

Kanasatka Water Matters

News & Updates

May 2023 - Issue 6



nhlakes.org

winnipesaukee.org

Congratulations to the 2022 Lake Kanasatka Winni Blue/LakeSmart Awardees!

Judy Stoessel Max and Candy Hoene Mark Diette & Mary Di Maria Antonia & Fred Von Gottberg Kelly Farragher-Paras

<u>As of this month</u>, Lake Kanasatka has a total of 13 LakeSmart properties. Will you be next?

Go to: https://kanasatka.org/lakesmartprogram/ and get started now!





The Kanasatka Loon Cam is Live!

The loon nesting raft has been launched in Kilnwood Cove for the 2023 season and the loon cam feed is now live in real time on www.kanasatka.org!

The loon cam provides a live video stream of the loon nest area 24/7, capturing nesting activities of the loon family even at night when the nest area is illuminated by an infrared floodlight which scientists confirm is as invisible to loons as it is to humans. An updated still snapshot is featured on the home page of the Lake Kanasatka Watershed Association website with a link to the live stream. In addition, a timelapse movie showcasing the events of the previous day is also accessible to viewers.

The location of the nesting raft is the same as in previous years, but there is a new camera and the images are now transmitted across the lake to a high speed internet connection which allows for higher resolution images.

Thanks to a generous donation from Sandra and Kevin Kelly and technical assistance provided by Bill Gassman in partnership with the Loon Preservation Committee, our lake community will once again be able to enjoy the natural wonder of loons nesting on Lake Kanasatka. Join us in witnessing the dedication, care, and resilience of these iconic aquatic birds up close and personal!

For more information, contact Kevin Kelly or Bill Gassman.

Are YOU LakeSmart?

A program indicator identified in the LKWA Watershed-Based Management Plan is to have 25% of properties around Lake Kanasatka with LakeSmart certification by the end of summer 2023. As of this writing, Kanasatka has 13 LakeSmart properties out of a total of approximately 182 waterfront properties or about 7 %.

Getting started on certification is fast and simple! Start the process by going to the LakeSmart page on the kanasatka.org website, check out the helpful resources and click on the self assessment link! If you need help accessing the LakeSmart information, please contact LKWAWatershedPlan@gmail.com.

How do you become a member of the LKWA Board?

Each year the LKWA Board of Directors 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. Going forward, all terms will be 2 years.

We are recruiting for several Board members, including the Director/Treasurer position. If you have an interest in becoming a Board member beginning in fiscal year 2024, please contact <u>Ikwamail@gmail.com</u> by May 31st. You will then be contacted by a member of the Nominations Committee.

More information regarding the procedures of the Nomination process will be provided in the Annual Board Newsletter in June.

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

Questions and Answers:

What's the deal with sand? Can I replenish my beach?

https://www.des.nh.gov/sites/g/files/ehb emt341/files/documents/2020-01/wb-



A Stormwater Runoff Solutionready for homeowners to install- place your order now! by Scott Parker

LKWA is launching a program that will make it easy for property owners to obtain water razors for use in mitigating problem stormwater runoff on their property. The March issue of the *Kanasatka Water Matters* newsletter contained an article about this effective tool and more information is coming soon on social media.

It occurred to us that obtaining materials and fabricating the razors might be a daunting challenge if left to individual residents, potentially discouraging their use and delaying our overall response to runoff problems. So we are launching this program whereby the association will procure the materials and volunteers will assemble the razors to your length requirements. We would use materials obtained in bulk to build the razors and would deliver to your site. The property owner would purchase the assemblies from the association at a price that will be as close to our actual cost as possible approximately \$5 to \$7 per foot of length based on our initial estimates.

As mentioned in the March article, installation is the most difficult part of the process. Trenching, obtaining stone product, and backfilling for the razors would be left to the property owner. We would like to gauge interest and begin procuring materials, so if you think this tool might fit your needs, please contact us by sending an email to:

LKWAmail@gmail.com.

Please put "Water Razors" in the subject line.

Why is Cyanobacteria such a big deal?

by Max Hoene

Cyanobacteria are one of the oldest organisms on the planet. Scientists know that climate change can have a role in stimulating cyanobacteria blooms – and that this relationship is complicated. As nutrient levels rise in a lake, elevations in temperature of just a few degrees (tipping point) can result in a significant increase in the frequency of cyanobacteria blooms. This combination has the potential to allow toxic cyanobacteria blooms that will impair the recreational use and health of our lake. This is the challenge our fragile lake is facing.

So, what can we do?

Unfortunately, there is no magic bullet to solve these algal bloom problems. It will take a lot of small, incremental efforts to mitigate nutrient loading into the watershed. The only complete solution is to locate the source of nutrients and reduce their availability to the lake. We can all start by looking around our own cottages/homes. Over the next few months, this series will suggest ways that can help make your property more "lakefriendly".

Ways to be more lake friendly and protect our lake:

This series began in our March issue with the first 2 lake friendly tips. This article includes 3 additional ways to protect our lake.

1. Leave the natural vegetation.

Eroding dirt is a significant pollutant that degrades lake water quality. The natural 50 ft buffer of trees, bushes and groundcovers between your home and the water are the lake's last line of defense. Phosphorus attached to the sediment contributes to declining water quality.

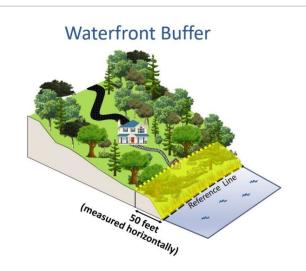


Image: borrowed from NHDES

This area "buffers" the lake from excess nutrients, sediment, and stormwater. Consider trading existing lawns for a mixture of native plants, trees shrubs and ground cover. NHDES specifies that all natural ground cover, within the 50ft buffer, must remain intact except for a path to the water not to exceed 6ft in width.

Obviously, a view of the water is important for most lakefront landowners. This is why shoreland zoning, which is designed to protect this area, has provisions to allow trees to be carefully limbed up 1/3 of the canopy. Care must be taken to keep as much of the natural vegetation intact while allowing for a view on a waterfront lot.

For more information, click on links below.

https://extension.unh.edu/sites/default/fi les/migrated_unmanaged_files/resource 004159_rep5940.pdf

https://www.des.nh.gov/sites/g/files/ehb emt341/files/documents/2020-01/homeowner-guide-stormwater.pdf

https://www.des.nh.gov/sites/g/files/ehb emt341/files/documents/swqpasummary.pdf

https://www.des.nh.gov/blog/may-2022please-dont-fertilize-our-lakes

2. Fix your driveway

Because of their proximity to the water, camp roads and driveways contribute disproportionately to lake water quality problems. No matter what, roads and driveways always need some level of annual maintenance. Survey your property for areas where runoff water has caused erosion. Take a walk around your property to see if recent rains have created any gullies or other eroded areas. If possible, fix eroded areas before the next rainstorm occurs. Oftentimes installing a berm at the top, or at intervals along the driveway, can divert runoff into woody areas which can absorb the stormwater. Routine grading or raking can help keep a proper crown or pitch so that water runs to the side instead of down the entire length. Consider pervious pavement materials that absorb stormwater as an alternative to asphalt*. Go out on a rainy day and be an erosion control detective.

*In winter, instead of salt and other de-icing agents, consider using sand on driveways and walkways.

For more information, click on links below.

https://awwatersheds.org/rubber-razorsdo-it-yourself-conservation-practices/

https://nhlakes.org/driveways-parkingareas-and-plowing/

https://www.youtube.com/watch? v=8MPS7wybEJk



Severe erosion like this could have been prevented with a properly sized ditch.



3. Maintain and pump your septic system.

According to U.S. EPA, 2003, at least 20 percent of all septic systems are malfunctioning to some degree. Such system failures contribute significantly to nutrients flowing into the watershed. Septic system inspections are a vital step in making sure your septic system is operating properly. Regular inspections ensure you and your family do not get sick due to a leak or other problems with your septic system. When septic tanks are not pumped regularly, the sludge can clog the bed and cause system failure. Do you know when your septic system was last inspected and pumped? Do not wait until your system shows signs of failure to have your septic tank pumped out. Waiting can mean complete clogging and an expensive repair bill. Have a licensed septic system inspector evaluate your system. PUMP AT LEAST ONCE EVERY THREE YEARS or as needed. Protect the lake and maximize the service life of your septic system and record the date of inspection & pumping.

In addition, conservative use of water and cleaning products will reduce the load to septic systems and add to their longevity. Turn off tap when not needed, repair leaking faucets and toilets (Older cottages, drawing water from the lake, can bring in organic material that get caught in the toilet flap valve. After flushing, listen carefully for the tank to stop filling) use low flow fixtures, run dishwashers and washing machines only when they are full, staggering loads over several days rather than doing them all at once. Limit the use of chlorine and non-biodegradable cleaners (phosphorusbased soaps and detergents) in your home, as these chemicals kill bacteria and inhibit a septic system from functioning properly.

For more information, click on links below.

https://www.des.nh.gov/sites/g/files/ehb



Image borrowed from: A Ditch in Time - *An* owner's manual for those who live and travel on dirt and gravel roads by Russ Lanoie, Conway, NH

emt341/files/documents/2020-01/ssb-13.pdf

https://nhlakes.org/wpcontent/uploads/Septic-Fact-Sheet-3.pdf

https://gsowa.org/consumerinformation//

Image: From NH Lakes.

Stay tuned for more Lake Friendly ideas in future newsletters.

What Are Native Plants and Why Are They Important?

by Judy Stoessel

A plant, whether found on land or in the water, is considered native if it has occurred naturally in a particular region, ecosystem, or habitat without human introduction. These plants have evolved over thousands of years in a particular region and have adapted to the geography, hydrology, and climate of that region.

Native plants create a natural habitat for beneficial wildlife. Those of us who garden normally think of pollinators such as bees, birds, and butterflies, but native plants also help create homes for other insects and spiders, fish, amphibians, reptiles, mammals, and microscopic organisms. These living things each have important jobs and they have tightly symbiotic relationships.

According to the American Audubon Association, native plants



provide nectar for pollinators including hummingbirds, native bees, butterflies, moths, and bats. They provide protective shelter for many mammals. The native nuts, seeds, and fruits produced by these plants offer essential foods for many forms of wildlife.

Native plants tend to be healthier and stronger than plants hybridized by the nursery industry. Plants native to an area are more likely to establish quickly and will be naturally hardy and healthy. **Of key importance to our efforts to protect Lake Kanasatka, their root systems are deep, sometimes up to 15 feet, which can help to control shoreland erosion and prevent water run-off. In addition, native plants require much less watering, fertilizer, and pesticides.**

Native plants tend to be low maintenance. This is important if you want to spend your time on recreation rather than yardwork! The American Society for Landscape Architects says that the long-term upkeep of native plants can be dramatically less costly than turf grass, as well as take less time.

Native plants can add great beauty to your landscape. Sometimes they are more understated than their hybridized cousins, but with native plants you can generally choose to create a more formal or a more wild space with a variety of colors, textures, heights, bloom times and interest in all seasons.

Notes:

It is important to place our local efforts on behalf of Lake Kanasatka within the larger context of declining biodiversity and climate change. I highly recommend two books by entomologist Dr. Douglas Tallamy: Nature's Best Hope: A New Approach to Conservation That Starts in Your Yard and Bringing Nature Home—How You Can Sustain Wildlife With Native Plants. Tallamy lectures widely and audio recordings of many of his talks are available on line.



lons, Solutions, & Alum, Oh My!

by Scott Wallace

A Brief Chemistry Lesson in Three Parts.

Understanding lake water chemistry is a complex issue. This last part covers how sediments on the bottom can redissolve into the water and how a common treatment, Alum, can reverse that effect.

Part 3: Alum

In our lake, we have a relatively large amount of iron phosphate (FePO₄) that has precipitated and coats the bottom of the lake. The



phosphates come from natural sources (water runoff) as well as human sources such as septic systems, detergents, and cleaning compounds. We also have iron in the lake due to the bedrock geology which is high in iron as many well owners know. For the most part, iron phosphate is only slightly soluble and will form a precipitate on the lake bottom. However, iron phosphate is somewhat unique in that its solubility increases in low **dissolved oxygen (DO)** conditions, known as **hypoxia**. In very low dissolved oxygen conditions of less than 2 ppm (parts per million), solid iron phosphate will separate into individual ions (Na⁺ and PO4⁻³) and redissolve into the lake.

Recently, we have measured an increasing area of low dissolved oxygen (DO) in our lake and a corresponding increase of dissolved phosphates. This is known as internal phosphorous loading because it comes from the lake as opposed to external loading from land sources. In reviewing historical data (1977-2015) the area of low dissolved oxygen covered 22% of the lake at a depth of 8.5 meters (28 feet) and lower. In 2021, we measured low dissolved oxygen (<2ppm) across nearly 41% of the lake area at a depth of 7.5 meters (24.6 feet) and lower. This larger area of low dissolved oxygen has resulted in iron phosphate precipitate redissolving into the lake and releasing phosphate ions which become a food source for algae and cyanobacteria.

The **internal phosphorous loading** can be reduced with a treatment known as **Alum**. Alum is the generic name of a group of solid ionic compounds containing aluminum. The most common of these is sodium aluminum sulfate. This is a combination of one sodium ion Na⁺, one aluminum ion Al⁺³, and two sulfate ions $(SO_4)^{-2}$. Alum's formula is then NaAl $(SO_4)_2$. Alum has widespread use in lake management to react with phosphate ions and form a **precipitate**, aluminum phosphate (AIPO₄). Aluminum phosphate is unique because once it forms it is **insoluble**. It precipitates to the lake bottom, and stays there. Aluminum phosphate then forms a barrier on the lake bottom that greatly reduces the possibility of future phosphate releases.

Alum cannot be used as a first line of defense. Please read the related article on alum treatments elsewhere in this newsletter.

Why can't we just do an Alum treatment now and get better water quality more quickly?

As per the Lake Kanasatka Watershed Management Plan, "An alum treatment is a management technique where aluminum is added to the bottom of the lake as aluminum sulfate, which permanently binds with phosphorus and hinders the release of phosphorus from bottom sediments (NALMS, 2004)."

An alum treatment is very expensive- upwards of \$300,000 for a lake of our size according to Laura Diemer at FB Environmental. Alum treatment is not currently in wide use in New Hampshire although it is commonly done in the mid-west and is in use in several neighboring New England states. Because of the cost and the limits to its longevity over time, NH DES requires that external watershed sources of phosphorus be addressed prior to being approved at the state level.

When asked about the efficacy of an alum treatment by David Brooks of the Concord Monitor, NH DES aquatic biologist David Neils stated unequivocally that in order for any lake to be in a position to be considered for treatment, external sources of phosphorus entering the lake must be eliminated. "Having a watershed-based plan and having dealt with external, unnatural phosphorus loads – that component is critical"... to the ultimate success of the treatment... "Otherwise you're just throwing your money away."

For information on the Nippo Lake alum treatment overseen by NH DES in 2021 see:

https://www.concordmonitor.com/aluminum-phosphorus-lake-new-hampshire-40633367

Homeowners! Help LKWA meet our water quality goals with these 3 steps:

1. Eliminate stormwater runoff on your property from entering the lake. For specific guidance see:

https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/homeowner-guidestormwater.pdf.

https://www.moultonboroughnh.gov/sites/g/files/vyhlif3506/f/uploads/storm_water_manageme nt_2.pdf

2. Have your septic system checked by a NH certified inspector and take appropriate action as recommend by the provider. For specific guidance see:

https://nhlakes.org/wp-content/uploads/Septic-Fact-Sheet-3.pdf

Approved septic system evaluators in our area include <u>https://septicchecknh.com/</u> and <u>https://lampreysepticservices.com/septic-inspections</u>

3. Maintain a vegetated buffer along your shoreline appropriate to the width of your slope. For specific guidance see:

https://www4.des.state.nh.us/SoakNH/wp-content/uploads/2020/03/vegetated-buffer.pdf

Board of Directors Meeting Summaries

March16, 2023

> Remediation Activities

Scott Parker proposed a runoff mitigation



project for the Watershed Management Plan (WMP). He offered to construct "water razors" as

a best management practice and make them available for property owners to purchase from LKWA. Camp Quinnebarge is working on remediation of their property.

➤ Annual Newsletter

Based on costs for the printed version and the success of the electronic monthly newsletter it was decided to implement an electronic version of the annual newsletter as well, scheduled for June.

➤ Grant Information

LKWA is coordinating with Lake Winnipesaukee Association (LWA) to file an application for a Congressionally Directed Spending (CDS) grant, requiring a 20% match in funds by LKWA if granted. Additional grants are being researched.

➤ Communications Committee

Website project is making progress, including the Loon Cam inclusion. Continued budget for the website needs to be reviewed.

➤ Other Business

The dam project could be delayed by a year due to a lack of coordinating between DES and DOT. LKWA would send a letter addressing the silt fence issues. Meanwhile, DOT would install a silt fence barrier as a stop gap measure.

> The Board decided not to have an interim remote membership meeting, since the newsletters were reaching the membership and provided an opportunity to contact Board members.

➤ The Board had an offsite strategic planning meeting on Saturday 3/18/23 from 9:30 to 2:00 PM held in person at the Loon Center.

April 20, 2023

➤ Treasurer Position to be Filled

Rob Baker tendered his resignation as Treasurer after 10 years of service and agreed to continue perform duties in the interim until a successor was elected. A recruiting effort is underway.

➤ Membership Outreach

The Board will be recruiting membership volunteers to help with WMP best practices implementation.

➤ Budget Review

The Board reviewed increased operating expenses, such as website costs, compliance fees and insurance costs. They discussed various cost savings to implement and determined that LKWA is running at an operating deficit, requiring an increase in membership dues for next year to cover current essential operating expenses. The operating budget will be provided in the annual newsletter for member review.

➤ Annual Meeting

The membership annual meeting date is tentatively planned for July 8, 2023, at Moultonborough Academy, pending availability of the venue.

> Fundraising/Annual Financial Appeal

The Board discussed the NH Gives activities for the June 6-7 fundraising event and implementing an annual giving appeal to benefit WMP activities.

➤ Thank You Messages

The Board discussed recognizing several members for their contributions, in particular Rob Baker for his service to LKWA as Treasurer and Director, and Bill Gassman and Kevin Kelly for implementing the Loon Cam.

➤ WMP Implementation

The Board will follow up with property owners associated with priority locations under the WMP

> Director Slate/Nominating Committee/Charter

The Board discussed the director slate for the annual meeting and soliciting members for positions to be filled, as well as soliciting member participation for the nominating committee. The Board adopted a Nominating Committee Charter, which will be made available on the website.

➤ Summer Picnic

The annual community picnic will be held again this summer, details are being decided and members interested in helping with the picnic are being sought.



Ready to Lend a Helping Hand? NH Gives

We're counting down the days to June 6-7 and NH Gives. We need your help to make our campaign a success, and we've included a few easy ways that you can support us.

PLEASE VISIT LAKE KANASATKA'S SITE AT

https://www.nhgives.org/organizations/l ake-kanasatka-watershed-associationinc

"NH Gives, an initiative of the NH Center for Nonprofits, is a powerful, statewide 24hour online fundraising event that is designed to build community...and... connect donors to local nonprofit...".

Please donate any amount you can. We are eligible for prizes for reaching goals such as number of donors, not just the amount of money.

Share and share alike. This online day of giving will be successful because of your own networks. Help us grow our network by sending this email to your network and ask your friends to do the same.

Be socially (media) active. Use your social media networks: post on Facebook, tweet about NH Gives, share your love for Lake Kanasatka, and ask others to do the same.



LKWA Treasurer Position Open

Rob Baker, LKWA Board Director and Treasurer has submitted his resignation effective April 1. "I have served LKWA for 10 years and am ready to hand the position off to another capable individual who can provide a leadership role on the Board.

This position will give you the opportunity to have an impact on Board decisions and meet the challenges as we move forward to correct our Lake issues." If you have any questions, please feel free to contact me directly at <u>rhbaker22@gmail.com</u> or send an email to <u>lkwamail@gmail.com</u> if you have an interest in serving Lake Kanasatka in this capacity.

Responsibilities of LKWA Director/Treasurer

Keep accurate records of all incoming and outgoing expenses

- Prepare Budget for the upcoming year
- ➤ Reconcile all LKWA accounts on a monthly basis

> Attend monthly Board meetings and provide input relative to financial issues and operational decisions

- Track membership renewals
- > Create a dues reminder to be sent to

Become a fundraising champion.

Everyone loves a champion! We really need fundraising champions to help drive people to our NH Gives profile on June 6-7. Visit our page and click on the "Fundraise" button. You will receive an email message with instructions to share your Champion fundraising page on behalf of Lake Kanasatka.

https://www.nhgives.org/organizations/l ake-kanasatka-watershed-associationinc

It's safe and protected, for this one day event.

Our message:

Join us to protect one of NH's gems in the Lakes Region! LKWA is dedicated to protecting the water quality and natural resources of Lake Kanasatka and Wakondah Pond, within the Lake Winnipesaukee watershed and the Red Hill Conservation area, in the towns of Moultonborough and Center Harbor. The watershed includes mixed forests and is home to a wide variety of fish, animals, and threatened and endangered species, including bald eagles and common loons.

The health and enjoyment of our beautiful lakes are being threatened by climate change, polluted runoff water, and invasive species. Our goal is to maintain the health and beauty of Lake Kanasatka watershed for the benefit of future generations.

LKWA relies on donations to carry out our mission. Your donation supports water quality monitoring, lake management, lake protection projects, and our lakeside learning activities throughout the year.

Thank you for your support!

past-due members in the Fall

➤ Monitor LKWA P.O. Box for bills, receipts and membership renewals

➤ Collect dues and confirm contact info at the Annual Meeting

> Exhibit strong communications and computer skills including email and excel

Manage bank accounts deposits and debits

➤ Provide financial summary with short explanation of finances and membership status to the annual Board Newsletter.

Provide end of year fiscal summary of account spending and balances

≻Address the LKWA membership at the annual meeting with the financial summary

➤ Have knowledge of or willingness to learn and apply compliance requirements for LKWA Non-Profit status (503c3) including filing IRS tax returns

Have knowledge of or willingness to learn and apply compliance requirements for NH Charitable Organizations Trusts Unit

➤ Track expenses to insure LKWA is in a strong and healthy financial position

> Provide financial input to comply with Grant application requests

Our sincere thanks to Rob for his dedication to LKWA for the past 10 years!

Use of Lakes or Streams for Domestic Water Supply

"Some residents and visitors think of New Hampshire as a relatively rural and pristine state and believe it is safe to use surface waters (lakes, ponds, streams and some springs) directly for drinking.... Regardless of the ease and convenience of this practice, **using drinking water** from lakes, ponds and streams is not safe and NHDES strongly cautions against this practice."

Read the entire NH DES Environmental fact sheet on this topic here:

https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/dwgb-1-11.pdf

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.

Questions and Answers

I am confused about the dues. I know it is \$35.00 but is that for a family or just an individual. Can you explain?

Dues are \$35 per person which gives that individual 1 vote at the annual meeting. If an additional person in the family (spouse, adult child etc.) wishes to vote, they would also need to become a member of LKWA and pay \$35.00.

Thank you for your support.

LKWA email contacts: Watershed Management Plan LKWAWatershedPlan@gmail.com

> General LKWA and Board: <u>LKWAmail@gmail.com</u>

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

Lake Kanasatka Watershed Association | www.kanasatka.org

