

Invited Abstract

STATUS OF FISH STOCKS IN LAKE ERIE - AN UPDATE

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ABSTRACT

Fish production has declined in many parts of Lake Erie during the past few years and remains at levels lower than in the past. This decline has been due principally to: food web effects, reduced lake productivity, declining growth, recruitment and survival in a number of species, increased exploitation and habitat degradation. The lakewide decline in abundance and biomass of key functional groups is associated with a reduction of warmwater omnivores.

Abundance and biomass of exploited species such as yellow perch, walleye and rainbow smelt have generally declined. Although some new modelling approaches for yellow perch populations suggest recovery in some perch populations, there is still much uncertainty.

Exotic species abundance has also declined although there is a reversing trend as round goby populations continue to increase in the central and eastern basins of the lake.

Advances have been made in hydroacoustic assessment, gear selectivity work and different approaches to spatial and habitat modelling and analyses. Attempts are being made to address ecosystem effects through new innovations such as the use of stable isotopes, multi-species food web models and stock discrimination studies. Studies of the bioenergetics of top predators such as lake trout, walleye and yellow perch are at various stages of completion.

Continuing research and assessment needs include the following: consideration of the changing habitat in relation to fish production; effects of changes in the physical environment on index/survey gear selectivity and catchability; the role of wetlands and tributaries to lakewide production and a greater consideration of the entire fish community.