

NewsWatch

Bacteria study at Buck Creek in gear

By KAY LEDBETTER

RESULTS from an intense three-year monitoring study indicate that Buck Creek in the southeastern part of the Texas Panhandle is not excessively contaminated.

This has experts saying it should be taken off Texas' list of impaired waterbodies.

Overall, the creek is in good shape, says Lucas Gregory, project manager with the Texas Water Resources Institute, College Station. Gregory and other officials recently met with landowners to announce the findings and discuss the future of the Buck Creek project.

Several locations periodically exhibit elevated bacterial levels, he says. So until it comes off the list, something has to be done to determine and manage the source of the bacteria.

Texas and Oklahoma

Buck Creek is an unclassified freshwater stream that originates in Donley County, Texas, near Hedley and runs east-southeast through Collingsworth and Childress counties before entering the southwestern corner of Harmon County in Oklahoma where it empties into the Red River.

Monitoring the Buck Creek Watershed, a part of the Red River Basin, began in 2004 after it was determined the stream did not meet all Texas Surface Water Quality Standards enforced by the Texas Commission on Environmental Quality, Gregory says.

Only 20 water samples had been taken from 1996 to 2001, but bacterial levels failed to meet water quality standards. If the impairment persisted, federal and state agencies could have imposed regulations impacting the use of the watershed, he notes.

To prevent this, several groups began working together, and John Sij, Texas AgriLife Research agronomist, Vernon, took on the project to gather data that would determine bacterial levels and their cause.

The work, funded by the Texas State Soil and Water Conservation Board through EPA, includes efforts by AgriLife Research, Texas AgriLife Extension Service, TWRI, the Natural Resources Conservation Service, Texas Parks and Wildlife, and the Red River Authority, Soil and Water Conservation Districts.

Fact-finding

The project aims to get enough data from various locations to make a scientifically sound decision about bacterial impairment of the water. Fifteen sample sites were established along the creek, and biweekly sampling was conducted from 2004 to 2007, which established a data set that now will be sent to the state environmental commission for review, Gregory says.

The next step is to establish a Watershed Protection Plan and do some bacteria source tracking, he says. That project should be done by Aug. 31, 2009.

Phyllis Dyer, research technician for AgriLife Research at Vernon, conducted the water sampling over the past three years. She will now collaborate with

Key Points

- A three-year study indicates Buck Creek is not excessively contaminated.
- Texas AgriLife Research works with others to pinpoint bacteria in water.
- DNA fingerprints are being used to identify human or animal sources of bacteria.

George Di Giovanni, AgriLife Research microbiologist in El Paso, who will use DNA analyses to match *E. coli* colonies found in the water to a library of DNA "fingerprints" gathered from human and animal species found in the watershed.

This will include collecting fecal samples from known animals (either identified visually or with a game-camera

photo), from fresh road kill or from trapping, Dyer says. Each warm-blooded species has a different *E. coli* fingerprint.

Samples are streaked for purification, and then an isolated colony is sent from Vernon to El Paso for the actual DNA matching, Dyer says.

Ledbetter is with Texas AgriLife Extension Communications, Amarillo.

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