HABITAT TASK GROUP
EXECUTIVE SUMMARY REPORT

Lake Erie Committee

REPRESENTING THE FISHERY MANAGEMENT AGENCIES OF LAKE ERIE & LAKE ST. CLAIR

Introduction - The following provides a brief encapsulation of information presented in the annual report of the Lake Erie Committee (LEC) Habitat Task Group (HTG). The complete report is available from the GLFC's Lake Erie Committee website at http://glfc.org/lake-erie-committee.php, or upon request from an LEC, Standing Technical Committee (STC), or HTG representative.

The HTG had three charges in 2019-2020: (1) Maintain a list of functional habitats and impediments for species specified by the LEC Fish Community Objectives (FCOs); (2) Assist member agencies with the use of technology; (3) Support other task groups by compiling metrics of habitat use by fish. Charge 1 had four supporting sub-components 1a) Identify Priority Management Areas, (1b) Develop strategic research direction, (1c) Document key habitat and research projects, (1d) Use GIS techniques to refine PMA mapping.

Charge 1: List of functional habitats and impediments for species specified by the LEC FCOs

Charge 1a: Identify Priority Management Areas (PMAs)

In 2019 the HTG completed the first iteration of the PMA exercise as reported in the previous HTG report (2018/2019). During the remainder of 2019 there was no additional work toward this charge to report. Over 2020-21, the HTG will continue to evaluate the PMA dataset to update as projects are completed and identify areas where there are deficiencies.

Charge 1b: Develop strategic research direction Through the process of identifying PMAs, key research gaps have become apparent. For example, some of the highest ranked habitat actions in the top 10 PMAs included the need to conduct more research on topics ranging from generic fish-habitat interactions to specific questions about forage abundance, resource competition, hypoxia, and specific habitat-use. Over 2020-21, the HTG will use the PMA dataset to identify and prioritize knowledge gaps to facilitate the development of strategic research questions.

Charge 1c: Document key habitat and research projects

The 2019 HTG report includes project overviews for 9 different habitat and research projects underway or completed in medium to high PMAs across the Lake Erie basin. These projects are:

- Synopsis of the ODNR Wetland Restoration within the H2Ohio Program
- Fish Habitat Suitability Modelling in Southern Grand River, Ontario Canada
- Shoreline improvement at Brandenburg Park in Chesterfield, MI

Charge 1d: Use GIS techniques to refine PMA mapping

In 2019, the HTG began collaborating with the Great Lakes Aquatic Habitat Framework project team to begin interpreting the PMA dataset into GIS layers. Through these efforts the work group was able to develop conceptual layers for the functional habitats identified in the PMA dataset. During 2020, the HTG will continue to pursue opportunities to further develop these layers and begin using them to help refine the PMA data set.

Charge 2: **Assist member agencies with the use of technology**

Members of the HTG are involved in a variety of projects, often using specialized equipment and techniques to identify, survey, and modify aquatic habitat in Lake Erie and its surrounding watersheds. For the 2019-20 report, the HTG highlights two programs that provide services for utilizing technology and available information.

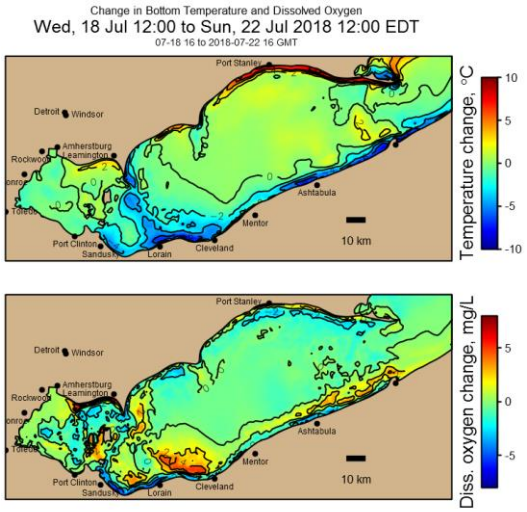
- Real-time Aquatic Ecosystem Observation Network (RAEON)
  RAEON provides the infrastructure and data management that Canadian researchers need to carry-out cutting-edge research that will increase the ability to track, understand and monitor freshwater ecosystem conditions and what causes them. The data collected through this program will be beneficial for addressing knowledge gaps in Lake Erie, including those identified in the PMA dataset.

- Tipping Point Planner

  Tipping Point Planner (TPP) is an ongoing project funded by EPA GLRI that can be used to identify local and watershed-scale land use tipping points for nutrients and sediment runoff that affect ecosystem health and fisheries in Great Lakes tributary and near shore habitats, and aid planning to reduce such threats. The TPP science and outreach team from multiple universities (Michigan State, Michigan, Purdue, Minnesota, Wisconsin) and agencies (NOAA GLERL, Sea Grant) developed an interactive decision support system (DSS) (http://tippingpointplanner.org) that models relationships between land use practices and endpoints of interest at present and future timescales (out to 2050).

Charge 3: **Support other task groups by compiling metrics of habitat**

Habitat influences the distribution of fish species. Evaluating how fish relate to habitat can play an important role in assessing and modeling key fish species in Lake Erie, particularly Walleye and Yellow Perch. For the 2019-20 report, the HTG highlights modeling work conducted by NOAA GLERL that is used to forecast when hypoxic levels (dissolved oxygen < 2 mg/L) occur in Lake Erie. This model has already been used to aid bottom trawl surveys in the Central Basin.



For more information including detailed methodology for identifying PMAs and project summaries, please see the complete HTG report, available from the GLFC's Lake Erie Committee website at http://glfc.org/lake-erie-committee.php, or upon request from an LEC, Standing Technical Committee (STC), or HTG representative.