

Ecosystem Processes: Understanding Lake Ontario Lower Food Web Indicators

The Lake Ontario ecosystem has been successfully managed for sustainable use through top-down manipulation of the upper food web by fish stocking and harvest, and by nutrient abatement that regulates resource allocation to the lower food web. Recent ecosystem changes have stimulated interest in developing lower food web indicators to provide indices of current and future states of the ecosystems. This information is crucial for stakeholders to understand how management policies affect ecosystem sustainability.

NY Sea Grant coordinated the outreach component of a Cornell University project to compile relevant information on food web indicators in an effort to build a process of understanding of lower food web components and their use as ecosystem indicators. A one-day workshop, featuring presentations from top scientists from the U.S. and Canada was organized to present this information to the public. Fifty attendees were educated on the effects of nutrient regulation on zooplankton, phytoplankton and fish communities, particularly how changes in body size, species and abundance of lower food web organisms serve as indicators of ecosystem sustainability.

Workshop participant evaluations indicated that this was the best workshop in terms of educational value they have attended. A further indicator of the program's success was a request to NY Sea Grant by the Ontario Ministry of Natural Resources (OMNR) to develop a companion workshop for Canadian stakeholders in May 2009.



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Photo: Pat MacNeill*

OMNR also recommended that this workshop template be adapted by the Lake Ontario Committee to present to the NY-Ontario public as part of the revision of Fish Community Objectives for Lake Ontario.

The Great Lakes Fisheries Commission (GLFC) will be developing a "traffic-light" communication model designed to assist stakeholders understand the links between ecosystem sustainability and the status of food web indicators. The model assigns a red color to indicators of serious ecosystem stress, yellow to indicators of moderate stress, and green to food web indicators of a healthy ecosystem.

*New York Sea Grant is a cooperative program of the State University of New York and Cornell University.
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