

Project RED

Riverine Early Detectors

Aquatic Invasive Species Monitoring on our Moving Waters



Volunteer Monitoring Manual



Extension

UNIVERSITY OF WISCONSIN-MADISON

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Photo: Ellen Voss
Cover photo: Addie Schlusel

Introduction

The health of our favorite rivers depends on all of us! Wisconsin's waters are vulnerable to invasion by a number of aquatic invasive species (AIS), from plants like Eurasian watermilfoil to animals like New Zealand mudsnails. If left unchecked, AIS have the potential to reduce the diversity of native organisms, disrupt the food web, and impact recreational activities. The key to successfully protecting our waters is detecting invasives early when it may still be possible to isolate or eradicate them. AIS populations that are detected early require less money and effort to manage. Volunteers like you are invaluable for early detection and rapid response.

Your AIS data is used by local, regional, and statewide staff to:

- 1. Establish baseline data on the statewide AIS distribution in rivers.**
- 2. Guide response efforts of pioneer populations that are detected early.**
- 3. Identify priority locations for AIS monitoring.**

You can monitor anywhere! You are welcome to “adopt” a section of river to keep an eye on, or monitor any river in Wisconsin you happen to be on.

Project Riverine Early Detectors (RED) has four steps:

- 1. Visit** a section of river or stream, keeping your eyes peeled for invasive species
- 2. Collect specimens or photograph** suspicious plants and animals
- 3. Verify** the specimens
- 4. Share** your findings



Photo: Chris Hamerla

The University of Wisconsin-Madison Division of Extension, the Wisconsin Department of Natural Resources (WDNR) and local AIS coordinators can help you throughout the process. Grab your paddle or waders and get out on the water. We need your help!

Protocols

STEP 1: Paddle, wade, or walk along a river and search for invasives

You can monitor for AIS anywhere! Whether you are paddling/fishing your favorite section of river, or on a new waterbody during a vacation, we always need volunteers on the lookout for AIS.

There are three types of riverine AIS monitoring:

1. Monitoring from the shoreline
2. Monitoring while wading or fishing
3. Monitoring while paddling or floating downstream

A steel rake head (usually with at least 30 feet of rope attached to it) is a very effective aquatic plant sampling tool.

You can buy a rake head by itself, or simply cut the handle off of a rake and tie the rope to the head. If desired, a double-sided rake can be made by attaching two rake heads together with cable ties, stainless steel hose clamps, or welding. Double-sided is better, since there will always be rake tines pointed down into the sediment to snag plants.

Suggested monitoring equipment

- Aquatic plant sampling rake
- Ziploc bags
- Permanent marker for labeling bags
- Hand lens
- Pencil
- Project RED data sheets
- Polarized sunglasses
- Binoculars
- ID guides to help you identify AIS

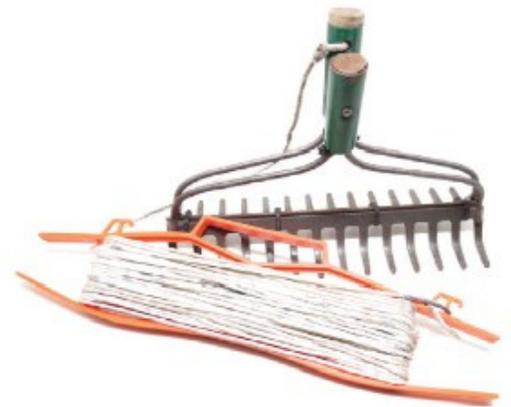


Photo: Paul Skawinski

Tips for all monitoring

- Binoculars can be helpful when a river or the adjacent wetland or floodplain is wide
- Wearing polarized sunglasses helps you to better see into the water

Monitoring while in the water (wading, fishing, or paddling)

1. Pay close attention to your put-in and take-out points. These are key areas to search for aquatic invasive species. Use your hands or a scoop to sift through sediment for invertebrates (such as Asian clams or New Zealand mudsnails).
2. Paddle or wade across shallow areas of the river. If your river is narrow, you may wish to paddle or wade in a zigzag pattern back and forth across the width of the river. Stay within your paddling limits.
3. Look for fragments of plants floating along the surface of the water, especially in backwater areas. Observe rooted plants. You may wish to use a rope rake to gather samples of rooted plants. If you see a suspicious submerged or emergent plant, gather a bit using your hand or a rake to inspect it closer.
4. Keep an eye out for invasive invertebrates (New Zealand mudsnails, for example), which may be attached to submerged wood, plants, rocks, bridges or buoys.
5. As you are moving along a section of river, stop frequently to observe the banks to determine if AIS are present.
6. As you go, pay particularly close attention when you are near bridges, backyards, boat landings, and urban areas. More common than not, we tend to find riverine invasive species in areas where humans come into contact with rivers the most, or where rivers have been disturbed.



Photos: Noah LS and Sean Bertalot

Stay within your limits! Streams and rivers can have strong and dangerous currents, and river bottoms can change and hide submerged objects like downed trees. Wear a life jacket and only paddle or wade where you are confident in your ability to stay safe.

Monitoring from the shoreline

1. Upon arrival at your site, identify the boundaries you wish to sample, typically 50-100 feet around a single point along the river. You may need to alter your length depending on site conditions. You will begin your search at one end and walk to the other along the shore or within the river.
2. Stop at least five times along your way at approximately equal intervals. Work downstream to upstream to avoid sediment disturbance, which can limit your ability to see into the water. You can consider all public docks/piers and bridges as sampling locations within your station, even if they are not equally spaced. If the access point is narrow, or less than 20 feet, choose three sites - one on each side and one in the middle. Follow steps 3-4 at each of your stopping locations.
3. Scan the area for at least 30 seconds. If there is heavy vegetation, spend more time as needed. While scanning, examine plant fragments and shells on the shore, as well as plants and animals in the water. If possible, use a handmade scoop or your hands to collect substrate from the shallow water along the shore. Sift through your sample for invertebrates. If available, use binoculars to scan the distant shorelines.
4. If you have one, toss a rope rake from the shore into the water, aiming for concentrations of plants. Be sure to hang onto the end of the rope. If you are at a narrow river site, you may wish to use a long-handled metal garden rake. Pull off and examine all the attached aquatic vegetation. Use the provided resources to help you identify suspicious plants or animals.



Photos: Tom Boisvert and Addie Schlusel

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Target Species

Regardless of method, become familiar with the habitat and identifying features of the following invasive species that have been identified as a threat to our rivers and streams here in Wisconsin.



Shoreline/Wetland Plants

- Japanese hops
- Phragmites
- Japanese knotweed
- Purple loosestrife
- Flowering rush
- Yellow iris

Emergent/Submerged Plants

- Yellow floating heart
- Eurasian watermilfoil
- Curly-leaf pondweed
 - Hydrilla
- Water hyacinth
- Didymo
- Brazilian waterweed
 - Water lettuce
- Starry stonewort
- Parrot feather

Invertebrates

- New Zealand mudsnail
 - Faucet snail
 - Asian clam
- Zebra mussels
- Quagga mussels
- Rusty crayfish
- Red swamp crayfish

If you don't find any AIS: Wonderful! Please let us know the good news. Reports of no AIS are just as important as reports that you did find something. Please fill out your data sheet and enter your data into the SWIMS database no matter what you find (or don't find!).

STEP 2: Identify and collect/photograph invasive species

Invasive species are often easily confused with native look-alikes. To ensure quality data, volunteers are encouraged to verify their findings with a professional. The easiest way to do so is to take digital photographs of the suspect plant or animal and send them to contacts on the next page. If taking a photo isn't possible, you are encouraged to collect specimens if you may do so safely and legally. Do not trespass onto private property in order to do so.

How to Take Photographs

Take multiple photographs of the same subject. Take many close-up photos of all identifying characteristics (i.e., leaves, stems, flowers, and roots if possible). Also capture landscape photos to show the extent of the infestation and the habitat in which the species was found. Be sure to include something for scale (e.g., a pencil or coin) in all photographs.

How to Collect Plants

Try to collect up to 3. Try to get the root system, all leaves, and seed heads and flowers when present. Place in a zip-lock bag with a damp paper towel or a tiny bit of water. Keep the sample cool, and transport it to a refrigerator.

How to Collect Invertebrates

Try to collect up to 3 specimens. Place in a plastic jar or bag with water; keep cool and transport to a refrigerator. Transfer specimen to the freezer or a jar filled with rubbing alcohol. If this is not feasible, you are encouraged to take photographs.



STEP 3: Verify your findings

After returning home from the river, refer to additional references to confirm the identity of the plant or animal that you found. The Wisconsin DNR online factsheets are a good place to start. Simply type the name of the species and the word “factsheet” (Ex. “Japanese hops factsheet”) into the search bar on the WDNR’s homepage (dnr.wi.gov). Here you will find photographs and a detailed description of the invasive species.

Other Online Resources:

<http://www.wisconsinrivers.org/our-work/aquatic-invasive-species>

<http://www.goldensandsrccd.org/our-work/water/aquatic-invasive-species-program/handouts>

If you still believe that you have found an invasive species, please contact the local or UW-Madison Extension Project RED coordinators listed below as soon as possible. If you took photographs of the invasive, please email the photographs along with the latitude and longitude coordinates to your coordinators. If you collected specimens and the species cannot be identified from the photographs alone, your coordinator may request that you deliver the specimen for a closer examination. A delay may result in decay and prevent experts from being able to identify the specimen. The local or statewide coordinators will confirm where you should deliver the specimens once you have contacted them.

To find your local AIS coordinator, visit this website:

https://dnr.wi.gov/lakes/invasives/Contacts.aspx?role=AIS_CTY_TRIB

Project RED Coordinator: Emily Heald emily.heald@wisc.edu

STEP 4: Share your findings

Your observations are valuable whether or not you found any invasive species while monitoring. When submitted, your Project RED data will be added to the WDNR database (called “SWIMS”), where it will be used by researchers and managers to better understand how invasive species are spreading throughout Wisconsin’s waters.

To access the SWIMS database, volunteers need a Wisconsin Web Access Management System (WAMS) ID:

- Go to <https://on.wisconsin.gov/WAMS/home> & follow the directions for Self-Registration
- Open your email account and look for an email from Wisconsin.gov.
- Email us your user ID and full name to: wav@extension.wisc.edu. You’ll get a reply within a couple of business days saying you’re all set up to enter Project RED data. You will not be able to enter data until you contact the Project RED Coordinator with your WAMS user ID.

Entering data in SWIMS

- Go to <https://dnrx.wisconsin.gov/swims/login.jsp> . Log in using your WAMS ID
- On your My Projects page, navigate to Project Riverine Early Detectors (Project RED). Under the description, click the Enter Data link.
- Select your name from the Data Collectors drop down list. If there are additional data collectors not listed, feel free to list them in the comments area.
- Then, select your monitoring station. If your station is not available in the dropdown list, select “Location Specified on the Next Page”.
- Enter the Start Date, End Date, and Time you started and stopped monitoring that day.
- Enter your written observations in the comments box.
- Click Next.
- Enter the Waterbody Name; then provide the Start and End Location in decimal degrees along with a detailed description of the locations (ex. County H Bridge just north of Baytown).
- Note which Species you looked for. Please answer Yes or No. Do not leave blank.
- Click Enter First ID# to enter your first find.
- Enter the ID#, name of the species, and latitude and longitude.
- Click Enter Next ID# to enter your next find.
- When finished, click Save and Return to List. If you click Save and Return to List (or if you click View List from the Submit Data tab), you will see the data you recently entered.

