

## Water Quality Report, June 2016

As stated in previous reports, we must all act responsibly to maintain the water quality of our beloved Lake Winona. This means taking proper care of the property near our lake. Modifications in what you use to clean/bathe/shampoo can truly help. Research the products you do use and try other, more environmentally safe products. Remember that anything you put on the land surrounding your home or down your drain will eventually find its way into the lake. Simply trying another approach is important. Each one of us can do our part.

When we alter the water shed, the natural purification of water that flows into our lake changes. Please be aware when trimming shrubs, cutting trees and making changes that affect the lake shoreline. Review the Shoreland Protection Act before landscaping and keep in mind that storm run-off is a significant problem. Paving driveways and walks can make a huge difference. Visit

<http://des.nh.gov/organization/divisions/water/wetlands/cspa/categories/faq.htm>

**Phosphorous** is the number one influencer on water quality, and gets introduced into our lake from cleaning products, fertilizers, road salt, oil, gas and lead, as well as landscaping activities. This promotes algae growth which robs the lake of its oxygen and provides poor habitat for aquatic life. Winona Lake is categorized as “average” for NH lakes and phosphorous levels. Unfortunately, we spiked higher in our last testing of the season, particularly in the Heights Brook area that flows into The Anchorage beach and in the Hypolimnion level (the deepest part of our lake). Dissolved bottom sediments are the likely cause in the deeper parts of the lake. Decaying plant life washing into our waters causes higher phosphorous levels, so be mindful of what washes into the lake from your yard during heavy storms. Phosphorous and oxygen levels are directly related, meaning that when phosphorous is high, oxygen decreases. Lower oxygen is less supportive of aquatic life. By being conscious of the cleaning and personal products we use and how we manage our lawns and landscaping, we can decrease our phosphorous levels.

Our **Conductivity** has been “worsening” according to the DES. The wording in their report is “data significantly increasing.” Conductivity is the water’s ability to carry electrical current. High conductivity may indicate pollution from such sources as road salt, septic systems, wastewater or agricultural runoff. The highest levels of conductivity were in our new testing location, “North Cove East” (near Chutes in the north end of the lake) and the Hawkins Pond Inlet. The high conductivity ratings where tributaries flow into our lake are more than likely influenced by road salt use.

It is recommended the LWIA send a letter to the towns of New Hampton and Center Harbor urging for the use of road salt alternatives on Winona Road in winter. A regular reminder to the towns from our tax paying citizens is also important. We can influence this if we persist. Additionally, lake residents residing near streams must recognize that regularly pumping of septic tanks and use of various environmentally friendly products is essential to our lake health. Please refer to this publication for more information:

[http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/2004\\_special\\_topic\\_conductivity.pdf](http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/2004_special_topic_conductivity.pdf)

**E-Coli** numbers were highest in 2015 at our new testing location, the North Cove East (by Chutes) inlet as well as the Heights Brook Inlet (by The Anchorage). Though none of our e-coli numbers were high enough to warrant a “beach closing” at Lake Winona, we must make our best efforts to assure our lake remains safe for all to enjoy. We will continue to watch and test these high areas. Animal life upstream may be the cause, but if you live near these areas be extremely diligent to maintain your septic system.

Our **Chlorophyll-A** numbers were higher in 2015 than in previous years. While our numbers have increased steadily since we began monitoring our lake in the 1970s, **our July number was 11.83, which is over the state median.** This is an indicator of increased algae. Algae blooms are a big problem and cyanobacterial blooms are becoming more and more common in NH Lakes. Lake Winona has shown the presence of cyanobacteria, but has not officially had a bloom reported to the DES.

The increase in Chlorophyll-A is something we can help prevent. Allowing leaves, grass trimmings and dead limbs to run into the lake, as well as the use of fertilizers and other non-environmentally friendly cleaning products can all impact algae growth. Be careful about trimming natural buffers at the water's edge. Keep a watchful eye on erosion and if there is concern, ask for help. Frequency and intensity of storms and the resulting high water levels may be promoting these algae growth spikes. I write this at a time when our water level is somewhat lower than usual, but several sudden thunderstorms could change this. Being prepared will truly help our lake.

**Dissolved Oxygen:** The DES analysis shows our dissolved oxygen levels are “bad” and “slightly bad.” These findings have been consistent over the last few years. A lack of oxygen can cause fish and other aquatic life to die off. According to DES, the usual things like storm and septic run off, phosphorous levels and use of road salt near our lake contributes to increased algae growth, which in turn depletes oxygen. When lake custodians (which means all of us) do our part, then our levels will improve.

Our **Transparency** numbers are said to be “worsening” and our data is significantly decreasing. We are better than the state median, but our water is still not as clear as it used to be. Transparency is impacted by algae growth. As previously mentioned, we must all be mindful of our actions and the products we use at the lake as they impact its water quality.

**Turbidity** is suspended matter in the water like algae, silt or clay. High turbidity causes light to be scattered and absorbed, not transmitted in straight lines through water. Such matter can come from construction sites (and we have had quite a few recently on our lake). Please remind your contractors and others working at your property that their work may impact our lake water quality. Keeping a construction site clear of debris and preventing material from being washed into the lake is important.

All in all, Lake Winona's water quality issues are similar to many New Hampshire lakes; we are not alone in our concerns. We all need to be aware of how our actions impact this lake. We must actively take part in its preservation. Learn all you can, be part of the solution and not the problem.

Lastly, many thanks to our water quality committee for their tireless efforts throughout the year:

**Charlie Goodwin** for water sampling and use of his boat, **Mark Heminway** for sampling and boat use, **Pam Hunt** and **Bea Thibault** for their time to do water sampling out on the lake, and **Eric Foster** for sample deliveries to Concord. And a very special note of thanks to the late **Donna Saia** for her time and dedication to our cause, we shall miss her willing and helpful hands.

We should be very proud of this group who have given their time to help with this process. We welcome anyone who would like to get involved—more volunteers are needed. The important thing about this process is that people take turns doing their share. Others can step up and take over, while those who do their part can come forward another time and also take on other functions with regard to our lake and its custody.

Please enjoy our lake, take good care of it and it will serve future generations well.

Respectfully submitted,  
Linda D. Heminway, Water Quality