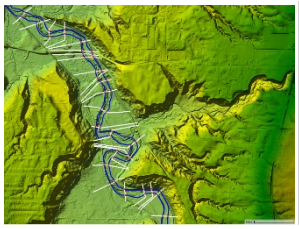
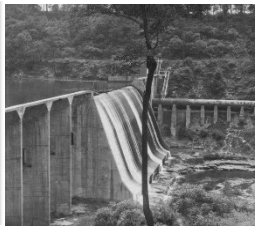
Report of the
Lake Erie Habitat Task Group
2022-2023



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Presented to:

Standing Technical Committee, Lake Erie Committee
March 29, 2023

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Charges to the Habitat Task Group 2022

1. Maintain a list of functional habitats and impediments for species specified by the LEC Fish Community Objectives (FCOs) that can be used to identify and evaluate status of:
    a. Priority management areas (PMA) that support LaMP, LEC Lake Erie Environmental Objectives (LEEOs) and FCOs
    b. Identify data needs to better identify and describe functional habitats (e.g. improved bathymetry).
    c. Documentation of key habitat and research projects as related to priority management areas.
    d. Use GIS techniques to refine PMA mapping, coordination, and scale.
2. Support other task groups by compiling metrics of habitat use by fish.

Charge 1: Maintain a list of functional habitats and impediments for species specified by the LEC Fish Community Objectives (FCOs)

Charge 1a: Priority management areas (PMA that support LaMP, LEC Lake Erie Environmental Objectives (LEEOs) and FCOs

In 2021-22 the Habitat Task Group (HTG) defined a 4-phase process to better capture the progress to-date and communicate future work needed to finish developing a functional, systematic, adaptive, cumulative, and collaborative approach for identifying Priority Management Areas (PMAs). Phase 1 was the initial proof of concept including the initial PMA data collected, management prioritization and scoring. Work completed during Phase 1 was presented in the 2019 HTG report[1]. Phase 2 was defined as the proof of concept for moving the original flat file PMA dataset (Phase 1) into a GIS framework. This phase included the creation of functional GIS layers and a geospatial data viewer to help data visualization. Phase 2 was completed in 2022-23 and will be updated in more detail under Charge 1d. Phase 3 was the development of a user friendly, backward-facing portal that will allow the underlying PMA data to be easily updated and refined as new information becomes available. This phase also includes development of a forward-facing viewer that will facilitate end-user analysis of the data and broad communication of Lake Erie's Environmental priorities. Phase 3 is ongoing with a pilot viewer developed for LEC use. Finally, Phase 4 is the ongoing phase in which the HTG will operationalize the PMA exercise allowing for updating and refinement of the PMA data, re-prioritize as required, and report out on progress within PMAs. The framework for this final phase is being constructed.

[1] 2019 Habitat Task Group (http://www.glfc.org/pubs/lake_committees/erie/HTG_docs/annual_reports/HTG_AnnualReport2019.pdf)

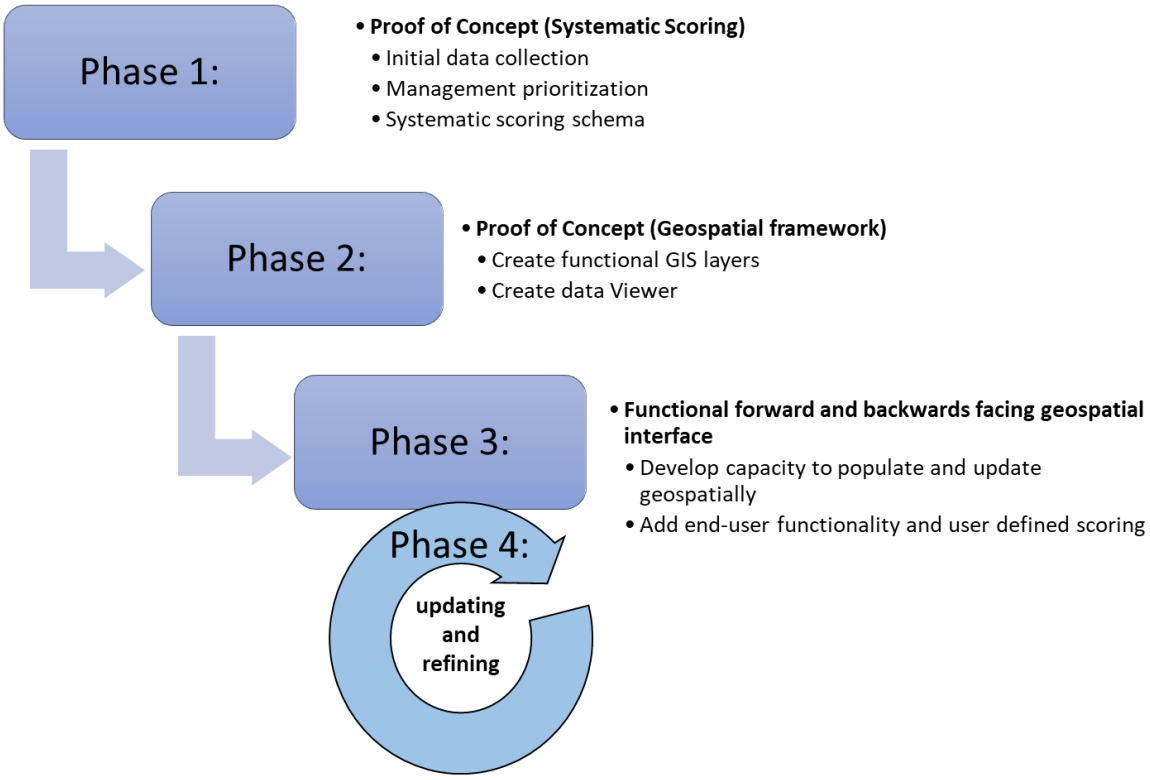


Figure 1: Four phases of PMA development identified by the Habitat Task group.

Charge 1b: Identify data needs to better identify and describe functional habitats.

In 2021, developments made while updating the PMA dataset into a spatial dataset identified numerous data needs required to detect and describe additional functional habitats. With the completion of Phase 2, the HTG has developed a sound list of data needs. Completing the framework for Phase 4 will allow the HTG to identify the process to begin addressing those needs.

Charge 1c: Documentation of key habitat and research projects as related to priority management areas.

Habitat Suitability Index Update

Habitat suitability index (HSI) models are used to identify and quantify suitable habitat for various fish species by comparing habitat characteristics (e.g., substrate, water depth, and flow) to species' optimal tolerance ranges at various life stages (e.g., spawning, and juvenile). Based on literature reviews, a species tolerance range is used to convert each habitat characteristic into a rating of "good", "moderate", or "poor" which are assigned numerical values such as 1, 0.5, and 0, respectively. For example, juvenile Lake Sturgeon are most successful in habitats containing silt, sand, gravel, and/or

cobble substrates therefore areas with these substrates would be rated as “good”. Ratings for all habitat characteristics are then combined to create an HSI map identifying suitable habitat for that species. This information can be used to protect and/or restore suitable habitats of native fish species, as well as identify risks of invasive species. In Lake Erie, there are several initiatives working to develop HSI.

Lake Sturgeon Habitat Suitability in the Cuyahoga River
J. Fischer

PMA linkage			
Functional Habitat:	Central Basin Rivers/Tributaries	Priority:	Medium

The Alpena U.S. Fish and Wildlife Service Conservation Office and partners continued habitat assessments in the lower 72 km of the Cuyahoga River from Lake Erie upstream to Ohio Edison Dam in partnership with the ODNR, Cuyahoga Valley NPS, and others. In spring of 2022 crews collected bathymetric data throughout the study reach, which will be used to develop a 1-D flow model to estimate the availability of suitable water depths and velocities for age-0 Lake Sturgeon and spawning adults, under multiple discharges. Additionally, crews completed processing side-scan sonar data collected in 2021 and classified substrate patches throughout the 72 km reach. This information will be used to quantify the availability of suitable water depths, water velocities, and substrates for spawning Lake Sturgeon (*Acipenser fulvescens*) and age-0 individuals. The 1-D flow model is currently in development and final maps of habitat layers and a overall habitat suitability are anticipated to be completed in 2023. The products of this work will help determine if the Cuyahoga River can support Lake Sturgeon reintroduction.

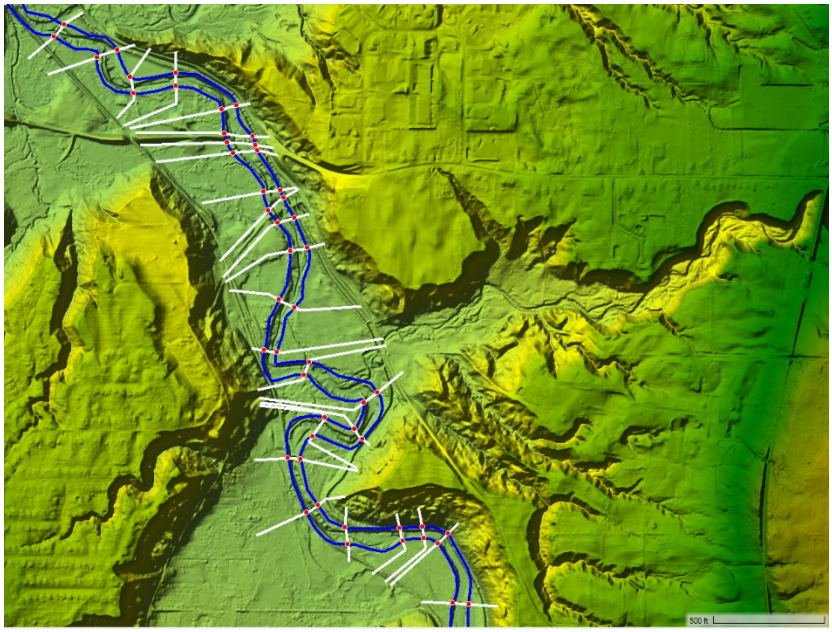


Figure 2: Map of cross-sections (white lines) within the Cuyahoga River floodplain and terrain data (greens to reds show low to high elevations) used to generate a 1-D flow model from Gorge Dam to Lake Erie. The blue polygon outlines the Cuyahoga River banks.

Native Species Habitat Suitability in Southern Ontario Tributaries (MNRF)

T.Gehrke[1] and S. Marklevitz[2]

PMA linkage

Functional Habitat: Rivers/Tributaries Priority: Low to High

In 2022, MNRF continued development of Habitat Suitability Indexes (H.S.I.) for native species in Southern Ontario Tributaries - including the Grand, Thames and Sydenham Rivers and Big Otter Creek. Unfortunately, Big Creek has been removed from the project due to many barriers (e.g. log jams) in the river preventing data collection. The Lake Erie Management Unit completed most of the side scanning mapping in the four remaining rivers, which to date totals 333 kms (Figure). Working with Chesapeake Technology (Chesapeake Technology - Makers of SonarWiz) and their Seabed Classification tool, we are exploring ways to delineate substrate patch polygons. In the Grand River, we also piloted methods for the development of a temperature layer using the Water Quality Modeling tool in the program HEC-RAS (HEC-RAS (army.mil)). Collaboration efforts with local Conservation Authorities continue as we develop HEC-RAS models that will allow us to complete depth and flow layers for our H.S.I.. Upcoming 2023 field plans include the completion of all outstanding side scanning, substrate sampling and expanded deployment of the temperature loggers across to all four rivers. We are working to finalizing the H.S.I. in all rivers by the end of 2024.

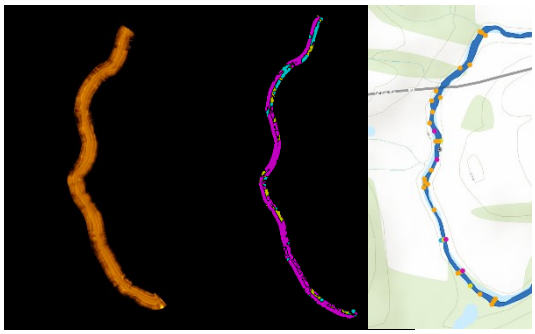


Figure 3: Example of the processed side-scan sonar imagery that has drawn polygons of different classes of substrate calculated using the SonarWiz Seabed Classification tool along with ground-truthed data points.

[1] Ty Gehrke, COA Biologist, Lake Erie Management Unit, Ontario Ministry of Natural Resources and Forestry ty.gehrke@ontario.ca

[2] Stephen Marklevitz, COA Coordinator, Lake Erie Management Unit, Ontario Ministry of Natural Resources and Forestry, Stephen.marklevitz@ontario.ca

Figure 4: Map of side-scanned areas of Grand River, Thames River, Sydenham River, and Big Otter Creek in Ontario, Canada

Identifying and characterizing Lake Whitefish spawning habitat in Lake Erie

J. Fischer, E. Roseman, D. Gorsky, P. Kohn

PMA linkage

Functional Habitat:	Open water - reef/shoal	Priority:	Low to Very High

In 2022, the USFWS, USGS, TNC, ODNR, OMNRF, Univ. of Toledo, and NYSDEC continued a joint project to assess Lake Whitefish (*Coregonus clupeaformis*) spawning activity and spawning habitat in Lake Erie. The project seeks to: 1) Describe the contemporary spawning habitat used by Lake Whitefish at known spawning locations in the western basin of Lake Erie; 2) Verify and describe suspected spawning sites used by Lake Whitefish in the central and eastern basins of Lake Erie; 3) Describe the factors (e.g., substrate composition, bottom slope, water temperature) influencing spawning of Lake Whitefish in the central and eastern basins; and 4) Evaluate restoration opportunities by describing habitat where future stocking could be successful. Habitat surveys began in fall of 2022 and focused on side-scan sonar surveys and camera drops to characterize substates at egg pumping sites. Crews completed sonar and camera surveys at sites out of Conneaut and Ashtabula Harbor and at 5 of the 12 sites out of Fairport Harbor. All video from camera drops was reviewed to classify percent composition of surficial substrates and classify substrates following the Coastal and Marine Ecological Classification Standard. Crews will be returning in 2023 to complete habitat surveys at Fairport, Cleveland, Huron, and Lorain Harbors. Depth and terrain data were obtained from NOAA bathymetry data and the Lake Erie PMA. Fall also marked the second field season of the two-year project, with egg mats and egg pumping deployed by crews in nearshore areas of the central and eastern basins, more information on the egg depositional surveys is provided in the 2023 Lake Erie Coldwater Task Group Report.

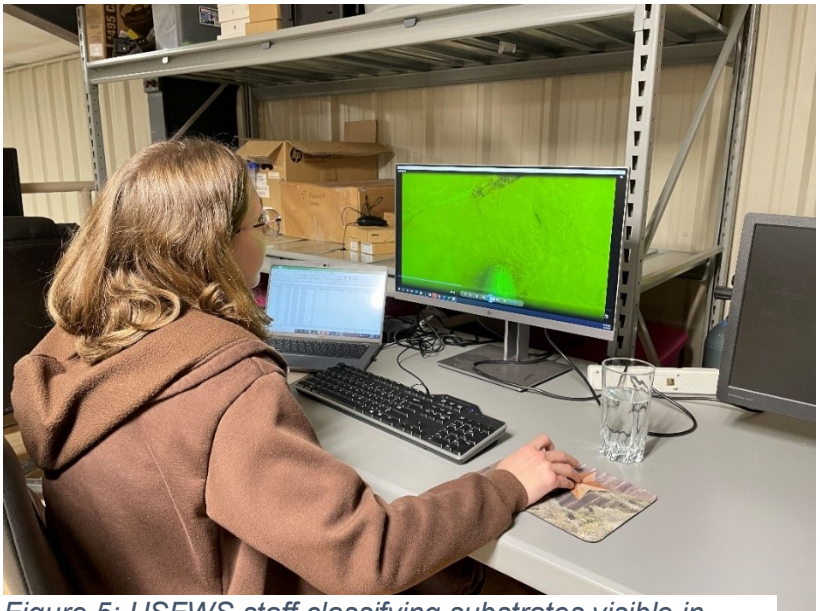


Figure 5: USFWS staff classifying substrates visible in underwater video collected at Lake Erie egg pumping locations.

Lake Whitefish recruitment in Lake Erie may depend on spatial transport to high-quality nursery habitat.

E. Roseman and Z. Amidon

PMA linkage			
Functional Habitat:	West Basin Nearshore and Open water-pelagic	Priority:	Low to Very High

Lake Erie's Lake Whitefish population has declined in recent years due to a suspected spatial mismatch between newly hatched larvae and high-quality nursery habitat. High-quality larval habitat is characterized by gently sloping shallow nearshore areas that contain warmer water temperatures and high prey abundance. However, in Lake Erie the three most important spawning locations are located 5-15 km offshore in the western basin (Maumee Bay and the mid-lake reefs) and in the Detroit River. Further, shoreline armoring has all but eliminated gently sloping shallow shorelines in the western basin. With less high-quality larval nursery habitat available, the chances that newly hatched larvae are transported to high-quality nursery areas is reduced, resulting in low survival. To evaluate if poor recruitment years are associated with lake current patterns that transport newly hatched larvae to low-quality (offshore) habitat, and good recruitment years are associated with lake current patterns that transport larvae to high-quality nursery habitat (nearshore) we developed a Lake Erie specific hydrodynamic model (AEM3D), which simulates spatial and temporal movement of newly hatched larvae from known spawning locations through time. To validate the model, larval Lake Whitefish were collected weekly in 2019 at 65 locations across the western basin of Lake Erie to estimate actual larval location and abundance. Simulated larvae were released on the mean estimated hatch date (April 11th, 2019) from Maumee Bay, the mid-lake reefs, and Detroit River and the model was run for the duration of the yolk-sac stage (10 days). Ground truth larval location estimates and model location estimates similarly suggest larvae (including larvae from the Detroit River) were moved to the southern portion of the western basin highlighting an important larval nursery area and increasing confidence in the model. Our next step is to estimate larval hatch date and simulate transport for multiple years (2017-2021) for comparison to a newly developed recruitment index which will identify transport patterns and critical habitat for Lake Whitefish recruitment in Lake Erie.

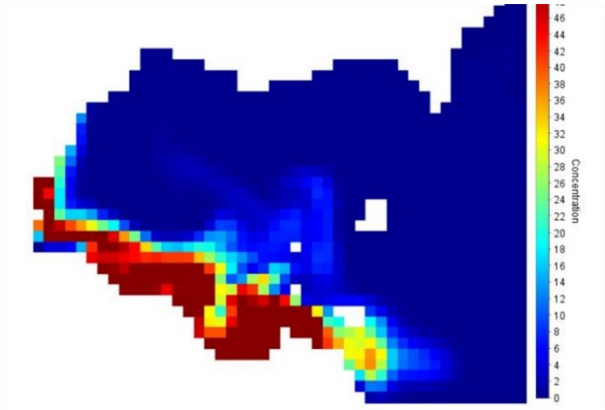


Figure 6: Image from the recently developed AEM3D hydrodynamic model simulated larval Lake Whitefish transport from Maumee Bay, the mid-lake reefs, and Detroit River

Gorge Dam Removal on the (Cuyahoga River)

Z. Slagle and M. Acre

PMA linkage			
Functional Habitat:	Central Basin Rivers/Tributaries	Priority:	Medium

The Gorge Dam is the largest remaining dam on the Cuyahoga River, and removal is planned over the next five years. The 18-meter tall, 128-meter wide structure was originally built in 1913 for hydropower, but has not been used since 1958. Funding for this project comes from a wide variety of sources: GLRI, the Great Lakes Legacy Act, Lake Erie Protection Fund, Summit Metroparks, and the Northeast Ohio Regional Sewer District. The Ohio EPA previously completed a cost estimate (~$130 million USD) and feasibility study. In Spring 2023, site preparation is ongoing, including clearing trees and readying a site for contaminated sediment in the dam pool. Over 2023–2025, roughly 765,000 m^3 of contaminated sediment will be dredged and pumped to a dry-land disposal area; demolition of the dam is planned for 2024–2025. This project will open ~18 river kilometers (rkm) to freely flow to Lake Erie and is expected to improve water quality downstream throughout the Cuyahoga River AOC. However, fish passage for the section is unknown as the dam was built over the Great Falls of the Cuyahoga which may continue to limit passage. USGS-Columbia Environmental Research Center (Matthew Acre) is leading an ongoing fish movement and connectivity project to assess passage of multiple species before and after the dam is decommissioned. The team is mainly comprised of members from USGS, Summit Metroparks, USACE, ODNR, and USEPA. Together they are investigating population demographic rates, population size, and current connectivity using traditional fisheries approaches as well as molecular techniques. One of the primary metrics assessing fish passage is acoustic and radio telemetry. The team have over 130 fish tagged with acoustic tags ranging approximately 40 rkm from Kent to the Vaughn Rd crossing of the river in the Cuyahoga Valley National Park. Radio tags are being deployed this spring and fall to address shortcomings in the acoustic technology within the acoustically noisy falls environment. Fish assemblages are also being evaluated at 12 sites spanning the same geographical range, and 16 species are being targeted as species of interest for estimating demographic rates.

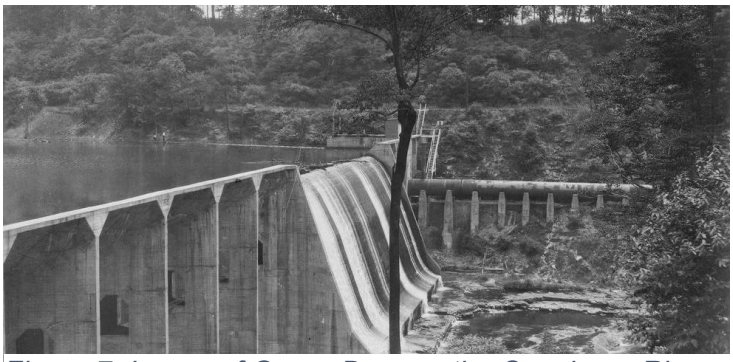


Figure 7: Image of Gorge Dam on the Cuyahoga River.

Cedar Point Causeway Wetlands Project (Sandusky Bay)

Z. Slagle

PMA linkage			
Functional Habitat:	West Basin Nearshore	Priority:	High

Beginning in 2020, Ohio state law prohibits dumping of dredge material into Lake Erie; there is a need to determine how this material can be best disposed of while potentially accomplishing other ecosystem objectives. The Cedar Point Causeway Wetland Creation Project is a test case for creating new wetlands using dredge material. With funding from GLRI, Ohio Healthy Lake Erie Fund, and US Army Corps of Engineers (USACE) and support from numerous partners (USACE, Ohio EPA, Ohio DNR, and the City of Sandusky), the initial stage of this project is nearing completion. In 2021, a retaining structure was built, forming two cells to accept dredge material (~13 ha in contained surface area) along the Cedar Point Causeway in eastern Sandusky Bay; in 2022, dredge material from the bay channel was pumped into these structures. After another 1–2 years of dredging, the dredge material will be allowed to settle and then be planted with macrophytes. Eventually, the retaining structure will be breached to allow water movement and fish passage between the contained wetland and the bay, adding 13 hectares of new wetland habitat. Partner agencies will continue to monitor changes to water quality and the fish community in future years.

Figure 8: The Cedar Point Causeway wetland in July 2022

St. Clair-Detroit Rivers Spawning Survey

E. Roseman

PMA linkage			
Functional Habitat:	Rivers/Tributaries	Priority:	Low to High

The USGS Great Lakes Science Center has monitored fish use on the constructed artificial spawning reefs in the St. Clair-Detroit River System since 2009. In 2022, fish spawning surveys were conducted in U.S. waters during spring and in U.S. and Canadian waters during fall under COVID-19 safety protocols using benthic egg mats. During spring sampling, Walleye eggs were captured at all constructed reef locations in the St. Clair River and Detroit River, with higher mean catch-per-unit-effort in the Detroit River. Catostomid eggs were captured at most reefs in the Detroit River and St. Clair River, with higher mean catch-per-unit-effort in the St. Clair River. Lake Sturgeon eggs were captured at all constructed reef locations in the St. Clair River and on the Fort Wayne Reef in the Detroit River. During fall sampling, we captured Lake Whitefish eggs at all reefs in the Detroit River and at the Harts Light Reef in the St. Clair River. Fish spawning surveys are anticipated to continue in 2023.

Public Data on Temperature and Dissolved Oxygen

R. Kraus and C. Hilling

PMA linkage			
Functional Habitat:	Central Basin Open Water	Priority:	Low to Very High

USGS received support from the Great Lakes Restoration Initiative to leverage the Great Lakes Acoustic Telemetry Observation System in Lake Erie to measure hypolimnetic temperature and dissolved oxygen throughout the central basin. The objectives were to supplement fish detection data with measurements of water quality during stratification and to supply the NOAA hypoxia forecast model with ground-truth information for retrospective analyses. USGS deployed data loggers (PME, Inc., MiniDOT data loggers) in 2020, 2021, and 2022 during annual maintenance of GLATOS stations. Data loggers were programmed to measure dissolved oxygen via an optical sensor, as well as temperature and percent oxygen saturation at 10-minute intervals. Specified temperature range was 0 – 35 °C (accuracy ±0.1°) and the dissolved oxygen range was 0 – 150% (accuracy ±5%) saturation. The loggers were equipped with a separate mechanical anti-fouling wiper, along with copper plate surrounding the optical dissolved oxygen sensor to reduce the amount of bio-fouling during deployment. Factory calibration of dissolved oxygen was verified in the laboratory, and instrument drift was assessed in the field immediately after retrieval (i.e., zero-point calibration). The full sampling design was not achieved in 2020 due to restrictions on crossing the

international border, but the full design was achieved in 2021 and augmented in 2022 (Table 1, Figure 8). In collaboration with NOAA-GLERL researchers, this work will continue in 2023 with additional stations. The public data releases are at www.sciencebase.gov, where 2020, and 2021 data are available, and 2022 data will be available soon.

Table 1. Data logger deployment information for Lake Erie 2020 - 2022

Year	Number of data loggers	Number of GLATOS stations*	Initial Deployment Date	Retrieval Date
2020	31	27	June 8, 2020	October 27, 2020
2021	56	48	May 10, 2021	October 27, 2021
2022	55	55	May 3, 2022	November 3, 2022

*Less than the number of loggers due to mid-lake stations with additional suspended loggers.

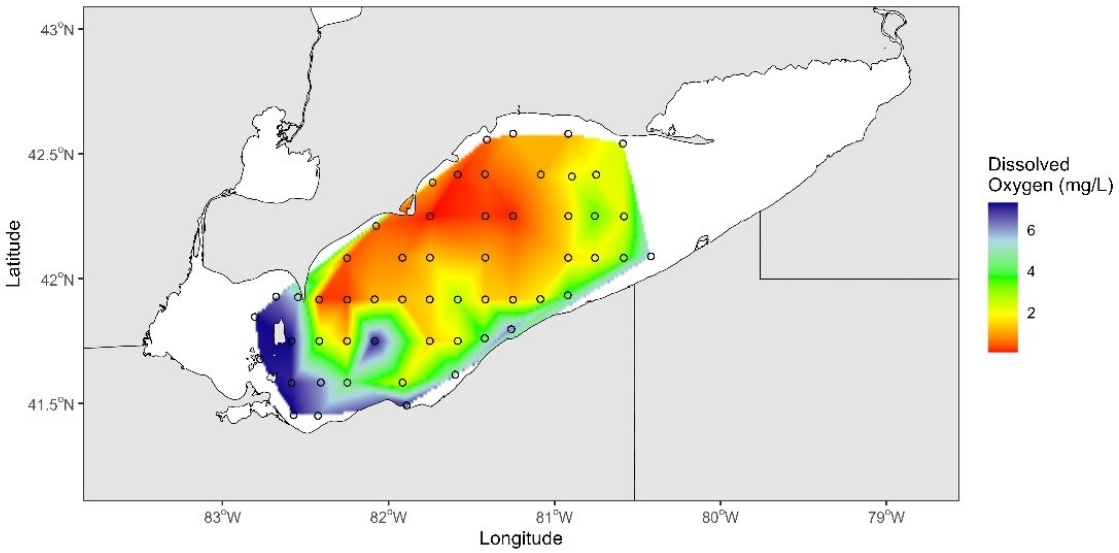


Figure 9: GLATOS stations equipped with data loggers during September 2022 (circles). As an example, mean dissolved oxygen distribution is plotted as a heatmap.

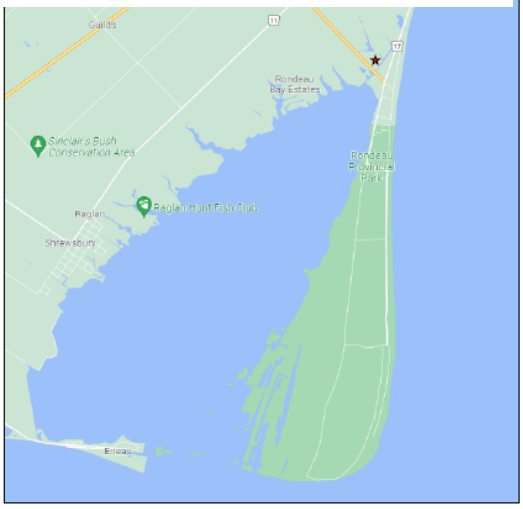
Ontario – Rondeau Bay- McLean Coastal Wetland restoration

S. Marklevitz

PMA linkage			
Functional Habitat:	Central Basin Coastal Wetland	Priority:	Medium

The McLean Drain is a slow-moving, mud bottomed waterway flowing into Rondeau Bay. At the mouth of this drain lies the Mclean property (Figure 10). It is 130.2 hectares (Ha) or 321.7 acres and consisted of mostly agricultural land, with portions containing provincially significant wetland, mowed lawn/garden, forested area, and tall grass prairie habitat. Given Lake Erie's recent high-water levels, the St.Clair Region Conservation Authority (SCRCA),the land owner, developed plans for the property, including coastal wetland restoration (Figure 2).

***Figure** 10: Location of McLean property (red star) on Rondeau Bay relative to Rondeau Provincial Park*



A pre-construction assessment found flooded agricultural land site in the early stages of natural coastal wetland succession (Figure 10). The site contained 17 aquatic plant and, 4 reptile (i.e. turtle), 3 amphibian and 29 fish species included 3 Species-At-Risk (SAR) fishes (Pugnose shiner, Spotted Gar and Warmouth). Using Canada-Ontario Agreement funding, OMNRF supported SCRCA's work at the site in 2022 which included:

1) Retirement of 16.1 Ha agriculture land leaving site A in (Figure 11) for agricultural practices.
2) 1.6 Ha of re-naturalization coastal wetland habitat (site B in Figure 11).
3) Construction of 0.4 Ha of retention wetlands and berm features were complete (site C in Figure 11).
4) Planting of 2.7 Ha of native Carolinian tree and shrub species were well underway with potential additional planting in the area possible (Green areas in Figure 11).

The work completed in 2022 complemented previous OMNRF funded wetland restoration projects on the South-Eastern side of the property (~12 Ha, Figure 12) and the Bates Wetland to the South-west (~13 Ha , Figure 12) to form the largest continuous coastal wetland in Rondeau Bay outside of Rondeau Provincial Park. A failure of the McLean Drain's berm in 2022 has created additional open water habitat and the potential for further enhancements to this coastal wetland complex in the future (site D in Figure 11).

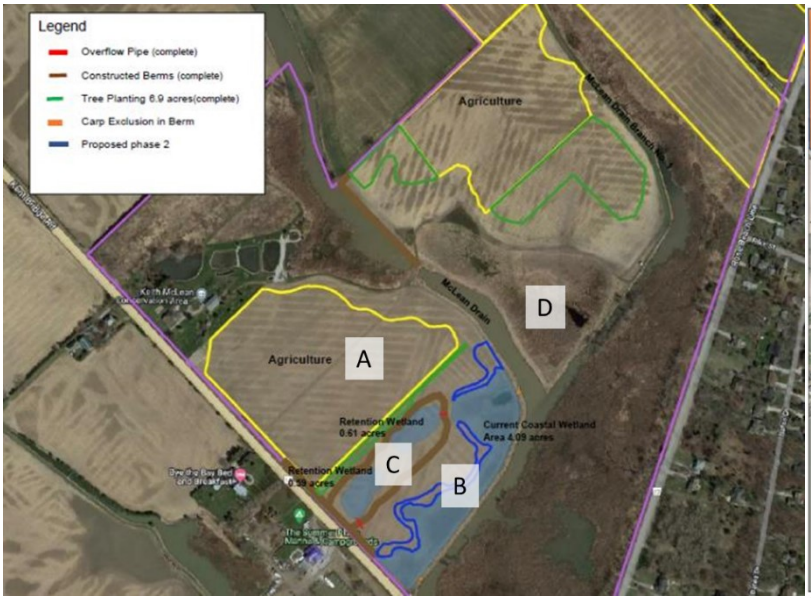


Figure 11: Detailed site plan for the 2022 McLean Coastal wetland Project. Yellow highlighted area identifies the land that will remain in agricultural production, the remaining land at the Site will be restored with landscape features specified in this Site Plan

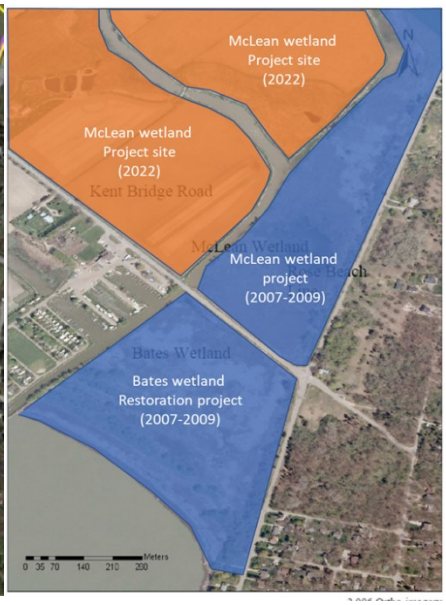


Figure 12: 2022 Mclean wetland restoration project relative to the 2008-2009 NDMNRF COA funded wetland restoration projects.

Figure 13*: Re-naturalized coastal wetland on the McLean Property (Site B on* ***Error! Reference source not found.***Figure 11*), This land was last actively farmed in 2018. Pictures were taken during summer/fall low water (Oct 24, 2022). Panel (A) is an eastward facing view of the naturally formed deep water/wetted area. Panel (B) is a south-west facing view on emergent wetland vegetation (cattails). This vegetation emerged from the natural seed bank in the soil. The Mclean drain's berm can be seen in the background. Panel (C) North-west facing view of emergent wetland, Kent Bridge Rd and Summer Place Marina can be seen in the background.*

Charge 1d: Use GIS techniques to refine PMA mapping, coordination, and scale.

Refining Lake Erie PMA Reefs and Plumes

A. Cooper, C. Harris, S. Marklevitz

Although much of the existing spatial database and web viewer for Lake Erie priority management areas (PMAs) was developed over the course of previous GLFC/GLAHF funding phases, a number of key habitat features remained to be mapped and integrated into the database and viewer. In particular, reef habitats in both Lake Erie and the St. Clair/Detroit Rivers as well as river plumes in Lake St. Clair and Detroit Rivers were not represented as spatial layers in the Lake Erie PMAs database. To fill these data needs, reef locations and river plumes were mapped by GLAHF.

Prior to work in this phase, known reef locations in Lake Erie were represented only as point locations. To provide two-dimensional representation of reef areas in support of PMA development, a variety of methods were explored to map reefs in Lake Erie. Ultimately a presence-only, machine-learning approach (MaxEnt) was used to predict reef locations in using 30 known reef occurrence points and predictor variables mapped at a 30 m resolution, including depth, bathymetric position index (BPI), and proximity to hard substrates. Mapped reef predictions were reviewed by the Lake Erie HTG to provide feedback on modeling results. For the Detroit and St. Clair Rivers, known reef locations of constructed/accidental origin were acquired from the USGS and integrated into the web viewer.

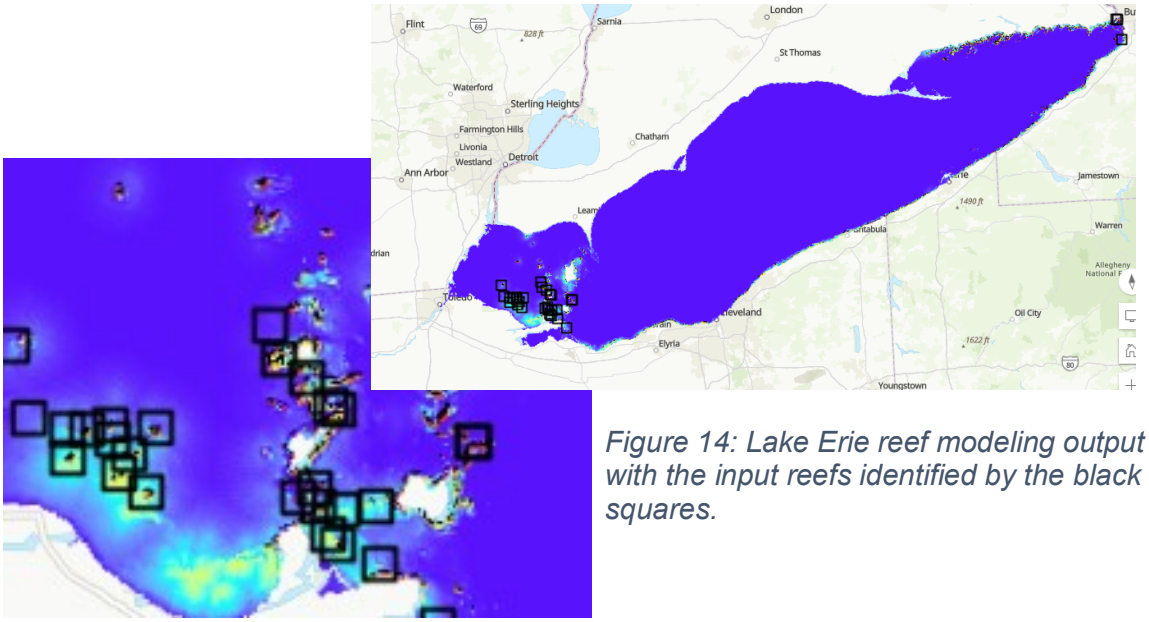


Figure 14: Lake Erie reef modeling output with the input reefs identified by the black squares.

Previous PMA mapping work resulted in the creation of a river plume layer for Lake Erie tributaries, however this layer excluded river plumes for Thames and Sydenham Rivers entering Lake St. Clair and extension of these plumes along the eastern side of the

Detroit River. Using cloud-free satellite imagery sourced from NASA MODIS data for the month of June, river plumes for the Thames, Sydenham, and Detroit Rivers were delineated for each year spanning 2018–2022. Overlays of these river plumes from successive years allowed regions of Lake St. Clair with recurring river plumes to be mapped. These river plumes were also reviewed by the Lake Erie HTG and integrated into the web viewer.

Charge 2: Support other task groups by compiling metrics of habitat use by fish.

There was no new work towards this charge in 2022. There are ongoing efforts targeted at this charge which have been captured in prior reports. One ongoing effort is the Experimental Lake Erie Hypoxia Forecast led by NOAA (https://www.glerl.noaa.gov/res/HABs_and_Hypoxia/hypoxiaWarningSystem.html). This system provides a forecast of bottom temperature and dissolved oxygen with the intent to alert users of hypoxic events (including upwelling events) in Lake Erie. The information collected and forecasted through this effort assists fisheries managers as well as a many other stakeholders around Lake Erie. Over the next year, the HTG will continue looking for opportunities to compile habitat metrics which are beneficial for the goals and objectives of the LEC.

Protocol for Use of Habitat Task Group Data and Reports

- The HTG has used standardized methods, equipment, and protocol in generating and analyzing data; however, the data are based on surveys that have limitations due to gear, depth, time and weather constraints that vary from year to year. Any results or conclusions must be treated with respect to these limitations. Caution should be exercised by outside researchers not familiar with each agency's collection and analysis methods to avoid misinterpretation.

- All data provided from the PMA exercise is reported with the caveat that it is a working dataset based on the best available information. The intention, as designed, is for the HTG to continuously refine the data as new information becomes available and prioritizations are subject to change. Use of the PMA information should be done with this understanding and consultation with HTG co-chairs to ensure proper interpretation of the most recent dataset is highly advised.

- The HTG strongly encourages outside researchers to contact and involve the HTG in the use of any specific data contained in this report. Coordination with the HTG can only enhance the final output or publication and benefit all parties involved.

- Any data intended for publication should be reviewed by the HTG and written permission received from the agency responsible for the data collection.

Acknowledgements

The HTG would like to acknowledge and thank the many contributors to the work presented in this report. As this report is mostly an overview of projects underway in the Lake Erie basin, it is impossible to identify every project and every individual involved. If you are involved in a habitat-related project in the Lake Erie basin and would like your work to be represented in the project table, please contact a member of the Habitat Task Group.