ENVIRONMENTAL NEWS

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Newsletter of the N.H. Department of Environmental Services July-August 2013

COMMISSIONER'S COLUMN

Celebrating 25 Years of Rivers Protection in New Hampshire

In the early 1980's, the Town of Jackson fought the development of a hydroelectric facility on the Wildcat River at Jackson Falls. This led to the river's induction into the federal Wild & Scenic Rivers System and emphasized the need for a similar State program. In 1985, a group of concerned citizens and conservation organizations formed the New Hampshire Rivers Campaign to advocate for our rivers. The Campaign, which later became the New Hampshire Rivers Council, helped to establish the State's Rivers Management and Protection Program. Thanks to the efforts of many individuals, legislators, organizations and businesses, the New Hampshire Rivers Management and Protection Program is now celebrating its 25th anniversary with approximately 1,000 river miles designated into the Program.

Photo by Julie Joslin

On signing this landmark piece of environmental legislation, then-Governor Judd Gregg described the State's rivers as "emeralds in the crown jewels of New Hampshire," emphasizing the importance of protecting rivers for the benefit of future generations. To assist NHDES in administering the Program, the Legislature established the statewide Rivers Management Advisory Committee (RMAC). The committee is comprised of 17 members representing business, agriculture, hy-

Commissioners's Column, cont. page 2

ENVIRONMENTAL PROTECTION

Regional Greenhouse Gas Initiative Rules

Recently, you may have read many newspaper articles and opinion editorials regarding the Regional Greenhouse Gas Initiative (RGGI). RGGI is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont that began in 2009 to cap and reduce carbon dioxide (CO_2) emissions from the power sector. States sell emission allowances through auctions and invest proceeds in consumer benefits such as energy efficiency and ratepayer rebates. RGGI is spurring innovation in the clean energy economy and creating green jobs.

In 2012, a comprehensive program review was conducted by the nine RGGI states. Proposed amendments to RGGI have been incorporated into an Updated Model Rule released on February 7, 2013. More information on the Updated Model Rule and accompanying materials is available at www.rggi.org/design/program_review. The program review sought to ensure RGGI's continued success – effectively reducing CO_2 emissions and providing benefits to consumers and the region. An independent report by the Analysis Group, a national economic research firm, found that the investment of RGGI proceeds from the first three years:

- Generates $1.6 billion in net economic benefit region-wide through the end of the decade;
- Puts $1.1 billion in electricity bill savings back into the pockets of consumers in the region over the next decade;

RGGI, cont. page 3

Commissioner's Column

continued from page 1

droelectric, water supply, conservation, recreation, fish and game, historical interests, and municipal and state government.

A unique aspect of the Rivers Program is that local residents or groups nominate their river for designation. As a result of this grassroots support, 18 rivers or river segments flowing through 126 towns, places and state parks are now part of the Program. Upon designation, a partnership is created among the State, local citizens and their towns through the formation of a local advisory committee (LAC). In true New Hampshire tradition, hundreds of citizens have volunteered their time and expertise to help their communities manage rivers and provide the State with local input regarding development proposals and other decisions that may impact rivers.

The list of LAC successes is as long and varied as New Hampshire's rivers themselves. In one case, the protection measures included in the Program helped local citizens defeat a proposal to establish a new solid waste landfill in a river's floodplain. Through its monitoring program, another LAC identified an illegal sewage discharge and worked cooperatively with the municipality to disconnect it, eliminating its flow into the river. Yet a third LAC has worked successfully with communities and organizations to increase public access to the river by refurbishing existing recreational facilities and distributing river trail and recreation maps. The cumulative accomplishments of the LACs are so impressive, they were presented with the President's Volunteer Service Award and the Spirit of New Hampshire Volunteer Service Award in 2008. The Instream Flow Program, with its pilot projects to determine how to best meet the needs of water users on designated rivers without harming river ecosystems, has also benefitted from the input of dozens of volunteers. Collectively, RMAC and LAC volunteers have donated approximately 60,000 hours of their time, valued at over $1.3 million, to the State over the last 25 years.

Like the ceaseless blue flow of our "bejeweled" rivers, volunteers have tirelessly powered the success of the Rivers Program. From the determined NH Rivers Campaign volunteers who called for the legislative enactment of the Program to the hundreds of Granite Staters who have contributed their time and talents since its inception, the Rivers Program has provided the framework for cooperative state and local partnerships. All who have participated in the Rivers Program can be proud of their work – the State's environment and economy are healthier because our rivers are clean, clear and accessible for present and future generations. ■

Jim Poisson of the Air Resources Division accepts the Governor's Excellence in Energy Efficiency Award for individual recognition for his dedication to increasing energy efficiency in state buildings from Governor Maggie Hassan.

ENVIRONMENTAL NEWS NHDES

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RGGI

continued from page 1

- Creates 16,000 job-years in the region; and
- Keeps $765 million in the local economy due to reduced fossil fuel demand.

With the release of the Updated Model Rule, the RGGI states plan to revise their CO_2 Budget Trading Programs through their individual, state-specific statutory and regulatory processes. Each RGGI state seeks to complete its state-specific process and have the proposed changes to the program take effect on January 1, 2014. In New Hampshire, both statutory and regulatory processes are necessary. House Bill 306 lowers NH's CO_2 Budget in line with the other eight states. The bill has passed in both the House and Senate as of this writing and is awaiting Governor Hassan's signature. The statutory amendments now authorize the department to amend RGGI-related rules (Env-A 4600, 4700, and 4800). The rulemaking process, including an opportunity for a public hearing, will now be initiated.

Steve Rand, owner of Rand's Hardware, receives his RGGI rebate check from Amanda Holden, Program Director of the Retail Merchants Association of New Hampshire Energy Efficiency Program. They are standing in front of the newly installed Solar Hot Water system on Steve's building in Plymouth, NH. This system is just a portion of all the energy efficiency improvements made to the building through the program and is expected to save Rand's a considerable amount on energy costs.

Since its inception, opponents of the program have advocated for its repeal on the basis of increased electricity costs. However, repeal of the program (or not making the necessary changes to allow New Hampshire to remain in the program) would cost even more. Since all New England states are in RGGI, the direct cost of the program as borne in the wholesale cost of electricity on the regional grid, will continue to affect NH ratepayers whether NH participates or not. By passing House Bill 306 and allowing for continued NH participation, NH ratepayers will benefit from an estimated $6.6 million in RGGI auction revenues that would not be received otherwise, the vast majority of which are rebated to customers.

Through the RGGI-funded Efficiency Training Program, 80 year-old Ben Pratt is learning to install cellulose insulation at the Grapevine Family & Community Resource Center in Antrim.

Wholesale electricity prices in New England actually fell by nearly 23 percent last year to their lowest levels since 2003, according to ISO New England Inc., the operator of the region's bulk power system and wholesale electricity markets. RGGI investments have reduced demand and thus lowered the need for additional transmission and generation infrastructure to meet peak demand.

Two other related bills were also passed. House Bill 630 allocates a minimum of 15 percent of the portion of the program's fund that is not rebated to ratepayers to low income energy efficiency programs. Senate Bill 123 annually dedicates up to $2 million to awards for municipal and local government energy efficiency projects. ■

Eliminating Stage II Vapor Recovery Systems

When you pump gas, you may have noticed a rubber cup or sleeve on the nozzle that prevents vapors from leaking out as the gas enters into your tank. This is part of a Stage II vapor recovery system. Stage II vapor recovery systems capture gasoline vapors escaping from the vehicle fuel tank during refueling and route them back to the station's underground storage tanks. As part of New Hampshire's strategy to decrease ground-level ozone in counties that did not meet federal ozone standards, NHDES has required Stage II systems to be installed at gas stations in Merrimack, Hillsborough, Rockingham, and Strafford counties since 1992.

Since 1998, federal regulations have also required the installation of new technology on motor vehicles, referred to as on-board refueling vapor recovery or ORVR. Studies have demonstrated that Stage II vapor recovery and ORVR systems are not compatible and can actually result in an increase in emissions. While Stage II controls have reduced the amount of ozone-contributing volatile organic compounds released during refueling, their emission reduction benefits will decrease as a greater proportion of the vehicles in the state are equipped with ORVR systems. According to the New Hampshire Division of Motor Vehicles data, 87 percent of the light duty vehicles registered in the four counties where Stage II is required are model year 1998 or newer.

NHDES has worked closely with EPA on the development of new guidance that recognizes Stage II systems are no longer necessary. Due to the predominance of ORVR equipped vehicles, Stage II systems are only providing minimal emission reductions currently, and will eventually lead to excess emissions. In addition, ozone levels in the entire state are now in compliance with the federal ozone standard. Because of these developments NHDES has removed the requirement to install Stage II controls on new gas stations and allows decommissioning of existing Stage II systems. NHDES also requires the decommissioning of existing Stage II systems no later than December 22, 2015.

Facility owners will incur some costs to decommission Stage II systems. Costs are expected to range from less than $1,000 to $6,000 depending on the number of gas pumps at a facility. The one-time costs of decommissioning will be off set by eliminating the ongoing costs of maintaining Stage II vapor recovery systems, estimated by EPA to be about $3,000 per year for an average gas station (lower for smaller facilities, higher for larger facilities). Eliminating the requirement to install Stage II equipment at new or substantially modified facilities is estimated to save at least $30,000 per facility, with no adverse impact on public health or the environment.

For more information on vapor recovery please visit www.des.nh.gov A to Z LIST "Vapor Recovery." ■

***From L-R**: Larry Perron (Pembroke Historical Society), Armand Verville (Allenstown Historical Society), Grace Levergood (DES Project Engineer), Kent Finemore (NHDES Project Manager), Nadine Peterson (Division of Historic Resources Historian), Elizabeth Muzzey, (Director, Division of Historic Resources), Carol Hooper (Preservation Company Historic Consultants), Claudette Verville (Allenstown Historical Society), Jim Garvin (Local Historian).*

The NHDES Dam Bureau facilitated a well-attended event to unveil a National Park Service quality interpretive sign documenting the history of the Buck Street Dams and Island in Allenstown and Pembroke. As part of the process to permit the removal of the dams, NHDES engaged in a successful collaborative effort with the NH Division of Historic Resources and the Historical Societies from Allenstown and Pembroke to study the cultural resources at the site and mitigate lost. As owner of the dams on behalf of the State, NHDES committed to prepare and install the sign as part of the mitigation measures.

Province Lake Watershed Plan Underway

Over the past few years, Province Lake has experienced extensive, lingering blooms of potentially toxic algae. In addition, the lake is listed as "impaired" by NHDES due to high phosphorus and chlorophyll a. With EPA Clean Water Act Section 319 funding from the NHDES Watershed Assistance Grant Program, the Province Lake Association recently kicked off a watershed management and planning effort to provide a roadmap for improving Province Lake's water quality now and for the future.

Province Lake, with a surface area of 1,008 acres, is set within a 7.3 square mile watershed in Wakefield and Effingham, N.H. and Parsonsfield, Me. Province Lake flows to the Saco River watershed and is drained by the South River to the northwest. The lake is fed by Hobbs Brook and several small tributaries.

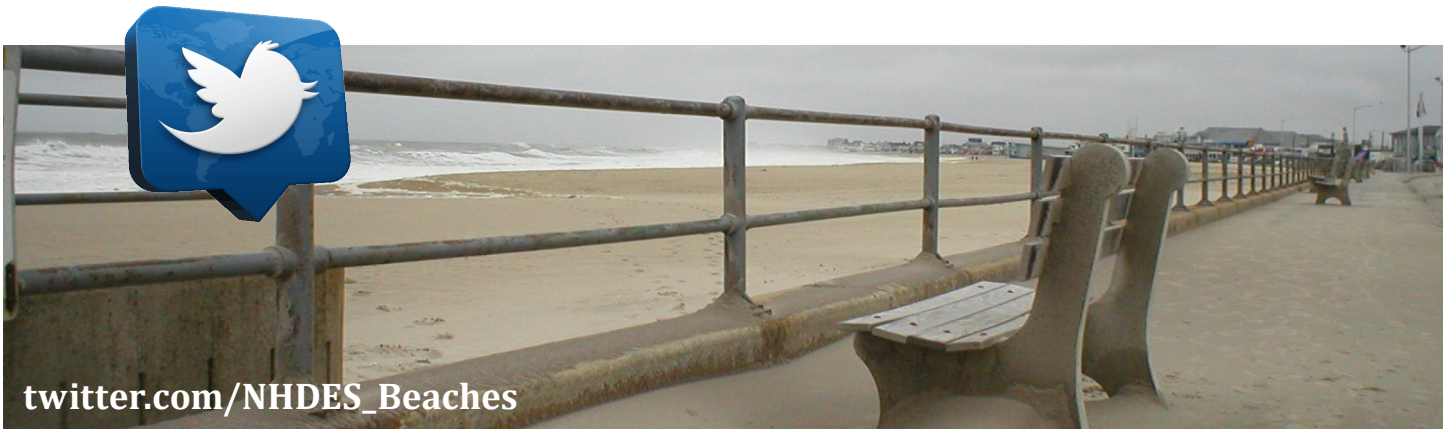
This unique interstate plan with New Hampshire and Maine will identify sources of pollution, propose solutions, and promote public involvement in the planning and restoration process. The planning process will include reviews of lake water quality data, pollution modeling, field surveys and identification of on-the-ground opportunities to fix pollution sources. This information will be used to develop site-specific recommendations for practices, projects and programs that can be implemented cooperatively at the local level to improve water quality.

Additionally, two demonstration projects will be constructed next summer to clean up polluted stormwater. The University of New Hampshire will work with the Province Lake Association and the Town of Wakefield to design and install innovative stormwater treatment practices to infiltrate stormwater and decrease pollutant loads. The treatment practices will be located near the lake where they will be visible as examples of what future pollution prevention projects could look like as the plan moves forward.

Province Lake Watershed Plan Steering Committee at a recent meeting at the Province Lake Golf Club. Members include representatives from the Province Lake Association, the Acton Wakefield Watersheds Alliance, Effingham Conservation Commission, Town of Wakefield, Town of Parsonsfield, Province Lake Golf Club, Green Mountain Conservation Group, FB Environmental Associates, New Hampshire Department of Environmental Services, and Maine Department of Environmental Protection.

The Province Lake Association is working with the Acton Wakefield Watersheds Alliance, FB Environmental Associates, the towns of Wakefield, Effingham, and Parsonsfield, the Green Mountain Conservation Group, the N.H. Department of Environmental Services, the Maine Department of Environmental Protection and many other local volunteers to develop the plan.

Public meetings will be held this summer to promote local involvement in the plan, gather input for the plan and learn more about residents' concerns about the lake. This project will benefit all who use and enjoy Province Lake. To stay up-to-date on planning efforts, visit the Province Lake Association web site: http://www.provincelake.org/ ■

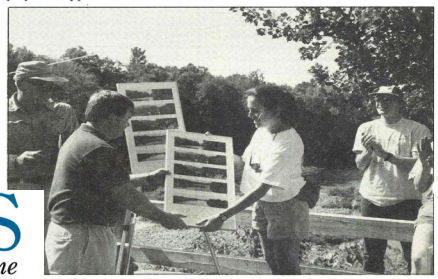


Celebrating a Rivers Protection Bill... and Delighting in a River Sojourn

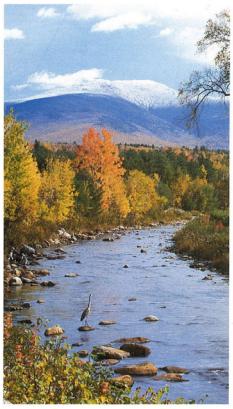
One of the major pieces of environmental legislation passed during the 1990 state session was HB 1432. The bill augmented the State's rivers protection and management program, begun, in 1988, by (1) creating a river classification system, (2) establishing in-stream protection measures for each river classification, (3) designating five rivers and river segments as protected, and (4) requiring the appointment of a local advisory committee for each designated river and river segment.

In order to celebrate the bill's passage, Governor Gregg, Commissioner Varney, members of the N.H. Rivers Campaign, and others paddled a portion of the Saco River, one of the five rivers designated in HB 1432. (The others were the Swift River and segments of the Lamprey, the Upper Merrimack, and the Lower Merrimack.) Running clear and cold out of the White Mountains, the Saco is a paddler's delight, ambling its way to the Atlantic down a broad-valley course of light-colored granitic sands.

Before embarking on the canoe trip, posters with photos of each of HB 1432's five designated rivers, created by the N.H. Rivers Campaign, were presented to several people. (At right, Commissioner Varney gives a poster to DES Rivers Coordinator Beth Patrino.)■



NEW HAMPSHIRE'S RIVERS
The Time Has Come



Swift River

Celebrating 25 Years 1988-

Connecticut

Upper Merrimack

Lower Merrimack

Swift

Lamprey

Saco

Rivers Management a

The Rivers Management and Protection A
Hampshire River Management and Protecti
gram. The purpose of the RMPP is to prote
the benefit of present a

Dam Removal

The Dam Removal & River Restoration Program
owners and communities in bringing significant
mental, economic and social benefits by removi
when dam maintenance outweighs a dam's bene

Homestead Dam on the Asheulot River befor and after dam removal

NH Rivers Council

First organized as the New Hampshire Rivers Campaign in 1985, the New Hampshire Rivers Council is a united voice for the protection of our rivers.

CSPA Enacted

The Comprehensive Shoreland Protection Act was enacted in 1991 to maintain the integrity of public waters.

1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000

Upper Exeter

Cold

Souhegan

Upper Merrimack River

Contoocook & North Branch

Ashuelot

VRAP Launches

In 1998, the Volunteer River Assessment Program (VRAP) staff begin training volunteers to sample river water quality.

Instream

Human influ
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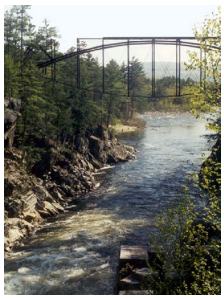
studies beg
flows for bo

Rivers Management Advisory Committee

Established in 1989, the RMAC works with NHDES to administer the RMPP.



Pemigewasset

Piscataquog

Local River Management Advisory Committee

Local Advisory Committee (LAC) members are concerned cit
from a broad range of interests to develop and implement a r
management plan and use it to advise communities, NHDES a
and federal agencies on ways to preserve and protect the rive

s of Rivers Protection
-2013

nd Protection Program

ct of 1988 (RSA 483) established the New on Program (RMPP), a statewide rivers pro- ct our state's significant river resources for nd future generations.

aids dam t environ- ng dams efits.

e

Souhegan ISF

State of NH funds pilot study.

Protected River Sign Program

Beginning in 2004, signs were placed at significant road crossings to tell the public of river designations.

The Value of Water

In 2003, the 2nd phase of the "What's Our Water Worth" study showed just how valuable NH waterways are to the state.

Lamprey ISF

NOAA funds pilot study.

Flow Program

uences can change river dynam- lly. In 2002, instream flow pilot an to determine how to protect th human and wildlife needs.

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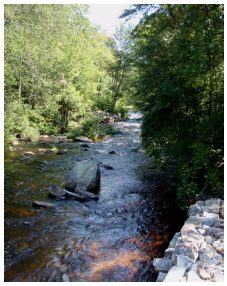
2011 flooding of the Ammonoosuc from Hurricane Irene



Lamprey River

FEH Program

Fluvial Erosion Hazard Program (FEH) begins as a collaboration between RMPP & NH Geological Survey.

CSPA Expanded

The Comprehensive Shoreland Protection Act expands to protect land along rivers' edges.

Rep. Kappler, Gov. Lynch & Sen. Fuller-Clark celebrate the Cocheco designation

Flood Management Study Commission

In 2007, the Legislature established a commission to develop a comprehensive plan for New Hampshire that describes possible measures to minimize flood impacts and to abate future flooding problems.

CSPA Expanded

The Squamscott and 1.8 miles of the Lamprey Rivers became the first designated tidal rivers after the Legislature allowed for their inclusion in the RMPP.

Mascoma River

2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

Isinglass

Ammonoosuc

Ammonoosuc

Cocheco

Lamprey Watershed

Lower Exeter & Squamscott

Oyster

Mascoma

As of 2013:

1,000 miles of designated rivers
126 towns, places & State Parks
23 Local Advisory Committees
250+ volunteer LAC members

Changing Climate is Baking Moose to Death

By ERIC ORFF
For the Monitor
Sunday, April 14, 2013

If you plan to be one of the 13,000 applicants in the late-May New Hampshire moose lottery draw, you might be thinking of baked moose as a delicious recipe if you are successful in the draw and on your hunt.

But that is not what New Hampshire moose biologist Kris Rines described at the March Fish and Game Commission meeting. For her, our too-warm winters and way-too-hot summers of late have been a recipe for a disaster for our moose. In fact, our changing climate is baking our moose to death.

That's right. In just the past five years, due to unseasonably warm temperatures in both winter and summer, moose numbers have plummeted some 40 percent, from more than 7,500 moose to about 4,500 today.

Photo by Mike Galuszka

And along with the moose, moose hunters have taken a hit too, with moose hunting permit numbers ratcheted down from 675 in 2007 to just 275 in 2012. That's a 60 percent reduction brought on by the declining moose numbers. Rines looked the commissioners in the eyes at the conclusion of her presentation and said, "You can expect a dramatic further cut in moose hunting permit numbers for next year, given the current situation."

Rines had explained to the commission just how complex a situation a warming New Hampshire presents to our moose. It really is a threefold disaster.

First, the too-hot summers are causing our cow (female) moose to feed less. Summer temperatures above 57 degrees begin to stress moose. They begin panting at 68 degrees and stop feeding and lie down at 79 degrees. This has led to underweight moose numbers increasing the past five years at the biological check station each fall. Yearling moose, first-time breeders, must be at least 440 pounds to successfully bare calves the next spring.

Adults, two years and older, typically give birth to twin calves if their fall weights are at least 550 pounds. Many of our cows have been under these weights the last few falls. So our moose cows are producing fewer calves than they did a decade ago.

Second, our too-mild winters are devastating our moose with a spike in winter tick numbers. As Rines put it, "If a female winter tick ready to lay her eggs falls off the moose in April on top of snow, the ticks don't survive. But if they fall onto bare ground, they thrive." So it is the length of time snow is on the ground going into spring that determines the tick load of the moose the next winter.

Now, take the winter of 2010, which was mild with an early spring. Rines figures that in the following, more normal winter, with extremely high tick numbers, all the calves born the previous spring died and at least 40 percent of the adults died due to an extremely high tick infestation. So we now have a double-barreled loss of calves: fewer being born and an extremely high mortality following a mild winter.

Lastly Rines talked about the mild winter weather causing an increase in deer numbers, which brings about more moose mortality in the form of brain worm disease. You see, deer survive just fine with brain worms, but the disease is fatal to

continued on next page

moose. So warmer winters means more deer, resulting in still fewer moose.

And this is happening all across North America, Rines explained. From New Brunswick and Nova Scotia to the east to Michigan, Minnesota, Ontario and out west to Utah, moose are on the decline due to a warming world.

Most of us think of climate change as something someone else is going to have to worry about in the future.

For the moose, that future began five years ago.

(Eric Orff of Epsom is the New Hampshire Fish and Game commissioner for Merrimack County and a consultant to the National Wildlife Federation.) ■

Collins & Aikman Plant to be Superfund Site

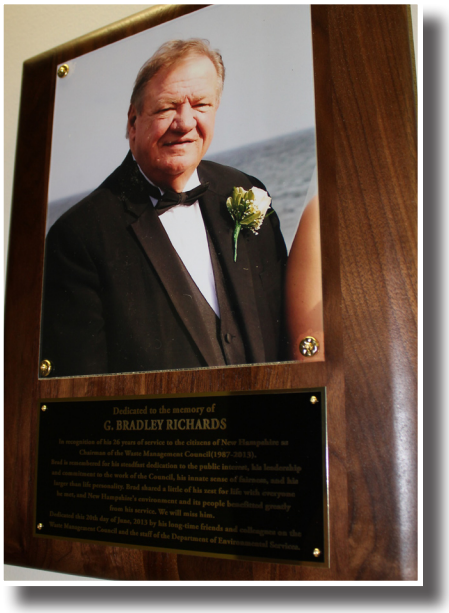
The former Collins & Aikman Plant site, previously know as Davidson Rubber and then the Textron Plant, in Farmington, N.H. was formally proposed to be added to the National Priorities List (NPL) of Superfund sites by the EPA earlier this year in May. Superfund is the federal program that investigates and cleans up the most complex, uncontrolled or abandoned hazardous waste sites in the country to protect people's health and the environment.

The Collins & Aikman Plant was an automotive parts manufacturing facility and is a source for groundwater contamination in the area. Tetrachloroethylene (PCE) was released at the site from septic leach fields and an above-ground storage tank, generating an uncontained groundwater contaminant plume that extends northeast beyond the facility. This plume of solvent contamination is known to have impacted a municipal supply well, which was consequently removed from service.

Site investigations were performed by Collins & Aikman and the New Hampshire Custodial Trust, which took possession of the property following the bankruptcy and closure of the Plant in 2006, to delineate a groundwater solvent plume emanating from the facility and impacting the Sara Greenwood Aquifer. Soil, surface water and groundwater contamination, primarily by volatile organic compounds, has been documented on and downstream of the property. Treatment systems were activated onsite to address the solvent contamination in soils and groundwater. A pump-and-treat system to remediate groundwater near the former septic leach fields is still in service, though it appears to be ineffective in addressing dense non-aqueous phase liquid that has migrated to the fractured bedrock.

While much work has been performed to characterize and partially contain the groundwater plume originating at the site, a comprehensive site investigation is still needed to characterize the site and facilitate remedial action. NHDES referred the site to EPA because, following bankruptcy and closure of the facility in 2006, insufficient funds have been available to support a full investigation and cleanup of the site. The Town of Farmington indicated their support for listing this site on the NPL as a means to achieve full site characterization and cleanup in a resolution dated August of 2012 and the governor of New Hampshire provided a letter of support for placing this site on the NPL in January of 2013. On May 24, 2013, the site was proposed for inclusion on the NPL to ensure that a comprehensive evaluation and cleanup is achieved for this uncontrolled hazardous waste site. This action initiates a 60-day public comment period. Following the public comment period, EPA will review comments received to determine if the site should be listed on the NPL. ■

Council Chair Remembered



New Hampshire's environmental community lost a friend this past February, with the passing of G. Bradley Richards, longtime chairman of the Waste Management Council. At the time of his passing, Brad was in his 26th year of service to the citizens of New Hampshire, having first been nominated to the volunteer post in 1987 by then-Governor John Sununu. Following its monthly meeting on June 20th, the Council and NHDES hosted members of Brad's family for the dedication of a memorial plaque that is now displayed at the DES offices in Concord. Brad is remembered for his steadfast dedication to the public interest, his leadership and commitment to the work of the Council, his innate sense of fairness, and his larger than life personality. Brad shared a little of his zest for life with everyone he met, and New Hampshire's environment and its people benefited greatly from his service.

Emerging Environmental Contaminants

In the course of its work managing contaminated sites where a hazardous substance or waste has been released, the NHDES Hazardous Waste Remediation Bureau evaluates and manages emerging contaminants that pose a potential or real threat to human health, the environment, or may even lack published health standards. A contaminant may also be "emerging" because a new source or pathway to humans has been discovered, or a new detection method or treatment technology has been developed. A current emerging contaminant of concern is 1,4-Dioxane, a probable carcinogen that has been found in ground water at sites throughout the United States.

Used as a stabilizer in chlorinated solvents (e.g., 1,1,1-Trichloroethane), 1,4-Dioxane is found in manufacturing and commercial products like laundry detergents and soaps. As a contaminant, it's highly mobile and travels farther than other contaminants. Furthermore, it's persistent; which means it does not readily breakdown, evaporate or adsorb into the soil. This makes it difficult and expensive to treat. Early lab methods did not detect it at all or didn't detect it at low concentrations.

1,1,1-Tricholoethane, aka., methyl choloform, is used as an industrial degreasing agent and is also found in some household cleaners and aerosol sprays.

As a bit of history, NHDES first detected 1,4-Dioxane at the Keefe Superfund site in Epping in 2003. Over the subsequent years, guidelines were developed and adopted at an ambient groundwater quality standard of 3 parts per billion (ppb). Thereafter, NHDES began sampling for 1,4-Dioxane at known hazardous waste sites, landfills and groundwater discharge sites in New Hampshire.

Since 2002, NHDES had been managing several private residential water wells in Atkinson that were contaminated with MtBE and providing the resident's with bottled drinking water. Beginning in November of 2011, these wells were sampled for 1,4-Dioxane as well and it was discovered that some 47 wells in the area had various levels of the contaminant. In March 2012, NHDES requested the EPA's assistance to help provide clean drinking water to the area residents. At press time, EPA plans to extend a water line from the Hampstead Area Water Company, currently providing water service to other areas of Atkinson. EPA will construct the water mains to service impacted residences and will also work with residents who want to connect their homes to the public water line. EPA will spend up to $2 million to install the water line, focusing on the most contaminated wells first, but providing as many hook-ups as possible within the $2 million budget.

To date, NHDES has detected 1,4-Dioxane at low levels at 75 hazardous waste and landfill sites, several wastewater treatment plants, public water sources and at carwashes. The NHDES Drinking Water and Groundwater Program and the Hazardous Waste Remediation Programs are working together to expand public outreach efforts and to obtain voluntary water test data from water systems around the state. As an emerging contaminant, NHDES will continue to learn more about the prevalence of 1,4-Dioxane contamination of our groundwater, along with – we hope – improved methods for detection and remediation of this contaminant from our waters. ■

N.H. EPA Environmental Merit Awards

EPA recognizesfour New Hampshire residents and one business with Environmental Merit Awards for their contributions to watershed protection and restoration.

Steve Landry, Individual Award

N.H. Department of Environmental Services, Concord, N.H.

Steve was recognized for his outstanding contributions that lead to water quality improvement in the Merrimack River Watershed.

Berkley W. Cue, Jr. – Lifetime Award; Patrick Santoso, *UNH Technology Transfer Center, Durham, N.H. –* ***Individual Award; Linda Schier,*** *Acton Wakefield Watersheds Alliance, Union, N.H. –* ***Individual Award; Monadnock Paper Mills,*** *Bennington, N.H. –* ***Business Award***

L-R: EPA Region 1 Admin. Curt Spalding, NHDES Commissioner Thomas Burack , Steve Landry, EPA Region 1 Assistant Admin. Ira Leighton

Residential Wood Smoke Causes Air Pollution in Keene

Over the past several years, air pollution monitoring in Keene has identified periods when the air contains unhealthy concentrations of fine particulate matter ($PM_{2.5}$). When this occurs, people may experience difficult breathing, aggravated asthma or heart conditions. Unlike the summertime smog events that much of the state experiences, most of these events occur during the cold weather months when people expect clean air.

In 2007, NHDES began continuous $PM_{2.5}$ monitoring in Keene to better understand the situation and found that $PM_{2.5}$ concentrations spiked at nights when the winds went calm and then dropped the next day when the winds picked up again. This was significant because it eliminated upwind areas

Tim Verville, NHDES Air Resources Division staff removes and replaces filters from the fine particle pollution sampler at the Keene Air Monitoring Station.

from being the primary cause of this problem. Keene has benefited from a wood stove changeout program and an outreach and educational program to help residents burn wood more cleanly. However, NHDES is still seeing some unhealthy concentrations; is wood burning the primary cause of this air pollution problem? When the air pollution monitoring filters returned to our labs smelling of wood smoke, we were given a clue.

During the winter of 2012-2013, NHDES conducted a special monitoring study designed to better understand the role that residential wood burning plays in the city's high winter air pollution. NHDES enhanced its Keene monitoring station to collect continuous $PM_{2.5}$, sulfur dioxide (SO_2), carbon monoxide (CO), black carbon, levoglucosan, and several trace metals. These pollutants were selected because their presence, absence, and how their concentrations vary in relation to other pollutants helps to identify the nature of the pollution sources. Levoglucosan was specifically selected because it is an organic compound that is uniquely formed during the burning of wood cellulose. If it is measured in the air, wood was burned. CO and black carbon are also good indicators of wood burning, but there are other sources in the area that create these pollutants. SO_2 and the trace metals were selected to help identify the roles of local coal, oil, industry and automotive emission sources.

The study found a very strong relationship between the levoglucosan and $PM_{2.5}$ concentrations at the Keene station, signifying that wood burning is the primary cause of the $PM_{2.5}$ concentrations. In addition, there were indications of oil and coal burning; probably also related to residential heating, but these sources play only a minor role in Keene's $PM_{2.5}$ levels. Automotive and local industry were not identified as significant $PM_{2.5}$ sources and while regional transport can contribute to unhealthy air in the city, it is the local residential wood burning that dominates these air pollution events.

For more information about the special study contact Jeff Underhill at Jeffrey.Underhill@des.nh.gov or (603) 271-1102.

NHDES's Deb Loiselle was recently presented with the Gulf of Maine Visionary Award for her work in the Dam Removal and River Restoration Program. Through Deb's work with her project partners, 160 miles of rivers have been restored through removal of 17 dams in New Hampshire with 10 of those in the Gulf of Maine. Bruce Carlisle, Chair of the Gulf of Maine Council (pictured) presented Deb with her award at a ceremony held June 12 in Salem, Massachusetts.

Tales From the Field

A fully involved fire arose from the Riveredge Marina in Ashland late at night on Sunday, April 28, 2013. Thirty boats equipped with marine engines and batteries were in the building at the time of the fire. Shortly after being notified, NHDES Spill Response and Compliance Investigation Section affiliate Ray Reimold called the Ashland Fire Chief who was at the scene. This three-alarm fire had consumed the building and littered the Squam River with oil, gasoline and debris.

Reimold arrived at the scene just fifteen minutes later and met with Fire Chief Heath. He immediately observed the petroleum and charred solid waste travelling down the river. Downstream of the fire, Reimold worked on the Holderness Fire Department's boat to deploy 75 feet of hard boom lined with 75 feet of sorbent boom. Less than an hour later, with the fire still ablaze, the booms were in place and Reimold had a moment to contact Supervisor Rick Berry about the site. Joint efforts to contain the debris continued throughout the night.

Early the next morning, Reimold arrived at the dam downstream from the fire. He contacted the NHDES Dam Bureau and had the dam shut to reduce the flow of the river until more booms could be placed and the site controlled. In accordance with RSA 146A, Marina owner Barry Gaw contracted M.E. Latulippe Excavating to place the solid waste in roll off containers and properly manage the other materials such as engines, gas tanks and batteries. They worked closely with Clean Harbors who cleaned up the waste that washed downstream prior to the booms being installed.

Next, a turbidity curtain was placed in the river. Weighted at the bottom, the curtain absorbs suspended oil particles while letting water to continue to pass through. Although the cause of the fire is yet unknown, the efforts of the local Fire Departments, Clean Harbors, NHDES personnel, Marine Patrol and countless others allowed for the dam to be opened on Wednesday – flowing water downstream once again. ■

Congratulations to NHDES' Jen Drociak, whose photo, "Trickling Filter, Concord Wastewater Treatment Facility" won second place out of more that 1,000 entries submitted into the New York Center for Photographic Art's "Water" juried exhibition scheduled to appear at the Soho Gallery for Digital Art from September 24 through October 6, 2013.

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