

Weston Pond

2017 SAMPLING HIGHLIGHTS

Station – Buoy

Amherst, NH



Blue = Excellent =
Oligotrophic

Yellow = Fair =
Mesotrophic

Red = Poor = Eutrophic

Gray = No Data

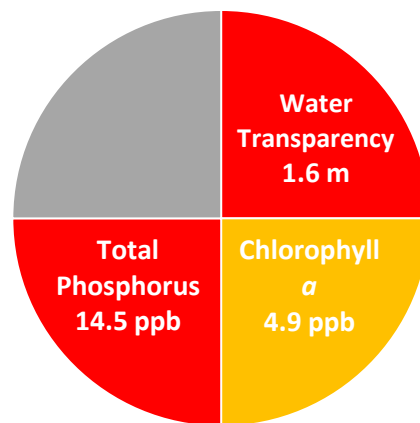


Figure 1. Weston Pond Water Quality (2017)

Table 1. 2017 Weston Pond Seasonal Averages and NH DES Aquatic Life Nutrient Criteria¹

Parameter	Oligotrophic "Excellent"	Mesotrophic "Fair"	Eutrophic "Poor"	Weston Pond Average (range)	Weston Pond Classification
Water Clarity (meters)	4.0 – 7.0	2.5 - 4.0	< 2.5	1.6 meters (1.3 – 1.9)	Eutrophic
Chlorophyll <i>a</i> ¹ (ppb)	< 3.3	> 3.3 – 5.0	> 5.0 – 11.0	4.9 ppb (4.5 – 5.3)	Mesotrophic
Total Phosphorus ¹ (ppb)	< 8.0	> 8.0 – 12.0	> 12.0 – 28.0	14.5 ppb (14.3 – 14.6)	Eutrophic

Table 2. 2017 Weston Pond Seasonal Average Accessory Water Quality Measurements

Parameter	Assessment Criteria					Weston Pond Average (range)	Weston Pond Classification
Color (color units)	< 10 uncolored	10 – 20 slightly colored	20 – 40 lightly tea colored	40 – 80 tea colored	> 80 highly colored	111.8 color units (111.8 – 111.8)	Highly colored

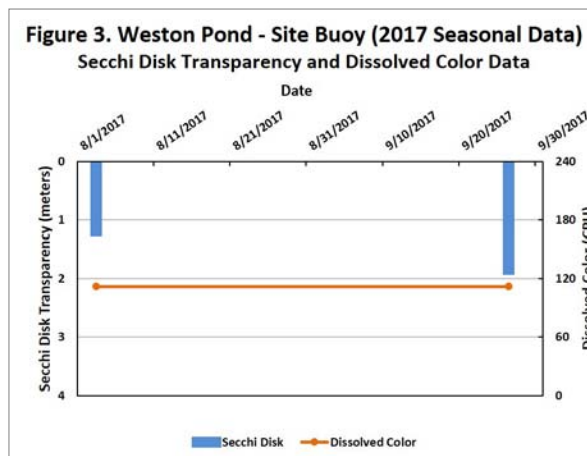
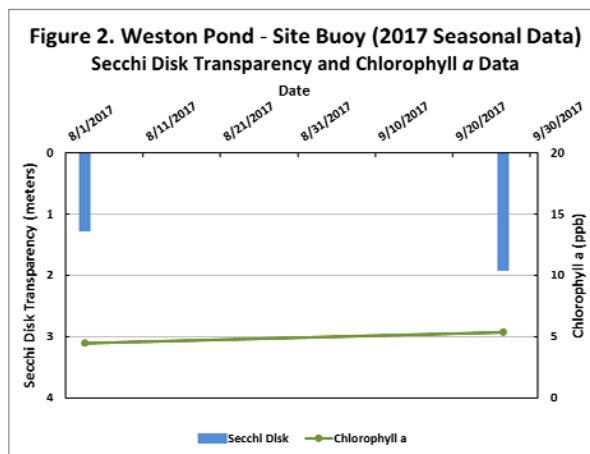


Figure 2 and 3. Seasonal Secchi disk transparency, chlorophyll *a* concentrations and dissolved color concentrations. Figures 2 and 3 illustrate the interplay among Secchi Disk transparency, chlorophyll *a* and dissolved color. Shallower water transparency measurements oftentimes correspond to increases in chlorophyll *a* and/or color concentrations.

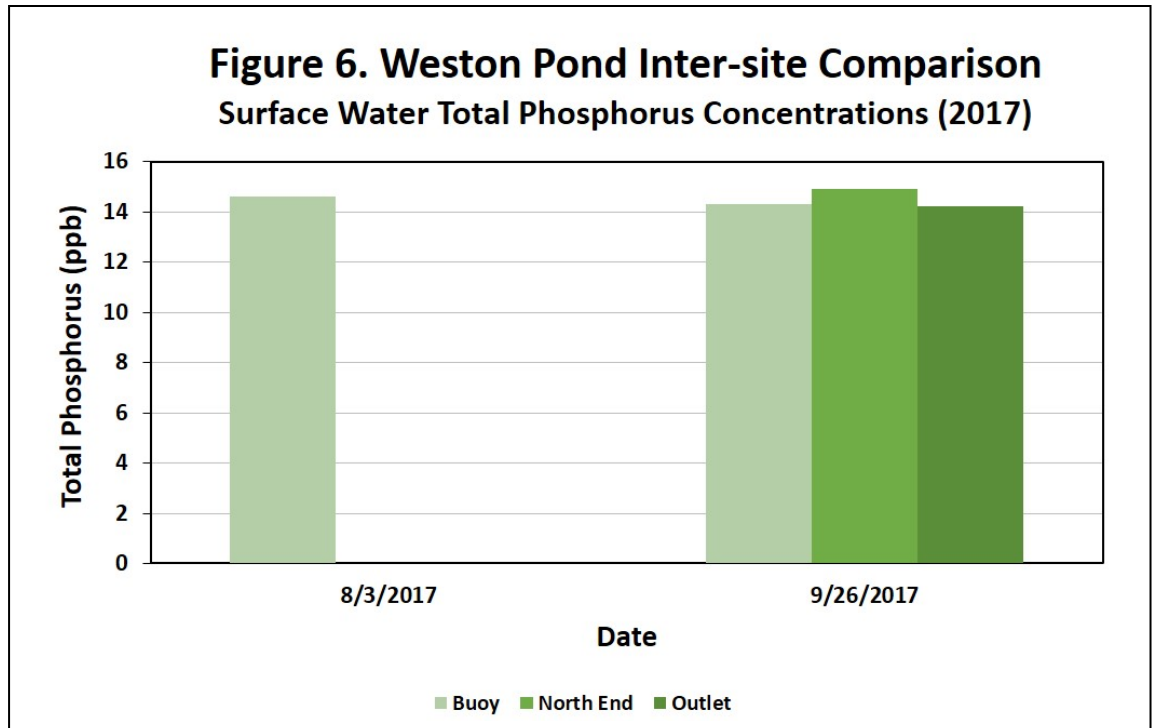
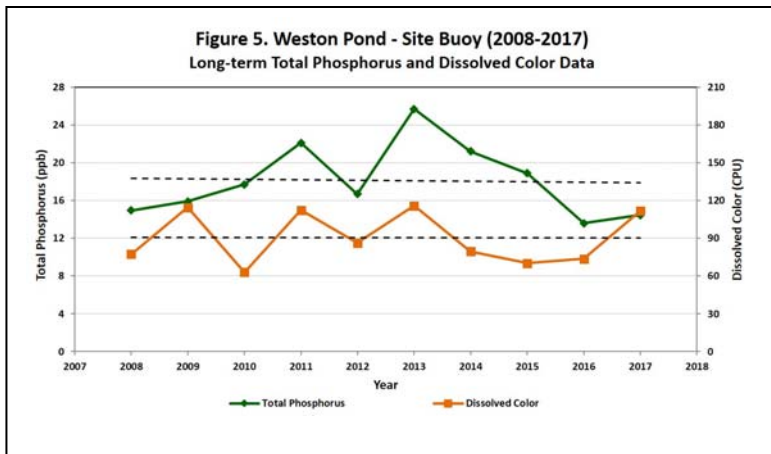
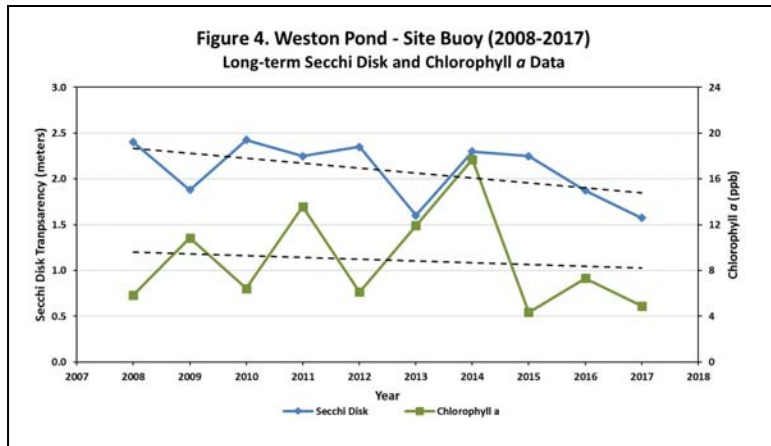
Weston Pond Water Quality Data (2008 – 2017)

WATER CLARITY: The Weston Pond water clarity measurements, measured as Secchi Disk transparency, display a trend of decreasing water transparency over ten years of water quality monitoring conducted between 2008 and 2017 (Figure 4).

CHLOROPHYLL: The Weston Pond chlorophyll *a* concentrations, a measure of microscopic plant life within the lake, have oscillated among years but do not display a trend of increasing or decreasing chlorophyll *a* concentrations over the ten years of water quality monitoring conducted between 2008 and 2017 (Figure 4).

TOTAL PHOSPHORUS: Phosphorus is the nutrient most responsible for microscopic plant growth. The Weston Pond total phosphorus concentrations have oscillated among years but do not display a trend of increasing or decreasing total phosphorus concentrations over the ten years of water quality monitoring conducted between 2008 and 2017 (Figure 5).

COLOR: The Weston Pond color data, the result of naturally occurring “tea” color substances from the breakdown of soils and plant materials, have oscillated among years but do not display a trend of increasing or decreasing color concentrations over the ten years of water quality monitoring conducted between 2008 and 2017 (Figure 5).



Figures 4 and 5. Long-term changes in the Weston Pond water clarity (Secchi Disk depth), chlorophyll *a*, water color and total phosphorus concentrations measured between 2008 and 2017. **These data illustrate the relationship among plant growth, water color and water clarity. Total phosphorus data are also displayed and are oftentimes correlated with the amount of plant growth.**

Figure 6. Inter-site comparison of the Weston Pond total phosphorus concentrations; Sites Buoy, North End, and Outlet. The inter-site comparison data provide a general sense of the variability among the three Weston Pond sampling locations.

Recommendations

Implement Best Management Practices within the Weston Pond watershed to minimize the adverse impacts of polluted runoff and erosion in Weston Pond. Refer to “Landscaping at the Water’s Edge: An Ecological Approach” and “New Hampshire Homeowner’s Guide to Stormwater Management: Do-It-Yourself Stormwater Solutions for Your Home” for more information on how to reduce nutrient loading caused by overland run-off.

- http://extension.unh.edu/resources/files/Resource004159_Rep5940.pdf
- <http://soaknh.org/wp-content/uploads/2016/04/NH-Homeowner-Guide-2016.pdf>

Figure 7. Weston Pond

Amherst, NH

2017 deep and nearshore water sampling sites with seasonal average water clarity



0 0.05 0.1 0.15 0.2 Miles

Aerial Orthophoto Source: NH GRANIT



Extension

