

The Watershed News

Volume XV, Issue IV

Autumn 2011

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

Road Salt Reduction Training to be held October 28th

In 2010, GMCG hosted a training for road agents and municipal officials on Road Salt Reduction. Due to popularity, we are offering it again on October 28th.

The New Hampshire Department of Environmental Services (DES) reports that over 30 waterbodies in the state are now impaired due to chlorides from road salt.

Over the past ten years, GMCG's water quality monitoring has shown a handful of sites in the Ossipee Watershed with elevated chloride levels. Michelle Daley, a research scientist at UNH and partner to the GMCG Water Quality Monitoring program noted that "in some places, salt concentrations are higher than those found in the seacoast region of the state where ocean water plays a larger role." Her research on the Ossipee Watershed's water quality data, along with that of the Lamprey River Watershed, shows that in many parts of the state, chloride levels exceed state standards even during the summer due to chloride-saturated groundwater.

GMCG will partner with the UNH

Technology Transfer Center (UNH T²) to provide a training on **October 28th** at the Ossipee Town Hall 8:30 AM-2 PM.

The purpose of the "Road Salt Reduction Training" is to discuss the influences that winter maintenance has on the environment and some ways to mitigate these impacts. The training is for Department of Public Works and DOT directors and staff, road agents, town engineers, transportation planners, planning board members, conservation commissioners, and others interested in how they can reduce the use of road salt in winter road maintenance. The workshop will also introduce attendees to road salt alternatives and their pros and cons in terms of effectiveness and environmental impact.

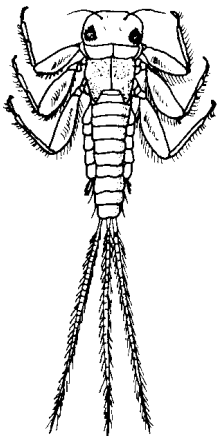
Steve Gray will be the instructor for this training. Gray is a former NHDOT state maintenance engineer with over 35 years experience and has taught this class since its creation in 2009. Among the topics that he will cover are: *the importance of winter operations;*

challenges to highway departments; salt reduction techniques; de-icing chemicals; snow disposal guidelines; winter maintenance policies and liability; record keeping; environmental concerns; and new technology.

This program is a UNH T² Center Roads Scholar Training Activity with 5 Environmental Hours. The workshop is eligible for Professional Development Hours (PDH's), as well as Continuing Education Units (CEUs).

GMCG will offer five free spots for municipal officials on a first come first serve basis—one per town. Participants can register online at www.t2.unh.edu/training, or by contacting 800-423-0060 or t2.center@unh.edu. Cost is \$45 for municipal workers and \$60.00 for private contractors and others and includes instruction, materials, refreshments, and lunch. Funding for this workshop is made possible by NH DES, Adelard and Valeda Lea Roy Foundation and Little Family Foundation.

Watershed Youth present information on Benthic Sampling in November



Ossipee Watershed students and teachers have, for the sixth year in a row, helped GMCG complete sampling for benthic macroinvertebrates through the Volunteer Biological Assessment Program (VBAP). Aquatic macroinvertebrates—such insects as mayflies, dragonflies, black flies and mosquitoes, as well as worms and snails—are the creatures that are visible to the naked eye ("macro"), lack a backbone ("invertebrate"), and spend at least a part of their life cycle in the water. Students in grades 4-6 from the towns of Sandwich, Effingham, Ossipee, and Freedom became citizen scientists as they collected these

critters from their rocky streambed homes, sorted and identified them, and then calculated the health of the stream based on each animal's sensitivity to or tolerance of pollution. The students will come together to present their results from 5 different streams on Thursday, November 17th from 6:00 to 7:30 P.M. at the Remick Museum in Tamworth Village.

For students from Sandwich and Ossipee, macroinvertebrates take on special meaning. This spring, students from those towns will hatch Eastern brook trout in cold water tanks in the classroom, ultimately releasing the fish into local rivers. Not only do many macroinvertebrates indicate the high water quality required by brook trout, they also serve as an important food source for the fish. By participating in both programs, students gain a much broader perspective of and attachment to our watershed's ecology.

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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Sandwich, Peter Pohl
Tamworth
Maine, Peter Zack
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Carol Felice, Madison
Alice Custard, Freedom

Staff

Executive Director, Blair Folts

Dirt Road Maintenance is about the "perfect crown"

The Perfect Crown

©Russ Lanoie 2001, Conway, NH

I think that I shall never see, a dirt road shaped as it should be.

Not graded flat the way some do, or rutted like a dubble-u,
Nor rounded like a baby's rear, but pointed like a Martian's ear
To keep the surface of the road from looking like a horny toad
With bumps and craters on its back, and slippery mud, due to a lack
Of drainage, shaped so it can't shed all water off its back, instead.

The trouble with a rounded road, is that it's flattest where the load

Is double that of either side, because it's where more tires ride,

'Cause cars both going to and fro, crowd toward the middle, don't ya' know?

New England dirt roads narrow be, from ditch to wall and rock to tree.

The simple rule to keep your road from looking like that horny toad

Just make it look like letter "A" and you will find that it will stay

As smooth as that new baby's ass, because it's shaped so **it can last!**

* * * * *

For further information on how to achieve proper road crown along with other time proven rules for gravel road construction and maintenance, see **A Ditch in Time**, at www.RuralHomeTech.com

"One recent Fall I came upon a Cat 14G (*big*) grader working on a well-traveled gravel road in one of our local developments. The scarifier was down and ripping and it was clear that the operator was preparing the surface for reshaping, or so I thought. Late that winter I happened to be traveling the road again and discovered that it was as full of potholes as ever. I noticed that, in spite of the full-scale firepower unleashed on the road to rework it the previous fall, it was still just as flat as it could be. The irony of the situation prompted me to write this ditty." Russ Lanoie

Russ Lanoie presented a workshop on Road Maintenance at GMCG's State of the Lake forum in August. He spoke about the role that proper maintenance of dirt roads and dirt driveways has on protecting water quality in rivers, streams, ponds and lakes particularly from sediment and phosphorus loading.

Watershed Conversations

Editor's Note: *Watershed Conversations is intended to provide a forum for the six towns of the Ossipee Watershed to share news of their conservation and planning activities and an opportunity to find creative solutions regarding watershed issues.*

Think Locally; Act Watershed.

Freedom

The Planning Board (PB) is looking at Cell Tower Site Plan Review Regulations (SPR) since the existing SPR regulations do not include the specific requirements needed to determine if an application meets the zoning ordinance. The board is adding these items and will have specific site plan review regulations for cell towers. The PB recently approved a cell tower application that focused heavily on the access road and storm water plan since the road is a half a mile long up the side of a hill. Freedom requires applicants to provide storm water plans designed for 25 years storms. A consultant advised the PB that storms in the North East now tend to be heavily front loaded with rain, such that runoff is equivalent to a 50 year storm initially and results in more erosion than a 25 year storm would carry. This can contribute to siltation and phosphorus loading to nearby streams. At the suggestion of the PB, the applicant agreed to design the dirt road to handle a 50 year storm out of their own "good will" even though it caused them to have to seek an alteration of terrain permit from DES. Additionally, the ZBA has requested that the PB review the cell tower height limitations above the tree canopy; the board will consider this and other changes to the article.

Madison

The planning board has re-initiated a discussion on developing a steep slopes ordinance, which will be discussed at subsequent meetings.

The Town's code enforcement officer has reviewed the guidelines of its recently adopted Groundwater Protection Ordinance and is careful to check on sites of concern.

Ossipee

Window on the Ossipees—This project is coming along nicely. The Kiosk is up and we are working on the informational panels now. Ossipee Lake Milfoil—Lake Hosts have made at least one save at the Pine River Boat Launch so far this season.

Sandwich

The PB is engaged in an effort to coordinate implementation of the recent Master Plan rewrite and is soliciting input from all stake holders. The board is also looking at adopting Dark Skies regulations as part of the Site Plan Review and Subdivision Regulations; considering amendments to the PWSF (cell tower) ordinance; considering amending the GPO ordinance to cover all of the town, and to address large commercial groundwater withdrawal. The Planning Board is also working with Lakes Region Planning Commission and NH Audubon in their efforts to produce a Smart Growth assessment for the Town. The PB has asked the CC to review the wetland regulations and to update the Prime Wetlands maps and look for ways to make the maps more accurate.

The Sandwich Conservation Commission is currently considering implementing recommendations of the Town's Master Plan; several of those items deal with protecting the town's groundwater resources. Both the chairs of the Conservation Commission and of the Planning Board attended GMCG's excellent workshop on how to implement a ground water protection ordinance. As a starter, we are considering a drinking water survey that may lead to choosing strategic sites to test drinking water from all four sources: bedrock aquifers, stratified drift aquifers, springs, and streams.

Tamworth

The PB is working on doing a town build-out analysis, and currently has no plans for other new ordinances. There is an Ordinance Committee composed of members from the select board, PB and conservation commission (CC). They are planning on bringing a warrant article to the 2012 meeting to rescind some ordinances that are out dated or superseded by new ordinances or state RSA. The CC is planning on creating a new wetlands map and maybe some minor changes to that ordinance.

Effingham

The Master Plan Committee is preparing drafts of several chapters of the Town's Master Plan. The many members of the committee have been working with the planning board for the past several years collecting data and information through surveys and public forums.

SRCC samples water after Irene and finds...

BY DENNIS FINN

Hurricane Irene roared up the East Coast with strong winds and heavy rainfall. Everyone in New England felt nature's force with this storm and although it was not nearly as fierce as a hurricane can be, the impacts were powerful and long lasting. In many instances, rivers responded to the 3 to 6 inches of rainfall by overflowing their banks onto the adjacent floodplain, making it difficult and perilous to collect our data. Undaunted in their attempt to document the damage, our water quality volunteers sampled: dissolved oxygen, pH, e Coli, specific conductivity, and turbidity. At testing time, the results were somewhat subtle, belying the tumultuous event that had just occurred. But the impact of one parameter on the

surface water was obvious and noticeable to everyone. This was the turbidity of the water.

The heavy rain undermined banks and roads, and, like Mother Nature's bulldozer, scraped soil, sand and sediment into the rivers. Almost coffee-colored and filled with debris, the rivers looked unnatural and dangerous. Our turbidity meter typically measures the sediment in the water at levels around 0.40 to 4.00, even after heavy rains. The Swift River in Conway came in at 350.00.

Irene was not the storm that it could have been. Yet, the telltale evidence she left behind will be with us for awhile.

Dennis Finn is Executive Director of the Saco River Corridor Commission, our downstream neighbor and partner in Maine.

Hunting for the county's Big Trees

BY DR. KAMALENDU NATH

It was a day to die for, redeeming the frustrations of days past on a hunt for the big, big! Big Trees that is. August 11: a day dry, crisp, sunny with a sweat-swiping cool breeze as rewarding as any New England summer day.

We measured two county champion candidates—an *Elm* tree across from the Carroll County jail in Ossipee and then a *Bigtooth Aspen*, a serendipitous find, on our way to two other trees on the county forest that Wendy Scribner had scouted out. Wendy is the UNH Cooperative Extension forester for Carroll County. The venture was tempered with agony for Wendy, who sustained half a dozen wasp bites. Fortunately, her pain was assuaged by a prized porcupine remains—skin, quills and a few bones—that she found in a den and ferried along for the rest of the hike.

That was just half a day; the other half took us to a *Pitch Pine* along Province Lake in Wakefield thanks to information provided by a citizen nominator. We ended the day scouting at the Freedom village center with a find, amongst others, of a *Tulip* tree. And that's how the hunt for the tree champ candidates went that day, unlike days when we would hardly find any *Big Tree* candidate.

So what is a *Big Tree*? Well, first some background. Forester Joseph Stern, in 1940, put out a call to find and save the biggest trees in the country. The American Forests that year instituted the concept of measuring *Big Tree* champions for each tree species to benefit the awareness of the citizenry. The program, active in all 50 states and the District of Columbia, was introduced in New Hampshire in 1950 by the Society for the Protection of New Hampshire Forests. Approximately 861 native and naturalized tree species are eligible for the *National Register of Big Trees*. The *2011 National Register of Big Trees* contains a total of 751 grand champion trees in 45 states while 210 species yet remain without champions. The current *NH Big Tree* coordinator is Carolyn Page, assisted by the

UNH Cooperative Extension.

Tree measurement consists of three parameters: circumference at breast height (CBH); the average crown spread (ACS) and the vertical height (VH). These parameters are utilized in a point score system to determine the champion tree with the highest score. A tree can be a County Champ, a State Champ and on rare occasions a National Champ. In New Hampshire, a total of 94 State Champion trees can be found in a *Complete Listing of NH Big Trees*, Jan 07, 2010. Among these New Hampshire trees, six have made the National Champion list. Carroll County lacks about 80 trees tracked in New Hampshire. Only half of the 18 towns in Carroll County (Conway, Madison, Moultonboro, Ossipee, Sanbornville, Sandwich, Tamworth, Wakefield and Wolfeboro) have trees listed in the March 2009 Carroll County champion trees list. Hence Wendy and I (the *NH Big Tree*, Carroll County co-chairs) are working to improve that score. And we seek your help, as well.

Finding the champ is largely keeping



A County Champion *Blue Spruce* recently discovered near Routes 16 and 302 in North Conway.

vigilance and registering the tree. How many times have we driven by Province Lake but failed to register a prospective *Pitch Pine*, finally brought to our attention by a local citizen nominator? How many times have we driven by the Bavarian Chocolate Haus shop on Route 16 in North Conway and failed to notice the big, beautiful *Blue Spruce* at the corner of the adjacent First Church of Christ building as a county champ?

But not all big trees make the champ



Wendy & nominator by a *White Ash* trunk in Jackson – not a county Champion.

status. Following information from a nominator, we went up to Jackson and measured a very impressive *White Ash* only to find it lower in points than our current champ in Sanbornville. Nevertheless, close non-champs are kept in the files for contingency. You may find it interesting to learn that trees within the highest five points are designated as co-champs and a listed champ never leaves the list even when it leaves this earth; it is replaced in championship by one yet enjoying photosynthesis. Champions need to be re-measured at least within 10 years.

Finally, the owner of a *Big Tree* not only feels pride in such a possession, but can display a certificate awarded by the *NH Big Tree* Program. Anyone can be a citizen nominator. Crown your town and our county with a *Big Tree* specimen to sing for.

For more information please visit:

www.nhbigtrees.org,
www.americanforests.org
www.extension.unh.edu

or email:

carolyn_page@hotmail.com
wendy.scribner@unh.edu
kamalendunath@yahoo.com

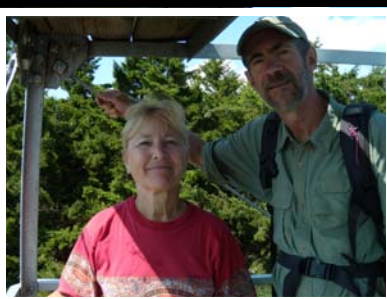
Kamal Nath is a resident of Effingham, former chair of the Effingham Conservation Commission and a volunteer land steward with the Forest Society.

Summer snapshots from the Ossipee Watershed

GMCG bids farewell to Program Director Tara Schroeder.



Jay Buckley offers a watermelon to thank her for her work protecting our water these past six years!



Board Chair, Noreen Downs and Richard Moore on Green Mountain



Patricia Carega, from Carega Gallery in Sandwich juried the Art in Action show. Hannah enjoys the art work!

Jeff Coombs of Chocorua Forest Lands lead tour for Watershed Weekend and talked about the BMPs they use in their forestry practices and



Elena Piekut, Youth Coalition Coordinator, greeted over sixty campers from Camp Calumet who helped spruce up Huntress House as well as create a new trail at the Green Mountain Natural Area



Summer intern Ryan Spencer from Plymouth State University helped the Land Trust Committee monitor conservation easements and created updated GIS and Google Earth maps.



Youth Coalition UPDATE

More and more curious and creative youth from around the Ossipee Watershed are becoming involved in GMCG's water quality research, natural resources advocacy, and best management practices (BMP) projects through the Youth Coalition.

In June, Brownie and Daisy Girl Scouts from Ossipee and Effingham got their hands dirty with work on the perennial beds and box culverts at the Ossipee Town Beach. Both of these BMPs mitigate erosion at this steep site, keeping the Town Beach looking nice and slowing the addition of nutrients such as Phosphorous into Duncan Lake. Thanks for your service girls!

Throughout July and August, many youth assisted with research on Ossipee Lake. Campers from Camp Huckins, Camp Marist, and Camp Calumet learned more about lake they enjoy every day at camp and collected data from both the Bearcamp River and the deepest spot in each of the lake's five bays.

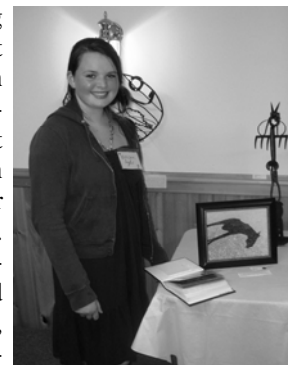
During Watershed Weekend at Camp Calumet, naturalist and educator Barbara Bald led a kids' macroinvertebrate stream adventure. Despite low expectations based on the stream's slow flow and sandy substrate, the group of young people who enthusiastically explored the stream with nets in hand found a wealth of critters—evidence of healthy biological quality.

In a continuation of the GET WET! program, the Youth

Coalition hosted a GET WET! Day in August. Local homeowners who picked up a private well sampling kit at Household Hazardous Waste collection brought their samples to the GMCG Office, where they were analyzed for six indicators of quality. Special thanks to Eddie Wims, an Ossipee 7th grader, for mastering the challenging Nitrates Station!

The summer's most exciting event was the Art in Action exhibit opening at the Little White Church in Eaton. Artists of all ages responded to a call for work that celebrates the role of the arts in creating change and exhibited their art together on an August evening. Many of the artists showed an aptitude for using recycled and found materials to create something new, beautiful, and evocative. A follow-up show was held in September at the Patricia Ladd Carega Gallery in Center Sandwich.

Have a great school year!



Allison Inglis, Kingswood Senior, poses with her photography at the Art in Action exhibit opening.

Watershed Planning for the Ossipee Watershed is introduced

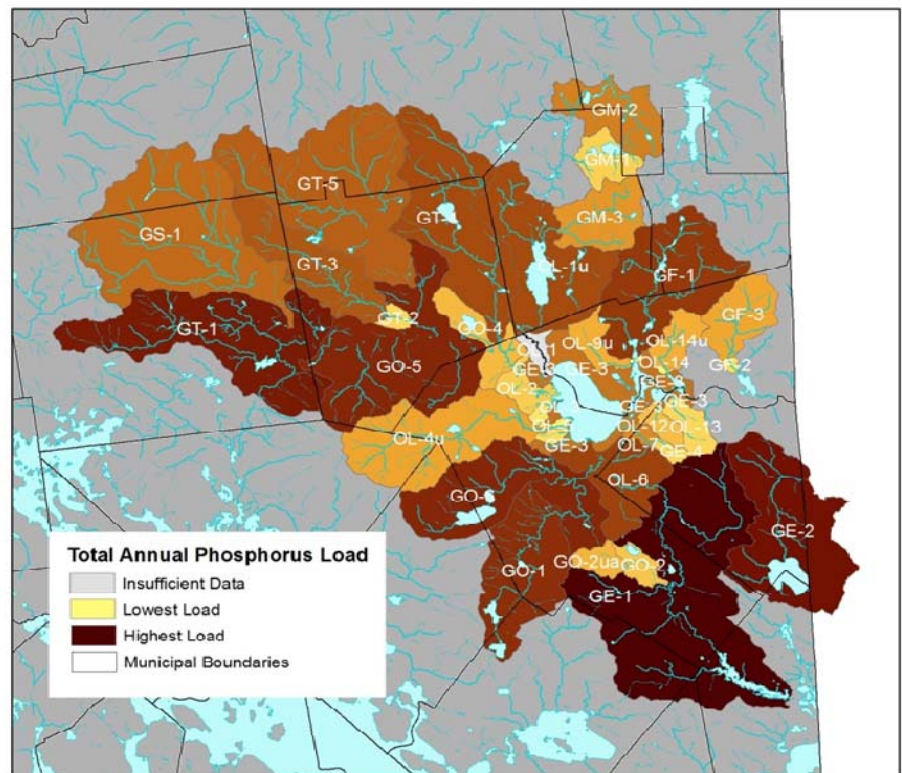
This summer GMCG collaborated with a consultant team including the firm Jeffrey H. Taylor and Associates, Plymouth State University, and the Society for the Protection of New Hampshire Forests. The team was hired in May of 2011 to prepare a *Methodology and Prioritization Analysis for Watershed Planning in the Ossipee Lake Watershed*. The results of this effort are now available in a report on the GMCG website ([link?](#)), and provide a framework for how best to proceed with a watershed planning effort in the Ossipee Watershed.

This initial step toward a watershed management plan included reviewing existing water quality data collected by a variety of groups in the watershed, identification and analysis of the sub-watersheds, identification of missing data, and evaluation of the feasibility of phasing future watershed planning efforts. Mark Green of the Plymouth State University Center for the Environment took the lead on the review and analysis of water quality data in the watershed. The Geographic Information Systems (GIS) analysis performed by Dan Sundquist of the Forest Society then allowed the team to review the volumes of water quality data by sub-watershed and better understand the relationship between water quality data and

the land uses in each watershed before drawing some conclusions for next steps.

This analysis has helped further clarify water quality issues in the Ossipee Watershed. The results identified missing parts of the watershed puzzle and data that, if collected, would be helpful in segregating natural from anthropogenic sources of phosphorus. This differentiation is critical to identifying, designing and costing any mitigation measures to reduce loading of phosphorus, chloride and other pollutants. Additionally, problematic sub-watersheds were identified in the

system and it was determined that more detailed land use data is needed to help better understand each sub-watershed's potential impact on total phosphorus loading. There are some interesting findings across the Watershed that deserve further investigation with all of the towns fully engaged. These include the correlations between phosphorus levels and the presence of large wetland complexes and development activity, and chloride levels and road density. Meetings to present the findings and discuss next steps will be scheduled throughout 2012.



GMCG receives the Jacqueline and Larry Leavitt Bequest

Hot August cricket sounds surrounded the kitchen table as I worked on a draft of GMCG's first strategic plan. It was 1998. A knock came at the front door. "Hey kiddo, I know you went home frustrated last night from that meeting but I just want to let you know that we support what you are doing" It was Larry Leavitt, chair of the Effingham Conservation Commission and my neighbor.

When he passed away in 2003, the town lost not only a great voice for conservation but also one of the early settlers of Effingham. Larry's family had been the founders of "Leavitt Town" as it was called prior to Effingham. In 2002, GMCG established a water quality monitoring program and Larry was one of the first volunteers. He and Fred Van Cor were dedicated to their river sites and collecting water quality data. After Larry passed away, his wife Jackie worked with GMCG to put a conservation easement on their property. "Larry loved this land and also cared for Green Mountain and we wanted GMCG to help create a conservation easement to protect land for animals and forestry forever." In 2006, GMCG worked with Jackie to create the Larry and Jackie Leavitt Easement. When Jackie suddenly passed away this winter, the community lost a wonderful neighbor and

advocate for animals and the natural world.

It was a touching surprise when Larry Leavitt's niece, Dale Heckler contacted GMCG to let us know that we were named in their wills. This is GMCG's first bequest for a total of \$35,000 from Larry and Jackie's estates and a donation from Dale's workplace, Amgen. We plan to honor the legacy of Larry and Jackie, their commitment to the community and to water quality protection. Please see future newsletters for more information on how GMCG will honor this very generous and meaningful bequest.



Dale and her son Matt in the Leavitt homestead

Autumn Calendar

Friday, October 28th: Salt Reduction in Winter Road Maintenance, 8:30-2:00 Ossipee Town Hall. A UNH T2 Center Roads Scholar Training Activity. 5 Environmental Hours. Cost \$60. Designed for Public Works Directors & Road Agents, others who plow snow, Municipal Engineers, Transportation Planners, Conservation Commissioners & Planning Board Members. The Workshop will discuss the influences that winter maintenance has on the environment and some ways to mitigate these impacts. For more details and to register, visit: http://www.t2.unh.edu/training/salt_reduction_chocorua.pdf Five FREE spots available for Municipal Officials, on a first come, first serve basis, one per town. To inquire about a FREE spot please call GMCG at 539-1859. .

Thursday, November 17th: Ossipee Watershed School Presentation & Open House. 6:00-7:30 p.m. at the Remick Country Doctor Museum & Farm in Tamworth. Local students that have participated in educational programs focused on water quality in the Ossipee Watershed will present their experiences and findings to the community. Free and open to the public. Light refreshments will be served. FMI, visit GMCG's School website: <http://www.gmcg.org/>

Your Membership Will Make a Difference.
PLEASE renew your 2011 membership today!
 Every drop counts! Thank you!

(Please make checks payable to Green Mountain Conservation Group, P.O. Box 95, Effingham, NH 03882)
 Vernal Pool ___\$25 Stream ___\$50 River ___\$75 Pond ___\$100 Lake ___\$250 Donation ___\$500 Other ___

NAME _____

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Are you interested in being a GMCG Volunteer? YES

PLEASE RENEW YOUR MEMBERSHIP TODAY and encourage your family, friends and neighbors to join GMCG. Thank you! GMCG is a non-profit 501(c)(3) tax exempt organization. We are funded by grants from foundations, memberships and donations. Please consider us in your estate planning. 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 Dates:
October 28th Road Salt
Reduction Training**

**GMCG Annual Meeting
with Ben Kilham
January 21, 2012**

**Deadline for
Winter Newsletter
submissions is December 15th**

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

Of water's Charge (Fall)

dread
apprehension erupts
on descending
fog
veiling sights beyond

Kamalendu Nath 2011

