

# Developing a Cooperative Monitoring Strategy for Lake Ontario, 2008

## Goal

*Develop a plan for a coordinated and effective assessment of Lake Ontario's food web and fishery in 2008 in order to meet the information needs of environmental and natural resource managers.*

## Status of Lake Ontario

- Food web alteration by invasive species
- Low phosphorus levels in the offshore
- Decline of *Diporeia*
- Impaired coastal zone

## Concepts and Questions

- Food quality and availability
- Benthic-pelagic fluxes
- Predator-prey relationships
- Nearshore-offshore fluxes

## Field Sampling Strategy

- **Combine fixed sites with towed sensor arrays**
- **Offshore (>30m):** long-term stations at two-week intervals combined with lake-wide cruises every fifth year (both, spring through fall)
- **Nearshore (1-30m):** six coastal areas (20 km x 5 km) adjacent to watershed drainage areas of three different land use types (spring through fall)
- **Whole-lake lake trout assessment:** predator-prey relationships, disease screening, thiamine status, population status

## Assessment Tools

- **Sea-bird profiler**
- **Traditional fish and limnological gear**
- **Optical plankton counter**
- **Fluorometry**
- **FlowCAM imaging**
- **Hydroacoustics**
- **Satellite imagery**
- **Aquatic bird census**
- **Food web biomarkers (stable isotopes/fatty acids)**
- **Computerized binational data repository**
- **Modeling**
- **Stoichiometry**