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COLA and the LCO Tribe Request that All of Lac Courte Oreilles be Listed as an Impaired Water

Hayward, WI (August 12, 2017)

Background

Lac Courte Oreilles (LCO) is designated as a deep (stratified) two-story cold-water fishery lake by the Wisconsin Department of Natural Resources (WDNR). A total phosphorus (TP) criterion of 15 parts per billion (ppb) or microgram/liter ($\mu\text{g/L}$) is applied to all such lakes in Wisconsin.

The Courte Oreilles Lake Association (COLA) and the Lac Courte Oreille Band of Lake Superior Chippewa Indians have proposed a Site-Specific Criterion (SSC) for total phosphorus of 10 ppb as a lake-wide average concentration.

The Problem

Musky Bay is already listed an impaired water because of excess phosphorus. Unfortunately, based on the last five years of sampling, phosphorus levels in other parts of LCO are now rising to dangerous levels as well. Mean concentrations of TP in Musky Bay, Stuckey Bay, West Basin, and Northeast Bay all exceed 15 ppb (Figure 1).

The rise in phosphorus concentrations is invariably accompanied by depleted dissolved oxygen (DO) concentrations. High phosphorus concentrations promote excessive plant and algae growth. Decomposition of this material in mid-to-late summer depletes DO in the water, and eventually fish start to die, essentially suffocating.

Dissolved Oxygen and Cold Water Habitat

Cisco, lake whitefish and other cold-water fishes need a band of water that has both cold enough temperatures and high enough oxygen for them to survive. Therefore, measures that represents the presence and overall quantity of suitable habitat by

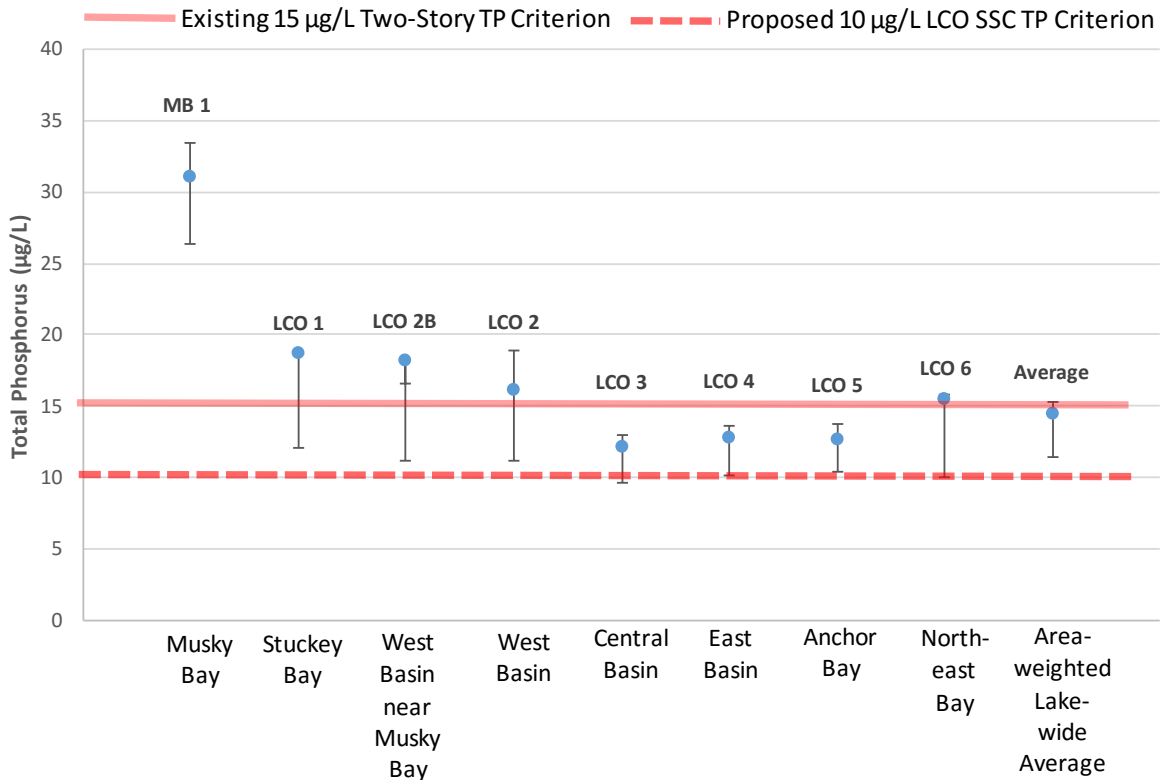


Figure 1. Mean TP concentrations at nine locations in Lac Courte Oreilles, 2012-2016. Error bars represent 90% confidence interval of grand mean.

combining both DO and temperature is the most useful metric for assessing support of the two-story fishery.

TDO5 is one means of assessing the available cold-water habitat and is defined as a vertical measurement of the water temperature (T) at which the dissolved oxygen (DO) concentration is 5.0 mg/L. An appropriate maximum temperature to support the cisco and lake whitefish in LCO is 66°F (Figure 2).

Based on extensive sampling from 2012 to 2016, a TDO5 of 66 degrees F and a critical habitat quantity of at least 1 meter for cisco and lake whitefish is not being maintained throughout the year resulting in fish kills and threatening sustainable populations in LCO.

LCO is not protective of cold-water species due to both TP and DO impairments.

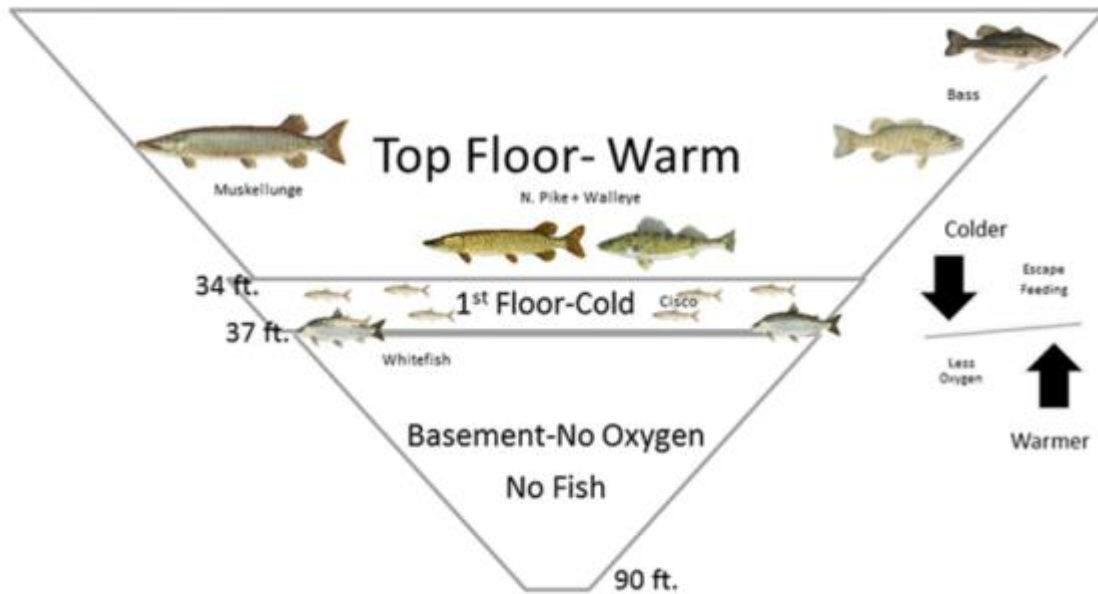


Figure 2. In this schematic, the zone between 34 and 37 ft. is depicted as the critical habitat for whitefish and cisco where DO concentrations are at least 5 mg/L, and the temperature is 66°F or lower. As water temperatures rise and/or DO concentrations decrease, the critical habitat can shrink and eventually disappear altogether.

COLA and the LCO Tribe have completed an [assessment](#) of the last five years of sampling data and determined that the TDO5/1-meter cold-water fish habitat **is not** being maintained in LCO primarily because the phosphorus concentration has been increasing and is now at the level that will result in the extinction of the cold-water fish in LCO. In addition, the current level of TP is resulting in spiraling degradation of LCO water quality (more algae and algal blooms, a decrease in water clarity and excessive aquatic plant growth) as evidenced in recent years.

This assessment has been provided to the WDNR with a request that WDNR list all of LCO as impaired for depleted dissolved oxygen caused by the pollutant.... phosphorus.

The draft 2018 Wisconsin list of impaired waters will be published shortly by the WDNR for public comment. As a COLA member and property owner on LCO it is important that you make it clear to WDNR that you want LCO listed as an impaired water in order to bring the full measure of the Federal Clean Water Act to bear on the preservation of this historic, outstanding natural resource.

COLA will be providing the membership with additional public comment guidance shortly after WDNR publishes the draft 2018 list.

Stay tuned and be ready to help make a difference for the lake.