

## COMMISSIONER'S COLUMN

### Pollution Prevention in the Granite State

Over the past 25 years, there is one thing that we have learned for certain — businesses can invest in pollution prevention processes and be more profitable at the same time. Eliminating or reducing waste at the source saves businesses money by reducing their regulatory burden and their solid and hazardous waste management costs.

The New Hampshire Pollution Prevention Program (NHPPP) was established in 1991 to help businesses comply with regulations, prevent pollution and save money and resources. Since then, the program has provided free, confidential assistance to businesses, municipalities and organizations throughout the state. Starting from the ground up, the program faced many obstacles, not the least of which was distinguishing its confidential consulting service from the department's inspection and regulatory programs. However, with time and patience, the NHPPP staff won the trust of cautious businesses through one-on-one site visits and useful reports that demonstrated how they could prevent pollution and achieve cost savings all at once.

Along with site visits, NHPPP offers pollution prevention workshops, answers requests for information from both businesses and individuals, and

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## ENVIRONMENTAL PROTECTION

### Water sustainability — It's about *listening*

The Water Sustainability Commission recently engaged citizens throughout the state in detailed discussions about how to keep abundant clean water available to all.

To facilitate such a dialogue, the commission went beyond the traditional public hearing or public information session to have in-depth conversations about water among people of diverse backgrounds and interests.

The Governor's Water Sustainability Commission was established by Executive Order in 2011. When the commission considered its mandate to hold public meetings throughout the state, it was aware that much work had already been done on water issues and looked for ways to engage citizens in an informed and productive conversation. New Hampshire Listens, a program based at the University of New Hampshire Carsey Institute, offered a way to do that.

"Sometimes the ways in which we engage the public work fine," explains NH Listens Associate Director Michele Holt-Shannon, "but there are other times when dealing with complex issues, decision makers get stuck and need a different approach." Gambling, outdoor recreation, community planning, historic preserva-

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*Trickle Falls Dam on Powwow Pond, East Kingston, NH. Photo: Spruce Wheelock*

## Commissioner's Column

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has developed award-winning guidance documents that assist companies in reducing their wastes. Over the years, the NHPPP has worked on projects with many different sectors of the community such as: marinas, hospitals, dental offices, the automobile, ski and hospitality industries, municipalities, and schools. Each project focuses on issues specific to those industries and offers suggestions to reduce energy use, water consumption, and waste.

Here's an example of how NHPPP works with companies to find solutions: A company that manufactures rubber-backed steel washers used a manufacturing process that flushed wastewater containing high levels of copper to the sewer. These levels were higher than allowed by their town's wastewater treatment facility. The company was puzzled. Where was the copper coming from? They manufactured the washers from steel. Treatment solutions had been suggested that would cost the company approximately



\$40,000-\$60,000. This approach would remove the copper from the wastewater, but still create hazardous waste (copper) which would involve additional management and cost.

The NHPPP was asked to conduct a site visit to look at the company's manufacturing process from start to finish. NHPPP found that the source of the copper was coming from a wire brush used to clean a mold release agent from clamshell-like molds used in the process of adhering the rubber to the washer. This cleaning process took place in a vat of sodium hydroxide. As it turned out, the mold cleaning brushes had brass bristles and the brushes were left hanging in the hot acid bath. Little by little, the sodium hydroxide was leaching the copper out of the brass bristles. To correct the problem the company simply needed to switch to a stainless steel brush! For the price of a stainless steel brush and a phone call, this company eliminated the copper pollution at the source.

To reach more businesses, the NHPPP has partnered with the University of New Hampshire Chemical Engineering Department to establish a successful, long lasting internship program. Since 1993, over 120 UNH students

have worked with 70 New Hampshire companies on pollution prevention projects with one common goal: to reduce or eliminate waste and save money. To date, companies have reported combined cost savings of over \$5 million. The benefits for both parties are great: the student acquires real-world experience, and the company has the opportunity

to save money while promoting a safe and environmentally-sustainable work environment.

To recognize the many New Hampshire businesses that have gone above and beyond to implement projects that exceed regulatory requirements and eliminate waste at the source, the Governor's Award for Pollution Prevention was established in 1993. Over the years, dozens of companies have been recognized, but what is most meaningful is that these companies have contributed to a cleaner environment for New Hampshire and have saved millions of dollars.

Throughout the years, the NHPPP has received numerous awards and recognition from the US Environmental Protection Agency for its efforts to prevent pollution and promote sustainability among businesses in the state of New Hampshire. The NHPPP program is ongoing today with a small group of staff that embody the DES philosophy that a strong New Hampshire economy and healthy environment have and will always go hand-in-hand.

Tom Burack  
Commissioner

## ENVIRONMENTAL NEWS



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## REDUCING DIESEL EMISSIONS

# Results of state's ARRA-DEIRA grant program

Over the past decade, the EPA has required new diesel-powered vehicles to meet increasingly stringent emissions standards. Because diesel engines can operate for 20 to 30 years, millions of older, dirtier diesel engines are still in use nationwide. EPA's Diesel Emission Reduction Act (DERA) program helps fund projects that reduce emission from these older vehicles by installing tailpipe controls, replacing engines and vehicles, and reducing idling.

In 2009, New Hampshire received \$1.73 million in DERA funds (in addition to the State's annual allotment of about \$200,000) via the American Recovery and Reinvestment Act (ARRA). This money was awarded to public and private entities throughout the state who submitted project proposals that were ranked on diesel emission reduction potential and economic benefit to the community impacted by the project as well as other criteria.

Fifteen recipients from across New Hampshire received awards ranging from \$20,000 to \$260,000, comprising 35 idle reduction units, six engine replacements (including marine engines), and seven vehicle replacements. In addition, almost \$2.2 million was contributed by the recipients as match.

Combined, these projects will yield significant emission reductions as well as fuel savings. Idle reduction technology installed as a result of this program has the potential to save 30,245 gallons of diesel fuel annually. Emission of nitrous oxides will be reduced by 22.3 tons per year. Fine particulate matter and hydrocarbon emissions will be reduced by 10 tons each over the lifetime of the equipment. Another benefit of the program will be a 260 ton reduction in annual greenhouse gas emissions. New Hampshire's ARRA-DEIRA funds will go a long way in protecting air quality for years to come. ■



*In New Hampshire, DERA funds were also awarded for replacing diesel marine engines.*



*DES receives recognition for 25 years of service to the state. DES Commissioner Tom Burack and Chris Way from the Department of Resources and Economic Development display the award at the Meadowbrook Greenerpalooza event, which took place in July.*

## Receive e-notices of updates to air rules

Would you like to be notified about changes to the New Hampshire Air Program Rules? DES maintains an email distribution list that notifies consultants, permitted sources, owners, associations and other interested parties on proposed air rules, public hearings, public comment deadlines and the rule's adoption. To receive these notices, go to <http://des.nh.gov> and click on the "SUBSCRIBE e-news" icon; then click on "NH Air Rulemaking Notices." (Consider subscribing to other DES notices and e-newsletters at the same time!) ■

## No-idling signs available

The Air Resources Division has free "No Idling" signs available to post in areas where vehicle exhaust is a problem. The signs come in two sizes: small (12" x 18") and medium (18" x 24"), and are available while supplies last. Before requesting signs from DES, permission must be obtained from the owner of the property on which the signs will be placed. For more information or to request signs, please contact Jessica Morton at (603) 271-1390 or [jessica.morton@des.nh.gov](mailto:jessica.morton@des.nh.gov). ■



## Volunteers help raise baby oysters for Great Bay restoration project

For six years, volunteers have been growing oysters to help restore oyster reefs to Great Bay. The Oyster Conservationist Program is a joint project of the University of New Hampshire and The Nature Conservancy. The UNH Jackson Lab in Durham grows the baby oysters, or spat, and TNC trains and assists the volunteers. In addition, the Coastal Conservation Association participates by collecting discarded shells from local restaurants to use as a growing medium for the spat. Oysters prefer to grow on shells, and stay in the same place throughout their lives.

In mid-July, volunteers each receive a cage full of shells with the spat in place. The volunteers monitor their cages weekly and help to keep the babies alive by cleaning any fouling from the cage and plucking out green crabs and other predators. They also measure the growth of the oysters bi-weekly. By mid-September, the baby oysters are big enough to be moved from their host site to a restoration site at the mouth of the Squamscott River.

Elizabeth Dudley, one of the 39 oyster conservationists participating this year, said that she notices a mini-ecosystem growing on each oyster that she pulls out of her cage. In one evening, she finds a fish, a translucent clam called a slipper-snail, and shrimp on the shells, observing firsthand the critical role that oysters play in the environment by providing critters a healthy place to live. Dudley, who is in her second year as an oyster conservationist, is always discovering new things about her little charges, like oysters grow vertically and in clusters.



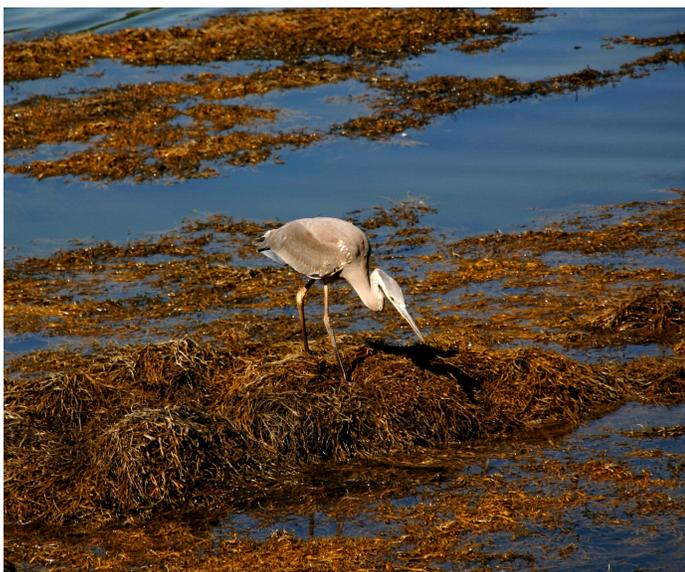
*Elizabeth Dudley, second-year volunteer oyster conservationist, and Kara McKeton, oyster conservationist coordinator with The Nature Conservancy, measure baby oysters, or spat, being raised by Dudley in a cage off her dock. Dudley and the other oyster conservationists on Great Bay help protect the spat by weekly cleaning out cages of fouling and predators such as crabs. Photo by Catherine Coletti.*

Oysters' greatest contribution, however, is that they help clean the water by filtering out pollutants. One oyster can filter as much as 20 gallons of water a day. Records show that as many as 1,000 acres of oysters lived in Great Bay as recently as 1970; currently only 70 acres remain. Disease decimated the oysters in the 1990s and still poses a threat. An oyster's lifespan has been reduced to four to five years.



The local residents participating in the Oyster Conservationist Program have raised 40,000 oysters for restoration since the program began. In addition, since 2000, oysters have been making a slow comeback with the help of restoration partners, and approximately 15 acres of oyster reef have been restored to the Great Bay. At current rates, one to two acres of oyster reef will be restored every year through 2020. The Nature Conservancy would like to increase restoration rates to five acres per year, but will need to grow funding sources as well as oysters to get to that goal.

The DES Coastal Program and the Piscataqua Region Estuaries Partnership joined together to fully fund this year's conservation project. ■



*Great blue heron at Ordiorne Point, N.H. Photo by Paul Lockwood.*

## TRAINING PROGRAMS

# UST operator training program highly successful—nearly 1,000 certified

Underground storage tank operator training regulations went into effect August 8, 2012 requiring owners of New Hampshire regulated motor and fuel oil underground storage tank (UST) facilities to assign certified Class A, B and C operators. These operators are required to go through training to certify their understanding of the existing UST regulations.

Although the DES operator training program has been running since the bill was enacted in 2010, there are a lot of facilities currently scrambling to have at least one designated operator for each class. As an alternative, potential UST operators have different training options through the International Code Council (ICC). The NH Class A UST systems operator exam is specific to those who wish to be Class A operators. The NH Class B UST system operator exam, as well as the national installations/retrofitting certification, are both restricted to Class B operators. Those trained and certified as Class A or B operators will be eligible to train Class C operators at their facilities.

In addition to the DES training program and the ICC, the second most popular approved program is an online UST training course through the state of Maine. Considering our DES course is now booked full until October, the online UST training program is an ideal alternative for potential operators who cannot otherwise make the trip to Concord.

Now that this deadline has passed, DES continues to host one of the several approved training options available to potential operators on a monthly basis. DES has successfully trained, as well as recertified, 978 operators. Although the training staff anticipated congratu-

lating a 1,000th operator certified before the deadline, these results were just as rewarding.

Most significantly, having this number of UST operators trained and certified will provide the state with a greater degree of public safety from potential petroleum spills and contamination. ■

## Sustainability

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tion, and education are among the issues NH Listens has helped local and state groups to address.

After working with commission members to frame the issues, develop background materials, and publicize the events, NH Listens facilitated simultaneous public conversations in each of the five Executive Council districts on May 8, 2012. The commission carefully chose the sites to coincide with the state's major watersheds: Merrimack, Saco, Androscoggin, Connecticut and Piscataqua.

On that evening, more than 135 individuals met for three hours to talk about their concerns, ideas and priorities for water. The conversations took place in circles of eight to 12 people, each moderated by a trained facilitator. Commission members were present at each site to listen, but not to present their own points of view. Each group chose a recorder, whose notes were later summarized into a report. The themes that arose most often were:

- Management, coordination across agencies and political boundaries, and protection of water.

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- Increased education and public awareness regarding water quality and availability.
- Regulation and incentives for water conservation.
- Funding strategies for water infrastructure.

The Commission and NH Listens followed up the May event with conversations with water professionals and others whose livelihoods depend on water. Participants in both sets of meetings noted the value of bringing together people with diverse points of view in small discussion circles.

As this newsletter goes to press, the commission is developing its final report, drawing upon the suggestions and observations from the NH Listens events and its discussions with experts, an online comment form, written comments, and input from members of the public at commission meetings.

More information about the commission's work, including NH Listens' report, is available at <http://www.nh.gov/water-sustainability>. ■

## RECOGNIZING EXCELLENCE

# Diers, Landry honored by Gulf of Maine Council

**A**t a ceremony held this summer in the Governor and Council chambers, Gov. John Lynch and DES Commissioner Tom Burack presented Gulf of Maine Council on the Marine Environment awards to DES's own Ted Diers and Steve Landry. The awards recognize the important contributions made by these individuals to the health of the Gulf of Maine, of which New Hampshire's coastal watershed is an integral part.

Ted Diers, Watershed Management Bureau administrator, was presented with the Distinguished Service Award, which recognizes dedication and commitment to marine environmental quality and sustainable resource use in the Gulf of Maine. The award is given to participants from the jurisdictions who are retiring from working with the Council. Over the past 15 years, Diers

has focused his work on state and federal ocean policy, salt marsh and river restoration projects, and efforts to protect clean water throughout the state's coastal watershed.

Steve Landry, Merrimack Watershed supervisor, received the Gulf of Maine Visionary Award, which recognizes innovation, creativity and commitment to marine protection by a business, environmental organization, or individual who is making a difference to the health of the Gulf of Maine. Landry has shown the utmost dedication to the protection and restoration of New Hampshire waters through his work at



*Ted Diers, David Burdick, Ann Smith, Tom Burack, Gov. John Lynch, Steve Landry and Peter Lamb pose following the Gulf of Maine Awards ceremony.*

DES as well as his numerous volunteer efforts.

The Gulf of Maine Council on the Marine Environment is a Canada/US partnership of government agencies, non-government organizations and business interests dedicated to preserving environmental quality in the Gulf of Maine and its watersheds. More information on the Council can be found at [www.gulfofmaine.org](http://www.gulfofmaine.org). ■

## DES THEN & NOW IN PHOTOS



*The Concord municipal landfill (pictured then and now) on Old Turnpike Road, Concord, began operation in 1965 on the banks of the Merrimack River on a 28-acre lot and operated for over 25 years. A federal law passed in 1981 required operating unlined landfills to formally close once they reached current capacity, or before. Concord's landfill closed in 1991 and was capped in 1995.*



*A cap stops penetration of surface water into the waste mass, and prevents contamination of groundwater in the area. Until it is determined that the landfill no longer poses any public health risk from buried materials, the closed landfill is monitored to ensure the integrity of the cap, and for methane gas and groundwater contaminants.*

## There's a science to beach inspecting

“The following new beach advisory has just been issued ...” For many, this warning will look familiar. Beach advisories are issued when bacteria levels in the water are too high, and pose a risk to swimmers. But who determines this, and how? That is the job of the DES Beach Inspection Program.

The process begins with Kayleen Duclos, a second-year intern in the DES Limnology Center. Each morning, Monday through Thursday, Kayleen packs up her equipment and heads out to the coast. She is responsible for testing the state's coastal beaches. Public beaches are tested from Memorial Day until Labor Day, and each beach has its own test schedule that may range from once every other week to twice a week.

Most beaches are divided into three sections for testing: left, right and center. After labeling the specimen jars appropriately, Kayleen ventures out onto the beach. She counts all the birds and people in the water, because the numbers can help tell the story of the levels of bacteria found. For each section, she records the water temperature, turbidity, tide and the weather before methodically dipping in her specimen container and taking a sample of the water.

After collection, she stores the samples in a cooler, and moves on to the next beach on her schedule. At the end of the day, she returns to DES where she leaves her samples with the state water testing lab. Here, Wendy Locke and Tina Wells prepare the samples and enter them into the database, Horizon Lims. Each sample has its own set of paperwork, and is triple-checked for accuracy. Wendy and Tina handle 40-60 different samples everyday, so precision is important.

After data entry is complete, the samples are moved across the hall where the actual testing begins. Dan Hagenbuch, also a second-year DES in-

tern, is responsible for testing the bacteria levels of the samples. The process for saltwater testing takes about 30 minutes. Filters are placed on funnels and a portion of the water sample is poured in. The filters are flushed with buffered water to allow non-bacterial particles to drain out, so that only the bacteria remain on the filter. When the water is finished draining, the filters are removed from the funnels and placed on a media plate containing a type of agar called MEI. The plate is stored for 24 hours at a temperature of 41°C. Here, the bacteria will colonize, and the results will then be counted and interpreted.

The bacteria being tested for are called indicator bacteria. The presence of indicator organisms is evidence that other disease causing pathogens surviving under similar conditions are in existence in the water. The indicator bacteria for saltwater is *Enterococchi*, while the one used for freshwater is *E. coli*. After being read, the samples are entered into a log book, and added to the DES OneStop database where it is available for the public.

Usually, the samples are within the allowable limits, and all is well. However, occasionally a bacteria level will be too high, and this is when beach advisories are issued. An example of this is the two-day ban issued at Hampton Beach last year. Advisories are not a ban from water usage, but an alert to bathers to swim at their own risk. Alerts stay in effect until the water can be retested and declared safe.

As evidence of the quality of New Hampshire's coastal beaches, Hampton Beach and Wallis Sands Beach have been rated five-star beaches by the Natural Resources Defense Council for the last two years — a distinction only held by 12 beaches nation-wide in 2012 — thanks in large part to the hard work of the Beach Inspection program.

DES's mission is to help sustain a high quality of life for by protecting and restoring the environment and public health in New Hampshire. The Beach Protection program is a key part in fulfilling this objective. Beach inspections help keep our waters healthy, and allow potential problems to be addressed early on. For more information about this program, please see <http://des.nh.gov/organization/divisions/water/wmb/beaches/index.htm>. ■



*A momma herring gull keeps a protective eye on her little ones as they enjoy the rocky coast of Star Island, N.H. Photo by Alicia Carlson.*



Former DES Commissioner Bob Varney and current Commissioner Tom Burack unveil a plaque honoring the service of Jody Connor during the dedication of the DES Limnology Center in Jody's name.



Photo by Barbara McMillan

Led by Scott Reynolds of Environmental Canine Services LLC, Sable, a seven-year old German shepherd, sniffs a water sample to detect the presence of human bacteria at a workshop held at DES's Seacoast office. Reynolds' company uses five scent-trained dogs to help clients determine where human bacteria sources are present in waterbodies. In addition to the workshop, the dogs assisted several Seacoast communities by tracking bacteria sources in problem watersheds.

## No Butts About It ... It's Littering!

Have you ever wondered when it became socially acceptable to litter with cigarette butts?

That is the question that the August issue of *GreenWorks* poses. A 2009 *New York Times* article reveals that people who do not litter with other objects, frequently do so with cigarette butts. Why? Perhaps it is because many smokers believe that cigarette butts are biodegradable. They are NOT. Nationwide, statistics show that cigarette butts account for an astronomical percent of litter. The actual percentage will surprise you. Read the entire article at <http://des.nh.gov/organization/commissioner/pip/newsletters/greenworks/documents/201208-greenworks.pdf>. ■

### VOLUNTEERS NEEDED!

Saturday, September 15

**New Hampshire Coastal Cleanup Day**

**The Blue Ocean Society**

(603) 431-0260 or

[info@blueoceansociety.org](mailto:info@blueoceansociety.org)



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