

The Resurrection of Fox Den Lake

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by

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Many folks dream of living on a lake. To be able to fish from your own backyard appeals to many. Imagine catching the big one just a few feet away from a cold one. Sounds great, doesn't it? What many people fail to realize, however, is that a lake or pond is more than just a watery hole in the ground. A lake is an ecosystem. The size and health of its super predators (bass, pike, etc.) depend on the integrity of the ecosystem that supports them. Healthy, vibrant lakes are teeming with fishes of all types, both game and nongame. In fact, nongame species are the foundation on which great fishing is made. Without them you have nothing but a few skinny bass and bluegill chasing each other, desperately seeking enough food to survive. Hardly the type of fishing that's memorable.

I live in the Panhandle of Florida near Pensacola in a coastal town called Navarre. When we first moved to the area, the proximity to the Gulf of Mexico (less than a mile away) and the lure of fresh seafood seemed to be all I could have asked for. Imagine my surprise when we moved into a home that backed up to a two-acre drainage freshwater pond masquerading under the name of Fox Den Lake. I was ecstatic. You see, I am an avid fisherman of a different sort. I spend much of my free time out in the waters collecting and studying nongame fishes of all sizes and types. I have aquarium-reared a great many North American native species and thought perhaps this lake would hold some unusual species for the home tank.

I was dead wrong. After settling in at our new house, I began to sample Fox Den Lake, which I share with ten other homeowners. Few minnows. No killies. And hardly any plants. Just a high nitrite level due to run-off, huge floating mats of algae, and the dreaded mosquito fish, *Gambusia affinis*. It was a water hole, not a lake.

I was disappointed at first, and then I was challenged. The few bream the lake held were skinny and in poor health. Hooks, nets and dynamite failed to turn up any bass. (Just kidding about the dynamite part!) The water temperature in the summer soared to the mid-80s. The lack of vegetation and flat surface of the water created a perfect solar panel. Surprisingly, the pH was a respectable 6.5. All in all a mixed bag—so I decided to start from the ground up.

First off, the lake lacked any significant structure. The barren sand that covered the bottom provided very few places for fishes to hide. That problem was going to have to be addressed and fast. I took a two-pronged approach. First, I put (threw) several fish boxes, logs, and five-gallon plastic buckets into some of the deepest holes. The branches and boxes provided cover for the younger fishes, and the plastic buckets with several one-inch holes in the sides provided necessary nesting sites and cover. I was limited to using things I could drop in from the shore or a canoe, but if I had access to cement pipe, I would have tossed them in, too, for cement pipes make excellent structure. (Keep in mind that on a private lake like Fox Den Lake you can take some liberties that you could not on a public lake. Check with your local fisheries personnel for any restrictions.)

The second problem was serious and required a more long-term fix. The lack of suitable rooted vegetation had allowed hair algae to dominate the lake. As this huge mat of algae rotted in the summer heat, it used up all the oxygen, and the subsequent fish die offs and foul odor made the lake unsightly and unpleasant. I realized that if the lake was going to grow some worthwhile plants, it was up to me to decide what they were going to

be. After a little research, I decided to establish lilies on the surface, and giant vallisneria underneath. I chose these plants because they are native to my area and easily collected, and because they are hardy, attractive and not too prolific. I wanted plants that would thrive in my lake but not take over. Native plants were a practical solution.

I spent the better parts of several weekends standing waist-deep in the lake planting lily tubers and eel grass root balls. The neighbors found this amusing and would cheerfully sit and watch me muck around in the lake, finding the occasional deep spot the hard way. I felt a little foolish but I stuck to it. I was rewarded in my second spring on the lake with a very large bed of eel grass (giant vals) and lilies popping up in the mid-range shallows. Their crisp white flowers made the lake stunningly beautiful. My neighbors, who before looked at me as if I was a bit balmy, began to trickle over to the house and to get the inside scoop on the resurrection of Fox Den Lake.

The second step was to add diversity. Contrary to the hype, mosquitofish are poor forage and even poorer mosquitofish! Their primary food consists of plant matter, free swimming insects, and eggs and young of other fish. True, they do eat mosquito larvae on occasion, but not at nearly the rate of many other common native species. In addition, their habit of remaining in the shallowest water makes them generally unavailable as forage for the predatory species. I did a little research, talked with some of the folks in NANFA, and came up with a species list which would cover the full range of forage from very small to six-inchers. For starters, I added banded pygmy sunfish (*Elassoma zonatum*). These tiny critters (under 1.5 inches) hide in the weeds at the edge of the lake feeding primarily on mosquito larvae and, in turn, becoming food for larger fishes. They are prolific and very tolerant of harsh conditions. This is one of the hidden creatures that makes a lake that much healthier. We know they do good. We just don't know how much good they do!

My next additions were several members of the killifish family. Killies, or topminnows, as they are sometimes called, are colorful, tough mosquito-eating machines. I have observed killies in an aquarium eat nearly half their body weight in mosquito larvae in a day! They are prolific, colorful and very durable. All in all, they make excellent pond, lake and aquarium residents. I went with two species of local killies I could collect locally, and which met the conditions and needs of Fox Den Lake. I

chose golden topminnow (*Fundulus chrysotus*), which grows to four inches in size. My second choice was the banded topminnow (*Fundulus cingulatus*), which my daughter calls the pink lemonade fish because of its pink fins and brilliant displays. While just as durable as the golden topminnow, this species remains well under three inches in size. You, of course have, killies near you that are equally suitable to the task. Do yourself, your lake, and your fish a favor, though: use only species native to your area. Importing non-local species can have devastating results.

I collected two dozen each of both killie species and released them in a shallow oxbow in the corner of the lake. Within 90 days I was able to collect young and juveniles of both species with a dipnet. Now, over a year later, they have begun to surpass the mosquitofish in number. A walk along the shore reveals flashes of color as killies dart along the surface and across the bottom. The bass and bream have tapped into this new food source and wait just below the drop-off for a fish to cross the line. You can hear the splash as they lunge towards a killie that has gone just a bit to far in search of food or a mate.

Once I was certain the killies were prospering in their new home, I took two final steps. First, I purchased red swamp crawfish from my local seafood market and released about forty pounds of the beasts into the lake. They are strictly scavengers and vegetarians and provide an excellent clean-up crew in the lake while providing top-notch forage. Then, about one month later, I went sportfishing and brought back live gamefishes to stock the lake, 36 adult bluegill (*Lepomis macrochirus*) and 18 10-14 inch largemouth bass (*Micropterus salmoides*).

I also began a regimen of weekly feedings. The gentleman who owned the local seafood market collected scraps for me every week. I'd feed the fish about one five-gallon bucket of these scraps. The results were astounding. All of the fish spawned within a few weeks of their arrival and by mid-summer bream and two-inch bass were everywhere. An even bigger surprise to me was the growth rate. With year-round warm weather and regular feedings, the first spawns were sexually mature by fall. By early winter the size and number of fish had increased so much that regular fishing could be resumed.

Even more amazing was the improvement of the lake's condition. The floating mats of algae disappeared. The nitrates began to drop and the eel grass acted as a filter bed, keeping the yard waste and sediments from causing

huge fluctuations in the lake's fertility. The lily pads did their job, too, providing cover from the sun. The lake's summer water temperature dropped a full five degrees. The lake no longer suffered from unexplained summer die-offs. Leopard frogs and bullfrogs began to appear, adding music and diversity to this once barren landscape. Kingfishers, egrets, herons and ospreys all made the stop-over for an occasional meal as they headed on to their unknown destinations. I found myself spending more and more time outside just watching, soaking up the beauty nature provides.

Now my children catch bluegill to the point of boredom. Bream as large as a pound have been taken out of the lake. Just last week I caught and released a 3-and-a-half pound largemouth bass. I have tried my best to keep the fishing at a managed level, chasing the fence jumpers

away and encouraging the serious bass fisherman to knock on the door any time they feel the urge. I have since added a few redbfin pickerel (*Esox americanus*) to keep the bluegill population under control. This fall I plan on making one last addition: catfish. I have planted homes for them in all the deep holes, and with the increase in killies and bream, they should find plenty of food. I am confident that old Mr. Catfish, like the others, will settle down here and find lowly Fox Den Lake the kind of place to raise a family. I know I have.

*Editors' note: While the author talks about stocking fishes, he does so only in a man-made lake that doesn't have outflow to any other body of water. Stocking a pond or lake that has a connection to another waterway is inadvisable, because of the potential to introduce exotic species or diseases to the connecting waterway.*

## The 1998 NANFA Annual Convention

June 5-7 1998 · Tennessee Aquarium · Chattanooga, Tennessee

### Friday, June 5

Orientation, site briefings, lectures and Tennessee Aquarium tour.  
(An additional behind-the-scenes tour may also be offered.)  
Tickets to the Aquarium (with IMAX movie) are \$14.95 (children 3-12 \$8.95).

### Saturday, June 6

Educational river observations led by area biologists and conservationists.  
Bring your mask and snorkel! Tennessee has the greatest fish diversity in the U.S.  
Collecting licenses and info will be available.

### Sunday, June 7

Open to revisit or view other sites or whatever you desire.

### Accommodations

Chattanooga Choo-Choo, double bed rooms, \$72.00 per room per night.  
The Choo-Choo complex is situated in a garden with historical trains on rails throughout.  
This or the Tennessee Aquarium will be our base of activities.  
Free shuttle from airport to Chattanooga Choo-Choo is available.  
Discounts at a local restaurant(s) are being negotiated.

### A personal note from Convention organizer, Casper Cox

I urge folks to come and spend a week here . . . there is much to see and do.  
I will be taking the entire pre-week off and will be available to lead visits to area sites.  
Otherwise arrive by Thursday evening. Questions? Want to volunteer?  
Call me at (423) 624-0721, or send an E-mail to [prizma@aol.com](mailto:prizma@aol.com).

### Note

The Convention is still in the planning stages.  
A final schedule of events and costs will be issued shortly.  
Watch the NANFA Website, mailing list,  
and the next *American Currents* for the most up-to-date information.  
For now, please send a \$25 reservation fee to Casper Cox, 1200B Dodds Ave., Chattanooga, TN 37404-4754.  
An information packet (brochures, initial orientation maps, etc.) is being prepared.

**SEE YOU IN CHATTANOOGA!**