DEPOT POND

2015 SAMPLING HIGHLIGHTS

Milton, NH

University of New Hampshire Cooperative Extension

Refer to the Milton Three Ponds Annual Report (2015) for additional information

Blue = Excellent = Oligotrophic

Yellow = Fair = Mesotrophic

Red = Poor = Eutrophic

Gray = No Data

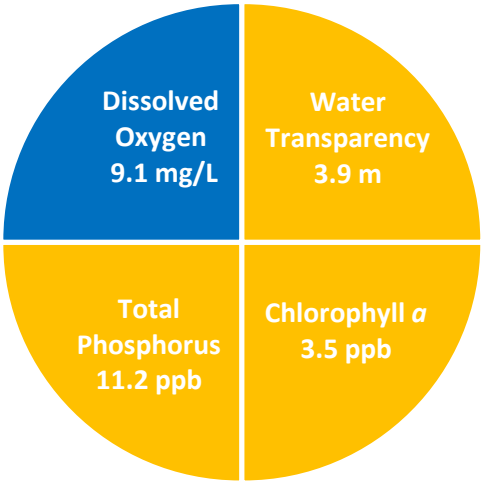


Figure 1. Depot Pond Water Quality (2015)

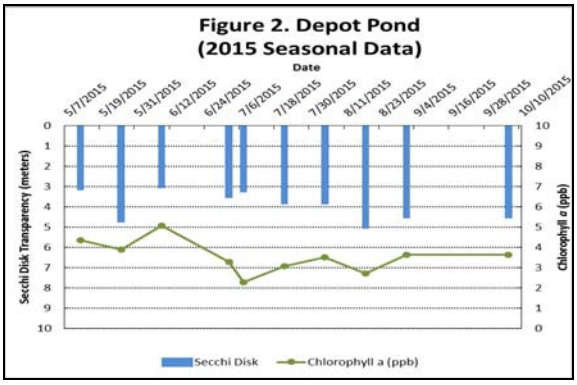
Table 1. 2015 Depot Pond Seasonal Averages and NHDES Trophic Level Classification Criteria

Parameter	Oligotrophic "Excellent"	Mesotrophic "Fair"	Eutrophic "Poor"	Depot Pond Average (range)	Depot Pond Classification
Water Clarity (meters)	**4.0 – 7.0**	**2.5 - 4.0**	**< 2.5**	**3.9** meters (3.0 – 5.0)	**Mesotrophic**
Chlorophyll *a* (ppb)	**< 3.3**	**> 3.3 – 5.0**	**> 5.0 – 11.0**	**3.5** ppb (2.3 – 5.1)	**Mesotrophic**
Total Phosphorus (ppb)	**< 8.0**	**> 8.0 – 12.0**	**> 12.0 – 28.0**	**11.2** ppb (8.2 – 17.8)	**Mesotrophic**
Dissolved Oxygen (mg/L)	**5.0 – 7.0**	**2.0 – 5.0**	**<2.0**	**9.1** mg/L (7.2 – 10.3)	**Oligotrophic**

*Dissolved oxygen concentrations measured on May 26, 2015 between 6.5 and 13.5 meters in the bottom water layer.

Table 2. 2015 Station Depot Pond Seasonal Average Accessory Water Quality Measurements

Parameter	Assessment Criteria					Depot Pond Average (range)	Depot Pond Classification
Color (color units)	**< 10 uncolored**	**10 – 20 slightly colored**	**20 – 40 lightly tea colored**	**40 – 80 tea colored**	**> 80 highly colored**	**33.7** color units (range: 17.5 – 43.1)	**Lightly tea colored**
Alkalinity (mg/L)	**< 0.0 acidified**	**0.1 – 2.0 extremely vulnerable**	**2.1 – 10 moderately vulnerable**	**10.1 – 25.0 low vulnerability**	**> 25.0 not vulnerable**	**8.0** mg/L (range: 6.4 – 9.4)	**Moderately Vulnerable**
Specific Conductivity (*u*S/cm)	**< 50 *u*S/cm Characteristic of minimally impacted NH lakes**		**50-100 *u*S/cm Lakes with some human influence**	**> 100 *u*S/cm Characteristic of lakes experiencing human disturbances**		**86.0** *u*S/cm (range: 79.0 – 94.8)	**Lakes with some human influence**



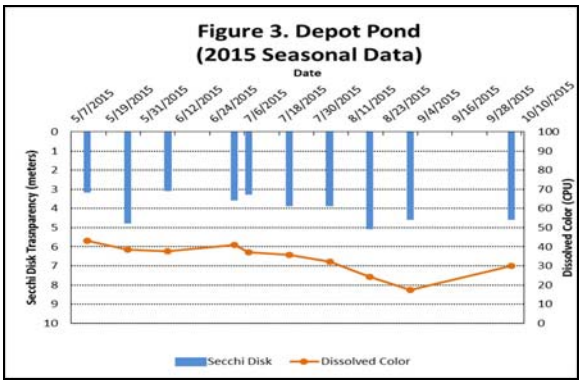


Figure 2 and 3. Seasonal Secchi disk transparency, chlorophyll *a* changes and dissolved color concentrations. Figures 2 and 3 illustrate the interplay among Secchi Disk transparency, chlorophyll *a* and dissolved color. Shallower water transparency measurements oftentimes correspond to increases in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

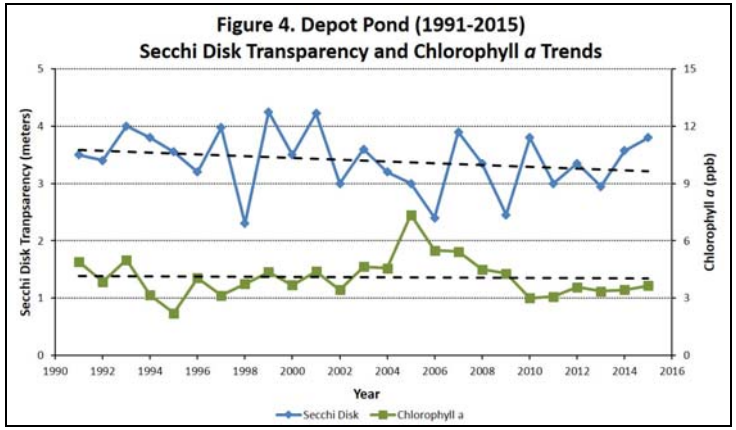
LONG TERM TRENDS

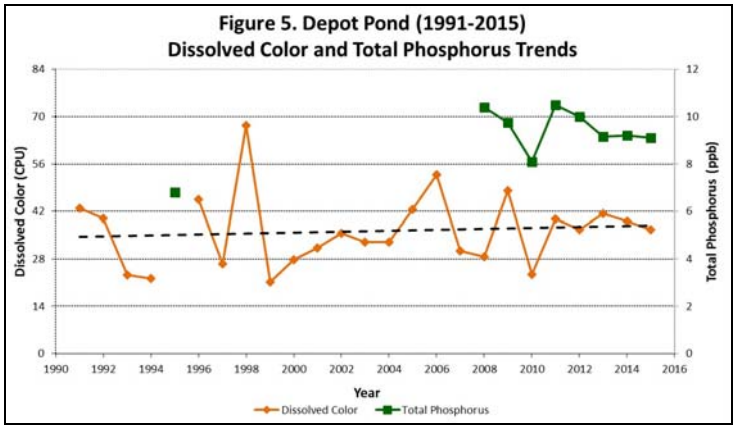
WATER CLARITY: The Depot Pond water clarity measurements, measured as Secchi Disk transparency, display a trend of decreasing water clarity over the past twenty-five years.

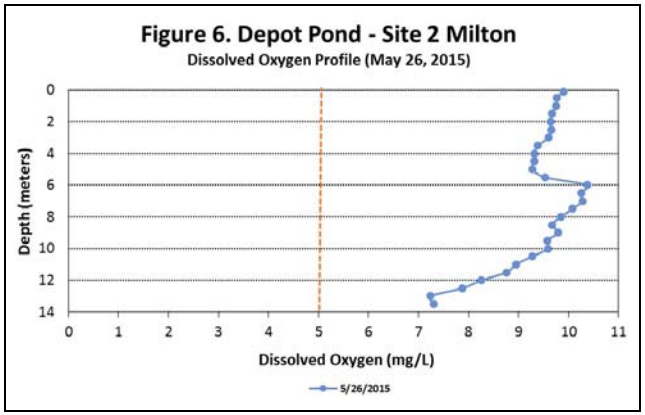
CHLOROPHYLL: The Depot Pond chlorophyll *a* concentrations, a measure of microscopic plant life within the lake, display a relatively stable trend over the past twenty-five years.

TOTAL PHOSPHORUS: Phosphorus is the nutrient most responsible for microscopic plant growth. Due to limited total phosphorus data, including gaps among sampling years, a trend analysis was not performed. Once ten years of total phosphorus data have been collected, a trend analysis will be performed.

COLOR: The Depot Pond color data, the result of naturally occurring "tea" color substances from the breakdown of soils and plant materials, display a trend of increasing color concentrations over the past twenty-three years.







Figures 4 and 5. Changes in the Depot Pond water clarity (Secchi Disk depth), chlorophyll *a,* dissolved color and total phosphorus concentrations measured between 1991 and 2015. **These data illustrate the relationship between plant growth, natural water color and water clarity. Total phopshorus data are also displayed and are oftentimes correlated with the amount of plant growth.** Trendlines are displayed when ten or more years of data are available.

Figure 6. Depot Pond dissolved oxygen profile taken by the **Center for Freshwater Biology** on May 26, 2015. The vertical red line indicates the oxygen concentration commonly considered the threshold for successful growth and reproduction of cold water fish such as trout and salmon.

Recommendations:

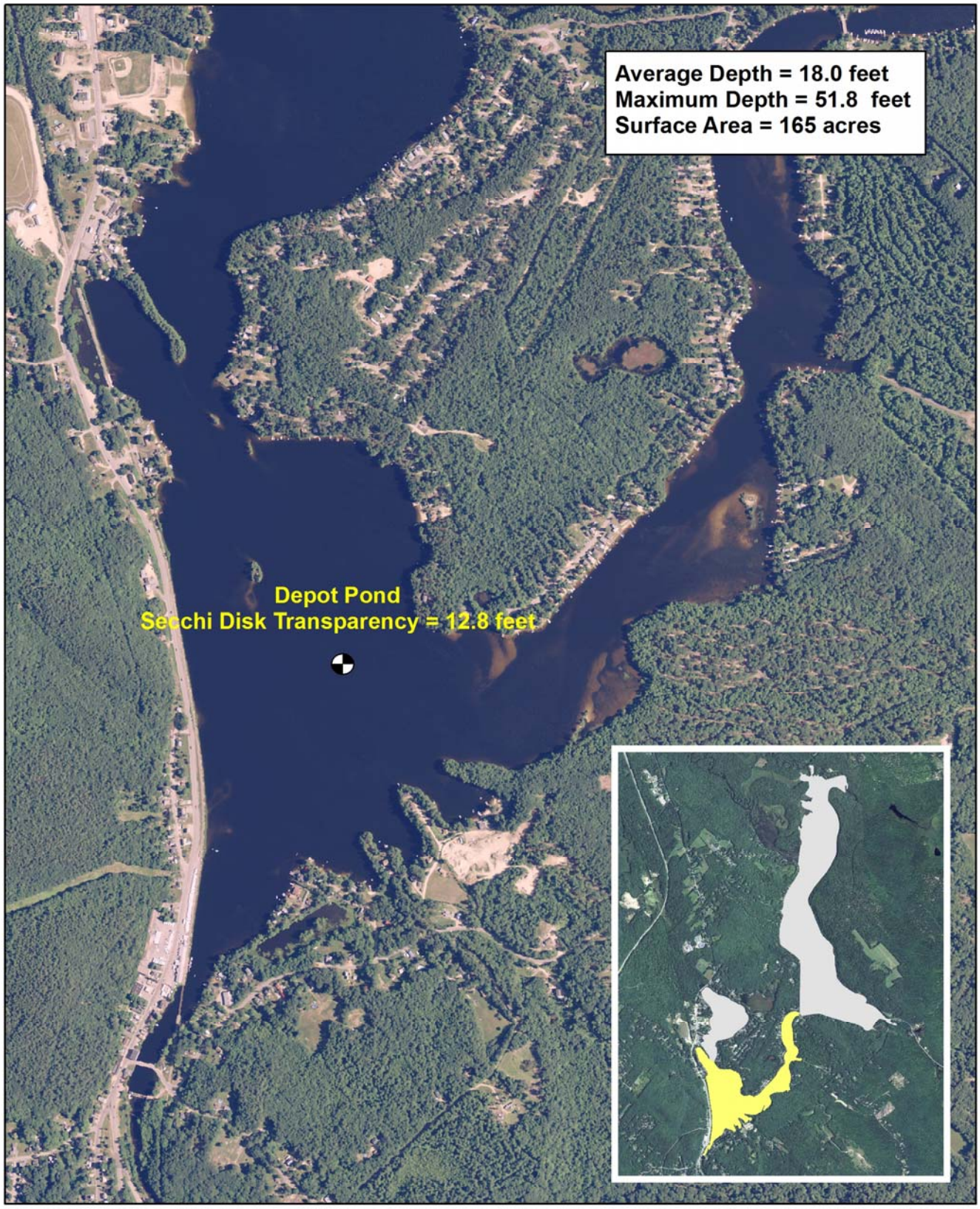
Implement Best Management Practices within the Depot Pond watershed to minimize the adverse impacts of polluted runoff and erosion into the lake. Refer to "Landscaping at the Water's Edge: An Ecological Approach" and "New Hampshire Homeowner's Guide to Stormwater Management: Do-It-Yourself Stormwater Solutions for Your Home" for suggestions that can help reduce nutrient loading caused by overland run-off.

- http://extension.unh.edu/resources/files/Resource004159_Rep5940.pdf
- http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-11-11.pdf

Figure 7. Depot Pond

Milton, NH

2015 Deep water sampling site and average water clarity



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NEW HAMPSHIRE LAKES LAY MONITORING

Aerial Orthophoto Source: NH Granit
Site Locations GPS coordinates collected by the UNH Center for Freshwater Biology