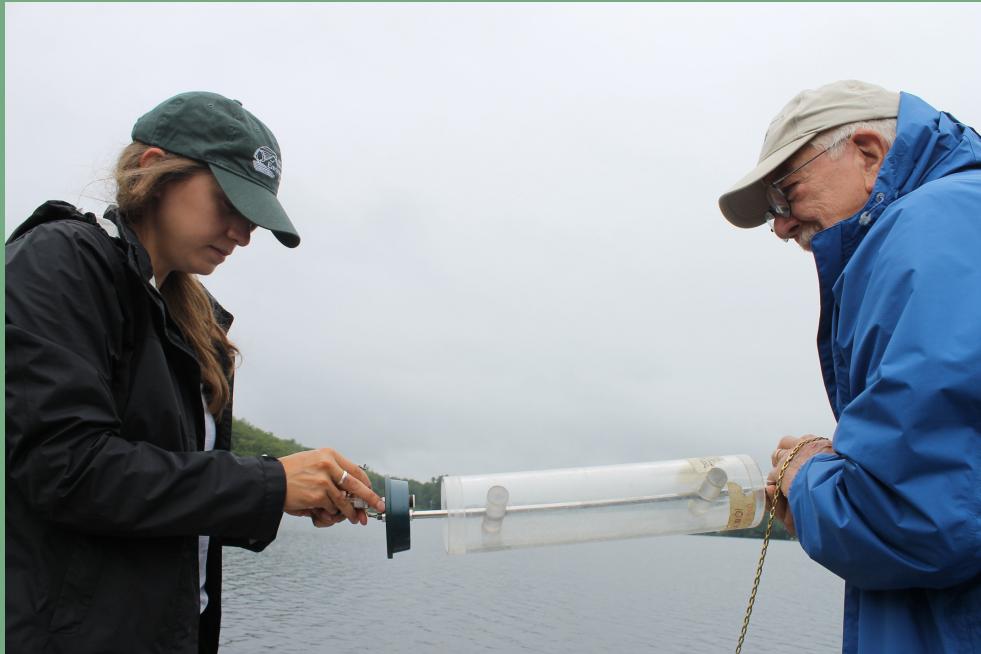


A DAY IN THE FIELD WITH A VOLUNTEER LAKE ASSESSMENT PROGRAM EMPLOYEE



NHDES Julie Loosigian and VLAP volunteer Jerry Cooper prepare to take a water sample at Kolelemook Lake.

By Liza Higley

SPRINGFIELD, NH- Julie Loosigian steps out of the car into the slow drizzle to recalibrate the temperature and dissolved oxygen reading equipment. She checks her watch and her clipboard, affirming that she is on schedule to meet Jerry Cooper at his home on Kolelemook Lake at 10:00 am. Today, she will be joining Jerry for a boat ride to test the water quality of his community's lake, as part of NHDES' Volunteer Lake Assessment Program.

The Volunteer Lake Assessment Program, also known as VLAP, helps to coordinate volunteers to assist NHDES in evaluating lake quality. The data collected by VLAP volunteers and NHDES employees is used to provide lake residents, on over 170 lakes and ponds in NH, with complete reports on their lake health. These reports help NHDES and residents to make more educated plans and decisions regarding lakes and ponds.

Julie is working to make this possible. As one of VLAP's two summer interns, Julie and other program staff visit nearly 130 lakes and ponds in the program each summer to ensure volunteers are taking data measurements accurately and that they have the support they need.

After the equipment is calibrated and it is all loaded into the boat, Jerry starts the

motor and steers toward the deepest part of the lake, where it reaches 22 feet deep. Jerry has been testing Kolelemook Lake as a VLAP volunteer since 1987. He collects data three times each year, June through August, to assess overall water quality.

One of the first tests Jerry performs is for water clarity, using the "Secchi Disk." This black and white disk is lowered over the side of the boat until it is out of sight, and then it's slowly tugged upwards until barely visible once more. The depth is recorded and the measurement is taken again, this time using a mask to look below the water. Depending on lake depth and other factors, water clarity is generally considered "poor" when the Secchi Disk is visible less than 2 meters below the surface, "good" when between 2 and 4.5 meters and "exceptional" when it is more than 4.5 meters. Water clarity is affected by algae, color and particulate matter in the water. Here on Kolelemook Lake, water clarity is usually considered "exceptional."



NHDES intern Julie Loosigian measures the lake's dissolved oxygen levels and temperature at various depths.

While Jerry measures clarity, Julie sits at the bow of the boat to measure temperature and dissolved oxygen levels, recording the data every $\frac{1}{2}$ meter down. She explains that dissolved oxygen is important to note because it's necessary for the survival of aquatic plants and animals. She also notes that temperature is important when identifying "whether or not the lake is stratifying (separating into layers), and if so, at what depths." This information allows Julie and Jerry to decide how many samples are necessary, and at what depth they should be taken.

Jerry and Julie then collect water samples to measure chlorophyll levels, an indicator of algal abundance; phytoplankton, microscopic algae used as an indicator of general lake quality; and levels of phosphorus, a nutrient that encourages algae growth. The water samples will also be used to test the lake's conductivity, turbidity, Acid Neutralizing Capacity, chloride levels, apparent color and pH levels.

After all the data is collected, Jerry drives Julie over to Lake Kolelemook's beach to test for E. coli levels before finally heading back towards Jerry's dock. With charts filled with data, and the cooler heavy with water samples, Julie affirms that Jerry's data is being collected correctly, and that he's doing great work to protect his little Kolelemook Lake.

As Julie reloads the car to head back to NHDES headquarters, she expresses just why she feels her job is so important.

"Long-term water quality monitoring is critical; if we have a good idea of what's normal for a particular waterbody, we can act as an alert system when there are changes that seem to exceed normal or expected fluctuations," she said. "And this type of monitoring wouldn't be possible without our amazing group of citizen scientists, many of whom have been involved for decades. Hanging out with them on the waterbodies they love is the best part of my job."



NHDES Julie Loosigian and VLAP volunteer Jerry Cooper take a water sample on Kolelemook Lake.



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