Kanasatka Water Matters

News & Updates

March 2023 - Issue 5

Be Your Own Landscape Designer- Undertake Your Own Site Analysis

by Judy Stoessel, Lake Kanasatka homeowner and 2022 LakeSmart Award recipient

Are you interested in taking a fresh look at your property? Landscape designers usually have a step in their planning process called site analysis. This involves taking a new look at your existing outdoor spaces. For some of you it may be worth the expense of hiring someone to guide you through this analysis. But you can also do this work yourself. How?

Take a few moments to note what you like about your yard, whether it is a great view, pretty or interesting vegetation, great play spaces for the kids, welcoming sunny and shady spots, or something else. Add what you don't like about your yard. Is there too much wind or noise, or too little privacy? Is there always a muddy spot after it

Recently Asked Questions:

How do you become a member of the LKWA Board?

The LKWA Board proposes a slate which is voted on by the membership at the Annual Meeting. Currently, the Board consists of four Directors with 2 year terms and four with 1 year terms. The Directors standing for re-election this year are Tim Baker, Wendy Booker, Lisa Hutchinson and Chris Wallace. If you have in interest in becoming a Board member in fiscal year 2023, please contact lkwamail@gmail.com.

Please provide your contact information,

your qualifications and what you would bring to the organization in terms of your interest, experience and qualifications.

Can anyone submit an article to the newsletter?

If you have a topic that you think would be of interest to the Lake Kanasatka community, please email lkwacommunications@gmail.com with your ideas or a draft of what you would like to submit. Articles should be no longer than 300 words, properly attributed if the text and/or pictures are not your own, respectful, timely and relevant.

I want to volunteer to help fix the lake. Who do I contact? Kanasatka.org has a list

rains? Do you have a lot of bare earth? Write down your list of assets and problem areas.

If this process seems daunting, remember that the LKWA Property Assessment has provided you with preliminary thoughts on areas for improvement on your property. And if you have already been studying how water moves through your property then you have been doing site analysis!

The other component of site analysis is aspirational--what do you want your yard to be like looking forward? What do you want to DO in your yard? Do you want a spot for quiet relaxation in a hammock, or are you more interested in cooking and entertaining outdoors, or do you want both? Do you need a play area for the kids and pets? Do you want to be able to roast marshmallows on an open fire? Do you need a spot to store small boats like kayaks and canoes? Is having a seating area near the water important? Again, everyone will have different needs and priorities. All of them can be met while still being "LakeSmart."

Each property owner will have different answers, both for the strengths and weaknesses of their existing site and for the yards they envision going forward. There are no right or wrong answers here. Property improvements can sometimes be expensive, or labor intensive if you do the work yourself, so I am simply urging you **to not be random in your approach**. If you have already resolved to become "LakeSmart", then your site analysis stage is the link to your action steps—it is prudent to have a plan based on your site analysis. Then the action steps you identify will be sure to serve your goals and allow you to enjoy your property while protecting the lake.

Note:
"Landscaping at the Water's Edge" is a terrific document, and Chapter 4 beginning on page 31 provides excellent details on the site analysis and planning process. It

of committees that are currently working on a range of projects. Contact the Committee Chair for further information. If you have another idea in mind, contact lkwamail@gmail.com.

Are there any fundraising activities planned?

The Board has recently initiated a Fundraising Committee. Please see the full article on upcoming fundraising events elsewhere in this newsletter. If you are interested in helping out with a particular fundraising event or by being on the committee please contact lkwamail@gmail.com for further details.

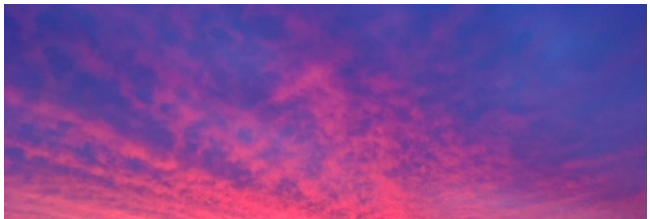
****

The Kanasatka Water Matters newsletter team will be taking a break in April, then look for the LKWA Board Annual Newsletter in May.

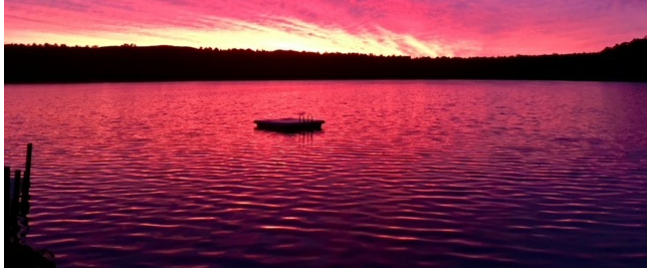
The Water Matters newsletter will return in June with a new issue full of information related to lake-friendly living.

In the meantime, send your questions (no questions about specific properties please) to:

lkwacommunications@gmail.com.



provides detailed questions to ask about your property and your needs. Here is the link:
https://nhlakes.org/wp-content/uploads/Landscaping-at-the-Waters-Edge.pdf



LAKE KANASATKA ROCKS!

Frequently Asked Questions answered

by Lisa Hutchinson

FAQ: Can I transplant ferns from my back lot?

Answer: Absolutely! Perhaps you can find other native plants there too, look for plants with deep root systems. It is important to have a buffer along your shoreline, ideally up to 4-6' wide. This provides roots opportunity to stabilize the soil, to slow down any stormwater runoff, and to allow water to infiltrate into the soil, along the root systems, slowing down its path carrying sediment and nutrients into the lake. You can keep any shoreline vegetation trimmed to 3' high, which discourages geese and often encourages denser growth. As long as you are doing the planting without using machinery, you will not need a shoreland permit from the State. Another important tip, water frequently after transplanting, until well established.

FAQ: Is a lawn bad?

Answer: Not always. It is certainly better than bare soil! Other groundcovers, anti-erosion mulch, native vegetation, and even clover mixes which fixate their own nitrogen are better. Duff, the natural leaf and needle fall from your trees, is also better than bare soil. If you choose to have a lawn area, work to minimize the size to be more lake-friendly, and look for varieties with deeper roots. Best practices include a vegetative buffer with a small access area, mowing high and less frequently to encourage deeper root development, and not fertilizing. Lack of water is often the reason for poor vegetation or ground cover in our area; soil tests tell us there are plenty of nutrients already in the soil! So, there is usually no need to fertilize – and remember, fertilizer is not allowed within 25 feet of any New Hampshire shoreline.

Top 10 Ways to Protect Our Lake

By Max Hoene,
Conservation Commission alternate,
2022 LakeSmart Award winner and Lake Kanasatka Homeowner
Photos: Compliments of Kevin Kelly

According to the DES, stormwater runoff contributes to over 90% of the water quality problems in New Hampshire. As a waterfront property owner, you want to protect your investment and its distinctive shoreline setting. Poorly managed stormwater can create many different problems including flooding, erosion, and degraded water quality. Spring is a great time for shorefront

including flooding, erosion, and degraded water quality. Spring is a great time for shoreline owners to evaluate their property and get started on making it more lake friendly!

The first two recommendations in this series are reasonably easy, Do-It-Yourself steps to help you get started.

1. Do a rainy-day survey

If you are not sure how your property may be affecting the lake, grab an umbrella and raincoat and head outdoors during the next heavy downpour. Observe sloped areas during heavy rainfall events and see what is happening with stormwater.

Start at the top of the property and work downward towards the lake. Take note of where water is coming from. Often the roof and driveway are the largest sources of stormwater runoff. Observe where stormwater is channeling and eroding, where stormwater is ending up and areas of vegetation that may be able to absorb some of the water.

Such an assessment is the first step towards protecting both your property and the environment and will allow you to better understand the opportunities and constraints of your property.

It is relatively easy to find a solution once you have identified problem areas.

Solutions:

• **Slow it.** Fast-moving water erodes soil. Divert flow away from steep areas. A swale or berm along the top of a slope or diagonally across a slope can be used to divert runoff to a more stable area and prevent erosion on the slope.

• **Spread it.** Allowing runoff to spread out, rather than concentrating it in a channel, slows the water and absorbs its energy. This reduces erosion and peak flows.

• **Soak it in.** Water that soaks into the soil is water that does not contribute to washouts or flooding.

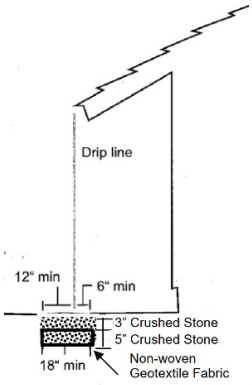
The key to controlling stormwater erosion

is to divert flow to a less steep area as needed. Use the techniques above to get stormwater off driveways and paths. If there is already a ditch designed to control stormwater, make sure it is stable by armoring it with rocks or vegetation.

For more information, click on link.
https://www.elvdnh.com/pdf_docs/2015/nhdes-wd-10-8.pdf

2. Take care of roof runoff

A 1-inch rainstorm produces approximately 625 gallons of stormwater runoff on a 1,000 square foot roof. While water coming directly off the roof is relatively clean, it can build up enough volume and velocity to erode dirt sediment as soon as it touches the ground. Using dry wells, drip edge drains, rain gardens or rain barrels can alleviate erosion caused from roof runoff and make your home more lake friendly.



Solutions:

- **Drip line trench:** Stone filled dripline trenches collect roof runoff and store it until it soaks into the soil. *Image borrowed from Conservation Practices for Homeowners Factsheet Maine DEP*

- **Dry well:** A stone-filled hole in the ground that collects runoff from gutter downspouts, roof valleys, and other areas where water concentrates and flows helps to collect roof runoff and store it until it soaks into the soil. *Image borrowed from NHDES New Hampshire Homeowner's Guide to Stormwater Management*

- **Rain gardens:** A sunken, flat-bottomed garden that uses soil and plants to capture, soak in and treat stormwater helps to reduce stormwater runoff and recharge groundwater. *Image borrowed from NHDES New Hampshire Homeowner's Guide to Stormwater Management.*
- **Rain barrel.** A container that captures rainwater from your roof to temporarily store it for use in dry conditions helps to reduce stormwater runoff.
- For more information on these simple DIY solutions, click on link. https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/homeowner-guide-stormwater.pdf

Ions, Solutions, & Alum, Oh My!

by Scott Wallace
Part 2 of 3

A Brief Chemistry Lesson in Three Parts. Understanding lake water chemistry is a complex issue. This second article describes how these chemicals can dissolve and disperse in the lake water and settle to the bottom. The last part covers how sediments on the bottom can redissolve into the water and how a common treatment, Alum, can reverse that effect.

Part 2- Solutions
Solutions are the uniform combination of solid compounds in a solvent, at an atomic level. We will focus on solutions where the solvent is water (H2O) which are called aqueous solutions. The water molecule is unique because it has 2 regions of partial positive charge on the hydrogen atoms and a region of partial negative charge on the oxygen atom. Water is called a polar molecule because it has electrical polarity much like a magnet has north and south poles. In addition to being the reason for water's ability to dissolve a great many compounds, water's polarity is the reason why ice floats. This could be the subject for a very long future chemistry lesson.

When molecules are added to water, the electrical polarity of the water is strong enough to separate the molecules, but not strong enough to separate the individual atoms. So when a teaspoon of sugar, a relatively small molecule composed of carbon, hydrogen, and oxygen, is added to water, the polar water molecules separate the individual sugar molecules which then float about in an aqueous solution. So, sugar dissolves and is considered to be **soluble** in water.

If you take a larger molecule composed of carbon, hydrogen, and oxygen, like candle wax (known as paraffin) and place it in

Using Water Razors to Manage Runoff

By Scott Parker, Lake Kanasatka homeowner and LKWA Facebook Admin

We all know that water travels the way of least resistance. Our goal is to create obstacles between the source of the potentially contaminated runoff and the lake and direct it where we want it to go. If you have a sloped section of lawn or a pathway or driveway that allows runoff to flow into the lake, you may have an application for water razors.

What is a "water razor?" Well, it's a "catchy" name for a relatively simple assembly that uses a rubber blade to either redirect runoff water to a stable or vegetated area or to stop the flow so it can accumulate behind the razor in a rain garden or other retention feature so water

water it will not dissolve. The power of water's polarity is not strong enough to separate the larger molecules of candle wax and it does not dissolve. Candle wax is **insoluble** in water.

Ionic compounds act in a completely different manner in water. Ionic compounds are generally soluble, with some exceptions. The polarity of water is strong enough to separate and surround all of the individual ions whether they are single atomic ions, such as sodium Na^{+}, or a polyatomic ion such as phosphate PO_4^{-3}. A solid lump of salt when added to water dissolves and forms huge numbers of sodium ions Na^{+} and chlorine ions Cl^{-} floating separately in water. If sodium phosphate ($Na_3(PO_4)$) was added to water, it would dissolve and form three floating sodium ions Na+ for every one phosphate ion PO_4^{-3}.

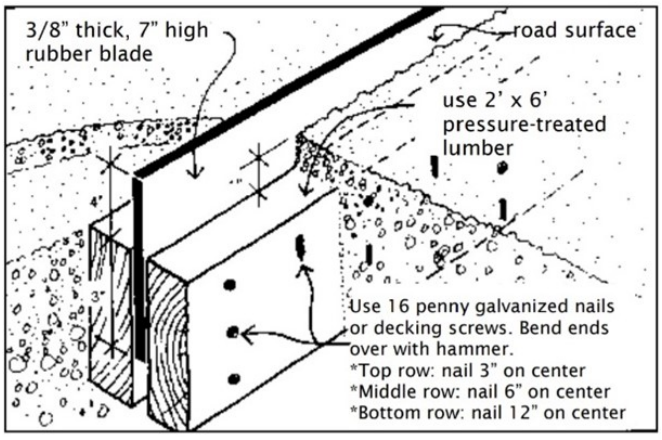
There are a variety of factors that affect solubility of molecules and ionic compounds in aqueous solutions. The amount of chemicals, or concentration, has a big effect. You could add two or three teaspoons of sugar to iced tea, and the sugar would dissolve. But if you kept adding more sugar, eventually you would reach a limit and the excess sugar would simply fall to the bottom of the glass. This is called a **saturated solution**. Higher temperatures will generally increase solubility of molecules and ionic compounds. For example, you can dissolve more teaspoons of sugar in hot tea than you can in the same amount of iced tea. Other factors such as pH and oxygen levels can also affect solubility.

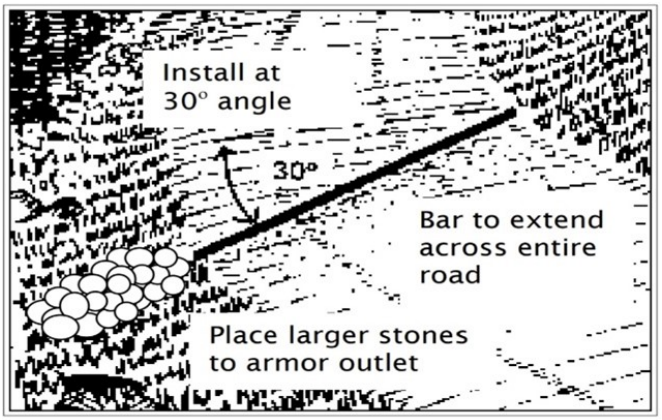
When we consider the solubility of dissolved ionic compounds, the electrical attraction of positive and negative ions can sometimes overwhelm the polarity forces of water. When this happens, the ions recombine into a solid ionic compound and precipitate to the bottom. Later, when lake conditions change, the polarity of the water can separate these ions and redissolve them.

can slowly be absorbed by the soil rather than continue its unhindered path to the lake.

Not only are water razors very effective, they're also versatile. When embedded in a driveway or pathway, they can be driven over with a vehicle or a wheelbarrow and will spring back to shape. They're best suited for unplowed areas, but a skilled and careful plow operator may be able to work around them.

Water razors are constructed of a rubber strip, approximately 1/2" thick, sandwiched between two pressure-treated 2x6" boards. The rubber strip is often made from recycled conveyor belt material. They can be built to the requirements of the site in nearly any length. The structure is then set into the surface by way of a trench about 6" deep and at least 4 or 5 inches wide. The trench is by far the most challenging part of the installation. These graphics, courtesy of the Maine DEP, will help you visualize the concept.





Contact me at Scottyp1954@gmail.com

To be included in the next issue- Part 3, the final article in the series covering how sediments in the bottom can redissolve into the water and how a common treatment, Alum, can reverse that effect.

for more information and to obtain a handy information sheet.

The **Acton Wakefield Watershed Alliance** has used water razors extensively and they have graciously permitted us to include some photos of this tool in action.

See more of their work at **https://awwatersheds.org/**

WMP Executive Summary

by Chris Wallace

Lake Kanasatka has experienced generally good water quality conditions in the years leading up to the cyanobacteria blooms in 2020 when two advisories were posted by NH DES. Blooms have continued to proliferate since that time. Water quality testing shows a trend towards less dissolved oxygen and less clarity, meaning more nutrients are entering the lake.

Cyanobacteria blooms are a result of a combination of warming waters and excessive nutrients, in particular, **phosphorus.** Sources of phosphorus in the watershed include development, stormwater runoff, shoreline erosion, fertilizer, poorly or non-functioning septic systems, and animal waste.

Our goal as an Association is to reduce the amount of phosphorus that enters the lake from both public areas like the boat launch, town roads and culverts as well as reducing the amount stemming from individual private properties.

The WMP recommends a reduction of phosphorus by 130 lb/year in an effort to combat the water quality issues we currently face. As a point of reference, the 5 sites identified as priority locations in the WMP will only reduce the phosphorus load by 15.4 lb/year.

What does this mean for the individual homeowner? *Every* property owner needs to start NOW to make the recommended remediations found in their shoreline survey packet. ***"Private landowners arguably hold the most power in making a significant impact to restoring and maintaining excellent water quality in our lakes."*** (Lake Kanasatka Watershed-Based Management Plan p. xiii)

First and foremost, you can do the following:

- Have your septic system evaluated by a certified inspector and take steps to address any deficiencies.
    - **https://nhlakes.org/wp-content/uploads/Septic-Fact-Sheet-3.pdf**
    - **https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/ssb-13.pdf.**
- Ensure that your shoreline vegetated buffers are robust enough to keep stormwater runoff from reaching the lake
    - **https://extension.unh.edu/sites/default/files/migrated_unmanaged_files/Resource004159_Rep5940.pdf**
- Address stormwater runoff from your driveway and paths by using water bars, water razors or repurposed fire hoses

- https://nhlakes.org/wp-content/uploads/Homeowners-Guide-to-Stormwater-Management-2019.pdf

DO YOUR PART … BE LAKE SMART!
our lake depends on it

Board of Directors

Meeting Summary
(February 16, 2023)

Attendees: Kirk Meloney, Jane Nash, Colette Cooke,
Chris Wallace, Tim Baker, Rob Baker,
Lisa Hutchinson, Wendy Downing,

➢ The board gratefully acknowledges the ongoing vigilance, information and assistance provided by Kevin Kelly to report stormwater runoff problems and other lake environmental issues over the winter months. Kevin has volunteered to help address some of these issues and his watchful eye on the lake during the winter is invaluable.

➢ Sandy Cove Association President Mark Foley, with volunteer assistance from Kevin Kelly, is beginning to address the challenges relating to the Sandy Cove property indicated in the Watershed Management Plan (WMP).

➢ LKWA renewed its membership in the NH Center for Nonprofits and plans to participate in NH Gives, a fundraising initiative provided by the Center.

➢ Bree Rossiter has begun to provide services as a contractor to update the LKWA website.

➢ Feedback on the newsletter has been positive and additional people have joined the mailing list.

➢ LKWA has signed a contract with FB Environmental in the amount of $2,600.00 to incorporate the 2022 water sampling data provided by UNH Lay Monitoring Program in order to update LKWA's Lake Loading Response Model for the WMP.

➢ An implementation team is discussing how to address projects for the WMP.

Happy March! Time to start planning LKWA Summer Activities!

Please volunteer for one or more of our initiatives so we can hold them all successfully.
As before, we would like to have the Concert in the Cove and a Unity Day. We are hoping for the return of the LKWA community picnic, at last! If you have helped with these events in the past, or if you haven't but would be willing, we need your help.

Fundraising Initiatives

We are also organizing new fundraising events this year, to continue to contribute to lake improvement initiatives. You will hear more about **NH Gives Day of Giving** here in the newsletter and in the coming months. We are considering a **capital campaign** specifically dedicated to the purpose of funding alum treatments in the future. We will be pursuing **partnerships with LakeSmart service providers**, for the benefit of our community members. We will also be pursuing fundraising partnerships with other businesses in Center Harbor, Moultonborough, and beyond. Want Kanasatka “merch”? Yummy food trucks? Tell us what else you’d like to see…

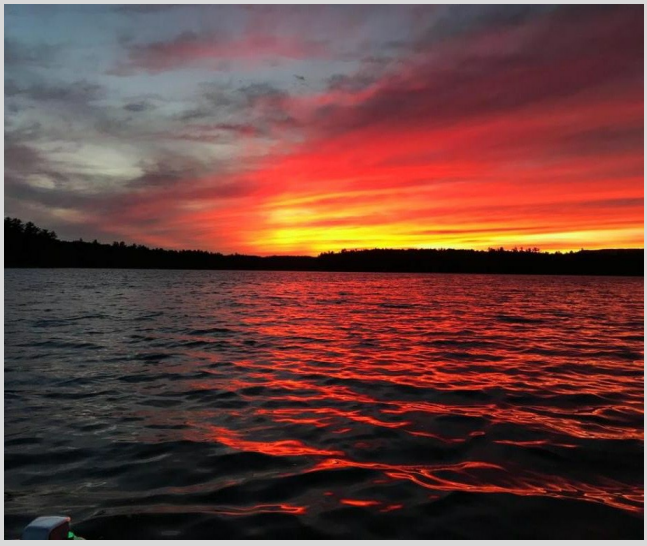
We need Volunteers for any and all of these events and opportunities. More hands, more success! Please send an email message to our mailbox at **lkwamail@gmail.com**.
Thank you!

Fundraising Volunteers:
Wendy Downing, Carol Parker, Peg Devine and Colette Cooke.
Join us!

LKWA is participating in NH Gives - Day of Giving – on June 6-7, 2023

Hosted by the NH Center for Nonprofits

NH Gives **https://www.nhgives.org/** is the state's largest day-of-giving - 24-hours for Granite Staters to give back - bringing together hundreds of nonprofits and tens of



LKWA Information Packets now available

Is there a new homeowner in your neighborhood or perhaps someone who plans to rent out their Lake Kanasatka home this summer? Contact us at **lkwacommunications@gmail.com** and we will be happy to provide you with a packet of information that includes

thousands of donors to raise as much money and awareness as possible for the causes served by NH's nonprofit sector. Other NH lakes region watershed nonprofits have raised up to $8,000.00 each by participating - but our success will depend on your help, through donations and spreading the word.

Watch for more information in the coming months!

Photo courtesy of Pam Grotenhuis Gallant

about **lake friendly living**.

****

Questions? We have Answers!

Send your Lake Kanasatka related questions to lkwamail@gmail.com and we will have an answer for you in the next newsletter! Please- no questions about specific properties.

** We will withhold all names unless you expressly ask to have your name included.

LKWA Website Updates

Take some time and link to the LKWA website, kanasatka.org! Bree Rossiter, Conservation Program Manager for Lake Winnipesaukee Association and working as an independent contractor for LKWA has done an incredible job of providing fresh, reliable, informative and well organized content to our website.

Our Watershed Management Plan (WMP), updated Bylaws, past Kanasatka Water Matters newsletters, LKWA contacts, useful and easy to follow LakeSmart information, fascinating facts and statistics about our loons, Shoreland Protection best practices, resource lists and fact sheets plus memories of years past on our lake round out the website.

Please visit kanasatka.org today to check out what's new!

DUES FOR FISCAL YEAR 2023

At the July 2022 annual meeting, a motion was made and voted on to raise LKWA dues from $25.00 to $35.00 per year per voting member. Dues payment in the amount of $35.00 may be sent to: *LKWA P.O. Box 774 Center Harbor, NH 03226.*

Thank you for your support.

LKWA email contacts:

Watershed Management Plan
LKWAWatershedPlan@gmail.com

General LKWA and Board:
LKWAmail@gmail.com

LKWA Communications email:
LKWACommunications@gmail.com

[Link to Watershed Management Plan]

This newsletter is brought to you by the LKWA Communications Committee: Carol Hart, Janna Hoiberg, Kevin Kelly, Jane Nash and Chris Wallace