Monitoring the health of Ontario’s inland lakes

Recreational fishing is enjoyed annually by over 1.3 million anglers, and contributes nearly $2.5 billion to the Ontario economy. The Ministry of Natural Resources and Forestry (MNRF) is working to maintain healthy fish stocks as they are an important environmental indicator. Healthy fish stocks ensure that present and future generations continue to enjoy high-quality fishing and the associated social and economic benefits.

In 2004, MNRF introduced the Ecological Framework for Fisheries Management to enhance fisheries management in Ontario. This new framework helps the ministry manage fisheries for the future by simplifying regulations and providing more public involvement. Increasing our understanding of inland lakes and their fisheries is an important part of this approach.

Broad-scale monitoring

In 2008, MNRF began a long-term program to monitor the health of Ontario’s lakes. The broad-scale fisheries monitoring program is improving the ministry’s understanding of the current and changing state of fisheries and other aquatic resources, identifying stresses on the resources, and reporting on changes over time such as angling pressure. Lakes are randomly selected in each fisheries management zone for species like lake trout, walleye and brook trout, although the program monitors all species in the lake. Some lakes will be re-sampled every five years for trend through time analysis.

Fisheries management zones

In January 2008, 20 fisheries management zones (FMZs) replaced the former 37 fishing divisions. These zones are now the unit of management for most lakes in Ontario. Fishing regulations, such as catch limits and seasons, are based on these zones. Fish will also be monitored and assessed at the zone level.

In 2012, MNRF science staff completed the first five-year cycle of the broad-scale monitoring program. Nearly 630 lakes were sampled across the province. Approximately 160 lakes will be sampled in 2015, which is year three of the second cycle. Some lakes that were sampled in the first cycle will be resampled, and new lakes will be added to the program.

During these lake surveys, science staff sample fish to estimate abundance, and record characteristics such as length, weight, and age. Some fish are tested for contaminants. See the Guide to Eating Ontario Sport Fish at www.ontario.ca/fishguide. The Ministry of the Environment and Climate Change (MOECC) is responsible for publishing this information.

Water temperatures, oxygen levels, and water clarity are also recorded. Samples from selected lakes are sent to the MOECC for water-quality analysis.

Certain lakes are examined for invasive species like spiny waterflea and rusty crayfish. Invasive species were found in a number of additional lakes in the first cycle.

Monitoring highlights...

Fish caught include lake trout, brook trout, walleye, northern pike, common white suckers, yellow perch, rock bass, redhorse sucker, whitefish, cisco, emerald shiner, spottail shiner, mimic shiner, and trout-perch.

For more information on the broad-scale program, contact:

Northeastern Ontario
Jeff Amos, Ministry of Natural Resources and Forestry, Northeast Biodiversity and Monitoring Section, P.O. Box 3020, Hwy 101 East, South Porcupine, Ont. P0N 1H0, (705) 235-1137, jeff.amos@ontario.ca
Kevin Leblond, Ministry of Natural Resources and Forestry, Northeast Biodiversity and Monitoring Section, P.O. Box 3020, Hwy 101 East, South Porcupine, Ont. P0N 1H0, (705) 235-1137, kevin.leblond@ontario.ca

Northwestern Ontario
Kim Armstrong, Ministry of Natural Resources and Forestry, Northwestern Biodiversity and Monitoring Unit, 173 25th Side Road, Rosalyn, Ont. P7K 0E9, (807) 939-2501, kim.armstrong@ontario.ca
Steve Peters, Ministry of Natural Resources, Northwest Biodiversity and Monitoring Unit, 173 25th Side Road, Rosalyn, ON P7K 0E9, (807) 939-2501, steve.peters@ontario.ca

Southern Ontario
Steve Vandermeer, Ministry of Natural Resources, Southern Biodiversity and Monitoring Section, 322 Kent Street West, Lindsay, Ont. K9V 4T7, (705) 324-5851, steve.vandermeer@ontario.ca