

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. 6 from 04/01/17 through 6/30/17

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. Project partners determined that a QAPP will not be needed since only routine parameters are being collected. 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 15th 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 sixth quarterly report was prepared and submitted.

35% 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. \$72,089 of an available \$181,207 has been spent on the project.

39% 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 June 13th to discuss WPP projects and grant proposals.

35% 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:

100% 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:

- a) Workplan modifications reflecting changes to water sampling protocol have been submitted to TTU Office of Research for approval.

95% 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

75% 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) LRFS met with TPWD and consultants re streambank restoration project along South Llano River, April 6, Junction
- b) Tyson Broad made presentation on WPP at Ecology and Management of Axis Deer stakeholder meeting, April 6, Junction
- c) 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 proposal for Hill Country Headwaters Conservation Initiative to NRCS, April 16
- d) LRFS did tabling event re WPP at 700 Springs Tour, April 29
- e) LRFS submitted a grant application for brush control for water supply enhancement from Texas State Soil and Water Conservation Board, May 11
- f) Tyson Broad discussed WPP with landowners along South Llano River at informal meet and greet, Junction, June 9
- g) Update: LRFS submitted a grant proposal last quarter to the Healthy Watersheds Consortium Grant Program for a brush control/water supply enhancement demonstration area; LRFS was not selected for this grant proposal.
- h) 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, April 1, April 14, March 4, and June 5.
- i) LRFS met with LRWA Alliance Board May 25 and June 29 to discuss State Wildlife Grant opportunities.

55% 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) Tyson Broad made presentation re WPP and data collection at LCRA Water Quality Planning Meeting, April 19, Austin
- c) NRCS reported 2,709 acres of brush were treated in the watershed during the quarter for a total of 11,142 acres since WPP implementation began. The annual goal is 9,000 acres
- d) There were 1,322 acres treated with prescribed burning during the quarter for a total of 5,839 acres since WPP implementation began. The annual goal is 5,400-7,700 acres.
- e) Crews from LRFS and TPWD treated 24 river miles of elephant ear along the South, North and main stem Llano River, April 18.
- f) More than 100 chinaberry trees were treated through volunteer efforts at LRFS, June 12

90% 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:

- LRFS continues to solicit interest in forming an Implementation Committee consisting of new and former members of the original Coordination Committee. The LRFS is awaiting final confirmation from additional potential members.

35% 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 475 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:
 - Tyson Broad attended the Texas State Comptroller Freshwater Mussels Workgroup in Austin on April 17, May 16 and June 20.
 - Tom Arsuffi participated in Texas Water Symposium discussion on *Invasive Species Impacts on Water Resources, Economics, and Ecosystems*, Fredericksburg, April 27
 - Tyson Broad presented *Added benefits of a Healthy Watershed Approach: Increased drought resiliency for the Upper Llano River, Texas* at University Council on Water Resources, Fort Collins, Co, June 13-15
 - Tom Arsuffi presented *Field stations as ambassadors and agents for bridging silos: Engagement in watershed protection, research and natural resource literacy in a land of private property* at University Council on Water Resources, Fort Collins, Co, June 13-15

40% 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:

- Revised sampling sites are awaiting approval from Texas Stream Team.

10% 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.

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:

- LRFS hosted 28 people at Texas A&M AgriLife Extension Watershed Steward Training May 6, Junction

- Lone Star Healthy Streams workshop is scheduled for September 8.

25% 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) LRFS hosted 25 Texas high school teams in the 2017 Envirothon, April 8-10. As the Special Topic of the competition was Agricultural Soil and Water Conservation, many of competition questions focused on findings from the WPP.
- b) LRFS hosted local elementary schools for Earth Day 2017. Presentations focused on watershed health through the use of the Field Station Stream Trailer.

20% Complete

Task 5 Support and Facilitation of WPP Implementation

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 revised sites from Texas Stream Team.

5% 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 once the revised sites are approved by Texas Stream Team.

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 of Unusual Developments

- The initiation of water quality monitoring has been delayed while determining if a QAPP is necessary for this round of the WPP implementation.

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. Finalize steering committee and scheduling their first meeting.
- c. Continue meeting with government entities and other stakeholders to discuss funding opportunities via WPP.
- d. Continue setting dates for Special Programs outlined in Subtask 4.1
- e. Implement engineering and riparian restoration plans for the streambank demonstration project at the LRFS.
- f. Implement Axis deer research plans and landowner partnerships
- g. Finalize WPP Implementation Projects for Ecological Society of America's 3 SPUR summer interns at LRFS.