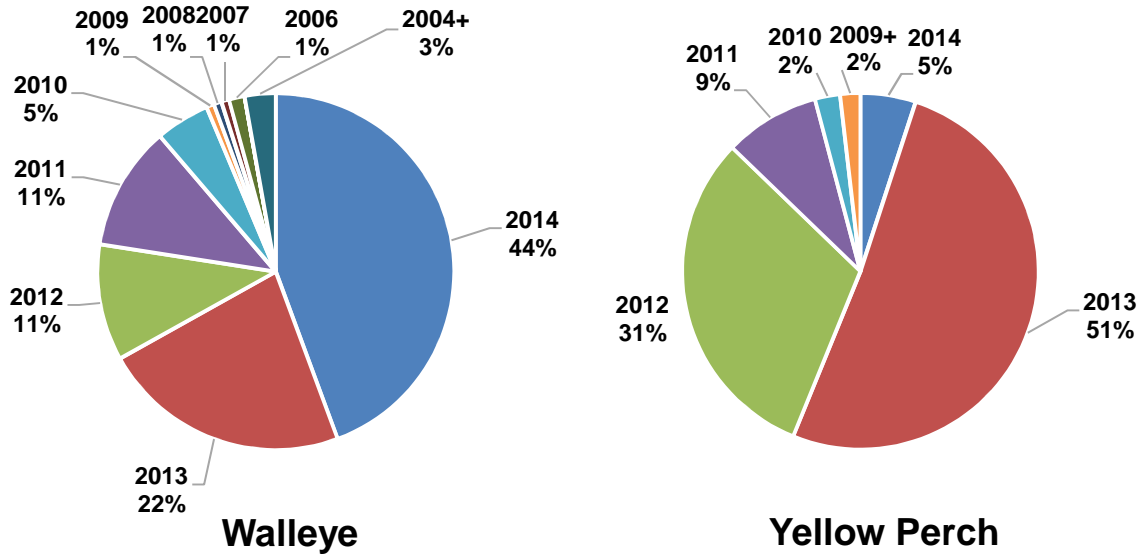


Figure 5.— Year-class contribution to Michigan sport harvest for Walleye and Yellow Perch from Lake St. Clair in 2016.

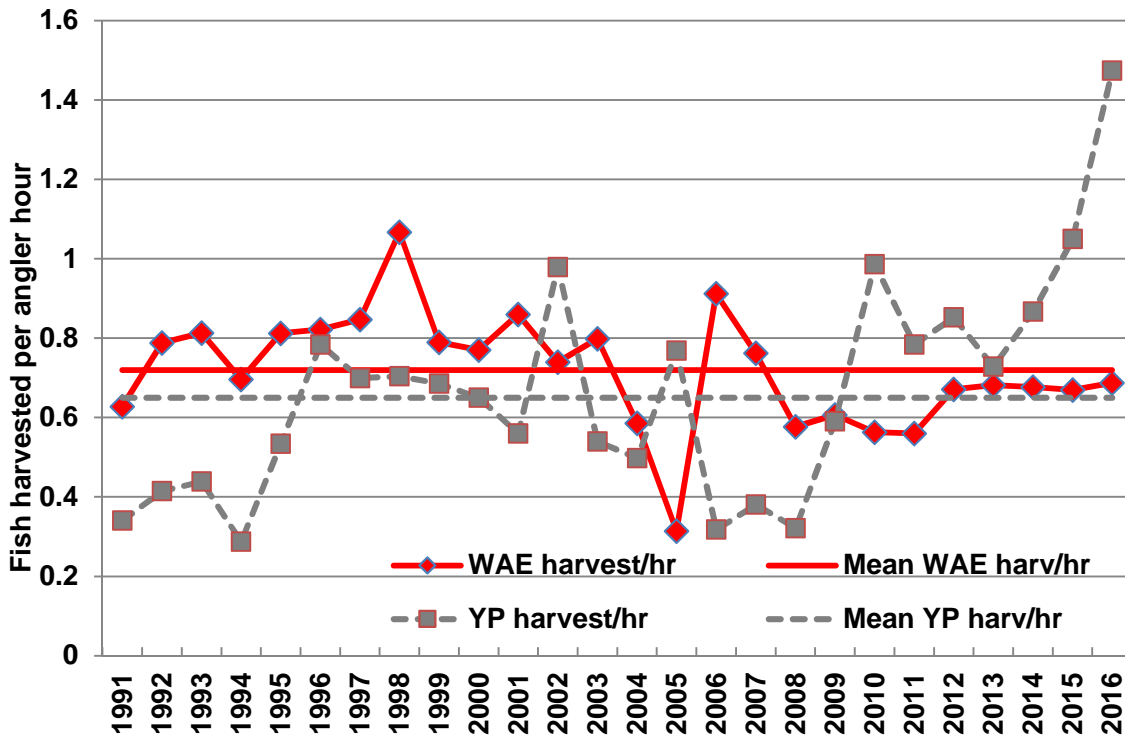


Figure 6.—Michigan Lake Erie charter boat harvest rates for Walleye and Yellow Perch, 1991-2016.



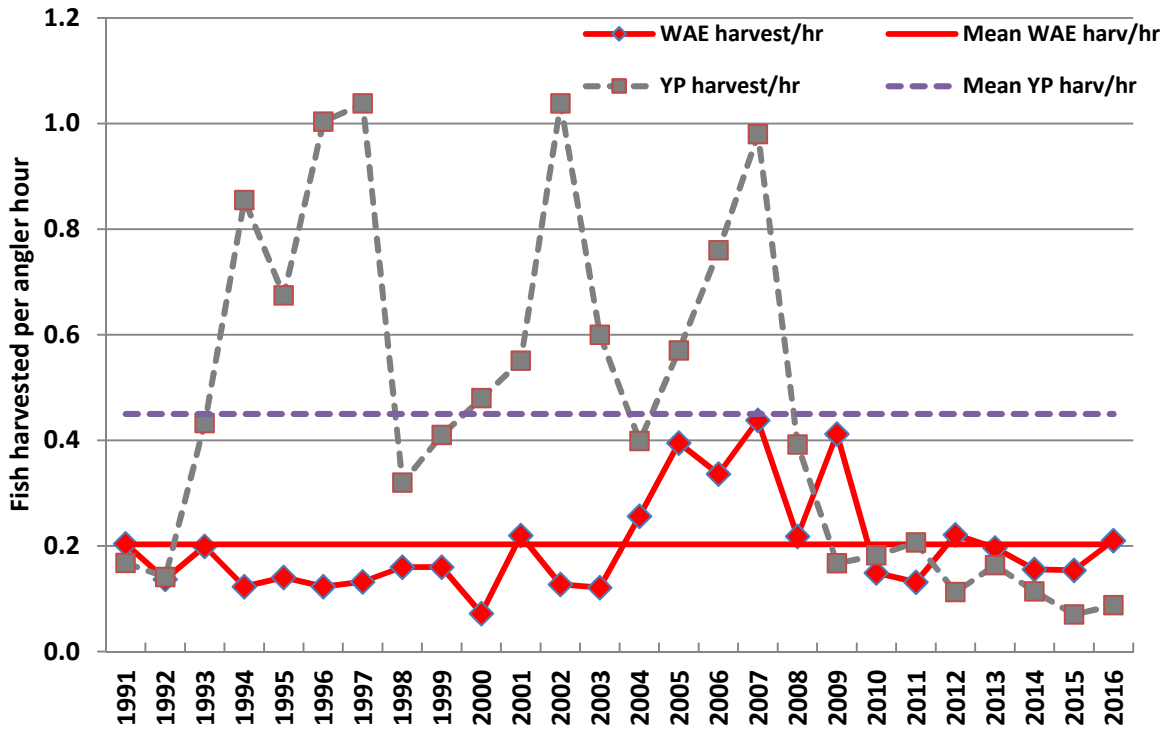


Figure 7.—Michigan St. Clair-Detroit River System charter boat harvest rates Walleye and Yellow Perch, 1991-2016.

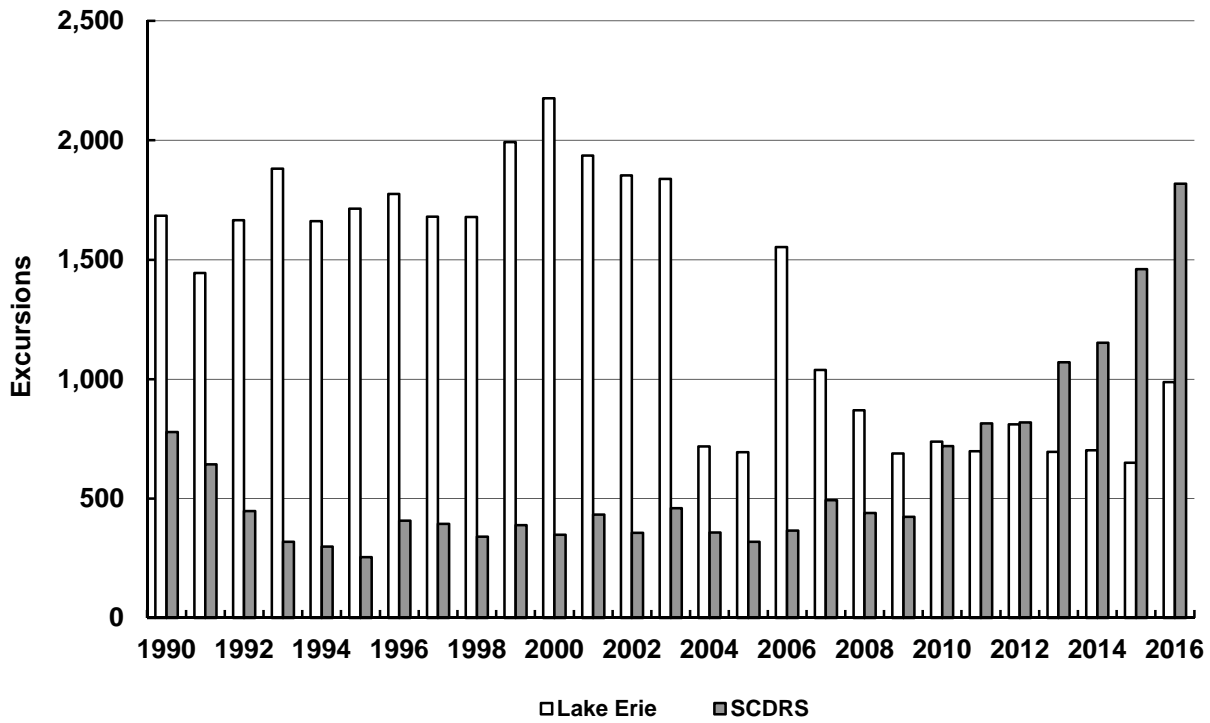


Figure 8.—Reported charter boat excursions on Lake Erie and the St. Clair-Detroit River System, 1990-2016.



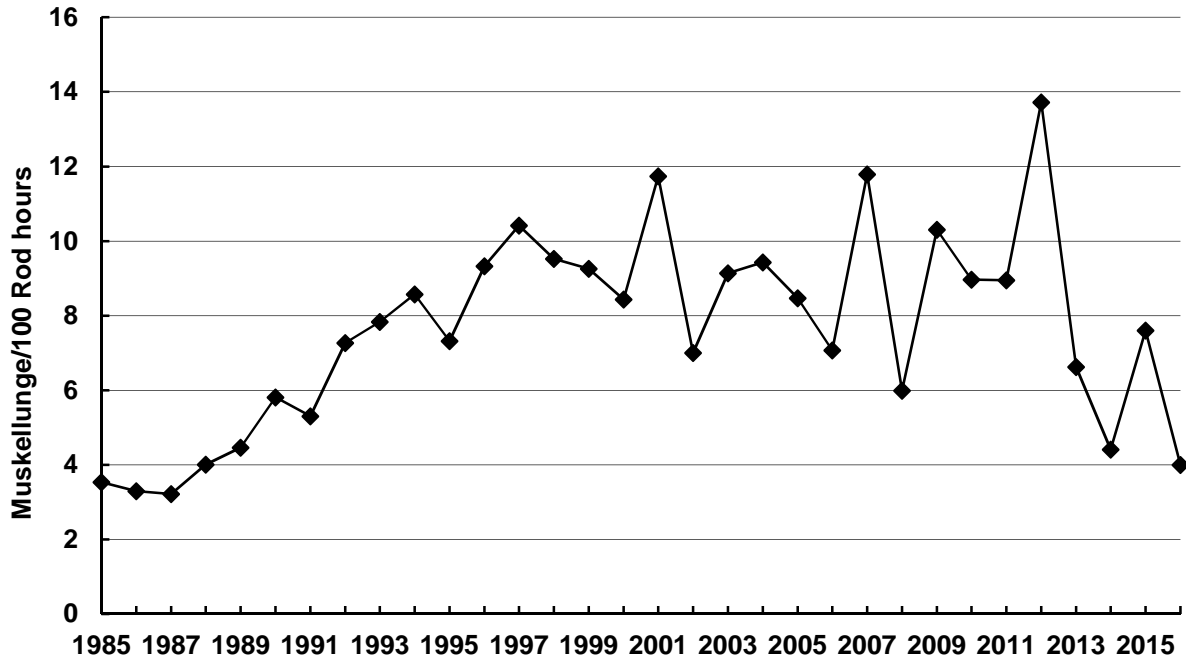


Figure 9.—Lake St. Clair Muskellunge catch rate from Angler Diary program, 1985-2016.

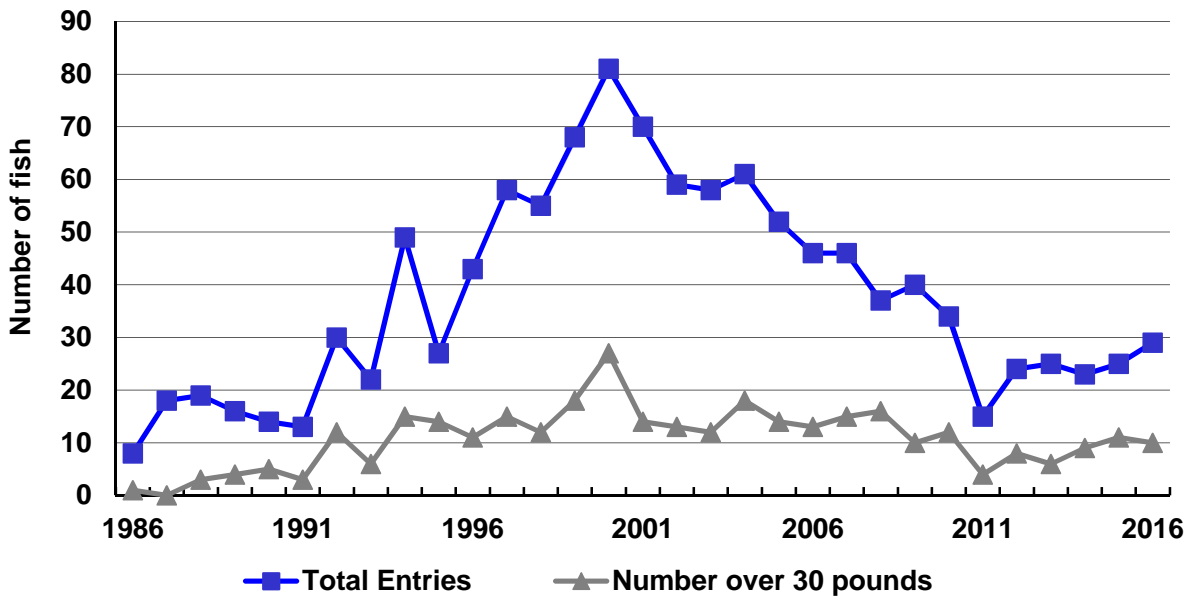


Figure 10.—Lake St. Clair Muskellunge entered in the Michigan DNR Master Angler Program, 1986-2016. Values for 1992-2016 represent combined regular and catch-and-release Master Angler categories.



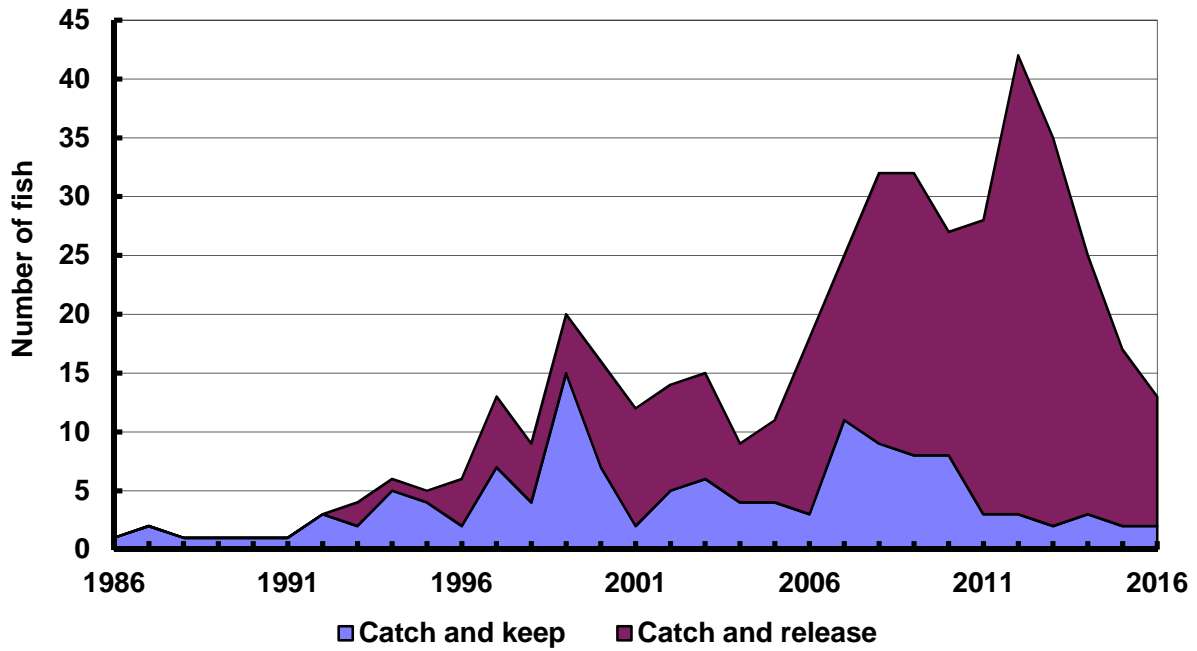


Figure 11.—Lake St. Clair Smallmouth Bass entered in the Michigan DNR Master Angler Program, 1986-2016.

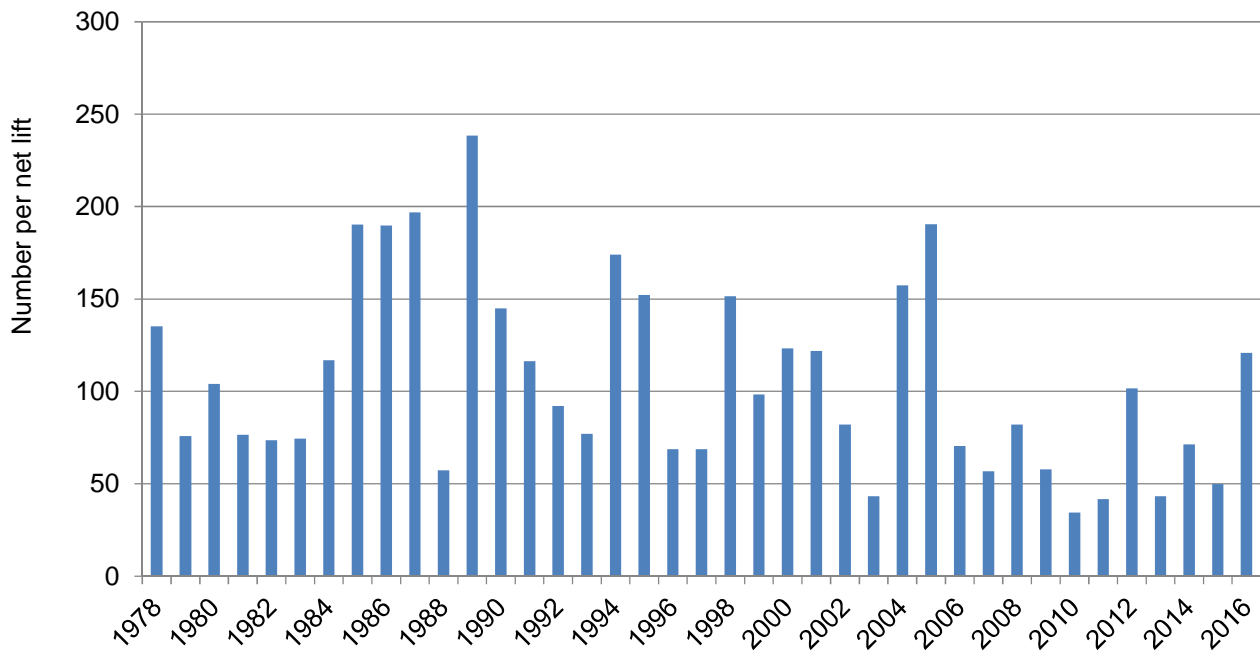


Figure 12.—Average total Walleye catch per unit effort, by year, for Michigan Lake Erie index gill nets, 1978-2016.



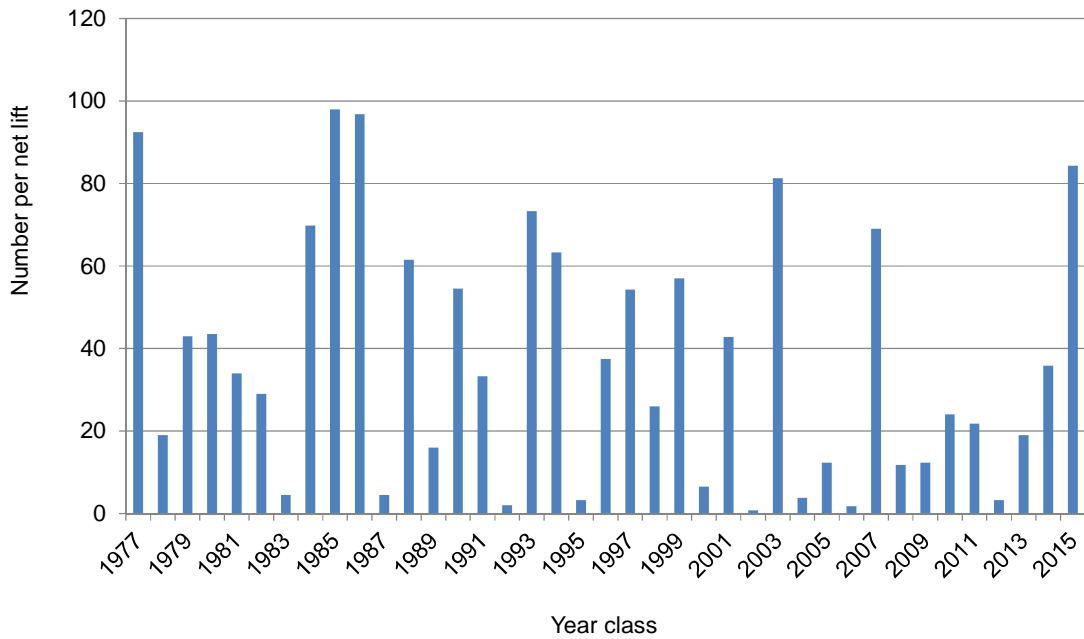


Figure 13.—Average yearling Walleye catch per unit effort, by year-class, for Michigan Lake Erie index gill nets.

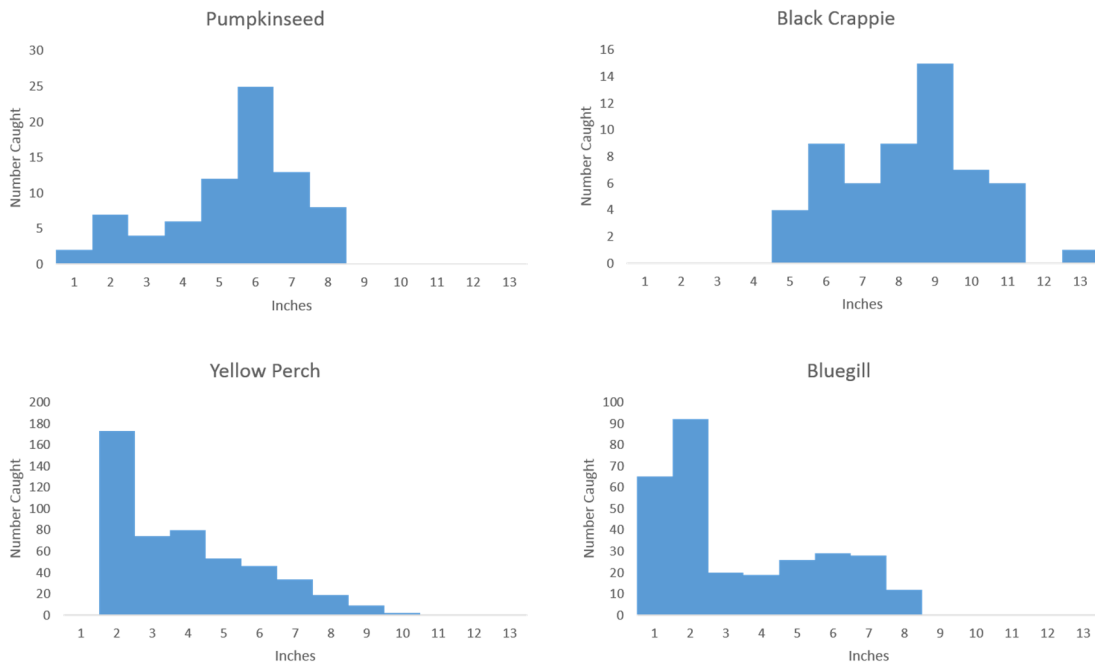


Figure 14.—Length frequency distribution of select Lake St. Clair panfish species collected during the 2016 nearshore survey.



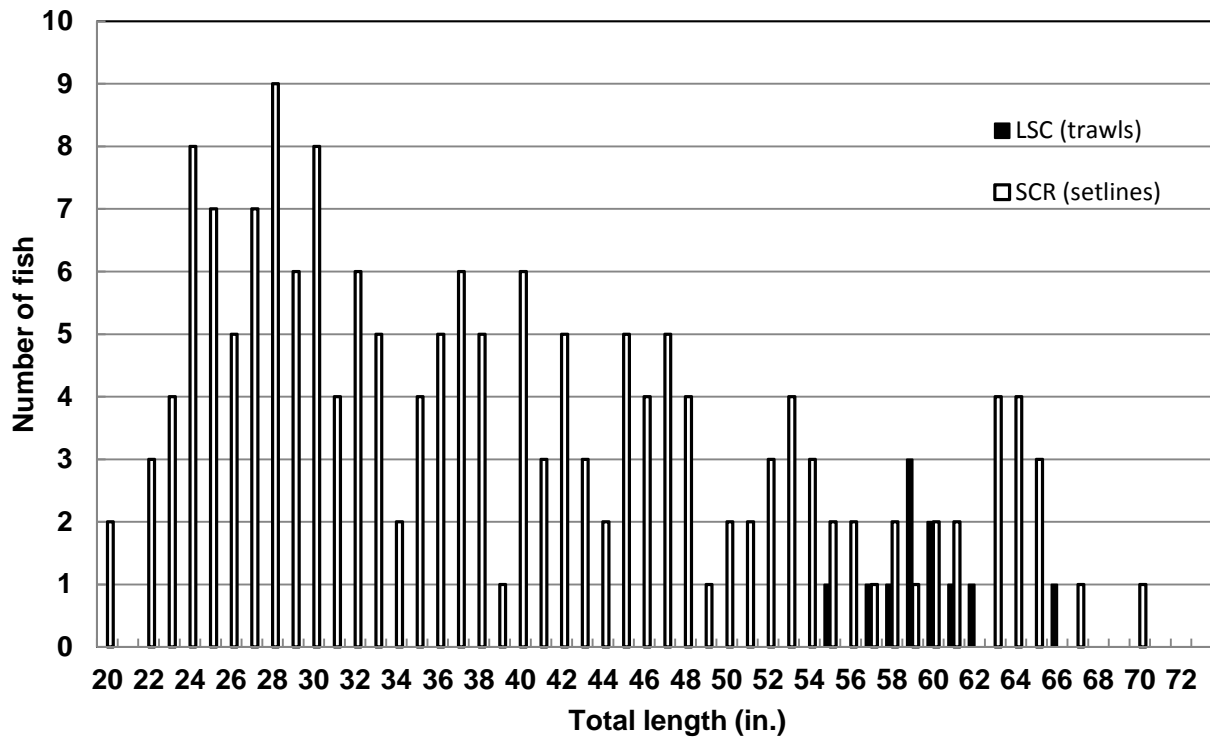


Figure 15.—Length frequency distribution for Lake Sturgeon caught in 2016 with survey setlines (n=174, white bars) in the St. Clair River and bottom trawls (n=11, black bars) in Lake St. Clair.



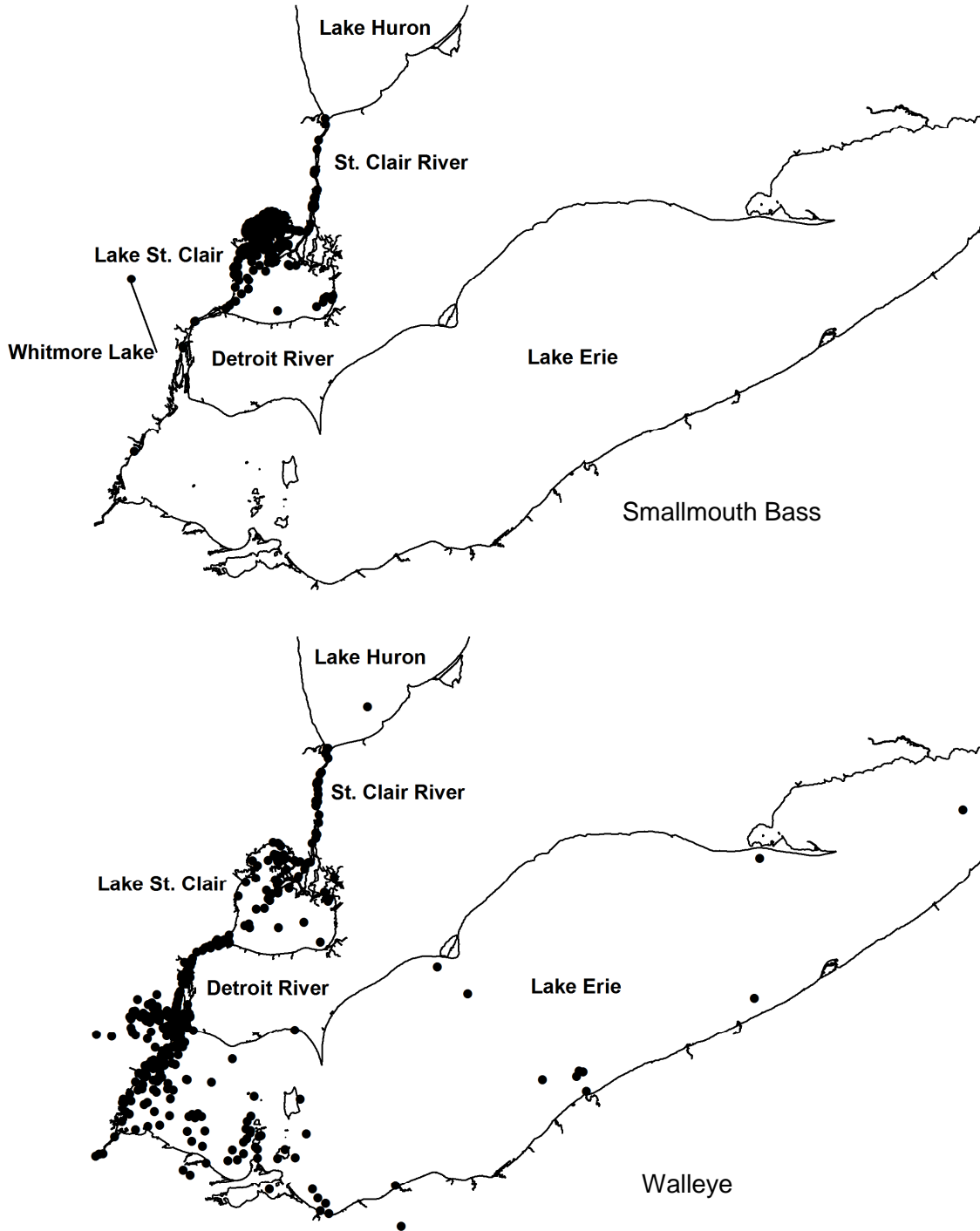


Figure 16.— Geographical distribution of Smallmouth Bass tag recoveries (N=628) for fish tagged during 2002-2016 at the Anchor Bay site in Lake St. Clair (top map) and for all tag recoveries since 2003 for Walleye tagged during 1994-2010 in the Huron River (N=495, bottom map). Black dots represent the recovery location of individual fish.



Table 1.—Estimated harvest, harvest rate, effort, and released catch for Michigan's 2016 Lake Erie non-charter boat fishery. Two standard deviations in parentheses. Released numbers represent legal sized fish where applicable.

Species	Harvest rate (fish/hr)	Month							
		Apr	May	Jun	Jul	Aug	Sep	Oct	Season
HARVEST									
Yellow Perch	2.430 (4.19)	159	1,937	20,252	119,218	357,807	484,149	234,261	1,217,783 (276,058)
Walleye	0.131 (0.19)	6,290	11,272	29,538	17,713	408	350	245	65,816 (12,839)
Channel Catfish	0.003 (0.02)	0	171	1,006	285	164	56	45	1,727 (1,153)
White bass	0.016 (0.05)	279	5,596	1,731	186	95	23	156	8,066 (3,521)
White Perch	0.007 (0.04)	0	382	1,195	415	127	1,173	374	3,666 (2,671)
Freshwater Drum	0.001 (0.004)	0	25	36	221	11	39	0	332 (295)
Smallmouth Bass	<0.001 (0.003)	4	36	131	0	0	0	0	171 (210)
Total Harvest	2.5893 (4.19)	6,740	19,516	53,907	138,038	358,612	485,790	235,081	1,297,684 (276,395)
EFFORT									
Angler hours		24,849	61,445	92,386	89,460	89,412	99,837	43,791	501,180 (65,931)
Angler trips		4,737	10,927	21,095	19,937	19,811	27,401	9,734	113,642 (14,917)
RELEASED									
Walleye	0.011 (0.011)	150	479	634	262	0	3,756	41	5,322 (735)
Largemouth Bass	0.014 (0.061)	350	1,333	1,834	72	709	258	2,496	7,052 (4,077)
Smallmouth Bass	0.008 (0.035)	524	654	396	482	1,524	465	164	4,209 (2,309)
Yellow Perch	0.607 (1.400)	131	787	7,584	5,672	92,169	126,588	71,526	304,427 (92,192)
White bass	0.261 (0.352)	3,556	62,729	28,990	11,690	8,449	8,863	6,333	130,610 (23,243)



Table 2.—Estimated harvest, harvest rate, effort, and released catch for the 2016 Lake St. Clair non-charter boat fishery. Two standard deviations in parentheses. Released numbers represent legal sized fish where applicable.

Species	Harvest rate (fish/hr)	Month							
		Apr	May	Jun	Jul	Aug	Sep	Oct	Season
HARVEST									
Yellow Perch	0.135 (0.187)	2,412	5,062	3,602	14,719	15,254	17,643	15,805	74,497 (22,491)
Walleye	0.024 (0.043)	0	373	2,641	7,264	1,978	772	368	13,396 (5,158)
Bluegill	0.023 (0.054)	2,899	2,267	1,732	4,447	236	803	541	12,925 (6,541)
Pumpkinseed	0.011 (0.031)	498	3,494	200	1,483	36	0	400	6,111 (3,704)
Smallmouth Bass	0.006 (0.013)	0	112	415	1,218	857	681	204	3,487 (1,612)
Rock Bass	0.006 (0.022)	0	603	633	1,216	664	38	0	3,154 (2,671)
Largemouth Bass	0.002 (0.008)	0	0	675	111	214	0	36	1,036 (1,016)
Total Harvest	0.213 (0.204)	6,304	12,281	10,730	30,690	19,738	20,273	17,642	117,658 (24,530)
EFFORT									
Angler hours		15,564	73,111	103,299	171,698	68,696	96,413	24,676	553,457 (120,284)
Angler trips		3,128	12,187	17,064	33,289	13,224	18,481	4,732	102,105 (22,467)
RELEASED									
Walleye	0.003 (0.008)	0	37	189	355	816	191	57	1,645 (932)
Largemouth Bass	0.075 (0.121)	689	16,323	12,825	9,100	1,567	717	204	41,426 (14,579)
Smallmouth Bass	0.263 (0.330)	11,472	44,613	38,922	29,583	14,197	5,050	1,976	145,814 (39,693)
Yellow Perch	0.334 (0.440)	1,870	6,081	9,473	53,761	36,143	52,628	24,747	184,703 (52,972)
Muskellunge	0.003 (0.007)	66	165	484	621	186	237	160	1,919 (799)



Table 3.—Total targeted harvest per hour, targeted harvest per excursion, number harvested, and targeted fishing effort (angler hours, trips, and charter excursions) for charter boats on Lake Erie, 2016.

Species	Total catch per hour	Catch per excursion	Month							Season
			Apr ¹	May	Jun	Jul	Aug	Sep	Oct ¹	
Harvested										
Yellow Perch	7.32	163.6	0	0	0	1,139	8,134	10,682	10,796	30,751
Walleye	0.86	18.36	1,053	2,328	7,094	4,008	58	21	0	14,562
Small. Bass	0	0	0	0	0	0	0	0	0	0
Released										
Yellow Perch	8.02	179.3	0	0	0	224	745	808	1,179	2,956
Walleye	1.49	31.9	514	1,874	5,289	3,105	10	0	0	10,792
Small. Bass	0.58	7.33	0	0	0	20	0	0	2	22
Muskellunge			0	0	0	0	0	0	0	0
Angler hours			2,152	3,040	7,561	4,228	1,466	1,540	1,261	21,248
Angler trips			367	572	1,537	871	282	295	254	4,178
Charter excursions			109	149	342	200	62	66	59	987

¹March and April values combined; October, November, and December values combined.



Table 4.—Total targeted harvest per hour, targeted harvest per excursion, number harvested, and targeted fishing effort (angler hours, trips, and charter excursions) for charter boats on the Detroit River, Lake St. Clair, and the St. Clair River, 2016.

Species	Total catch per hour	Catch per excursion	Month							Season
			Apr ¹	May	Jun	Jul	Aug	Sep	Oct ¹	
Harvested										
Yellow Perch	2.45	50.91	0	49	46	87	153	1,008	1,406	2,749
Walleye	0.53	11.34	4,602	2,482	530	264	243	0	24	8,145
Small. Bass	0.09	1.86	0	0	156	508	352	138	0	1,154
Muskellunge	0.00	0.01	0	0	0	0	1	1	0	2
Released										
Yellow Perch	3.70	76.91	0	0	0	77	140	468	719	1,404
Walleye	0.65	13.70	1,073	543	52	3	4	0	16	1,691
Small. Bass	1.27	26.80	596	6,163	3,588	1,811	1,731	926	595	15,410
Muskellunge	0.16	3.51	0	0	298	387	200	157	184	1,226
Angler hours			9,508	7,582	6,055	5,255	4,169	3,000	3,128	38,697
Angler trips			1,574	1,243	910	816	638	455	461	6,097
Charter excursions			424	380	293	237	193	144	148	1,819

¹March and April values combined; October, November, and December values combined.



Table 5.—Commercial harvest (pounds sold) from Michigan waters of Lake Erie in 2016.

Species	Harvest (lbs.)	% of total harvest	Reported market value
Common Carp	187,838	23%	\$52,595
White Bass	166,613	20%	\$103,300
Channel Batfish	155,315	19%	\$66,785
Goldfish	86,818	11%	\$86,818
Buffalo	73,119	9%	\$58,495
Quillback	69,213	8%	\$20,764
White Perch	35,708	4%	\$28,566
Bullhead Spp.	29,493	4%	\$17,991
Freshwater Drum	17,282	2%	\$5,357
Bowfin	2,333	0%	\$0
Sucker Spp.	705	0%	\$247
Gizzard Shad	0	0%	\$0
Grand Total	824,437	100%	\$440,918



Table 6.—Commercial harvest (pounds caught) of selected species from Michigan waters of Lake Erie, 1982 to 2016.

Year	Buffalo	Bullhead Spp.	Common Carp	Channel Catfish	Gizzard Shad	Goldfish	Quillback	Freshwater Drum	Sucker Spp.	White Bass	White Perch	White- fish	Grand Total
1982	22,474	58	676,896	20,354	76,000	0	1,430	608	178	1,742	0	0	799,740
1983	7,837	997	622,604	28,990	665,000	0	1,510	3,555	185	12,042	0	0	1,342,720
1984	789	152	422,571	9,208	1,265,200	0	56,061	116	44	2,041	0	0	1,756,182
1985	7,885	7,340	738,857	9,253	878,000	0	80,018	905	1,378	4,764	0	0	1,728,400
1986	14,732	7,687	367,310	11,183	0	0	2,217	2,032	123	1,397	0	0	406,681
1987	17,814	4,462	685,395	39,603	0	551	1,062	1,825	88	4,142	0	0	754,942
1988	9,471	5,421	417,365	15,208	0	188	1,380	1,180	0	1,049	0	0	451,262
1989	19,549	3,572	194,320	11,481	0	2,951	568	0	0	991	0	0	233,432
1990	40,064	488	158,151	2,025	0	877	0	0	0	0	0	0	201,605
1991	0	704	206,244	1,941	0	466	6,894	0	0	19	8	0	216,276
1992	0	444	251,365	2,929	2,845	1,025	30,204	290	0	357	10	0	289,469
1993	0	844	238,805	9,152	395	501	28,175	4,206	0	1,180	0	0	283,258
1994	0	659	94,662	5,760	2,103	111	8,930	111	0	1,819	0	0	114,155
1995	0	827	329,262	16,168	23	517	66,013	39,673	436	1,850	64	0	454,833
1996	104	828	387,671	24,969	36,996	7,138	73,662	48,218	4,286	2,923	45	0	586,840
1997	91,877	744	325,433	17,936	24,494	10,497	33,937	8,823	72	7,306	4	0	521,123
1998	15,721	2,139	620,015	16,573	4,988	6,862	22,990	24,507	6,180	1,326	0	0	721,301
1999	25,894	7,050	211,055	7,561	6,200	0	0	265	1,945	23	0	0	259,993
2000	27,843	1,742	313,200	14,400	4,595	3,025	0	0	0	1,776	0	0	366,581
2001	24,393	1,197	185,495	16,328	55	8,281	310	2,935	0	492	0	0	239,486
2002	45,367	6,500	336,820	39,778	6,655	4,660	1,300	4,035	0	3,810	0	0	448,925
2003	9,350	900	65,020	7,890	0	0	2,150	0	0	0	0	0	85,310
2004	18,883	1,650	97,380	23,600	5,120	0	3,400	0	550	1,973	0	0	152,556
2005	96,621	5,495	319,700	15,657	14,910	78,333	1,600	331	2,390	1,338	0	0	536,375



Table 6. (continued)—Commercial harvest (pounds caught) of selected species from Michigan waters of Lake Erie, 1982 to 2016.

Year	Buffalo	Bullhead Spp.	Common Carp	Channel Catfish	Gizzard Shad	Goldfish	Quillback	Freshwater Drum	Sucker Spp.	White Bass	White Perch	White- fish	Grand Total
2006	85,269	7,277	378,123	42,931	52,382	67,171	5,030	7,876	1,410	5,237	796	10,693	664,195
2007	215,282	12,536	241,356	98,979	242,695	39,140	9,900	67,072	9,712	77,249	35,946	8,800	1,058,667
2008	142,726	31,969	204,881	71,385	134,008	84,361	2,257	137,304	11,244	98,041	56,867	0	975,043
2009	130,295	45,294	196,888	63,725	122,379	90,771	3,900	116,312	11,339	96,456	34,522	9,439	921,320
2010	68,511	47,612	191,321	64,913	0	77,550	107,037	130,533	7,919	37,021	19,524	963	752,904
2011	107,610	57,670	401,034	138,540	0	84,857	84,727	227,873	17,435	47,058	31,949	4,155	1,202,908
2012	221,255	24,450	507,305	129,666	110,800	57,015	93,296	136,679	12,520	96,916	26,070	6,436	1,422,408
2013	164,345	8,600	256,546	102,197	40,050	28,146	138,841	73,101	10,234	187,848	32,954	0	1,042,862
2014	136,743	7,556	353,979	117,835	31,800	34,054	70,180	81,734	1,500	172,126	42,646	0	1,050,153
2015	100,135	26,396	227,946	144,500	50	88,791	76,203	128,510	332	179,246	53,245	267	1,025,621
2016	73,119	29,493	187,838	155,315	0	86,818	69,213	17,282	705	166,613	35,708	0	822,104
G. Total	1,941,958	360,753	11,412,813	1,497,933	3,727,743	864,657	1,084,395	1,267,891	102,205	1,218,171	370,358	40,753	23,889,630

