

May 14, 2021

I inspected Lake Frances today to view the current state of algae control, observe other aquatic plant issues, and to make observations that relate to the long-term management of this water body.

While the branched filamentous algae Pithophora has been an ongoing issue, it is still present but has not formed floating mats yet this year. The tilapia stocking has done a good job in reducing the amount of this problem and appears to have enhanced the prey base in the system by converting algae into fish flesh. In addition to Pithophora, a slimy bright green non-branched algae (Spirogyra) has cropped up in high density. Like Pithophora, Spirogyra is readily eaten by tilapia. Even though there is some over-wintering of large adult tilapia, it is still advantageous to continue the annual stocking of 4" tilapia to stay ahead of the algae issue. Biological control with tilapia remains the best solution for this issue.

Grass carp are used for other submersed soft-stem problematic plants. Grass carp are long lived and provide effective control for the first 8 to 10 years of life. The current number of grass carp in the system are keeping coontail (*Ceratophyllum demersum*) and parrot feather (*Myriophyllum aquaticum*), and other imported upstream problematic plants under control. It is apparent that the current level of grass carp herbivory is sufficient.

There are several beds of alligator weed (*Alternanthera philoxeroides*) occurring along the shoreline. This is the vine like plant the grows out from the shore with clover-like white flowers. I observed at least a dozen health beds scattered around the lake. However, I did find one bed that had active alligator weed flea beetles (*Agasicles hygrophila*), which should spread and control this problem as the season progresses. Flea beetles are about ¼ inch long with yellow stripes. Their larvae are specialized to eat alligator weed leaves. Like tilapia, flea beetles survive mild winters, but may need to be supplemented in the future following exceptionally cold winters. Some obviously found refuge this past winter and are doing well.



1 Flea beetle on alligator weed. Lake Francis 2021.

The number of non-native waterfowl appears to have been reduced over time. Efforts to discourage them should continue. I did observe one wood duck nesting box turned into a lunch box. This yellow rat snake had defeated the predator guard and ingested an egg. Trees and bushes should be trimmed annually to prevent snake access.

Continue to minimize additional sources of fertility and organic matter entering the lake. Lawn fertilization should be done with slow release formulations and should not be applied within 10 feet of the water. Leaves and grass clippings should not be deliberately introduced or blown into the lake.



2 Yellow rat snake with ingested egg. May 14, 2021

The potential of importing floating plant problems from upstream ponds through the two Harbor View road culverts, could prove to be a problem. Small floating semi-circular booms could easily be installed on the Lake Francis side of the culverts to prevent floating debris from being washed into the lake by high water flows. These would in no means impede the water flow, just stop floating weeds and trash, but will require periodic cleaning.

My subjective observation of an increased occurrence of barnacles on every hard surface indicates a little higher salinity at times. This, however, did not preclude the spawning of largemouth bass this spring, as young were observed when I stopped to find and photograph the flea beetles.

At the time of my visit, the water level was several inches below the spillway. Spring rains have apparently by passed the Lake Frances watershed. Other than lower water and weed issues in upstream water bodies, the lake continues to stay in a health state.

Regards,

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