



Upper Llano River WPP Development

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The Llano River, a clear spring-fed perennial river and major tributary of the Colorado River, is a true gem of the Texas Hill Country. The Upper Llano River, which includes the North and South Llano Rivers, along with the springs that feed it, supports several unique plant and animal communities and provides constant critical flows downstream to the Llano and Colorado rivers, Lake LBJ and other Highland Lakes, especially during times of drought.

Due to the pristine nature and relatively constant flow of the springs, the Upper Llano River is currently a healthy ecosystem supporting a variety of aquatic and terrestrial ecosystems and numerous recreational opportunities. However, loss of spring flow due to aquifer withdrawals, subtle changes from land fragmentation, loss of riparian habitat, spread of invasive species and encroachment of juniper species on upland habitats threaten this system, potentially decreasing water quality and streamflows.

Upper Llano River Watershed Protection Plan Development

Because the protection and preservation of the Upper Llano River and its springs is a natural resource, economic and cultural concern, the Texas Tech University Llano River Field Station (TTU-LRFS) and Texas Water Resources Institute (TWRI) are working with the South Llano Watershed Alliance (SLWA) and others to develop and implement a watershed protection plan (WPP). The alliance is an organization of landowners and interested stakeholders whose mission is to preserve and enhance the South Llano River and adjoining watersheds by encouraging land and water stewardship through collaboration, education and community participation.

Watershed planning is driven by local stakeholders and includes the following key



tasks: 1) identify desired watershed conditions and measurable goals, 2) prioritize appropriate management practices and needed education and awareness programs to achieve those goals, 3) assist in the development of the WPP document, 4) lead implementation of the plan at the local level, and 5) communicate implications of the WPP to other interested constituents within the watershed.

The plan and its components will address potential threats arising from land fragmentation, noxious woody vegetation, aquatic invasive species, groundwater availability and the potential for groundwater exports and aquifer contamination.

TTU-LFS, TWRI and SLWA are facilitating the stakeholder process for development of the plan through a federal Clean Water Act 319(h) grant from the Texas State Soil and Water Conservation Board and U.S. Environmental Protection Agency,

Join the Alliance

Public participation and stakeholder involvement is being carried out primarily through the SLWA. The director of the TTU-LRFS, who also serves as a director on the SLWA Board, is the watershed coordinator. The diverse group of landowners, public officials, special interest groups and agencies

participating in the SLWA provide guidance for the direction of the project and development of the WPP. Input from stakeholders is critical to the success of all watershed planning and implementation efforts and will be sought throughout this project to provide information and assist in identifying best management practices for future implementation. Routine stakeholder meetings will be held in the watershed throughout the planning process. Please plan to participate in this important effort to improve and protect your water resources and encourage others to do so as well.

Through collaboration with local governments, the SLWA and others, this effort will conserve the watershed's healthy components, therefore, avoiding water quality impairments in the future. With proactive, holistic aquatic ecosystem conservation and protection through the development and future implementation of a WPP for the Upper Llano River watershed, preservation of these lands and waters for generations to come are ensured.

Other Ongoing Efforts

To provide local stakeholders the information needed to develop a watershed protection plan and promote watershed stewardship, a number of efforts are being conducted concurrent with the WPP process:

- The Texas AgriLife Research Spatial Sciences Lab is providing information and maps on current landuse, brush density and other spatial information for the watershed.
- The TTU-LRFS is characterizing current water quality and biological conditions of the Upper Llano River watershed.
- The TTU-Water Resources Center is analyzing watershed data using models

Six Steps of the Watershed Planning and Implementation Process

1. **Build partnerships**
2. **Characterize the watershed**
3. **Finalize goals and identify**
4. **Design an implementation plan**
5. **Implement watershed plan**
6. **Measure progress and make adjustments**

to assess recommended measures in the WPP to achieve environmental goals established by stakeholders.

- The TTU-LRFS and Texas AgriLife Extension Service is providing training workshops on riparian protection, land stewardship, grazing management, invasive species, brush control, conservation, wildlife and habitat plans and water resource issues.
- The TTU-LRFS is delivering a water and watershed K-12 Texas Essential Knowledge Skills-based curriculum.

This effort is also being closely coordinated with ongoing Upper Llano Watershed Conservation Plan efforts by Texas Parks and Wildlife Department and SLWA to restore Guadalupe Bass populations.

Partners

Texas AgriLife Extension Service
 Texas Water Resources Institute
 Texas Tech University Llano River Field Station
 Texas Tech University Water Resources Center
 South Llano Watershed Alliance
 Texas A&M University Spatial Sciences Laboratory



For more information visit www.southllano.org



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