

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

Quarter no. 5 from 01/01/17 through 3/31/17

**I. Abstract**

The Upper Llano River Watershed Protection Plan (WPP) project has begun implementation following approval by EPA in late September of last year. During this period, numerous discussion occurred with governmental and non-governmental organizations re funding opportunities through the WPP. A grant proposal for a brush control/water supply enhancement demonstration project was submitted to the Healthy Watersheds Consortium Grant Program. Next quarter, work will focus on (1) initiating water quality monitoring with Texas Stream Team volunteers; (2) developing the steering committee and scheduling their first meeting; (3) developing and implementing a streambank demonstration project at LRFS; (4) formalizing axis deer research plans; and (5) identifying WPP Implementation Projects for Ecological Society of America summer interns at LRFS.

**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 fifth quarterly report was prepared and submitted.

**25% 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. \$46,949 of an available \$181,207 has been spent on the project.

**26% 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 to discuss submitting a Regional Conservation Partnership Program (RCPP), March 27.
- b. Project partners met with TSSWCB via conference call to discuss modifications to QAPP, March 30

**25% 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 Quality Assurance**

**To develop data quality objectives (DQOs) and quality assurance/control (QA/QC) activities to ensure data of known and acceptable quality are generated through this project.**

*Subtask 2.1 TWRI, with input from the TTU-LRFS, will develop a QAPP for activities in Task 5 consistent with the most recent versions of EPA Requirements for Quality Assurance Project Plans (QA/R-5) and the TSSWCB Environmental Data Quality Management Plan. All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in the TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415) and Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416). [Consistency with Title 30, Chapter 25 of the Texas Administrative Code, Environmental Testing Laboratory Accreditation and Certification, which describes Texas' approach to implementing the National Environmental Laboratory Accreditation Conference (NELAC) standards, shall be required where applicable.*

The following actions have been completed during this reporting period:

- a) Submitted QAPP to TSSWCB for review and approval. (see Subtask 2.2)

**10% Complete**

*Subtask 2.2 TWRI and TTU-LRFS will implement the approved QAPP. TWRI will submit revisions and necessary amendments to the QAPP as needed.*

The following actions have been completed during this reporting period:

**0% Complete**

### **Task 3 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 3.1 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

#### **70% Complete**

*Subtask 3.2 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) Tyson Broad met with City of Junction City Council about funding opportunities via the WPP, January 9.
- b) Tyson Broad met with Kimble County Commissioners about funding opportunities via the WPP, January 10, Junction
- c) Tom Arsuffi and Tyson Broad discussed partnership opportunities through the WPP with Upper Llanos Prescribed Burn Association, January 12 and 13, Junction
- d) Tyson Broad made a presentation on funding opportunities via WPP to the Real Edwards Conservation Reclamation District, January 18, Camp Wood
- e) Tom Arsuffi and / or Tyson Broad met in the Austin area with Hill County Conservation Network Steering Committee on January 26, March 6 and March 16 to discuss the network and a potential Resource Conservation Partnership
- f) LRFS submitted a grant proposal of \$85,438 to the Healthy Watersheds Consortium Grant Program for a brush control/water supply enhancement demonstration area, February 1
- g) LRFS assisted City of Junction in applying for three TWDB SWIFT loans for water conservation, February 3.
- h) Tyson Broad made a presentation on the WPP funding opportunities to the Headwaters Groundwater Conservation District, Kerrville, March 8.

- i) 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, March 15 and 30.
- j) LRFS met with LRWA Alliance Board February 2 and March to discuss State Wildlife Grant opportunities.

**25% Complete**

*Subtask 3.3 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:

- a) Tyson Broad is working with TWRI to track milestones in the WPP
- b) NRCS reported 6,306 acres of brush were treated in the watershed during the quarter for a total of 8,433 acres since WPP implementation began.
- c) There were 4,017 acres treated with prescribed burning during the quarter for a total of 4,517 acres since WPP implementation began.

**50% Complete**

*Subtask 3.4 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:

- TTULRFS hosted a celebration dinner for 31 Coordination Committee members and spouses on February 23, Junction. Follow up meeting discussed the path forward, solicited interest in forming an Implementation Committee, as well as solicited input for new members of the Coordination Committee. No date was set for the next meeting.

**20% Complete**

*Subtask 3.5 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 471 landowners, citizens, local businesses, local and regional governmental entities and elected officials, state and federal agencies, and environmental and special interest groups.

### **20% Complete**

*Subtask 3.6 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:
- January 23, Tyson Broad met with TWRI and TSSWCB staff to discuss QAPP, Temple
  - Tyson Broad attended the Texas State Comptroller Freshwater Mussels Workgroup in Austin on February 7 and March 24.
  - Tom Arsuffi was appointed to the TWDB Region F Water Planning Group and discussed role of WPP plans as water conservation tools at meeting in Brownwood on February 2.
  - Tyson Broad attended a Texas Tech EDYS (Ecological Dynamic Simulation) Model training at San Antonio River Authority, February 9-10
  - Tyson Broad attended meeting of Groundwater Management Area 7 in Fredericksburg on February 16.
  - Tom Arsuffi and Tyson Broad attended Texas Forest Service Listening Session in Kerrville, March 30.

### **30% Complete**

*Subtask 3.7 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:

- Sampling has not begun pending the resolution of the QAPP

### **0% Complete**

*Subtask 3.8 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 3.9 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 January through March of 2017, there were 708 sessions and 501 users of the website, with daily visits at 12/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 436 "Likes" and reached a total of 1,417 Facebook users during the last quarter of 2016.
- d. Tom Arsuffi and Tyson Broad gave an interview about the WPP to TWRI txH2O magazine, March 10

**15% Complete**

#### **Task 4 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 4.1 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:

- a) Texas Watershed Steward Program was scheduled for May 6.

**10% Complete**

*Subtask 4.2 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) Tom Arsuffi gave a presentation on engagement activities of the WPP at the Regional Engagement Conference in Lubbock, February 22.
- b) Tom Arsuffi gave a presentation on herbivore impacts on riparian zones as an implementation goal of the WPP at the Texas Academy of Science meeting in Temple, March 4.
- c) TTULRFS hosted a training for Texas Envirothon participants, March 7<sup>th</sup>; the current issue for this event is Agricultural Soil and Water Conservation Stewardship
- d) Tyson Broad made presentation about Hill Country rivers and what is being done to protect them to Osher Lifelong Learning Institute at TTU-Fredericksburg, March 21.

**20% Complete**

## **Task 5 Effectiveness Monitoring**

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

*Subtask 5.1 Routine Water Quality Monitoring – Upon approval of the project QAPP, the TTU-LRFS will conduct routine, monthly, ambient water quality monitoring at 8 locations throughout the Upper Llano watershed over the course of at least 14 months. Sampling will include routine field parameters (Temp, pH, DO, conductivity, and flow) and field observations.*

The following actions have been completed during this reporting period:

- a) No action has occurred this quarter. Awaiting approval of QAPP.

**0% Complete**

*Subtask 5.2 Data Management – TTU-LRFS will conduct data management and will maintain a master database for all water quality data collected through this project. TTU-LRFS will import routine water quality monitoring data into the database and transmit data to TCEQ for inclusion in SWQMIS.*

The following actions have been completed during this reporting period:

- a) No activity to report this quarter.

**0% Complete**

*Subtask 5.3 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**

## **Task 6 Volunteer Monitoring**

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

*Subtask 6.1 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, are facilitating coordination and training of volunteers and distribution of sampling kits.

**5% Complete**

*Subtask 6.2 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 the second quarter of 2017.

**5% Complete**

*Subtask 6.3 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) Data sites were updated for Texas Stream Team database.

**10% Complete**



*Subtask 6.4 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**

- Project was delayed due to overlapping project of the development of the WPP and implementation, will need to do a budget/workplan revision to move funds around to extend the current workplan to accomplish tasks.

### **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. Continue meeting with government entities and other stakeholders to discuss funding opportunities via WPP.
- c. Continue setting dates for Special Programs outlined in Subtask 4.1
- d. Develop engineering and riparian restoration plans for the streambank demonstration project at the LRFS.
- e. Formalize Axis deer research plans and landowner partnerships
- f. Identify WPP Implementation Projects for Ecological Society of America's 3 SPUR summer interns at LRFS.
- g. Texas Watershed Steward workshop scheduled for May 6.