



# Aquatic Plants and Lake Water Quality:

## Protecting “Weeds” Helps Our Lakes

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Each spring, staff of the Prior Lake-Spring Lake Watershed District (PLSLWD) receive phone calls from citizens concerned about “weeds,” a.k.a. rooted aquatic plants, growing in local lakes and wetlands. The callers want to know how to get rid of what they see as pesky intruders that are ruining their shoreline. What folks often do not understand is the critical role these “weeds” play in maintaining a healthy lake.

### The “Steady State” Shuffle

Scientists have found that shallow lakes with medium to high levels of nutrients (e.g. nitrogen and phosphorus) tend to fall into two categories. Some lakes have a lot of rooted aquatic plants growing on the bottom of the lake and emergent plants (like cattails and bulrush) growing along the shoreline. These lakes tend to have clear water, little shoreline erosion, and good sport fishing. Other lakes have few rooted and emergent plants, murkier water, more evidence of shoreline erosion, and greater numbers of carp and other undesirable fish.

These two categories, called “steady states” by the scientists, can even be seen in the same lake at different times. A lake can switch from a “clear water, abundant plants” steady state to a “murky water, few plants” state in just a couple of years due to changes in the lake or its watershed.

What we do not see are lakes with lots of nutrients, clear water, and no aquatic plants. That’s because the nutrients in the lake fuel plant growth — either rooted and emergent aquatic plants, or microscopic floating algae.

### Weed ‘Em and Weep

So where do “weeds” come into this picture? In lakes with abundant aquatic plants, a lot of nutrients are tied up in the plants themselves, so the nutrients are not available for algae to grow. This helps keep the lake water clear, since algae blooms are often the cause of murky lake water. Disturbing the aquatic plants can release those nutrients, fueling algae blooms and shifting the lake from a “clear water” to a “murky water” state. And once a lake has shifted steady states it can take many years, and lots of money, to switch it back.



### Mission:

*To manage & preserve the water resources of the Prior Lake-Spring Lake Watershed District to the best of our ability using input from our communities, sound engineering practices, and our ability to efficiently fund beneficial projects which transcend political jurisdictions.*

### **Benefits of Native Plants**

Native aquatic plants benefit lakes in many ways. They protect the shoreline from erosion and provide habitat for fish and ducks. They also tie up nutrients that otherwise would feed the algae blooms that reduce water clarity and turn lakes green and scummy in late summer.



### **Enter, Invasive Aquatics**

The picture gets even cloudier (pun intended) when invasive plants such as Curlyleaf pondweed and Eurasian watermilfoil are introduced into a lake. Curlyleaf pondweed is a particular problem because it starts growing in the fall, grows all winter, and in the spring it shades out native plants before they can get started. Then the curlyleaf dies back in early July, releasing the nutrients tied up in the plant just when the light and temperature conditions are most favorable to algae growth. So often its “in comes the curlyleaf, out goes the native plants and clear water.”



Curlyleaf pondweed.

While Eurasian watermilfoil also presents a challenge to lake biology and recreation, it grows all summer so it does not threaten water quality like curlyleaf does.

Sometimes lakeshore owners inadvertently make an invasive plant problem worse by clearing native plants from their shoreline. Unless the landowner continues to remove plants all year, the disturbed shoreline makes a great spot for invasive species to take hold.

### **What Can We Do?**

There are a number of things that lakeshore and watershed residents can do to help maintain, or restore, the “clear water” steady state in a lake. These include:

- Avoid disturbing native aquatic plants whenever possible.
- If you do plan to treat or remove aquatic plants, follow the Department of Natural Resources regulations (see <http://www.dnr.state.mn.us/shorelandmgmt/apg/permits.html>), obtain a DNR permit if required, and only treat/remove plants in the area you actively use for swimming or boat access.
- Carefully check your boat and trailer when moving between lakes, to avoid bringing an invasive plant along with you.
- Consider bringing native plants back to your shoreline. The PLSLWD has technical assistance and cost-share available for shoreland restoration.
- Reduce stormwater runoff from your property or business, which can add extra nutrients to the lake.
- Become familiar with the management goals the PLSLWD and its partners have established for your local lake.

These are just a few of the things that we can do to protect native aquatic plants, and maintain and improve water clarity in our local lakes.



Restoring native plants to the shoreline, May 2005.

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