

Instructions for Measuring Secchi Disk Transparency (SDT)

Secchi Disk Transparency is a quick, simple and accurate method for determining lake water quality. Transparency is a measurement of how deep into a lake the sunlight can penetrate. Factors that interfere with light penetration are algae, zooplankton, water color, and silt. Since algae is usually the most abundant item, by measuring transparency one also is measuring the algae population (see Figure 1.) Lake water quality can be defined as the amount of algae that a lake supports.

A Secchi disk is 8" (10 cm) in diameter and made of metal or plastic which is painted with alternating black and white quadrants. The disk is attached to a tape that is marked in meters. A water scope is used in conjunction with a Secchi disk. The scope allows the monitor to see more deeply and clearly into the water by reducing glare and cutting down on wave disturbances. Using a scope can maximize the depth of SDT reading and minimize the effects of varying cloud covers, wave movements and wind velocities.

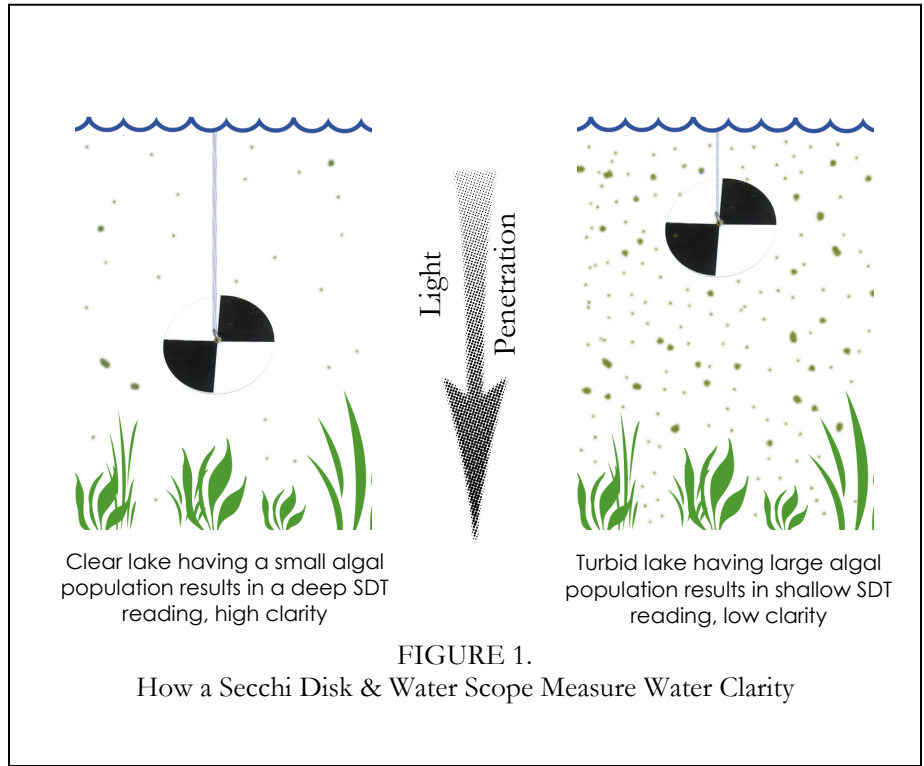


FIGURE 1.
How a Secchi Disk & Water Scope Measure Water Clarity

Readings should be taken from May through September at two week intervals if possible. Readings should be taken between 9:00 am (0900 hours) and 3:00 pm (1500 hours.) This is when the sun is most directly overhead. Readings taken in the early morning or late afternoon will be markedly lower than a midday reading.

Follow these steps to obtain accurate Secchi Disk Transparency (SDT) readings:

1. Motor or paddle to the deepest part of the lake or pond. This will allow you the deepest possible reading. Lake depth maps with sampling locations are available through LSM, or online at www.lakesofmaine.org.
2. Always anchor your boat. If the boat moves while taking the reading, and the disk does not hang straight, the reading will not be accurate.
3. Take the SDT reading on the shady side of the boat. This will also insure the deepest possible reading. The shade reduces glare and can improve the readings up to 3ft. (~1 meter.)
4. Viewing the disk through the scope, slowly lower the Secchi disk until you can no longer see it (no white glow.) Then, raise it until it is visible again and lower it one more time, very slowly, stopping when it disappears.
5. Hold the Secchi disk and tape steady, remove your face from the scope and mask and place the scope safely inside the boat. Pinch the meter tape where it meets the water and record that depth onto the data sheets.

Practice taking a Secchi reading online with LSM's Secchi Simulator: <https://www.lakestewardsofmaine.org/secchi-simulator/>