

GLMRIS Study Overview

GLMRIS

GREAT LAKES AND MISSISSIPPI RIVER INTERBASIN STUDY



AQUATIC
NUISANCE
SPECIES



ECOSYSTEMS



NAVIGATION



RECREATION



FLOOD RISK
MANAGEMENT



WATER USE



**US Army Corps
of Engineers®**

Commonly Used Acronyms

GLMRIS – Great Lakes and Mississippi River Interbasin Study

USACE – U.S. Army Corps of Engineers

ANS – Aquatic Nuisance Species

CAWS – Chicago Area Waterways System

NEPA – National Environmental Policy Act

As a result of international commerce, travel and local practices, aquatic nuisance species (ANS) have been introduced and spread throughout the Great Lakes and Mississippi River basins. ANS transfer was impeded historically by the poor water quality of man-made channels that connect these basins. Recent water quality improvements have lessened that impediment making it more likely for ANS transfer between the two basins to occur.

The U.S. Army Corps of Engineers (USACE), in consultation with federal agencies, Native American tribes, state agencies, local governments and non-governmental organizations, is conducting the Great Lakes and Mississippi River Interbasin Study (GLMRIS). In accordance with the study authorization, USACE will evaluate a range of options and technologies (collectively known as “ANS controls”) to prevent the transfer of ANS between the Great Lakes and Mississippi River by aquatic pathways. In this context, the term “prevent” includes the reduction of risk to the maximum extent possible, because it may not be technologically feasible to achieve an absolute solution. As part of this study, USACE will conduct a detailed analysis of various ANS controls, including hydrologic separation.



USACE will explore options and technologies, collectively known as ANS controls, that could be applied to prevent ANS transfer between the Great Lakes and Mississippi River basins through aquatic pathways.

Specific tasks of the feasibility study:

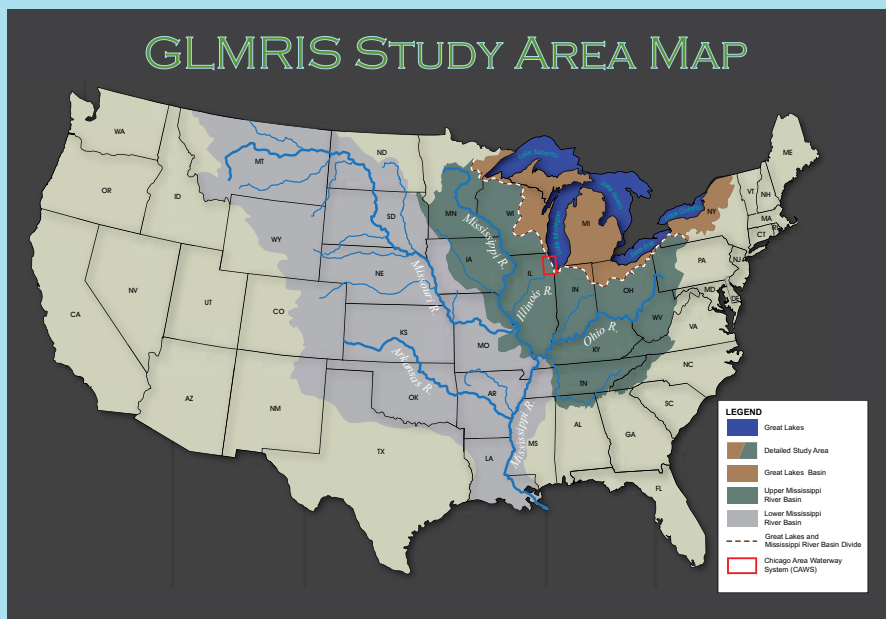
- Inventory current and forecast future conditions within the study area;
- Identify aquatic pathways that may exist between the Great Lakes and Mississippi River basins;
- Inventory current and future potential ANS;
- Analyze possible ANS controls to prevent ANS transfer, to include hydrologic separation of the basins;
- Analyze the impacts each ANS control may have on significant natural resources and existing and forecasted uses of the lakes and waterways within the study area; and
- Recommend a plan to prevent ANS transfer between the basins. If necessary, the plan will include mitigation measures for impacted waterway uses and significant natural resources.

ANS are non-indigenous species that:

- Threaten the diversity or abundance of native species;
- Threaten the ecological stability of infested waters; or
- Threaten the commercial, agricultural, aquacultural or recreational activities dependent on such water.



The GLMRIS study area includes portions of the Great Lakes and Mississippi River basins that fall within the United States as shown on the map below.



Aquatic Pathways - Potential aquatic pathways between the Great Lakes and Mississippi River basins exist along the basins' shared boundary (---). This shared boundary is the primary concentration of the study.

Detailed Study Area - The *Detailed Study Area* is the area where the largest economic, environmental and social impacts from alternative plans are anticipated to occur. The *Detailed Study Area* consists of the Upper Mississippi Basin (■) and the Great Lakes Basin (■).

General Study Area - Future ANS may transfer beyond the *Detailed Study Area*; this pattern was observed by the spread of the Zebra mussel, which originated in the Great Lakes and spread throughout the Mississippi River Basin. Therefore, the *General Study Area* encompasses the lower Mississippi River Basin (■). While the majority of GLMRIS tasks will be completed within the *Detailed Study Area*, USACE will consider specific ANS impacts in the larger *General Study Area*.

USACE is conducting GLMRIS along two concurrent tracks: Focus Area I, the Chicago Area Waterway System (CAWS); and Focus Area II, Other Pathways.

Chicago Area Waterway System

Focus Area I, as shown in the Chicago Area Waterway System Map to the right, is the only known continuous aquatic pathway between the Great Lakes and Mississippi River basins and, therefore, poses the greatest potential risk of ANS transfer between the basins, via an aquatic pathway.

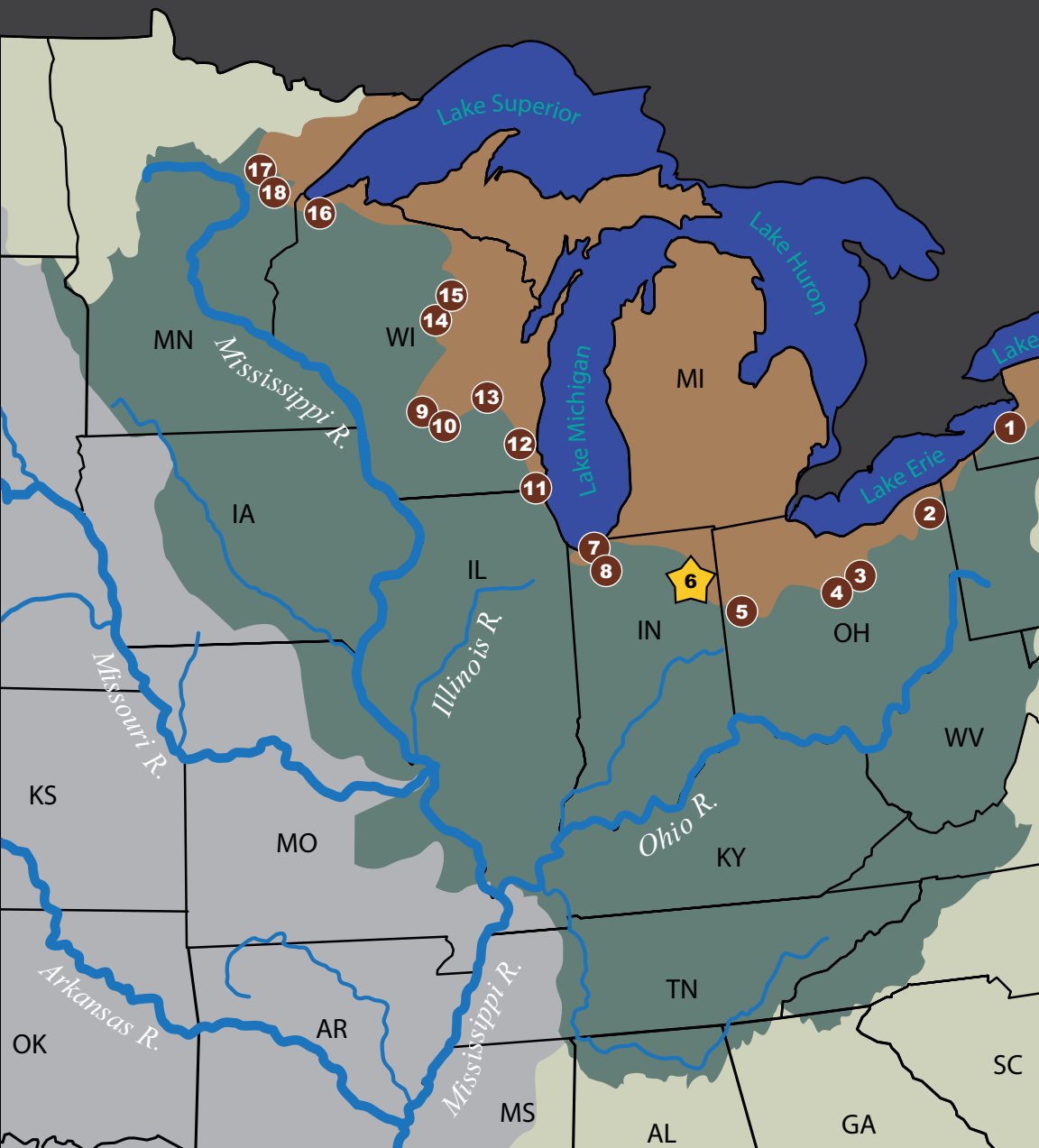
Other Pathways

Focus Area II addresses remaining potential aquatic pathways between the basins. For Focus Area II, USACE has completed the Other Pathways Preliminary Risk Characterization Report, which is found on the GLMRIS project website. As shown on the Other Pathways Map (pages 6 & 7) potential aquatic pathways have been initially determined to pose a significant risk of ANS transfer.

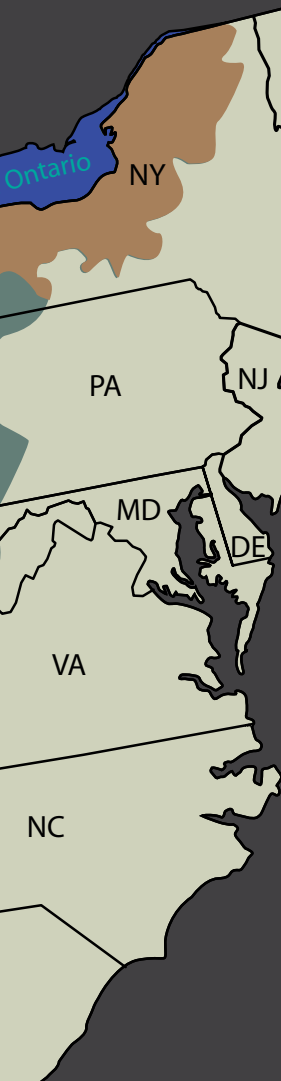
Eagle Marsh was identified as having the highest potential risk of ANS transfer. Consequently, the Indiana Department of Natural Resources implemented an interim measure to mitigate this risk.

USACE is coordinating further study at each of these 18 potential aquatic pathways to finalize the risk characterization and determine whether ANS controls are recommended.









FOCUS AREA II



LEGEND

	Great Lakes
	Great Lakes Basin
	Upper Mississippi River Basin
	Lower Mississippi River Basin

POTENTIAL AQUATIC PATHWAYS

NAME	COUNTY	STATE
1 East Mud Lake	Chautauqua	NY
2 Mosquito Lake - Grand River	Trumbull	OH
3 Ohio and Erie Canal at Long Lake	Summit	OH
4 Little Killbuck Creek	Medina	OH
5 Grand Lake-St Mary's	Mercer	OH
6 Eagle Marsh, Fort Wayne	Allen	IN
7 Loomis Lake	Porter	IN
8 Parker Ditch - Cobb Ditch	Porter	IN
9 Portage (Upstream)	Columbia	WI
10 Portage (downstream)	Columbia	WI
11 Jerome Creek	Kenosha	WI
12 W. Menomonee Falls	Waukesha	WI
13 Rosendale - Brandon	Fond du Lac	WI
14 Hatley-Plover River	Marathon	WI
15 S. Aniwa Wetlands	Marathon-Shawano	WI
16 Brule Headwaters Portage	Douglas	WI
17 Swan River	Itasca	MN
18 Libby Branch of Swan River	Aitkin	MN

Principles and Guidelines

GLMRIS follows the U.S. Army Corps of Engineers Civil Works Planning Process - a six-step iterative process defined in the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*, U.S. Water Resources Council, 1983. See the figure on the right. The USACE planning process is a structured approach to problem-solving and provides a rational framework for sound decision-making.

Multi-purpose Evaluation Process

USACE will evaluate the benefits, costs, and impacts of alternative plans. Evaluation of alternative plans will utilize economic, environmental, and social metrics. USACE will evaluate and compare alternative plans with planning and engineering models including economic, environmental, hydraulic, and hydrology. Certified or approved models will be used for all planning activities. USACE-approved state-of-the-art planning and engineering methodologies and models will be used in the GLMRIS analyses to ensure that technically and scientifically sound data and results are developed.

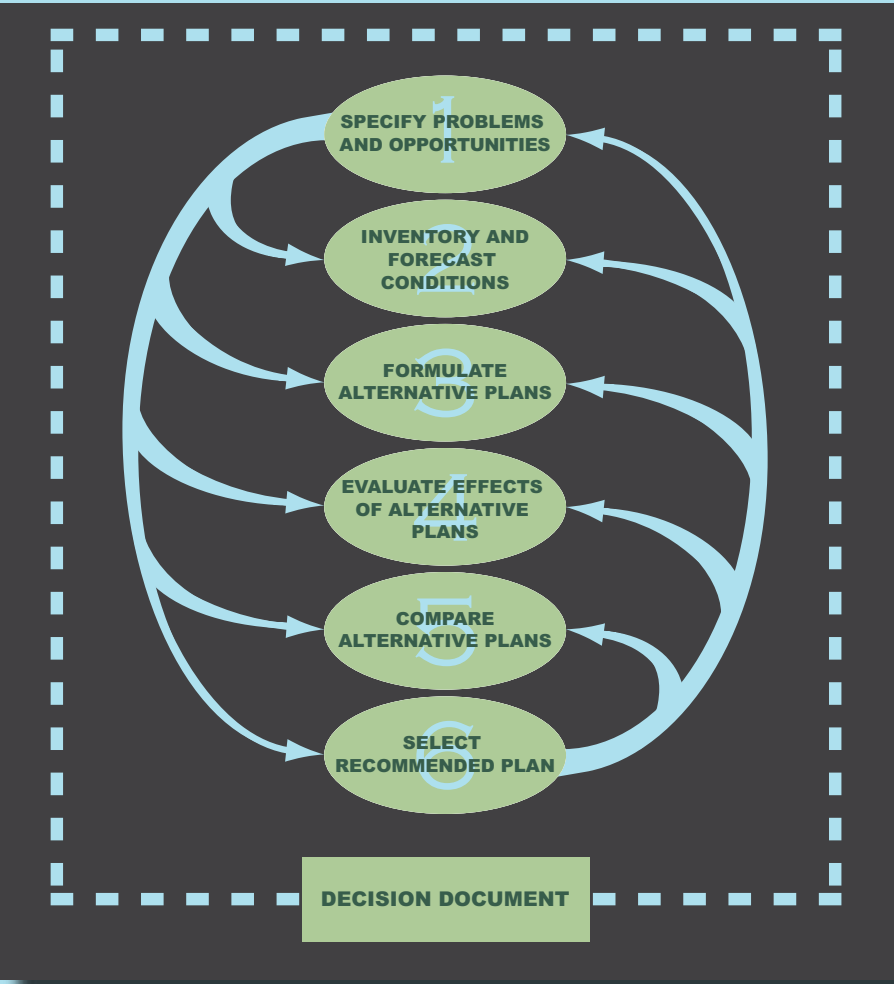
Revisions to *Principles and Guidelines*

Principles and Guidelines may be revised during this study based on direction from the Water Resource Development Act of 2007, Section 2031. Therefore, USACE planning policy and guidelines may change during the course of the study.

Public Involvement Opportunities

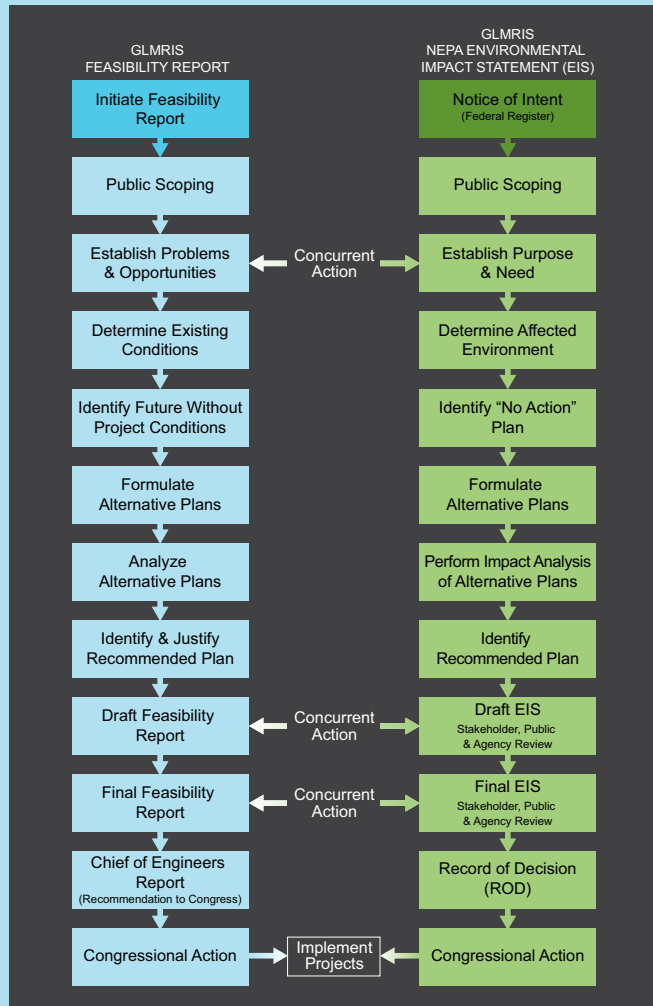
Public involvement is an integral and essential part of the GLMRIS process. Throughout the study, USACE will use a variety of communication tools to ensure interested parties are kept informed of GLMRIS activities. The public will have formal opportunities to provide their input during NEPA scoping and review of the draft Environmental Impact Statement.

USACE Six-Step Planning Process



NEPA Process

The National Environmental Policy Act (NEPA) requires federal agencies to inventory environmental resources and evaluate and compare project alternatives to determine the impacts to significant natural resources. GLMRIS will integrate the NEPA process with the USACE six-step planning process, as further detailed below.



When comparing alternative plans, USACE will utilize economic, environmental, and social metrics to evaluate potentially competing interests. Below are possible interest areas USACE may analyze during this tradeoff analysis.

Protection of Significant Natural Resources such as:

- Ecosystems
- Threatened and Endangered Species

Construction, Operation and Maintenance of ANS Controls

Avoidance of Induced Operations and Maintenance Caused by ANS

Preservation of Commercial & Recreational Fisheries

Maintenance of Current Recreational Uses of the Lakes and Waterways

Mitigation for Impacted Waterway Uses such as:

- Flood Risk Management
- Commercial & Recreational Navigation
- Water Uses
- Recreation

Residual Impacts to Waterway Uses



The implementation of GLMRIS is based upon several key assumptions:

- Availability of resources and funding is critical to the success and timely completion of this study.
- Collaboration with other federal, state, and regional agencies is imperative toward arriving at a collaborative solution.
- Information flow between agencies will require significant and dedicated coordination.
- Funding for a recommended solution at the federal level is likely to be resource-constrained.
- Congress is able to provide the requisite authorities to appropriately address federal implementation of recommendations offered by GLMRIS; otherwise, the requisite authorities are assumed to exist at the state or regional levels of government, such that non-federal entities are able to implement recommended solutions.
- Any project evolving from the GLMRIS authority may be subject to USACE Civil Works policy provisions, to include cost-sharing of a construction project, or ownership of the long-term maintenance by a local non-federal sponsor.

The implementation of GLMRIS is governed by the following constraints:

- Authorization – Study authority is limited to aquatic transfer between the Great Lakes and Mississippi River basins.
- Existing Waterway Uses – Recommended alternative plans must mitigate or provide alternative facilities or measures for possible impacts to existing waterway users.
- Legal Requirements – Recommended alternatives are restricted to those that comply with applicable laws and policies.
- Technical readiness or maturity – Feasible and constructible solutions to reduce the risk of ANS transfer between the basins either exist, or can be developed.
- Resource limitations – Study completion is dependent upon sufficient and timely allocation of funding, manpower and the ability of collaborating agencies to contribute resources and information.
- Data limitations – Data limitations include subject areas such as the identity of future ANS, the performance of the proposed ANS control alternatives and the unknown impact of climate change.

Public involvement is an integral part of the Great Lakes and Mississippi River Basin Study. USACE will provide groups and individuals with opportunities to offer their input.

During the NEPA public scoping period, comments may be submitted via the following ways:

Web Comments

Submit your web comments through the GLMRIS Web site.

Written Comments

Submit a completed Comment Form to the Chicago District, USACE Office before the end of the comment period at the following address:



Planning Department - GLMRIS
U.S. Army Corps of Engineers
Chicago District
111 North Canal Street,
Suite 600
Chicago, IL 60606

The NEPA Public Scoping Period closes March 31, 2011. Please see the GLMRIS Web site for more information on comment submission.

We sincerely appreciate your interest in GLMRIS and encourage you to stay up to date with news and events about the study.

- Visit our Web site for more information and to subscribe to our email list:

www.glmris.anl.gov

- Find GLMRIS on  Facebook : www.facebook.com/glmris
- Follow GLMRIS on  Twitter : @GLMRIS

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Notes

Notes

NEPA Scoping Public Meeting Dates

Metropolitan Locations

Dates

Chicago, IL	Dec. 15, 2010
Buffalo, NY	Jan. 11, 2011
Cleveland, OH	Jan. 13, 2011
Minneapolis, MN	Jan. 20, 2011
Green Bay, WI	Jan. 25, 2011
Traverse City, MI	Jan. 27, 2011
Cincinnati, OH	Feb. 1, 2011
Ann Arbor, MI	Feb. 3, 2011
St Louis, MO	Feb. 8, 2011
Vicksburg, MS	Feb. 10, 2011
Milwaukee, WI	Feb. 15, 2011
New Orleans, LA	Feb. 17, 2011

