Oconto County Lakes Project

DRAFT_031025

MOODY LAKE MANAGEMENT PLAN

2025

VISION

Moody Lake will remain a quiet Northwoods lake where lazy lake days and family traditions come together.

Moody Lake Management Plan

The authors would like to acknowledge the commitment and enthusiasm of Oconto County Lakes & Waterways Association, Oconto County Land and Water Conservation Department, UW Extension – Oconto County, Wisconsin Department of Natural Resources, UW-Stevens Point Water and Environmental Analysis Laboratory, the Moody Lake Area Association, landowners in the Moody Lake watershed, and participants in the Oconto County Lakes Project.

This plan was prepared by the Center for Watershed Science and Education at University of Wisconsin – Stevens Point.

Along with the Oconto County Lakes Project participants, the following individuals and organizations contributed to the content of this plan.

Moody Lake Planning Participants

Suring Lee
Randy Bialcik
Mary Schaeffer
Gilberto Rivas
Randy Bialcik, Jr.
Tracy Wymelenberg
Douglas DeNicola
Karen Bialcik
D Dark

Technical Contributors to the Planning Process

Dale Mohr, UW-Extension - Oconto County

Ken Dolata, Oconto County Land & Water Conservation Department

Brenda Nordin, Wisconsin Department of Natural Resources

Tammie Paoli, Wisconsin Department of Natural Resources

Ryan Haney, UWSP Center for Watershed Science and Education

Sarah Hull, UWSP Center for Watershed Science and Education

Paul McGinley, UWSP Center for Watershed Science and Education

Table of Contents

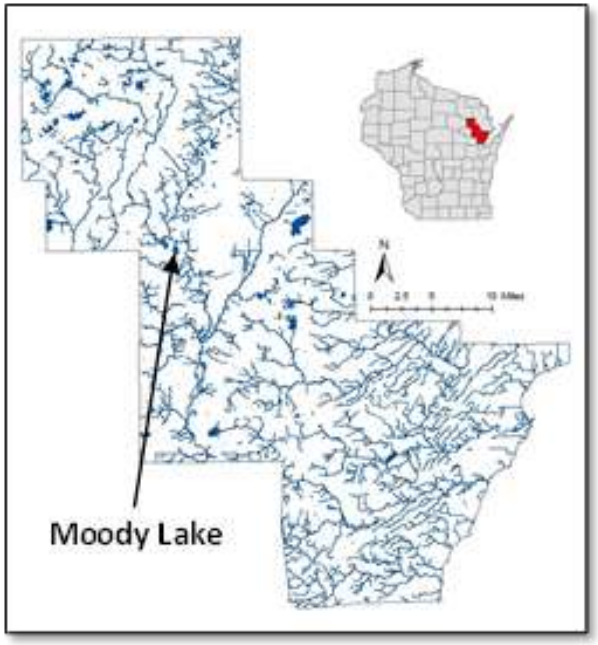
TABLE OF CONTENTS

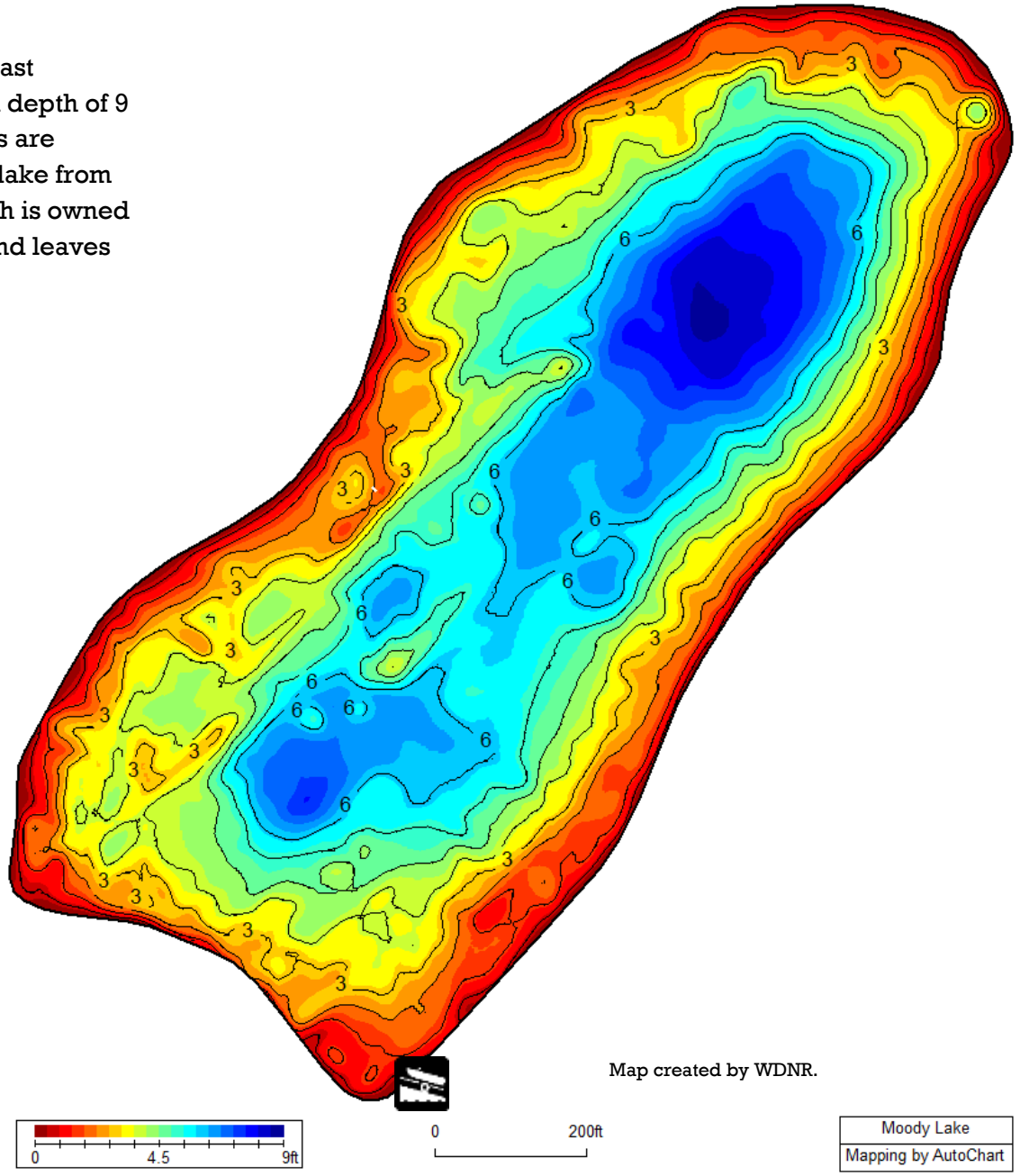
Resource	Acronym or Truncated Name
Citizen Lake Monitoring Network	CLMN
Clean Boats Clean Waters	CBCW
Lumberjack Resource Conservation & Development Council	LRCD
Moody Lake Area Association	MLAA
Oconto County Land & Water Conservation Dept.	OC LCD
Oconto County Board of Supervisors	OC Board
Oconto County Lakes and Waterways Association	OCLAWA
Town of Breed	TOB
University of Wisconsin - Extension	UWEX
UWSP Water & Environmental Analysis Laboratory	WEAL
UWSP Center for Watershed Science and Education	CWSE
USDA Natural Resources Conservation Service	NRCS
Wisconsin Department of Natural Resources	WDNR
Wisconsin Department of Transportation	WDOT

Background

ABOUT MOODY LAKE

Moody Lake is located in the Town of Breed, in northeast Wisconsin. This 22-acre seepage lake has a maximum depth of 9 feet with moderately clear water. Its bottom sediments are primarily muck with sand. Visitors have access to the lake from one public boat landing on the lake's south side, which is owned and maintained by the Town of Breed. Water enters and leaves Moody Lake primarily through groundwater.





Map created by WDNR.

What Is A Lake Management Plan?

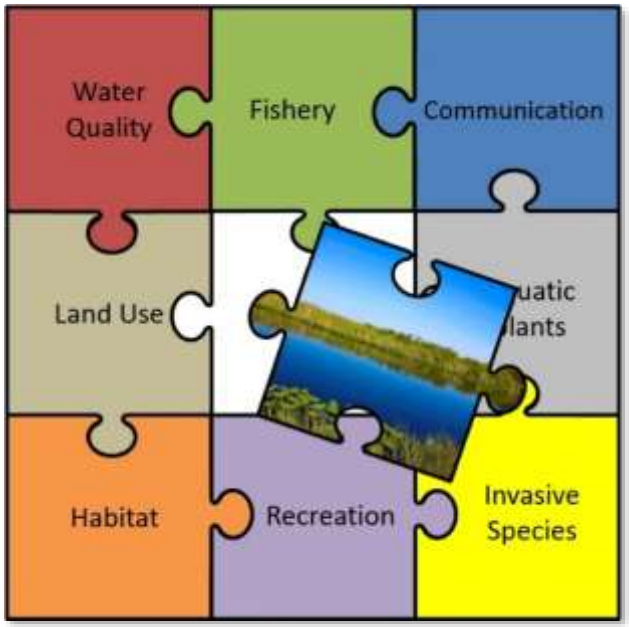
LAKE MANAGEMENT PLANS (LMP)

What is an LMP?

A management plan is a living document that changes over time to meet the current needs, challenges and desires of the lake and its community. Although each lake is different, the WDNR requires that each comprehensive lake management plan addresses a specific list of topics affecting the character of the lake, whether each topic has been identified as a priority, or as simply something to consider. In this way, every LMP considers the many aspects associated with lakes.

What is the purpose of this LMP?

This plan was created to ensure that Moody Lake is healthy now and for future generations. It was designed to learn about Moody Lake and identify features important to the Moody Lake community, in order to provide a framework for the protection and improvement of the lake.



Implementing the content of this LMP will enable citizens and others to work together to achieve the vision for Moody Lake now and in the years to come. It is a dynamic document that identifies goals and action items for the purpose of maintaining, protecting and/or creating desired conditions in the lake and identifies steps to correct past problems, improve on current conditions, and provide guidance for future boards, lake users, and technical experts.

Because many entities are involved in lake and land management, it can be challenging to navigate the roles, partnerships and resources that are available. The planning process and content of this plan have been designed to identify where some key assistance exists. The actions identified in this LMP can serve as a gateway for obtaining grant funding and other resources to help implement activities outlined in the plan.

How Was This Plan Created?

ABOUT THIS PLAN

One of the first steps in creating this plan was to gather and compile data about the lake and its ecosystem to understand past and current conditions. This was done in 2022-2023 alongside 5 other lakes as part of the Oconto County Lakes Project. The project was initiated by citizens in the Oconto County Lakes and Waterways Association who encouraged Oconto County to prioritize lake interests. This effort led to funding from the WDNR Lake Protection Grant Program. There was insufficient data available for many of the lakes to evaluate current water quality, aquatic plant communities, invasive species, and shorelands. The data that were available had been collected at differing frequencies or periods of time, making it difficult to compare lake conditions. Professionals and students from UW-Stevens Point, Oconto County Land Conservation Department, UW Extension, Oconto County citizens and WDNR staff collected the data for use in the development of lake management plans. Sources of information used in the planning process are listed at the end of this document.

Reports from the Moody Lake Study and the materials associated with the planning process and reports can be found on the Oconto County website: **www.co.oconto.wi.us** and navigating to Departments>Land Conservation>County Waterways>County-wide Lake Study.

THE PLANNING PROCESS

Who created the strategic plan?

This plan is the result of a stakeholder-driven effort which involved many partners combining insight, knowledge, and expertise throughout the process. Area residents, lake users, and representatives of local municipalities gathered at public meetings held on March 22, 2022 and on March 5, 2025 via an online platform to learn from one another and make decisions about the fishery, water quality, habitat, and land management in the Moody Lake watershed. Technical assistance during the planning process was provided by staff from OCLCD, UWEX, WDNR, and the CWSE.

How were various opinions incorporated?

Participation in the planning process was open to everyone and was encouraged by letters mailed to Moody Lake waterfront property owners and by press releases in local newspapers. In addition, those individuals and organizations who provided their information were provided with emails about upcoming meetings, which could be forwarded to additional contact lists. To involve and collect input from as many people as possible, including those who might not be able to attend the public meetings, an online survey was conducted. Property owners and interested lake users were notified about the survey and how to access it via direct mailings to waterfront property owners and associated lake organizations and press releases in local newspapers. The surveys could be filled out anonymously online, or paper copies were available upon request. Survey questions and responses were shared at the planning sessions and can be found in the Appendix.

How Is This Management Plan Used?

Who will use this plan?

- **Individuals:** Individuals can use this plan to learn about the lake they love and their connection to it. People living near the lake can have the greatest influence on the lake by understanding and choosing lake-friendly options to manage their land and the lake.
- **Moody Lake Area Association:** This plan provides an association with guidance for the whole lake and lists options that can easily be prioritized. Resources and funding opportunities for lake management activities are made more available by placement of goals into the lake management plan, and the association can identify partners to help achieve their goals for the lake.
- **Neighboring lake groups, sporting and conservation clubs:** Groups with similar goals for lake stewardship can combine their efforts and provide each other with support, improve competitiveness for funding opportunities, and make efforts more fun.
- **The Town of Breed:** Municipalities can utilize the visions, objectives, and goals documented in this lake management plan when considering town-level planning or decisions within the watershed that may affect the lake.
- **Oconto County:** County professionals will better know how to identify needs, provide support, base decisions, and allocate resources to assist in lake-related efforts documented in this plan. This plan can also inform county board supervisors in decisions related to Oconto County lakes, streams, wetlands, and groundwater.
- **Wisconsin Department of Natural Resources (WDNR):** Professionals working with lakes in Oconto County can use this plan as guidance for management activities and decisions related to the management of the resource, including the fishery, and invasive species. LMPs help them to identify and prioritize needs, and where to apply resources. A well thought out lake management plan increases an application's competitiveness for funding from the State.

Who can help implement this plan?

Lead persons and resources are identified under each action in this plan. These individuals and organizations are able to provide information, suggestions, or services to achieve goals. The following table lists organization names and their common acronyms used in this plan. This list should not be considered all-inclusive – assistance may also be provided by other entities, consultants, and organizations.

Management Plan Structure

GOALS FOR MOODY LAKE

The foundation of any effective strategic plan is clear identification of goals and the steps needed to achieve the goals. The selected goals should achieve the overall vision for Moody Lake. This plan also identifies available resources within each objective.

The topics comprise the chapters in this plan and have been grouped as follows:

In-Lake Habitat and a Healthy Lake

Fish Community—fish species, abundance, size, important habitat and other needs

Aquatic Plant Community—habitat, food, health, native species, and invasive species

Critical Habitat—areas of special importance to the wildlife, fish, water quality, and aesthetics of the lake

Landscapes and the Lake

Water Quality—water chemistry, clarity, contaminants, lake levels

Shorelands—habitat, erosion, contaminant filtering, water quality, vegetation, access

Watershed—land use, management practices, conservation programs

People and the Lake

Recreation—access, sharing the lake, informing lake users, rules

Communication and Organization—maintaining connections for partnerships, implementation, community involvement

Updates & Revisions—plan for maintaining a living document

Moody Lake Management Plan Goals

Goals for Moody Lake

The following goals and actions were derived from the values and concerns of citizens interested in Moody Lake and members of the planning committee, as well as the known science about Moody Lake, its ecosystem and the landscape within its watershed.

Implementing and regularly updating the goals and actions in this plan will ensure that the vision is supported and that changes are incorporated into the plan.

LIST OF GOALS

Goal 1	**The fishery in Moody Lake will be healthy, well-balanced and self-sustaining.**
Goal 2	**Moody Lake will have a healthy, diverse aquatic plant community free of invasive species that provides essential habitat and good water quality.**
Goal 3	**Sensitive areas in Moody Lake, which provide essential habitat and/or water quality benefits, will be protected.**
Goal 4	**Property owners in the Moody Lake watershed will be aware of their connection to the lake and implement healthy land management practices.**
Goal 5	**Shorelands around Moody Lake will be healthy and protective of water quality and habitat. Over the next 5 years, at least 500 feet of mowed shoreline (at least 7-10 properties) will be restored.**
Goal 6	**Maintain or improve water quality in Moody Lake.**
Goal 7	**Lake users will be informed about and respectful of Moody Lake.**
Goal 8	**Increase participation in lake stewardship.**
Goal 9	**Review plan regularly and update as needed.**

Fish Community

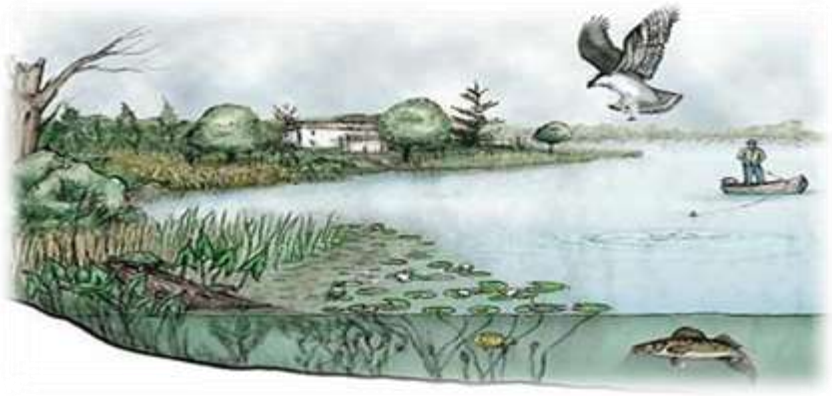
IN-LAKE HABITAT AND A HEALTHY LAKE

The health of one part of the lake system affects the health of the rest of the plant and animal community, the experiences of the people seeking pleasure at the lake, and the quality and quantity of water in the lake. Habitat is the structure for a healthy fishery and wildlife community. It can provide shelter for some animals and food for others. Many animals that live in and near the lake are only successful if their habitat needs are met.

What is lake-habitat?

Healthy lake-habitat in Moody Lake includes native aquatic plants and shoreland vegetation, as well as tree branches/limbs above and below the water.

Habitat exists within the lake, along the shoreland, and even extends into its watershed for some wildlife species. Native vegetation (including wetlands) along the shoreline and connected to the lake provides shelter and food for waterfowl, small mammals, turtles, frogs, and fish. Native plants in and near the lake can also improve water quality and balance water quantity. Aquatic plants infuse oxygen into the water, which is essential for the fish community. Some lake visitors such as birds, frogs, and turtles use limbs from trees that are sticking out of the water for perches or to warm themselves in the sun. The types and abundance of plants and animals that comprise the lake



community also vary based on the water quality, and the health and characteristics of the shoreland and watershed.

The Fish Community

A balanced fish community has a mix of predator and prey species, each with different food, habitat, nesting substrate, and water quality needs to flourish.

What can affect the fishery?

Activities in and around a lake that can affect a fishery include:

- disturbances to the native aquatic plant community or substrate,
- excessive additions of nutrients or harmful chemicals,
- removal of woody habitat,
- shoreline alterations,
- shoreland erosion can cause sediment to settle onto the substrate, causing the degradation of spawning habitat.

What People Value about Moody Lake

Great weekend getaway.
Location and the land is flat.
Viewing animals and waterfowl.
It's quiet.

Habitat provides shelter and food for fish and wildlife.

Fish Community

Can the fishery be improved?

Managing a lake for a balanced fishery can result in fewer expenses to lake stewards and the public. While some efforts may be required to provide a more suitable environment to meet the needs of the fish, they usually do not have to be repeated on a frequent basis. Ideally, a lake contains the habitat, water quality, and food necessary to support the fish communities present within the lake and provide fishing opportunities for people without a lot of supplemental effort and associated expenses to maintain these conditions.

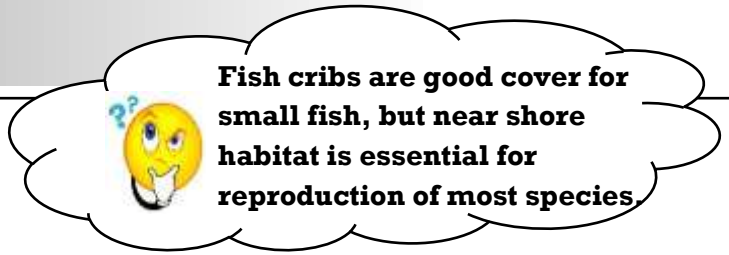
- Protecting existing habitat such as emergent, aquatic, and shoreland vegetation, and allowing trees that naturally fall into the lake to remain in the lake, are free of cost.
- Restoring habitat in and around a lake can have an up-front cost, but the effects will often continue for decades.
- Costs in time, travel, and other expenses are associated with routine efforts such as fish stocking and aeration.

Year	Species	Age Class	# Stocked	Length (in)
2024	Largemouth Bass	Yearling	350	6
	Bluegill	Adult	300	6
2015	Largemouth Bass	Yearling	100	6
	Gr. Sunfish x Bluegill	Yearling	200	4.5
	Yellow Perch	Yearling	175	5
2006	Bluegill	Adult	200	4
	Yellow Perch	Adult	200	6
	Fathead Minnow	Adult	15000	1
	Walleye	Yearling	110	7
2001	Northern Pike	Large Fingerling	36	7.3

Moody Lake Fish Management History

- ✓ Classified as 'simple, harsh, no fishery'
- ✓ Some stocking by lake group
- ✓ Aerator installed in 1999
- ✓ Fish kill in September 2016, late summer kill.

Fish Community



	Moody Lake - September 2016		
Common Name Of Fish	Number	Average Length (inches)	Length Range (Inches)
Largemouth Bass	11	4.5	3.2 – 8.2
Black Crappie	6	6.1	5.8 – 6.3
Yellow Perch	2	6.3	6.3 – 6.4
Total	**19**		

Moody Lake Fish Survey Results

- Boomshocker survey on October 31, 2016. No other surveys on file.
- 19 total fish caught.
- Concluded that fish kill was related to low dissolved oxygen, but fortunately was not a complete kill.

Goal 1. The fishery in Moody Lake will be healthy, well-balanced and self-sustaining.

Objective 1.1 Manage for a healthy balance of predator and panfish populations.

Actions	Lead person/group	Resources	Timeline
Encourage catch-and-release for largemouth bass.		WDNR-Tammie Paoli	Ongoing

Objective 1.2 Continue to enhance fish and wildlife habitat in and around the lake.

Actions	Lead person/group	Resources	Timeline
Monitor winter dissolved oxygen concentrations. A DO meter can be borrowed from OCLCD.		OCLCD WDNR-Brenda Nordin	Winters
If DO concentrations indicate a problem, or if additional fish kills occur, consider different schedule or aerator.		WDNR-Tammie Paoli	As needed
Continue to identify and support landowners interested in fish sticks (at least 10% of properties with fish sticks is recommended).		WDNR-Tammie Paoli	Ongoing
Educate and encourage landowners to leave logs, tree branches, and limbs in place in the water, whenever possible.		WDNR-Tammie Paoli UWEX-Pat Goggin	Ongoing
Continue to protect and restore shoreland areas and avoid shoreland alterations to improve fish habitat (see **Shorelands** section).		Shoreland property owners	Ongoing

Aquatic Plant Community

Native plants provide essential food and habitat for fish and wildlife.

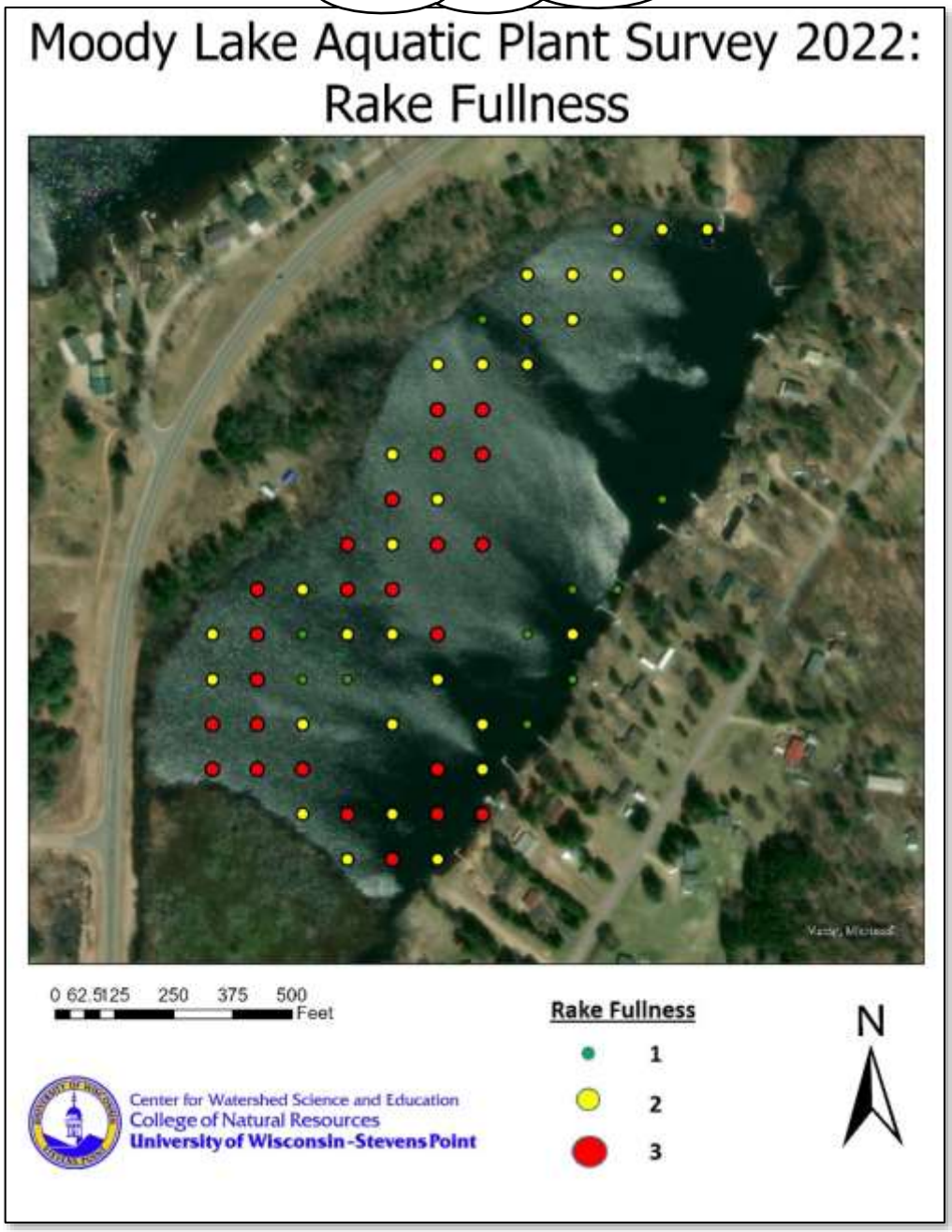
Aquatic Plants

Aquatic plants provide the forested landscape within Moody Lake. They provide food and habitat for spawning, breeding, and survival for a wide range of inhabitants and lake visitors including fish, waterfowl, turtles, amphibians, as well as invertebrates and other animals. They improve water quality by releasing oxygen into the water and utilizing nutrients that would otherwise be used by algae. A healthy lake typically has a variety of aquatic plant species, which makes the aquatic plant community more resilient and can help to prevent the establishment of non-native aquatic species. Additionally, they stabilize the bottom sediment and help filter out the suspended sediment from the water column.

Aquatic plants near shore and in shallows provide food, shelter, and nesting material for shoreland mammals, shorebirds and waterfowl. It is not unusual for otters, beavers, muskrats, weasels, and deer to be seen along a shoreline in their search for food, water or nesting material. Aquatic plants also serve as indicator species for environmental stressors that could be occurring in a lake or river, such as a runoff event.

Moody Lake 2022 Aquatic Plant Survey Highlights

- ✓ The aquatic plant community is characterized by below average diversity of plant species with a total of 6 species observed. The FQI was 16.3.
- ✓ 61% of sites visited has vegetative growth. The maximum depth of plants was 8 feet.
- ✓ The most frequently encountered species were watershield (89%), large purple bladderwort (71%).
- ✓ No invasive species were observed.



Aquatic Plant Community

Watershield has floating leaves with their distinctive jelly-like slime on the undersides and stems. While providing shade and shelter for aquatic animals and food for waterfowl, the plants secrete a number of chemicals that kill or inhibit growth of bacteria, algae, and other plants. Native Americans reportedly ate its tuberous roots.

Large purple bladderwort is a carnivorous plant that forms tiny bladder-like traps capable of capturing small organisms. Primarily a submergent, it occurs in soft, quiet waters with small emergent purple flowers in late summer.

Aquatic Invasive Species (AIS)

Aquatic invasive species are non-native aquatic plants and animals that are most often unintentionally introduced into lakes by lake users. This commonly occurs on trailers, boats, equipment, and from the release of bait. In some lakes, aquatic invasive plant species can exist as a part of the plant community, while in other lakes populations explode, creating dense beds that can damage boat motors, make areas non-navigable, inhibit activities like swimming and fishing, and disrupt the lakes' ecosystems.

No invasive species were observed during the 2022 survey. However, **Chinese mystery snails** were documented in Moody Lake in 2016. Not a lot is known about the impacts of this species, but they have been shown to compete with native populations of snails and possibly serve as a vector for parasites and disease.

A point-intercept survey per the DNR protocol is recommended every 5 years to detect changes in the plant community and detect any AIS.

Aquatic Plant Management in Moody Lake

Management strategies in Moody Lake were designed to achieve a balance between healthy aquatic habitat, good water quality, and eradication of invasive species.

Management Options for Invasive Species or Nuisance Native Aquatic Plants

Management options that offer the most practical and effective approaches for managing invasive species or nuisance native plants, while minimizing impacts to Moody Lake as a whole, have been identified. Depending upon conditions, the following options may be used alone or in combination with others.

Hand-pulling. No permit required.

Hand-pulling is the preferred method for removing invasive species. Additionally, lakefront property owners are allowed to manually remove native aquatic plants from an area up to 30 feet wide without a permit for swimming and boat access (this does not include the excavation or removal of any bottom sediments). Any denuded lakebed is prime real estate for invasive species, however, and close monitoring is necessary to ensure no populations are established.

Aquatic Plant Management Plan Review

A good aquatic plant management plan strategy should reduce the amount of management activity needed as time goes on. In Moody Lake, a series of successful strategies (integrated plant management) should lead to a balance between healthy aquatic habitat, water quality, and recreation with minimal annual management.

Goal 2. Moody Lake will have a healthy, diverse aquatic plant community free of invasive species that provides essential habitat and good water quality.

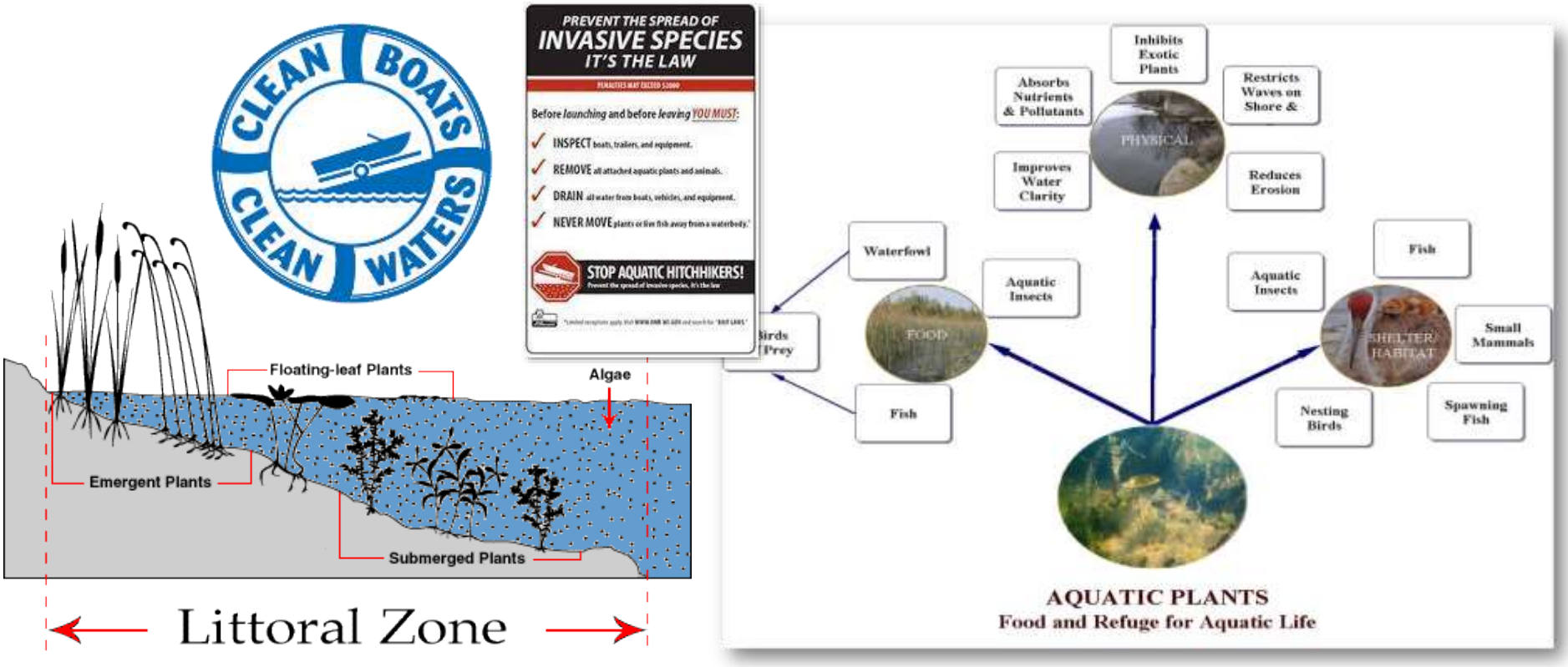
Objective 2.1 Minimize disturbance to native aquatic plants.

Actions	Lead person/group	Resources	Timeline
Inform property owners of the importance of native aquatic vegetation to impede the establishment of AIS, provide food and habitat for wildlife, and protect the shoreline by sending educational materials and/or newsletter.		WDNR-Brenda Nordin	Ongoing
Encourage landowners to limit plant removal to invasive species or skimming off those that have become unrooted and free-floating. If plants severely impede access, consider hand-pulling small areas around private docks (within WDNR guidelines). Cleared lakebed is ideal habitat for AIS to become established, so be vigilant about watching for AIS in these areas.		WDNR-Brenda Nordin	Ongoing
Regularly monitor aquatic plant community to detect any changes in lake conditions and ensure stable populations. A point-intercept survey is recommended.		WDNR-Brenda Nordin Consultants	Every 10 years if no active plant management taking place
Reduce nutrient and sediment loading to lake (to limit abundance of plants and algae) by improving shoreland buffers (see **Shoreands** section) and implementing BMPs in the watershed (see **Watershed** section).		WDNR-Brenda Nordin OCLCD	Ongoing

Aquatic Plant Community

Objective 2.2 Protect against establishment of aquatic invasive species.

Actions	Lead person/group	Resources	Timeline
Encourage or host training to identify and look for invasive species, particularly EWM.		WDNR-Brenda Nordin LRCD	Ongoing
Identify Clean Boats Clean Waters volunteers or hire someone to staff boat launch on busy days. This can be paid for with a CBCW grant.		CBCW	Ongoing
Educate landowners on importance of native aquatic plants for preventing AIS. Host a speaker or mail literature to property owners.		WDNR-Brenda Nordin	Ongoing
If new AIS is suspected or observed, follow the guidance in **Appendix B**.		WDNR-Brenda Nordin	Ongoing



Critical Habitat

Every waterbody has areas that are most important to the overall health of the lake.

Critical Habitat

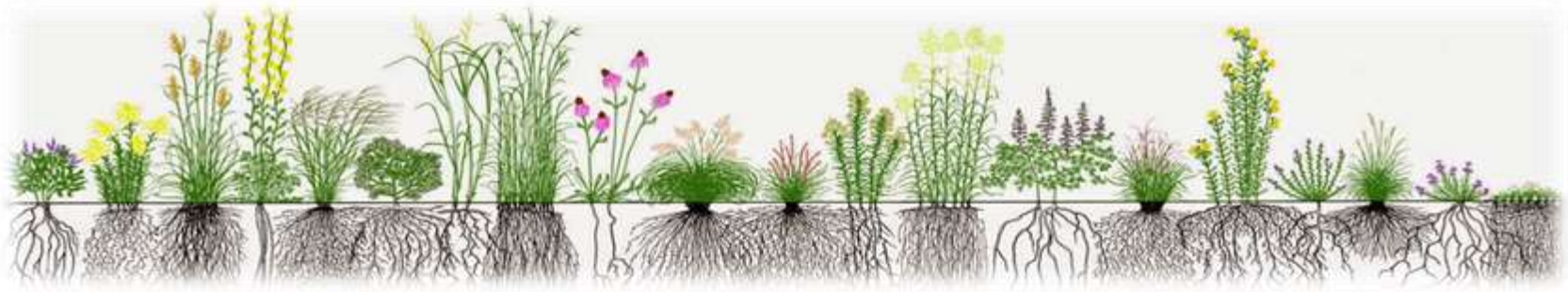
Special areas harbor habitat that is essential to the health of a lake and its inhabitants. In Wisconsin, critical habitat areas are identified by biologists and other lake professionals from the WDNR in order to protect features that are important to the overall health and integrity of the lake, including aquatic plants and animals. While every lake contains important natural features, not all lakes have official critical habitat designations. Designating areas of the lake as critical habitat enables these areas to be located on maps and information about their importance to be shared. Having a critical habitat designation on a lake can help lake groups and landowners plan waterfront projects that will minimize impact to important habitat, ultimately helping to ensure the long-term health of the lake.

Although Moody Lake does not have an official critical habitat area designation, there are areas within Moody Lake that are important for fish and wildlife. Natural, minimally-impacted areas with woody habitat such as logs, branches, and stumps; areas with emergent and other forms of aquatic vegetation; areas with overhanging vegetation; and wetlands are elements of good quality habitat. Identifying other important areas around the lake that are important habitat and informing lake users of their value can help raise awareness for the protection of these areas.

Goal 3. Sensitive areas in Moody Lake, which provide essential habitat and/or water quality benefits, will be protected.

Objective 3.1 Identify and inform others of quality habitat areas in and around Moody Lake.

Actions	Lead person/group	Resources	Timeline
Request a Critical Habitat Designation from WDNR.		WDNR-Brenda Nordin	2022
If critical habitat is identified, communicate to property owners, visitors, and Town Board as to why these areas are important. Look for opportunities to protect these areas.			TBD



Watershed

LANDSCAPES AND THE LAKE

Moody Lake Watershed

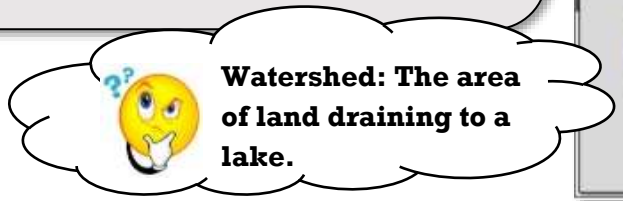
A Lake is a Reflection of its Watershed…

Understanding where Moody Lake's water originates is important to understanding lake health. During snowmelt or rainstorms, water moves across the surface of the landscape (runoff) towards lower elevations such as lakes, streams, and wetlands. This area is called the watershed. Groundwater also feeds Moody Lake; its land area may be slightly different than the surface watershed.

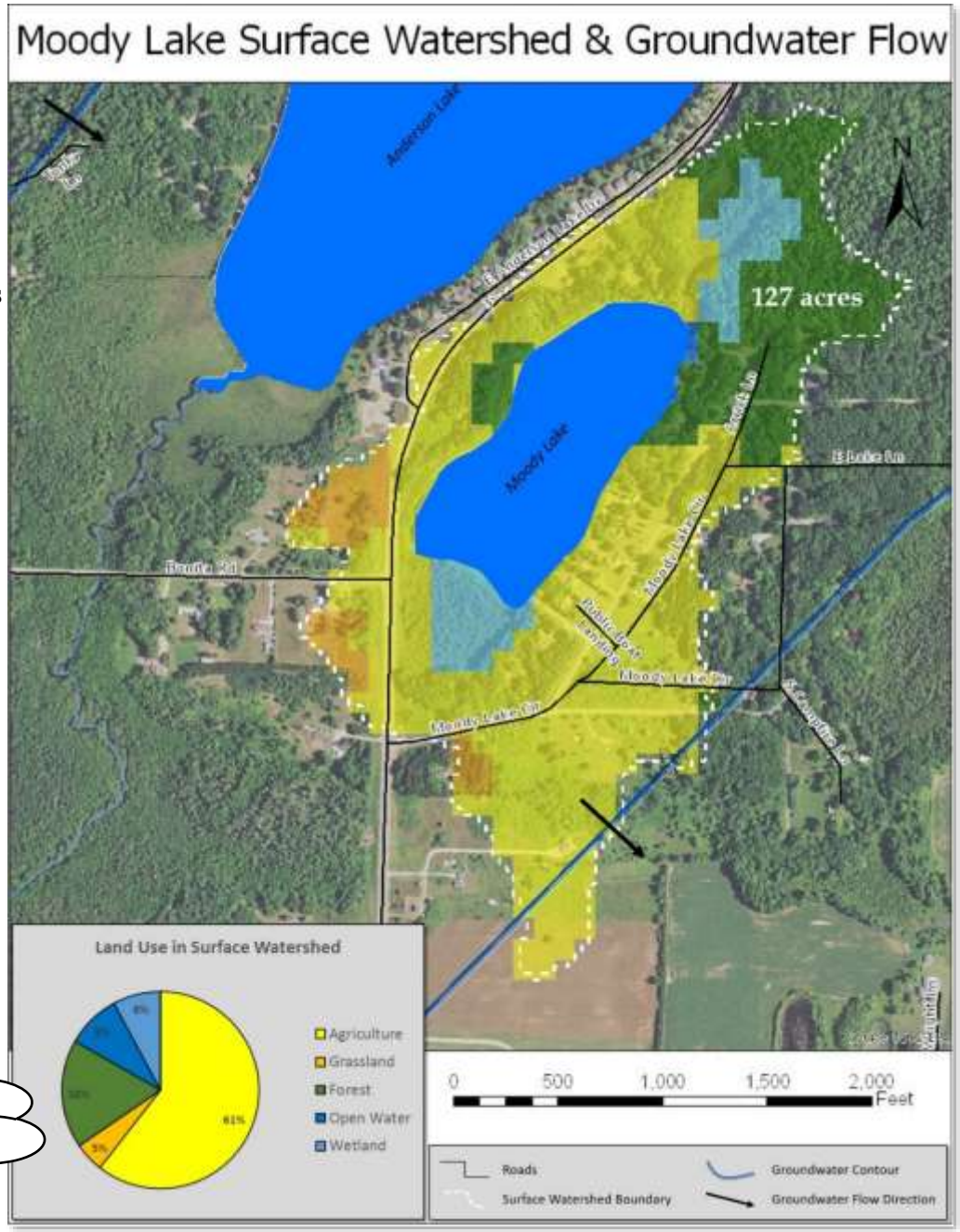
Less runoff is desirable because it allows more water to recharge the groundwater, which feeds the lake year-round - even during dry periods or when the lake is covered with ice. The capacity of the landscape to shed or hold water and contribute or filter particles determines the amount of erosion that may occur, the amount of groundwater feeding a lake, and the lake's water quality and quantity. Landscapes with greater capacities to hold water during rain events and snowmelt slow the delivery of the water to the lake.

Moody Lake's Watershed

The Moody Lake watershed is 127 acres. Primary land use is agriculture, forest and grassland, and residential. The lake's shoreland is surrounded primarily by developed residential lots and forest. In general, the land closest to the lake has the greatest immediate impact on water quality.



Watershed: The area of land draining to a lake.



Watershed

Why does land matter?

Land use and land management practices within the watershed can affect both its water quantity and quality. While forests, grasslands, and wetlands allow a fair amount of precipitation to soak into the ground, resulting in more groundwater and good water quality, other types of land uses may result in increased runoff and less groundwater recharge, and may also be sources of pollutants that can impact the lake and its inhabitants.

Soil and Erosion

Areas of land with exposed soil can produce soil erosion. Soil entering the lake can make the water cloudy and cover fish spawning beds. Soil also contains nutrients that increase the growth of algae and aquatic plants.

Development

Development on the land may result in changes to natural drainage patterns, alterations to vegetation on the landscape, and may be a source of pollutants. Impervious (hard) surfaces such as roads, rooftops, and compacted soil prevent rainfall from soaking into the ground, which may result in more runoff that carries pollutants to the lake. Wastewater, animal waste, and fertilizers used on lawns, gardens and crops can contribute nutrients that enhance the growth of algae and aquatic plants in our lakes.

What can be done?

Land management practices can be put into place that mimic some of the natural processes, and reduction or elimination of nutrients added to the landscape will help prevent the nutrients from reaching the water. In general, the land nearest the lake has the greatest impact on the lake water quality and habitat and is often the easiest to manage (own property, no politics, etc.).

Be Part of the Solution!

Practices designed to reduce runoff include:

- protecting/restoring wetlands,
- installing rain gardens, swales, rain barrels, and other practices that increase infiltration
- routing drainage from pavement and roofs away from the lake
- meandering lake access paths to minimize direct flow to the lake.

Practices used to help reduce nutrients from moving across the landscape towards the lake include:

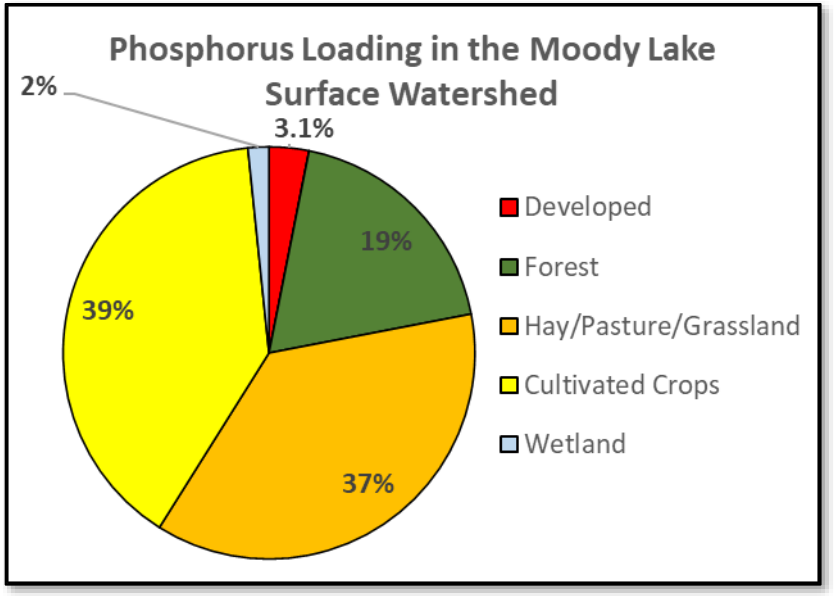
- eliminating/reducing the use of fertilizers,
- increasing the distance between the lake and a septic drainfield,
- protecting/restoring wetlands and native vegetation in the shoreland,
- controlling erosion,
- manure management and cropping practices.

Most of these activities are eligible for cost share and grant assistance!

Watershed

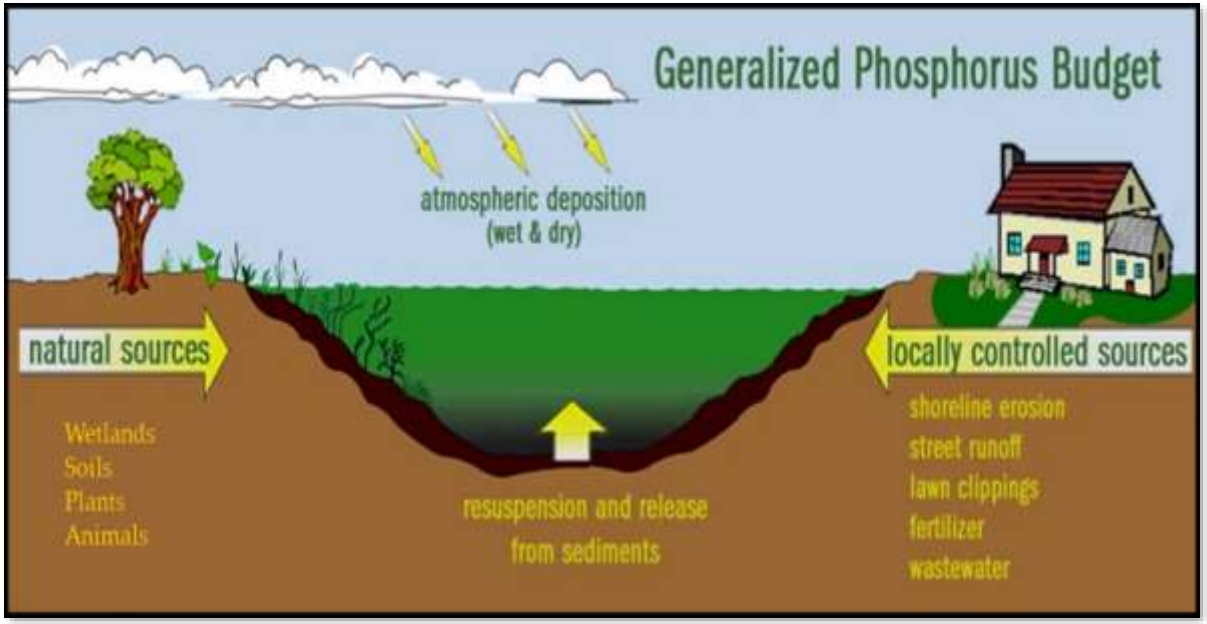
Phosphorus Modeling

Estimates of phosphorus from the landscape can help to understand the phosphorus sources to Moody Lake. Land use in the surface watershed was evaluated and used to populate the Wisconsin Lakes Modeling Suite (WILMS) model. In general, each type of land use contributes different amounts of phosphorus in runoff and groundwater. The types of land management practices that are used and their distances from the lake also affect the contributions to the lake from a parcel of land. The phosphorus contributions by land use category, called phosphorus export coefficients, have been obtained from studies throughout Wisconsin (Panuska and Lillie, 1995). In the Moody Lake watershed, the vast majority of these sources are anthropogenic and can be managed.



Phosphorus Loading in Moody Lake Watershed

Based on modeling results, agriculture had the greatest percentage of phosphorus contributions from the watershed. Efforts to reduce nutrient inputs to the lake must be focused on land uses that we have some control over such as production and developed areas.



Goal 4. Property owners in the Moody Lake watershed will be aware of their connection to the lake and implement healthy land management practices.

Objective 4.1 Support healthy land management activities in the Moody Lake watershed to reduce sediment and nutrient loading.

Actions	Lead person/group	Resources	Timeline
Encourage the County to support and follow-up with water quality based best management practices (BMPs) within the lakes watershed. Include BMPs that reduce application of excess nitrogen and pesticides that leach to groundwater.		NRCS DATCP County Board Supervisors	Ongoing
Support landowners interested in the protection of their land via a land conservation program (i.e. conservation easement, conservation reserve program, purchase of development rights, or sale of land for protection).		WDNR Lakes Protection Grant Knowles-Nelson Stewardship Fund NWLT	As needed
Encourage any new development to manage runoff on site and consider ways to minimize impacts from septic systems on Green Lake		Town of Breed Developers/builders	As needed
Encourage design of road and construction projects that will minimize impact to lake.		Town of Breed OC Highway Dept/WDOT	As needed
Protect wetlands to maintain the water budget of Moody Lake. Any altered wetlands should be mitigated within the lake's watershed.		WDNR	As needed
Work with Town to maintain and make improvements to boat launch to reduce erosion and runoff.		USFS WDNR	As needed


Cover crops


Drainage swales

Shorelands

90% of lake life spends all or part of their life in the near shore zone.

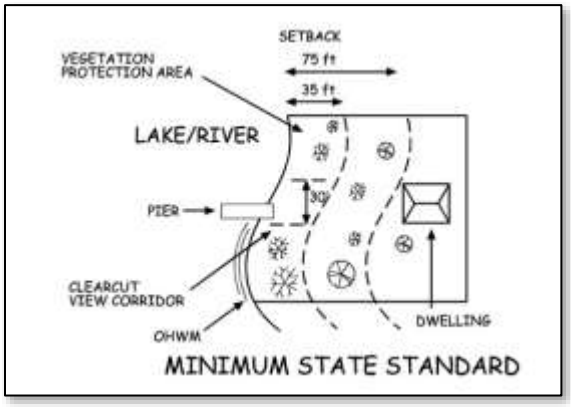
Shorelands

Shoreland vegetation is critical to a healthy lake ecosystem. It provides habitat for many aquatic and terrestrial animals including birds, frogs, turtles, and small and large mammals. It also helps to improve the quality of the runoff that is flowing across the landscape towards the lake.

Healthy shoreland vegetation includes a mix of unmowed grasses/flowers, shrubs, trees, and wetlands which extends at least 35 feet landward from the water's edge.

Shoreland ordinances have been in place since 1964 to improve water quality and habitat, and to protect our lakes. To protect our lakes, county and state (NR 115) shoreland ordinances state that vegetation should extend at least 35 feet inland from the water's edge, with the exception of an optional 30-foot wide view corridor for each shoreland lot. Although some properties were grandfathered in when the ordinance was initiated in 1966, following this guidance will benefit the health of the lake and its inhabitants.

Disturbed shoreland is measured as any shoreline without a shrub or herbaceous layer at the water's edge, regardless of buffer thickness. This may be a result of mowed lawn, artificial beach, etc.



Be Part of the Solution!

Follow Healthy Shoreland Practices

- Mow Less: The simplest, most affordable way to improve your shoreland is to reduce mowing near shore. Native vegetation will re-establish itself over time.
- Leave natural shoreland vegetation in place.
- Restore native shoreland vegetation where it is lacking.
- Plant attractive native species of grasses/flowers, shrubs and trees that will add interest and beauty to your property.
- Don't use fertilizers or herbicides, they may run into the lake. Test your soil to determine if fertilizer is warranted.
- Add or leave woody habitat near the shore. Turtles, birds, and fish love it!
- Never transplant water garden plants or aquarium plants into lakes, streams, or wetlands.
- Visit **www.healthylakeswi.com** for additional resources.

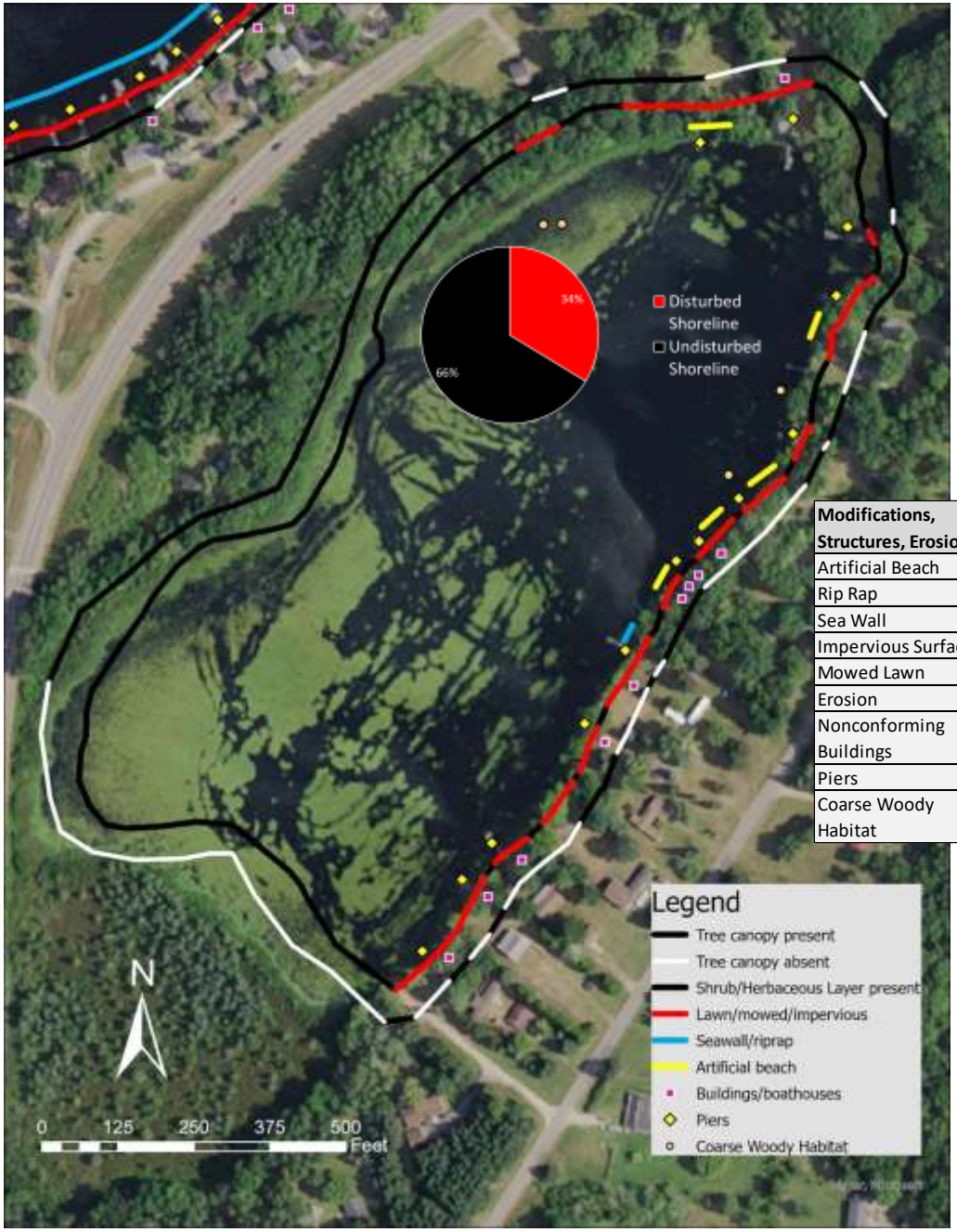
State Shoreland Zoning Ordinance

NR 115 Wisc. Adm. Code for Unincorporated Municipalities

No vegetation within 35 feet of the lake's edge shall be removed except for:

- Up to 30% of shoreline may be removed of shrubs and trees for a view corridor
- A mowed or constructed pedestrian path up to 5 feet wide to access lake

Shorelands

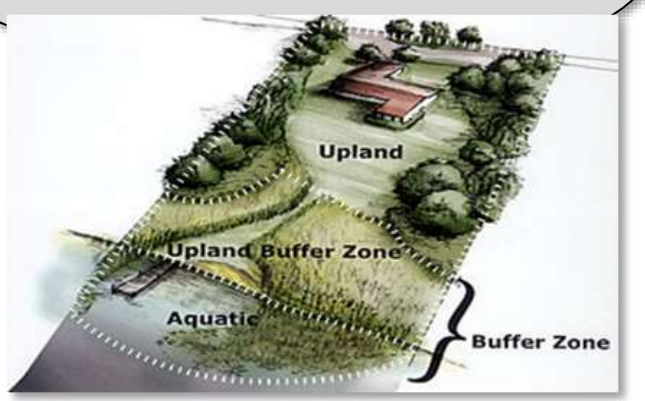


Modifications, Structures, Erosion	Measured Occurrence
Artificial Beach	160
Rip Rap	15
Sea Wall	0
Impervious Surface	8
Mowed Lawn	438
Erosion	0
Nonconforming Buildings	10
Piers	13
Coarse Woody Habitat	40 logs/mile

Moody Lake's Shorelands

To better understand the health of Moody Lake, shorelands were evaluated. The survey inventoried shoreland vegetation, erosion, riprap, barren ground, seawalls, structures, and docks. About 1/3 of the 1/4 mile of shoreline is developed as homes and seasonal cottages. A total of 13 piers were counted during the survey (1/102 ft).

- With 23 lakefront lots, 690 feet (52%) of disturbed shoreland is permitted under NR115. Based on the 2022 shoreland inventory, 34% (1,446 feet) of Moody Lake's shoreland was disturbed. Coarse woody habitat was measured at 40 logs/mile (250 logs/mile recommended.)
- Moody Lake had average shoreland health compared to other lakes in the study. Some stretches are in good shape, but many portions have challenges that should be addressed.



Coarse Woody Habitat (CWH)

Woody debris (i.e., branches, limbs, trees) that falls into the lake forms critical habitat for tiny aquatic organisms that feed bluegills, turtles, crayfish and other critters. Water insects such as mayflies graze on the algae that grow on decomposing wood. Dragonfly nymphs hunt for prey among the stems and branches. Largemouth and smallmouth bass often find food, shelter, or nesting habitat among these fallen trees.

Above water, a fallen tree is like a dock for wildlife. Ducks and turtles sun themselves on the trunk, muskrats use the tree as a feeding platform, predators such as mink and otter hunt for prey in the vicinity of fallen wood, and dead trees that remain along the shoreline are used as perches by belted kingfishers, ospreys and songbirds.

Undeveloped lakes typically contain hundreds of 'logs per mile' while they may completely disappear on developed lakes. Unless it is a hazard to navigation or swimming, consider leaving woody debris in the water.

Shorelands

Moody Lake 2022 Shoreland Survey Results			
Total lakefront footage	**# Riparian lots**	**Total allowable (NR115) disturbed shoreland**	**Measured disturbed shoreland**
1,324	23	690 feet (52%)	446 feet (34%)

Goal 5. Shorelands around Moody Lake will be healthy and protective of water quality and habitat. Over the next 5 years, at least 500 feet of mowed shoreline (at least 7-10 properties) will be restored.

Objective 5.1 Shoreland property owners will be knowledgeable and make good decisions regarding shoreland management practices.

Actions	Lead person/group	Resources	Timeline
Provide informational materials to all shoreland property owners about basic lake stewardship including healthy shorelands and their composition (wildflowers, native plants, coarse woody habitat). Include information on cost share programs.		OCLWA UWEX Lakes WDNR Healthy Lakes Grants	Ongoing
Encourage and support shoreland owners interested in shoreland restoration. Include information on how and why to create healthy shorelands in a welcome packet to new property owners.		UWEX Lakes OCLCD WDNR Healthy Lakes Grants	Ongoing
Encourage those interested in shoreland restoration to contact OCLCD for available resources.		OCLCD WDNR Healthy Lakes Grants	Ongoing
Consider restoring and showcasing a 'demonstration site' with a sign about shoreland protection.		WDNR	2022
Identify property owners to install fish sticks to improve fish habitat (see **Fish Community** section).		WDNR-Tammie Paoli	2022

Water Quality

Water Quality

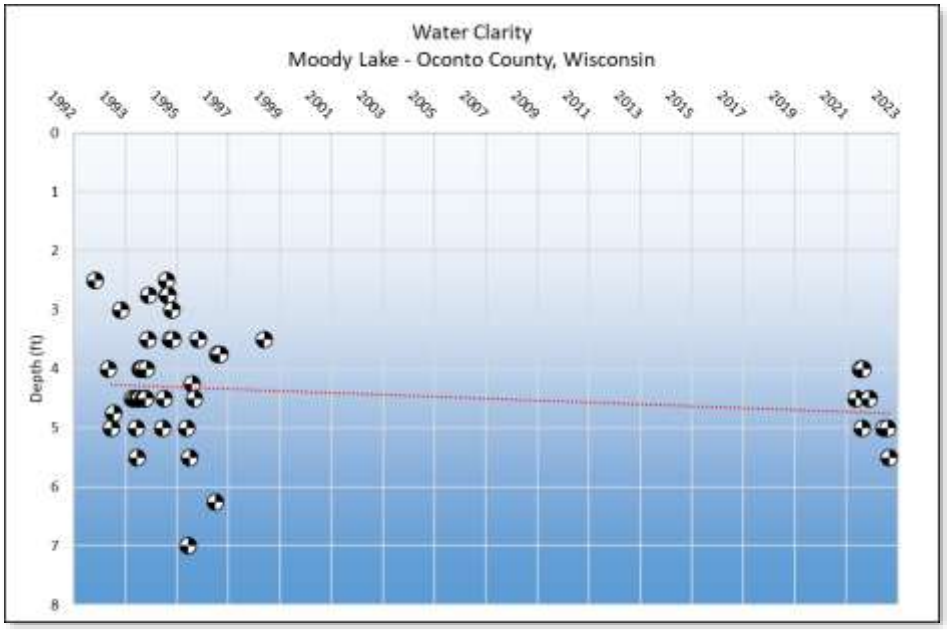
A variety of water chemistry measurements were used to characterize the water quality in Moody Lake. Water quality was assessed during the 2022-2023 lake study and involved a number of measures including temperature, dissolved oxygen, water chemistry, and nutrients (phosphorus and nitrogen). Nutrients are important measures of water quality in lakes because they contribute to algae and aquatic plant growth. Each of these interrelated measures plays a part in the lake's overall water quality. In addition, water quality data collected in past years was also reviewed to determine trends in Moody Lake's water quality.

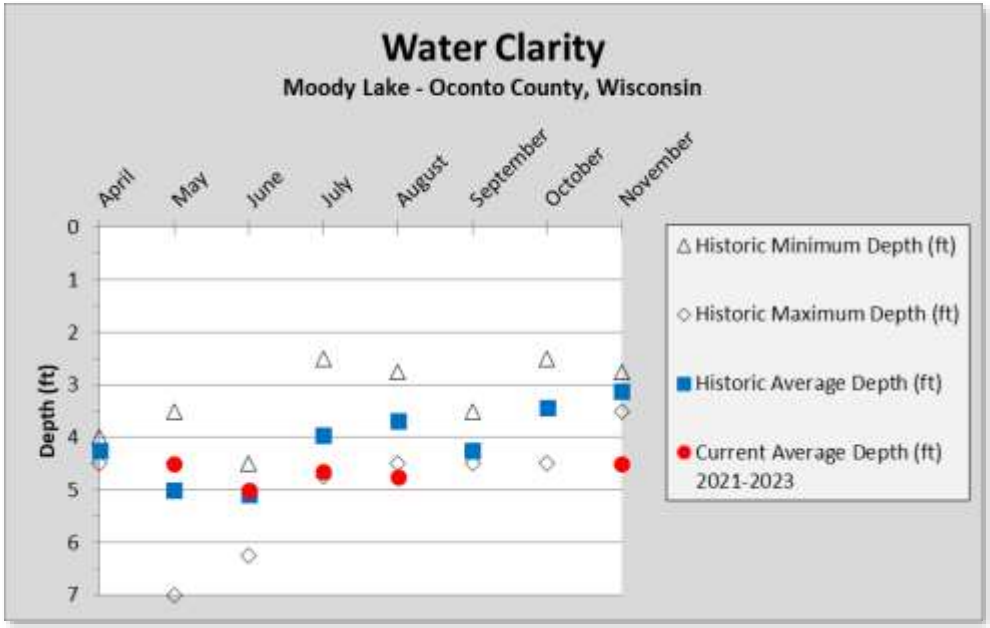
Water Clarity

Water clarity is a measure of how deep light can penetrate (Secchi depth). Clarity is affected by water color, turbidity, and algae and helps determine where rooted aquatic plants grow.

Moody Lake's Water Quality Summary

- ✓ **Water clarity** ranged from 4.5-5.5 feet (considered fair), which is consistent with historic measurements and suggests a slightly improving trend.
- ✓ Sufficient **dissolved oxygen** was present in at least the upper 5 feet of water at all times during the study.
- ✓ Concentrations of **contaminants** were low during the study. Atrazine was not detected.
- ✓ **Phosphorus** concentrations were periodically above the standard of 40 ug/L during the study. Inorganic nitrogen remained well below concentrations that spur algal blooms.
- ✓ Water in Moody Lake is **soft** (10 mg/L CaCO3), having a low level of dissolved minerals. The lack of ions in the water makes it more vulnerable to adverse impacts of nutrients.

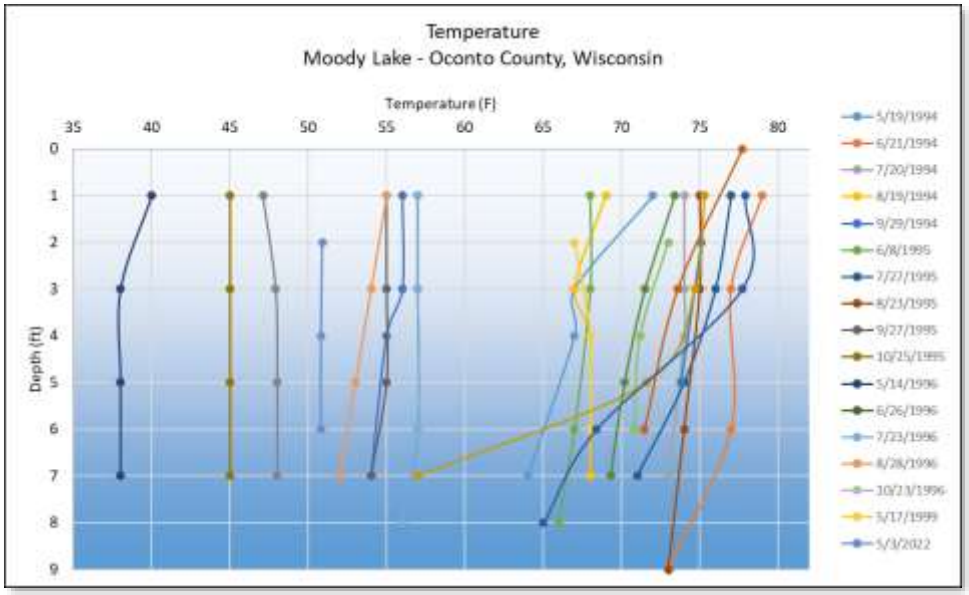




Water Quality

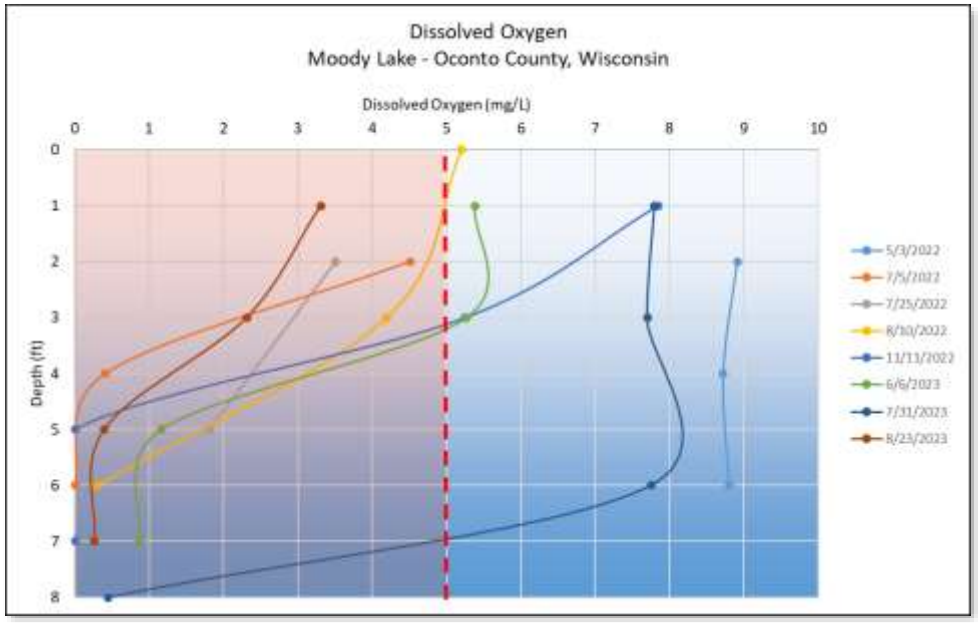
Temperature and Dissolved oxygen

Temperature profiles for Moody Lake show a typical profile of a shallow, mixed lake with similar temperatures with depth at each sampling event. Dissolved oxygen is an important measure in



Moody Lake because a majority of organisms in the water depend on oxygen to survive. Oxygen is dissolved into the water from contact with air, which is increased by wind and wave action. Algae and aquatic plants also produce oxygen when sunlight enters the water, but the decomposition of dead plants and algae reduces oxygen in the lake.

Dissolved oxygen concentrations decline with depth as access to sources such as the atmosphere and growing plants is decreased. Oxygen levels in Moody Lake are sometimes sufficient to support fish through most of the year but becomes anoxic in late summer.



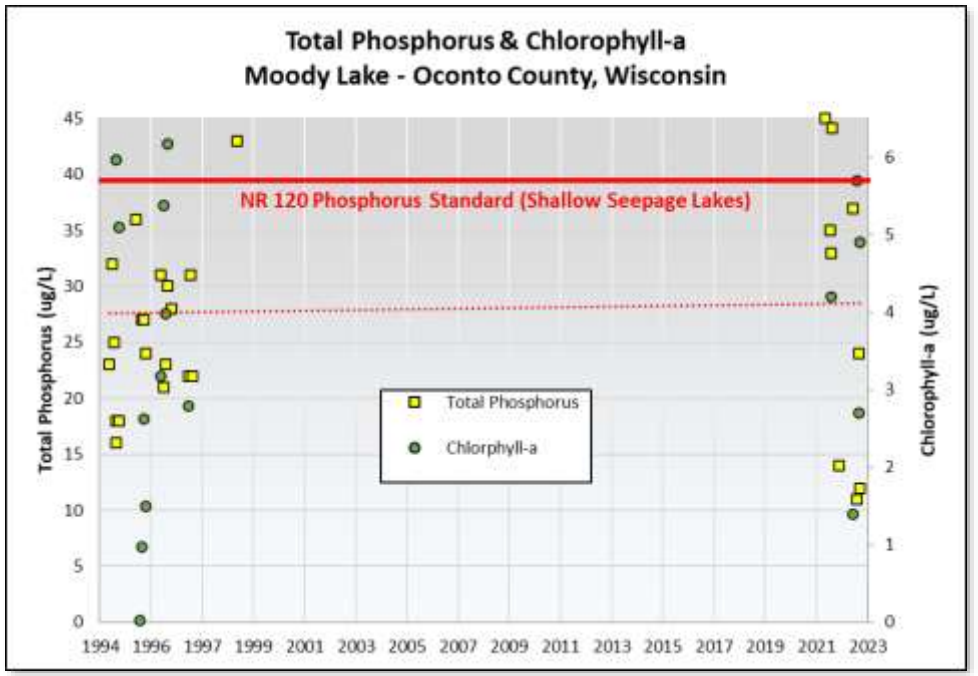
Contaminants

Chloride, sodium and potassium concentrations are commonly used as indicators of how a lake is being impacted by human activity. The presence of these compounds where they do not naturally occur indicates sources of water contaminants. Although these elements are not detrimental to the aquatic ecosystem, they indicate that sources of contaminants such as road salt, fertilizer, animal waste and/or septic system effluent may be entering the lake from either surface runoff or via groundwater. Measurements of these compounds were low, which suggests the lake is being minimally impacted by human activity.

Water Quality

Nutrients

Phosphorus is an element that is essential in trace amounts to most living organisms, including aquatic plants and algae. Naturally-occurring sources of phosphorus include soils and wetlands, and groundwater. Common sources from human activities include soil erosion, animal waste, fertilizers, and septic systems. Although a variety of compounds are important to biological growth, phosphorus receives so much attention because it is commonly the "limiting nutrient" in many Wisconsin lakes. Due to its relatively short supply compared to other substances necessary for growth, relatively small increases in phosphorus result in significant increases in aquatic plants and algae. NR 120, Wisconsin Administrative Code lists phosphorus limits for different lake types. Shallow seepage lakes such as Moody have a standard of 40 ug/L they must remain stay to remain healthy. The very limited data available show concentrations in Moody to be well below this standard. Continued monitoring is necessary to verify this and establish and trends. Inorganic nitrogen concentrations below 0.3 mg/L in spring are below the threshold that fuels algae blooms. Sources of inorganic nitrogen include animal waste, septic systems/waste treatment effluent, and fertilizers.



In Moody Lake, phosphorus concentrations were periodically above the threshold of 40 ug/L, but chlorophyll-a remained below its threshold of 6 ug/L throughout the study. Compared to limited data from the late 1990s, a slightly increasing trend in concentrations is suggested. Continued monitoring is recommended.

Be part of the solution!

Managing nitrogen, phosphorus and soil erosion throughout the Moody Lake watershed is one of the keys to protecting the lake itself. Near shore activities that may increase the input of phosphorus to the lake include applying fertilizer, removing native vegetation (trees, bushes and grasses), mowing vegetation, and increasing the amount of exposed soil. Nitrogen inputs to a lake can be controlled by using lake-friendly land management decisions, such as the restoration of shoreland vegetation, elimination/reduction of fertilizers, proper management of animal waste and septic systems, and the use of water quality-based management practices.

Water Quality

Goal 6. Maintain or improve water quality in Moody Lake.

Objective 6.1 Maintain median summer total phosphorus concentrations below 40 ug/L and fall inorganic nitrogen concentrations below 0.3 mg/L.

Actions	Lead person/group	Resources	Timeline
Inform others around the lake about the impact of nutrients and land management on water quality through the distribution of a newsletter and/or hosting a guest speaker.		OCLWA WDNR UWEX Lakes	Ongoing
Refrain from the use of fertilizers. Encourage soil testing to determine if amendments are necessary.		OC UWEX	Ongoing
Encourage the restoration of unmowed vegetation to slow and absorb runoff and pollutants (see **Shorelands** section).		UWEX Lakes	Ongoing

Objective 6.2 Continue to develop an ongoing, long-term dataset for Green Lake to monitor trends or changes over time.

Actions	Lead person/group	Resources	Timeline
Support volunteers collecting water quality data. Encourage new volunteers to work with current volunteers in the Citizen Lake Monitoring Network.		CLMN WDNR-Brenda Nordin	3+ times annually in summer
Submit all data to WDNR for archival and use by scientists and resource managers.		WDNR	Ongoing

Wisconsin has more than 500,000 registered boats-one for every 10 residents.

PEOPLE AND THE LAKE

The people who interact with the lake are a key component of the lake and its management. In essence a lake management plan is a venue by which people decide how they would like people to positively impact the lake. The plan summarizes the decisions of the people to take proactive steps to improve their lake and their community. Individual decisions by lake residents and visitors can have positive impacts on the lake and on those who enjoy this common resource. Collaborative efforts may have bigger positive impacts; therefore, communication and cooperation between the community and suite of lake users are essential to maximize the effects of plan implementation.

Boating hours, regulations, and fishing limits are examples of principles that are put into place to minimize conflicts between lake users and balance human activities with environmental considerations for the lake.

Recreation

According to survey responses, the lake is enjoyed for its scenery, wildlife, and fishing. There is one public boat launch located on the west side of Moody Lake which is owned and maintained by the Town of Breed. No Wake is allowed at any time.

Goal 7. Lake users will be informed about and respectful of Moody Lake.

Objective 7.1 Promote an atmosphere of respect amongst lake users.

Actions	Lead person/group	Resources	Timeline
Work with other lake groups and towns to support a recreational officer and municipal court for enforcement of regulations, including 'No Wake' and safe boat operation.		Town of Breed OCLWA OC UWEX	Ongoing
Work with Town to upkeep/repair boat ramp, as appropriate. Boat ramps in disrepair can be unhealthy to the lake if it results in spinning tires, power loading, etc. A well-kept boat launch also sends a message to visitors about the attention and care a lake is receiving.		USFS WDNR	Ongoing
Update signage at boat launch with an interpretive kiosk.		UWEX Lakes	TBD

LakeKit.net is a network of lake groups helping others to build and maintain websites.

Communication and Organization

Working together on common values will help to achieve the goals outlined in this plan. This will involve communication between individuals, the Town of Breed, Oconto County, resource managers, and elected officials. In addition, staying informed about lake- and groundwater-related topics will be essential to achieving the goals laid out in this plan. See the Oconto County Lake Information Directory in the Appendices for contact information.

Many of the goals outlined in this plan focus on distributing information to lake and watershed residents and lake users in order to help them make informed decisions that will result in a healthy Moody Lake ecosystem that is enjoyed by many people. Working together on common values will help to achieve the goals that are outlined in this plan.

Goal 8. Increase participation in lake stewardship.

Objective 8.1 Develop opportunities and incentives for active participation in the management of Moody Lake.

Actions	Lead person/group	Resources	Timeline
Maintain a website or Facebook page to provide a commons source of communication.		LakeKit.net OC UWEX	Ongoing
Maintain an email list of shoreland property owners and others interested in Moody Lake.		OC UWEX	Ongoing
Distribute welcome packet/mailing to all new shoreland property owners with basic lake stewardship information.		OCLWA UWEX Lakes	As needed
Communicate updates to lake management plan and management activities to residents and users of the lake via email list and/or newsletter.			As needed
Host gatherings to learn about topics identified in this plan. Invite speakers or conduct demonstrations.		UWEX Lakes WDNR	Ongoing

Objective 8.2. Organize stewards of Moody Lake to maximize and access resources. Communicate with municipalities, agencies and organizations to leverage resources and opportunities.

Actions	Lead person/group	Resources	Timeline
Establish a lake association or "Friends" group.	Interested citizens	UWEX Lakes	Ongoing
Network with other lake groups by having Moody Lake represented at OCLWA.		OCLWA	
Attend Wisconsin Lakes Convention or Lake Leaders Institute.		UWEX Lakes	April

Updates and Revisions

Updates and Revisions

A management plan is a living document that changes over time to meet the current needs, challenges and desires of the lake and its community. The goals, objectives and actions listed in this plan should be reviewed annually and updated with any necessary changes. Partners listed in the plan should be contacted annually, and updated information complied. A list of changes/updates to the plan should be documented. To ensure that everyone is informed about changes, appropriate approval for changes should be acquired by all partners signing on to this plan.

Goal 9. Review plan regularly and update as needed.

Objective 9.1 Communicate updates with lake community, Oconto County and WDNR.

Actions	Lead person/group	Resources	Timeline
Review plan regularly (annually) and discuss/document accomplishments and identification of goals/objectives for coming year.			Annually
Formally update this plan every 5 years.		OC UWEX UWEX Lakes WDNR	2027

REFERENCES

Boat Ed, 2013. The Handbook of Wisconsin Boating Laws and Responsibilities. Approved by Wisconsin Department of Natural Resources. www.boat-ed.com

Borman, Susan, Robert Korth, and Jo Temte, 2001. Through the looking glass, a field guide to aquatic plants. Reindl Printing, Inc. Merrill, Wisconsin.

Dolata, Ken, Mohr, Dale and Turyk, Nancy, 2018. Operational Strategy and Plan for Surface Water Management and Protection in Oconto County.

Haney, Ryan, 2024. Moody Lake Study Summary Report. Center for Watershed Science and Education-University of Wisconsin Stevens Point.

Haney, Ryan, 2024. State of the Oconto County Lakes. Center for Watershed Science and Education-University of Wisconsin-Stevens Point.

Paoli, Tammie, 2025. Moody Lake Fishery, Oconto County, Presentation to Moody Lake Planning Meeting, March 5, 2025. Wisconsin Department of Natural Resources.

Panuska and Lillie, 1995. Phosphorus Loadings from Wisconsin Watershed: Recommended Phosphorus Export Coefficients for Agricultural and Forested Watersheds. Bulletin Number 38, Bureau of Research, Wisconsin Department of Natural Resources.

Public Service Commission of Wisconsin, 1948. Opinions and Decisions of the Public Service Commission of Wisconsin, Volume XXXII. 410 pp.

Shaw, B., C. Mechenich, and L. Klessig, 2000. Understanding Lake Data. University of Wisconsin-Extension, Stevens Point. 20 pp.

APPENDICES

Appendix A

Appendix A. Oconto County Lake Information Directory

Algae - Blue-Green

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov
Website: http://dnr.wi.gov/lakes/bluegreenalgae

Contact: Wisconsin Department of Health Services
1 West Wilson Street, Madison, WI 53703
Phone: 608-267-3242
Website:
www.dhs.wisconsin.gov/eh/bluegreenalgae/contactus.htm

Aquatic Invasive Species/Clean Boats Clean Water

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov
Website: http://dnr.wi.gov/topic/Invasives/

Aquatic Plant Management

(Native and Invasive)

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov
Website: http://dnr.wi.gov/lakes/plants/

Aquatic Plant Identification

Contact: Dr. Emmet Judziewicz
UWSP Freckmann Herbarium
TNR 301, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-4248
E-mail: ejudziew@uwsp.edu

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Aquatic Plant Surveys/Management

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov
Website: http://dnr.wi.gov/lakes/plants/

Best Management Practices (rain gardens, shoreland buffers, agricultural practices, runoff controls)

Contact: Ken Dolata
Oconto County Land & Water Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us
Website: http://www.co.oconto.wi.us/departments/

Boat Landings, Signage, Permissions (County)

Contact: Monty Brink
Oconto County Forestry/Park/Recreation
301 Washington Street, Oconto, WI 54153
Phone: 920-834-6995
E-mail: monty.brink@co.oconto.wi.us
Website: http://www.co.oconto.wi.us/departments/

Boat Landings (State)

Contact: Chip Long
Wisconsin Department of Natural Resources
101 N. Ogden Road, Peshtigo, WI 54157
Phone: 715-582-5017
E-mail: Christopher.long@wisconsin.gov
Website: http://dnr.wi.gov/org/land/facilities/boataccess/

Appendix A

Boat Landings (Town)

Contact the clerk for the specific town/village in which the boat landing is located.

Conservation Easements

Contact: Gathering Waters Conservancy
211 S. Paterson St., Suite 270, Madison, WI 53703
Phone: 608-251-9131
E-mail: info@gatheringwaters.org
Website: http://gatheringwaters.org/

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Contact: Northeast Wisconsin Land Trust
14 Tri-Park Way, Suite 1, Appleton, WI 54914
Phone: 920-738-7265
E-mail: newlt@newlt.org
Website: www.newlt.org

Contact: NRCS Lena Service Center
410 ½ East Main Street, Lena, WI 54139
Phone: 920-829-5406

Critical Habitat and Sensitive Areas

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov
Website: http://dnr.wi.gov/lakes/criticalhabitat/

Dams

Contact: Meg Galloway
Wisconsin Department of Natural Resources
PO Box 7921, Madison, WI 53707
Phone: 608-266-7014
E-mail: meg.galloway@wisconsin.gov
Website: http://dnr.wi.gov/org/water/wm/dsfm/dams/

Fertilizers/Soil Testing

Contact: Dale Mohr
Oconto County UW- Extension
301 Washington Street, Oconto, WI 54153
Phone: 920-835-6845
E-mail: dale.mohr@wisc.edu
Website: http://oconto.uwex.edu

Fisheries Biologist (management, habitat)

Contact: Chip Long
Wisconsin Department of Natural Resources
101 N. Ogden Road, Peshtigo, WI 54157
Phone: 715-582-5017
E-mail: Christopher.long@wisconsin.gov
Website: http://dnr.wi.gov/fish/

Frog Monitoring—Citizen Based

Contact: Andrew Badje
Wisconsin Department of Natural Resources
Phone: 608-785-9472
E-mail: Andrew.badje@wisconsin.gov
Website: WFTS@wisconsin.gov

Grants

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov
Website: http://dnr.wi.gov/Aid/Grants.html

Appendix A

Contact: Ken Dolata
Oconto County Land & Water Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us
Website: http://www.co.oconto.wi.us/departments/

Groundwater Quality

Contact: Kevin Masarik
UWSP Center for Watershed Science & Education
TNR 224, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-4276
E-mail: kmasarik@uwsp.edu
Website: http://www.uwsp.edu/cnr/watersheds/

Groundwater Levels/Quantity

Contact: Ken Dolata
Oconto County Land & Water Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us
Website: http://www.co.oconto.wi.us/departments/

Contact: George Kraft
UWSP Center for Watershed Science & Education
TNR 224, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-2984
E-mail: george.kraft@uwsp.edu

Informational Packets

Contact: UW Extension - Lakes
TNR 224, 800 Reserve St. Stevens Point, WI 54481
Phone: 715-346-2116
E-mail: uwexlakes@uwsp.edu

Lake Groups – Friends, Associations, Districts

Contact: Dale Mohr
Oconto County UW- Extension
301 Washington Street, Oconto, WI 54153
Phone: 920-835-6845
E-mail: dale.mohr@wisc.edu
Website: http://oconto.uwex.edu

Contact: Patrick Goggin
UWEX Lakes
TNR 203, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-365-8943
E-mail: pgoggin@uwsp.edu
Website: http://www.uwsp.edu/cnr/uwexlakes/organizations/

Contact: Eric Olson
UWEX Lakes
TNR 206, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-2192
E-mail: eolson@uwsp.edu
Website: http://www.uwsp.edu/cnr/uwexlakes/organizations/

Contact: Susan Tesarik
Wisconsin Lakes
4513 Vernon Blvd., Suite 101, Madison, WI 53705
Phone: 1-800-542-5253
E-mail: lakeinfo@wisconsinlakes.org
Website: http://wisconsinlakes.org/

Lake Levels

See: Groundwater

Lake-Related Law Enforcement (no-wake, transporting invasives, etc.)

Contact: Ben Mott
State Conservation Warden
Wisconsin Department of Natural Resources
427 E. Tower Drive, Suite 100, Wautoma, WI 54982
Phone: 920-896-3383
Website: http://www.wigamewarden.com/

Appendix A

Land Use Plans and Zoning Ordinances

Contact: Patrick Virtues
Oconto County Planning/Zoning/Solid Waste
301 Washington Street, Oconto, WI 54153
Phone: 920-834-6827
E-mail: Patrick.virtues@co.oconto.wi.us
Website: http://www.co.waushara.wi.us/zoning.htm

Contact: UWSP Center for Land Use Education
TNR 208, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-3783
E-mail: Center.for.Land.Use.Education@uwsp.edu
Website: http://www.uwsp.edu/cnr/landcenter/

Nutrient Management Plans

Contact: Ken Dolata
Oconto County Land & Water Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us
Website: http://www.co.oconto.wi.us/departments/

Contact: NRCS Lena Service Center
410 ½ East Main Street, Lena, WI 54139
Phone: 920-829-5406

Parks (County)

Contact: Monty Brink
Oconto County Forestry/Park/Recreation
301 Washington Street, Oconto, WI 54153
Phone: 920-834-6995
E-mail: monty.brink@co.oconto.wi.us
Website: http://www.co.oconto.wi.us/departments/

Purchase of Development Rights

Contact: Northeast Wisconsin Land Trust
14 Tri-Park Way, Suite 1, Appleton, WI 54914
Phone: 920-738-7265
E-mail: newlt@newlt.org
Website: www.newlt.org

Purchase of Land

Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov
Website: http://dnr.wi.gov/topic/stewardship/

Rain Gardens and Stormwater Runoff

Contact: Ken Dolata
Oconto County Land & Water Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us
Website: http://www.co.oconto.wi.us/departments/

Septic Systems/Onsite Waste

Contact: Patrick Virtues
Oconto County Planning/Zoning/Solid Waste
301 Washington Street, Oconto, WI 54153
Phone: 920-834-6827
E-mail: Patrick.virtues@co.oconto.wi.us
Website: http://www.co.waushara.wi.us/zoning.htm

Shoreland Management

Contact: Ken Dolata
Oconto County Land & Water Conservation Department
410 ½ East Main Street, Lena, WI 54139
Phone: 920-834-7152
E-mail: ken.dolata@co.oconto.wi.us
Website: http://www.co.oconto.wi.us/departments/

Shoreland Vegetation

http://dnr.wi.gov/topic/ShorelandZoning/

Shoreland Zoning Ordinances

See: Land Use Plans and Zoning Ordinances

Appendix A

Soil Fertility Testing
Contact: Dale Mohr
Oconto County UW- Extension
301 Washington Street, Oconto, WI 54153
Phone: 920-835-6845
E-mail: dale.mohr@wisc.edu
Website: http://oconto.uwex.edu

Water Quality Monitoring
Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Water Quality Problems
Contact: Brenda Nordin
Wisconsin Department of Natural Resources
Phone: 920-360-3167
E-mail: brenda.nordin@wisconsin.gov

Wetlands
Contact: Jason Fleener
Wisconsin Department of Natural Resources
GEF2 DNR Central Office, Madison, WI 53707
Phone: 608-266-7408
E-mail: Jason.fleener@wisconsin.gov
Website: http://dnr.wi.gov/wetlands/

Contact: Wisconsin Wetlands Association
214 N. Hamilton Street, #201, Madison, WI 53703
Phone: 608-250-9971
Email: info@wisconsinwetlands.org

Wetland Inventory
Contact: Dr. Emmet Judziewicz
UWSP Freckmann Herbarium
TNR 301, 800 Reserve St., Stevens Point, WI 54481
Phone: 715-346-4248
E-mail: ejudziew@uwsp.edu

Woody Habitat
Contact: Chip Long
Wisconsin Department of Natural Resources
101 N. Ogden Road, Peshtigo, WI 54157
Phone: 715-582-5017
E-mail: Christopher.long@wisconsin.gov
Website: http://dnr.wi.gov/fish/

Appendix B. Rapid Response Plan

REPORTING A SUSPECTED INVASIVE SPECIES

1. Collect specimens or take photos.

Regardless of the method used, provide as much information as possible. Try to include flowers, seeds or fruit, buds, full leaves, stems, roots and other distinctive features. In photos, place a coin, pencil or ruler for scale. Deliver or send specimen ASAP.

Collect, press and dry a complete sample. This method is best because a plant expert can then examine the specimen.

-OR-

Collect a fresh sample. Enclose in a plastic bag with a moist paper towel and refrigerate.

-OR-

Take detailed photos (digital or film).

2. Note the location where the specimen was found.

If possible, give the exact geographic location using a GPS (global positioning system) unit, topographic map, or the Wisconsin Gazetteer map book. If using a map, include a photocopy with a dot showing the plant's location.

Provide one or more of the following:

- Latitude & Longitude
- UTM (Universal Transverse Mercator) coordinates
- County, Township, Range, Section, Part-section
- Precise written site description, noting nearest city & road names, landmarks, local topography

3. Gather information to aid in positive species identification.

- Collection date and county
- Your name, address, phone, email
- Exact location (lat/long or UTM, Township/Range)
- Plant name
- Land ownership (if known/applicable)
- Population description (estimated # plants, area covered)
- Habitat type where found (forest, field, prairie, wetland, open water)

4. **Mail or bring specimens and information to any of the following locations (digital photos may be emailed):**

Wisconsin Dept. Natural Resources
2984 Shawano Avenue,
Green Bay, WI 54313
Phone: (920) 662-5100

UW-Stevens Point Herbarium
301 Trainer Natural Resources Building
800 Reserve Street
Stevens Point, WI 54481
Phone: 715-346-4248
E-Mail: ejudziew@uwsp.edu

Wisconsin Invasive Plants Reporting & Prevention Project
Herbarium-UW-Madison
430 Lincoln Drive
Madison, WI 53706
Phone: (608) 267-7612
E-Mail: invasiveplants@mailplus.wisc.edu

Appendix C

Appendix C. Lake User Survey Results