Volume 3, Issue 1 *Winter 2006*

Courses of Change

Making the Choice: Pervious versus Impervious

As you look out your front window you may not be able to see it underneath all the snow but you may be thinking about it. For many of us, the thought and planning of warmer weather projects helps carry us through the long cold winter months. A project that is becoming increasingly popular is the paving of driveways. While convenience may be the main reason to consider pavement, have you thought about the possible detrimental impact impervious surfaces have on water quality?

When we dig around in our backyards, either to plant a tree or to put in a foundation, we are in what is called the unsaturated zone. When we hire someone to drill a new well, they must go down through that zone until they hit the saturated zone. That distance can be anywhere from a few feet to a few hundred feet depending on where you are. The upper portion of the saturated zone is referred to as the water table and below that is our reservoir of groundwater. When the rain falls or the snow melts, that water percolates through the unsaturated zone until it reaches and replenishes our groundwater supply. By now you may be wondering what this has to do with your driveway.

Pavement is an impervious surface which means the precipitation that falls upon it can't get through to the otherside. Instead the water quickly glides along the pavement in search of a surface that is considered pervious, or pourous (with holes in it). Although this may seem like an insignificant issue, a problem arises in that the water moves across the impervious surface picking up contaminates along the way such as oil, gas, fertilizers, sediment and even bacteria. When the water does finally reach a pervious surface, or a waterbody, it can be full of all these pollutants which in turn introduces a huge surge of contamination into our water supply. On the other hand, when precipitation is allowed to gradually penetrate through the unsaturated zone, as it does in unpaved areas or in areas that have been covered by a pourous surface, these contaminates are naturally filtered out before they reach the groundwater supply.

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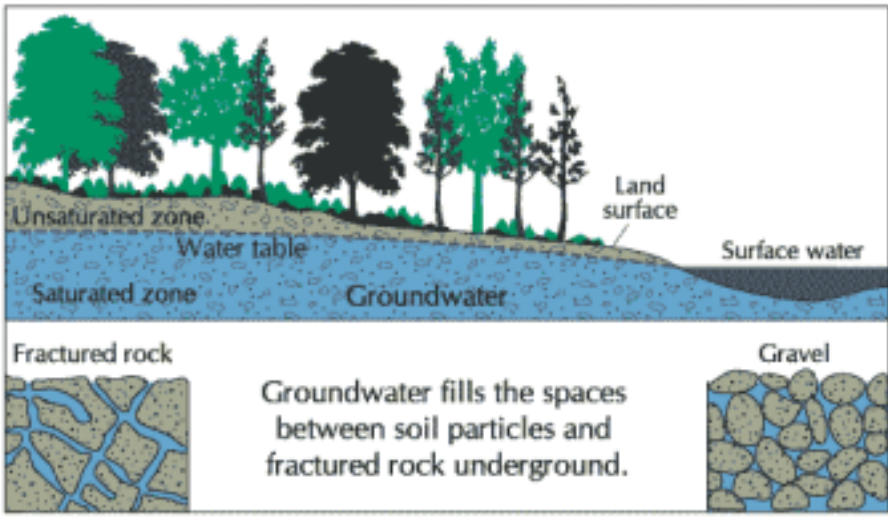

Image compliment of US Geological Survey

Source: http://www.kpud.org/water_resource/edu_pages/grndwtr_101.html

Inside Our Winter Issue...

Courses of Change is a quarterly publication of the Saco River Corridor Commission. We encourage our readers to submit ideas for publication in future issues. The deadline for submission in our Spring 2006 edition is April 15, 2006.

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Mission Statement
The Saco River Corridor Commission is committed to protect public health, safety, and the quality of life for the State of Maine through the regulation of land and water uses, protection and conservation of the region's unique and exceptional natural resources, and through the prevention of impacts caused by incompatible development.

Printed on Recycled Paper by:
Cardinal Printing Company - Denmark, Maine

Executive Director's Column...

The Saco River Corridor Commission has begun the new year with five new members! During the past several weeks we have welcomed community members from Denmark, Limington, Parsonsfield, Saco, and Standish as our newest volunteer Commissioners. We are very excited about the new faces, however, we still have vacancies in the Towns of Baldwin, Buxton, Cornish, Dayton, and Newfield. We also have slots open for alternate positions to represent the communities of Brownfield, Fryeburg, Hiram, Hollis, and Waterboro. We encourage anyone who is reading this that lives in those towns to contact the Commission Office to discuss how you can volunteer for a unique agency that is unlike any other organization in the entire state!

As we usher in the New Year the Commission is, as always, looking toward the future. Currently our regulatory work and water quality monitoring have worked well together. The regulations are designed to protect our resources and the monitoring program was put in place to ensure that the regulations are working. But are these two programs enough? Will our valuable resources be protected on the strength of these two elements not just now but into the future?

We view our role as Commissioners and staff as members of a community. In this instance, our community is twenty towns strong. To work within this extended community, to be active and involved, and to make a sincere contribution, all entities involved must understand the resource needs of each part of the community. Over the next few months, as winter gives way to spring, a group of Commissioners will meet periodically to discuss issues important to this Commission and to the towns we serve. Topics that we will consider include community awareness, outreach and education, and how can the Commission encourage and foster wise resource use.

With each passing year, we see a greater influx of development coming in from outside of the corridor leading to a larger and larger community. The construction of second homes, the purchase of land for future speculation and the building and selling of homes for a recreational market are all taking place at a tremendous rate. Many people come to Maine to experience the clean water and air, the rural atmosphere and the slower pace of life. Many people come here because the areas they currently live in are already overly developed and in many instances spoiled. It is a paradox that folks will come to this area for its beauty and yet within a short time they want to recreate the areas that they are trying to escape from. These increasing demands on the community we live in is of great concern to the Commission and one of the primary reasons we felt it was important to discuss the issues that are important to all members of our regional community.

Dennis Finn has been the Commission's Executive Director since 1995.

Water Quality Update

Believe it or not, our sixth water quality testing season is scheduled to begin the week of April 10th. Although we have no planned increases to the current 29 monitoring sites we are always looking to expand our monitoring efforts in the State of New Hampshire. In addition, we encourage input from the Maine communities within the Saco River Corridor regarding sites along the rivers that may have changing needs that should be monitored.

We are however, hoping to begin sampling macroinvertebrates during the 2006 testing season. Macroinvertebrates are organisms that are large (macro) enough to be seen with the naked eye and lack a backbone (invertebrate). These aquatic organisms live in all types of running waters and typically live either part or most of their lives attached to submerged rocks, wood debris, or vegetation. These organisms are very intolerent of pollution which is one reason why they are good indicators of water quality. More information to come on this expansion to our program in the spring.

We now have five years of data covering over 100 miles of river within the State of Maine. Since the inception of this program our dedicated volunteers and staff have performed over 19,000 individual water quality measurements. Our current paramemters include pH, temperature, dissolved oxygen, turbidity, alkalinity, *Escherichia coli*, total Kjeldahl nitrogen, total phosphorus, and orthophosphate. All of our data is available on our website located at www.srcc-maine.org. When you visit our website you can also learn more information about our monitoring program including the exact testing locations, explanations of all water quality parameters, why we chose to monitor those parameters, and product information on the equipment our volunteers use as part of our program.

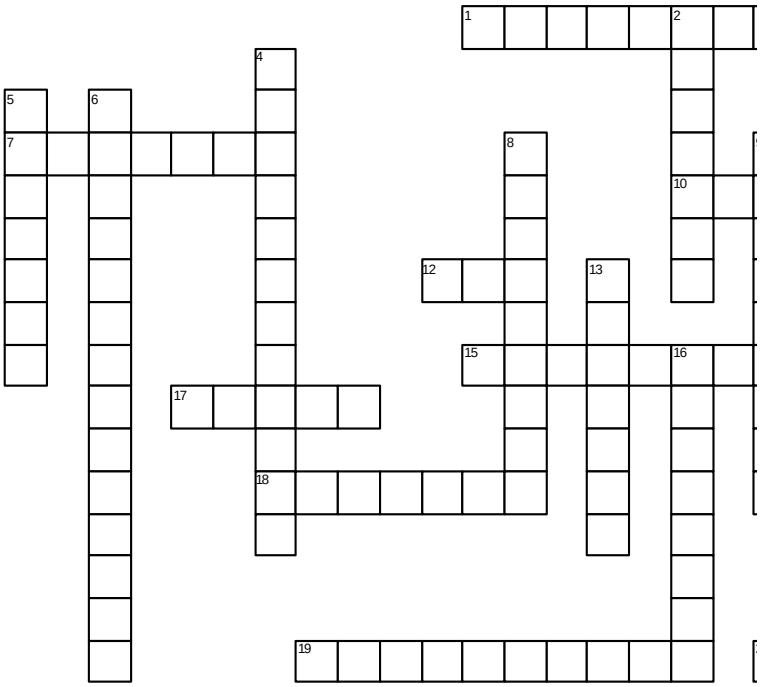
Before testing begins in just two short months, we are scheduling mandatory training sessions for all water quality volunteers. This training is required as part of our Quality Assurance Project Plan (QAPP) which is a formal agreement between the Saco River Corridor Commission and the United States Environmental Protection Agency. A QAPP is a document which outlines all procedures of a monitoring project to ensure that testing results are accurate. Our particular QAPP is unique in that it also covers the water quality monitoring efforts of the Green Mountain Conservation Group (GMCG) based in Freedom, New Hampshire. The GMCG has been monitoring locations in New Hampshire since 2002. To learn more about the Green Mountain Conseration Group or the sites they monitor please visit their website located at www.gmcg.org. SRCC volunteers will be notified of specific training dates as the spring nears.

If you are interested in becoming a volunteer or would just like more information please contact the Commission Office for details.

"Time is a sort of river of passing events, and strong is its current; no sooner is a thing brought to sight than it is swept by and another takes its place, and this too will be swept away."

-- Marcus Aurelius

Crossword Contest Deadline: April 1, 2006



Each reader who correctly completes and submits this crossword will be entered into a drawing to receive one of the following books.

Small Wonder
By Barbara Kingsolver
or
The River Reader
By John A. Murray

PLEASE CIRCLE WHICH BOOK YOU PREFER.

ACROSS

1 Insoluble material suspended in water that consists mainly of particles derived from rocks, soil, and organic materials
7 An underground layer of unconsolidated rock or soil that is saturated with usable amounts of water
10 With oxygen, needing oxygen for cellular respiration
12 An atom or molecule that has lost or gained one or more electrons
15 Water pollution control laws based upon the Federal Water Pollution Control Act of 1972
17 A substance in gaseous form
18 A branch of science concerned with the interrelationship of organisms and their environments
19 An element considered the key nutrient in controlling eutrophication in lakes and ponds
20 Having a pH value of less than 7

DOWN

2 A marine ecosystem where freshwater enters the ocean
3 Fit or suitable for drinking
4 A person whose work is making maps or charts
5 The place or type of site where a plant or animal naturally or normally lives and grows
6 A naturally occurring change that takes place after a water body received inputs of nutrients, mostly nitrates and phosphates, from erosion and runoff of surrounding lands
8 The science that deals with the physical, chemical, and biological properties and features of fresh waters, especially lakes and ponds
9 A stream that flows into a larger stream, river, or another waterbody
11 Imaginary line on the surface of the Earth connecting points of the same elevation
13 To follow a winding course
14 Land area from which water drains to a particular water body
16 Areas that, at least periodically, have waterlogged soils or are covered with a relatively shallow layer of water

Notes From Upstream

Water levels remain high with 7.97 inches of rain recorded at the USGS Tamworth station on the Bearcamp River for the month of October. Although the wetlands have been retaining much of the excess water, a few towns experienced flooding with roadway damage in a number of cases. According to Larry Dingman, professor emeritus at the University of New Hampshire, although all of this rain has swelled rivers and streams, much of it is filling the acquifers since the trees have lost their leaves and are no longer taking up any water. In fact, this October the responses of grounwater and streams has been so immediate and pronounced that records are being broken for ground water and surface water levels. Predictions for a snowy winter on top of saturated ground water levels should make for a muddy spring!

The Ossipee Watershed RIVERS monitoring program continues through the winter for the second year with sampling occurring at six sites, one in each of the watershed towns. Physical parameters have been analyzed for RIVERS and Ossipee Lake Tributaries sites, with some interesting results. This was the first year the GMCG was able to collect conductivity data for the sites with the purchase of a multi parameter meter earlier in the season. Specific conductivity levels were elevated above 100 uS/cm (microsiemens per centimeter) at a few of the sites, indicating some form of impairing input. Feedback from municipal officials and bracketing of sites has led us to believe that contamination from road salt application on major roadways may be the cause of these higher readings in a few of the cases. According to the NH Department of Environmental Services, conductivity levels are increasing at a statistically significant rate in the state's freshwater bodies, largely due to road salting activities. Excessive levels of salts in waterways can have detrimental impacts to drinking water and aquatic life. Higher livels of chloride can be toxic to certain forms fo aquatic life, and plant species can be impacted by much lower concentrations. To learn more about how your town can implement best management practices such as de-icing alternatives, proper storage of salt, minimal impact salting strategies, and proper snow disposal practices, visit: http://www.des.state.nh.us.factsheets.

Tara Schroeder is the Program Director for the Green Mountain Conservation Group's RIVERS Water Quality Monitoring Program which began four years ago. If you have any questions, Tara can be reached at the GMCG's Freedom Office at 603-539-1859.

Pervious vs Impervious

...Continued from Page 1

The next question many of you may have is how can your seemingly small driveway have such a huge impact on water quality. Well, if your driveway was the only one it probably wouldn't have a significantly measurable impact. The problem is in the fact that more and more homeowners are opting for pavment for various reasons. The cummulative impact of all these driveways has the potential to create a negative impact on water quality. The Saco River Corridor Commission (SRCC) has been testing water quality at various locations along the Saco, Ossipee, and Little Ossipee Rivers for the past five years. As the number of paving projects increase over the years, we may have an opportunity to see the effect pavement has on water quality. There are vast amounts of information available to the homeowner by simply searching "pavement alternatives" on the internet. The SRCC is planning to schedule a public speaker during an upcoming Commission Meeting for either March or April to discuss this topic with area residents. Please check our website for more details as the time nears.

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COURSES OF CHANGE - WINTER, 2006

• Our newsletter is available on the web at www.srcc-maine.org. If you would like to receive this publication electronically, please send us your e-mail address.

• Has your address changed? If so please let us know!

Images From The Past

The excerpt and photo below were taken from *White Pine on the Saco River: An Oral History of River Driving in Southern Maine* by Michael P. Chaney and published by the Maine Folklife Center at the University of Maine, Orono, Maine.

"This was at Salmon Falls, which is underwater now, you know. It was really a pretty wild place. You had to be very careful. There was a rock there, just below the bridge, and the logs would jam against that. They would go through alright, but certain logs, they would keep building up there once in a while. When you let the tail end of the drive through, there would be a dozen or fifteen logs left on this rock. They would be winged in to the shore on the east side so that you could walk out onto them alright, but, if you took the logs off you were stranded out there. What they would do, they would let a fellow go out and take those logs off, toss him a rope, he would tie it around his waist and hang on, and just jump."

A view of Turtle Rock in Salmon Falls Gorge in the 1920's now flooded by the Skelton Dam (built in 1945 - 1947).