

MICHIGAN WATER COLLABORATION WORKSHOP
BREAKOUT GROUP NOTES - FISHERIES

What gap does the vision address?

Michigan's Great Lakes nearshore (nearshore to be defined) lacks consistent surveillance that could inform state management needs/decisions while also providing opportunity to address important fundamental and applied science questions.

Vision

Develop and implement an integrated Great Lakes nearshore surveillance system using currently available state agency and state funded academic institutions.

Michigan possesses a large network of state-funded, post-secondary institutions that are geographically distributed to enable the development and operation of voluntary surveillance program that would serve multiple purposes, including:

1. Providing key information for state and local coastal and fishery decision makers;
2. Providing a database of key, shared physical, chemical and biological water data for use by participating researchers and decision makers; and
3. Providing training in research design, nearshore sampling techniques and related skills for the state's next generation of water resource and fisheries professionals.

Attributes of such a network would include:

- A common set of goals/objectives, research and management questions, research design at network level, and sampling protocols.
- Low or no barrier investment to joining the network
- A coordinator, or coordinating entity
- A single agreed upon database structure for all information
- Long term arrangements for data management, including meta data protocols, data curation and archival

Resources

1. DNR facilities, housing, research vessels, sampling gear, mentors and analytical power
2. State academic institutions with an established presence on the coast, e.g., Northwest Michigan College, Central Michigan University, Grand Valley State University, University of Michigan, Michigan State University, Saginaw Valley State University, Lake Superior State University, Michigan Technological University; with students at all levels and young researchers, e.g. post-docs and assist faculty, to entrain
3. Specific university-based research equipment:
 - Unmanned autonomous vehicles (air and water) at Michigan Tech and Michigan Tech Research Institute, Saginaw Valley State University
 - Lab (analytical) and field equipment, e.g. for genetics @ MSU, microchemistry
 - Smaller vessels/wading equipment

4. Modeling capacity:
 - Higher resolution 3D models for circulation and particle transport (UM CILER/NOAA GLERL)
5. Michigan Sea Grant network (regional extension agents) and grant program focused on state needs the research community can address and a broad based communications system to provide research information to the public
6. Grant funding for university partners:
 - Through Great Lakes Restoration Initiative (GLRI) to state, e.g., invasive species funding, as well as federal, e.g., US Army Corps of Engineers, US Fish and Wildlife Service;
 - MI Corps funds;
 - Great Lakes Fishery Commission research funds, especially human dimension funding;
 - Resources for large, collaborative groups such as through [SEYSNC](#), USGS Powell Center, National Science Foundation Research Coordination Network

Opportunities

- 1) Future opportunities:
 - a. Citizen science – take advantage of Sea Grant capacity with “train the trainer” programs
 - b. Great Lakes Stewardship Initiative (GLFT)
- 2) Universities seeking and receiving external grants to support a network with the support of state agencies

Needs

- 1) Determination of Inland lakes/Great Lakes nearshore (to be determined, could be 0-30 foot contour) areas beyond capacity of state and federal agencies to systematically monitor
- 2) Understanding energy flow and ecosystems processes in Great Lakes and other systems
- 3) Understanding the geomorphology of and stream transport of recruited materials in tributary streams to the Great lakes
- 4) Improved understanding of the historic fish community including its status and how energy flowed in this system function. Additionally, improved understanding of how the Great Lakes and its tributary systems were physically structured and functioned along with how European settlement has been those dynamics.
- 5) Improved support for aquaculture to ensure its sustainability within the context of the state’s wild fish resources and ensuring fish health issues do not create additional problems from other wild fish resources. There is also a gap on the status of fish pathogens in Michigan waters.

Attendees

- Jen Read, UM
- Gary Whelan, MDNR
- Elliott Nelson, Sea Grant
- Ashley Moerke, LSSU
- Carl Ruetz, GVSU
- Rhett Mohler, SVSU
- Mark Rowe, UM CILER
- Marc Gaden, UM/Great Lakes Fishery Commission
- Mariah Meek, MSU