

Secchi Disk

What is it?

This is a separate instrument from the Hydrolab in the Pelican case. A secchi disk contains alternating black and white quadrants and is attached to a line. This line is used to lower the disk into a body of water with the purpose of measuring the clarity of the water. The depth at which the disk can no longer be seen is called the secchi depth and is the measurement recorded.

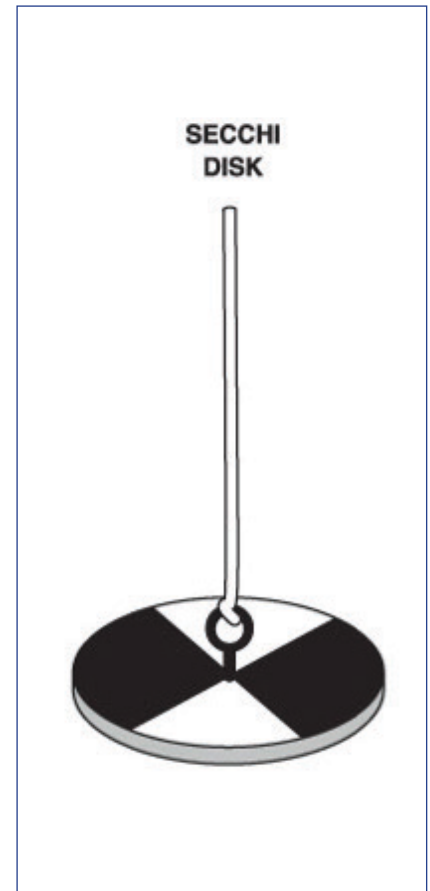
Why do we measure it?

Secchi depth is important to measure because the clarity of water impacts the amount of light penetration and in turn can affect photosynthesis and the distribution of organisms. While people often focus on the negative aspect of losing clarity, completely clear water is usually not desirable either because that means the water is devoid of needed food like plankton.

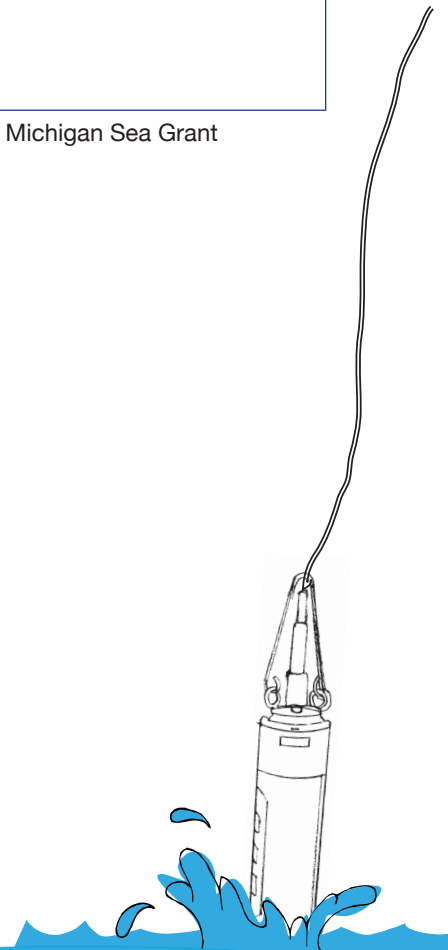
Secchi disk readings are useful in comparing bodies of water or looking for changes to a specific body of water over time. Changes in clarity of water can be an indicator of a human threat to an ecosystem.

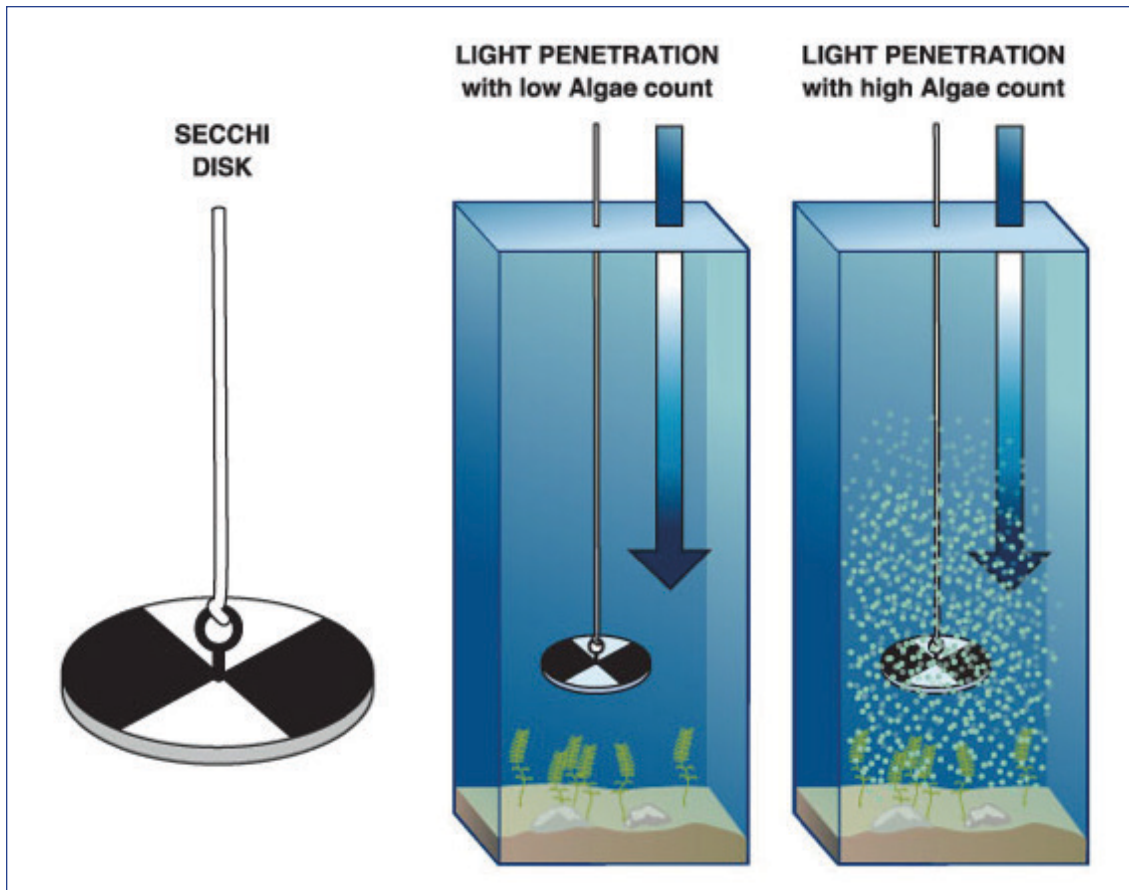
What affects it?

Clarity will decrease as color, abundance of algae or suspended sediments increase. The color of water is sometimes caused by staining, due to decay of plant material. Excess algae growth can occur where there is additional input of nutrients like phosphorus and nitrogen from agriculture and/or sewage treatment or septic system waste. An increase in suspended sediments can be the result of urban, agricultural or storm runoff.



Source: Michigan Sea Grant





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Procedure for use in the field:

The secchi disk can be lowered from a boat, pier, or bridge. It is best deployed in a shaded area in calm water between 10 am and 4 pm. Also, the observer should not wear sunglasses.

1. Lower the secchi disk into the water, keeping it parallel.
2. Slowly lower the disk until you can't see it any more. At that point, raise it back up until you can see it again and then slowly lower it back down until right when it disappears again.*
3. At that point, notice where the water's surface intersects the marked line.
4. Raise the disk and count the markings on the line from that intersection point down to the disk.
5. The resulting measurement is the depth at which it disappeared.

*This procedure is used by USEPA, GLNPO.

