

Protecting natural resources in the Ossipee Watershed since 1997



Photo collage: Just some of GMCG's many volunteers over the last 20 years!

## GMCG & SRCC's RIVERS program turns 20

**By Jill Emerson**  
**GMCG Water Quality Coordinator and Water Quality Program Manager at Saco River Corridor Commission**

This year our flagship community science program, affectionately nicknamed RIVERS (because the actual name - the Regional Interstate Volunteers for the Ecosystems and Rivers of the Saco - is a mouthful), celebrates 20 years of data monitoring in the Saco Watershed. That is two decades of collaborating with our downstream friends, the Saco River Corridor Commission (SRCC). That is dozens of passionate volunteers working to obtain data throughout the entire watershed. That is over 100,000 points of data collected. The program has seen several water quality coordinators, and even a couple of executive directors. Twenty years is quite a long time to be running a program, and I am happy to say RIVERS shows no signs of slowing down!

According to a number of wedding and relationship-themed websites I perused (of which there are many), in celebration of this milestone achievement, the traditional gift is china, to symbolize the beautiful

balance the relationship has mastered. While our program has no use for fancy plates, I do think our program has struck a nice balance between maintaining high scientific standards while being accessible to volunteers of all skills and experiences. Over the lifetime of RIVERS, we have listened to technical feedback from water quality experts at the state and federal levels, academic research partners, and professional consultants to make sure our methods and protocols are up to date with the latest science and technology.

GMCG and SRCC understand how imperative it is to gather accurate information and analyze it for trends so that all stakeholders of the Saco River Basin better understand the quality of their surface water. On the flip side, we also have listened to constructive criticisms from volunteers on how to make the program more welcoming. This has resulted in creating a step-by-step volunteer manual, conducting multiple training sessions before the sampling starts, and in-field visits to evaluate and provide our volunteers with feedback. We even produced brightly colored shirts made exclusively for our volunteers to wear each year at their sites (so not

*Continued on page 2...*

# Green Mountain Conservation Group

*The Watershed News* is a quarterly publication of Green Mountain Conservation Group, a nonprofit, 501 (c)(3) charitable organization established in 1997. The mission of GMCG is to promote an awareness of and appreciation for clean water and the wise use of shared natural resources across the Ossipee Watershed and advocate strategies to protect them.

The towns of Eaton, Effingham, Freedom, Madison, Ossipee, Sandwich and Tamworth comprise the Ossipee Watershed. This watershed includes one of the largest and deepest stratified drift aquifers in New Hampshire. GMCG also serves the towns of Maine's Sacopee Valley. Water knows no boundaries!

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Jill Emerson, Water Quality Coordinator

## AmeriCorps Members

Bethany Mestelle, Education and Outreach Assistant  
Caitlin Noseworthy, Water Quality Resources Assistant



## RIVERS turns 20 *continued from page 1*

only do they collect data, they look sharp while doing so!). This delicate balance between the technical and accessible is our metaphorical china, and I believe the key to keeping this program successful.

In more modern times, the 20<sup>th</sup> anniversary gift is platinum, to symbolize endurance and strength. I think the endurance of our program speaks for itself with 20 years of continuous community support. Our program remains strong through the joint efforts of both GMCG and SRCC. Our combined training sessions bring our volunteers together at the start of each sampling season. Yearly reviews of our protocols are conducted to make sure we are all on the same page, and every five years we work together to rewrite our Quality Assurance Project Plan (QAPP) - a document of methodologies that is signed off by New Hampshire Department of Environmental Services and Maine Department of Environmental Protection and reviewed by the Environmental Protection Agency. But the real strength of the program, hands down, is our volunteers. People who come back year after year to monitor, and the people who join us just for a season. We would not have been able to get to our 20<sup>th</sup> anniversary without each and every one of them.

We have learned a lot in the last 20 years – both in terms of what the surface water quality is in the Saco River Basin and how to run a complex volunteer program. We have figured out what works and what does not over the years, and I think the program is set

up to be successful for not only the next two decades, but well beyond that. While I do not know where the program will take us in the next 20 years, I can say that we will keep learning, growing, and finding more ways to be productive while standing in some of our favorite rivers for years to come. Cheers to 20 years and many more!



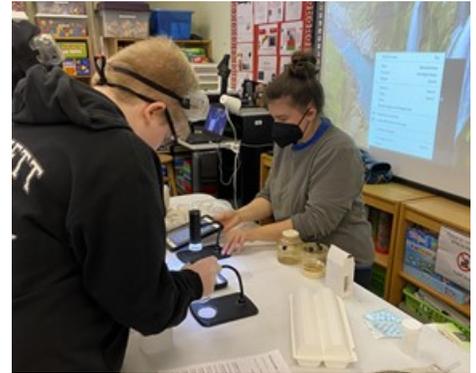
# GMCG in action



GMCG volunteer Felicia Ledgard helps a Pine Tree Elementary student screen his drinking water for iron at a GET WET! program in March.



Water Quality Research Assistant AmeriCorps Caitlin Noseworthy collects water quality information from the Ossipee River during a recent RIVERS testing day.



Water Quality Coordinator Jill Emerson helps students at Pine Tree Elementary screen their drinking water for microplastics at GET WET! in March.



Education and Outreach Assistant AmeriCorps member Bethany Mestelle teaches preschoolers at Children Unlimited about animal tracking in the snow.



Animal tracking specialist Barbara Bald scans the snow for footprints during a beginners tracking program on GMCG's Blue Heron Trail in Effingham.



University of New Hampshire Cooperative Extension Forester Wendy Scribner leads a winter tree identification and carbon sequestration program during our Winter Forestry Walk at the Blue Heron House.



A student shows off his creation at one of our Found Art: Recycled Plastic Sculpture after school programs at the Conway Public Library.



Participants in the winter tree identification and carbon sequestration program snowshoe along the GMCG's conservation center in Effingham.



Lakes Region Conservation Corps AmeriCorps members from GMCG and Squam Lakes Association join together for a service project at the North Conway Community Center as part of AmeriCorps week.

# Where are they now?

## By Tara Schroeder Education Coordinator

Former GMCG staff members, interns and AmeriCorps members share what they have been up to recently.

### Mia (Akaogi) Murphy GMCG intern 2008

Mia worked at GMCG during the summer of 2008 while completing her Master's degree at the University of Vermont. She returned in 2010 as the Water Quality Monitoring Coordinator. Since then her life has changed greatly. In 2011 Mia married Matt and in 2012 they welcomed their first son, Torin. They lived in Groton, MA for several years while Matt worked at a renewable energy company and Mia adjusted to life as a new mother. In 2016 they realized their dream of moving back to Vermont and purchased a home in East Montpelier. The next year they welcomed their second son, Ryden.



Mia, Matt, Torin (9), Ryden (4), and their Australian Cattle Dog (Waffles) have been enjoying their life in East Montpelier. Mia has been raising two wonderful boys full of energy and silliness while completing projects around the house. She is especially happy when she is out working in her perennial and vegetable gardens. Matt is COO for a company that invests in renewable energy all over the country. Torin is in 4<sup>th</sup> grade and enjoys playing video games, reading, basketball, Brazilian Jiu Jitsu, and break dancing. Ryden started preschool this year and loves Super Mario, video games,



Ellie Stoermer works among the albatross on Midway Atoll.

dinosaurs, and playing silly games with his brother. In the last few years especially, they have been grateful for where they live and how much they have been able to enjoy all the wonderful outdoor activities Vermont offers. Mia hopes to return to a career in the nonprofit or environmental education field in the near future.

### EB (Emma Brandt) AmeriCorps member and GMCG Education and Outreach Assistant 2020-2021



EB moved to Bethlehem, NH in August, 2021 after completing her AmeriCorps service term. She started working at the Gale River Cooperative Preschool, a nature and play-based preschool, as an assistant teacher and naturalist. During her time at GMCG, EB had the freedom to create new educational content which helped her discover her love of working with the preschool age group. She has been taking classes to earn her CDA (Child Development Associate) Credential and learn more about the intricacies of early childhood education. She has delighted in introducing her students to the beautiful and fascinating northern forest and helping them grow as people and as environmental stewards.

EB has been taking advantage of being so close to the White Mountains by alpine skiing, hiking, running, and learning how to Nordic ski this winter! She is still an avid knitter and reader, and has a deep love of board games and spending time with friends. She is thankful to the GMCG community for all their hard work in the Ossipee Watershed and for her fantastic experience as an AmeriCorps member last year.

**Ellie Stoermer**  
**AmeriCorps member and GMCG**  
**Education and Outreach Assistant**  
**2019-2020**

Ellie Stoermer, former AmeriCorps Education & Outreach Assistant from 2020, is doing well these days. She shares “I am back in civilization and have just started a job leading a restoration crew for a conservancy in Monterey, CA. Midway (Atoll) was definitely an amazing experience but I'm glad to be back in the world of grocery stores. Here's a picture of me getting way too sandy transplanting ākulikuli on the beach to help prevent erosion.” (See Ellie's photo on page 4)

In 2021 Ellie spent six months at Midway Atoll National Wildlife Refuge, a remote island 1300 miles from the Hawaiian Islands with fewer than 50 people. Midway is a sanctuary for millions of seabirds, shorebirds, and various marine life who all call the island home. Ellie conducted biological work over long days on Midway, which included intensive weed control activities such as hand-pulling or spraying herbicide with backpack sprayers, plant propagation, rodent control, and seabird monitoring.

**Trent Millum**  
**AmeriCorps member and GMCG**  
**Water Quality Resources Assistant**  
**2020-2021**



After moving on from GMCG, AmeriCorps member Trent Millum quickly made the move to Western Pennsylvania to serve as an AmeriCorps member for the Western Pennsylvania Conservancy (WPC), a term of service that has proven to be vastly different from his time in Effingham. Western Pennsylvania, once a pinnacle of industry and coal mining in the country, is now a landscape heavily impacted by agricultural activity. This has resulted in streams heavily impacted by acid mine drainage and streambank erosion.

Trent's role is to help out with and lead many different types of projects and research endeavors. This includes streambank restoration where natural structures are placed in streams to deflect water from the banks, reduce erosion and alter streamflow to create more habitat for fish species. His has also participated in riparian tree planting projects on agricultural or public land, trout nest surveys, culvert surveys, and culvert replacement projects to improve aquatic fish passage throughout PA's watersheds. His favorite projects include electrofishing surveys, macroinvertebrate analysis, and snorkeling for his first ever freshwater mussel surveys. All of these projects are helping WPC determine the health of waterways in Pennsylvania which has the second most miles of freshwater streams in the country.

Outside of work Trent continues to grow in his love for birding, and has joined a local club that collects community science bird population data. He has enjoyed visiting college friends in the state, and seeing his family more this year, including being the best man in his oldest brother's wedding. Trent and his two brothers were excited to watch their favorite football team the

Cincinnati Bengals play a home playoff game in January. He is grateful for every experience with GMCG and the people he met in New Hampshire, and cannot wait to visit soon.

## Reduce Plastic and support GMCG at Hannaford in Ossipee

GMCG is pleased to have been selected to be a part of the **Hannaford Helps Reusable Bag Program** which is designed to make it easy for customers to contribute to their local community while supporting the environment.

For the month of **April 2022** each time a \$2.50 reusable Community Bag is purchased at the Hannaford located at **891 NH-16, Ossipee, NH 03864**, \$1 will be donated to **GMCG**. Shoppers can also purchase reusable Community Bags via Hannaford-To-Go online to support **GMCG** throughout April. This is a great way to raise awareness, support the environment and fundraise for our cause.

To learn more please visit [hannaford.bags4mycause.com](http://hannaford.bags4mycause.com).



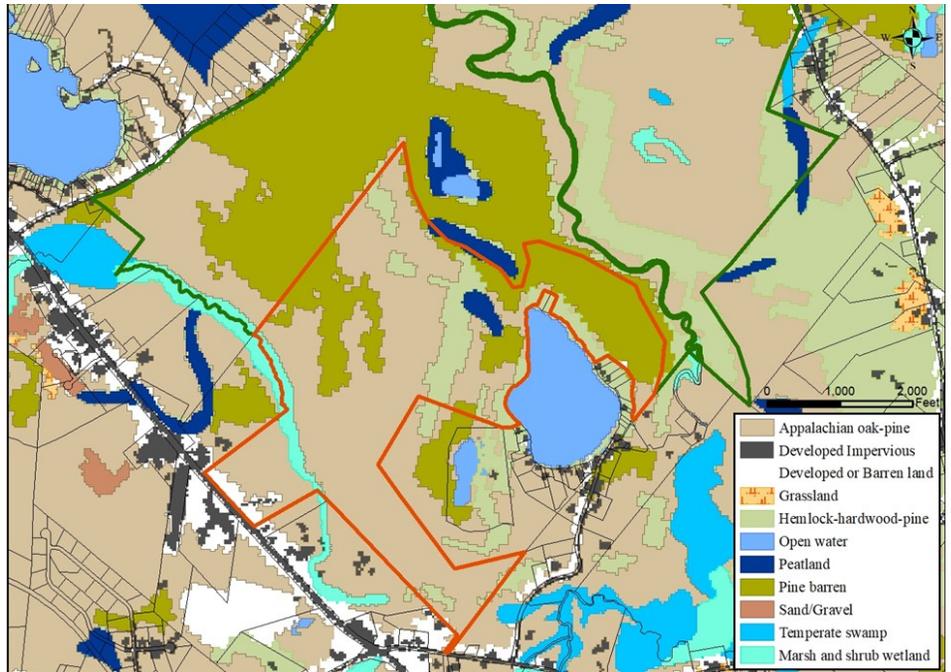
# Remote Ecological Assessment identifies potential impacts of gravel excavation on White Pond and Frenchman Brook

By Steven Lamonde, M.S.  
Ecologist & Project Manager  
&  
Jeffrey N. Littleton, M.S.  
Principal Ecologist  
Moosewood Ecological LLC.

During the autumn of 2021, at the request of Friends of White Pond and the Green Mountain Conservation Group, our company, Moosewood Ecological LLC., conducted a remote ecological assessment for the area surrounding Ossipee's 46-acre White Pond. Friends of White Pond, a group of 150 landowners and their families, is concerned about the impacts of Ossipee Aggregate's sand and gravel operation on flora, fauna, and groundwater. Our goal was to assess the likelihood of threatened species and habitats being affected by this excavation. While no in-person site visits were planned for this initial assessment, we turned to a wealth of publicly available datasets and scientific literature to inform our study. Of particular assistance to our work was New Hampshire's Wildlife Action Plan, reports of flora from the neighboring Pine River State Forest, and data from the Natural Heritage Bureau.

The White Pond area's rich glacial history presents a varied topography containing modern-day eskers, kettle holes, and expansive sand and gravel deposits. The nutrient-poor, well-drained soils on top of these glacial deposits support rare habitat types, from pine barren forests to peatland bogs. Some of New England's most endangered species, including dozens of imperiled butterflies and moths, depend entirely on pine barrens. The NH Natural Heritage Bureau considers the Ossipee Pine Barrens to be the largest and most pristine example of this natural community in New Hampshire.

The same soils that support so much rare biodiversity also provide



Map depicting Wildlife Action Plan habitat types for the area surrounding White Pond, which includes Pine River State Forest (outlined in green) and Ossipee Aggregate's parcel (outlined in orange).

important materials for construction and transportation projects, hence the frequency of sand and gravel excavation sites in the Ossipee region. Surface mining is one of the severest forms of natural disturbance, as all vegetation and topsoil are removed, thereby destroying habitat for every species that once lived there. Extensive, pre-excavation logging on Ossipee Aggregate's land near White Pond has already significantly degraded some of the 83 acres of pine barrens on the property. After excavation at this site is completed, some 125 acres of habitat, including an estimated 21 acres of pine barrens, will be lost. We estimated up to 50 wildlife species of conservation concern may be impacted by this operation. While this loss of critical habitat is imminent, the impact to local flora and fauna does not need to be permanent.

Given hundreds to thousands of years, nature will reclaim even

the most highly-disturbed sites. Active and well-informed restoration efforts can speed up this natural process by bringing in suitable topsoil and reestablishing native plants. In fact, The Nature Conservancy's ongoing restoration of pine barrens at a separate excavation site in Ossipee could serve as a detailed guide for restoring the excavation site near White Pond. With this template in hand, an opportunity arises for scientists, concerned citizens, and representatives of Ossipee Aggregates to design a new industry standard for ecologically-minded restoration plans. Such a partnership could pave the way for other communities looking to restore natural ecosystems in heavily impacted areas.

To download the full report go to  
[www.gmcg.org/whitepond](http://www.gmcg.org/whitepond)

# Reflecting on the origins of Earth Day

By Caitlin Noseworthy  
Water Quality Resources  
Assistant and AmeriCorps  
member

The release of Rachel Carson's *Silent Spring* in 1962 was an eye-opening read for many people and made the general public aware of the connection between public health and pollution. Prior to the book's release, prosperity and air pollution were considered to be one in the same; pollution meant that there was economic progress being made. Senator Gaylord Nelson from Wisconsin was driven to make a change after witnessing the severe consequences of pollution such as the disastrous oil spill off of the California coast in 1969. Senator Nelson proposed a "teach-in" day to educate university students in Seattle on environmental issues. This idea quickly gained national attention. On April 22, 1970, rallies were held in many U.S. cities including Chicago and Los Angeles to commence the first Earth Day.

The first Earth Day was incredibly successful in spreading the news about the importance of caring for the environment. In 1971, 25 percent of the United States public agreed that protecting the environment should be an important goal— a 2,500 percent increase from polling in 1969 (History, 2021). The push for protecting the environment during the 1970s brought forth several important pieces of environmental legislation, such as the Clean Water Act, Clean Air Act, and the Occupational Health and Safety Act. The movement also resulted in the formation of the Environmental Protection Agency which was tasked with protecting human health as well as the natural environment from contamination and pollution.

A major environmental crisis that has emerged over the last 70 years is the exorbitant use of plastic and its impact on the environment. The durability and ubiquity of plastics are a concern for the health of aquatic



During the first Earth Day celebration, bicyclists wore signs encouraging people to ride bikes instead of driving cars to reduce air pollution.<sup>1</sup>

organisms as well as water quality. Almost 10 million tons of plastic ends up in our oceans each year and enormous garbage patches have formed in multiple oceans (Baldwin & Nawaz, 2019). It is estimated that by 2050, there will be more plastic than fish (by weight) in the oceans (Baldwin & Nawaz, 2019). One of the major issues with plastic is that it never really disappears. Plastic can take many years to break down, but even then it degrades into smaller pieces of plastic commonly known as microplastics. GMCG recognized that plastic usage is a problem and created the Less Plastic Initiative in order to educate the public about plastics in the environment. GMCG has visited schools and camps, facilitated a Plastics Community Forum, and hosted an information table at a farmers market to raise awareness about plastic pollution.

History.com Editors. (2021, October 28). Earth Day 2022. HISTORY. <https://www.history.com/topics/holidays/earth-day>

Baldwin, Lorna & Nawaz, Amna. (2019, November 27). The Plastic Problem. PBS News Hour. <https://www.pbs.org/newshour/show/the-plastic-problem>

## Small Ways to Reduce Plastic Usage

- Cut out chewing gum as it can be made with synthetic rubber and plastic.
- Choose to buy foods and drinks that come in cardboard or paper packaging.
- Bring your own containers to stores and restaurants.
- Use Tupperware alternatives such as glass.
- Invest in reusable bags for all your shopping needs.
- Choose to buy package-free soap and laundry detergents now widely available such as the brand TruEarth.
- Say no to plastic straws. Choose straws made from reusable metal or biodegradable materials.
- Say no to bottled water and other drinks in single use plastic.

# Planning the next 25 years of watershed protection

By **Matt Howe**  
Executive Director

GMCG turns 25 this year. We have a committee dedicated to planning some events and other ways to recognize this notable achievement. Thirty percent of nonprofits do not make it past ten years, so the quarter century mark is definitely something to cheer about!

One way the Board of Directors will honor this milestone is to embark on the development of a new strategic plan. It has been several years since we conducted a thorough assessment of what the watershed community seeks from us and how we can most effectively meet those expectations.

Our first step will be to conduct some surveys. We will send you a questionnaire this summer. Knowing how you feel about how we are doing and how we can do better is important to us. We also will reach out to citizens of the watershed who are not on our mailing list. It is important to know what they think too. Additional outreach will be done with stakeholders and partners such as conservation commissions, planning boards, state agencies and other nonprofits.

If you have ideas for questions we should be asking, please send me an email or give me a call. We already have a lot on our mind about the questions and challenges we must consider as we plan for the next three to five years and beyond:

## 1. Sustainability

Our financial condition is good but as the nonprofit survival rate confirms, fundraising and financial management must always be a board's top priority. In GMCG's case we cannot merely plan to raise the \$320,000 we need this year. We need a plan to raise \$400,000 or more in future years because there is one question for which we already have the answer: from water quality monitoring to classroom education to



*Looking west to the Ossipee Mountains from the summit of Foss Mountain in Eaton.*

advising on best land management practices—the demand for our program services is growing. Indeed, the demand for what we do already has exceeded our capacity to respond. We must continue to expand our base of individual donors and institutional support. One question that deserves special attention is: what is our potential for earned income, commonly referred to in nonprofit circles as “program-related revenue?” How can we appropriately monetize our base of organizational knowledge and staff expertise? Much of our work cannot be priced, nor should it be, but requesting reasonable fees for services such as water quality monitoring for businesses and lake associations, or consulting with landowners on erosion control measures are examples of how we can both pursue our mission and become more self-sufficient.

## 2. Land Conservation

As the only land trust focused specifically on the Ossipee Watershed, we must ask: how can we help preserve as much land as possible over the next decade?

GMCG is not an ordinary land trust. A more accurate description is that we are a watershed protection organization engaged in research, education and advocacy that also holds conservation easements and fee-owned conservation land. It is not a criticism to note that our organizational model limits the resources available to carry out the time-consuming and often complex process of securing easements and fee-owned land, not to mention monitoring those lands. Long ago we made a conscious choice to weave together and devote resources to all four braids of REAL. Simply put, more land in our watershed requires protection than we currently have the capacity to protect. It is time for an exploration of strategies to address this challenge.

## 3. Allocation of resources

No matter how successful we are growing our capacity to serve the watershed, a key planning question for GMCG is: Are we allocating our limited resources in a manner proportionate to the specific threats posed to our watershed by human activity and climate change? This



*Drone photography looking down the Pine River and across Ossipee Lake by Karl Cresswell.*

question can never be fully answered but asking it is an important exercise (and why a survey of your concerns and other stakeholders is so necessary). Ranking the relative threat of problems that are all serious is not easy, and perhaps somewhat risky. From cyanobacteria to *E. coli*; PFAS to microplastics; gravel excavation to culverts in disrepair; faulty septic systems to shoreline erosion – we do not want to understate any of these perils. However we can only do so much. By deepening our understanding of these threats based on scientific evidence as well as the potential economic losses if natural resources are degraded, we can be more confident that we are devoting our limited resources to where we can have the greatest impact on our watershed’s most pressing problems.

#### **4. Adequate Facilities**

The Blue Heron House needs some improvements and routine maintenance but overall the building is in excellent condition and is large

enough to accommodate additional year-round staff. The Huntress House, however, is an aging structure with more significant maintenance issues. It also lacks the space to properly house the growing crew of AmeriCorps members who provide extraordinary value to the full gamut of our watershed protection programs. Our strategic plan must address this problem and consider a range of options, from replacing the building to finding additional lodging in proximity to the Blue Heron House.

#### **5. Municipal outreach and support**

Joining a lawsuit to reverse a decision by a local government is the last thing we want to do. We want to collaborate with the towns of the Ossipee Watershed in every way possible, and we are proud of the success we have had over the last 25 years building relationships and working in partnership with town officials on behalf of shared conservation goals. As part of our

strategic plan, we want to identify ways we can do more to support town officials and town boards as they manage their natural resources and navigate the increasingly complex challenges of balancing conservation and development. Prosperous businesses are critical to the economic vitality of this region, as is development done responsibly in the right places. The public servants who volunteer countless hours to governing our towns can do without lawsuits. The best way to avert conflict is through the cultivation of trust and shared knowledge. This must remain one of GMCG’s top priorities.

Developing a new strategic plan will take two years. This year is all about research, reaching out to the watershed community and listening. Early next year we will aim to write the plan. As we get underway we look forward to your input and to making sure we are asking the right questions. Thank you in advance for being a part of the process.

# Weighing the risks: why gas stations are a threat to water resources

By Tara Schroeder  
Education Coordinator

One hundred and nine towns in the State of New Hampshire have Groundwater Protection Ordinances to protect critical drinking water resources and the long-term health and safety of residents. These ordinances are recommended by regional planning commissions and state officials at the New Hampshire Department of Environmental Services (DES). As early as 1989, communities in the Ossipee Watershed had the foresight to protect their shared drinking water resources from some of the highest risk land uses that could potentially and irreversibly contaminate their water. The Town of Effingham's Groundwater Ordinance was adopted by its residents in 2011. As with many other towns' ordinances, gas stations are prohibited in Effingham within the Groundwater Protection District.

In 2021 a gas station was proposed for a site within Effingham's Groundwater Protection District. According to Dr. Robert Newton, Professor Emeritus of Geosciences at Smith College who has mapped and studied the Ossipee Aquifer since 1974, this location is "the worst possible location for a gas station." Not only is it in one of the most vulnerable areas over the Ossipee Aquifer, it is also a former gravel pit. A substantial amount of sand and gravel has already been removed, making the operation even closer to the water table with less of a filter for potential contaminants. The proposal was deemed a "Development of Regional Impact" by the Effingham Planning Board because of its proximity to the Ossipee town line and potential impact to the underlying aquifer, granting the following towns in NH and Maine abutter status for testimony: Ossipee, Freedom, Madison, Eaton, Tamworth, Sandwich, Wakefield, Porter, and Parsonsfield.

The applicant for the gas station, Meena LLC., and members of the Effingham Zoning Board of Adjustment who granted a variance for the



*Dozens of wells on Phillips Brook, Broad Bay and Leavitt Bay would be in harm's way from contaminants that enter the groundwater through the state's infiltration basin. Map: Robert Newton .*

project, have pointed to the Underground Storage Tank (UST) permits approved by DES and improvements in technology as proof that "DES believed that its current safeguards were more than sufficient to ensure that no release into the groundwater would occur" (Town of Effingham Memorandum, 2021). However, DES does not consider a site's hydrogeologic conditions when granting permits, only that the tanks are up to their standards. DES is careful to state in its correspondence with applicants for permits that "state law does not preempt local authority...The State of New Hampshire shall not incur any liability as a result of any spill, leak, failure or damage of any kind related to the UST facility" (NH DES OneStop, 2020). Ultimately, it is the Town's responsibility to determine if an individual site within their town is appropriate for a gas station.

For all of the above reasons, state officials continue to recommend that municipalities prohibit gas stations as a "high risk use" in sensitive drinking water

areas, despite improvements in technology, as spills and accidents at gas pump islands are a routine source of contamination that can result in groundwater contamination.

There have been 9 spills of more than 10 gallons of gasoline reported to DES in recent years from Carroll County alone, including a 2020 spill in Bartlett that released 45 gallons (DES OneStop data, see chart provided by Dr. Newton). Accidents happen. These operations, while improved in the past ten years, still pose a risk to water resources. People drive off with the hose in their tank. Plow trucks plow over the gas pump. Gas tanks can be overfilled. Shut off valves can fail. More substantial leaks and spills can happen too, as evidenced by the spill at a gas station in California of 1,300 gallons in December, 2021 that occurred after an SUV backed into a gas pump and the pump's safety valve failed (Newton, 2022). In addition to accidental spills, routine drips from hoses during refueling as part of normal operations contributes about 125 gallons of gasoline spillage per year at moderate sized gas stations

*"Given the likelihood that UST systems will release gasoline constituents (most commonly in the form of vapor leaks from underground piping systems or overfills of the UST, vehicle tank or portable container) and the possibility that spilled fuel will be carried off the fueling area by stormwater, municipal officials interested in providing the highest possible level of protection for groundwater used for drinking water should consider restricting the siting of gas stations as they would any other land use that is likely to contaminate groundwater. If the municipality's zoning ordinance prohibits the location of certain high-risk land uses in wellhead protection areas, aquifer protection areas, or other areas of high-value groundwater, gas stations should be considered for inclusion in the list of prohibited land uses."*  
(DES Fact Sheet, 2020)

according to some studies (Hilpert et al., 2015). These studies showed that while about 70% of the gasoline that is dripped evaporates, 30% infiltrates the concrete pads and can move down through the pad as either liquid or vapor and can eventually reach the water table.

While USTs and dispensing systems have improved, they are not fail-safe and without risk. The Bureau of Transportation reports 559,900 leaking UST releases in the United States since 1984, with new leaks occurring each year (US Dept. of Transportation, 2020). One case of leaking USTs from 1993 at a gas station in Ossipee is still showing contaminants above state standards in 2020 well sampling tests (NH DES OneStop, 2021). More recently, petroleum leaks into Pearl Harbor's tap water impacted nearly 6,000 people who were sickened and forced out of their homes. The Defense Department has closed the fueling plant and it will take years to work with state, national and local leaders to clean up the contaminated aquifer underneath the fuel tanks which is shared with the Navy and Honolulu's municipal water utility. The military will also need to provide healthcare to the families and workers affected (NPR,

Town	Gal	Comment
Moultonborough	20	Drive-off with hose attached
North Conway	20	Car gas tank leaked
Bartlett	45	Snowplow hit gas pump
North Conway	20	Fill shutoff failed
Wakefield	25	Fill shutoff failed
Ossipee	30	UST overflow during refill
Ossipee	20	Fill shutoff failed
Wakefield	10	
Wolfeboro	20	Gas pump leak

Chart prepared by Dr. Robert Newton with data from NH Department of Environmental Services OneStop Data website.

2022).

One of the most important tools a community can have to protect its drinking water resources and mitigate risks of contamination is a local Groundwater Protection Ordinance. In the case of the Effingham gas station proposal where a variance has already been granted, Effingham and surrounding communities must weigh the risks involved. They must consider the site's soils, hydrology, proximity to surface and groundwater, proximity to drinking water wells, potential for negative impact from a spill or leak, direction and rate of flow, and who is liable if/when water becomes contaminated.

How will wells be monitored? Will the state's \$1.5 million available for mitigation be enough to cover the cost for new wells or a public water supply system? What about any healthcare costs or losses in property value? Above all, communities must consider the value of the resource. What is clean drinking water worth? The decision to allow a prohibited use in a groundwater protection district in Effingham could also negatively impact the 108 other communities in New Hampshire that have adopted local groundwater/aquifer protection zoning ordinances. Effingham's decision could open the door for other town zoning boards to grant similar exemptions, thereby weakening scores of groundwater ordinances across New Hampshire that citizens have approved in order to protect their drinking water resources.



*The site of a spill in Bartlett, NH in March of 2020 where approximately 45 gallons of gasoline were released when a snowplow truck hit one of the dispensers. Three hundred and six gallons of contaminated snow and one drum of gasoline were removed and disposed of at NRC Environmental of Maine, Inc. of South Portland. One drum of hazardous solids containing gasoline-impacted absorbent materials was disposed of at ENPRO Services of Vermont, Inc. in Williston.*

Sourced from NH DES OneStop: GASOLINE RELEASE EVALUATION AND INITIAL RESPONSE ACTION Glen Circle K Route 16 & Route 302 (1 US Route 302) Bartlett, New Hampshire NHDES Site #199802100 IRSPILL #0039584

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# Calling all artists for the 2022 “Wonders of Water” community art exhibition

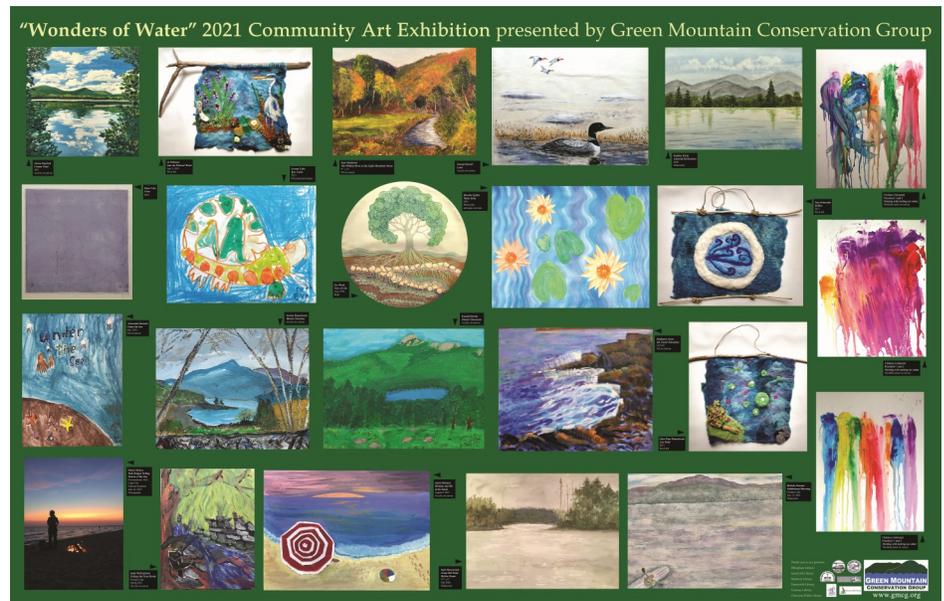
## By Moselle Spiller Outreach Coordinator

GMCG is happy to announce the third annual, 2022 “Wonders of Water” (WOW) community art exhibition this September is seeking artists from all inclinations to express what clean water means to them.

Last year on August 12th the second annual WOW community art exhibition included 25 artists of all ages from across the watershed and beyond. Their featured works explored the beauty of water and the importance of protecting clean water in our lives. Participants had the opportunity to show their work in person at the Watershed Celebration at the Blue Heron House in Effingham, as well as on a traveling banner that was hung outside six watershed libraries for two weeks at a time. This year there will not be an in-person showing but the ever popular traveling outdoor banner will again be displayed at multiple locations across the watershed throughout the fall.

This year GMCG is seeking more locations in addition to libraries to hang the WOW banner. If you are a local business or organization or know someone who has an appropriate place to hang a five-foot by seven-foot banner please let us know! GMCG also seeks partners to help promote the exhibition. Partners will be listed in press releases, radio broadcasts, and on GMCG’s website. Partners’ names and logos will be displayed on the traveling banner. Contact [info@gmcg.org](mailto:info@gmcg.org) for more information on how to partner.

Artist participation guidelines for the 2022 WOW exhibition will be posted to [www.gmcg.org](http://www.gmcg.org) on April 1st, and submissions will be accepted through August 15th. GMCG welcomes artists of all ages (and inclinations) to explore the meaning of **water** through the medium of their choice.



The 2021 “Wonders of Water” community art exhibition included artists from across the watershed who explored the importance of clean water in their lives.

Artists who submit digital art will have the option of being displayed online in addition to the traveling banner. For assistance with digitizing a physical piece of art GMCG staff are available to help. Visit [www.gmcg.org](http://www.gmcg.org) for all the details.



Spring Pond, by Steph Ayers.

### Get inspired!

Past media types have included felted wool, print making, watercolor oil paint, acrylic paint, finger paint melted using ice cubes, Batik, sculpture, photography, poetry, and more.

Subjects relating to water can be as broad as your imagination as well! Past artists have depicted the plants and animals that live in water, landscapes including water, spoken word, recorded performances on video, and written stories about water.



From top to bottom: The WOW banner displayed outside the Conway Public Library, The Chocorua Public Library, and the Madison Public Library last fall.

# Conservation conversations

**Editor's Note:** *Conservation Conversations* provides a forum for the seven towns of the Ossipee Watershed to share news of their conservation and planning activities and an opportunity to find creative solutions to challenges.

## Eaton Conservation Commission

The Eaton Conservation Commission gave a presentation to the Town of Eaton on Eaton Town Lands, and links are on [fossmountain.org](http://fossmountain.org), [eatonnh.org](http://eatonnh.org), and on the commission's webpage.

## Effingham Conservation Commission

Spring finds ECC rolling out somewhat more normal versions of traditional activities that had been modified by the pandemic. The Earth Day roadside litter cleanup will be held on Saturday, April 30, 8AM, starting at the Town Offices. BBQ to follow at noon. The Earth Day poster contest for Effingham Elementary School students has been announced, with the theme Solar Energy: Earth-Friendly Energy for All. A Zoom presentation titled *Wild*

*History: 350 Years of New Hampshire Wildlife* is scheduled for Friday, April 22 at 7 p.m. at a computer near you. Looking ahead, ECC hopes to see the extended Pine River Cherubini Preserve trails completed this spring or summer, as well as further examination of enhancements to protection and public enjoyment of the natural resources of the town.

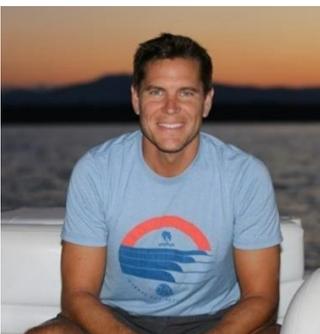
## Tamworth

The Tamworth Conservation Commission has received approval from the state's Forestry Division to relocate a portion of the Betty Steele Loop in the Big Pines area of Hemenway State Forest. The Betty Steele Loop is a portion of the trail system that leads from Route 113A to the Great Hill Fire Tower and is popular with hikers. Unfortunately, the section of the trail on the slope above the Swift River has become severely eroded and potentially hazardous when the trail surface is wet. The new

section of trail will be on the top of the slope to avoid potential problems in the future. The Commission hopes to have the new trail section completed in time for the summer hiking season.

Ned Beecher will continue the traditional weekly bird walks again this year, starting on Wednesday, April 20th and ending on May 18th. Ned offers these morning spring bird walks for anyone interested. Meet at 7:00 am at the Tamworth Town House parking area at the west end of Tamworth Village. The group drives and walks to excellent birding spots in and around Tamworth and returns by 9:15 a.m. (but people can peel off earlier). Bring binoculars if available (but they have an extra pair or two). Dress for the weather. Rain or shine, but not in a deluge. Over the five weeks, see (or at least hear) ~80+ species and learn many birds songs, field markings, and behaviors. This is the best time for birding!

## GMCG Board of Directors welcomes Todd Dickinson and Nancy Walser



Todd Dickinson

Todd fills one of three new "at-large" seats approved as part of a by-laws review last year. He grew up in western Massachusetts and spent his summers as a camper, then a staff member, at Camp Calumet on Lake Ossipee. It was there that he developed a love for the lake and the surrounding region. His additional experiences in scouting, as well as yearly summer family camping trips, left him with a deep passion for nature and the outdoors and a strong commitment to ensuring the health of our environment. When he's not working as the CEO of two biotech companies based in Boston and the California Bay Area, he and his partner Jamie enjoy the New Hampshire outdoors as much as possible. Todd's interests include nature photography, hiking, mountain biking, boating, golf, playing the piano, and woodworking. He holds undergraduate degrees in chemistry and theology from St. Olaf College, and a PhD in Analytical Chemistry from Tufts University.



Nancy Walser

Nancy will be GMCG's Town of Sandwich representative. An avid gardener, hiker and writer, Nancy and her husband Robert Buderer have lived part-time in Sandwich since 2001 and full-time since 2020. She recently retired from her job as a book editor for the Harvard Graduate School of Education. When her two children were growing up, Nancy served eight years as an elected school board member in Cambridge, MA. Most recently, she served eight years as a member and president of her condo association in Cambridge. She is the author of *The Essential School Board Book* (Harvard Education Press, 2009) and she continues to write about educational issues nationally. Nancy enjoys working on her old farmhouse in East Sandwich and is looking forward to learning more about how to preserve the environment in ways that allow both humans and nature to coexist and flourish as we face the challenges of a warming climate.

# Save the date! 2022 spring calendar

**Kid's Earth Day Art Exhibit:** This Earth Day, Friday April 22, 2022 enjoy children's art on exhibit at the Conway Public Library, all made from upcycled plastic! Artwork is on exhibit from April 21st through May 21st at the library, offering a glimpse into the issue of plastics in our environment through children's eyes. The exhibit is part of GMCG's Less Plastic Initiative and promises to be both educational and inspirational, and is suitable for all ages. To participate, kids can attend programs on April 7 and April 21 from 3:30 to 4:30 p.m. at the Conway Library. Please email [education2@gmcg.org](mailto:education2@gmcg.org) to sign up for this free program.

**RIVERS Informational Session:** On Tuesday April 12 at 7 p.m. on Zoom, Join GMCG's and SRCC's Jill Emerson and GMCG's WQRA AmeriCorps Caitlin Noseworthy as they give an overview of our community science program RIVERS. Learn about what we monitor, why it's important, and what benefits it provides both the communities and the volunteers! Pre-registration is required at [www.gmcg.org](http://www.gmcg.org). Contact Jill at [water@gmcg.org](mailto:water@gmcg.org) with any questions.

**Drinking Water Wells Presentation by Russ Lanoie:** On Wednesday, April 13 from 5 to 6 p.m. join Russ Lanoie, specialist in designing, consulting and educating about roads, wells and septic systems in New Hampshire's northern climate for over 50 years, for a presentation all about groundwater wells. Do you know what type of well you have? Where is it? What are nearby contaminants that could threaten your drinking water? Learn about the advantages and disadvantages of different types of wells and a modern design for dug wells that is easy to install and maintain. Nearly 80% of homeowners in Carroll County, New Hampshire get their drinking water from private wells. Please pre-register for this program and watch a video on wells at [www.gmcg.org](http://www.gmcg.org).

**Madison Salt Brining Workshop:** On Tuesday, April 19 from 11 a.m. to 12 p.m. Madison's Department of Public Works and town officials will share how they were able to reduce salt use and save money this winter using a salt brining system and truck. Brining is a process that liquefies salt before it is applied to roadways and has been found to be more effective at melting ice and snow while reducing road salt applications by more than 50%. This program is free and open to the public, geared towards town officials, road agents, private contractors, watershed associations and others interested in reducing salt use. Please pre-register by contacting [education@gmcg.org](mailto:education@gmcg.org) as space is limited. The workshop will be held at the Madison Department of Public Works located at 1923 Village Rd, Madison, NH 03849, adjacent to the Madison Elementary School. This program is a collaboration between Madison, GMCG, Saco Headwaters Alliance and UNH Technology Transfer Center. Program participants receive 1 Environmental Roads Scholar hour for their participation and a certificate of completion from UNHT2.

**RIVERS Volunteer Training Sessions:** In preparation for the 2022 monitoring season, GMCG and SRCC will offer a Volunteer Training Session on Tuesday, April 26 and Saturday, April 30 from 10 a.m. to 12 p.m. at the Blue Heron House. RIVERS volunteers will learn and refresh their water quality skills, practice using monitoring equipment, and meet other volunteers. In order to provide the highest quality data, we strongly encourage all volunteers to attend one session. Sessions will be outside so please dress for the weather.

**Drinking Water Protection Workshop with NH Department of Environmental Services:** On Wednesday, June 1 from 5 to 6:30 p.m., this workshop will be in-person at Runnells Hall in Chocorua, with an online Zoom option. The program will be led by Paul Susca, Supervisor for the Planning, Protection and Assistance Section, and Pierce Rigrod, Drinking Water and Ground Water Supervisor for the New Hampshire Department of Environmental Services. The workshop will cover the roles of municipalities and the state in protecting groundwater and drinking water resources and protection strategies such as local zoning provisions. Learn about common threats to drinking water and the economic benefits of groundwater protection measures. This workshop is geared towards planning board members, select boards, conservation commissioners, zoning boards, code enforcement officers, health inspectors, public water suppliers and anyone interested in learning more about on-the-ground development and implementation of recommended tools such as Groundwater Protection Ordinances, Groundwater Reclassification, and Source Water Protection Plans. This program is free and open to the public. Register in advance for the Zoom meeting at [www.gmcg.org](http://www.gmcg.org), or in-person at [education@gmcg.org](mailto:education@gmcg.org). This program is a partnership between GMCG, Saco Headwaters Alliance and NH DES.

**Natural Area Interpretive Trail Grand Opening:** On Saturday, June 18 and Sunday, June 19 (exact time TBD), join GMCG staff and AmeriCorps members as GMCG unveils a new interpretive trail at the GMCG Natural Area! Past AmeriCorps members built the trail and the newest members, Bethany and Caitlin, will be creating a trail booklet containing information about ten different stations along the trail. This free and open to the public interpretive trail will offer a different learning opportunity from the trail at the Blue Heron House, as the new learning stations will be centered around the historic curiosities of the area. Email Caitlin at [water2@gmcg.org](mailto:water2@gmcg.org) with any questions.

**Green Mountain Forestry & Fire Tower Hike:** On Saturday, June 25, from 9 a.m. to 1 p.m. join GMCG and the Forest Society for a guided hike of Green Mountain to the Forest Society High Watch Forest Reservation and fire tower and

some great views of the Ossipee Watershed. The hike will be led by Field Forester, Steve Junkin, and Senior Director of Education, Dave Anderson, of the Forest Society. The group will hike via the Libby Road Trail, with a side trip to visit the area of a 2018 40-acre tree harvest to learn about why these cuts were created and observe the regeneration at the site. Next, the group will head to the summit for lunch and views. Be prepared for a 3-mile round-trip hike with some steep terrain. Please bring a lunch and water, and pre-register for the hike by contacting [education@gmcg.org](mailto:education@gmcg.org) as space is limited.



**Building our capacity to protect the Ossipee Watershed!**  
**GMCG's Capital Campaign—\$250,000**

Name(s) \_\_\_\_\_

Address \_\_\_\_\_

Town \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Email \_\_\_\_\_

In a mailing last week we shared the story of this special campaign and the ways it will help GMCG take the next leap forward. We are grateful for whatever you and your family can do to help reach our goal.

**Yes!** Count me/us in with a **total pledge** of \$ \_\_\_\_\_ to conserve critical lands, care for GMCG's buildings, & expand/support the staff.

I/we plan to fulfill the pledge all at once.     Check enclosed     Please send an invoice

I/we plan to fulfill the pledge over a three-year period

This will be a gift in memory of or in honor of: \_\_\_\_\_

**Questions:** Contact Executive Director Matt Howe at [director@gmcg.org](mailto:director@gmcg.org) or call (603) 539-1859.

Mail to: GMCG P.O Box 95, Effingham, NH 03882  
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***Thank You!***



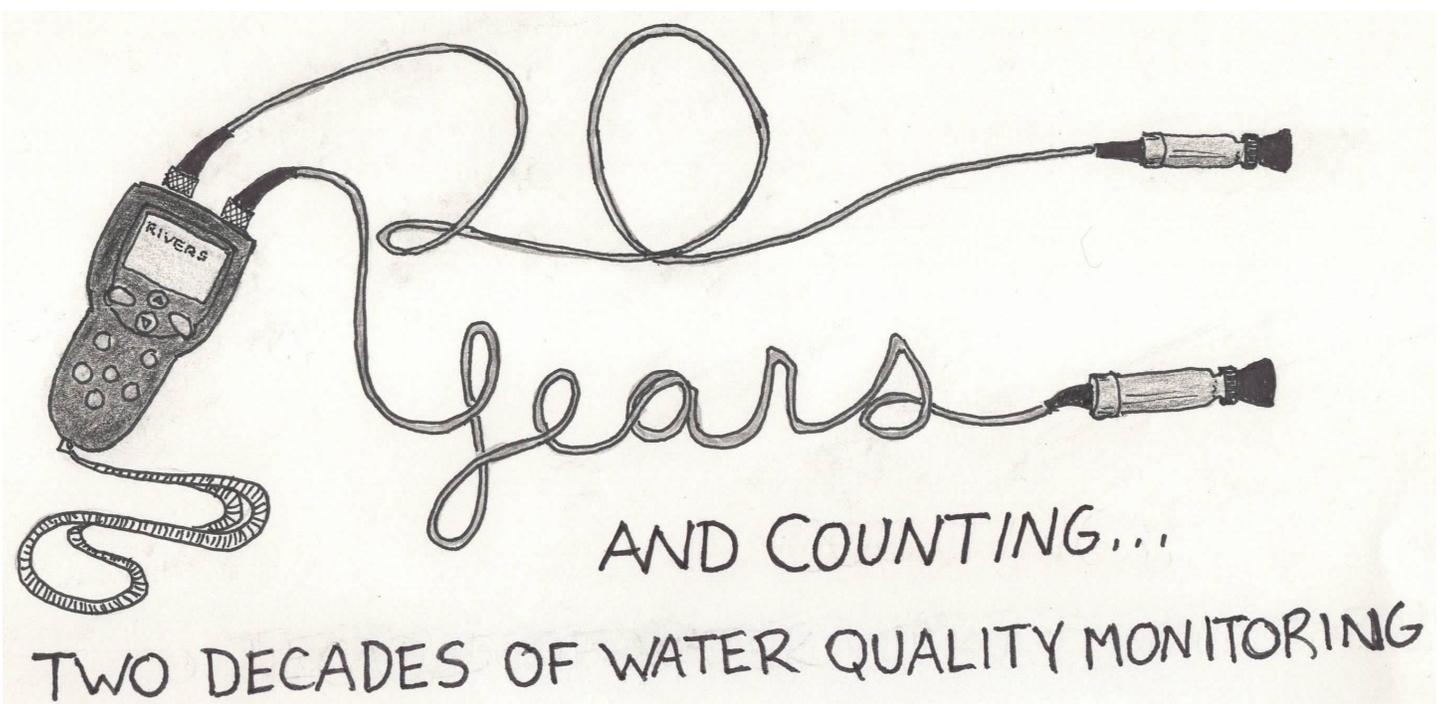
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## THE WATERSHED NEWS

A Quarterly Publication for the Ossipee Watershed

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**RIVERS turns 20.  
GMCG turns 25.  
Celebrate!**



*Cartoon by Tim White*

### In This Issue:

- Setting the stage for a new strategic plan
- The risk of a new Effingham gas station
- GMCG is Hannaford Bag recipient for April
- “Wonders of Water” community art exhibition
- The origins of Earth Day....and more!

Contributors: Jill Emerson, Matt Howe, Tara Schroeder, Moselle Spiller, Bethany Mestelle, Caitlin Noseworthy, Steven Lamonde, and Jeffrey N. Littleton.

Comments, questions, or ideas for a future article?  
Please write to [info@gmcg.org](mailto:info@gmcg.org)