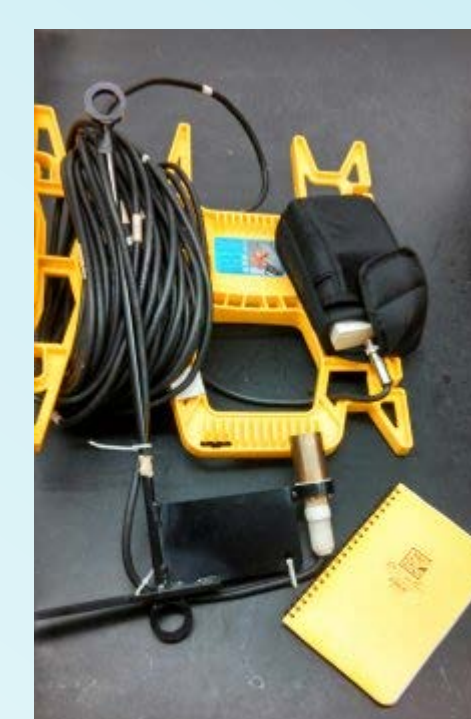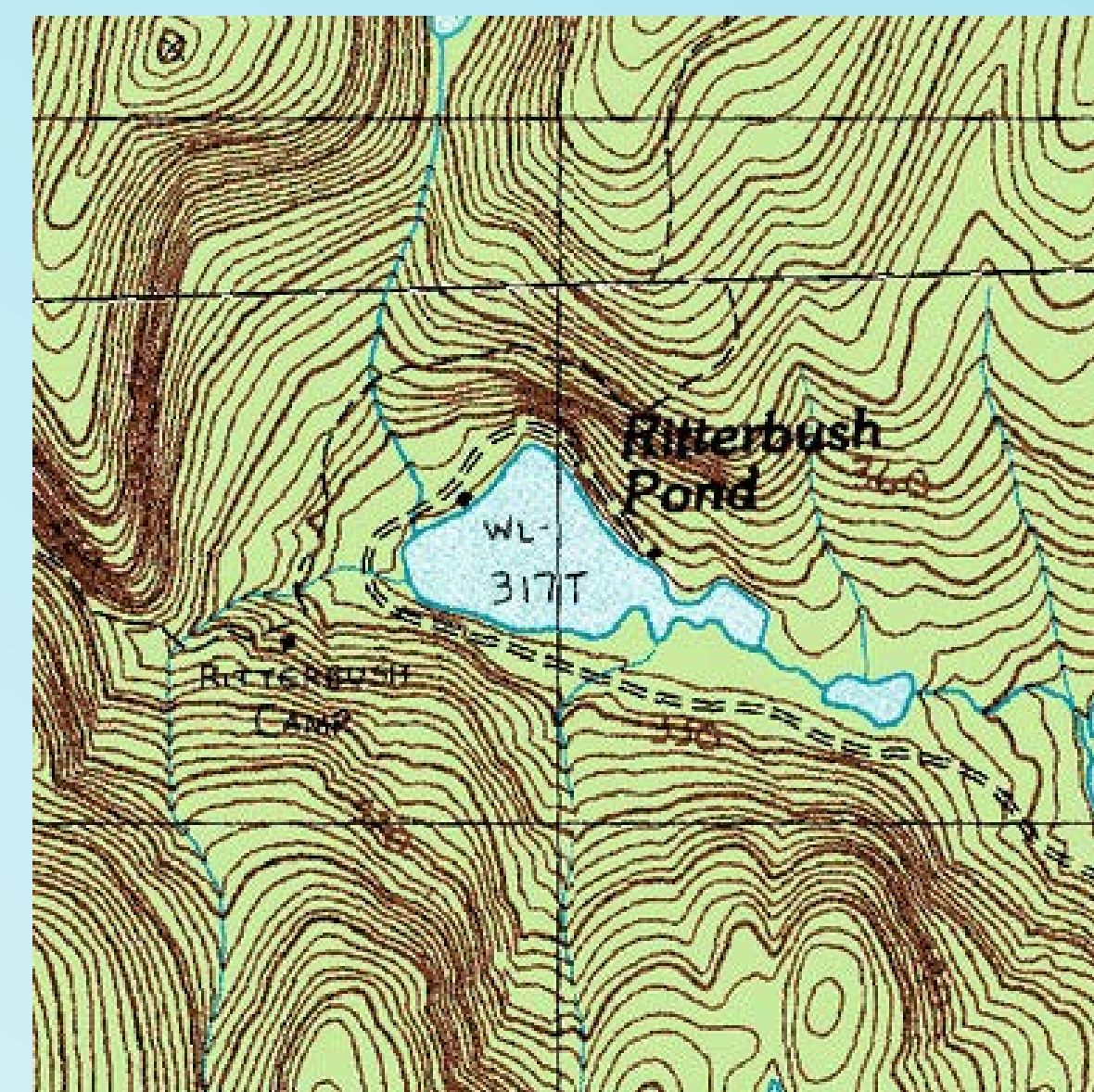# Ritterbush Pond Analysis

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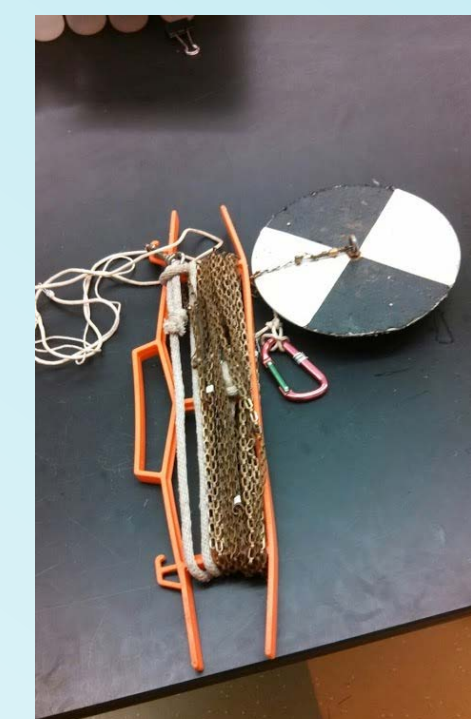
Introduction

Ritterbush Pond is a well preserved ecological resource in Eden, Vermont. This pond was the center of our research . Through our research we aimed to find out what pollutants (i.e phosphorus, nitrogen, algae, etc.) Data collected was taken over the course of summer 2013. Phosphorus, one of the most common naturally found nutrients in water, which was at a good level in Ritterbush. Phosphorus accelerates growth of plants by speeding up the loss dissolved oxygen, which smothers aquatic life. Finding these results for every body of water is crucial. Naturally, Nitrpgen is found more often in salt water, so it was easy to assume that Ritterbush had low levels of Nitrogen.

Materials

- Multi Probe Meter
- Tape Measure
- Secchi Disk
- Water Sampler
- Plastic Bottles
- Water Filter Net
- Light Meter
- Filtering System

Secchi Disk   Light Meter

Filtering System

Procedures

Working with a Research Assistant, we tested for:
- Temperature variance based on depth
- Dissolved Oxygen (DO) and DO % saturation
- pH
- Conductivity
- Turbidity
- Phosphorus
- Total Suspended Solids (TSS)
- Water quality

Methods

- pH, dissolved oxygen and conductivity were measured using a multi-probe , which was lowered into pond by meter increments.
- Depth was measured by a chain with meter graduations, which had weights attached to the submerged end.
- Turbidity was measured using a secchi disk (a metal disk with alternating black and white quadrants) to measure the point at which light stopped traveling through the water. The disk was lowered into the water until it was no longer visible measuring turbidity (clarity) at a certain depth.
- The water sampler was used to collect samples at desired depths. The cylinder was dropped down into the water, and when it was at the specific depth (meters) a weight was dropped down the chain triggering the lids to close and capture the water.
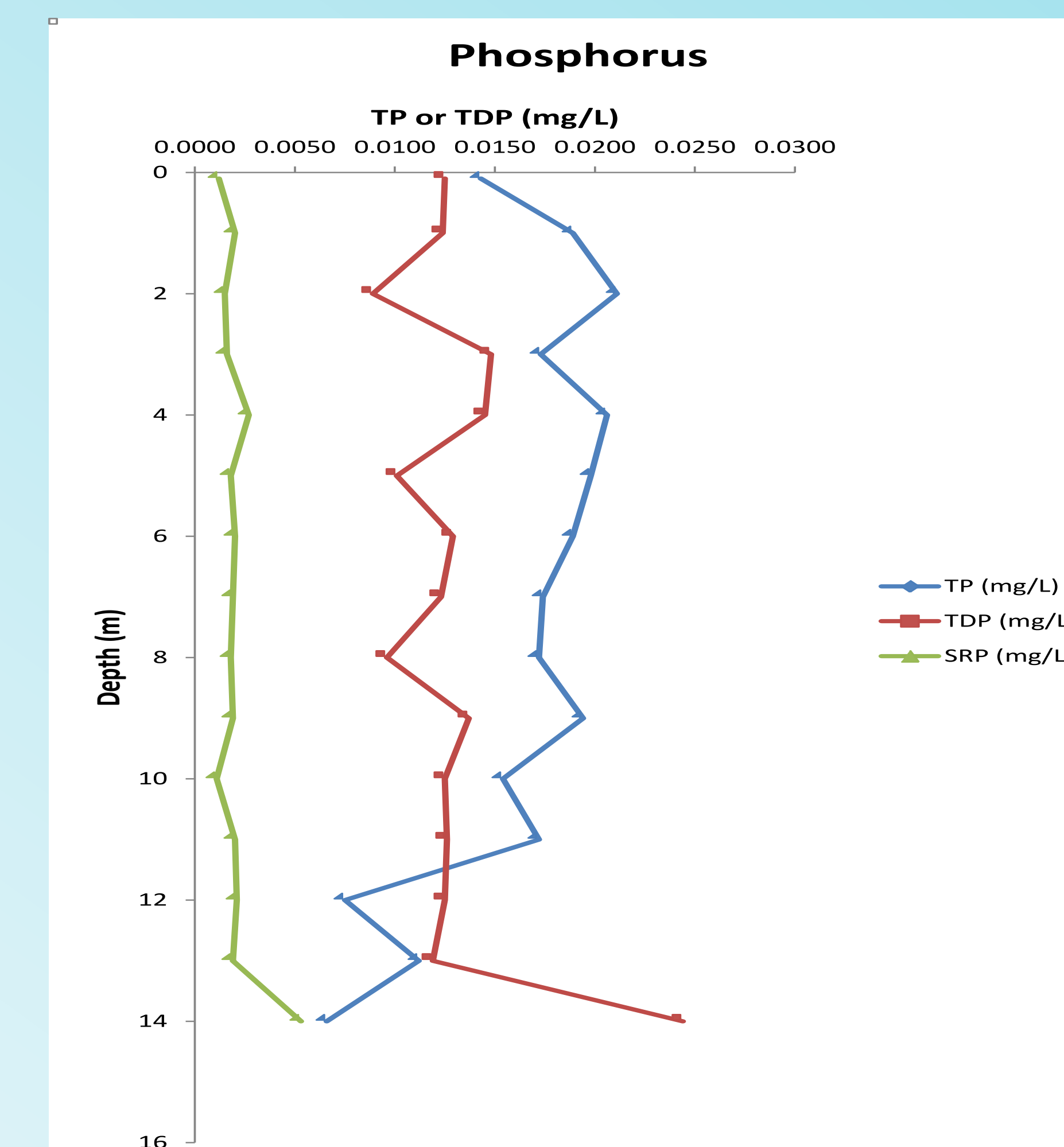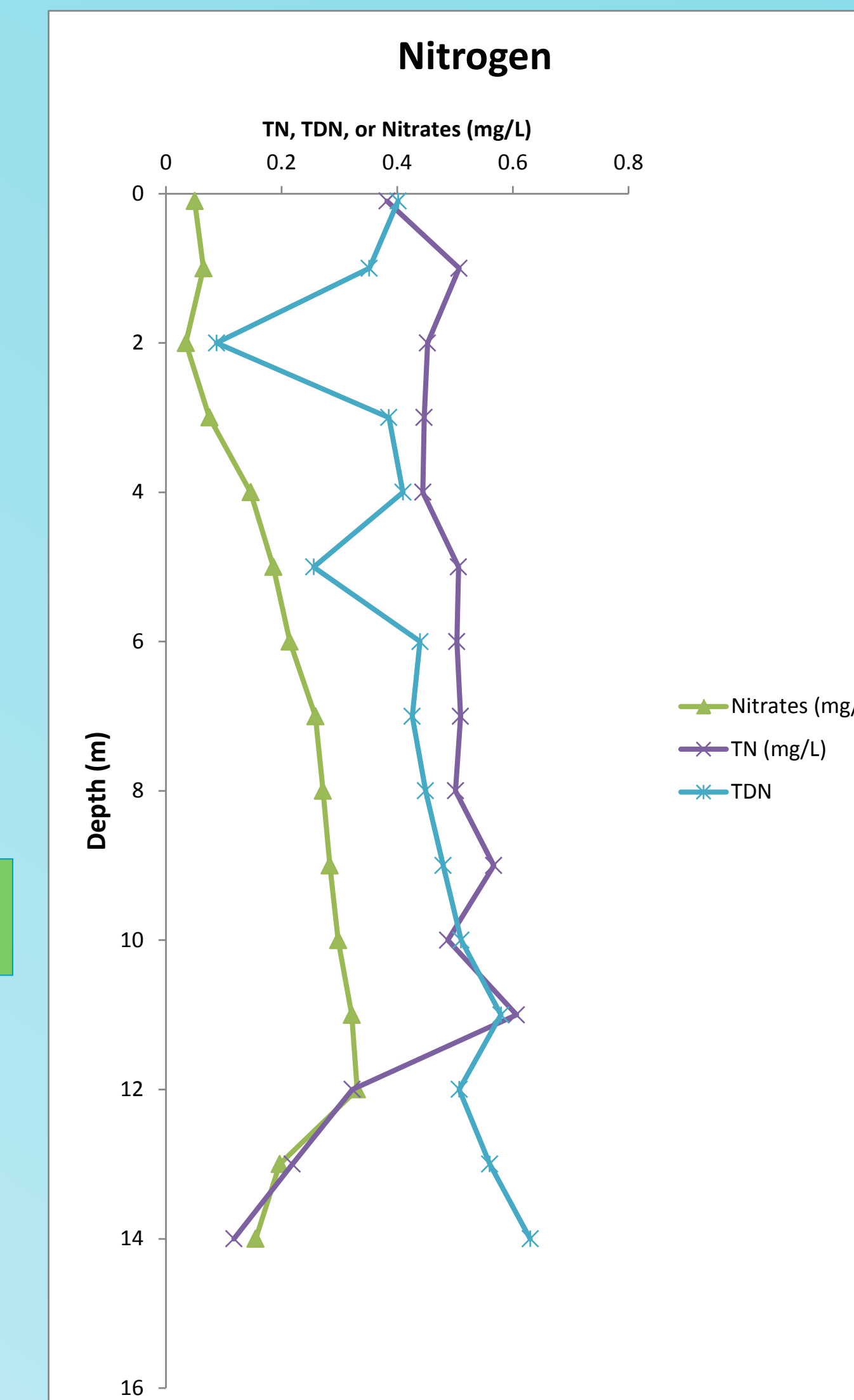
Results

Our results varied by day and by water condition. Most times the weather was overcast and rainy. The first day, 6/26/2013, levels 0.1,1 and 3 were neutral with levels of: 7.25,7.02,and 7.06. From meters 4 to 14.3, levels were acidic, lowest being 5.29.   On day 7/2/2013 2,3, and 4 meters down the water was neutral with 7.03,7.05,and 7.18 pH levels.4 meters down to 15 is acidic with our lowest level of 5.34. On date 7/9/2013, all levels were acidic, with the highest being 6.44, and the lowest being 5.0.

Nitrogen

TN, TDN, or Nitrates (mg/L)

- Nitrates (mg/L)
- TN (mg/L)
- TDN

Phosphorus

TP or TDP (mg/L)

- TP (mg/L)
- TDP (mg/L)
- SRP (mg/L)

June 26

Depth (m)

- Temperature (°C) Dissolved Oxygen DO % sat pH conductivity Light
- Dissolved Oxygen
- pH

July 9

Depth (m)

- Temperature (°C) Dissolved Oxygen DO % sat pH conductivity Light
- Dissolved Oxygen
- pH

Acknowledgements