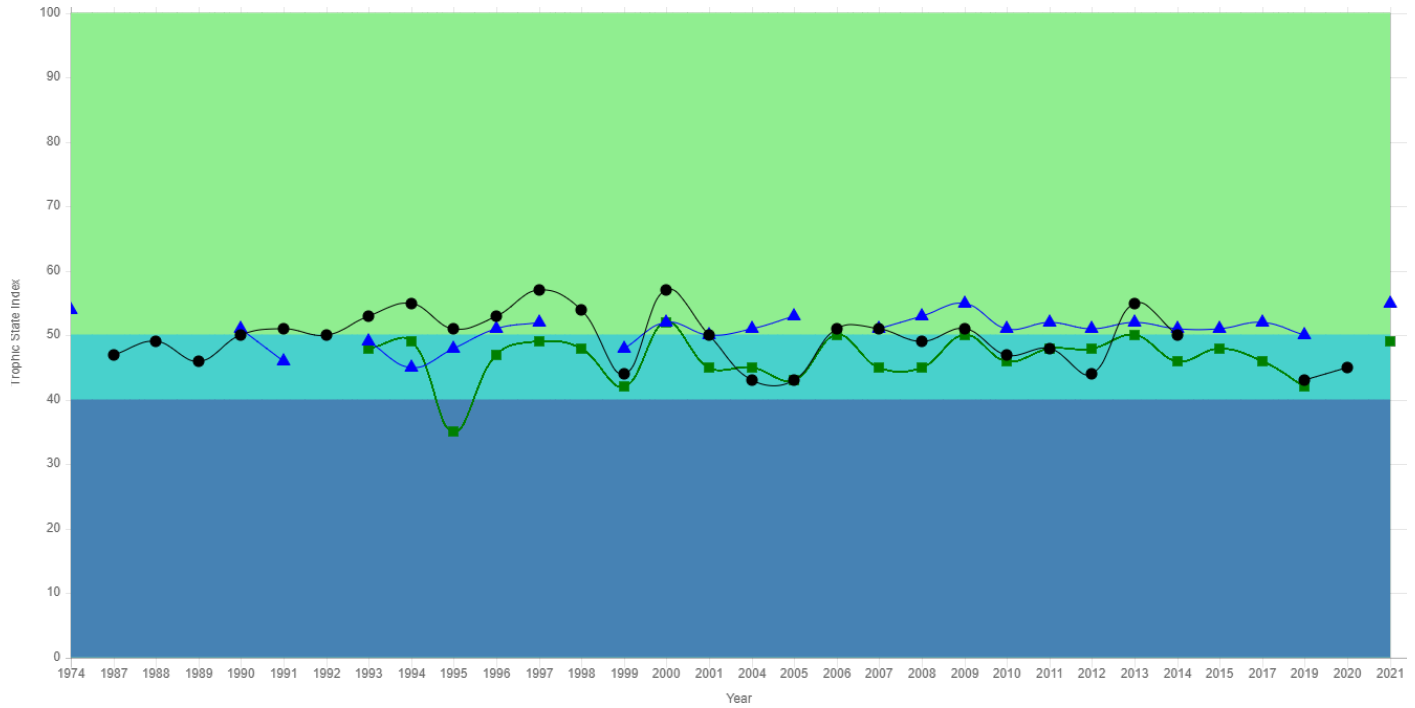# Trophic State Index Graph: Silver Lake - Deep Hole, Kenosha County

● Secchi TSI ▲ Total Phosphorus TSI ■ Chlorophyll TSI

Past Summer (July-August) Trophic State Index (TSI) averages.

TSI(Chl) = TSI(TP) = TSI(Sec)	It is likely that algae dominate light attenuation.
TSI(Chl) > TSI(Sec)	Large particulates, such as Aphanizomenon flakes dominate
TSI(TP) = TSI(Sec) > TSI(Chl)	Non-algal particulate or color dominate light attenuation
TSI(Sec) = TSI(Chl) >= TSI(TP)	The algae biomass in your lake is limited by phosphorus
TSI(TP) > TSI(Chl) = TSI(Sec)	Zooplankton grazing, nitrogen, or some factor other than phosphorus is limiting algae biomass

Trophic State Index Graph: Silver Lake - Deep Hole, Kenosha County

TSI	TSI Description
TSI < 30	Classical oligotrophy: clear water, many algal species, oxygen throughout the year in bottom water, cold water, oxygen-sensitive fish species in deep lakes. Excellent water quality.
TSI 30-40	Deeper lakes still oligotrophic, but bottom water of some shallower lakes will become oxygen-depleted during the summer.
TSI 40-50	Water moderately clear but increasing chance of low dissolved oxygen in deep water during the summer.
TSI 50-60	Lakes becoming eutrophic: decreased clarity, fewer algal species, oxygen-depleted bottom waters during the summer, plant overgrowth evident, warm-water fisheries (pike, perch, bass, etc.) only.
TSI 60-70	Blue-green algae become dominant and algal scums are possible, extensive plant overgrowth problems possible.
TSI 70-80	Becoming very eutrophic. Heavy algal blooms possible throughout summer, dense plant beds, but extent limited by light penetration (blue-green algae block sunlight).
TSI > 80	Algal scums, summer fishkills, few plants, rough fish dominant. Very poor water quality.

Trophic state index (TSI) is determined using a mathematical formula (Wisconsin has its own version). The TSI is a score from 0 to 110, with lakes that are less fertile having a low TSI. We base the overall TSI on the Chlorophyll TSI when we have Chlorophyll data. If we don't have chemistry data, we use TSI Secchi. We do this rather than averaging, because the TSI is used to predict biomass. This makes chlorophyll the best indicator.