

A Homeowner's Guide to Lake-Friendly Living

15 simple strategies for sustainable lakeshores & landscapes to protect Seneca Lake

Seneca
lake
pure waters association



Recent studies have linked water quality with property values on lakes throughout the US from Minnesota to Maine. 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 Seneca Lake will protect your investment in your lakeshore property.

This guide addresses three main ways to protect the water quality of Seneca Lake and your investment in your lakeshore property. If we all practice lake-friendly living, we can all enjoy the beauty and health of Seneca Lake for years to come.



Minimize Runoff

Runoff picks up pollutants and carries them to the lake. Minimize the hard surfaces that create runoff.



Eliminate Pollutants

Eliminate pollutants at their source. Avoid using fertilizers, household toxins, and other chemicals. Prevent soil erosion and fix failing septic systems.



Capture and Infiltrate

Capture and infiltrate any pollutant-carrying runoff that you didn't eliminate before it reaches the lake - with shoreline buffers, rain barrels, and rain gardens.

To learn more about how you can help protect Seneca Lake, go online to www.senecalake.org



Working together to protect Seneca Lake

Seneca Lake's beauty has made it a popular destination. Traditional summer camps are giving way to year-round homes, as more and more people want to enjoy the beauty and tranquility of lakeside living. The landscape is dramatically changing as lots are cleared and driveways paved, and trees are removed to make way for fertilized lawns. The cumulative effects from such drastic changes to the landscape mean big changes to the health of the lake. By changing the natural environment to a suburban landscape, the lake ecosystem can no longer function properly.



Leaving the natural topography and vegetation of the forest floor around your house protects the lake.

15 simple strategies for sustainable lakeshores & landscapes to protect Seneca Lake

1. Reduce Impermeable Surfaces
2. Limit Lawn Size
3. Use Water Wisely
4. Minimize Erosion
5. Be Smart About Lawn Care
6. Use Phosphorus-Free Fertilizer
7. Maintain Your Septic System
8. Don't Flush Your Drugs
9. Maintain Your Vehicles
10. Conserve Water
11. Reduce Household Hazardous Wastes
12. Install a Vegetative Buffer
13. Plant a Rain Garden
14. Go Native

15. Join SLPWA Today!

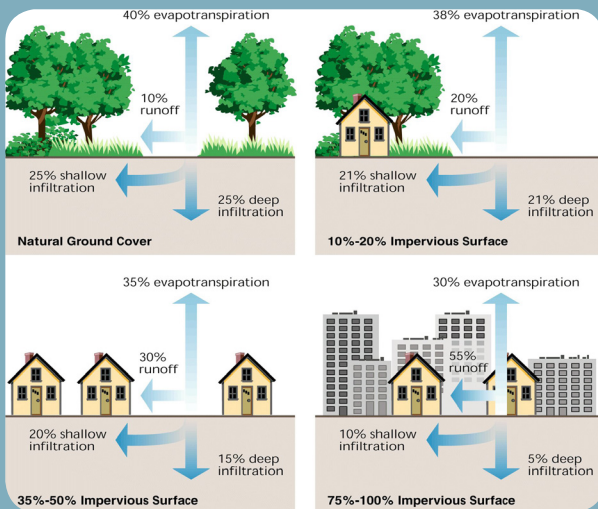


Storm Water Runoff

Storm water runoff isn't just a problem along roads and commercial areas. Residential properties generate runoff as well. Storm water runoff from developed areas is the greatest threat to the water quality of Seneca Lake.

What is storm water runoff ?

After a rain event, water that falls on natural surfaces infiltrates into the ground and eventually into the ground water. Water that falls on impermeable surfaces, such as roads and parking lots, cannot soak into the ground, and instead moves across these surfaces.



As impermeable surfaces increase and water can't soak into the ground, runoff across the surface increases. These surfaces increase the velocity of the runoff and also add pollution. Oils, salt, and sediment carrying phosphorous or other chemicals are picked up by the water as it travels and are all deposited into the lake.



Runoff carrying sediments formed this delta. When the stream reaches the lake the water slows, and the sediment settles out in the lake at the mouth of the stream.



What are the effects of storm water runoff?

- Sediments can cloud water, affecting plants, fish, and other aquatic life.
- Sediments can form deltas, impeding navigation and lake access, and providing ideal habitat for invasive species.
- Excess nutrients can cause increases in algal growth.
- Bacteria and pathogens can make water unsafe for drinking and swimming.
- Debris - including plastic bags - can suffocate or disable aquatic life; such as ducks and turtles.
- Household hazardous wastes; such as pesticides, paints, or motor oil, can poison aquatic life.
- Road salt from the winter increases chloride levels in the lake.

All of these effects lead to a loss in water quality - which can increase the cost to treat our water to make it safe for drinking and hurt the economy by impacting tourism and property values.

Simple Step #1

Reduce Impermeable Surfaces



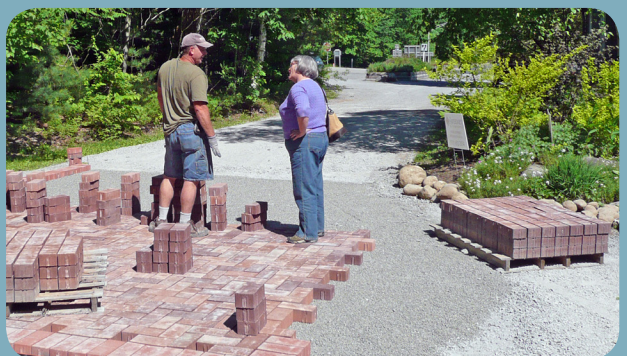
Permeable surfaces allow water to infiltrate and soak into the ground. Impermeable surfaces do just the opposite. When water hits this kind of surface, instead of soaking in, it runs off. This is what creates storm water runoff. The larger the area of impermeable surface, the greater the volume of storm water runoff.

Ways to lessen your impermeable footprint:

- Keep paved driveways as small as possible. Use permeable surfaces for driveways and overflow parking areas that aren't needed on a regular basis. While gravel driveways may start off permeable, over time the compaction makes them nearly as impermeable as regular asphalt.
- Rooftops are impermeable too - so keep your home a modest size and build up - not out - on lakeshore lots.
- Use stone pathways or stepping stones across your lawn instead of poured concrete or asphalt paths.
- Try one of the newer permeable pavement technologies. There are permeable paver systems, asphalt, and concrete - so you can get just about any look you want. Prices vary - and while all options are generally more expensive than traditional pavements, it is definitely money well spent.



Below: Permeable pavers being installed instead of solid pavement





Simple Step #2 Limit Lawn Size

Look at the forest all around us. Natural wooded areas have multiple layers of vegetation. A canopy of tall trees, an understory of smaller trees and shrubs, and a groundcover of ferns and other plants. Branches and the leaf litter from all these plants build up on the forest floor over time and break down into a layer, called duff, that covers the ground.

Duff protects the soil from the impact of rain, keeping the soil in place instead of letting it erode away. The roots of plants and trees in the forest also hold the duff in place. Water soaks into the ground, filtering pollutants and replenishing ground water. Studies have found that areas of lawn can create more runoff than similarly sized wooded areas.



The plants and leaf litter on the forest floor lessen the impact of rain and allow it to soak into the ground instead of running off across the surface.

Lawns absorb less rainfall than natural areas.

- Grading a lot to create a lawn removes the natural topography of the land. Low spots where water would naturally collect and have time to soak in are lost.
- Heavy machinery and equipment compact the soils during construction, leaving no space in the soil for water to soak in.
- Without the branches and leaves of trees and shrubs to intercept the rainfall and lessen its impact, rain hits the ground hard and runs off across the surface.



When building a new home, think about how you will use your lawn. Would you like an area for children to play? Or for a pet to exercise? Then, plan accordingly. Only create as much lawn area as you need.

If you have a large existing lawn that you don't use, start making it smaller by planting more trees and shrubs around the edges, and eventually work your way in.

Simple Step #3 Use Water Wisely



Using water wisely around the yard helps prevent pollution from storm water runoff.



If you have an irrigation system:

- Water your lawn and garden in the morning or evening when temperatures are cooler to minimize evaporation.
- Adjust sprinklers so only your lawn is watered and not the house, sidewalk, or street.

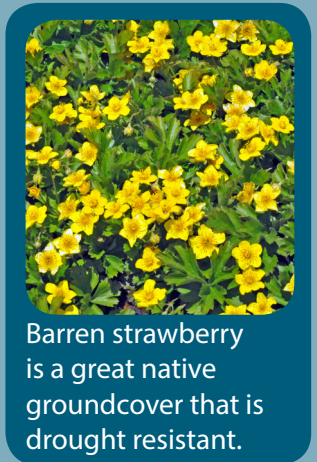
• Install a rain sensor on your irrigation controller so your system won't run when it's raining.

• Choose shrubs and groundcovers instead of turf for hard-to-water areas such as steep slopes and isolated strips.

• Spread a layer of organic mulch around plants to retain moisture and save water, time and money.

• Use drip irrigation for shrubs and trees to apply water directly to the roots where it's needed.

Or better yet, landscape with native plants that won't need irrigation once they are established. This will save water and save you the cost of the installation and maintenance of an irrigation system!



Barren strawberry is a great native groundcover that is drought resistant.

Other ways to prevent runoff from your property:

• Install a rain barrel to collect runoff from your roof and to use for watering your garden.



• Direct your downspouts onto your lawn or into a rain garden, away from your driveway and other impermeable surfaces.

• Install covers on pools and spas and check for leaks around pumps.

• Check for leaking outdoor faucets.

• Use a broom instead of a hose to clean driveways and sidewalks.

• Patios provide space that doesn't ever need to be watered. These useful "outdoor rooms" can also add value to your property. Just be sure to keep it permeable!



Simple Step #4 Minimize Erosion



When you are planning a construction project, check with your local municipality to determine whether or not you need a permit. Be sure to have an erosion control plan in place before you begin. Depending on the type of project, you might need to:

- Preserve existing vegetation where possible to prevent erosion. Avoid parking or driving heavy machinery near trees as soil compaction can damage their roots.
- Build a gravel access drive to limit compaction of your site and to limit the mud that is tracked out to the street from vehicles leaving the site.
- Properly install a silt fence or straw bales to trap sediment on the downslope side of your lot.
- Protect soil piles with silt fences and by keeping them covered with tarps or plastic. Locate the piles away from the road or nearby water to lessen the chance of sediment being transported off-site.
- Replant the area as soon as possible so that there is not bare soil. Cover lawn areas with 4-6" of topsoil and then seed and mulch with straw.
- Fence the construction area to limit activity to only the necessary area of the site. This will help reduce erosion and unnecessary soil compaction of the rest of your property.
- Divert runoff around disturbed areas to minimize erosion.

Sediment fences are the last line of defense from stopping sediments from washing off your site. They should not be relied upon as the sole solution for erosion control and they must be installed properly in order to be effective.

This site was seeded and mulched with straw to cover the bare soil and the silt fence stayed in place until the grass seed had a chance to grow and stabilize the soil. Larger plants were also planted to help revegetate the disturbed area. It is important to keep erosion control measures in place until the site has been restabilized. Remember - just because the construction is done, doesn't mean it is time to pack things up just yet!



Simple Step #5

Be Smart about Lawn Care



Fertilizers, leaves, grass clippings, animal waste, and eroded soil are all sources of phosphorus. When they are swept or washed into the street or nearest storm drain, they end up in a nearby stream or the lake. Follow these tips for smart lawn care with water quality in mind.

- Apply fertilizer at the recommended rate. Fall is the best time. Don't fertilize before a storm. Never apply to frozen ground. Or better yet, skip the fertilizer all together!

• Yard waste can contribute significant amounts of phosphorus to water ways. Keep soil, leaves, and lawn clippings out of the street, ditches, storm drains, and streams by bagging them, composting them, or leaving them right on the lawn as a natural fertilizer.

• Mow higher. Keep grass length to 2½ – 3 inches. It is healthier for your lawn - and means you can mow less often!



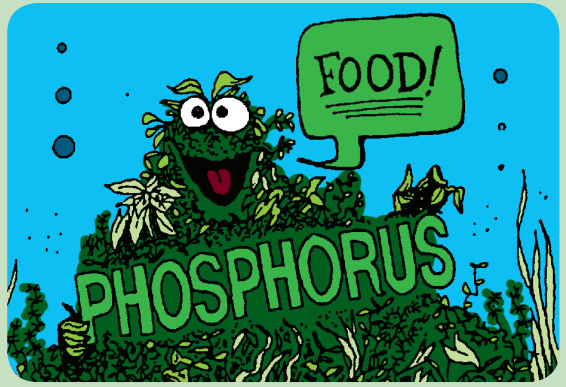
Mow Your Way to Clean Water. Lawn care practices can have a big impact on water quality and the environment.

- Pick up pet waste. Pet waste can contain harmful bacteria as well as phosphorus. Flush it in the toilet or place it in the garbage.
- Build healthy soil using compost and other natural amendments. Healthy soils are more resistant to disease and insect problems.
- Learn about Integrated Pest Management (IPM) and use pesticides sparingly and only when really needed. Do not apply pesticides as part of a 'routine maintenance plan'. When use is needed, be sure to follow the label. Often the timing of the application is critical to its success. There are many organic products available at stores - try these first - and only use chemicals as a last resort.

Phosphorus & Water Quality

What is Phosphorus?

Phosphorus is a natural element and an essential nutrient for plant growth but is found only in small amounts in lakes and streams. Even small increases in phosphorus can have a devastating impact on the water quality of a lake or stream. Increased phosphorus can stimulate algae and excessive plant growth. Boating, fishing, and swimming can become difficult and lake shore property values and tourism can also be negatively impacted.

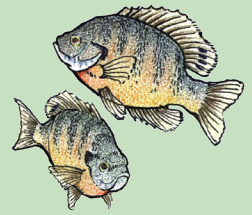


Green and Gross

Excess phosphorus can lead to an explosion of algal growth in the lake. **1 lb of phosphorus can produce up to 500 pounds of wet algae!**

More Phosphorus, Less Fish

As 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 no where else to go.



Where Does Phosphorus Come From?

Phosphorus has many sources. 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.



Sediments wash into streams and out into the lake, bringing phosphorus attached to the soil particles. One way to help stop this transfer of phosphorus into the lake is to stop the sources of it, such as fertilizers containing phosphorus.

Simple Step #6

Use Phosphorus-Free Fertilizer



What do I look for?

The three numbers in fertilizer bags show the N-P-K nutrient analysis. The middle number is the phosphate (phosphorus) content. A “zero” in the middle means it is phosphorus-free.

Will phosphorus-free fertilizer keep my lawn green & healthy?

Yes! Soils in most parts of New York already have an adequate amount of phosphorus to grow a healthy lawn. In these instances, adding more phosphorus with fertilizer is not needed and will not benefit your lawn.



How do I find out what my soil needs?

If you are concerned that your lawn may need phosphorus, you can have your soil tested. Soil testing is available through your local Cornell Cooperative Extension office for a reasonable fee.

Besides being lake-friendly - It is now the Law!

Beginning on January 1, 2012, New York State law prohibits:

- the use of phosphorus-containing lawn fertilizer unless you are establishing a new lawn or a soil test shows that your lawn does not have enough phosphorus,
- the application of lawn fertilizer on impervious surfaces, (Picking up fertilizer applied or spilled onto impervious surfaces is required.)
- the application of lawn fertilizer within 20 feet of any surface water except: where there is a vegetative buffer of at least 10 feet; or where the fertilizer is applied by a device with a spreader guard, deflector shield or drop spreader and is applied at least three feet from surface water,
- the application of any lawn fertilizer between December 1 and April 1.

The law also requires retailers to display phosphorus-containing fertilizers separately from non-phosphorus fertilizers and to post an educational sign where the phosphorus-containing fertilizers are displayed.

The law does not apply to agricultural fertilizer or fertilizer for gardens.



Simple Step #7 Maintain Your Septic System

Maintaining your onsite waste water treatment system (OWTS) - or septic system - not only protects Seneca Lake and nearby ground waters from being contaminated, but also protects your health and your investment in your home. Typical pollutants found in household waste water include nitrogen, phosphorus, and disease-causing bacteria and viruses. A properly designed, constructed, and maintained system can provide long-term, effective treatment of household waste water. If not properly maintained, a failing system can cost tens of thousands of dollars to replace.

Know the signs of a failed system:

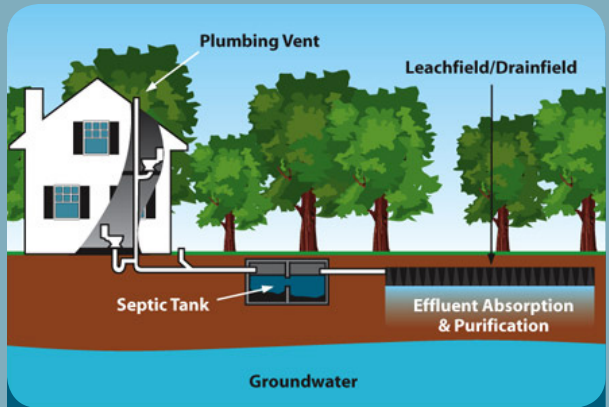
- Pooling water or muddy soil around the tank or drainfield or in your basement.
- Bad smell coming from area of tank.
- Toilet or sink backs up when you flush or do laundry.
- Bright green grass over the drainfield.

If you notice any of these signs - call a professional to have your system looked at right away.

Alternative Systems

Due to unsuitable soils, high bedrock or ground water, or small lot size you may have a hard time making a traditional septic system work on your property.

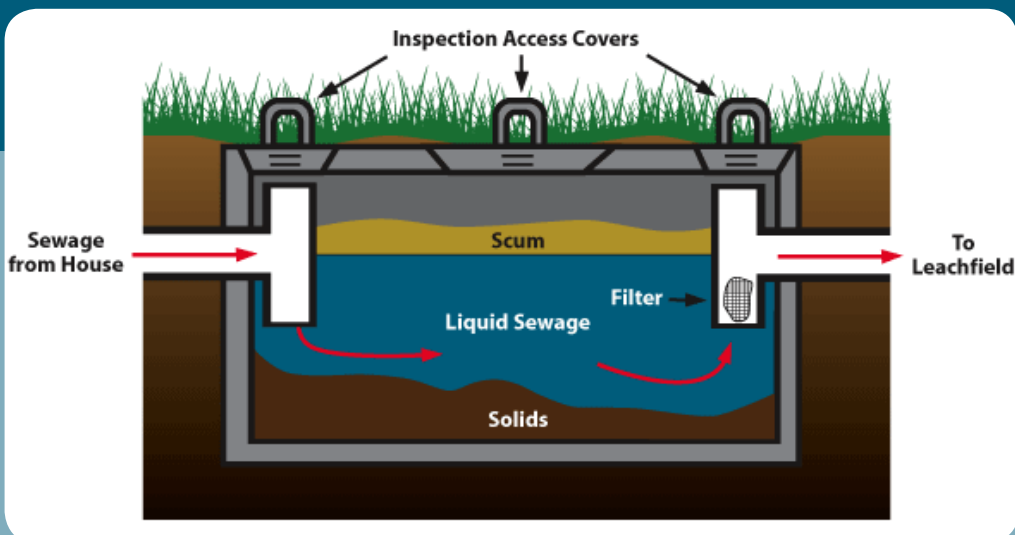
There are alternative systems now available that use new technologies to improve treatment processes, many of which need less space to function.



A typical septic system has 4 main parts:

- a pipe from the home that carries the waste water into the tank;
- a tank that holds the water long enough for the solids to settle out to the bottom and the oil and grease to float to the surface;
- a drainfield where the water from the tank is discharged;
- the soil where the microbes provide the final treatment.

Such systems use sand, peat or plastic media instead of soil to treat the waste water. Many of these systems are already being used on other lakes. *Photo at left is a Puraflo system that uses peat moss as a filter.*



How to Maintain your System:

1. Regularly inspect your system and pump your tank as necessary.

It's a good idea to have your system inspected every 2-3 years. In general, it should be pumped every 3-5 years but this depends on how much your system is used and its size. Your inspector can determine when it is time to pump your tank. If you don't pump your tank routinely, the solids in the bottom can build up and make their way out into your leachfield, clogging it and eventually ruining it. You might not know you have a problem until it is too late and you need a new leachfield.

2. Don't dispose of household hazardous wastes in sinks or toilets.

Avoid paints, chemicals, cleaners, gasoline, oil, or other toxic materials that could kill the good bacteria in your system. Avoid things that can clog pipes such as diapers, coffee grounds, feminine hygiene products, paper towels, and grease and fat from cooking. Avoid frequent use of a garbage disposal. Normal use of antibacterial products such as handsoap is fine but excessive use might kill too many beneficial bacteria in your system and prevent it from working properly. Septic additives are not needed.

3. Care for your drainfield. Plant only grass or groundcover with shallow roots over or near your drainfield. Deep roots could clog and damage the drainfield. Don't drive or park vehicles on the drainfield either. This could compact soil or damage the pipes. Keep roof drains, sump pump drains, and other surface water runoff away from the drainfield to avoid flooding it.

4. Use water efficiently. Using less water means less water going through your septic system. This helps it operate properly and reduces stress on your system and the risk of a failure.

Avoid overloading your system with more water than it is meant to handle.

- Don't do multiple loads of laundry all in one day - spread it out instead.
- Don't drain a hot tub or pool into your tank or over your drainfield.
- Some water softeners or filters flush themselves daily. Make sure these aren't discharging into your system.



Simple Step #8 Don't Flush Your Drugs

Until recently, consumers have been told to flush old drugs down the toilet, or pour them down the drain. We now know that such actions can have many detrimental effects. Some drugs pass largely unaltered through waste water treatment systems. A nationwide study found low levels of drugs such as antibiotics, hormones, contraceptives and steroids in 80% of the rivers and streams tested throughout the U.S.



What should be done with unwanted drugs?

The best option is to take medications to a special local collection site or event. (Most household hazardous waste collection events will not accept pharmaceuticals.) Go to www.dontflushyourdrugs.net to find a collection event in our area or go to our website to find a list of drop-off locations. As a last resort, dispose of your medications in the trash, following these steps:

- Add water and then mix ashes, dirt, cat litter, coffee grounds, or another undesirable substance to the medication.
- Hide all medications in an outer container, such as a sealable bag, box or plastic tub. Seal the container with strong tape.
- Dispose of drugs as close to your trash collection day as possible to avoid accidental or intentional misuse.
- Avoid crushing pills as some medications can be harmful in powder form.
- To prevent consumption by scavenging humans, pets or wildlife, do not conceal discarded drugs in food.



Simple Step #9 Maintain Your Vehicles

Most people might link cars to air pollution, but all the fluids found in a car can be very detrimental to water quality as well.

- Make sure your car is not leaking oil or other fluids onto your driveway or onto the road where it can be washed into nearby waterways.
- If you change your own oil, use an oil pan to catch any drips. If the oil spills, don't wash it into the nearest storm drain with the hose. Instead, clean it up with an absorbent material such as kitty litter and then dispose of it properly.
- Wash your car on your lawn - or better yet - take it to a commercial car wash where the wash water is captured, cleaned, recycled, and reused. Soapy water contains phosphorus and other chemicals that can harm fish and water quality.

Simple Step #10

Conserve Water In Your Home



Water conservation in the home helps maintain your septic system. Here are some ways to use water more efficiently around your home :

- Install high-efficiency showerheads. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Turn off faucets while shaving or brushing your teeth.
- Compost vegetable waste instead of using the garbage disposal.
- Run the dishwasher only when full.
- Don't use running water to thaw food.
- Make sure all faucets are completely turned off when not in use.
- Install aerators in the faucets in your kitchen and bathroom.
- Replace old dishwashers, toilets, and washing machines with new, high-efficiency models. New washing machines with the Energy Star label use only 18 - 25 gallons of water per load (compared to 40 gallons per load for the typical machine) and save about 7,000 gallons of water a year.



Did you Know ?
Average indoor water use in a typical single-family home is almost 70 gallons per person per day.

Simple Step #11

Reduce Household Hazardous Wastes



Household hazardous waste is any waste produced in the home, which is flammable, toxic, corrosive, or reactive. Common examples include: gasoline, oil, solvents, paints, paint thinners, fertilizers, pesticides, cleaners, and batteries.

Use these products with care to avoid damaging your health. Improperly disposed of paints and chemicals can pollute local waters.

- Use hazardous substances in the smallest amounts possible.
- Use non-toxic, biodegradable products when possible.
- Recycle products whenever possible or share with a neighbor.
- Clean paint brushes and other supplies in a sink, not outside.
- Always follow the directions on the label and store properly to avoid leaks or spills. Store hazardous products until they can be safely disposed of at a household hazardous waste collection event.

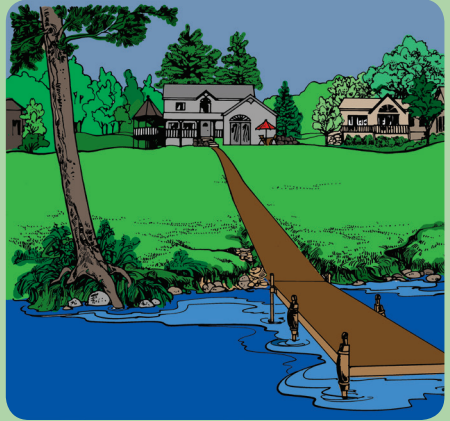


Simple Step #12 Install a Vegetative Buffer

More and more people are building year-round or second homes on Seneca Lake. They often bring their idea of a conventional yard with them, leading to a grass lawn down to the lakeshore.

Traditional lawns on a lakeshore can cause:

- Excessive plant and algal growth,
- Shoreline erosion and sedimentation,
- Loss of wildlife habitat,
- An increase in nuisance animals,
- Loss of leisure time.



A naturally landscaped yard adds value to your property and can also benefit Seneca Lake's water quality and overall health.

What is a vegetative buffer?

A vegetative buffer, or buffer zone, is a strip of natural vegetation along the shoreline of a lake or body of water.

Ideally, the vegetation should cover at least 50-75% of the property's lake frontage.

By restoring the shoreline with native plants, you restore the ecological functions of the lakeshore. The benefits of buffers include:

- Food and shelter for local wildlife,
- Stabilized soil and reduced erosion,
- Filtration of pollutants and sediments,
- Absorption of nutrients,
- Deterrence of nuisance species,
- Privacy from lake users,
- Save time and money in maintenance.

Got geese?

Canada geese love short, tender grass and avoid tall grass where predators can hide. A shoreline buffer will send the geese packing.



Use the *natural landscape*

as your guide



A canopy of trees above, shrubs and flowers in the middle, and ground cover below provides multiple layers to intercept the rain. If you don't have room for trees on your property - use large shrubs, flowers, and ground cover to create your layers instead. ***You can protect the lake's water quality and still have an amazing view at the same time!***

Lucky enough to have a natural vegetative buffer along your shoreline? Leave it! Mother Nature knows best. →



← Not so lucky? That's ok. You can plant a new vegetative buffer along your shoreline just as these homeowners did. It will mature in no time, and will protect your investment in your property for years to come.

What should I plant?

Go to www.senecalake.org for a list of recommended native plants for buffers on Seneca Lake. You can also check out some demonstration plantings at The Finger Lakes Institute in Geneva in their lakeside rain garden.

Right Plant. Right Place.

Seneca Lake is zone 6a of the plant hardiness zones - so be sure any plants you pick are meant for zone 6 or colder to play it safe. You will also need to consider the soil type, sunlight, drainage and slope on your site.

How do I get started?

Look around at natural areas to see what plants are growing there. Plant native species and they will support New York's biodiversity by providing food and habitat for birds, butterflies and other wildlife. Reference the planting list on the SLPWA website.





Simple Step #13 Plant a Rain Garden



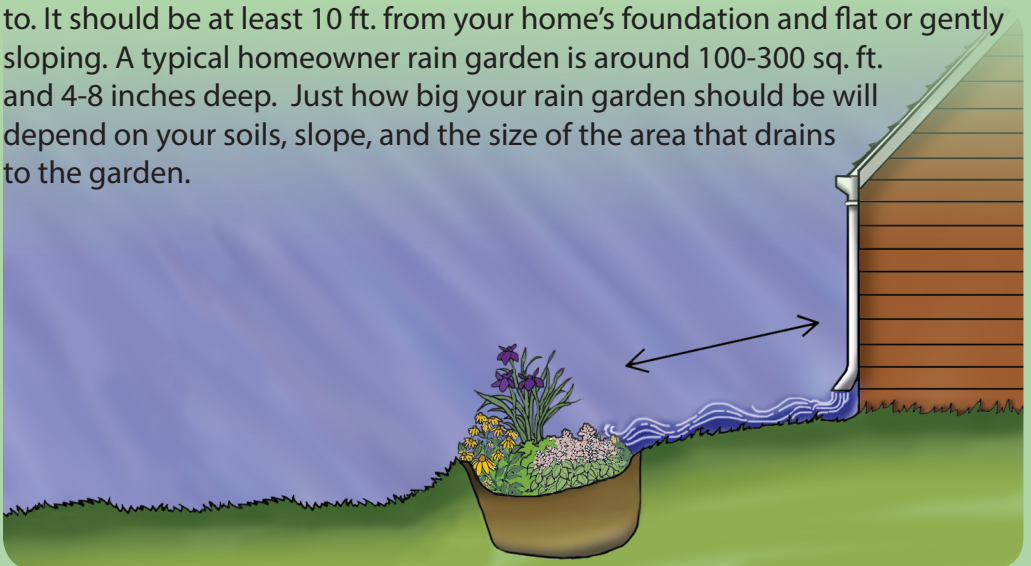
A rain garden is a vegetated depression that collects rainwater. This allows the rain that falls on rooftops, driveways, and patios to infiltrate into the ground instead of becoming storm water runoff.

Rain gardens are beneficial in many ways:

- Help keep water clean by filtering storm water runoff before it enters local waterways.
- Help alleviate problems with flooding and drainage.
- Enhance the beauty of yards and communities.
- Provide habitat and food for wildlife like birds and butterflies.
- Reduce the need for expensive storm water treatment structures in your community.

Getting Started:

The first step is sizing and siting your rain garden. You want to pick a location on your property that you can direct a downspout or other source of runoff to. It should be at least 10 ft. from your home's foundation and flat or gently sloping. A typical homeowner rain garden is around 100-300 sq. ft. and 4-8 inches deep. Just how big your rain garden should be will depend on your soils, slope, and the size of the area that drains to the garden.



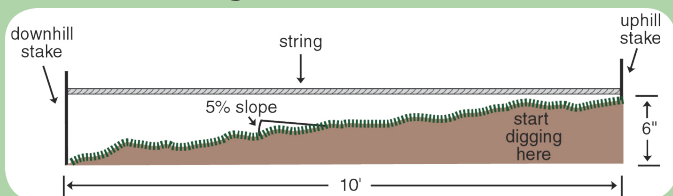


Oxeye Sunflower

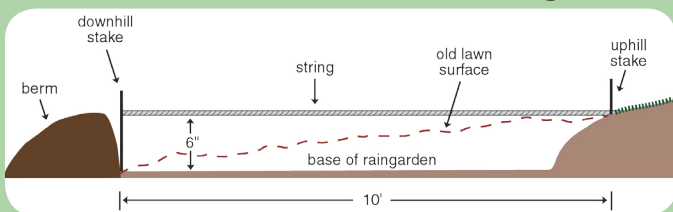
Time to Dig!

After you have planned out your garden size, shape, and location, it is time to start digging. You can use a hose, string, or spray paint to outline the shape of your garden to help keep you digging in the right place. As you dig, use the soil you are removing to create the berm around three sides of your garden to hold the water in. The fourth side isn't built up because that is where the water flows in. You want the bottom of your garden to be level. You can 'eyeball' it - or get out a level to be sure.

Where to Dig



Where to Put the Soil You've Dug



Planting the Garden

Since a rain garden is flooded periodically, you need plants that can live in both wet and dry conditions. You should also consider if your site is sunny or shady when selecting plants. You might want a variety of height, color, and blooming period as well. This way your rain garden is not only stopping storm water runoff but is also providing a beautiful landscape to enjoy all summer long.

Plant a rain garden - and you'll be excited when it rains!

Native Plants for Rain Gardens

- Tall White Beardtongue
- New England Aster
- White Turtlehead
- Blue Flag Iris
- Culver's Root
- Joe Pye Weed
- Labrador Violet
- Cardinal Flower
- Wild Geranium
- Beebalm
- Great Blue Lobelia
- Foamflower
- Switchgrass



Swamp Milkweed

These are just a few of the plants you can use in a rain garden.



Simple Step #14 Go Native!



What is a native plant?

Native plants are indigenous to an area at the time of European settlement.



Japanese knotweed along roadway

What is an invasive plant?

An invasive plant is a non-native plant that grows out of control, out-competing our native plants for nutrients, sunlight, and space. Invasives cause harm to the environment, the economy, and some can even be dangerous for our health!

Invaders for Sale

You may already know about common roadside invaders such as Japanese knotweed, but it may surprise you that many popular plants still sold at garden and nursery centers are also invasive. Here is a list of plants that you should avoid buying. The worst species are in bold below.

Burning bush is very popular for its red fall color - but it is very invasive and has already been banned in some states!



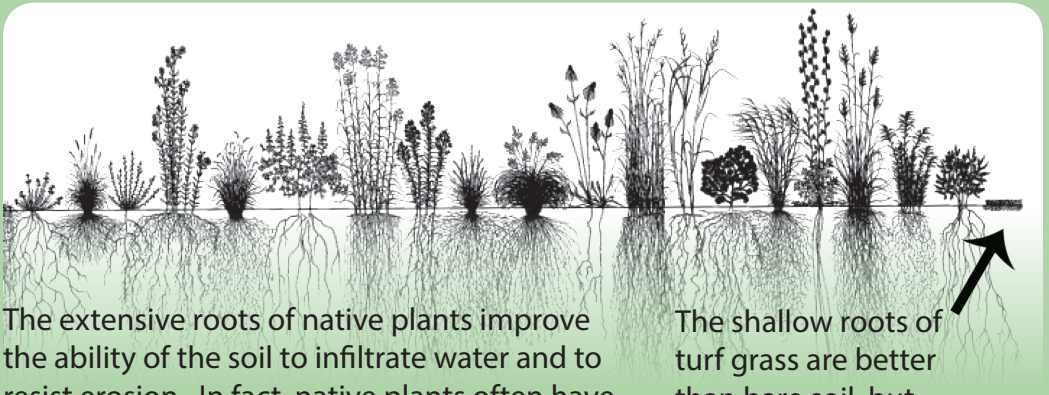
- Autumn Olive** *Elaeagnus umbellata*
- Black Locust** *Robinia pseudoacacia*
- Border Privet *Ligustrum obtusifolium*
- Burning Bush** *Euonymus alatus*
- Callery (Bradford) Pear *Pyrus calleryana*
- Common Buckthorn** *Rhamnus cathartica*
- Common Periwinkle *Vinca minor*
- Creeping Jenny** *Lysimachia nummularia*
- Crown Vetch *Coronilla varia*
- English Ivy *Hedera helix*
- Garden Loosestrife *Lysimachia vulgaris*
- Goutweed *Aegopodium podagraria*
- Indian Cup Plant *Silphium perfoliatum*
- Japanese Barberry** *Berberis thunbergii*
- Multiflora Rose** *Rosa Multiflora*
- Norway Maple** *Acer platanoides*
- Oriental Bittersweet** *Celastrus orbiculatus*
- Porcelainberry** *Ampelopsis brevipedunculata*
- Purple Loosestrife** *Lythrum salicaria*
- Shrubby Honeysuckles** *Lonicera spp.*
- Wintercreeper *Euonymus fortunei*
- Yellow Iris** *Iris pseudacorus*

The Benefits of Native Species

With all the benefits that native plants provide, you can feel good about enjoying the beautiful landscape all around you.

Native plants:

- Help protect New York's biodiversity by providing food and habitat for birds, butterflies, and other wildlife.
- Save you time and money. Natives have evolved in our environment over many years and are already adapted to survive here; they are low maintenance and don't need lots of fertilizer, pesticides, and watering.
- Help reduce storm water runoff. The deep roots of natives absorb and filter runoff more effectively than the short roots of many turf grasses and other ornamental plants.



The extensive roots of native plants improve the ability of the soil to infiltrate water and to resist erosion. In fact, native plants often have more biomass below the surface than above. For example, little bluestem, a great bunch grass for the garden, only grows 2-3' tall, but can have roots up to 8 feet deep.

The shallow roots of turf grass are better than bare soil, but pale in comparison to native plants. Kentucky bluegrass is shown in the drawing above.

So many choices...

Native plants come in just about every size, shape, and color. You can design a native plant garden for interest in all 4 seasons, or a theme garden based on form or function. Here are just a few ideas to get you started.

Hummingbirds

- | | |
|-----------------|---------------------|
| Cardinal Flower | Bee Balm |
| Wild Columbine | Beardtongue |
| Fireweed | Trumpet Honeysuckle |

Birds

- | | | |
|-----------|--------------------|---------------|
| Dogwoods | Serviceberry | Milkweeds |
| Viburnums | Chokeberry | Joe Pye Weeds |
| Bayberry | Cutleaf coneflower | Asters |

Deer Resistant

- | | | |
|--------------|----------------|-------------|
| Blue Vervain | Foamflower | Winterberry |
| Culvers Root | Sensitive Fern | Summersweet |
| Bergamot | Bugbane | Spicebush |

Butterflies

- | |
|--------------------|
| New York Ironweed |
| Woodland sunflower |
| Goldenrods |

Salt Tolerant

- | |
|-------------|
| Arrowwood |
| Elderberry |
| Witch hazel |



Blue Vervain



Simple Step #15 Join SLPWA



The Seneca Lake Pure Waters Association (SLPWA) leads efforts to maintain and enhance the quality of Seneca Lake as a source for drinking water and recreation. Over 100 volunteers donate their time to assist SLPWA in collecting data for our water quality initiatives. Financial support for these activities comes from our members, donors and grants.

Jump in and join us!



Stream Monitoring Volunteers



Benthic Macroinvertebrate Volunteers

SLPWA is a membership organization. We can only accomplish our mission to protect Seneca Lake through the support of our members.

Help us continue protecting the lake by becoming a member! Call today or visit our website. Your support will continue to be appreciated for generations to come.

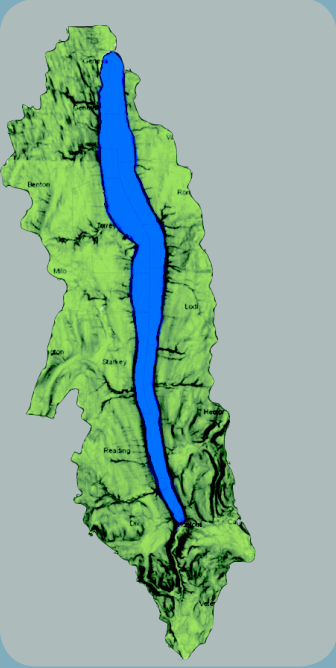
Join online by visiting: www.senecalake.org

Thank you to the Lake George Association for allowing the adaptation of this home owners guide with changes.

Credits and References: Thanks to UW Extension and Wisconsin DNR for courtesy use of the line drawings throughout the publication. p. 3: Illustration courtesy *Stream Corridor Restoration: Principles, Processes, and Practices*, 10/98, by the Federal Interagency Stream Restoration Working Group (FISRWG). p. 8-10: Thanks to the Onondaga Lake Partnership and CCE of Onondaga County for imagery and language. p. 17: Rain garden photo courtesy of the Cayuga Lake Watershed Network, Rain garden illustration courtesy of Sheri Amsel. p. 18: Rain garden illustrations from University of Wisconsin Extension, *Rain Gardens: A How-to Manual for Homeowners*. p. 19: Photo credits : Japanese knotweed; L.J. Mehrhoff, UCONN, Bugwood.org. Burning bush; J.H. Miller, USDA Forest Service, Bugwood.org. Illustration from UCONN Extension's *Rain Gardens in Connecticut*.

The Seneca Lake Watershed

Seneca Lake
and its watershed



A watershed is an area of land that drains into a waterbody. It includes all surface and ground water.

The Seneca Lake watershed is 66.3 square miles. The lake's shoreline is found within Seneca, Ontario, Yates and Schulyer counties.

Seneca Lake holds an estimated 4.2 trillion gallons of water.

Eleven municipalities rely on the lake for public water systems.

Approximately 100,000 residents use Seneca Lake as their primary water source.

Watersheds and Water Quality

Seneca Lake was carved out of bedrock at least two million years ago by glacial carving of streams and valleys. It is the deepest fresh water lake east of the Mississippi river outside of the Great Lakes.

Seneca Lake has a very long retention time, over 18 years. This means that it takes a very long time for water, and any pollution that might be in the water, to flush out of the lake. Changes in water quality don't happen fast. We are now seeing signs of decline, which tell us the problem has been building for years. Even if we make changes now, it will take years to see the benefits of those actions. There is no time to waste if we want future generations to experience the lake as we have. Seneca Lake is a very unique resource, one most worthy of our protection.

We all live here because we love the lake: the beauty, the tranquility, and the memories it holds for us. But the lake can't protect itself. It relies on those who love it to protect it as well.



SLPWA is hopeful that the greater Seneca Lake community will embrace and implement some of the lake friendly living tips found in this guide. Even simple measures can make a difference and have a positive impact on the lake's water quality. You do not have to implement all of them

- choose what works for you and your property. It takes a community to preserve and protect a lake! Thank you for being a lake friendly community member.

www.senecalake.org



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