The Sampler

March 31, 2016

The Sampler is a monthly e-newsletter produced by the Volunteer Lake Assessment Program.

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Web Highlights

This month's featured lake website is Lake Winona Improvement Association, New Hampton, N.H.

Rare "Ice Disks" Floating on Androscoggin River

Invasive Plant Found in Milton Three Ponds

No Surprise, NH Just Experienced Its Warmest Winter Ever Recorded

Busy Spring Ahead for Migratory Fish Biologists

Large-Lakes Fishing Season Opens April 1st

NASA Maps El Nino's Shift on U.S. Precipitation

First Comprehensive Study of NH Oyster Farming

Warmer Water Leads to Respiratory Distress in Aquatic Animals

Scientists Warn of the Danger of Salt Pollution

Tiny Water Flea, Big Cost

Upcoming Events

Lake Trophic Survey Program Update

The NHDES Lake Trophic Survey Program (LTSP) was initiated in 1975 with the intention of determining trophic state of lakes and ponds greater than 10 acres as required by the federal Clean Water Act. Physical, chemical, and biological measurements were collected at 780 lakes and ponds from 1978-2008 and trophic class ratings were assigned. In 2008 the program was temporarily discontinued, however the importance of the program was not lost and in 2013 staff worked to revamp and expand the LTSP as part of the Watershed Management Bureau's (WMB) monitoring strategy.

The new strategy has two major changes. First, ten lakes per year are selected to receive trophic surveys with one lake selected from up to ten targeted watersheds. Second, the LTSP sampling protocol was modified to monitor the ten lakes once annually over a three year period with each year occurring in a different summer month. While three sampling events cannot be considered a wealth of data, the new protocol gives a glimpse of the annual and monthly variability over a three year period, and better captures the growing season for aquatic plants. The three year assessment concludes with assigning the lake's current trophic state. In 2015, sampling was completed on the ten lakes initially selected in 2013 (Table 1). The LTSP is now preparing to report the results.

Table 1. Lakes Reported in 2016

Lake Name	Town
Third Connecticut Lake	Pittsburg
Lake Francis	Clarksville
Loon Pond	Lincoln
Oliverian Brook Pond	Benton
Lily Pond	Gilford
Sondogardy Pond	Northfield
Little Pond	Webster
Walker Pond	Boscawen
Mountain Pond	New Ipswich
Island Pond	Rindge

For the 2016 sampling season, the new lake selections are in place and combined with the 2014 and 2015 selections, a total of 28 waterbodies will be sampled (Table 2). The revised LTSP allows NHDES to continue to make informed decisions concerning changes in trophic status, provide the public more recent water quality information, monitor regional environmental influences, and facilitate water quality stewardship of New Hampshire's

2016 NH Soil Matters Conference
April 19, 2016
8:30 a.m. - 12:00 p.m.
N.H. Audubon Center
Silk Farm Rd.
Concord, N.H.

Save the Date!
VLAP Annual Workshop
Saturday, May 21, 2016
NHDES
29 Hazen Drive
Concord, N.H.

2016 Lakes Congress
June 2-3, 2016
Church Landing at Mills Falls
Meredith, N.H. 03253

Grants

NHDES 2016 Aquatic Resource Mitigation (ARM) Funds
Pre-proposals due April 29, 2016
Final Application due August 31, 2016

National Water Quality Initiative
Application ranking date deadlines:
March 18, 2016
April 15, 2016
May 20, 2016

Conservation Innovation Grants
2016 Focus Water Quality and Finance
Deadline May 10, 2016

Limno Lingo

Trophic State: The classification of a lake or pond into three defined trophic states, oligotrophic, mesotrophic or eutrophic, based on how productive the lake is. Classification systems differ around the world but typically use some combination of algal growth, nutrients (phosphorus and nitrogen), clarity, and dissolved oxygen. Oligotrophic lakes have high dissolved oxygen (> 5 mg/L), high transparency (> 12 ft.), low chlorophyll-a (< 4 ug/L), waterbodies. Stay tuned for the release of the new round of LTSP reports later this year!

Table 2. Lakes Sampled in 2016

Lake Name	Town	Initial Sample Year
Cedar Pond	Milan	2014
Durand Pond	Randolph	2014
Dodge Pond	Lempster	2014
Daniels Lake	Weare	2014
Bailey Pond	New Boston	2014
Surry Mountain Reservoir	Surry	2014
Wilson Pond	Swanzey	2014
Upper Wilson Pond	Swanzey	2014
Mountain Pond	Pittsburg	2015
Middle Pond	Pittsburg	2015
Elbow Pond	Woodstock	2015
Ellsworth Pond	Ellsworth	2015
Falls Pond	Albany	2015
Storrs Pond	Hanover	2015
Silver Lake	Tilton	2015
Sargent Lake	Belmont	2015
Rocky Pond	Gilmanton	2015
Collins Pond	Fitzwilliam	2015
Reynolds Pond	Littleton	2016
Round Pond	Eaton	2016
Long Pond	Eaton	2016
Halfmoon Pond	Grafton	2016
Round Pond	Barrington	2016
Trout Pond	Stoddard	2016
Smith	Washington	2016
Otter Brook Pool	Keene	2016
Babbidge Reservoir	Roxbury	2016
Potanipo Pond	Brookline	2016

Lake Ice Out Records Set

Ice out records were set in 2016 for many lakes and ponds around the state. Lake Winnipesaukee and Lake Sunapee iced out on March 18th, but smaller ponds in the southern portion of the state were a couple of weeks ahead. The earliest ice out reported to NHDES was February 26th at Captains Pond in Salem. February ice outs also occurred at Powwow Pond in East Kingston, Robinson Pond in Hudson, and Pearly Pond in Rindge. For more information on ice in and ice out, submit data, and to view ice out data submissions
visit http://des.nh.gov/organization/divisions/water/wmb/vlap/ice-in-out.htm

The data combined with ice in data shows some lakes and ponds in the state were ice covered for less than two months! This is certainly a concern approaching the spring and summer as aquatic plants and algae get a head start on growth, particularly exotic aquatic plants. Waters will warm faster and stratify earlier which may impact fish spawning and lead to depleted dissolved oxygen levels earlier in the summer. Keep an eye out for anything unusual this spring and summer, particularly cyanobacteria and filamentous

low phosphorus (< 10 ug/L), and sparse aquatic plant growth. Eutrophic lakes have low dissolved oxygen (< 2 mg/L), low transparency (< 6 ft. or 1.8 m), high chlorophyll-a (> 15 mg/L), high phosphorus (> 20 ug/L), and abundant aquatic plant growth. Mesotrophic lakes have characteristics that fall in between those of oligotrophic and eutrophic lakes.

algal growth, and record observations on data sheets or report them to the VLAP Coordinator at sara.steiner@des.nh.gov

Revised Manual for Erosion Control on Logging Operations Released

The University of New Hampshire (UNH) Cooperative Extension, along with many partners, recently released the revised "New Hampshire Best Management Practices for Erosion Control on Timber Harvesting Operations" manual. Click here for more information.

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