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***LMMCC Meeting – Fall 2016***

***November 9-10, 2016***

***UWM School of Freshwater Sciences***

***Milwaukee, WI***

**Proceedings**

Participants-IN-PERSON:

1. Bechle Adam Wisconsin Coastal Management Program - UW Sea Grant
2. Beck Judy Retired, U.S. EPA Great Lakes National Program Office
3. Breiby Todd Wisconsin Coastal Management Program
4. Bronte Chuck U.S. Fish & Wildlife Service
5. Bruce Jen U.S. Geological Survey
6. Dinsmore Donalea Wisconsin Department of Natural Resources
7. Doss Matt Great Lakes Commission
8. Fogarty Lisa U.S. Geological Survey
9. Galarneau Steve WDNR - Office of the Great Lakes
10. Greb Steve Wisconsin Department of Natural Resources
11. Hanson Jenny USGS - Upper Midwest Environmental Sciences Center
12. Lenaker Pete USGS - Wisconsin Water Science Center
13. Masterson John Wisconsin Department of Natural Resources
14. Miller Jennifer USACE Chicago District
15. Molnar Mike Indiana Department of Natural Resources
16. Peterson Scot Illinois Natural History Survey
17. Robertson Dale U.S. Geological Survey
18. Seilheimer Titus Wisconsin Sea Grant
19. Stone Jayme U.S. Geological Survey
20. Tecic Diane Illinois DNR Coastal Management Program
21. Theuerkauf Ethan Illinois DNR Coastal Management Program

Great Lakes Commission Staff:

1. Matt Doss
2. John Hummer, Project Mgr./Contractor

Participants-via conference call

1. Becky Pearson, GLOS

Welcome

Steve Galarneau, Director, Wisconsin DNR Office of the Great Lakes, welcomed everyone to the Fall 2016 Meeting of the Lake Michigan Monitoring Coordination Council (LMMCC).

Introductions & Review of Agenda – Steve Greb, LMMCC co-chair, Wisconsin DNR

Steve led introductions and reviewed the meeting agenda. It was noted that since Glenn Warren would not be present for the CSMI presentation, Jen Bruce’s talk on the Science in the Great Lakes (SiGL) Mapper would be moved up to his slot.

Update on Lake Michigan Partnership – John Masterson, Wisconsin DNR

John presented the background on lakewide management plans (then referred to as LaMPS) called for under the Great Lakes Water Quality Agreement, then followed with an update on the roles and current work of the Lake Michigan Partnership and the new Lakewide Action and Management Plan (now LAMP) for Lake Michigan. Key points:

* The change of name to LAMP (instead of LaMP) recognizes the need for implementation and action going forward.
* A new Lake Michigan LAMP is due in 2019. Prior to this, lake ecosystem objectives (LEOs) will be developed by task teams in 2017 (see presentation for details on LEOs), a science reporting workshop will occur at the State of Lake Michigan Conference in fall 2017, and a science priorities workshop will take place in fall 2018.
* The LAMP is developed and overseen by the Lake Michigan Partnership, led by U.S. EPA, other government agencies, and tribes working collaboratively to understand lake conditions, stressors, and identify actions. Collaborative lakewide goals, objectives, and actions plans are being developed.
* The Lake Michigan Partnership facilitates information sharing, sets priorities, and assists in coordinating environmental protection and restoration activities.
* Work under the Partnership is spearheaded by a Management Committee of several government agencies and organizations, with a similarly composed Work Group leading actions that are carried out by standing or ad hoc subcommittees.

Science in the Great Lakes (SiGL) Mapper – Update & Quick Demo – Jen Bruce, USGS Wisconsin Water Science Center

Jennifer Bruce reviewed the SiGL Mapper. Key points:

* Start key bullet points here. (Waiting to receive Jen’s presentation.)

Next we heard presentations related to three of the four LAMP workgroups: Habitat & Species, Chemicals & Nutrients, and Sustainability.

**Habitat & Species-Fisheries**: Overview of the Great Lakes Mass Marking Program – Charles Bronte, U.S. Fish & Wildlife Service, New Franken, WI

Chuck presented background information and current status of the Great Lakes Mass Marking Program, with a focus on Lake Michigan. Key points:

* In 2003, the Council of Lakes Committee of the Great Lakes Fishery Commission put together a multiagency task group to investigate implementing a fish mass marking program for the Great Lakes basin. It was funded and implemented.
* The program is a comprehensive, coordinated fish tagging/marking and data recovery program involving all state, tribal, federal, and provincial agencies that stock char and salmon into the Great Lakes and its tributaries.
* A fully developed program would be able to provide tagging and marking services for 22 million fish annually and put in place a system to collect and process tag recovery data and then work with the agencies to analyze and evaluate the data to help understand the impacts of their stocking programs.
* Bronte reviewed the objectives of the program, what information is gained, why it’s important, techniques considered/ used, how the program works, and funding levels since 2008.
* The program is facing a major funding cut for FY17.

**Chemicals & Nutrients**: Microplastics: Status & Monitoring Strategies – Pete Lenaker, USGS Wisconsin Water Science Center

Key points:

* Research on microplastics in the Milwaukee area.
* Microplastics are plastic particles less than 5mm in diameter and can be microbeads, foam, film, fiber/line, and fragment. Can come from clothes like fleece jackets.
* Microplastics leach chemicals into fish.
* Observed in over 100 marine and freshwater species.
* Samples collected in Lake Michigan (about 1 mile offshore) and the Milwaukee, Menomonee, and Kinnickinnic rivers, plus the Inner Harbor and Outer Harbor.
* Each watershed had an upstream and downstream sampling location.
* Results are still preliminary.

**Sustainability:** Monitoring Geologic and Nearshore Dynamics to Improve Shoreline Sustainability – Diane Tecic and Ethan Theuerkauf, Illinois Coastal Management Program

Key points:

* Focused on the subsection of “littoral processes – sand and shoreline management” of the Sustainability Work Group of the Lake Michigan LAMP. Talked about increasing relevance and effectiveness of the LAMP.
* Highlighted the relevance of monitoring and climate change issues for the GLWQA.
* Stressed importance of monitoring and research in identifying and solving problems: must be solution-driven.
* Work is environment-driven, but must remember needs of economy and communities and harmonize approaches: definition of sustainability.
* Importance of work: Affects habitats and species, recreation, economy, water quality.
* Reviewed monitoring needs and desired outcomes of littoral processes sustainability monitoring.
* Drilled down to Illinois Coastal Geologic Research and Monitoring Program.
* Discussed major barriers to sand management and habitat preservation and how they are addressing them through collaborative strategic research and monitoring.
* Reviewed the program’s coastal processes mapping, monitoring, and research efforts, including a couple projects to critically evaluate strategies for managing coastal change:
  + GLRI proposal- habitat loss at Illinois Beach State Park
  + USACE/USGS- beach nourishment effectiveness

**Breakout Groups**

We broke into two breakout groups combining Habitat & Species and Coastal/Physical Processes in one and Contaminants and Nutrients in the other. Tasks for the breakout groups were as follows:

1. Determine what the monitoring and coordination needs are for the identified topic areas.
2. Identify key goals and objectives that could be addressed by a LMMCC workgroup.

A Breakout Groups handout with specific questions was provided to guide the discussions. At the end of the breakout sessions, the groups presented recommendations and what they propose for future work—and what role the LMMCC could have in supporting the science and management issues for Lake Michigan.

***Breakout groups notes start on next page.***

**Habitat & Species and Coastal/Physical Processes Breakout Group**

Sand Balance and Shoreline Management – need a group. GLC + Lisa🡪Diane & Ethan

**Major science and management issues**

These were \*starred\* items from this group:

* Mapping – How do we turn a map into an effective baseline? Phragmites-wetlands
* Link with LCC pilot and other relevant groups and initiatives
  + How can we meet with them?
  + How can we bring them into the LMMCC work?
  + **Diane Tecic is lead**
* Nearshore framework – connection with Habitat & Species Work Group
  + What are the monitoring needs?
  + How can LMMCC help?
* Lake Ecosystem Objectives (LEOs) – We need to wait and see what the LEOs are and how we can help monitor/measure them
  + Establish LEOs
  + Monitor/measure LEOs
  + Do we contribute to the LEOs or react to them?
  + Help form them so they are based on sound science and can be measured/monitored
  + Connect appropriate people to LEOs
  + What’s the “carrot” to attract people to the LEOs? We’re in LAMP limbo!
  + Have LMMCC workgroups help the LEO subcommittees
  + **Diane, Lisa, Matt P.**
* Focus on issues for LMMCC – priority areas, greatest needs, get the right people engaged. Core agencies.
* Support the LAMP – Support data/monitoring needs for LAMP priorities
  + Let LAMP Partnership identify priorities and LEOs and then coordinate how LMMCC can support the effort as a coordinator of monitoring
* Everything Else
  + Connect CSMI (every 5 years) with ongoing, annual monitoring

Other specific issues identified

* Nearshore vs. Offshore.
* Benthic energy transport to and from nearshore to offshore.
* Too much focus on nearshore.
* Sand management.
* Shore hardening.
* Invasive impacts on wetlands and non-hardened shorelines.
* Look at TNC report on biodiversity research needs.
* How do we fill in the 5-year gap in the CSMI cycle?
* Coastal wetlands – difficult to monitor due to lake levels. (Editor’s note: See work of Great Lakes Coastal Wetlands Consortium – they have methods and protocols that have been tested and used.)

**How do we better integrate the Great Lakes Fishery Commission with the LAMP and the Habitat & Species Work Group? They haven’t been well connected.**

**Have the LMMCC go to the Council of Lake Committees meeting – March 2017**

* Look at the Lake Superior LAMP as a model – how its GLFC Lake Committee and Technical Committee is driving the LAMP fishery work.
* \*Titus Seilheimer, WI Sea Grant, will be the LMMCC connection.

**Sustainability of invasives control – phragmites**

* Challenge of establishing a baseline.
* Functionality measure.
* What is an appropriate metric?
* What tools/data can we recommend to come up with effective metrics? What collaborations can we establish to help with this?

**Anthropogenic vs. natural impacts to wetlands**

* What is zoned for development by whom?
* NOAA, USFWS, LCC work on pilots for wetlands, etc.
* St. Clair-Detroit River Corridor Initiative – SW Michigan wetland assessment.

**Fate and transport of sand and coastal processes**

* Modeling. Cohesion in what’s being done. Guy from IL Coastal Program is working on modeling.
* Large coastal simulation model doesn’t exist, or needs to be scaled up.
* Good data doesn’t exist to inform this.
* Need a larger concerted network. Couple with different weather events.
* WRDA sediment management pilots.
* Diane Tecic is starting a sustainability workgroup (Diane, Lisa, Ethan) – Sand and Shoreline Management. Create a larger community around this. Could possibly lead to other sustainability issues.
* Start with coastal programs – framework that could bring in other states. Template.
* What are the data and monitoring needs? How can the LMMCC help?

**Data Needs**

* Shoreline management (IL) - Data needs to be able to characterize change over time – lack of concerted effort around the lake to do this.
  + What is the suite of data that is relevant on a lakewide basis, e.g., Indiana Dunes.
* Great Lakes Mapping Summit – April 2017 – will look at needs in Great Lakes and how we can better coordinate data. What groups are coordinating the mapping needs?
  + Associate the LMMCC with this. (Check with Diane Tecic on this.)
  + NOAA NCOS program could be a partner on this. (Check with Steve Brown, IL USGS, on this.)

**Contaminants and Nutrients Breakout Group**

**Major science and management issues**

Nutrients

* Harmful Algal Blooms – toxicity, dynamics, biomass, species
* Hypoxia – fish kills
  + Above are for Fox River only in Lake Michigan
* Loadings quantities

Contaminants

* Historic – source contributions pathway – PCBs
  + Evaluate mitigation for PCBs
* Ongoing – Mercury accumulation
* Emerging – Endocrine disruptors: Ecosystem health

Other/General Notes

Lake MI has better baseline for contaminants and nutrients with LMMBS.

Research questions vs. consistent monitoring to build trends.

4 Lake MI states have not bought into common framework.

Help build CSMI picture.

What’s being missed?

Need to not forget local groups monitoring.

Need reclamation/sewerage district and beach monitoring folks at the table.

**Data Needs**

* Loadings – What is it at ***all*** river mouths?
* If loading is changing in Lake Michigan - measuring it all river mouths gives you a finer scale.
* Need to know flow – wet or dry year – so are able to compare.
* Time series – trends analyses.
* “Useful” monitoring program:
  + Time: 12 times a year
  + Space: Mouths of tribs – which ones are the question?
  + Compare

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***Sidenote/opinion:***

* Wisconsin samples monthly
* Michigan needs revamped sampling program – currently does more upstream monitoring – only once every 5 years
  + Needs to be at least quarterly sampling

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* Need CSMI data
* End Points:
  + Trib mouths
  + Permits
  + Fauna
  + Beaches
* LMMB Baseline, then 2005, 2010, 2015, etc.
* POTW Sampling
* Opportunity to compare all of above, including CSMI data

**Rolling It All Together: Next Steps**

* Nominations for co-chair
* LMMCC Exec Comm meet with Tinka Hyde, new GLNPO director: Market LMMCC, connect on CSMI
* Initiate call – small group – strategy for proposing monitoring discussion at State of Lake Michigan Conference
  + Use SOLM Conference to scope monitoring – **Flash talks** followed by breakout session
  + Suggest session on Nutrients for State of Lake Michigan conference
  + **Provide template ahead of time – what everyone is doing (Mike Molnar)**
  + What do you do, what are your needs/technical resources?
* Spring webinar topic? – involve citizen science (vol mon) programs
* Have the LMMCC go to the Council of Lake Committees meeting – March 2017
* STAY CONNECTED WITH LEOs PROCESS! (Read bullet section on LEOs on p. 4)
* Form group on sustainability and shoreline hardening issue (LMMCC workgroup separate from DT’s?)
* Keep connected with LAMP Partnership’s priorities –create value-added focus for LMMCC
* Reach out to tribes again ($7 Billion fishery) – need tribal rep – Mike Finney, WI & Mike Ripley, Chippewa-Ottawa Resource Authority
* Link with LCC pilot and other relevant groups and initiatives.

*Question: What is the LCC Pilot?*