

**Great Lakes Restoration Initiative Action Plan
Science Advisory Board Review**

Charge to the SAB panel reviewing the GLRI Action Plan

I. Scope of Review

The SAB panel is charged with reviewing the Great Lakes Restoration Initiative's (GLRI or Initiative) Action Plan. A separate scientific background paper was developed to provide the review panel with an overview of the key ecological problems in the Great Lakes, and help the panel navigate through the extensive literature, strategies, and plans that informed the GLRI Action Plan. The SAB panel is requested to use the scientific background paper (and other relevant documentation cited in the background paper) in the review of the Action Plan.

II. Introduction

In 2010, President Obama announced and Congress appropriated \$475 million in new funding for the GLRI to protect and restore the chemical, biological, and physical integrity of the Great Lakes. The Great Lakes contain 20 percent of the world's surface freshwater, accounting for 95 percent of the surface freshwater in the United States. The watershed includes two nations, eight U.S. States, two Canadian provinces, more than 40 tribes, and more than one-tenth of the U.S. population. Led by the United States Environmental Protection Agency (EPA), the GLRI targets some of the most serious threats to the Great Lakes including toxic substances and contaminated sediment, invasive species, non-point source pollution, and habitat degradation.

To guide the efforts of the GLRI, EPA and our Federal partners, through the Great Lakes Interagency Task Force (IATF)¹ chaired by EPA Administrator Lisa Jackson, developed a comprehensive multi-year Action Plan. The GLRI Action Plan identifies goals, objectives, measurable ecological targets, and specific actions for five major focus areas:

- Toxic Substances and Areas of Concern
- Invasive Species
- Nearshore Health and Nonpoint Source Pollution
- Habitat and Wildlife Protection and Restoration
- Accountability, Education, Monitoring, Evaluation, Communication and Partnerships

III. Directive for Review of the GLRI Action Plan

The Congressional Conference Report accompanying H.R. 2996² further specifies the need for EPA to "engage an independent, scientific panel to review the scientific credibility of the plan to optimize the likelihood of successful restoration at appropriate scales."

¹ The Great Lakes Interagency Task Force (IATF) brings together eleven U.S. cabinet and Federal agency heads to coordinate restoration of the Great Lakes. Created by Executive Order from President Bush on May 18, 2004, the IATF mission is to focus on environmental outcomes like cleaner water and sustainable fisheries, and target measurable results. The IATF helps coordinate GLRI implementation. <http://www.epa.gov/greatlakes/iatf/index.html>

² Public Law 111-88, the Department of the Interior, Environment, and Related Agencies Appropriations Act, 2010.

IV. Charge Questions on the overall structure of the GLRI Action Plan

Question 1 - As presented in the scientific background document, the goals, objectives, measures, and actions of the Action Plan are based on the best available scientific analysis of environmental challenges and are consistent with the multitude of strategic plans and governing structures for the Great Lakes. Since the Action Plan is an “action driver”, we are most interested in the SAB’s recommendations on the identified principal actions to achieve progress. Are the principal actions proposed in the Action Plan consistent with the actions and/or recommendations of the previous collaborative plans and strategies for the Great Lakes (e.g. Great Lakes Regional Collaboration Strategy) as identified in scientific background document and other information of which you are aware? Are there other actions that we should consider for inclusion in the Action Plan that will better achieve the goals of the Action Plan?

Question 2 – As presented in the scientific background document, we have developed and currently operate the Great Lakes Accountability System (GLAS)³ as the primary mechanism for collecting information to monitor and report on GLRI progress. GLAS is still a work-in-progress at this time and it is not ready for external review. However, given the scope of the Action Plan and the nature and types of projects funded under the GLRI, we are interested in the SAB’s recommendations on how best to track the progress and accountability for a large ecosystem restoration program. What critical environmental elements, endpoints, or other measures would you include to those identified in the Action Plan?

Question 3 – Please comment on the overall scope and framework of the Action Plan and its ability to organize environmental issues in a way that directs restoration actions. Does the SAB have any specific recommendations on how to improve or clarify the Action Plan?

V. Charge Questions on Toxic Substances and Areas of Concern

Question 4 – The presence, significance, and trends of many historically-regulated (or “legacy”) contaminants in the Great Lakes are well-documented. Through the Action Plan, we are working to fully implement and enhance existing programs to eliminate releases of many of these contaminants. For example, the GLRI is working to accelerate the rate of sediment remediation in Areas of Concern (AOCs) through the Great Lakes Legacy Act⁴ among other programs. Similarly, the Action Plan calls for initiating strategic pollution prevention and toxics reduction efforts to minimize releases and emissions of many of these same contaminants. Please comment on the Action Plan’s approach for addressing so-called “legacy” contaminants through sediment remediation and toxics reduction efforts. Please comment on whether the Action Plan addresses the reduction of “legacy” contaminants at all geographic scales sufficiently to restore the Great Lakes ecosystem. Are there other actions that we should consider?

Question 5 – The Action Plan also acknowledges the threats posed to the ecosystem by chemicals of emerging concern, such as flame retardants, surfactants, pharmaceuticals and personal care product constituents. To devise and implement effective control strategies, EPA and the other federal agencies are coordinating efforts to identify significant sources and impacts of new toxics to the Great Lakes ecosystem through robust surveillance and screening. Please comment on our approach for assessing and managing the risks posed by chemicals of emerging concern. Are there other actions or specific chemicals of emerging concern that we should consider?

³ Available online at <http://glri.us/projects.html>

⁴ Funding under the Great Lakes Legacy Act is now part of the GLRI.

VI. Charge Question on Invasive Species

Question 6 – Invasive species have dramatically altered the Great Lakes ecosystem. New species continue to threaten the Great Lakes. The Action Plan identifies a set of actions intended to eliminate new introductions, control the spread, and minimize the risks of invasive species. EPA has initiated separate reviews for some of the principal actions in this focus area. Ballast water technology is being reviewed by a separate SAB panel. The Asian Carp activities are being addressed through the Asian Carp Control Strategy Framework that is being elevated to a program unto itself in coordination with GLRI. Therefore, we are asking the SAB's for advice and recommendations on the remaining actions to address invasive species. What are the key scientific data needed in an early detection surveillance network to provide up-to-date critical information for evaluating rapid response options? Does the SAB have any recommendations on demonstrated preventative and control technologies that could be applied to invasive species in the Great Lakes? Are there other actions that we should consider?

VII. Charge Question on Nearshore Health and Nonpoint Sources

Question 7 - The report *State of the Great Lakes 2009* has documented that “phosphorus loads may be increasing after a long period of decrease, and that an increasing proportion of the phosphorus is an available, dissolved form.” The increased phosphorus loads along with other stressors are degrading nearshore water quality as evidenced by eutrophication, harmful algal blooms (e.g. *Cladophora* and *Microcystis*) and avian botulism. To address these problems, the Action Plan identified a set of principal actions to improve the health of the nearshore areas and reduce nonpoint source pollution to levels that do not impair nearshore waters of the Great Lakes. These principal actions include identifying sources and reducing loadings of nutrients and soil erosion and targeting watershed plan implementation in high priority watersheds. Please comment on the adequacy of the principal actions to address the impacts associated with nearshore soluble reactive phosphorus, *Cladophora* biomass, and dreissenid biomass. Are there other actions that we should consider? Please comment on the Action Plan's intent to target Great Lakes subwatersheds⁵ that show severe signs of stress for focused restoration activities as opposed to a broader approach that targets all watersheds (stressed and currently unstressed).

VIII. Charge Questions on Habitat and Wildlife Protection and Restoration

Question 8 – One of the Action Plan's principal actions to protect and restore habitat and wildlife is aimed at improving “aquatic ecosystem resiliency”. “Resiliency” is loosely defined in the Action Plan as providing an ecosystem with the capability to buffer the impacts of potential problems such as climate change. Please comment on the concept of “resiliency” in restoring and protecting aquatic habitats in the Great Lakes ecosystem. Does the SAB have any recommendations on actions to increase “resiliency”? Are there additional ecological elements or measures that should be considered to better improve resiliency or buffering capacity and our progress in habitat restoration and ecosystem protection projects? What about actions in the other focus areas?

Question 9 – The Action Plan broadly defines “restoration” to encompass physical, biological, and chemical functions and processes. Are the actions listed in the Action Plan “restoration” actions?

⁵ These include the targeted geographic watersheds identified on pages 16 and 28 of the Action Plan and other Areas of Concern

IX. Charge Question on Accountability, Education, Monitoring, Evaluation, Communication, and Partnerships

Question 10 – Focus Area 5: Accountability, Education, Monitoring, Evaluation, Communication, and Partnerships, is intended to provide the “necessary backbone” of the entire GLRI through oversight, monitoring and assessment, education and outreach, and partnerships. This focus area is intended to implement assessment and evaluation actions to address gaps in knowledge and an inadequate understanding of complex and emerging issues. Does the SAB have any recommendations of critical data gaps for which programs or tools should be implemented in the other focus areas? Please comment on the Action Plan’s approach for enhancing coordination and collaboration among Great Lakes partners to address key scientific issues.

Question 11 - Outreach and education are crucial in the effort to restore the Great Lakes. The Action Plan identifies the need to educate future generations to extend restore efforts. Please comment on the Action Plan’s approach to incorporate Great Lakes stewardship into environmental education curricula.