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# LSU researcher: Southern Hills Aquifer has ample supply; salt water intrusion no crisis

BY DAVID J. MITCHELL | Staff writer
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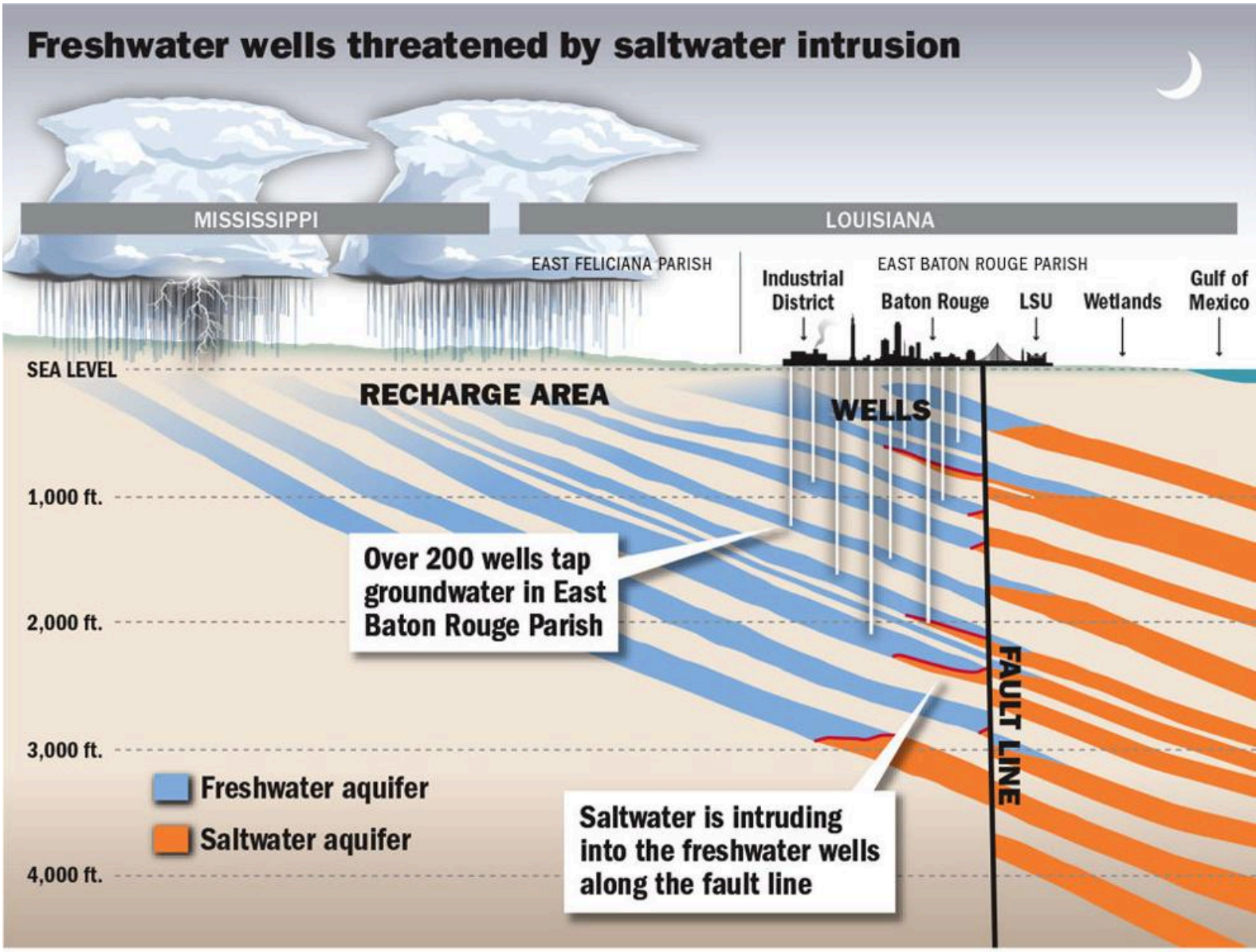


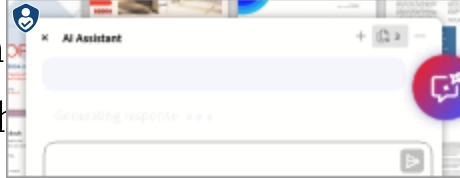

Source: U.S. Geological Survey

Advocate graphic by **DAN SWENSON**

BY DAN SWENSON | The Advocate



Groundwater levels in the aquifer underneath East Baton Rouge Parish have been recovering for at least the past decade, and continuin
into that aquifer doesn't represent a crisis-level threat to th



supply, according to recent research.

Douglas Carlson, an LSU professor and member of the Louisiana Geological Survey who specializes in groundwater research, says media coverage of the Southern Hills Aquifer has overstated the drinking water problem. He says the risk is gradual and localized to some wells that supply drinking water and the parish's industrial corridor along the Mississippi River.

Carlson delivered that assessment earlier this week after he conducted a 40-year statistical analysis of 180 groundwater wells in East Baton Rouge Parish. "The overall picture is, yes, there is a concern for a couple of pumping stations, but overall the idea that the parish is gonna run out of water entirely or the tap is going to be full of salty water for all the consumers in the utility really doesn't exist, really," Carlson said in recent comments to a Baton Rouge groundwater commission. "Yes, it's probably best to spread out your demand, but it's not a crisis that suddenly you're going to have salty water tomorrow or even 10 years from now."

Carlson's analysis found all the water-bearing sand layers in the part of the Southern Hills Aquifer under East Baton Rouge had between 3.4 trillion and 15.4 trillion gallons of water of good enough quality to be used. That could supply centuries of water under current pumping rates.

At the same time, the U.S. Geological Survey is finalizing a new estimate of salt water intrusion into parts of the aquifer. John Lovelace, a supervisory hydrologist and assistant director of the U.S. Geological Survey's Lower Mississippi-Gulf Water Science Center, said the report is expected to show the intrusion is moving slowly northward in the lowest water-bearing part of the aquifer.



Carlson's analysis also showed that groundwater levels, though in recovery, did remain at a point that encouraged salt water intrusion in at least two middle sand layers. But Carlson suggested the movement was slowing — the salt water

is advancing only a few hundred feet per year — and the risk was not so severe in the near future.

"To cover a mile would take decades. The thought that it'll sweep through the entire parish, would take literally hundreds of years to move that far north, assuming you had demand migrate northward and the salt water followed," he said.

Carlson's assessment and the imminent USGS report come as the Capital Area Ground Water Conservation Commission is about to take the next step Monday in creating a 50-year strategic plan to manage the region's groundwater sources and respond to the salt water intrusion problem. Part of that task will be assessing the state of the science and the future water demand on the aquifer.

Critics say the state panel hasn't done enough to limit the pumping that abets the intrusion. Environmentalists have also argued that industrial users should be forced to switch to water from the Mississippi River and reserve the groundwater for the public; industries have pointed to the need for a more broadly shared solution.

With help from the Water Institute of the Gulf, the commission has been refining big-picture objectives over the past several months. Those could include developing surface water sources for some aquifer users, restrictions on groundwater use by the type of user, and conservation programs for the general public.

Carlson's assessment received some pushback from a groundwater commissioner Tuesday who suggested that the raw water supply has never been the issue. The salt water intruding across the Baton Rouge Fault and encroaching on key drinking water wells in the city and the industrial supply wells north of the State Capitol has been the issue.



That threat has confronted the commission with a political decision about whether to move that infrastructure north or find other water sources that will help reduce overall pumping demand to slow or halt the salt water intrusion, the

commissioner said.

"We could go up to East Feliciana (Parish) and probably pump, you know, as much water as we want, but how much is it going cost to get that down here versus there is a big river right across the way — which one is more feasible economically?" said Matthew Reonas, a state Office of Conservation employee who is the state agency's representative on the commission. "So, those become political and social questions."

Other commissioners, like Mark Walton, have advocated for scavenger wells that intercept the salt water movement and send it deeper underground or into the Mississippi. Baton Rouge Water Co. has used one to protect some of its water wells; the commission is investigating another in Baton Rouge.

While often envisioned as large underground pools of water, groundwater aquifers are no such thing. They are made up layers of sand, clay and rock.

Like strawberry syrup inside a snowball of freshly shaved ice, the groundwater is held in the tiny air spaces among the granules of earth. Wells drilled into the ground are the snowball's straw.

The Southern Hills Aquifer is made up of ten earthen layers, often called sands, stacked on top of one another between 400 feet and 2,800 feet deep. Though they are collectively referred to as the "aquifer," the sands are individual water sources and are thought to be sealed off by clay.

The aquifer also spreads across the Florida Parishes and parts of the west bank, though Carlson only focused on East Baton Rouge Parish.

Carlson's estimate of supply is a rough tally, given wide variation on what's in the ground. Experts know that the aquifer naturally recharges, but Carlson said he intentionally left that out of his calculations to create a conservative estimate.

Hydrologists know that the aquifer naturally recharges its supply, but experts working for the groundwater commission said they also expected pumping demand to rise in the coming decades.

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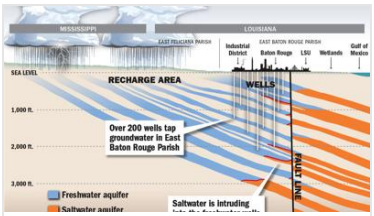


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