AQUATIC INVASIVE SPECIES EARLY DETECTION MONITORING PROTOCOL ON LAKES, STREAMS, WETLANDS, AND ROADSIDES

Wisconsin Department of Natural Resources

STANDARD OPERATING PROCEDURES

July 9, 2025

EGAD #: 3200-2025-06

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Scope

This protocol details preparation, site considerations, equipment, and monitoring procedures involved with aquatic and wetland invasive species monitoring in lakes, wadable and non-wadable streams, wetlands, and roadsides.

We consult Chapter NR 40, Wis. Admin. Code Identification, Classification, and Control rule. Aquatic and wetland invasive species are the main targets for monitoring, with an emphasis on species classified as NR 40 Prohibited or non-native species that are uncommon or rare in the state.

The Wisconsin Department of Natural Resources (DNR) relies on a network of DNR staff, Lake Monitoring and Protection Network (LMPN) personnel, partners, and volunteers (i.e., Citizen Lake Monitoring Network and Water Action Volunteers) to collect data on the presence and absence of invasive species. The DNR aquatic invasive species (AIS) monitoring objectives are to detect pioneer populations of NR 40 regulated invasive species — especially NR 40 prohibited species — within lakes, streams, and wetlands to enable quick response and provide semi-quantitative information on species density and abundance.

The following protocols are used by DNR, LMPN and other professional staff. They can also be used to inform the citizen AIS monitoring programs.

Sampling Design Overview

Surveys will be conducted on waterbodies (lake, streams, or wetlands) or along roadsides. Following methods used by Latzka et al. (2015), each location will be surveyed using a combination of access searches, targeted searches, and meander searches between access and target sites (Figure 1). The number of target sites and estimated survey time is determined by site specific characteristics (Table 1). See Table 2 for a complete list of sampling equipment.

The following methodology is based largely on Latzka et al. (2015) and will be used for the various survey types:

- Access searches for 15 minutes
- Target searches for 10 minutes
- Meander searches at a slow pace (~0.001-8 kph) between search sites targeting suitable habitats for target species. The pace will depend on the site. Wetlands and streams might take longer to navigate than roads, lakes, and non-wadable streams.

Table 1. Number of target sites for various survey locations and sizes. Shoreline length, wetland acreage, stream length and width, and road length are used to determine the number of target sites and provide an estimate of the anticipated survey time.

Lake Shoreline Distance (km) (ROW, SWDV, Latzka 2015)	Wetland Area (km^2) (SWDV, DNR 2016a, Granberg et al. 2017)	Wadable Mean Stream Width (length) (m) (Lyons 1992, DNR 2002, DNR 2015a, DNR 2015b)	Non-Wadable Stream length (km) (DNR 2016b)	Roadside Distance (km) (Granberg et al. 2017, DNR 2018)	# Target Sites	Estimated Survey Time (hours)
<1.6	<0.25	<2.9 (105)		1-2	4	1
1.6-4.8	>0.25-1	>2.9-5.7 (106-200)		>2-3	5	2
>4.8-6.4	>1-3	>5.7-11.5 (201-400)		>3-4	6	3
>6.4-8.0	>3-5	>11.5-17.1 (401-600)		>4-5	7	4
>8.0-9.6*	>5-10*	>17.1-23* (601-800)	3.0*	>5-6*	8*	5*
**Larger areas may be surveyed. Target site count and time spent will be estimated based on the provided estimates.*						

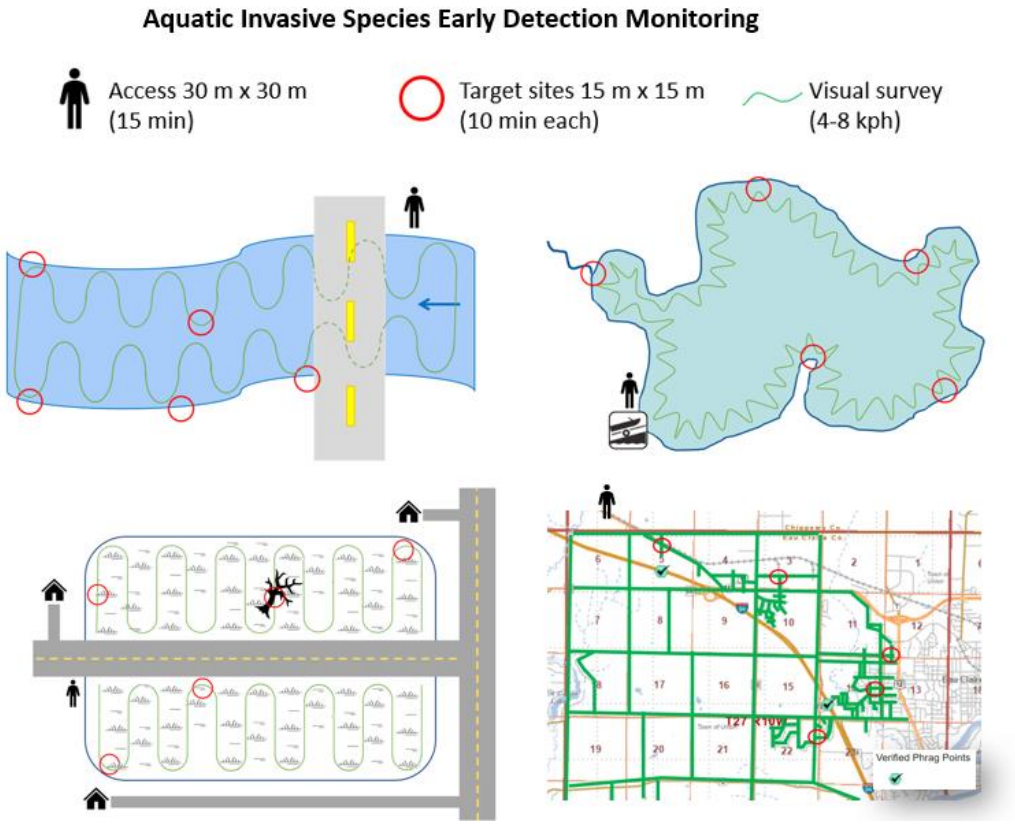


Figure 1. Diagram of aquatic invasive species early detection methods in lakes, streams, roadsides and wetlands. Methods include 15-minute surveys at access sites, 10-minute surveys at target sites, and surveying while meandering between sites. Target sites will be selected based on suitability for invasive species, primarily due to disturbances or other factors making them vulnerable to establishment.

Desktop Preparation

Monitors should be familiar with the identification of species regulated under Chapter NR 40 and their preferred habitat. Review the diagrams and descriptions in Appendix A to understand various species groups and parts to be familiar with. The DNR AIS Team identified a list of priority species that will be tracked: https://apps.dnr.wi.gov/swims/Documents/DownloadDocument?id=359904256. This spreadsheet includes links to factsheets which contain additional guidance for identification, distribution, and control for each species. Additional identification and distribution resources are available on the DNR Aquatic and Wetland Invasive Species Monitoring website: https://dnr.wisconsin.gov/topic/Lakes/AIS/Monitoring.html

Fieldwork involves monitoring access locations, specific target areas, and meandering between areas to have broad coverage of the location. The access and target sites should be determined prior to starting fieldwork but can be amended out in the field if better locations are identified. In all instances, private property will only be monitored if granted access by the landowner.

Mapping Resources

- Useful layers in **Lakes & AIS Viewer (LAV)**: {"https://dnrmaps.wi.gov/H5/?viewer=Lakes_AIS_Viewer"}
    - See the Basic Tools tab to view the legend
    - AIS Monitoring efforts
        - Project RED
        - AIS Volunteer Monitoring
        - Early Detection Monitoring – 2010 – 2015 rate of spread assessments
    - Boat & Shore Fishing Access
    - Invasive Aquatic Plants Locations
    - Invasive Fish Locations
    - Invasive Invertebrate Locations
    - Invasive Wetland Plant Locations
    - Dams
    - Monitoring Stations
        - Points, lines, & areas with & without recent and historical data
    - Inland Water Resources
        - 24K Streams and Rivers
        - Lakes and Open Water
        - Intermittent Streams
        - 1:24k Flow Direction
        - Stream Order
    - Wetland Inventory & Wetlands
        - Wetland Restorations
        - Critical Habitat Areas

- Useful layers in **Surface Water Data Viewer (SWDV)**:
  {"https://dnrmaps.wi.gov/H5/?viewer=SWDV"}
    - Monitoring Sites & Data
      - Points, lines, & areas with & without recent and historical data
    - Watershed Boundaries
      - Watersheds and HUCs
    - Boat Access & Shore Fishing
    - Dams & Floodplains
    - Clean Water Act Standards & Uses
    - Assessments and Impairments
      - Water Condition List
    - Priority Navigable Waterways
    - Mapped Wetlands
      - Mapped Wetlands layer displays, among others:
        - Wisconsin Wetland Inventory (cached and dynamic)
          - Click on the polygon, then Wetland Class Area and scroll down to find acreage
    - Surface Water
      - Surface Water (Cached)
      - 24K Intermittent Streams
      - 24K Open Water
      - 24K Streams and Rivers
      - 24K Flow Direction
      - Stream Order
      - Lake Natural Communities
      - Stream Natural Communities

- Useful layers in the **Aquatic Plant Explorer (APEx)**:
  - {"https://dnr-wisconsin.shinyapps.io/AquaticPlantExplorer/"}
    - Lake maps with aquatic plant species presence and density
    - Summary statistics including maximum depth of aquatic plant growth

Data Resources

- **S**urface **W**ater **I**ntegrated **M**onitoring **S**ystem (SWIMS):
  {"https://dnr.wisconsin.gov/topic/SurfaceWater/SWIMS"}
    - Known AIS → Resources of Interest → Waterbody Name
    - Last monitoring efforts → Fieldwork → Station ID
- DNR Lakes pages:
  {"https://apps.dnr.wi.gov/lakes/lakepages/"}
    - Facts & Figures tab:

    - Verified invasive species in the waterbody
    - Area, maximum and mean depth, waterbody type, hydrological lake type, county, latitude, longitude
    - Contour (bathymetric) maps identify shoreline length (used to estimate survey time), historical structures, and alkalinity
    - Lake organizations
    - Recreation (beaches, boat landings, ordinances, fish, public lands, etc.)
- The Wisconsin Land Information Program maintains a list of statewide county contacts and websites with parcel data to assist in determining landowners for access permissions: https://doa.wi.gov/DIR/County_Contacts.pdf

Site Planning

Follow guidance provided in the *Best Management Practices for Boat, Gear and Equipment Decontamination* document for how to prevent moving invasive species while monitoring. {https://apps.dnr.wi.gov/swims/Documents/DownloadDocument?id=113967385}

Stations will be the lake polygon, stream point, wetland point, or county centroid for roads. If new stations need to be created, contact the Regional DNR AIS Biologists.

1. **Access sites**
   Access sites for lakes, rivers, and streams can be identified during desktop reconnaissance by determining the latitude and longitude of all public boat launches and carry-in access sites. Access sites for wetlands are road crossings or trailheads. Since roadsides will use the county centroid station, accesses for roadsides will generally be at the county boundary. Beaches, resorts, and fishing piers are not considered access points but could be sampled as target sites.

2. **Target sites**
   Target sites are areas where the probability of new introductions is higher due to proximity to known invasive species occurrence, unique natural features, or anthropogenic influences. Natural features to target include inlets/outlets, areas with different substrate types, different plant community types, downed trees, and deer trails. Locations impacted by anthropogenic disturbances that can be monitored include private boat launches, beaches, fishing piers, roads, houses, stormwater retention ponds, and construction sites. Current maps and aerial photos, as well as contour maps, can be used to identify areas of various land use types (e.g., residential, commercial, beaches, natural, etc.), substrates/habitat (i.e., sand, gravel, vegetation, etc.), and inlets/outlets. Target sites can be modified if site conditions are different from what was observed during the desktop assessment.

3. **Meander**
   Use existing resources to identify potential routes that will pass through all available habitat that could be suitable for a variety of species. Contour maps can be used to identify general substrates, and APEx can be checked to identify plant communities.

Table 2. Equipment list for completing early detection surveys on lakes, streams, wetlands, and roads. Equipment with a lighter shade of blue is optional.

EQUIPMENT	Lakes	Wadable Streams	Non-wadable streams	Wetlands	Roadsides
FIELD MONITORING EQUIPMENT					
Field identification guides					
Aquatic Invasive Species Monitoring Form (3200-154 R 04/2025) [PDF] printed on waterproof paper					
Pencils					
Stopwatch					
Maps (i.e., contour/topographic, aerial imagery or orthophotos, georeferenced imagery uploaded to Smartphone Gazetteer)					
GPS					
Boat/kayak					
Anchor					
Waders/hip boots					
50 m tape measure					
Binoculars					
Camera					
Aquatic plant rake on a rope and pole (*Recommended Baseline Monitoring of Aquatic Plants in Wisconsin*)					
Stainless steel sand scoop					
Ewoldt clam rake					
D-frame kick net					
White sorting trays					
Forceps					
Sieves					
Hand lens					
Polarized sunglasses					
Boat ladder					

EQUIPMENT	Lakes	Wadable Streams	Non-wadable streams	Wetlands	Roadsides
FIELD MONITORING EQUIPMENT					
Underwater camera (required if not snorkeling)					
Aquascope (required if not snorkeling and if no underwater camera)					
SNORKELING					
Appropriate exposure suit (rash guards, wetsuits, or dry suits) if snorkeling or scuba diving– scuba diving and dry suits require certification from a recognized scuba agency. Snorkeling and diving activities for the DNR require safety certification training.					
Dive flag with float/anchor (required when snorkeling)					
Snorkel, mask, defogger, fins, and weight belt					
SPECIMEN COLLECTION					
Labels printed on waterproof paper					
Resealable plastic storage bags, netted bags, bottles in a variety of types and sizes					
Ethanol (≥70%)					
SAFETY					
PFD (non-inflating if snorkeling)					
Reflective vests or backpack with pockets (surveyor vest works well)					
Flashing light(s) for vehicles parked on roadside					
Orange safety cones for vehicles parked on roadside					
Walking sticks					
DISINFECTIOIN EQUIPMENT					
Long-handled stiff bristled brush					
Jugs or spray bottles with clean water					
Backpack or handheld sprayer with clean water for rinsing					

EQUIPMENT	Lakes	Wadable Streams	Non-wadable streams	Wetlands	
DISINFECTIOIN EQUIPMENT					
Portable steam cleaner					
Tubs for equipment disinfection					
Black plastic bags to allow waders to soak					
Chlorine solution and/or Virkon® Aquatic solution					
Nitrile gloves					
Emergency eyewash solution					
Eye protection meeting ANSI Z87 (safety sunglasses are acceptable)					
Respirator (requires training)					

Permissions

- Landowner permission must be requested by the surveyor and granted by the landowner prior to accessing any private property. County zoning departments have web mapping resources with landowner information.
- A free permit is required from WisDOT to work on state managed roadsides. State managed roads have a number for their name, e.g. Highway 8, Highway 53. The permit, DT1812-Work on the Right of Way Permit, needs to be approved by WisDOT and a copy should be with you when accessing the roadside. Visit this page for more information and to apply.
- If you stay within the right of way (ROW), you do not need to contact adjacent landowners for permission. How far a ROW extends from the centerline of a road depends on road width and can vary greatly. Look at the County GIS site to see the full extent of the right of way width. There are usually markers, and when there is a fence, they are most often (though not always) installed 3 feet inside the WisDOT right of way. If you are not able to check the GIS site, check with the local road department for guidance.

Communication

Prior to beginning a survey, lead monitors (regional DNR AIS biologist, Lake Monitoring Protection Network (LMPN) AIS coordinator, or another partner) will notify stakeholders. This notification can be done via email. Lead monitors will notify the following stakeholders:

- Regional DNR AIS Biologists – Regional DNR AIS Biologist will then inform DNR lake, fish, stream, and wetland biologists.
- LMPN staff, County AIS, or Land and Water Coordinator, Lake Association or friends' group.
- CLMN, WAV, Project RED volunteer program coordinators.

Safety

General safety precautions should be recognized. Review specific safety protocols required by your employer. A two-person crew is recommended. Use a stable boat and wear a personal flotation device (PFD) if sampling on lakes or non-wadable streams. If blue-green algae are a concern, do not enter the water. Use appropriate footwear when traversing wetlands (knee boots) and wadable streams (waders). Reflective vest must be worn when outside of the vehicle; vehicles must be marked with orange safety cones. Collecting samples in cold weather carries the risk of hypothermia, and collecting samples in hot weather carries the risk of dehydration and heat stroke. Prepare with appropriate clothing, sun protection, drinking water, and insect repellent. Carry a fire extinguisher, cellular phone or portable radio, and a first aid kit. Be aware of the forecast and weather conditions. Federally controlled/regulated waters also must comply with United States Coast Guard regulations for flares, vessel shut-off, and noise making devices.

Volunteers and partners are encouraged to assist with the survey if time allows, as local knowledge of the survey site can improve AIS monitoring in many ways (Figure 3).

VOLUNTEER MONITORING JOB ASSIGNMENTS
Volunteer and monitor lead decide based on capabilities and experience of the volunteers: • Data recorder - use GPS, record observations of plants and animals found. • Serve as a surface observer for snorkelers, if snorkeling. • Utilize plant rake, D-net/scoop, binoculars, etc. • Assist by watching roadside/shoreline while driver in motion. • Assist in plant/animal ID. • Collect photos while sampling. • Serve as a weather observer. • Assist in launching and loading the boat and placing cones when parked on the road. • Share information about AIS with inquiring observers.

Figure 3. Volunteer monitoring job assignment opportunities.

Field Data Collection and Management

Record data on the Aquatic Invasive Species Monitoring Form (3200-154 R 04/2025) [PDF]. The following sections provide instructions on how to fill out each part of the datasheet.

General Information

Fill out the datasheet according to the descriptions of each data field below. See Figure 4 for an example of the completed general information section of the datasheet.

Location

This section identifies general location information:

- Location Name (SWIMS Station Name)
- SWIMS Station ID
- County
- Collector(s) name
- Date
- Start & end time

Survey Area Type

This section identifies the type of area that was monitored (e.g., wetland, lake, wadable stream, non-wadable stream, or roadside).

- Lake stations are the entire lake polygon for the Waterbody Identification Code (WBIC)
- Stream stations will use an existing station within the county on the WBIC or the WBIC county pour point.
- Wetland station will use an existing station within the wetland.
- Road stations will use the county point centroid station.

Pathway

The Wisconsin Aquatic Invasive Species Management Plan identifies invasion pathways that contribute to the introduction and spread of AIS. The details below provide lists of sub-pathways identified in the plan.

Pathways most assessed during AIS early detection surveys are Recreational Activities and Service Providers, Natural Dispersal, Aquatic Surveying and Monitoring, and Organisms in Trade.

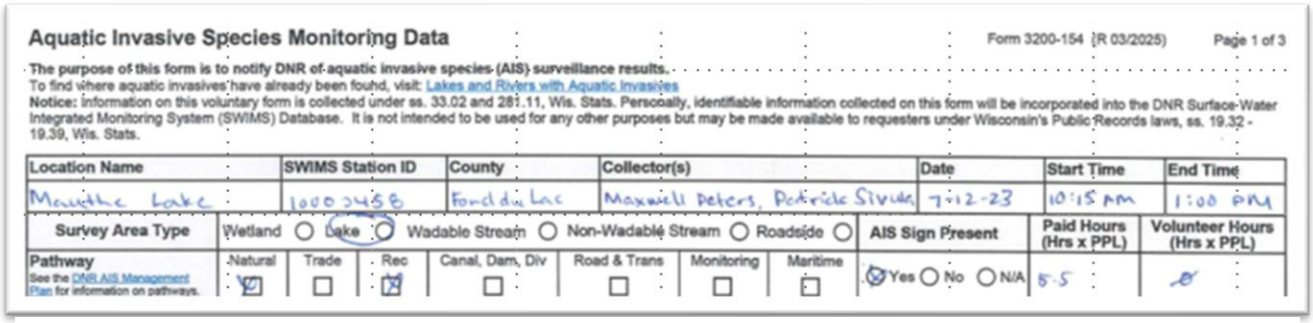
- **Maritime Commerce** applies to equipment and gear used in commerce (i.e., Great Lakes, Mississippi River, etc.). Sub-pathways include ballast water and biofouling of equipment (i.e., hull, anchor, etc.).
- **Canals, Dams, and Diversions** applies to connections between the Great Lakes basin and the Mississippi River basin that are identified in the Great Lakes Mississippi River Interbasin Study. These include the Mississippi River Lock and Dam System, first barriers to dispersal of source waters (Great Lakes, Mississippi River) and the Portage Canal.
- **Recreational Activities and Service Providers** includes recreational boating, wading sports, waterfowl hunters, marinas, lake and dock service providers, and aquatic plant management companies.
- **Non-Recreational Fishing and Aquaculture** includes area with commercial fishing, food aquaculture, wild harvested bait, permitted fishing tournaments, rough fish removal, fishing guides (inland and Great Lakes), private stocking, and fish and bait production and importation.
- **Aquatic Surveying and Monitoring Activities** includes federal and state agencies, tribes, universities, community-based organizations, volunteer groups and contractors who use equipment to conduct surveys to collect information on the status of water quality, biological communities, and habitat.
- **Transportation and Utility Corridors** includes road and trail maintenance, construction, mowing, and right-of-way maintenance.
- **Organisms in Trade** includes plants and animals used in landscaping, the pet industry, classroom and laboratory use, or as bait or for consumption. A separate OIT monitoring protocol is in development to assess pet, plant and biological supply companies. This pathway is monitored where there has been a known release of an OIT species.
- **Natural Dispersal** pathways are not addressed in the current plan but occur through flowing water with upstream connections to invasive species populations, and locations accessible to wildlife and wind that could introduce propagules.

AIS Sign Present

Indicate whether a “Prevent the Spread” AIS prevention sign is present at the public access location(s).

Hours (Time Spent)

Record time spent on the water by both paid and unpaid (volunteer) monitors.



Aquatic Invasive Species Monitoring Data — Form 3200-154 (R 03/2025) — Page 1 of 3

The purpose of this form is to notify DNR of aquatic invasive species (AIS) surveillance results.
To find where aquatic invasives have already been found, visit: Lakes and Rivers with Aquatic Invasives
Notice: Information on this voluntary form is collected under ss. 33.02 and 281.11, Wis. Stats. Personally identifiable information collected on this form will be incorporated into the DNR Surface Water Integrated Monitoring System (SWIMS) Database. It is not intended to be used for any other purposes but may be made available to requesters under Wisconsin's Public Records laws, ss. 19.32 - 19.39, Wis. Stats.

Location Name	SWIMS Station ID	County	Collector(s)	Date	Start Time	End Time
Mauthe Lake	10002458	Fond du Lac	Maxwell Peters, Patricia Sivula	7-12-23	10:15 AM	1:00 PM

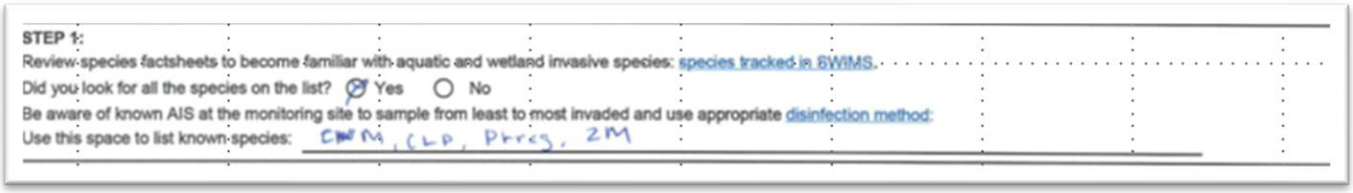
Survey Area Type	Wetland ○ Lake ◉ Wadable Stream ○ Non-Wadable Stream ○ Roadside ○	AIS Sign Present	Paid Hours (Hrs x PPL)	Volunteer Hours (Hrs x PPL)
		◉ Yes ○ No ○ N/A	5.5	0

Pathway (See the DNR AIS Management Plan for information on pathways.)	Natural	Trade	Rec	Canal, Dam, Div	Road & Trans	Monitoring	Maritime
	☑	☐	☒	☐	☐	☐	☐

Figure 4. Example of completed general information section of the datasheet.

Step 1

- Review list of target species tracked by DNR and indicate (Yes/No) whether all the AIS were looked for during the survey (Figure 5).
- Use blank space on form to list AIS species already known to be present at the monitoring location.

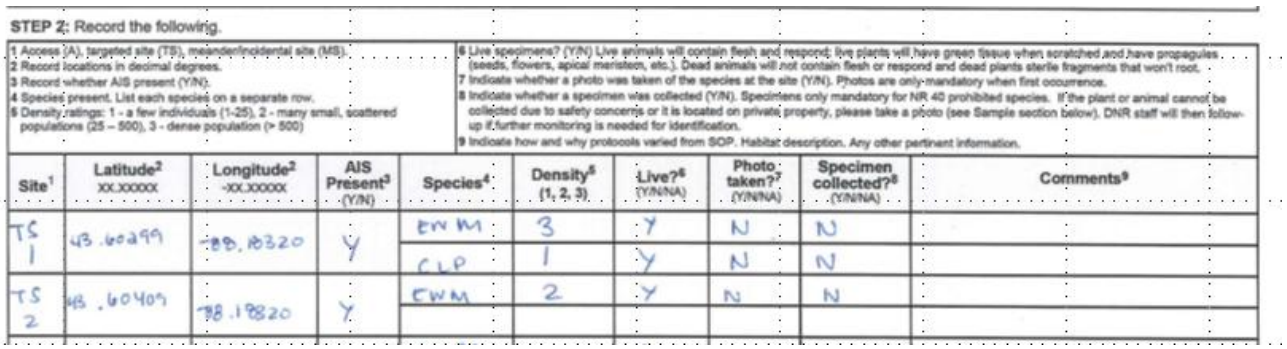


STEP 1:
Review species factsheets to become familiar with aquatic and wetland invasive species: species tracked in SWIMS.
Did you look for all the species on the list? ◉ Yes ○ No
Be aware of known AIS at the monitoring site to sample from least to most invaded and use appropriate disinfection method.
Use this space to list known species: EWM, CLP, Phrag, ZM

Figure 5. Example of datasheet section that identifies species looked for during the survey, as well as those known to be present.

Step 2

- Access, target, and meander sites will be surveyed as described below (Figure 6).



STEP 2: Record the following.

1 Access (A), targeted site (TS), meander/incidental site (MS).
2 Record locations in decimal degrees.
3 Record whether AIS present (Y/N).
4 Species present. List each species on a separate row.
5 Density ratings: 1 - a few individuals (1-25), 2 - many small, scattered populations (25 – 500), 3 - dense population (> 500)
6 Live specimens? (Y/N) Live animals will contain flesh and respond; live plants will have green tissue when scratched and have propagules (seeds, flowers, apical meristem, etc.). Dead animals will not contain flesh or respond and dead plants sterile fragments that won't root.
7 Indicate whether a photo was taken of the species at the site (Y/N). Photos are only mandatory when first occurrence.
8 Indicate whether a specimen was collected (Y/N). Specimens only mandatory for NR 40 prohibited species. If the plant or animal cannot be collected due to safety concerns or it is located on private property, please take a photo (see Sample section below). DNR staff will then follow-up if further monitoring is needed for identification.
9 Indicate how and why protocols varied from SOP. Habitat description. Any other pertinent information.

Site[1]	Latitude[2] xx.xxxxx	Longitude[2] -xx.xxxxx	AIS Present[3] (Y/N)	Species[4]	Density[5] (1, 2, 3)	Live?[6] (Y/N/NA)	Photo taken?[7] (Y/N/NA)	Specimen collected?[8] (Y/N/NA)	Comments[9]
TS 1	43.60499	-88.19320	Y	EWM	3	Y	N	N	
				CLP	1	Y	N	N	
TS 2	43.60409	-88.19820	Y	EWM	2	Y	N	N	

Figure 6. Example of a completed datasheet including the site type, latitude and longitude, AIS presence, species identification, density estimates, presence of live or dead specimens, whether photo/specimens were collected and any comments.

I. Access Site (15 minutes)

Public access sites are often the first locations AIS are observed. At each access site, use the measuring tape to identify the 30 m section of the shoreline or wetland and estimate 30 m out from shore for the search area. For lakes and streams, access sites are typically public boat landings, canoe launches, and road crossings. Private boat landings are considered target sites and are not searched as access sites. The access points for roadsides are generally where you enter the county.

The latitude and longitude of each access site can be determined prior to visiting the waterbody using various mapping tools. Record and report the actual sampling latitude and longitude on the datasheet if different than what was identified during desktop reconnaissance or if additional access sites are identified in the field.

Use a stopwatch to search the area for 15 minutes following survey methods. If boats are used, they should be anchored or tied to public docks if available – do not tie onto private docks.

If there are two people, divide the tasks to complete the survey more efficiently. However, if one person is snorkeling, the other person must serve as the surface spotter watching for their safety and should not also conduct monitoring.

1. **Visually assess emergent vegetation (2 minutes)**

   Lakes, Streams, Wetlands, and Roadsides
   Using visual inspections and binoculars, examine the survey area along the shoreline, roadsides, or wetland for emergent invasive plant species. Inspect the shrub layer for facultative invasive plant species by scanning back and forth to view each layer of plants within the survey area.

2. **Visually assess low-lying and submersed vegetation (2 minutes)**

   Lakes and Streams
   Wear polarized sunglasses to examine the lake or stream bed from the water surface. Use an underwater camera or aquascope/underwater viewer to evaluate submersed vegetation, especially when not snorkeling.

   Wetlands and Roadsides
   Walk transects within the survey area to examine the low-lying vegetation.

3. **Assess plants/animals with tools (5 minutes)**

   Lakes and Streams
   Examine the various substrates within the survey area using the tools described below. Collected materials should be placed in white trays and examined for invasive snails, mussels, etc. Use hand lenses as needed for identification on site. If not snorkeling, double the time spent using benthic tools.

   Benthic tools:

Polarized sunglasses: Examine the lake/stream bed while wearing sunglasses.

Underwater viewer/scope or underwater camera: View the vegetation and substrates through the scope to look for presence of invasive plant and animals. A rake or net can be used to retrieve any AIS occurrences observed.

Plant rakes: Rakes should consist of two 14-tine bow rake heads welded together. Do not use thatching rakes or other rakes as they could cut the macrophytes and not collect the plants. The rake on a pole is used in water depths where a pole can access the sediment. The rope-rake can be used at all sites deeper than the pole can reach. Examine plants and any animals collected.

D-frame kick net: D-frame kick nets should be 500- or 600-micron mesh, about 12" W x 10" L x 22" D, with a handle about 52" L x 1-1/4" diameter. Use on sites shallower than 4 feet. Enter the water being careful not to disturb the targeted sampling area. Dig deeply into the substrate with the foot but avoid kicking coarse debris into the net.

Sieves: Sieves should range from 150 to 500-micron pore size and can be used to sort through sediment collected with D-nets. Sieve with an appropriate mesh size for the substrate present; start by using larger mesh working down to smaller mesh as material is screened and removed.

Sand scoop: Sand scoops should be approximately 18-23 cm wide with holes less than 10 mm in diameter. Sand scoops can be purchased with long handle poles or modified afterwards and retrofitted with a pole. Sand scoops work best in sand or gravel substrates. Dig down deep – once, then rinse the scoop in water to remove fine sediment.

Ewoldt clam rake: Commercial clamming rakes can be modified by adding finer mesh to capture smaller AIS organisms. Clamming rakes should measure approximately 25 cm x 15 cm with steel teeth and modified with 1 cm rubberized wire crayfish trap mesh. Collapsible handles usually are included with commercially available clam rakes. Clamming rakes work well in sand, muck and gravel substrates while also collecting plant material in the tines. Dig down into the substrate to get a good amount of sediment. Pulling the rake toward you with downward pressure works best. Rinse fine sediment away in water to better observe what was collected.

Forceps: Forceps can be used to sort through vegetation and debris.

Hand lens: A hand lens may be needed to examine small animals and plant parts.

Wetlands and Roadsides

Slowly walk transects within the survey area to visually inspect for signs of invasive species. Examples of what to look for are crayfish, crayfish chimneys, and snails or mussels attached to vegetation.

4. **Below water assessment (6 minutes)**

Lakes and Streams

Snorkeling: Snorkel an area of about 90m^2 using a combination of transects and meanders based on substrate, habitat, and target species. DNR employees can find detailed snorkeling instructions and should be in compliance with the DNR Diving and Snorkeling Manual Code 9187-07.

Appropriate exposure protection and a snorkel vest or non-inflatable PFD should be worn. A boat ladder can be used to safely get in and out of the boat if needed. If not snorkeling due to poor visibility or safety concerns, conduct additional assessments using benthic tools.

Wetlands and Roadsides

Examine plants and animals in any ephemeral ponds that are present. If standing water is not present, conduct more transects during this time. Walking sticks can be used for stabilization.

Record data on the Aquatic Invasive Species Monitoring Data Form 3200-154 (04/2025) (see below).

II. Target Site (10 minutes)

At each target site, use the measuring tape to identify the 15 m section of the shoreline and estimate 15 m out from shore for the search area. Use a stopwatch to search the area for 10 minutes following the same methods described for the access sites. If boats are used, they should be anchored or tied to public docks if available – do not tie onto private docks.

1. **Assess emergent vegetation (1 minute)**
2. **Assess low-lying and submersed vegetation (1 minute)**
3. **Assess plants/animals with tools (4 minutes)**
4. **Below water assessment (4 minutes)**

Snorkeling: Snorkel an area of about 45m^2 using a combination of transects and meanders based on substrate, habitat, and target species.

Record data on the Aquatic Invasive Species Monitoring Data Form 3200-154 (04/2025) (see below).

III. Meander Search

In all systems, meander slowly between target sites and access sites in a zig-zag pattern and look for aquatic invasive species in the water, along the shoreline, and/or in the wetland vegetation. Travel rate will depend on navigability and method – navigating streams and wetland on foot will be much slower than navigating non-wadable streams, lakes or roadsides using vehicles. If visibility is low (e.g., stained water, algae, dense vegetation), use benthic tools during the meander.

Lakes and Non-Wadable Streams

1. Drive the boat 4-8 kph between access/target sites and look for aquatic invasive species in the water and along the shore. Move from shallow water out to deeper water where plants are no longer observed or 30 m from shore.
2. Attempt to survey areas with different substrates (i.e., sand, gravel, boulders) and habitats (i.e., submersed plants, emergent plants).
3. One person should focus on the shoreline and use binoculars while the other looks in the water with an aquascope/underwater viewer or underwater camera.

Wadable Streams

1. Move slowly (0.0001- 3kph) along one bank meandering from shore to thalweg looking for aquatic invasive plants, snails, and crayfish.
2. Attempt to survey areas with different substrates (i.e., sand, gravel, boulder).
3. One person examines the shoreline while the other looks in the water with polarized glasses, an aqua scope/underwater viewer or underwater camera.
4. For wadable streams, sample riffles by holding the D-net frame firmly against the stream bottom and disturbing the substrate upstream of the kick net with your feet.

Wetlands

1. Walk slowly (0.0001- 3kph) between sites on legally accessed properties; examine each habitat type found at the site. Traverse the wetland in a grid pattern meandering among the various habitat types.
2. One person should examine emergent plants with binoculars while the other focuses on submersed/low-lying vegetation, crayfish burrows, and macroinvertebrates.

Roadsides

1. Drive or walk slowly (4-8 kph); move slower near wetland or surface water crossings. Be sure to examine each habitat type while moving. A flashing red light must be attached to the roof when driving slower than the speed limit.
2. Occasionally pause and while one person uses binoculars, the other focuses on submersed/low-lying vegetation, macroinvertebrates, and crayfish burrows. If on surface water, use nets and scopes.

Record Data

Record the location of each monitoring site in decimal degrees using a GPS (datum WGS 84) on the Aquatic Invasive Species Monitoring Data Form 3200-154 (04/2025). See Figure 6 for an example.

- Record site type (i.e., access, target, meander)
- Record site latitude and longitude (via a GPS or smart phone).
- Indicate whether any AIS were observed.
- If AIS are found, record which species were found on a separate row.
- If three or more discrete locations of a certain species are found at access, targeted search sites, and/or during the meander survey, stop recording new locations during the meander survey.
- Density ratings:
    - 1 - a few individuals (1-25),

- 2 - many small, scattered populations (25 – 500),
- 3 - dense population (> 500)

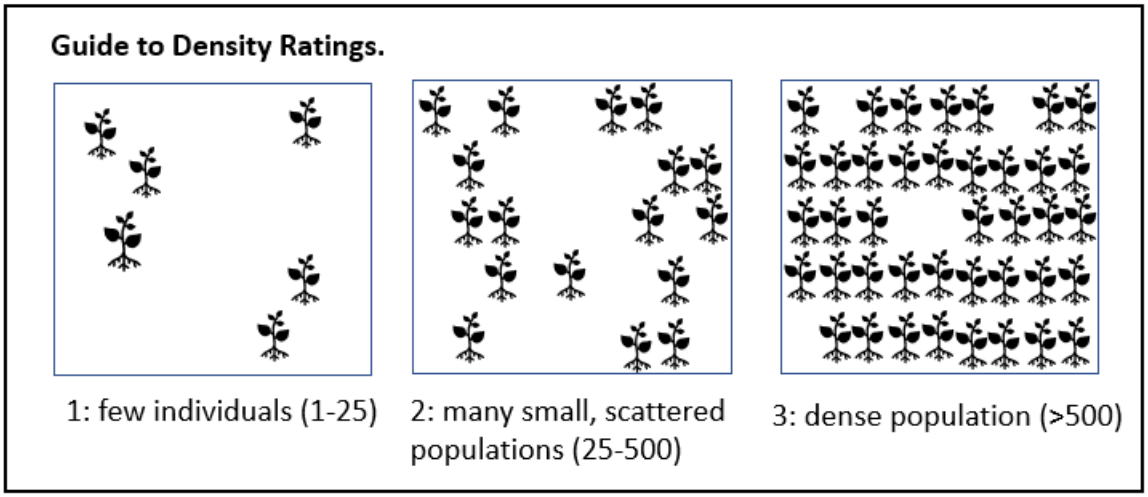


Figure 7. Diagram illustrating each density rating class in the search area for access (30 m x 30 m) and target (15 m x 15 m).

- Live (L) animals will contain flesh and respond. Live plants will be green or with live tissue when scratched or rooting structures present and intact. Dead (D) animals will not contain flesh or respond. Dead plants are fragments that do not have roots or budding nodes. There will likely be a mix of live and dead specimens, although it is common that only empty shells are found. L:D Classes:
  - Live
  - Dead
  - None found
- Photo taken? – Indicate whether a photo was taken of the species at the site (Y/N) on the data form. Photos (or a physical voucher) are required when documenting the first occurrence of an AIS at a location. Photos may also be taken of previously reported AIS occurrences and attached to the SWIMS fieldwork event. See Appendix A for guidance on how to take photographs.
- Specimen collected? – Indicate whether a specimen was collected (Y/N) on the data form. Physical specimens of new occurrences of NR 40 Prohibited species should always be collected and photographed immediately and submitted to the Regional DNR AIS Coordinator as soon as possible. If the specimens are not identified, they should be preserved on ice or in refrigeration for no more than 1 week following collection to avoid specimen degradation. Newly detected NR 40 Restricted species should be photographed for verification and specimens only need to be collected for vouchering if they are a new county record.
- Comments – Please provide habitat description. Indicate how and why protocols varied from SOP. Note any other pertinent information (Figure 6).

Step 3

- Enter data into SWIMS weekly or as soon as possible. See Appendix D for instruction on SWIMS data entry.

Decontamination and Disinfection

The public is required to inspect, remove, drain, and never move plants or animals (ch. NR 40, Wis. Adm. Code, s. NR19.055, Wis. Adm. Code, and ch. 23, Wis. Stats.). The Boat, Gear, and Equipment Decontamination and Disinfection Manual Code 9183 requires all Wisconsin Department of Natural Resources employees, agents, and permittees that transport equipment between waters to take additional prevention steps.

> Boat, Gear and Equipment Decontamination and Disinfection Manual Code 9183.1 | Best Management Practices | Wisconsin DNR

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Latzka, A.W., J.T. Crawford, A.S. Koblings, Y. Caldeira, E. Hilts, and M.J. Vander Zanden. 2015. Representing calcification in distribution models for aquatic invasive species: surrogates perform as well as $CaCO_3$ saturation state. Hydrobiologia 746:197-208.

Lyons, John. 1992. The length of stream to sample with a towed electrofishing unit when fish species richness is estimated. North American Journal of Fisheries Management 12(1):198-203, DOI: 10.1577/1548-8675(1992)012<0198:TLOSTS>2.3.CO;2

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Wisconsin Department of Natural Resources. 2015b. Streams & Rivers Aquatic Invasive Species Early Detection Monitoring. Department Invasive Species Monitoring on Streams [PDF]

Wisconsin Department of Natural Resources. 2016a. Timed-meander sampling protocol for wetland floristic quality assessment. TimedMeanderSamplingProtocol.pdf (wisconsin.gov)

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APPENDIX A: Aquatic Invasive Species Identification, Locations, & Photo Guidance

Wisconsin Department of Natural Resources

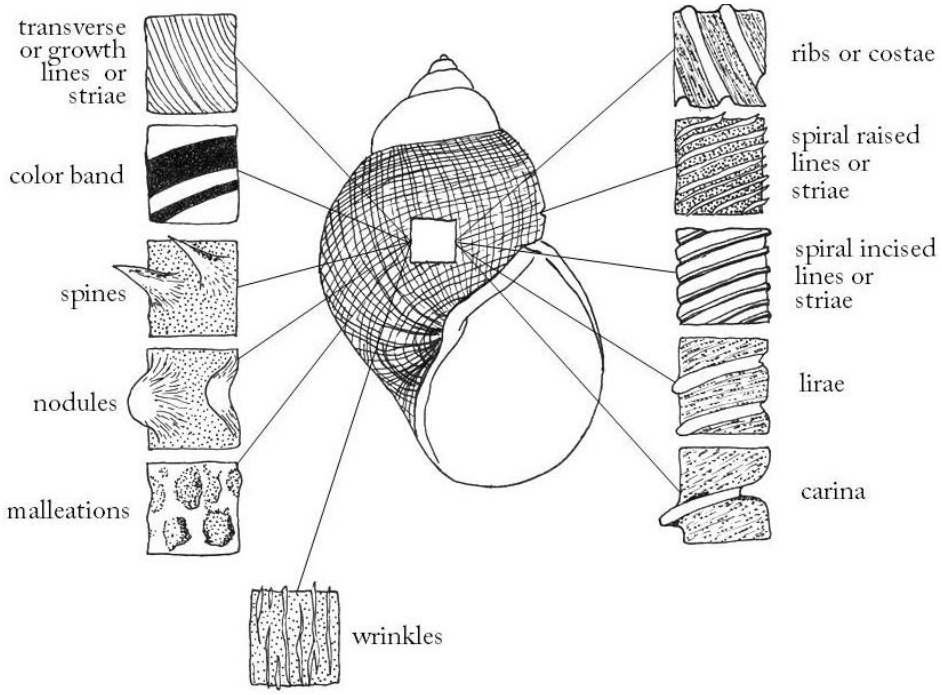
All monitors should become familiar with basic identification of NR 40 listed species and carefully review the following diagrams of species parts. When new aquatic invasive species occurrences are detected, they should be photographed per the following guidance. Specimens of newly detected NR 40 Prohibited species will also be physically collected and submitted for vouchering.

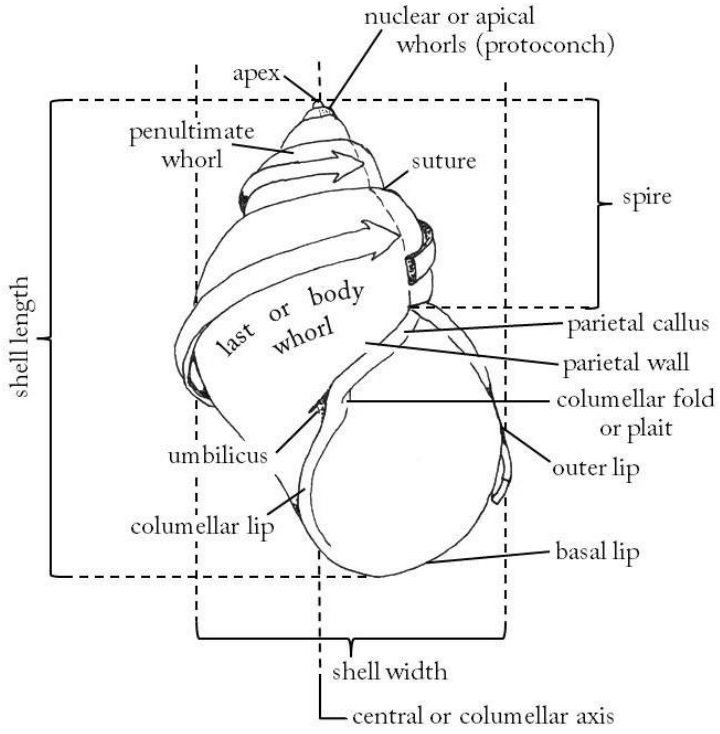
Diagrams of species parts

The following pages includes diagrams and descriptions of the various species groups. This is to offer guidance on specific parts to photograph. If needed, glossaries can be found in the cited references.

Freshwater Snail Anatomy

A full glossary of snail anatomy and taxonomic key can be found at the Key to Wisconsin Freshwater Snails (Perez and Sandland).





Figures C1-C2. Shell features when identifying snails.

Freshwater Mussel Shell Anatomy

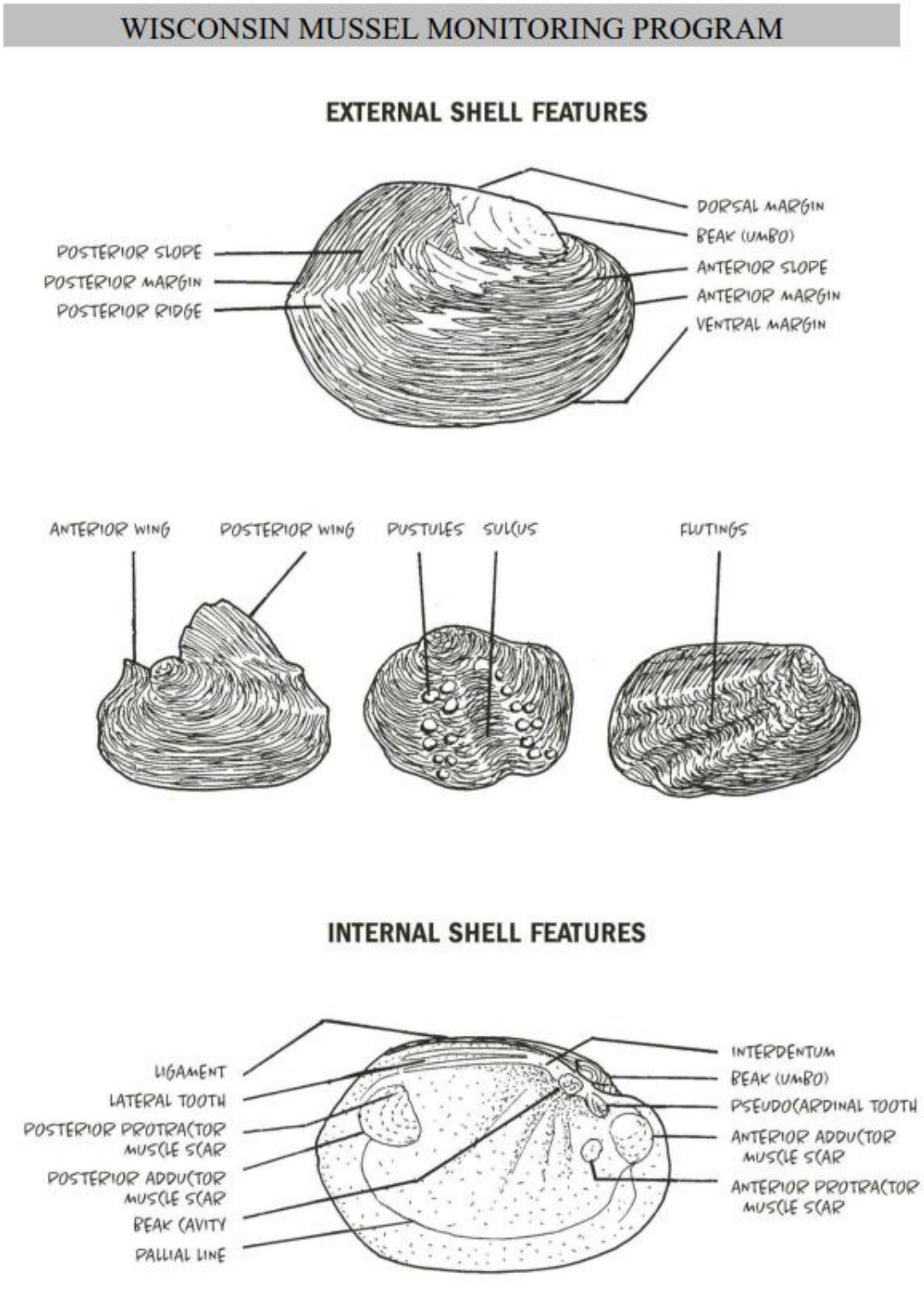


Figure C3-C4. External and internal unionid shells features (WDNR)

IDENTIFICATION OF PLANT PARTS

1. Spike
2. Stipule
3. Blade
4. Petiole
5. Simple leaf
6. Sessile leaf (no petiole)
7. Peltate leaf (petiole attached at mid-underside)
8. Stem
9. Compound leaf (with three leaflets)
10. Opposite leaves
11. Alternate leaves
12. Whorled leaves
13. Leaf apex (tip)
14. Leaf margin
15. Leaf base
16. Leaf axil
17. Flower in leaf axil
18. Peduncle
19. Internode (between two nodes or joints)
20. Node (joint)
21. Parallel veins
22. Margin entire
23. Net veins
24. Margin lobed
25. Finely dissected leaf
26. Margin dentate
27. Margin serrate
28. Rhizome (underground stem)
29. Roots

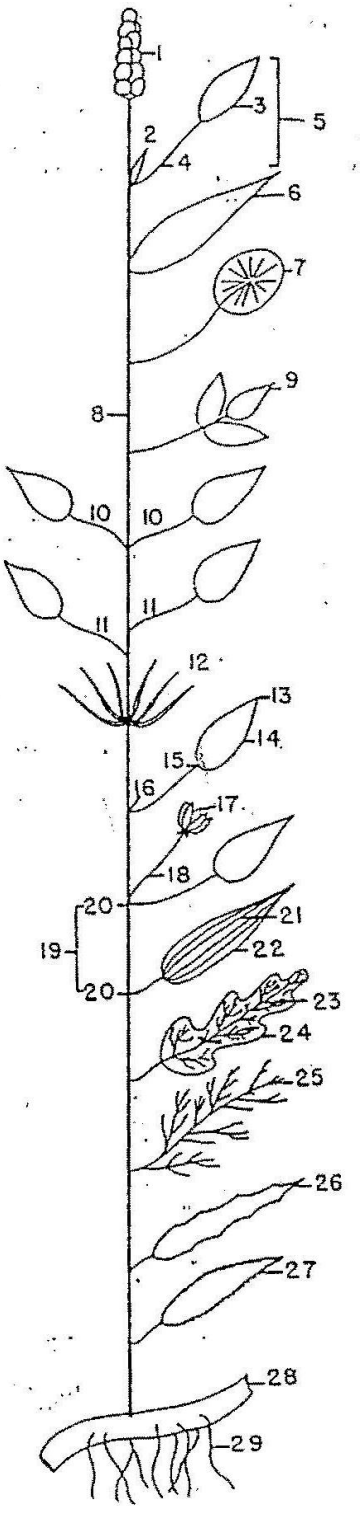


Figure C5. Labeled diagram of key identification plant parts. (Freckmann 2012).

Crayfish

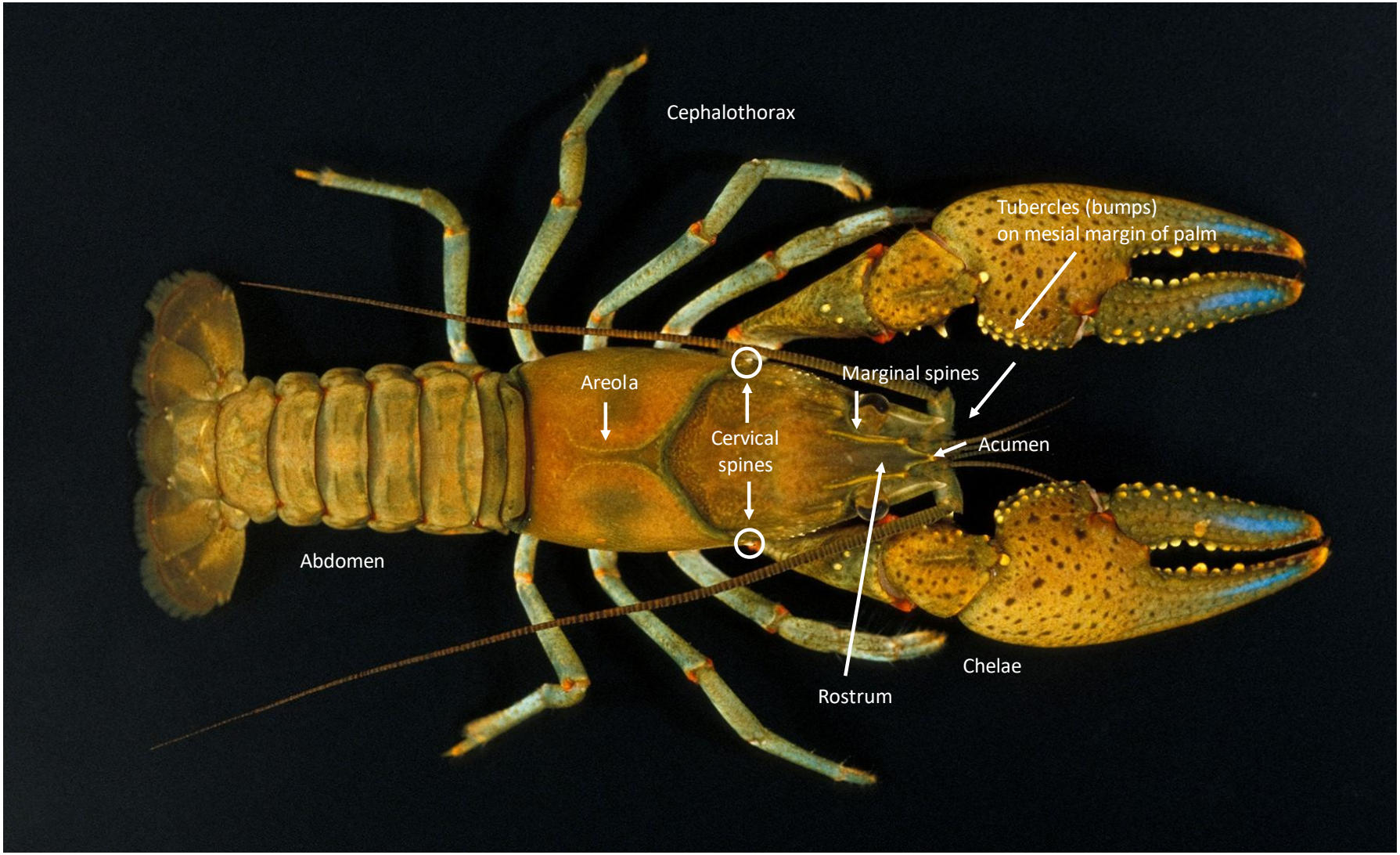


Figure C6. Parts on crayfish that are used for identification of species (Taylor 2019).

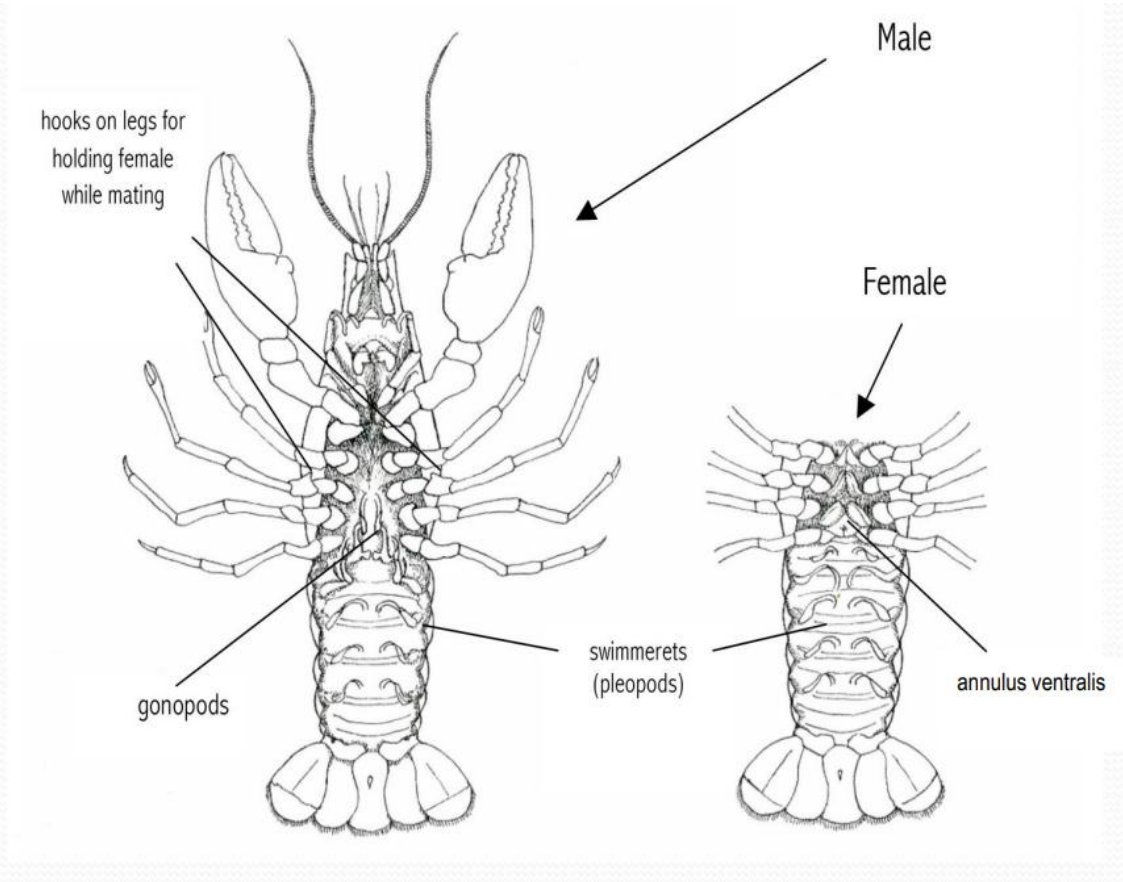


Figure C7. Parts on a crayfish that are used to identify sex (Guarino et al. 2012).



Figure C8. Parts on a crayfish that are used to identify sex. Male on left, female on right (Bana Kabalan).



Figure C9 Lateral view of male gonopods and closeup of male gonopod under dissecting scope (WDNR).

Fish

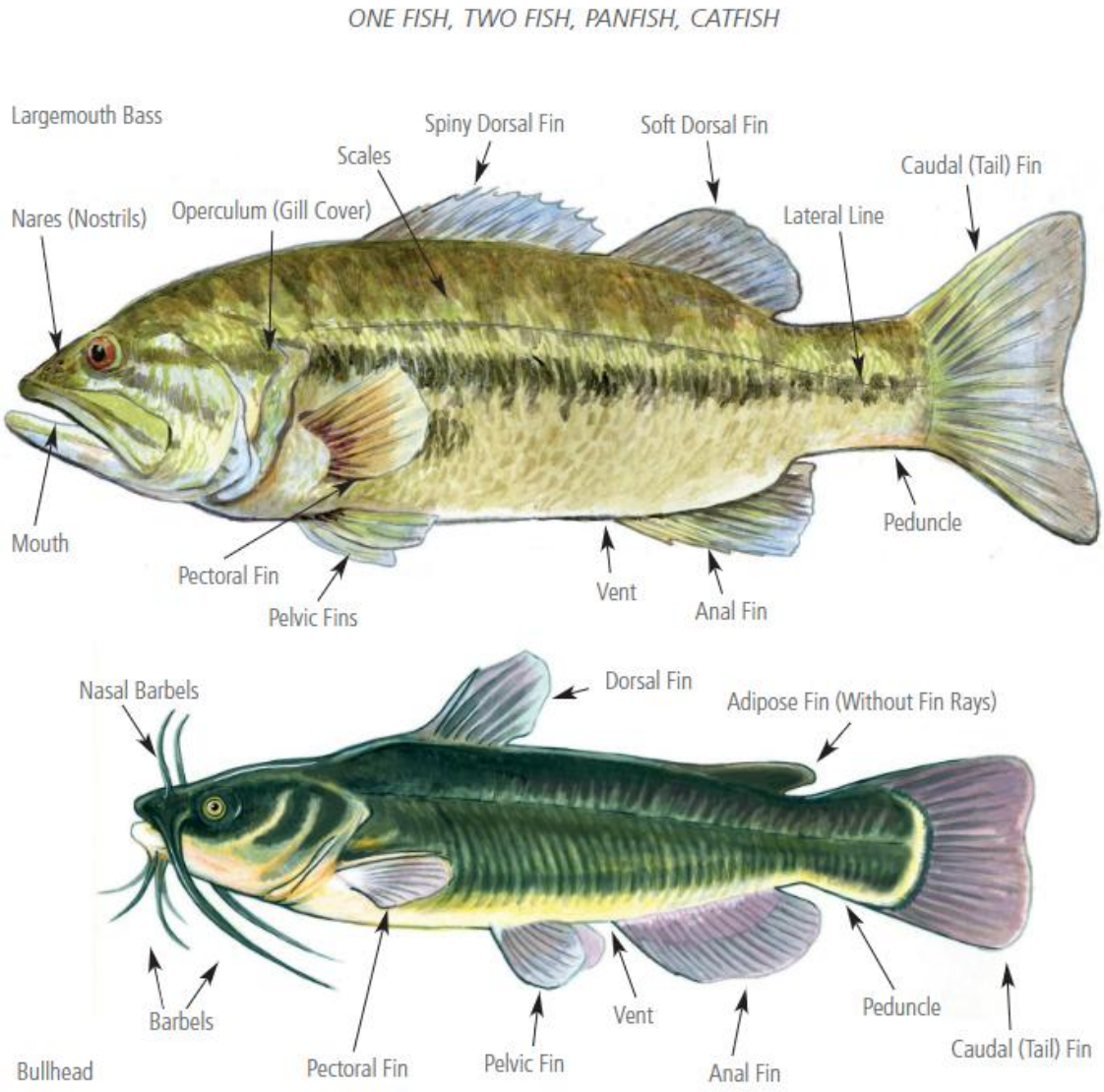


Figure C9 Fish anatomy (WDNR a).

Photographs

Photographs of specimens should be taken when reporting new AIS populations, regardless of whether a specimen is being physically vouchered. Detailed images of key characteristics and landscapes in which species are found enable identification and bolster reports, while poor photographic technique may result in unidentifiable and less useful records. It is understood that it is not always possible to collect photos if the

species are inaccessible or on private property. This document provides guidance on collecting and submitting photographs for verification and documentation.

Equipment

- Camera: high resolution is preferred; most phone cameras are adequate.
- Aquatic Invasive Species Identification Guide
- Field datasheet (AIS Early Detection Form)

Preparing for the Photo

Charge your battery before you go. Whether you're using a nice digital camera or your phone, having a fully charged battery will make sure you have plenty of time to snap the right picture.

Make sure you have enough memory to take photos. Digital cameras will need a clean memory card, while phone users may need to clear some space out by deleting unused apps.

Multiple photos are needed for each new detection:

1. Landscape
2. Specimen
3. Close-up of features needed for identification.

Step 1 Collect photos of the landscape

Take a picture of the landscape illustrating the location and extent of the occurrence, if possible, so that the site is easy to recognize for follow-up visits. If population is submersed take a picture from the location of the occurrence and include the landscape so that it is somewhat recognizable. Wide-angle photos help to show the area and possibly the extent of the population. Include landmarks such as signs, beaches, parks, public structures (i.e., docks, boat landings, buildings, roads, signs, etc.), memorable environmental features (i.e., large trees, boulders, abrupt changes in vegetative cover, etc.), or anything else that is unique and easy to locate again. Include the completed paper datasheet in the photo (if available) so that it is clear where the photo was taken. Photos without datasheets will be accepted if geographic coordinates (latitude and longitude) are included in the report to allow us to relocate the population.

Common issues when taking landscape photos include:

- **Lighting** – Take the photo with the light source behind you. Early morning and late afternoons usually provide the best lighting for photography.
- **Focus** – Focus one photo with the landscape in focus and another photo with the population in focus.
- **Yellow or blue tint** – Manually change the white balance setting to match the type of light you have (sunlight, fluorescent, tungsten, flash, etc.).
- **Incomplete/missing datasheet**.

Take multiple photos to ensure that at least the datasheet or landscape is in focus in each photo.



Figure C1. Landscape photo of yellow iris population nearshore. Good photo, but datasheet is missing.

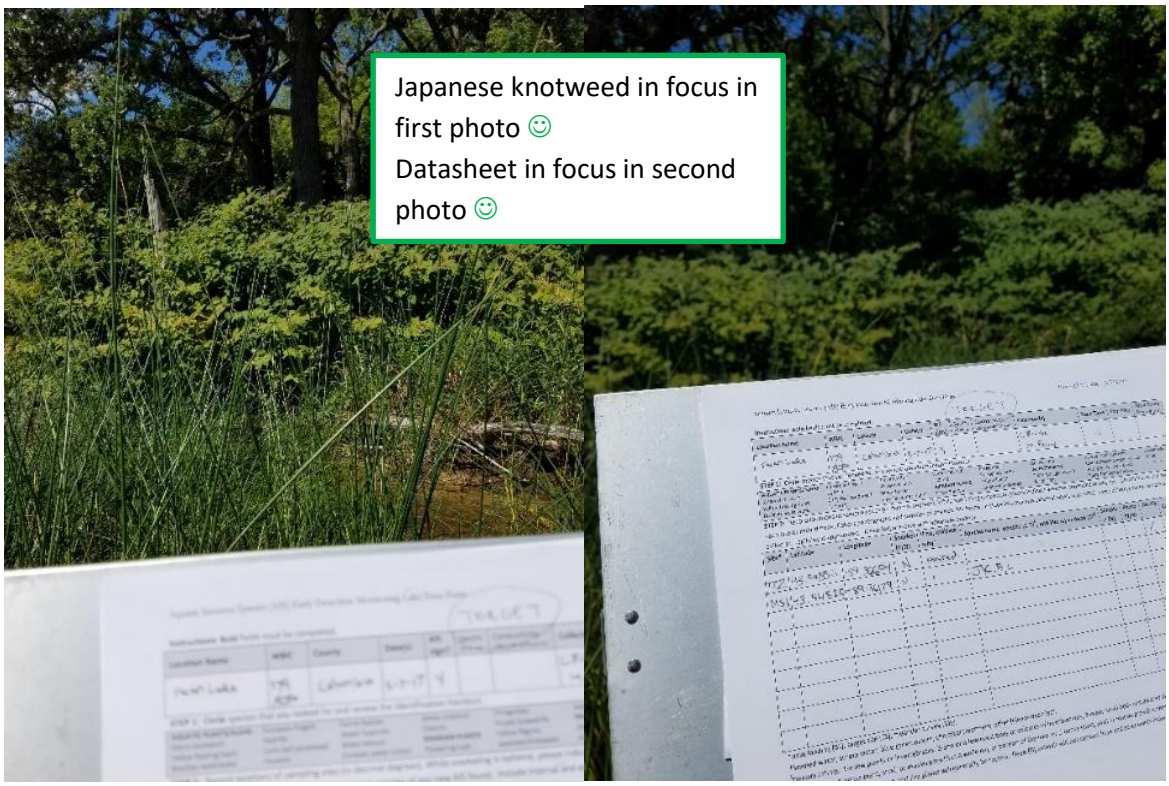


Figure C2. Two landscape photos of monitoring site – one photo with plant in focus and one photo with complete datasheet in focus.

Step 2. Collect photos of the specimen

Take several close-up pictures of the specimen to show various identifying characteristics. Spread the specimen out so that features are visible. Include the field datasheet in each picture to show the location (i.e., site name, latitude longitude, date, etc.) – it is okay if only a part of the field datasheet is included. Keep the datasheet and subject at a similar distance from the camera to ensure that both are in focus. Take multiple photos to ensure that at least one is in focus. If there are multiple populations of a species in one lake, stream, or wetland station, only one representative photo is needed.

Common issues when taking close-up specimen photos include:

- **Lighting** – Take the photo with the light source behind you. Move the specimen into better light if possible or use a cell phone or other flashlight to provide extra light.
- **Specimen is dark** – Move the specimen to have a darker background or increase the camera's exposure up manually or use the spot – meter function.



- **Focus** – Camera is closer than its minimum focal length, or poor lighting/contrast is making it difficult for the camera to determine what your subject is. Move the camera farther away and try again.
- **Incomplete/missing datasheet** – Put the specimen on top of the datasheet.

Take multiple photos to ensure that at least the datasheet or landscape is in focus in each photo.

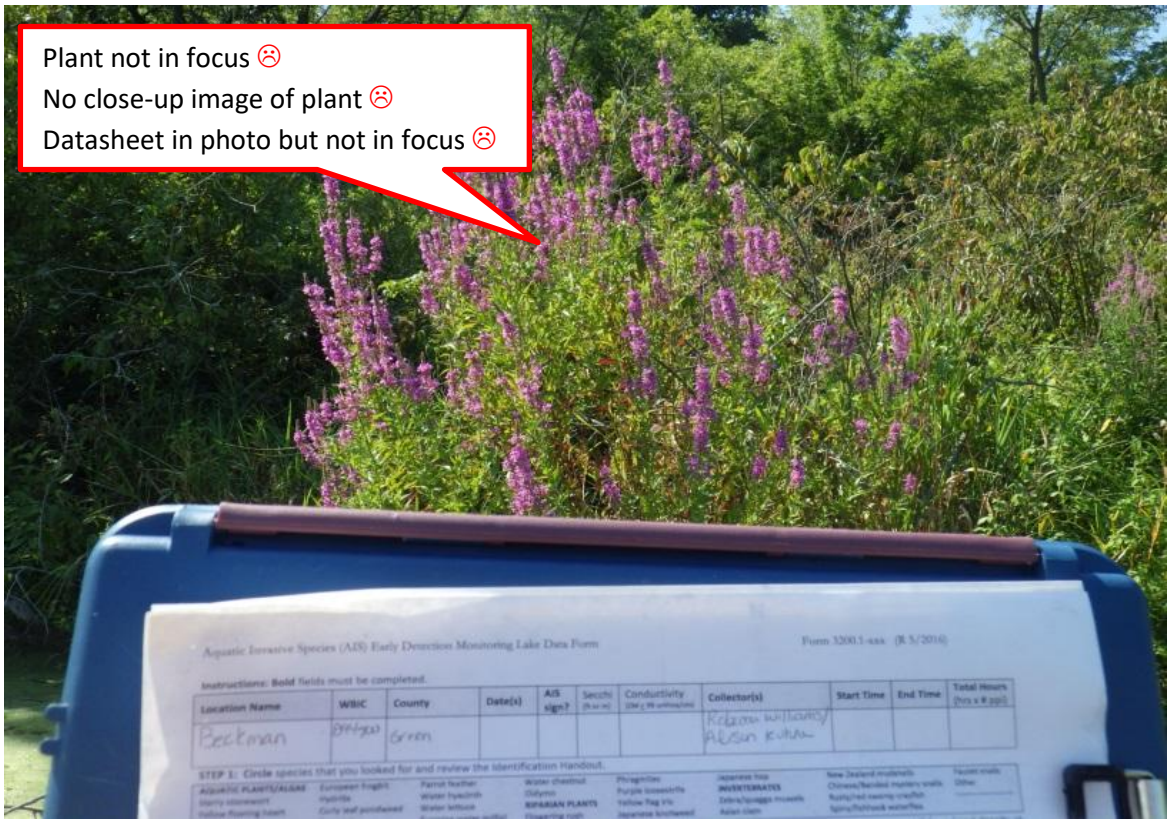


Figure C3. Monitoring photo of purple loosestrife that does not clearly show identifying characteristics and the datasheet is incomplete and out of focus. Photographer should have been closer to the plant to better show characteristics and help keep both plant and datasheet in.

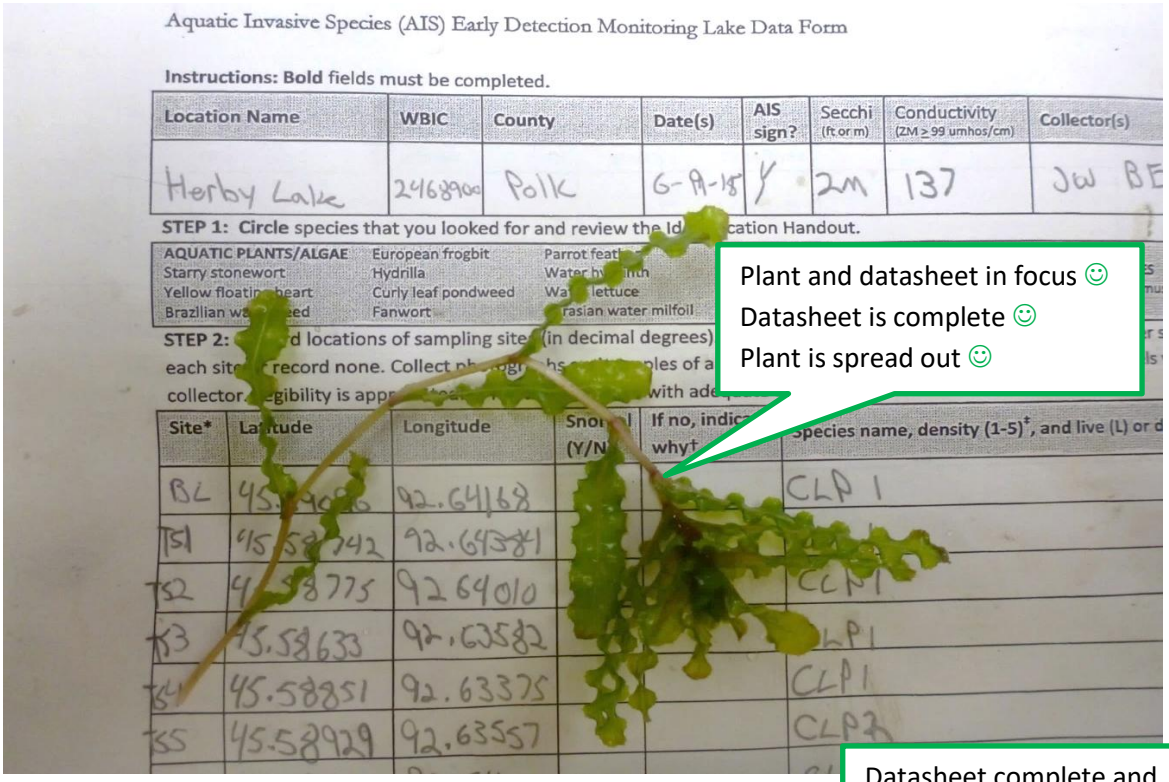


Figure C4. Datasheet is complete and in focus, and specimen is in focus and spread o

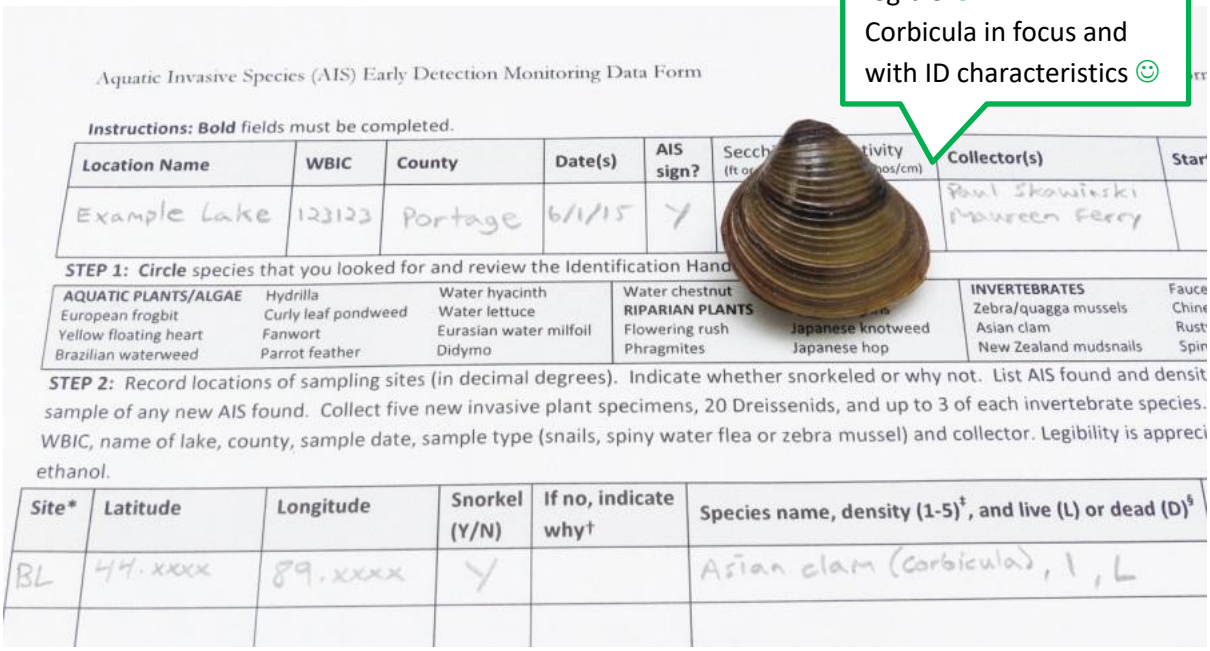


Figure C5. Corbicula is in focus and datasheet is complete.

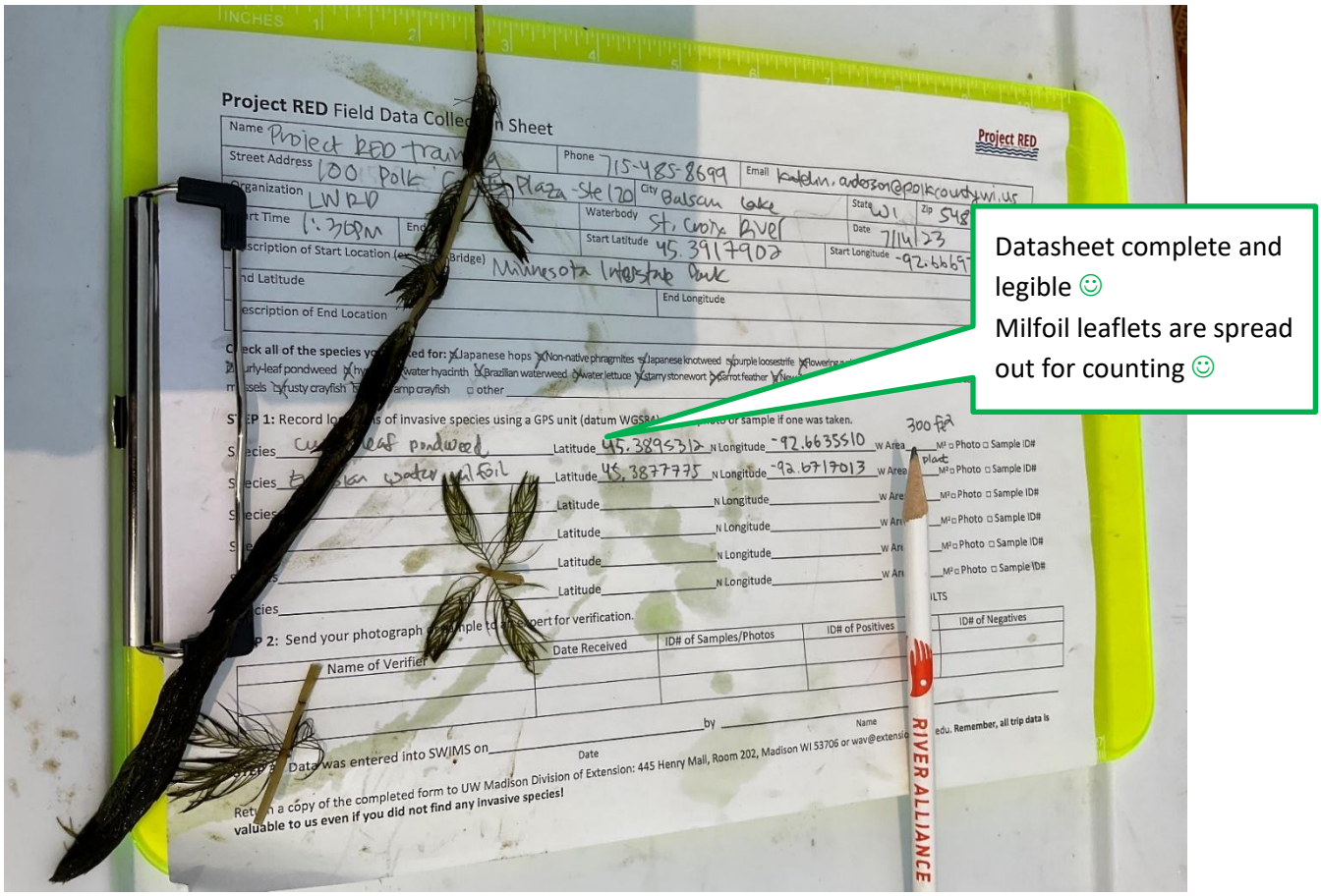


Figure C7. Eurasian watermilfoil on completed datasheet showing leaflets. The datasheet is complete.

Submit photos

Photos should be named using the following naming convention:

SPS (abrv.)_County_YYYYMMDD_Waterbody Name_(WBIC|Station ID|Latitude_Longitude) _Collector last Name

Example: ZM_Dane_20160805_Lake Delton_1295200_Graham

Collectors with SWIMS roles of Coordinator can attach photos directly to the SWIMS fieldwork event. Consult Appendix D and the SWIMS Help Guide on how to add a New Document and Adding a Document to a Fieldwork Event. The Regional DNR AIS Coordinator will receive the photos when they review the fieldwork event with your photo.

Collectors without the SWIMS Coordinator role should send photos to the Regional DNR AIS Biologist.

Specimen Collection

Collect up to 5 intact specimens of all NR 40 Prohibited occurrences. Specimens of NR 40 Restricted occurrences should be collected for AIS occurrence in a county for vouchering if they have not been vouchered in the county. Be sure that specimens contain all the identifying characteristics that are identified in Appendices B and C including root system, leaves, flowers, and seeds for plants.

- Place aquatic plants in an appropriately sized plastic resealable bag with a damp paper towel. Keep out of the sun in a cooler or refrigeration for no more than one week so it remains fresh for later examination and pressing. https://apps.dnr.wi.gov/swims/Documents/DownloadDocument?id=303339222
- Place animal specimens in a bag/bottle and preserve them by either freezing, refrigerating in water, or by submersing the animal in ethanol using a container with a tight-fitting lid. If ethanol is needed for preservation, non-denatured ethanol is preferred since specimens are often used for education.
- Include a label on synthetic waterproof paper with each specimen and record all details with a pencil on the label (Appendix C). Submit specimens with the label and copy of the datasheet to the Regional DNR AIS Coordinator.

Image credits

C1-C2 Perez, Kathryn and Greg Sandland. Key to Wisconsin freshwater snails. 01 July 2024 Key to Wisconsin Freshwater Snails (northamericanlandsnails.org)

C3-C4 Wisconsin Department of Natural Resources. Wisconsin Mussel Monitoring Program Training Manual. 03 September 2024., Mussel Monitoring Program of Wisconsin (wiatri.net)

C5 Freckmann, Robert W. 2012. Aquatic Vascular Plants: a text and lab manual for Biology 347/547.

C6 Taylor, Chris A. PH.D. Ombudsperson, Emeritus Curator of Fishes and Crustaceans, Prairie Research Institute, Illinois Natural History Survey.

C7 Guarino, Jennifer, Crista Gastador, and Emily Miller. 2012. Field guide to the crayfish of the White River watershed, east-central Vermont. White River Partnership Verdana Ventures LLC. Microsoft Word - CF Field Guide Final Draft, (6-3-12).doc (whiteriverpartnership.org)

C8 Bana Kabalan. University of Florida, Reisinger Lab

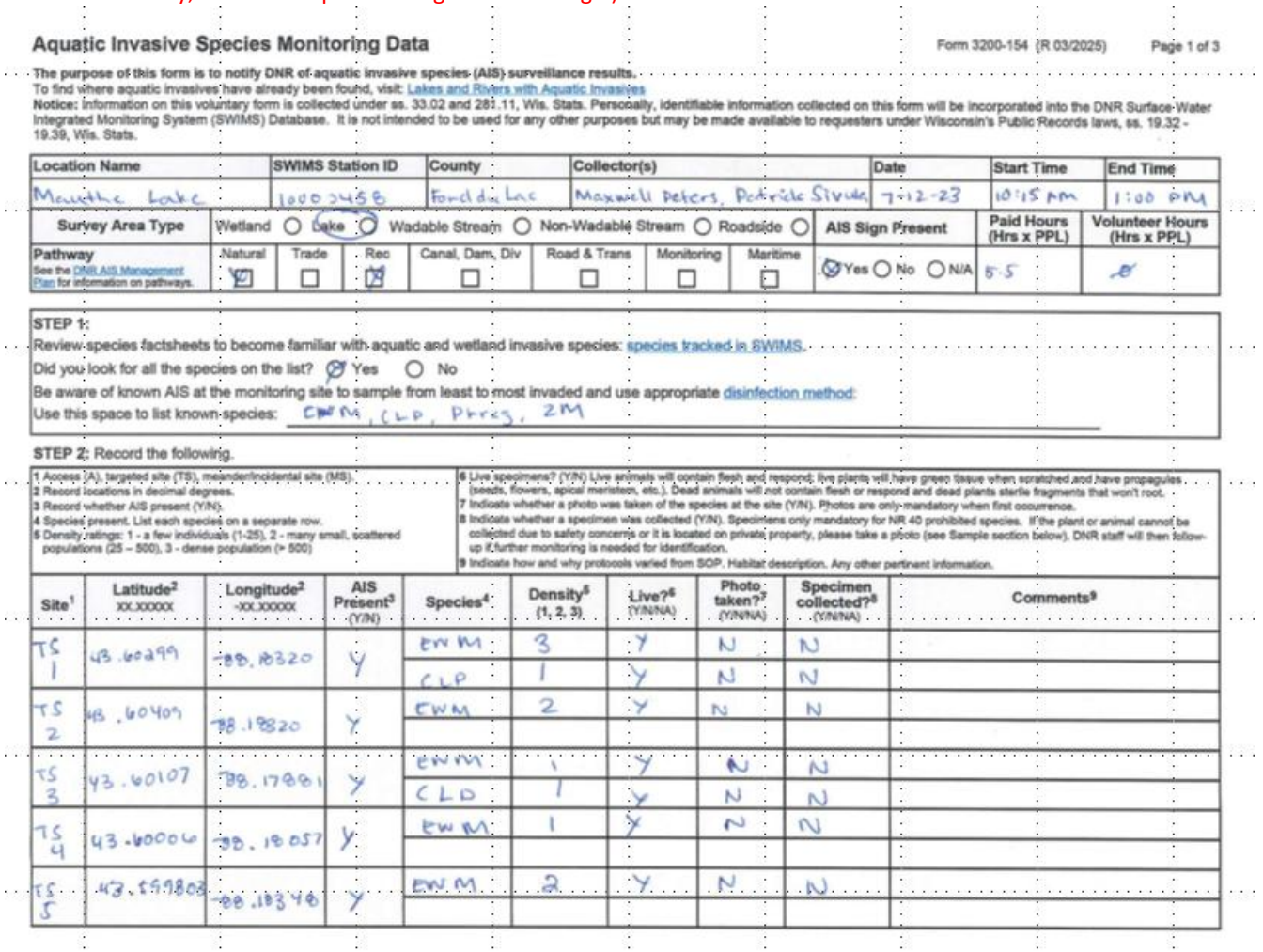
C9 Wisconsin Department of Natural Resources a. HOOK, LINE & THINKER: Science Guide. 03 September 2024. HLT-InstructorScienceGuide-C1-LP1.pdf (widen.net)

APPENDIX B: Example Aquatic Invasive Species Monitoring Data Form

Wisconsin Department of Natural Resources

Aquatic Invasive Species Monitoring Form (3200-154) 04/2025[PDF]

(Note: To fill and save this form electronically, it must be opened using Microsoft Edge.)



Aquatic Invasive Species Monitoring Data

Form 3200-154 (R 03/2025) Page 1 of 3

The purpose of this form is to notify DNR of aquatic invasive species (AIS) surveillance results.
To find where aquatic invasives have already been found, visit: Lakes and Rivers with Aquatic Invasives
Notice: Information on this voluntary form is collected under ss. 33.02 and 281.11, Wis. Stats. Personally, identifiable information collected on this form will be incorporated into the DNR Surface Water Integrated Monitoring System (SWIMS) Database. It is not intended to be used for any other purposes but may be made available to requesters under Wisconsin's Public Records laws, ss. 19.32 - 19.39, Wis. Stats.

Location Name	SWIMS Station ID	County	Collector(s)	Date	Start Time	End Time
Maxwell Lake	10002458	Fond du Lac	Maxwell Peters, Patricia Sivula	7-12-23	10:15 AM	1:00 PM

Survey Area Type	Wetland ○	Lake ◉	Wadable Stream ○	Non-Wadable Stream ○	Roadside ○	AIS Sign Present	Paid Hours (Hrs x PPL)	Volunteer Hours (Hrs x PPL)
						☒ Yes ○ No ○ N/A	5.5	0

Pathway (See the DNR AIS Management Plan for information on pathways.)	Natural ☑	Trade ☐	Rec ☒	Canal, Dam, Div ☐	Road & Trans ☐	Monitoring ☐	Maritime ☐

STEP 1:
Review species factsheets to become familiar with aquatic and wetland invasive species: species tracked in SWIMS.
Did you look for all the species on the list? ◉ Yes ○ No
Be aware of known AIS at the monitoring site to sample from least to most invaded and use appropriate disinfection method.
Use this space to list known species: EWM, CLP, Phrag, ZM

STEP 2: Record the following.

1 Access (A), targeted site (TS), meander/incidental site (MS).
2 Record locations in decimal degrees.
3 Record whether AIS present (Y/N).
4 Species present. List each species on a separate row.
5 Density ratings: 1 - a few individuals (1-25), 2 - many small, scattered populations (25 – 500), 3 - dense population (> 500)
6 Live specimens? (Y/N) Live animals will contain flesh and respond; live plants will have green tissue when scratched and have propagules (seeds, flowers, apical meristem, etc.). Dead animals will not contain flesh or respond and dead plants sterile fragments that won't root.
7 Indicate whether a photo was taken of the species at the site (Y/N). Photos are only mandatory when first occurrence.
8 Indicate whether a specimen was collected (Y/N). Specimens only mandatory for NR 40 prohibited species. If the plant or animal cannot be collected due to safety concerns or it is located on private property, please take a photo (see Sample section below). DNR staff will then follow-up if further monitoring is needed for identification.
9 Indicate how and why protocols varied from SOP. Habitat description. Any other pertinent information.

Site[1]	Latitude[2] xx.xxxxx	Longitude[2] -xx.xxxxx	AIS Present[3] (Y/N)	Species[4]	Density[5] (1, 2, 3)	Live?[6] (Y/N/NA)	Photo taken?[7] (Y/N/NA)	Specimen collected?[8] (Y/N/NA)	Comments[9]
TS 1	43.60299	-88.18320	Y	EWM	3	Y	N	N	
				CLP	1	Y	N	N	
TS 2	43.60409	-88.18820	Y	EWM	2	Y	N	N	
TS 3	43.60107	-88.17881	Y	EWM	1	Y	N	N	
				CLP	1	Y	N	N	
TS 4	43.60006	-88.18057	Y	EWM	1	Y	N	N	
TS 5	43.599803	-88.18348	Y	EWM	2	Y	N	N	

APPENDIX C: AIS Specimen Label

Wisconsin Department of Natural Resources

Species: Station/Location Name: County: Latitude, longitude: Collector(s): Date: Habitat: Associated species: PRESERVATIVE: □ Denatured ETOH □ Pure ETOH □ None PRESERVATIVE %: □ ETOH 95% □ ETOH 70% □ ETOH ____%	Species: Station/Location Name: County: Latitude, longitude: Collector(s): Date: Habitat: Associated species: PRESERVATIVE: □ Denatured ETOH □ Pure ETOH □ None PRESERVATIVE %: □ ETOH 95% □ ETOH 70% □ ETOH ____%	Species: Station/Location Name: County: Latitude, longitude: Collector(s): Date: Habitat: Associated species: PRESERVATIVE: □ Denatured ETOH □ Pure ETOH □ None PRESERVATIVE %: □ ETOH 95% □ ETOH 70% □ ETOH ____%
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APPENDIX D: How to Enter Aquatic Invasive Species Monitoring Data into SWIMS

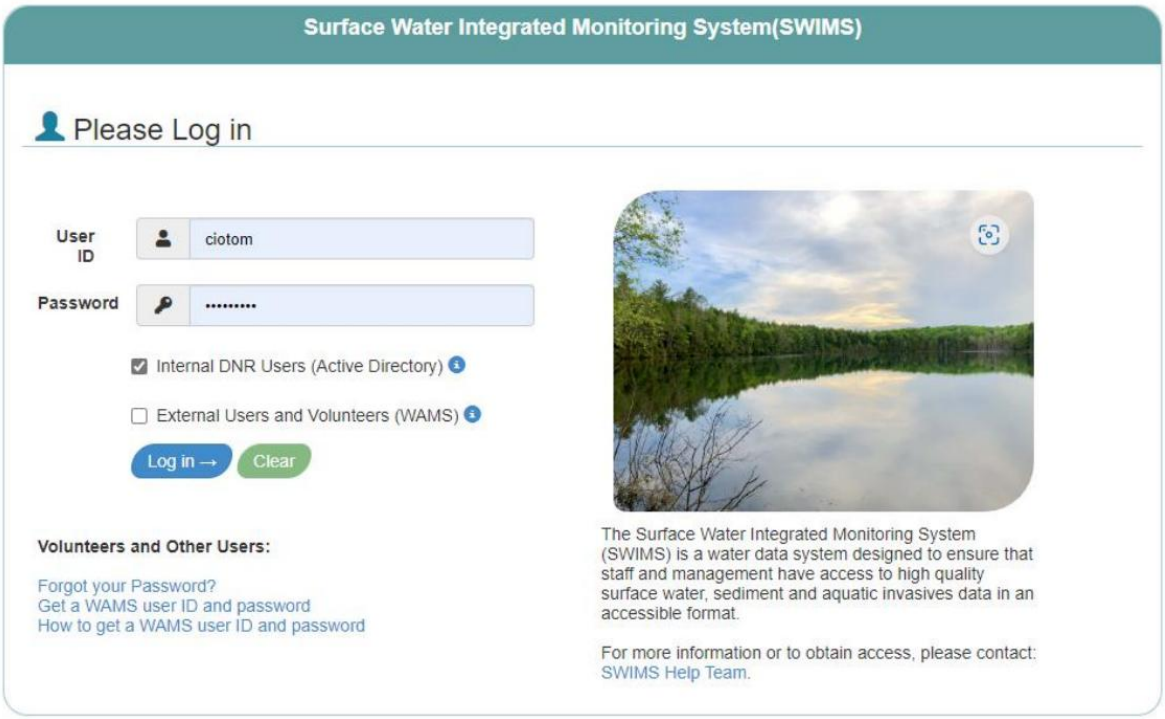
Wisconsin Department of Natural Resources

Updated: April 2023

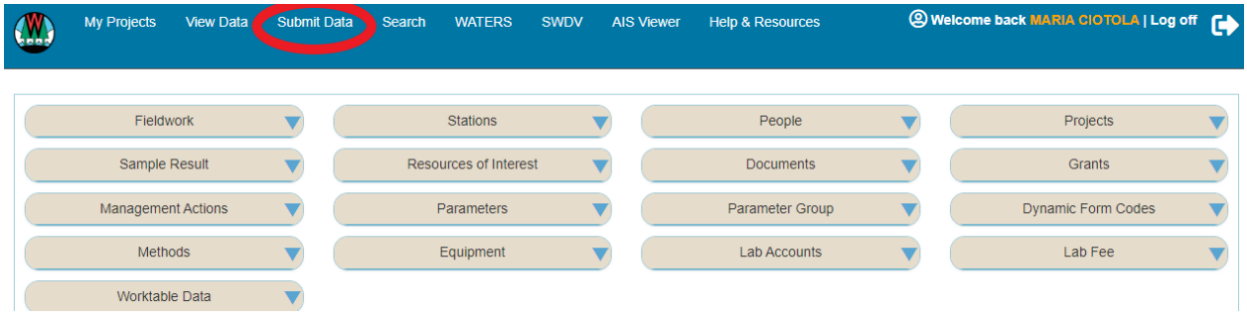
How to Submit Fieldwork Data

Note: It is generally good practice to click 'Save' after each applicable step before moving onto the next step.

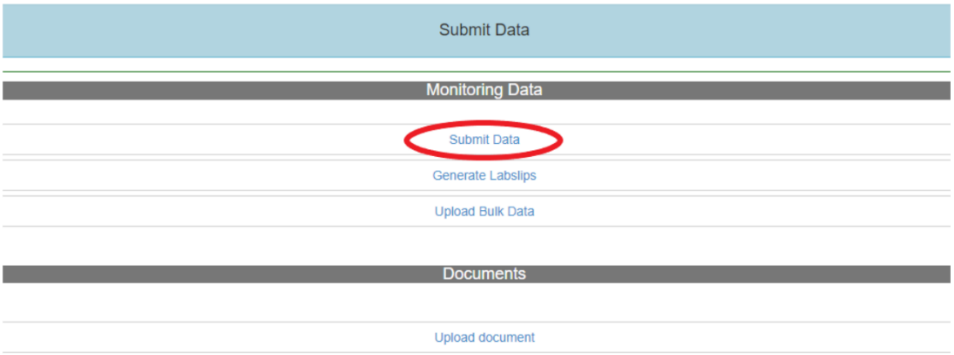
1. Log in at https://apps.dnr.wi.gov/swims/



2. Click the 'Submit Data' tab at the top of the page:



3. Then, ‘Submit Data’ again under Monitoring Data.



4. Enter the following:
    a. Search for and select the project associated with your survey. This is typically Aquatic Invasive Species Monitoring Data.
    b. Add the appropriate data collector.
    c. Add the relevant station for the survey. Contact the regional DNR AIS Biologist or Central Office if a station needs to be created.
    d. Select the date and time of the survey
    e. Select the Aquatic Invasive Species Early Detection Monitoring Form for the appropriate year.
    f. Select the end date and time.
    g. If photos were collected, they should be associated with the project by adding them to the fieldwork event now. Photos should be uploaded to SWIMS prior to entering the fieldwork event and added now or they can be added now. See below and the SWIMS user guide for guidance on how to upload documents. Name the photo:

Species (abrv.)_County_YYYYMMDD_Waterbody Name_(WBIC|Station ID|Latitude_Longitude) _Collector last Name

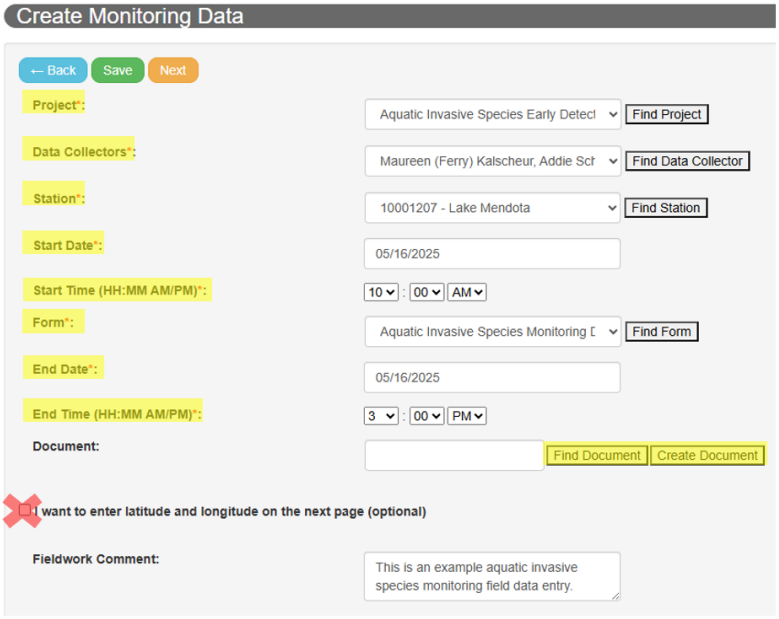
Example: ZM_Dane_20160805_Lake Delton_1295200_Graham

You must use underscores (“_”) in the photo name and no other punctuation as this will create an error and we will not be able to view the photo.

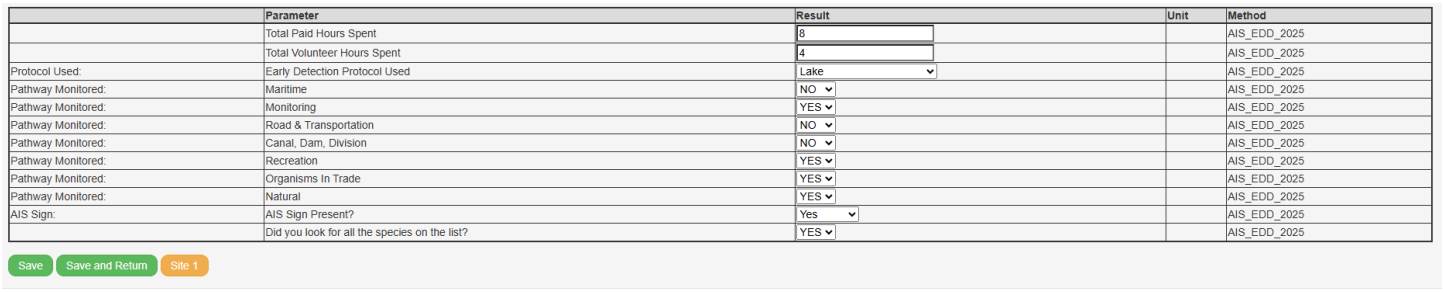
Initially, only one photo can be attached to each fieldwork event. Since multiple photos are sometimes needed for each new AIS occurrence, you will need to save the first photo > save the fieldwork event > open the fieldwork event > enable editing and attach additional photos.

If multiple photographs are taken, after the collector’s name add “landscape”, “specimen”, “close-up”, or another descriptor.

    h. DO NOT select the button to add latitude and longitude on the next page.
    i. Add any relevant comments, including whether the protocol differed and how.



5. The next page is the Site AIS Monitoring Early Detection Form. Fill in the appropriate drop-down menus for your survey.
    a. Ensure you fill in hours spent (paid and volunteer).
    b. Which Early Detection protocol or survey area type you implemented (Lake, Non-Wadable Stream, Wadable Stream, Wetland, or Roadside).
    c. Identify the pathway(s) that might impact the survey area.
    d. If an AIS sign was present.
    e. Whether you looked for all species on the list. If you select no, you must provide details in comments on the first SWIMS entry page.
6. After all relevant information has been filled in, click 'Save' and then 'Site 1' at the bottom of the screen.



	Parameter	Result	Unit	Method
	Total Paid Hours Spent	8		AIS_EDD_2025
	Total Volunteer Hours Spent	4		AIS_EDD_2025
Protocol Used:	Early Detection Protocol Used	Lake		AIS_EDD_2025
Pathway Monitored:	Maritime	NO		AIS_EDD_2025
Pathway Monitored:	Monitoring	YES		AIS_EDD_2025
Pathway Monitored:	Road & Transportation	NO		AIS_EDD_2025
Pathway Monitored:	Canal, Dam, Division	NO		AIS_EDD_2025
Pathway Monitored:	Recreation	YES		AIS_EDD_2025
Pathway Monitored:	Organisms In Trade	YES		AIS_EDD_2025
Pathway Monitored:	Natural	YES		AIS_EDD_2025
AIS Sign:	AIS Sign Present?	Yes		AIS_EDD_2025
	Did you look for all the species on the list?	YES		AIS_EDD_2025

7. On the next page, fill in:
    a. Site type (access, targe or meander) and coordinates.
    b. If AIS present, which AIS.

c. Approximate density (1 – a few individuals, 2 - scatted populations, 3 – many dense).
d. Live/dead.
e. Whether photo was collected and where/when it was sent.
f. Whether specimen was collected and where/when it was sent.
g. Add comments on the species, if needed.
h. Verifiers.

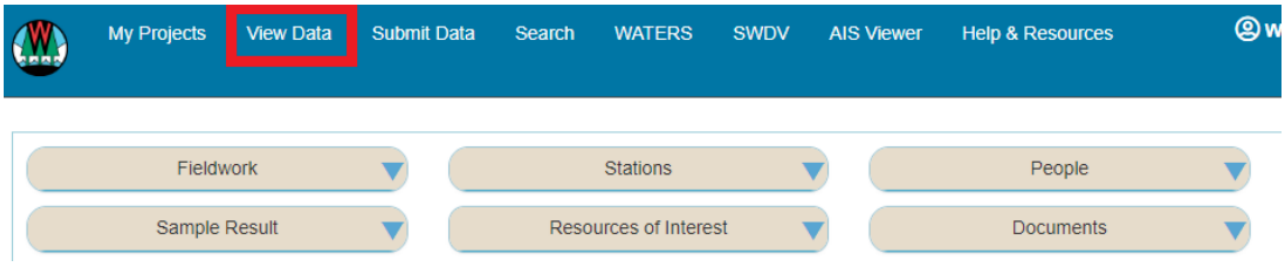
	Parameter	Result	Unit	Method
Site Location Information:	Site	Access Site 1		AIS_EDD_2025
Site Location Information:	Latitude (i.e. 43.1234)	43.104		AIS_EDD_2025
Site Location Information:	Longitude (i.e. -89.4567)	89.4827		AIS_EDD_2025
Site Location Information:	AIS Present?	YES		AIS_EDD_2025
Species 1:	Species	Eurasian Water-Milfoil		AIS_EDD_2025
Species 1:	Density	many, small scattered populations (25-10(		AIS_EDD_2025
Species 1:	Live	Yes		AIS_EDD_2025
Species 1:	Photo taken?	N/A		AIS_EDD_2025
Species 1:	Where was photo sent?			AIS_EDD_2025
Species 1:	When was photo sent? Enter date:			AIS_EDD_2025
Species 1:	Specimen Collected?	NO		AIS_EDD_2025
Species 1:	Where was specimen sent?			AIS_EDD_2025
Species 1:	When was specimen sent? Enter date:			AIS_EDD_2025
Species 1:	Comments about this AIS at this site	known		AIS_EDD_2025
Species 1:	First Verifier	Addie Schlusell		AIS_EDD_2025
Species 1:	Second Verifier	Maureen Kalscheur		AIS_EDD_2025

8. When all sites have been entered, be sure you click ‘Save’ or ‘Save and Return’. If you click Save and Return (or if you click "View List" from the Submit Data tab), you will see a list of data you've recently entered or helped collect.

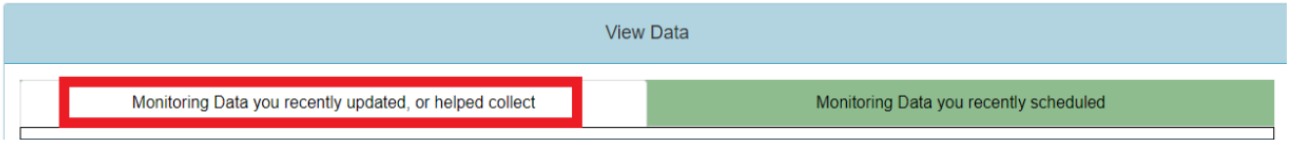
How to Edit Existing Data

1. Log in at: https://apps.dnr.wi.gov/swims/

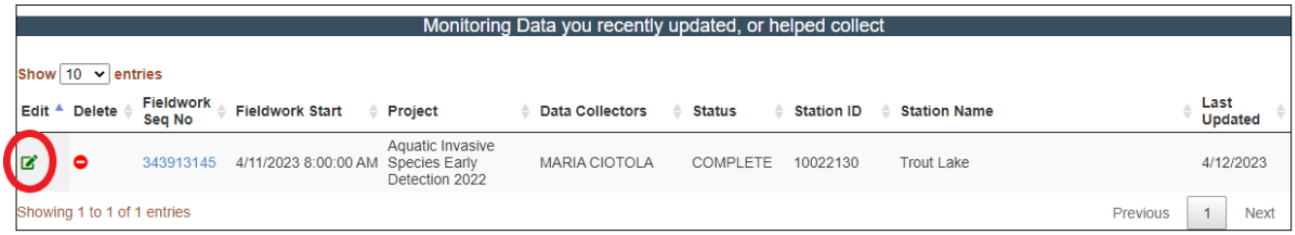
2. Click ‘View Data’ at the top of the page.



3. Two lists will be available to view: ‘Monitoring Data you recently updated or helped collect’ and ‘Monitoring Data you recently scheduled’. Make sure you are viewing data you recently updated or helped collect if you want to edit monitoring data that has already been entered.



4. Click the green pencil next to the Fieldwork Event you want to edit.



5. You can edit comments, etc. on the first page if necessary, and then click ‘Next’. You can now edit your results. Hit ‘Save and Return to List’, to save your changes.