Wetland Invasive Species Monitoring Project Protocol:

1. **Review** Department General Safety <u>Guidelines</u>.
2. **Review** <u>Department Safety SOPs</u> 1, 2, 3 (4 and 6 <u>are only necessary for boat use)</u>.
3. **If sites to be field checked are locations previously reported** to WDNR, species and location information simply need to be confirmed, along with estimating site size. The WDNR/UWEX Wetland Invasive Species (WIS) Program can often supply data for such sites. **Always obtain access permissions** from landowners before entering private land sites. Local stakeholders may help acquire permissions to conduct such monitoring, but the WIS Program can often supply landowner contact info (or even acquired permissions) once accurate location, species and site size info is reported to the Program. Road right-of-way permissions are also generally necessary (see below).
4. **Become familiar with** <u>target species in aquatic and wetland sites (also see the Guide to Invasive Plants in Wisconsin at http://dnr.wi.gov/files/pdf/pubs/fr/fr0436a.pdf)</u>. Develop accurate search images for target species based on time of year and appropriate physical characteristics.
5. <u>**Check**</u> **what records** are known in the work area to know whether there are any previous records that need verification, and if <u>disinfection methods are needed</u> to prevent further dispersal of exotic species during field work.
6. **Review local area maps** to identify vulnerable habitats and areas to search that are likely to have target species, such as roadsides, developments, other transportation corridors, possible source locations, etc.
   a. WIS Program may provide small scale site maps for reported target populations.
   b. Township maps will show infested road sites and other known area AIS locations.
   c. These will provide clues to where other roads/areas might harbor additional sites that should be checked.
   d. Roads travelled should be marked on maps for area work records. Maps that have been marked on should be scanned and saved to the project in SWIMS.
   e. Wis. Atlas/Gazetteer may be used to orient township map locations & help devise efficient travel routes.
7. **Equipment** that may be necessary to conduct the survey (not necessarily inclusive).
   a. Roadsides: Retroreflective vest, red flashing light(s) for car, orange safety cones.
   b. GPS unit to record coordinates, and tracks if doing a moving survey.
   c. Camera to collect photos of specimens. Geo-coded camera or smart phone preferred.
   d. Ziploc bags with label pens for preserving prohibited specimens. Ideally save in plant press later for vouchering specimens. Labels are used to properly identify the collection site.
   e. Binoculars/scope to scan distant sites & Range finder, if available, to estimate distance.
   f. <u>Wetland Invasive Plant Monitoring form</u> (on waterproof paper) for each site.
   g. Portable Jiffy steam, car inverter and long handled stiff bristled brush for disinfection.
   h. Multiple pairs of boots or waders for sampling multiple sites where decontamination is necessary. Walking sticks may be useful.
8. **Surveys:**
   a. **Take photographs** for each species observed following the <u>Photographing Guidance</u> found in the <u>verification process</u> guidance document. Photographs of each physically distinct population will be needed for verification for any species, especially difficult to distinguish from look-a-like species (e.g. Phragmites subspecies). For other species, only one photo is necessary for all the same species recorded in a wetland. Send photos to the regional DNR AIS Coordinator.

b. **Collect specimens** for prohibited species or for difficult to identify species. Collect plant parts critical for effective ID and label carefully. Send specimens to the regional DNR AIS Coordinator.

c. Record the **start coordinates (access point)** and AIS presence/absence on the [Wetland Invasive Plant Monitoring form](#).

d. **If monitoring a roadside population:**

    i. **WDOT permits** are required for roadside surveys on state and federal ROWs, and county or town permission is wise for their roads. Only check plants that are within the legal right-of-way unless private land permissions have been acquired. The ROW is typically 66' (out to 33 feet each side from the road center line) on most 2 lane county, state, federal and 20'+ wide town roads (49.5' ROW on 16'-18' town roads). Contacting landowners adjacent to roads before entering ROWs, if possible and safe, is useful since neighbors often care for these areas and may want to know your purpose, but their permissions are not required for entry into ROWs.

    ii. **All legally invasive wetland plants in ROWs** or within eyesight of road should be reported, but right-of-way field site checks will be most common for some species. Make a note in the comments if a population is outside the ROW.

    iii. **For previously reported sites**, prepare routes, maps or any other aids based on site locations to check sites as efficiently as possible.

    iv. **Drive & work carefully** while scanning for any species, especially if also monitoring GPS coordinates to find a previously reported site. Keep all WDOT work safety requirements in mind when deciding to stop, including having your retroreflective vest on constantly. Have the vehicle flashers on whenever driving slower than other traffic. The vehicle should be driven entirely off pavement and onto the road shoulder, if possible. Consider parking either side of a site if necessary for this. Leave the vehicle from its left side, if possible.

    v. **Collect GPS** point where monitoring is initiated and record on the datasheet as "access" and indicate whether AIS were observed or not. If AIS were observed, estimate the area and density. If it is a small population (e.g. one plant), collect the coordinates from the population center. If it is a larger population (e.g. a living room, 12 ft x 16 ft), collect coordinates from each edge of the population to create a polygon. Provide GPS accuracy in the comments of the data sheet. Use the [WDNR Coordinate Reference System](#).

    vi. **Turn GPS tracking 'on'** during the search to keep track of the search route.

    vii. **Search (meander)** along the road. Each time an AIS is observed, record the coordinates as "meander" and estimate the area and density. Populations ~20 feet apart can be recorded as a new population.

    viii. At the **end of the search track**, record the end point as an "access", collect coordinates and records whether AIS were observed or not. If AIS were observed, estimate the area and density.

    ix. **Confirm the species and collect** the latitude/longitude coordinates at the population center point for each monitoring location (with shape if a polygon),

as well as infestation size. If a population is visible from the road, but not accessible, estimate the distance, direction (with range finder if possible) and size. Use binoculars. Before reporting distant sites, confirm population center point and size later from recognition of the infestation on Google Earth or using other mapping software so that accurate land ownership can be determined for getting access permission.

      x. **Complete** the [Wetland Invasive Plant Monitoring form](#). Be sure to estimate the area and density of each population.

  e. **If monitoring a whole wetland:**

      i. **Turn GPS tracking 'on'** during the search to keep track of the search route.

      ii. **Examine predetermined vulnerable target areas** identified as vulnerable during desktop reconnaissance. Additional target sites may be added upon visual inspection of the wetland (blowdown, construction, etc.). Target sites will be recorded as 'target' and AIS presence/absence will be recorded. Species found that were not at pre-determine target locations will be recorded as 'incidental' sites.

      iii. **Complete the Wetland Invasive Plant Monitoring form**.

  f. **Describe** each search site and the overall wetland on the form.

  g. **Record the stop location** and presence/absence of AIS on the form.

  h. **Turn tracks 'off'** and save them by the station name and date. They will be saved to the SWIMS project and attached to the ROI later.

9. Decontaminate and disinfect equipment when leaving a site where you have entered a wetland (actual entry is not always necessary), [decontaminate](#) any clothing or equipment that was used per the Boat, Gear, and Equipment Decontamination and Disinfection [Manual Code 9183.1](#).

10. **Enter the data** from the Wetland Invasive Plant Monitoring form into SWIMS.

  a. The excel spreadsheet will identify if a station already exists or whether a station needs to be created.

  b. The collector will create any stations that need to be creating and all surveyed stations to the project and enter the data.

  c. Be sure to save scans of the data sheet and attach them to the project.

  d. To obtain treatment results quickly, the collector will also add verification and acreage estimates to the excel spreadsheet.

11. **Submit incident reports** for AIS occurrences observed while in route to monitoring station.

12. Provide **photos/specimens** to the regional verifier.

13. Follow the [communication protocol](#) following new discoveries.
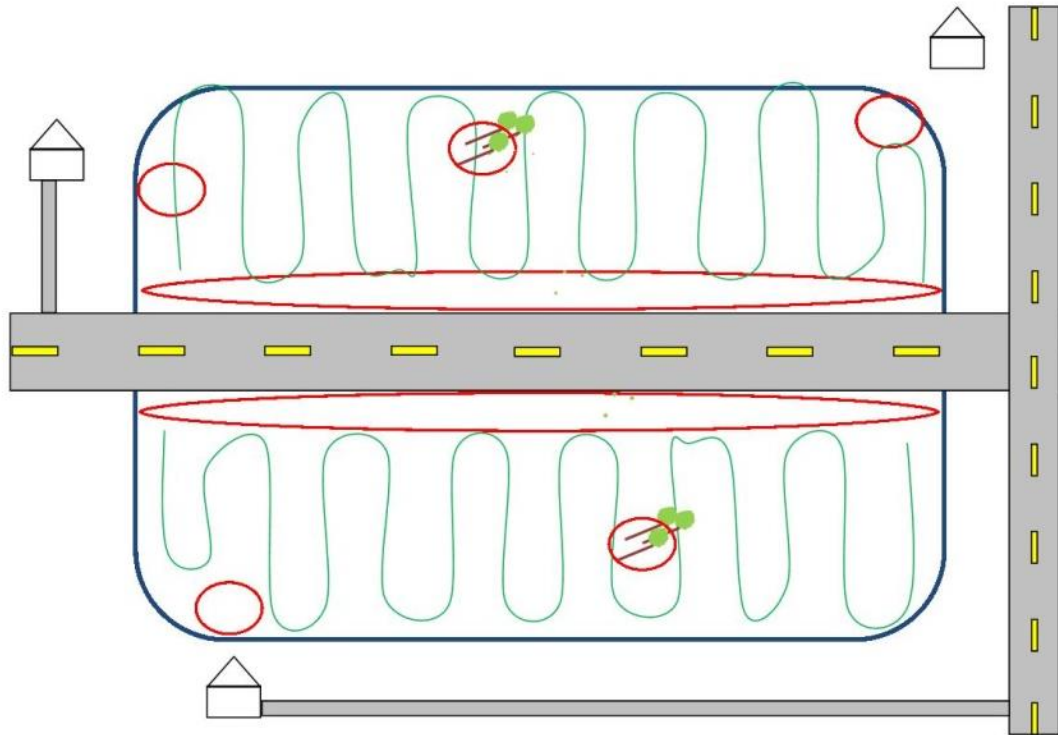
Figure 1. Schematic of Wetland AIS Early Detection Survey Design. Survey along road accesses and 5 target areas (red circles). Target areas include areas of anthropogenic influence like roads or homes and disturbances like blow down. Survey along transects between target sites for broad coverage of the wetland (blue line).