

# TCEQ to test lowered D.O. levels in East Texas

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By Terri Richardson

As the Texas Commission on Environmental Quality seeks to lower standards statewide, it has also proposed an experimental lowering of the dissolved oxygen levels required for Cypress Basin Watershed streams which flow into Caddo Lake.

The Cypress Basin Watershed is the only freshwater area targeted for the lowering of dissolved oxygen levels, which are also affected by the level of bacteria loads permitted to be in streams.

"Right now, the standard is four milligrams per liter in these rivers and streams in the Cypress Basin. TCEQ is targeting the Cypress Basin and a few places on the coast as proposed places to weaken the dissolved oxygen standards," said Rick Lowerre, who represents the Caddo Lake Institute.

Among those tributaries to be affected locally are the Little Cypress, Black Cypress and James bayous. Oso Bay near Corpus Christi has also been slated for the experiment in lower standards by the TCEQ, Lowerre said.

"The level of oxygen is important for fish life," said Lowerre. "When you get down to one or mg/L, the fish die."

According to "TCEQ's Proposals for Changes to the Texas Water Quality Standards" issued in March, the dissolved oxygen criteria in classified segments is projected to remove 12 water bodies from the "2008 List of Impaired Water Bodies."

"Where appropriate, removal of water bodies that are listed for dissolved oxygen impairment also eliminates the need for a study to define a (remedy) for these water bodies," according to the proposal. "If each of the 20 (remedy) or other studies for dissolved oxygen is eliminated, a minimum of \$3 million in state and federal funds is expected to be saved over a three-year period."

The total savings expected for the reduction in sites requiring study and action "would be estimated at a minimum to be \$4 million over a three-year period (\$1.3 million each year)," according to the proposal.

Of the \$4 million projected savings about 65 percent or \$2.6 million would be federal Clean Water Act funds with the other 35 percent or \$1.4 million maintained by the state's general fund.

"The problem is TCEQ, rather than trying to fix the low dissolved oxygen problems and the bacteria being too high, they want to change the standards so that they are no longer in violation," Lowerre said.

The two conditions are related.

Lowerre explained that bacteria in streams consume dissolved oxygen. So, if there is higher levels of bacteria permitted in the streams, the levels of dissolved oxygen will drop.

"They're trying to make it the same as it is in the Houston Ship Channel, which is the only place in Texas with that low a number," said Lowerre. "Louisiana, Arkansas, Oklahoma, New Mexico, none of these states have levels of dissolved oxygen that low, except Texas in the Houston Ship channel where it is 1.5 mg/L."

Dissolved oxygen levels are among natural characteristics recognized by the TCEQ among which are also pH, temperature, diversity of aquatic organisms, amount of stream flow, depth and natural background pollutant levels.

"All the stuff in sewage takes oxygen out of the water as it degrades. If you don't treat the sewage well, the effluence from the sewage will cause the oxygen to drop," said Lowerre.

Other sources for bacteria such as nutrients from fertilizers, manure, cattle and chicken operations - when introduced to waterways - also pull oxygen from the water as the bacteria feed on the stream's nutrients.

"All of those things eliminate oxygen in the system. The TCEQ is just saying this is natural conditions, that they're letting things go back to natural, but you can also have algae blooms and fish kills from those kind of loadings," said Lowerre. "It's not. You don't have these kinds of fish kills naturally."

Dissolved oxygen criteria are evaluated by monitoring dissolved oxygen over about ten 24-hour periods in relatively unimpacted areas, according to the TCEQ proposal.

Locally, water quality is tested at Caddo Lake and its tributaries by Dr. Roy Darville, ecologist at East Texas Baptist University, who also provides test data to TCEQ. He said the proposed levels for dissolved oxygen are "low."

"I don't know of any place in the state of Texas where that is allowed," said Darville. "I don't know of any other place in the U.S. where that is allowed, but I haven't looked either. It is very unusual, unusually low."

Darville said that there are some with the opinion that the proposed level is acceptable because the fish and wildlife in East Texas are adapted to it.

"When biologists study a stream, we look at the fish and bugs that live in the stream," said Darville. "In general the fish and bugs that live in the streams with low dissolved oxygen seem to be doing OK. Traditional in biology and ecology we would say that it is too low, that it will kill everything. Whether it will or not is a very difficult question to answer."

Darville has been committed to studying the bodies of water in the Cypress Basin for the past 15 years and said Caddo Lake and its feeder streams are evaluated under a "complex process."

"In general in these creeks, the bugs and the fish communities are healthier than traditional science says they should be, so there is this sort of discongruent set of facts where we have dissolved oxygen that is too low and is supposed to harm the biological community," said Darville. "And we have biological communities that seem to be OK. We don't understand what is going on."

Darville questioned whether having increased or even decreased dissolved oxygen might make a stream biologically "exceptional" and added that the TCEQ's opinion is that since the life in the streams is fine, that the low levels of dissolved oxygen must be OK.

Meanwhile, a clearinghouse of organizations have banded together in opposition of the changes proposed by the TCEQ including: City of Uncertain, Caddo Lake Area Chamber of Commerce and Tourism, Greater Caddo Lake Association of Texas, Louisiana Greater Caddo Lake Association, Friends of the Caddo Lake National Wildlife Refuge, Environmental Integrity Project, Clean Water Action, Texas Campaign for the Environment and Caddo Lake Institute.

"The proposed equation will result in very low D.O. levels, possibly fish kills," according to comments released by a clearinghouse of local organizations concerned with the TCEQ's lowering of standards.

The group also support comments filed by the Sierra Club and the National Wildlife Federation.

Lowerre added that many bass fishing clubs have also spoken out against the proposed lowering of dissolved oxygen in East Texas waters.

"TCEQ seems to assume that the fish in the streams can live in water with no or extremely low levels of dissolved oxygen. D.O. levels could drop to 1.5 mg/L for daily averages, 0.5 mg/L for daily minimums and that grab samples could show no D.O, and still be acceptable," according to the comments.

"Now they are proposing to let the level go as low as 1.5 mg/L in the Cypress Basin as a test case, but if they get away with it here, they'll go to the Sulfur Basin, Natchez, Sabine - all the East Texas rivers will be next," said Lowerre.