DEPARTMENT OF NATURAL RESOURCES

Status of the Fisheries in Michigan Waters of Lake Erie and Lake St. Clair, 2013

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Lake Sturgeon collected with modified bottom trawl in Lake St. Clair, August 2013

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FISHERIES DIVISION

Highlights for 2013

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 Master Angler program, and commercial fishery records, as well as fisheries survey results. Some of the highlights described in detail include:

- The 2013 non-charter angler harvest rate for Lake Erie yellow perch was above the long-term average, while the walleye harvest rate was below the long-term average.
- Michigan non-charter anglers on Lake Erie caught 56,285 walleye and harvested 45,865 of those fish. Anglers reported releasing lower numbers of sub-legal size walleye in 2013 compared to 2012.
- Charter boat harvest rates for Lake Erie walleye were more than 5 times those estimated for non-charter anglers, while yellow perch charter boat harvest rates were 14% higher than those estimated for non-charter anglers.
- 2013 Lake Erie index gill net catch rates for Michigan waters were 58% lower than 2012 and remained below the 1978-2012 average.
- Long-term tagging studies on Lake Erie walleye stocks clearly illustrate the important contribution of Lake Erie walleye to the Great Lakes sport fishery of Southeast Michigan, from Port Huron to Toledo.
- 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 2013.
- Rock bass, smallmouth bass, and channel catfish were the dominant species in the Lake St. Clair trap net survey in 2013. Over 14% of the channel catfish exceeded Master Angler minimum length.
- Tagging studies of lake sturgeon in the connecting waters since 1997 have demonstrated that these fish move throughout the region, although most recoveries have occurred in close proximity to the tagging site. Lake sturgeon residing year-around in the St. Clair River, or moving into Lake Huron, appear to experience a higher level of exploitation than fish residing all year in Lake St. Clair.

Fishery Forecast for 2014

Harvestable-size yellow perch abundance is forecasted to be lower in 2014 than last year in Lake Erie, with the strongest contribution expected from the 2009 year class. Lake Erie walleye abundance is also expected to decline in 2014. Michigan anglers will continue to find fewer walleye from the strong 2003 year class, and the fishery will rely on contributions from the 2011 and 2010 year classes. This is not surprising, as annual variation in reproductive success of walleye and yellow perch can result in substantial year-to-year changes in their abundance. Muskellunge and smallmouth bass numbers tend to remain more stable from year to year and both species should continue to provide excellent fishing opportunities in 2014, particularly in Lake St. Clair and the Detroit River. Still, since weather conditions can affect sport fishing success as much as fish abundance it is difficult to predict fishing success. Water levels in Lake St. Clair, the connecting rivers, and Lake Erie are forecasted to rise but are projected to remain below their long term average in 2014. Thus, anglers may continue to encounter restricted access to some fishing areas in the connecting waters.

About the Lake St. Clair Fisheries Research Station

The Lake St. Clair Fisheries Research Station is a unit of the Research Section of the Michigan Department of Natural Resources (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 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. 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 (OMNR) 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 OMNR and MDNR to provide annual estimates of catch rates for the major sport fish species in the lake. 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

An on-site creel survey conducted by the MDNR during 2013 produced a total harvest estimate of 316,667 fish (Table 1) for Michigan's Lake Erie sport fishery (non-charter). In combination, walleye and yellow perch accounted for 83% of the total harvest, reflecting their importance in the sport fishery. Non-charter anglers caught an estimated 56,285 walleye in Michigan waters of Lake Erie, and harvested 45,865 (81%) of those fish. The percentage of walleye released suggests that the 2011 and 2012 year classes will contribute to the harvest in future years. Although few bass are harvested by Michigan's Lake Erie anglers, over 16,000 legal-size largemouth and smallmouth bass were reported caught and released. Estimated angler effort in 2013 declined 19% from 2012 (Figure 1). The walleye harvest rate in 2013 (0.13/angler hour) decreased 11% from 2012, and remained below the long-term mean of 0.22 walleye per angler hour for the fifth consecutive year (Figure 2). The yellow perch harvest rate (0.64/angler hour) decreased 7% in 2013, but remained well above the long-term mean of 0.55 yellow perch per angler hour. Trends in angler effort and harvest rates for walleye and yellow perch since the mid-1980's 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 2013 on-site creel survey. The age composition of harvested walleye was dominated by ages 2, 3, and 4 (2011, 2010, and 2009 year classes), which collectively accounted for 68% of the harvest (Figure 3). The 2003 year class (age 10) continued to contribute to the harvest, with age 9 and older walleye accounting for 9% of the harvest. The average length of walleye harvested in the sport fishery in 2013 was 480 mm (18.9 in.).

Yellow perch harvest was dominated by age 3 and age 4 fish (2010 and 2009 year classes), which in combination, accounted for 70% of the total harvest (Figure 3). Average lengths of harvested age 3, and 4 yellow perch were 222 mm (8.7 in.) and 227 mm (9.0 in.). The overall average length of yellow perch harvested in the sport fishery in 2013 was 223 mm (8.9 in.). Observed mean length-at-age for yellow perch taken in the Michigan sport fishery was relatively stable for age 2, 3, and 4 fish in 2013 (Figure 4).

Charter fishery

In 2013, Michigan charter boat operators reported a harvest of 22,723 fish from Lake Erie (Table 2). In combination, walleye (47%) and yellow perch (50%) accounted for 97% of the total harvest. The walleye harvest rate in 2013 increased 2% from 2012 and was only slightly below the long-term mean harvest rate of 0.73 walleye per hour

(Figure 5). Yellow perch harvest rate decreased 15% from 2012, exceeding the long-term mean of 0.60 yellow perch per hour for the 4th consecutive year. The charter boat walleye harvest rate (0.68) was about 5 times higher than those estimated for non-charter anglers (0.13) in 2013, while the yellow perch charter harvest rate (0.73) was about 14% higher than the rate for non-charter boat anglers (0.64).

Beginning in 2010, Michigan charter boat operators were also required to report catch-and-release fishing activity as well as harvest. For Lake Erie, charter operators reported releasing 4,687 fish in 2013. About 67% of the released fish were from the "other species" category, which generally is composed largely of white perch, white bass, freshwater drum, and channel catfish.

For the St. Clair-Detroit River system, charter boat anglers reported a harvest of 11,398 fish (Table 3). Yellow perch (34%), walleye (41%), and smallmouth bass (16%), made up the bulk of the harvest. In 2013, charter boat harvest rates for walleye decreased 11% from 2012, and was slightly lower than the long-term mean walleye harvest rate of 0.20 walleye per hour (Figure 6). Yellow perch harvest rate increased 45% in 2013, but remained well below the long-term yellow perch harvest rate of 0.51 yellow perch per hour.

Charter operators on the St. Clair-Detroit River system reported releasing 18,780 fish (Table 3). Smallmouth bass (80%) and muskellunge (6%) accounted for the majority of the fish caught-and-released. For smallmouth bass, charter operators released 89% of the 16,893 smallmouth bass caught in 2013. Of the 1,131 muskellunge reported caught, only 4 were harvested, for a release rate of 99.6%.

The number of reported Michigan charter excursions on Lake Erie decreased 14% in 2013, and remained well below the levels reported prior to 2004 (Figure 7). In 2013, charter boat excursions on the St. Clair-Detroit River system increased 31% from 2012. We suspect much of the increase in reported St. Clair system charter excursions since 2010 has been the result of the new reporting requirement for catch-and-release fishing activity. For many years, much of the charter fishing activity on the St. Clair-Detroit River system has been catch-and-release oriented, and was largely unreported.

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 2013, the catch rate decreased to the lowest level observed since 2008 (Figure 8). The large decrease in muskie catch rates for 2013 continues a pattern of increased variability in catch rates over the past 12 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 2013, with 25 of the 41 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 9). We suspect this is largely a reflection of waning interest in submitting Master Angler entries for muskellunge less than 50" 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" minimum size limit (MSL) for Ontario waters and a 42" 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 sport and 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. Lake St. Clair accounted for 34% of all smallmouth bass entries statewide in 2013 (catch/keep and catch/release programs combined). Since the early 1990's, both catch/keep and catch/release Master Angler smallmouth bass entries from Lake St. Clair have exhibited an increasing trend (Figure 10). Catch/release entries have outnumbered

catch/keep entries for the last 14 years. The 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 2013, a total of three Michigan commercial fishing licenses were active on Lake Erie. The 2013 commercial harvest included 11 types of fish for a total of 1,041,167 pounds (Table 4). In combination, common carp (25%), white bass (18%), buffalo (16%), quillback carpsucker (13%), and channel catfish (10%) accounted for 82% of the total harvest by weight. The major species in the trap net harvest included white bass, quillback, and freshwater drum. The primary species in the seine harvest included common carp, buffalo, and channel catfish. The 2013 harvests of quillback carpsucker and white bass were the highest reported since 1981 (Table 4). The harvest of channel catfish and buffalo in 2013 were also in the upper end of the range of harvest levels observed for those species since 1981. The total value of the 2013 Lake Erie commercial harvest from Michigan waters was estimated at $431,480 (Table 5).

Summary of Netting 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. 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.

Lake Erie

In 2013 a total of 1,793 fish representing 15 species were captured during four net lifts completed during the annual October gill net survey in Michigan waters of Lake Erie. White perch (59%) and gizzard shad (23%) comprised over three-quarters of the catch by number, followed by walleye (10%), yellow perch (3%), channel catfish (2%), freshwater drum (2%), and white bass (1%). The remaining eight species (shorthead redhorse, common carp, quillback, white sucker, Chinook salmon, goldfish, black redhorse, and hybrid goldfish x carp) accounted for less than 1% of the total catch. The average CPE of white perch (266 fish/lift) was the highest observed in the time series since catch rates on species other than walleye were first recorded in 1992.

The average total walleye catch-per-effort (CPE) for the two index sites (43 fish/lift) decreased by 58% from 2012 (Figure 11). This decrease was in part due to a weak cohort of yearling walleye from the 2012 year class, which accounted for 8% of the total catch in 2013. The average CPE of yearling walleye (3 fish/lift) was similar to the CPE recorded for the weak 2004 and 2006 year classes (Figure 12). The 2011 year class (age 2) was the most abundant cohort in the survey, accounting for 41% of the catch. Combined, the 2010 and 2011 year classes will be the largest component of the Michigan Lake Erie walleye fishery in 2014.

Lake St. Clair and St. Clair River

Four trap nets were fished from April 22 to May 20, 2013 at index net sites in Anchor Bay. A total of 3,889 fish representing 28 species were captured during the survey. The catch also included a total of 30 mudpuppies. Rock bass were numerically dominant, accounting for 57% of the total (Figure 13). Other common species in the nets included smallmouth bass (10%), channel catfish (8%), and walleye (5%).

Ages were estimated for walleye (N=195) and smallmouth bass (N=380) based on interpretation of dorsal spine samples. The dominant walleye cohort was the 2010 year class (Age 3),

accounting for 32% of the total catch (Figure 14). The 2009 year class (Age 4) was also a major component of the walleye catch, accounting for 27% of the total. For smallmouth bass, the 2009 (14%), 2008 (17%), 2007 (20%), and 2006 (15%) year classes accounted for 52% of the total trap net catch. A total of 381 smallmouth bass were tagged and released at the Anchor Bay trap net site in 2013.

The trap net survey documented an abundant population of channel catfish in Anchor Bay with many trophy size individuals. The average weight of channel catfish captured during the 2013 trap net survey was 4.8 pounds. Over 14% of the channel catfish exceeded the minimum size requirement (27 inch total length) for the MDNR Master Angler program. Lake St. Clair anglers are discouraged from keeping large channel catfish for food due to consumption advisories as a result of PCB contamination. However, catch-and-release trophy channel catfish angling opportunities are clearly available in Anchor Bay during the spring. The high abundance of large channel catfish suggests that this population is currently experiencing low exploitation.

Over the 11 years of the trap net survey in Anchor Bay, rock bass have dominated the catch (Table 6). Smallmouth bass CPE has varied considerably, while walleye CPE has been fairly steady. We suspect smallmouth bass catch rates in the trap nets are related to spawning movements during the survey period and are likely affected by annual variations in the warming of the waters of Anchor Bay. Sturgeon catch rates are low, but a few are captured in the trap nets each year.

The forage fish community of Lake St. Clair has been surveyed with bottom trawls each year since 1996 by the MDNR. A total of 9 trawl tows were conducted at the Anchor Bay index trawling site in 2013. The spring samples were dominated by yellow perch and spottail shiner (Table 7). The species with highest mean densities in the fall samples were yellow perch, spottail shiner, and logperch (Table 8). Although spottail shiners were among the most abundant species in both the spring and fall trawl surveys, their catch rates in 2013 were among the lowest seen during the time series. Alewife catches have been low since 2003, likely a result of the alewife population crash in Lake Huron. Yellow perch age-specific catch rates from the trawl survey indicate highly variable recruitment in Lake St. Clair (Table 9; Figure 15). Yellow perch recruitment in 1998, 2003, 2007, 2008, and 2010 was strong, with total CPE values for those year classes all over 1,000 fish.

September trawling in Anchor Bay provides early indications of spawning success for yellow perch and smallmouth bass. Catch rates for young-of-year yellow perch from September trawls indicate spawning success in 2013 was higher than in 2011 or 2012 (Figure 16), but much less successful than 2010, the most abundant year class recorded since the survey began in 1996. In combination with the strong 2007 and 2008 year classes, the 2010 year class will result in continued strong contributions of yellow perch to the Lake St. Clair fishery over the next several years.

Smallmouth bass recruitment patterns are variable based on September trawl catch rates of young-of-year (Figure 17). The 2013 year class densities were below average, and much less abundant than the record high densities recorded for the 2010 year class. Population studies have suggested that mean length of young-of-year smallmouth bass in the fall can be more important than abundance in determining year class strength. The mean length of young-of-year smallmouth bass caught in 2013 were near the long-term mean length recorded since 1996, suggesting the 2013 year class is not likely to be a major contributor to the fishery in the future.

A total of 196 lake sturgeon were collected during assessment surveys on Lake St. Clair and the St. Clair River in 2013. Sturgeon captured averaged 1,252 mm (49.3 in.) in total length, with a range from 526 mm (20.7 in.) to 1,862 mm (73.3 in.) A total of 103 sturgeon were captured in the St. Clair River during the annual setline survey, while 77 fish were captured with trawls in Lake St. Clair during July – September. The length frequency for setline and trawl captured sturgeon in 2013 illustrates the higher proportion of large individuals in the trawl catch (Figure 18). We suspect this reflects a difference in the actual size structure of the 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 sturgeon population.

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 2013, seven tag returns were reported from fish previously tagged in the Huron River at Flat Rock. The distribution of tag recoveries to date from walleye tagged at this location 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 19). 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 an average of 117.1 km (72.8 mi) from the tagging site. However, it is obvious from tag recovery patterns that some individuals from the Lake Erie spawning stocks migrate within that lake, never venturing into the Detroit River and Lake St. Clair.

Lake St. Clair and St. Clair River

In 2013, Michigan tagged a total of 381 smallmouth bass with non-reward jaw tags in Anchor Bay of Lake St. Clair. A total of 46 non-reward tags placed on smallmouth bass in 2013 were recovered by anglers for a single-season reporting rate of 12.1%. The 2013 reporting rate marked the fourth consecutive year of an increasing trend in tag reports and was nearly three percentage points higher than the 9.5% reporting rate observed in 2012, nearly five percentage points higher than the 7.6% reporting rate observed in 2011, and almost four times the reporting rate of 3.1% observed in 2010. We suspect that this increase in tag reporting is a result of outreach efforts to encourage the reporting of tagged fish that are caught and released alive. Walleye captured during the spring trap net survey were not tagged, although three walleyes that were tagged in Lake St. Clair during previous surveys were reported in 2013.

Since 2002, a total of 4,676 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 Detroit River near the Ambassador Bridge (Figure 19). On average, recaptured smallmouth bass tagged during 2002-2013 traveled 8.3 km (5.2 mi) from the Anchor Bay tagging site.

One smallmouth bass tagged in Anchor Bay was recovered from Whitmore Lake in Washtenaw County in 2011 (Figure 19). 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 during the early 2000s).

A total of 2,721 lake sturgeon have been tagged and released in the St. Clair River and Lake St. Clair since 1996. To date, 479 tagged lake sturgeon have been recaptured with survey gear or reported by fishermen. A total of 313 tagged sturgeon have been recovered with survey setlines in the North Channel. One was recovered in a survey trap net in Anchor Bay, while 12 have been recaptured in assessment trawls on Lake St. Clair. Sport anglers have reported 120 recoveries, nearly all from the St. Clair River North Channel, except for one reported from Lake Erie, near Huron, Ohio. Twenty-one 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. Trawling has accounted for the capture of 36% of the sturgeon tagged and released during this study, but only 33 recoveries (7%) have been fish originally caught in a trawl on Lake St. Clair. We view this as an indication that fish residing year-around in the St. Clair River, or moving into Lake Huron, experience a higher level of exploitation than fish residing all year in Lake St. Clair.

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 will be 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 2013, the LEC agreed upon a TAC of 3.36 million walleye, with a Michigan quota of 196,000 walleye. This quota sets the Michigan walleye daily possession limit at 6 fish from May 1, 2013 to April 30, 2014. The 2014 daily possession limit for walleye fishing in Michigan waters of Lake Erie will be announced in April. The Michigan walleye minimum size limit (15 inches) and season (open all year) for Lake Erie waters remain unchanged for 2014.

MI 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 2006, Michigan bass fishing seasons were changed to include a statewide early catch-and-immediate-release (CIR) season. The CIR season opens statewide the last Saturday in April (April 26, 2014) and extends to the opening day for the harvest season. The harvest season for smallmouth and largemouth bass fishing in the Michigan portion of the connecting waters is the third Saturday in June (June 21, 2014) thru December 31. The harvest season for the Michigan waters of Lake Erie opens on the Saturday before Memorial Day (May 24 in 2014).

Effective April 1, 2013, the statewide daily possession limit for muskellunge in Michigan has been changed to 1 harvested fish per angler per year. This statewide regulation covers the Great Lakes and connecting waters of Southeast Michigan and has implications for catch-and-release format tournaments where fish are possessed. A non-transferable muskellunge harvest tag is required to harvest any muskellunge. The tag is free and is available at all license vendors. A muskellunge shall be immediately released or tagged with a validated muskellunge harvest tag.

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.

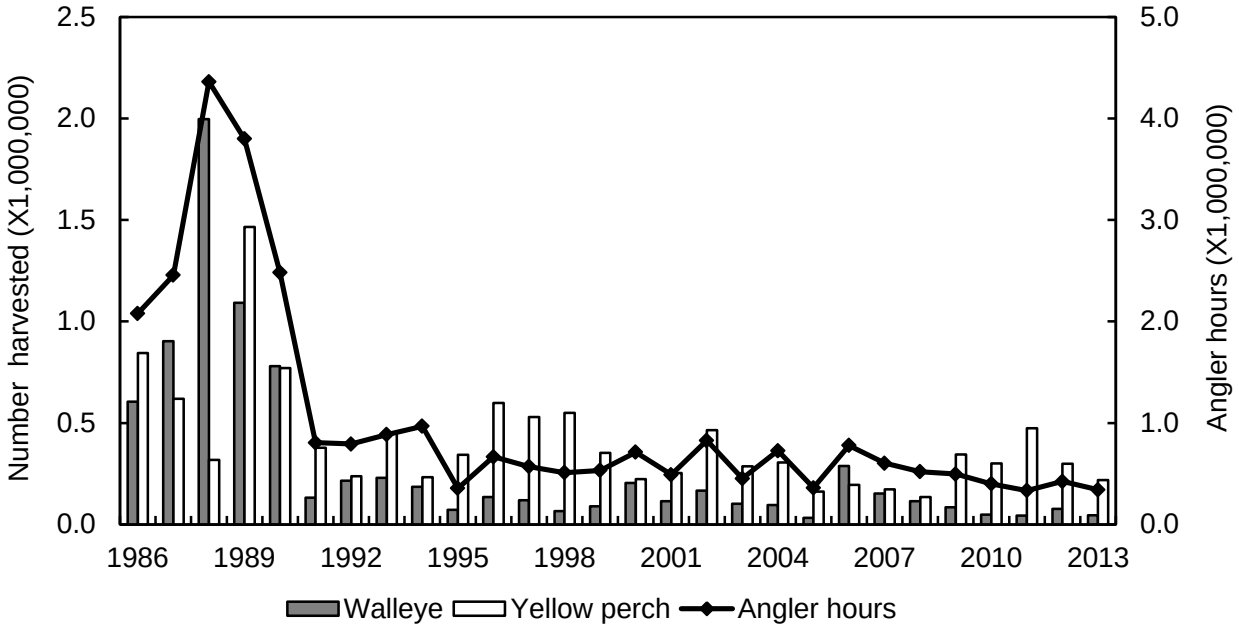

Figure 1.—Estimated harvest and effort for Michigan's Lake Erie sport fishery, 1986-2013.

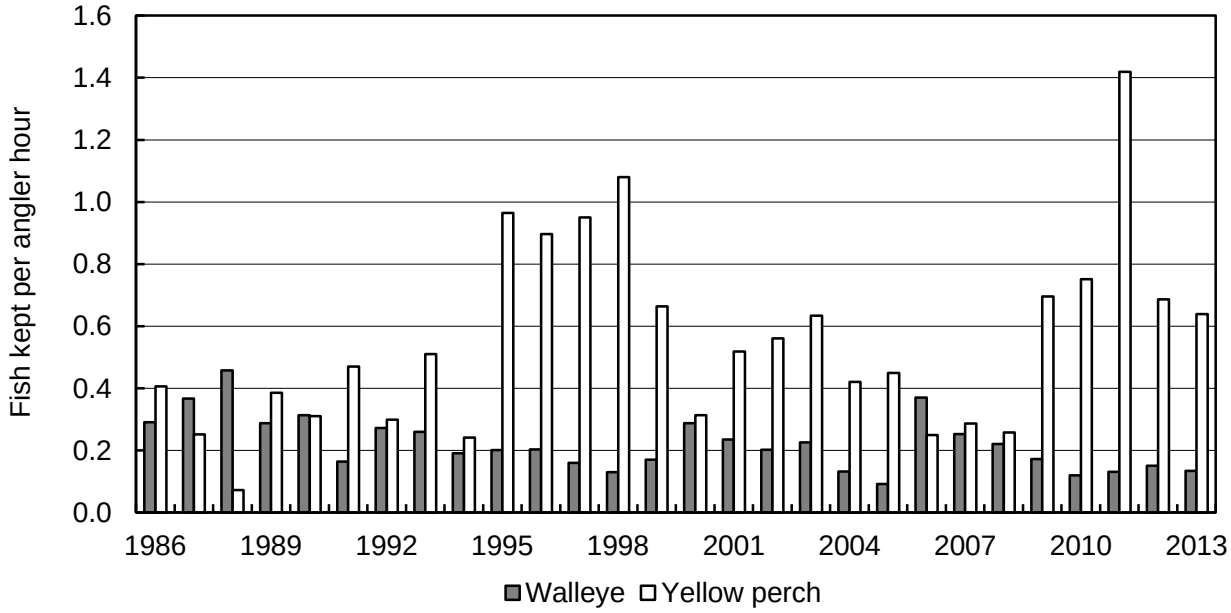

Figure 2.—Walleye and yellow perch harvest rates for Michigan's Lake Erie sport fishery, 1986-2013.

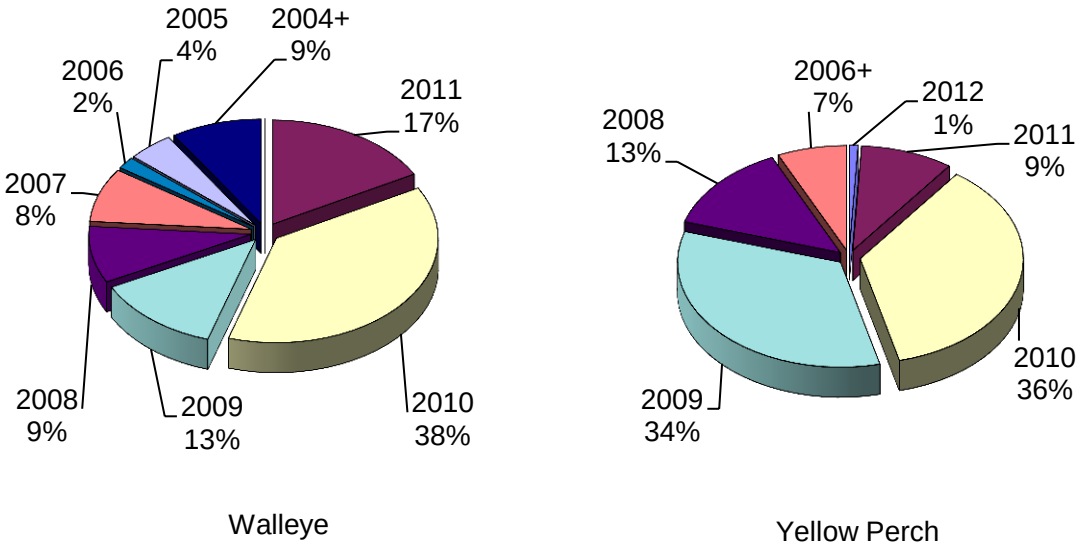

Figure 3.—Year class contribution to Michigan sport harvest for walleye and yellow perch from Lake Erie in 2013.

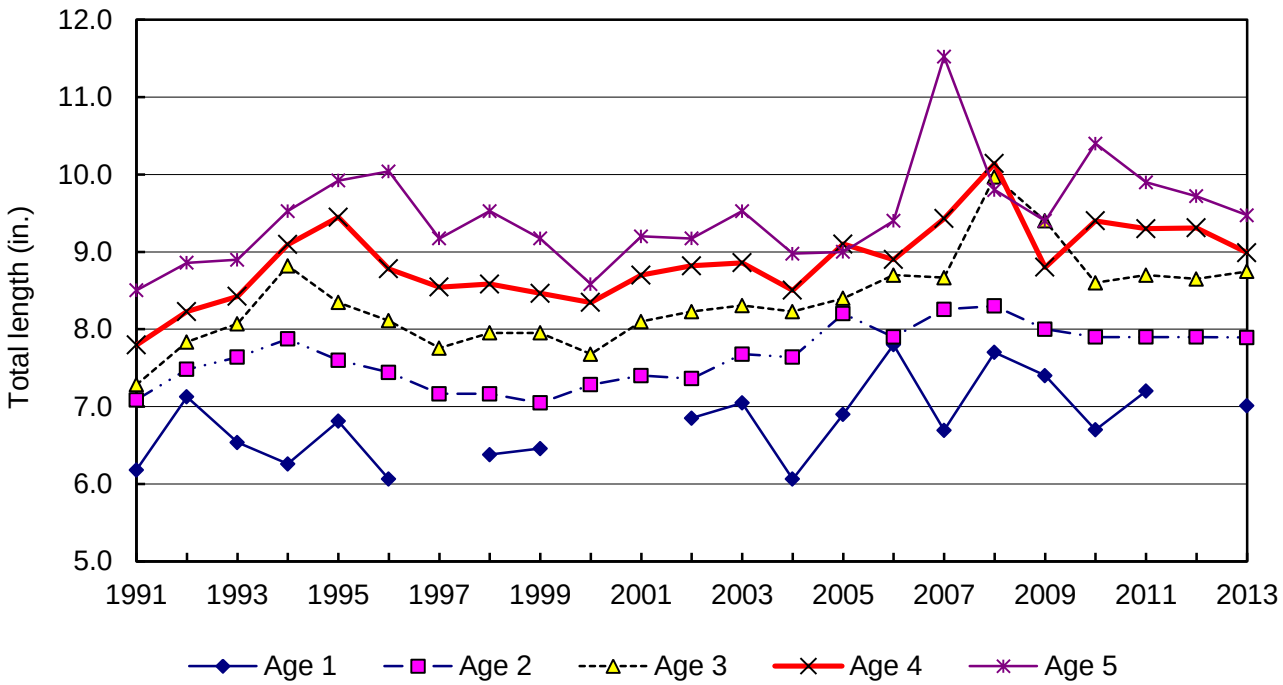

Figure 4.—Mean length at age for sport-harvested yellow perch from Michigan's waters of Lake Erie, 1991-2013.

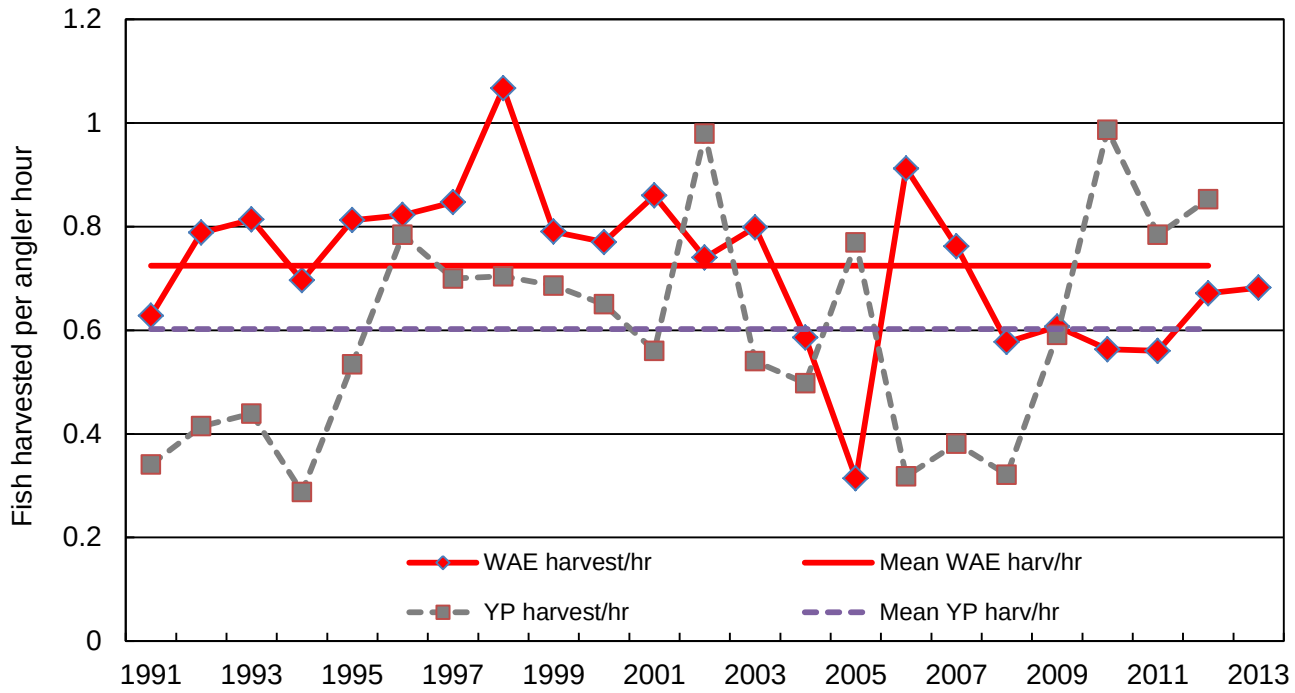

Figure 5.—Michigan Lake Erie charter boat harvest rates for walleye and yellow perch, 1991-2013.

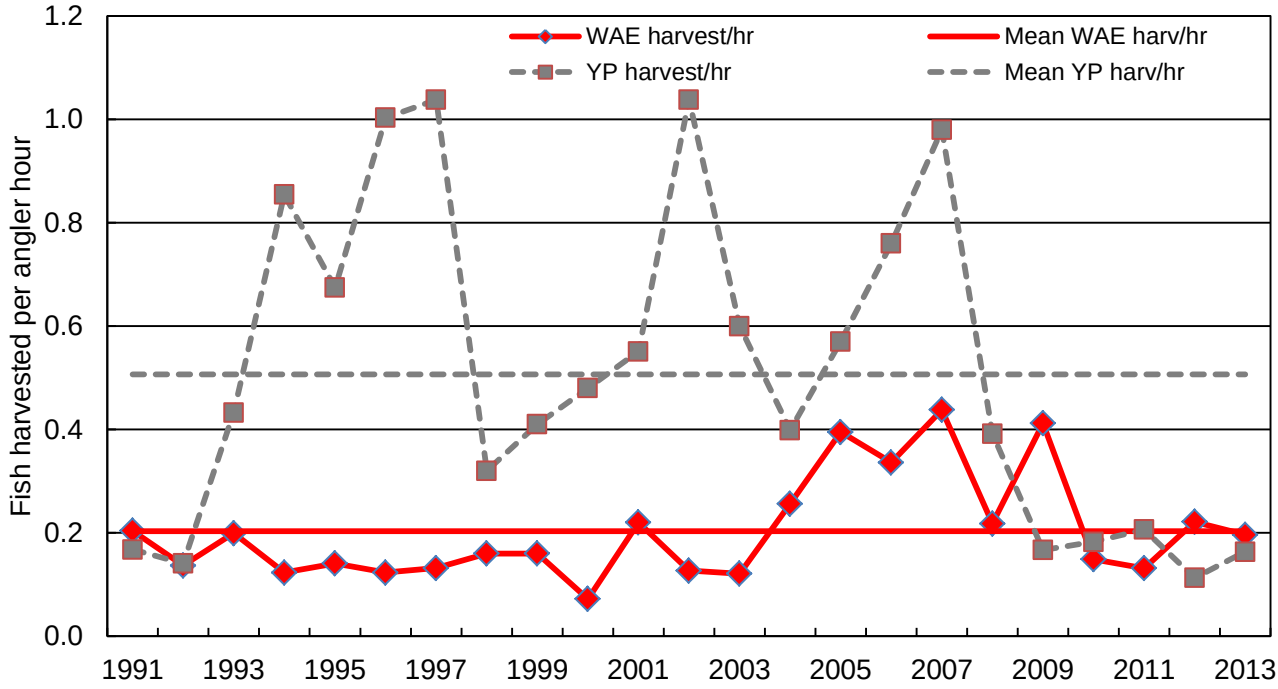

Figure 6.—Michigan St. Clair-Detroit River system charter boat harvest rates walleye and yellow perch, 1991-2013.

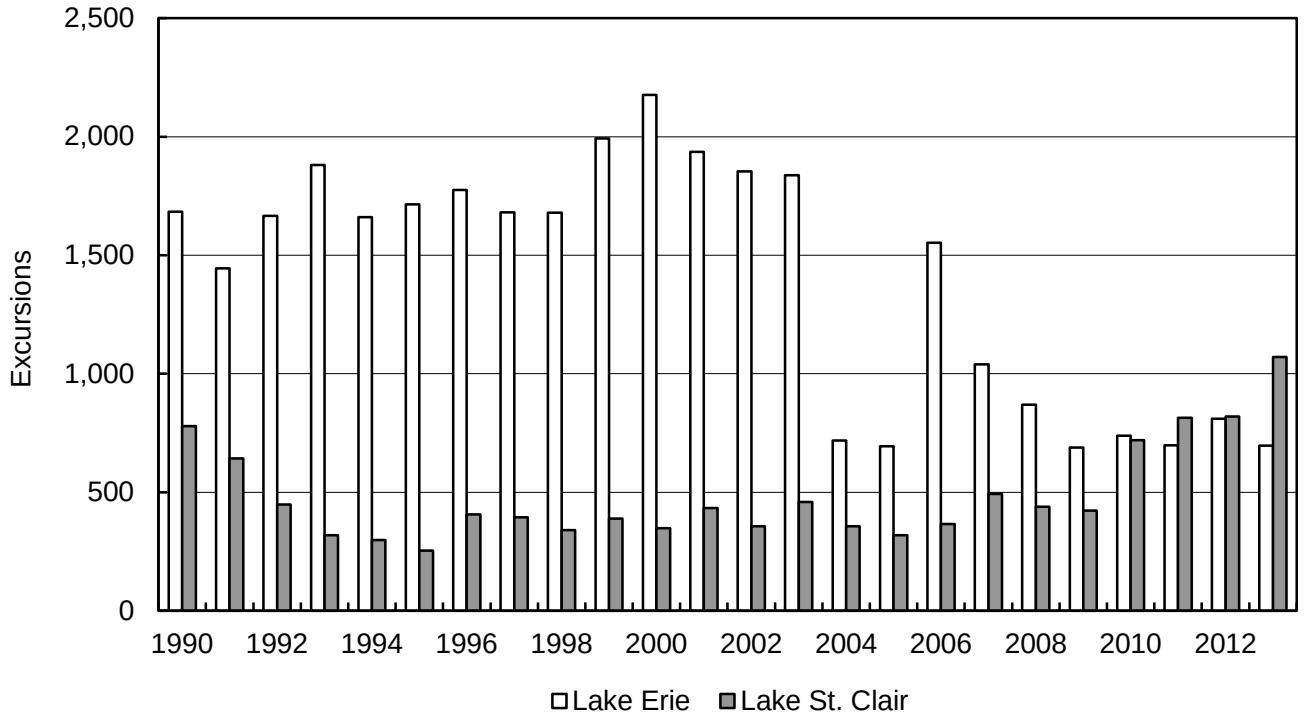

Figure 7.—Reported charter boat excursions on Lake Erie and the St. Clair-Detroit River system, 1990-2013.

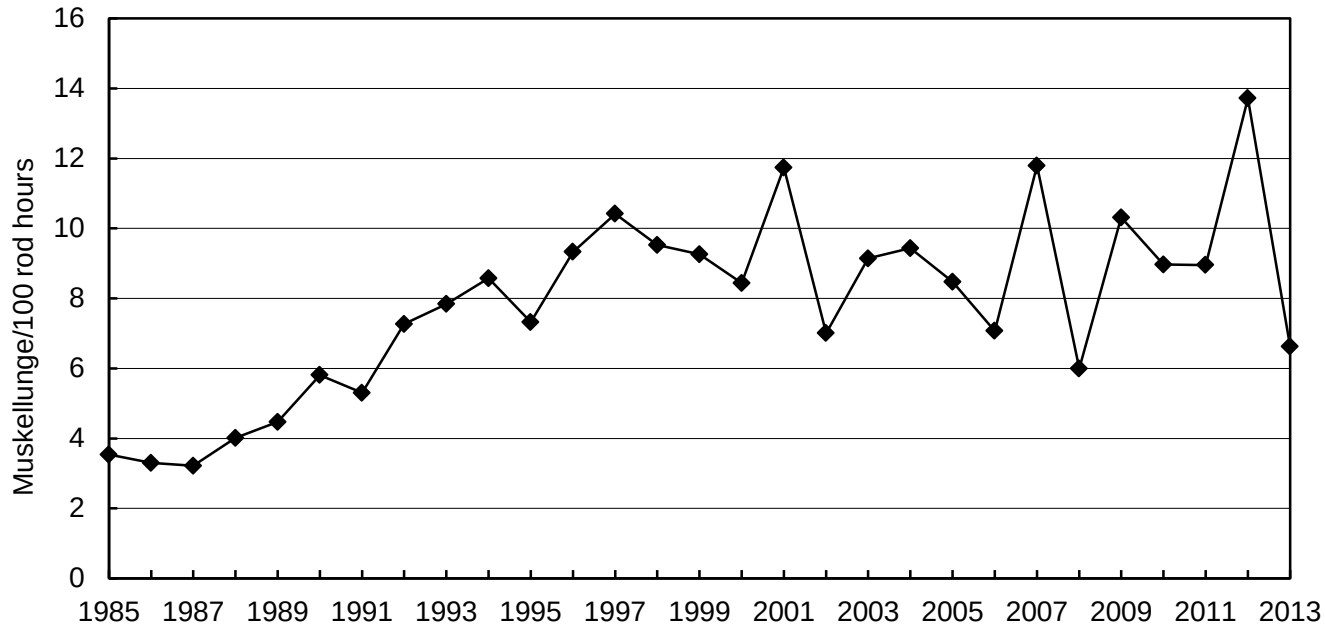

Figure 8.—Lake St. Clair muskellunge catch rate from Angler Diary Program, 1985-2013.

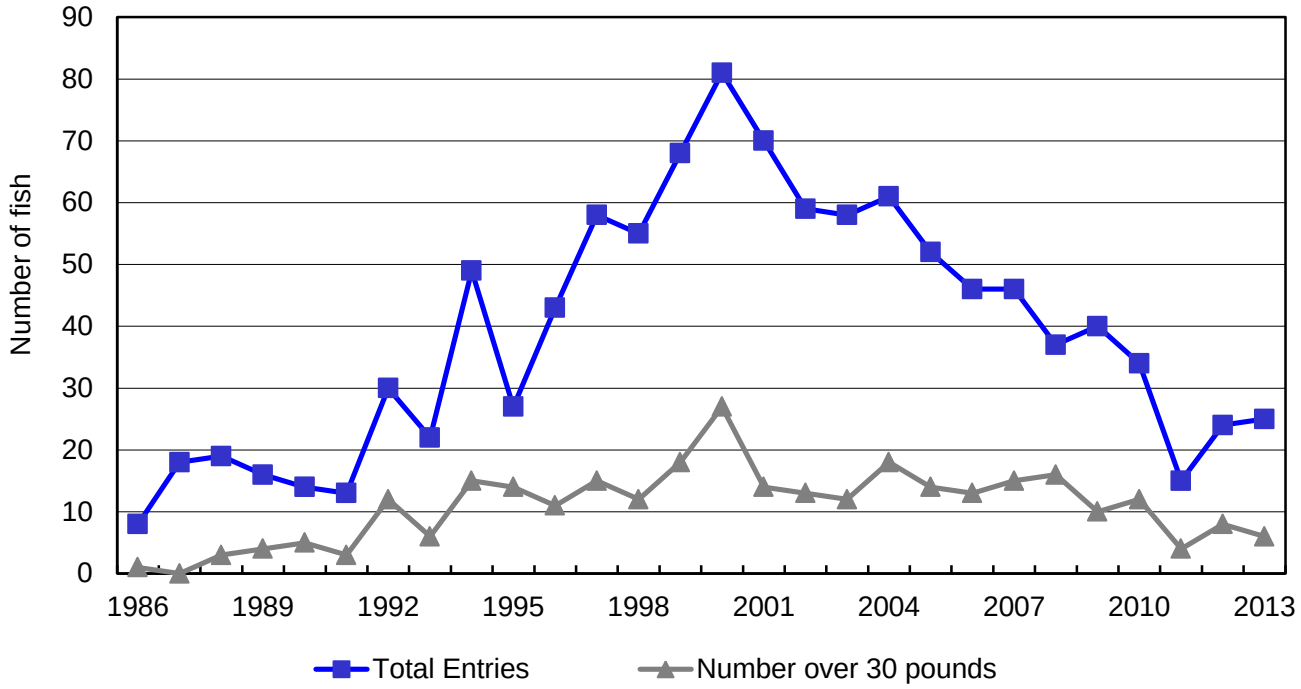

Figure 9.—Lake St. Clair muskellunge entered in the Michigan DNR Master Angler Program, 1986-2013. Values for 1992-2013 represent combined regular and catch-and-release Master Angler categories.

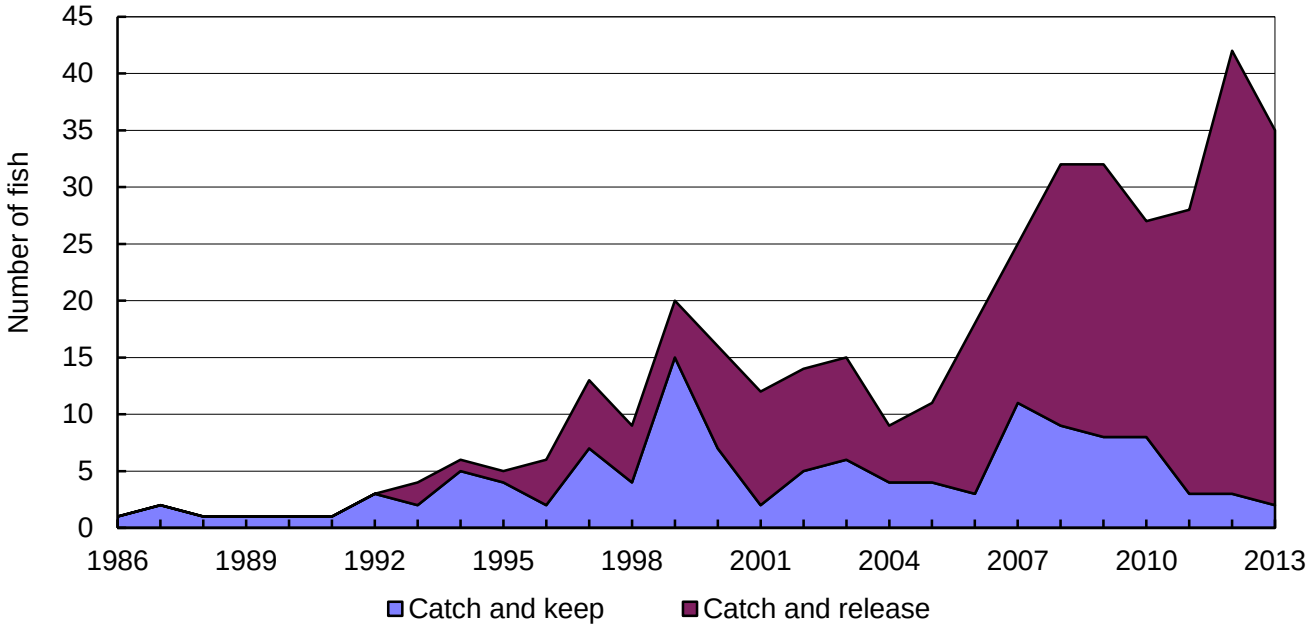

Figure 10.—Lake St. Clair smallmouth bass entered in the Michigan DNR Master Angler Program, 1986-2013.

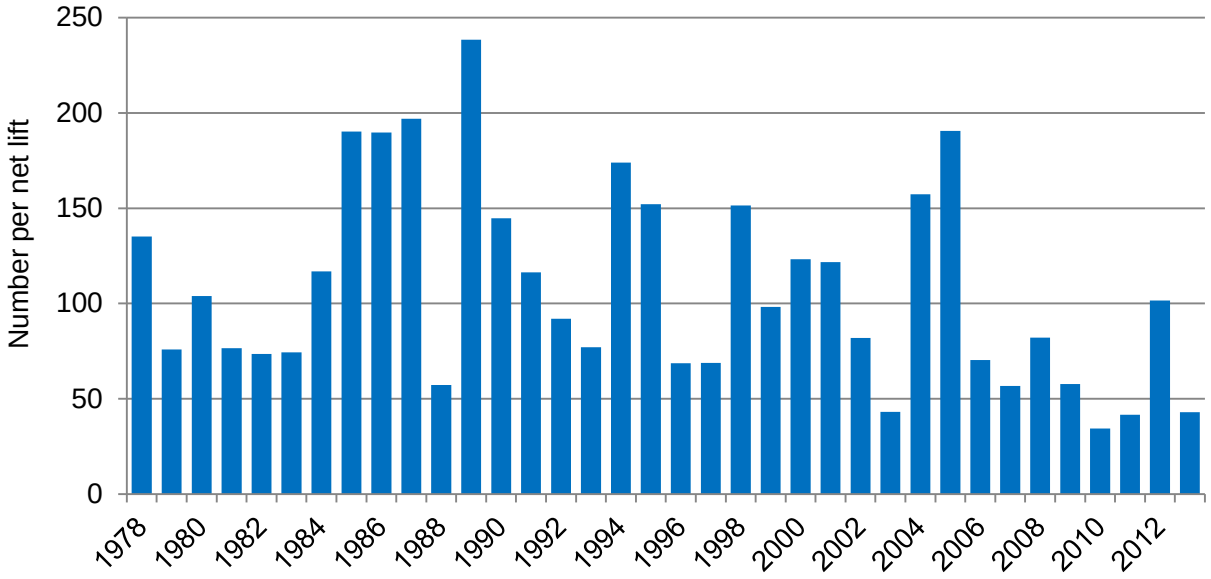

Figure 11. Average total walleye catch per unit effort, by year, for Michigan Lake Erie index gill nets, 1978-2013.

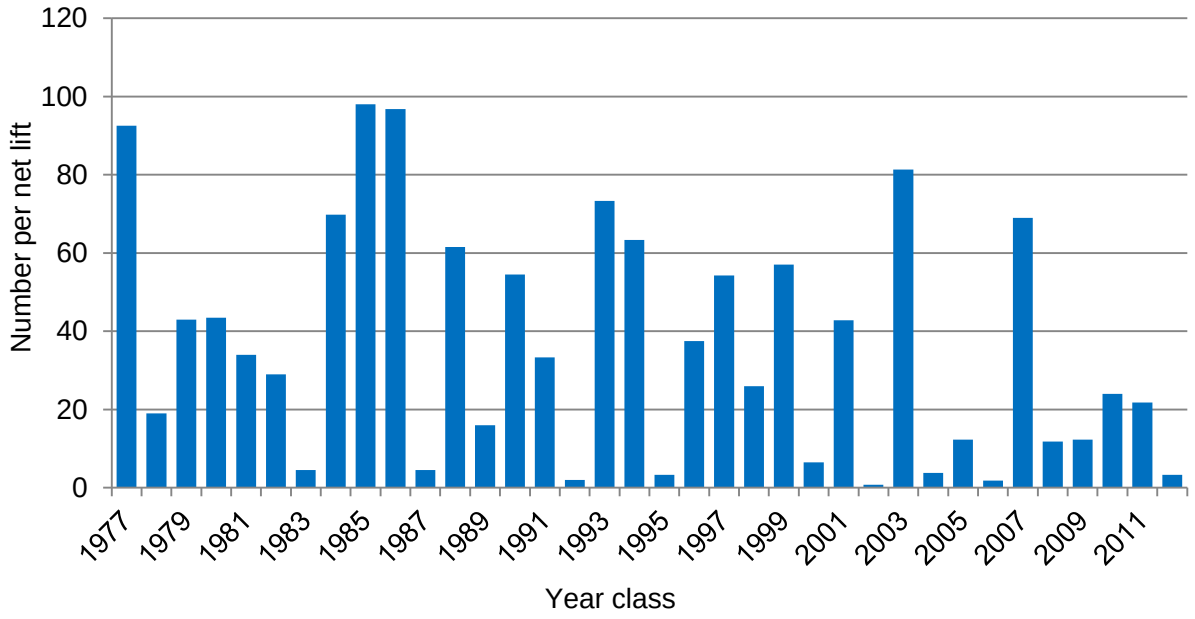

Figure 12. Average yearling walleye catch per unit effort, by year class, for Michigan Lake Erie index gill nets, 1978-2013.

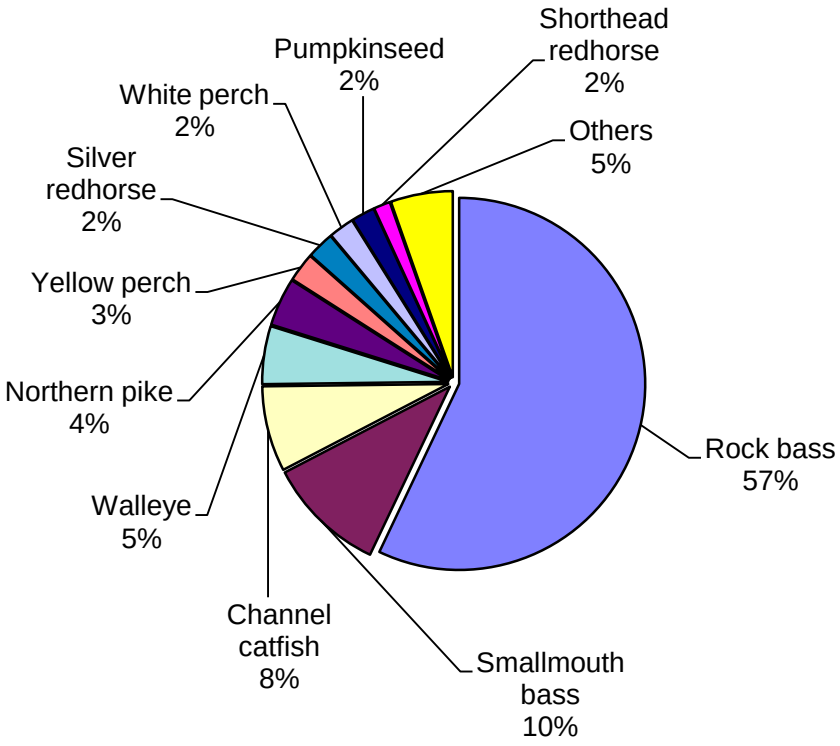

Figure 13.—Catch composition for trap nets fished in Lake St. Clair during May 2013.

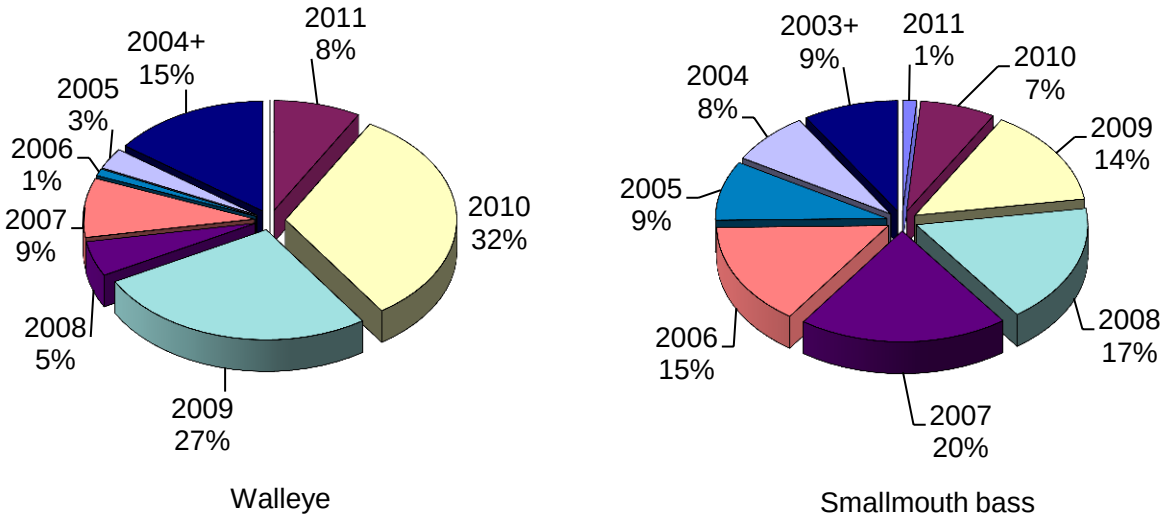

Figure 14.—Contribution by year class to catch in survey trap nets in Lake St. Clair during May 2013.

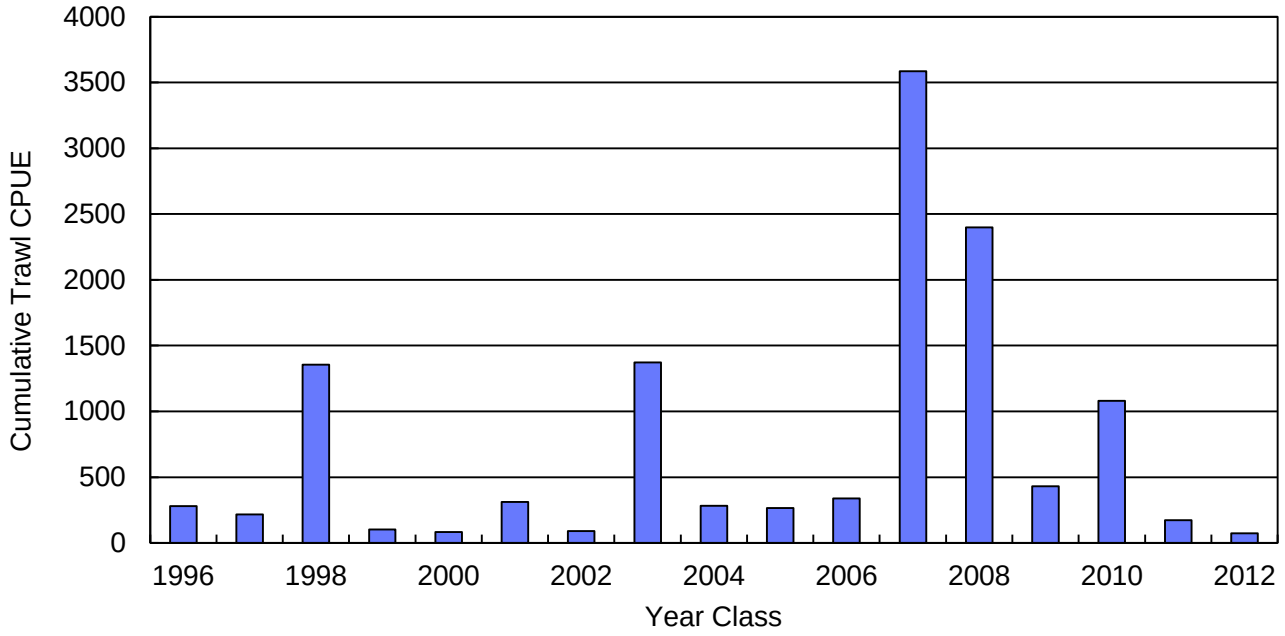

Figure 15.—Year-class strength for yellow perch in Lake St. Clair as indicated by June trawl catch rates summed across years (survey years 1996 to 2013).

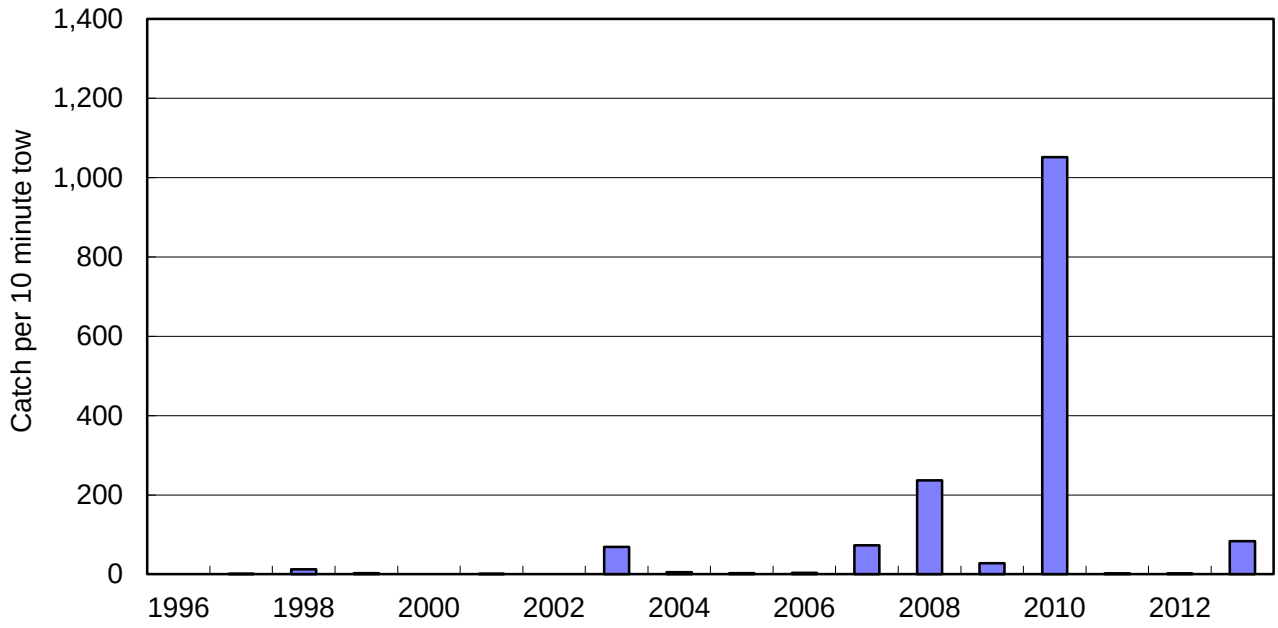

Figure 16.—Year-class strength for yellow perch in Lake St. Clair as indicated by September trawl age 0 catch rates, 1996 to 2013.

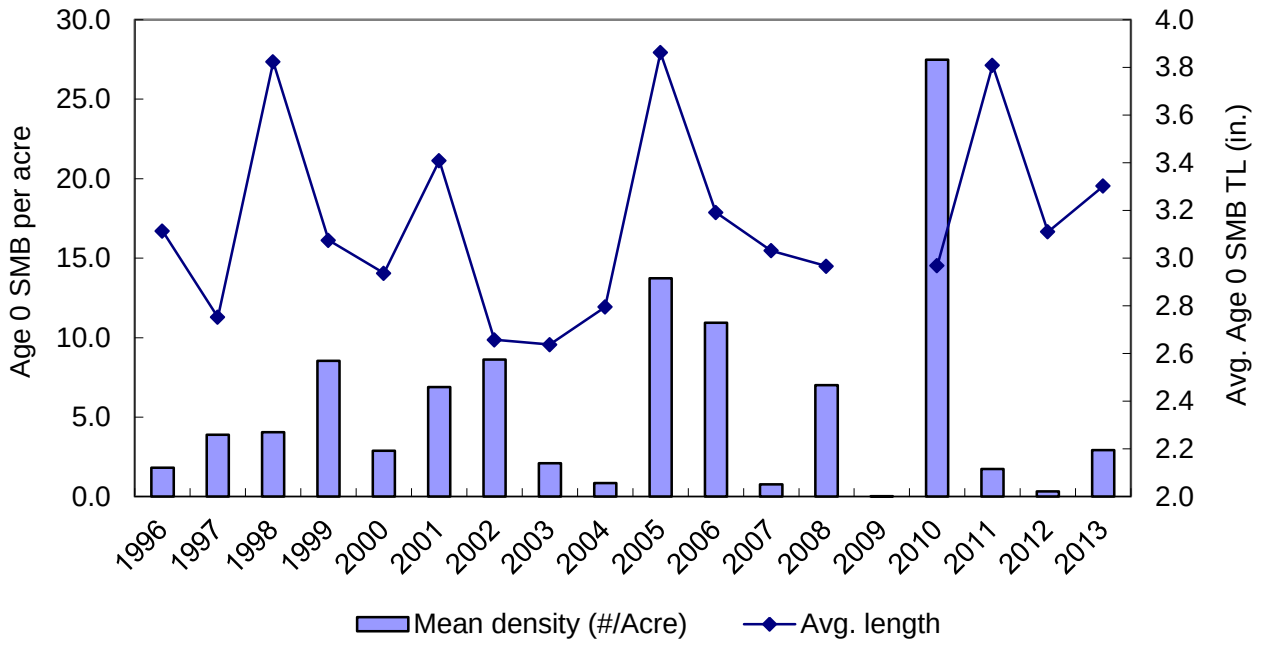

Figure 17.—Year-class strength for Lake St. Clair smallmouth bass as indicated by September trawl catch rates and mean length for young-of-year, 1996 to 2013.

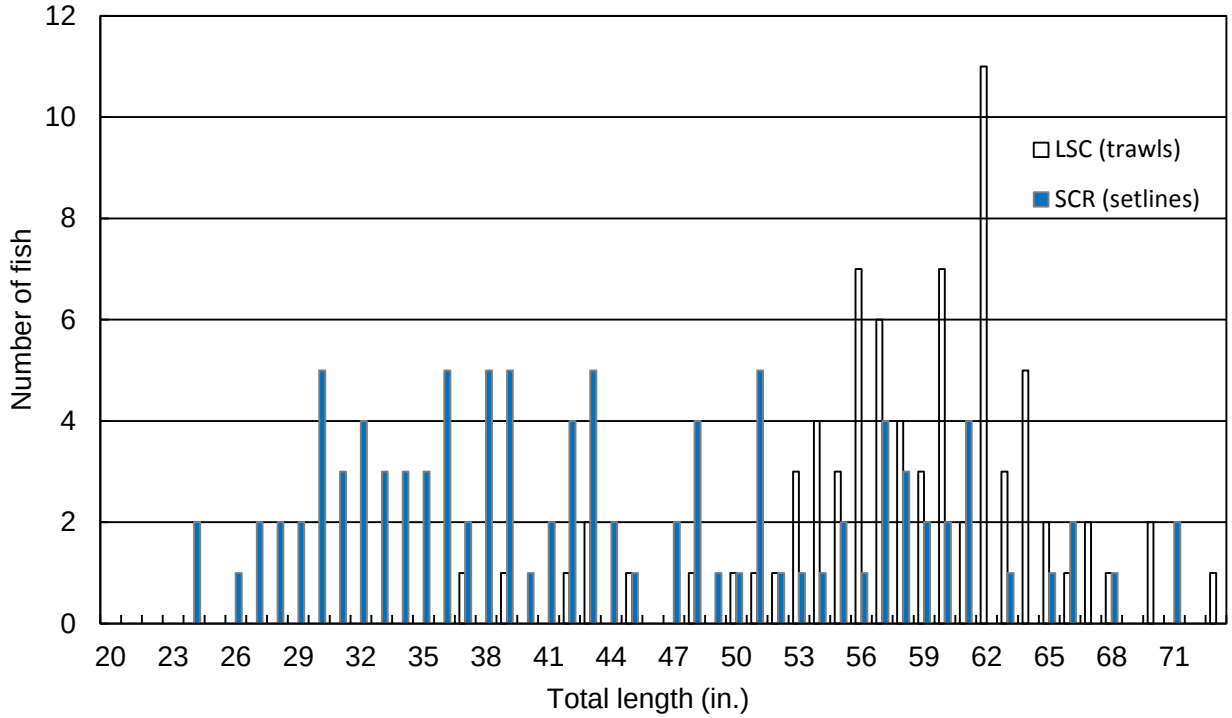

Figure 18.—Length frequency distribution for lake sturgeon caught in 2013 with setlines in the St. Clair River and bottom trawls in Lake St. Clair.

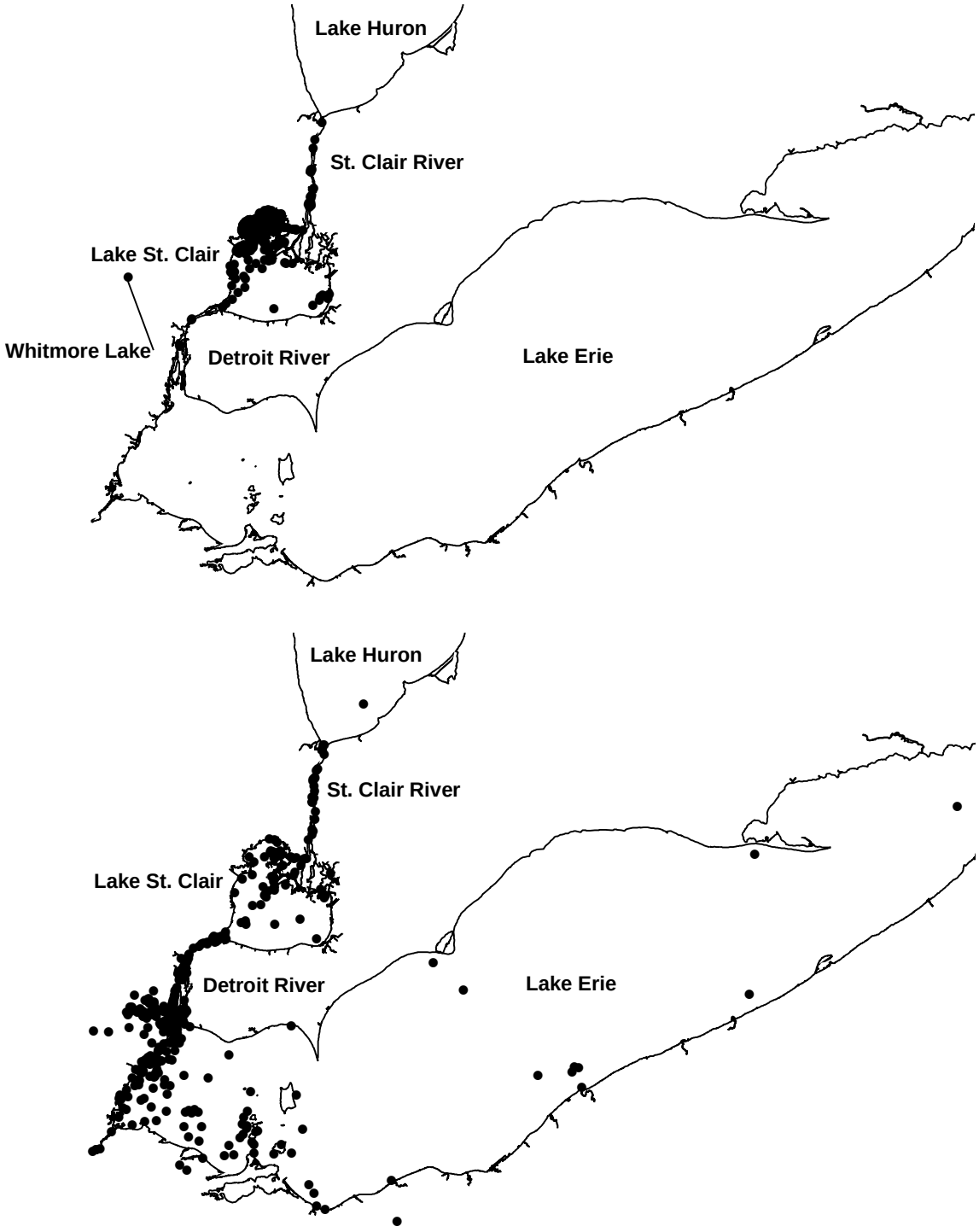

Figure 19.— Geographical distribution of smallmouth bass tag recoveries (N=526) for fish tagged during 2002-2012 at the Anchor Bay site in Lake St. Clair (top map) and for all tag recoveries since 2003 for walleye tagged during 1994-2010 in the Huron River (N=476, bottom map). Black dots represent the recovery location of individual fish.

Table 1.—Estimated harvest, harvest rate, effort, and released catch for Michigan's 2013 Lake Erie non-charter boat fishery. Two standard errors in parentheses.

Species	Harvest rate	Month Apr	May	Jun	Jul	Aug	Sep	Oct	Season
HARVEST									
Yellow perch	0.6387 (0.7222)	252	10,291	28,970	35,558	52,948	59,332	30,948	218,299 (162,637)
Walleye	0.1342 (0.1435)	996	16,275	13,843	12,612	1,905	104	130	45,865 (32,326)
Channel catfish	0.1013 (0.1870)	423	6,022	5,975	8,352	8,252	4,810	776	34,611 (42,103)
White bass	0.0171 (0.0331)	921	2,238	928	1,063	511	177	0	5,838 (7,453)
White perch	0.0258 (0.0460)	12	531	451	495	1,016	2,779	3,533	8,816 (10,352)
Freshwater Drum	0.0039 (0.0087)	0	234	253	239	153	122	345	1,346 (1,951)
Smallmouth bass	0.0030 (0.0062)	0	51	21	345	246	99	253	1,014 (1,398)
Largemouth bass	0.0005 (0.0016)	0	0	59	12	5	0	0	76 (151)
Other species	0.0007 (0.0278)	0	85	9	15	15	58	67	249 (157)
Total Harvest	0.9265 (0.5631)	2,603	35,744	50,628	58,777	65,126	67,738	36,052	316,667 (60,166)
EFFORT									
Angler hours		9,212	69,775	62,596	75,467	58,541	42,857	23,349	341,797 (225,207)
Angler trips		2,109	13,990	13,503	16,433	12,090	9,335	5,446	72,907 (49,724)
RELEASED									
Walleye Legal size	0.0033 (0.0550)	117	213	185	464	115	42	0	1,136 (640)
Walleye Sub-legal	0.0272 (0.1179)	78	2,777	3,241	2,408	176	67	537	9,284 (3,227)
Largemouth bass	0.0189 (0.1547)	253	115	1,231	1,374	2,596	200	696	6,465 (4,563)
Smallmouth bass	0.0242 (0.1176)	76	2,427	897	1,542	2,369	845	107	8,263 (3,211)
White bass	0.3788 (0.4258)	305	50,223	29,515	14,203	28,450	6,027	757	129,481 (41,812)

Table 2.—Total harvest per hour, harvest per excursion, number harvested, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Lake Erie, 2013.

Species	Total catch per hour	Catch per excursion	Month							Season
			Apr[1]	May	Jun	Jul	Aug	Sep	Oct[1]	
Harvested										
Rainbow trout	0.0001	0.0014	0	0	1	0	0	0	0	1
Yellow perch	0.7288	16.3779	299	1,256	1,221	539	1,247	3,729	3,108	11,399
Walleye	0.6821	15.3276	578	823	6,173	2,632	387	73	2	10,668
Small. bass	0.0043	0.0963	4	0	14	32	17	0	0	67
Other	0.0376	0.8448	0	20	229	13	225	46	55	588
Released										
Yellow perch	0.0420	0.9440	80	0	66	55	52	272	132	657
Walleye	0.0519	1.1652	33	88	478	154	49	8	1	811
Small. bass	0.0045	0.1006	2	3	17	36	5	0	7	70
Muskellunge	0.0002	0.0043	1	0	0	2	0	0	0	3
Other	0.2011	4.5201	21	299	1,206	375	271	450	524	3,146
Angler hours			870	1,415	7,473	3,051	1,231	1,010	591	15,641
Angler trips			151	262	1,457	592	223	198	110	2,993
Charter excursions			46	69	317	140	51	45	28	696

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

Table 3.—Total harvest per hour, harvest per excursion, number harvested, and fishing effort (angler hours, trips, and charter excursions) for charter boats on the Detroit River, Lake St. Clair, and the St. Clair River, 2013.

Species	Total catch per hour	Catch per excursion	Month							Season
			Apr[1]	May	Jun	Jul	Aug	Sep	Oct[1]	
Harvested										
Yellow perch	0.1634	3.6041	2	43	201	111	216	1,429	1,858	3,860
Walleye	0.1964	4.3305	2,156	1,259	463	458	134	99	69	4,638
Small. bass	0.0762	1.6797	0	64	285	532	705	192	21	1,799
Muskellunge	0.0002	0.0037	0	1	1	1	1	0	0	4
Other	0.0464	1.0243	69	79	844	83	16	4	2	1,097
Released										
Yellow perch	0.0316	0.6965	0	2	13	6	2	397	326	746
Walleye	0.0187	0.4127	282	143	0	11	0	2	4	442
Small. bass	0.6391	14.0934	182	4,104	4,512	2,248	2,251	983	814	15,094
Muskellunge	0.0477	1.0523	6	12	353	210	187	155	204	1,127
Other	0.0581	1.2801	101	964	96	123	55	24	8	1,371
Angler hours			4,209	3,692	4,836	3,394	3,265	2,359	1,862	23,617
Angler trips			649	582	741	528	508	362	291	3,661
Charter excursions			174	182	217	158	146	103	91	1,071

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

Table 4.—Commercial harvest (pounds caught) of selected species from Michigan waters of Lake Erie, 1982 to 2013.

Year	Buffalo	Bullhead	Common carp	Channel catfish	Gizzard shad	Goldfish	Quillback	Freshwater drum	Sucker	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
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
Grand Total	1,631,961	297,308	10,643,050	1,080,283	3,695,893	654,994	868,799	1,040,365	99,668	700,186	238,759	40,486	20,991,752

Table 5.—Commercial harvest (pounds sold) from Michigan waters of Lake Erie in 2013.

Species	Harvest (lbs.)	% of total harvest	Reported market value
Carp	256,546	25%	$72,245
White bass	188,028	18%	$103,801
Buffalo	164,345	16%	$89,483
Quillback carpsucker	138,841	13%	$43,181
Channel catfish	102,197	10%	$49,395
Freshwater drum	72,261	7%	$17,541
Gizzard shad	40,050	4%	$8,811
White perch	32,954	3%	$13,997
Goldfish	28,146	3%	$28,012
Sucker	10,234	1%	$1,541
Bullhead	7,565	1%	$3,472
Grand Total	1,041,167	100%	$431,480

Table 6.—Mean catch per trap net (24 hour lift) for species commonly taken during spring trap net surveys in Anchor Bay, Lake St. Clair.

	Survey year												
Species	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Mean
Black bullhead	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.01
Black crappie	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.02	0.01	0.06	0.08	0.04	0.03
Bluegill	0.06	0.00	0.05	0.01	0.02	0.00	0.05	0.00	0.01	0.23	0.03	0.07	0.04
Brown bullhead	0.02	0.01	0.02	0.00	0.01	0.01	0.00	0.02	0.03	0.02	0.00	0.08	0.02
Channel catfish	1.88	1.85	1.70	1.21	1.76	2.01	3.14	2.22	2.24	1.22	2.64	2.53	2.03
Common carp	0.24	0.00	0.01	0.01	0.03	0.00	0.00	0.43	0.34	0.29	0.08	0.15	0.13
Common white sucker	0.14	0.08	0.12	0.10	0.10	0.33	0.15	0.06	0.16	0.22	0.03	0.16	0.14
Freshwater drum	1.30	4.01	1.68	0.36	2.27	0.47	0.36	0.59	0.66	0.52	0.35	0.38	1.08
Gizzard shad	0.04	0.03	0.01	0.03	0.01	0.01	0.00	0.00	0.00	0.01	0.15	0.10	0.03
Goldern redhorse	0.01	0.01	0.02	0.02	0.02	0.01	0.00	0.05	0.00	0.01	0.00	0.05	0.02
Lake sturgeon	0.01	0.06	0.03	0.02	0.05	0.00	0.10	0.05	0.01	0.09	0.01	0.05	0.04
Largemouth bass	0.22	0.04	0.11	0.03	0.03	0.10	0.10	0.11	0.06	0.21	0.03	0.18	0.10
Muskellunge	0.56	0.52	0.63	0.71	0.48	0.49	0.13	0.83	0.18	0.12	0.00	0.13	0.40
Northern pike	0.90	0.15	0.58	0.87	0.86	0.66	0.55	0.71	1.02	1.11	0.70	1.54	0.80
Pumpkinseed	3.02	0.55	0.50	0.03	0.22	0.46	0.71	0.40	0.74	1.54	0.84	0.77	0.81
Quillback carpsucker	0.22	0.13	0.25	0.07	0.28	0.06	0.27	0.34	0.32	0.25	0.06	0.15	0.20
Rock bass	30.34	13.95	14.65	6.16	15.44	21.73	22.12	29.09	53.81	43.31	36.35	19.33	25.52
Shorthead redhorse	1.14	1.90	0.69	0.77	1.62	0.51	1.00	0.76	1.16	1.30	0.74	0.52	1.01
Silver redhorse	0.25	0.27	0.54	0.59	0.95	0.30	0.95	1.37	1.54	1.29	0.26	0.87	0.77
Smallmouth bass	4.32	8.16	2.37	1.73	3.83	5.84	2.74	3.50	8.49	6.92	4.01	3.68	4.63
Walleye	2.17	1.55	1.15	2.43	2.40	1.72	1.25	1.98	1.03	2.14	1.02	1.91	1.73
White bass	0.03	0.05	0.03	0.00	0.07	0.05	0.27	0.42	0.15	0.26	1.56	0.37	0.27
White perch	0.11	0.05	0.35	0.05	1.11	0.10	0.96	0.44	0.79	0.83	0.67	0.85	0.52
Yellow perch	3.08	0.74	2.04	0.51	0.58	2.22	1.59	0.50	0.39	1.31	1.19	0.96	1.26
Total all species	50.08	34.14	27.67	15.72	32.19	37.08	36.48	43.97	73.15	63.40	50.80	34.90	42.11
Number of net lifts	64	50	55	34	42	50	35	22	54	54	39	46	
Starting date	5/3	5/28	5/3	5/11	5/5	5/3	5/6	5/8	5/3	4/25	4/25	4/22	
Ending date	5/30	6/20	5/26	5/25	5/24	5/22	5/20	5/20	5/24	5/25	5/14	5/20	
Starting water temperature (^{0}C)	9	12	8	9	13	9	13	12	14	9	9	8	
Ending water temperature (^{0}C)	15	16	15	13	13	13	11	14	17	13	14	15	
Average secchi depth (m)	1.8	2.2	1.2	2.2	1.7	2.6	2.1	1.5	1.7	1.3	1.9	1.93	

Table 7.—Mean density (number of fish caught per hectare trawled) for all fish species caught during spring (June) with 10 m headrope index trawls in Anchor Bay, Lake St. Clair.

	Year														
Species	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Mean
Alewife	4	3	3	0	0	0	0	0	0	0	0	0	0	0	3
Bluntnose minnow	11	10	7	1	6	118	1	13	0	3	2	4	3	1	10
Common carp	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Emerald shiner	5	0	11	0	2	0	0	0	32	39	4	18	26	17	9
Freshwater drum	1	5	1	4	3	6	4	3	0	0	0	2	0	0	3
Johnny darter	0	0	0	0	3	2	0	7	2	17	3	4	17	61	8
Lake sturgeon	0	0	1	1	0	0	2	1	0	0	0	0	1	0	0
Largemouth bass	0	1	0	0	0	0	0	4	0	0	1	0	0	0	0
Logperch	0	2	8	0	42	6	0	1	3	29	13	107	10	10	23
Muskellunge	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
Northern pike	0	1	0	1	0	1	1	0	0	0	0	1	2	0	0
Shorthead redhorse	3	4	7	4	2	6	9	1	0	0	4	1	0	0	4
Pumpkinseed	0	2	0	0	0	0	1	1	0	0	0	0	6	0	1
Quillback	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	4	61	0	14	53	11	6	1	68	110	122	18	284	56	115
Rock bass	13	30	39	18	5	10	33	73	4	2	21	4	5	2	18
Round goby	11	1	30	6	53	10	0	30	1	14	33	24	1	2	15
Sand shiner	14	20	362	0	118	45	2	640	4	15	0	20	36	55	76
Silver lamprey	0	0	0	1	1	0	5	2	0	0	1	0	0	0	1
Silver redhorse	1	0	2	5	2	1	1	2	0	0	1	4	1	0	1
Smallmouth bass	1	3	4	2	2	10	4	13	0	0	2	2	1	0	3
Spottail shiner	935	7	5,730	211	1,777	524	769	53	90	2,705	495	5,093	1,988	109	1,159
Trout-perch	34	11	265	13	108	65	248	7	2	3	23	13	42	41	95
Walleye	1	1	1	1	0	2	12	2	0	1	0	0	2	0	2
White perch	13	1	1	1	2	1	2	0	1	1	0	1	1	0	1
White sucker	3	1	61	2	68	22	5	1	20	16	95	9	39	6	20
Yellow perch	158	1,132	725	306	888	1,107	869	303	3,137	7,144	3,120	3,101	1,865	758	1,526

Table 8.—Mean density (number of fish caught per hectare trawled) for all fish species caught during fall (September or October) with 10 m headrope index trawls in Anchor Bay, Lake St. Clair.

	Year														
Species	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Mean
Alewife	3	32	0	0	0	1	1	0	0	5	0	0	0	0	6
Bluntnose minnow	15	54	33	13	43	238	61	36	65	198	821	189	7	4	101
Common carp	0	1	2	0	0	1	0	0	0	0	0	1	0	0	0
Emerald shiner	0	0	1	0	41	36	608	0	1	8	2	5	0	4	40
Freshwater drum	1	2	0	1	5	2	3	2	0	2	2	0	1	0	1
Johnny darter	0	0	0	7	0	0	0	1	1	0	0	1	12	0	2
Lake sturgeon	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0
Largemouth bass	2	16	36	13	13	29	22	58	50	45	23	9	1	29	19
Logperch	5	18	6	14	38	113	34	9	175	288	120	31	35	48	57
Muskellunge	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern pike	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0
Shorthead redhorse	1	2	0	0	0	1	2	1	0	0	0	1	0	0	0
Pumpkinseed	0	5	5	3	1	0	5	8	24	0	0	5	0	1	3
Quillback	1	0	2	1	1	0	0	0	5	0	0	0	0	0	1
Rainbow smelt	1	0	0	4	26	0	1	0	1	139	0	1	2	0	11
Rock bass	93	40	41	35	25	77	67	71	211	21	104	80	5	29	60
Round goby	10	10	99	2	28	14	10	4	7	11	15	0	8	9	19
Sand shiner	15	10	44	507	8,909	3,072	109	29	408	0	0	383	2,516	2	967
Silver lamprey	0	0	0	0	0	0	1	1	1	0	0	1	3	0	0
Silver redhorse	0	1	6	0	4	5	4	1	1	2	1	1	0	0	2
Smallmouth bass	6	0	51	7	3	41	32	3	22	2	69	13	8	13	18
Spottail shiner	51	879	2,407	1,068	545	2,410	2,668	983	2,191	981	2,492	1,867	28	168	1,083
Trout-perch	0	0	10	6	59	3	79	1	0	3	105	7	14	12	66
Walleye	1	0	11	0	2	9	3	1	0	2	0	2	0	0	2
White perch	0	0	13	8	6	146	12	31	398	9	9	1	0	1	37
White sucker	1	1	8	1	1	4	6	5	7	6	10	1	0	0	3
Yellow perch	41	114	73	181	48	52	34	220	625	1,100	2,601	36	24	246	308

Table 9.—Catch rate (number per 10 minute tow) by age for yellow perch in June index trawl tows on Lake St. Clair.

Year	Total	Survey year														
class	CPUE	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1985	0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1986	0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1987	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1988	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1989	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1990	24	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1991	117	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1992	51	1	0	1	–	1	–	–	–	–	–	–	–	–	–	–
1993	581	54	2	3	–	1	–	–	–	–	–	–	–	–	–	–
1994	903	21	8	11	1	1	–	1	–	–	–	–	–	–	–	–
1995	148	32	12	21	10	3	1	0	–	–	–	–	–	–	–	–
1996	280	70	11	35	10	9	1	1	–	–	–	–	–	–	–	–
1997	218	38	6	53	61	44	4	8	1	–	–	–	–	–	–	–
1998	1,355	650	114	348	84	118	23	18	0	–	–	–	–	–	–	–
1999	103	–	5	26	18	25	23	4	3	0	–	–	–	–	–	–
2000	82	–	–	3	5	5	43	21	2	4	–	–	–	–	–	–
2001	312	–	–	–	131	90	50	25	12	4	0	–	–	–	–	–
2002	89	–	–	–	–	9	11	6	12	51	0	–	–	–	–	–
2003	1,373	–	–	–	–	–	705	397	175	26	46	22	1	–	2	–
2004	284	–	–	–	–	–	–	9	158	18	78	17	1	3	0	–
2005	265	–	–	–	–	–	–	–	34	26	150	36	10	6	3	–
2006	338	–	–	–	–	–	–	–	–	5	108	99	32	84	10	0
2007	3,585	–	–	–	–	–	–	–	–	–	1,003	1,718	647	198	17	2
2008	2,398	–	–	–	–	–	–	–	–	–	–	1,265	625	393	91	24
2009	431	–	–	–	–	–	–	–	–	–	–	–	64	153	193	23
2010	1,081	–	–	–	–	–	–	–	–	–	–	–	–	533	434	114
2011	172	–	–	–	–	–	–	–	–	–	–	–	–	–	73	99
2012	72	–	–	–	–	–	–	–	–	–	–	–	–	–	–	72
Total		867	158	500	320	306	860	489	395	134	1,386	3,155	1,378	1,370	824	335