

# CHAPTER I

## Aquatic Plant Management (APM) in Wisconsin

*Chapter I describes the reasons and philosophies behind Wisconsin's aquatic plant management policies. It will help you decide if you need to manage the plants in your lake and clarifies the laws and permits needed to do the work.*

### A Tapestry of Life

The home for most aquatic plants is the shallow water area in a lake called the littoral zone. Much of a lake ecosystem depends on what happens in that zone. When a part of it is removed, it is like removing a house in the neighborhood, the residents that once lived there can no longer return, and when enough homes are removed, and enough residents are lost, the interactions that make the neighborhood a viable community cease, and the community fails. A community of aquatic plants is part of what makes a healthy lake ecosystem.

Wisconsinites recognize that aquatic plants at the lake edge are a beautiful, protective and nourishing component of the lake ecosystem. Emergent, floating and submersed plants are the binding thread in a watery tapestry of life. Aquatic plants help with soil stabilization and create a thriving habitat for animals.

Emergent plants can help filter runoff from uplands to protect lake water quality. Their roots create complex networks that stabilize sediments at the water's edge where buffeting waves might otherwise erode the lakeshore. These plant beds are essential to the spawning success of many fish species, and provide cover and nesting for marshbirds, songbirds and waterfowl. Purple flowered pickerelweed, delicate white duck potato and sedges and grasses of all textures add beauty to the lake upland interface.

Floating-leaved plants provide shade and refuge for the near shore animal community, giving invertebrates and small fish a place to live. They also serve as hunting grounds for larger predators. Yellow and white pond lilies and red watershield create a stunning ring of color around many lakes.

Submersed aquatic plants perform countless functions in the shallow, near shore area called the littoral zone. These plants photosynthesize, creating life-giving oxygen for the animals that live in the littoral zone. Submersed plants absorb phosphorus and nitrogen over their leaf surface and through their roots, decreasing the nutrient availability to nuisance algae. Plant roots stabilize soils and reduce the turbidity caused when sediments are resuspended. Submersed plants are also a key component of the intricate logic of nature humans call the "food web."

There is great variety in form and texture among submersed plants. Some, like water celery or bur-reed, have smooth ribbon-like leaves. Other plants, such as bladderworts, water-milfoils, water marigold and coontail, have finely dissected leaves. The pondweeds range from fine-leaved to broad-leaved. Rosette-type plants, with short, stiff leaves, are

common in sandy and nutrient poor sites. Together, these plants create a diverse and beautiful underwater garden.

Underwater plants are a home, safe haven, nursery and bountiful buffet for the diverse parade of creatures that need the water for life, and that make living near the water enjoyable for us. From moose to minute invertebrates, animals eat the foliage and seeds, or graze the algae that coat the plants. Fish communities, from minnows to musky, live and feed in the shade and shelter of lake plants. They are linked to the otter and mink. Plants slow water movement and provide cover for eggs and offspring. They are meshed with the dragonflies and water beetles that are bound to frogs and turtles that are vital to herons and loons.

### THE ROLE OF AQUATIC PLANTS

- Ninety percent of a lake ecosystem depends on what happens in the littoral zone.
- Aquatic plants create a thriving habitat for animals.
- Aquatic plants filter runoff from uplands to protect lake water quality.
- Plant roots create networks that stabilize sediments at the water's edge where buffeting waves might otherwise erode the lakeshore.
- Plants are essential to the spawning success of many fish species.
- Plants provide shade and refuge for near shore animals.
- Plants photosynthesize, creating life-giving oxygen for the animals that live in the littoral zone.
- Submersed plants absorb phosphorus and nitrogen over their leaf surface and through their roots.
- Plant use nutrients, making them less available for nuisance algae.
- Native aquatic plants can limit aquatic invasive plant growth.
- Plants fruits and tubers provide food for mammals, waterfowl, insects and fish.

### Wisconsin's Philosophy

The waters of Wisconsin belong to all of us. Their management becomes a balancing act between the rights and demands of the public and those who own property on the water's edge. This legal tradition called the Public Trust Doctrine dates back hundreds of years in North America and thousands of years in Europe. Its basic philosophy with respect to the ownership of waters was adopted by the American colonies. The US Supreme Court has found that the people of each state hold the right to all their navigable waters for their common use, such as fishing, hunting, boating and the enjoyment of natural scenic beauty.

In deciding to manage aquatic plants, keep in mind this great trust and tradition...our actions affect all people who use the waters.

In addition to the public trust doctrine, two forces have converged that reflect our changing attitudes toward aquatic plants in Wisconsin. One is a growing realization of the importance of a strong, diverse community of aquatic plants in a healthy lake ecosystem. The other is a growing concern with the spread of Aquatic Invasive Species (AIS), such as Eurasian water milfoil. These two forces have been behind changes in our aquatic plant management laws and the evolution of stronger support for the control of invasive plants.

To some, these two issues may seem in opposition, but on closer examination they actually strengthen the case for developing an APM plan as part of your total lake management picture. Planning sounds like a lot of work, but a sound plan can have long-term benefits for your lake and your community.

The impacts of humans on our State's waters over the past five decades have caused Wisconsin to evolve a certain philosophy toward aquatic plant management. This philosophy stems from the recognition that aquatic plants have value in the ecosystem, as well as from the awareness that, sometimes, excessive growth of aquatic plants can lessen our recreational opportunities and our aesthetic enjoyment of lakes. In balancing these, sometimes competing objectives, the Public Trust Doctrine requires that the State be responsible for the management of fish and wildlife resources and their sustainable use to benefit all Wisconsin citizens. Aquatic plants are also recognized as a natural resource to protect, manage, and use wisely. To assure we do not harm the lake ecology, it is important that plant management is undertaken as part of a long range and holistic plan.

To promote the long-term sustainability of our lakes, the State of Wisconsin endorses the development of APM Plans and supports that work through various grant programs. In many cases, the State requires the development of long-term, integrated aquatic plant management strategies to identify important plant communities and manage nuisance aquatic plants in lakes, ponds or rivers. See *Chapters II and III* for more details.

There are many techniques for the management of aquatic plants in Wisconsin. Often management may mean protecting native plants by selectively hand pulling. Sometimes more intensive management may be needed such as using harvesting equipment, herbicides or biological control agents. These methods require permits and extensive planning.

While limited management on individual properties is generally permitted, it is widely accepted that a lake will be much better off if plants are considered on a whole lake scale. This is routinely accomplished by lake organizations or units of government charged with the stewardship of individual lakes.

## How Much Is Too Much...Is it Necessary to Manage the Plants?

There are two important questions to ask when planning aquatic plant management:

- 1) Do we really have nuisance levels of aquatic plants?
- 2) If we decide we do have a nuisance level, can we do anything to change the situation?

An important first step in the APM process is making sure there really is an issue with aquatic plants. Go through the following checklist. If you find you need more information, contact your DNR APM Coordinator (<http://dnr.wi.gov/water/wm/dsfm/shore/county.htm>).

<i>YES</i>	<i>NO</i>	<i>ASK YOURSELVES</i>
<input type="checkbox"/>	<input type="checkbox"/>	Do all user groups (anglers, bird watchers, water-skiers, etc) agree there are too many plants?
<input type="checkbox"/>	<input type="checkbox"/>	Are the plants limiting people's ability to use the lake for boating, fishing, swimming, etc?
<input type="checkbox"/>	<input type="checkbox"/>	Has this plant growth been increasing each year?
<input type="checkbox"/>	<input type="checkbox"/>	Is this plant growth a weather related anomaly?
<input type="checkbox"/>	<input type="checkbox"/>	Are the plants all of one species?
<input type="checkbox"/>	<input type="checkbox"/>	Have we found a new colony of aquatic invasive plants?
<input type="checkbox"/>	<input type="checkbox"/>	Are the plants changing the water's ecosystem in a negative way?

**DO WE REALLY HAVE  
A NUISANCE LEVEL  
OF PLANTS?**

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**If you and other lake users answered yes to many or all of these questions, you may consider taking action. Even if you have answered yes to many of these questions, there may not be much you can do, depending on the situation.**

<i>YES</i>	<i>NO</i>	<i>ASK YOURSELVES</i>	<b>CAN WE CHANGE THE CONDITIONS?</b>
<input type="checkbox"/>	<input type="checkbox"/>	Does the lake have a history of excessive plant growth?	
<input type="checkbox"/>	<input type="checkbox"/>	Is the lake shallow?	<i>Some lakes are prone to abundant plant growth. Shallow lakes, lakes with rivers running through them, lakes with dams, or lakes with large nutrient rich watersheds may have few viable remedies for abundant plant growth.</i>
<input type="checkbox"/>	<input type="checkbox"/>	Is there a dam on the lake? Is there a river running through the lake?	
<input type="checkbox"/>	<input type="checkbox"/>	Is there a large nutrient-rich watershed draining into our lake?	
<input type="checkbox"/>	<input type="checkbox"/>	Are the lakeshore neighbors willing to accept the work and financial costs necessary to manage the lake's aquatic plant community?	
<input type="checkbox"/>	<input type="checkbox"/>	Are we willing to accept the consequences of our actions, such as possibly encouraging more algal growth or an altered fishery with decreased plant growth?	
<hr/> <p>If you and other lake users answered yes to some or all of these questions, you may not be able to do much to curb plant growth. Some lakes are prone to abundant plant growth. Shallow lakes, lakes with rivers running through them, lakes with dams, or lakes with large nutrient rich watersheds may have few viable remedies for abundant plant growth.</p>			

## Aquatic Plant Laws and Rules

### *Who Is Affected?*

Anyone involved in aquatic plant management should be aware that a permit may be needed to remove, add or control aquatic plants. Groups that may get involved in aquatic plant management can include lake associations, lake districts, contractors offering herbicide or harvesting services, lake management consultants, persons planning plant restoration projects, those proposing water draw downs for plant control, or others managing, controlling or planting aquatic plants. In addition all persons using our state waters need to comply with the "Boat Launch Law" which deals with the transporting of aquatic plants on boat trailers and other equipment.

### **Laws**

In recent years, Wisconsin passed laws that represent some of the most significant changes to Wisconsin aquatic plant management in decades. Section 23.24 (<http://www.legis.state.wi.us/statutes/Stat0023.pdf>) of the Wisconsin State Statutes, relating to aquatic plants, required the Department of Natural Resources (DNR) to establish a program to, “Protect and develop diverse and stable communities of aquatic plants, regulate how aquatic plants are managed and provide education and conduct research on invasive aquatic plants.”

In a related action, Section 30.715 of the Wisconsin State Statutes was amended to state that "No person may place or use a boat or boating equipment, or place a boat trailer in navigable water if the person has reason to believe that the boat, boat trailer or boating equipment has any aquatic plants attached." The so-called “Boat Launch Law,” Section 30.715 of the Wisconsin Statutes, makes it illegal to launch watercraft or associated equipment if there are aquatic plants or zebra mussels attached. This law includes penalties under Section 30.175, which will result in forfeiture of \$120 for a first offense. Penalties under Section 23.24 include forfeiture up to \$200 for first time violations, and \$700 - \$2000 or prison time for second violations. The courts also have the ability to order restoration under this law (<http://www.legis.state.wi.us/statutes/Stat0030.pdf>).

### **Permits and Regulations**

There are two primary permit programs regulating how we manage aquatic plants in Wisconsin. One is the program that covers cutting and harvesting, under Administrative Code Chapter NR 109 (<http://www.legis.state.wi.us/rsb/code/nr/nr109.pdf>), titled "Aquatic Plants: Introduction, Manual Removal, and Mechanical Control Regulations." The other permit program covers chemical treatment under Administrative Code Chapter, NR 107 (<http://www.legis.state.wi.us/rsb/code/nr/nr107.pdf>), and is called "Aquatic Plant Management.”

The Administrative Code Chapters NR 107 and NR 109 establish the criteria for the permit program authorized by the law. Nearly all activities used to control or manage aquatic plants require a permit. There are two general exemptions from permit requirements. One is for individuals who use manual methods to remove vegetation from an area not wider than 30 feet (the manual removal zone). This zone extends directly out from a use area such as a dock or swim area (see figure below). Manual removal means plant removal accomplished by a person's own muscle power, which could include using a rake or hand cutting tool. Another exemption is allowed for manual removal of aquatic invasive species from the shoreline of a riparian owner when these plants are removed in a manner that does not damage or eliminate native species. No person may intentionally introduce these plants into the waters in the state of Wisconsin. In addition, anyone cutting or raking plants of any species must remove the plants from the lake and shoreline.

*Nearly all activities used to control or manage aquatic plants require a permit.*

*Where wild rice may be present, advice on whether a permit is required should be obtained from your DNR APM Specialist.*

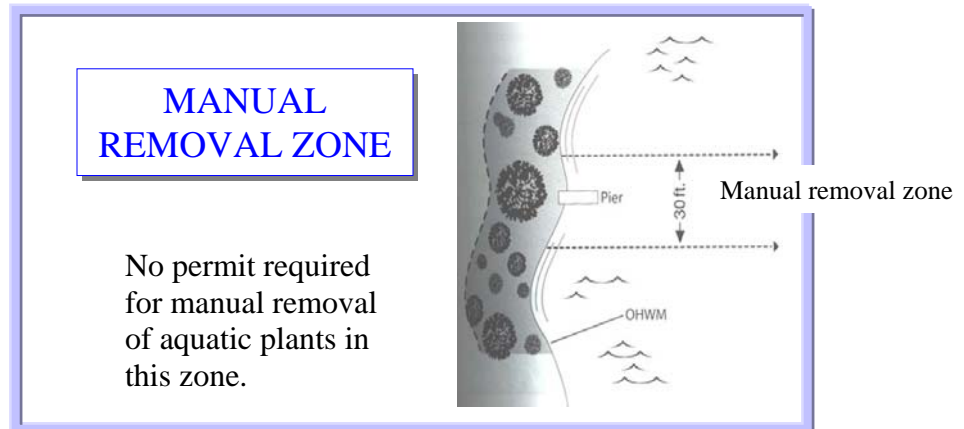


Figure 1

Chapter 109 also provides special protection for certain plants, including wild rice. Where wild rice may be present, advice on whether a permit is required should be obtained from your DNR APM Coordinator (<http://dnr.wi.gov/org/water/wm/dsfm/shore/county.htm>). This protection is particularly important under established treaty obligations designed to assure wild rice is managed for its cultural and ecological importance in northern Wisconsin.

Any manual removal outside the manual removal zone, mechanical removal and any use of chemical herbicides require a permit. The permit may specify the quantity of plants, species, locations, methods, times and disposal methods for managing aquatic plants in your lake. Permit fees will be established based on size of the proposed project. Fees will range from \$30 to \$300 for harvesting, and from \$20 to \$1,270 for chemical treatment. Other methods that require a permit include biological controls, draw down, bottom coverings, and various plant removal devices. One type is designed to attach to docks or be placed on the bottom and operate automatically. These devices are permitted under Chapter 30, but rarely approved.

**The DNR may specify any of the following as conditions of a harvesting or chemical permit:**

**THINGS TO CONSIDER WHEN APPLYING FOR A PERMIT**

- The quantity of plants that may be managed
- The method that may be used for management
- The species that may be managed
- The methods used for disposal of harvested aquatic plants
- The areas that will be managed
- The time that management will take place

### ***Chemicals***

The use of chemicals in the waters of Wisconsin always requires a permit from the DNR under NR 107.05. Whether a permit will be granted or not, hinges on many complex factors. Consider the following list if you are thinking about chemical use. Meeting these criteria does not mean you will receive a permit, but the following questions should be considered as part of any APM plan.

**These are some of the criteria used by Wisconsin DNR to evaluate a chemical application permit NR 107.05\***

**CAN WE USE  
CHEMICALS?**

- The chemical is registered with the State of Wisconsin.
- There is a current department of aquatic chemical fact sheet.
- The chemical will provide nuisance relief, and not place unreasonable restrictions on existing water uses.
- The chemical will not cause a hazard to humans, animals or other non-target organisms.
- The chemical application is part of an APM plan.
- The chemical will not significantly injure fish, fish eggs, fish larvae, essential fish food organisms or wildlife, either directly or indirectly through habitat destruction.
- The chemical will not be applied in a location known to have endangered or threatened species.
- The chemical will not be applied in locations identified by the Department of Natural Resources (DNR) as sensitive areas\*, unless the applicant can demonstrate to the satisfaction of the DNR that treatments can be conducted in a manner that will not alter the ecological character or reduce the ecological value of the area.
- The chemical will not be used in waters beyond 150 feet from shore except where approval is given by the DNR to maintain navigation channels, piers or other facilities used by organizations or the public, including commercial facilities.

*\*(Sensitive areas are areas of aquatic vegetation identified by the DNR as offering critical or unique fish and wildlife habitat, including seasonal or life stage requirements, or offering water quality or erosion control benefits to the water body.)*

***Remember: New applications will be reviewed with consideration given to the cumulative effect of applications already approved for the body of water.***

\*\*For complete details, link to the Wisconsin Administrative Code NR 107 (<http://www.legis.state.wi.us/rsb/code/nr/nr107.pdf>)



### ***Harvesting***

The use of mechanical harvesting in the waters of Wisconsin always requires a permit from the DNR under NR 109. Whether a permit will be granted or not, hinges on many factors. Consider the following list if you are thinking about harvesting as a tool to manage plants. Meeting these criteria does not mean you will receive a permit, but the following questions should be considered as part of any APM plan.

**These are some of the criteria used by Wisconsin DNR to evaluate a harvesting permit under NR 109.05\*\*:**

**CAN WE  
HARVEST?**

- Are the aquatic plants impairing water use activities?
- Will the harvesting remedy water use impairments?
- Will the harvesting cause a hazard to humans?
- Will the harvesting cause significant adverse impacts to threatened or endangered resources?
- The harvesting is part of an APM plan.
- The method you intend to use to report your activities
- Will the harvesting adversely affect water quality, aquatic habitat or the aquatic community, including the native aquatic plant community?
- Is the harvesting in locations identified by the DNR as sensitive areas\*? (If so, the applicant must demonstrate to the satisfaction of the DNR that treatments can be conducted in a manner that will not alter the ecological character or reduce the ecological value of the area.)
- Will the harvesting cause significant adverse long-term or permanent changes to a plant community or a high value species in a specific aquatic ecosystem?
- Will harvesting impact wild rice beds?

*\*Sensitive areas are areas of aquatic vegetation identified by the DNR as offering critical or unique fish and wildlife habitat, including seasonal or life stage requirements, or offering water quality or erosion control benefits to the water body.*

***Remember: New applications will be reviewed with consideration given to the cumulative effect of management activities already approved for the body of water.***

\*\*For complete details, link to the Wisconsin Administrative Code NR 109 (<http://www.legis.state.wi.us/rsb/code/nr/nr109.pdf>)

Permits for mechanical harvesting and chemical treatments will be issued annually, unless an approved APM plan is in place for your lake. Multi-year permits for harvesting may be issued with an approved APM plan. The DNR will evaluate APM plans in terms of scientific base and feasibility. Reviewing the goals of your aquatic plant management plan will help prevent mistakes in managing lakes that may be costly, ineffective or possibly harmful to the lake ecosystem. With this review in mind it is up to the community to decide what methods are most practical and feasible.

## Goals

### ***Planning as Part of a Permit***

Developing an APM plan is highly recommended, and may be required, as part of your application for a permit. An APM plan may be developed as a “stand alone” management plan or as part of a comprehensive lake management plan. It is always sound management to think of a lake as a whole when planning. Doing small pieces of plant management around the lake with no thought toward the cumulative impacts can lead to unforeseen consequences.

Objectives that may lead you to prepare an aquatic plant management plan can include:

- Protection—preventing the introduction of nuisance or invasive species into waters where these plants are not currently present;
- Maintenance—continuing the patterns of recreational use that have developed historically on and around a lake;
- Rehabilitation—controlling an imbalance in the aquatic plant community leading to the dominance of a few plant species, frequently associated with the introduction of invasive nonnative species.

## Techniques

An aquatic plant management plan is desirable, and may be required when conducting aquatic plant management activities over larger areas of the lake or contemplating whole-lake treatments, especially if you are considering:

- Mechanical harvesting
- Application of chemical herbicides
- Aquatic plant introduction
- Water level manipulations
- Use of Biological controls such as Eurasian water-milfoil weevils.

NOTE: The use of grass carp or rusty crayfish as biological control agents in Wisconsin is strictly prohibited.

## Wisconsin Stewardship and APM

You may be wondering why you should be required to get a permit and may be required to have a plan to remove aquatic plants from public waters. In deciding to manage aquatic plants that grow in our waters, keep in mind Wisconsin's great public trust and tradition. Our actions affect not only us, but also all people who use the waters.

Wisconsin has developed and adopted statutes regulating aquatic plant management in Wisconsin. The state has recognized that aquatic plants are an important resource, fundamental to the ecological health of our waterways. The state also recognizes the need to assist communities in managing aquatic plants, and has created grant programs to subsidize local costs.

Permit costs may seem high at the local level, but they are only a small portion of the total cost of aquatic plant management. The permit dollars assist in supporting Wisconsin's aquatic plant program and the specialists who work with communities to manage aquatic plants. Consider this, through permit fees, you're investing in your lake's future – like any investment, it requires initial finances to promote a good return. Your lake communities' support and investment of time, talents and dollars is fundamental to the work that will assure our public that fresh water lakes remain rich, diverse centers of aquatic life for generations to come.

Many lakes develop annual aquatic plant management budgets that range from thousands to tens of thousands of dollars to improve recreational conditions on lakes. With such a large investment, it makes sense to have a well thought out plan to assure the money is spent wisely, and the lake and its users benefit.

**The people of Wisconsin  
thank you for your stewardship.**