

Status of Yellow Perch in Lake Michigan – 2019-2020



[Wisconsin DNR fisheries crew in front of the R/V *Coregonus*, a 60-ft research vessel stationed out of Sturgeon Bay. Crews from Peshtigo and Sturgeon Bay offices “masked up” and conducted trawling in Green Bay...one of only a handful of Yellow Perch surveys that were completed lakewide in 2020. Photo courtesy of Tammie Paoli, Wisconsin DNR.]

REPORT TO THE LAKE MICHIGAN COMMITTEE
March 23, 2021

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Yellow Perch / Inshore Fish Working Group Contact List: 2021

This report was prepared from information provided by agency biologists. Questions regarding data from a specific area of Lake Michigan, or concerning a specific aspect of Lake Michigan yellow perch research, should be directed to biologists from the relevant jurisdiction (see Appendix 1 for a map of lake areas).

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Status of Yellow Perch in Lake Michigan

Yellow perch assessment activity is occurring throughout the lake, with numerous agency and university personnel sampling perch utilizing various gear types in different seasons. Selected parts of this information are presented here, in three sections. The first section covers the relative abundance of adult (age 1 and older) yellow perch. The second section examines the most recent age structure data available for different parts of the lake. The final section consists of estimates (or indices) of juvenile yellow perch recruitment: most of these data come from collections of age-0 yellow perch. Coordinated regulation of yellow perch harvest has been an important part of perch management since the early 1990s. Current commercial and recreational regulations for all Lake Michigan jurisdictions are included as a final section of this status report, along with data showing trends in yellow perch harvest over time.

Since its formation in 1994, the Lake Michigan Yellow Perch Task Group has in most years produced an annual status report. Exceptions to the annual reporting cycle occurred in 2012 (report covering 2010 and 2011 activities), 2015 (2012-2014 activities), 2018 (2016 and 2017 activities), and 2021 (2019 and 2020 activities). In 2014, ongoing and additional yellow perch-related work and research activities were incorporated within the responsibilities of the existing Lake Michigan Technical Committee (LMTC) Inshore Fish Working Group. The current (2021) report marks the 21st report and 27th year of reporting by this group.

Adult Relative Abundance (Figures 1 – 7; data assembled were collected with either gill nets or bottom trawls.)

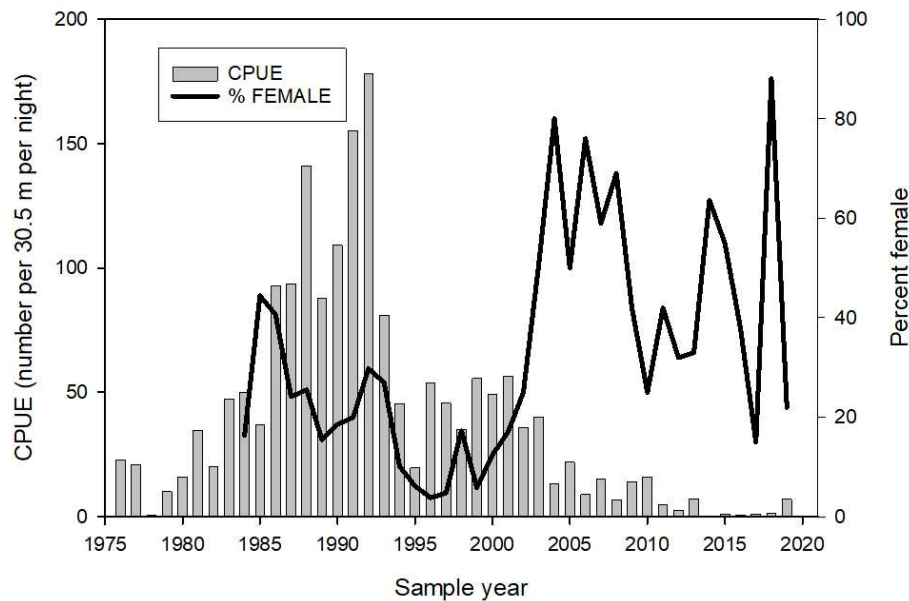


Figure 1. Adult yellow perch relative abundance and percent female in the Illinois waters of Lake Michigan. (ILDNR; data from spring gill net assessment, Chicago and Lake Bluff, IL, 1976 – 2019. Adult Yellow Perch data were not collected in 2020 due to COVID-19 restrictions.)

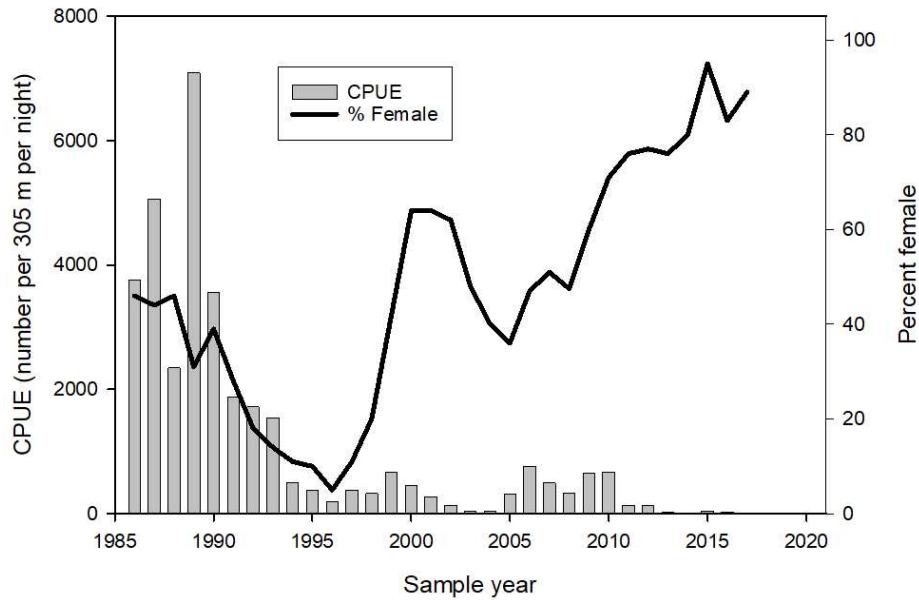


Figure 2. Adult yellow perch relative abundance and percent female in the Wisconsin waters of Lake Michigan. (WDNR; data from winter gill net assessment, Milwaukee, WI, 1986 – 2020. Percent female calculation ends in 2018 due to insufficient sample size.)

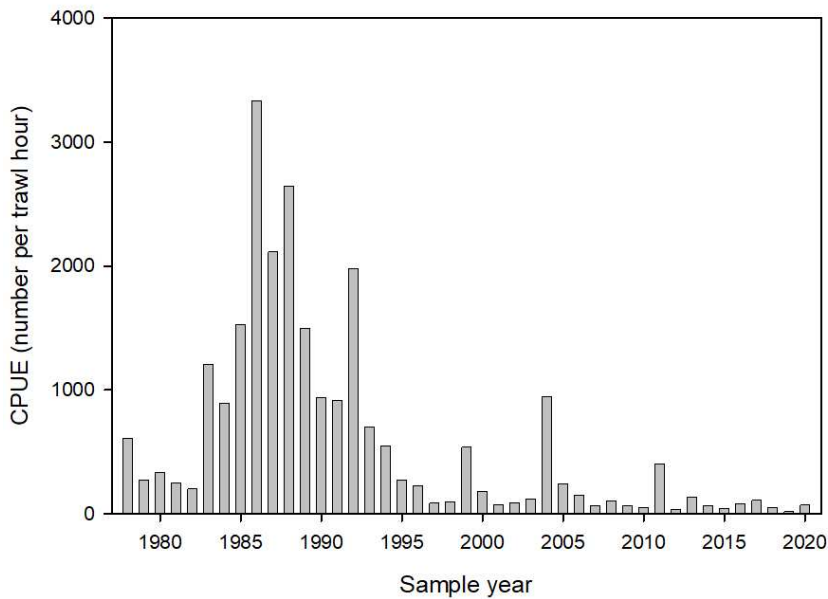


Figure 3. Adult yellow perch relative abundance in the Wisconsin waters of Green Bay. (WDNR; data from summer trawl assessment, Green Bay, WI, 1978 – 2020.)

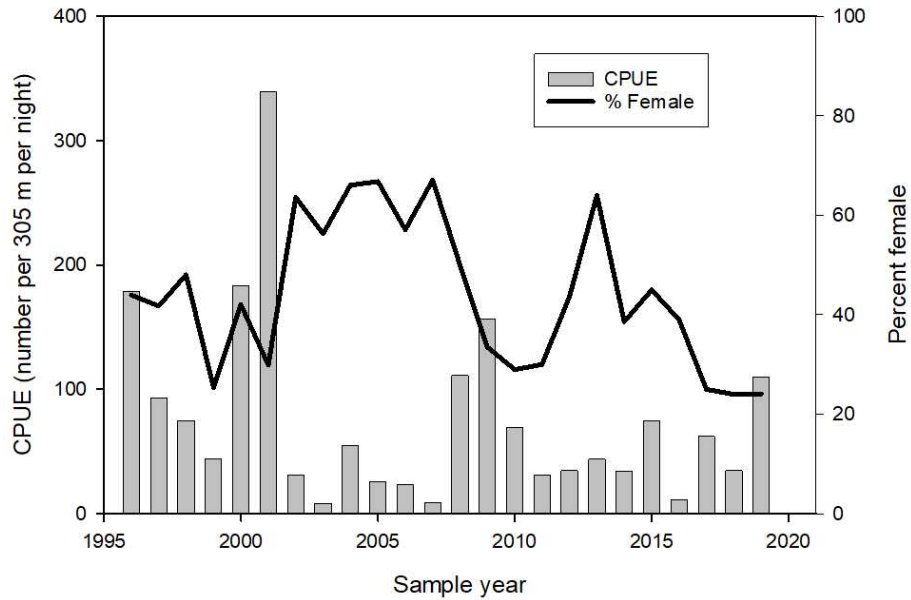


Figure 4. Adult yellow perch gill net catch-per-unit-effort and percent female in the catch at four southern Lake Michigan ports (Grand Haven, Saugatuck, South Haven, and St. Joseph, MI). (MDNR; data from April-June, 1996 – 2019. Adult Yellow Perch data were not collected in 2020 due to COVID-19 restrictions.)

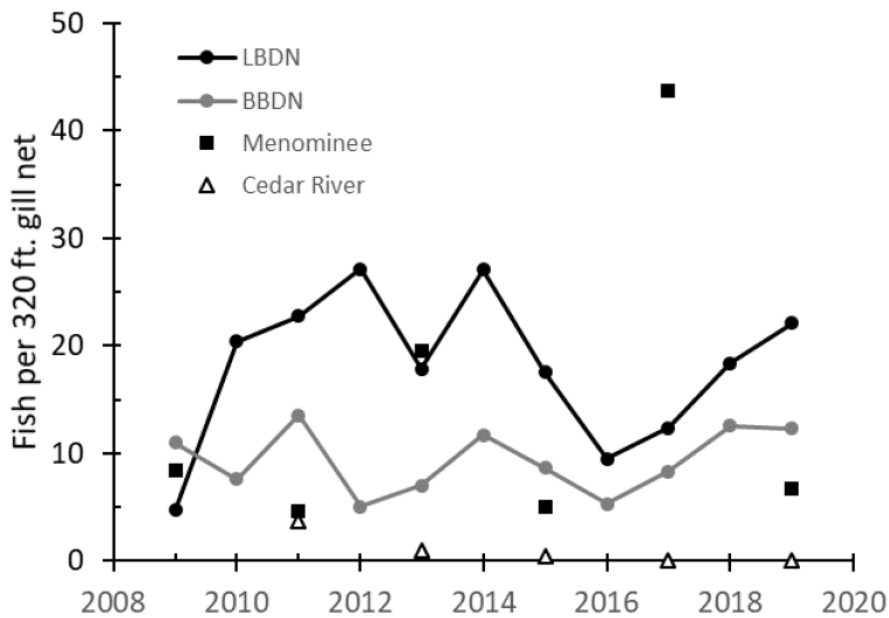


Figure 5. Adult yellow perch gill net catch-per-unit-effort from Bays de Noc, Lake Michigan (MDNR; data from August-September, 2009 – 2019.)

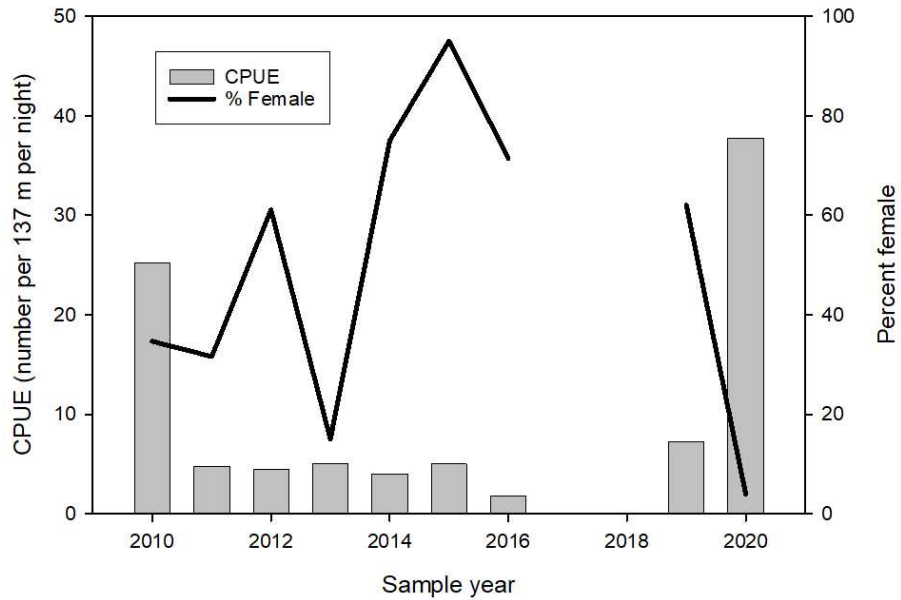


Figure 6. Adult yellow perch gill net catch-per-unit-effort and percent female in the catch from Indiana waters of Lake Michigan (INDNR; data from May, 2010 – 2020.)

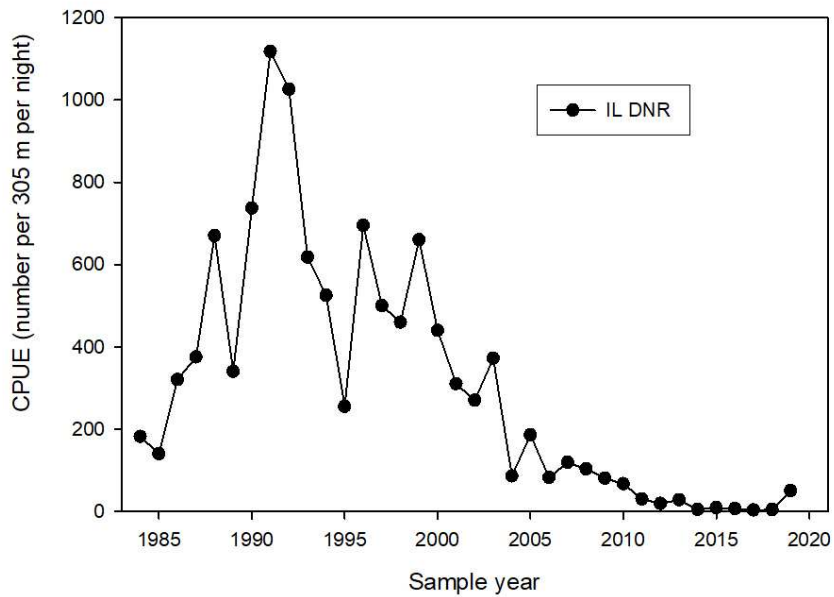


Figure 7. Yellow perch CPE (number of fish per 305 m) in graded mesh gill net consisting of equal length panels of 51-mm, 64-mm, and 76-mm stretched mesh, 1984-2019. (Data from ILDNR.)

Population Age Structure (Figures 8 – 10; ages were determined by evaluating otoliths or spines. See figures for agency-specific information.)

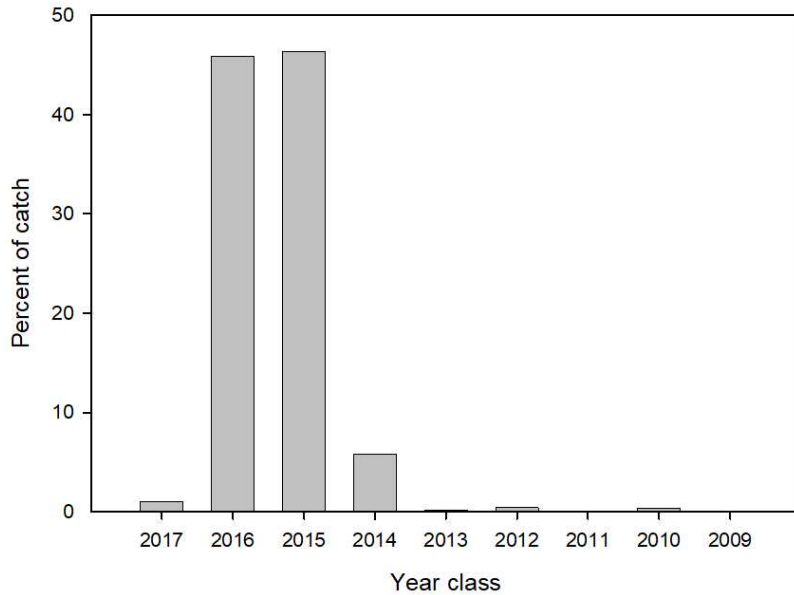


Figure 8. Yellow perch age structure from the Illinois waters of Lake Michigan. (ILDNR; data from spring gill net assessment, Chicago and Lake Bluff, IL, 2019. Ages determined using otoliths.)

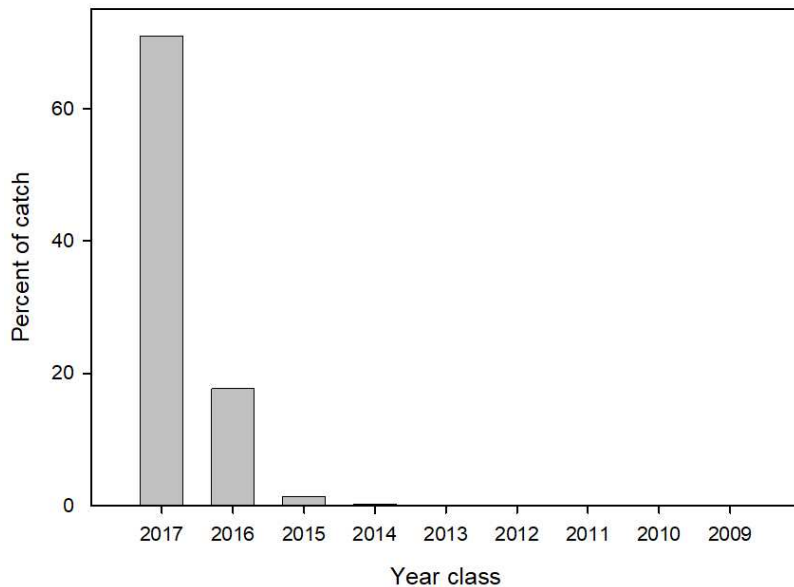


Figure 9. Yellow perch age structure from the Wisconsin waters of Green Bay. (WDNR; data from commercial harvest – all gear types, Green Bay, WI – 2019. Ages determined using spines.)

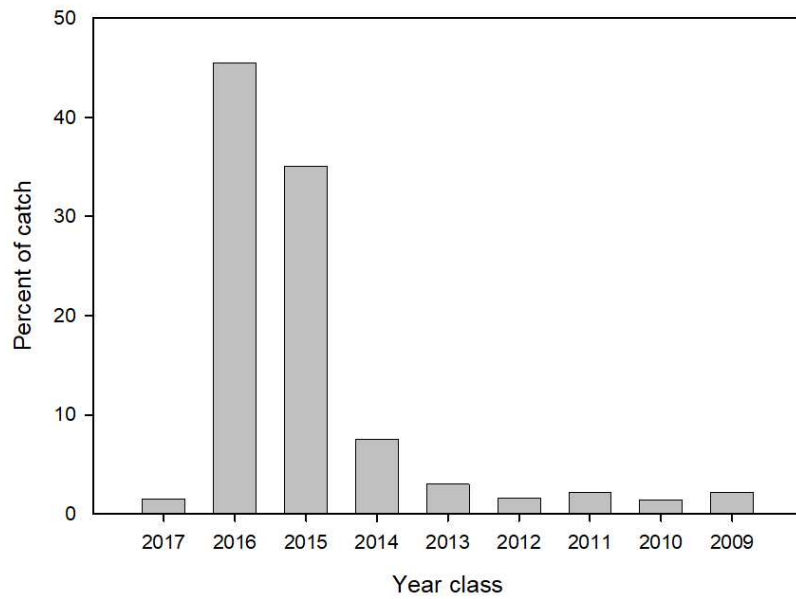


Figure 10. Yellow perch age structure from the Michigan waters of Lake Michigan. (MDNR data from spring gill net assessment, combined three southern Lake Michigan ports – Grand Haven, Saugatuck, and South Haven, MI – 2019. Age determined using spines.)

Recruitment (Figures 11 – 18; data assembled were collected with bottom trawls, seines, or micro-mesh gill nets.)

Having a reliable indicator of future inputs to an adult population is vital to understanding the dynamics of the fish population and helping predict changes in abundance. An early indicator of recruitment is most beneficial to managers. In Lake Michigan, indicators of yellow perch recruitment have traditionally been collected using bottom trawls or beach seines. In addition, the YPTG agreed to implement a lakewide summer “micromesh” gill net assessment (beginning in summer 2007) to standardize assessment of young-of-year yellow perch production, especially in areas where standard trawl and seine surveys cannot be implemented.

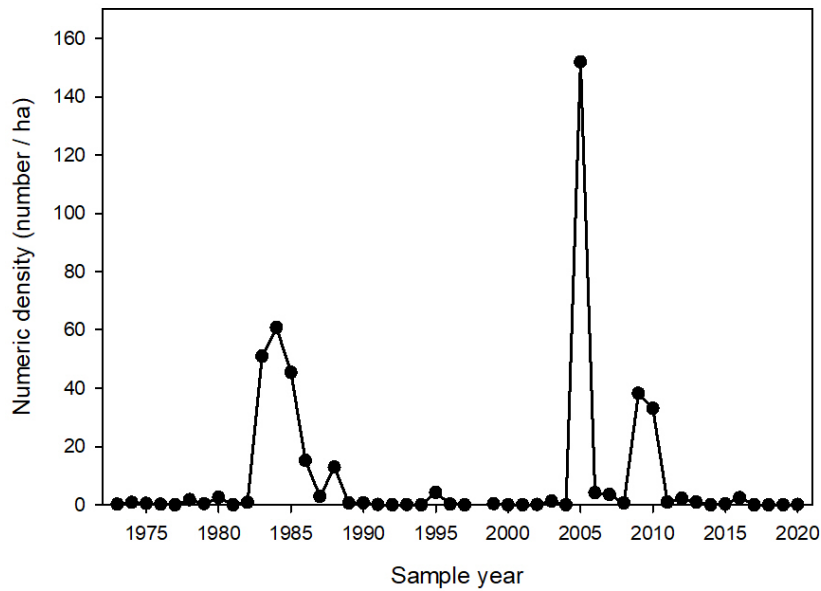


Figure 11. Density of age-0 yellow perch, lakewide. (USGS; data from fall bottom trawl assessments, 1973 – 2020.)

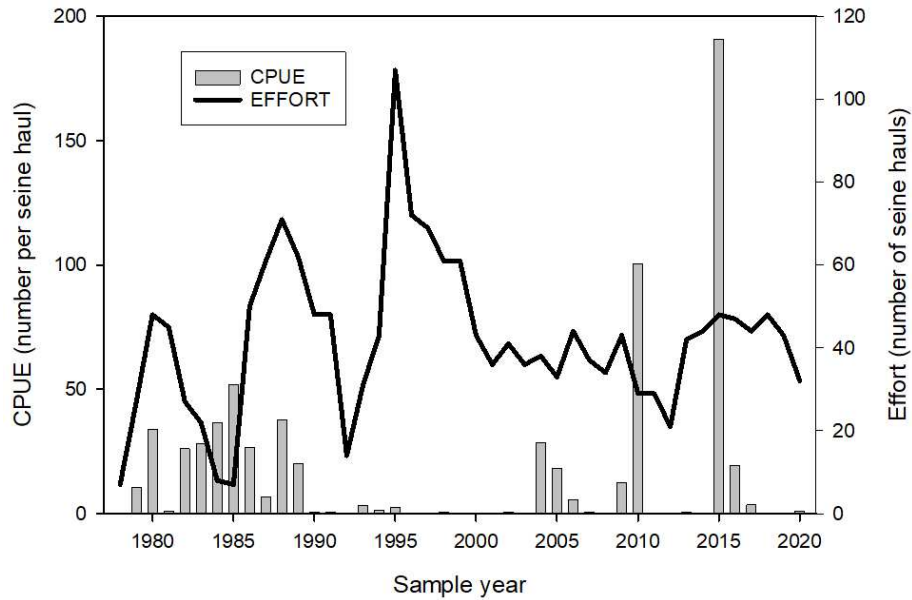


Figure 12. CPUE of YOY yellow perch from the Illinois waters of Lake Michigan. (ILDNR; data from summer beach seining along the Illinois shoreline, 1978 – 2020.)

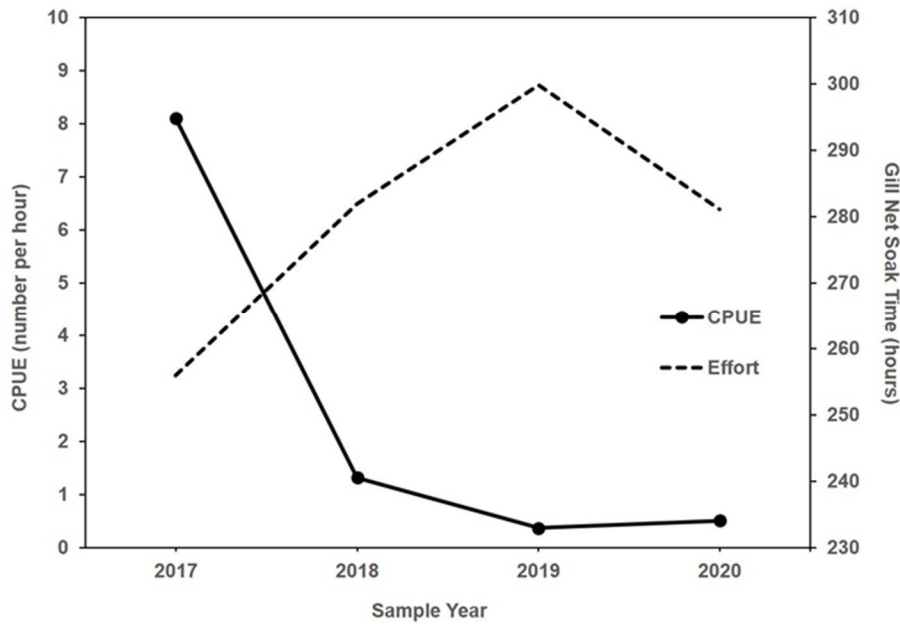


Figure 13. CPUE of yellow perch in micromesh gill nets from the Illinois waters of Lake Michigan. (INHS; data from Zion (DR), south of Waukegan Harbor (T4), near Highland Park (M2), and outside Jackson Harbor (S2), 2017 – 2020.)

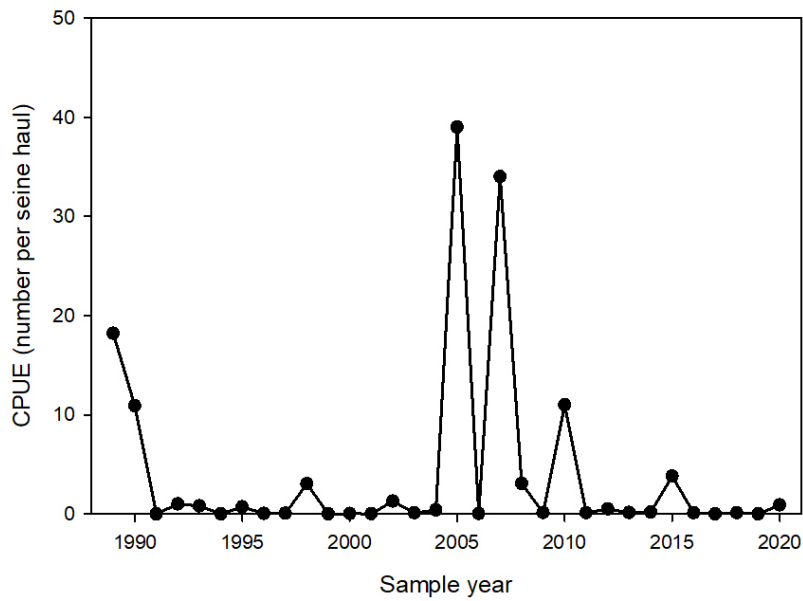


Figure 14. CPUE of age-0 yellow perch from the Wisconsin waters of Lake Michigan. (WDNR; data from summer beach seine assessments along the southern Wisconsin shoreline, 1989 – 2020.)

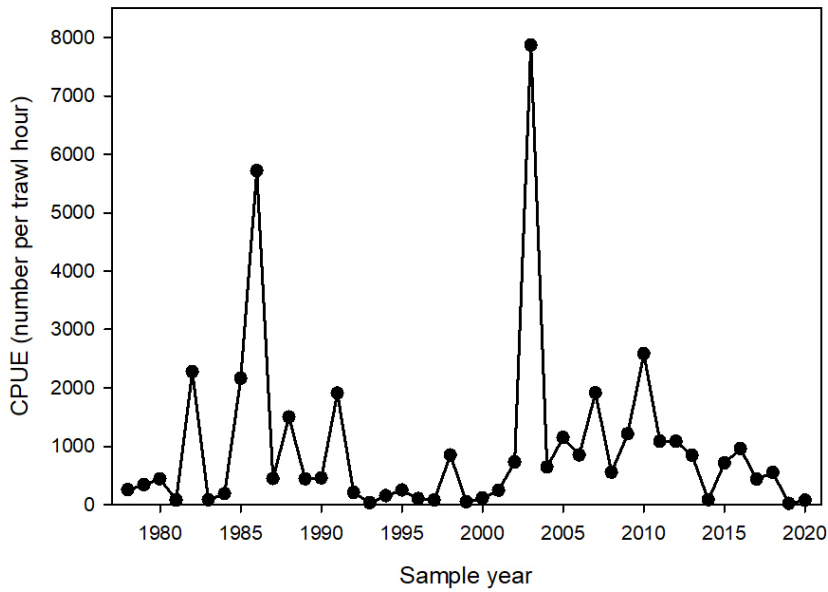


Figure 15. CPUE of age-0 yellow perch from the Wisconsin waters of Green Bay. (WDNR; data from summer trawl assessments, 1978 – 2020.)

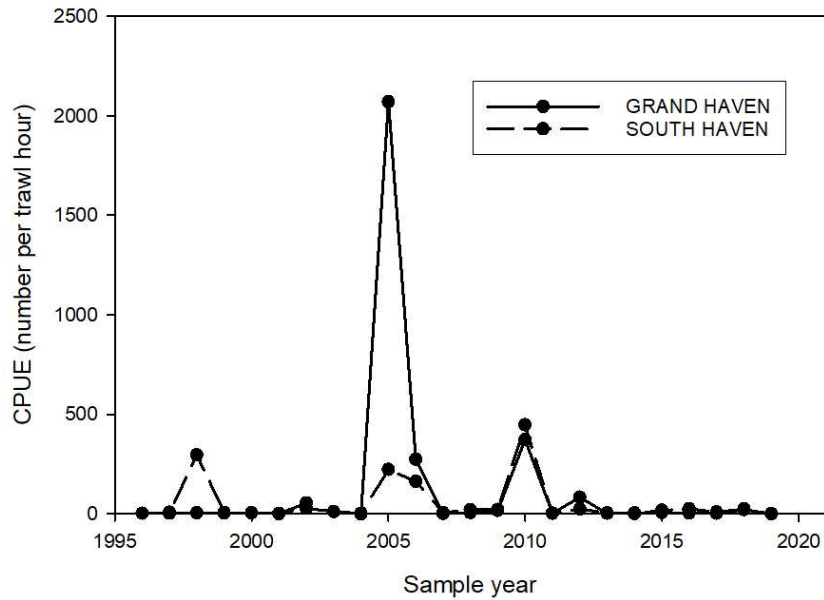


Figure 16. CPUE of age-0 yellow perch in the Michigan waters of Lake Michigan. (MDNR; late summer bottom trawl data from Grand Haven and South Haven, 1996 - 2019. Grand Haven was not sampled in 2003, and South Haven was not sampled in 2019. Yellow Perch recruitment data were not collected in 2020 due to COVID-19 restrictions.)

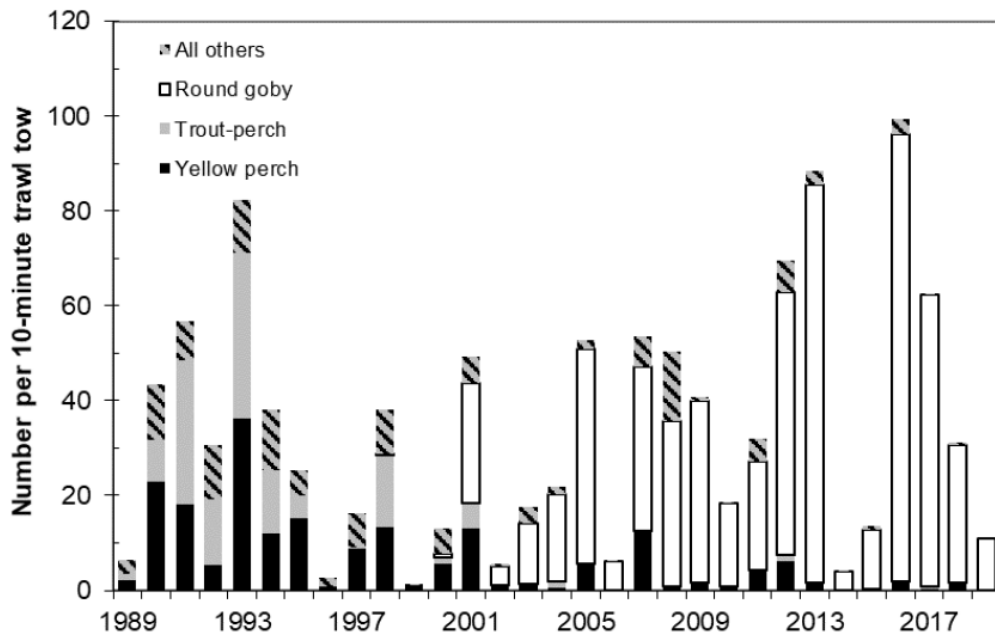


Figure 17. CPUE of age-0 yellow perch from Bays de Noc, Lake Michigan. (MDNR; data from late summer trawl assessments, 1989 – 2019.)

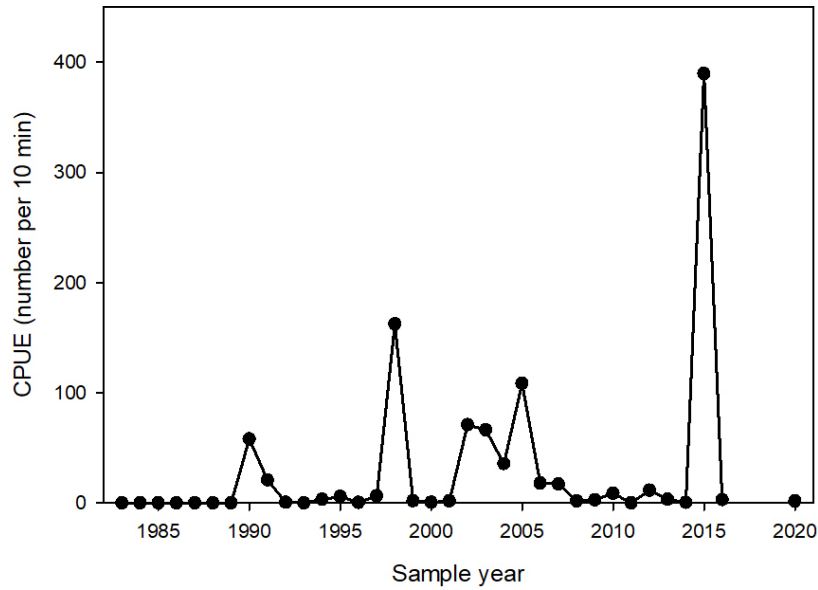


Figure 18. CPUE (number per 10-minute trawl) of age-0 yellow perch from Indiana waters of Lake Michigan. (INDNR; data from August bottom trawl assessments, 1983 – 2020.)

2021 Yellow Perch Regulations and Harvest Trends

Sportfishing regulations:

- Illinois
 - May 1 through June 15; closed to sportfishing for yellow perch
 - Daily bag limit 15 fish
- Indiana
 - No closed season for yellow perch
 - Daily bag limit 15 fish
- Michigan
 - No closed season for yellow perch
 - Daily bag limit; 25 fish
- Wisconsin (Lake Michigan)
 - May 1 through June 15; closed to sportfishing for yellow perch
 - Daily bag limit 5 fish
- Wisconsin (Green Bay)
 - March 16 through May 19; closed to sportfishing for yellow perch
 - Daily bag limit 15 fish

Commercial regulations:

- Illinois perch fishery remained closed
- Indiana perch fishery remained closed
- Michigan does not allow a commercial harvest (outside of 1836 Treaty waters)
- Wisconsin perch fishery remained closed (outside of Green Bay, where quota for 2021 is 100,000 pounds and a seasonal closure is in place from March 16 to May 19)

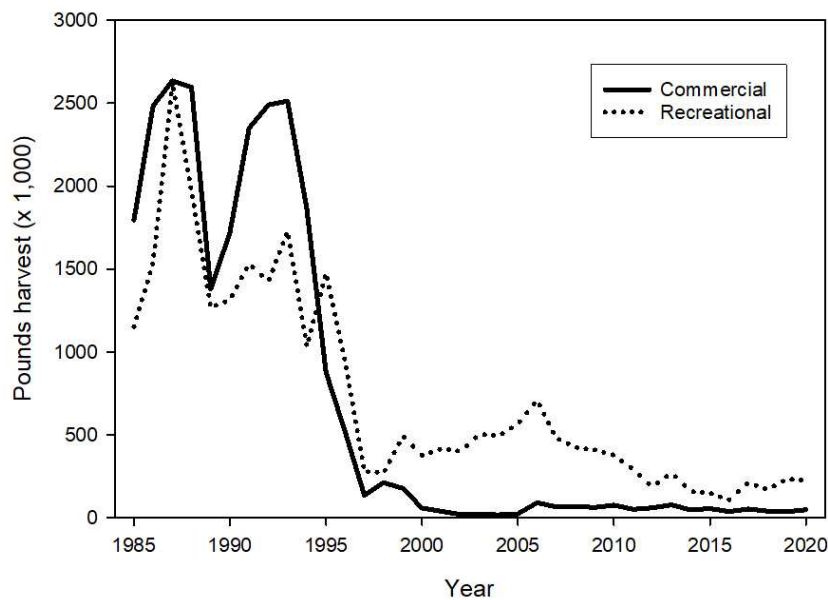


Figure 19. Lake Michigan harvest (lakewide) of yellow perch by commercial and recreational fisheries, 1985-2020. (All jurisdictions; data from Lake Michigan Committee lakewide extractions database, R. Redman.)

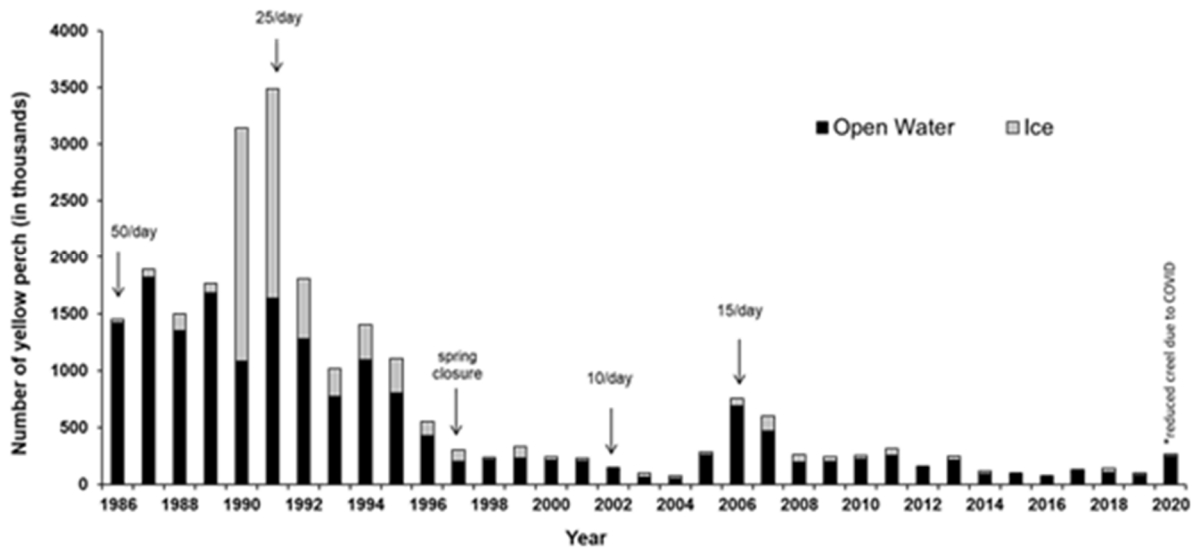


Figure 20. Recreational harvest of yellow perch by open water and ice fisheries on Green Bay, Lake Michigan, 1986-2020 (WDNR; NOTE – The 2020 creel survey missed part of the season due to COVID-19 restrictions, but harvest of yellow perch was up from recent years for the months that were surveyed.)

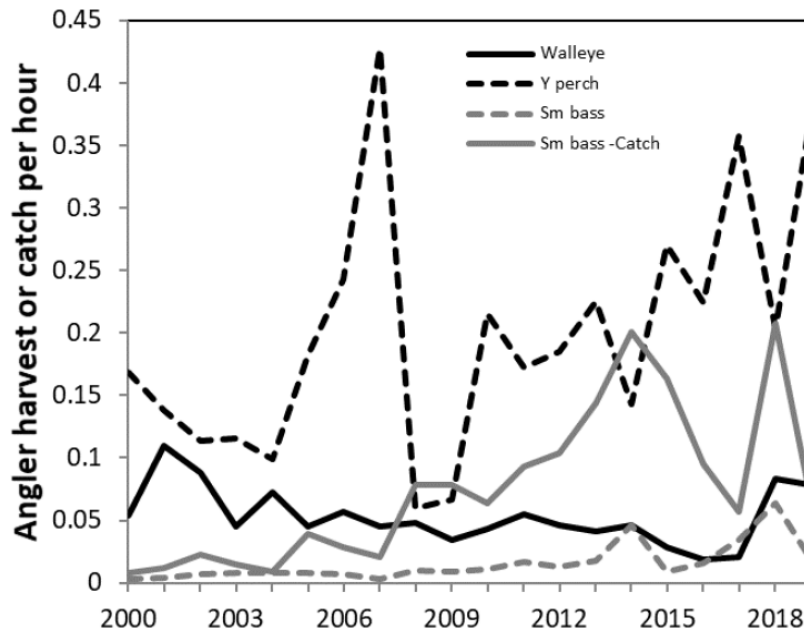


Figure 21. Recreational harvest rate (fish per hour) of yellow perch in Michigan waters of northern Green Bay / Bays de Noc, 2000-2019 (MDNR)

Meetings and Other Yellow Perch-Related Happenings in the Lake Michigan Basin, 2019-2020

- Outside of the regular summer and winter LMTC meetings (and coordination of this report), no additional meetings of the LMTC Inshore Fish Working Group were convened during 2019-2020.

Appendix 1. Lake Michigan statistical districts.

