



INSTRUCTIONS FOR INVASIVE AQUATIC PLANT MAPPING SURVEY DOCUMENTATION FORM (5/1/11)



Can I use last year's Mapping Survey Form?

PLEASE do not use old forms. The Mapping Survey Form is updated from year to year and old forms are missing important information.

Can I put more than one lake/pond on the same sheet?

If you sample multiple waterbodies, **PLEASE** use a separate sheet for each distinct waterbody.

How do I fill out my form?

NOTE: It is best to use a pencil because some inks are water-soluble.

SECTION 1: General Information

1. Fill out the top portion of the Mapping Survey Form with the **waterbody name, town, county, state** (if other than Maine)
2. **MIDAS #:** Unique four-digit identification code for a lake (rivers do not have these codes) If unknown contact VLMP-CIAP for information
3. **Date/s:** Record the date as month, day, year
4. **Total Survey Hours:** Record total number of hours as # of hours spent conducting the survey on the water
5. **X # surveyors:** Enter the total number of surveyors that completed the survey
6. **Lead Surveyor:**
 - a. **Name:** Record first and last name
 - b. **IPP Certification #:** Record IPP certification number if applicable (if unknown contact VLMP-CIAP)
 - c. **IPP Training:** If you are not certified by have attended an IPP workshop by the VLMP, please mark **Y**
 - d. **Phone # and/or Email Address:** Recording both email and phone is preferred
 - e. **Regional Affiliation:** Record lake association, agency, etc. that you are affiliated with if applicable
 - f. **Surveyor Type:**
 - IPP Volunteer** – Invasive Plant Patrol trained volunteer
 - Agency** – Staff from various agencies that conduct surveys, e.g. Auburn Water District, Maine DEP, Maine Department of Conservation Natural Areas Program
 - Research/Ed. Institute** – Students and /or faculty of a research institution (such as college or university)
 - Professional** – Trained professional, usually hired by the lake association and / or stakeholders
 - Other (explain)** – anyone who does not fit into the above categories
7. **Additional Surveyors:**
 - a. **Name:** Record first and last name
 - b. **IPP Certification #:** Record IPP certification number if applicable (if unknown contact VLMP-CIAP)
 - c. **IPP Training:** If you are not certified but have attended an IPP workshop by the VLMP, please mark **Y**
8. **Mapping Survey Primary Target(s):** Record target plant(s) of the mapping survey. This is usually the known invader, but can include other invasive plants on the Maine state watch list.
9. **Survey Level:** Record the scope of the survey conducted. For a mapping survey we recommend performing a Level 3 survey on the entire waterbody. The following abbreviations are used to indicate the survey level:
 - Limited:** The thorough survey of a particular portion of the littoral zone (an area that would not typically be done in a level 1 survey).
 - Level 1:** The points of public access and areas of concentrated boat traffic (e.g. marinas and narrow navigation channels) are surveyed. Survey areas extend horizontally along shoreline at least 100 meters (~300 feet) on either side of the high-risk zone, and outward along the entire length to the depth at which the bottom is no longer visible (typically between 9 and 13 feet).
 - Level 2:** The Level 1 areas were surveyed, plus the areas of the shoreline that are likely to provide suitable habitat for aquatic plants, such as shallow, sheltered coves.
 - Level 3:** Survey covers the entire shoreline area and littoral zone. (The littoral zone includes all regions of the waterbody where sunlight reaches the bottom and rooted aquatic plants are present.)
 - By Sector:** Surveys are often done by teams of surveyors. Checking **By Sector** indicates that the survey being recorded covers one portion (or sector) of the survey area. Surveyor/s may take up to 3 years to complete the survey. A map indicating the sector boundaries should be included. Applies to survey levels 1, 2, & 3 only.

Entire: Indicates that the survey was completed by one surveyor or one group of surveyors. Applies to survey levels 1, 2 & 3 only.

10. **Relative Water Level:** Darkened stain, occurring in bands that run horizontally along stony sections of the shoreline (most noticeable on large boulders) marks the “**Normal High**” water level for the waterbody. Check ‘**Above**’ for levels above these markers and ‘**Below**’ for levels lower than these markers.
 11. **Additional Survey Goals:** Record additional survey goals, e.g. inventory of dominant native plants by sector or by waterbody OR complete inventory of native plants including rare and endangered species.
 12. **Plant Conditions:** Check the descriptor that best characterizes the general condition of the majority of the plants observed during your survey.
 13. **Screening Method/s:** Record method employed to survey waterbody, may include more than one.
OPTIONAL: Abbreviations can be used to indicate methods used in a particular area on survey map
- VISUAL METHODS**
- VR:** Visual Random Points - visual spot-check of areas on the waterbody
 - VP:** Visual Plot Points – visual check of discrete points at regular intervals along a transect or grid
 - VT:** Visual Transect – follow a predetermined continuous line between two points looking on both sides of the watercraft as far as the eye can see.
 - VC:** Visual Complete Coverage – surveyed every area in the littoral zone. **Recommended.**
- GRAB SAMPLE METHODS**
- GR:** Grab Sample Random Points – Sampling random points of the waterbody with the grab sample tool
 - GT:** Grab Sample Target Points – Sampling specific points of concern in the waterbody with the grab sample tool
 - GP:** Grab Sample Plot Points – Sampling of discrete points at regular intervals along a transect or grid
14. **Maximum Depth of Plants Observed:** The maximum depth that plants were observed during the screening survey. Use a depth finder or marked, weighted line to determine depth.
 15. **Light Conditions:** Record all light conditions that occur during the screening survey.
 - Bright:** you can see distinct shadows, the sky is clear
 - Cloudy Bright:** the day is bright but there are clouds in the sky
 - Overcast:** the day is gray and there is predominately cloud cover in the sky
 16. **Surface Conditions:** Record all lake surface conditions that occur during the survey.
 17. **Grab Sample Tool:** Record the appropriate type of grab tool used to conduct the screening survey, checking all that are used during the survey.
 18. **Viewing Methods:** Record the appropriate viewing area of scope(s) used to conduct the screening survey, checking all that are used during the survey.
 - Tube Scope 6”diam__ 4”diam__** includes 6” & 4” diameter tube scopes. Please indicate which was used.
 - 9-10”diam Bucket Scope or equivalent** include bucket scopes, kayak-size trunk case view scopes, and view canoes
 - Trunk Scope or equivalent** include large-sized trunk case scopes, storage bin scopes, and clear kayaks
 - Facemask or equivalent** include the use of facemask for snorkeling or SCUBA
 - Polarized Lenses:** Polarized Lenses help reduce glare and make seeing plants from the surface easier
 - Naked Eye:** On calm days, using your naked eye can increase your visual range from the surface
 - Other:** Please describe any scope that does not fit into one of the above categories
 19. **Additional tools or methods used:** List any tools or methods used during the survey not listed above.

SECTION 2: Additional Species of Concern

1. **Additional Species of Concern Observed:** Examples of some additional species of concern are
 - Chinese Mystery Snail (*Cipangopaludina chinensis*)
 - Common Reed (*Phragmites australis*)
 - Gleotrichia (*Gleotrichia echinulata*)
 - Northern Pike (*Esox lucius*)
 - Purple Loosestrife (*Lythrum salicria*)
 - Rusty Crayfish (*Orconectes rusticus*)
 - Zebra mussel (*Creissena polymorpha*)
2. **Sector/Location:** Record area surveyed with enough detail for someone unfamiliar with the area to locate the site. Please use permanent landmarks whenever possible.
3. **GPS Waypoint:** Set of coordinates identifying location on survey map; usually longitude & latitude
4. **Buoy Code:** Record code on buoy marking the location of the species of concern.
5. **NOTES:** Record any additional observations or points of interest.

SECTION 3: Invasive Aquatic Plant Mapping Survey

1. **Map Point:** Numbered point on survey map that identifies location of IAP

2. **IAP Code:** Invasive species are abbreviated as follows
 - BE** – Brazilian Elodea (*Egeria densa*)
 - CP** – Curly-leaf Pondweed (*Potamogeton crispus*)
 - EM** – Eurasian Watermilfoil (*Myriophyllum spicatum*)
 - EF** – European Frogbit (*Hydrocharis morsus-ranae*)
 - EN** – European Naiad (*Najas minor*)
 - F** – Fanwort (*Cabomba caroliniana*)
 - PF** – Parrot Feather (*Myriophyllum aquaticum*)
 - YH** – Yellow Floating Heart (*Nymphoides peltata*)
 - VM** – Variable Leaf Watermilfoil (*Myriophyllum heterophyllum*)
 - VMh** – Hybrid Variable Leaf Watermilfoil (*M. heterophyllum* x *M. laxum*)
 - WC** – Water Chestnut (*Trapa natans*)
 - H** – Hydrilla (*Hydrilla verticillata*)
3. **Sector/Location:** Record area surveyed with enough detail for someone unfamiliar with the area to locate the site. Please use permanent landmarks whenever possible.
4. **GPS Waypoint:** Set of coordinates identifying location on survey map; usually longitude & latitude
5. **Buoy Code:** Record code on buoy marking the location of the potential invader.
6. **Characterization Code:** Use the code(s) listed below that best describes the marked infested area.
 - IN:** Individual IAP
 - SDP:** Small Dense Patch of IAP; primarily single species stands covering an area less than 100 square feet
 - MDP:** Medium-sized Dense Patch of IAP; primarily single species stands covering an area 100 to 500 square feet
 - LDP:** Large Dense Patch of IAP; primarily single species stands covering an area over 500 square feet (Provide an estimate of the area coverage for LDP if possible)
 - SIA:** Sparsely Infested Area; plants and plant clusters sparsely distributed over a wide area, too numerous to mark individually (Shade SIA on the map &/or mark outer boundaries with series of GPS points)
 - MIA:** Moderately Infested Area; plants and plant clusters moderately distributed over a wide area, too numerous to mark individually (Shade MIA on the map &/or mark outer boundaries with series of GPS points)
 - HIA:** Heavily Infested Area: Plants and plant clusters are heavily distributed over a wide area, too numerous to mark individually (Shade HIA on map &/or mark outer boundaries with a series of GPS waypoints)
7. **MXN:** Check if the IAP infestation was mixed in with a significant stand of native plants (Use to modify any characterization code.)

EXAMPLES OF MAPPING SURVEY MAPS

