

# The Watershed News

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A Quarterly Publication for the Ossipee Watershed Published by the Green Mountain Conservation Group

## WMP Steering Committee to conduct shoreline survey

A shoreline survey is designed to locate sources of soil erosion and polluted runoff that have the potential to damage lake water quality. Everyone can be a steward of our lakes and streams – not just those who own property right on the shore. Even if your house is miles away from the water's edge, how you manage your land and household activities can affect water quality.

On September 28th the Watershed Management Plan Steering Committee and FB Environmental will conduct a shoreline survey of the lower bays of Ossipee Lake (Broad, Berry, and Leavitt) and Danforth Pond. The purpose of the survey is to gather information about development along the shoreline areas of these waterbodies. In particular volunteers will be looking at shoreline erosion and the extent of vegetated buffers on shorefront lots. This is not a regulatory survey but is instead intended to provide information to help assess the condition of the waterbodies for the upcoming watershed plan.

Shoreline erosion can add excess

phosphorus to the lake waters and there is current evidence of an increasing trend in phosphorus levels that can lead to algal blooms. Vegetated buffers (plants and trees on the immediate shoreline) help to lessen phosphorus levels and also provide valuable wildlife habitat.

Lakes are polluted, in great part, by non-point source (NPS) pollution in the form of eroded soil and the nutrients (phosphorus) it carries. As storm water flows over bare or loose soil, these pollutants adhere to water molecules and are deposited in water bodies such as lakes, streams and oceans.

There are many inexpensive ways to mitigate storm water runoff. Some simple actions that homeowners can do include:

- Prevent soil erosion – re-seed areas of bare soil. Plant trees, shrubs, and groundcovers to reduce the size of your lawn and absorb excess nutrients.
- Reduce or eliminate the use of phosphorus in fertilizers. Use phosphorus-free fertilizer if you must fertilize, and consider alternatives such as spot treatments, lime or compost.
- Maintain your driveway and camp road

by re-grading and crowning regularly to keep the water off the road. Sediment washed from the road surface or ditches usually ends up in the lake.



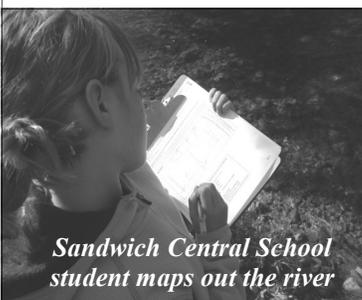
*One example of a shoreline in need of plantings to help reduce sand in the lake.*

For more information on the Watershed Management Plan or to volunteer, please contact GMCG at 539-1859.

*Funding for this project was provided in part by a Watershed Assistance Grant from the NH Department of Environmental Services with Clean Water Act Section 319 funds from the U.S. Environmental Protection Agency*

## Watershed youth assist with fall water quality

September ushers in autumn and with it a chance to sample the local tributaries for aquatic macroinvertebrates—those little critters that are visible to the naked eye (macro) yet lack a backbone (invertebrate) and spend half their life cycle in the water. Students



*Sandwich Central School student maps out the river*

from Effingham, Freedom, Madison, Ossipee, Sandwich, and Tamworth will head out into the streams as citizen scientists for the day and collect these insects, identify and sort them and ultimately calculate the health of that water body based on their findings.

This is the eighth year that GMCG has coordinated the Volunteer Biological Assessment Program (VBAP) as part of the New Hampshire Department of Environmental Services statewide effort to collect water quality data.

Following the field sampling, students work in their classrooms to create a presentation for the community about water quality in the Ossipee Watershed. Students from three school districts and six towns will co-present and be on hand to answer questions about the program and about the health of the streams. The community presentation will take place on December 4th from 5:30-7:30 at the Remick Museum.

*Special thanks to the Pequawket Foundation, Quimby Foundation and NH Fish and Game for their support.*

## The Watershed News

The Watershed News is a quarterly publication of the Green Mountain Conservation Group, a non-profit, 501(c) 3, charitable organization established in 1997 and dedicated to the preservation of the natural resources in the Ossipee Watershed. The towns of Effingham, Freedom, Madison, Ossipee, Sandwich and Tamworth make up the boundaries of the Ossipee Watershed. This watershed includes one of the largest and deepest stratified drift aquifers in New Hampshire.

GMCG's purpose is twofold:

1. To provide an organizational structure for a coalition of citizens and local officials interested in identifying sensitive areas within the Watershed in need of protection;
2. To offer public educational events about conservation issues and possible solutions regarding the preservation of unique natural resources.

Through research, education, advocacy and land conservation we strive to promote an awareness and appreciation of our watershed's natural resources and encourage a commitment to protect them.

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 Water Quality, Corey Lane  
 Land Trust, Chris Young

## Legislature restores funding for LCHIP

Funding for the Land and Community Heritage Investment Program (LCHIP) was fully restored in the state budget approved by the NH legislature and governor in June.

For the past several years the LCHIP program has been operating on reduced funds because the real estate transfer fees dedicated for the program were instead used to help balance the state's general fund budget. The 2013 budget restores 100% of the dedicated funds to LCHIP, estimated to be \$8.45 million over the biennium.

LCHIP awards grants to help conserve land and preserve historic buildings across the state, including several projects in the Ossipee Watershed.

Funding for the program comes from two main sources: the sale of conservation license plates and certain real estate transfer fees.

LCHIP has been tremendously successful at leveraging outside dollars: for every \$1 dollar invested by LCHIP, nearly \$6 is invested from local, private and other funds. Unfortunately, over the past four years, the LCHIP funds have been diverted for other purposes, which has left numerous community conservation projects unable to move forward.

To learn more about the program and community projects and grants please visit [www.lchip.org](http://www.lchip.org).

## Land Trust Alliance offers to help defend conserved lands from legal challenges

The Green Mountain Conservation Group has been a member of the national Land Trust Alliance (LTA) for 10 years and has recently become an active member of Terrafirma, an organization formed by LTA to help land trusts like GMCG defend their conserved lands from legal challenges.

Terrafirma is owned by its members to insure the costs of upholding conservation easements and fee lands held for conservation purposes when they have been violated or are under legal attack, and to provide information to member land trusts on risk management. Terrafirma is the first national initiative to ensure the permanence of conservation undertaken by the land conservation community. This insurance program is a "risk retention group," a mutual insurance arrangement whose business is limited to insuring its members, all of whom are members of the Land Trust Alliance.

GMCG holds 14 conservation easements totaling more than 2,000 acres, and owns four fee lands totaling more than 250 acres. Given the responsibilities that come with protecting these property interests, GMCG believes it is important to be in a good position to defend the conservation values of these properties in perpetuity.

As a participating land trust, GMCG pays an annual fee of \$60 per property for coverage, as well as an initial registration fee to the Terrafirma Risk Retention Group LLC.

Across the USA, 424 land trusts in 46 states are working together to defend the conservation of 20,432 properties covering over six million acres. These properties range from urban parks, ball fields and community gardens to forests, farms and wetlands.

As population and development pressures increase, conservation lands face increasing pressures. As lands change ownership, more and more land trusts are faced with legal challenges to defend the conservation values of the properties they are charged with stewarding. These properties were procured through private, public or federal funding as well as tax incentives and it is imperative for land trusts like GMCG to assure that the conservation values of the lands will be conserved in perpetuity. Terrafirma is a comprehensive program that provides a way for land trusts to insure properties.

*For more information about Terrafirma visit [terrafirm.org](http://terrafirm.org).*

## Global water scarcity reminds us of our good fortune

By Sarah McVicar

In the United States, the 20th century was a remarkable time in the history of water – the first time abundant, safe and cheap water became widely available for us to drink. But now we are entering a new era that will forever alter our relationship with water. Our water supply is increasingly stressed by unprecedented population growth, unpredictable climate changes affecting water availability and continuing economic development that consumes and pollutes water resources on a huge scale.

In many parts of the world today, water scarcity is already an all too real fact of life. In his book *The Big Thirst*, Charles Fishman notes that at least 40 percent of the world doesn't have good access to water. Some don't have water at all; in other places girls and women give up the chance for education and other opportunities to travel long distances to carry water for their families. Nearly one out of six people around the world has no access to clean, safe drinking water. According to the World Health Organization, roughly 5,000 children a day die from illnesses caused by inadequate or tainted water supplies.

Here in Northern New England, particularly in the Ossipee Watershed, we

are lucky. The entire Northeast is one of the most water-rich regions in the nation. According to Andrew Stone of the American Groundwater Trust, New England state agencies do a good job overseeing our water resources. The tourist and recreation industry in rural New England depends on the health of our lakes and rivers. What many people don't realize is that most of our water – far more than the water in lakes and rivers combined – is stored in underground aquifers. Often overlooked, this part of the water system below the surface – known as groundwater – helps to maintain the flow in our rivers and streams.

But we are in danger of taking our water wealth for granted. Stone and his colleagues are challenged by the task of communicating the value of water in a way that is meaningful to the general public. While the nation's water infrastructure needs an investment of around \$600 billion just to replace and repair aging systems, the average U.S. family puts more money into soda pop than they spend on water and waste-water disposal. Although fortunately water scarcity is rare in New England, deteriorating water infrastructure is a real concern. Stone suggests real-cost pricing for water utilities, homes and businesses

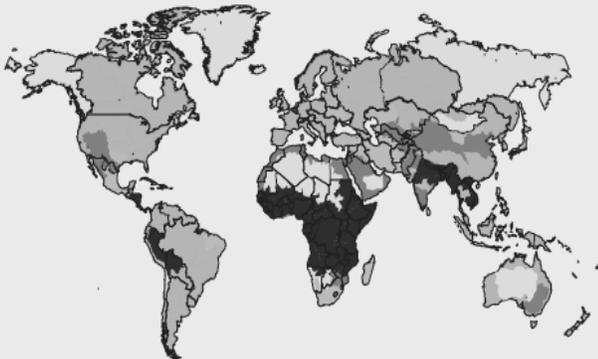
to reflect the actual value of water and water systems. Unless we are willing to pay more for water, Stone says, we will not be able to maintain our water infrastructure.

Technologies to clean, deliver and store water will be increasingly important in the future. Stone cites aquifer storage recovery, storing water underground in times of surplus to be used in times of need, as especially promising. Because the source of surplus is likely to be storm water, and storm water washes over our entire landscape, public cooperation at the local and regional level is needed to reduce pollution from fertilizers and other common surface-applied chemicals.

One major challenge is that water problems are local – that is, reducing bottled water usage in Ossipee, New Hampshire, does not mean more water for families in sub-Saharan Africa. The impacts of water availability, however, are unequivocally global. While water itself is in no danger of disappearing, how we humans approach and manage water in the future will be the factor that determines our fate.

*Sarah McVicar is a resident of Wonalancet and a recent graduate of Antioch University New England.*

Little or no water scarcity   
  Approaching physical water scarcity   
  Not estimated  
 Physical water scarcity   
  Economic water scarcity



© International Water Management Institute

World population is predicted to grow from 7 billion to 9.1 billion by 2050, putting a strain on water resources to meet increased food, energy, and industrial demands. Other pressures include increased urbanization and overconsumption, lack of proper management, and climate change. Since the last century, global water use has been growing at more than twice the rate of population increase.

For information visit [worldwatch.org](http://worldwatch.org).

*International Water Management Institute  
Global water scarcity map.*

## Volunteers are the back bone to GMCG's Water Quality Monitoring program

By Corey Lane

GMCG's water quality monitoring programs have been in full swing this season with some great and some not so great weather. Thanks to over 50 volunteers, data is being collected for RIVERS, VLAP, VBAP and EPSCoR.

**RIVERS (Regional Interstate Volunteers for the Ecosystems and Rivers of Saco)** is GMCG's longest running sampling program that tracks water quality on tributaries in the Ossipee River Watershed. The RIVERS program relies on a core of dedicated volunteers. This year, volunteers began sampling in early May and will continue to collect river water through mid-October. Twenty eight tributary sites including new sites in Eaton are tested every other week and are sampled for dissolved oxygen, conductivity and turbidity using field meters. Volunteers also collect bottle samples that are sent to the University of New Hampshire and analyzed for total phosphorus, calcium, chloride, potassium, manganese, sodium, dissolved organic carbon, nitrogen, nitrate, phosphate, silica, total dissolved nitrogen, sulfate, and ammonium. This extensive sampling program began in 2002 with a cross border partnership with the Saco River Corridor Commission (SRCC)-our downstream neighbors in Maine. GMCG and SRCC share a Quality Assurance Project Plan (QAPP) which is approved by NH Department of Environmental Services and Maine Department of Environmental Protection. This document sets protocol and governs the procedure that all volunteers follow while testing. Without it, data could still be collected in our watershed but would not be considered valid.

**VLAP (Volunteer Lake Assessment Program)** has collected samples from the five deep water locations in Ossipee Lake every month

since ice out in April. Ossipee Lake Marina donated boats and gas in the spring making ice out testing possible. We are particularly grateful to Ed Green and Bob Houle, our official captains, who donated their boats, gas and time. We have also had an incredible crew who have been willing and able to get out on the lake and use their skills and knowledge to get the job done. This year, GMCG has increased the VLAP sampling days and amounts in order to collect additional data and total phosphorus profile that will be analyzed for the Watershed Management Plan.

With over twelve years of water quality data, GMCG is now studying trends in water quality and tracking changes. A forthcoming analysis of this data will help chart the best course of



*Volunteers Bob Houle and Rick Klausner assist with sampling.*

action to protect the water bodies that we all love.

Some may think that collecting water quality data is unnecessary in our seemingly pristine region, but the contrary is true. Surface water is always fluctuating. Without long term data collection one cannot determine if a water body is "making noises" which are short term fluctuations or "signaling" which are long term water quality trends.

Predicting current and future trends is critical to protecting and managing a healthy watershed. Data has been collected by the New Hampshire Lakes Lay Monitoring Program in the Ossipee Watershed for decades. This information is sending us a signal. The water quality in the Lake and Bays has declined. The Watershed Management Plan is based on collecting and analyzing many types of information in order to make recommendations that will turn the decreasing trend around.



*Camp Calumet assists with sampling.*

**EPSCoR(Experimental Program to Stimulate Competitive research)** The HOBOT meters that are locked into the Pine and Ossipee Rivers have been logging away every three minutes. These meters are collecting conductivity, temperature and stage readings year round since July 2012.

Plymouth State University is analyzing data across the state for a climate study and GMCG is able to use the data from these stations for the Watershed Management Plan. Because of how they are locked into the rivers, it is no easy task to access these data loggers. Volunteer Rick Klausner has been committed to braving the waters and assisting with these downloads. Thanks Rick! To review data from GMCG's stations on the Ossipee and Pine Rivers or rivers across the state visit <http://lovotecs.sr.unh.edu/stations/>

*Corey Lane is the Water Quality Coordinator for GMCG.*

## Conservation Conversations

**Editor's Note:** *Watershed Conversations is intended to provide 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

The Eaton Conservation Commission has been busy trying to keep Little Bluestem Grass from taking over the



*A hike up Foss Mountain in Eaton offers 360 degree views.*

organic blueberry fields on Foss Mountain. Upcoming efforts will include burning, application of sulfur to lower the pH, which the grass does not tolerate but is good for the blueberries, and continued cutting. The lower-elevation blueberry fields are commercial, but large sections

nearer the top of the mountain are open for public picking.

In addition, we have conducted limited logging to start the development of the new trail to the top of Foss, with its great 360 degree views. This trail will be located further north off Foss Mountain Road and head west to follow what is locally known as the Brooks Pasture Road before heading in a southerly direction to the open top of Foss. The old trail was poorly designed and followed the fall line, making diversion of water an impossibility and leading to risky hiking conditions in anything but optimal conditions. The new trail will also include expanded parking and new signage/kiosks to highlight the local history and environment

### Madison

In August, the Madison Conservation Commission (MCC) lead an Old Home Week walk for about 15 folks up the B & M Ledge Trail for views of the Silver Lake valley. The MCC continues to work on town property trail expansion and annual town property and conservation easement monitoring. Madison residents are encouraged to think about preserving family lands through conservation easements. MCC has some funds available for easement legal and survey assistance.

### Sandwich

The Conservation Commission sponsored a workshop on Easement Monitoring for members and volunteers that was lead by Dave Mallard, Stewardship Director of the Lakes Region Conservation Trust (LRCT) and Joan Turley, Land Stewardship Coordinator of the Squam Lakes Conservation Society (SLCS).

Five Days in Sandwich took place again in July. The CC sponsors this day camp focused on conservation for the children of Sandwich. Three separate week-long sessions served three dozen young campers, aged seven to fourteen. Dan Reidy directed this popular summer program.

In July, the Town of Sandwich accepted a parcel of 107 acres of conservation land from Club Motorsports, Inc. The agreement by the Selectmen to accept this land was reached after extensive discussions by the Conservation Commission and Planning Board and public hearings.

In conjunction with the Planning Board, the Commission is working on a proposal to update the documentation of its currently designated Prime Wetland in the coming year.

## Freedom Elementary Students help install rain garden at Camp Huckins

On September 13<sup>th</sup> the students at Freedom Elementary School rolled up their sleeves, picked up some shovels and assisted in installing a rain garden at Camp Huckins on Ossipee Lake. Rain gardens are designed to catch and contain stormwater runoff (which carries phosphorus) before it washes into the Lake. Runoff carries phosphorus which can contribute to pollute loading to the lake and it is important to stop it from reaching the water in order to protect water quality.

This was not an easy job to complete. First, a hole had to be dug to catch the water and allow it to filter into the earth. When the students were finished digging they had actually filled a dump truck with sand!

Once the hole was big enough, the students shoveled

soil into a crescent shaped berm, covered it with an erosion control mulch and then planted blueberry bushes to finish the project. Acton Wakefield Watershed Alliance created the design and assisted with the installation as part of the Watershed Management Plan. Another garden will be installed at Camp Marist this fall and two more planned for next spring.



*New rain garden on Ossipee Lake protects water quality*

## Summer memories on Ossipee Lake

Dear Lake Ossipee lovers,

Living on Lake Ossipee at Camp Huckins for 2 weeks each summer has been amazing. This year was our 5th -- we are officially "Hucksters.." Each day was jam-packed with fun activities we will never forget. We fondly remember sailing on the sunfishes, canoeing to the island, roasting s'mores by the shore and swimming in the beautiful clear lake.

It didn't matter what we were doing, our days were always full of smiles and laughter. Each morning we woke to the sweet sound of loons starting their day. Early morning swims to the island were the best, and the water was gorgeous. At first, jumping off the tower into the lake sent shivers through our spines, but it was soon replaced by big smiles when we plunged into the deep cool water.

We enjoy Lake Ossipee for its clear and clean water and for the fun-filled days that we had on the lake. Going out onto the pontoon boat was always a blast and even in the rain, we always found our own sun. Water sampling with the people from GMCG was really fun because we sang songs and got to help out.

We remember our first year at Huckins, when on the fourth of July they set off fireworks from the island. We all sat by the shore and watched the beautiful display and the stars shone bright in the night sky. Joy to the World Camp Huckins style!

"Joy to the fishes in Lake Ossipee,  
I say, joy to you and me"

Lucy Poole and Lucy Hughes  
7th grade, Wayland, MA



## Young residents assist with well water sampling

By Jenna M. Boyd

In the Get Wet Program, we tested people's well water. They brought in a sample bottle of their well water taken before their filter and paperwork that told us about their land. They talked about what was around their house such as how many acres, if they had a well, river, lake, pond, or stream near by. To test the water, we used a lot of different chemicals. We used various test to test for impurities. Some of the things we tested for was pH levels and iron. In this process, it can be really fun but serious, you have to wash hands a lot and wear goggles all the time. I had a lot of fun doing this project and hope I can help others well water on.



project and volunteer to test their again later

*Jenna M. Boyd is a new GMCG Volunteer and a 7th grader at Kennett Middle School.*

# WATER: For Health; For Healing; For Life!

By Marylou Dow

Without WATER, nothing LIVES. Comparative shortage of water first suppresses and eventually kills some aspects of the body. Water is the main source of energy – it is the “cash flow” of the body. Water increases greatly the efficiency of the immune system in the bone marrow, where the immune system is formed (all its mechanisms), including its efficiency against cancer. Water energizes food, and food particles are then able to supply the body with this energy during digestion. This is why food without water has absolutely no energy value for the body.

Water gives us power and electrical energy for all brain functions, most particularly “thinking”. Water helps reduce stress, anxiety and depression. Water helps prevent the loss of memory as we age. It helps reduce the risk of Alzheimer’s

disease, multiple sclerosis, Parkinson’s disease and Lou Gehrig’s disease.

*Marylou Dow is owner of “A Better Body” in Eaton, is an Exercise Physiologist/Trainer and Nutritionist who customizes fitness programs, builds immune systems and increases energy.*

GMCG thanks Marylou for emphasizing the importance of water in our daily lives. And with your membership support, GMCG can continue to emphasize the importance of “clean” drinking water within the Ossipee watershed through our state approved water quality monitoring program, research, youth education, community outreach, advocacy and land protection efforts.

## Have you tested your well water recently?

By Noreen Downs

GMCG volunteers are getting the word out about Water Quality in the Ossipee Watershed in a personal way. Most residents in the watershed have private wells, and even though we are fortunate to have an abundance of clean water, it is still important to be vigilant and test your well. The NH Department of Environmental Services (NH DES) recommends testing your home well water every 3 to 5 years. Everyone needs to know that home well water is safe to drink.

Over the summer, you may have seen GMCG displays at local farmers markets or Old Home Week events in Tamworth, Freedom, Ossipee, Sandwich and Eaton. GMCG volunteers have been busy engaging folks in conversations about well water, and offering FREE organized transportation of well water test samples to the NH DES lab in Concord. Interested participants have paid for the DES lab analysis, and GMCG transported the samples.

In addition to working with NH DES, GMCG also offers GetWet well water screening, a program which is provided to local elementary schools in the spring and available during the

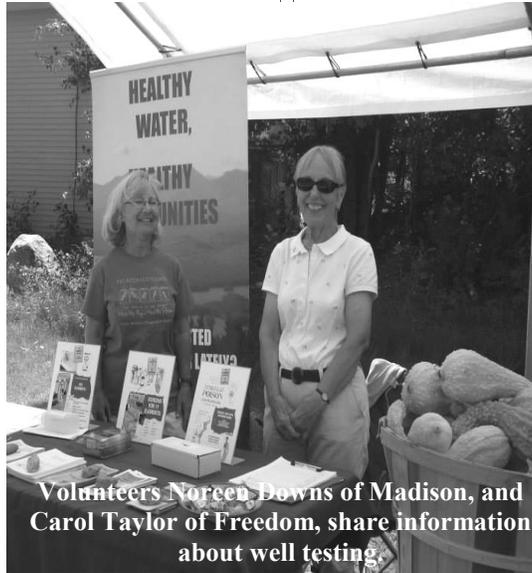
summer months at local events. Through the GetWet program, water is screened for six parameters including pH, nitrates, sodium, iron, hardness, and chlorides.

This year GMCG added a home water analysis test for any member joining at the \$100 level. One summer resident became a new member right away, saying she was very excited to take home the well water test kit as a fun "citizen scientist" learning experience for her visiting grandchildren. While these screenings are not as precise as a certified lab analysis, they can provide useful information if the screened element is out of normal acceptable range and should therefore be further examined. It's all pretty exciting. If you are interested in having your well water sampled through any of these programs feel free to contact GMCG at 539-1859 or visit our website,

[www.gmcg.org](http://www.gmcg.org), for more details.

Everyone should know what's in his or her drinking water to sustain "Healthy Water, Healthy Communities."

*Noreen Downs is a volunteer from Madison and former Chair of GMCG.*



Volunteers Noreen Downs of Madison, and Carol Taylor of Freedom, share information about well testing.

**Your Membership Makes a Difference.  
PLEASE renew your 2013 membership today!  
Every drop counts! Thank you!**

*(Please make checks payable to Green Mountain Conservation Group P.O. Box 95, Effingham, NH 03882)*

*You may also renew your membership online at [www.gmcg.org/we-need-your-help/](http://www.gmcg.org/we-need-your-help/)*

**Vernal Pool \_\_\$25 Stream \_\_\$50 River \_\_\$75 Pond \_\_\$100 Bay \_\_\$250 Lake \_\_\$500 Aquifer \_\_\$1000 Other \_\_**

**NAME** \_\_\_\_\_

**ADDRESS** \_\_\_\_\_

**PHONE** \_\_\_\_\_

**EMAIL** \_\_\_\_\_

**Are you interested in being a GMCG Volunteer?  YES**

**PLEASE RENEW YOUR MEMBERSHIP TODAY** and encourage your family, friends and neighbors to join GMCG.

GMCG is a non-profit 501 (C)3 tax-exempt organization. We are funded by grants, memberships, and donations.

### Creating a future gift .....

One of the most meaningful ways to ensure your legacy of caring about clean water and the protection of our natural resources in the Ossipee Watershed is to include GMCG in your estate planning. Please contact us if you would like to discuss details and how you can support GMCG in this way. We accept donations of real property, stocks, bonds, mutual funds, life insurance policies and gift annuities. Donations are tax-deductible to the full extent of the law.

**Our Federal Tax Identification number is: 02-0498020.**



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# The Watershed News

**Save the Date**  
**December 4**  
**Youth Water Quality**  
**Presentation**  
**Remick Musuem**  
**6:00-8:00 pm**

**Deadline for**  
**Winter Newsletter**  
**submissions is December 10th**

EVERY PERSON CAN MAKE A DIFFERENCE AND EACH PERSON SHOULD TRY.



Sign up for event updates with *Watershed Happenings* and stay in the flow! Sign-up at [www.gmcg.org](http://www.gmcg.org)