

Help us Preserve, Protect, and
Promote Cayuga Lake water quality.

TAKE THE PLEDGE
MAKE CHANGES
LEARN MORE
GET INVOLVED

BECOME A MEMBER
BECOME A VOLUNTEER



Cayuga Lake Watershed Network
www.cayugalake.org
PO Box 348
Aurora, NY 13025



Cover photo credit: William Hecht



A HOMEOWNER'S GUIDE TO

Lake Friendly Living



Love the Lake!

Your Guide to Lake Friendly Living

What happens around your home matters...

As one of over 100,000 residents who use Cayuga Lake as a primary water source, you can make a difference in the water quality of Cayuga Lake. The Cayuga Lake watershed encompasses over 785 square miles where storm water runoff moves into the lake and impacts its water quality.

What can YOU do?

Get started by taking the pledge to adopt Lake Friendly Living practices! The three basic practices focus on easy steps to protect Cayuga Lake.

Reduce/ Eliminate Pollutants



Minimize Runoff



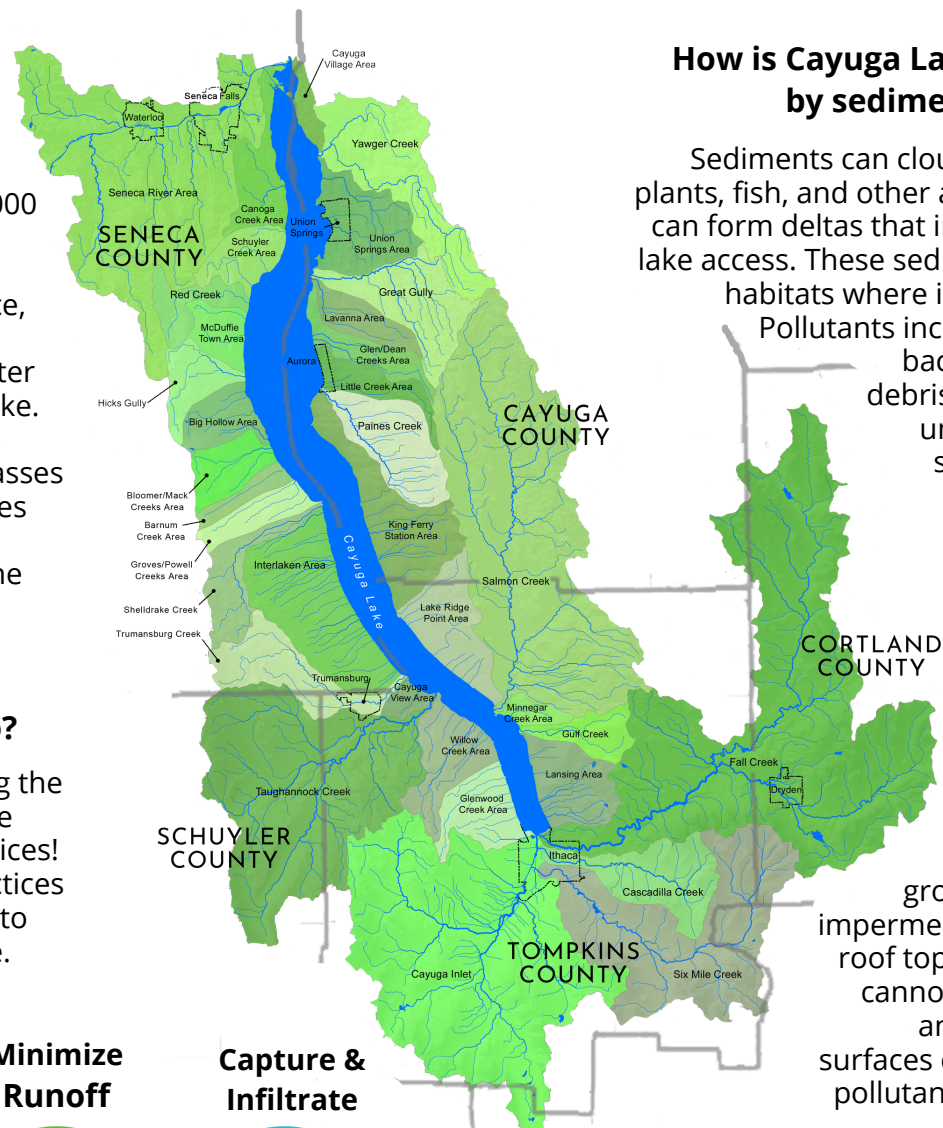
Capture & Infiltrate



Show your support for Lake Friendly Living!

Put a Lake Friendly Living sign in your yard, or on your door or car. Talk with neighbors and residents about what you are doing and the simple things they can do to help protect and preserve Cayuga Lake.

Share your results! Cayuga Lake Watershed Network wants to recognize your efforts and share your story. Visit www.cayugalake.org to share your photos and story.



Map of the Cayuga Lake Watershed

How is Cayuga Lake quality affected by sediment and pollutants?

Sediments can cloud water affecting lake plants, fish, and other aquatic life. Sediments can form deltas that impede navigation and lake access. These sediments can also create habitats where invasive species thrive. Pollutants include excess nutrients, bacteria, pathogens, and debris that can make water unsafe for drinking and swimming and disrupt healthy aquatic life.

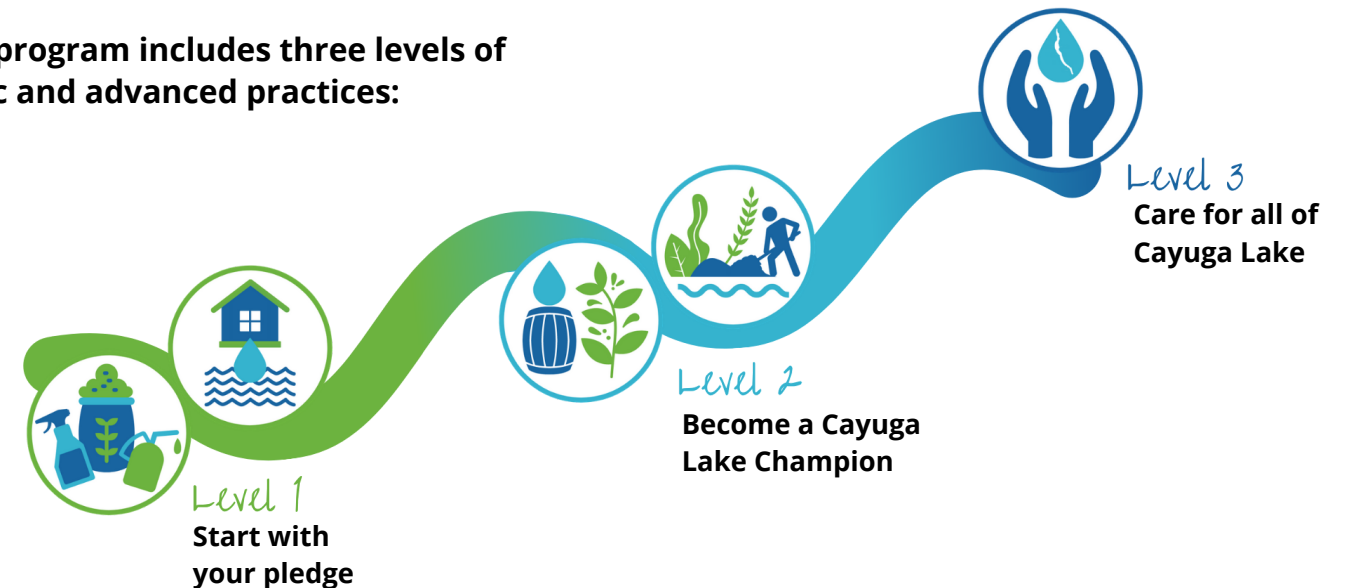
What is storm water runoff?

Residential properties can generate runoff. Rain that falls on natural surfaces is infiltrated into the ground. Rain that falls on impermeable surfaces, such as roof tops, paved surfaces, etc. cannot soak into the ground and moves across these surfaces carrying sediment and pollutants with it into the lake.



The Cayuga Lake Friendly Living program is designed to help you learn and apply practices that best suit your situation and abilities.

The program includes three levels of basic and advanced practices:



This guide is divided into three sections. The sections guide you through basic to advanced best practices to be lake friendly.

Level 1

1. Take the pledge. Learn about and adopt basic practices to reduce / eliminate pollutants and minimize runoff related to:

- Lawn care
- Hazardous waste
- Vehicle maintenance
- Septic maintenance
- Minimize water use and runoff

Level 2

2. Become a Cayuga Lake Champion. Learn about and implement advanced practices to capture and infiltrate water and reduce runoff related to:

- Permanent gardening and landscape improvements
- Reduction of impermeable surfaces
- Minimizing erosion

Level 3

3. Care for all of Cayuga Lake. Learn more about issues that impact Cayuga Lake and how to Get Involved!

- Stormwater runoff
- Harmful Algae Blooms
- Prevent the spread of invasive species
- **Get Involved!**

There is an abundance of information available to help you get started and progress. We encourage you to visit our website for resources and ways to learn more about Lake Friendly Living and getting involved to preserve, protect and promote Cayuga Lake.

If we all commit and practice Lake Friendly Living, we can all enjoy the beauty and health of Cayuga Lake for years to come. Visit www.cayugalake.org/lake-friendly-living/.

Anything you can do matters!

Level One

Take The Pledge



Reduce / Eliminate Pollutants

Identify pollutant sources and modify household habits

Use Good Lawncare Practices

- ☐ **Know your soil's needs.** Test soil then feed only if needed.
- ☐ **Eliminate the use of lawn fertilizer or apply phosphorus free fertilizer at the recommended rate** (see footnote about phosphorus-free fertilizer and NYS law).
 - 💧 Fall is the best season to fertilize.
 - 💧 Don't fertilize before a storm or to frozen ground.
 - 💧 Consider skipping the fertilizer and build healthy lawn soil with mulched leaves and compost.
 - 💧 Incorporate IPM (Integrated Pest Management) practices that use ecosystem-based strategies for pest prevention.
<https://nysipm.cornell.edu/>
- ☐ **Mow less.** Create no mow zones or buffer zones and mow higher- 2.5 to 3 inches (6.4 to 7.6 cm). This is healthier for your lawn and impacts runoff too.
- ☐ **Cover bare spots.** Keep lawn areas vegetated to help prevent erosion, soil loss, and sediment from entering the lake.
- ☐ **Scoop dog poop.** Flush it or place it in the trash.
- ☐ **Keep soil, leaves and lawn clippings out of the street, ditches, storm drains, streams and the lake.** Instead, place in biodegradable lawn waste bags, compost, or leave on lawn as a natural fertilizer. Invest in a mulching lawn mower.



Footnote: In 2012, NYS enacted a law that requires phosphorus-free fertilizer be used on all lawns unless establishing a new lawn or soil test shows that additional phosphorus is required. Learn more at www.dec.ny.gov/chemical/67239.html

Reduce Household Hazardous Waste and Chemicals

These are any wastes or chemicals that are **flammable, toxic, corrosive, or reactive**, such as gasoline, oil, solvents, paints, paint thinners, pesticides, cleaners, batteries, and prescription drugs.

- ☐ Use smallest amounts possible.
- ☐ Use non-toxic, biodegradable products when possible.
- ☐ Follow instructions on labels.
- ☐ Store properly to prevent leaks or spills.
- ☐ Dispose hazardous waste at collection sites and events.
- ☐ Do not flush prescription drugs.
 - 💧 Dispose at collection sites or in trash after mixing with ashes, dirt, cat litter, or coffee grounds, and sealing in a plastic bag or container.



Maintain Vehicles, Watercraft, and Other Recreational Vehicles

- ☐ **Prevent fluids leaking onto driveways or roads.** Change oil with a pan to catch drips. Use an absorbent material to wipe up spills and dispose properly.
- ☐ **Wash vehicles on the lawn vs. impermeable surfaces or use a car wash facility.** Soapy water contains chemicals that can harm fish and water quality.



Level One

Take The Pledge



Reduce / Eliminate Pollutants

Identify pollutant sources and modify household habits

Maintain Septic System

☐ Regularly inspect and pump

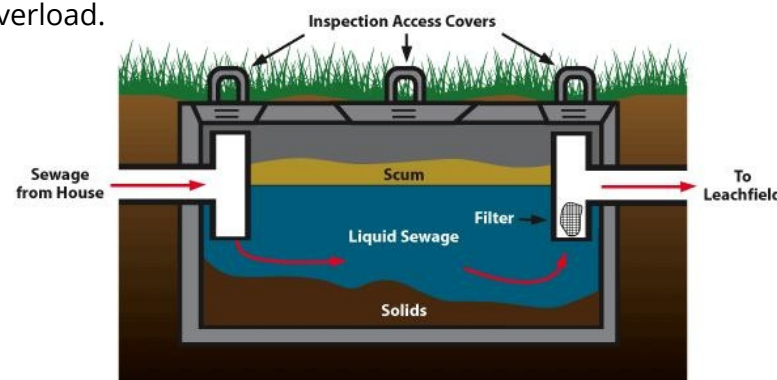
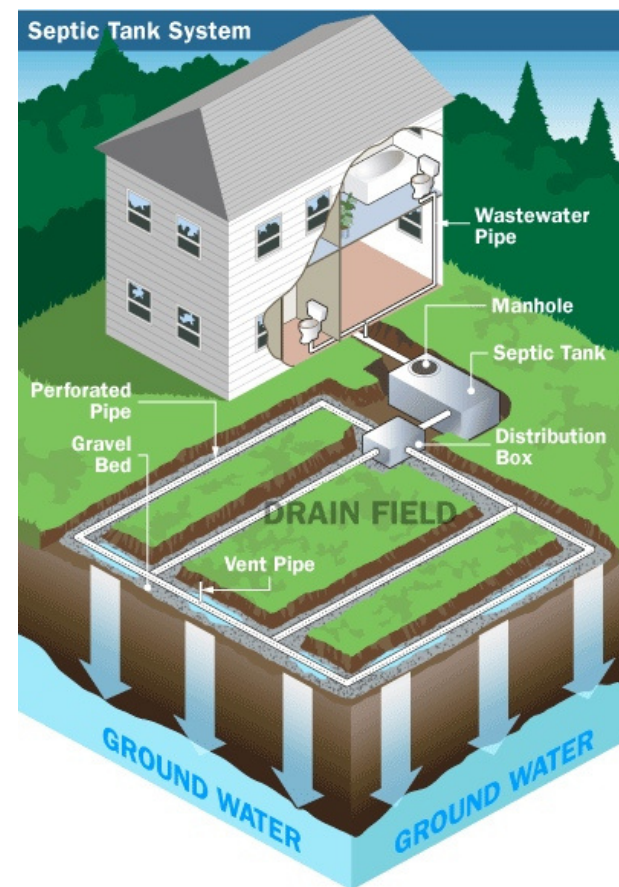
- Inspect every 2 to 3 years.
- Pump every 3 to 5 years (depending on size and use).
- Keep detailed records of all inspections, pumpings, repairs, and any other maintenance.
- Check with local municipalities to see if they have a septic inspection program.

☐ Care for your drain field

- Plant only grass or ground cover with shallow roots.
- Don't drive or park on a drain field.
- Keep roof drains, sump pump drains, and other surface runoff away from drain field.
- Use water efficiently to reduce the amount that goes through your septic system to avoid overload.

☐ Know the signs of a failed system

- Pooling water or muddy soil around tank
- Foul odor coming from area of tank
- Toilet or sink back-ups when you flush or wash laundry
- Bright green grass over drain field



Minimize Runoff

Minimize hard surfaces that create runoff

Use Water Wisely

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

- ☐ **Water when cool** (morning or evening) to minimize evaporation.
- ☐ **Adjust sprinkler** to cover only the lawn and not hard surfaces such as a street or sidewalk.
- ☐ **Install a rain sensor** on an irrigation controller so the system won't run when it is raining.
- ☐ **Use drip irrigation** for shrubs and trees to apply water directly to the roots.
- ☐ **Use a broom instead of the hose** to clean driveways and sidewalks.
- ☐ **Spread a layer of organic mulch** around plants to retain moisture.
- ☐ **Choose drought resistant vegetation** and ground cover instead of turf in hard to water areas like steep slopes.



Great job! Keep Going →

Level TWO

Become a Cayuga Lake Champion

Lake Champions understand their own water use, catchment, conservation, water quality, and other important water related areas. They look for ways to practice lake friendly living through advanced gardening and land management practices. **These practices include and go beyond those at the Pledge level.** They may be larger projects that require more expertise and resources. Lake Champions engage in these meaningful individual actions and also collective actions that benefit people and nature.



Capture and Infiltrate

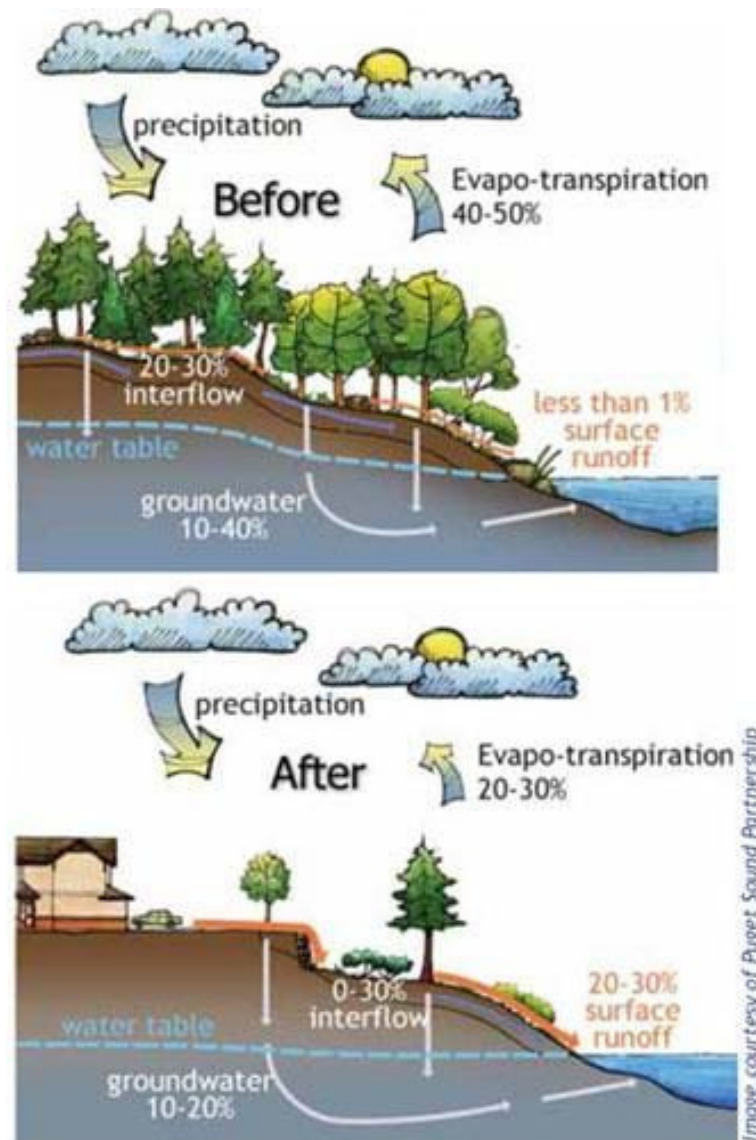
Capture and infiltrate pollutant-carrying runoff before it reaches the lake

Implement Permanent Landscaping Improvements

There are several landscaping techniques that provide long-term sustainable impacts on water quality.

☐ Limit Lawn Size

- Lawns absorb less rainfall than natural areas.
- Grading to create a lawn removes natural topography where water can collect and have time to absorb.
- Without the branches and leaves of trees and shrubs, rain hits the ground hard and runs off faster.
- Consider reducing lawn size and replacing with trees, shrubs, native plants, and rain garden landscaping techniques.



☐ Install a Rain Barrel

- Capture and recycle the rain washing off the roof.
- Rain water is "soft water" and ideal for gardens, flower pots, and car and window washing.
- Personalize the look and utility of the barrel to match your property aesthetics and water needs especially during periods of drought.



☐ Plant Native

- Native plants are adapted to local climate and need less watering and less chemicals to thrive.
- Native plants attract helpful wildlife including birds, butterflies, and ladybugs.
- Native plants' deep roots absorb and filter water more effectively than grass and other shorter root plants.
- To find more information on NYS native plants, visit: www.dec.ny.gov/docs/lands_forests_pdf/factnatives.pdf.

☐ Plant a Rain Garden.

- A well-placed rain garden collects rainwater, filters pollutants and reduces runoff and flooding.
- Rain gardens enhance your yard and communities and provide habitat and food for wildlife.
- Rain gardens should be located in an area where runoff from a downspout or other source can be directed. On average, rain gardens are around 100 to 300 sq. feet (27.9 square m) and 4 to 8 inches (10.2 to 20.3 cm) deep.
- Learn more at: www.dec.ny.gov/public/44330.html.



Level TWO

Become a Cayuga Lake Champion



Advanced Practices

Landscape management techniques for large-scale property changes

Champions of Lake Friendly Living understand the effects of storm water. The practice of using water wisely as explained on page 6 is an important first step. There are also landscape management techniques that may require new installations or changes to your property and ongoing efforts. Cayuga Lake Champions look for and invest in these types of practices.

Reduce Impermeable Surfaces

- ☐ **Keep paved driveways as small as possible** and use permeable/porous pavement, crushed stone, or grass-stone pavers.
- ☐ **Use permeable pavers or stepping stones for walkways.**
- ☐ **With new home construction or additions, minimize roofline by building up instead of out.**



Minimize Erosion During New Construction

- ☐ **Preserve existing vegetation where possible.**
- ☐ **Avoid parking or driving heavy equipment near trees** to avoid compaction and maintain proper infiltration.
- ☐ **Build a gravel access road** to minimize site compaction. Locate soil piles away from the road, water, or drainage paths and protect with silt fences or cover with a tarp.
- ☐ **Grade area** to divert runoff around disturbed areas to minimize erosion.
- ☐ **Properly install erosion and sediment control measures**, such as silt fence and straw bales during construction and keep in place until the site is stabilized and replant the area as soon as possible.



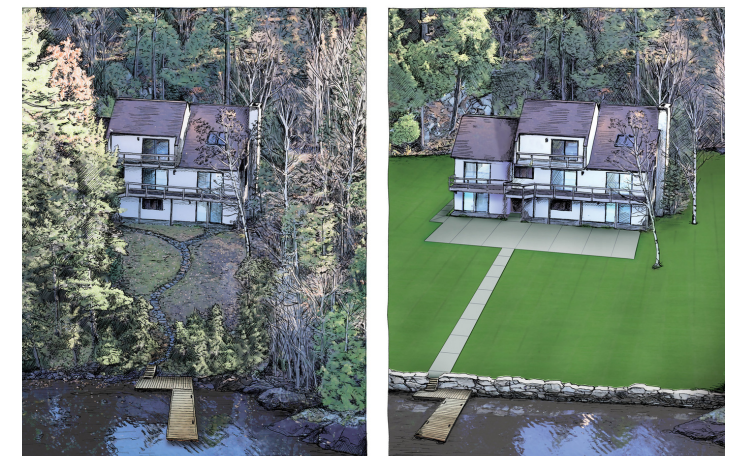
Photo Credit: Schuyler County SWD



Additional practices to help protect water quality on Cayuga Lakeshore properties.

- ☐ **Minimize erosion of lakeshore area and increase runoff infiltration by maintaining or installing a natural vegetative buffer.**

- Avoid hardening the shoreline. Natural vegetation should ideally cover 50 to 75% of lake frontage.
- By restoring the shoreline with native plants, you restore the ecological functions of the lakeshore with many other benefits, including food and shelter for local wildlife, absorption of nutrients, deterrence of nuisance species, privacy from lake users, and saved time and money in maintenance.
- Prevent nuisance animals, such as Canada geese. They prefer short, tender grass and avoid tall vegetation where predators can hide.
- Keep lawns and steep slopes vegetated.
- Plant or maintain vegetative buffers along streams or drainage paths.



Before starting any construction, check with Town and County agencies about required permits and zoning laws. In addition, when doing work near the lakeshore, check with the two regulating agencies, the New York State Department of Environmental Conservation and US Army Corps of Engineers to inquire about permit requirements. For more information, visit www.dec.ny.gov/permits/6222.html and www.nan.usace.army.mil/Missions/Regulatory/Obtaining-a-Permit/



Level Three

Care for all of Cayuga Lake



Learn More and Get Involved

Everyone in the watershed plays a role.

Stormwater Runoff

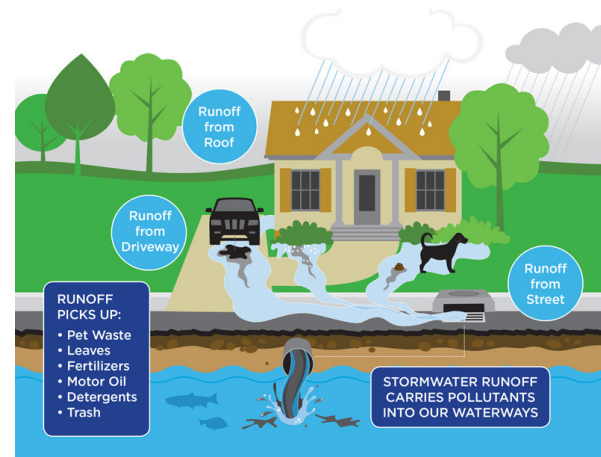
Stormwater runoff from developed areas is the greatest threat to the water quality in our water bodies. Stormwater runoff isn't just a problem along roads and commercial areas. Residential properties generate runoff as well.

What is stormwater runoff?

After a rain event, water falls on natural surfaces and infiltrates into the ground and eventually into the groundwater. Water that falls on impermeable or solid surfaces, such as roads and parking lots, can not soak into the ground, but instead moves across these surfaces increasing the velocity of runoff, with the potential to generate erosion. Stormwater can pick up pollutants such as oils, salt, and sediment carrying phosphorous or other chemicals transporting nutrients to the lake. Pollutants such as deicing salt can increase chloride levels, household hazardous waste such as motor oil and paint can poison aquatic life, bacteria and pathogens can make water unsafe for drinking and swimming and excess nutrients can promote algal growth.

What is phosphorus?

Phosphorus is a natural element and an essential nutrient for plant growth, however even small increases in phosphorus from stormwater runoff can have a devastating impact on water quality. Increased phosphorus can stimulate algae and excessive plant growth. This algae, known as **Filamentous algae**, is a common natural occurrence in freshwater ponds and lakes. Most algae are harmless and are not known to be toxic to humans. Non-toxic algae tends to look more like floating hairy mats or green tumbleweeds submerged in the water. However, filamentous algae should not be confused with Harmful Algal Blooms also known as HABs.



What is a Harmful Algae Bloom (HABs)?

Most algae are harmless and are an important part of the food web. Certain types of algae can grow quickly and form blooms, which can cover all or portions of a lake. However, some species of algae can produce toxins and are referred to as harmful algal blooms (HABs) or cyanobacteria. Cyanobacteria blooms (HABs) are not really algae, they are bacteria and are likely to produce a range of natural chemical compounds, many of which are toxic to humans and pets. These toxins, termed cyanotoxins, can cause health concerns if touched, ingested, or inhaled.

How can you tell if a bloom is a HAB?

HABs have been described as having the appearance spilled green paint or pea soup. They can also look like parallel streaks in the water or like green dots. For more information about HAB's & NYS DEC's Know It, AVOID It, Report It information, please visit www.dec.ny.gov/chemical/77118.html

What are the main causes of HABs?

HABs are likely triggered by a combination of water and environmental conditions that may include: excess nutrients, lots of sunlight, low-water or low-flow conditions, calm water, and warm temperatures. Depending on the weather and the characteristics of the lake, HABs may be short-lived (appearing and disappearing in hours) or long-lived (persisting for several weeks or more).

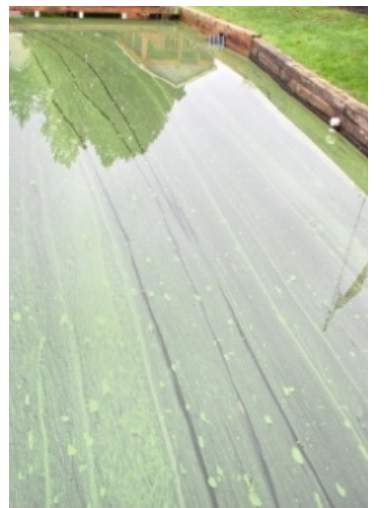
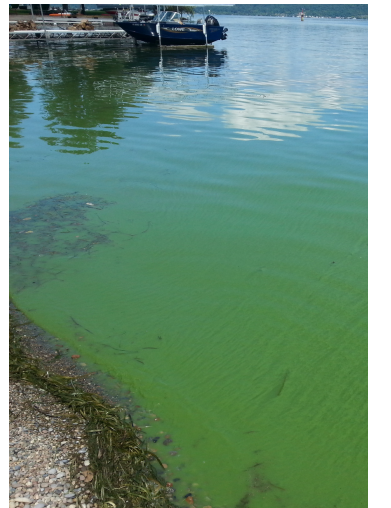
According to a study conducted by the DEC, four factors were found to be correlated with HABs occurrences: phosphorus levels, presence of dreissenid mussels, maximum lake fetch length, and the lake compass orientation of its maximum length. For every 0.01 mg/L increase in phosphorus levels, the probability that a body of water will produce a HAB increases by roughly 10-18%. However, the other three factors have a much greater range of uncertainty. The presence of dreissenid mussels are estimated to increase the probability of HABs by 18-66%, a northwest orientation of the longest fetch length is estimated to increase HABs probability by 10-56%, and finally, every mile of increased fetch length is estimated to increase the probability of HABs by 20%. While these four factors were identified by the DEC, they are likely not the only four that exist. More information on this can be found in the Cayuga Lake HABs Action Plan here: www.dec.ny.gov/docs/water_pdf/cayugahabplan.pdf.

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KNOW IT - AVOID IT - REPORT IT

If you believe you have seen a suspicious harmful algal bloom in Cayuga Lake, send the location of the bloom, the date and time observed, and two pictures to habshotline@gmail.com or call the **Community Science Institute** at **607-257-6606**. A trained HABs Harrier will respond and collect a sample if necessary.



Level Three Care for all of Cayuga Lake



Learn More and Get Involved

Everyone in the watershed plays a role.

Prevent the Spread of Invasive Species

CLEAN - DRAIN - DRY

Before leaving the launch area, **CLEAN** watercraft and equipment of all visible mud, plants, fish, and animals, **DRAIN** the motor, bilge and livewell, and **DRY** everything that came in contact with the water. Use provided bins for proper disposal of aquatic hitchhikers.



STOP AQUATIC HITCHHIKERS!

Be A Good Steward. Clean. Drain. Dry.
StopAquaticHitchhikers.org



Water Chestnut Foliage



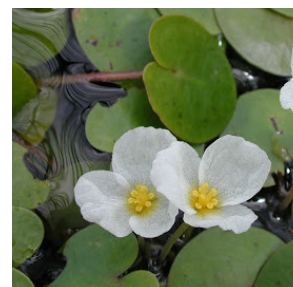
Water Chestnut Seeds



Hydrilla



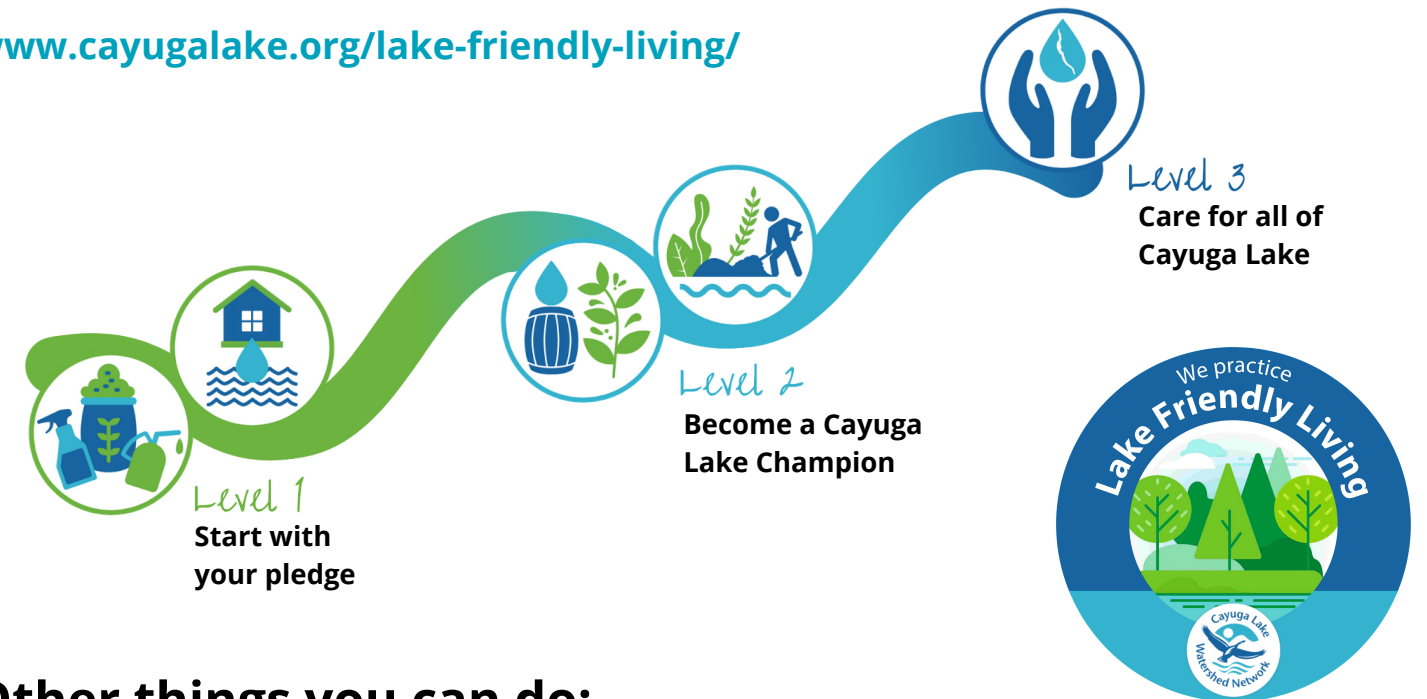
Starry-Stonewort



European Frog-Bit

This guide is one resource to help you learn and apply Lake Friendly practices. Visit our Lake Friendly Living website for links to more information about specific topics and projects.

www.cayugalake.org/lake-friendly-living/



Other things you can do:

- **Show your support for Lake Friendly Living.** Put up a Lake Friendly Living sign in your yard, or on your door or car. Talk with neighbors and residents about what you are doing and the simple things they can do to help protect and preserve Cayuga Lake.
- **Share your results.** Cayuga Lake Watershed Network wants to recognize your efforts and share your story. Please send photos and your story to info@CLWN.org.
- **Learn about Key Agencies and Resources in the Cayuga Lake Watershed** www.cayugalake.org/lake-friendly-living
- **Become a Cayuga Lake Watershed Network member!** www.cayugalake.org/volunteer/become-a-member/
- **Volunteer and join activities around the lake that help preserve and protect Cayuga Lake.** To get involved and learn about events, visit www.cayugalake.org/news-events/upcoming-events



Thank you!

for your commitment and efforts to preserve, protect, and promote Cayuga Lake water quality.