

2015 Water Quality Report

What have we learned?

First: It takes a lot of observations (water testing) before any definitive conclusions can be made about the water quality of the lake.

Second: There are a lot of variables that impact water quality – primarily the weather. 2015 weather proved to be a very unusual; record high temperatures, low rainfall. The testing crew thought there would be a large change in data, surprisingly there was little.

We still have little or no dissolved oxygen (DO) in the deeper waters.

On the June 15 foray DO was depleted from a depth of 66 feet deep to the bottom. On August 3, it was 53 feet, and on September 14, 43 feet. This tells us that about half the lake is dead for much of the summer. Mackinaw and silvers are severely affected. They are literally trapped between anoxia (low DO) and uncomfortable warm water above.

Warm sunny weather accelerated algae growth. Water clarity is largely dependent on the amount of algae in the water. The water is usually clear down to an average depth of 21 feet. In 2015 the average depth was 15.6 feet. Only one other year, 2011, 17.2 feet was nearly as bad. Phosphorous levels were not unusually changed. Phosphorous is absorbed by algae and when the algae dies it drifts to the bottom where it is consumed by bacteria resulting in low DO. We think low rainfall/snowfall in 2015 resulted in low runoff and therefore less than normal phosphorous in the lake.

The first foray in 2016 will be on June 15th given good weather. Anyone wishing to join our test crew will be welcome. Contact Jim Davies at 509-233-2651 if interested.

LOON LAKE PROPERTY OWNER'S CITIZEN WATER QUALITY MONITORING

This is the ninth year of the Loon Lake water quality monitoring program. No room for skepticism remains regarding the extent to which our lake water quality has deteriorated. The data contained in the Washington State University study made in 2011 and presented in May of 2012 showed that in the middle to late summer below 49 feet there is insufficient dissolved oxygen to sustain a thriving deep/cold water kokanee and mackinaw fishery.

Our 2014 and as yet unpublished 2015 foray results show that critical depth is now 42 feet below the surface. It is chilling to realize that the depth of the water in which kokanee and mackinaw can thrive has gone from 106 feet at the start of the 20th century to less than half that in 115 years. This is a loss of 6.5 inches of habitable depth per year! At this rate the entire depth of the lake could be uninhabitable for fish by the year 2092. I think it obvious what other recreational values would be lost.

The causative factor is phosphorus. Phosphorus is responsible for excessive aquatic plant growth. This includes micro (algae) and macro (leafy) plants. When they die and drift to the bottom they provide food for bacteria. Bacterial action uses up dissolved oxygen causing a condition called anoxia. Bacterial remains and their wastes containing the phosphorus they accumulated while living are deposited in the bottom sediments. That sedimentary phosphorus, while in the presence of anoxia, is released to the adjacent deep water. During Fall turnover it is distributed back to the entire water column making it available on and near the surface to nourish new algae and "seaweed" the following Spring. Although the amount of phosphorus entering from outside the lake has been substantially diminished, the fund of phosphorus within the lake stubbornly remains. This remainder, continuing shoreline and upland development, threatened loss of phosphorus consuming wetlands, and continuing political and public apathy toward understanding and fixing the problem will inevitably lead to increasing levels of phosphorus which will ultimately result in lessening and the potential for the ultimate loss of Loon Lake's recreational and real property value.

Jim Davies

LLPOA Board Member