

Four earthen walls

by Gary Phillips

I love living in a rammed earth house. It's dry, tight as a drum, lovely and basically ignores severe weather changes. The materials didn't come from China, basically just soil from down the road and local pine lovingly gilded by friends and Chatham County artists.

Real estate appraisers tell me that modern construction techniques will build a house that under the best of circumstances can survive 20-40 years. I have a solid square of 400-year earth walls under a beefy metal roof and sitting on a stem wall foundation that meets earthquake code. I can find structures built like mine all over the world that have been standing hundreds and even thousands of years.

And it wasn't that expensive. Choosing small-scale construction and contracting the house myself meant that I could afford custom cabinets, hand-built tile counters, 10-foot ceilings, a stone courtyard. And the basic material is cheap as dirt.

How can I say how warm it feels to be sheltered by two feet thick earth walls? My house is welcoming and filled with light, decorated with carved sculpture niches and long ambling striations of color, cluttered by the regular stuff of our lives but anchored like a rock to the earth, to a commonality so rich it wows me every day. It's as basic as basic can be.

Gary Phillips is a Chatham resident, principal at Weaver Street Realty, and former chair of the Chatham County Board of Commissioners.



WATERS

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suggest limited impairment. Sadly, only 2 small areas in the upper Cape Fear River Basin are designated Outstanding Resource Waters. Thus, most of our streams have been significantly degraded during recent centuries.

One would think that the numerous statutes enacted during the past century — Fish and Wildlife Coordination Act, Clean Water Act, Clean Air Act, National Environmental Policy Act, State Environmental Policy Act, US Endangered Species Act, NC Endangered Species Act, and others — plus numerous regulations associated with these act — would have helped increase the number of Outstanding Resource Waters within the upper Cape Fear River Basin during the past 40 years. This has clearly not happened.

So, if we are not increasing the number of Outstanding Resource Waters, are we at least holding our own in terms of water quality in this area? To answer this, simply look at the most fundamental requirement associated with state water quality regulations: We must protect existing uses (e.g., species present) and aquatic life propagation/protection. For many aquatic species in the upper Cape Fear River Basin, this is not occurring, and, in fact, many of their populations have been declining since numerous environmental protection laws were enacted in the early 1970s. A few examples follow.

When I first started canoeing the Haw River in 1974, I considered it one of the most beautiful rivers in North Carolina. After working in nearly a dozen states, I still consider it beautiful. However, when I start looking at its aquatic animals, I am saddened.

Sensitive mussels, like the brook floater which was present in the Haw River near Bynum during the early 1970s, are now gone, and even common mussel

species are relatively rare. Given various habitat characteristics, there should be more than a dozen mussel species in the Haw River, including the Atlantic pigtoe, Roanoke slabshell, creeper, notched rainbow, Carolina creekshell, yellow lampmussel, and variable spike. Collectively, millions of individuals should be present. Now, only a few species are present, and finding a few dozen individuals is a chore. Considering that mussels probably filtered the entire volume of water in the Haw every day or so during past centuries, we have lost a significant part of our natural heritage and nature's natural water filters.

In terms of fish species in the Haw River, the federally listed Cape Fear shiner is most noteworthy. As a Wildlife Resources Commission biologist, I first started surveying for this species in the early 1990s. During these years, a few individuals could be found in the Haw River between the dam at Bynum and US 64 bridge. My records are now considered historical, and the population is designated "extirpated." (Note: I've probably lived too long. Many local populations of various aquatic species I've worked with across several states are now considered historical. As a field biologist, that's extremely depressing.)

On a positive note, a local population of the Cape Fear shiner we discovered in the Haw River above Bynum during the early 1990s is still extant (present). However, probably because of water quality and other habitat issues, it has a restricted range and relatively few individuals have been found during recent surveys. What's most troubling about the Cape Fear shiner's status in the Haw is that the scientific community can't explain why its population is so depressed in this river reach. Most likely, there are cumulative and synergistic impacts associated with various kinds of urban, suburban, and rural runoffs from the landscape together with certain impacts from wastewater treatment plant effluent discharges (many in the upper Haw).

Like the Haw, the Rocky River, a Deep River tributary, is unusually beautiful and reminds me of some of the small rivers in the Appalachians. Like the Haw River, the Rocky was blessed with a great diversity and abundance of freshwater mussels, snails, and fish. I've been surveying the Rocky River and its tributaries for various animal species for several decades now. Although the Cape Fear shiner still has a relatively large and healthy population in the lower Rocky River and its tributary, Bear Creek, this species has dropped below detection level upriver from Woody Dam. Also, mussel species, such as the Atlantic pigtoe, brook floater, and triangle floater, which were documented in the subbasin since the 1970s, now appear extirpated throughout. On a bright note, mussel species diversity still remains relatively high, and if conservation groups, land owners, and various agencies continue to emphasize improved techniques to manage land and water impacts, mussel populations will expand and repopulate available habitats.

Finally, the lower Deep River and some of its tributaries continue to provide significant habitat for many rare species, including the Cape Fear shiner, yellow lampmussel, brook floater, Savannah lilliput, Carolina creekshell, and several others. In general, these animals exist here since lower Deep River is significantly removed from polluting urban centers. In fact, the Deep River in Moore County, which is quite removed from urbanization, is designated an Outstanding Resource Waters by the state. Of the three rivers mentioned in this article, the Deep has lost the fewest species to extirpation during recent decades. In time, genetic stock of some rare species within the Deep could be used to help restore aquatic diversity to the Rocky, Haw, and their tributary streams.

Maintaining healthy populations of all native aquatic species in all river basins is important to people, since these animals are extremely important around the clock monitors of water quality.

As long as these animals can maintain healthy populations in our rivers, we can be assured of healthful, low cost water for our own consumption.

So, why have we reached the point that 80 percent of our more than 300 native freshwater mussel species and 25 percent of our nearly 900 native freshwater fish species in North America are considered extinct, endangered, threatened, or of special concern to the scientific community, and these numbers are rapidly increasing (little known facts to the general public)? And, why are many species considered "common" to the scientific community becoming rare or extirpated from many of our nation's creeks and river? Basically, why haven't all the federal and state statutes and regulations helped protect these species?

I have some honest answers to these questions and can provide some tough solutions; however, these will have to wait for another day. Until the public understands the extent of impairment of our freshwaters and there is an honest collective desire to dramatically improve conditions in these waters and on the land that drains to these waters, solutions will only fall on deaf ears. Personally, after surveying thousands of miles of streams in the Southeast United States and explaining why we need to change our ways, I am exhausted from the effort. Soon, there will be no need to explain; the losses will be permanent.

John M. Alderman, a resident of Chatham County and one of the leading aquatic biologists in the Southeastern United States, has been monitoring streams and rivers in the Southeastern United States for decades. This article is the fifth in a series designed to highlight what we must do to create widespread prosperity in the 21st century. The series is sponsored by CONNECT — a Chatham based network of civic groups (see ConnectChatham.com). These articles emphasize one main point. Prosperity is the product of natural resources (N), environmental resources (E), population (P), technology (T) and work (W). This reality can be expressed in equation form: Prosperity = (N+E) ÷ P X (T+W).

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