

**Habitat and Species Annex Subcommittee**  
**Report to GLEC on Completion of Biodiversity Conservation Strategies for the Great Lakes**  
February 12, 2015

**The Great Lakes Water Quality Agreement Commitment**

The Habitat and Species Annex Subcommittee (Subcommittee) has worked with the Lakewide Management Annex Subcommittee and Lake Partnership working groups (workgroups) to complete the following Great Lakes Water Quality Agreement (GLWQA) commitment:

*Within two years of entry into force of this Agreement, complete the development and begin implementation of lakewide habitat and species protection and restoration conservation strategies that use adaptive management approaches, identify conservation mechanisms, and address the most significant stressors to native species and habitat.*

As of February 12, 2015, this commitment has been met and lakewide habitat and species protection and restoration conservation strategies, also called *Biodiversity Conservation Strategies* (Strategies), have been developed for all five of the Great Lakes. The strategies assess the status of and threats to lakewide biodiversity and recommend conservation priorities for native species and their habitats.

Each Strategy is a product of extensive collaboration among lakewide, regional and local stakeholders. They serve as a tool to foster and guide a shared implementation of priority conservation actions among federal, state, provincial, tribal, academic, municipal and watershed management representatives.

**Habitat and Species Annex Subcommittee Approach**

In order to assess whether the Strategies contain lakewide priority objectives for habitat and species and if actions to achieve those objectives are being implemented, the Subcommittee interviewed Lake Partnership workgroup members. The workgroups are co-chaired by the Parties and include senior-level representatives and technical experts from federal, state, and tribal agencies that have decision-making authority or jurisdiction over lake resources at the local level. During the interviews, workgroup members answered questions regarding: the Strategy planning process, the priority objectives that the workgroup identified, how the Strategies will be implemented; and future plans for Strategy development and LAMP reporting.

The Subcommittee and workgroup conversations confirmed that although implementation of the Strategies has begun in each lake basin to address the most significant stressors to native species and their habitat, the process used to scale-down conservation actions to a local level varies across the basins.

**Development of Biodiversity Conservation Strategies**

The Strategies were developed to represent a diverse set of goals shared by many stakeholders for protecting and restoring lakewide biodiversity. Key partners leading the effort included The Nature Conservancy, the Nature Conservancy of Canada, and the LAMP workgroups. The initial

strategy development began with Lake Ontario (completed 2009) and was followed by Lakes Huron (2010), Michigan (2012), Erie (2012) and Superior (2015). Strategy development for each lake followed the Nature Conservancy's Conservation Action Planning (CAP) approach that integrates planning, implementation and assessment of conservation projects. Efforts were supported by both federal and provincial funding (United States Environmental Protection Agency, Environment Canada and Province of Ontario) with grants awarded to The Nature Conservancy and The Nature Conservancy of Canada.

The Ontario, Huron, Erie and Michigan Strategies were publically released by The Nature Conservancy although each was identified as the product of a number of authors. Lake Superior's Strategy was released by the Lake Superior Partnership. The Strategies were developed through engaging and gathering input and information from individuals and organizations in each lake's watershed through workshops, webinars and a comprehensive review of published data.

The Strategies include an assessment of the current status of the diverse types of habitat associated with that Great Lake (*e.g.*, off shore waters, coastal wetlands, islands), major threats to biodiversity, or significant environmental issues within each lake. Six key issues identified by the Strategies as common across the Great Lakes basin include: aquatic invasive species; incompatible development; climate change impacts; terrestrial invasive species; dams and barriers to fish movement in rivers and streams; and pollution from sources such as urban, rural and agricultural runoff.

The Strategies are viewed by stakeholders as important sources of baseline information on habitat and native species in the Lakes, including their status, relevant threats and issues, priorities for conservation, and strategies and actions to address the most significant threats. Resulting recommendations and maps included in the Strategies have already proven to be valuable resources for guiding conservation actions.

As a result of the broad collaborative processes undertaken to develop the Strategies, some recommendations go beyond the Lake Partnerships' mandate pursuant to the revised GLWQA (with the exception of Lake Superior which was a product of the Lake Superior Partnership). The Lake Partnerships recognize the value that the Strategies provide as a guide for people and organizations to implement actions that fall within their respective mandates. They will be used by the Lake Partnerships: to bring focus and set priorities; to encourage appropriate conservation actions by government and non-government organizations and individuals; and to engage with and promote decisions by those who have the authority, responsibility and mandate to meet the goals, objectives and priorities of the LAMP and the Great Lakes Water Quality Agreement.

The Lake Superior Partnership is currently in the process of preparing watershed-level plans to further guide and support implementation of the recently released Strategy at a more local level. The Lake Ontario Partnership used the broader Lake Ontario Biodiversity Strategy to produce a LAMP implementation plan to focus on and implement priority conservation actions within the GLWQA mandate. Other Lake Partnerships are identifying regional (or watershed-

based) biodiversity objectives and outlining the specific conservation actions required to address these issues on a more manageable local scale.

### **Biodiversity Conservation Strategy Implementation**

The Strategies offer a “blueprint” for conservation actions by identifying the types of actions needed in priority areas; however, implementing these actions across a complex, large-scale landscape requires diverse stakeholder representation and diverse resources. The implementation process must identify opportunities, focus on lakewide priorities and the most significant stressors, and provide the context that will promote action at a regional scale by communities and local organizations. Broad collaboration among municipalities, local communities, and non-governmental organizations is a key element for the successful implementation of projects on a regional scale, but it is also important to have involvement from government agencies and other organizations that have a mandate for habitat and species conservation.

Across the lakes there is strong support for the adaptive management approach in the planning, application and implementation of the Strategies. Lake Partnership workgroups built the CAP process into the Strategies so that they can apply to a wide range of conservation activities, including LAMP-based project planning. For example, in Lake Ontario studies are now underway to develop better baselines (*i.e.*, coastal wetlands, water levels) that will guide investments in habitat restoration and support this adaptive process into the future.

The table below illustrates several examples as to how the Strategies are being used now in each lake basin to inform and implement priority conservation actions.

<i>Lake Basin</i>	<i>Date Strategy Completed</i>	<i>Strategy Element</i>	<i>Conservation Action/Implementation</i>	<i>Implementing Partners</i>
Lake Ontario	2009	Restoration of native prey fish species	U.S. and Canadian agencies started a program to reintroduce bloater to the lake. Juvenile bloaters stocked today originated from eggs collected on Lake Michigan. Eggs are hatched and juveniles reared at facilities in New York and Ontario.	Ontario Ministry of Natural Resources and Forestry; U.S. Fish and Wildlife Service, U.S. Geological Survey, State of New York
Lake Huron	2010	Address most significant threat for Southern Georgian Bay – urban development and shoreline alterations	The <i>Southern Georgian Bay Shoreline Management Strategy</i> was developed to focus on coordinating efforts to identify restoration opportunities, guide local development and decision making, harmonizing	Ontario Ministry of Natural Resources and Forestry; Fisheries and Oceans Canada; Grey-Sauble and Nottawasaga

			regulatory approaches and permits for shoreline construction projects and supporting landowner stewardship of the shoreline.	Valley Conservation Authorities
Lake Erie	2012	Priority Conservation Areas identified for migratory fish	Information from conceptual models and decision support tools in priority areas has been used to strengthen funding proposals for the most important fish passage projects in the lake basin.	State of Michigan; State of Ohio; The Nature Conservancy
Lake Michigan	2012	Expand green infrastructure in the Chicago-Gary Metropolitan Area as a way to increase filtration for non-point source pollution	The Chicago-Gary metropolitan area was identified as a priority area for implementation because of its highest biodiversity for a coastal terrestrial system with the lowest overall condition. Through partnerships such as the Chicago Wilderness and the Chi-Cal Rivers Fund, green infrastructure and storm water projects are being implemented to enhance fish, wildlife and habitat in this priority area.	Chicago Wilderness, National Fish and Wildlife Foundation, Chi-Cal Rivers Fund, U.S. Fish and Wildlife Service; State of Illinois Coastal Program; State of Indiana Coastal Zone Management Program
Lake Superior	2015	Rehabilitation of Coaster Brook Trout populations	Applying the 'shared implementation' approach, partners are working together to implement habitat enhancement projects at remaining spawning areas in Lake Superior that are critical to support healthy populations.	The Nature Conservancy and the Nature Conservancy-Canada; U.S. Fish and Wildlife Service, National Park Service; Department of Fisheries and Oceans; State of Michigan; Ontario Ministry of Natural Resources and Forestry