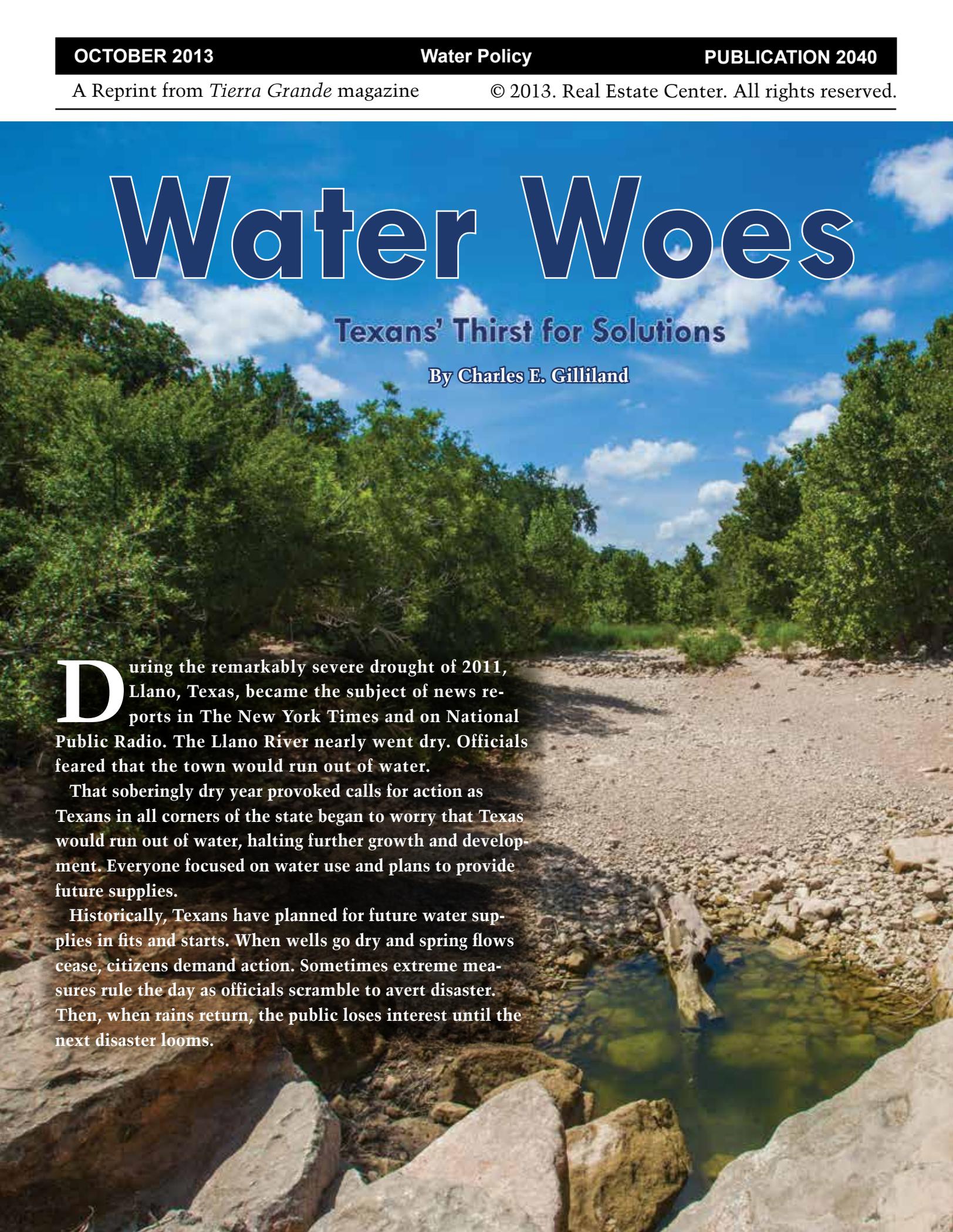


Water Woes

Texans' Thirst for Solutions

By Charles E. Gilliland



During the remarkably severe drought of 2011, Llano, Texas, became the subject of news reports in *The New York Times* and on National Public Radio. The Llano River nearly went dry. Officials feared that the town would run out of water.

That soberingly dry year provoked calls for action as Texans in all corners of the state began to worry that Texas would run out of water, halting further growth and development. Everyone focused on water use and plans to provide future supplies.

Historically, Texans have planned for future water supplies in fits and starts. When wells go dry and spring flows cease, citizens demand action. Sometimes extreme measures rule the day as officials scramble to avert disaster. Then, when rains return, the public loses interest until the next disaster looms.

After the prolonged drought of the 1950s, Texas legislators sought to remedy this slapdash approach by establishing the Texas Water Development Board (TWDB) to plan for future water needs. The board dutifully prepared a top-down plan in 1968 followed by a series of updated plans through 1992.

Regional Water Planning Groups

Following another period of limited rainfall in 1996, the legislature switched gears, opting to change from a top-down plan to localized efforts centered on regional planning groups. Passage of Senate Bill 1 in 1997 created 16 regional water planning groups (RWPGs) charged to:

Provide for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions in order that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare; further economic development; and protect the agricultural and natural resources of that particular region.

To do this, RWPGs set themselves the following tasks:

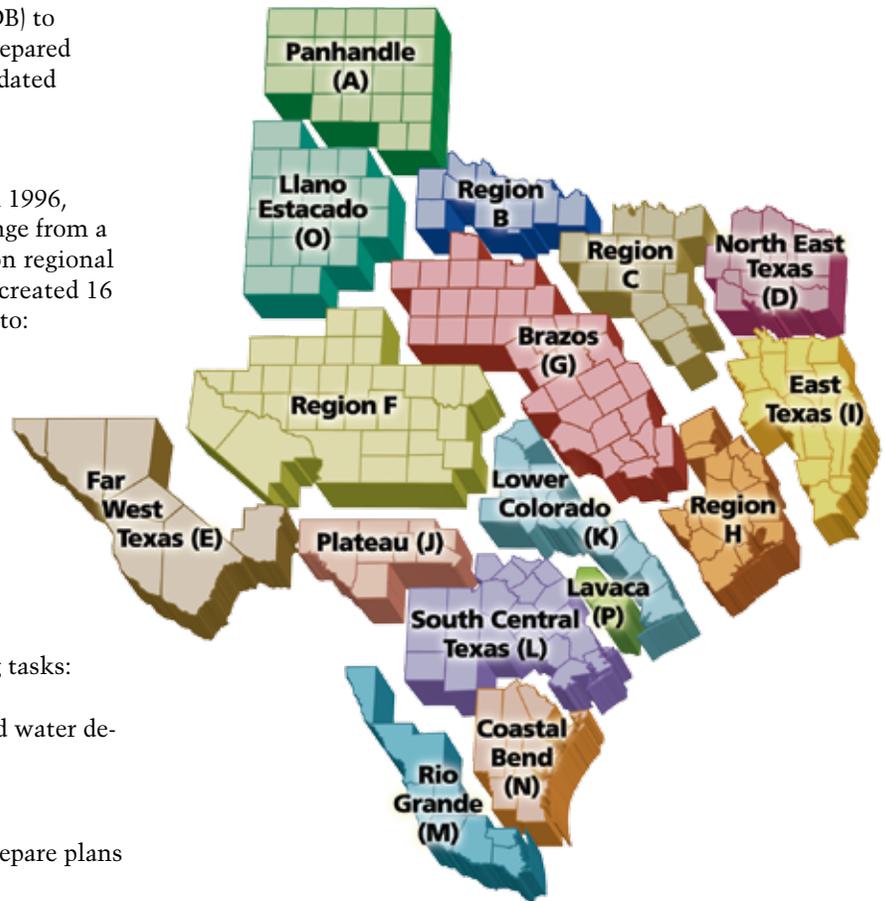
- describe the regional water planning area;
- quantify current and projected population and water demand over a 50-year planning horizon;
- evaluate and quantify current water supplies;
- identify surpluses and needs;
- evaluate water management strategies and prepare plans to meet the needs;
- evaluate impacts of water management strategies on water quality;
- describe how the plan is consistent with long-term protection of the state's water, agricultural and natural resources;
- recommend regulatory, administrative and legislative changes;
- describe how sponsors of water management strategies will finance projects; and
- adopt the plan, including the required level of public participation.

The RWPGs discharge their duties in public meetings with a roster of voting members. Members were originally appointed by the TWDB to include stakeholders from interest groups affected by the water plans. Those stakeholders include the public, agriculture representatives and government entities. Any entity likely to be impacted by the plan has a seat at the table. As vacancies occur, RWPGs replace departing members with representatives from the departing member's group.

Now when the flow from the spigot falters, concerned individuals have an entity to contact with questions and concerns. RWPGs and their latest plans can be viewed at the Regional Water Planning site at the TWDB (<http://tinyurl.com/n492lgl>). These plans were devised to evaluate specific water needs that would emerge should another long and severe drought similar to that of the 1950s beset Texas in the future.

The process involves consulting with experts in demography and hydrology to project population growth and supplies of surface water, groundwater and reusable water anticipated in

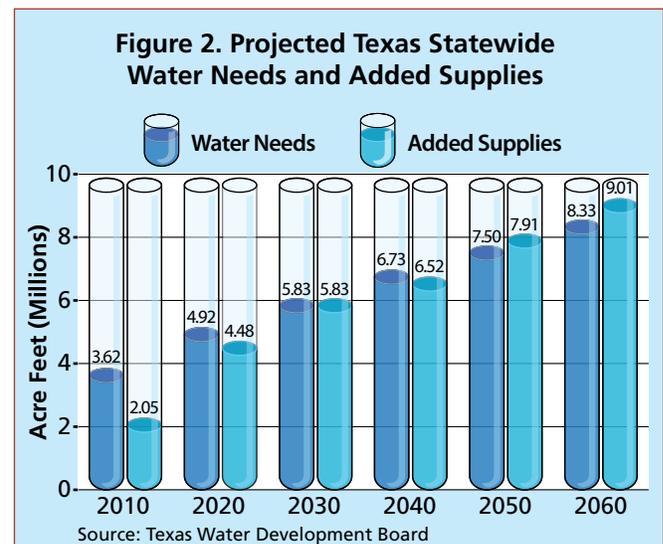
Figure 1. Texas Water Planning Regions



each region in each decade. Matching supplies with demand from various users indicates the adequacy of water resources given the economic activity in the region. TWDB collects the individual reports from the 16 regions and compiles them into the statewide water plan.

Statewide Water Plan

In the latest version of the plan, *2012 Water for Texas*, the regional planning groups first identify needs and then devise strategies to overcome the projected shortfalls. Strategies encompass a wide range of activities including building



reservoirs, increasing conservation, building pipelines, buying water and desalinization, to name a few. They will require a capital investment of \$53 billion, with about \$46 billion targeting municipal needs. However, the plans do not identify sources of funds required to build the projects envisioned in the plan.

To provide funding for some of these projects, the 83rd Texas Legislature passed Senate Joint Resolution 1 and House Bill 4 to create the State Water Investment Fund for Texas and the State Water Implementation Revenue Fund of Texas to provide \$2 billion to TWDB for construction of approved projects.

Texas voters will decide the fate of these funds during an election to amend the Texas Constitution in November. If approved, the funds will be transferred from the rainy day fund to TWDB and targeted to development of a prioritized list of water management strategies.

Planning regions are shown in Figure 1. The remaining figures estimate water supplies before and after the strategies envisioned in the plan have augmented existing water supplies. A summary of the statewide situation is shown in Figure 2. The chart shows the water needs or shortfall predicted during a record drought in millions of acre feet of water per year. An acre foot is enough water to cover one acre at a depth of one foot (about 325,853 gallons). The chart indicates that in 2010, Texas would have been 3.623 million acre feet short of projected usage if a drought of 1950s proportions had occurred.

The chart also shows the volume of added supplies Texas could generate by implementing the strategies set forth in the plan. In 2010, that would have generated 2.049 million additional acre feet, far short of projected needs. Needs grow with the state's expanding population, but additional supplies also increase over time as projects are completed. By 2030, added supplies meet projected statewide needs. By 2060, supplies comfortably exceed needs. However, the devil is in the details at the local level.

Regional Supply, Demand

A comparison of regional needs in 2010 and 2060 is shown in Figure 3. In 2060, most regions anticipate adequate supplies relative to needs except for Far West Texas (E) and the Llano Estacado (O) regions (Figure 4). Unresolved shortfalls would still exist in those regions. The O region anticipates a substantial shortfall as pumping depletes the Ogallala Aquifer. Much of that need is for irrigation.

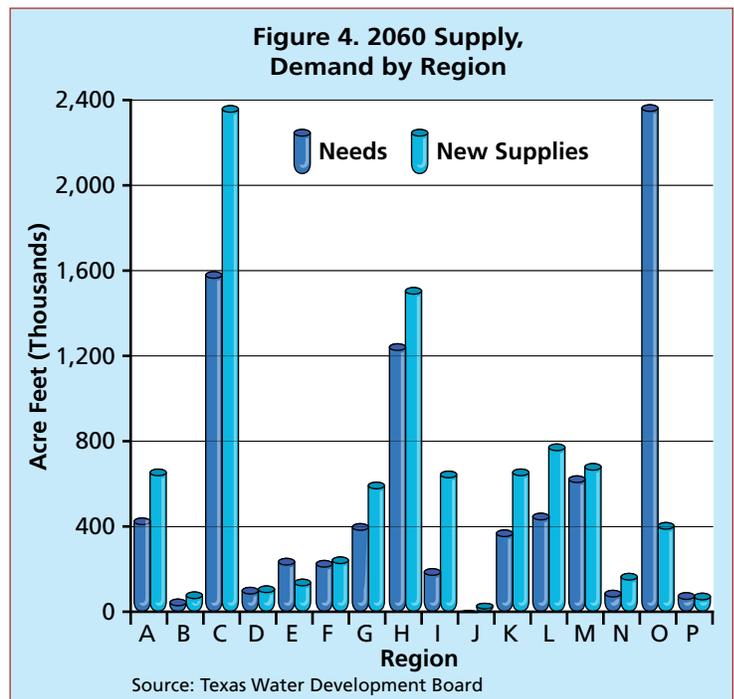
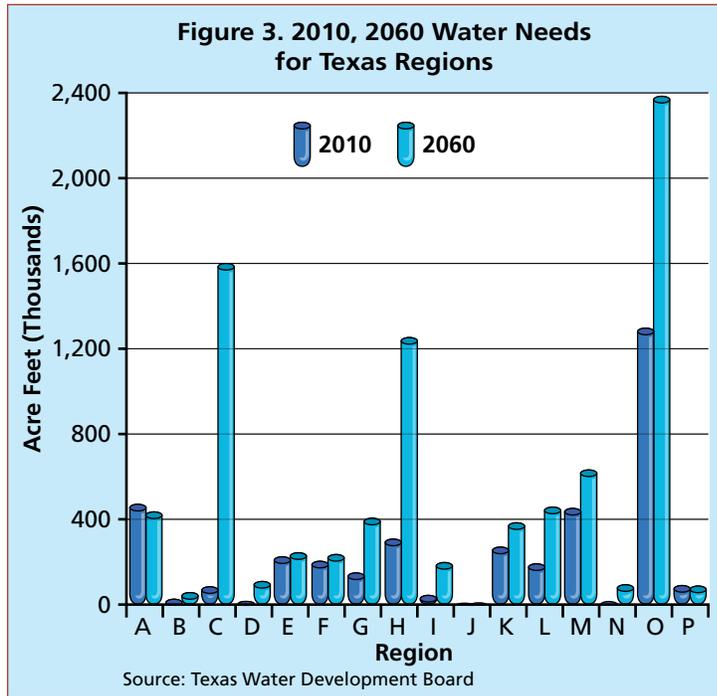
Figure 4 shows 2060 needs versus new supplies by region. Presumably nearly all agricultural irrigation would halt in that region during a prolonged, historic drought. Regions C, H, M and to some extent G will see population-driven municipal

demand increase by 2060. Region E faces the same challenges as El Paso's population expands and irrigation continues to use sizable quantities of water.

In contrast, Region C with Dallas-Fort Worth populations growing substantially foresees a large boost in supplies that will outstrip population growth. However, a recent court ruling halting plans to secure supplies from Oklahoma may eliminate this rosy scenario and send planners back to the drawing board. Region H, encompassing Houston and Galveston, also projects a comfortable cushion.

The detailed statewide plan contains reports of subregional issues. In many of these regions there are counties where unmet needs exist in 2060 even when region-wide totals exceed projected total needs. The regional data offer a clear picture of the situation in any city or county and are available at the regional planning section of the TWDB website. ↗

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THE TAKEAWAY

The future of Texas' water supply is in the hands of 16 regional water planning groups, each of which is responsible for evaluating the needs of the region, monitoring supplies, planning strategies to conserve water and finding new sources of water. A statewide water plan is compiled from the regional reports.



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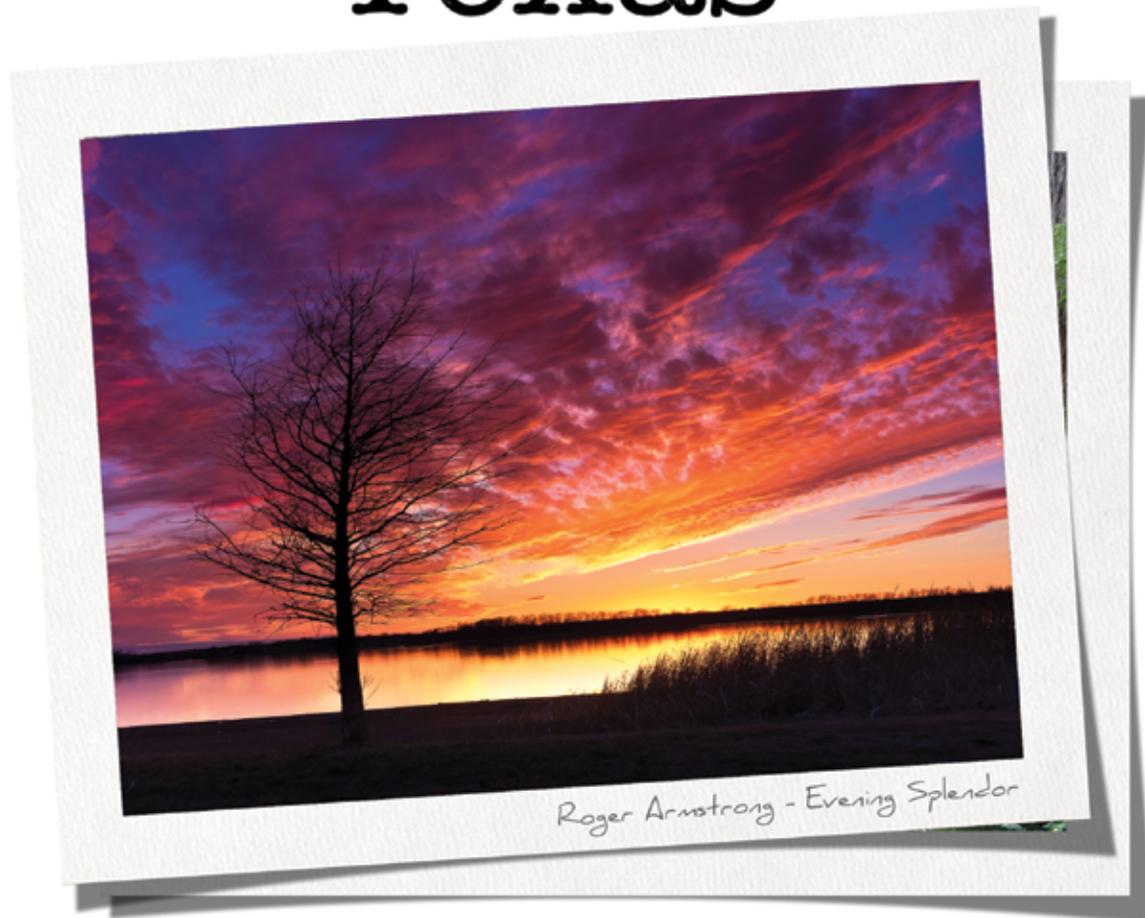
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Big Beautiful Texas



As Center staff perused the pictures entered in our photo contest, we were struck by Texas' diverse beauty. It wasn't easy picking winners, but after much discussion and enthusiastic lobbying for our personal favorites, we reached an agreement.

The best of the best photos (including the one shown here) will be featured on our website (recenter.tamu.edu/photocontest/) and in our 2012-13 Annual Report and 2014 Calendar, available in mid-November.

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