Lake Michigan Committee
Duluth, Minnesota
March 21-22, 2002

Status of Yellow Perch in Lake Michigan
and
Yellow Perch Task Group Progress Report

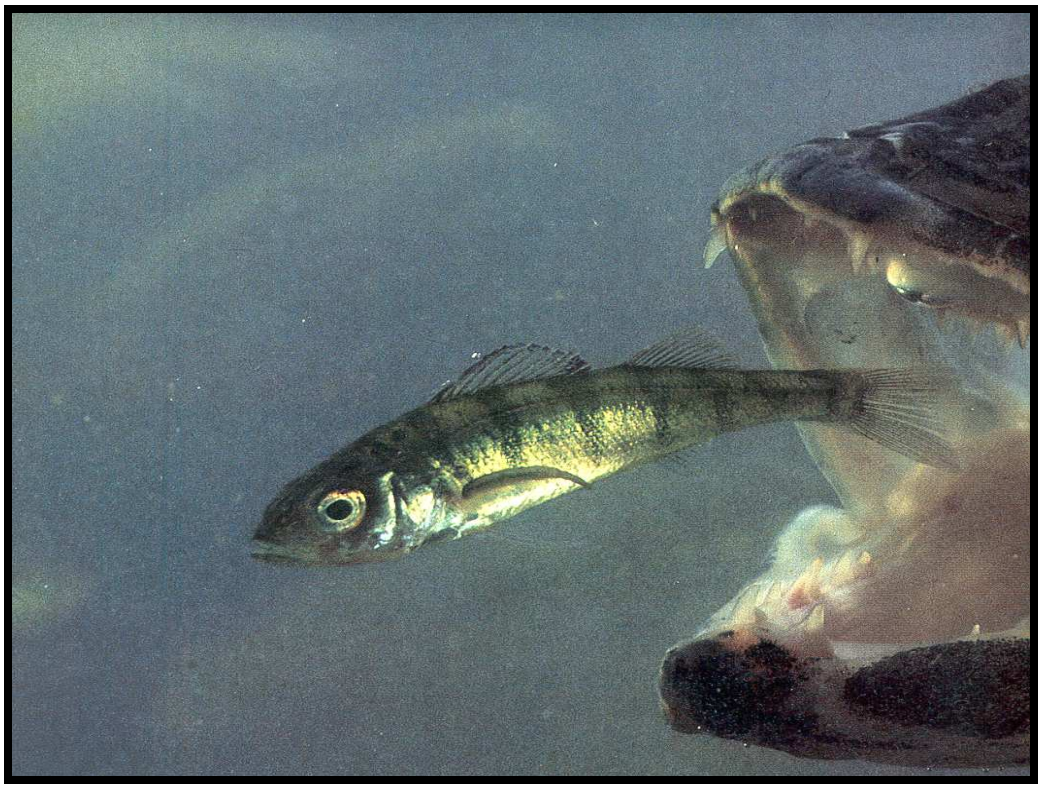

Photo courtesy of The Hunting and Fishing Library

REPORT OF THE LAKE MICHIGAN TECHNICAL COMMITTEE

Prepared by:
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This report was prepared from information provided by the following Lake Michigan Yellow Perch Task Group members and contributors. 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 the contributor of that information.

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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) perch. The second section examines the most recent age structure data available for various parts of the lake. The final section consists of estimates (or indices) of juvenile yellow perch recruitment; most of this data comes from collections of age-0 perch.

Coordinated regulation of yellow perch harvest has been an important part of perch management in recent years. Current commercial and recreational regulations for all Lake Michigan jurisdictions are included as a final section of this status report.

Adult Relative Abundance

The data assembled was collected with either gill nets or bottom trawls (Figures 1 - 5). Generally, this information shows a long-term decline in adult yellow perch abundance. The longer data series show peaks in the mid-1980s to early 1990s, followed by significant declines through the mid-1990s (Figures 2 - 5). Adult perch numbers have leveled out or increased slightly in some jurisdictions in recent years (e.g., Figures 1 and 3). Fluctuations in adult abundance have been accompanied by changes in the composition of the catch by sex; this is also apparent in the longer data series (Figures 2 - 4).

Population Age Structure

Adult population age structure has been measured annually for most areas of the lake. While there is some minor variability in reported adult age structure, all collections documented that fish from a single dominant year class (1998) account for the majority of the adult population. This adult age structure information correlates well with early recruitment indices based on trawl and seine assessments (see below).

Recruitment

Having a reliable indicator of future inputs to an adult population is vital to understanding the dynamics of the fish population and helping predict abundance changes. An early indicator of recruitment is most beneficial to managers. In Lake Michigan, indicators of recruitment vary from collections of age-0 yellow perch to adult age group abundance; the majority of this information is collected using bottom trawls or beach seines. Early estimates of recruitment (Figures 12 - 19) vary somewhat across the basin, but most collections indicate that the strongest recent year classes occurred in 1995 and 1998. Recruitment from these years is still relatively low, based on longer data series from Indiana (Figure 14), Illinois (Figures 15-16), and Wisconsin (Figures 17-18).

Adult Relative Abundance

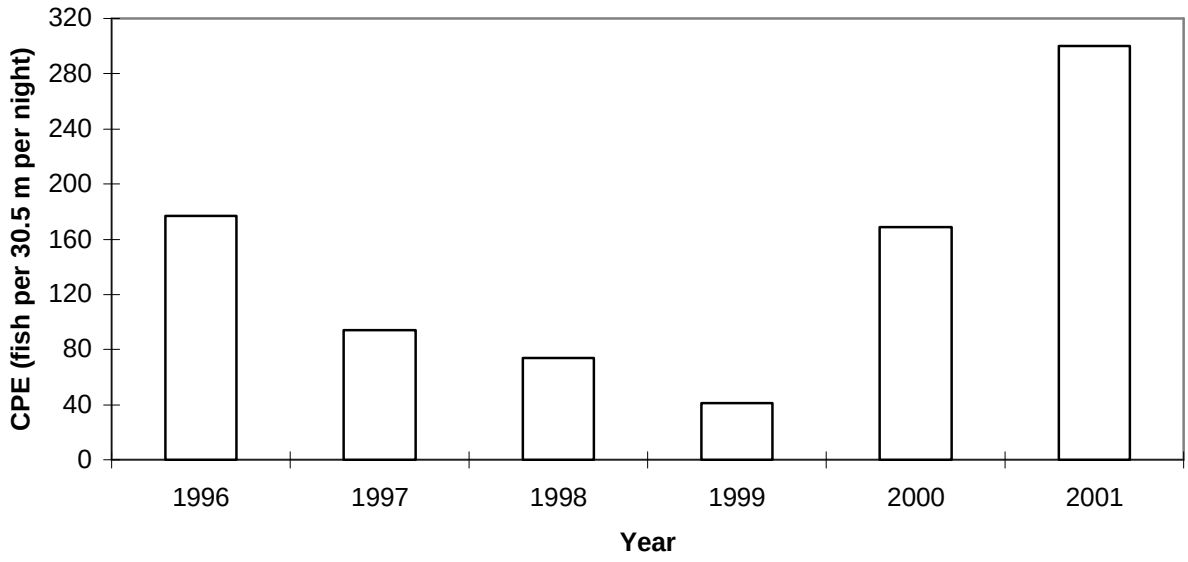

Figure 1. Adult yellow perch gill net catch-per-unit-effort and percent of females in the catch at four southern Lake Michigan ports (Grand Haven, Saugatuck, South Haven, and St. Joseph, MI). (MDNR; data from April-June, 1996 – 2001).

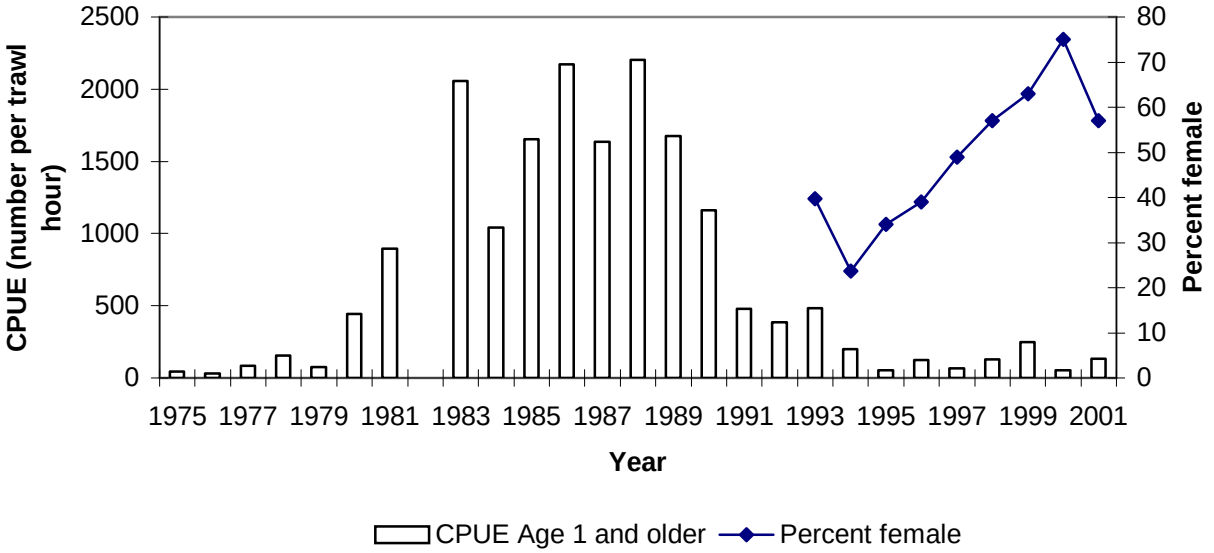

Figure 2. Adult yellow perch trawl CPUE and percent female in Indiana waters of Lake Michigan. (Ball State University; data from summer trawl survey at sites M and K in 1975 – 2001).

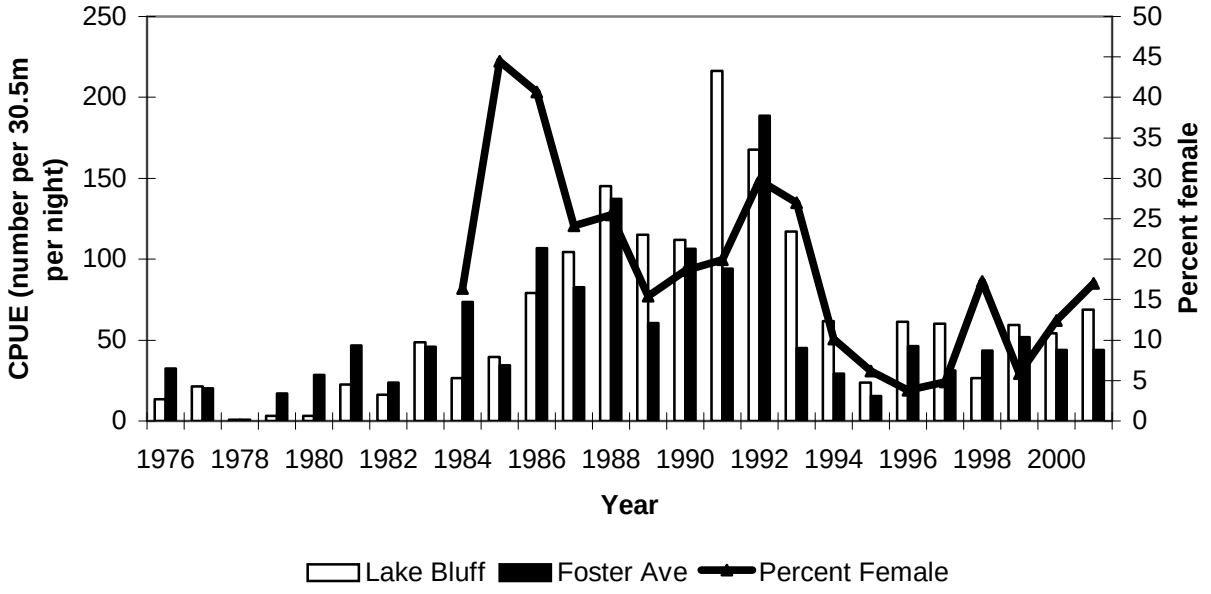

Figure 3. Adult yellow perch relative abundance and percent female in the Illinois waters of Lake Michigan. (ILDNR; data from spring gill net assessment, Chicago and Lake Bluff, IL, 1976 – 2001).

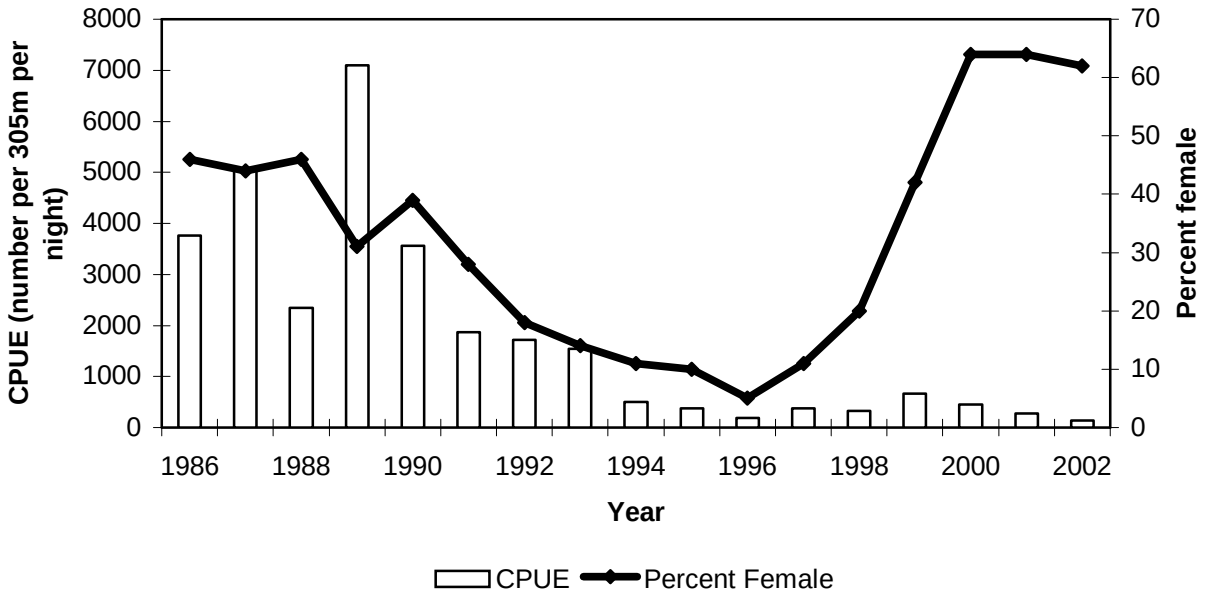

Figure 4. Adult yellow perch relative abundance and percent female in the Wisconsin waters of Lake Michigan. (WDNR; data from winter gill net assessment, Milwaukee, WI, 1986 – 2002).

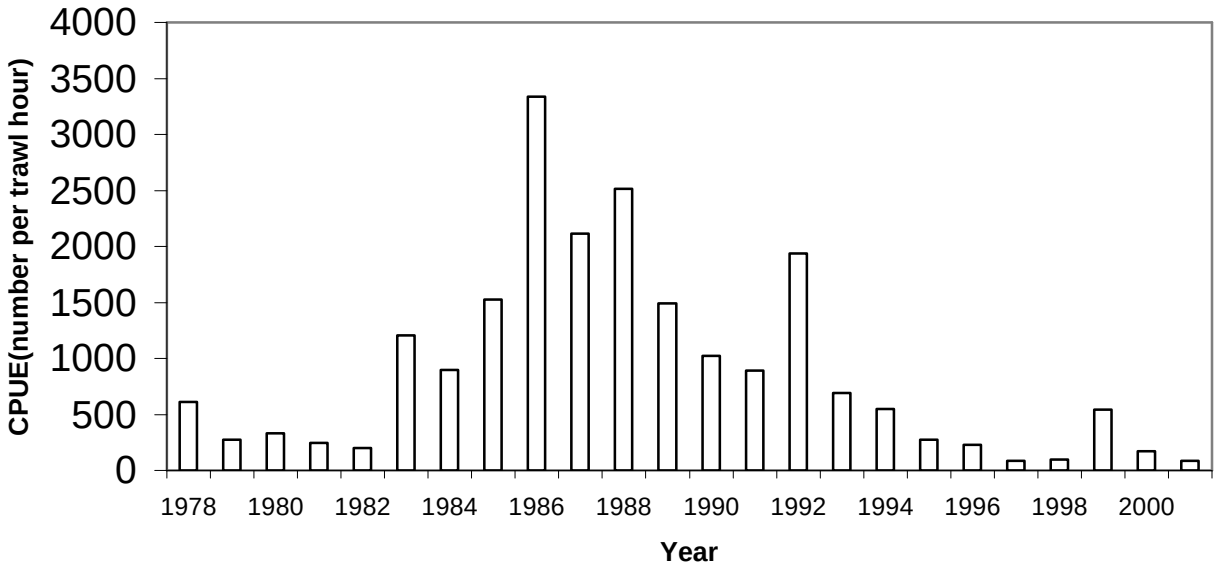

Figure 5. Relative abundance of age-1 and older yellow perch from the Southern Green Bay. (WDNR; data is the weighted area average from fall bottom trawls, 1978 – 2001).

Population Age Structure

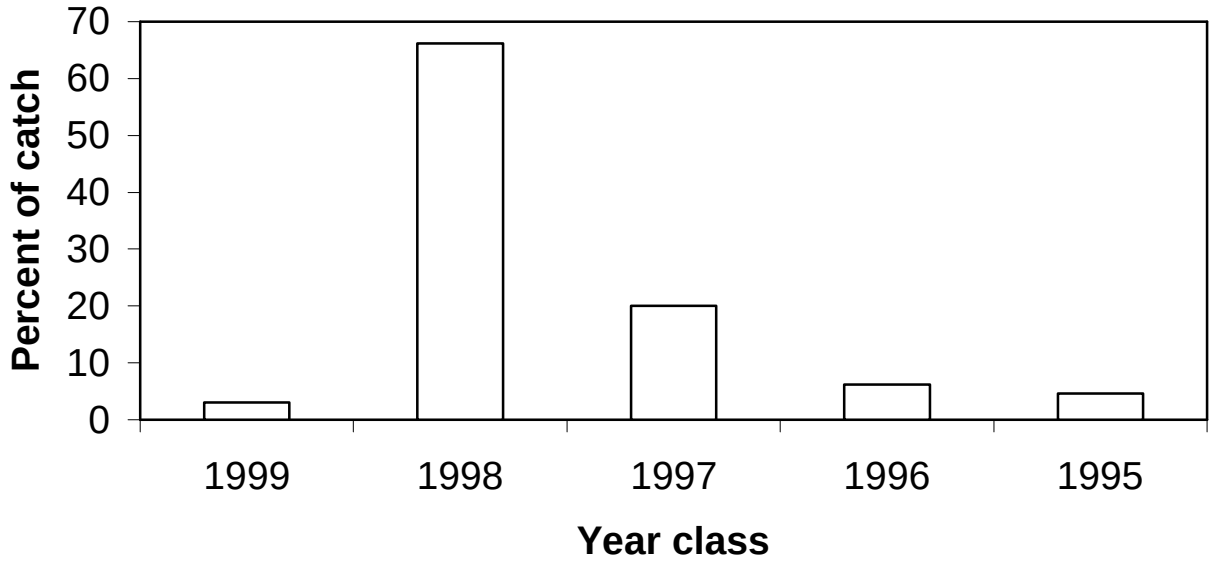

Figure 6. Yellow perch age structure from northeastern Lake Michigan. (Little Traverse Bay Band of Odawa Indians; data from gill net surveys, 2001. Ages determined using otoliths).

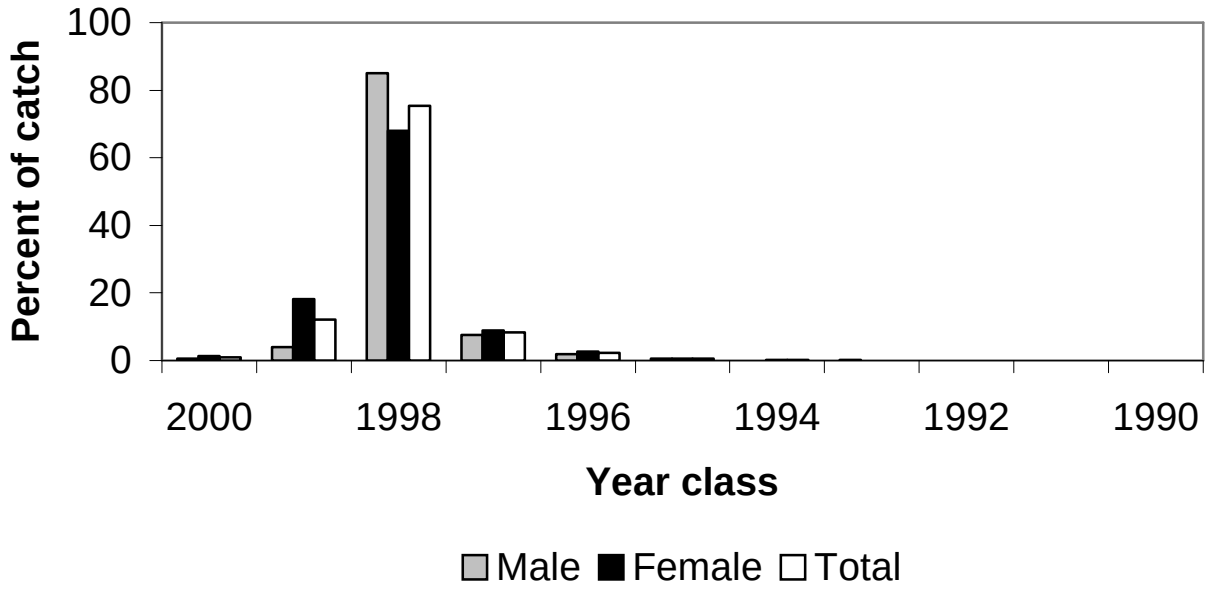

Figure 7. Yellow perch age structure from the Indiana waters of Lake Michigan. (Ball State University; data from summer trawl surveys at sites M and K, Indiana, 2001. Ages determined using opercules).

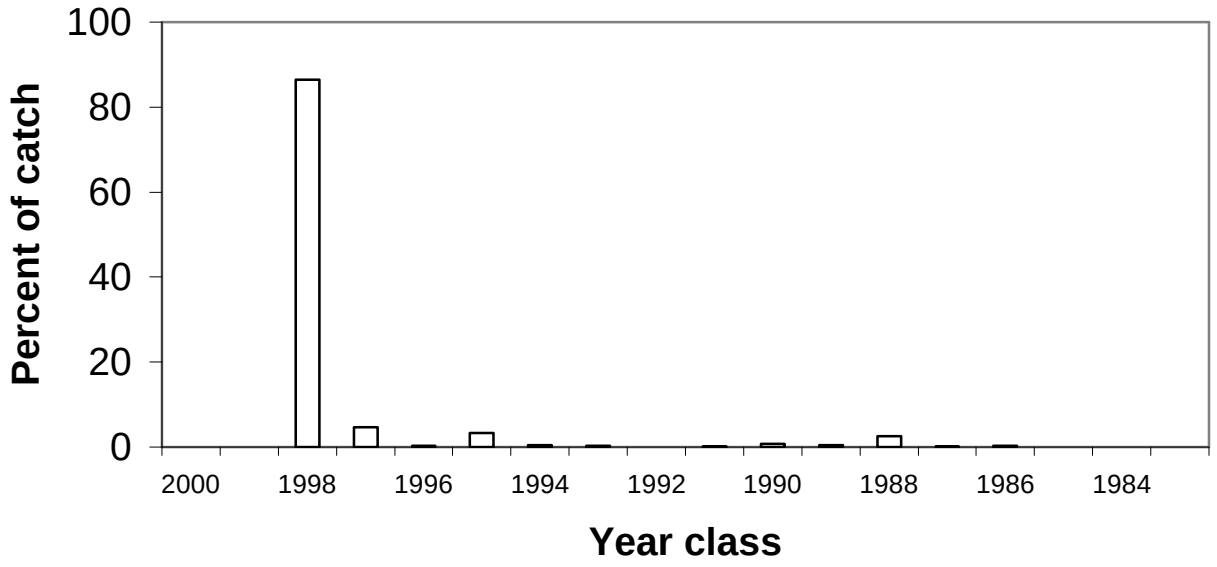

Figure 8. Yellow perch age structure from the Illinois waters of Lake Michigan. (ILDNR; data from spring gill net assessment, Chicago and Lake Bluff, IL, 2001. Ages determined using otoliths).

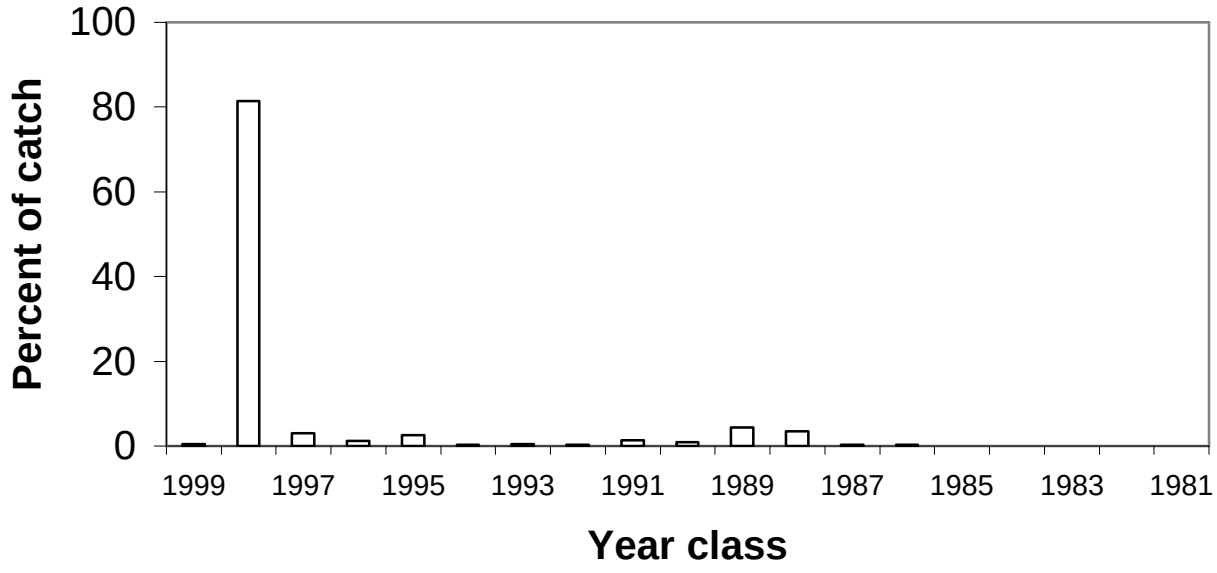

Figure 9. Yellow perch age structure from the Illinois waters of Lake Michigan. (INHS; data from spring fyke net sampling, Waukegan and Lake Bluff, IL, 2001. Ages determined using otoliths).

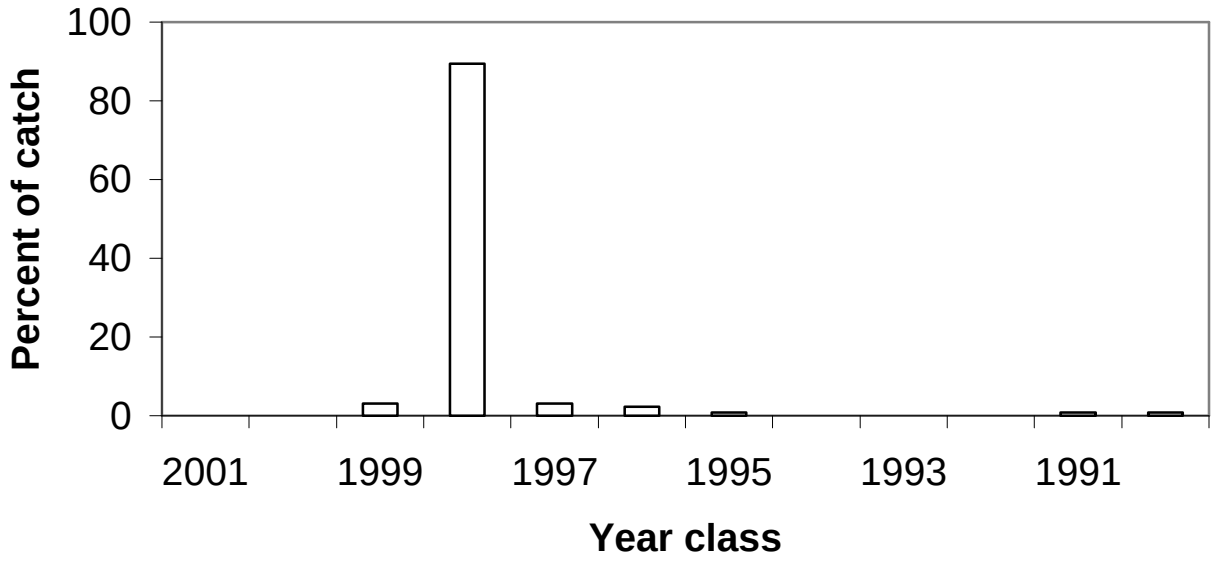

Figure 10. Yellow perch age structure from the Wisconsin waters of Lake Michigan. (WDNR; data from winter gill net assessment, Milwaukee, WI, 2002. Ages determined using spines).

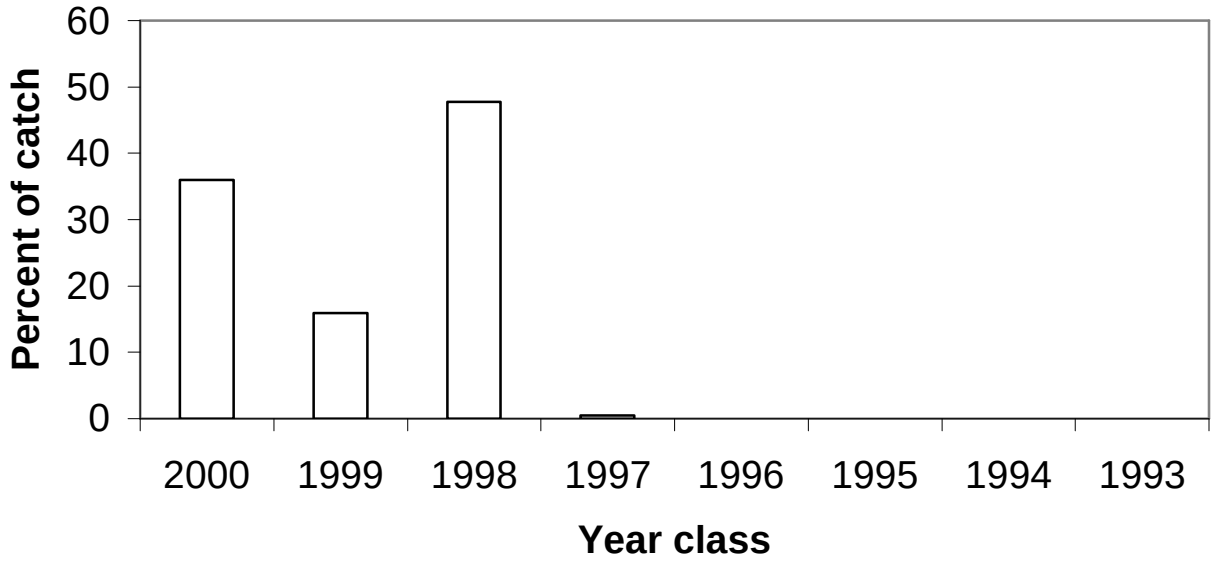

Figure 11. Yellow perch age structure from the Wisconsin waters of Green Bay. (WDNR; data from fall trawl catches in Southern Green Bay, 2001. Ages determined using spines).

Recruitment

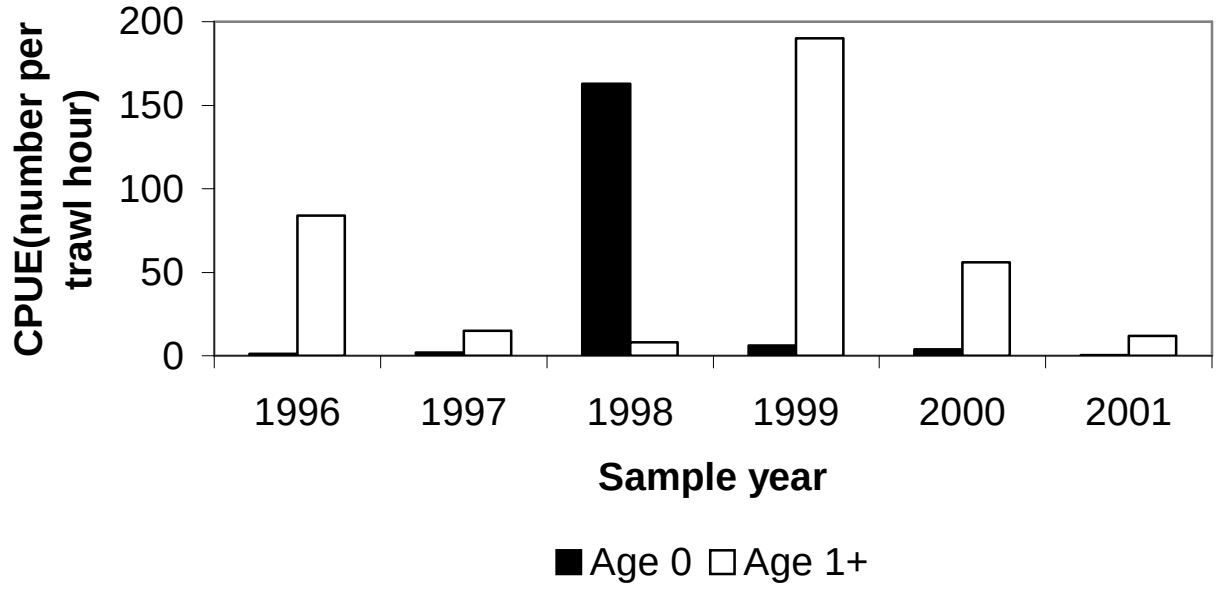

Figure 12. CPUE of age-0 and age-1 yellow perch in Michigan waters of Lake Michigan. (MDNR; data from summer trawl assessment at Grand Haven, Saugatuck, South Haven, and St. Joseph, MI, 1996 – 2001).

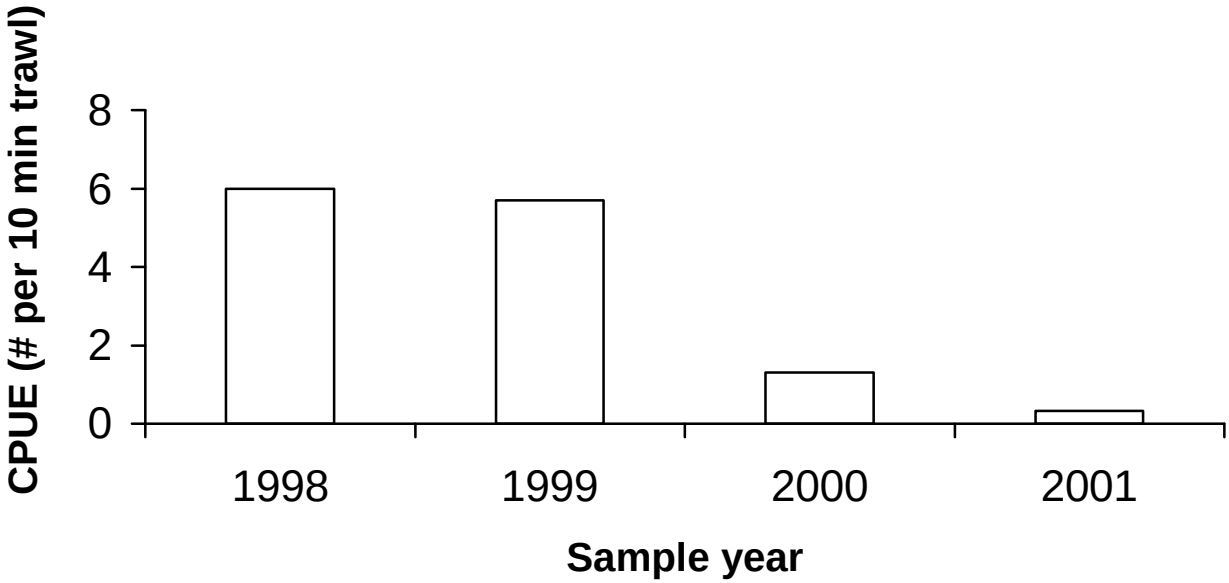

Figure 13. CPUE of age-0 and age-1 yellow perch in the Michigan waters of Lake Michigan. (UM-CILER; data from bottom trawl surveys at Muskegon and St. Joseph, MI, 1998 – 2001).

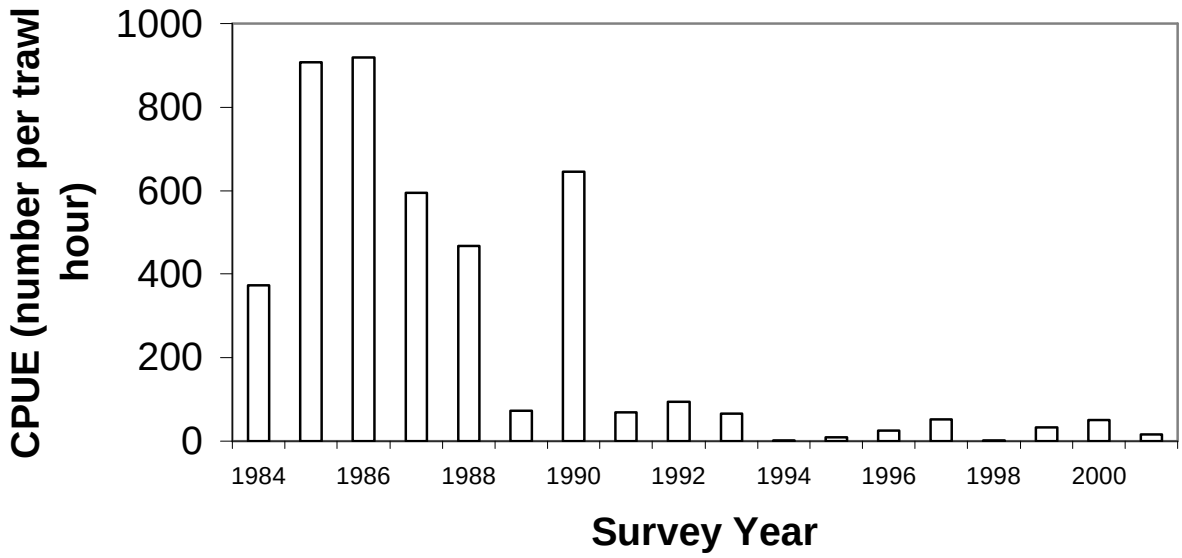

Figure 14. CPUE of age-2 yellow perch from the Indiana waters of Lake Michigan. (Ball State University; data from summer bottom trawl assessments, 1984 – 2001).

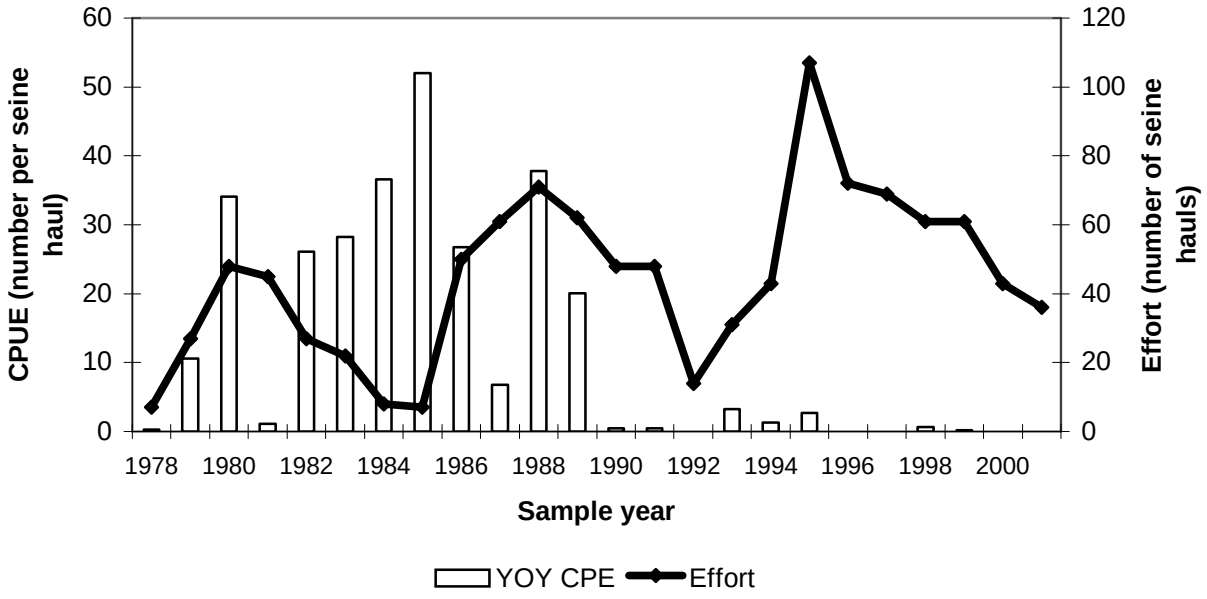

Figure 15. CPUE of YOY yellow perch from the Illinois waters of Lake Michigan. (ILDNR; data from summer beach seining along the Illinois shoreline, 1978 – 2001).

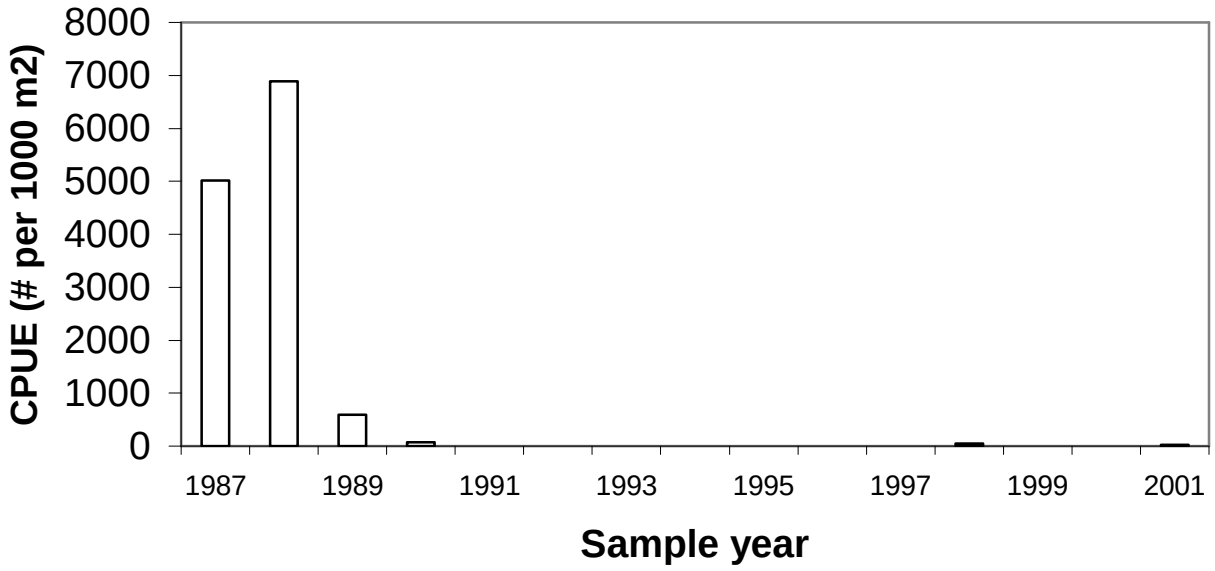

Figure 16. CPUE of age-0 yellow perch in the Illinois waters of Lake Michigan. (INHS; data from summer and fall bottom trawls off Waukegan, IL, 1987 – 2001).

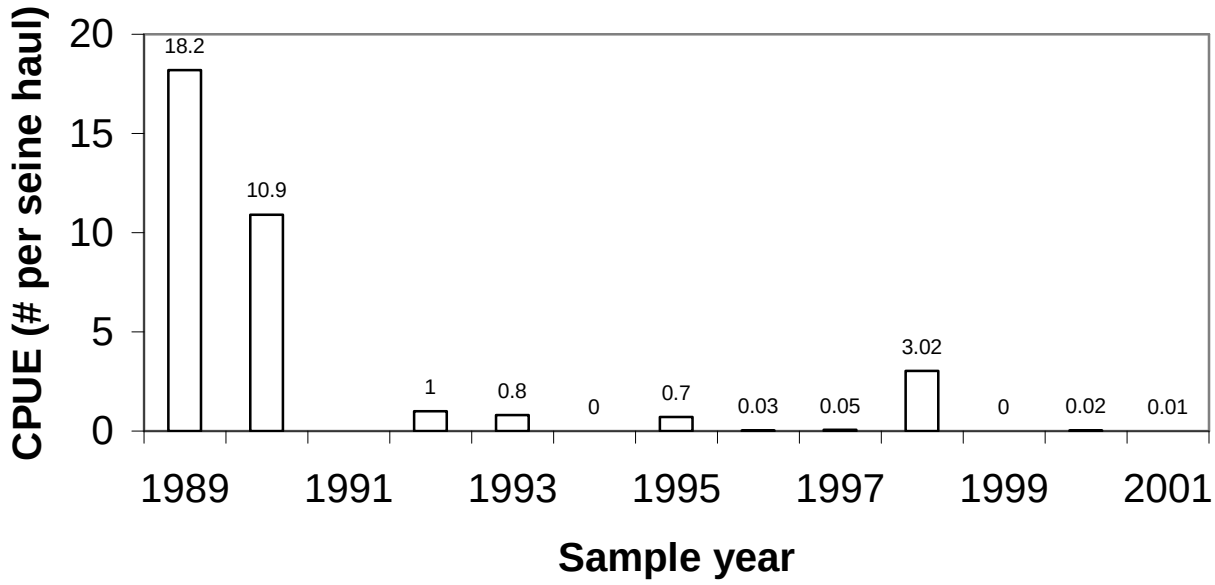

Figure 17. CPUE of age-0 yellow perch from the Wisconsin waters of Lake Michigan. (WDNR; data from summer beach seine assessments along the southern Wisconsin shoreline, 1989 – 2001).

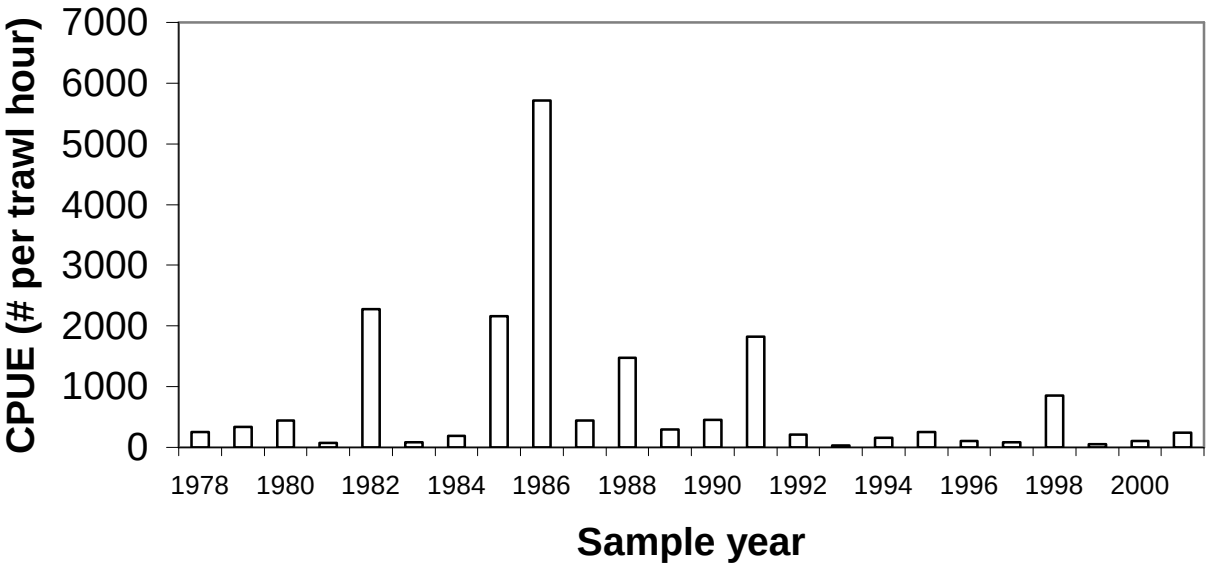

Figure 18. CPUE of age-0 yellow perch from the Wisconsin waters of Green Bay. (WDNR; weighted area average of fall bottom trawl surveys in Southern Green Bay, 1978 – 2001).

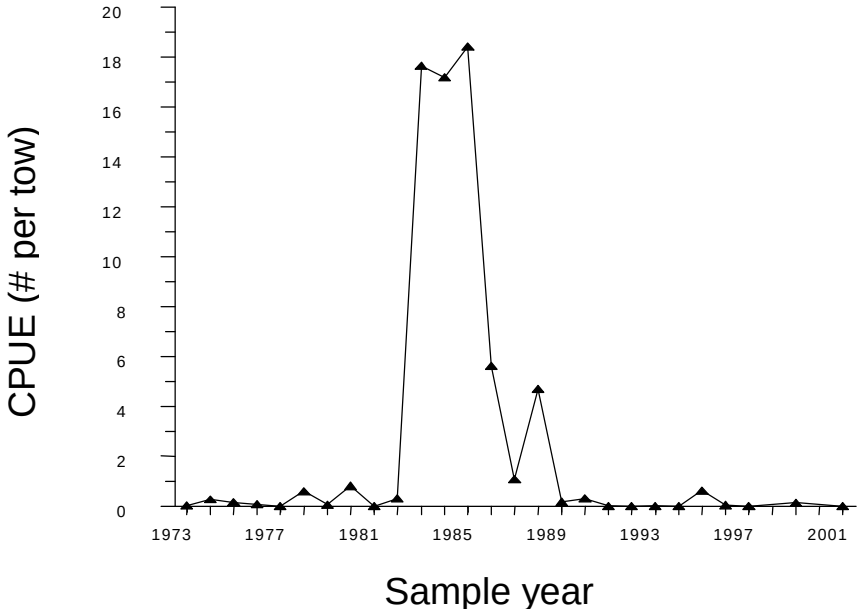

Figure 19. CPUE of age-0 yellow perch from Lake Michigan. (USGS-GLSC; fall bottom trawl surveys at index stations throughout Lake Michigan, 1973 – 2001).

2002 Yellow Perch Harvest Restrictions

Sportfishing regulations:

- Illinois
  - July 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 35 fish (south of the 45th parallel)
- Wisconsin (Lake Michigan)
  - May 1 through June 15; closed to sportfishing for yellow perch (per 2002 emergency rule)
  - Daily bag limit 5 fish
- Wisconsin (Green Bay)
  - March 16 through May 15; closed to sportfishing for yellow perch
  - Daily bag limit 10 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 is 20,000 pounds)

Multi-agency Yellow Perch Research Initiative

2001 marked the fifth year of the lakewide research initiative implemented by the Lake Michigan Management Agencies in 1997. The goal of this research effort is to identify likely causes for the lack of perch recruitment observed in Lake Michigan in the early 1990's. A draft 5-year progress report, describing this work, has been completed ("Yellow Perch Research and Management in Lake Michigan: Evaluating Progress in a Cooperative Effort, 1997-2001"). Draft copies are available from the Lake Michigan Yellow Perch Task Group chairperson.