

## NYSG Prey Fish Program Assessment Results in Surveying Improvements

Since 1978, the United State Geological Survey (USGS) and New York State Department of Environmental Conservation (NYSDEC) have conducted prey fish population surveys in Lake Ontario. This survey program tracks changes in prey fish abundance and age class structure, and is used to predict future population trends. Prey fish population trends are the basis for setting stocking rates of trout and salmon to balance predator and prey abundance – an essential ingredient of healthy and sustainable recreational fisheries. The recreational fisheries of Lake Ontario provide an estimated economic benefit to NYS exceeding \$400 million annually (NYSG, 1996).

In 2003, New York Sea Grant (NYSG) organized an independent, technical review of the Lake Ontario prey fish assessment program to evaluate prey fish sampling design, data analysis, and the validity of prey fish abundance indices. Three prominent marine fisheries assessment scientists: Stephen Smith, Fisheries Oceans Canada; Dr. Steven Murowski, NOAA National Marine Fisheries Service; and Dr. Gerald Ault, Rosensteil Institute of Marine Science - participated in the review. Since the 2003 review, a number of improvements have been made to the prey fish survey program.

During 2006 and 2007, in response to the NYSG-brokered independent peer review of the USGS-NYSDEC prey fish assessment program for Lake Ontario, the two agencies:

- began using a revised acoustic sampling program to compare fish abundance over trawling areas with non-trawled areas to



*The RV Kaho is a research vessel operated by the U.S. Geological Survey, which in conjunction with the RV Seth Green operated by the New York State Department of Conservation conducts fisheries assessment in Lake Ontario. Photo: U.S.G.S., Oswego*

better understand whole lake prey fish distribution

- reanalyzed the 28-year alewife catch data, verifying the data's accuracy; and applied new statistical procedures to re-evaluate the need for correction factors to account for changes in vessels and assessment gear, and
- modified the alewife sampling strategy by extending sampling to greater depths and adopting a more efficient sampling effort that has increased the survey's precision and decreased the number of bottom trawl tows needed to assess the alewife population.

The collaborative NYSG-led project with USGS, NYSDEC, and marine scientists has resulted in a more accurate and efficient prey fish assessment program in Lake Ontario, providing fisheries managers with enhanced ability to manage New York's world-class recreational fisheries.

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*New York Sea Grant is a cooperative program of the State University of New York and Cornell University. Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.*

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