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## 2013 Cayuga Lake

### Lake-Wide Seabird Profiles

#### August 6, 2013 Provisional Data Summary

*Submitted: for review; for discussion purposes only*

*Anthony R. Prestigiacomo  
Research Scientist*

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2013 Cayuga Lake Map



**Site Numbers and Description**

**Site 9:** 2.3 mi N of Frontenac Island

**Site 8:** 2.5 mi S of Union Springs

**Site 7:** 2.1 mi W Aurora

**Site 6:** 1.1 mi N of Sheldrake Pt.

**Site 5:** 1.8 mi N of Milliken Power Plant

**Site 4:** 1.6 mi S of Milliken Power Plant

**Site 3:** ~ 0.5 mi NE of Taughannock Park Marina

**Site 2:** 0.9 mi NW of Cornell Sailing Club

**Site 1:** 0.6 mi N of Allan H. Treman Marina

**Site IL:** ~ across from Allan H. Treman Launch Area

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## Guide to Abbreviations and Units

*Sea Bird Profiles of Cayuga Lake collected by Upstate Freshwater Institute*

Profiles display variability of the measured parameter with depth (in meters, notice the significant change in scale) and at the sampling locations along Cayuga Lake.

- **Temperature** (units are degrees C)
- **Specific Conductance (SC)** indicates the ability of water to convey an electrical current, which is a measure of the lake water's ionic content and activity (normalized to a temperature of 25°C). Units of specific conductance are micro Siemens per centimeter ( $\mu\text{S}/\text{cm}$ )
- **Turbidity (Tn)** is a measure of water clarity (the extent to which particles suspended in the water scatter light). Lower turbidity waters appear clear, while higher turbidity waters appear cloudy. Turbidity is reported in units of NTU, which stands for Nephelometric Turbidity Units.
- **Beam Attenuation Coefficient (BAC)** is another measure of water clarity. The unit of measure is per meter ( $\text{m}^{-1}$ ), signifying the extent to which light is absorbed or scattered per meter of water depth. Like turbidity, low values signify more transparency and higher values more opacity.
- **Chlorophyll (Chl)** is a measure of the photosynthetic pigment present in the water column, and indicates the abundance of phytoplankton (algae) suspended in the water. Units are  $\mu\text{g}/\text{l}$ , which is equivalent to parts per billion.
- **Photosynthetically Active Radiation (PAR)** designates the amount of solar radiation within the spectral band that plants and algae can use in the process of photosynthesis. PAR declines with depth in the water column, as light is scattered and absorbed. The depth of penetration of PAR defined the "photic zone", where light is present to support photosynthesis. The units of PAR are micro Einsteins per square meter per second ( $\mu\text{Em}^{-2}\text{s}^{-1}$ ).
- **Secchi Disk Transparency (SD)** is another measure of water clarity, and one that is standard for lake monitoring programs. The Secchi disk is a 20 cm diameter plastic disk with alternating quadrants of black and white, on a calibrated line. The monitoring team lowers the Secchi disk through the water column and records the depth at which it is no longer visible to the observers on the boat. Secchi disk is reported in meters. Higher Secchi disk readings signify clearer water.

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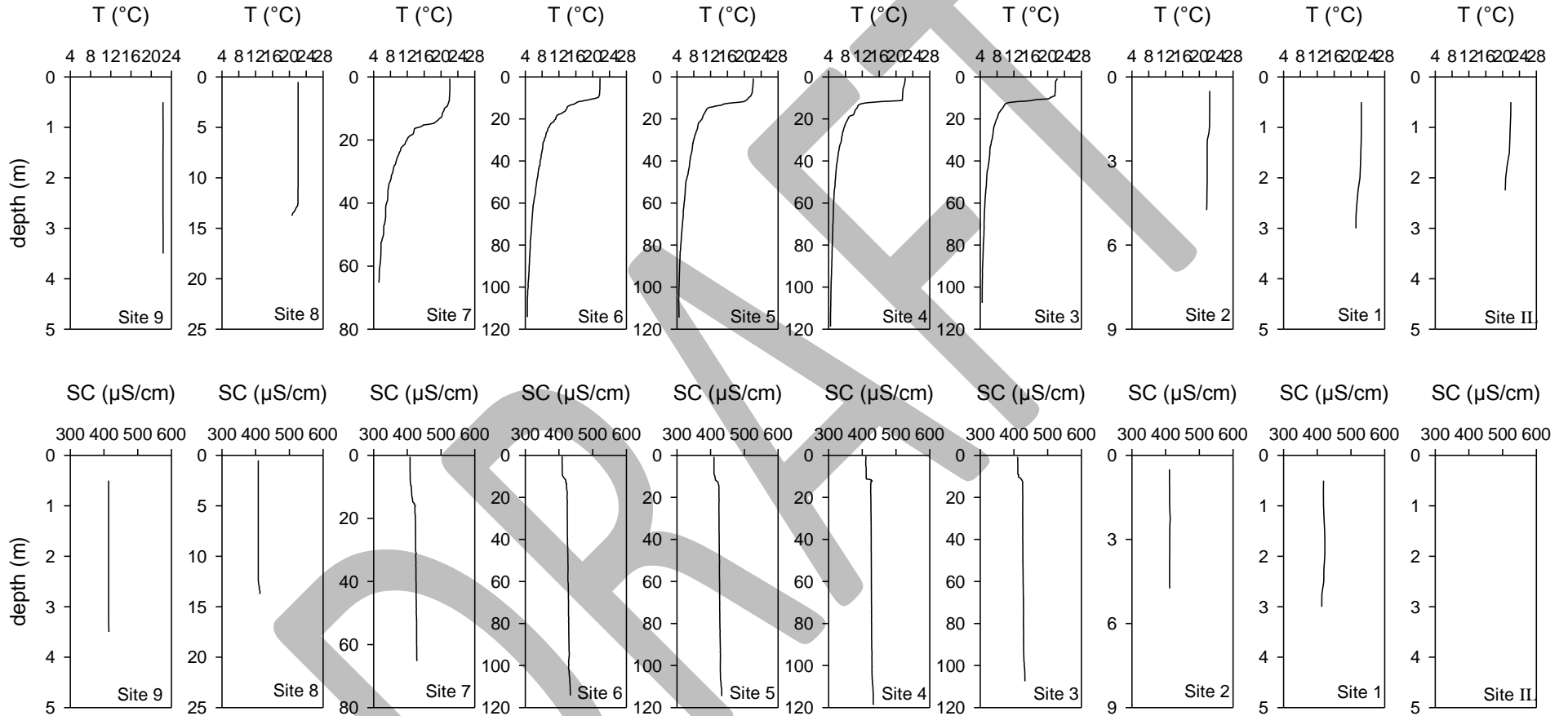
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Temperature and Specific Conductance Profiles

North to South →



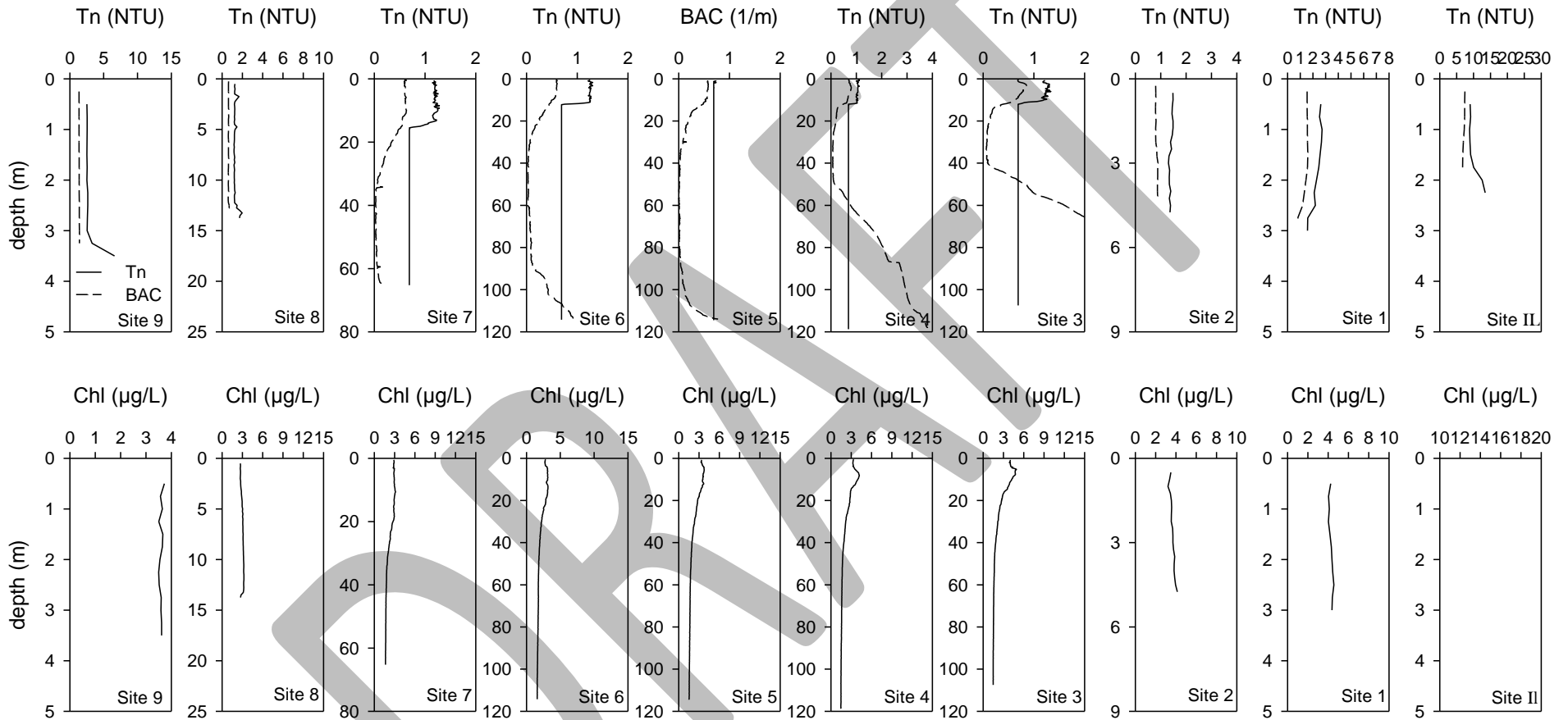
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Turbidity, Beam Attenuation, and Chlorophyll Profiles

North to South →



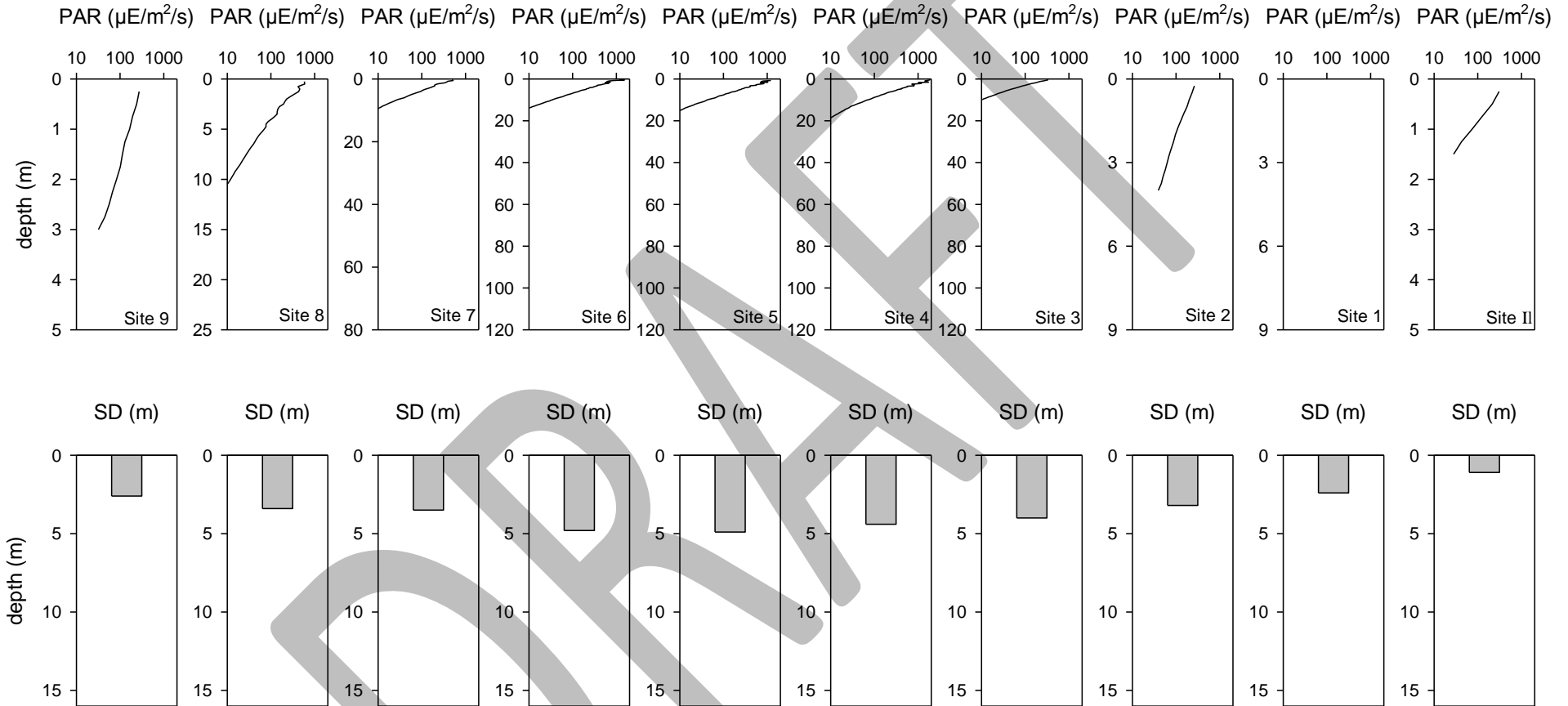
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PAR with Secchi Disc Profiles

North to South →



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