YOUR GUIDE TO LAKE
FRIENDLY LIVING
IN NEW HAMPSHIRE

LAKESMART

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NH LAKES

This Publication was Funded by Grants from

Jane's Trust &
The Davis Conservation Foundation

NH LAKES serves as a resource to the public on all aspects of lakes in New Hampshire. If you have any questions, please feel free to call us at **(603) 226-0299** or email us at **info@nhlakes.org.**

NH LAKES relies on charitable contributions from individuals like you who have a deep and profound connection to the beautiful lakes of New Hampshire. **Our mission is to help keep lakes clean and healthy, now and in the future.**

If you have not already done so, please join NH LAKES today! You can make a membership contribution online at **nhlakes.org,** by calling (603) 226-0299, or by sending in the membership envelope enclosed with this publication.

The most irrational thing we can do is pretend our lakes will take care of themselves.

This Guide is Brought to You by

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2008 First Printing
2011 Second Printing
2016 Third Printing
2019 Fourth Printing

You can find a PDF version of this publication on our website at nhlakes.org.

About NH LAKES

Keeping the Lakes You Love Clean and Healthy

The New Hampshire landscape features nearly 1,000 lakes. In, on, and around these waters is where many of our most cherished memories are created with family and friends. At NH LAKES, we turn your love of New Hampshire lakes into the practices that keep them clean and healthy. And, we provide easy access to reliable, timely, and well-researched information to help you make important decisions to ensure your favorite lake is clean and healthy for years to come.

More than 25 Years of Collaboration

NH LAKES was formed in 1992 by the collective vision of an organization focused on advocacy and another whose mission was geared toward educating the public on lake issues: The New Hampshire Lakes Legislative Coalition, Inc., and The New Hampshire Lakes Federation, Inc. respectively. Now, more than 25 years later, NH LAKES continues that collaborative tradition by working alongside local groups and people like you who are best positioned to meet the unique needs of their local lake community.

Doing Big Things... And Getting Results

Every summer, our impact expands exponentially as we place nearly 300 seasonal employees and 500 volunteers as Lake Host Inspectors at 100 of the most highly-used boat ramps throughout the state. Lake Hosts teach boaters the simple actions they can take to prevent the spread of aquatic invasive species—plants and animals which can ruin the health and enjoyment of our lakes. In addition to the Lake Host Program, the presence and vigilance of NH LAKES at the New Hampshire State House has resulted in programs and laws that will protect the future quality of New Hampshire lakes for the benefit of people and wildlife for years to come.

About LakeSmart

The Next 25 Years

A few years ago, NH LAKES posed this question to natural resource managers and lake community leaders around the state: "If NH LAKES keeps doing the same thing we've been doing for the past 25 years over the next 25 years, will our lakes be better off?" The answer was a resounding, "No." This answer was largely due to the fact that more needs to be done statewide to minimize the amount of polluted runoff water flowing off the landscape and into our lakes. We also heard that more needs to be done to encourage a culture of lake-friendly living throughout the state.

Now Offering the LakeSmart Program

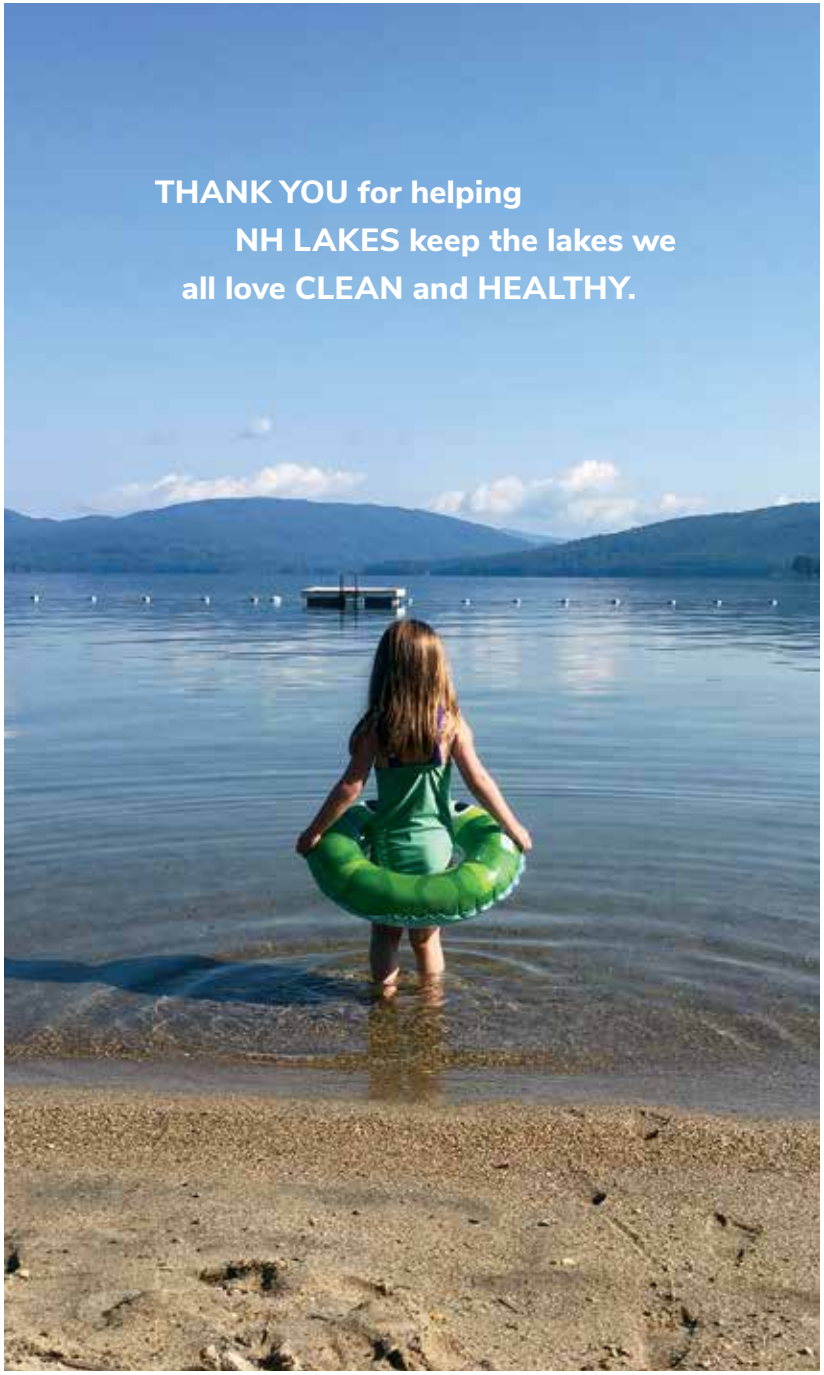
NH LAKES is now offering the LakeSmart Lake-Friendly Living Program. This free, non-regulatory, and voluntary certification program recognizes and rewards property owners who maintain their homes and the surrounding landscape in ways that help keep lakes clean and healthy. This includes reducing the amount of polluted runoff water their property generates.

LakeSmart Award

Make Lake-Friendly Living the Norm in Your Community

You can make lake-friendly living the cultural norm in your community by leading through example and encouraging your neighbors to do the same. Reading this guidebook is one of the first steps in learning how to be lake-friendly.

Interested in bringing the LakeSmart Program to your community or your property? Visit our website at nhlakes.org/lake-smart, or contact us at info@nhlakes.org or (603) 226-0299.



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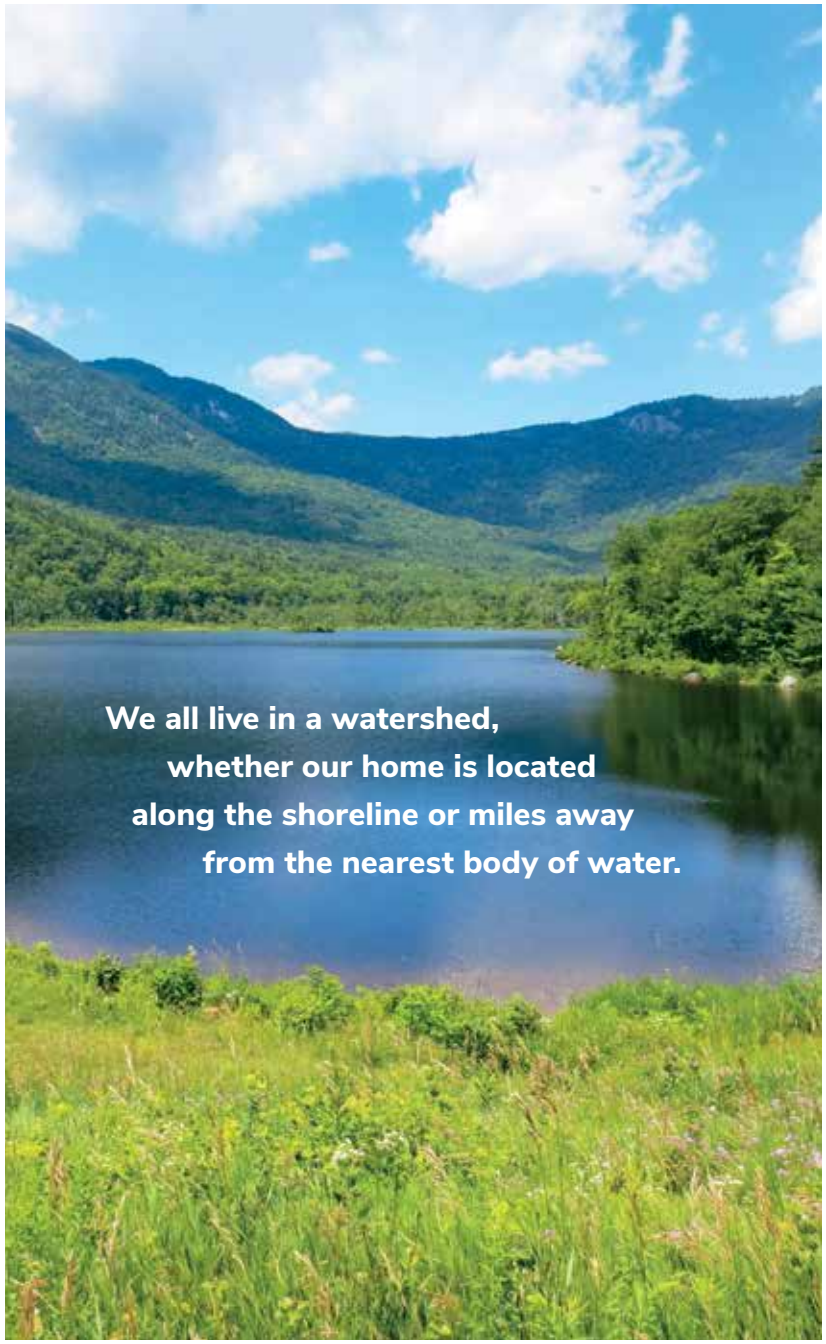
Introduction

New Hampshire Lakes Serve Many Purposes

New Hampshire boasts some of the most pristine and beautiful lakes in the country. Overall, these waterbodies are of high quality and are particularly important to the citizens and visitors of New Hampshire. Lakes not only provide a vast array of year-round recreational opportunities, they also provide critical fish and wildlife habitat, and many serve as public drinking water supplies. Numerous jobs in the state are dependent upon healthy and clean lakes and the opportunities that they provide. Simply put, New Hampshire's lakes are important to the state's economy, its natural environment, and our overall quality of life.

NH LAKES has developed this guide to provide you with a basic understanding of lake ecology and the connections between lake health and what you do in your home, on your property, along the shoreline, and out on the lake itself. This guide also provides you with some simple suggestions on: how to minimize your impacts on the lake; where to find more specific information about permit requirements for land clearing, structure building, and other development projects near lakes; and how to become actively involved in lake conservation programs.

New Hampshire boasts some of the most beautiful lakes in the country.



Basin Pond. PHOTOGRAPH BY JAMES DUNCAN.

Lake Basics

What is a Watershed?

A watershed is all the land that drains into a common waterbody, such as a lake, pond, or river. This waterbody is where all the water from precipitation and groundwater not used in other ecological processes flows off the landscape and eventually collects. A watershed can be only a few square miles or several hundred square miles in size. We all live in a watershed! You can determine the watershed boundary of a particular waterbody by connecting the points of highest elevation around that waterbody.

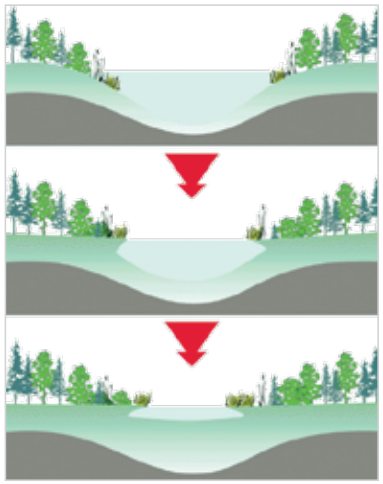
During rain events, soil and various pollutants including fertilizers, pesticides and herbicides, oils and other chemicals, and animal manure (including waste from septic systems) can be transported from the land surface within a watershed into waterbodies miles away.

Improper management of lawns, eroding gullies and shorelines, malfunctioning septic systems, and runoff water from urban and agricultural lands allow higher concentrations of pollutants to find their way into rivers and lakes than would naturally occur. Increased nutrient inputs into a lake can cause algae blooms and excessive aquatic plant growth, thus greatly speeding up the natural lake aging process.

The Life of the Lake

Lakes age with time. Most New Hampshire lakes are approximately 15,000 years old and have been going through a natural process of filling in over thousands of years. The natural aging process in which a lake fills in with material (such as sediment and decayed plants) and gets shallower continues as a lake progresses to a pond, a pond to marsh, a marsh to meadow, and a meadow to dry land. Although most of New Hampshire's natural lakes are approximately the same age, they are filling in at different rates.

In New Hampshire, young lakes typically contain low concentrations of nutrients, are steep-sided, have clear water, have sand or rock along most of the shoreline, contain few aquatic plants, and support little algal growth. Older lakes contain high concentrations of nutrients, are shallow, have sediment accumulated on most of the lake bottom, contain extensive plant beds, and support much algal growth.



Lakes fill in naturally over time with sediment, plants, and other material.

Humans accelerate the natural lake aging process by increasing the amount of nutrients (particularly phosphorus) and sediment than would naturally flow into a lake from its watershed. Changes in how watershed land is used can result in changes in nutrient runoff from the watershed. Studies have shown that the amount of phosphorus entering waterbodies from agricultural land is at least five times greater than from forested lands, and from urban areas is more than ten times greater than from forested lands!

A sediment and plant-filled lake. PHOTO COURTESY OF THE MAINE LAKES SOCIETY.

Phosphorus and Lake Health

Phosphorus is a nutrient that all aquatic plants and animals need to survive. However, excessive quantities of phosphorus in a lake can have negative impacts on lake health.

The removal of trees and other vegetation within watersheds and the creation or expansion of surfaces that do not absorb water — impervious surfaces like roofs and paved driveways — increases the amount of phosphorus that flows into lakes. These types of surfaces do not allow rainwater or snowmelt water to sink into the ground where phosphorus can be removed by natural processes.

Actions on the landscape that can contribute phosphorous and other nutrients into a waterbody include:

- Applying lawn and garden fertilizers
- Doing laundry or bathing in the lake
- Dumping grass clippings and leaves into or near the lake
- Feeding waterfowl
- Malfunctioning septic systems
- Removing natural vegetation
- Washing cars and boats in or near the lake

Increased phosphorus inputs to a lake causes nuisance algal and plant growth. Algal blooms can cloud lake water and cause taste and odor issues in drinking water sources. Excessive phosphorus can also lead to toxic bacteria and algae blooms.

Harmful Algal Blooms (Cyanobacteria)

Cyanobacteria are bacteria that use sunlight to produce their own food. They occur in all of our lakes, and have been there for thousands of years. When nutrient levels become elevated in a waterbody, cyanobacteria may bloom and form surface scums that are green or blue-green in color. Some species of cyanobacteria are toxic. When toxic cyanobacteria become concentrated and are ingested, they can be harmful to wildlife, pets, and people. Human exposure to cyanobacteria may result in symptoms such as nausea, vomiting, diarrhea, mild fever, skin rashes, and eye and nose irritations.

Cyanobacteria Blooms can be Dangerous to Your Health

If you observe a cyanobacteria bloom or scum:

- Avoid swimming or wading in the water.
- Do not drink the water.
- Keep pets and livestock out of the water.
- Call NHDES at (603) 419-9229 to report the problem.

PHOTO COURTESY OF NHDES.

Generally, the water quality of New Hampshire lakes is very good. However, lake water should not be consumed unless it is specifically treated for such use. Neither in-home water treatment systems nor boiling the water will eliminate cyanobacteria toxins.

When toxin-producing cyanobacteria blooms occur in surface waters in excessive amounts, the New Hampshire Department of Environmental Services (NHDES) may issue an advisory recommending that lake users avoid contact with the water in areas experiencing blooms.

The Key to Keeping Lakes Clean and Healthy

There are several actions each of us can take on our own property to help ensure a future of clean and healthy lakes in New Hampshire. Some of the most important actions we can take include keeping natural vegetation on the landscape, fixing areas where soil is being washed away, and helping runoff water soak into the ground. Together, the small actions that each of us take will make a big difference.

Lake-Friendly Actions

In Your Home

Many lake communities in New Hampshire are not served by municipal wastewater treatment systems. As a result, most lakeside residents rely on septic systems for wastewater treatment. A septic system digests the wastewater from the household(s) it is connected to. The most common systems consist of a septic tank with a leach field connected to it. The septic tank holds solid waste, while the wastewater flows off into the leach field. The soil around the leach field filters the water.

Nutrients, including phosphorus, build up in household wastes and are dissolved in the wastewater that ends up in the leach field.

Most lake-side houses have wastewater that may affect lake water quality.

Nutrients, and other pollutants, that do not get filtered out naturally by the soil in the leach field will eventually drain into groundwater or nearby waterbodies, including lakes.

The following practices can help ensure the proper functioning of your septic system and minimize the amount of nutrients and other pollutants it contributes to the groundwater and nearby waterbodies, including the lake.

Conserve water.

- When you use less water, the possibility of nutrients leaking into nearby waterbodies is reduced.
- Take shorter, less frequent showers, turn off the water while brushing your teeth, and run laundry and dishwashing cycles with full loads only.
- Install water-saving devices in your toilet tanks, sink faucets, and shower heads.

Space out water uses.

- Spread out washing machine, shower, and dishwasher uses, to give the septic system a chance to work between inflows.

Use cleaning products containing no phosphates.

- Use soaps and detergents containing no phosphates.
- Be careful about using products labeled as 'biodegradable.' Just because something is biodegradable does not mean that it is good for the environment. Phosphate-free household products are widely available in most stores. Check the label for phosphates and other pollutants.

If you use water softeners, use chloride-free products.

- Chloride is a pollutant that is harmful to plants and animals, including plants and animals in the lake.
- Read the product label carefully. Common water softeners contain potassium chloride or calcium chloride. Chlorides washed into a septic system eventually flow into groundwater and may reach the lake.

Be careful what you flush and dump down the drain.

- Paint products, bleach, septic tank additives, and toilet deodorizers can kill the good bacteria in septic systems that break down waste, causing waste to accumulate and the system to malfunction.
- Heavy toilet paper, paper towels, and cigarette butts can clog septic systems and are not easily broken down by natural processes.

Compost your kitchen waste.

- The use of a garbage disposal adds excess solid waste to the septic system which can slow its function and shorten its life. By decreasing the amount of solid waste in the system, you will not have to pump the tank as frequently.
- Using a garbage disposal also adds nutrients, including phosphorus, into the septic system.

Don't park or drive on the leach field.

- The weight of vehicles can damage the system.

Keep the leach field area free from trees and woody shrubs.

- Cover the leach field area only with plants that have shallow root systems like grasses and ground covers. Avoid planting woody shrubs and trees with deep root systems so that the pipes in the leach field are not damaged.

Have your septic system inspected and pumped regularly.

- Have a Certified Septic System Evaluator inspect your septic system regularly. For a listing of certified evaluators, visit certifiedsepticevaluator.org.
- Have your septic system pumped on a schedule recommended by your service provider. Service frequency depends on use and size. If settled solids are not removed from the tank, they can wash into and clog the leach field. To find information on licensed septage haulers, visit getpumpednh.com.
- Organize a neighborhood septic system pump-out. You and your neighbors may be able to get a lower price!
- Upgrade or replace your septic system if it is outdated or undersized. The typical life expectancy of a conventional septic system and leach field is approximately 20 years. If your system is approaching this age, or if you have added bedrooms and/or bathrooms to your house since your septic system was built, have your system evaluated by a licensed septic system installer.

Please note. Septic systems vary. Diagram is not to scale.

- Signs of septic system failure include toilets and sinks that drain slowly or back up when toilets are flushed or laundry is run, and leach fields that are soggy and/or accompanied by foul or 'off' smelling odors.

If you don't know where your septic system or leach field is...

- Have a licensed septic hauler help you find the system or request records through the New Hampshire Department of Environmental Services Subsurface Systems Bureau.

On Your Property

No matter where you live, you live in a watershed. Whether you live next to a stream, river, or lake, or live miles away from the nearest waterbody, what you do on your property could harm the health of waterbodies near or far.

Fortunately, there are several things you can do to reduce the amount of runoff water, phosphorus, soil (which contains nutrients), and other pollutants that flow off of your property. By taking these simple actions, you will help keep lakes clean and healthy.

Minimize and identify driveway and parking areas.

- Drive and park vehicles on your property only in areas specifically designated for these uses. Soils compacted by vehicle travel do not absorb water. By parking and driving in only certain places, the amount of runoff water generated on your property will be minimized.
- Convert unused driveways and parking areas into areas planted with native plants to help soak up runoff water.

Can you see this house along this lake? One way to minimize your impact on the lake and the surrounding watershed is to blend structures into the landscape.

Walkways and driveways constructed out of pavers and crushed stone help runoff water soak into the ground.

PHOTO COURTESY OF US EPA.

Help runoff water from driveways, parking areas, and walkways soak into the ground.

- Install porous (pervious) pavers or pavement on your driveway, parking areas, and walkways.
- Construct infiltration trenches lined with crushed stone along driveways, parking areas, and walkways to encourage water to soak into the ground.
- Create vegetated swales along driveways, parking areas, and walkways, and divert runoff water into these areas.
- On moderately steep gravel driveways and walkways, install waterbars. These earthen ridges can be used to divert runoff water into stable vegetated areas.
- For info. on pervious pavers and pavement, infiltration trenches, vegetated swales, and waterbars, visit nhlakes.org/lakesmart.

Use winter de-icing products sparingly on driveways, parking areas, and walkways.

- Sweep up leftover sand and salt between storms and at the end of winter.

Use chloride-free winter de-icing products.

- Common rock salt contains chloride which is harmful to plants and animals, including plants and animals in the lake. Chloride-free de-icing products are commonly available. Read the product labels carefully.

If you hire a contractor for snow and ice control on your property, hire a New Hampshire Certified "Green SnowPro" Contractor.

- Certified Green SnowPro Contractors have been trained how to reduce the amount of rock salt they use to control snow and ice accumulations while also providing for safe travel for vehicles and pedestrians. For a listing of certificated Green SnowPro contractors, email salt@des.nh.gov or call (603) 271-1352.

Help runoff water from roofs soak into the ground.

- Below gutter downspouts and roof valleys, install a drywell. A drywell is a stone and gravel filled pit.
- Below each roof drip edge, install a stone lined infiltration trench.
- Collect rainwater from your roof in a rain barrel and use it to water your garden.
- For information on how to install a dry well, infiltration trench, or rain barrel, visit nhlakes.org/lakesmart.

A dripline trench of crushed stone was installed (right) to catch water that runs off of the roof, allowing it to sink into the soil instead of running downhill and picking up pollutants before flowing into the lake.

PHOTOS COURTESY OF THE ACTON WAKEFIELD WATERSHEDS ALLIANCE YOUTH CONSERVATION CORPS. AWWATERSHEDS.ORG.

Reduce the size of lawns and replace with native plantings.

- Turf grasses have short root systems and lawn soils become compacted over time. As a result, when it rains, most of the precipitation flows off of lawns. By replacing some of the lawn on your property with native ground covers, shrubs, and trees, you will minimize the runoff water generated on your property.

- The University of New Hampshire Cooperative Extension Education Center can help you select native plantings for your property. For assistance, contact (877) EXT-GROW or visit extension.unh.edu/Gardening-Resources.

Avoid applying fertilizer or compost.

- Most soils in New Hampshire provide enough nutrients for lawns and gardens to grow. If you think your lawn or gardens need fertilizer, test the soil's nutrient level first. You can purchase a soil test in most gardening stores.
- This applies to compost as well. While compost is natural, it is high in nutrients that can pollute the lake.

Avoid using herbicides and pesticides.

- If you must control weed and pest growth, use products made from natural ingredients. Contact the UNH Cooperative Extension Education Center for more information.

If you must use fertilizer, herbicides, or pesticides, use sparingly. Within 250 feet of lakes and rivers, apply these products according to the Shoreland Water Quality Protection Act.

- The use of all fertilizers (except limestone) within 25-feet of the high water mark of lakes, ponds, and major rivers is not allowed. Twenty-five feet beyond the high water mark, low phosphate, slow release nitrogen fertilizer or limestone may be used.
- The use of pesticides and herbicides within 50-feet of the high water mark of lakes, ponds, and major rivers is not allowed. Greater than 50 feet from the water, pesticide and herbicides can be applied only by a licensed professional.

If you mow your lawn, set the mower bar on high and leave clippings on the lawn.

- The longer the blades of grass, the longer the roots. Deeper roots will help stabilize soils and soak up runoff water.
- Clippings left on the lawn are a natural fertilizer and will help the soil retain water. But, be sure not to leave clippings on the lawn where they will be washed into nearby waterways.

Minimize landscaped areas and keep areas in a 'natural state.'

- Plants — including groundcovers, shrubs, and trees — found naturally on your property are suited for the area and require less maintenance than lawns and gardens. They are also more effective in stabilizing the soil and soaking up runoff water.
- Keep natural areas in their natural state — avoid 'smoothing' the ground and raking up leaves and pine needles. By allowing the surface of natural areas to be uneven and covered with a thick layer of pine needles and leaves, runoff water will be slowed down and more will soak into the ground.

Cover all bare soil areas.

- Ensure that all surfaces on your property are covered by plants, crushed stone, pine needles, leaves, or mulch. This will prevent soil from being washed away.

Repair all areas where soil is being washed away and divert runoff water into vegetated areas.

- Create a rain garden and divert runoff into it. A rain garden is a depression in the ground vegetated with plants that can withstand wet and dry conditions. For more information, visit nhlakes.org/lakesmart.
- Never divert runoff water into streams, rivers, or lakes.
- If there's an area where soil is being washed away and you need guidance fixing it, contact NH LAKES or hire a professional trained in landscaping by the water's edge. For the directory of trained professionals, visit nhlakes.org/reduce-runoff.

Minimize the number and size of paths and stabilize all paths.

- Curve footpaths to divert runoff water off the path and into vegetated areas. This will prevent runoff water from being funneled straight down the path, causing soil to be washed away.
- Cover the surface of footpaths with mulch, crushed stone, or spaced pavers.
- For paths on moderate slopes, install infiltration steps. Infiltration steps are built with timbers and are filled with crushed stone. They soak up runoff water and provide for safe foot travel. For more information, visit nhlakes.org/lakesmart.

This rain garden (right) will help prevent erosion and reduce the amount of surface water running downhill and into the lake.

PHOTOS COURTESY OF THE ACTON WAKEFIELD WATERSHEDS ALLIANCE YOUTH CONSERVATION CORPS. AWWATERSHEDS.ORG.

Infiltration steps slow down and soak up runoff water.

PHOTO COURTESY OF THE ACTON WAKEFIELD WATERSHEDS ALLIANCE YOUTH CONSERVATION CORPS. AWWATERSHEDS.ORG.

- For paths with moderate to steep slopes, install water bars to divert water off the path and into vegetated areas. For more information, visit nhlakes.org/lakesmart.

Pick up pet and livestock waste.

- Pet and livestock waste contains nutrients and bacteria that pollute waterbodies. Make sure waste is not left on the ground or piled where it could be washed away by runoff water.

Prevent toxic chemicals from leaking onto the ground.

- Ensure that all exterior oil and gas tanks and storage containers are not rusty, are covered, and are not located where falling snow and ice could hit them.

Along the Shoreline

If you live along a lake, pond, river, or stream, the area along the shoreline is the last line of defense in helping to keep the water clean and healthy. There are several actions you can take in this area to reduce the amount of nutrients, soil, and other pollutants that reach the lake. There are also several things you can avoid doing in the shallow area of the water to help keep the lake healthy, too.

If you own or manage shoreline property, there are two important laws you will want to know about:

If you plan to clear land or build near the shoreline, be sure to consult the Shoreland Water Quality Protection Act regarding permit information.

The New Hampshire Shoreland Water Quality Protection Act protects lake health by controlling soil erosion and reducing polluted runoff water with 250 feet of lakes, pond, rivers, and major streams. Setbacks from the water are established for structures and septic systems. Setbacks are also established for the use of pesticides, herbicides, and fertilizer. Limits on the amount of surfaces that don't absorb runoff water (like rooftops, decks, patios, driveways, parking areas, and walkways) that can be created and the amount of vegetation that can be removed are also established. If you plan to clear any land or build any structure near the shoreline, consult the Shoreland Water Quality Protection Act well-before starting your project. *(See Section 5 for required permit information.)*

The New Hampshire Wetlands Program protects and preserves lands under lakes and ponds and wetlands from activities that would negatively affect wetlands. Wetlands help keep lakes healthy by reducing flooding, filtering polluted runoff water, recharging groundwater, and supporting fish and other wildlife. If you plan to conduct work in a lake or pond, or in the bank of a lake or pond, you will need a state wetlands permit. Typical activities that require permits include: building, expanding, or repairing a dock; constructing or repairing a retaining wall; and, adding sand to a beach or creating a new beach. *(See Section 5 for required permit information.)*

Please note that all guidelines discussed in the "On Your Property" section of this guidebook are also applicable to shoreline properties.

Preserve or create a strip of vegetation along the shoreline.

- Commonly referred to as a 'buffer strip' or 'vegetated buffer,' a healthy area of native ground covers, plants (ferns, hostas, lilies), shrubs, and trees between your property and the lake will help to soak up runoff water and keep soil in place. The longer and wider the strip, the better.

Leave the shoreline and shallow water area in its natural state.

- Keep only trees and other vegetation within 250-feet of the shoreline unless you have received a Shoreland Permit which allows you to remove some vegetation.
- Avoid 'cleaning up' the shallow water. Leave rocks and native plants, and refrain from raking the lake bottom. Rocks and plants help break waves and prevent bank erosion. Raking the lake bottom disturbs habitat areas for fish and other organisms.
- Never personally put chemicals or other materials into the water to control any plant growth. This can only be done with a permit by a professional.

If you must remove plants from the water, do not remove plants without a permit.

- Aquatic plants help prevent erosion by stabilizing lake bottoms and shorelines with their roots and by absorbing wave energy.
- Aquatic plants are also important for fish spawning and nursery areas, and provide habitat for insects and other organisms that support the food chain of the lake.
- Not only is it illegal to remove aquatic plants without a permit, removing native plants may open up habitat for invasive plants to take over.
- Before any invasive plant, such as variable milfoil, can be managed, the waterbody must have a long-term management plan

approved by the New Hampshire Department of Environmental Services. *(See Section 5 for required approval information.)*

Avoid dumping sand or creating new beaches.

- Sandy beaches that are not naturally occurring will not last. The sand will either be carried away by water currents or will slowly settle onto the bottom of the lake where it will contribute to the rate of lake filling in and aging.
- The addition of sand along the shoreline will smother bottom-dwelling organisms, alter the food chain, destroy fish spawning and nesting sites, and damage fish gills. As the lake becomes shallower, more sunlight will reach the lake bottom, which can cause increased plant growth.
- It is illegal to dump sand or create a beach in New Hampshire without a permit from the New Hampshire Department of Environmental Services. *(See Section 5 for required permit information.)*

If you must have a sandy beach, create a perched beach.

- A perched beach has little or no slope and is set back from the water. Perching a beach will help correct erosion problems on a sloping, sandy beach that leads directly to the water.
- Contact the New Hampshire Department Environmental Services for permit requirements. *(See Section 5 for required permit information.)*

Perched beaches like this one help minimize the erosion of sand into lakes.

Reducing the steepness of an eroding soil pathway and stabilizing it with vegetation and gravel reduces the potential for erosion into the lake.

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Restore altered shorelines.

- Much of the shoreline along New Hampshire's lakes has already been altered and degraded by the removal of natural vegetation for the construction of docks, boat houses, beaches, houses, lawns, and roads. While it is not required by law for shoreline property owners to restore altered shorelines, it is encouraged. It can be relatively easy, too!
- Convert a human-made sandy beach to a vegetated area.
- Convert all unused boat launch areas, driveways, parking areas, and paths to areas planted with native vegetation.
- Cover all areas of bare soil with native plants.
- If you are not sure how to restore an area, contact NH LAKES and we'll provide you with some ideas.

Repair all areas where soil is being washed away.

- Fill-in eroded gullies and channels and stabilize the surface with crushed stone, mulch, or vegetation. Be sure to divert runoff water into vegetated areas. Never divert runoff water into streams, rivers, or lakes.
- If there's an area where soil is being washed away and you need guidance fixing it, contact NH LAKES or hire a professional trained in landscaping by the water's edge. For the directory of trained professionals, visit nhlakes.org/reduce-runoff.

Limit foot-traffic to and from the shoreline.

- Provide only one footpath access to the shoreline. Design the path so that it meanders and diverts runoff water off the path and into nearby vegetated areas.
- Cover the surface of all paths with crushed stone, mulch, or spaced pavers.

Avoid constructing docks and floating platforms out of pressure treated wood.

- While the use of pressure treated wood to construct docks and platforms is not illegal, chemicals used to pressure treat lumber are toxic to people and wildlife. There are several alternatives to pressure treated wood available.

Minimize the area of water around docks and boat houses kept ice-free by bubblers and circulators during the winter.

- If you use a de-icer device to protect shoreline structures from ice damage, open up just enough water to keep the structure disconnected from the ice sheet. This can be done by using a system with a thermostat and timer.
- Opening up more ice than needed to protect shoreline structures can create hazardous conditions for people who recreate on the ice and can harm the health of the lake.
- All de-icing equipment operation requires a New Hampshire Department of Safety Permit and a "Thin Ice" sign of a specific size and design. Permits and additional information are available from your local Town or City Clerk.

Refrain from feeding waterfowl.

- Feeding waterfowl will attract more to the site. A single goose can create up to three pounds of waste per day. Waterfowl waste typically contains significant amounts of phosphorus.
- Waterfowl fecal matter can contain harmful parasites and bacteria that can contaminate swimming areas. And, in some cases, it contributes to 'swimmers itch' — a painful skin rash — for some people.
- Waterfowl are healthier when they consume the foods they naturally forage.

While waterfowl may be pretty to look at, they can negatively affect lake health. Provide barriers, such as dense shrubs to discourage them from visiting the lawn. *And, don't feed them!*

Make your property unattractive to waterfowl.

- Grassy lawns attract geese and ducks. Providing barriers, such as dense shrubs, between the shoreline and the property will discourage waterfowl from the visiting the lawn.

Keep yard and household wastes out of the water.

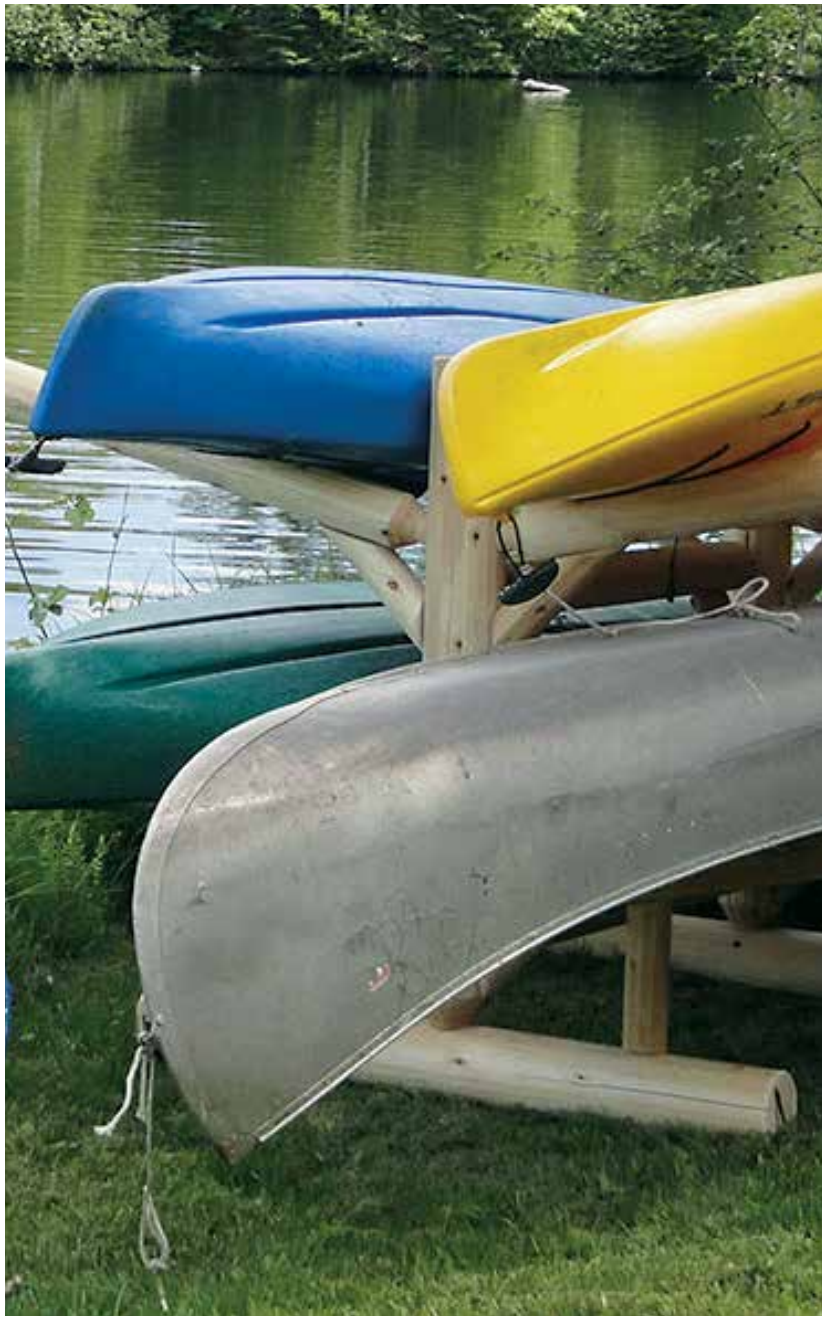
- Refrain from dumping grass clippings, leaves, ashes, compost, and sawdust into the lake, and avoid stockpiling these materials where they can be washed into the water. While these materials are natural, they contain nutrients that pollute the lake.

Do not bathe yourself or your pets in the water.

- Soaps and shampoos will add nutrients and other pollutants to the lake. Even camping soaps or biodegradable soaps may contain undesirable pollutants.

Identify and minimize boat storage areas.

- Soils compacted by trailer wheel travel do not absorb water. Park trailered boats on your property only in areas specifically designated for this use. This will help minimize the amount of runoff water generated on your property.
- Store canoes, kayaks, and paddleboards on racks elevated off of the ground to provide more areas for water to soak into the ground.



Storing canoes, kayaks, and paddleboards on elevated racks provides more area for water to soak into the ground.

Lake-Friendly Boating & Recreation

New Hampshire boasts some of the best boating opportunities in the region — and possibly in the nation! Whether you enjoy paddling or motor boating, there's plenty for you to explore and enjoy on our 1,000 lakes and nearly 17,000 miles of rivers and streams.

With that said, boating activity can also harm the health of our waters. The good news is, whether you are a motor boater or a paddler, there are a few simple actions you can take to help keep our waters paradise — and clean and healthy, too!

In addition to lakes, New Hampshire has nearly 17,000 miles of rivers and streams.

Use a direct fuel injection engine to reduce toxic air emissions and protect water.

Buying a Motorboat

Low-pollution 4-cycle and 2-cycle direct fuel injection outboard engines have been developed to reduce toxic air emissions from marine engines and reduce the release of gasoline into waterways. As of 2006, you can no longer purchase a non-direct fuel injection engine. By purchasing and using these cleaner burning engines, you can help protect air and water quality, while greatly reducing your fuel costs. Although these engines may cost more up-front, they provide many benefits since they:

- Burn 35 to 50 percent less gasoline, which means more fuel savings.
- Use up to 50 percent less oil.
- Reduce air emissions by 75 percent.
- Reduce the amount of gasoline released into waters.
- Are much quieter!

Operating Your Boat

Minimize the use of motorboats in shallow areas.

- Motors can churn-up sediment on the lake bottom. This leads to phosphorus being suspended in the water, which contributes to algal growth and decreased lake clarity.
- Motors can fragment invasive plants, such as variable milfoil, potentially causing new areas of infestations as the fragments travel to other parts of the lake and continue growing.
- Wildlife and waterfowl may be frightened away from their homes and nests by noisy motors.

Do not operate a motorboat within 150 feet of any shoreline at greater than headway speed (6 mph).

- Not only is it illegal, but boat wakes can erode the shoreline and damage wildlife habitat. Excessive speed is also a danger to others.

Eliminate unnecessary idling.

- It pollutes the air and water, and the wasted fuel can be costly.

Operate away from loons and loon nesting areas.

- Many of New Hampshire's lakes are home to the Common Loon, a threatened species.
- Approaching loons in the water or on their nest will stress the animals, and may lead them to abandon their nest.
- If you see an adult loon on the water, slow down as loon chicks are often difficult to see.
- Also, if you fish, be sure to use lead-free fishing tackle. Lead poisoning from ingested fishing tackle is the leading cause of adult loon deaths in the state.

Protect loons by posting adequate signage.

If you operate a wakeboat, take care to minimize generating waves that travel to the shoreline.

- Large waves can erode the shoreline, adding nutrients and soil into the water, which can cause excessive plant and algal growth. Large waves can also damage shoreline structures.
- A few lake-friendly wakeboating tips include:
  - ~ Minimize repetitive passes in a particular area.
  - ~ Operate more than 150 feet from the nearest shore.
  - ~ Consider wake boating at times when there is less boat traffic on the lake.

Maintaining and Fueling Your Boat Engine

Keep engines well-tuned.

- Routinely check for fuel leaks and keep a shallow pan under engines to collect any leaking liquids.

Avoid overfilling fuel tanks.

- Use a funnel or a spout with an automatic stop device to prevent overfilling the gas tank. Use absorbent materials or petroleum absorption pads while fueling to catch splash-back and drops when the nozzle is transferred from the boat to the fuel dock.

Avoid pumping any bilge water with an oily sheen.

- Use absorbent pads in the bilge area that capture or digest oil and dispose or recycle this material properly. Contact your local marina to purchase absorbent materials.

Wash boat hulls by hand out of the water and in area where rinse water won't flow into nearby waterbodies.

- Use non-toxic and phosphate-free detergents and cleaning products. If possible, use natural cleansers such as baking soda or lemon juice.
- Rinse water should not be discharged to any waterbodies, wetland areas, or storm drains.

Use marina sewage pumpout and dump stations to dispose of wastes.

- It is illegal to discharge boat sewage in any lake, pond, river or stream in New Hampshire. Sewage contains nutrients and potentially disease-causing organisms. Pumpout stations allow you to empty holding tanks and portable toilets. The New Hampshire Department of Environmental Services maintains information on the locations of pumpout and dump stations. *(See Section 6 for program and contact information.)*

Prevent the Spread of Aquatic Invasive Species

Invasive species are organisms that thrive in an area where they did not naturally develop and that cause harm to the economy, environment, or people.

The primary ways invasive species have been introduced and spread from waterbody to waterbody in New Hampshire are:

- Boaters transporting invasive species from infested to uninfested waterbodies (new infestations are typically found near boat launch sites).
- Dumping fish tanks or aquarium plants into waterbodies
- Natural transport (waterfowl, animals, etc.).

Aquatic invasive species infestations make recreation in and on the water dangerous and unpleasant, disrupt the ecological balance of lakes, reduce shoreline property values, and are difficult and expensive to control. They are nearly impossible to get rid of once firmly established in a waterbody.

While there are state laws that regulate the sale and transport of aquatic invasive species, as of the writing of this guide, invasive aquatic species are found in at least 90 waterbodies in New Hampshire. Seventy-five waterbodies contain variable milfoil, and six systems contain the invasive Asian clam. In addition, at least a couple dozen waterbodies contain the invasive Chinese mystery snail. Some waterbodies have infestations of multiple species.

Variable milfoil, an invasive plant, is found in approximately 75 waterbodies in New Hampshire.

You can help prevent the spread of aquatic invasive species!

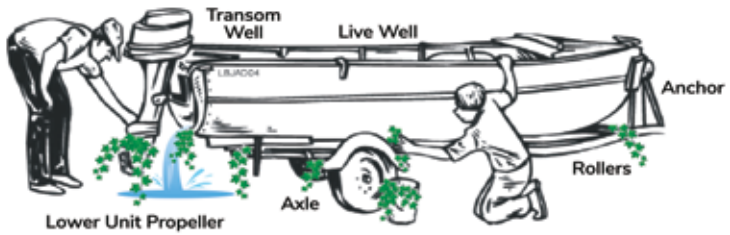
If you trailer a boat (motor boat, personal watercraft, sail boat, canoe or kayak) into and out of more than one waterbody per boating season, there are some simple steps you can take to prevent the spread of aquatic invasive species.

BEFORE Leaving the Launch Area:

- ✓ **CLEAN** off any mud, plants, animals and debris from your boat, trailer, and gear. Clean off anchor lines, water intake grates on jet-powered craft, and paddles, too! Dispose of all material away from the waterbody where it won't flow back into the water. ***Cleaning is the law in New Hampshire!***
- ✓ **DRAIN** water from the boat motor, bilge, live wells, ballast bags and tanks, storage compartments, and gear. Blow out all water in jet-powered craft and tip motors and paddle crafts to let out water. **OPEN / REMOVE** all drain plugs and drain all compartments and gear away from the water where runoff won't flow back into the lake. Draining and keeping all drain plugs out/open while trailering is the law in New Hampshire!
- ✓ **DRY** off anything that came in contact with the water to remove invasive species not easily seen. To use your boat again within five days, thoroughly rinse with clean water away from waterbodies and towel dry. Rinsing with high pressure, high temperature water is best.

BETWEEN Waterbodies:

- ✓ **RINSE.** It is best to visit a carwash before launching into another waterbody. Rinsing can also be done at home, preferably where runoff water will flow into a stable, vegetated area and not into a storm drain or nearby waterbody. Rinse the boat hull and trailer with clean water. Flush motors, bilges, live wells, ballast bags and tanks, and storage compartments with clean water per boat manufacturer instructions.



There are several places on a typical boat and trailer to check and remove hitchhiking aquatic plant fragments. Boaters should also open/remove all drain plugs and keep them open/out while trailering.

Here are some more ways you can help prevent the spread!

- If you have unwanted aquarium plants, dry, burn or compost (away from the water), or dispose of them in the trash. Avoid dumping them down the drain or in a waterbody.
- Avoid boating through areas designated as 'Restricted Use Areas.' These are areas with small, contained invasive species infestations. Limiting access to such areas helps prevent fragmentation and spreading of invasive plants.
- If you have renters or guests that bring boats to the lake, encourage them to bring their boats, trailers, and gear, cleaned, drained, and dry. Provide them with the "Help Keep New Hampshire a Boating Paradise" brochure published by NH LAKES. To obtain free copies, contact us at info@nhlakes.org or (603) 226-0299.
- If there's a boat launch in your community, check to see that it has a "Clean, Drain, and Dry" sign. Signs can be obtained from the New Hampshire Department of Environmental Services at no cost by contacting Amy.Smagula@des.nh.gov or (603) 271-2248.
- If there's a kiosk at a local boating access site, make sure that it contains aquatic invasive species prevention information. For free posting information, contact NH LAKES at info@nhlakes.org or (603) 226-0299.
- If there's a boat launch in your community that isn't protected by Lake Hosts during the summer, contact NH LAKES to find out how to start a Lake Host Program. Through this program, inspectors teach boaters how to prevent the spread of invasive species. *(See Section 4 for program information.)*
- If you think you may have found a new invasive species infestation in a waterbody, contact the New Hampshire Department of Environmental Services at Amy.Smagula@des.nh.gov or (603) 271-2248.

If there's a boat launch near you that isn't protected by Lake Hosts during the summer, contact NH LAKES to find out how to start a Lake Host Program.

Get Involved!

Join a Local Lake Association

If your lake has an association, join it! Lake associations are typically nonprofit, voluntary organizations that are concerned with lake conservation and other local lake-related issues. Most associations have a variety of members, including shoreline property owners, neighboring residents, and lake enthusiasts.

Joining a Lake Association can be a meaningful and fun way to contribute to your community.

Lake associations serve many functions, including providing outreach and educational opportunities, assisting with water quality monitoring, conducting invasive species prevention and management activities, monitoring loons and other wildlife, and working closely with a variety of stakeholders on developing lake management plans. Also, being a member of a lake association is a great way to make friends and have fun!

If there is no lake association in your area, start one! NH LAKES can help.

Join NH LAKES

NH LAKES is a statewide, nonprofit, member-supported organization. Our mission is to keep New Hampshire's lakes clean and healthy, now and in the future. We work with partners, promote clean water policies and responsible use, and inspire the public to care for our lakes.

Advocate for Lakes

Collaborate with NH LAKES staff and legislators to help craft policies and laws that protect our lakes! Sign up to receive NH LAKES' Advocacy Alert e-newsletter (email info@nhlakes.org or sign up at nhlakes.org). You will find out how and when to contact legislators and about opportunities to attend and testify at hearings.

Become a Lake Host

Teach boaters how to prevent the spread of invasive species! Developed in 2002 by NH LAKES, the **Lake Host™ Program** is the first line of prevention when it comes to aquatic invasive species. Trained Lake Hosts (employees and volunteers) teach boaters at boat ramps throughout the state how to "Clean, Drain, and Dry" boats, trailers, and gear to prevent the spread.

For More Information:

LakeSmart
(603) 226-0299
info@nhlakes.org
—
nhlakes.org

LakeSmart Award
NH LAKES
For Lake-Friendly Living
nhlakes.org

Become LakeSmart

Help make lake-friendly living the cultural norm in your community by leading through example and encouraging your neighbors to do the same. NH LAKES now offers the **LakeSmart Lake-Friendly Living Program** and invites you to participate. This free, non-regulatory, and voluntary certification program recognizes and rewards property owners who maintain their homes and the surrounding landscape in ways that help lakes clean and healthy. Four areas of a property are evaluated to determine the extent to which lake-friendly living practices are being implemented. These areas include: driveways and parking areas; structures and septic systems; yards, recreation areas, and footpaths; and, shoreline and water access areas.

If a property is found to be lake-friendly deficient in certain areas, recommendations are provided for how to become more lake-friendly. Owners that achieve LakeSmart status on their property receive a sign to post for their neighbors and community to see.

Become a Weed Watcher

Help spot invasive plants and animals before they take over the lake! The **Weed Watcher Program** is a cooperative program between lake residents, lake associations, and the New Hampshire Department of Environmental Services.

Weed Watchers are trained to monitor lakes for the growth of invasive species.

Become a Weed Control Diver or Tender

Get trained to remove invasive plants like milfoil from the lake! The most common invasive aquatic plant control technique used in just about every infested waterbody is some form of basic hand removal.

For More Information:

Weed Watcher
(603) 271-2248
Amy.Smagula@des.nh.gov
—
des.nh.gov/organization/divisions/water/wmb/exoticspecies

For More Information:

Weed Control Diver/Tender
(603) 271-2248
Amy.Smagula@des.nh.gov
—
des.nh.gov/organization/divisions/water/wmb/exoticspecies

Because an infestation can easily be spread by such attempts, the process is regulated by the Department of Environmental Services. Individuals interested in helping to manage an invasive plant infestation are encouraged to assist with the effort as a certified **Weed Control Diver** or **Weed Control Tender.**

Help Monitor Water Quality

Help scientists pinpoint sources of pollution before they seriously harm the lake. Hundreds of volunteers each year collect information and water samples from lakes and streams.

For More Information:

VLAP
(603) 271-2658
Sara.Steiner@des.nh.gov
—
des.nh.gov/organization/divisions/water/wmb/vlap

LLMP
(603) 862-3696
bob.craycraft@unh.edu
—
extension.unh.edu/Volunteer/NH-Lakes-Lay-Monitoring-Program

Thanks to data generated by these efforts, scientists are able to detect changes in lake health and help communities fix problems. This saves residents, lake associations, municipalities, and the state the cost of expensive lake clean-up projects.

Two volunteer statewide lake monitoring programs are available. Find out if your favorite lake is monitoring and how you can join our start a program by contacting the programs listed below.

The Volunteer Lake Assessment Program (VLAP) is a cooperative program between lake residents and the New Hampshire Department of Environmental Services.

The Lakes Lay Monitoring Program (LLMP) is administered jointly through the Cooperative Extension and the Center for Freshwater Biology at the University of New Hampshire.

Help Soak Up Runoff Water!

Looking to reduce the amount of runoff water your property generates? **The Soak Up the Rain New Hampshire (SOAK) Program** can help! The SOAK Program provides training, coordination, and assistance in installing rain gardens, rain barrels, and other practices to reduce runoff water from homes and businesses throughout the state. This is a voluntary program managed by the New Hampshire Department of Environmental Services (NHDES).

Participate in the Mercury in Fish Program

Want to help scientists determine which fish are safe to eat? Studies have shown that fish from lakes in New Hampshire contain mercury. Mercury is a serious environmental contaminant, negatively affecting wildlife and humans. New Hampshire, like many other New England states, has a statewide freshwater fish consumption advisory due to high mercury levels.

Most mercury in New Hampshire's water comes from air pollution that blows into the state from other areas of the country. The mercury eventually ends up in our lakes where animals — including fish — absorb it and it becomes concentrated in certain species.

With the help of the **Mercury in Fish Program** volunteers**,** the New Hampshire Department of Environmental Services samples fish from lakes for mercury content. This data is used to determine statewide and waterbody-specific fish consumption guidelines.

For More Information:

SOAK
(603) 271-1190
lisa.loosigian@des.nh.gov
—
soaknh.org

For More Information:

Mercury in Fish
(603) 271-3414
—
des.nh.gov/organization/divisions/water/wmb/vlap/mercury

Volunteer with the Loon Preservation Committee

Help the **Loon Preservation Committee (LPC)** monitor the success of loons by becoming a field volunteer! The Common Loon is an iconic bird that can be found (and heard!) on some lakes in New Hampshire. However, it is listed as threatened species in New Hampshire. Lead poisoning from ingested least fishing tackle is the leading cause of adult loon deaths in the state.

Field volunteers help monitor the number and breeding success of loons on lakes throughout the state.

For More Information:

Loon Preservation
(603) 476-5666
volunteers@loon.org
—
www.loon.org

Foster the Next Generation of Lake Caretakers

Providing fun, hands-on, learning experiences for kids is the best way to spark passion in our future lake leaders. NH LAKES offers two family-friendly programs for this very purpose!

The Watershed Warrior Program

The family-friendly **Watershed Warrior Program** activity circuit encourages hands-on fun while learning about lake ecology and simple everyday things they can do to help keep lakes healthy. At the end of the circuit, participants have the opportunity to become a 'Watershed Warrior' by pledging to adopt at least one lake-friendly activity into their daily life. All Watershed Warriors earn a patch and certificate. You can bring this program to your community in a number of ways!

For More Information:

Watershed Warrior
(603) 226-0299
info@nhlakes.org
—
nhlakes.org

The Lake Explorer Quest

NH LAKES invites individuals and families to get out and explore our lakes by paddling through the **Lake Explorer Quest Program!** Studies show that today's youth are experiencing a "nature deficit" which can be detrimental to physical and mental health. Children who spend time outdoors are healthier and more creative, have better concentration, and get better grades. Studies also show that many adults experience nature deficit, too! By spending time in nature we also increase our connection to it and our tendency towards caring for the natural world.

By exploring three lakes by canoe, kayak, paddleboard, or other paddle boat, and documenting their explorations with us, participants earn their very own Lake Explorer Quest patch and other NH LAKES swag! Participants must also certify that they practiced the "Clean, Drain & Dry" method for preventing the spread of aquatic invasive species and implemented safe boating practices on each excursion.

For More Information:

Lake Explorer Quest
(603) 226-0299
info@nhlakes.org
—
nhlakes.org

PHOTOGRAPH BY MIKE NOVOTNY.

Required Approvals & Permits

If you are planning a land development project in the watershed or along a waterbody, or a project in the water, in addition to any local permits that are needed, your project may require a state permit from the New Hampshire Department of Environmental Services (NHDES). For projects that do not require a state permit, there may be standards you must follow during construction.

General information regarding the most common state permits needed for watershed or shoreline land development projects is provided below. If you have questions about whether or not your project requires a permit, do not hesitate to contact your municipal office, as well as NHDES at (603) 271-3503. A quick phone call could save you time and money and protect the water resources in your community!

Also, some on-water recreational activities and uses require a permit. If you plan to operate a boat, moor a boat, designate a swimming area or waterski course, fish, or host an event on the water, you may need state approval in the form of a permit, license, or registration.

Planning some on-water activities, like designated waterskiing courses, may require a permit.

PHOTOGRAPH BY STEVEN LIFFMANN.

New Hampshire Department of Environmental Services (NHDES)

29 Hazen Drive, PO Box 95, Concord, NH 03302-0095
(603) 271-3503 | www.des.nh.gov

Alteration of Terrain Permit Program
(603) 271-2303
des.nh.gov/organization/divisions/water/aot

This permit protects New Hampshire surface waters, drinking water supplies, and groundwater by controlling soil erosion and managing runoff water from developed areas. This program applies to earth moving operations such as industrial, commercial, and residential developments. It also applies to sand pits, gravel pits, and rock quarries.

An Alteration of Terrain Permit is required whenever a project proposes to:

- Disturb more than 100,000 square feet of contiguous terrain (50,000 square feet, if any portion of the project is within the protected shoreland).
- Disturb an area having a grade of 25 percent or greater within 50 feet of any surface water.
- In addition to these larger disturbances, the Permit by Rule applies to smaller sites.

Exotic Species Program
(603) 271-2248
des.nh.gov/organization/divisions/water/wmb/exoticspecies

If a waterbody contains an exotic aquatic plant, the waterbody must have a New Hampshire Department of Environmental Services approved long-term management plan before any control activities can be conducted.

Shoreland Protection Program
(603) 271-2147 | shoreland@des.nh.gov
des.nh.gov/organization/divisions/water/wetlands/cspa

The Shoreland Water Quality Protection Act protects lake health by controlling soil erosion and reducing polluted runoff water within 250 feet of lakes, rivers, and major streams. Setbacks from the water are established for structures and septic systems. Setbacks are also established for the use of fertilizers, pesticides, and herbicides. Limits on the amount of surfaces that don't absorb runoff (like rooftops, decks, patios, driveways, parking areas, and walk-ways) and the amount of vegetation removal are also established.

A Shoreland Impact Permit is needed for all construction, excavation, or filling activities within 250 feet of the shoreline. In addition, a 50-foot waterfront buffer in which vegetation removal is restricted, the application of pesticides and herbicides are prohibited, and impervious surface limitations apply.

Subsurface Systems Bureau
(603) 271-3501
des.nh.gov/organization/divisions/water/ssb

- Purchase and sales agreement on developed waterfront within 250 feet of tidal waters or a great pond without municipal sewer requires a Site Assessment Study.
- Building a residential dwelling, adding bedrooms, or expanding living space anywhere not serviced by municipal sewer requires a Septic System Construction Approval and Septic System Operational Approval.
- Subdividing land for a single family home, condominium, apartment, or campground anywhere not serviced by municipal sewer requires a State Subdivision Approval.
- Installing a well closer than 75 feet to a property line (anywhere) or a septic system requires a Recorded Well Release.

Wetlands Bureau
(603) 271-2147
des.nh.gov/organization/divisions/water/wetlands

A Wetlands Permit is required for:

- Installing, repairing, or expanding a dock or any type of shore-line structure.
- Impacting the bank of any waterbody (i.e. bank stabilization or constructing or repairing retaining walls).
- Adding sand to a beach or constructing a new beach.
- Dredge, fill, or construction in any wetland, lake, tidal buffer zone, or sand dune.

New Hampshire Department of Safety

Marine Patrol Unit
(603) 293-2037 | marinepatorol@dos.nh.gov
www.nh.gov/safety/divisions/nhsp/fob/marine-patrol

In emergency marine situations, call (603) 293-2037 or (877) 642-9700

Generally, the Marine Patrol is responsible for the following:

- Enforcement of state boating laws and administrative rules.
- Enforcement of state criminal laws.
- Investigation of all boating accidents and drownings.
- Installation, maintenance, and removal of state owned marine aids to navigation.

You will need to obtain a Marine Patrol Permit if you plan on:

- Designating a public or private swim area with swim lines.
- Hosting a fishing event, race/regatta, parade, water ski show/ exhibition, or other special event on the water.
- Installing a waterski course.

Boater Education
(603) 267-7256
www.nh.gov/safety/divisions/nhsp/fob/marine-patrol/boating-education

New Hampshire Law now requires that all persons who operate a powerboat with a motor greater than 25 horsepower to obtain a Boating Education Certificate.

Boat Registration
www.nh.gov/safety/divisions/dmv/registration

Any boat operated on the public waters of New Hampshire, including tidal and coastal waters and all inland waters, must be registered and must display the bow number issued by the Department of Motor Vehicles, except for the following:

- Sailboats under 12 feet in length and rowboats and canoes powered by sail, oars, paddles, or other human power.
- Vessels registered in another state or country temporarily using the waters of this state for not more than 30 consecutive days.

Moorings Program
(603) 267-6453
www.nh.gov/safety/divisions/nhsp/fob/marine-patrol/moorings

Mooring permits are required for eight New Hampshire lakes: Bow Lake, Lake Ossipee, Lake Sunapee, Lake Winnipesaukee, Lake Winnisquam, Newfound Lake, Pleasant Lake (Deerfield/ Northwood), and Squam Lake.

New Hampshire Fish and Game Department

11 Hazen Drive, Concord, NH 03301
www.wildlife.state.nh.us

Fishing Licenses
www.wildlife.state.nh.us/licensing

If you plan to fish in New Hampshire waters and you are 16 years old or older, you will need a **Fishing License.**

Fishing Tournament Permits
www.wildlife.state.nh.us/fishing/tournaments.html

If you plan to host a fishing tournament in New Hampshire, you will need to obtain a **Fishing Tournament Permit** from the New Hampshire Fish and Game Department (as well as a **Water Event Permit** from the NH Marine Patrol).

Programs & Contact Information

The following list of program contact information for New Hampshire watershed and lake-related nonprofit organizations, governmental agencies, and academic institutions should help you to find out more information about the lake and watershed programs that you are interested in and also answer any questions that have not been answered in this guide.

If this listing does not help you find the information you are looking for, please do not hesitate to contact NH LAKES and we will help you find the answers to your questions.

Please note that the individual names and contact information provided below were current when this guidebook was printed, but may change over time.

NH LAKES

17 Chenell Drive, Suite One
Concord, NH 03301
(603) 226-0299
info@nhlakes.org
nhlakes.org

The Loon Preservation Committee

183 Lee's Mill Road
Moultonborough, NH 03254
(603) 476-Loon (5666)
info@loon.org
www.loon.org

The New Hampshire Department of Environmental Services (NHDES)

29 Hazen Drive, PO Box 95
Concord, NH 03301
(603) 271-3503
www.des.nh.gov

Beach Inspection Program
Amanda McQuaid, Coordinator
(603) 271-0698
beaches@des.nh.gov
des.nh.gov/organization/divisions/water/wmb/beaches

Clean Lakes Program
des.nh.gov/organization/divisions/water/wmb/cleanlakes

Clean Vessel Act
(603) 271-8803
cva@des.nh.gov
des.nh.gov/organization/divisions/water/wmb/cva

Exotic Species Program
Amy Smagula, Coordinator
(603) 271-2248
Amy.Smagula@des.nh.gov
des.nh.gov/organization/divisions/water/wmb/exoticspecies

Lakes Management and Protection Program
Tracie Sales, Coordinator
(603) 271-8811
Tracie.Sales@des.nh.gov
des.nh.gov/organization/divisions/water/wmb/lakes

Public Information and Permitting Unit Center
(603) 271-8876
info@des.nh.gov
des.nh.gov/organization/commissioner/pip

Shoreland Protection Program
(603) 271-2147
shoreland@des.nh.gov
des.nh.gov/organization/divisions/water/wetlands/cspa

Soak Up the Rain New Hampshire Program
Lisa Loosigian, Coordinator
(603) 271-8475
lisa.loosigian@des.nh.gov
des.nh.gov/organization/divisions/water/stormwater

Volunteer Lake Assessment Program
Sara Steiner, Coordinator
(603) 271-2658
Sara.Steiner@des.nh.gov
des.nh.gov/organization/divisions/water/wmb/vlap

Wetlands Bureau
(603) 271-2147
des.nh.gov/organization/divisions/water/wetlands

The New Hampshire Fish and Game Department

11 Hazen Drive
Concord, NH 03301
(603) 271-3421
info@wildlife.nh.gov
www.wildlife.state.nh.us

The New Hampshire Department of Safety

Bureau of Marine Patrol
31 Dock Road
Gilford, NH 03249
(877) 642-9700 (603) 293-2037

The University of New Hampshire

Cooperative Extension Education Center
(877) EXT-GROW (398-4769)
extension.unh.edu/Gardens-Landscapes/Home-Gardening

Lakes Lay Monitoring Program
Bob Craycraft, Educational Program Coordinator
(603) 862-3696
bob.craycraft@unh.edu
extension.unh.edu/Volunteer/NH-Lakes-Lay-Monitoring-Program

PHOTOGRAPH BY KRISTINE REARDON.

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Moore, John L. A Special Place — New Hampshire's Lakes. Lake Winnipesaukee Association, 1994.

Moore, Libby. The Lake Book: Actions You Can Take to Protect Your Lake. 6th edition. Congress of Lake Associations of Maine. Yarmouth, ME, 1993.

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