

TEXAS TECH UNIVERSITY  
AND  
TEXAS WATER RESOURCES INSTITUTE  
Implementation of the Upper Llano River Watershed Protection Plan  
FY 2017 Work Plan 15-11

**EPA State Categorical Program Grants – Workplan Essential Elements  
FY 2011-2015 EPA Strategic Plan Reference  
Strategic Plan Goal – Goal 2 Protecting America’s Waters  
Strategic Plan Objective – Objective 2.2 Protect and Restore Watersheds and Aquatic Ecosystems**

Quarter no. 7 from 07/01/17 through 9/30/17

**I. Abstract**

During this period, LFRS met with local governmental organizations and non-governmental organizations re funding opportunities through the WPP, and submitted a full RCPP proposal to NRCS. A grant proposal to continue WPP Implementation was submitted to TSSWCB. Riparian restoration efforts treated 24 miles of streambank for invasive elephant ear and removed invasive Mexican Ricegrass; and constructed exclosures at South Llano River State Park. Next quarter, work will focus on (1) initiating water quality monitoring with Texas Stream Team volunteers; (2) assembling the new steering committee; (3) implementing streambank demonstration projects at LRFS; (4) continuing axis deer research.

**II. Overall Progress and Results by Task**

**Task 1 Project Administration**

**To effectively administer, coordinate and monitor all work performed under this project including technical and financial supervision and preparation of status reports.**

*Subtask 1.1 TTU-LRFS will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15<sup>th</sup> of January, April, July and October. QPRs shall be distributed to all Project Partners.*

The following actions have been completed during this reporting period:

- a. The seventh quarterly report was prepared and submitted.

**45% Complete**

*Subtask 1.2 TTU-LRFS will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.*

The following actions have been completed during this reporting period:

- a. \$90,434 of an available \$181,207 has been spent on the project.

**50% Complete**

*Subtask 1.3 TTU-LRFS will host coordination meetings or conference calls, at least quarterly, with Project Partners to discuss project activities, project schedule, communication needs, deliverables, and other requirements. TTU-LRFS will develop lists of action items needed following each project coordination meeting and distribute to project personnel.*

The following actions have been completed during this reporting period:

- a. Met with project partners July 26 and Sept 21 to discuss WPP projects and grant proposals.

**45% Complete**

*Subtask 1.4 TTU-LRFS will develop a Final Report that summarizes activities completed and conclusions reached during the project and discusses the extent to which project goals and measures of success have been achieved.*

The following actions have been completed during this reporting period:

- a. No actions occurred this quarter.

**0% Complete**

## **Task 2 Support and Facilitation of WPP Implementation**

**Facilitate continued stakeholder involvement in the Upper Llano River Watershed to ensure successful implementation of the Upper Llano River WPP and track implementation.**

*Subtask 2.1 TTU-LRFS will continue to employ an Upper Llano River Watershed Coordinator (WC) to engage and facilitate the Upper Llano River WCC, watershed stakeholders, and entities identified in the Upper Llano River WPP. The WC will serve as the primary conduit for interaction with landowners, citizens, and entities to facilitate the implementation of the WPP. The WC shall successfully complete (or have already completed) the Texas Watershed Planning Short Course. The WC shall participate in all Texas Watershed Coordinator Roundtables held during the project period. The WC shall be stationed in the Upper Llano River watershed.*

The following actions have been completed during this reporting period:

- a) Dr. Tom Arsuffi, Director of the TTU-LRFS and Tyson Broad, Upper Llano River Watershed Coordinator and web manager for the Llano River Watershed Alliance have completed the Texas Watershed Planning Short Course and both are stationed at the TTU Llano River Field Station in Junction.
- b) Tyson Broad continued meeting with local organizations and landowners regarding funding opportunities through the WPP. See Subtask 3.2

**80% Complete**

*Subtask 2.2 The WC will assist governmental and non-governmental organizations in the Upper Llano River watershed, in identification and acquisition of resources (financial and technical) to enable WPP implementation. The WC, with assistance from TWRI, will actively seek and pursue funding*

*opportunities and work with partners to develop grant proposals. The WC will work with state and federal agencies, as appropriate, to bring technical and financial resources to the watershed.*

The following actions have been completed during this reporting period:

- a) LRFS met City of Junction Mayor and Kimble County Judge to discuss OSSF replacement programs, July 21
- b) LRFS met with NRCS in Temple to discuss Regional Conservation Partnership Program, July 27.
- c) Tyson Broad met with City of Junction mayor to discuss Clean Water State Revolving Fund, Sept 6.
- d) LRFS partnered with several NGOs and governmental organizations (including Hill Country Conservancy, Hill Country Alliance, Texas Wildlife Association, Wimberley Valley Watershed Association, Llano River Watershed Alliance) to submit a Regional Conservation Partnership Program full proposal for Hill Country Headwaters Conservation Initiative to NRCS, Sept 7.
- e) LRFS partnered with TWRI, LCRA, and Llano River Watershed Alliance to submit Clean Water Act Nonpoint Source proposal to TSSWCB, Sept. 15.
- f) LRFS participated in meeting of Hill Country Conservation Network, a partnership of organizations exploring collaborative efforts and funding on Hill Country issues, Sept 20.
- g) LRFS assisted Edwards Aquifer Authority, UT-San Antonio, and Real-Edwards Conservation and Reclamation District in data collection associated with dye tracing activities on the Edwards Plateau, August 10 and September 22.
- h) LRFS met with LRWA Alliance Board Aug 3 and Sept 10 to discuss grant opportunities.
- i) Update: LRFS submitted a grant proposal last year to the Southeast Aquatic Resource Partnership for riparian restoration work. Due to funding issues, the award announcement was delayed until July; LRFS was not selected for this grant proposal.

### **65% Complete**

*Subtask 2.3 The WC, with assistance from TWRI, will 1) evaluate and track progress toward achieving milestones established in the Upper Llano River WPP; and, 2) work with LCRA to assess water quality data collected through the Clean Rivers Program and other data collection efforts in relation to achieving load reductions.*

The following actions have been completed during this reporting period: (b&c need updating)

- a) Tyson Broad is working with TWRI to track milestones in the WPP
- b) NRCS reported 1,971 acres of brush were treated in the watershed during the quarter for a total of 13,113 acres since WPP implementation began. The annual goal is 9,000 acres
- c) There were 913 acres treated with prescribed burning during the quarter for a total of 6,752 acres since WPP implementation began. The annual goal is 5,400-7,700 acres.
- d) Volunteers constructed fifteen exclosures around young saplings along riparian trails at South Llano River State Park, July 9
- e) Crews from LRFS and TPWD treated 24 river miles of elephant ear along the South, North and main stem Llano River, August 30
- f) Litter was removed at three S Llano river crossings and more than 100 clumps of Mexican Ricegrass were removed at South Llano River State Park through volunteer efforts

- g) LRFS worked with summer interns from Ecological Society of America to develop and complete axis deer and riparian exclosures research projects that facilitate WPP Implementation Projects

**65% Complete**

*Subtask 2.4 The WC will facilitate public participation and stakeholder involvement in the watershed planning process, specifically by hosting meetings of the Upper Llano River WCC to provide regular updates on progress to implement the WPP and seek input and recommendations on needed activities. TWRI will assist with agenda development and facilitation as needed. The WC will coordinate meetings, secure meeting locations, prepare and disseminate meeting notices and agendas. Meeting summaries will be prepared and posted to the project website.*

The following actions have been completed during this reporting period:

- LRFS has reformed an Implementation Committee consisting of new and former members of the original Coordination Committee. The initial meeting will be in mid-October.

**45% Complete**

*Subtask 2.5 The WC will maintain a database of watershed stakeholders and affected parties for use in engaging the public in the watershed planning process. The stakeholder group will be added to based upon previous efforts of TTU-LRFS and TWRI in TSSWCB project 11-04, Development of the Upper Llano River Watershed Protection Plan. The spreadsheet will represent a diverse cross section of Upper Llano River landowners, citizens, local businesses, local and regional governmental entities and elected officials, state and federal agencies, and environmental and special interest groups.*

The following actions have been completed during this reporting period:

- a. The Upper Llano Watershed Protection Plan stakeholder database is now at 482 landowners, citizens, local businesses, local and regional governmental entities and elected officials, state and federal agencies, and environmental and special interest groups.

**30% Complete**

*Subtask 2.6 The WC will attend and participate in other public meetings as appropriate in order to communicate project goals, activities and accomplishments to affected parties. Such meetings may include, but are not limited to, city councils, county commissioners' courts, Clean Rivers Program Basin Steering Committee and Coordinated Monitoring, local soil and water conservation districts (SWCDs), groundwater conservation districts and other appropriate meetings of critical watershed stakeholder groups.*

The following actions have been completed during this reporting period:

- a. This quarter, TTU-LRFS met with/participated in the following meetings/activities:
  - LRFS attended the Watershed Coordinator Roundtable in College Station, July 26.
  - Tom Arsuffi presented a talk on the WPP at the annual meeting of the Ecological Society of America, August 8, Portland, OR.
  - Tyson Broad attended the Hill Country Alliance Leadership Summit, Sept 21, Dripping Springs

- Tom Arsuffi presented a talk on the WPP at the annual meeting of the Organization of Biological Field Stations, Sept 22, Itasca, MN.
- Tyson Broad attended the Texas Stream Team annual meeting, Sept 28, San Marcos.
- Tom Arsuffi on behalf of the Llano River Field Station accepted the Kellogg Foundation Exemplar Award for Public Engagement at the annual meeting of the Engagement Scholarship Consortium, September 27, Birmingham, AL.

**50% Complete**

*Subtask 2.7 The WC will provide information to LCRA for inclusion in the Clean Rivers Program Basin Summary Report and Basin Highlights Report regarding progress to implement the Upper Llano River WPP.*

The following actions have been completed during this reporting period:

- After a technical delay in uploading data to the database, data are now being populated in the Stream Team database.

**15% Complete**

*Subtask 2.8 The WC will develop, publish, and distribute 4 semi-annual newsletters that are designed to keep landowners and entities informed of ongoing WPP implementation activities, including water quality data collection and progress toward achieving milestones in the WPP. The newsletter shall be distributed as most appropriate to individual landowners and entities in the watershed. The WC will solicit content matter for the newsletters from Project Partners as appropriate. TSSWCB must approve all project-related content in any informational materials and promotional publications prior to distribution.*

The following actions have been completed during this reporting period:

- a) No activity to report this quarter.

**0% Complete**

*Subtask 2.9 The WC will facilitate communication with stakeholders in order to engage the public and affected entities in WPP implementation. The WC will utilize all appropriate communication mechanisms including direct mail, e-mail, the project website, and mass media (print, radio, television). The WC, with assistance of TWRI, will develop and disseminate general project informational materials, including, but not limited to, flyers, brochures, letters, factsheets, news releases, and other appropriate promotional publications. The WC, with assistance of the LRWA, will utilize a website, listserv, and social media to facilitate direct discussion between stakeholders. The WC will solicit content matter for educational materials from Project Partners as appropriate. TSSWCB must approve all project-related content in any informational materials and promotional publications prior to distribution.*

The following actions have been completed during this reporting period:

- a. The SLWA website, listserv, and Facebook page is a resource for stakeholders in the watershed on land and water stewardship, hydrologic and weather conditions, latest news, upcoming events, community participation, and the Watershed Protection Plan.
- b. For the quarter July to September of 2017, there were 586 sessions and 427 users of the website, with daily visits at 6/day. A weekly newsletter, "Watershed Week in Review" is

prepared by LRWA/LRFS and distributed to listserv subscribers (299) and Facebook friends and via the website.

- c. The Facebook page for the Alliance currently has 458 "Likes" and reached a total of 6,194 Facebook users during the third quarter of 2017.

### **15% Complete**

## **Task 3 Outreach, Education and Community Support**

### **To promote involvement, provide information transfer and encourage participation in the Upper Llano River WCC and WPP implementation efforts**

*Subtask 3.1 The WC, with assistance from TWRI, will coordinate and conduct water resources and related environmental outreach/education efforts across the watershed, as identified in the Upper Llano River WPP. The WC will work with collaborating entities to organize the following training programs:*

- *Lone Star Healthy Streams (Feral Hog component) workshop – 2 events*
- *Lone Star Healthy Streams (Grazing Cattle component) workshop – 2 events*
- *Lone Star Healthy Streams (Horses component) workshop – 1 event*
- *Riparian Area Management Workshops for landowners and land managers – 1 event*
- *Texas Watershed Steward Program – 1 event*
- *Rainwater harvesting workshop – 1 event*
- *Texas Well Owner Network training and well screening event – 1 event*

*The WC will work with the entities that administer/fund these programs and try to direct delivery of these programs to the Upper Llano River watershed depending on priorities of those entities and programs.*

The following actions have been completed during this reporting period:

- LRFS hosted Texas A&M AgriLife Extension Lone Star Healthy Stream workshop, Sept 8, Junction. Three components: Feral Hogs, Grazing Cattle, and Horses were included.
- Texas Well Owners Network workshop is re-scheduled for November 14th. The October workshop was postponed due to needs arising from Hurricane Harvey.

### **50% Complete**

*Subtask 3.2 The WC will coordinate education and outreach activities as identified in the Upper Llano River WPP. The WC will make presentations on the Upper Llano River WPP and general NPS pollution information to local schools and community organizations. The WC will support, promote, and participate in, as appropriate, any field days, demonstrations, site tours, or education events sponsored by AgriLife Extension, USDA-NRCS, and/or SWCDs for the Upper Llano River Watershed.*

The following actions have been completed during this reporting period:

- a) Tyson Broad gave an overview of the Llano Watershed and WPP to Young African Leaders group, July 10, Junction.
- b) Tyson Broad presented an update on the WPP to the Fredericksburg Fly Fishers, Aug 10<sup>th</sup>.
- c) Tyson Broad gave a presentation re the WPP to the Texas State Comptroller Freshwater Mussels Workgroup in Austin on August 16<sup>th</sup> and also attended the meeting on July 19<sup>th</sup>.

- d) LRFS partnered with Kimble County AgriLife for five Stream Trailer demonstrations at Junction Elementary School, Sept 22.

**30% Complete**

#### **Task 4 Volunteer Monitoring**

##### ***To monitor water quality benefits of WPP implementation efforts***

*Subtask 4.1 Volunteer Coordination and Training – Upon receipt of funding notification, TTU-LRFS will facilitate the organization and training of local watershed volunteers through the Texas Stream Team’s training programs. A training event will be hosted locally and TTU-LRFS personnel as appropriate will become trainers as well so that any new interested parties can be trained as needed.*

The following actions have been completed during this reporting period:

- LRFS, along with LRWA, facilitated coordination and training of volunteers and distribution of sampling kits. LRFS continues to provide support for volunteer monitors.

**10% Complete**

*Subtask 4.2 Volunteer Monitoring – Sampling will be conducted by volunteer monitors at multiple locations across the watershed in parallel with the routine monitoring. Parameters monitored will include water temperature, pH, DO, total dissolved solids, conductivity, salinity, water clarity, and E. coli enumeration. Volunteer data will be reported to the Texas Stream Team. Field observations will also be recorded and include flow level, algae cover, water color, water clarity, water surface, water conditions, water odor, present weather, days since last significant precipitation, rainfall accumulation, and stream velocity. Data collection and sample analysis will be conducted as described in the Texas Stream Team Water Quality Monitoring Manual and QAPP.*

The following actions have been completed during this reporting period:

- a) Volunteer monitoring has begun at 3 sites. Monitoring at additional sites will begin once the database issues are resolved by Texas Stream Team.

**10% Complete**

*Subtask 4.3 Data Management – Volunteer monitors will utilize Texas Stream Team practices and procedures for recording, validating and submitting data into the Texas Stream Team database. Additionally, these data will be incorporated into the watershed specific database developed by and housed at TTU-LRFS as well as the Stream Team’s database and dataviewer. Volunteer monitoring data will not be sent to TCEQ for future water body assessment purposes, but will instead be utilized by the watershed coordinator for directing future BMP assessments and performance evaluations.*

The following actions have been completed during this reporting period:

- a) Database issues at Texas Stream Team hampered data entry during this quarter.

### **10% Complete**

*Subtask 4.4 Water Quality Data Assessment – TTU-LRFS and TWRI will conduct a water quality data assessment to reveal trends in water quality over the course of the project, track impacts of implementation, and aid in further identification of areas of concern in the watershed.*

The following actions have been completed during this reporting period:

- a) No activity to report this quarter.

### **0% Complete**

#### **III. Related Issues/Current Problems and Favorable or Unusual Developments**

- The initiation of water quality monitoring has been delayed while database issues are being resolved with Texas Stream Team. TST has been unable to approve new sites.

#### **IV. Projected Work for Next Quarter**

The following actions are projected to occur during the next quarter:

- a. Initiate Water Quality monitoring and other field work Texas Stream Team volunteers
- b. First meeting of Coordination Committee is scheduled for mid-October.
- c. Prepare newsletter.
- d. Continue meeting with government entities and other stakeholders to discuss funding opportunities via WPP.
- e. Continue setting dates for Special Programs outlined in Subtask 4.1
- f. Implement engineering and riparian restoration plans for the streambank demonstration project at the LRFS.
- g. Continue Axis deer research plans and landowner partnerships