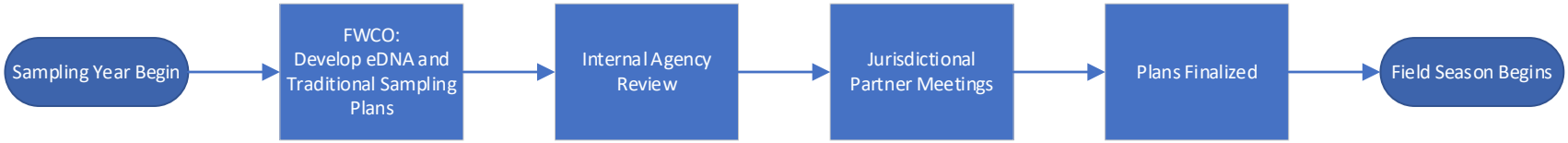
USFWS Great Lakes Early Detection and Monitoring (EDM) Program Communications Plan

(version 12/17/2025)

Aquatic Invasive Species (AIS) in this document refers to species found on the USFWS Great Lakes watchlist or an unexpected non-native species. This plan applies to data collected by the USFWS as part of the Great Lakes EDM program.

Pre-season sample planning

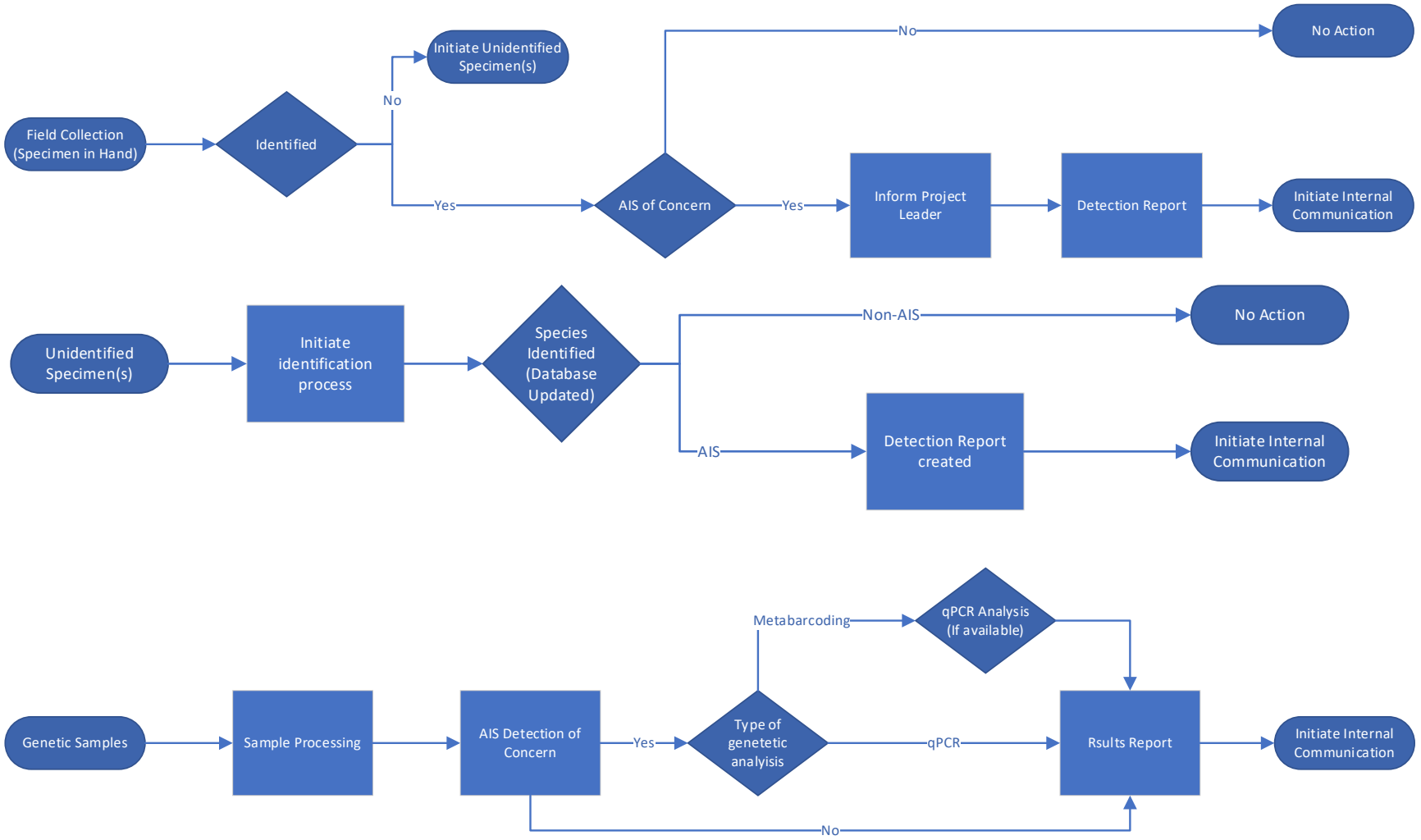


1. FWCO's will prepare basin wide, consistent sampling plans that includes both traditional gears and genetic tools annually.
2. All plans will be reviewed internally to ensure that they meet the framework in addition to the EDM Program vision, mission, and objectives.
3. Implementation plans will be presented in individual jurisdictional partner meetings organized by the EDM Coordinator.
4. Based on feedback, plans will be revised before field season.
5. Implementation plans will be posted to the appropriate folder on the Teams site.

The program will also engage partners in the following forums:

- The USFWS will engage at the Great Lakes Interstate Early Detection and Rapid Response coordination meeting. (Annual)
- The USFWS will provide the annual implementation plans to the appropriate Lake Committee. (Annual)
- The USFWS will communicate with the Council of Lake Committees (CLC) on new technologies and major changes to the program. The USFWS will provide briefings to the CLC on request. (As needed)
- The USFWS will communicate regularly with the Great Lakes Panel ExCom & panel administrator on providing the panel with information. (Regular)

Identification



Field Collection - Specimen in Hand

1. If the organism can be identified, proceed to step 3. If the organism cannot be identified, proceed to next step.
2. Preserve and catalogue specimen for future review and validation.
    a. Take multiple pictures for future identification.
    b. Properly preserve the whole specimen or tissue sample for genetic analysis.
    c. Proceed to unidentified specimen(s) workflow.
3. If the specimen is on the USFWS watchlist or an unexpected non-native species, proceed to next step. No other action is required for native or expected non-native specimens.
4. Inform the project leader of the find.
5. Prepare detection report.
6. Proceed to internal communication of results.

Unidentified Specimen(s)

1. Identify the specimen through genetic analysis or expert solicitation. It is recommended to go with the method that provides the quickest turnaround. Identification should occur as quickly as reasonably possible after collection.
2. Update database.
3. If the specimen is on the USFWS watchlist or an unexpected non-native species, proceed to next step. No other action is required for native or expected non-native specimens.
4. Prepare detection report.
5. Proceed to internal communication of results.

Genetic Samples

1. Process samples according to the applicable genetic standard operating procedure.
2. If an AIS of concern, a USFWS species watchlist or any species not seen before, is detected in a sample, the EDM coordinator will be alerted. If no AIS species of concern are detected, proceed to step 5.
3. If the analysis was qPCR, proceed to step 5. If the analysis was metabarcoding, proceed to next step.
4. qPCR analysis will be conducted according to the qPCR standard operating procedure.
5. Prepare results report.
6. Proceed to internal communication of results.

Bighead and Silver Carp qPCR

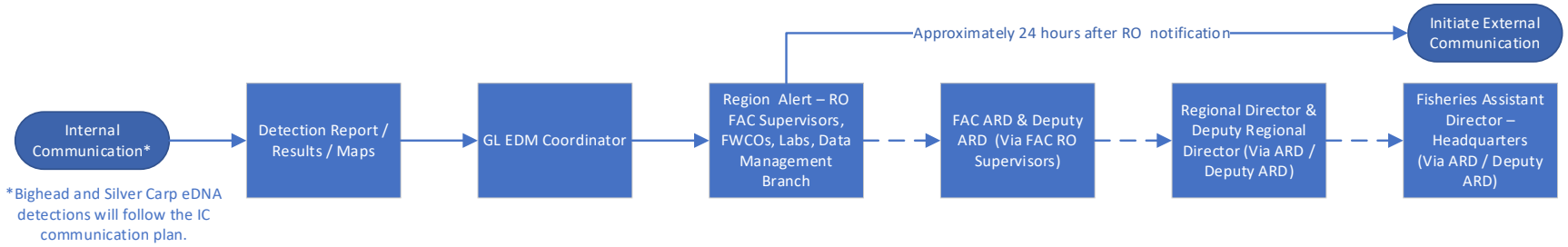
Bighead and Silver carp eDNA has its own communication protocol outlined in the *Quality Assurance Project Plan IC eDNA Monitoring Program* (Section D3 and Appendix A).

Notification of Results

Preparation

1. All lab and/or field office QA/QC will be completed prior to notification.
2. The responsible staff person (i.e. Database Manager, FWCO AIS lead) will create a results package that includes:
    a. Geo-referenced map indicating sites where samples were taken and AIS detections.
    b. Detection report.
    c. eDNA: Downloadable raw data file.
    d. Specimen in hand: ecological risk screening summary
3. The responsible staff person sends the results package to the EDM Coordinator.
4. The EDM Coordinator will provide the results in a uniform template for internal and external communications.

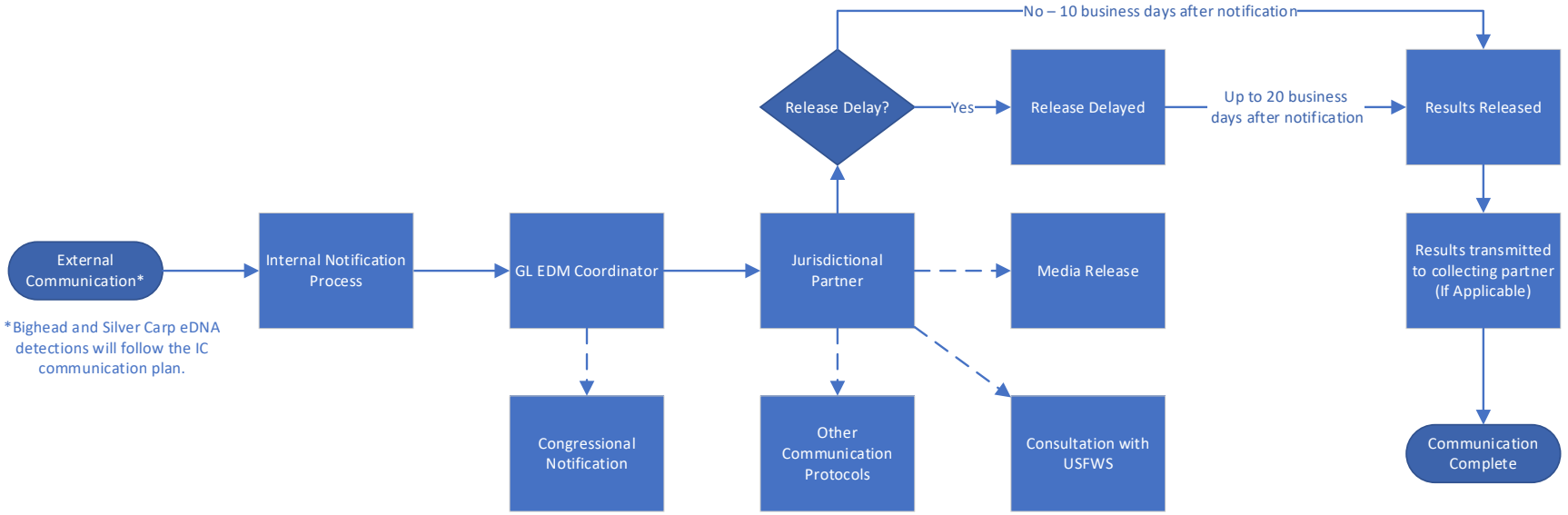
Internal Data / Results Sharing



1. The EDM Program Coordinator receives the results package.
2. The EDM Program Coordinator sends the results package to the applicable Region Fish and Aquatic Conservation (FAC) Leadership consisting of the FAC Assistant Regional Director (ARD) and FAC Deputy ARD, Regional AIS Supervisor, FWCO Program Supervisor, impacted FWCO(s) (Project Leader and eDNA Lead) and Office of Communication.
3. Results information is to be kept confidential. Any potential communication with partner groups or other entities outside of FWS will not occur prior to informing the affected partner.

4. If necessary, Regional FAC Leadership may inform the Regional Director and/or Deputy Regional Director. Additionally, depending upon the results, the Regional Director and/or Deputy Regional Director may inform the FAC Assistant Director at the Headquarters level.
5. Depending on the region that the results originate from, the Regional Director or designee will inform Other Regional Director and/or Deputy Regional Directors.
6. The internal communication process will target completing this step in 24 hours. This will allow the EDM Coordinator to disseminate results promptly and maintain our responsiveness to affected partner and partner group(s).

External Results / Data Sharing



1. After internal notification, the EDM Program Coordinator will disseminate the results to affected jurisdictional partner(s):
    a. Results communication package map, report, raw data (eDNA), and ecological risk screening summary (specimen).
    b. A transmission memo from the EDM Program Coordinator to the affected partner(s) relating a summary of the information that has been collected. This memo will be sent via email.
    c. Consultation will be provided upon request.

*Bighead and Silver Carp detections will follow the Invasive Carp communication protocols.

2. When notifying the affected partner, the internal communication list will be copied. This transmission will start a 10-business day waiting period at the end of which the results will be made publicly available (i.e. database, provided upon request, etc.). However, upon written request from an affected partner, the FWS will extend the timeframe for up to an additional 10 business days. The request will specify the reason(s) for the extension (e.g. new geographic area of eDNA detection, high number of positive results, etc.), the name and position of the requesting official, and the number of additional days requested.
3. Following transmission of the data package to the affected partner(s), the EDM Program Coordinator will be prepared to work with them, to assist in interpreting the results or supporting further sampling if possible and necessary, understanding that in some cases the affected partner may decide to no follow up is necessary.
4. A media release may be done by the State or Tribal Entity. FWS does not issues press releases for EDM results, but the FWS Office of Communication will assist. The EDM Program Coordinator will coordinate the public release of results with the partner led press release. It is recommended that the partner hold on sharing results with any external/non-government groups or individuals until after media release has been distributed.
5. The FWS will not release results to other partners or communication chains, but partner(s) may choose to share these results with other agencies/groups and communication chains. The EDM Coordinator will notify the Invasive Carp Regional Coordinating Committee co-chairs of bighead or silver carp detections prior to public release.
6. Congressional member offices will be notified on a case dependent basis. Congressional office contacts will be notified upon issuance of a partner press release by the USFWS.
7. Results will be made publicly available concurrent with any press releases issued by affected partner, OR by 3 PM CST on the tenth business day after delivery of the data package to the affected partner, whichever comes first, unless more time is requested by the partner. This is to ensure transparency in the system and to not restrict information sharing. Day 1 will be considered the next business day following delivery of the data package to the affected partner.

    Public databases

    a. Traditional Sampling Database: Not yet established
    b. Genetic Sampling Database: Not yet established
    c. Public facing results dashboard: Not yet developed
8. If applicable. Results will be forwarded to the sample collection entity if it was not the US FWS or the jurisdiction.
9. Aquatic Nuisance Species in hand captures will be forwarded to the USGS NAS database team by the USFWS capturing office. Genetic results will not be reported to USGS NAS.

*The invasive carp eDNA communication protocol can be found starting on page 46 of the Quality Assurance Project Plan: Invasive Carp eDNA Monitoring Program. https://www.fws.gov/sites/default/files/documents/2025-03/edna_qapp_2025.pdf

Programmatic

Accomplishments

The Great Lakes EDM program will produce an annual report highlighting locations, amount of effort, and aquatic invasive species detections. The annual report will be delivered to partners and provided to the public via website (under development).

All data will be accessible to agencies and the public

Awareness

Programmatic adaptations will be transparent and communicated through a variety of appropriate forums: Interstate Early Detection and Rapid Response group, Great Lakes Panel on ANS, Council of Lake Committees, lake specific technical committees, task groups, collaborative workgroups, and webinars.

The EDM program will engage partners annually at the Interstate Early Detection and Rapid Response coordination meeting.

Program staff are encouraged to participate in conferences, workshops, and meetings. Presentations will be coordinated with the EDM Coordinator.

Internal

Internal USFWS programmatic communications will occur on a USFWS SharePoint site.

The USFWS Great Lakes EDM program will hold an internal annual meeting.

Appendices

Appendix A – Specimen in hand jurisdiction notification memo template

Hello Jurisdictional Contacts,

Attached you will find a USFWS notification along with the Ecological Risk Screening Summary for a Species detection in Location. Our Great Lakes Early Detection and Monitoring (EDM) team captured or observed the Species while conducting traditional fish sampling in Location on Date.

Upon review of the USGS-NAS database, it was determined this finding was a Type of Finding for this species within the Lake basin. We propose Next Step. If Jurisdiction would prefer an alternative pathway forward, please let us know so we can adjust accordingly.

Feel free to contact me or Project Leader if you have any questions.

Thank you,
Nick Frohnauer
eDNA and Great Lakes Early Detection Coordinator
U.S. Fish & Wildlife Service Region 3
Norman Point II
5600 American Blvd, West; Suite 990
Bloomington, MN 55437-1458
612-431-5829

Appendix B – Specimen in hand detection report example

U.S. Fish and Wildlife Service – Midwest Fishery Program
Notification of Aquatic Invasive Species Detection

Notification Date:	2 February 2025
Contact:	Nick Frohnauer – Regional eDNA & Early Detection Coordinator (612-431-5829)
	Scott Koproski - Project Leader Alpena FWCO (989-356-5023)
Species:	Water Lettuce (*Pistia stratiotes*)
Location:	Sandusky Bay, Sandusky, Ohio
Collection Date:	20 November 2024
Significance:	Routine – New occurrence less than 30 miles from previous occurrence

Activity:
The Alpena Fish and Wildlife Conservation Office (Alpena FWCO) carries out an Early Detection and Monitoring Program (EDM) for fish and benthic invertebrates in areas that have been identified as "high risk" pathways for Aquatic Invasive Species (AIS) introductions in lakes Erie and Huron. Although the USFWS EDM program targets fish and benthic invertebrates, field teams remain alert and aware for all potential invasive species.

On November 20, 2024, the USFWS EDM team was conducting surveillance in the area of Sandusky Bay, OH and incidentally noticed the presence of a water lettuce (*Pistia stratiotes*) colony (Figure 1, Photo 1, Photo 2, Table 1) in a separated backwater of a creek. Smaller populations were observed scattered in the creek mainstem feeding into Sandusky Bay. After a search of the US Geological Survey Nonindigenous Aquatic Species (NAS) database, the team determined that this invasive plant had not been previously recorded in the Sandusky Bay area.

Water lettuce is found across the southern reaches of the Great Lakes, including in the Detroit River and parts of Lake Erie (Figure 2, Figure 3) (USGS NAS Database). This species was first recorded in the southern United States in the 1700's and then in Ohio in 2000 (USFWS 2018 – Ecological Risk Screening Summary). Water lettuce has been reported nearby in Lake Erie to the west approximately 30 miles (Metzger Marsh Wildlife Area, OH) and to the east approximately 150 miles (Presque Isle State Park, PA) (USGS NAS Database).

The US Fish and Wildlife Ecological Risk Screening Summary (ERSS) has classified Water Lettuce as a "High" risk due to their established history of invasiveness, high climate match, and medium certainty of assessment (https://www.fws.gov/sites/default/files/documents/Ecological-Risk-Screening-Summary-Water-Lettuce.pdf). Their impacts in invaded ranges include negative impacts to both biodiversity and human health where this species establishes large colonies.

These efforts demonstrate the value of having a comprehensive Early Detection and Monitoring Program throughout the Great Lakes and the expertise of the field crews to be alert of non-target invasive species.

Additional Communications/Actions:
The Midwest Region's Fishery Program will defer to Ohio with respect to messaging this externally. If Ohio decides a response action is necessary, our Program stands ready to assist in any manner.

Figures, Tables, and Photos:

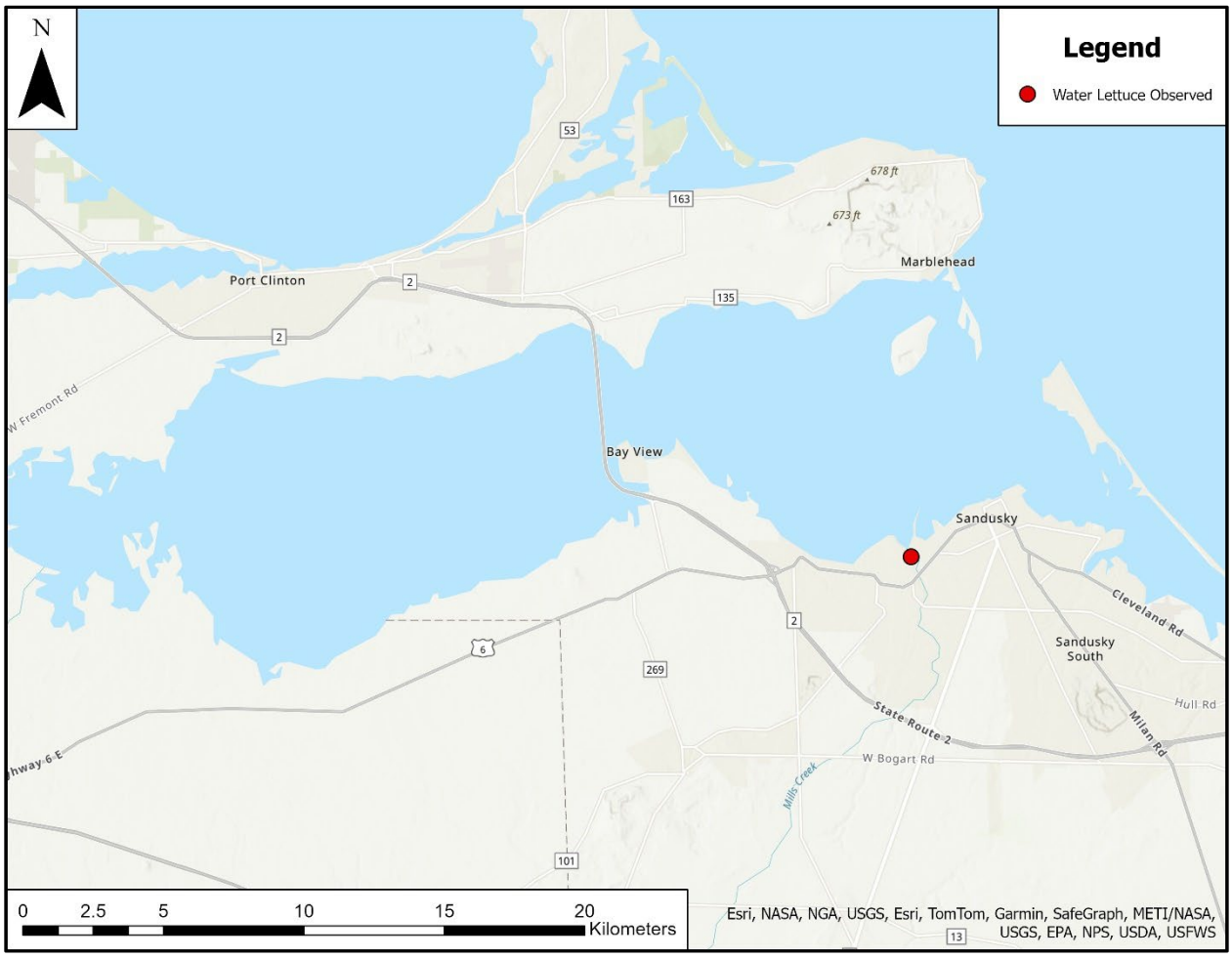


Figure 1. The location of the water lettuce detected in the area of Sandusky Bay, OH on 20 November 2024. *Map credit: USFWS Alpena FWCO*

Photo 1: Water lettuce observed in a creek leading into Sandusky Bay on 20 November 2024. *Photo credit: USFWS Alpena FWCO*

Photo 2: Large colony of water lettuce observed in a creek near Sandusky Bay, OH on 20 November 2024. *Photo credit: USFWS Alpena FWCO*

Figure 2. Water lettuce detections in Lake Erie and the Huron-Erie Corridor as reported in the USGS NAS database. *Map credit: USGS NAS database*

Appendix C – Significance Determination Procedures

Determining the significance of a capture is a step in the "Invasive Fishes Communication Protocol"** from the Council of Great Lakes Fishery Agencies. Therefore, the USFWS will make a determination of significance including reasoning when reporting a detection for specimens in hand. This determination will be made by the collecting office field biologists, reviewed by the office Project Leader, and presented to the Great Lakes Early Detection and Monitoring Program coordinator for concurrence. The significance determination does not impact the timing of the communication from the USFWS to the jurisdiction. This determination is not binding and may be modified by the jurisdictional entity.

Range Expansion: Nearly 200 AIS exist in the Great Lakes and further range expansions are possible and may be of great importance. Therefore, the significance of the range expansion should be determined, taking into account whether the organism moved from one lake to another, crossed political boundaries, was found more than 50 miles from their previous known location, or was newly found in areas identified in management plans as sensitive.

New AIS Collection: New AIS collected in the Great Lakes are significant and should be communicated and responded to accordingly. Fortunately, a body of literature exists to assess the risk of potential invaders based on such factors as history of invasiveness, climate matching with their native range, and other life history attributes. The significance of any novel collections will be based on this literature, including the Service's Ecological Risk Screening Summaries (ERSS), The Council of Great Lakes Governors "least wanted" list, and species listed as high or significant threats in state or provincial AIS plans.

Urgent

A live species is collected in a lake that it has not been previously found.

A live species is collected in a state or province where it has not been previously collected.

A live species is collected in an area of significance such as ESA critical habitat, or in metropolitan areas where impacts and additional vectors of spread are prevalent.

A significant increase in relative abundance is detected.

Novel species (alive or dead) to the Great Lakes collected for the first time and meets any of the qualifications below:

- Identified as a "high" risk by a completed Service ERSS
- Listed in the highest risk category of a state or provincial AIS Plan. The wording varies between plans but are typically classified as "severe", "high risk", or similar terms
- Listed on the Governors and Premiers "least wanted" watch list

Important

A live species has a significant range expansion (>50 miles from previous collections).

Novel species (Alive or dead) to the Great Lakes collected for the first time and meets any of the qualifications below:

- Identified as an “uncertain” risk by a completed Service ERSS. Note that the climate match specifics of an “uncertain” determination should be consulted to better define the risk posed
- Listed in a lower risk category of a state or provincial AIS Plan

Routine

A minor range expansion was identified (10<collection location<50 miles from previous collections) Novel species to the Great Lakes collected for the first time and meets any of the qualifications below:

- Identified as a “low” risk by a completed Service ERSS

** https://www.glfc.org/pubs/cglfa/Invasive%20Fishes%20Communications%20Protocol.pdf

Appendix D – Genetic results memo template

Hello Jurisdictional Contacts,
Enclosed with this email you will find the U.S. Fish and Wildlife Service (USFWS) eDNA metabarcoding results relating to the USFWS sampling that occurred in:
Location - Date Range.

These results are presented in an interactive HTML format. The following USFWS watchlist species were found in the metabarcoding results:
None or Species

Please be aware that results for all species except bighead and silver carp will be added to our ServCat database (link to database), available to the public, ten business days after the transmission of this message (Date). However, if Jurisdictions plans to release the results sooner, we will post them sooner. Upon your request, we will delay the posting of these results for an additional ten business days to Date. If requested, we will work with you to interpret these results and issue a press release. Please keep us appraised of your release date.

We will not release results to any other partners or communication chains, but your state may choose to do so.

If you would like to discuss these results, we would be happy to set up a conference call for you and appropriate staff at your earliest convenience.

Thank you for your continued interest and dedication to the monitoring and prevention of invasive species in the Lake Basin.

Nick Frohnauer
eDNA and Early Detection Coordinator
U.S. Fish & Wildlife Service Region 3
Norman Point II
5600 American Blvd, West; Suite 990
Bloomington, MN 55437-1458
612-431-5829

Appendix E – Genetic results communication package example (HTML file) *Will be updated when 2025 package is finalized. *

Communication of Metabarcoding Results

Great Lakes Early Detection and Monitoring Program

AUTHOR
U.S. Fish and Wildlife Service

PUBLISHED
March 26, 2025

eDNA Sampling Details

Report Number: 2025032610

Receiving Entity: New York State Department of Environmental Conservation

Location: Irving, NY

Collection Agency (Office): NYS Department of Environmental Conservation (Region 9 Fisheries)

Sample Date Range: May. 23 - Oct. 18, 2024

eDNA Samples Processed: 11 environmental samples, 2 controls

Quick Glance Results

- A total of **11** unique sample locations were surveyed at Irving, NY in the Lake Erie basin.
- Across all samples, DNA was detected from **53** taxa including a total of **47** unique species-level detections.
- On average per sample, the amount of water filtered was **1.65 liters** and the sequencing depth (number of assigned DNA reads) was **256,639 reads**, and the number of detected taxa was **27.5 species and genera**.

Great Lakes USFWS AIS Watchlist Detections

The USFWS Great Lakes AIS watchlist was developed utilizing information from Great Lakes Aquatic Nonindigenous Species Information System (GLANSIS), USFWS Ecological Risk Assessments, the Great Lakes and St. Lawrence Governors and Premiers Least Wanted list, and partner input.

Species watchlist metabarcoding results:

AIS Watchlist Species Were Detected

Common Name	Scientific Name	Determination	Number of Samples with DNA Detected
Rudd	*Scardinius erythrophthalmus*	Monitoring	**1**

Note: Use dropdown list in the map below to see where exactly at this location watchlist detections occurred.

eDNA Results Exploration

Location Map

The location results map is interactive and can be used to explore the sample locations and where specific taxa DNA detections occurred within Irving, NY. Clicking on an individual point will open a pop-up that contains metadata regarding that particular survey event (When all species are selected only information for topmost record is displayed). Point pop-up labels show the unique sample identifier at exactly where that sample was collected. The map can be filtered using the **Fish Taxa Name** box below to view detection distribution of a single taxon. Additionally, the map can be enlarged by clicking the expand icon in the top right corner of the map and saved as an image file by selecting the download icon in the top left corner.

Fish Taxa Name:

Figure 1. Interactive map showing locations where samples were collected. Filtering this map will dynamically updates the points representing where taxa DNA was detected in the survey location. Clicking on an individual point will open a pop-up that contains metadata regarding that survey event.

Detection Table

The eDNA detection summary table shows all taxa detected at the Irving, NY sample location. This table can be sorted by clicking on the column. Percent detection for a taxa refers to the percentage that fishes DNA appeared in relation to the total number of samples collected.

Table 1. Summary of environmental DNA (eDNA) detections grouped by taxa.

Common Name	Scientific Name	Detections	Percent Detected	Mean Frequency
Rudd	*Scardinius erythrophthalmus*	1	9	0.001

Continued for however many species detected				

Accessing eDNA Results Data

Report 2025032610 Data

The data associated with this report can be downloaded for further exploration or analysis. The file will download as an **Excel** file with a second worksheet that contains a data dictionary providing descriptions of the data types and fields found in the dataset.

Download eDNA Results Data Package (Excel Format)

Complete Great Lakes Metabarcoding Dataset

The Great Lakes Early Detection and Monitoring Programs metabarcoding results dataset can be found here. This file is updated when results are publicly posted following the communications protocol.

Questions and Additional Information

For any questions related to detection results or assistance with interpretation please contact the following program lead:

Nick Frohnauer
USFWS, Great Lakes EDM Coordinator | email: nicholas_frohnauer@fws.gov | phone: 612-431-5829

Appendix E – Jurisdictional Contacts

Jurisdiction	First	Last	Notification*
Minnesota	Grace	Loppnow	All
Minnesota	Kelly	Pennington	All
Minnesota	Brad	Parsons	All
Minnesota	Cory	Goldsworthy	Metabarcoding, Traditional
Illinois	Brian	Schoenung	Invasive Carp, Traditional
Illinois	Vic	Santucci	Invasive Carp, Traditional
Wisconsin	Michelle	Nault	All
Wisconsin	Lori	Tate	All
Wisconsin	Amy	Kretlow	All
Wisconsin	Brad	Eggold	All
Wisconsin	Karson	Cisneros	All
Michigan	Seth	Herbst	All
Michigan	Lucas	Nathan	All
Michigan	Tammy	Newcomb	All
Michigan	Doug	Schultz	All (Lake Huron Only)
Michigan	Jay	Wesley	All (Lake Michigan Only)
Michigan	Jim	Francis	All (Lake Erie Only)
Michigan	Dave	Caroffino	All (Lake Superior Only)
Michigan	Justin	Bopp	All
Michigan	Ceci	Weibert	All
Michigan	Randy	Claramunt	All
Indiana	Ben	Dickinson	All
Indiana	Rod	Edgell	All
Indiana	Eric	Fisher	All
Ohio	John	Navarro	All
Pennsylvania	Dave	Nihart	All
Pennsylvania	Sean	Hartzell	All
Pennsylvania	Kris	Kuhn	All
Pennsylvania	Mark	Haffley	All
New York	Cathy	McGlynn	All
New York	Steven	Pearson	All
New York	Steve	Hurst	All
New York	Chris	Legard	All (Lake Ontario Only)
New York	Jason	Robinson	All (Lake Erie Only)
Seneca Nation	Shane	Titus	All
Seneca Nation	Greg	Lay	All

*Notification refers to the type of sampling: Genetic Metabarcoding, Invasive Carp eDNA, Traditional Sampling