

**Wisconsin Department of Natural Resources
Aquatic Invasive Species (AIS) Early Detection Monitoring**

Standard Operating Procedures

Draft June 5, 2011

Before leaving the office:

- Each Monday - Email Tom Joestgen – DNR Risk Management if you will have a non-state employee or volunteer with you in a state vehicle or boat during a given week.
 - Leave person's name, business purpose, where and when they will be with you
- Check SWIMS for recent (within last five years) summer phosphorus and conductivity data → collect surface water samples if no recent data exists.
- Check SWIMS or the Statewide AIS list to determine which AIS are already present. Do not collect specimens of already listed species.
- Check mussel suitability data. If the lake is listed as suitable, borderline suitable or unknown collect veliger samples. If listed as not suitable do not collect veliger samples.
- Print datasheets
 - Early Detection Form
 - Veliger Tow Form(s)
 - Spiny Waterflea Tow Form(s)
 - Specimen labels
- Print bathymetric lake maps (these will be made available on a common drive)
 - Select five search sites where AIS are likely to be present (inlets, plant filled bays, rocky bars/points, developed shorelines, shorelines downwind of boat landings)
- Check equipment list

At the Lake:

Boat Landing Search(es):

- Each public or commercial boat landing is searched by snorkeling for 30 minutes (15 minutes if two people snorkeling, 30 minutes if one person). Covering an area of shoreline 200' long out to the maximum depth of plant growth or 100' from shore whichever comes first.

- Staff snorkeling should spend the first half of their time working on the shallow section of the site and then switch to the deep half of the site for the rest of the time.
- Look for snails, mussels and aquatic plants in the water and snails on any emergent macrophytes.
- If visibility or safety is a concern then rakes should be used to collect aquatic plants and a D-net should be used to look for snails and mussels for 30 minutes.
- Collect specimens of each AIS found for verification.
- Record the location (center of site at shoreline) of each boat landing on GPS.

Mid-lake samples:

Water Quality

- Take Secchi depth and conductivity reading and record on early detection form.
- Collect integrated sample for phosphorus if no data exists within the last five years.

Waterflea Tows

- Collect three waterflea tows (using 254 um net) from the open water area of the lake (at least 15-20 feet depth). One sample should come from the deep hole and other basins should also be covered.
 - Drop net to within 2 meters of the lake bottom and then pull behind the boat for two minutes or 100 meters (measured using GPS), whichever comes first, at lowest idling speed.
 - Rinse samples into bottle and label with lake name, county, WBIC, collector and date.
 - Add ethanol to samples for at least a 4/5 ratio of ethanol:water.
 - All samples can be placed in the same jar unless distinct bays of the lake are searched and specific sample location is needed for the separate samples.
 - Complete the Water Flea Tow Monitoring Form (Form 3200-128).

Lake Searches:

Snorkel Search Sites

- Stop at each search site and conduct 10 minute snorkel searches.
 - Look for snails, mussels and aquatic plants in the water and snails on the above water stems of any emergent macrophytes.
 - Collect specimens of each AIS found for verification.
 - Record the site number and location (center of site at shoreline) of each site on GPS and datasheet.
 - Record the name of any species found and density rating for invasive plants.
- If you find additional appropriate search sites as you are driving around the lake, you can add additional 10 minute searches or replace the sites that you pre-selected.

Veliger Tows

- Collect vertical zebra mussel veliger net tows (using the 54 um net) off shore from three of the search sites in 5-10 feet of water.

- The depth of the plankton tow will depend on the on the Secchi depth of the lake.
 - If Secchi depth is > 4 meters, collect two 2 m tows. Consolidate into one jar.
 - If Secchi depth is 2-4 meters, collect one 2 m tow.
 - If Secchi depth is < 2 meters, collect one 1 m tow.
- Complete the Mussel Veliger Tow Monitoring Form (Form 3200-135).
- Stop at any additional public or commercial boat landings and complete the boat landing snorkel search above. Do not include small backyard boat ramps for 30 minute snorkel searches.

Meander Survey

- Drive boat slowly between boat sites and look for aquatic invasive plants in the water and along the shoreline. Meander between shallow water and maximum rooting depth or 100' from shore whichever comes first.
- Stop at 50 haphazard locations while boating around the lake and take rake pulls and D-net sweeps. Check rake and net contents for AIS.
 - Collect specimens of each AIS found for verification.
 - Record the location of each AIS found on GPS.
 - Only collect separate GPS points from discretely different beds of invasive plants.
 - Once five specimens of a species have been collected at any site (boat landing, search site or meander survey) there is no need to collect additional specimens at other sites.
 - If three discrete locations of a certain species are found either at snorkel search sites and/or during the meander survey stop recording new locations during the meander survey. Three discrete locations of one species will indicate that the species is established in the lake.

Back at the Boat Landing:

- Inspect and remove any aquatic plants and animals from the boat and trailer.
- Drain all water from the boat and motor.
- Disinfect boat and trailer (per [DNR disinfection protocol](#))
- Place plankton nets in disinfection solution (bleach solution per [DNR disinfection protocol](#)) in tubs for 10 minutes.
- If traveling to another lake, rinse veliger net with water and place in tub with vinegar for 10 minutes.
- Scrub wetsuit with or place in disinfection solution (bleach solution per [DNR disinfection protocol](#)) for at least 10 minutes.