

# Lamprecht Consulting

## Pond and Lake Management

November 24, 2012

Lake Francis HOA  
C/o Mark DeOgburn  
1027 Travers Dr.  
Charleston, SC 29412

Dear Mark,

I am writing in reference to my 2012 general observations of the health of Lake Francis. This year's primary inspection occurred early in the growing season (June). I have visited the lake on 3 other occasions to make observations on alligator weed growth and the unusual mortality of trees along the causeway.

After 2 cold winters alligator weed was becoming a problem again. Cold winters kill the natural control agent, alligator weed flea beetle. However, the 2011-12 winter was mild and made for good numbers of beetles over-wintering in areas where they were stocked last summer. Upon seeing abundant alligator weed growth along the causeway, I took it upon myself to collect ~ beetles and move them to Lake Francis when I made my June inspections. I stocked them out at the causeway beds and was pleased with the effort, but later found alligator weed stands across the lake that already had extensive beetle damage and I was able to see the 1/4 long black and yellow striped beetles themselves. Later in the summer, it was obvious that the level of beetles present were once again suppressing alligator weed and as long as we don't have a lot of cold winter temperatures, this weed should cease to be a Lake Francis issue.

The damage of trees and bushes along the causeway is consistent with an herbicide treatment. The loss of marsh vegetation outside of the out-fall from Lake Francis may be related to this treatment. Any treatment to community property, by SC State Pesticide Regulation, has to be conducted by a licensed pesticide applicator. This is to insure that the product is applied in accordance to the product label, which requires procedures that minimize habitat and human health risks. This is in addition to homeowners association rules and management decisions. Individuals who make such applications are not only violating the association's will, they are breaking State and Federal Law.

Oxygen readings in the shallow shaded arms of the lake continue to exhibit morning levels that may be considered a little lower than normal but not a level that should be of concern. The main body of the lake and the deep central arm (townhouses) continues to show a distinct stratification unrelated to the normal temperature stratification. At the time of my visit, the water temperature was uniform from the surface down to 20', but there was no oxygen below 10'. The surface

salinity was approximately 3ppt, while at about 10' it changed to 7ppt. Clearly, the stratification in the deep portion of Lake Francis is maintained by a salinity gradient. I would be interested in a mid-winter visit to see if this stratification persists under minimum water temperatures.

In the late spring of 2012, Lake Francis appears to be in good shape. The lake continues to function in a health fashion providing fishing opportunities and being an asset to the community's homeowners.

I continue to be concerned about the deep arm of the lake. There still remains the potential for a summer mixing and subsequent fish kill event. The present stability will be affected by any change in hydrology created by the widening of Harbor View Drive. I would try to negotiate an aeration system as well as improvements to the outfall structure leading to the marsh.

Continue to do what you-all have been doing, with consideration towards the suggestions made in the above text.

Regards,

Scott Lamprecht  
Fisheries Biologist