

Lake Water Quality Report Cards

Background: Anoka Conservation District completed water quality sampling on Linwood and Boot Lakes every other week from May to September 2018, for a total of 10 samples. Linwood Lake has been monitored in previous years; Boot Lake had not. Monitoring is funded by the Sunrise River Watershed Management Organization.

What's monitored:

Total phosphorus – the nutrient that drives most algae growth. To meet state standards average summer concentrations must be <40 µg/L for deep lakes or <60 µg/L for shallow lakes. Linwood Lake is technically a deep lake due to a deep spot where sampling occurs but is more similar to a shallow lake.

Chlorophyll-A – a proxy for amount of algae present, the State standards for average summer concentration are <14 µg/L for deep lakes and <20 µg/L for shallow lakes.

Secchi depth – a measurement of lake clarity and thus an indication of turbidity and/or algal presence. The State standard for deep lakes is >1.4 m and for shallow lakes is >1.0 m.

Linwood Lake Report Card

Letter grade: C

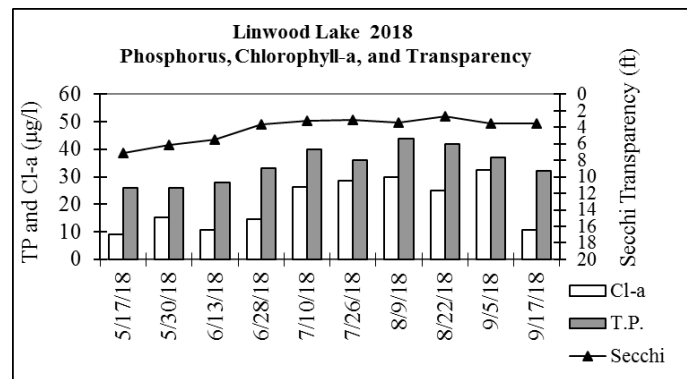
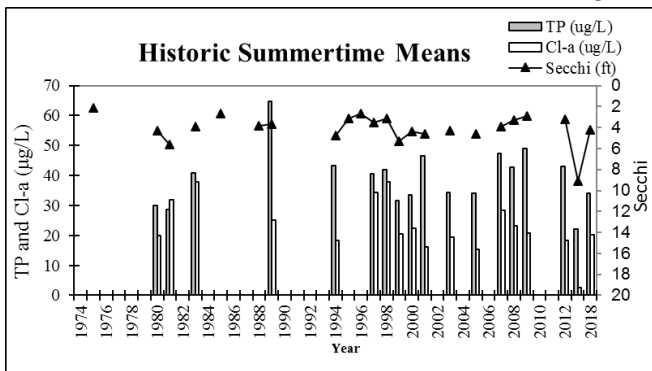
Phosphorus: C (35 µg/L)

Chlorophyll-a: C (21.3 mg/L)

Secchi transparency: C (4.2 ft)

Numbers are 2018 summer averages.

Trend: No change from 1974 to 2018.



Management considerations:

A Linwood Lake TMDL impaired waters study identified the following factors as management targets for Linwood Lake: internal sediments, shoreline management, shoreline septic systems, watershed runoff, agricultural practices, curly-leaf pondweed and common carp. High powered boats may be impacting water quality by disturbing sediments as the lake is large enough for these boats to get up to full speed, but is mostly shallow. Multi-faceted management is likely needed.

Boot Lake Report Card

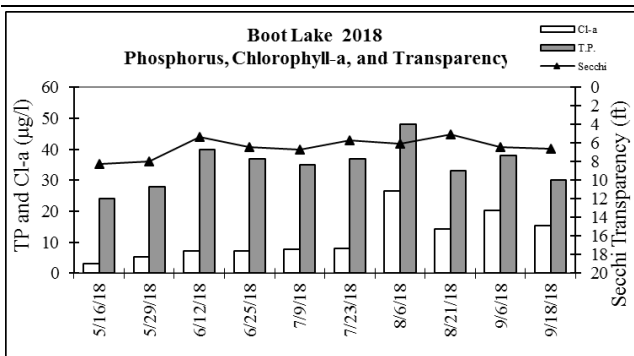
Letter grade: C+

Phosphorus: C (35.6 µg/L)

Chlorophyll-a: B (11.1 mg/L)

Secchi transparency: C (6.5 ft)

Numbers are 2018 summer averages.



Management considerations:

It appears that Boot Lake is neutral in its water quality impact on Linwood Lake, but improvements in or upstream of Boot Lake may be needed to achieve goals at Linwood Lake. It often makes sense to manage the whole watershed. For example, in 2018-19 a study is underway to examine one possible water quality linkage between the lakes – the movement and spawning of common carp.

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Sunrise River WMO