**LAKESHORE VILLAGE**
**Water Quality Results for Egret Lake and Cormorant Lake**
**Multiple Samples taken: December 11, 2017 – August 26, 2019**

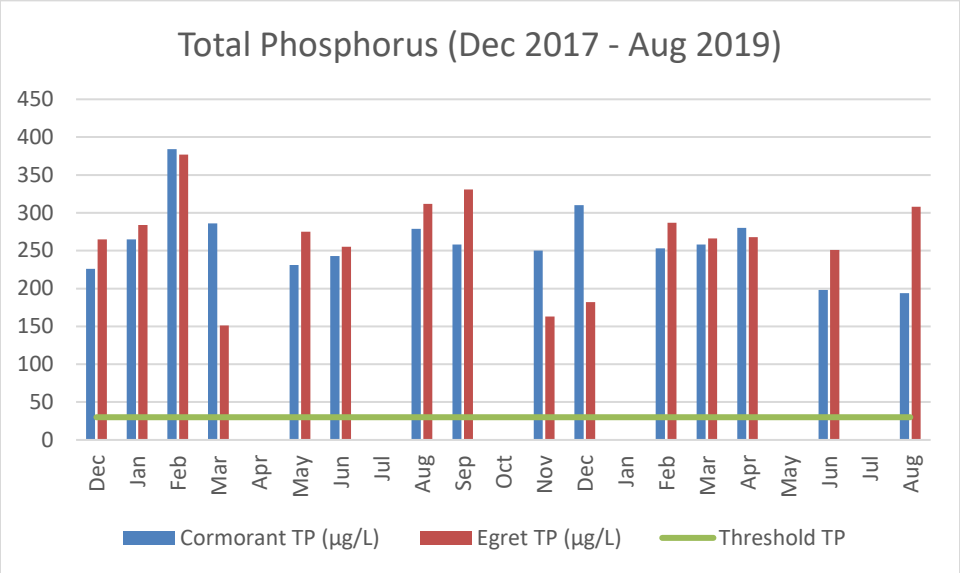
As we strive to improve the water quality of our lakes at Lakeshore Village, we are taking monthly water samples in two of our lakes for Florida LAKEWATCH. Presented here are our water quality data, which emphasize results for phosphorus, nitrogen, chlorophyll, and water clarity. These four parameters are regarded as the best suite of indicators of overall water quality.

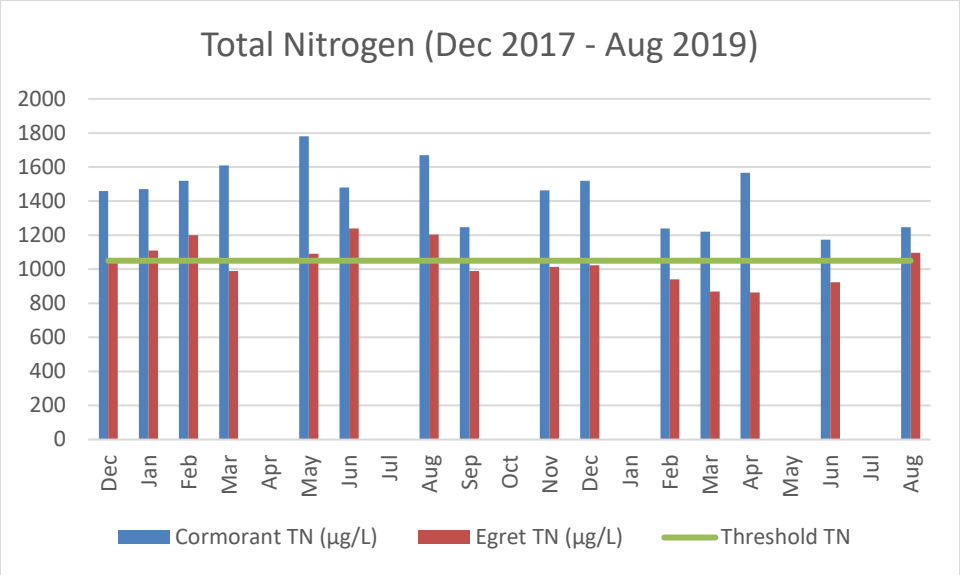
Our lakes are in the Southwest Florida Flatlands Region, which are typically eutrophic (***rich in organic and mineral nutrients)*** and being grouped in the Clear Hard Water group of Florida lakes. Florida LAKEWATCH compares our results to regional lakes with similar physiography, geology, soils, hydrology, water chemistry and vegetative climate.

As representatives of our four lakes, only Egret Lake and Cormorant Lake are being sampled. Interpretation of the data are made to the Florida Department of Environmental Protection's (FDEP) Nutrient Criteria for lakes. Applicable interpretations for Total Phosphorus and Total Nitrogen are used to assess impairment based on the nutrient criteria. The table below summarizes the average value from December 2017 through Aug 2019 as a generalized outcome.

| **Lake:** | **Egret** | | **Cormorant** | |
|---|---|---|---|---|
| **Phosphorus** | 265 µg/L | Exceeds Criteria | 261 µg/L | Exceeds Criteria |
| **Nitrogen** | 1040 µg/L | Below Criteria | 1444 µg/L | Exceeds Criteria |
| **Chlorophyll** | 24 µg/L | Exceeds Criteria | 46 µg/L | Exceeds Criteria |
| **Water Clarity** | 2.8 ft | Less than Desired | 2.3 ft | Less than Desired |

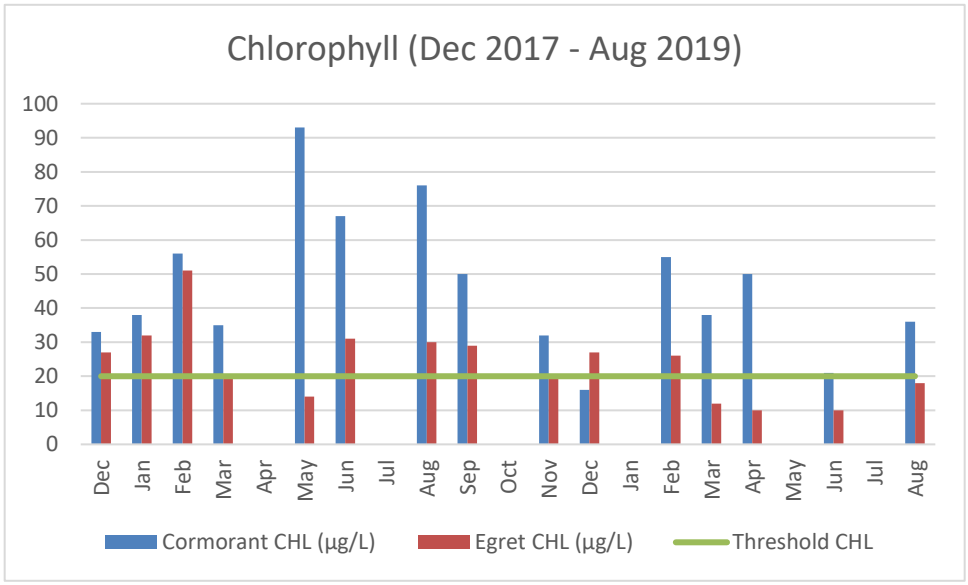
Elevated levels of **phosphorus** can cause shifts in water quality balance and is the most common cause of undesirable growth of aquatic weeds and algae. Lawn and landscape fertilizer runoff are another major source of phosphorus in lakes. Both Cormorant and Egret Lakes exceed the nutrient criteria for all seasons. While this is not unusual for retention ponds, it provides a goal for reducing phosphorus input.



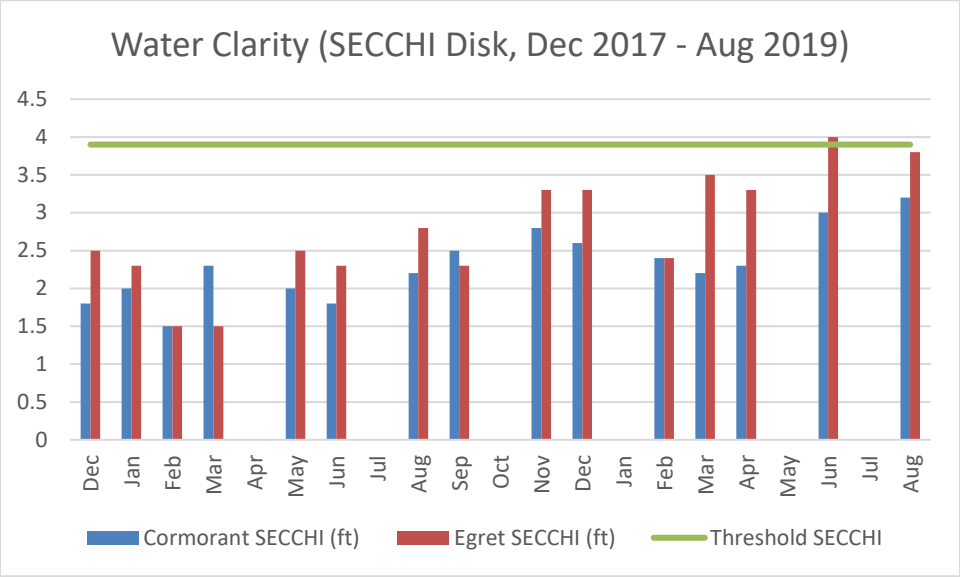



**Nitrogen** promotes plant and algal growth when combined with phosphorus. Nitrogen levels should remain in the low range to maintain a healthy lake system. While Cormorant exceeds the criteria, Egret is below but approaches the threshold.

**Chlorophyll** is measured to estimate the level of eutrophication in lakes, evident by the amount of phytoplankton present. Chlorophyll, one of the green pigments involved in photosynthesis, is indicative of algal concentrations and of nutrient enrichment. Excessive phytoplankton concentrations, as indicated by high levels of Chlorophyll, cause adverse impacts on dissolved oxygen levels due to biological oxygen demand as plant life decays. Both lakes have high levels of Chlorophyll, but more so in Cormorant Lake. Chlorophyll in Egret is becoming less as collections continue and may be related to a decrease in nitrogen. All things considered, the chlorophyll levels in both lakes are reasonable and do not indicate a risk of noxious algal blooms at this time.



Secchi depth is a mechanical test to judge the **depth of clarity** of a body of water. Generally, nutrient-rich lakes tend to have low Secchi depths less than 6 feet and highly enriched sites less than 3 feet. However, many lakes are exceptions to this rule based on other parameters, and Secchi in isolation cannot always diagnose a lake's overall health. Cormorant and Egret Lakes have water clarity less than desired, but clarity seems to be increasing.




**Explanation of Nutrient Criteria in Relation to Lake Classification:**

The numeric nutrient criteria for Florida require that lakes must first be grouped into three groups based on color and alkalinity or specific conductance. They are (1) Colored Lakes, (2) Clear Hard Water Lakes, and (3) Clear Soft Water Lakes. The lakes in Lakeshore Village are classified as Clear Hard Water Lakes as estimated when Chlorophyll averages generally above 20 µg/l. The specific criteria or thresholds for these lakes in Florida and to which the water quality data from Cormorant and Egret Lakes are compared are as follows:

- Total Phosphorus = 30 µg/L
- Total Nitrogen = 1050 µg/L
- Chlorophyll = 20 µg/L
- Water Clarity = >3.9 ft

These values are obtained from a geometric mean of all values (used to offset skewed values such as a storm event) of each lake over the full time period. The graphs provide the monthly data to observe trends over time.