ENVIRONMENTAL NEWS

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Newsletter of the New Hampshire Department of Environmental Services May-June 2020

COMMISSIONER'S COLUMN

Carrying on

The way the world gets work done has changed as a result of the COVID-19 pandemic, and NHDES is no different. Most of our staff, like many of you, have transitioned to working remotely. At least for the foreseeable future, we will no longer be meeting with our customers in-person but instead we will be working to best answer questions over the phone and via email. We understand that this can be challenging, but we are here to help you and together we can keep moving forward to the day that we can operate in a more normal fashion.

NHDES will be developing a plan, based on the guidance from the Governor and the Department of Homeland Security and Emergency Management, for a phased approach to bring staff back into our building when it is deemed safe to do so. Until that time, NHDES will be working to maintain and ensure that we are preserving and protecting our environment and public health. It would be untrue, however, if I was to say that it is business as usual. We worked closely with the Governor to issue Emergency Order #29, on Executive Branch Deadlines and Requirements, as it pertained to NHDES. Essentially, this order gave NHDES the flexibility to work with the regulated community in a collaborative manner to address situations made untenable by the COVID-19 pandemic. To be clear, this did not allow or loosen any regulations that would result in harm coming to the environment. In most cases, it was more of an administrative accommodation to reflect today's realities – an extension of timeframes for certifications and licensing and a mechanism to allow

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High levels of PCBs detected in fish tissue in Squam Lake

On March 30, 2020, just two days before the start of the open water fishing season, the New Hampshire Department of Environmental Services (NHDES) announced new, more restrictive fish consumption limits for all fish caught in Squam Lake as a result of high levels of polychlorinated biphenyls (PCBs) detected in fish tissue samples. The new limits for smallmouth bass and fish other than yellow perch are significantly more restrictive than the existing state-wide limits for fish consumption due to mercury.

The Squam Lake limits are as follows:

- One meal every 4 months for adults and children 7 years and older.
- One meal every 6 months for women of childbearing age.
- One meal per year for children under 7.

PCBs are man-made chemicals used as coolants and lubricants in electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence that they build up in the environment, can cause harmful health effects, and are considered a probable human carcinogen.

High levels of PCBs were discovered in Squam Lake when the Loon Preservation Committee (LPC) set out in 2016 to determine why so few Common Loons successfully hatched and fledged on the lake. Even given the challenges of surviving lead fishing lures and the growing number of boaters on the lake, successful loon hatching on Squam Lake was unusually low. The LPC analyzed unhatched loon eggs and found disturbingly high levels of PCBs, poly- and perfluorinated alkyl substances (PFAS), DDT, and other chemicals. They and their partners at the

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additional time for some permitting decisions, should the need arise.

We have done our best to be transparent and to communicate these changes. You can find information on how the Emergency Order impacts NHDES via the press release we issued. Also, NHDES programs have been posting COVID-19-related updates for their customers and stakeholders on the NHDES COVID-19 webpage. Please check the webpage regularly, as we will update information as necessary.

I am extremely proud of the work done by NHDES staff to transition to working remotely in a very short period of time. A lot of effort by staff, and assistance from our colleagues at the Department of Information Technology, have made the change as painless as possible. The way we get work done has changed, and it is unknown whether we will ever totally get back to the way things were before the pandemic. Someone once remarked that "the only constant in our world is change." Life will return to normal – a "new normal" perhaps – but normal nonetheless. ■

Left: Three generations of NHDES employees. Left-right: Dot Hart, Jen Grace, Alyssa Moodie

Clark Freise retirement announcement

My colleagues and friends,

It is with mixed emotions that I announce that I will be retiring from NHDES effective May 8, 2020. I am sad that I will no longer be standing with you daily, fulfilling our mission to protect the public health and environment of New Hampshire. However, the time has come for my wife and I to fulfill our long-term goal of spending several years exploring the world at sea (now with Millie, seen here standing her version of "a proper lookout"). I began my career serving our country in the United States Navy. I end it here, having served our state and our families with you here at NHDES. I can think of no finer or more honorable bookends.

NHDES has been challenged mightily over these last four and half years and has stood resilient and capable through it all. I have every confidence you will continue to do the same and will even find ways to improve after this old sailor heads over the horizon. Thank you for the support, wisdom and patience you have shown me. My time here with you has been a blessing to me and I will carry it with me always.

Sincerely,

Clark

NHDES Assistant Commissioner

Diesel emissions reduction funding

NHDES has approximately $300,000 of funding available through the EPA's Diesel Emissions Reduction Act (DERA) Program. The DERA Program is intended to help diesel vehicle and equipment owners replace older diesel engines/vehicles/equipment to reduce emissions. This Request for Proposals (RFP) is a second round of funding administered by NHDES through the State Clean Diesel Grant Program.

The State Clean Diesel Grant Program provides partial funding for New Hampshire local and state governments and businesses operating in New Hampshire to reduce emissions through idle reduction technologies, exhaust controls, and replacement of older on- or off-road diesel engines/vehicles/equipment with newer engines/vehicles/equipment. Grant funding is available with a required match by the grantee. Eligible project submissions will be scored and selected through a competitive solicitation process. To view prior grant recipients and projects, and access the RFP, application, scoring criteria and FAQs, visit the New Hampshire DERA Project webpage. Questions? Contact jessica.wilcox@des.nh.gov. ■

ENVIRONMENTAL NEWS

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Squam Lakes Association and Plymouth State University also looked at the chemical levels in crayfish and stream sediments feeding the parts of the lake where loon hatching success was lowest and found unusually high levels of these same chemicals.

This research led to another question: What about the fish, both for human and loon consumption? To find out, NHDES coordinated with EPA to better understand the potential risks to human health associated with eating fish caught in the lake. NHDES biology staff collected 55 smallmouth bass and yellow perch in Squam Lake, grouping 4 to 5 fish into five smallmouth bass samples and seven yellow perch samples. The samples were analyzed for PCBs and PFAS by an EPA contract lab and yielded the following results:

- PCB concentrations were higher in smallmouth bass than yellow perch.
- PCB concentrations in smallmouth bass ranged from 3.99 to 22.81 parts per billion or ppb (average of 13.34 ppb).
- PCB concentrations in yellow perch ranged from 3.44 to 7.49 ppb (average of 4.55 ppb).

NHDES evaluated the range of PCB concentrations in fish tissue for potential human health risks, specifically the cancer risk. Based on this evaluation, NHDES has concluded that the PCB concentrations in the fish are high enough to present risks from exposure and their consumption should be limited.

The new consumption limits for smallmouth bass caught in Squam Lake also apply to lake trout, salmon, hornpout and other fish species other than perch.

NHDES found that PFAS concentrations in smallmouth bass and yellow perch were not high enough to require further restrictions on fish consumption from Squam Lake. Of the five PFAS for which NHDES can calculate consumption limits, perfluorooctane sulfonic acid (PFOS) raised the most concern due to its toxicity and occurrence in sampled fish. Based on high-end exposure assumptions, NHDES estimated

that adults could eat up to four meals per month of Squam Lake smallmouth bass and other fish, and even more yellow perch, before being at risk of health impacts from PFAS. In contrast, the recommended limit for adults eating Squam Lake smallmouth bass and other fish based on PCBs is only three meals per year.

However, it is important to note is that there is no known risk to catching and handling of fish in Squam Lake, so catch and release fishing is not impacted.

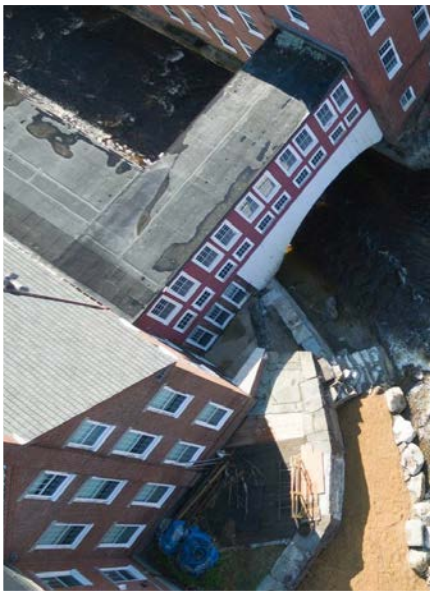
The existing statewide mercury-based consumption guideline for smallmouth bass and yellow perch is one meal per month for young persons and pregnant woman and four meals per month for adults and children seven years old or older. In addition, the mercury guidelines state that only fish less than 12-inches in size should be eaten, which may be below the legal length limit for some species. Since the guidelines for Squam Lake are stricter than the mercury guidelines, it is important that anglers follow the Squam guidelines when fishing in Squam Lake.

For more information related to the fish consumption advisory for Squam Lake, please contact David Neils, Chief Aquatic Biologist at NHDES, at david.neils@des.nh.gov or (603) 271-8865. ■

Restoring fish passage and reducing flood hazards along the Bellamy River

Above: Lower Sawyer Mill Dam pre-removal in October 2010; high-water in March 2010 and removal in September 2018.
Below: Removal complete in December 2019.

After more than 10 years of planning, the Lower and Upper Sawyer Mill Dams, located in Dover on the Bellamy River, have been removed. This long, collaborative project has been a successful effort to protect the safety of those living near the high hazard dams, restore the natural conditions of the river and clean up legacy contaminants in the sediments around the dams.



April 2020 drone image of the mill and

The journey to dam removal began in 2009 when the NHDES Dam Bureau issued the dam owner, Sawyer Mill Associates (SMA), a letter of deficiency requiring that the dams be brought into compliance with modern dam safety requirements. The dams were classified as high hazard dams because they were structurally connected to the inhabited Sawyer Mill Apartment buildings.

The former Sawyer Woolen Mill was converted to Sawyer Mill Apartments between 1983 and 1986. When the Sawyer Woolen Mill was nominated for the National Register of Historic Places, the nominating documentation described it as the "best preserved woolen textile mill in New Hampshire," which conveys a powerful sense of place due to the remaining integrity of its 19th century mill architecture, building layout and workmanship.

SMA understood the impracticality and cost of bringing the dams into compliance, so the group hired a consultant team in 2011 to evaluate the feasibility of dam removal, and ultimately decided to pursue removal of both dams. This kicked off an engineering and permitting phase that lasted from 2015 through 2019. The removal of the Lower Sawyer Dam was completed in January 2019 and the Up-

Sawyer Mill, cont. page 5

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per Sawyer Mill Dam removal was completed in March 2020.

Central to the Sawyer Mill complex is the Bellamy River, which once provided the power source for the original milling operations and then the water supply to facilitate the coal-fired steam power plant that was built in 1875. While some historic maps depict its original path, the Bellamy River bears no resemblance to its native condition due to the significant modifications put in place between 1864 and 1892, including extensive channelization and the construction of the Upper and Lower Sawyer Mill Dams. Historically, the entire mapped extent of the Bellamy River system is thought to have been utilized by diadromous fish species: alewives, blueback herring, American eels, shad and Atlantic salmon. However, they have been prevented by dams from accessing important spawning and rearing habitat of the Bellamy River.

d river. Credit: Evans and Gardner, 2020.

Efforts to restore habitat connectivity in the Bellamy River began in 2004 with the removal of a dam ruin at the head-of-tide. Since that time, river herring have been observed at the base of the Lower Sawyer Mill Dam, which is located only 2,500 feet from the tidal waters of Great Bay. With the removal of the Upper Sawyer Mill Dam in March 2020, project partners are eagerly awaiting the river herring migration in May 2020 to monitor how effectively fish are able to navigate this newly available habitat. After a 300-year absence from this system, it is still too early to know how these diadromous fish populatations will respond to the restored river conditions.

Another significant conservation benefit of the Sawyer Mill Dam Removal Project is the passive restoration of 21 acres of riverine floodplain that occurred upon the removal of the Upper Sawyer Mill Dam. The resulting condition will replace a pond that had poor water quality with emergent and scrub/shrub floodplain wetlands and pool/riffle river habitat features, which will provide a significant increase in high quality habitat for a diversity of plants and animals.

Yet another conservation benefit of this project is the cleanup of legacy contamination. Extensive sampling showed that the sediments impounded by the Sawyer Mill Dams were contaminated with Polycyclic Aromatic Hydrocarbons (PAHs), which are typically associated with urban road surface runoff. Ultimately, 3.020 cubic yards of sediments were removed from the Bellamy River and disposed in regulated landfills. The removal of sediment contaminants added significant complexity and cost to the project, but was necessary to ensure that these accumulated sediments were removed from the system so as not to cause adverse impacts to downstream resources, such as Great Bay.

Multiple state and federal agencies contributed technical and financial assistance to the project, including providing SMA with $1,705,015 in grant funding to support the feasibility, engineering, permitting and construction phases of the project. ■

Top to bottom: Upper Sawyer Mill Dam pre-removal in June 2017; high-water in May 2006; removal in November 2019; removal completion in March 2020 (courtesy VHB).

NHDES Snapshot: Boat Pumpouts Program

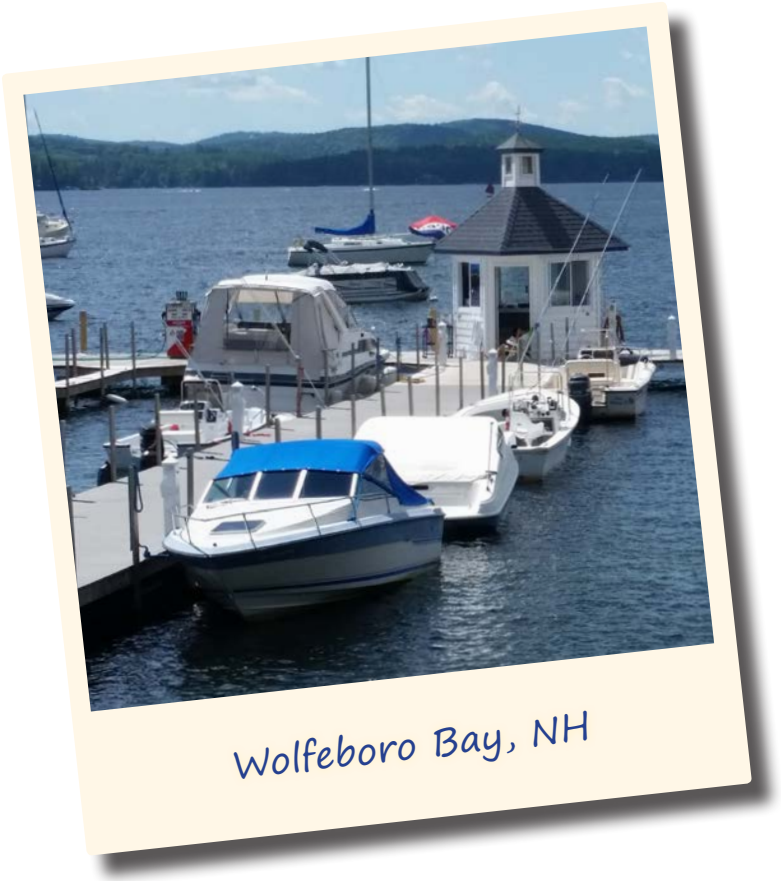
NHDES staff can't fulfill the agency's mission only from our desks. To protect environmental quality and public health in New Hampshire, we are out in the field every day: testing water quality in our ponds and lakes, sampling private well water, monitoring air emissions, assessing storm damage, responding to oil and chemical spills, training water works and solid waste operators, and so much more. "NHDES Snapshot" is an occasional series that takes a quick look inside the day of one of those employees.

Andrea drives up to the marina and finds a parking spot. She sifts through her pile of papers, finds the one with the right business' name on it, and starts walking toward one of the buildings, looking for the right person to talk to about the marina's pump-out system.

It was the summer of 2019 when Andrea visited marinas as part of the NHDES Boat Pumpouts Program, which falls under the Clean Vessel Act (CVA). The program currently monitors about 13 sites across the state, mostly around Lake Winnipesaukee, Great Bay and Little Bay. On this visit, Andrea is looking for information, as well as offering it. She asks someone knowledgeable about the pumpout system at that marina whether they anticipate needing to replace it soon, and how many gallons of waste the marina collects annually. Then she tells the marina staff about the grant opportunity through the CVA. After the brief visit, Andrea hops back in the car and drives to the next location. While the program currently only checks in with about 13 marinas, the goal is to expand the program and increase the number of pumpouts in New Hampshire.

The Clean Vessel Act Program ensures that sewage from boats is disposed correctly, rather than in places where people swim, and maintains an adequate number of facilities where the recreational boaters can safely pump off sewage and graywater. This is important because bacteria and nutrients from boat sewage are highly concentrated and possibly mixed with formaldehyde and other toxic disinfectants. If released into the water, sewage would contaminate the waterbody, causing problems for plants, animals and humans. To help keep this resource clean, as part of the CVA, NHDES provides funding for the construction and maintenance of pump-out and dump stations on marinas. These grants can cover up to 75% of the costs with other state, local and private sources closing the cost gap. The program also works with marinas and the boating public to educate vessel owners about the "No Discharge Areas."

Since 2002, the NHDES program has initiated a "No Discharge Area" for all coastal waters, which is a federally designated zone where discharge of sewage is prohibited.



Inland waters have the additional protection of a state regulation which also prohibits discharge of graywater (sink and shower water). Since 2002 this program has eliminated 199,000 gallons of sewage by seacoast mobile pumpout boats; installed or replaced 10 pumpout stations throughout the state; and inspected over 400 recreational boats to determine if the plumbing is in compliance with New Hampshire regulations.

The summer of 2020 is just getting started and a lot is still unknown. There might not be the resources available to do marina visits this year. The program reaches out through brochures, social media and the NHDES website to inform the public about the harmful effects of sewage pollution. With the end goal of keeping our waterbodies clean for everyone to enjoy, the CVA program is using whatever resources are available to provide information to the public. ■

Local distilleries working to protect first responders, healthcare workers, the environment and you

The NHDES Pollution Prevention (P2) Program is expanding on its successful partnership with New Hampshire breweries – helping them implement energy efficient, water conservation, and waste reduction practices – by partnering with the New Hampshire Craft Spirits Organization. Just as the craft brewing industry has seen rapid growth in recent years, the craft beverage distilling industry is on the rise, expanding from a handful of distillers a few years ago to nearly 20 by the end of 2019. Currently, the P2 Program is working with 29 breweries in New Hampshire, and is ready to help craft beverage distillers grow sustainably.

As this partnership is launched, the P2 Program is proud to see these distilleries step up to the plate during the current public health crisis by producing hand sanitizer instead of the regular lineup of bourbon, whisky, rum, brandy, gin, vodka and other flavored spirits. Flag Hill Distillery and Winery, Tamworth Distilling, Smokey Quartz, Djinn Spirits, Steadfast Spirits, Live Free Distillery, Cold Garden Spirits, and Copper Cannon Distillery are all doing their part to protect first responders, health care workers, and the general public by producing hand sanitizer. These facilities are doing what other distilleries across the country are doing to fight COVID-19: producing hand sanitizer based on World Health Organization's guidelines, and many are giving it away for free. Recently, the Alcohol and Tobacco Tax and Trade Bureau (TTB) granted exemptions and authorization for U.S. distillers to make ethanol-based hand sanitizer "to address the demand for such products during this emergency."

This is also a chance for distilleries to be environmentally friendly. Local producer David Grasse of Tamworth Distilling explained that "making the sanitizer actually makes the distillery more efficient because the waste from the distilling process can now be put to good use as a sanitizing agent."

Making hand sanitizer requires neutral grain spirit, which distillers use to make whisky and other spirits, plus hydrogen peroxide, glycerin, and small bottles, all of which need to be procured. Brian Ferguson, proprietor of Flag Hill Distillery and Winery, noted that they have 40 tons of locally-sourced corn in storage, which is used with malted barley to create the neutral spirit. Other distillers around the country are using some of their own vodka or gin to make the hand sanitizer and still others use by-products of the distilling process. Even residents are helping the distillers by donating bottles, five-gallon containers, corn and other materials. Check with your local distillers for more information about what donations they might need.

The P2 Program would like to thank New Hampshire's craft beverage distillers for doing their part to address this health crisis, and we look forward to working with them to optimize their environmental sustainability goals in the future. ■

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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No TP? Bag it, don't flush it.

The coronavirus pandemic continues to cause a shortage of toilet paper for some, which could result in inappropriate items being flushed down the toilet. Municipal wastewater treatment plants, including the NHDES-operated Winnipesaukee River Basin Program (WRBP), are concerned about a possible increase in non-flushable items causing clogs in the system.

These materials, such as facial tissues, wipes, paper towels, rags, t-shirts and sheets, can cause damage to municipal wastewater or home septic systems, which can result in costly repairs. In December 2016, a "pipe snake" made of wipes, rags, sanitary products and paper towels was pulled from the WRBP sewer system that serves the Lakes Region of New Hampshire. Clogs like this occur on a regular basis from people flushing innapropriate items.

The bottom line is that the only safe items to flush are human waste and toilet paper. If you are forced to use something other than toilet paper, please place it in a bag and dispose of it in your trash. For more information, check out the NHDES brochure on What's Flushable. ■

#OneThing4Earth

Last month, we celebrated the 50th anniversary of Earth Day virtually, with a social media campaign that challenged others to share their #OneThing4Earth. Just as we believe "Earth Day is Every Day," we also firmly believe that just one thing can make a difference. Making one sustainable lifestyle choice a daily habit is a simple thing that anyone can do to show their love of the environment and their willingness to protect it.

The response to the challenge reaffirmed our beliefs.

NHDES Commissioner Bob Scott launched the challenge by posting a video of his home compost pile on the NHDES social media profiles and challenging his entire staff to post videos of themselves doing one thing that is good for Earth.

Among the many responses, we saw people using solar panels to power their homes, driving electric vehicles, using reusable food wraps, growing food in their front yards, collecting rain in rain barrels, and lots of bike riding.

To see all of the great videos and photos shared so far, view the #OneThing4Earth search on Facebook, on Instagram, and on Twitter.

It's not too late to accept the challenge! Join us in recognizing the importance of protecting the environment by posting your #OneThing4Earth; and remember pass on the challenge. ■