

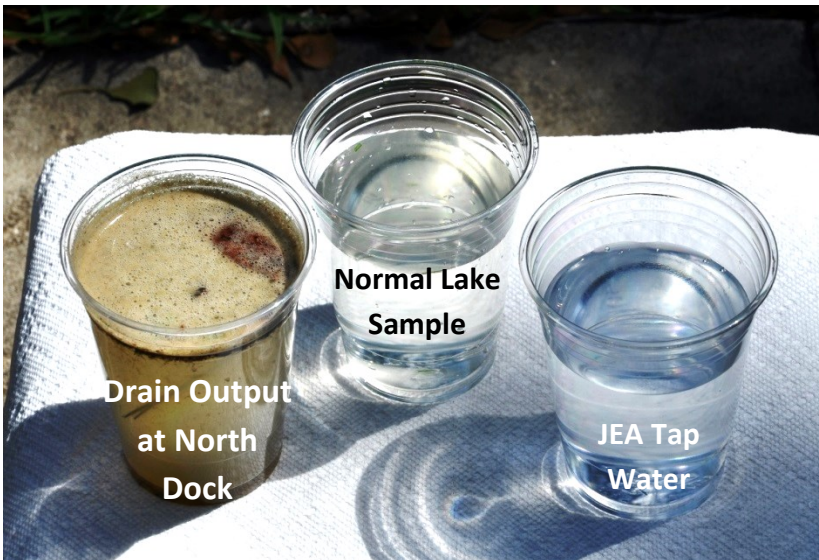
Dale Lewis

**Overview:**

Secret Cove has a tremendous asset in our lake, adding value to every home. It's the only clean, clear "fishable and swimmable" community lake in Jacksonville, and has water quality that exceeds EPA standards. The lake water's oxygen levels support a sustainable fish population, the pH and chloride levels are in the normal range, fertilizer levels are low and the clarity averages 13 feet of visibility. We have not seen a heavy growth of algae, or problems with invasive plant species, in the last five years.



July 3 Boat Races at South Dock



**Keeping the Lake Clean:**

The streets in Secret Cove drain into Hidden Lake and Pottsburg Creek. If you dump anything into a street drain, it has a negative impact on water quality. In this photo, the sample at the left was taken near the North Dock after a heavy rain, after a resident dumped oil into a street drain. The cup in the middle holds a normal lake water sample. The cup on the right is JEA tap water. Please do not ever dump anything into the street drains!

**The Lake:**

Hidden Lake covers 23.2 Acres and ranges from 3.5 feet to 17 feet in depth. The lake has been owned by the Secret Cove Civic Association, (Real Estate # 154295-0100) since 1977. The Association pays monthly

for inspections by Lake Doctors and for the annual stocking of fish. The lake's water quality is tested 12 to 18 times per year by SCCA volunteers, in cooperation with the Florida Lake Watch program.

### **Fish:**

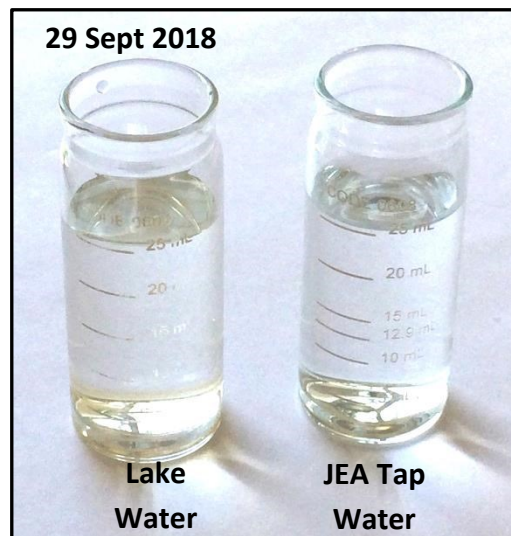
Since January of 2014, the lake has been stocked with 20,000 Gambusia minnows, 3,200 Bream (Blue Gill and Shellcrackers) and 600 Catfish. Since Bass are predators, and the population is currently self-sustaining, we do not add Bass to the lake. The lake has a triploid Grass Carp population, introduced several years ago to help keep hydrilla in check. These Carp cannot reproduce, and will have to be restocked from time to time if algae, hydrilla or other invasive plants become a problem.

### **Vegetation:**

Vegetation is sparse. The lakeshore has bulkheads on most of the perimeter, with no naturally-occurring plants in these areas. There are no fallen trees in the lake, or areas with bottom-rooted vegetation. This means that there is very little cover for small fish to escape predators. In addition, because there are few plants underwater, we don't have the natural water-filtering system that you would see in lakes that have been allowed to remain "wild". Wild freshwater lakes eventually fill in with decaying plant material, in a process called eutrophication. To avoid this outcome for Hidden Lake, we will have to intervene from time to time keep maintain its clean, clear, fishable and swimmable condition.

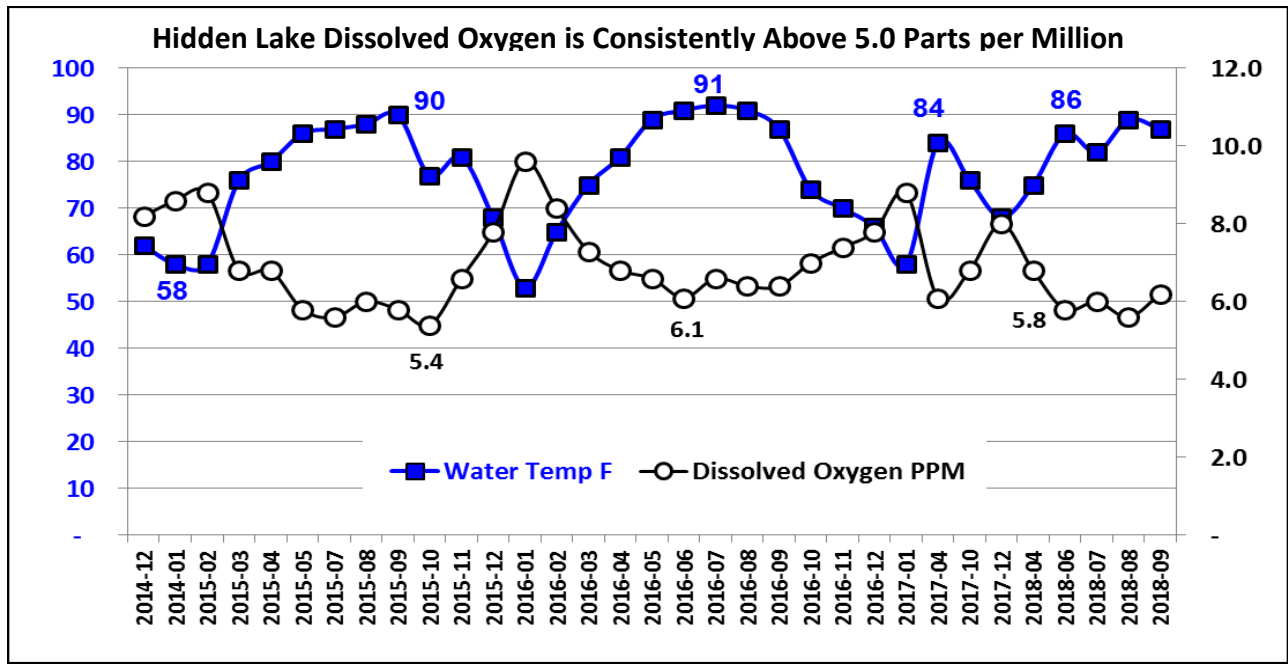
### **Chlorophyll Tests**

We test for algae by measuring the chlorophyll levels in the lake. Monthly water samples are vacuum-strained through filter paper, and are then sent to the Florida LakeWatch labs for free analysis.



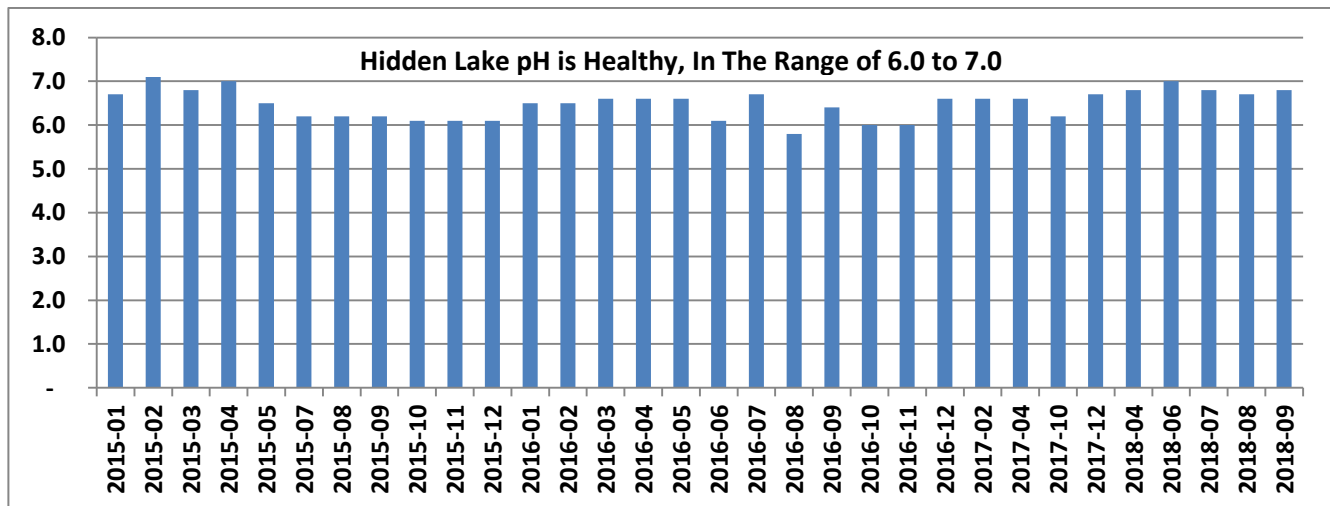
### **Water Chemistry: Dissolved Oxygen**

Fish "breathe" the oxygen in the water column. The Dissolved Oxygen level should be above 5.0 parts per million for fish to maintain a healthy population. Hot water can hold less oxygen than cold water, so the samples with the lowest oxygen level are usually found in the hottest part of the summer, when the lake water is around 90 degrees. As is shown below, oxygen levels are consistently above 5.0 ppm.



### Water Chemistry: pH

Neutral pH is 7.0. Below 7.0, the acidic level increases. Rainwater has a pH between 5.5 and 6.5.



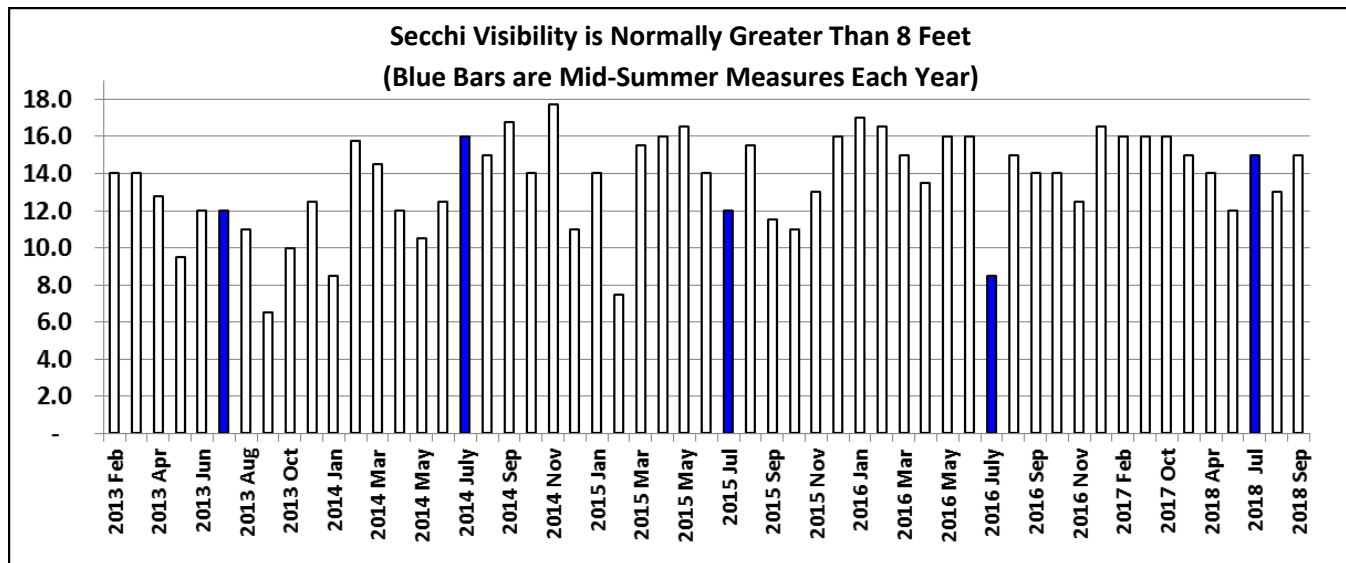
### Water Chemistry: All Other Tests

The level of Phosphorous, at 25 ppb (parts per billion), is in the low range. The Nitrogen level, at 300 to 500 ppb, is in the mid-range. We don't have a problem with fertilizer runoff from the backyards around the lake.

Alkalinity, the ability to buffer the acidic rain we receive, is at the low end of acceptable, at about 28 ppm (parts per billion) of Calcium Carbonate. Chlorides, the amount of salt in the water, is in the normal range of 72 to 76 ppm.

### Visibility:

We measure visibility with a Secchi Disk, a 12 inch white circle attached to a rope. The disk is lowered until it can no longer be seen and the depth is recorded as Secchi Visibility. The lake water is at its clearest when the temperatures are low, so winter readings are generally the best.



### Water Treatment and Copper Sulphate:

In the past, the lake has had problems with both hydrilla and floating algae. Several years ago, during a drought, the Secchi visibility fell to less than 4 feet and action was required. Lake Doctors treated the lake with Copper Sulphate to clear up the algae. There have been no chemical treatments over the last 5 years. The soil on the lake bottom has been tested by AELabs and has traces of Copper, but less than you would expect to find in your backyard garden.



### Summary:

Secret Cove has the only “fishable, swimmable” neighborhood lake in Jacksonville. The lake adds value to every home. As a community, we’ve had to make an investment in monitoring, test chemicals and treatments to keep it in this condition. Your dues, combined with volunteer labor, make this possible.

Please do your part.