

AQUATIC PLANT IDENTIFICATION AND MAPPING

Rooted aquatic plants are a natural and essential part of the lake, just as grasses, shrubs and trees are a natural part of the land. Their roots are a fabric for holding sediments in place, reducing erosion and maintaining bottom stability. They provide habitat for fish, including structure for food organisms, nursery areas, foraging and predator avoidance. Waterfowl, shore birds and aquatic mammals use plants to forage on and within, and as nesting materials and cover. Though plants are important to the lake, overabundant plants can negatively affect fish populations, fishing and the recreational activities of property owners. In this situation, it is advantageous to manage the lake and its aquatic plants for the maximum benefit of all users. To be able to do this effectively it is necessary to know the plant species present in the lake and their relative abundance and location. A map of the lake showing the plant population locations and densities will greatly aid management projects.

The Aquatic Plant Identification and Mapping parameter is a labor-intensive volunteer activity. Typically, a team of volunteers needs to contribute in order to be successful. Prior to heading to the lake, the volunteers develop a sampling strategy for their lake, based on size and known areas of plant growth. Sampling transects (straight lines parallel to shore) are identified, along which plant samples are collected, generally at the one, four and eight foot depths with a constructed sampling rake. The rake is tossed out into the lake and retrieved from the four compass directions. The density of each plant species is determined by its presence on one, two, three or all four of the rake tosses. The sampling effort often requires several days. The data from all the transects then are used to create a plant distribution map and report.

The procedure is written in *A Citizen's Guide for the Identification, Mapping and Management of the Common Rooted Aquatic Plants of Michigan Lakes*. Copies of this book may be obtained from Michigan Lakes and Streams Associations (MLSA) or Michigan State University Extension. As discussed in the book, the assessment procedure may be slightly modified to accommodate the volunteer monitor's skills and resources.

Equipment Checklist

- boating safety equipment and anchor
- copy of monitoring procedures (*A Citizen's Guide for the Identification, Mapping and Management of the Common Rooted Aquatic Plants of Michigan Lakes*)
- a depth map of the lake
- field recording sheets
- weighted sounding line
- weighted rake and retrieving line
- zip-lock bags
- clipboard
- pencil or indelible ink pen

- camera (optional; digital preferred)

Sample Collection

Sample collection procedures are detailed in Chapter 5 of *A Citizen's Guide for the Identification, Mapping and Management of the Common Rooted Aquatic Plants of Michigan Lakes* by Wandell and Wolfson (2007). Additionally, this reference provides information on aquatic plant identification (Chapter 3) and how to make a plant collection (Chapter 4). A plant collection can aid with volunteer training for the plant mapping project.

Photographs

Photographs are an excellent way to document the plants you find. When photographing plants, it helps to lay the plant on a light-colored background, with the leaves spread out so that distinguishing features can easily be seen (leaf shape, size, number of leaflets, etc.). If you are unsure of the identity of a plant, a few good photos could eliminate the need to ship actual specimens to MSU for identification; instead, a quick email with a few digital photos may be sufficient for expert identification, and a faster response. Photographs of plants from your lake can also be a useful tool for educating neighbors and members of your lake community about the plants that are found in your lake, and a good reference for you for future surveys.

Reporting Results

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