

June 15, 2017

I'm writing in reference to my May visit to Lake Francis on the Saturday morning of the spillway guard installation. There had been concern over floating duckweed that apparently gained ingress to the Lake through changes to the upstream culverts that connected to the lakes on the west side of Harborview Drive. I inspected all the lake's 'fingers', taking water quality measurements and viewing vegetation and the new culverts.

From this one single visit, I was given the impression that the changes I observed were due to the increased flow capacity and the new elevation of the culvert pipes. Previously, the pipes were submerged on both ends and didn't allow floating plants to freely flow under the road, which the new pipes do. Temporarily, this allowed the upstream duckweed infestation to flow into Lake Francis. However, the salinity level in Lake Francis looked to be impairing the growth of the duckweed as it looked to be failing about everywhere I looked. Also, the salinity level in the two north side fingers, was higher than I had ever observed. The logical explanation for this is the increased flow capacity of the new culverts allowed more backflow during high tides, bringing more saline water from the main body of the lake. This increase water flow can be nothing but good in the long run. The salinity remains in the range defined for freshwater. A floating boom system across the end of the pipes would stop floating plant and debris from entering Lake Francis, if plant and trash problems persist or occur in the future.

I have not seen the Lake since my visit and expect that the duckweed has remained present, but in a much reduced density. Duckweed is a plant that requires shelter from wave energy. It hides among shoreline plants and structure and in narrow canals, but can't handle open wind swept spaces. It can be spot treated with herbicides if necessary and although grass carp don't do a great job eliminating it, they do eat it and discourage re-infestation. You-all have a plan for grass carp stocking and this should help throughout the year.

The deep middle finger of the lake continues to show strong stratification, with low oxygen occurring below 10' depth. The volume of low dissolved oxygen is pretty high and remains a liability in that rapid stratification break up could lower over-all oxygen levels to a point of creating a fish kill. This stratification has been established by both temperature and salinity, meaning that it is extra stable and unlikely to break up unless driven by wind and high water flow associated with the extremes of a hurricane. The Lake has not experienced a fish kill for over 15 years (Chief Greenburg was still serving), so this may not be as great an issue as I once believed. I have written in the past about installing an aeration system that would break up this stratification in the winter time and maintain good oxygen levels throughout the growing season, but I now look at this as more of a luxury than a necessity.

I can't reiterate enough that all residents should be discouraged from feeding ducks and geese. A low density population of wood ducks is perfectly fine and fitting for a SC pond. However, all the domesticated mallards, mixed ducks, muscovy ducks, and resident Canada geese represent a serious health risk to the pond and should their use of the pond should not be encouraged in anyway.

Regards,

Scott Lamprecht