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Knickerbocker Lake Association reviews water quality reports at annual meeting

By JOSEPH CHARPENTIER Posted: Monday, August 27, 2018



One of Camp Knickerbocker's two access points to the lake. JOSEPH CHARPENTIER/Boothbay Register

Little Knickerbocker Lake or "Little K" is showing signs of stress, Forrest Bell Environmental Associates project manager Laura Diemer told attendees of the Knickerbocker Lake Association's annual meeting in McEvoy Lodge at Camp Knickerbocker Aug. 22. However, Diemer said there are no clear trends to say the water quality is going down a certain path. "Keeping things as is and keeping what's already there is really your best bet to protecting Little Knickerbocker."

"Whether you grew up on a lake, whether it's Knickerbocker, maybe you just moved to one or just visit one, you all have a common vested interest in protecting the water quality in Knickerbocker Lake. Our enjoyment of these water resources does come at a price," said Diemer.

The development of land surrounding the lake brings an increase in pollutants, said Diemer. Hired by Boothbay Region Water District, FBE conducted multiple tests over a long period and formulated reports so the district would know how much phosphorus the lake has, and how much is too much for the watershed and current and future development.

Surveys were conducted separately on Little Knickerbocker and the larger lake. The levels of phosphorous and chlorophyll-a (algae) were considerably higher in Little K, which contributes about 18 percent of the pollutants in the main part of the lake.

Diemer said Little K's total phosphorus level was 14ppb, the threshold of poor water quality. Chlorophyll-a levels are nearly 6ppb compared to the threshold of 7ppb and water clarity is at a depth of three meters. Two is the threshold for poor water quality. The build-out analysis also found under current standards and zoning, a complete development of land around the lake would drop the water quality far below standards for drinking water; increase the cost to treat; and drop property value. The reports found even preserving a third of the land from development will not be enough to keep the water drinkable.

Diemer said developed areas typically emit 10 times the phosphorus of similar pieces of undeveloped land. Though only seven percent of the watershed can be considered developed, that development accounts for about 57 percent of the phosphorus load.

"This is good news, bad news. The good news is it's a manageable source. There are so many solutions that we can implement on existing and future development to really tackle that load."

Diemer said homeowners can curb their impact by planting vegetation, putting in rip-rap, pumping out septic tanks every two to three years, making sure septic usage matches capacity, inspecting old systems, and keeping trees and heavy machinery off leach fields.



WHPWA President Leslie Volpe, left, accepts a gift of \$300 toward the pond's new siphon from KLA and its president Paula Arsenault. JOSEPH CHARPENTIER/Boothbay Register



FB Environmental Associates project manager Laura Diemer explains the level of water degradation and what property and home owners can do to curb it. JOSEPH CHARPENTIER/Boothbay Register

Diemer said the next steps are to work with the town to amend relaxed zoning ordinances and to maximize land conservation.

Also at the meeting, Paula Arsenault introduced herself as the KLA's new president, thanked outgoing president Jim Macleod and invited BRWD's Sue Mello, John Orne and Jon Ziegra to speak.

Orne and Ziegra spoke on the district's role in providing quality drinking water, 55 million gallons of which comes out of Knickerbocker Lake. Mello spoke briefly on the lake's 2014 watershed survey which identified runoff sites.

"And part of that survey is ongoing," Mello said. "We're always looking for sites, but what we've really switched to is fixing things, fixing problems. We've been working with the Y and various homeowners."

Grant money is available to help with some of the more costly projects, said Mello. BRWD will partner with home or landowners up to \$1,000 to fix issues such as runoff, faulty septic systems, or erosion.

"Last year, as the planning board started thinking about changing the ordinances, we had questions about how much is too much going into the lake," said Mello.

That is when the district decided to hire FBE to test waters and compile a series of four reports which also included Adams Pond, the source of drinking water in the off-season.

"The biggest message that I can give you that we found with the modeling and build-out analysis is that Knickerbocker Lake is at risk for water quality degradation and a lot of that is sort of relaxed zoning standards with development around Knickerbocker Lake especially with it being used as a primary drinking water source ... Keeping that in mind and trying to work with and trying to work with the town, your best friend is trying to keep as much intact forestland in the watershed as possible." – Laura Diemer, FB Environmental Associates

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Mello said BRWD hopes this new information will help with town development strategies specifically zoning ordinances and public water planning. As a whole, Knickerbocker Lake's report shows that the water quality presently meets the standards of a productive lake, but it is at the high end of the scale and that further increases in phosphorus levels and chlorophyll-a (algae) will increase the lake's susceptibility to algae blooms.

Boothbay Region YMCA Facilities Director Rosita Mooney shared that Camp Knickerbocker has been happy to work with BRWD to improve the Y's effect on Lake Knickerbocker.

"We have anywhere from 150 to 200 campers here every day, so it's a big part of our program, the waterfront ... In the last three years we've put in over \$20,000 easily in making repairs that are mutually beneficial for the lake in terms of erosion control, but also have really improved the quality of our property."

Mooney said the Y had seen the need to make changes, but did not have the tools. In 2015, a partnership with BRWD and the Knox-Lincoln Soil and Water Conservation District made that process much easier and fostered a working relationship between the Y and the two organizations, said Mooney. They identified areas of erosion and beautified the two areas of access for campers in one fell swoop.

“If you look at the scale of what we have, it's really truly amazing that we can provide for our children a fresh water place to swim and boat ... It's been a great opportunity for us to make improvements in the right direction.”

Boothbay Code Enforcement Officer Jason Lorrain offered his office's counsel for home and land owners who know they are a point source or are not sure.

As the meeting began winding down, Arsenault voiced envy for the community and spirit of the West Harbor Pond Watershed Association (WHPWA). Leslie Volpe, WHPWA's president, summed up the spirit of its 60 members: “Float planes were what brought us together, but the pond is what has kept us together. That's our real galvanizing issue. Our mission is lengthy and far reaching, but it all boils down to one simple sentence: Our mission is to preserve and protect West Harbor Pond and its watershed ... That's what it's been all about.”

What does it take to succeed? Said Volpe, “Community, communication, education and a sense of purpose.”