Section 3.1 Monitoring Strategy for Aquatic Invasive Species

Table 20: Aquatic Invasive Species Studies		
Study	**Purpose**	**Supports: Recreation, Wildlife**
Aquatic Invasive Species – Incident Reports	Track incidental occurrence for distribution and early detection	Evaluate effectiveness of programs.
Probabilistic Aquatic Invasive Species Monitoring– (Baseline Statewide Monitoring – Aquatic Invasive Species Early Detection)	Track distribution, early detection and determine the rate of aquatic invasive species spread to evaluate efficacy of prevention.	Identify key areas for intervention.
Aquatic Invasive Species – Water Quality Biologist Stream Monitoring	Distribution and early detection	Identify key areas for intervention.
Citizen Lake Monitoring Network – Aquatic Invasive Species	Distribution and Early detection	Identify key areas for intervention.
Aquatic Invasive Species – Project Riverine Early Detection	Distribution and early detection	Identify key areas for intervention.
Aquatic Invasive Species Snapshot day (pilot)	Pilot project to monitor road crossing for aquatic invasive species, including organisms in trade.	Evaluate cost effective monitoring strategies.

Study Descriptions

AIS Incident Reporting

Monitoring objectives
Staff and volunteers report occurrences of aquatic invasive species to update distribution lists and initiate rapid response action, when appropriate. Future uses include but are not limited to water condition assessments.

Monitoring design
Incidental observations during routine field work or outdoor activities are conducted.. There are two processes used to report: to the local DNR Lake Coordinator (http://dnr.wi.gov/topic/Invasives/report.html) or implementing the DNR Aquatic Invasive Species protocol (http://dnr.wi.gov/lakes/invasives/AISDiscoveryCommunicationProtocol.pdf).

Water quality indicators
Location (e.g. Lake Name, water body identification code, latitude/longitude, etc.) is provided in reports. Water quality data may or may not be reported with these incidental reports.

Quality Assurance
Volunteers or staff may or may not have received training. All aquatic invasive species reports must be verified by an expert prior to making the information public. Our communication protocol identifies appropriate chain of custody for specimens (http://dnr.wi.gov/lakes/invasives/AISDiscoveryCommunicationProtocol.pdf).

Data management
An incident report will be completed and entered into SWIMS. There are two types of incident reports:
- Plant (http://dnr.wi.gov/lakes/forms/3200-125-plantincident.pdf) or
- Animal (http://dnr.wi.gov/lakes/forms/3200-126-animalincident.pdf).

Central office staff creates an electronic record to identify whether and where the occurrence has been verified by an expert.

Reporting

Collected data are shared on the DNR website:
- list of species locations (http://dnr.wi.gov/lakes/invasives/BySpecies.aspx)
- Lakes and Aquatic Invasive Species Viewer (http://dnr.wi.gov/lakes/viewer/)
- Significant discoveries are shared on the DNR Lakes Blog (http://lakes-l.blogs.govdelivery.com/) and/or news releases.

Programmatic evaluation

Twice each year, the DNR host a forum with federal, state, county, tribal, university, and private stakeholders to summarize and discuss aquatic invasive species reports, monitoring improvement, and response actions. Staff has requested to be made aware of reports and when Resources of Interest are created in their work area. We will begin providing weekly or monthly reports to staff. Staff has also requested to be made aware of follow-up efforts in their work area.

AIS Probabilistic (Baseline Statewide Monitoring–Early Detection)

Monitoring objectives

The statewide monitoring strategy outlined below will provide DNR and partners with the information needed to:
1. Establish baseline data on statewide AIS distribution.
2. Track the rate of AIS spread in a number of vulnerable waterbodies that will represent the state as a whole.
3. Evaluate the effectiveness of outreach and education efforts aimed at stopping the spread of AIS.

Monitoring design

Sampling timeframe is from June 15 to September 15. Monitor 200 randomly selected lakes throughout the year using boat landing searches, snorkel searches, shoreline meander, plankton tows.

Water quality indicators

Secchi disk depth and conductivity data are collected.

Quality Assurance

Each spring, there is an annual field protocol review and identification and disinfection training. Specimens of all occurrences are collected and submitted for identification verification by the appropriate taxonomic expert. Vouchers are prepared and sent to the appropriate herbarium or museum.

Data management

Staffs enter their data into SWIMS. Data is proofed by a second staff to ensure accurate entry. Data sheets are scanned and saved. Central office staff creates a Resource of Interest and identify whether the occurrence has been verified by an expert.

Reporting

Throughout the season, significant discoveries will be shared with monitoring staff. Updates are provided at the fall and spring AIS Coordinator meeting. Each spring, results are summarized and shared through a local press release or incorporated into a statewide press release.

Collected data are shared on the DNR website:
- list of species locations (http://dnr.wi.gov/lakes/invasives/BySpecies.aspx)
- Lakes and Aquatic Invasive Species Viewer (http://dnr.wi.gov/lakes/viewer/)
- Significant discoveries are shared on the DNR Lakes Blog (http://lakes-l.blogs.govdelivery.com/).

Programmatic evaluation

Fall meeting with monitoring staff to review protocols and identify issues to improve following year. Twice each year, the DNR host a forum with federal, state, county, tribal, university, and private stakeholders to summarize and discuss aquatic invasive species reports, monitoring improvement, and response actions. Staff has requested to be made aware of reports and when Resources of Interest are created in their work area. We will begin providing weekly or monthly reports to staff. Staff has also requested to be made aware of follow-up efforts in their work area.   Protocols are articulated in the WDNR Aquatic Invasive Species Early Detection Monitoring SOPs, Draft June 9, 2014.

AIS Water Quality Biologist Stream Monitoring

Monitoring objectives
Track the distribution of aquatic invasive species in streams and early detection of pioneer populations.

Monitoring design
Water quality biologists report presence/absence during routine field work.

Water quality indicators
Stream flow, pH, and temperature data are collected. Macroinvertebrates and fish data are collected to determine stream index of biotic integrity.

Quality Assurance
Biologists are trained to identify AIS, complete/submit the field datasheet, collect specimens, and disinfect equipment. Specimens or photographs are submitted to DNR AIS staff for verification and vouchering. Some species may be verified with photographs. If specimens are collected, vouchers are prepared for an herbarium or museum. If no specimen is collected for a species that needs voucher verification, the record will be flagged and specimen collected.

Data management
Either the data collector or staff enter the data into SWIMS, which is proofed by second staff to ensure accuracy. Data sheets are scanned and saved. Central office staff creates a Resource of Interest and identify the occurrence verified location.

Reporting
Collected data are shared on the DNR website:
- List of species locations (http://dnr.wi.gov/lakes/invasives/BySpecies.aspx)
- Lakes and Aquatic Invasive Species Viewer (http://dnr.wi.gov/lakes/viewer/)
- Significant discoveries are shared on the DNR Lakes Blog (http://lakes-l.blogs.govdelivery.com/) and/or news releases.

Programmatic evaluation
Fall meeting with monitoring staff to review protocols and identify issues to improve following year. Twice each year, the DNR host a forum with federal, state, county, tribal, university, and private stakeholders to summarize and discuss

aquatic invasive species reports, monitoring improvement, and response actions. Staff has requested to be made aware of reports and when Resources of Interest are created in their work area. We will begin providing weekly or monthly reports to staff. Staff has also requested to be made aware of follow-up efforts in their work area. Aquatic Invasive Species Monitoring Data Form 3600-532A (R 2/14).

Citizen Lake Monitoring Network – Aquatic Invasive Species

Monitoring objectives
Track the distribution of aquatic invasive species in lakes and early detection of pioneer populations.

Monitoring design
Volunteers are recruited and trained to identify AIS. Volunteers on lakes set up monitoring teams to divvy up the work. Species monitored and protocols used will depend on the volunteer's interest/abilities. The methods are available on-line: http://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/programs/CLMN/SecchiManual-2014web.pdf

Water quality indicators
Water quality data is not collected for this project.

Quality Assurance
County coordinators receive annual refresher trainings. Volunteers are trained how to identify AIS, complete the datasheet, enter data into SWIMS, and disinfect equipment. Volunteers are encouraged to collect AIS specimens or photographs for each location where it is observed. Volunteers deliver specimens to local experts. Local experts prepare vouchers and send them to the herbarium or museum.

Data management
Volunteers complete the following forms:
- Aquatic Invasives Surveillance Monitoring Report End of Season Report, Form 3200-133
- Aquatic Invasives Surveillance Monitoring Multiple Locations, One Date, Forms 3200-130

Volunteers complete the following forms, if plankton tows are collected:
- Mussel Veliger Tow Monitoring Report, Form 3200-135
- Water Flea Tow Monitoring Report, Form 3200-128

If AIS are observed for the first time on a lake, volunteers complete:
- Aquatic Invasive Plant Incident Report, Form 3200-125
- Aquatic Invasive Animal Incident Report, Form 3200-126
- Purple Loosestrife Volunteer Watch Report, Form 3200-11

For established population monitoring, report your results using the:
- Plant Bed Density Report, Form 3200-132.
  - o At this time, there is no computer data entry option for this form. Online data forms will be created as time allows. The data collected with this form will be very useful in tracking the spread of EWM throughout the lake if EWM does spread and is necessary in tracking success of your management option. Keep hard copies for your reference and/or submit them to your local DNR Aquatic Plant Management Coordinator.
- Crayfish (Quantitative) Monitoring Report, Form 3200-12
- Zebra/Quagga Mussel (Quantitative) Report Requires use of substrate plates, Form 3200-127

Volunteers use the following forms if they participate in purple loosestrife biocontrol project:

- Purple Loosestrife Cultivation Authorization and Biocontrol Insect Application, Form 3200-11

Forms are either entered directly into SWIMS by the volunteer or submitted to the local DNR AIS contact, local AIS Coordinator, or mailed to Jennifer Filbert.
UW Extension and DNR will work to streamline the CLMN AIS reporting.

Reporting

Collected data are shared on the DNR website:

- list of species locations (http://dnr.wi.gov/lakes/invasives/BySpecies.aspx)
- Lakes and Aquatic Invasive Species Viewer (http://dnr.wi.gov/lakes/viewer/)
- Significant discoveries are shared on the DNR Lakes Blog (http://lakes-l.blogs.govdelivery.com/), news releases.

Programmatic evaluation

Feedback is provided during annual train-the-trainer trainings. Twice each year, the DNR host a forum with federal, state, county, tribal, university, and private stakeholders to summarize and discuss aquatic invasive species reports, monitoring improvement, and response actions. Staff has requested to be made aware of reports and when Resources of Interest are created in their work area. We will begin providing weekly or monthly reports to staff. Staff have also requested to be made aware of follow-up efforts in their work area. Annual reviews should be conducted either statewide or by regional coordinators to share discoveries with volunteers and receive feedback.

Aquatic Invasive Species–Project Riverine Early Detection

Monitoring objectives

River Alliance of Wisconsin and DNR would like to identify AIS locations along rivers.

Monitoring design

Volunteers are trained to identify AIS. Volunteers paddle or wade a stretch of stream and look for AIS. See the protocols which are described in Project Red Protocols Document.

Water quality indicators

Water quality data is not collected for this project.

Quality Assurance

County coordinators receive annual refresher trainings. Volunteers are encouraged to collect AIS specimens or photographs for each location where it is observed. Volunteers deliver specimens to local experts. Local experts prepare vouchers and send them to the herbarium or museum.

Data management

Volunteers complete the Project RED Field Data Collection Sheet. Volunteers either mail datasheets to the partners who enter the data into SWIMS. Data Entry form for Project Red.

Reporting

Collected data are shared on the DNR website:

- List of species locations (http://dnr.wi.gov/lakes/invasives/BySpecies.aspx)

- Lakes and Aquatic Invasive Species Viewer (http://dnr.wi.gov/lakes/viewer/)
- Significant discoveries are shared on the DNR Lakes Blog (http://lakes-l.blogs.govdelivery.com/) and/or news releases.

Programmatic evaluation

Twice each year, the DNR host a forum with federal, state, county, tribal, university, and private stakeholders to summarize and discuss aquatic invasive species reports, monitoring improvement, and response actions. Staff have requested to be made aware of reports and when Resources of Interest are created in their work area. We will begin providing weekly or monthly reports to staff. Staff has also requested to be made aware of follow-up efforts in their work area. Annual reviews should be conducted either statewide or by regional coordinators to share discoveries with volunteers and receive feedback.

Aquatic Invasive Species–Snapshot Day (pilot)

Monitoring objectives

River Alliance of Wisconsin and DNR would like to identify AIS locations, especially organisms-in-trade releases, at road crossings.

Monitoring design

Local county AIS coordinators identify targeted locations, recruit volunteers and host a one-day event. Volunteers are trained to identify species in the morning and visit targeted locations to assess presence/absence of AIS. AIS Bridge Snapshot Day Local Coordinators Handbook September 13, 2014   AIS Bridge Snapshot Day Protocols.

Water quality indicators

Water quality data is not collected for this project.

Quality Assurance

County AIS coordinators will receive annual refresher trainings. Volunteers collect AIS specimens or photographs for each location where it is observed. The specimens are submitted to the local coordinator. The local coordinator verifies the identification and will submit a voucher specimen to the herbarium. If there are multiple locations reported along a stream, then the coordinator will select just one specimen to voucher that will represent each population observed along that stream.

Data management

Volunteers complete the AIS Bridge Snapshot Datasheet and submit to the local coordinator. The local coordinator provides the datasheet to the River Alliance of Wisconsin to enter the data. Central office staff creates a Resource of Interest and identify whether the occurrence has been verified by an expert. AIS Bridge Snapshot Datasheet

Reporting

Collected data are shared on the DNR website:
- list of species locations (http://dnr.wi.gov/lakes/invasives/BySpecies.aspx)
- Lakes and Aquatic Invasive Species Viewer (http://dnr.wi.gov/lakes/viewer/)
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