Ball Pond Water Quality Data: 2016-July 2021

Background

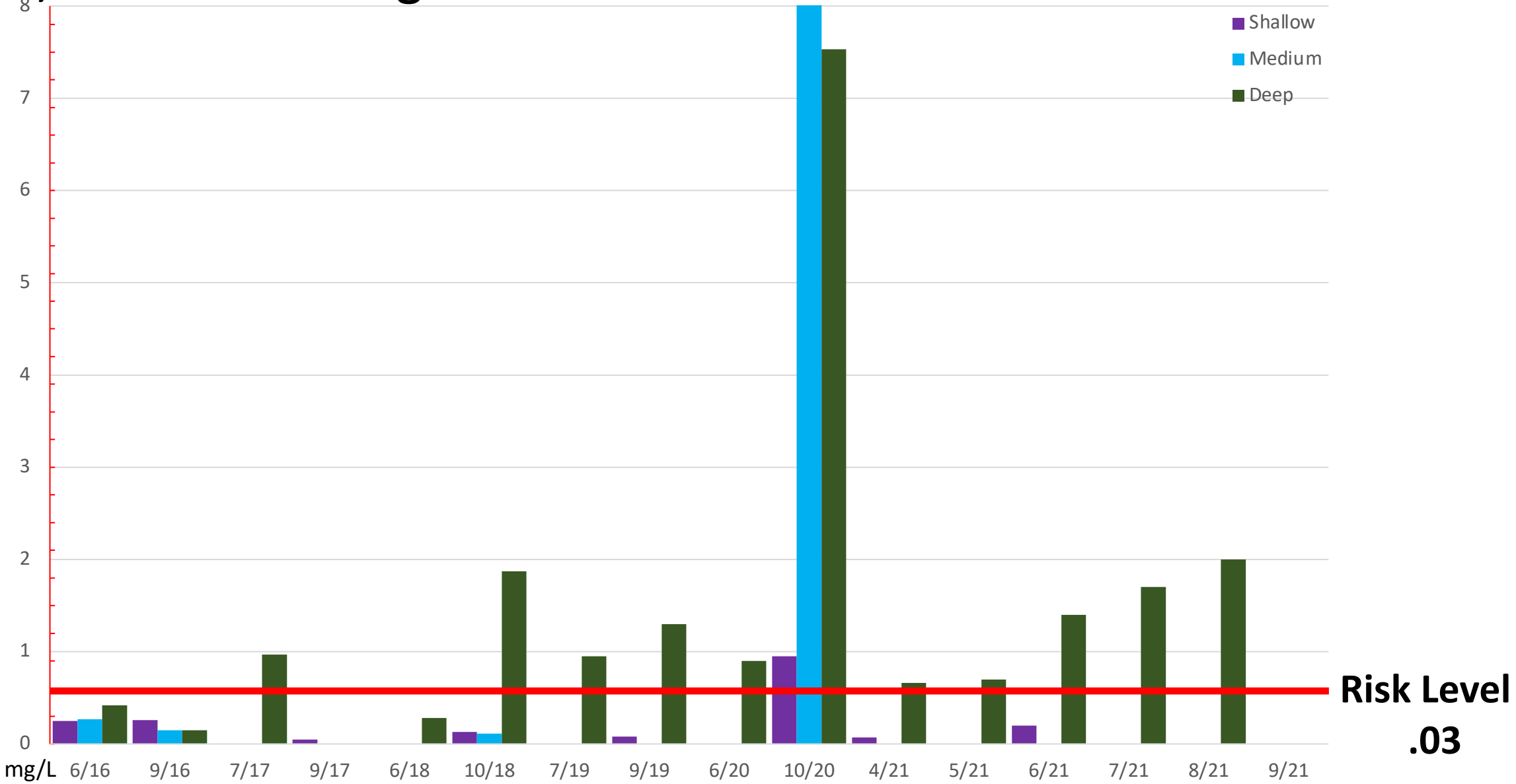
Ball Pond Advisory Committee (BPAC) has been managing water quality testing in Ball Pond for many years. Hydro Technologies in New Milford takes our samples and gives us back reports on a range of data including nutrients that cause algae blooms. Typically we tested twice a year. Because of increased concern we started testing every month, from April though October, as of this year.

The following graphs report on levels of inorganic nitrogen and phosphorus. Nitrogen and phosphorus are our primary concern because these nutrients cause potentially dangerous algae blooms. We had two algae blooms this summer. We were able to test the second bloom for harmful micro-toxins and were relieved that tests did not reveal that bloom produced micro-toxins.

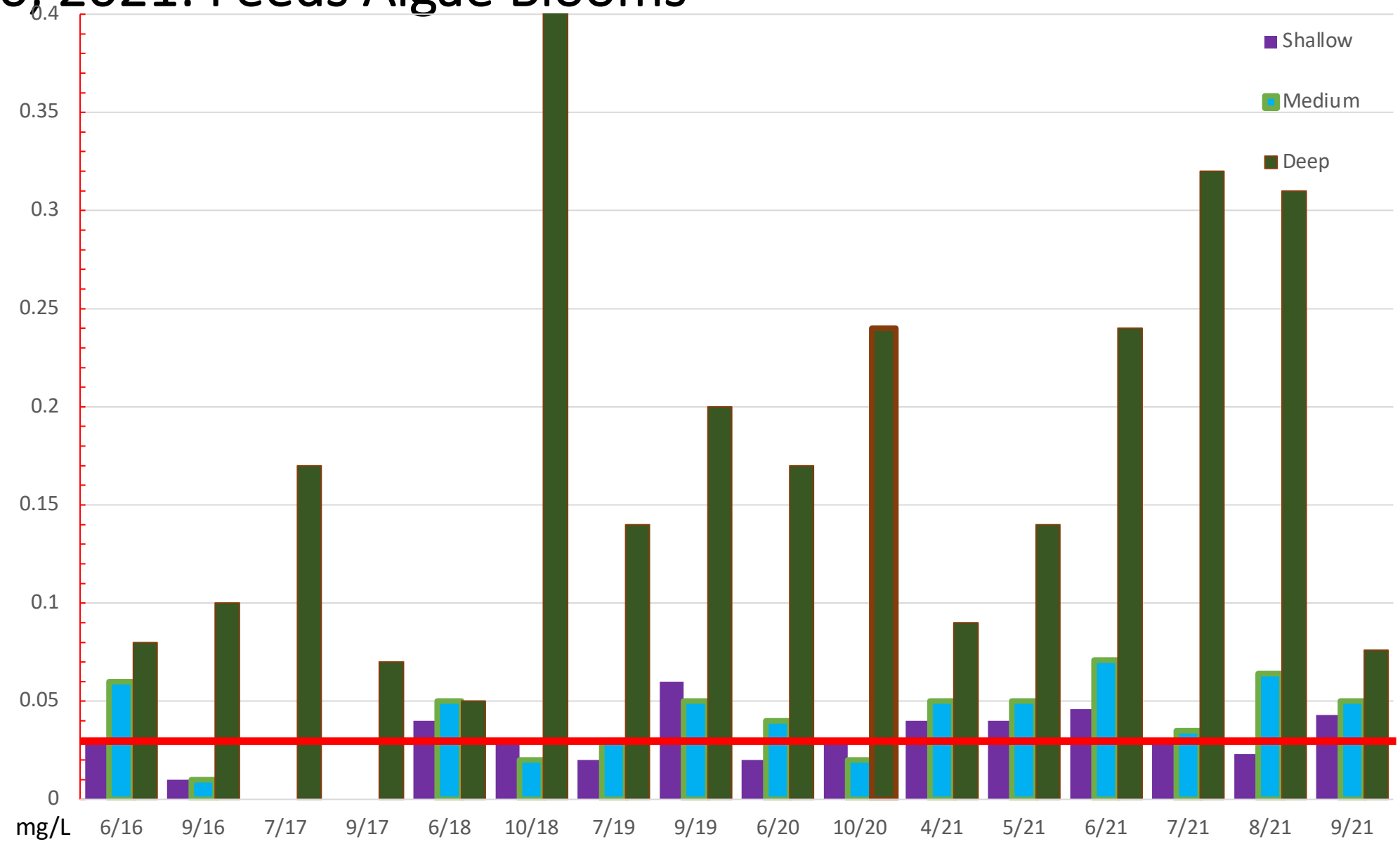
We sample at 3 different lake levels – shallow, medium and deep. The deep sample is typically taken below the thermocline. The graphs show these levels as purple bars for shallow data, blue bars for medium depth data, and dark green bars for deep level data. When there is no bar for a time period the value was “0.” The red line indicates risk level. As you see, we are often at or above risk level, especially at deeper levels.

Nitrogen and phosphorus come from runoff from the Ball Pond watershed. Phosphorus is forever. Once phosphorus enters the lake, it stays in the lake. Two primary sources of these organic nutrients are septic systems and lawn fertilizer. Other factors may also affect nitrogen and phosphorus levels, but septic and lawn fertilizer are major factors that we could reduce.

Ball Pond Inorganic Nitrogen Levels: Above Risk in 2017, 2018, 2019, 2020, 2021: Feeds Algae Blooms



Ball Pond Phosphorus Levels: Above Risk 2016, 2017, 2018, 2019, 2020, 2021: Feeds Algae Blooms



What does it all mean?

Next steps

Ball Pond is at risk for continued increases in its levels of nitrogen and phosphorus, and more potentially dangerous algae blooms. BPAC will continue monthly water quality monitoring through October. We will continue to be in on-going consultation with our town's public health officer, Tim Simpkins

Interpreting our data and making recommendations requires lake science expertise. BPAC has contracted with Aquatic Ecosystems Research LLC to prepare a year end report that will incorporate all available data and offer recommendations. Many of you are familiar with AER's key staff, Larry Marsicano and Mark June-Wells, PhD. Dr. June-Wells authored the recent study of Ball Pond's sterile grass carp program. AER's report and recommendations will be presented to the Selectmen and shared with the community when the report is available.

At the end of the day, what are our options?

1. Education
    1. Don't use lawn fertilizer
    2. Increase septic system maintenance
    3. Don't blow leaves or grass clippings into the lake
2. Policy
    1. Town ordinance against lawn fertilizers
    2. Increased septic inspections
    3. Town sewer system to replace septic tanks

Clearly, education and smarter choices is a relatively easy next step. Policy changes would be a long-term process that will require compelling data, science-based recommendations, and community support. BPAC will continue to promote education and smarter choices, and seek expert guidance based on increased data collection.