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Great Lakes Restoration Initiative Action Plan IV Measures Reporting Plan

Version 2.0

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Introduction

The Great Lakes Restoration Initiative Action Plan IV (Action Plan IV) summarizes the actions that federal agencies plan to implement during federal fiscal years 2025-2029 to protect and restore the largest fresh surface water system in the world. These actions build on restoration and protection work carried out under Great Lakes Restoration Initiative (GLRI) Action Plans I, II, and III. Activities are conducted in the following five Focus Areas:

- Toxic Substances and Areas of Concern
- Invasive Species
- Nonpoint Source Pollution
- Habitats and Species
- Foundations for Future Restoration Actions

Measures of Progress

Twenty-four (24) Measures of Progress have been developed to track all actions implemented under Action Plan IV. Eighteen (18) of these measures have annual targets and the remaining six (6) measures are "indicator" measures that do not have targets. Progress under the Action Plan IV measures also support *Pillar 1: Clean Air, Land, and Water for Every American* in the EPA's "Powering the Great American Comeback" Initiative as it improves water quality and restores habitat for local communities. The GLRI also directly supports *Pillar 3: Cooperative Federalism and Cross-Agency Partnership* as the work will be implemented in partnership with states, Tribes, local governments, industry and other organizations.

EPA is the lead agency responsible for coordinating reporting activities of the Great Lakes Regional Working Group to report on the measures in the GLRI Action Plan IV.

The GLRI Action Plan IV Measures Reporting Plan (Measures Reporting Plan or Plan) is intended to be used by the Regional Working Group (RWG) as a tool to support consistent and accurate reporting on the measures. It is also intended to support the quality and reliability of data input into the Environmental Accomplishments in the Great Lakes (EAGL2) information system. The EAGL2 system is EPA's information system for collecting results achieved under the measures through GLRI-funded projects.

Results collected in the EAGL2 system are used in reporting to headquarters, Office of Management and Budget, and other stakeholders through the Great Lakes Restoration Initiative Annual Report to Congress.

This Plan will be updated as needed.

How to use the GLRI Action Plan IV Measures Reporting Plan

The forepart of this Plan includes information that is generally applicable to all 24 GLRI Action Plan IV measures.

The Appendix to this Plan contains specific guidance for each measure. It is intended to be an easy-to-use resource for RWG Agencies submitting annual results into EAGL2. The sections of this guidance consist of general information regarding each measure including Measure Code, Measure

Language, Description, Definitions, Acceptable Results, Unacceptable Results, When to Count Results, Measure Lead, Measure Targets, Units, Universe, Baseline, acceptable Data Source and Calculation, and any Data Limitations or Qualifications that are unique to the particular measure.

General Definitions

Environmental Accomplishments in the Great Lakes 2 (EAGL2) Information System: The EAGL2 information system is a Great Lakes National Program Office (GLNPO)-hosted database for RWG agencies to identify projects and report results achieved against GLRI Action Plan IV Measures of Progress.

Great Lakes Restoration Initiative (GLRI): The GLRI was launched in 2010 to accelerate efforts to protect and restore the largest system of fresh surface water in the world – to provide additional resources to make progress toward the most critical long-term goals for this important ecosystem. The GLRI advances federal agency coordination through the Interagency Task Force and the Regional Working Group. GLRI Action Plan IV, developed by the agencies with input from states, Tribes, partner agencies, and the public, summarizes actions federal agencies plan to implement during FY 2025-2029 within the Focus Areas referenced above. For more information: https://www.glri.us/

GLRI-funded project means an organized activity or set of activities that is wholly or partially supported by the use of GLRI funds to achieve a common purpose.

Great Lakes National Program Office (GLNPO): Under Executive Order 13340, the Great Lakes National Program Office of the Environmental Protection Agency assists the Interagency Task Force and the Regional Working Group in the performance of their functions. The Great Lakes National Program Manager is chair of the Regional Working Group. For more information: https://www.epa.gov/aboutepa/about-great-lakes-national-program-office-glnpo

Great Lakes Regional Working Group (RWG): The RWG is composed of the appropriate regional administrator or director with programmatic responsibility for the Great Lakes system for each agency represented on the Task Force including: the Great Lakes National Program Office of the Environmental Protection Agency; the United States Fish and Wildlife Service, National Park Service, Bureau of Indian Affairs, and United States Geological Survey within the Department of the Interior; the Natural Resources Conservation Service and the Forest Service of the Department of Agriculture; the National Oceanic and Atmospheric Administration of the Department of Commerce, the Department of Housing and Urban Development; the Department of Transportation; the Coast Guard within the Department of Homeland Security; and the Army Corps of Engineers within the Department of the Army. The RWG coordinates and makes recommendations on how to implement the policies, strategies, projects, and priorities of the Task Force.

RWG Data Contact	RWG Data Reviewer	EPA Measure Lead and/or EAGL2 Information System Administrator	GLRI Reporting Coordinator
Ensures funding recipients understand	Independently reviews the entries by their	Ensures RWG Agencies receive	Coordinates and collects data on an as

definitions from Measures Reporting Plan.	Agency's Data Contacts.	training on definitions of progress for each Measure.	needed basis for reporting purposes from EAGL2 and each Measure Lead.
Collects progress reports from funding recipients.	Ensures supporting documentation is attached.	Ensures EAGL2 Information System is submitted annually.	
Ensures internal reporting mechanism consistency with IA QAP.	Ensures data entries are consistent with supporting documentation.	Queries EAGL2, conducts QA, and calculates total progress to send to GLRI Reporting Coordinator.	
Enters information into EAGL2 for each project and measure, including supporting documentation.			
Coordinates with EPA Measure Leads.			

Figure 1. GLRI Action Plan IV Measures of Progress data collection and reporting.

General Procedures

EAGL2 Data Process:

- Data is collected as described for each individual measure. The data source for results may be an RWG agency or their funding recipients and sub-recipients.
- Contacts designated by RWG agencies enter annual, incremental project information, including results and supporting documentation, into the EAGL2 system until the project is complete and all results are entered. Supporting documentation may include workplans, progress reports, maps, charts, spreadsheets, formulas, e-mails, or other materials the agency uses to determine results. Only RWG agencies report into the EAGL2 system.
- Data Reviewers, different from the respective contacts who entered the data, designated by RWG agencies perform independent reviews of data entries and ensure that supporting documentation has been entered.
- For each project, the EAGL2 System automatically generates cumulative results from the end of the previous reporting period through the end of the current reporting period.
- The EPA Measure Lead reviews the reported cumulative results against applicable measures and provides general oversight for their reasonableness.
- The EAGL2 System Administrator sums the data values with the cumulative total from the previous year (including the baseline value) to calculate the current cumulative total, which is then reported to the GLNPO Reporting Coordinator.
- The GLNPO Reporting Coordinator reviews the reported cumulative totals for completeness and reasonableness. The GLNPO Reporting Coordinator submits the cumulative total results for final programmatic reporting.

- Work plans should provide for reporting in the same units and using the same methodology as this measures Reporting Plan. Where this protocol is not followed, resulting in data being reported in a different unit or using a different methodology, Project Officers and Focus Area Leads (FALs) will establish and follow a standard process to convert reported data to the correct units or results.

Identifying applicable Measures for Projects:

- RWG agencies, including EPA, identify primary, secondary, and tertiary measures for each GLRI-funded project at the time projects are first entered in EAGL2.
- Such applicable measures are identified in EAGL2 if they support or contribute to Action Plan IV measure results, even if they will not directly contribute "results."
- RWG agencies may use a variety of methods to identify primary, secondary, and tertiary measures, such as a review of project workplans. Unless documentation is needed to support results, supporting documentation is not required in EAGL2 solely for the purpose of identifying projects that support a measure but do not directly contribute numerical results. The RWG agency is responsible for storing all records and documentation used to support identification of relevant measures.
- Choose the applicable Action Plan IV Measure(s) of Progress, even if the project previously reported under Action Plan III Measure(s) of Progress. See the Attachment 1 Crosswalk.

Project Results:

- Except as specifically described for a particular measure, only results from activities wholly or partially supported by GLRI-funded projects are counted; results from activities other than GLRI-funded projects are not counted. Results from cost-shared GLRI projects are included.
- Results may be from work directly implemented by an RWG Agency as well as work performed via subsequent contracting and granting arrangements. Only RWG agencies report results into the EAGL2 system.
- Results are **entered for the respective reporting periods** into EAGL2. EPA will use the EAGL2 system to add the incremental results to get cumulative results as needed.
- Results may be realized in the current reporting period from projects funded by a previous GLRI appropriation. All results are reported using the applicable Action Plan IV Measures.
- When possible, results should be attributed to the fiscal year in which they were accomplished. However, reporting should be done by the end of the first reporting period when results can be calculated and documented, even if that is after the fiscal year in which the results were accomplished. **Agencies should not attempt to change results that were previously reported.**
- If an error is found in previously reported data, that data will not generally be revised. Instead, a positive or negative entry will be made for that project in the reporting period in which the error is found, such that the cumulative reported amount will be correct.
- Each RWG agency is responsible for its own data.
- Each RWG agency is responsible for submitting into EAGL2 the records and documentation (supporting documentation) needed to support their reported results.

Data Oversight and Quality:

- Data oversight is done by Source Data Reporting Oversight Personnel: RWG agencies, via RWG agency data contacts, in coordination with agency staff, recipients, and subrecipients.
- Source Data Reporting Oversight is done by each RWG agency. RWG agencies are responsible for ensuring that data they submit to EAGL2 is verified and validated and is in accordance with the Measures Reporting Plan.
- Although beginning in FY 2020, RWG agencies also include supporting documentation in EAGL2, each RWG agency is responsible for storing the original records and documentation that supports their results, including a written Standard Operating Procedure to document steps followed to estimate outcomes consistently each year.
- For EPA, project officers for grants and project managers for Great Lakes Legacy Act projects (i) oversee and review information provided in grantee and contractor progress reports and (ii) submit data to EAGL2 on the basis of those reports and communication with grantees and contractors. The EPA Measure Lead provides general oversight for the reasonableness of information that has been entered into EAGL2 by EPA staff.
- Acceptable quality documentation is required for EPA's recipients and sub-recipients of GLRI funding when that funding is used for projects involving the use or collection of environmental data. Federal agencies must have a quality assurance and quality control system in place that will provide the needed management and technical practices to assure that environmental data used to support GLRI decisions are of adequate quality and usability for their intended purpose.

Data Limitations/Qualifications:

- Information in the EAGL2 system is inputted by multiple Federal agencies. There may be errors in geo-referencing, input accuracy, as well as data omissions. Statistics from the system reflect a point in time.
- Reporting may include a data lag for data collection and could actually reflect the cumulative progress as of the previous reporting period. Because a data lag could exist for both information collection and reporting, the reported information may be from one month to a year old depending on the timing of the tracking and reporting deadlines.
- See Project Results above regarding errors found in previously reported data. Because that data will not be revised, results for a given reporting period may be higher or lower than what was actually achieved for that period, but the cumulative reported amount will be correct.

Information Systems Oversight:

- The EAGL2 system administrator manages and oversees the EAGL2 site; ensures RWG Agencies receive training on definitions of progress for each measure; facilitates RWG agency data entry into the EAGL2 Information System; uses the EAGL2 Information System to calculate the current cumulative totals for results; maintains an up-to-date version of the EAGL2 Implementation Manual; and facilitates extraction and transformation or results by EPA Measures Leads and the GLNPO Reporting Coordinator.

Final Reporting Timing and Oversight:

- Final Reporting Oversight is done by the GLNPO Reporting Coordinator, in coordination with the EPA Measure Lead. Final Reporting Oversight Responsibilities include review of data reported by the EPA Measure Leads for completeness and reasonableness and submitting results for final reporting.
- Final reporting includes reporting in the annual GLRI Report to Congress.
- Final reporting is expected to be completed annually by the start of the second quarter after each fiscal year.

Key Contacts

Focus Areas/Leads. The EPA Focus Area Leads and EPA Measure Leads oversee data transmitted and reported as final through the EAGL2 Information System and transform transmitted data for final reporting. The Focus Areas and Focus Area Leads are:

- Toxic Substances and Areas of Concern: Andrea Schaller (schaller.andrea@epa.gov / 312-886-0746)
- Invasive Species: Matt Pawlowski (pawlowski.matthew@epa.gov / 312-886-7834)
- Nonpoint Source Pollution: Santina Wortman (wortman.santina@epa.gov / 312-353-8319)
- Habitats and Species: Leah Medley (medley.leah@epa.gov / 312-886-1307)
- Foundations for Future Restoration Actions: Elizabeth Hinchey Malloy (hinchey.elizabeth@epa.gov / 312-886-3451)

EAGL2 Information System Administrator: Emily Steinhauer, GLNPO Project Officer (steinhauer.emily@epa.gov / 312-353-5588)

GLNPO Reporting Coordinator: The Reporting Coordinator coordinates with the Focus Area Leads and the EAGL2 System Administrator in utilizing data from EAGL2 to meet programmatic reporting requirements.

Measure 1.1.1

Areas of Concern where all management actions necessary for delisting have been implemented

1. **Description**: This measure tracks the number of U.S. Great Lakes Areas of Concern where all management actions necessary for delisting have been implemented.
2. **Definition of terms used in this measure**:
    a. **Great Lakes Areas of Concern (AOCs)** are severely degraded geographic areas within the basin as described in Annex 1 of the Great Lakes Water Quality Agreement.
    b. **Management Actions Necessary for Delisting** are the actions identified by stakeholders in the AOC and the states in a Remedial Action Plan (RAP) that outlines the reasonable and realistic management actions that could be taken to remove the relevant Beneficial Use Impairments (BUIs) and, hence, delist the AOC. Such management actions are the set of local, state and federal actions that are believed to be necessary to remove the impairment. These actions may not result in the

removal of a set of BUIs immediately; however, these actions are expected to allow environmental conditions to improve, leading to the eventual delisting of the AOC.

3. **What results are acceptable to count for this measure?**
    a. Completion of all of an AOC's state-identified Management Actions. Management Action examples include:
        i. Completion of a remediation project that will lead to controlling contamination source(s).
        ii. Completion of a habitat restoration project that will lead to improving environmental conditions.
4. **What results are unacceptable to count for this measure?**
    a. Ongoing or periodic monitoring programs that provide information on environmental conditions.
    b. Staff work or time spent on projects that support the ongoing work at an AOC.
5. **When to count results for this measure:**
    a. "Project supports measure but will not have a numeric result" is selected for applicable projects.
    b. **Only the Measure Lead** may enter results for this measure. Results are counted only following delivery of either: (i) applicable state documentation to the effect that all the requisite work for all of the management actions at the AOC has been completed or (ii) a memo to the GLNPO Director from the applicable AOC Task Force Lead, through the appropriate EPA manager, verifying the completion of all management actions previously identified by the applicable State as necessary for delisting (e.g., a Legacy Act dredging project that takes place over a 6 month period would be considered a completed management action at the end of that 6 month period). The results of that completed work need not be realized in order for the necessary management actions to be completed.
    c. Although projects generally identify primary, secondary, and tertiary measures, only identify projects with this measure that directly contribute to the ultimate purpose of completing all Management Actions Necessary for Delisting. Do not identify projects with this measure that: (i) only indirectly contribute to completion of such Management Actions or (ii) begin after the AOC's delisting.
6. **Measure Lead:** Mark Loomis (312-886-0406 / loomis.mark@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
17	18	20	22	23

Units are the number of AOCs. Targets are cumulative.

8. **Universe:** The Universe is the 31 United States AOCs.
9. **Baseline:** The baseline is the 17 AOCs where all management actions had been implemented as of September 30, 2024.
10. **Data Source and Calculation:**
    a. Data Source: GLNPO's AOC Task Force Leads provide the data for this measure from reports and other information regarding projects undertaken via GLRI funding and/or other state programs. The AOC Task Force leads are GLNPO staff members

who oversee AOCs, including the tracking of BUIs and completion of management actions. Task Force Leads receive their information from State AOC program managers. Local AOC leads provide information to State AOC leads.

b. Data Collection and Transmission: GLNPO Task Force Leads collect and track data about the management actions taken by AOC stakeholders (including state agency staff and managers and local AOC members) by reviewing reports and other information. GLNPO Task Force Leads coordinate with their state and local counterparts to verify their information. When all management actions necessary to delist the AOC have been completed, the Task Force Lead documents that fact in a memorandum (the Completion Memo) through the Measure Lead to the GLNPO Director. EPA's Measure Lead places the signed Completion Memo in AOC program files as management actions are completed.

c. EPA's Measure Lead annually enters the result in EAGL2 and delivers an e-mail into EAGL2 as supporting documentation.

11. **Data Limitations/Qualifications:** Known sources of error include the provision of premature data by a state to the Task Force Lead.

Measure 1.1.2

Beneficial Use Impairments removed in Areas of Concern

1. **Description:** This measure tracks the number of beneficial use impairments (BUIs) removed within the 31 U.S. Great Lakes Areas of Concern (AOCs); however, since the source of information for this measure is outside of EAGL2, RWG agencies should only select measure 1.1.1, not measure 1.1.2, for projects related to this measure.
2. **Definition of terms used in this measure:**
   a. **Approval Letter** is the letter signed by the GLNPO Director approving a state BUI removal package.
   b. **Great Lakes Areas of Concern (AOCs)** are severely degraded geographic areas within the basin as described in Annex 1 of the Great Lakes Water Quality Agreement.
   c. **Beneficial Use Impairments (BUIs)**: Any of the 14 impairments described at: https://www.epa.gov/great-lakes-aocs/beneficial-use-impairments-great-lakes-aocs
   d. The **BUI removal package** consists of a state letter and associated documentation to the effect that: (i) all management actions necessary for removal of the BUI have been completed and the applicable BUI removal targets have been met and (ii) monitoring data indicates that the BUI removal targets have been met and environmental conditions have improved such that the impairment no longer exists. The BUI removal package is submitted by the state to the GLNPO Director via AOC Task Force Leads following appropriate coordination among EPA, state staff and local entities to determine that BUI removal targets have been met.
   e. **Remedial Action Plans (RAPs)** address one or up to 14 BUIs associated with an AOC. State or local stakeholders establish BUI removal criteria for associated BUIs.

RAPs are developed by the state for each AOC and outline the management actions needed to meet these criteria and thus remove the associated BUIs.

f. A **removed BUI** indicates that the state and GLNPO Director have ratified that all management actions necessary for removal of the BUI (determined by the RAP) have been completed and the BUI removal targets have been met.

3. **What results are acceptable to count for this measure?**
   a. Monitoring data indicates that the BUI removal targets have been met and environmental conditions have improved such that the impairment no longer exists, and the applicable state has submitted a BUI removal package to the GLNPO Director, and the GLNPO Director has transmitted the Approval Letter to the state, approving the state's BUI removal package.
4. **What results are unacceptable to count for this measure?**
   a. All actions determined by the state or local stakeholder necessary through a RAP (or other removal criteria) to remove the BUI have not yet been completed.
   b. Monitoring data does not indicate that environmental conditions have improved to achieve the restoration targets.
   c. The state has not transmitted a BUI removal package to the GLNPO Director.
   d. The GLNPO Director has not transmitted the Approval Letter to the state.
5. **When to count results for this measure:**
   a. "Project supports measure but will not have a numeric result" is selected for applicable projects.
   b. **Only the Measure Lead Counts results for this measure. This measure is NOT identified for any projects. RWG agencies select measure 1.1.1 for projects contributing to BUI removal.**
   c. Count results only when the GLNPO Director transmits the Approval Letter to the state, approving their BUI removal package.
   d. The date of the Approval Letter is the date of the BUI removal.
6. **Measure Lead:** Mark Loomis (312-886-0406 / loomis.mark@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
136	**144**	**151**	**158**	**165**

Units are the number of AOCs. Targets are cumulative.

8. **Universe:** A total of 255 BUIs have been identified in 31 U.S. AOCs.
9. **Baseline:** The baseline is 128 BUIs removed as of September 30, 2024.
10. **Data Source and Calculation:**
    a. Data Source: The Measure Lead is the data source for results entered into EAGL2 for this measure. The Measure Lead uses source information collected from the GLNPO Director and the applicable U.S. state to report results for this measure.
    b. Data Collection and Transmission: The measure lead collects the BUI Removal Package and the Approval Letter indicating that all management actions necessary for removal of the BUI have been completed and the BUI removal targets have been met. EPA's Measure Lead places copies of the BUI Removal Package and the Approval Letter in AOC program files when the Approval Letter is sent.

   c. EPA's Measure Lead annually enters the result in EAGL2 and delivers an e-mail into EAGL2 as supporting documentation.

11. **Data Limitations/Qualifications:** GLNPO relies on verification by the States to provide monitoring data and supporting documentation that indicates that BUI removal targets have been met and a BUI can be removed. EPA technical staff review such requests, as input to management decisions. Known sources of error include the input of unacceptable data by a state or local partner, data that is incomplete regarding management actions and other data that may be applicable to actions in the AOC but are not relevant to actions that lead to BUI removal. When all BUIs have been removed the site is eligible for the state to formally request delisting as an AOC.

    While approval itself could take up to a month after a State transmits its letter and associated documentation, no data lag is expected from the time the GLNPO director transmits the Approval Letter.

Measure 1.1.3

Areas of Concern delisted

1. **Description**: This measure tracks the number of U.S Areas of Concern which are delisted. however, since the source of information for this measure is outside of EAGL2, RWG agencies should only select measure 1.1.1, not measure 1.1.3, for projects related to this measure.
2. **Definition of terms used in this measure**:
   a. **Great Lakes Areas of Concern (AOCs)** are severely degraded geographic areas within the basin as described in Annex 1 of the Great Lakes Water Quality Agreement.
   b. **Delisting** is the formal process to remove an Area of Concern's designation as such. The U.S. EPA's document "U.S. Areas of Concern (AOC) Delisting Process" updated February 2019 outlines the process which meets the requirements of the 2012 Great Lakes Water Quality Agreement (GLWQA). The GLWQA states "A Party shall remove the designation of an AOC … when environmental monitoring confirms that beneficial uses have been restored in accordance with the criteria established in the RAP. … [a] Party shall solicit a review and comments from the State and Provincial Governments, Tribal Governments, First Nations, Metis, Municipal Governments, watershed management agencies, other local public agencies, the Public, and the Commission … prior to the removal of a designation as an AOC …"
   c. **Beneficial Use Impairments (BUIs)**: Any of the 14 impairments described at: https://www.epa.gov/great-lakes-aocs/beneficial-use-impairments-great-lakes-aocs
   d. **Remedial Action Plans (RAPs)** address one or up to 14 BUIs associated with an AOC. State or local stakeholders establish BUI removal criteria for associated BUIs. RAPs are developed by the state for each AOC and outline the management actions needed to meet these criteria and thus remove the associated BUIs.
3. **What results are acceptable to count for this measure?**

   a. This will be counted only when all steps of the delisting process have been completed and will be accepted as complete only following formal notification to the International Joint Commission (IJC) and the State.
4. **What results are unacceptable to count for this measure?**
   a. Anything less than the notification to the IJC and state of formal delisting will not be counted.
5. **When to count results for this measure:**
   a. Only the Measure Lead Counts results for this measure. This measure is NOT identified for any projects.
   b. This measure will be recorded in EAGL2 once the notification to the IJC and state of formal delisting has occurred.
6. **Measure Lead:** Mark Loomis (312-886-0406 / loomis.mark@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
7	9	12	13	14

Units are the number of AOCs. Targets are cumulative.

8. **Universe**: The Universe is the 31 United States AOCs.
9. **Baseline**: The baseline is the 6 AOCs where all steps in the delisting process are complete as of September 30, 2024.
10. **Data Source and Calculation**:
   a. Data Source: The Measure Lead is the data source for results entered into EAGL2 for this measure. The Measure Lead uses source information collected from the GLNPO Director and the applicable U.S. state to report results for this measure.
   b. Data Collection and Transmission: The measure lead collects the formal notification of the IJC and State and places these in AOC program files when the formal notification letters are sent.
   c. EPA's Measure Lead annually enters the result in EAGL2 and delivers an e-mail into EAGL2 as supporting documentation.
11. **Data Limitations/Qualifications**: None known, besides the general data limitations/qualifications.

Measure 1.1.4

Meaningfully involve communities within Areas of Concern in all phases of Management Actions

1. **Description**: This is a programmatic measure reported only by EPA and not a measure of performance on a grant or IA. This measure tracks meaningful involvement with communities within Areas of Concern (AOCs) in all phases of Management Actions including through Focus Area 1.1 projects, advisory committee activities, and activities of federal, state, local and Tribal partners. Examples of meaningful involvement with communities include, but are not limited to, Tribal consultation, public outreach during management action development through implementation, increased membership to local public advisory groups, organizational development and capacity building for advisory

committees, development of state guidance for advisory committees, community engagement and supporting workforce development opportunities.

2. **Definition of terms used in this measure**:
    a. **Meaningful involvement** means:
        i. Providing timely opportunities for members of the public to share information or concerns and participate in decision-making processes;
        ii. Fully considering public input provided as part of decision-making processes;
        iii. Seeking out and encouraging the involvement of persons and communities potentially affected by activities; and/or
        iv. Providing technical assistance, tools, and resources to assist in facilitating meaningful and informed public participation, whenever practicable and appropriate, and/or

    Approaches utilized for meaningful involvement when appropriate will vary depending on its communities served, site-specific issues, and stage of progress toward delisting.

    b. **Communities within AOCs** means groups or members of the public who, by the nature of their location, purposes, or activities, may be affected by AOC activities or actions. This may overlap with Tribal lands or interests which may trigger separate Tribal consultation requirements.
    c. **Management Actions** are the reasonable and realistic actions that could be taken to remove the relevant BUIs and, hence, delist the AOC. These actions may not result in the immediate removal of a set of BUIs, but they are expected to remove the contaminant threat or restore habitat that will allow environmental and human health conditions to improve over time and lead to eventual delisting of the AOC. The management actions are formal actions identified by stakeholders in the AOC and the States.
    d. A **Meaningful Involvement Effort** is an activity or initiative to engage the public in AOC work, as appropriate. This includes public outreach and engagement activities associated with individual Management Action projects, and/or Tribal consultation as appropriate. It may also include advisory committee and State/Tribal activities or initiatives directed toward developing guidance for advisory community engagement, broadening advisory committee membership and supporting workforce development opportunities, or other activities, as appropriate.
3. **What results are acceptable to count for this measure?**
    a. The Measure Lead reports a result of "Yes" for the fiscal year if the Measure Lead indicates that meaningful involvement has occurred, as appropriate, and was used to inform AOC decisions over the past fiscal year.
4. **What results are unacceptable to count for this measure?**
    a. It is unacceptable for the Measure Lead to report a result of "Yes" for the fiscal year if an assessment conducted by the Measure Lead indicates that meaningful involvement was not conducted over the past fiscal year.
5. **When to count results for this measure:**

   a. "Project supports measure but will not have a numeric result" is selected for applicable projects.
   b. Results for this measure are assessed on an annual basis at the end of each fiscal year. The Measure Lead reports a result of "Yes" after reviewing a list of meaningful involvement efforts in the AOC program over the past fiscal year.
   c. An effort is counted annually when all planned engagement activities are being conducted or have been completed.
6. **Measure Lead:** Mark Loomis (312-886-0406 / loomis.mark@epa.gov)
7. **Action Plan IV Targets:** None. This is an indicator measure with cumulative results.
8. **Universe**: N/A
9. **Baseline**: N/A. Results are identified in qualitative reporting.
10. **Data Source and Calculation**: Agencies select this measure for GLRI-funded meaningful involvement projects, as appropriate. State AOC leads will collaborate with local AOC advisory committees to report information to EPA. The EPA Measure Lead reviews reported efforts and makes such inquiries as necessary to identify and verify the results for this measure (i.e. meaningful involvement efforts). The Measure Lead will use this information to report annually on meaningful involvement work done in the AOC program. The Measure Lead places a summary of each fiscal year's meaningful involvement activities for measure 1.1.4 into the EAGL2 "General EPA document" section, or such other location as shall be developed for it.
11. **Data Limitations/Qualifications**: Results under this measure provide an indication that organizations are involved in outreach and engagement activities with communities; however, this measure should not be used to evaluate the quality or effectiveness of such actions.

Measure 1.2.1

Risks and benefits of consuming Great Lakes fish, wildlife and harvested plant resources are shared to inform consumption choices

1. **Description**: This measure reports whether the risks and benefits of consuming Great Lakes fish, wildlife, and harvested plant resources are shared by States and Tribes from GLRI-funded projects to inform consumption choices.
2. **Definition of terms used in this measure**:
   a. **States and Tribes**: State government, Tribal Nations and governments, and Intertribal Commissions.
   b. **Shared Information**: The communication of information regarding consumption choices to the public.
   c. **Harvested Plant Resources**: Plant and plant by-products harvested and consumed by Native American Tribes and other individuals in the Great Lakes Basin.
3. **What results are acceptable to count for this measure?**
   a. The Measure Lead reports a result of "Yes" for the fiscal year if an assessment conducted by the Measure Lead indicates that information about the risks and benefits of consuming Great Lakes fish, wildlife and harvested plant resources has been shared. Although it is a non-quantifiable measure, EPA is asking project

recipients to report the estimated number of individuals that receive information as a secondary data source to identify project progress. In semi-annual progress reports, project recipients should provide an exact number of known engagements or a reasonable estimate of people at a public event based on attendance or informational materials passed out. If this information is communicated or shared to the public online, the project recipient may report the number on online engagements with a given webpage or web document. In instances where signage provides passive education, an estimate of annual usage for the area should be provided.

4. **What results are unacceptable to count for this measure?**
    a. Reporting engagements on a project that has not communicated or shared consumption information in a fiscal year.
    b. Monitoring information not used to communicate risks and benefits of Great Lakes fish, wildlife, and harvested plant resources.
5. **When to count results for this measure:**
    a. This is a non-quantifiable measure that is assessed on an annual basis. At the end of a fiscal year, the EPA Measure Lead will assess projects in EAGL and determine whether or not risks and benefits of consuming Great Lakes Fish, wildlife, and harvested plant resources were shared with individuals..
6. **Measure Lead**: Brian Lenell (312-353-4891 / lenell.brian@epa.gov)
7. **Action Plan IV Targets**: None. The Measure Lead will provide cumulative results. Units are the number individuals that received information on the risks and benefits of consuming Great Lakes fish, wildlife, and harvested plant resources.
8. **Universe**: N/A
9. **Baseline**: 0. This is not a cumulative measure.
10. **Data Source and Calculation**: This measure should be selected when projects conducting the activities in this measure are performed. The EPA Measure Lead reviews EAGL2 entries for these projects and makes such inquiries as necessary to identify the results. The Measure Lead works with data contacts and project officers so that results are entered into EAGL2.
11. **Data Limitations/Qualifications**: Results under this measure provide an estimation on numbers of individuals engaged on consumption advice; however, this measure should not be used to evaluate the quality or effectiveness of such actions.

Measure 1.3.1

Contaminant monitoring and assessment activities conducted to address data gaps

1. **Description**: This measure tracks the number of chemical monitoring and assessment activities conducted under GLRI-funded projects.
2. **Definition of terms used in this measure**:
    a. **Contaminant monitoring and assessment activities** are projects that monitor priority contaminants and assess their impacts on Great Lakes ecosystems to fill identified data gaps, including those identified by the Lake Partnerships for the

Cooperative Science and Monitoring Initiative of the Great Lakes Water Quality Agreement, and in national plans.

b. **Long-term base monitoring programs** – Programs under the GLNPO base monitoring efforts that monitor contaminants in the Great Lakes funded under Focus Area 5, which includes the Integrated Atmospheric Deposition Network (IADN), the Great lakes Fish Monitoring and Surveillance Program (GLFMSP), and the Great Lakes Sediment Surveillance Program (GLSSP).

3. **What results are acceptable to count for this measure?**
   a. An activity is acceptable for counting in a fiscal year if progress has been made towards project planning, field sampling, lab-based study, sample processing, data analysis, or reporting in that fiscal year.
   b. Projects that include multiple activities that all support the project output(s) should be counted as a single activity.
   c. If a project is being conducted collaboratively by multiple state and/or federal agencies, each agency can count their activities towards this measure.
   d. Projects not supported with FA1.3 funding (such as AOC projects) but involve contaminant monitoring can select Measure 1.3 as a secondary measure
4. **What results are unacceptable to count for this measure?**
   a. Long-term base monitoring programs, as defined above, that measure contaminants in the Great Lakes
   b. Projects for which no progress is made towards completing the project in during the fiscal year.
   c. Counting multiple activities all being completed for the same project. Projects that have multiple activities or components should be counted as one activity during each fiscal year. For collaborative projects, each agency contributing to the project can count an activity during each fiscal year during which progress is made.
5. **When to count results for this measure:**
   a. An activity or project can be counted when a monitoring or assessment activity has been conducted during the fiscal year. If a monitoring or assessment activity is conducted, a result of '1' should be entered for the fiscal year. If no activities were conducted in the fiscal year, a '0' should be entered. No other numbers should be entered.
6. **Measure Lead:** Matt Pawlowski (312-886-7834 / pawlowski.matthew@epa.gov)
7. **Action Plan IV Targets:** None. Units are number of activities.
8. **Universe**: N/A
9. **Baseline**: 0. This is not a cumulative measure.
10. **Data Source and Calculation**: RWG agencies enter into EAGL2 the applicable annual result. During each data call, agencies provide supporting documentation for any results they report. All ongoing activities or projects should be counted in any given fiscal year if progress is made towards planning, sampling, data analysis, or reporting. See sections 3 and 4 for further explanation of when to count an activity or project.
11. **Data Limitations/Qualifications**: None known, besides the general data limitations/qualifications.

Measure 2.1.1

Number of regional introduction pathways for non-native species invasion addressed through comprehensive approaches

1. **Description**: This measure tracks the number of regional introduction pathways through which non-native and invasive species can be introduced to the Great Lakes ecosystem that are addressed using comprehensive approaches.
2. **Definition of terms used in this measure:**
    a. **Non-native species** are species that were introduced (intentionally or not) into the Great Lakes Basin ecosystem.
    b. **Invasive species** are non-native species that are not intentionally introduced or managed in the Great Lakes Basin ecosystem.
    c. **Regional Introduction Pathways** includes major pathways (such as recreational boating, organisms in trade (OIT), and invasive carp barriers) by which invasive species can be moved beyond their range.
    d. **Comprehensive approaches** include activities and initiatives that address or mitigate pathways for invasive and non-native species movement at geographically significant scales and/or by using multiple complementary approaches for addressing the pathway.
3. **What results are acceptable to count for this measure?**
    Projects will be considered collectively to determine whether they address key regional introduction pathways such as recreational boating, organisms in trade (OIT), and the prevention of spread of invasive carp (particularly at sites like Little Killbuck Creek). Individual projects will not count numerically towards this measure. However, collections of related projects will be used to assess progress towards this measure. The following projects can potentially be considered as part of the overall tracking of progress for this measure:
    - Projects that prevent the establishment of invasive species in the Great Lakes Basin ecosystem, including enforcement and commercial harvesting of invasive carp in waters connected and outside the Great Lakes Basin.
    - Projects that prevent the movement of species through Pathways described above.
    - Projects may include but are not limited to: development of ballast water management programs, education and outreach campaigns, boat wash facilities, species risk assessments to inform management of organisms in trade, and investigations of contamination by invasive species at various points of sale (internet trade, nursery trade, bait trade, etc.).
    - Projects that develop or enhance collaboratives or projects that develop or field test technologies whose main focus is related to mitigating regional introduction pathways for non-native species can support this measure but should select "Project supports measure but will not have a numeric result".

    The following measure keywords should be used to help categorize projects in EAGL2: Canals/Waterways; Commercial Shipping - ballast water and hull fouling; Illegal trade of banned species; (Pathway) - Recreational Boats – ballast, bilge, livewell, and baitwell water

and hull/trailer fouling; Release of Aquarium species; Release of Live Bait; Spread of plant species purchased through nurseries, internet sales, and water garden trade.

4. **What results are unacceptable to count for this measure?**
    a. Control actions or activities to reduce common, wide-spread invasive species from sites (control actions are counted under measure 2.3.1).
    b. Actions outside the Great Lakes Basin that do not reduce risk of invasion to the Great Lakes.
    c. Activities that are not associated with a GLRI-funded project.
    d. Early detection monitoring and rapid response exercises are unacceptable to count for this measure. These activities should be counted under Measures 2.2.1 and 2.2.2, respectively.
5. **When to count results for this measure**:
    a. Results for this measure are counted when significant progress has been made towards addressing a major introduction pathway (e.g., recreational boating, organisms in Trade, invasive carp pathways). All projects addressing each of those pathways will be considered holistically by the measure lead and the agencies to determine when sufficient progress has been made on the pathway.
    b. A new record in EAGL2 is required whenever a project is funded with a new fiscal year's appropriation; consequently, even if activities are conducted at the same place for the same purpose, those activities will count as separate projects for each new relevant appropriation that funds them.
    c. RWG agencies should record progress towards this measure non-numerically because of the holistic nature of this measure. RWG agencies should highlight which pathways were addressed by the project in the Keywords section of EAGL2 and should include an overview of progress and achievements related to those pathways in the supporting documents section of EAGL2 to help the measure lead and the agencies in determining when sufficient progress has been made for this measure.
6. **Measure Lead**: Matt Pawlowski (312-886-7834 / pawlowski.matthew@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	1	2	2	3

Numbers represent number of comprehensive pathways prevention projects. Targets are cumulative.

8. **Universe**: N/A
9. **Baseline**: The baseline for this measure is 0.
10. **Data Source and Calculation**: Agencies enter into EAGL2 summaries of each project supporting this measure that manage pathways through which invasive species can be introduced to the Great Lakes ecosystem. During each data call, agencies should include supporting documentation summarizing the progress made with regard to the pathway(s) addressed. Agencies should use the keywords feature to categorize which pathways the

project addresses. The measure lead will work with the agencies to determine whether sufficient progress has been made towards achieving the numeric goals of this measure.

11. **Data Limitations/Qualifications**: None known, besides the general data limitations/qualifications.

Measure 2.2.1

Percentage of aquatic high-priority locations for potential new non-native species occurrence under surveillance

1. **Description**: Under the USFWS Early Detection Monitoring Program, surveillance activities for new, non-native species occurrences are conducted annually in the Great Lakes Basin at one or more locations within 25[1] high-priority sites in the US side of the Great Lakes Basin. This measure tracks the percentage of locations in each year where early detection activities were conducted. Early detection activities for non-native species that are conducted at locations not specified in the USFWS Early Detection Monitoring Program can support this measure but will not count numerically towards the measure of progress.
2. **Definition of terms used in this measure:**
    a. **High-priority locations** are locations in the Great Lakes Basin that USFWS, in consultation with other agencies and partners, have identified as potential hot spots for new, non-native species occurrences. USFWS conducts monitoring for fish and invertebrates at these locations annually using both traditional sampling methods (e.g., netting, trapping, conventional fishing, electrofishing) as well as DNA barcoding methods. Sampling occurs at differing numbers of locations within each high-priority site based on the physical and hydrologic features of the location (see section 12 below for a table high-priority sites and locations and number of high priority sites).
    b. **Early detection monitoring** means monitoring that is intended to detect populations of invasive species and communicate such detections to management agencies.
3. **What results are acceptable to count for this measure?**
    a. Monitoring activities that collect biological or other environmental data to detect new populations of non-native and invasive species in high-priority locations (as specified by USFWS and Great Lakes Commission (GLC) the Great Lakes Basin ecosystem. These monitoring activities generally include conventional fishing, electrofishing, netting, trapping, environmental DNA sampling, genomic techniques, and other molecular methodologies targeting fish and invertebrates.
    b. Other monitoring activities (e.g., plant and animal surveys) with the goal of early detection of non-native species that have the potential to become established in a new location within the basin can support this measure but cannot be counted numerically towards the measure of progress if those activities do not overlap with

[1] The number of high priority sites has been updated slightly since the creation of Action Plan IV where 26 sites were preliminarily noted (see Table 1).

USFWS high priority locations. These efforts should select "Project supports measure but will not have a numeric result" within EAGL2.

c. Early detection efforts that overlap with USFWS Early Detection Monitoring Program high priority locations but are not part of the program can be counted if USFWS are not already counting activities at those sites in a fiscal year. These projects should be done in consultation with USFWS.
d. Monitoring activities that take place outside of the Great Lakes Basin ecosystem (e.g., invasive carp monitoring activities in the Chicago Area Waterway System) are acceptable if the intent is to prevent these species from becoming established in the Great Lakes Basin ecosystem. Such projects can support this measure but cannot be counted towards the measure of progress. Projects that develop or enhance collaboratives whose main focus is related to coordinating, enhancing, and/or expanding non-native species surveillance or early detection efforts can support this measure but should select "Project supports measure but will not have a numeric result".
e. Projects that develop or field test technologies intended to improve non-native species surveillance or early detection can support this measure but should select "Project supports measure but will not have a numeric result".

4. **What results are unacceptable to count for this measure?**
   a. Individually counting multiple surveillance activities that are conducted at an individual high-priority location.
   b. Counting a monitoring activity more than once during a fiscal year.
   c. Monitoring for common, wide-spread invasive species already established in the Great Lakes Basin.
   d. Activities outside of the Great Lakes Basin that do not reduce risk of establishment of non-native species in the Great Lakes Basin.
   e. It is unacceptable to count the same (or overlapping) monitoring activity under more than one funding source. For example, if USFWS and another federal agency or state grant funds are used to implement a monitoring activity at a high-priority location, it should only be reported once under the grant that provided most of the funding used to implement the work.
5. **When to count results for this measure:**
   a. Results "count" when the monitoring has been "conducted" as defined above. A single monitoring activity is counted once each fiscal year the monitoring activity is "conducted". All high-priority locations monitored within an individual fiscal year should be counted for that fiscal year. The number of high priority locations sampled in each year is divided by the total number of high-priority locations (123 sites, see Table 1) to determine the percent of sites monitored in the fiscal year.
6. **Measure Lead**: Matt Pawlowski (312-886-7834 / pawlowski.matthew@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
65	70	80	85	90

Numbers represent percentage of priority sites monitored. These numbers are cumulative.

8. **Universe**: N/A. 100% of the 137 sites identified within the 25 high priority locations on the US side of the Great Lakes Basin.
9. **Baseline**: As of the end of FY24, 65% of high priority locations were under active (approximately annual) surveillance by USFWS.
10. **Data Source and Calculation**: RWG agencies (primarily USFWS for this measure) enter into EAGL2 the applicable annual result, as percent, of early detection and surveillance activities at high-priority locations conducted annually. RWG agencies other than USFWS should not enter a numeric result for this measure unless the project occurs at a high-priority location and is done in consultation with USFWS and the measure lead.
11. **Data Limitations/Qualifications**: None known, besides the general data limitations/qualifications.

Table 1: List of high-priority sites for the Early Detection Monitoring program. Each site has differing numbers of high-priority locations where monitoring might occur in any given year. This measure of progress tracks the percentage of high priority locations that are monitored in any given fiscal year. Specific details about high-priority locations at each high-priority site can be obtained from USFWS. The GLC Risk Rank represents relative risk of a site to have news species introductions with 1 representing the highest risk. Lake St. Clair and the Detroit River both have two high-priority sites.

GLC Fish Grid Rank	High PrioritySite	Number of High Priority Locations
1	Chicago	9
2	Maumee Bay	10
3	Buffalo	9
4&16	Lake St. Clair	5
5	Rochester	6
6	Oswego	3
	Benton Harbor	5
8	Saginaw Bay	4
9	Grand Haven	13
10	Marblehead	3
11	Calumet	6
12	Burns Harbor	5
18	Gary	3
13	Sandusky Bay	5
14	Cleveland	6
15 & 21	Detroit River	4
17	Evanston	2
19	Green Bay	6
20	Milwaukee	8

22	Lorain	1
23	Fairport Harbor	1
24	Port Clinton	2
25	St. Louis River	7
Total		123

Measure 2.2.2

Number of rapid responses, exercises and post-response follow-up activities conducted annually

1. **Description**: This measure tracks the number of rapid responses or exercises conducted under GLRI-funded projects with the goal of preventing the introduction of invasive species to the Great Lakes Basin.
2. **Definition of terms used in this measure:**
    a. **Conducted** means implementation has been completed. Note that some rapid response activities can span months or years.
    b. **Exercises** are training drills, ranging from "tabletop" discussions to simulated on-the-ground or on-the-water actions, in which responses to fictional scenarios are practiced.
    c. **Rapid** means the response takes place in a timely manner before a species becomes widely established. The actual amount of time may vary significantly given the specific species and the ecology of the invasion site. Note: in contrast to chemical emergencies, biological response actions may occur within days or months and, in rare cases, several years after detection. Biological response actions are typically complex and require the consideration of not just the removal of invasive species, but also the protection and/or minimization of damage to the native resources within the invasion site. Significant time may be needed for planning before a mobilization and response.
    d. **Response** is a first attempt to eradicate a non-native species that is found in a new location that is geographically distinct from any previous rapid response or control efforts. This may be a population in a new lake or even within the same lake as long as it is considered a new location within that lake.
3. **What results are acceptable to count for this measure?**
    a. On-the-ground or in-the-water response actions intended to eliminate populations of invasive species before they have a chance to become widely spread.
    b. Rapid responses after the primary eradication effort is completed that are at the same location within the same calendar year are counted as additional rapid responses.
    c. Exercises to rehearse multi-agency rapid response actions, including in-person meetings (“table-top exercises”) or field exercises.
    d. In the case of multi-agency exercises, the result is equal to the number of agencies that act in the incident commander role.

   e. Acceptable responses are typically within the Great Lakes Basin, but actions outside the Basin are counted if they reduce the risk of a Great Lakes population becoming established, e.g., invasive carp actions within the Chicago Area Waterway System.

4. **What results are unacceptable to count for this measure?**
   a. A response or exercise is counted once it has been completed, not upon initiation.
   b. Additional efforts needed for the same population/location in subsequent years are not counted. They are "control" efforts given the population are no longer considered "new."
   c. Control actions or activities to reduce common, wide-spread invasive species from sites.
   d. Site visit to confirm the reported presence of an AIS in a new location – this is considered part of early detection.
   e. Mapping the extent of an AIS to determine what response is appropriate – this is considered an early step in the planning process for a rapid response.
   f. Outreach to reduce likelihood of spread to other locations
   g. In the case of multi-agency exercises, it is unacceptable to count an agency's participation as an exercise if it merely supports another agency acting in the incident commander role.
   h. Actions outside of the Great Lakes Basin that do not reduce risk of a Great Lakes invasion.
   i. Activities that are not from a GLRI-Funded project.
5. **When to count results for this measure:**
   a. A response or exercise is counted once it has been completed, not upon initiation, which may take days, weeks, or in some cases months.
6. **Measure Lead**: Matt Pawlowski (312-886-7834 / pawlowski.matthew@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
12	**12**	**12**	**12**	**12**

Units are number of responses and exercises. Targets are annual.

8. **Universe**: N/A - The universe represents all rapid responses and exercises that could be done by GLRI-funded agencies. The universe is without limit.
9. **Baseline**: 12, representing regularly expected annual responses, exercises, and activities.
10. **Data Source and Calculation:** RWG agencies enter into EAGL2 the applicable annual result. During each data call, agencies provide supporting documentation for any results they report.
    RWG agencies should collect and provide readily available descriptions of the response, post-response follow-up, or exercise funded by the agencies, including type of response, invasive species name, and start/end date for each year of appropriated GLRI funding. Agencies use best professional judgment to develop a short action narrative. The lead agency will also use best professional judgment to identify the nearest city and choose a representative date (month, year) and representative coordinates (in latitude, longitude) for the action. The Measure Lead may collect additional results information for this Measure

from other agencies through independent inquiry. The Measure Lead adds the supporting documentation for any such additional results information into EAGL. As necessary, the EPA Measure Lead investigates and resolves discrepancies between data reported through the EAGL2 information system and data obtained through this inquiry.

11. **Data Limitations/Qualifications**: None known, besides the general data limitations/qualifications.

Measure 2.3.1

Acres controlled for invasive species to benefit habitats, native species and communities

1. **Description**: This measure tracks the aquatic/terrestrial acreage controlled under GLRI-funded projects.
2. **Definition of terms used in this measure:**
    a. **Aquatic/terrestrial** means all habitat types within the Great Lakes Basin, whether they are covered in water or not.
    b. **Acreage or Acre** means the unit of area equivalent to 1/640th of a square mile or 43,560 square feet. Acres include the total geographic area addressed by a management action, recognizing that most invasive species infestations will vary in their percent coverage. Acreage can be determined through a variety of means, including but not limited to line transects, randomized plot sub-sampling, estimation based on photographic surveys, GPS mapping, and professional judgment.
    c. **Controlled** means the acreage has received an initial treatment as part of a GLRI-funded project to reduce the populations of an invasive species that is widely established and commonly found in the watersheds of all Great Lakes (e.g., Eurasian Watermilfoil, Phragmites, Curly-leaf Pondweed, Round Goby).
    d. **Retreatment** means the subsequent treatment of an area after a previous invasive species control project period has ended, which is typically more than a single field season.
3. **What results are acceptable to count for this measure?**
    a. Controlled terrestrial, wetland, or aquatic acreage resulting from the initial treatment that reduces common, wide-spread invasive species from project sites, which may take days, weeks, months, or in some cases years.
    b. Acreage resulting from the retreatment of acres that have already received an initial treatment from a previous different and distinct GLRI-funded project. Projects that retreat acres that have been treated during previous GLRI-funded projects should indicate how many acres are receiving retreatment
    c. Acreage may be identified by methods using professional judgment acceptable to the GLRI funding agency including but not limited to line transects, randomized plot sub-sampling, estimation based on photographic surveys, use of GPS and GIS mapping, and manual calculations through direct observation.
    d. Projects that develop or enhance collaboratives whose main focus is related to coordinating, enhancing, and/or expanding non-native species control can support

this measure but should select "Project supports measure but will not have a numeric result".

e. Projects that pilot or test new control tools or technologies intended to improve non-native species control (i.e., APIV Commitment 2.3.b) can support this measure but should select "Project supports measure but will not have a numeric result".

4. **What results are unacceptable to count for this measure?**
   a. Acreage resulting from actions that address species that are not widely established. (These are considered "rapid responses".)
   b. Acreage that was surveyed for invasive species, but that did not receive a control action.
   c. Acreage resulting from activities that are not fully or partially funded through the GLRI.
   d. Subsequent treatment acreage during the same project period. During a single project period of 2-3 years (e.g., "phase 1" project), spot retreatments in consecutive years may be necessary to achieve project period goals but should not be included in the acreage reported. For example, if a single project lasting two years treats 20 acres in year 1, then treats 20 new acres in year 2 as well as 2 acres of spot retreatments in areas treated during year 1, the total area reported in EAGL2 will be 40 acres, not 42 acres.
   e. Overlapping treatment acreage from the same project defined by target species. For example, if species A treatment acreage is 20 acres during the project, species B treatment acreage is 20 acres during the project, and each species overlaps for a total of 10 acres, the total area reported in EAGL2 will be 30 acres, not 40 acres.
5. **When to count results for this measure:**
   a. Count results when the acreage received the initial treatment to reduce the populations of invasive species. When acreage is retreated as part of the same project, it is not counted.
   b. Reporting should be done in the first reporting period when results can be calculated and documented, even if that is after the reporting period in which the initial treatment occurred – do not attempt to change results that have already been reported.
6. **Measure Lead**: Matt Pawlowski (312-886-7834 / pawlowski.matthew@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
320,000	**330,000**	**340,000**	**350,000**	**360,000**

Units are acres. Targets are cumulative.

8. **Universe**: Not Available. The universe would represent all possible acres which could have invasive species removed in the Great Lakes. Developing such data would be a significant resource commitment beyond the scope of the GLRI.
9. **Baseline**: 307,000 acres. This is the total aquatic/terrestrial acreage reported to be controlled under GLRI as of September 30, 2024.

10. **Data Source and Calculation**: RWG agencies enter into EAGL2 the applicable annual result. During each data call, agencies provide supporting documentation for any results they report.
    Various methods may be used to calculate acreage including but not limited to line transects, randomized plot sub-sampling, estimation based on photographic surveys, use of GPS mapping, manual calculations through direct observation, GIS analysis, and other methods using professional judgment acceptable to the GLRI funding agency. Partial acres should be rounded to the nearest acre.
11. **Data Limitations/Qualifications**: None known, besides the general data limitations/qualifications.

Measure 3.1.1

Estimated pounds of phosphorus reductions from conservation practice implementation

1. **Description**: This measure tracks the reduction in phosphorus loads to waterways expected to occur as a result of land management activities to prevent agricultural runoff and streambank erosion.
2. **Definition of terms used in this measure:**
    a. **Phosphorus reductions**: an estimate of how much the average annual phosphorus load or export from the land will decrease, either because less phosphorus is applied, more is taken up by crops/vegetation, or less is transported downstream. These are predictions based on actual performance data, edge of field research or application of models.
    b. **Conservation practice**: on-farm behaviors and physical structures that minimize nutrient and sediment runoff from agricultural lands. This approach involves implementing practices that either prevent nutrients from leaving the field (avoid), manage their movement (control), or capture them before they reach waterways (trap). See the commonly used USDA-NRCS National Conservation Practices for examples.
3. **What results are acceptable to count for this measure?**
    a. Results associated with the establishment of conservation practices on farm fields, at the edge of field, in drainage ditches, or in streambanks and floodplains.
    b. Conservation practices that will remain in place for 3 years or more.
    c. Calculations based on performance over a long term (30 years or more) weather simulation time period to capture and incorporate variability.
    d. Results from implementation that is described within a GLRI-funded contract, grant award, or legal agreement between an entity (e.g., federal or state agency, local entity) and the private landowner and/or project partner.
    e. Results and acres are only counted once, even if additional conservation practices occur on the same acreage, or the same practice is implemented multiple times in the project period.
4. **What results are unacceptable to count for this measure?**

a. Results from initial grant awards or project plans that do not yet identify the specific locations where conservation practices will be implemented or secure landowner agreements to adopt behavioral/physical activities.
b. Results associated with implementation of additional conservation practices on acres for which phosphorus reductions have already been calculated.
c. Results for practices that will be in operation for less than 3 years.
d. Results calculated using an unapproved calculation methodology (see Section 10 below).

5. **When to count results for this measure:**
   a. Results are reported for this measure during the reporting period in which the conservation practices were implemented, contracted, or verified. For NRCS, results can be reported prior to actual implementation if the type, duration, and extent of practices been sufficiently described and captured within a contract or other legal agreement between the agency and the private landowner and/or project partner and thus has a high likelihood of being realized. For structural practices, results are only reported once and assumed to be sustained for the service life of the structure. Management practices that are repeated on the same acres for multiple years are only counted once.
6. **Measure Lead**: Santina Wortman (312-353-8319 / wortman.santina@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
3,100,000	**3,400,000**	**3,700,000**	**4,000,000**	**4,300,000**

Units are pounds. Targets are cumulative.

8. **Universe**: N/A
9. **Baseline**: 2,800,000 pounds was the target in FY2024.
10. **Data Source and Calculation**:
    a. Data Source
       i. Typically, NRCS, EPA, BIA, and USACE will report results against this measure. The data source may be the RWG agency or their funding recipients and sub-recipients.
       ii. For most conservation practices, agencies will use a methodology developed by the NRCS specifically for Great Lakes watersheds, based on the results of their Conservation Effects Assessment Project (CEAP) studies in the region. Results for conservation practices for which performance data is not yet available from NRCS, will use other methods or models to derive the estimated phosphorus reduction, as necessary. Results and methods will be reviewed and approved by the EPA Measure Lead, in consultation with NRCS. During each data call, agencies provide supporting documentation for any results they report.
       iii. Federal agencies may use the NRCS lookup tables or another method approved by the EPA Measure Lead to calculate the phosphorus reduction before entering results into EAGL. The primary data sources are expected to be:

1. US Department of Agriculture – Natural Resources Conservation Service (NRCS) ProTracts Software is a web-enabled application used to manage NRCS conservation program applications and cost share contracts with private landowners and containing associated project details including schedules of conservation practices to be implemented from application through contract completion. NRCS also uses data from their National Conservation Planning Database (NPAD) which is matched with the ProTracts data.
2. US Environmental Protection Agency (EPA) – EPA assistance agreements and grantee progress reports that identify the planned phosphorus reduction practice or suite of practices; an estimate of the land area impacted by planned practice or suite of practices; and the spatial location of land areas impacted (i.e., watersheds, counties).
3. US Army Corps of Engineers (USACE) – Individual, finalized project technical and design documents used for by contractors for construction at individual project sites, indicating the land area impacted by phosphorus reduction practices and specific project elements that are employed.

b. Data Collection: Agencies use the following approved methods for data collection and reporting.

i. NRCS:

1. NRCS developed a series of "lookup tables" that can be applied to a land area impacted by a conservation practice or suite of practices in a watershed (HUC8 level) to calculate average annual total phosphorus reduced (lbs). These calculations are customized by practice type, practice grouping, and watershed location, incorporating local, regional conditions and processes important to phosphorus loss. There are three key practices that are not available in the lookup tables: waste storage facilities, conversion of cropland to prescribed grazing and gypsum applications. For these practices, the NRCS uses literature-based benefits estimates and NRCS manure storage planning software tools to estimate P reductions.
2. NRCS enters results into EAGL2 after NRCS Resource Analytics Lab and CEAP staff apply the lookup tables to contract information in Protracts and NPAD. Official certified USDA NRCS ProTracts data is available by mid-November for funds obligated in prior fiscal years.
3. In addition, NRCS reports phosphorus reductions from project partners, such as the Great Lakes Commission's Great Lakes Sediment and Nutrient Reduction Program. The GLC compiles phosphorus reductions from grantee progress reports and individual project workplans.

ii. EPA:

1. For EPA projects, **project officers** report **acreage** as a comment. The EPA Measure Lead enters results into EAGL2 after applying the same NRCS lookup tables, where possible, to project information supplied by EPA project officers in EAGL. If practices are not available in the NRCS lookup tables, EPA will use the best available information to derive a conservative estimate. Method of calculation will vary, depending on project type and grantee's choice of model to estimate benefits of implementation, but must be an approved, recognized model appropriate for watershed planning. Acceptable models may include the EPA's Pollutant Load Estimation Tool (PLET: https://www.epa.gov/nps/plet) or The Long- Term Hydrologic Impact Assessment (L-THIA) model (https://engineering.purdue.edu/~lthia/).

iii. BIA: reports phosphorus reductions from grantee progress reports and individual project workplans. Method of calculation will vary, depending on project type and grantee's choice of model to estimate benefits of implementation, but must be an approved, recognized model appropriate for watershed planning. Acceptable models may include the EPA's Pollutant Load Estimation Tool (PLET: https://www.epa.gov/nps/plet) or The Long-Term Hydrologic Impact Assessment (L-THIA) model (https://engineering.purdue.edu/~lthia/).

iv. USACE:

1. USACE projects generally do not use the NRCS lookup tables as their work occurs in stream corridors and wetlands. Instead, USACE staff use the best available information to derive a conservative estimate of phosphorus reduction, based on final design specifications and specific project elements employed. A supporting watershed model such as L-THIA may be used.
2. USACE enters phosphorus into the EAGL2 system when projects move from design to construction.

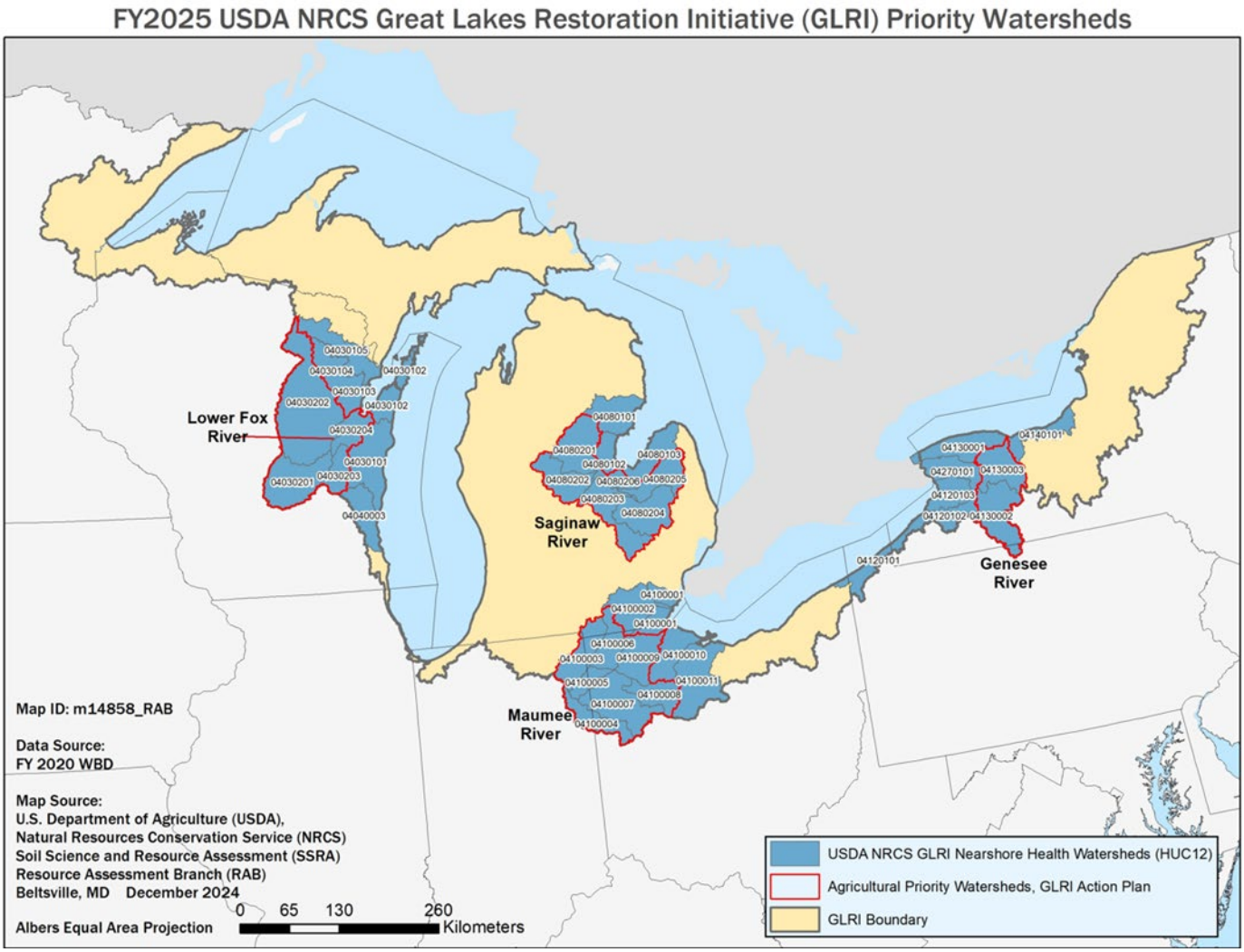
11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply. An assumption is made that NRCS contracts with private landowners will be implemented largely as planned. It is also assumed that conservation practices will be maintained long term (results are cumulative).

Measure 3.1.2

Acres receiving technical or financial assistance on nutrient management in priority watersheds

1. **Description**: This measure tracks the cumulative number of cropland acres in specific priority watersheds that receive assistance from either GLRI or other NRCS programs to improve on-farm nutrient management.
2. **Definition of terms used in this measure:**

a. **Nutrient management**: Managing the amount, placement, and timing of plant nutrients to obtain optimum yields and minimize the risk of surface and groundwater pollution.
b. **Priority Watersheds**: The specific watersheds included in this measure are shown in blue on the map below. These areas include the four priority watersheds for agricultural phosphorus reduction identified in the Action Plan (outlined in red): the Fox River; the Saginaw River; the Maumee River; and the Genesee River. In addition, NRCS prioritizes nutrient management assistance in certain nearshore watersheds adjacent to these. See areas in blue on the map below and the respective hydrologic unit codes (HUCs).



Access current map here: [NRCS Great Lakes Restoration Initiative (GLRI) Priority Watersheds Maps | Natural Resources Conservation Service]

Measure 3.1.2 tracks nutrient management adoption in the following 8-digit HUCs:

NRCS GLRI Nearshore Health Watersheds
Effective FY2025

HUC8	Watershed Name	State
04030101	Manitowoc-Sheboygan	WI
4030102	Door-Kewaunee	WI
4030103	Duck-Pensaukee	WI
4030104	Oconto	WI
4030105	Peshtigo	WI
4030201	Upper Fox	WI
4030202	Wolf	WI
4030203	Lake Winnebago	WI
4030204	Lower Fox	WI
4040003	Milwaukee	WI
4080101	Au Gres-Rifle	MI
4080102	Kawkawlin-Pine	MI
4080103	Pigeon-Wiscoggin	MI
4080201	Tittabawassee	MI
4080202	Pine	MI
4080203	Shiawassee	MI
4080204	Flint	MI
4080205	Cass	MI
4080206	Saginaw	MI
4100001	Ottawa-Stony	MI
4100002	Raisin	MI
4100003	St. Joseph	IN, MI
4100004	St. Marys	IN, OH
4100005	Upper Maumee	IN, OH
4100006	Tiffin	MI, OH
4100007	Auglaize	MI, OH
4100008	Blanchard	OH
4100009	Lower Maumee	OH
4100010	Cedar-Portage	OH
4100011	Sandusky	OH
4120101	Chautauqua-Conneaut	NY, OH, PA
4120102	Cattaraugus	NY
4120103	Buffalo-Eighteenmile	NY
4130001	Oak Orchard-Twelvemile	NY
4130002	Upper Genesee	NY, PA
4130003	Lower Genesee	NY
4140101	Irondequoit-Ninemile	NY
4270101	Niagara River	NY

3. **What results are acceptable to count for this measure?**
    a. Results from nutrient management projects funded under the GLRI or NRCS base programs (e.g. EQIP) that provide direct assistance in the form of cost sharing, soil testing, use of equipment, demonstration of technology, education or knowledge

transfer on techniques to prevent the loss of manure or fertilizer applied to cropland.

b. Results associated with the introduction or modification of nutrient management practices implemented on farm fields for a period of at least 3 years.
c. Results from implementation that is described within a contract, grant award, or legal agreement between an entity (e.g., federal or state agency, local entity) and the private landowner and/or project partner.
d. Results and acres are only counted once, even if subsequent assistance occurs on the same acreage, or assistance occurs multiple times in the project period.

4. **What results are unacceptable to count for this measure?**
    a. Results from initial grant awards or project plans that do not yet identify the specific locations where conservation practices will be implemented or secure landowner agreements to adopt behavioral/physical activities.
    b. Results for practices that will be in operation for less than 3 years.
    c. Results outside of the priority watersheds.
    d. Acreage is only counted one time even if receiving technical or financial assistance multiple times.
5. **When to count results for this measure:**
    a. Results will be counted when the project implementation for those acres is sufficiently documented and verified by NRCS and EPA.
6. **Measure Lead**: Santina Wortman (312-353-8319 / wortman.santina@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
2,300,000	**2,450,000**	**2,600,000**	**2,750,000**	**2,900,000**

Units are acres. Targets are cumulative.

8. **Universe**: 9,500,000 acres[2].
9. **Baseline**: 2,150,000 acres expected in FY24.
10. **Data Source and Calculation**:
    a. Results and methods will be reviewed and approved by the EPA Measure Lead, in consultation with NRCS.
    b. Data Source
        i. Typically, only NRCS or EPA will report results against this measure. The data source may be an RWG contract, partnership agreement, grants or grantee progress reports.
        ii. US Department of Agriculture – Natural Resources Conservation Service (NRCS) ProTracts Software is a web-enabled application used to manage NRCS conservation program applications and cost share contracts with private landowners and containing associated project details including schedules of conservation practices to be implemented from application through contract completion. Other data sources include the National

[2] Previous calculation of 10,000,000 acres as the original baseline included acreage that was not in priority watersheds

Planning and Agreements Database (NPAD) and USDA National Agricultural Statistics Service Cropland Data Layer.

iii. US Environmental Protection Agency (EPA) – EPA assistance agreements and grantee progress reports that identify the type of technical or financial assistance that was provided and the land area impacted by the planned nutrient management practice or suite of practices.

c. Data Collection

i. Data collection processes for NRCS and EPA are described below.

ii. NRCS:

1. NRCS enters results into EAGL2 after USDA Farm Production and Conservation Business Center pulls contracts data for the practice and NRCS Resource Analytics Lab staff analyze the contract information in Protracts along with data from the NPAD and Cropland Data Layer. Official USDA NRCS ProTracts data is available by mid-November for funds obligated in prior fiscal years.

iii. EPA:

1. EPA Project Officers report results in EAGL2 based on grant recipient progress reports.
2. EPA's Measure Lead reviews and verifies results reported in EAGL2.

11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply. In addition:
    a. Reporting against this measure is operating under the assumption that a field or land parcel is contracted only once using GLRI or NRCS funding. In addition, an assumption is made that contracts with private landowners will be implemented largely as planned.
    b. Some nutrient management practices are measured by number or linear feet or number of occurrences rather than by area. Converting these practices to acres impacted may introduce error.
    c. The reported acreage is the result of funding from both GLRI (reported as the GLRI amount) and NRCS (reported as leveraged funding).

Measure 3.1.3

Number of active demonstration farms created or sustained with GLRI funding

1. **Description**: This measure tracks the growing number of farms participating in GLRI Demonstration Farm networks being established by the NRCS to expand adoption of conservation practices that aim to reduce phosphorus loads to waterways.
2. **Definition of terms used in this measure**:
    a. **Demonstration farm network**: An association of 3 or more individual agricultural producers who agree to try new approaches and share their experiences with other farmers through personal interactions and on-site examples. Participation is voluntary and requires close collaboration with local entities and the NRCS. GLRI funding typically supports technical assistance from an NRCS and/or partner soil

conservationist or agronomist, on site monitoring, or cost-sharing and incentive payments.

b. **Active**: Being considered an "active" member can be shown in numerous ways, for example participating farms are typically expected to: host field days, mentor other farmers, try new conservation practices, allow partners to access their property, share information, etc.

c. **Created or sustained**: A new farm that joins a network or continuing participation of an existing member. It is not required that the individual farm's participation continue to be funded under GLRI so long as the initial establishment of the network occurred as a result of GLRI funding.

3. **What results are acceptable to count for this measure?**
   a. Farms who have entered into contract or other partnership agreement with an NRCS-funded partner for at least one year.
4. **What results are unacceptable to count for this measure?**
   a. Demonstration farms that are not established with NRCS GLRI funding support.
   b. Farms that are no longer actively participating.
5. **When to count results for this measure:**
   a. Results are reported for this measure during the reporting period in which the participating farm was enrolled in the network through an agreement between the farm and the NRCS-funded project partner.
6. **Measure Lead**: Santina Wortman (312-353-8319 / wortman.santina@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
43	46	49	52	55

Units are number of farms. Targets are cumulative.

8. **Universe**: N/A
9. **Baseline**: 39 participating farms as of FY24.
10. **Data Source and Calculation**: The data source for this measure is the NRCS. The NRCS GLRI Coordinator will coordinate with each of the states to track the number of farms as they are added or removed.
11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply.

Measure 3.2.1

Estimated gallons (in millions) of stormwater runoff reduced

1. **Description**: This measure tracks the total volume of stormwater runoff prevented from entering the Great Lakes a result of installation of green infrastructure.
2. **Definition of terms used in this measure:**
   a. **Stormwater runoff reduced**: The volume of runoff that otherwise would have entered waterways during wet weather events.
   b. **Green infrastructure**: Generally refers to nature-based solutions to prevent runoff and treat stormwater where it falls. As defined by the Clean Water Act, the term

'green infrastructure' means the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters.

3. **What results are acceptable to count for this measure?**
    a. Green infrastructure projects that are intended to improve water quality by preventing transport of pollutants into local waterways and sewers during wet weather events.
    b. Projects located in an area impacted by urban or suburban land use.
    c. Units are millions of gallons. So if a project is designed to capture 10,000,000 gallons annually, simply enter "10." Parts of millions of gallons should be rounded to the nearest tenth of a million, e.g. 400,000 gallons would be reported as "0.4."
    d. Only report numeric results associated with on-the-ground work. Design, engineering, and other planning activities should be marked as contributing to this measure without a numeric result.
4. **What results are unacceptable to count for this measure**?
    a. Projects intended to prevent or manage agricultural stormwater runoff. For example, creation of a wetland within or at the edge of an agricultural field to hold back water and prevent agricultural pollutants from entering a local waterway.
    b. Large scale stormwater diversion and retention features, such as coastal wetlands, outside of urban areas.
    c. Conventional "gray infrastructure" approaches used to move water and mitigate flooding impacts to communities through the use of pipes, tunnels or other engineered collection systems.
5. **When to count results for this measure**:
    a. Estimates are reported in advance of construction based on design estimates. This can be the reporting period in which the grant was awarded if the design is sufficiently complete and the reporting agency is confident the anticipated results are reasonable and achievable.
6. **Measure Lead**: Derek Ager (312-353-7463 / ager.derek@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
625	700	775	850	925

Units are gallons (in millions). Targets are cumulative.

8. **Universe**: N/A
9. **Baseline**: 550 million gallons was the FY2024 target in Action Plan III.
10. **Data Source and Calculation**:
    a. The data source is the RWG agency that submits results to EAGL2. Typically, the RWG agencies EPA, USACE, USFS, and USFWS report results towards this measure. During each data call, agencies provide supporting documentation for any results they report. Documentation to substantiate the number of gallons is typically in the form of a project workplan or site design.

b. Results are entered once for the project. Because the result for this measure is counted when the design is complete, the expected and actual result is usually reported at the same time (at the start of the project) and will be the same. If later it is determined that the reported value was too high, this should be noted in the comment, but the result will not be changed in EAGL. If the actual result is higher than what was expected, the difference should be entered so that the total result for the project matches. See sections 3, 4 and 5 for further explanation of when to count results towards this measure.

c. Various methods may be used to calculate the stormwater volume. Each RWG agency will use a consistent method or model to calculate results for their projects. Multiple tools are acceptable as described below. The methodology that is used will be dependent on the scope of the project and specific best management practices being implemented.

    i. USFS will primarily utilize the i-Tree tool - an approved, recognized model for stormwater interception by trees and shrubs. USFS will report the projected annual average benefit of established trees over a 20-year time frame, incorporating a survival rate consistent with management plans. The primary method of calculation will be most appropriate to the project scope (e.g. i-Tree Planting Calculator, i-Tree Design). These tools may be supplemented with information in peer-reviewed literature (e.g. McPherson et al. 2006) or site-specific models/measurements, if accepted by the Forest Service as suited to available project data. If trees are included along with other best management practices, projects may also employ methods of calculation approved in this section for use by other agencies.

    ii. Method of calculation for EPA and USFWS projects will vary, depending on project type and grantee's choice of model to estimate benefits of implementation, but must be an approved, recognized model. Acceptable models may include the National Stormwater Calculator (https://www.epa.gov/water-research/national-stormwater-calculator), WinSLAMM, (http://www.winslamm.net/), HydroCad stormwater modeling (http://www.hydrocad.net/), or others.

    iii. USACE: The Long-Term Hydrologic Impact Assessment Low Impact Development (L- THIA LID) model will be used to estimate project benefits (https://engineering.purdue.edu/~lthia/).

11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply. There is potential that results will be higher than what was constructed. In addition, results may vary depending on the model used for the individual project.

Measure 3.2.2

Miles of Great Lakes streams and shoreline restored or protected

1. **Description**: This measure tracks the number of miles of Great Lakes shoreline and stream corridors restored or protected from water quality degradation due to stormwater runoff.
2. **Definition of terms used in this measure**:

a. **Shoreline** means lakeshore beaches or other land along the Great Lakes coast.
b. **Stream corridors** means the streambanks and floodplains (i.e. the riparian zones) of streams in the Great Lakes drainage basin.
c. **Restored or protected** means the area is transformed back to a more natural state and/or management measures have been implemented along the streambank or shoreline to prevent nonpoint source pollutants such as nutrients, sediment, and bacteria from reaching the Great Lakes.

3. **What results are acceptable to count for this measure?**
   a. Projects designed for the primary purpose of attenuating nonpoint source pollution to the Great Lakes. This can include a variety of techniques ranging from on-the-ground ecological restoration, establishment of riparian buffers, or direct elimination of a cause or source of nonpoint source pollution, such as combined sewer overflows or fecal contamination on beaches.
   b. Miles should be measured as the length of shoreline or stream that were directly impacted by the project. Work along both sides of a stream should only be counted once.
   c. Miles associated with a GLRI-funded project or program. Projects leveraging other sources of funding may report the entire length stream or shoreline impacted, so long as they are not duplicated in EAGL2 (i.e. more than one federal agency reports results of the same project).
   d. Only report numeric results for projects that were implemented on-the-ground. Design, engineering, and other planning activities should be marked as contributing to this measure without a numeric result.
4. **What results are unacceptable to count for this measure?**
   a. Shoreline hardening or dredging.
   b. Restoration completed in upland areas, not within stream corridors or along the shore.
   c. Results from restoration or protection efforts that do not address nonpoint source pollution.
   d. Unless the activity must continue to be performed annually, (such as wildlife management on beaches), miles that were previously reported under this measure cannot be counted again.
   e. The same miles cannot be counted twice as both “restored” and “protected.”
5. **When to count results for this measure:**
   a. Progress toward this measure can be counted when the on-the-ground work is complete. Results can be reported incrementally as the project is implemented, or all at once when implementation is complete. It is not necessary to wait until post-construction monitoring or a final report is submitted.
6. **Measure Lead**: Derek Ager (312-353-7463 / ager.derek@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
74	87	100	113	126

Units are miles. Targets are cumulative.

8. **Universe**: N/A
9. **Baseline**: 61 miles was the FY2024 target in Action Plan III.
10. **Data Source and Calculation**: The data source is the RWG agency that submits results to EAGL2. Typically, the RWG agencies EPA, USACE, USFWS, APHIS, and BIA report results towards this measure. During each data call, agencies provide supporting documentation for any results they report. Documentation to substantiate the number of miles is typically in the form of project plans or progress reports from the funding recipient.

    Various methods may be used to calculate miles including but not limited to use of GPS mapping, manual calculations through direct observation, GIS analysis, and other methods using professional judgment acceptable to the GLRI funding agency.

    Where available, the number of miles anticipated as described in the Statement of Work should be entered as the "expected result" at the project start. Actual results are entered as the work is completed. Results are counted once for the project, i.e. continuation of work on the same miles are not reported. See sections 3, 4 and 5 for further explanation of when to count results towards this measure.
11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply. In addition, If the purpose of a project is to manage a specific shoreline area over multiple years, those miles may count each year the project achieves desired results. This is a relatively small portion of the total results.

Measure 3.2.3

Acres of riparian buffers, wetlands and floodplains restored or reconnected

1. **Description**: This measure tracks the number of acres within riparian zones adjacent to Great Lakes waterbodies that are restored to slow or intercept runoff.
2. **Definition of terms used in this measure:**
    a. **Riparian buffers** in this context refer to vegetated areas along a stream or drainage ditch. The riparian zone extends from the streambank to the floodplain and serves as a natural barrier between waterbodies and upland areas.
    b. **Restored** means the area is transformed back to a more natural state to lessen the degradation of water quality. Restoration of riparian buffers, floodplains and wetlands improves hydrologic functions of the stream system that will prevent downstream transport of pollutants in runoff.
    c. **Reconnected** means the stream regains access its floodplain or an adjacent wetland during high flow events.
3. **What results are acceptable to count for this measure?**
    a. Projects designed for the primary purpose of attenuating nonpoint source pollution in watersheds. In agricultural watersheds, for example, this can include projects that expand the width of the floodplain bench along an agricultural ditch (also called "conservation ditches"), establish a riparian buffer through the retirement of lands for agricultural production, etc. In urban watersheds, this could include removing concrete or pavement along a stream channel, for example.

   b. Acres should be measured as the total spatial footprint of the land areas on either side of the stream that were impacted, including wetland areas. If work occurs on both sides of a stream, both sides should be counted.
   c. Acres associated with a GLRI-funded project or program. Projects leveraging other sources of funding may report the entire acreage restored or reconnected, so long as they are not duplicated in EAGL2 (i.e. more than one federal agency reports results of the same project).
   d. Only report numeric results for projects that were implemented on-the-ground. Design, engineering, and other planning activities should be marked as contributing to this measure without a numeric result.

4. **What results are unacceptable to count for this measure?**
   a. Areas that do not have a direct connection to a Great Lakes tributary (e.g. inland lakes, isolated wetlands).
   b. Acres restored primarily to benefit aquatic habitat and/or connectivity, such as through dam removal.
   c. Results reported under Measure: 4.1.1. Acres of coastal wetland, nearshore, and other habitats protected or enhanced may also be reported under 3.2.3 if they are located within the riparian zone and otherwise meet the requirements for this measure.
   d. The same acres considered "restored" cannot also be counted as "reconnected" under this measure.
   e. Acres cannot be counted more than once.
5. **When to count results for this measure:**
   a. Progress toward this measure can be counted when the on-the-ground work is complete. Results can be reported incrementally as the project is implemented, or all at once when implementation is complete. It is not necessary to wait until post-construction monitoring or a final report is submitted.
6. **Measure Lead**: Derek Ager (312-353-7463 / ager.derek@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
50	100	150	200	250

Units are acres. Targets are cumulative.

8. **Universe**: N/A
9. **Baseline**: N/A. This measure is new in Action Plan IV.
10. **Data Source and Calculation**: The data source is the RWG agency that submits results to EAGL2. Typically, the RWG agencies EPA, USACE, USFWS, and BIA report results towards this measure. During each data call, agencies provide supporting documentation for any results they report. Documentation to substantiate the number of acres is typically in the form of project plans or progress reports from the funding recipient.

    Various methods may be used to calculate acres including but not limited to use of GPS mapping, manual calculations through direct observation, GIS analysis, and other methods using professional judgment acceptable to the GLRI funding agency.

Where available, the number of acres anticipated as described in the Statement of Work should be entered as the "expected result" at the project start. Actual results are entered as the work is completed. Results are counted once for the project, i.e. continuation of work on the same acres are not reported. See sections 3, 4 and 5 for further explanation of when to count results towards this measure.

11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply.

Measure 3.3.1

Nutrient monitoring and assessment activities conducted

1. **Description**: This measure tracks the number of nutrient monitoring and assessment activities (specifically their locations, as described below) conducted to inform nonpoint source pollution control activities in the Great Lakes.
2. **Definition of terms used in this measure:**
    a. **Monitoring and assessment activity** means a location where one or more of the following activities occurs:
        i. collection or analysis of water quality data in streams or waters of the Great Lakes;
        ii. characterizing nutrient sources in a watershed using aerial photos, windshield inventories, or spatial analyses of soils, slopes and hydrology;
        iii. watershed-based modeling of the loading and transport of nutrients to the Great Lakes.
3. **What results are acceptable to count for this measure?**
    a. Results are only acceptable from a limited number of strategically picked monitored sites that are representative of broader environmental outcomes. Results are acceptable from:
        i. The sites in the USGS Great Lakes Tributary Monitoring Program that represent the majority of the nutrient load to the Great Lakes: https://rconnect.usgs.gov/glritrends/.
        ii. Additional nutrient monitoring projects or watershed-based assessment activities conducted on the land, in streams or in waters of the Great Lakes to understand nutrient loading and transport. For example, a HABs monitoring program in a specific waterbody counts as "1" activity under this measure.
4. **What results are unacceptable to count for this measure?**
    a. Monitoring or assessment activities that are not funded wholly, or in part, under the GLRI.
    b. Projects that do not implement standardized protocols for water quality sampling, monitoring and statistical designs.
    c. One-time, ad hoc, or exploratory activities that occur at a scale or frequency that is not representative of GLRI projects and programs.
    d. If unsure whether the monitoring/assessment activity should be counted, check with the Measure Lead.

5. **When to count results for this measure:**
    a. Results count for this measure one time during each reporting period that the monitoring or assessment activity takes place. Many sites are operational for multiple years and will report results in every year that nutrients are measured or quantified. For example: If monitoring took place in first part of the year and then assessment in the latter part, it would still only count as "1" activity; however, the same activity could count as "1" in each of multiple years (i.e., if in one year the site is monitored and then the next year that data is analyzed to calculate the nutrient load, it would count in both years as "1" activity each year).
6. **Measure Lead:** Santina Wortman (312-353-8319 / wortman.santina@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
30	**30**	**30**	**30**	**30**

Units are activities. Targets are annual.

8. **Universe**: N/A
9. **Baseline**: 30 nutrient monitoring and assessment activities are expected annually. Targets are not cumulative, but rather reflect ongoing activities anticipated during each fiscal year.
10. **Data Source and Calculation**: The data source is the RWG agency that submits results to EAGL2. Typically, only USGS and NOAA will report results towards this measure. The EPA Measure Lead reviews the entries to ensure consistency. During each data call, agencies provide supporting documentation for any results they report.
11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply.

Measure 3.3.2

Nutrient and stormwater runoff reduction demonstration projects implemented

1. **Description**: This measure tracks the number of on-the-ground demonstration projects conducted to inform nonpoint source pollution control activities in the Great Lakes.
2. **Definition of terms used in this measure**:
    a. **Demonstration projects** collect, evaluate, and share data regarding the effectiveness of a new or enhanced technology or best management practice. Methods for evaluating effectiveness can include direct measurements and observations or modeled outcomes, and employ a wide variety of environmental, economic and social indicators.
3. **What results are acceptable to count for this measure?**
    a. Projects that implement a nutrient or stormwater reduction activity on the ground.
4. **What results are unacceptable to count for this measure?**
    a. Development of a conceptual model or proof of concept.
    b. Ad hoc monitoring, prospective or retrospective analyses.
5. **When to count results for this measure:**

   a. Results count for this measure during the reporting period(s) that the demonstration project was implemented. Many projects span multiple years and will report a result of "1" each year.
6. **Measure Lead:** Santina Wortman (312-353-8319 / wortman.santina@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
10	10	10	10	10

Units are number of projects. Targets are annual.

8. **Universe**: N/A
9. **Baseline**: 10 or more projects supported annually. Note: this measure was revised in Action Plan IV. Targets are not cumulative, but rather reflect individual activities anticipated during each fiscal year.
10. **Data Source and Calculation**: The data source is the RWG agency that submits results to EAGL2. Typically, USACE, EPA, or USGS will report against this measure. During each data call, agencies provide supporting documentation for any results they report. The EPA Measure Lead reviews EAGL2 entries for these projects to ensure consistency.
11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply.

Measure 4.1.1

Acres of coastal wetland, nearshore, and other habitats protected or enhanced

1. **Description**: This measure tracks the number of acres of coastal wetland, nearshore, and other habitats in the US protected or enhanced as a result of GLRI-funded projects.
2. **Definition of terms used in this measure:**
   a. **Great Lakes Coastal Wetlands**: Historical or the existing 375,000 acres of US wetlands with a current, previous, or potential hydrologic connection to a Great Lake or connecting channel via surface or subsurface water such that water levels of the wetland are influenced by Great Lakes water levels. These can be wetlands on a Great Lake, connecting channel, river (if the river is influenced by the Great Lakes), or an isolated wetland (with a subsurface connection to the Great Lakes).
   b. **Nearshore and other habitats**, (excluding coastal wetlands), means all habitats within the Great Lakes Basin within the following systems: open water; nearshore waters and connecting channels; coastal shore; rivers and tributaries; inland lakes and wetlands; uplands.
   c. **Protected** means stress to ecosystems have been prevented.
   d. **Restored** means the ecosystem has recovered from degradation, damage or destruction.
   e. **Enhanced** means the value and effectiveness of habitats and species has increased.
3. **What results are acceptable to count for this measure?**
   a. Because individual projects generally protect, restore or enhance only a single problem or a small portion of a geographic area, many projects may be needed to

completely protect, restore or enhance a habitat. For example, a habitat to be restored may need to have drain tiles removed to restore hydrology, invasive plants removed that outcompete native plants, and native plants and animals reintroduced to improve the species composition. Each could be a different project and the same acres may be counted at the completion of each individual project. When several years of the same work must be implemented for the project to be completed, the acres are only counted once. For example, wild rice planting over the same acres several years in a row to get the bed established. When a new project is undertaken over the same acres however, then they can be counted again.

4. **What results are unacceptable to count for this measure?**
    a. Acreage in Canada is not acceptable.
    b. The miles of connectivity established for aquatic species that are reported under Measure 4.1.2 cannot be converted to acres and reported under this measure; however, the restored acreage that may be associated with those miles may be counted under this measure.
    c. Acres surveyed or monitored only should not be counted.
    d. Acres that are projected, rather than realized in the reporting period, are not acceptable.
5. **When to count results for this measure:**
    a. Progress is counted when planned individual project work to protect, restore, or enhance the coastal wetland has been completed. **Progress is only counted once at the conclusion of the project.** Past results should not be changed – see General Procedures – Project Results.
6. **Measure Lead**: Leah Medley (312-886-1397 / medley.leah@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
540,000	**547,000**	**554,000**	**561,000**	**568,000**

Units are acres. Targets are cumulative.

8. **Universe**: 1,550,000 acres[3] (US) plus additional acreage (unknown) having a previous hydrologic connection to a Great Lake or a connecting channel via surface or subsurface water such that water levels of the wetland are influenced by Great Lakes water levels as identified by the Great Lakes Wetland Consortium via an updated GIS analysis. Prior to this updated analysis, the Universe value stated in GLRI Action Plan II was 260,000 acres. As a result of changing water levels and land use management, the acreage for this "Universe" may fluctuate. The total acreage protected or restored may ultimately exceed 1,550,000 acres because the same acreage can be counted when work is done on the same acreage through different projects.
9. **Baseline**: 530,000 acres (cumulative) as of September 30, 2024.
10. **Data Source and Calculation**: During each data call, agencies provide supporting documentation for any results they report. Funding recipients use various methods to calculate acreage including but not limited to using standard GIS or Google Earth-type

[3] More information is provided in detail here for reporting purposes.

mapping tools, estimation based on photographic surveys, use of GPS mapping, manual calculations through direct observation, and other methods using professional judgment acceptable to the GLRI funding agency.

To measure acres for on-the-ground/shoreline activities, such as trash cleanup, estimate the total length of the activity as well as how far it extends onto the shoreline. Use these two dimensions to calculate the total acres searched on the ground. Similarly, for on-the-water searches, estimate the total length traveled and the width of how far you can see to either side of your boat. Use these two dimensions to calculate the total acres searched in the water.

Riparian and in-stream restoration, creation or protection projects that do not establish connectivity as in 4.1.2 must be reported in acreage. If project outcome is expected to result in maximum biological function for a continuous reach, count in-stream habitat acres for that entire reach (e.g., multiply the length of stream affected by the average bankfull width of the stream). If project outcome is not expected to result in maximum biological function for a continuous reach, include only the footprint of the directly impacted area (such as wood placement and the pool that forms), not the entire reach in which actions occurred. For projects that return a stream to its original channel (e.g., channel reconnection or remeander), calculate in-stream acreage as length of modified channel by bank-full width.

11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply.

Measure 4.1.2

Miles of connectivity established for aquatic species

1. **Description**: This measure tracks the miles of connectivity established for aquatic species under GLRI-funded projects.
2. **Definition of terms used in this measure:**
    a. **Miles of connectivity** is the number of miles of in-stream habitat including mileage for seasonal and intermittent streams in the Great Lakes Basin.
    b. **Reopened** means the tributaries are available for the target species to move into as a result of bypassing or removing a barrier.
3. **What results are acceptable to count for this measure?**
    a. Tributary miles of connectivity reopened including mileage for seasonal and intermittent streams if one or more of a target species gains additional access to spawning and/or rearing habitat from the reconnection of those habitats.
    b. Re-opened and improved quality of tributary miles of connectivity realized from completion in the current reporting period from projects funded by a previous GLRI appropriation.
4. W**hat results are unacceptable to count for this measure?**
    a. Miles of connectivity beyond the next obstructed pathway are not “reopened” and are thus not acceptable.
    b. Miles of connectivity that are projected, rather than realized in the reporting period, are not acceptable.

   c. Don't count both sides of in-stream habitat, even if restoration occurred on both sides of a stream. Treat in-stream habitat as a single line down which restoration work occurs.
   d. Miles surveyed or monitored only should not be counted.
5. **When to count results for this measure**:
   a. Progress toward this measure is counted as stream miles are reopened and/or habitat is restored that allows passage and use. That may be done either (i) sequentially for projects that sequentially open up miles or (ii) all at once for projects such as a large-scale dam removal that achieve their results at a single point in time. See General Procedures – Past Results regarding changing results and calculating results.
6. **Measure Lead:** Leah Medley (312-886-1397 / medley.leah@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
8,300	**8,450**	**8,600**	**8,700**	**8,800**

Units are miles. Targets are cumulative.

8. **Universe**: N/A
9. **Baseline**: Cumulative 8,170 miles as of September 30, 2024.
10. **Data Source and Calculation**: During each data call, agencies provide supporting documentation for any results they report. RWG agencies may use various methods acceptable to them to calculate stream miles including walking the stream, Geographic Information System, the USACE stream mile calculator, and manual calculations through direct observation.
11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply.

Measure 4.2.1

Species benefited where actions have been completed to significantly protect or promote recovery of populations

1. **Description**: This measure tracks the number of species benefited where actions under GLRI-funded projects have been completed to significantly protect or promote recovery of populations.
2. **Definition of terms used in this measure**:
   a. **Actions** mean supporting science, research, population enhancements, establishment of propagation techniques, stocking, habitat restoration, habitat protection, development of management plans, implementation of management plans, and monitoring necessary to avoid extinction, maintain current populations, or increase and expand populations across the Great Lakes Basin. Actions may include supporting science or research projects that identified key controlling factors of a particular species population. Actions may also include a habitat restoration or protection project that will lead to protection or recovery of a population.

b. **Species** include, but are not limited to, the 18 examples identified in Action Plan IV:

Lake trout	Great Lakes piping plover	Brook trout
Native prey fish (ciscos and bloaters)	Pitcher's thistle	Native fluvial mussels
Michigan monkey flower	Marsh breeding birds	Lakeside daisy
Dwarf lake iris	Lake sturgeon	Copperbelly water snake
Eastern massasauga rattlesnake	Mitchell's satyr butterfly	Poweshiek skipperling
Native bees	Karner blue butterfly	Eastern prairie fringed orchid

3. **What results are acceptable to count for this measure?**
   a. Completion of all of actions previously identified by GLRI federal, state, tribal and other entities necessary to reach the consensus-based species outcome during the FY2025-2029 time period:
      i. Consensus-based species outcomes are identified by GLRI interagency work groups made up of and reflecting federal, state, and tribal priorities during Action Plan IV. These outcomes are not meant to mirror federal, state, or entity long-term goals for particular species. They may be interim steps towards long-term (greater than five years) goals.
      ii. The Measure Lead is responsible for documenting and updating species outcomes as well as associated actions necessary to reach these outcomes.
4. **What results are unacceptable to count for this measure?**
   a. Individual habitat restoration/protection projects or science/research efforts that are targeted to providing benefits to a species population.
   b. Projects initiated to reach the consensus-based outcome for a particular species may list this measure as a primary, secondary, or tertiary measure but should not enter a numeric result.
5. **When to count results for this measure:**
   a. Only the Measure Lead may enter results for this measure.
   b. The Measure Lead for this measure of progress (MOP) is responsible for 1) documenting and updating specific actions that have been identified by GLRI interagency working groups and verifying projects undertaken by agencies constitute an action is completed.
   c. The Measure Lead will make the determination when all planned work necessary to reach a consensus-based significant outcome for a particular species is completed. Any monitoring data relevant to the outcome will be summarized to further support the consensus-based outcome for a species is reached.
6. **Measure Lead**: Leah Medley (312-886-1397 / medley.leah@epa.gov)
7. **Action Plan IV Targets**

FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
9	10	11	13	15

Units are number of species. Targets are cumulative.

8. **Universe**: N/A
9. **Baseline**: 8 as of September 30, 2024.
10. **Data Source and Calculation**: Agencies select this measure for GLRI-funded projects where actions have been completed to significantly protect or promote recovery of populations. RWG agencies collect and provide readily available descriptions of the activities funded by the agencies, including study design, data collection/analysis methods, and anticipated results. Agencies use best professional judgment to develop a short activity narrative. The lead agency will also use best professional judgment to identify the nearest city and choose a representative date (month, year) and representative coordinates (in latitude, longitude) for the activity.

    The EPA Measure Lead reviews EAGL2 entries for these projects and makes such inquiries as necessary to identify the results for this measure (i.e. the number of species benefitted). The Measure Lead enters results into EAGL2 and ensures that applicable supporting documentation is also included.
11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply.

Measure 5.1.1

Number of youth impacted through education and stewardship projects

1. **Description**: This measure tracks the number of youth impacted through GLRI-funded, place-based experiential education and stewardship projects.
2. **Definition of terms used in this measure**:
    a. **Experiential learning** means learning through action, experience, or discovery and exploration outside the classroom. Learning should include focused reflection and an active hands-on learning component in order to increase knowledge, develop skills, and clarify values through direct interaction between the recipient and the individual providing instruction for the educational program.
    b. **Impacted** means having gained new knowledge of Great Lakes science and stewardship through hands-on learning experiences.
    c. **Place-based** means that youth engage in a hands-on learning experience in the Great Lakes Basin about the Great Lakes ecosystem.
    d. **Youth** means K-12 school students.
3. **What results are acceptable to count for this measure?**
    a. Youth must be impacted via a relevant GLRI-funded project, approved by the Measure Lead.
    b. Number of students directly impacted by teachers trained in experiential, place based professional development funded by 5.1.1
4. **What results are unacceptable to count for this measure?**
    a. Youth impacted through a program that is not place-based.
    b. Youth impacted through a program that does not consist of experiential learning.
    c. Youth impacted through passive online webinars, displays, brochures, videos, etc.

   d. Reporting attendance (e.g., reporting "members of the public" that attended an event) without the ability to determine how many attendees are youth as defined above.
5. **When to count results for this measure:** Results are counted when youth have completed the educational experience as determined by individual educational program requirements.
6. **Measure Lead**: Erica Yang (312-353-5598 / yang.erica@epa.gov)
7. **Action Plan IV Targets**: None. This is an indicator measure with cumulative results. Units are number of youth impacted.
8. **Universe**: N/A
9. **Baseline**: A cumulative total of 685,007 youth has been impacted in grades K-12 from FY2010-FY2022.
10. **Data Source and Calculation**: The data source is the RWG agency that submits results to EAGL2. RWG agencies collect and provide readily available descriptions of the activities funded by the agencies, including study design, data collection/analysis methods, anticipated results, identification of the nearest city, and representative activity dates and coordinates. Agencies use best professional judgment to develop a short activity narrative, to identify the nearest city, and to choose a representative date (month, year) and representative coordinates (in latitude, longitude) for the activity. During each data call, agencies provide supporting documentation for any results they report.
11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply.

Measure 5.1.2

Number of people trained through workforce development programs

1. **Description**: This measure tracks the number of people taught and trained* on the skills needed to enter the environmental restoration and protection workforce that supports GLRI projects
   *via place-based training linked to GLRI Focus Area themes/actions/projects/ that position people to be qualified to apply for jobs that directly support Great Lakes restoration and protection.
2. **Definition of terms used in this measure:**
   a. **Environmental restoration and protection workforce development programs** are job training programs and experiences that work toward a goal of increasing the number of skilled workers and building a local environmental workforce in the Great Lakes.
   b. **People** means those who are engaged in programs to be taught the skills needed to enter the Great Lakes environmental restoration and protection workforce to support GLRI project implementation and/or long-term maintenance of GLRI projects.
3. **What results are acceptable to count for this measure?**
   a. Number of people who completed job training programs.
   b. Number of people earning vocational certificates in trades aligned with ecological restoration certifications.

   c. Number of people participating in job corps programs to gain the skills required to conserve the natural resources and restore the Great Lakes.
   d. Number of people completing internship programs designed to provide participants with practical hands-on job experiences that can lead to careers in environmental protection and restoration upon completion.
4. **What results are unacceptable to count for this measure?**
   a. Number of people in programs designed only to enhance STEM in K-12 or university classrooms.
   b. Number of teachers trained in professional development activities offered through FA 5.1.1 projects.
5. **When to count results for this measure:**
   a. Results are counted when individuals have completed training as determined by individual workforce development program requirements.
6. **Measure Lead**: Erica Yang (312-353-5598 / yang.erica@epa.gov)
7. **Action Plan IV Targets**: None. This is an indicator measure with cumulative results. Units are number of people trained.
8. **Universe**: N/A
9. **Baseline**: N/A (new measure for Action Plan IV)
10. **Data Source and Calculation**: The data source is the RWG agency that submits results to EAGL2. RWG agencies collect and provide readily available descriptions of the activities funded by the agencies, including study design, data collection/analysis methods, anticipated results, identification of the nearest city, and representative activity dates and coordinates. Agencies use best professional judgment to develop a short activity narrative, to identify the nearest city, and to choose a representative date (month, year) and representative coordinates (in latitude, longitude) for the activity. During each data call, agencies provide supporting documentation for any results they report.
11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply. In addition, results from this measure are not reflective of overall Great Lakes workforce development, but only of the workforce development acceptable under this measure.

Measure 5.2.1

Annual Great Lakes monitoring conducted; interdisciplinary science projects and assessments implemented to support the GLRI and U.S. domestic actions in support of the Cooperative Science and Monitoring Initiative (CSMI), lake-specific priorities identified in LAMPs and other GLWQA activities

1. **Description**: This measure reports on annual monitoring and assessment projects and the implementation of interdisciplinary science projects that support GLRI and US domestic activities under the Great Lakes Water Quality Agreement (GLWQA). Projects identified with this measure include:
   a. EPA's long-term monitoring programs
   b. CSMI intensive field year projects
   c. Agency ecosystem monitoring and assessment efforts
2. **Definition of terms used in this measure:**

   a. **Great Lakes monitoring** refers to sampling of water, aquatic life, sediments, air, wetlands and other relevant media to assess the physical, chemical, and biological health of the Great Lakes ecosystem conducted through the expenditure of GLRI funds.
   b. **LAMPs**: Lakewide Action and Management Plans
3. **What results are acceptable to count for this measure?**
   a. The Measure Lead reports a result of "Yes" for the fiscal year if an assessment conducted by the Measure Lead indicates annual monitoring and assessment projects were conducted and supported implementation of GLRI and US domestic activities under the GLWQA.
4. **What results are unacceptable to count for this measure?**
   a. Monitoring and assessment projects implemented under other Focus Areas.
5. **When to count results for this measure:**
   a. This is a non-quantifiable measure that is assessed on an annual basis. At the end of a fiscal year, the EPA Measure Lead will assess projects in EAGL and determine whether or not the projects were conducted and supported the implementation of GLRI and US domestic activities under the GLWQA.
   b. Projects should be reported using the "non-numeric" designation.
6. **Measure Lead**: Derek Ager (312-353-7463 / ager.derek@epa.gov)
7. **Action Plan IV Targets:** None. Reporting consists of the identification of relevant projects with this measure, and a subsequent result of "Yes" for each year monitoring and assessment has been conducted and supports GLRI and US domestic activities under the GLWQA. No units are attributed to this result.
8. **Universe**: N/A
9. **Baseline**: N/A. Results are identified in non-quantitative reporting.
10. **Data Source and Calculation**: Agencies select this measure for monitoring and assessment projects implemented under Focus Area 5.2 that inform GLRI and US domestic activities under the GLWQA as described above. They should be entered as non-numeric. The EPA Measure Lead reviews EAGL2 entries for these projects and makes such inquiries as necessary to identify the results for this measure. The Measure Lead will determine if monitoring and assessment has been completed and generate a brief summary of how projects are used to inform GLRI and GLWQA activities with examples.
11. **Data Limitations/Qualifications**: The general data limitations/qualifications apply.