



**DOING THE RIGHT THING  
for Our Lakes and Rivers**

# DOING THE RIGHT THING for Our Lakes and Rivers

*The Oneida County Lakes and Rivers Association offers this series of informational articles to encourage the protection of our irreplaceable water resources for all to enjoy, now and in the future. OCLRA and its members commit themselves and encourage others to commit to:*

## Continue the tradition

Among Wisconsin's rich natural resources, its many lakes and rivers continue to inspire our citizens' deeply held conservation values. For decades, Wisconsin waterfront property owners have joined lake and river associations to advocate for sustainable development and protection of our water resources, which belong to all state residents.

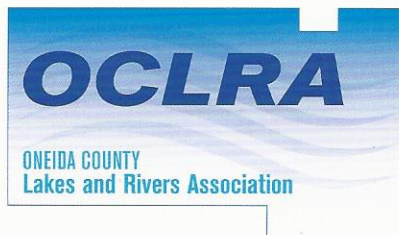
## Support local control of lake and river protection

Today, lake and river associations and all who treasure our state's waters face a new challenge. Actions taken in state government have removed a great deal of power from county and local governments to adopt rules that protect water resources. Local control is essential because each locality's waters are unique in quality and character.

## Take effective action

Wisconsin's lake and river organizations have a history of responding to challenges. We know and practice what must be done to protect our waters. We will continue to advocate for sensible waterfront development, knowing that a healthy natural environment and healthy economies go hand in hand. We will promote shoreland and lake protections proven effective by the best scientific research. We will work to promote policies that help keep our lakes and rivers clean and beautiful.

**To find out more, visit [www.oclra.org](http://www.oclra.org) or email to [webmaster@oclra.org](mailto:webmaster@oclra.org).**





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# Water Quality: What Is it Exactly?

How good is your lake's water quality? The answer isn't as simple as it might seem. You can judge water quality reasonably well just by looking, but for a full assessment you have to look much deeper. Let's look at the key components of water quality.

**Clarity.** In general, clear lakes have good water quality, but that isn't always true. For example Lake Michigan is very clear these days, but largely because invasive mussels filter out the algae that form the base of the food chain. As a result, certain fish populations are collapsing. Clear as Lake Michigan may be, it is far from healthy.

**Dissolved oxygen (DO).** The more molecular oxygen (O<sub>2</sub>) in the water, the more life the lake can sustain. High DO supports fish like trout and smallmouth bass. Low DO may limit fish life to rough species like bullheads and carp.

**pH.** This is a measure of how acidic or alkaline the water is. Fish and other organisms can live only within certain pH ranges. A lesson here comes from lakes that in the 1970s were acidified by pollutants from coal power plants. In some lakes the water became so acidic that almost all fish died.

**Nutrients.** Excessive nitrogen and phosphorus from farm runoff, excess lawn fertilization, failing septic systems and other sources can cause rampant weed and algae growth. The result is reduced water clarity and DO, among other impacts.

**Insect life.** Mayflies, caddisflies and stoneflies have low tolerance for pollution – they are a sign that your lake is healthy. More pollution tolerant but still positive indicators are craneflies, dragonflies, damselflies and whirligig beetles.

**Plankton.** A healthy lake has strong numbers and good diversity of algae, one-celled diatoms, and the many small creatures we collectively call zooplankton.

So, the water quality in a lake isn't always clear cut. What is clear cut is the need to protect it.

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## Did you know?

*Tiny amounts of mercury in lakes can accumulate in fish, making some species possibly unhealthy for some people to eat.*

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# AIS—Help Fight Off Lake Invaders

Aquatic invasive species (AIS) cause serious damage to lake ecosystems and our native plants, fish and wildlife.

You know many of them by name. Rusty crayfish mow down lake weedbeds and deplete fisheries. Zebra mussels filter out the algae and small creatures on which newly hatched fish feed. Eurasian water milfoil grows in thick mats that hinder boating and swimming. Purple loosestrife takes over wetlands.

Curly leaf pondweed. Spiny water flea. Asian carp. Sea lamprey. The list goes on. Here are a few facts to help you understand these nuisances and help keep them from spreading:

- **Many invasives (like zebra mussels) came here in ballast water that ocean ships empties into the Great Lakes. Others (like rusty crayfish) came in the bait buckets of out-of-state anglers.**
- **Invasive species proliferate because they have no natural predators or competitors. They reproduce quickly, crowd out native plants and animals, and cost millions to control.**
- **Invasives spread with help from people and animals. Some travel on boat trailers or in the livewells and bilges of boats moving from lake to lake. Others (like purple loosestrife) can hitchhike on footwear or in pet fur.**
- **It is against state law to possess, transport, transfer or introduce invasive species.**
- **More than 40 percent of the species on the federal Threatened or Endangered lists are at risk from invasive species.**
- **Invasives can be controlled by pulling them out, erecting physical barriers, and eradicating them with chemicals or biological agents.**
- **No method of control beats prevention of their spread. Prevention starts with public education and inspection of boats at landings.**

Wisconsin spends millions per year to battle invasives. If you value the lakes, rivers and forests, do your best to help – whatever it takes.

Visit <http://dnr.wi.gov/topic/Invasives/>.

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***Did you know...***  
*Wisconsin's list of  
invasive species  
includes 35 plants  
and 62 animals.  
More pose threats  
each year.*

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# Your Lake Is Aging. Help the Process Go Slowly.

From the time our lakes were formed by the glacier, they began to age. Over many thousands of years, every lake goes through a slow process in which plants grow and die, streams and runoff bring in sediment, and the lake bed fills in.

Some lakes age faster than others. For example, deep lakes with rocky bottoms and fed mostly by groundwater springs tend to age very slowly. Shallow lakes with soft bottoms friendly to weed growth, and with streams flowing in, also tend to age faster.

That oversimplifies things, of course, but the point is that every lake lies somewhere on the aging curve. The way we humans treat lakes can affect how quickly or slowly they age.

One indicator of how fast a lake will age is its trophic state – how rich it is in nutrients that cause algae and weeds to grow. Scientists place lakes into three basic trophic states: oligotrophic, mesotrophic, and eutrophic.

- **Oligotrophic lakes (“oligo” means “few”) are poor in nutrients. They tend to be deep with sandy or rocky shorelines. The water is clear; weeds and algae are sparse. These lakes age slowly.**
- **Eutrophic lakes, on the other end of the scale, tend to be shallower with mucky bottoms. In summer, they may become green with algae and choked with weeds. These lakes can age very quickly.**
- **Mesotrophic lakes fall between the two extremes. Many Northern Wisconsin lakes are mesotrophic.**

The basic difference between these lake types is the level of nutrients in the water. Development of homes and businesses tends to accelerate lake aging, as it can add nutrients through erosion, lawn fertilizer runoff, and failing septic systems.

By following good management practices, each lake association and each property owner can help limit the addition of nutrients and let lakes age naturally – which is to say, more slowly.

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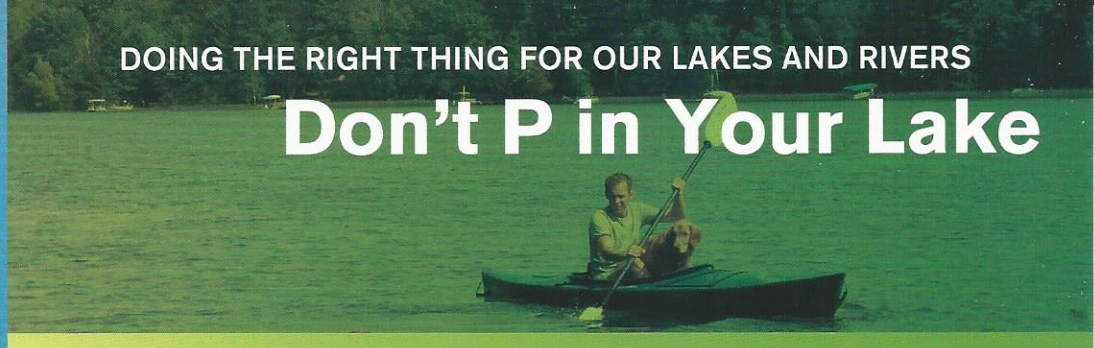
*A septic system should be inspected each year and pumped out every three years to keep it working properly and protect lake water quality.*

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# Don't P in Your Lake



That's P as in the chemical symbol for phosphorus, a nutrient that in excessive amounts can cause noxious algae blooms in lakes.

The headline comes from an education campaign in a New Hampshire town that encourages people to help keep phosphorus out of the water. It's good rule to follow on any lake.

What's the trouble with phosphorus? It accumulates over time, and too much of it can cause explosive growth of weeds and blue-green algae (cyanobacteria).

Aquatic biologist Darby Nelson explains this brilliantly in his book, "For Love of Lakes." He describes the ingredients in his wife's blueberry muffins and how, if she has only two teaspoons of baking powder (the limiting factor), she can only make one batch – no matter how much flour and sugar and how many eggs she may have.

Then he notes that in lakes, phosphorus is the limiting factor: "Compared to demand, it is phosphorus that is available in least supply...Little phosphorus in lake water begets few cyanobacteria, algae and aquatic plants. Lots of phosphorus begets lots of blue-green algae, or aquatic plants, or both."

The worst culprit here is the blue-green algae, which can reduce dissolved oxygen in the water. That leads to foul-smelling pileups on shore, produces toxins that kill fish, and even makes people and pets sick. So, to keep P out of your lake, what can you do? Here are some tips:

- **Use phosphorus-free fertilizer on your yard or, better yet, no fertilizer.**
- **Use phosphorus-free detergents and dish soaps.**
- **Keep a natural shoreline or at least a buffer strip of natural vegetation to limit runoff.**
- **Have your septic system serviced on a regular schedule.**
- **Take steps to limit runoff from hard surfaces.**

Keeping P out of the water will help preserve the quality of the lake you love.

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## *Did you know...*

*Yes, doing that other kind of "P" in the lake does add phosphorus. So, use the bathroom.*

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# Algae in Our Lake – Is That Good or Bad?



At certain times of the year, a normally clear lake can appear green and not so clear. You're seeing the presence of algae in the water. In a healthy lake, algae are critical to the balance of life. But, as in life in general, the rule is: Everything in moderation.

Algae are tiny plants that have no stems or leaves but usually contain chlorophyll. They may attach to submerged rocks and branches, or they may float freely in the water. Algae provide food for the tiny creatures (zooplankton) that the fry of our favorite fish love to eat.

Algae exist when all conditions are right: temperature, sunlight, water pH, and the balance of nutrients. A critical nutrient is phosphorous. It must be present in precisely the right amount. Too little and algae will not thrive. Too much and algae will "bloom." That reduces the lake's clarity, appeal and natural balance.

There are several kinds of algae. Tiny green spots floating in the water are fine. Dense mats of stringy brown or green matter near the surface are filamentous algae. They aren't pleasant to look at, but they cause few problems.

The trouble can come in mid- to late summer, when lakes too rich in nutrients experience blooms of blue-green algae. These organisms are really bacteria that form suddenly and grow rapidly. They create a thick, blue-green mat near the surface, forming wavelike patterns in quiet water. During certain times in their lifecycle, these bacteria produce powerful toxins that can make people and pets sick.

So, get to know the natural cycles of your lake. Know when to expect the welcome presence of beneficial algae. Be aware of the sudden changes in algae growth. Don't be alarmed by the presence of tree pollen on the cold lake surface in late spring.

Join your shoreland neighbors to help keep lake phosphorous in equilibrium. Don't use phosphorous fertilizers. Keep your septic system in good working order. Tend to your natural shoreland buffer.

In balance, algae is a good thing. Healthy lake life depends on it. Too much algae may be a sign of a lake under stress.

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## *Did you know...*

*Blue-green algae blooms can deplete oxygen in lakes and kill fish.*

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# Shoreline Buffers: Good for Your Lake. Good for You.

What can you do to help keep your lake healthy? Actually, quite a lot. One of the best things you can do is create (or keep) a strip of natural vegetation – a shoreline buffer – along the length of your frontage. Shoreline buffers can help limit the effects of development on our lakes. If everybody had one, our lakes would be cleaner and more beautiful. You might be surprised at all the good a shoreline buffer can do.

## Good for your lake and the environment

- Protects the water by filtering runoff containing silt, salt, chemicals, fertilizer and other pollutants.
- Slows runoff, letting water soak into the ground instead of flushing straight into the lake.
- Helps keep waves and runoff from eroding the shoreline.
- Improves near-shore habitat for fish and other water creatures.
- Provides a haven for mammals, birds, reptiles, amphibians and insects – a sanctuary for wildlife.

## Good for you and your property

- Saves time you would otherwise spend mowing and trimming more lawn.
- Gives you extra privacy and helps muffle the noise of boats and personal watercraft.
- Discourages messy pests like geese and non-native plants like purple loosestrife.
- Helps make the lake more attractive to home buyers, and so makes your property more valuable.

It's far easier and cheaper to protect your lake from harm than to clean it after it's been damaged. Plan your shoreline buffer this year.

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**Did you know...**  
A shoreline buffer  
as little as 30 to 35  
feet wide can make  
a big difference in  
protecting your lake  
from pollution.

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# Butterflies, Turtles and Frogs – Oh, My!

The development of our lakeshores is almost complete. A 1965 study of northern lakes showed 25 percent of the shoreline developed. The Wisconsin Department of Natural Resources predicts that by 2025 more than 90 percent will be developed.

Building along shorelines can increase runoff of phosphorus and other pollutants that hurt lake water quality. But there's something every property owner can do to limit these impacts: Plant a buffer zone along the lakeshore – or preserve a natural buffer zone that's already there.

A buffer zone has bonus benefits beyond water quality: It is beautiful and provides a rich habitat for wild creatures.

A buffer zone is a strip along your shoreline – ideally at least 35 feet wide – that is planted with trees, bushes, natural grasses, wildflowers and ground cover. It restores natural lakeshore habitat that was lost to home construction.

You can keep a buffer zone and still have a lawn (if you want one). The trees and plants help stabilize the shoreline, limit erosion and keep the lake clear. They help filter out pollution. And they add to the natural beauty for which people buy lake and river property. The plants you choose can offer more visual appeal than a manicured green lawn – they impart color, texture and variety to the landscape.

A buffer strip is inviting to many wild creatures that prefer to live in sheltered areas near the water. Imagine being able to enjoy:

- **Songbirds, hawks and herons**
- **Turtles, frogs, snakes and salamanders**
- **Otters, minks and foxes**
- **Bees, butterflies and fireflies**

These and many more creatures will prosper in your natural waterfront setting. So, plant or maintain a buffer zone. Butterflies, turtles and frogs will say, "Oh my!"

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***Did you know...***  
*The 30- to 40-foot strip around a lake's shore is called the "ring of life" for the rich variety of creatures that live there.*

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# Just Because It's Legal Doesn't Mean It's Good

Recent state actions have eliminated many elements of local shoreland zoning ordinances designed to protect our lakes and rivers. Rules and guidelines that local officials had deemed critical to protect lakes and streams were declared null and void by the State of Wisconsin.

Now some activities that can seriously harm our waters are legal. The new rules were advanced overnight by the Joint Finance Committee, approved by the State Legislature and signed into law by the Governor. But regardless what is and is not legal, we can still do what is right – for our water, our neighbors, and our properties. Consider:

- **Clearing and mowing your lake property all the way to the water's edge may be legal, but is it good for your lake?**
- **Renting your lake home to groups for one-week stays may be legal, but is that considerate of your neighbors?**
- **Driving your boat at 60 mph may be legal, but is it safe and prudent?**
- **Removing a fallen dead tree on your shore is permissible, but will doing so take away beneficial fish habitat?**
- **Dredging in the lake in front of your property may become legal, but how will it affect the lake ecosystem and fishery?**
- **Dividing your large waterfront property into several lots may be allowed, but will more homes and more runoff impair the health of your lake?**

Though we are free to do whatever is legal, that may not be good for the water. In fact, pushing up to the legal limits may help ruin the quality and the value of the place you love. As you make plans for your property, don't think of what you can legally do. Think of doing what is right for the lake.

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*"A thing is right when  
it tends to preserve  
the integrity, stability  
and beauty of the  
biotic community. It is  
wrong when it tends  
otherwise."*

**—Aldo Leopold**

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# Changing Our Ways: Clean Boats – Clean Waters

There was a time when fishing a northern lake meant a visit to a local boat livery – a lakeside business that provided a boat and often a fishing guide for a fee. Back then, the boats available to us stayed on a single lake.

Reel forward to modern fishing. Today, few serious anglers go without a modern fishing rig, complete with a powerful motor, electronic fish-locating devices, live well, and a cooler stocked with beverages, all mounted on a road-worthy trailer. If the fish aren't biting on one lake, anglers can move on to a different lake.

All that is fine, but it comes with a big risk. Each year, more northern lakes become hosts to aquatic invasive species (AIS) – unwanted plants or animals that upset the delicate balance of native lake life. Often, those invaders arrive on boats or trailers that recently visited a lake where an invasive species such as Eurasian water milfoil was present.

Today's mobile anglers have a responsibility to avoid transferring lake water, vegetation, baits, snails and other creatures from one lake to another. Wisconsin law requires anglers and all boaters to remove any potential "aquatic hitchhikers" from boats, motors and trailers and to empty live wells before leaving a landing area, and especially before launching on another lake.

To help Northwoods boaters and anglers learn these procedures, lake neighbors volunteer at landings to help perform routine inspections and clean watercraft. They also monitor and gather lake data to inform strategies for future invasive species prevention and control. The Wisconsin Clean Boats – Clean Waters Initiative provides training and coordination for the volunteers.

The next time you use a boat landing, be sure to thank the volunteers who seek to maintain the fisheries and the health and beauty of our northern lakes.

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## ***Did you know...***

*The extremely invasive Eurasian water milfoil can infest a lake starting with just one part of a plant that "hitchhikes" on a boat or trailer.*

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# Liquid Gold: The Value of Water Quality

Clean lakes and rivers in the North are not just beautiful – they are critical to the regional economy. Clean water directly benefits every lake property's value. To appreciate the economic benefits of clean water, consider:

- Many northern Wisconsin towns get more than half their assessed value from shoreline property. Some get over 90 percent.
- A UW-Madison study in Vilas and Oneida Counties found that property values could drop by 15 to 17 percent due to impaired water quality, presence of invasive species, and loss of scenic beauty and wildlife habitat.
- The tourism industry depends on our high-quality lakes. Visitors spent more than \$215 million in Oneida County in 2015, according to the state Department of Tourism.
- Many small businesses rely on water based recreation for most their sales. Many business owners would like to live here to enjoy the high quality of life that goes with a clean lake.
- High-quality lakes help attract doctors, other professionals, entrepreneurs and retirees. Their assets, incomes and spending power enrich the local economy, yet do not require major spending on infrastructure.

We risk losing these economic benefits if the quality and scenic beauty of our lakes are impaired reduced by too much shoreline development. Lake quality, once lost, is very difficult to restore.

Our local economies depend on shoreline protection. Each lake is its own unique, complex system; each county has its own needs and values. Local, fair and efficient shoreline protection ordinances are proven to help maintain lake quality.

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**Did you know...**  
*A Northwoods study has shown that impaired lake quality can reduce lake property values by \$30,000 per parcel.*

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# Protecting Our Lakes: The Virtues of Prevention

Your mom kept telling you that avoiding a mess in your room was easier than cleaning it up. She was right.

Doctors will tell you it's better (and much cheaper) to stop smoking than to cure the problems smoking causes. They're right.

And when your lake association president says it's better to keep pollution out of the water than to try and get rid of it – well, he or she is right, too. Consider these facts when planning to build or landscape on your lakefront property:

- While rivers can 'cleanse themselves' if we stop adding pollutants, lakes will recycle the pollutants in a continuous downward spiral of reduced water quality.
- Most lake problems result from small amounts of pollution adding up over time. It is a one-way street that can't be easily reversed – and the problems often aren't noticed until it's too late.
- More than 50 years' experience shows that pollution prevention is much cheaper than cleanup – no economist could justify waiting until signs of poor water quality appear.
- Preventive practices cost next to nothing, yet can greatly improve fish and wildlife habitat, reduce erosion, and increase biological diversity. A simple prevention practice is to leave an unmowed buffer strip along your shoreline. This natural pollution reduction also looks beautiful and needs little or no maintenance.
- Preventive practices can be a one-shot deal. Cleanups often require a great deal of time and money – and their benefits may be only temporary.

As you make plans for your lake property, think like an economist. Or your doctor. Or your mom. Put prevention first. The rewards can be incredible. You can't put a price on water quality.

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*"An ounce of prevention is worth a pound of cure."*  
–Benjamin Franklin

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# By the Numbers: The Water Wealth of Oneida County

Oneida County has rich and extremely varied water resources – only Vilas County has more lakes. Studies indicate the lakes and streams are among the county's most important economic resource. Here are some facts about Oneida County's lakes and streams:

- The county has 1,130 lakes with a total of 69,351 surface acres.
- There are 296 streams totaling more than 830 miles, including 77 trout streams (194 miles).
- The lake shorelines total 1,331 miles, and the stream shorelines total 1,661 miles.
- 82 percent of the lakes (938) are less than 50 acres, and 445 are less than 10 feet deep. The deepest is Clear Lake in the Northern Highland American Legion State Forest, at 100 feet.
- The largest lake is Lake Tomahawk at 3,627 acres, and the largest flowage is the Willow Flowage at 5,135 acres.
- Privately owned lake shoreline totals about 1,000 miles, more than three times the publicly owned lake shoreline (300 miles).

The county has a wide variety of lake types: seepage, drainage, drained, spring, and impoundment. In addition, each lake is unique in size; water quality, color and transparency; and fish and wildlife habitat. This variety makes the waters interesting, useful and valuable.

The lakes and streams are also unique in their ability to tolerate pollution. The Hat Rapids Flowage on the Wisconsin River, for example, receives hundreds of pounds of pollution daily from the City of Rhinelander and a paper mill yet still meets water quality standards. On the other hand, many lakes and small streams cannot tolerate even small amounts of pollution.

This is why a one-size-fits-all shoreline protection rule covering all of Wisconsin cannot adequately protect Wisconsin's waters. Local control and science-based rules are best for the waters and the people who enjoy and depend on them.

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## ***Did you know...***

*In 2015, the Wisconsin legislature took away the right of counties to enact lakeshore zoning rules more protective than the minimum standards set by state law.*

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# Why Zoning?

The whine of chainsaws almost drowns out the deep rumble of the bulldozer. Your quiet, peaceful bay will be forever changed – your worst nightmare. The new neighbors are clearing their property, converting it to a lakeside tavern with a parking lot in the rear and a big lakeside deck for dancing and music. A big new dock and lots of lighting complete the picture...

## **CUT... STOP!**

Don't worry – this can't happen on most lakes in Wisconsin. We have zoning regulations that protect our properties against such intrusions.

Zoning ordinances are regulations that control development, detailing building size and density, lot sizes, setbacks from property lines and more. Most important, they make sure that development is compatible with its surroundings. So, no taverns in the residentially zoned area on your peaceful bay. And no single-family homes in an industrial park.

For over a century Wisconsin has used zoning regulations. In 1933, Oneida County was the first county in the nation to adopt a comprehensive rural zoning ordinance. These ordinances protect not only private property rights but public property rights, as well. For over two centuries Wisconsin's lakes and rivers have been considered public property – they belong to all of us.

Zoning is a working balance between public and private rights. The same regulations that preclude your neighbor's tavern also limit, to some extent, what any one of us can do with our property. For example, shoreland zoning helps keep our lakes and rivers healthy and beautiful.

In return for limitations on our own activities, we all benefit from high-quality water resources, and the economic growth and enhanced property values that go with them. Wisconsin's waters are fragile and irreplaceable. Let's do our part to preserve them. Shoreland zoning helps us do that. It serves us extremely well.

**One in a series of articles sponsored by the Oneida County Lakes and Rivers Association ([www.oclra.org](http://www.oclra.org)). For more information, contact Bob Martini at 715-282-5896 or email to [webmaster@oclra.org](mailto:webmaster@oclra.org). OCLRA encourages the use and distribution of this material by lake associations, their members, and other parties concerned about water quality.**

*"We did not inherit the land from our forefathers – we are borrowing it from our grandchildren."*

**—Anonymous**

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DOING THE RIGHT THING FOR OUR LAKES AND RIVERS

# Wisconsin's Long History: Manage Lakes with Science

For decades Wisconsin's lakes have been well managed by a partnership of landowners, the Department of Natural Resources, county officials, the University of Wisconsin-Extension, various lake organizations, and private consultants.

This system was based on the best available science and had largely bipartisan support from legislatures and governors. Famous Wisconsin scientists and politicians, along with visionaries like Aldo Leopold, Gaylord Nelson, and John Muir developed this system. It was the envy of lake lovers worldwide for decades. Science-based decision-making guided lake management.

About six years ago, this all changed. The weakening of environmental protection laws could reverse decades of proven lake protection policies. Short-term interests could displace science as a basis for lake management in Wisconsin. State-level changes have taken away local control over critical protections, such as shoreland zoning. Among the possible consequences:

- **The rights of the vast majority who own and use our shorelines might be reduced – over-development by a few endangers the welfare of many.**
- **The economic value of shoreline properties could be threatened if lake water quality is diminished.**
- **The vast majority of lake users who do not own lake property could suffer from declines in lake quality because new laws allow development and maintenance practices that scientific principles say are unwise.**
- **The moral responsibility to care for our aquatic assets may be compromised by political ideology.**
- **New regulations may give waterfront property owners immediate benefits, but also remove long-term lake quality protections, leading to permanent lake damage.**

These new laws are now in place and are affecting our lakes today. Wisconsin's system of science-based lake protection must be restored and strengthened to avoid the risk of irreversible damage to our valuable lake resources. Our responsibility to safeguard our lakes for future generations is too important to ignore.

*The northern Wisconsin tourism industry is based on quality lake resources. It is worth hundreds of millions of dollars a year.*

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DOING THE RIGHT THING FOR OUR LAKES AND RIVERS

# Development on Our Lakes: Are We at a Tipping Point?

Many imagine a time countless decades ago when our northern Wisconsin lake country was in a steady state of environmental equilibrium. A web of food and habitat resources nurtured a steady diversity of life in an endless natural balance across the land and waters.

From the perspective of centuries, this balance of nature was really not so steady or predictable. Forest fires, shifting climate trends, and the sweeping rise and fall of dominant organisms periodically created sudden and random affronts to the notion of nature in balance.

So it is today with many of our lakes. An abrupt and sweeping influx of human development has come to the peaceful natural shorelands. A study of northern Wisconsin lakes shows that in the 1960s, 25 percent of private shoreland was developed – and that at the present pace 90 percent will be developed by 2025.

This surge in development has been shown to cause a 700 percent increase in phosphorous entering into our lakes. Sediment loading has increased by 18 percent. Invasive species are arriving and lakes are warming, putting new pressures on the fragile balance of plants, fish and wildlife. Suddenly, the delicate balance of lake ecology is being upset.

A Minnesota study discovered a tipping point for healthy lakes. When the natural forested portion of a northern lake's shoreland falls below 60 percent, lake health begins to deteriorate. Many northern lakes are reaching a tipping point. Lakeshore development has begun to exceed nature's capacity to remain in a stable state.

We can help keep lake health in balance through development choices rooted in sound science and maintained through state and local shoreland conservation rules and guidelines. Sustainable lakeshore stewardship practices will allow us to pass the cherished legacy of our northern lakes on to future generations.

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*“Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher ‘standard of living’ is worth its cost in things natural, wild and free.”*

**—Aldo Leopold  
Foreword to  
“A Sand County  
Almanac,” 1949**

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# Tragedy of the Commons: An Old Fable for Modern Times

In early England, a commons was an area used by all – not privately owned. Pastures, for example, were commons areas available to anyone for grazing cattle. One day, a farmer thought he might increase his profits by quietly adding a cow to his herd. Would one more cow make a difference to the commons? Other farmers then quietly added cows, too.

Over time, the pastures became barren and overgrazed, and the cattle on the commons became puny and stunted. To make up for their losses, the herdsmen added more cattle to their herds. Things only got worse; the commons became wastelands, of no use to any herdsmen.

Is there a modern lesson here for our Northwoods lake country? History records many examples of the abuse and overuse of unrestricted commons areas. When private parties are left to their devices, commons areas can degrade until they become unusable and undesirable. That can happen to our lakes if we let it.

Wisconsin's Public Trust Doctrine treats the state's lakes and streams as commons areas – free for all to use. Some are in danger of becoming tragedies, through excessive development, pollution, and destruction of natural beauty and habitats.

How can these tragedies of the commons be prevented? By striking the right balance between free public use and preservation. We can all do our part by doing things that protect the waters and avoiding actions that would harm them. There's also a role for fair and reasonable regulation of our water commons. For example, protective shoreland zoning ordinances at the local and county levels help keep our lakes and rivers healthy.

Everyone must work together to achieve the needed balance. We value our lakes too much to let them become tragedies of the commons.

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*When do the rights of landowners around lakes infringe on the rights of the people who own the water (all of us)? If non-regulation doesn't work, how much regulation is right?*

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DOING THE RIGHT THING FOR OUR LAKES AND RIVERS

# Who Owns Wisconsin's Lakes and Streams? We All Do!

That's right. No one person or company can own any of our state's surface waters. They are public resources, owned by all of us.

Together we own the waters of Lake Michigan, the Wisconsin River, Lake Winnebago, Trout Lake, the Turtle-Flambeau and Chippewa flowages, the Wolf River, and all of our state's more than 15,000 lakes and 84,000 miles of rivers and streams. These waters are held in trust by the state Department of Natural Resources

The Public Trust Doctrine is affirmed by the state Supreme Court. It gives us the right to swim, boat, fish, hunt, skate and generally enjoy these waters and their scenery. Over many years, the doctrine has been upheld, defined and expanded by court cases and state laws. It is part of Wisconsin's culture.

Private parties can and do own the land along lakes and streams. Landowners have the right to use those shorelines and have access to the water. However, the Wisconsin Supreme Court has ruled that when conflicts occur between private and public rights, the public's rights take priority.

If we accept the Public Trust Doctrine, then we all have a duty to help protect the waters for the good of everyone. In fact, it is the Public Trust Doctrine that empowers the DNR to protect our right to the waters through permitting rules, and through laws that allow local zoning ordinances to limit development along waterways.

The Public Trust Doctrine, like our waters themselves, is a treasure worth protecting.

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***Did you know...***  
*The Public Trust Doctrine is enshrined in Wisconsin's Constitution. It declares that all the state's navigable waters are "common highways and forever free."*

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DOING THE RIGHT THING FOR OUR LAKES AND RIVERS

# Shoreland Zoning in Wisconsin: A Step Backward

Six years of debate, multiple public hearings and some 50,000 comments from citizens of diverse backgrounds led to a major revision Wisconsin's shoreland zoning standards in 2010.

This package, called NR115, updated rules that had protected our waters since the 1960s. It set statewide minimum standards to safeguard the water quality, fish and wildlife habitat and scenic beauty of lakes and rivers. Provisions included minimum lot sizes, building setbacks from the water's edge, and standards for amounts of impervious surfaces (such as roofs and driveways) that increase runoff.

Meanwhile, counties could make their shoreland zoning rules more protective than the state standards if they saw fit; many counties did so. Key management practices included controlling development density and creating natural buffer strips at the water's edge.

Then came the state budget process of 2015. In July, the Joint Finance Committee added a provision to the biennial budget bill forbidding counties from enacting zoning rules more restrictive than NR115. Traditionally, changes of this size are considered over weeks of open debate. Instead, this law was added to the budget at the last minute, outside normal legislative channels, leaving no chance for public discussion. Called Act 55, it was later signed into law with the budget bill. The impacts could be profound:

- **The one-size-fits-all regulation ignored vast difference in counties' lake and river resources.**
- **The law took away local control of shoreland development.**
- **It forced counties that already had more protective zoning rules to abandon them in favor of state minimum standards. That negated years of effort and overruled the wishes of local officials and citizens.**
- **Lake protections such as vegetative buffers, minimum frontages and lot sizes, setbacks, runoff mitigation, shoreland lighting, and others were severely weakened.**
- **Northern Wisconsin counties were hurt the most because our lakes and rivers are essential to quality of life and the backbone of a multi-million-dollar tourism industry.**

Act 55 severely undermined local control and water-quality protection. It serves narrow interests for short-term gains. It could result in serious and lasting damage to the water resources Wisconsin residents hold dear.

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*"The government  
closest to the  
people serves the  
people best."*

*—Thomas Jefferson*

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# Property Rights: Whose Property?

In Wisconsin we decided that a smoker's rights stop at the tip of a non-smoker's nose. The majority has pushed for it to be so. Not everyone likes it.

Where is the tip of the nose when it comes to rights in and around water? The ordinary high water mark (OHWM) sets a dividing line between the "dirt" and the water. Someone owns the dirt and the public owns the water. What are the rights of these parties? Why should there be any conflict? What does the majority want?

Wisconsin's Public Trust Doctrine states that the water rights are owned by everyone who wants to use the water. Lakes and streams belong to all of us, not just the people who own land along the shore. Regulations protect these water rights. Protections prevent activities in and on the water, and on the surrounding land, that might harm the water. Many of these guidelines and practices have been in place for years. They are accepted as part of Wisconsin's long history of conserving natural resources.

The balance between the public rights to the water and the rights of the adjoining landowners has always been somewhat flexible. That balance helps maintain the water quality. Protecting the water for all of us continues to be good for Wisconsin citizens, whether or not they own lake or river property.

Recent legislation has potential to undermine long-held assumptions about the Public Trust Doctrine and the rights of the majority. New laws rolled back rules that have long protected water quality for everyone. Each new law that erodes the Public Trust Doctrine diminishes our rights to enjoy Wisconsin's lakes and streams. Visit <http://conservationvoters.org/> to learn about these changes and what they mean for your rights and for Wisconsin. Then let your elected officials know your opinions.

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*Did you know...  
The Public Trust  
Doctrine is enshrined  
in the Wisconsin  
Constitution and has  
been upheld by the  
state Supreme Court.  
It says all Wisconsin  
citizens have the right  
to boat, fish, hunt, ice  
skate, and swim on  
navigable waters and  
enjoy the waters'  
natural scenic beauty.*



DOING THE RIGHT THING FOR OUR LAKES AND RIVERS

# Upset by the Loss of Lake Protections? Take Action.

Aldo Leopold said, "One of the penalties of an ecological education is that one lives alone in a world of wounds."

In a time when it seems critical protections for our lakes and our environment are being rolled back, it's easy to feel alone and powerless. But you don't have to. You can take action – and have plenty of company when you do. Here are some proven ways to make an impact.

- **Do your homework.** Understand the issues inside and out. Know your allies and your opponents. Take Bob Dylan's advice and know your song well before you start singing.
- **Join up.** Groups speak louder than individuals. They carry weight with decision-makers and have resources to make themselves heard. Join your local and county lake associations. Explore groups like the River Alliance, the League of Conservation Voters, and Wisconsin Lakes.
- **Get politically active.** Support candidates who care about the environment. Don't just vote. Work on their campaigns. Canvass door-to-door or join a phone bank. Make a donation.
- **Engage with elected officials.** Attend their town halls and listening sessions. Testify at hearings. Write to your representatives. Emails are fine; old-fashioned letters can carry more weight. Consider following up your letter with an email. State your case firmly but politely. Tell why the issue matters to you.
- **Share your passion.** Talk about your issues with like-minded friends. Broadcast your views on social media.
- **Be seen in the media.** Submit letters to the editor. Submit a longer op-ed column. Use the comment sections on new stories. Always be civil. Call in to radio talk programs.

These ideas are for starters. Consult with your favorite organization for advice on other forms of action. No matter how hard it gets, don't give up. Join other committed people and multiply your power.

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*"Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has."*

**—Margaret Mead**

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***“We did not inherit the land from our forefathers –  
we are borrowing it from our grandchildren.”  
– Anonymous***

