ENVIRONMENTAL NEWS

NHDES

Newsletter of the N.H. Department of Environmental Services March-April 2011

COMMISSIONER'S COLUMN

Do you need to be convinced?

Does anyone need to be convinced that New Hampshire's wonderful quality of life is directly linked to the quality of our environment? Unfortunately, many people have forgotten the pollution that used to affect our lives. Over the past 40 years, the collective efforts of the federal, state and local governments, non-profit organizations and individuals to protect the environment have been quite successful in reducing pollution. And so, today, it's easy to assume that New Hampshire has always had a high quality environment that supports a wonderful quality of life. But it wasn't always so.

With another Earth Day on the horizon, we are publishing a slightly unconventional issue of *Environmental News*. We asked our program staff to discuss some of our major environmental achievements since the first Earth Day on April 22, 1970, over 40 years ago. Taking a look at the past helps to remind us of why we do what we do, and to renew our commitment to protecting the environment and public health, making all of our lives better.

I expect we can all agree that New Hampshire's environment has benefited from legislative and regulatory actions taken to protect our environment. For example, the federal Clean Water Act, the Clean Air Act, Superfund and Brownfields legislation, and DES's

Commissioner, *continued on page 8*

Cleaner water—one of Earth Day's greatest successes

Imagine a New Hampshire without the Clean Water Act.

Would the Connecticut River still be the nation's best landscaped sewer? Would anyone dare to venture into the Merrimack, even by canoe? Would your grandfather's stories about the Nashua River turning the same color as the wool they were dying that day seem outlandish at all?

We take clean water for granted, mostly because of a law so elegantly structured and so effective that its core provisions have not changed in 40 years. This law came into being as a direct result of the awareness raised with the first Earth Day of 1970.

The Clean Water Act says that waters should be clean enough for their designated uses -- that they should be fishable, swimmable, and supportive of aquatic life. Simple, yet elegant in its conception.

During a time when pipes spewed human and industrial waste untreated into American waters, Congress passed a law that said ultimately there will be no discharge of pollutants allowed. Zero.

It required EPA to set water quality standards that would protect designated uses. It required dischargers to use the best available control technology to treat

Cleaner water, *continued on page 2*

Cleaner Water

continued from page 1

wastewater. Where such measures fall short of cleaning up polluted water, the Clean Water Act requires that we determine how much pollution reduction is needed to meet standards and to enforce such reductions.

In New Hampshire, the Clean Water Act was first administered by the state's Water Supply and Pollution Control Commission, the precursor of the Department of Environmental Services. Recognition of the importance of wetlands in maintaining clean water was built into the Clean Water Act. While New Hampshire had already enacted statutes to address water quality and wetlands protection, passage of the federal Act bolstered the implementation and enforcement of those laws.

> During a time when pipes spewed human and industrial waste untreated into American waters, Congress passed a law that said ultimately there will be no discharge of pollutants allowed. ***Zero***.

The Nashua River in the 1960s (left) and after cleanup in the 1980s (right). Photos courtesy of the Nashua River Watershed Organization.

The Act also addressed threatened waters, preventing anyone from degrading clean water such that it falls below water quality standards. Certain waters are designated as Outstanding Resource Waters, into which no pollutants of any kind are allowed.

The Clean Water Act is not perfect. Arguments continue about how wetlands should be treated under the Act, about how water quality standards are derived, and about how to deal with stormwater.

No law is perfect, but few have ever been as effective as the Clean Water Act. New Hampshire would not be as healthy or as prosperous without it. ■

Clean water has been an attribute of New Hampshire's quality of life for generations. The Clean Water Act helps to ensure high water quality for generations to come.

ENVIRONMENTAL NEWS

Environmental News is published six times a year by the N.H. Department of Environmental Services.

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Solid and hazardous wastes managed with results

The management of solid waste has come a long way since the first Earth Day in 1970. Solid waste is what we no longer need or want, so it's thrown in the trash and forgotten. Of course everything goes *somewhere,* and on the first Earth Day, most solid waste went to the town dump or to an incinerator that had no air pollution controls.

In those days, solid waste was a significant contributor to air pollution. Burning day at the dump was always an obvious event for residents in the area, as the odor and smoke of burning garbage filled the air and traveled far and wide. What wasn't fully appreciated then was the harmful effects that were carried along with that odor and smoke. Particulates and hazardous chemicals in the smoke are significant contributors to respiratory ailments such as asthma. The waste in the dump was left partially burned, uncovered and rat infested. Sometime thereafter, the practice of open burning ceased and waste was generally covered with soil at the end of the day. This was a step in the right direction as far as air pollution is concerned. However, the new, so-called "sanitary landfills" were not lined, so there was no way to prevent rain water that came in contact with the waste—sometimes hazardous waste—from leaching into the ground and contaminating groundwater. New Hampshire is still suffering the effects of this legacy.

Now there is a concerted effort to recycle as much of the solid waste stream as possible and dispose of what is not recyclable in lined landfills that have features designed to contain the waste and its by-products. New Hampshire recycles about 30 percent of its waste. Since about 80 percent of the state's wastestream is potentially recyclable, we still have a ways to go.

In the wake of the discovery in the 1970s of toxic waste dumps such as Love Canal, N.Y., and Times Beach, Mo., Congress enacted the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, commonly known as "Superfund." The mission of the Superfund program is to address contamination at the nation's worst sites where hazardous substances were abandoned, accidentally spilled, or illegally dumped, and pose current or future threats to human health or the environment. In New Hampshire, the Superfund program currently is addressingin-volved with 20 sites. To date, 17 of those sites are in the clean up phase. While DES is charged with cleaning up these sites, it is also charged to make sure this doesn't happen again.

Contaminated sites do not have to be as severe as a "Superfund" site to require expensive cleanup and management. Many of the textile and other manufacturing mills that brought prosperity to New Hampshire cities and towns have fallen into disuse and abandonment. Despite their prime downtown locations, redevelopment and reuse of these facilities has been hindered by concerns about the liability and costs associated with environmental contamination. On an economic scale, these abandoned or under used properties exact a heavy toll on our communities. Nearly two-thirds of these "brownfields" sites are located in or near the centers of these communities. To meet the formidable challenge posed by our state's brownfields sites, New Hampshire, with assistance from the US Environmental Protection Agency, has built an active, flourishing brownfields program. Since 1996, 64 sites have been assessed, resulting in the cleanup or a remedy design of 36 sites. This has leveraged over $100 million in private sector investments and created thousands of jobs.

With America's love affair with its automobiles came hundreds of thousands of gas stations, which have created the problem of leaking underground petroleum storage tanks. In the early 1970s, these tanks were out-of-sight and out-of- mind, *until* they contaminated underground sources of drinking water supplies. With the enactment of the federal Underground Storage Tank (UST) Law, New Hampshire took over the program and took sizeable steps to protect the state's groundwater. More than 12,000 substandard tanks were removed and replaced with new state-of-the-art USTs that can detect a leak before it reaches the environment. DES has one of the most protective UST programs in the country in terms of standards for UST design and installation and contamination cleanup. In the absence of private insurance, the program developed one of the most successful cleanup funds in the country, which provides funding to clean up legacy sites discovered in the 1990s and provides financial assurance of $1.5 million for each active facility. Only a fraction of all the petroleum contaminated sites remain today, as the program has taken a proactive approach to provide treatment for contaminated water supplies, remove sources of contamination and restore groundwater quality.

The DES Brownfields programs and federal funds have

Managed waste, *continued on page 6*

Healthier, cleaner air thanks to effective laws

Air quality in New Hampshire has always been great—or has it?

Overall, emissions of pollutants from power plants, industry, and large commercial facilities in New Hampshire have decreased from 175,000 tons in 1994 to just about 40,000 tons (excluding CO_2) in 2009. These reductions are due to increased regulatory controls on emissions of toxic air pollutants, mercury, nitrogen oxide, sulfur dioxide, particulate matter and dioxins. As a result, New Hampshire can breathe easier.

Remember when acid rain was a hot topic in the news? We saw mountain top vegetation turning red from the effects of sulfur dioxide and nitrogen oxide deposition and declining fish populations in acidified lakes. Whatever happened to acid rain? Since its inception in 1995, EPA's Acid Rain Program, a part of the Clean Air Act Amendments of 1990, has helped to dramatically reduce the levels of sulfur dioxide and nitrogen oxide emissions, thus saving human lives and our priceless ecosystems.

The Acid Rain Program includes a highly successful "cap-and-trade" program for sulfur dioxide reductions. The program sets a permanent cap on the total amount of sulfur dioxide that may be emitted by electric generating units in the US, and included provisions for trading and banking emission allowances. New Hampshire supplemented the federal Acid Rain Program with the state's Clean Power Act in 2007 to achieve even greater sulfur dioxide and nitrogen oxide reductions.

DES's solar powered air monitoring station in Londonderry is part of a national multi-pollutant air monitoring network designed to provide data on certain pollutants at lower detection limits, as well as enhanced forecasting and reporting of air quality conditions.

Open-air burning is strictly regulated and burning trash at home has been illegal since 2003. Increased regulatory controls, particularly on power plants, municipal incinerators and other large sources, have greatly reduced emissions of toxic air pollutants, mercury, nitrogen oxide, sulfur dioxide, particulate matter and dioxins.

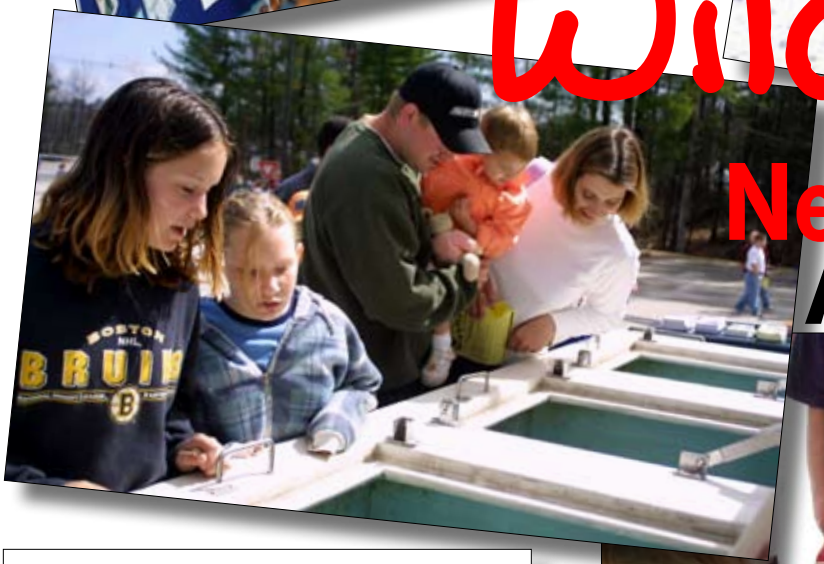
Nationally, power plants have decreased emissions of sulfur dioxide, a precursor to acid rain, to 5.7 million tons in 2009, a 67 percent decrease from 1980 levels and a 64 percent decrease from 1990 levels. Our air quality has improved; the average amount of ambient sulfur dioxide decreased 76 percent between 1980 and 2009. Many lakes and streams affected by acid rain in the Northeast are exhibiting some signs of recovery. One analysis estimates the Acid Rain Program's annual public health benefits at more than $120 billion, about 40 times the estimated cost.

Mercury is another air pollutant of concern for New Hampshire. Upwind sources in the Midwest and Canada add to that generated in-state. In 1998, DES published the *NH Mercury Reduction Strategy* to set overall goals for mercury reduction from in-state sources. The strategy focused not only on reducing air emissions from power plants and incinerators, but also eliminating or reducing mercury in products and waste. Successful programs for recycling old thermostats, compact fluorescent bulbs and other mercury-containing products have emerged. These reduction efforts, coupled with stringent regulations on large municipal waste combustors, medical waste incinerators and other in-state mercury sources, have resulted in an average 75 percent reduction in overall in-state mercury emissions from the 1997 baseline. Additional reductions are also imminent, due to a scrubber on the PSNH power plant in Bow that will bring the total mercury emissions from in-state generation down to 90 percent below the 1997 baseline.

Sometimes it's hard to appreciate the effectiveness of air regulations in New Hampshire. If you can't see—or smell—a pollutant, it's hard to know it's there. But envision the 18-wheeler with dirty exhaust, the belching factory smokestack, or the beautiful mountain vista marred by thick smog. Now notice if you see, or smell, these things very often if at all anymore. Now you can begin to appreciate the progress we have made in cleaning and protecting the air we breathe. ■

Discover WILD New Hampshire!

April 30, 2011



Where?

NH Fish & Game, Hazen Drive, Concord, NH

admission is free!

Discover WILD New Hampshire Day is co-sponsored by N.H. Department of Environmental Services, N.H. Fish & Game Department, and Wildlife Heritage Foundation of New Hampshire.

Managing waste

continued from page 3

provided incentives to redevelop industrial and abandoned sites that are tainted by soil and groundwater contamination.

The petroleum spill preparedness and response program provides rapid response to more than 400 spills per year. It uses state-of-the-art technology, pre-planned response strategies and biannual spill exercises to prepare for a potential petroleum spill from the major coastal terminals, which store approximately 140 million gallons, and tanker traffic, which transports approximately 690 million gallons per year. Lessons learned from major oil spills such as the Exxon Valdez and the recent Deep Horizon disaster have strengthened our partnerships with federal and state agencies, placing DES in a better position to protect the state's sensitive estuary and coastal zones. ■

Essex Mills in Newmarket, past and present. Since 1996, 64 brownfields sites, including the Essex Mills, have been assessed, resulting in the clean up or a remedy design of 36 sites. This has leveraged over $100 million in private sector investments and created over 2,000 jobs in New Hampshire.

OPPORTUNITY TO LEARN

Water & Watershed Conference, March 25-26

DES invites all interested watershed stakeholders to attend the 2011 New Hampshire Water and Watershed Conference: From Our Headwaters to the Sea – Living in a Changing Water World, to be held on Friday and Saturday, March 25 and 26, 2011 from 8 a.m.-3:30 p.m. Registration is from 8 a.m.–9 a.m. and will be held at the Hartman Union Building at Plymouth State University, 17 High Street, Plymouth.

Friday's presentations are designed for technical/professional audiences, while Saturday's presentations have been developed for the general public. Local and state officials will find the sessions on both days very informative. Throughout the conference there will be ample opportunity to network with other professionals, policy makers, educators, consultants, local river, lake and watershed committee members, volunteers and interested public. In addition, posters and other exhibits will be on display. CEUs are available for wetland and soil scientists, and additional CEUs are currently being sought.

The cost to attend the conference is $40/day or $70 for both days, and $25/day for students. For additional information about the conference, including the agenda, session descriptions and how to register, please log-on to www.plymouth.edu/center-for-the-environment/2011-nh-water-and-watersheds-conference or contact Jacquie Colburn, DES Lakes Coordinator, at (603) 271-2959 or jacquie.colburn@des.nh.gov.

Register now for this popular annual event. ■

AIR QUALITY AFFECTS US ALL

Get up-to-date, air quality messages through EnviroFlash—a nationwide notification system that provides instant information, customized for your area of New Hampshire.

EnviroFlash is a personalized delivery system that provides air quality forecasts and alerts via email, text, or pager messages. This is especially helpful for people who are at greater risk from air pollution. EnviroFlash alerts people to unhealthy air quality conditions allowing them to make safe decisions about their day's activities.

Sign up today at www.enviroflash.info. Enviroflash is a free service of DES and the EPA. For information on air quality forecasts and current levels in New Hampshire, visit www.airquality.nh.gov or call (800) 935-SMOG. ■

DES MOVIE REVIEW

Professional geologist-caver critiques *Sanctum*

By Ernst H. Kastning, DES Drinking Water and Groundwater Bureau

With the number of absurdly fantastical adventure movies released regularly, it's nice to see an action thriller grounded in reality.

The new James Cameron adventure thriller, *Sanctum*, is the story of a team of cave explorers trapped by a massive typhoon-induced flood in a deep and extensive limestone cave in Papua New Guinea, where the only way out is downward through uncharted passages to a yet undiscovered outlet in the ocean. The story was inspired by real events: one of the directors and script writers, Andrew Wight, survived such a severe flood in 1988 while inside a cave under the Nullarbor Plain of Western Australia.

While most moviegoers may not recognize the authenticity of the techniques and equipment used in the film, I can attest to the great care that director Alister Grierson and writer-producer Wight have taken to provide realism to the cave setting. You may have to ignore some of the brash dialog and attempts at interpersonal jostling that typically accompany such escape movies, but the realm of the cave, the rushing water, the techniques and equipment used in exploration, and the inherent dangers are highly realistic.

Each situation in the film is believable on its own merits and has happened at one time or another in caving—although in *Sanctum*, all of these have been combined, one after another, and continually pose challenges and demand solutions. This makes for an exhausting tale in which the audience feels the tense and claustrophobic situations. It is unlikely that such a string of events would ever be encountered by a single caving expedition. However, individually accidents do happen, although they are relatively rare because cavers strictly abide by established safety rules.

Seeing the movie is very much like experiencing the real thing, but it is a bit claustrophobic to watch, especially the cave-diving scenes. As a caver who has crawled and climbed through a fair number of aquifers over the last 45 years, I can say that caving is safe if practiced properly and with a great deal of training. But even some of the extensive boulder and talus caves of New Hampshire require essential skills and attention to safety. To learn more about caves, visit www.caves.org. ■

Ernst H. Kastning, Ph.D., a former professor of geology, has been on hundreds of caving trips around the world, including some grueling ones in long and complex cave systems.

PREPARING FOR THE FUTURE

School bells ring-in new wastewater training program

In January, DES began the one-year Wastewater Manager Candidate School program with 16 wastewater treatment operators. Each candidate is from New Hampshire and each was chosen by his or her respective facility to attend the program, affectionately known as Wastewater Manager Boot Camp. The program is sponsored by DES, in partnership with USEPA, the New England Interstate Water Pollution Control Commission, and the NH Water Pollution Control Association. The monthly classes are held at DES in Concord.

The training program provides intensive training, networking, and skill-development course work to help groom the next generation of wastewater management leaders and enhance the skill of current managers. The majority of New Hampshire wastewater managers are over 45 years old. The new program will prepare individuals to continue the necessary work of managing the state's critical wastewater treatment infrastructure.

The New Hampshire Water Pollution Control Association and NEIWPCC are taking an active role assisting DES with the program. The program includes about 100 hours over the next year with management courses, technical courses such as engineering basics and process control, skill training in media relations, working with regulatory agencies, and budget preparation. New Hampshire joins Maine, Massachusetts, Rhode Island and Connecticut in offering this focused program to cultivate wastewater managers. The program is funded with federal training grants, so participation in this program comes at a low cost to the individuals or their communities.

For more information about the program, please see http://www.des.nh.gov/organization/divisions/water/wweb/documents/boot-camp-app.pdf. ■

Presidential Range by Mike Galuszka, DES Waste Management Division.

Commissioner

continued from page 1

implementation and enforcement of these laws and their state counterparts have all contributed immeasurably to New Hampshire's quality of life, including the economic revitalization of our cities and towns.

Our work, however, will never be finished. We will forever be treating and managing the wastes that we generate as a society. These wastes, if not properly managed, can profoundly impact our air, water and land, as well as our health. At the same time, the public is seeing a new generation of challenges, from water pollution due to stormwater runoff to the environmental impacts of using large amounts of fossil fuels. The risks and impacts of this next generation of environmental challenges are perhaps less visible than the ones that spurred on the necessity for the environmental regulations of the past, but they are no less of a threat to the long term health of our environment and quality of life.

The accomplishments of the last 40 years have taught us many lessons. We now know that we can no longer simply wait for a problem to present itself, leaving us to scramble to find a reactive solution to that problem. Instead we must approach our work in a comprehensive, proactive manner that views environmental challenges in the larger societal and economic framework of our times and seeks balanced, sustainable approaches.

The next generation of challenges will be no less daunting than those of the past. We need further efforts and action to improve our air quality, ensure funding for drinking water and wastewater systems that will meet 21st century water quality standards, and promote growth patterns that reduce pollution and create more livable communities.

As in the past, we should expect to hear concerns that environmental and public health protections may slow our economy. But history has actually taught us that by improving environmental quality, we create new jobs and economic opportunities and live longer, healthier lives. When new environmental controls are first proposed, the estimates of compliance costs are typically on the high side. However, over the last 40 years, American innovation and entrepreneurship have risen to the challenge and helped our country to create cost-effective solutions that have revived our precious environment, saved countless lives, and created new jobs in the process. I am confident that we will continue to see this same positive story over the next 40 years, in which the benefits of efforts to protect environmental quality and public health will far outweigh the costs of those protection efforts. As with today, 40 years from now it shouldn't be necessary to convince anyone in New Hampshire that our wonderful quality of life is directly linked to the quality of our natural environment.

Tom Burack, *Commissioner*

Photo by: Ken Kettenring, DES Hazardous Waste Remediation Bureau.

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Commute Green New Hampshire
May 16-20, 2011

More information in the May/June issue!

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