



Cape Fear Firebird

The Light of Save the Cape

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Water, water, everywhere, Nor any drop to drink.
~ Samuel Taylor Coleridge

Aquifer Anxiety

The North Carolina Office of State Budget and Management projects that the population of Brunswick and New Hanover Counties will grow by about 60,000 in the next ten years—from 342,000 to over 400,000. Likewise, jobs and income will grow. What will not grow is the water supply. Instead, that development puts our water supply at risk. As does bureaucratic blundering. Read on.

The public water supplies in both counties draw from the Cape Fear River and from the Castle Hayne aquifer. Private wells, for both residents and industries, also draw directly from that aquifer.

The Castle Hayne aquifer underlies the coastal plain from New Jersey to North Carolina. It is called “Castle Hayne” because it reaches its highest elevation at Castle Hayne in New Hanover County. That highest point is 25 feet below sea level along a line extending from mid-New Hanover County southwest through Brunswick County, crossing the Cape Fear River below Wilmington.

But the Cape Fear River has a shipping channel dredged to 42 feet below sea level at that crossing point—cutting a 500-foot wide trench into the Castle Hayne aquifer to a depth of 17 feet.

But doesn't that cause the aquifer to leak into the river? Well, yes. Or salt water to leak into the aquifer? That, too. The natural flow is into the river, so long as the aquifer is recharged from surface water at a rate exceeding withdrawals. But natural forces—drought—and artificial—increased impervious surfaces and increased withdrawal for domestic and industrial use—would upset that balance and salt water from the river would flow into the aquifer and come out of our spigots.

That issue came up 1996, when the Corps of Engineers began the project to deepen the channel in the Cape Fear River 42 feet deep. The Water Resources Division of NCDENR, analyzing data from several years earlier, advised the Corps that, because water from the aquifer normally flows into the river, unless the normal situation was disturbed by drought or increased municipal or industrial pumping, dredging to 42 feet “would not produce detrimental changes to the aquifer system.” So the Corps went ahead and dredged into the aquifer.

That was then, this is now. In 2009, the Corps was considering dredging deeper for a megaport at Southport. NCDENR became concerned about increased industrial pumping and population growth causing the aquifer's natural hydraulic gradient to reverse and salt water to intrude into water sources. The issue was put aside when the megaport project was put “on hold.”

And now the issue is back. The State Ports Authority plans to dredge five feet deeper into the aquifer to receive larger ships from Asia. They don't seem to be thinking about our water supply.

Save the Cape, Inc. 910-294-0456 618 North Howe Street Southport, NC 28461
www.savethecape.org www.facebook.com/savethecape