

KEEP

*Highland Lake*

CLEAN & HEALTHY

# Highland Lake's Guide to Lake-Friendly Living

HELP US  
HELP OUR  
LAKES  
AND PONDS



## Working Together to *Protect Highland Lake*

The beauty of Highland Lake's waters has made it a popular destination. Traditional summer camps are turning into year-round homes as more and more people want to enjoy the beauty and tranquility of lakeside living. As you spend more and more time on Highland Lake, take a moment to make sure you're living a lake-friendly life by following the tips in this guide.

### **How Does Highland Lake's Water Quality Impact Me?**

Recent studies have linked water quality with property values on lakes throughout the US. Lakeshore properties are in demand and the value of these properties depends upon the quality of the lake. People prefer clean water and will pay more to live on lakes with better water quality. What you and your neighbors do to protect and improve the water quality of Highland Lake will protect your quality of life and lakeshore property investment.



**Highland Lake Association**

[www.highlandlakemaine.org](http://www.highlandlakemaine.org)  
[HLA@highlandlakemaine.org](mailto:HLA@highlandlakemaine.org)



# Ways to Protect *Water Quality*



Anything that enters Highland Lake can impact the health of the water, including common pollutants such as soil, fertilizers, pesticides, pet waste, litter, road salt, and many others. These pollutants can make the lake less desirable for us to live beside by making the water unsafe to swim or fish in or ruining the view with algal blooms, murky water, and litter. Bass, eagles, loons, and other wildlife also need a healthy lake for their home.

This guide provides ways to protect Highland Lake's water and your investment. If we all practice lake-friendly living, we can all enjoy the beauty and health of Highland Lake for generations to come.

## *Did you know?*

Most of Maine's freshwater water quality issues are from **nonpoint source pollution**, meaning they're caused by things such as soil, fertilizers, pesticides, and pet waste from our yards, driveways, and roads running off into the lake with the rain.

## Three Ways to Healthy Water Quality

### **Minimize Runoff**

Runoff picks up pollutants and carries them to the Lake. The key to protection is to minimize the hard surfaces that create runoff.

### **Eliminate Pollutants**

Eliminate pollutants at their source. Avoid using fertilizers, pesticides, and other chemicals. Maintain your septic system, prevent soil erosion, and pick up after your pet.

### **Capture and Infiltrate**

Prevent polluted runoff from reaching the lake by using rain barrels, rain gardens, and shoreline buffers to store it, slow it down, or let it soak into the ground.

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Reduce Runoff

**Store & Divert Water**

- Spread a layer of organic mulch around plants to retain moisture in the soil.
- Choose native shrubs and groundcovers instead of turf for steep slopes and isolated strips.
- Install a rain barrel to collect runoff from your roof and use it to water your garden. *Look for Portland Water District's annual spring rain barrel sale.*
- Direct your downspouts onto your lawn or into a rain barrel, rain garden, or dry well, away from your driveway and other impermeable surfaces.
- Don't have gutters? Install dripline trenches to capture roof runoff.

*Use Less Water*

Create less runoff by measuring rainfall and aiming for 1-1.5 inches of water once or twice a week for your lawn.

Water your lawn and gardens in the morning (6 to 10 AM) when temperatures are cooler to minimize evaporation.



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Limit Lawn Size

### The Power of Plants

The natural landscape has multiple ways to absorb and filter water—from the tree canopy, to the understory of smaller trees and shrubs, to the plants’ roots. These natural systems protect soil, limit erosion, and filter pollutants before they reach waterbodies.



### Lakes Like Less Lawn

When updating your home’s existing landscape, consider reducing your lawn size to limit runoff and protect Highland Lake. You can swap your lawn for flower and vegetable gardens, groundcovers for shady parts of your yard, and pervious paver pathways and patios. For remaining sections of lawn, make sure to keep it natural—See [www.cumberlandswcd.org/yardscape](http://www.cumberlandswcd.org/yardscape) for tips.



### Use Native Plants

Native plants have deeper roots to absorb and filter runoff than the short roots of turf and other ornamental plants while requiring less maintenance. Use these in the vegetative buffers, rain gardens, and other landscaped sections of your yard.



**FOR MORE INFORMATION** on limiting lawn size, check out our partner resources at [www.highlandlakemaine.org/communications/guides-and-resources](http://www.highlandlakemaine.org/communications/guides-and-resources).



## Additional Resources

# Natural Shoreline Protection



### Buffer Myth

Having a vegetative buffer doesn't mean you lose your view of the lake!

You can use a mix of native shrubs, flowers, tall grasses, and other plants that can easily be seen over while protecting your shoreline from erosion, filtering stormwater pollutants, and creating habitat for wildlife on land and in the lake.

### Vegetative Buffers & Rain Gardens

A **vegetative buffer** is a strip of natural vegetation along the shoreline of a lake or waterbody that reduces runoff into the lake. Ideally, the vegetation should cover at least 50-75% of the property's lake frontage.

A **rain garden** is a vegetated depression that collects rainwater. This allows the rain that falls on rooftops, driveways, and patios to soak into the ground instead of becoming stormwater runoff.

### Use the Natural Landscape as Your Guide

As you think about your vegetative buffer or rain garden, use Mother Nature as your guide. Create layers with large native shrubs, flowers, and groundcover. Pick plants that grow in our zone - Highland Lake is in the plant hardiness zone of 5b.

Visit [www.cumberlandswcd.org/yardscape](http://www.cumberlandswcd.org/yardscape) to find resources about rain gardens, vegetative buffers, and native plant recommendations.

### How to Get Started

Contact the **Highland Lake Association**! We can help you get free technical advice and even grant funding to design and install a vegetative buffer or rain garden that will work well for your property. There are also additional planting and maintenance guides at [www.highlandlakemaine.org](http://www.highlandlakemaine.org) to help you get started!

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Got Dirt?

*Keep it Covered*

Any bare spot of soil, whether it's on your driveway, walkway, yard, or shoreline, is getting eroded by rain, snowmelt, and wind and adding phosphorus to the lake.

To keep dirt in its place, you want to stabilize it with plants, mulch, gravel, or some other covering.

You can prevent erosion from happening at these common sites.

**Path & walkway stabilization**

To prevent issues with your path or walkway, make sure it is

- Less than 6' wide
- Winding to help slow water down and soak into the ground
- Built with pervious material such as crushed stone, erosion control mulch, or pervious pavers

**Driveway diverters**

To quickly shed water from your driveway:

- Paved driveway: Crown or superelevate it to send water off to the sides instead of down your driveway.
- Dirt driveway: Install a water diverter (e.g. rubber razor, open top culvert, or angled speed bump) to send water from your driveway into nearby vegetation.



## Additional Resources

# Preventing Erosion

### *Did you know?*

Activities within **75 feet** of Highland Lake or its six stream tributaries require a **Natural Resources Protection Act (NRPA) permit** and any activity within **250 feet** of the lake is regulated by **shoreland zoning laws**.

#### **Activities that require permitting include:**

Building, repairing, or altering any permanent structures  
Removing or displacing soil, sand, vegetation, or other materials

**First step:** Contact your Code Enforcement Officer to ask about regulations and permitting.

Falmouth Code Enforcement:  
(207) 699-5310

Windham Code Enforcement:  
(207) 894-5960 x 1

### Leave the Duff Layer

"Duff" is the layer of leaves and pine needles that covers the forest floor and protects the soil from erosion. Instead of raking it up, leave it for a free and natural way to protect your soil.

### Construction

If you do need to disturb soil for construction, you can prevent erosion by doing the following:

- Preserve existing vegetation where possible and avoid driving or parking machinery near trees to prevent root damage.
- Properly install a silt fence or erosion control mulch berm downslope and between your project and the water before beginning the project..
- Keep any soil piles covered with tarps and located away from the water.
- Replant and mulch the bare soil areas as soon as possible.

**Reminder:** Contact Code Enforcement for information on shoreland zoning rules and which NRPA permit to submit to the Department of Environmental Protection before construction begins.



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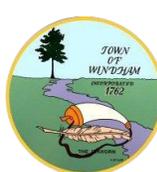
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YardScaping

If your property has an existing lawn, keep it natural! A natural lawn is more resistant to weeds, bugs, disease, and drought.

- **Mow better.** Cut high (3 inches) for strong roots and to shade out weeds. Leave clippings behind for a natural source of nutrients.
- **Build your soil.** Aerate and topdress your lawn with compost.
- **Add new grass.** Overseed with native shade-tolerant grass varieties (fescues and perennial ryegrasses).
- **Test your soil.** Before applying fertilizers or lime, check how much it needs (if any).
- **Feed your lawn.** Once established, most lawns can get all the nutrients they need from grass clippings and growing with white clover.
- **Compost safely.** Keep yard waste away from the water and ditches, where phosphorus can easily reach the lake.

For more information, visit [www.cumberlandswcd.org/yardscape](http://www.cumberlandswcd.org/yardscape).



## Additional Resources

# What's Phosphorous?

### *Did you know?*

**Soil is the #1 freshwater pollutant in Maine.**

Soil causes a lot of problems all on its own, such as adding nutrients that grow algae, discoloring and making the water cloudy, increasing the water temperature, and reducing the water's ability to hold enough dissolved oxygen.

Unfortunately, soil also binds to other pollutants, such as bacteria from pet waste and chemicals from our vehicles and homes and brings them with it when it erodes.

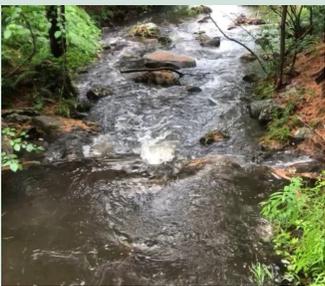
Phosphorus is a natural nutrient that plants use to grow in freshwater lakes. Increased phosphorus can stimulate algae and excessive plant growth, negatively impacting boating, fishing, swimming, and your property values. Even small increases of phosphorus can have a devastating impact on the water quality of a lake or stream.

### Phosphorus Impacts

Just 1 lb. of phosphorus can produce up to 500 pounds of green, smelly, and potentially toxic algae! When algae die and decay, the water is robbed of dissolved oxygen. This can devastate fish populations if it occurs for a long period of time or the fish have nowhere else to go. Algae also make the water murky and potentially hide water hazards, making it unsafe or undesirable to swim and boat.

### Where Does Phosphorus Come From?

Some exists naturally in lakes and streams but human activities from residential and agricultural areas contribute a significant amount of phosphorus. Stormwater runoff travels across land and picks up phosphorus from **fertilizers, eroded soil particles, septic systems, and pet waste** and discharges it into nearby streams and the lake.



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**Double the Trouble**

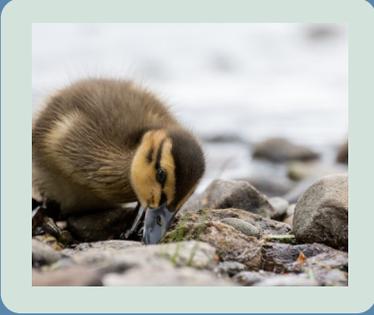
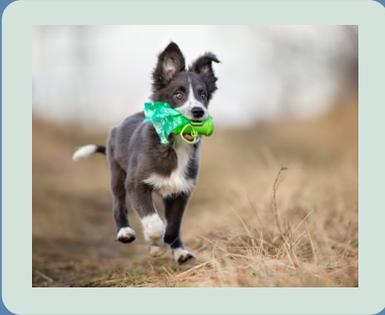
From farm animals, to household pets, to wildlife, all animal waste contains nutrients and pathogens such as parasites, bacteria, and viruses. To prevent these pollutants from reaching Highland Lake and making the water unsafe to swim in and fish from, consider the following:

- Scoop, bag, and trash dog waste whether it's in your yard or happens during a walk.
- Keep wildlife wild by not feeding ducks and geese to help keep the birds healthy and reducing their waste.
- Contact CCSWCD for site-specific recommendations for managing farm animal manure.

*Did You Know?*

**Dog waste is the #3 water pollutant.**

Our natural ecosystem can support 2 dogs per square mile. The Highland Lake Watershed has approximately 68 dogs per square mile.



## Additional Resources

# Don't Waste Our Water

### Home Sweet Home

It's not just us contributing pollutants to Highland Lake. Our 570+ dogs living in the watershed can too.

570+ Dogs



### Did You Know?

Due to their diet, dog waste (both poop and urine) has highly concentrated amount of nutrients that can burn and kill your lawn. Those nutrients can be picked up by stormwater runoff and carried to the lake.

### Protect the Lake

Excess fecal bacteria can close Highland Lake to swimming and fishing.

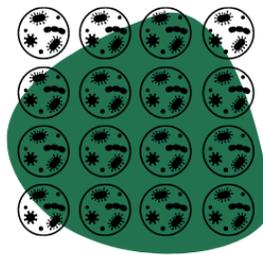
Any excess phosphorous entering the lake can lead to an unwanted algal bloom.



### The Ick Factor

Over the course of a year, the average dog produces 2.75 pounds of phosphorous and 2.8 trillion fecal bacteria in their waste.

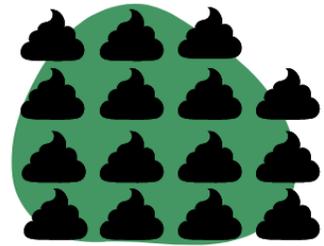
1.6 quadrillion



Fecal Bacteria

Over 1.6 quadrillion fecal bacteria are produced by dogs per year in the Highland Lake Watershed.

1.5 thousand



Phosphorous

Over 1,500 pounds of phosphorous are produced by dogs per year in the Highland Lake Watershed.

## Be the Solution to Water Poo-llution

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Join Us!

# Highland Lake Association



Our mission is to preserve, enhance, and protect the natural resources of Highland Lake and its watershed.

The Highland Lake Association (HLA) is a registered 501(3)(c) non-profit organization, started in 1989. Our organization is staffed by volunteers from around the lake and is supported by our member dues.

The HLA has established itself as a leader in watershed education and water quality monitoring. Protecting water quality remains our top priority. The HLA Water Quality Committee monitors lake water quality using recognized standard methods, including analysis of natural and invasive plant species and coordinates additional testing, education, and personnel as warranted.

We collaborate with our local partners, the Cumberland County Soil & Water Conservation District, the Towns of Windham, Falmouth, and Westbrook, as well as USM, UNH, and the DEP to improve and maintain the water quality of Highland Lake for the benefit of the residents, the Towns, and future generations.

The first summer camps appeared around 1900 on Highland Lake, a lake less than 12 miles from Portland, Maine. There are now more than 500 residences around the lake shore and more than 1,000 within the watershed. The area around the dam (Duck Pond corner) served as the industrial center to residential settlement dating back to the late 1700s. The site served as a rag mill as well as a lumber mill. HLA is proud to maintain the lake's history and dedication to pure enjoyment in pure water!

**HLA welcomes residents along the shoreline and beyond to join in our efforts to keep Highland Lake at its best!**

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