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December 2011

Drought in Texas

Texas Water Resources Institute
make every drop count

A special e-newsletter from the Texas Water Resources Institute about dealing with the Texas drought

Christmas tree farms ready for holiday season in spite of drought

By Laura Bentz

The Christmas season has arrived. Thanksgiving and Black Friday have passed, and preparations are in full swing. People are buying gifts, decorating houses and making delectable treats.

Among the various traditions, one seems to stand out: the Christmas tree. While many have switched to artificial trees, there is still a large number that opt to purchase a real tree each season. According to the National Christmas Tree Association, in the U.S. approximately 25 to 30 million real trees are sold each year.

This year, however, Christmas tree growers have cause for concern. The drought has resulted in a struggle to keep Christmas trees healthy and growing. Although the 2011 drought's effects have received a lot of attention, many parts of Texas have not received normal rainfall for several years now.

Drought affects pH of water, creating changes in quality

By Danielle Kalisek

Studies conducted by Baylor University scientists accidentally determined how drought affects water and its pH levels, therefore affecting water quality and aquatic life among other things. Results from ongoing studies may soon help answer more questions.

"These recent field studies we were performing were not timed to intentionally encompass drought-type conditions," said **Dr. Bryan Brooks**, professor of environmental science at Baylor University. "As it turns out, because of the timing of these wadeable stream and reservoir studies, they encompassed our last major drought in 2006."

Brooks, **Dr. Ryan King**, **Dr. Robert Doyle** and Baylor graduate students originally set out to study water quality gradients in reservoirs and streams to support environmental assessment and management efforts. However, when the 2006 drought conditions became prevalent, what turned out to be a problem for the scientists' studies ended up allowing them to develop a better understanding of how droughts influence historical and emerging contaminants of water quality for compounds, toxicity and bioaccumulation (or the

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Drought in the news

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accumulation of a substance in a living organism's tissues), and how aquatic organisms can be influenced by site-specific pH.

Extreme conditions impact fish populations across Texas

By Kathy Wythe

Extreme drought has decreased flows in rivers and streams and depleted major reservoirs across Texas, changing the fish population, even threatening the survival of some rare fish, according to Texas fish experts.

Low or no streamflows cause loss of habitat, degraded water quality and increased saltwater intruding into fresh water.

Cindy Loeffler, Texas Parks and Wildlife Department (TPWD) Water Resources Branch chief, said streamflow gages for much of the state are registering well below normal this year, indicating severe hydrologic drought. She said these low flows are limiting available habitat for some freshwater aquatic species.

"It is probably too soon to know what long term effects the drought will have on fish populations across the state, but biologists are concerned that rare fish will have a tough time surviving the extreme conditions," Loeffler said.

Cooking Restrictions

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Ellis County Rancher and NRCS Work Together To Survive Historic Drought Conditions

Ten Things You Should Know About the Texas Drought

Texas Drought: The Executive Summary

Texas Drought Survival Kit Now Online

Drought perspectives: Upper Colorado River Authority

By Courtney Smith

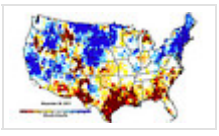
Chartered in 1935, the Upper Colorado River Authority (UCRA) in San Angelo, Texas, served primarily as a lending institution for local municipalities seeking to make area water improvements prior to the 1990s, according to its website.

While UCRA continues this role, the river authority is now heavily involved in education and outreach programs and efforts protecting water quality and conservation in West Texas. This includes the drought stricken watersheds of Tom Green, Coke and other contiguous counties.

O.C. Fisher Reservoir, a secondary drinking water source for San Angelo, and E.V. Spence Reservoir, which currently only supplies water to the city of Robert Lee, are both at less than one percent capacity, said **Chuck Brown**, UCRA's director of operations.

NASA research reveals low aquifer levels and conservation districts continue local work

By Leslie Lee



The surface water impacts of the drought are easy to see, as many lakes have closed public boat ramps, Groesbeck's dependence on the depleted Navasota River nearly resulted in a water crisis, and low reservoirs are revealing mysteries and artifacts.

Because aquifers are hidden from sight and more difficult to measure, the drought's impact on groundwater supplies is not as obvious.

Now data recently released by NASA has revealed just how bad groundwater levels are.

Groundwater levels in much of Texas are at the lowest levels in more than 60 years, according to new national maps produced by NASA using data from the NASA/German Aerospace Center Gravity Recovery and Climate Experiment (Grace) mission.

The latest groundwater map shows large patches of maroon over eastern Texas, indicating severely depressed groundwater levels.

Drought in Texas is a special e-mail newsletter of Texas Water Resources Institute, part of Texas AgriLife Research, the Texas AgriLife Extension Service, and the College of Agriculture and Life Sciences at Texas A&M University. TWRI and the Texas A&M Institute of Renewable Natural Resources work together to foster and communicate research and educational outreach programs focused on water and natural resources science and management issues in Texas and beyond.

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