

2009 Annual Report to the Public Water Access Advisory Board
Programs and Activities of the
NH Department of Environmental Services
July 2010

During 2009, the New Hampshire Department of Environmental Services (DES) engaged in numerous programs and activities associated with recreational opportunities and public access to the state's waters; these items are described below. DES continues to be active in its efforts to expand and improve public access opportunities across New Hampshire.

DES Bureaus and Programs that Support Public Access

Dam Bureau

The DES Dam Bureau owns and operates 113 dams, and also operates and maintains 105 dams belonging to the NH Fish and Game Department (F&G). DES provides boating recreational opportunities by regulating the water level of these dam controlled waterbodies. Many of these dam sites have public access facilities, which require constant maintenance, repairs and enhancements. As part of the operation plans for each of the dams, the need and the opportunities to improve public access is fully evaluated.

Maintain and Monitor Existing Lease Agreements

The Bureau owns lake and riverfront parcels on waterbodies across the state and it leases many of these properties and facilities to several communities and other agencies across the state. DES works cooperatively with towns and agencies to provide public access opportunities at these locations: Bow Lake, Strafford; Lovell Lake, Wakefield; Goshen Lake, Goshen; Oliverian Brook Flood Control Impoundment, Benton; Deering Reservoir, Deering; Milton Three Ponds, Milton; and the Waumbek and Rowe sites on the Salmon Falls River, Milton.

Site Enhancement Projects

Numerous sites were cleared of brush and debris to improve public access by the Site Enhancement Crew in 2009. This year efforts were focused primarily on the Baker River flood control sites which are heavily used for recreation. The crew also assisted with mowing and cleaning existing dam sites and boat launches.

Maintenance, Repairs, and Upkeep to Existing Dams

Sunrise Lake Dam, Middleton – Completed major reconstruction of the dam.
Big Brook Bog Dam, Pittsburg – Completed major reconstruction of the dam.
Deering Reservoir Dam, Deering – Completed Phase 2 of the reconstruction of the dam.
Hubbard Pond Dam, Rindge – Installed gates to limit access of wheel vehicles on dam.
Pleasant Lake Dam, Deerfield – Replaced outlet pipe and constructed new downstream headwall.
Little Lake Sunapee Dam, New London – Replaced deteriorated outlet structure and gate-house.

New Projects in the Design, Permitting, Planning Stages or Waiting Funding

Durham Reservoir Dam, Durham – Completing design for reconstruction, construction to start in 2010.
Hawkins Pond Dam, Center Harbor- Planned major reconstruction of the dam spillway.
Perkins Pond Dam, Weare – Design complete, construction to start in 2010.
Pleasant Lake Dam, Deerfield – Completing design of Phase 2 of the reconstruction, construction to start in October 2010.
Ballard Pond Dam, Derry – Completing design, construction date not scheduled.
Milton Three Ponds Dam, Milton – Repairs underway with work to continue through the end of 2010.
Pittsfield Mills Dam, Pittsfield – Repairs ongoing, to be completed in spring 2010.
Hubbard Pond Dam, Rindge – Armoring of dam embankments designed and permitted; construction to commence in the fall of 2010.
Deering Reservoir Dam, Deering – Will complete final phase of reconstruction in the fall of 2010.

Dam Removals

Black Brook (Maxwell Pond) in Manchester
Winnicut River Dam in Hampton

Wetlands Bureau

The Wetlands Bureau continues to ensure that public access is provided whenever a marina is proposed for a lake, a river, or the seacoast. The bureau has a liaison staffer who works with the F&G Public Access Program to coordinate reviews and approvals of various jurisdictional programs within DES in an effort to facilitate construction of public access sites proposed by F&G.

Watershed Management Bureau

The Watershed Management Bureau (WMB) uses a holistic and integrated approach to achieve clean water goals. Both regulatory and non-regulatory programs work together within the Bureau to integrate science, policy, planning and education to address nonpoint source pollution, stormwater, and exotic species. There are over 20 programs and activities within the Bureau several of which contribute to and support public access in New Hampshire.

Clean Vessel Act Program

The New Hampshire Clean Vessel Act (CVA) program is a result of a cooperative effort between DES and the U.S. Fish and Wildlife Service. The Federal Clean Vessel Act provides funds to states for the construction, renovation, operation and maintenance of pumpout/dump stations. Since 2002, New Hampshire funding has also been applied to the operation of a mobile pumpout service along the coast. Federal law prohibits the discharge of treated or untreated boat sewage in water that is designated a No Discharge Area (NDA). All waters within three miles of the New Hampshire shoreline and the Isles of Shoals are part of the coastal No Discharge Area. Tidal and estuarine waters, including all bays and rivers to the tidal dams, are incorporated in the NDA. New Hampshire is also one of only 14 states that enforce "No Discharge" laws for inland waters. Boats cannot contain devices that will allow for overboard discharge of treated/untreated boat sewage or graywater.

Coastal Waters

No new pumpout facilities were funded for the state's coastal waters during 2009, but four stationary pumpout locations and one mobile pumpout boat are available to the boating public. Two marinas were awarded operation and maintenance funding for existing pumpout facilities. The CVA program anticipates funding a new facility in Portsmouth and to replace equipment at a facility in Dover for 2010/2011.

To date, more than 68,000 gallons of sewage have been removed from recreational boats just through the use of the mobile service. The 2009 pumpout program season serviced 522 boats and pumped out approximately 17,000 gallons of sewage. The volume of sewage collected by the pumpout boat continues to increase each year, an indication of the need and effectiveness of such a resource for recreational boater sewage.

Inland Waters

One replacement pumpout facility was funded at Channel Marine on Lake Winnepesaukee in 2009 with installation scheduled for 2010. Four marinas, also on Lake Winnepesaukee, were awarded operation and maintenance funding for existing pumpout facilities. The NH CVA Program anticipates funding construction and renovation of additional systems, including a floating restroom facility, and the initiation of a mobile pumpout service for inland waters in 2010/2011.

Boat Inspection Program

The Boat Inspection Program continues to promote proper boating practices by conducting inspections for freshwater vessels with onboard wastewater containment facilities on Lakes Winnepesaukee and Winnisquam. The program has focused attention on these particular lakes since a high percentage of large boats with such facilities tend to exist there. Currently RSA 487:2-3 prohibits the discharge of gray or black water into New Hampshire's inland waters. The program completed 48 inspections, of which five were re-inspections. Violations of sink regulations were the most common for 2009. Inspection numbers for the boating season vary according to weather and seasonal staff availability.

Public Beach Inspection Program

Coastal Program

New Hampshire receives an annual US Environmental Protection Agency (EPA) grant to enhance the existing Coastal Beach Program. The grant focuses on implementing and enhancing current monitoring and notification programs. New Hampshire has several goals, including: 1) to identify and implement an improved beach advisory notification system; 2) to better identify sources of Enterococci (bacteria) and initiate Best Management Practices (BMPs) to reduce bacteria loading; 3) to establish a beach recognition and rewards program for public beaches that provide safe and healthy recreational experiences, and; 4) to employ recent technological advances in beach monitoring. The NH Coastal Beach Program is considered one of the best in the country and these grants further the state's efforts to protect public health.

DES inspected a total of 17 coastal public swimming beaches in 2009. Coastal beaches were inspected twice per week, once per week, or once every other week for a total of 401 summer inspections and 48 fall inspections. Seven coastal beach advisories were issued for an exceedance of public beach water quality standards for Enterococci (bacteria).

Freshwater Program

DES inspected a total of 162 freshwater public swimming beaches on a monthly basis, and 87 juvenile camps once during the season for a total of 752 inspections. Forty-three freshwater beaches were issued a total of 60 advisories for exceedances of the public beach water quality standards for E. coli. Nineteen beach advisories were issued at Ahern State Park in Laconia as a result of a pre-emptive advisory following a greater than 0.25 inches of rainfall.

Twelve freshwater beaches were issued cyanobacteria advisories for the presence of a potentially toxic cyanobacteria scum. Lake warnings for cyanobacteria blooms on lakes without designated beaches or for areas of a lake away from the designated beach were again issued during the swimming season of 2009. DES issues a cyanobacteria warning if an algae bloom on a lake contains greater than 50 percent cyanobacteria. Ten cyanobacteria warnings were issued in 2009.

Exotic Species Program

Milfoil Control Funds

DES provided milfoil grant funds to eight organizations to chemically control the growth of exotic aquatic plants in 2009, and five grants to perform non-chemical control activities. Additionally, DES staff performed numerous non-chemical control strategies on various waterbodies, including hand-pulling, benthic barrier placement and diver-assisted suction harvesting work.

Milfoil and Other Exotic Plants Prevention Fund

DES issued grants to the New Hampshire Lakes Association for a Lake Host Program, and to the New Hampshire Rivers Council for work to both survey and educate about invasive algal species, including rock snot (*Didymo*). One Milfoil Research Grant was awarded to a consulting firm to evaluate the difference in control of variable milfoil due to varied doses of the aquatic herbicide 2,4-D (trade name "Navigate").

Public Education and Outreach

DES distributed numerous milfoil signs and educational pamphlets throughout the state. There are more than 500 volunteer Weed Watchers from across the state working in cooperation with DES on more than 300 waterbodies.

Management of Exotic Plants

DES worked with more than 30 waterbodies using techniques such as hand-pulling, placement of bottom barriers, harvesting and the application of herbicides to control exotic plants.

Other Programs to Control Exotic Plants

DES has a Weed Control Diver Program and the Diver-Assisted Milfoil Machine (DAMM), a watercraft outfitted to suction harvest exotic weeds from a water body. The diver program began in 2007 and more than 70 divers have since been certified and have worked in approximately 20 lakes over the last three years. These individuals are specially trained to safely extract exotic plants from the lakebed with minimum disruption to the lake bottom and little impact to lake quality. The DAMM, first used in 2008, harvested exotic weeds from approximately 20 lakes. The combination of these two programs provided very effective physical removal of exotic aquatic plants from New Hampshire's lakes and ponds.

New Infestations of Exotic Plants

There was one new infestation of variable milfoil in New Hampshire in 2009 in Upper Goodwin Pond in Concord. Though this is a new listing, DES biologists believe that the milfoil is not new to this pond. The pond is surrounded by private property so it is not used by transient boaters. The milfoil was not reported to DES and was found during a survey by a DES team of biologists. It is believed that the milfoil was introduced to the pond during a time of high water in the Merrimack River (this is an old oxbow pond to the Merrimack).

Clean Lakes Program

The Clean Lakes Program at DES involves the diagnostic evaluation of water quality within a given watershed. Lakes and ponds in New Hampshire are recommended for the Clean Lakes Program if data from other monitoring programs, like the DES Lake Survey Program or the Volunteer Lake Assessment Program (VLAP) show signs of declining water quality over time. Diagnostic studies are designed to determine the sources and magnitudes of phosphorus entering a lake, and to make recommendations to reduce the phosphorus load. Studies generally last 12 to 16 months, and all tributaries and the outlet are sampled for water and phosphorus inputs. Since the early 1980s, 19 diagnostic feasibility studies have been completed. Most recently completed were Partridge Lake, Littleton (2007), Rust Pond, Wolfeboro (2007) and Perkins Pond, Sunapee (2009).

In addition to Diagnostic Feasibility Studies, the Clean Lakes Program manages EPA Section 319 (Non-Point Source Pollution) Watershed Based Plans. At this time plans are being developed for Lake Winnisquam in Belmont, Tilton, Meredith, Laconia and Sanbornton, Cobbetts Pond in Windham, Mirror Lake in Tuftonboro and Rust Pond in Wolfeboro.

Lake Probabilistic-Based Sampling

The Lake Trophic Survey (LTS) program was discontinued in 2007 in order to participate in the EPA-sponsored National Lake Assessment (NLA) Program for randomly-selected lakes. In 2009 DES completed the third and final year of the three-year program to sample 50 randomly-selected lakes. Nineteen lakes were sampled in 2009. Lakes were sampled according to both NLA and LTS procedures and protocols (NLA samples were sent to contract laboratories). Many of the 2009-sampled lakes have public boat access, including Second Connecticut Lake in Pittsburgh, Little Squam Lake in Ashland and Wicwas Lake in Meredith.

Mercury in Fish Program

With assistance from Fish and Game and volunteers, 103 fish were collected from the state's lakes and

ponds in 2009. The fish were frozen upon collection and analyzed for total mercury in the DES Limnology Center in late 2009 and early 2010. Many of the lakes and ponds from which the fish were collected have public access facilities, including Mascoma Lake in Enfield and Lake Winnepesaukee.

Biomonitoring Program

In 2008, the DES Biomonitoring Program participated in the National Flowing Waters Study designed to characterize the condition of the nation's rivers and streams. As part of this project the Biomonitoring Program collected biological, chemical, and physical data from ten large river sites. Of these ten, seven were located on the Connecticut River, two on the Merrimack River, and one on the Contoocook River. These data will be reported on in 2011 as part of an EPA national assessment. In addition to these efforts, stream water temperature data were collected from approximately 30 sites for the purpose of water quality standards development. Finally, coincident macroinvertebrate and nutrient samples were collected from ten sites.

Continuing in 2009, the DES Biomonitoring Program completed sampling at six additional Wadeable streams in order to satisfy its obligations for the National Flowing Waters Study. In addition, sampling was completed in fifteen Wadeable streams towards a statewide characterization of the condition of New Hampshire's rivers and streams. As in 2008, coincident macroinvertebrate and nutrient samples were collected from various streams statewide in 2009 to further the development of numeric nutrient criteria. Stream water temperature data were collected from approximately 30 sites for the purposes of water quality standards development. Lastly, the Biomonitoring Program completed a draft report detailing the development and composition of a transitional water fish index of biotic integrity. The index will allow DES to more completely assess the biological condition of the state's rivers.

Surface Water Quality Assessments

Water Quality Monitoring of Rivers

Since site-specific water quality assessments tend to focus on rivers and streams with known problems, the results of the assessments are not indicative of water quality statewide with respect to designated uses, including "primary contact recreation/secondary contact recreation" and "aquatic life". The federal Clean Water Act (CWA) requires states to develop and adopt surface water quality standards that include: designated uses for all surface waters, criteria to support the designated uses, and an antidegradation policy. Designated uses are human uses of surface waters that are considered desirable and should be protected. To create a broader picture of water quality in the state's rivers for those designated uses, DES also conducted a *probabilistic assessment* of Wadeable (fourth order and smaller) streams for 2008. In other words, streams were randomly sampled to make inferences about the water quality of all New Hampshire's streams. The assessment found that for "aquatic life" support, there was insufficient data for 47.8 percent of the streams, 37.9 percent supported the aquatic life standard, and 14.3 percent did not. For "primary contact recreation," the percentages were 10.7 percent insufficient data, 83.2 percent supporting, and 6.1 percent not supporting.

Water Quality Monitoring of Lakes

The probabilistic sampling of New Hampshire lakes was completed in 2009 and the evaluation of that data in terms of supporting designated uses was completed at the end of 2009 for the 2010 water quality assessment report. DES will "poll" (sample) a randomly-selected subset of lakes to predict the condition of all lakes. Fifty lakes out of a sample set of 1004 lakes greater than 10 acres were sampled. The results showed that over 95% of the lakes supported the "primary contact recreation" (swimming) use. All lakes supported the swimming use based on bacteria; the non-support lakes were due to elevated chlorophyll (planktonic algal) levels or the presence of a cyanobacteria scum. All lakes fully supported the secondary contact (boating) use. Less than 4% of the lakes fully supported the "aquatic life" use. Lakes did not support "aquatic life" use for a variety of reasons, and a given lake could be impaired for multiple reasons. Low pH values were the main cause for non support (84%), followed by nutrients as represented by chlorophyll and total phosphorus (56%). Many of the lakes sampled had public access facilities.

Volunteer Lake Assessment Program (VLAP)

During 2009, approximately 500 volunteers throughout the state sampled a total of 178 lakes, and 1,089 water quality monitoring stations at those lakes. In addition, it is estimated that the VLAP program generated approximately 15,800 total sample results in 2009. By sampling a lake several times each year over a period of years, long-term water quality trends can be discerned. The sampling efforts of the volunteer monitors supplement the sampling and assessment efforts of DES, saving the state personnel and travel costs. Only through the help of volunteer monitors can such a volume of sampling be accomplished throughout the state.

Volunteer River Assessment Program (VRAP)

During 2009, VRAP supported 29 volunteer groups. One hundred and eighty-five VRAP volunteers monitored 354 river and stream water quality monitoring stations, providing over 9,101 water quality parameter measurements useable for the Clean Water Act mandated water quality assessments. For many of the VRAP rivers and tributaries, the volunteers are providing DES with its only source of water quality data. As with the VLAP, the VRAP volunteers provide the agency with high quality data while saving the state significant expense.

Rivers Management and Protection Program (RMPP)

The Cold River Local Advisory Committee (CRLAC) adopted the *Cold River Watershed Management Plan*, which covers the towns of Acworth, Alstead, Charlestown, Langdon, Lempster, Marlow, Unity and Walpole, in April of 2009. The RMPP staff assisted CRLAC in the review of the plan. The CRLAC recommends that there be safe, clean and healthy informal and formal access to the river in all of the riverfront towns.

The Connecticut River Management Plan: Recreation Overview was developed by the Connecticut River Joint Commissions. The plan was produced in 2009 with support from the National Oceanographic and Atmospheric Administration and DES. There are four recommendations in the plan pertaining to public river access: 1) expand public river access for car-top boats, 2) establish and use best management practices for building new sites, 3) improve communications between agencies, and 4) avoid expanding powerboat use. A copy of the plan can be found online at http://www.crjc.org/pdf/Connecticut_River_Rec_Management_Plan-Web.pdf

In 2009, RMPP staff awarded a 604(b) Water Quality Planning grant to Southern New Hampshire Planning Commission to update the Piscataquog River Management Plan. The plan contains four goals relative to recreation opportunities: 1) to provide adequate access points in each community from which the public can enjoy the river, 2) to establish access points in appropriate locations using sound conservation and design practices, 3) to prevent overuse and decline of public access areas, and 4) to alleviate the occurrence of trespass on private property by those seeking to use a public resource.

In 2009, RMPP staff awarded an American Recovery and Reinvestment Act 604(b) Water Quality Planning grant to Central New Hampshire Regional Planning Commission (CNHRPC) to update the Contoocook and North Branch Rivers Management Plan. One of the sections to be updated is access by foot and vehicles, including maps of public access points (vehicle and non-vehicular). With input from the Contoocook and North Branch Rivers Local Advisory Committee CNHRPC have discussed public access (vehicle and pedestrian to the river), identified existing permitted access points, and identified and mapped potential future access points.

Lakes Management and Protection Program

Since the Public Water Access Advisory Board (PWAAB) was first established in 1993, the Lakes Coordinator has served as the DES representative to the board. In addition to providing the PWAAB with information specific to proposed waterfront state surplus land reviews, making presentations regarding documents produced by DES that pertain to water quality and/or public access, working with the Dam Bureau to review and report the status of DES access sites, and working with the Wetlands Bureau

regarding the permitting of access sites, the Coordinator provides assistance to Fish and Game Department and the Board regarding existing and proposed public boat access facilities that are managed by DES and other agencies.

NH Coastal Program

In 2009, the Coastal Program supported the Blue Ocean Society for Marine Conservation's beach cleanup programs, including the Adopt-a-Beach Program, International Coastal Cleanup Day and monthly marine debris monitoring program at Jenness Beach, helping to keep public access sites along the coast clean and more enjoyable for visitors. The ultimate goal is marine pollution prevention, which cannot be accomplished by cleanups alone. The Blue Ocean Society used data from the cleanups, along with informative educational materials developed in past projects, to better inform the public of the prevalence and impacts of marine pollution.

Through its work coordinating the Great Bay Siltation Commission, the Coastal Program conducted a survey about recreation in the Great Bay Estuary, which yielded 198 responses. The Commission created the survey to ascertain how and where users recreate in the Great Bay Estuary, the quality of their recreational experience, and their level of concern with specific recreational and navigational issues. The top four recreational uses were bird and wildlife viewing; recreational fishing; motorboating; and canoeing and kayaking. Though limited public access sites was cited as a concern about recreational use in Great Bay, the majority of respondents were unwilling to pay a fee to increase access sites.

A Coastal Program grant provided the town of Hampton Conservation Commission funding for trail construction at the Ice Pond in Hampton. The Conservation Commission teamed up with Seacoast Youth Services, a service learning program for teens, to help prepare and build the trail.