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Clams can open up about Sabine Lake's health

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September 4, 2009
Posted: September 3, 2009, 7:23 PM CDT Last updated: September 4, 2009, 12:24 AM CDT

Gene Locke had no idea a species of small clams could influence water issues in Texas.

But on Thursday, the Port Arthur fisherman got a crash course on the bivalve mollusk and why it is ideally suited to act as an indicator species for the health of Sabine Lake.

Researchers head out Thursday in search of rangia clams. Clam beds will help determine the health of the lake. Dave Ryan/The Enterprise

Researchers were on the lake this week surveying rangia clam beds in the hopes that their findings could influence a proposed state process for regulating "environmental flows" - the amount of water needed to maintain healthy river and estuary systems.

New state standards could have an impact all the way to Dallas, where the thirsty Metroplex has been eyeing the Neches River for a possible dam, triggering a lawsuit that's awaiting possible consideration by the U.S. Supreme Court.

The National Wildlife Federation, which designed the clam study, wants to ensure the health of Sabine and other Texas estuaries, said Norman Johns, a hydrologist heading the study for the non-profit conservation group.

Two years ago, the Texas Legislature passed a bill designed to protect river flows by setting standards to be developed through scientific study and with input from various stake holders.

The rangia clams are such a good indicator species because they can live only within a narrow range of salinity and can spawn only within an even narrower range.

Researchers can estimate age based on the size of the clam, and by that means get an idea of what the salinity levels were in different partsof the estuary at different times.

Johns said they should be able to get an idea of how water in have fluctuated over the last 15 years - the normal life span of the rangia clam.

Deciding what's "healthy" is a bit more subjective he said, noting that the saline level fluctuates through cycles of flood and drought. However, the presence of rangia clams is generally a good sign.

Saltwater encroachment due to dredging and widening of the lake's opening into the Gulf has left its unique and fragile ecosystem in a precarious position, according to the National WildlifeFederation. Allowing more saltwater into the system or reducing freshwater flow could cause substantial harm to the lake, which is a salty estuary formed where the Sabine and Neches Rivers meet before draining into the Gulf of Mexico.

On Thursday's expedition, contractors Martin Heaney and Jeremy Hull of Bio-West first scanned the lake with sonar, noting the spots that appeared to be clam beds. They used the data to create a diagram showing the location of the sites.

The next step was to make the rounds of each bed and pull up samples with a small metal dredge. They recorded the results of each dredge, measuring 20 individual clams at each site.

The clams, while not as charismatic as an endangered species like the whooping crane, are still a vital part of their ecosystems - another reason they are a good indicator species, Johns said. They are an important food source for fish, crustaceans, ducks and mollusks. They also help clean water of toxins through filtration, according to The Nature Conservancy.

At one of the sites indicated on the diagram, Hull hauled up a basket filled with a combination of clams and oysters.

Heaney, a senior ecologist of Bio-West's coastal division, looked pleased.

The findings matched his interpretation of the sonar diagram, which indicated an oyster reef and clam bed.

Johns explained that the clams tolerate up to 15 parts per thousand of saline, and oysters thrive in waters ranging from 10 parts per thousand all the way to full sea water (about 35 parts per thousand).

"They overlap in the middle," he said.

Martin Heaney watches as Jeremy Hull hauls up a dredge device as they search for rangia. Dave Ryan/The Enterprise

Johns said there's no guarantee that the Sabine Lake study will get official consideration. However, so far, the group appointed to administer the standard setting process has been receptive to his group's input.

Locke said as a fisherman, he has an interest in what happens to Sabine Lake's water supply.

He volunteered to help the group with Thursday's study.

"I think what all fishermen want is for them to use science, not politics, to decide how much water comes down here," Locke said.