



Great Lakes Advisory Board (GLAB) March 30 and 31, 2021.

Day 1

Great Lakes Advisory Board - Charter

- The Advisory Board will provide advice and recommendations on matters related to: a. the Great Lakes Restoration Initiative; and b. the domestic implementation of the Great Lakes Water Quality Agreement between the U.S. and Canada.
- **Description of Duties:** The duties of the Advisory Board are solely to provide advice and recommendations to the EPA Administrator through the Great Lakes National Program Manager. In response to specific requests (i.e., charge questions) from the Agency, the Advisory Board will provide advice and recommendations on:
 - a. Great Lakes protection and restoration activities.
 - b. Long term goals, objectives and priorities for Great Lakes protection and restoration.
 - c. Other issues identified by the Great Lakes Interagency Task Force/Regional Working Group.
- **Agency or Official to Whom the Committee Reports:** The Advisory Board will provide advice and recommendations, and report to the EPA Administrator through the Region 5 Administrator in their capacity as the Great Lakes National Program Manager

Current GLAB Members

- **Co-Chair: Stephen Galarneau**, Director of the Office of Great Waters – Great Lakes & Mississippi River, Wisconsin Department of Natural Resources
- **Co-Chair: Kyle Dreyfuss-Wells**, Chief Executive Officer, Northeast Ohio Regional Sewer District
- **Scudder Mackey**, Chief of the Office of Coastal Management, Ohio Department of Natural Resources
- **James Williams Jr.**, Tribal Chairman, Lac Vieux Desert Band of Lake Superior Chippewa Indians
- **Jeff Stollenwerk**, Director of Government and Environmental Affairs, Duluth Seaway Port Authority
- **John Hull**, Founder and Chairman, Hull & Associates Inc.
- **Lisa Frede**, Director of Regulatory Affairs, Chemical Industry Council of Illinois
- **Larry Antosch**, Senior Director, Ohio Farm Bureau Federation
- **Kay Nelson**, Director of Environmental Affairs, Northwest Indiana Forum
- **J. Val Klump**, Dean and Professor of the School of Freshwater Sciences, University of Wisconsin - Milwaukee
- **Alan Steinman**, Director of Annis Water Resources Institute, Grand Valley State University
- **Brian Miller**, Retired, Illinois-Indiana Sea Grant and Illinois Water Resources Center
- **Sylvia Orduño**, Organizer, Michigan Welfare Rights Organization

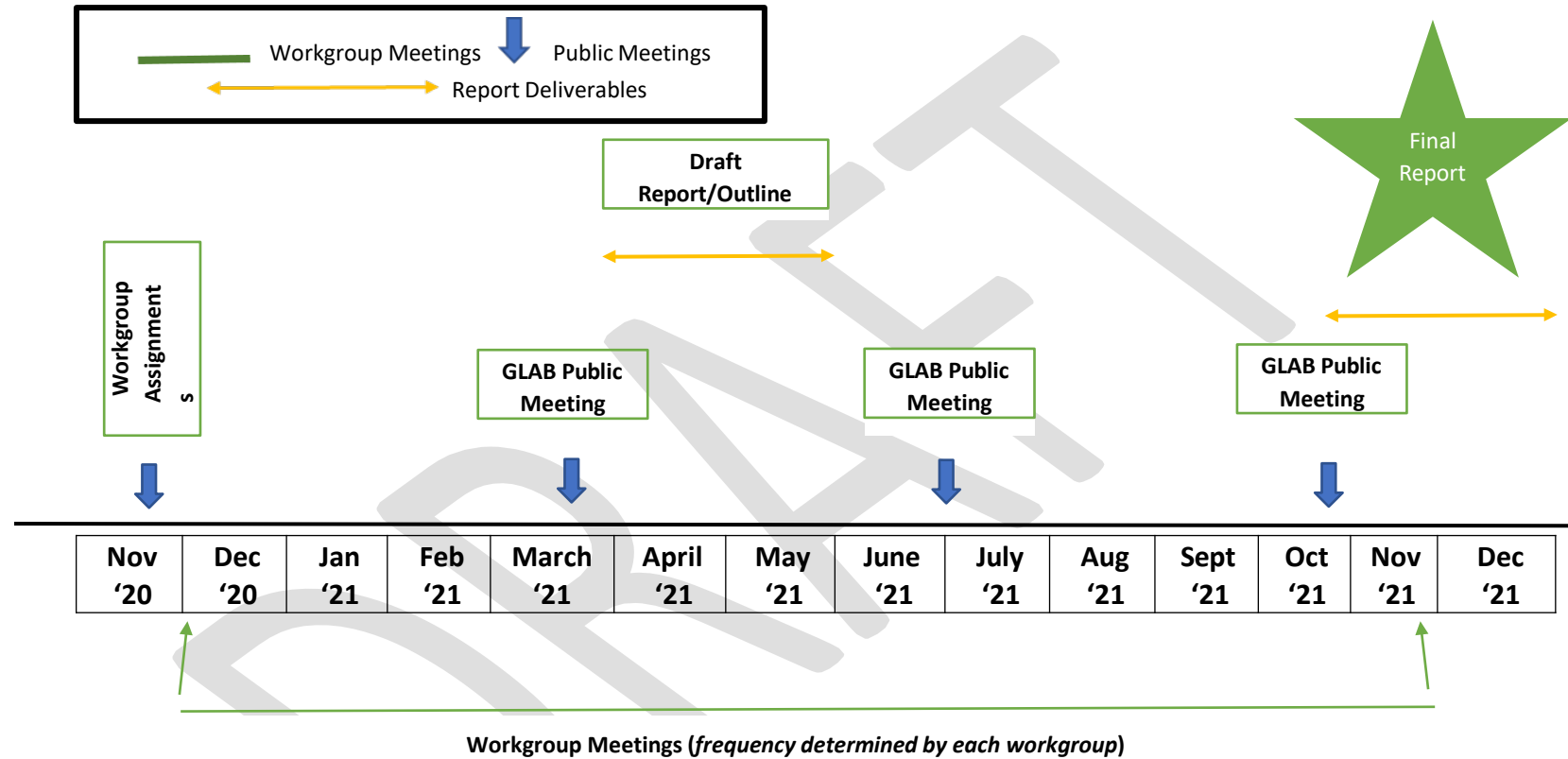
6 CHARGE QUESTIONS / THEMES – 3 WORKGROUPS

Discussion Platform

Grouping the 6 Charge Questions

- Nutrients Workgroup (1 & 2)
 - Theme 1: Seek Advice and Recommendations on Innovative Strategies to Address Legacy Phosphorus
 - Theme 2: Seek Advice and Recommendation on Managing Excess Nutrients
- GLRI Workgroup (3, 5 & 6)
 - Theme 3: Seek Advice and Recommendation on GLRI Outreach
 - Theme 5: Outcome Based Investments in the Great Lakes
 - Theme 6: GLRI's Role in the Vitality and Reinvestment of Great Lakes Communities
- Invasive Species Workgroup (4)
 - Theme 4: Seek Advice and Recommendation on Invasive Species

Great Lakes Advisory Board Timeline 2020-2021 Timeline of Work (Draft Version 12/08/2020)





GLAB Nutrient Workgroup

March 30, 2021

DR. LARRY ANTOSCH

LISA FREDE

DR. SCUDDER MACKEY (CHAIR)

DR. BRIAN MILLER

DR. ALAN STEINMAN

Theme 1: Seek Advice and Recommendations on Innovative Strategies to Address Legacy Phosphorus

Charge Question to GLAB:

Please identify any strategies, using traditional or innovative technologies or methods, to reduce legacy phosphorus within the Lake Erie watershed (and other Great Lakes and tributaries thereto).

Background Information: *Legacy phosphorus is defined as phosphorus that is already in the soil and water of the Great Lakes (and tributaries thereto) and that may require different considerations as part of the installation of any new or continuing best management practices to reduce nutrient loads.*

Theme 2: Seek Advice and Recommendation on Managing Excess Nutrients

Charge Question to GLAB:

Balancing the need for the continued production of agricultural commodities in the Great Lakes region, the contribution to excess nutrient loading in Lake Erie associated with agricultural production activities, and the need to significantly reduce the extent and duration of HABs on Lake Erie, **what innovative actions could reasonably be taken to accelerate the reduction of excess nutrients and HABs or duration of HAB events in Lake Erie?**

Consider if there are new or different applications of traditional federal funding sources, opportunities to partner with the private sector (including tourism, drinking water systems, and others affected by HABs), or community-driven or market-based approaches to financing water quality improvements.

Background Information: *The issue of nutrient (especially phosphorus) loading has been a very significant and public ecosystem health issue in Lake Erie, primarily due to the creation of Harmful Algal Blooms (HABs) that negatively impact drinking water systems, tourism and other commercial activities in the Great Lakes.*

Strategic Approach

Workgroup Actions	Rationale
<p>Technical - Science and Data-Driven Approach</p> <ul style="list-style-type: none">• Review recent ongoing work, publications, monitoring reports...• Discussions with external entities• GLNPO Focus Area 3 Presentation and Discussion <p>Process/Management-Related Approach</p> <ul style="list-style-type: none">• Funding allocations (\$\$\$\$)• Opportunity Identification/Project Generation• Project Investment Criteria• Assessment and Performance Metrics <p>GLAB Workgroup and External Expertise</p> <ul style="list-style-type: none">• Problem identification/Gap analyses• Innovative/Different Approaches• Review prior GLAB recommendations	<ul style="list-style-type: none">• Investments are made based on sound scientific data and information – that yield results.• Are Action Plan II and III goals being met? Are the results real and have the investments made a difference? Are HABs any less severe?• Are resources adequate? Explore alternative funding mechanisms.• Process for GLNPO to identify and support innovative projects/opportunities?• Long-term performance monitoring.• What's working and what isn't? What are we missing? Recommend new information and/or approaches. Don't "reinvent the wheel".

Focus Area 3

Theme 1 – Legacy Nutrients

- **Sources of Legacy Nutrients (Soil and Water of the Great Lakes)**
 - Watershed (BMPs, tiles, AG drainage)
 - Tributary (water retention, erosion control)
 - Lake (dredging, remediation)
- **Technical Evaluation**
 - Identify Interventions that address Legacy Nutrients (complementary to Theme 2)
 - Effectiveness of those Interventions
 - Demonstration Projects and Technologies
- **Opportunity Identification/Project Generation**
- **Innovative Approaches and New Technologies**
- **Integration with other Focus Areas/Initiatives**
 - Shared funding/metrics, Leveraging

Theme 2 – Excess Nutrients

- **Size and Type of Projects**
 - AG Urban and Suburban PS/NPS BMPs
 - Natural Infrastructure (wetlands)
 - Hydrology (water management/retention)
 - Engineered Solutions (public works)
 - Dredging/Sequestration/Treatment
- **Geography and Regions of Investment**
 - Focus on geographies/regions that are major contributors to HABs
- **Integrated portfolio of projects**
 - Projects designed to work together
- **Innovative Approaches and New Technologies**
- **Alternative funding mechanisms/Incentive Programs (Pay-for-Performance, Market-based)**
- **Long-term maintenance and monitoring to ensure long-term project performance**

Process/Management

Non-Structural Process/Management	Rationale
<ul style="list-style-type: none">• Funding allocations<ul style="list-style-type: none">• Grant Funding (traditional)• Pay for Performance, Public-Private• Conservancy Districts, Endowments• Market-Based Incentives (Nutrient Trading)• Long-Term Project Continuity and Performance<ul style="list-style-type: none">• Long-term Maintenance, Management, and Monitoring (Project Performance)• Long-term Funding Streams...• Governance/Implementation Structures<ul style="list-style-type: none">• Watersheds/Water Districts• Regulatory Framework• Rural/Municipal Systems (Stormwater, Septic, AG Manure, AG drainage)• Dredging/Beneficial Use (USACE navigation)	<p>Can GLNPO leverage grant dollars to maximize nutrient reduction benefits and achieve Action Plan III goals and objectives? How does GLNPO reduce risks associated with innovative projects? Can GLNPO incentivize local action and investments?</p> <p>Current monitoring/assessment regimes are short-term. Nutrient reduction must be a long-term commitment over decadal scales. Not viable under traditional short-term grant-funded programs.</p> <p>Must address scale and regulatory dependencies, e.g., TMDL compliance and flexibility. Limitations of Federal, State, and Local authorities, may limit ability to implement synergistic nutrient reduction strategies.</p>

Initial Thoughts/Next Steps

Nutrient Workgroup Effort	Suggestions...
<p>Non-Structural Process/Management</p> <ul style="list-style-type: none">• Funding allocations/Governance Structure• Opportunity Identification/Project Generation• Project Investment Criteria• Assessment and Performance Metrics <p>Theme 1 – Legacy Nutrients</p> <ul style="list-style-type: none">• Sources of Legacy Nutrients• Identify effective interventions that address Legacy Nutrients <p>Theme 2 – Excess Nutrients</p> <ul style="list-style-type: none">• Project size & type (BMPs, wetlands, hydrology)• Regions that are major contributors to HABs• Innovative approaches and new technologies• Alternative funding mechanisms and incentives	<ul style="list-style-type: none">• Increase Nutrient/HAB Funding Allocations (GLNPO Step Increases), Leveraging GLRI Funding with State and Local funds• Project Size and Type to maximize benefits, Invest in Geographies and Regions that matter• Alternative Funding Mechanisms and Incentive Programs (Pay-for-Performance, Market-based)• Long-term Maintenance and Monitoring to ensure Long-term Project Performance• Integration with other Focus Areas/Initiatives, Shared Funding/Metrics, Leveraging

Our Funding Solution...



Questions and Discussion

Dr. Larry Antosch

Lisa Frede

Dr. Scudder Mackey (chair)

Dr. Brian Miller

Dr. Alan Steinman

GLAB Nutrient Workgroup

March 30, 2021

Break

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GLAB AQUATIC INVASIVE SPECIES (AIS) WORKGROUP

PUBLIC MEETING MARCH 30 & 31, 2021

WORKGROUP CHARGE QUESTION

BACKGROUND INFORMATION: *INVASIVE SPECIES CONTROL AND PREVENTION CONTINUES TO BE A CHALLENGE FOR THE GREAT LAKES. PERHAPS THE MOST VISIBLE EXAMPLE ARE THE EFFORTS TO CONTROL ASIAN CARP FROM ENTERING LAKE MICHIGAN.*

BALANCING THE NEED FOR CONTINUED COMMERCIAL, RECREATIONAL AND OTHER ACTIVITIES ON THE GREAT LAKES, WHAT INNOVATIVE ACTIONS COULD REASONABLY BE TAKEN TO ACCELERATE THE CONTROL OF EXISTING INVASIVE SPECIES, AND WHAT METHODS OR STRATEGIES CAN BE DEPLOYED TO PREVENT THE ESTABLISHMENT OF FUTURE INFESTATIONS?



Bighead carp



Grass carp



Black carp



Silver carp

USDA'S DEFINITION OF AIS



AQUATIC (WATER-DWELLING) INVASIVE SPECIES ARE NON-NATIVE PLANTS, ANIMALS, AND OTHER ORGANISMS THAT HAVE EVOLVED TO LIVE PRIMARILY IN WATER (AQUATIC HABITATS) RATHER THAN ON LAND (TERRESTRIAL HABITATS). AQUATIC HABITATS ARE HABITATS THAT ARE COVERED WITH WATER ALL OR PART OF EVERY YEAR. FROM OCEANS TO BOGS, MANY TYPES OF AQUATIC HABITATS EXIST.

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OVERVIEW OF WORKGROUP OUTLINE

- PATHWAYS/VECTORS
- REGULATORY ISSUES
- CHALLENGES
- RECOMMENDATIONS

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PATHWAYS/VECTORS

- VESSEL DISCHARGE: SALTIES, LAKERS, AND BARGES
- CANALS AND WATERWAYS
- RECREATIONAL ACTIVITIES
- AQUACULTURE
- ORGANISMS IN TRADE
- MISCELLANEOUS
- OTHER?

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RECOMMENDATIONS

- EARLY WARNING SYSTEM
- MONETARY ALLOCATIONS
- INNOVATIVE APPROACHES
- REGULATORY ALIGNMENT
- OTHERS?

Day 1 Meeting Wrap Up