Wetland Water Chemistry

Wetlands need an abundance of water to thrive and grow, but the characteristics of that water are also important. Temperature is an obvious example of a characteristic of water that can vary and affect both plant and animal life. PH, total dissolved solids (TDS), and the amount of dissolved oxygen (DO) are other important parameters that we will measure in this exercise. All of these measurements must be considered to evaluate the health of an aquatic system.

In general, low pHs can dissolve more heavy metals while high pH disrupts fish metabolism and causes massive kills. High dissolved solids usually means cloudy water while low measurements could indicate problems in electrolytes for some organisms. The level of dissolved oxygen can vary greatly from one body of water to another and is a limiting factor for all types of life in a wetland. Decaying organisms and plants can consume more oxygen than is being produced by the live plants, making a pond completely uninhabitable.

In this exercise we will measure temperature, pH, TDS, and DO in different water systems at different times of the day. These water systems will include the natural Billy Creek pond, the rubber-lined and un-vegetated fish pond, the wetland pond (3 levels) and the wetland stream.

Objectives:

1. Discuss the importance of water quality and quantity to support a diverse collection of plants and animals.
2. Become familiar with techniques and equipment used to measure water chemistry.
3. Describe why multiple measurements over time are needed to fully describe water chemistry.
4. Interpret your results by comparing measurements from the different areas.

Procedures:

1. Listen carefully to the instructions on how to use the instruments and where the sample sites are located.
2. Take the measurements at the designated location at the designated time.
3. Enter your group's data into the correct worksheet on the laptop.
4. Interpret the group's results from the graphs provided and discuss if they make sense.