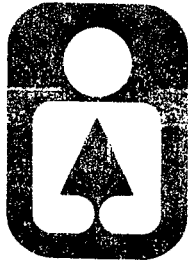


Illinois



Department of Conservation

life and land together

LINCOLN TOWER PLAZA • 524 SOUTH SECOND STREET • SPRINGFIELD 62701-1787  
CHICAGO OFFICE • ROOM 4-300 • 100 WEST RANDOLPH 60601



October 13, 1994

Mr. Mike Miles  
RR #5  
Lake Santa Fe Estates  
Metamora, IL 61548

Dear Mr. Miles:

On October 11, 1994, Mr. Scott Blickenstaff and Ron Romani assisted me in sampling the fish population of Lake Santa Fe. We used the 240 volt electro fish shocker and made one circuit of the shoreline, collecting fish for 36 minutes. We had excellent collecting efficiency and were able to census the following:

largemouth bass - 80 fish, ranging from 2.8 to 17.5 inches  
bluegill - 26 fish, ranging from 2.8 to 7.5 inches  
black crappie - 4 fish, ranging from 9.3 to 10.0 inches  
green sunfish - 5 fish, ranging from 3.2 to 8.3 inches  
smallmouth bass - 1 fish, 14.1 inches long

At the time of the sample water quality parameters were:

p.H - 8.4  
alkalinity -137  
conductivity - 620  
water temperature - 68 F  
transparency - 60" - due to plankton

Aquatic vegetation was minimal and consisted of leafy pondweed and limited duckweed. Less than 1/2% coverage was noted. This density of aquatic vegetation is less than the desired 10-15% coverage that is ideal for the fishery. The vegetation is needed for young forage fish to survive heavy predation from largemouth bass and other predators. Grass carp have removed the aquatics at Lake Santa Fe below the "threshold" level for good lake fish populations. From a fishery standpoint and the environmental well-being of Lake Santa Fe, no additional grass carp should be

stocked at this time. Some leafy pondweed and duckweed was noted as well as filamentous algae. It should be noted that grass carp do not control filamentous or planktonic algae. By their feeding activity, they tend to increase levels of both.

Of the fishes collected, the largemouth bass appeared to be in good condition and getting reproduction. We only sampled bass under 4.0 inches and for 3 minutes and were still able to collect 48 fish in that time or 16 largemouth per minute. It indicates the presence of a dominant year class of predators and will result in slow bass growth for the next several years. This problem is aggravated by the depressed levels of forage fish due to limited aquatic weed coverage. The larger bass collected appeared fat and getting adequate growth. The slot-length limit of 12-15 inches appears to be a good one for your lake and has resulted in suitable numbers of bigger bass. A collection rate of 18 fish per hour over 14 inches in length is indicative of a good population.

Bluegill were collected in very limited numbers. A collection rate of .72 fish per minute is far less than the 3 fish per minute desired. Almost no 1-3.0 inch bluegill, the basis of forage in your lake for smaller bass and crappie, were collected. This is a function of the super abundant small bass population and almost complete lack of aquatic weeds. You must get more aquatic weeds to improve bluegill densities.

Other fish collected included a stocked smallmouth bass and 4 black crappies. The crappie are not desirable fish in small impoundments due to the potential to overpopulate and the smallmouth bass cannot reproduce well in strong largemouth bass populations.

Also collected were 5 green sunfish. These fish are native to Illinois streams but are not good fishes for managed impoundments. None of these species should cause any special management problems. Not collected were walleye, although we saw one, or channel catfish.

Based upon our sample the following represents my recommendations:

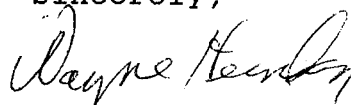
1. Do not stock additional triploid grass carp.
2. Treat problem algae areas using copper sulfate. You can treat the beach areas or other heavy use areas using 5 lbs. of granular copper sulfate placed in a tightly woven cloth sack and towed through the algae area. You will have to repeat this as needed every 8-12 days, until September. Do not start these treatments until after June 1st.
3. Stock channel catfish every other year at a rate of 180

fish of 10-12 " long.

4. Stock walleye every other year at a rate of 360 fish, 6-8" long.
5. Continue to utilize a 12-15" slot length limit on bass.
6. Consider stocking 50-60 adult breeder (over 4" in length) redear sunfish to forage on the abundant snails at Lake Santa Fe. They should also provide extra forage for bass.
7. A good way to reduce nutrient loads and organic material in your lake (the ultimate cause of algae blooms) is to burn up the nutrients with free oxygen. This can be accomplished with an aeration system. Included with this letter is some material on aerators. I do not recommend any specific unit but include the info for your inspection.

If you have any questions please contact me! We should attempt to sample your lake in 1995 or 1996 to ascertain the results of these recommendations.

Sincerely,



Wayne Herndon  
District Fishery Biologist  
P. O. Box 633  
Pekin, IL 61555  
309-347-5119

bao

enclosures: Aeration systems, Pond & Lake Management book, Aquatic Weeds book

c: file