

## Yellow Perch Predation on *Bythotrephes cederstroemi* in Little Bay de Noc and Big Bay de Noc, Lake Michigan, 1988

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Abstract.--Stomach contents were examined from 1,164 yellow perch (*Perca flavescens*) collected from Little Bay de Noc and Big Bay de Noc, Lake Michigan, June through October, 1988. Diet through August consisted of several different taxa considered typical for yellow perch. During September and October, 124 perch (76 to 213 mm total length) contained 1-120 (mean = 16.7) of the exotic cladoceran *Bythotrephes cederstroemi*. Of 39 other fish species examined, only rock bass (*Ambloplites rupestris*) was found to have ingested *Bythotrephes*. Trout-perch (*Percopsis omiscomaycus*) had considerable dietary overlap with yellow perch, but no trout-perch was found to have eaten *B. cederstroemi*. The overall proportion of yellow perch preying on *B. cederstroemi* was higher in Little Bay de Noc (32%) than in Big Bay de Noc (4%). Within individual fall net samples, from 0 to 72% of the yellow perch contained *Bythotrephes*. Yellow perch appeared to prefer *B. cederstroemi* (when available) over other food items that had comprised their diet earlier in the year and continued to be available during the fall. Many age-0 yellow perch were large enough by September to consume *Bythotrephes*, but 1- to 4-year-old fish may have been more efficient in handling the cladoceran. If *B. cederstroemi* become abundant prior to September in subsequent years, age-0 perch may not be of sufficient size to prey on them.

*Bythotrephes cederstroemi* is a predaceous cladoceran which recently invaded and spread throughout all of the Great Lakes. Previously restricted to a northern and central Palearctic distribution (Lehman 1987), *B. cederstroemi* was reported first in Lake Huron in 1984 (Bur et al. 1986); documentation of its presence in the other Great Lakes was complete within 3 year (Bur et al. 1986, Lange and Cap 1986, Lehman 1987, Cullis and Johnson 1988). *B. cederstroemi* are known to have invaded southern Green Bay, Lake Michigan, at least

by 1987 (B. Belonger, personal communication, Wisconsin Department of Natural Resources, Marinette, Wisconsin) but prior to this report were not known to inhabit northern Green Bay. Evans (1988) hypothesized that the apparent ease with which *B. cederstroemi* became established in the Great Lakes may relate in part to reduced predation on the near-surface plankton community as alewife (*Alosa pseudoharengus*) have become relatively less abundant in the 1980s (Jude and Tesar 1985, Hartman 1988).