

TEXAS WATER RESOURCES INSTITUTE
AND
TEXAS TECH UNIVERSITY

Development of the Upper Llano River Watershed Protection Plan
FY 2011 Workplan 11-04

Quarter no. 3 From 4/1/12 Through 6/30/12

I. Abstract

This quarter, the Upper Llano River Watershed Protection Plan project focused primarily on QAPP development, outreach, and planning for the first stakeholder meetings. USGS installed a stream gage on the South Llano which will provide valuable data for the project. TTU-LRFS initiated the historical data review and selected monitoring sites for inclusion in the project. With this information, the Monitoring QAPP was drafted and submitted to the TSSWCB. EPA comments were also received on the LULC QAPP. TWRI and SSL revised the QAPP based on those comments and resubmitted it. The EDYS model was also selected by the TTU-WRC for the watershed modeling task which will be initiated once the LULC is completed and the modeling QAPP is approved. On the outreach component of the project, an invasive species workshop was held, planning for first public meeting was initiated, and a Texas Watershed Steward Program scheduled for next quarter. Further, outreach continued through the SLWA website and listserv as well as TTU-LRFS participation at events including monthly SLWA Board meetings, TPWD staff meetings, the 700 Springs Tour, a Landowner Appreciation Day at Rocksprings, and other venues. Next quarter, the first public meetings will be held, landuse will be classified, and watershed monitoring will be initiated.

II. Overall Progress and Results by Task

Task 1 Project Administration

Subtask 1.1 TWRI 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 and posted on the project website.

The following actions have been completed during this reporting period:

- a. The third quarterly report was prepared and submitted on July 13, 2012.

20% Complete

Subtask 1.2 TWRI 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. As of July 3, 2012, \$1,549 (<1%) of federal project funds had been expended.
- b. Progress of Allocations to each Project Partner is as follows:

- TWRI has expended <1% of their funds.
- ESSM has expended 2% of their funds
- SSL has expended <1% of their funds.
- TTU has expended <1% of their funds.

5% Complete

Subtask 1.3 TWRI 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. TWRI 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:

- Drs. Wagner and Arsuffi met on April 19, 2012 to discuss LULC, QAPPs, and public meetings.
- On June 11, 2012, a conference call was held to discuss the Upper Llano Stakeholder process.
- On June 12, 2012, Drs. Wagner and Arsuffi met to discuss a timeline for public meetings.
- On June 13, TSSWCB, TTU-LRFS, and LCRA met via conference to discuss monitoring of the Llano River.
- The second quarterly conference call was held July 5, 2012 at 9:00 am. Kevin Wagner, Jana Lloyd, Tom Arsuffi, Scott Richardson, Emily, Znobias Wooten, Bob Lyons, Tyson Broad, Kendria Ray, and Ken Rainwater participated. Primary action items identified included developing a timeline for upcoming stakeholder efforts, submission of the stakeholder database, finalizing the first public meeting agenda, developing the public meeting notice, distributing the meeting notice and agenda, finalizing project QAPPs, initiating monitoring and LULC classification efforts, and beginning development of the first newsletter.
- The third quarterly project meeting has been scheduled for August 14.

20% Complete

Subtask 1.4 TWRI will work with project personnel from ESSM, TTU-WRC, TTU-LRFS, and SLWA to prepare the WPP incorporating input from stakeholders and findings of monitoring, modeling, and data analysis tasks.

The following actions have been completed during this reporting period:

- No activity to report this quarter.

0% Complete

Subtask 1.5 SLWA will continue to host and maintain a website (<http://southllano.org/>) to serve as a public clearinghouse for all project- and watershed-related information. All presentations, documents and results will be posted to this website. The website will serve as a means to disseminate information to stakeholders and the general public. TWRI and TTU-LRFS shall contribute content matter for the website as appropriate.

The following actions have been completed during this reporting period:

- The SLWA website continues to be a resource for stakeholders in the watershed on land and water stewardship, hydrologic and weather conditions, latest news, upcoming events, community participation, and related topics. Specific topics this quarter included:

- Opening of paddling trail on April 14, 2012
 - Establishment of new USGS stream gage on South Llano
 - Announcement of Invasive Species Workshop on June 9, 2012
- b. This quarter (Apr-June 2012), a total of 673 unique visitors viewed the website.

20% Complete

Subtask 1.6 The Director of TTU-LRFS will serve as the Upper Llano River Watershed Coordinator and be responsible for the general oversight and coordination of all project activities, reporting requirements, and educational activities, and serve as the primary conduit for interaction with landowners, citizens, and entities to facilitate the development of the WPP. The Watershed Coordinator shall successfully complete (or have already completed) the Texas Watershed Planning Short Course and participate in Texas Watershed Coordinator Roundtables.

The following actions have been completed during this reporting period:

- a. The Director of the TTU-LRFS completed the Texas Watershed Planning Short Course on November 14-18, 2011.

100% Complete

Task 2 Quality Assurance

Subtask 2.1 TWRI will develop a QAPP for water quality monitoring activities in Tasks 4 and 5 and a QAPP for watershed modeling activities in Task 6 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.

The following actions have been completed during this reporting period:

- a. QAPP for Task 4 - GIS Inventory and Land Use/Land Cover Analysis
- TWRI submitted QAPP to the TSSWCB for review on March 7, 2012.
 - TWRI received EPA comments on June 7, 2012.
 - TWRI addressed EPA comments and resubmitted on June 17, 2012.
- b. QAPP for Task 5 - Water Quality Monitoring
- TTU-LRFS submitted QAPP to the TSSWCB for review on June 19, 2012.
- c. No activity to report this quarter on development of the QAPP for Task 6 watershed modeling activities.

50% Complete

Subtask 2.2 TWRI will implement the approved QAPPs. TWRI will submit revisions and necessary amendments to the QAPPs as needed.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Task 3 Public Participation and Stakeholder Coordination

Subtask 3.1 TTU-LRFS, with input from TWRI, SWLA, and Texas AgriLife Extension Service, will compile (Months 1-3) and maintain (Months 4-36) 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 SLWA. The database and stakeholder group 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 Director of the TTU-LRFS continued work on the database of watershed stakeholders and will provide it to the TSSWCB for review by July 13, 2012.

10% Complete

Subtask 3.2 TTU-LRFS will facilitate public participation and stakeholder involvement in the watershed planning process, specifically project meetings and activities. TTU-LRFS will coordinate meetings, secure meeting locations, prepare and disseminate meeting notices and agendas. Meeting summaries will be prepared and posted to the project website. It is anticipated that at a minimum, quarterly public meetings will be sufficient; however, if more meetings are deemed necessary, they will be scheduled accordingly. Meeting frequency may be adjusted throughout the course of the project to accomplish project goals. TSSWCB will review and approve all meeting notices, agendas, and meeting summaries prior to public dissemination.

The following actions have been completed during this reporting period:

- a. A draft timeline and meeting agendas for public meetings and steering committee meetings planned for the next 3 quarters drafted and submitted to TSSWCB for review on June 18, 2012.
- b. By July 6, TSSWCB will provide comments on the agenda for the first public meeting scheduled for August 14, 2012. This first public meeting is intended to inform the public of the WPP project and its timeline.
- c. Once the agenda for the public meeting is approved, a meeting notice will be drafted and submitted to TSSWCB the week of July 9-13 for review. Following TSSWCB approval, the meeting notice and agenda will be sent out the week of July 16.
- d. Future meetings tentatively planned are as follows:
 - Sep 2012 - Public meeting #2 to form Steering Committee
 - Dec 2012 - Steering Committee Meetings #1
 - Mar 2013 and thereafter - Quarterly Steering Committee Meetings

20% Complete

Subtask 3.3 TTU-LRFS 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:
 - SLWA Board meetings on April 19, May 17, and June 21.
 - SLWA Watershed Plan Advisory Committee on April 25. This 17 member committee, composed of the County Judge, local businessmen, local farmers and ranchers, a member of the Groundwater Conservation District, Texas Parks and Wildlife, and members of the SLWA, met to provide comment and input on the Alliance's Watershed Conservation Plan. The Watershed Conservation Plan will be finalized by the SLWA Board on July 19th, 2012. Some of the information available from the Conservation Plan has the potential to be used in the Watershed Protection Plan.
 - TPWD Habitat Conservation Staff Meeting in April 2012 to discuss the-- EPA Healthy Watersheds Initiative and development of the Upper Llano WPP.
 - 700 Springs Tour in April 2012
 - Neighbor Meeting Neighbor Landowner Appreciation Day at Texas A&M University System's Sonora/Rocksprings Texas Agrilife Research Station in April 2012.
 - Hill Country Land - Use Expo in Kerrville, Texas in May 2012
- b. TTU-LRFS and/or TWRI will meet with local SWCDs on August 8 to provide them an overview of the project, gather input, and encourage their participation in the project.

20% Complete

Subtask 3.4 TTU-LRFS will facilitate communication with stakeholders in order to engage the public and affected entities in the watershed planning process. TTU-LRFS will utilize all appropriate communication mechanisms including direct mail, e-mail, the project website, and mass media (print, radio, television). TTU-LRFS will utilize the existing SWLA Google Group to facilitate direct discussion between stakeholders. TTU-LRFS will develop, publish, and distribute 5 semi-annual newsletters (1 in year 1 and 2 in years 2 and 3) that highlight Upper Llano River watershed activities; the newsletter shall be distributed as most appropriate to individual landowners and entities in the watershed. TSSWCB must approve all project-related content in any educational materials and publications prior to distribution.

The following actions have been completed during this reporting period:

- a. The SLWA Google Groups "South Llano River Project" group continues to be an effective tool for communicating with stakeholders. Those interested can sign-up for the group at the SLWA website (<http://southllano.org/>). This quarter, this Google group has been used to transmit info on the Opening of the Paddling Trail, a new USGS Stream Gage, and other timely materials.
- b. Media mentions this quarter included:
 - Healthy Watersheds: Managing Natural Water Storage and Filtration Systems; Texas Public Radio; <http://www.tpr.org/programs/newsmakerhour.html>
 - Symposium Underscores Importance of Watershed Planning to Protect Texas Water for Future Generations; <http://www.hillcountryalliance.org/HCA/News022312>
 - Hill Country Alliance 60 second radio spot on the Llano River WPP.

20% Complete

Subtask 3.5 TTU-LRFS will coordinate with SCSC to host a Texas Watershed Steward Program workshop focused on the Upper Llano River through TSSWCB project 11-05, Continued Statewide Delivery of the Texas Watershed Steward Program.

The following actions have been completed during this reporting period:

- a. The Texas Watershed Steward Program is scheduled for August 30, 2012.

20% Complete

Task 4 GIS Inventory and Land Use/Land Cover Analysis

Subtask 4.1 TAMU-SSL will collaborate with project partners, local agencies and stakeholders to develop a comprehensive GIS inventory of the Upper Llano River watershed. This GIS inventory will include the most recent information available on land use, elevation, soils, stream networks, reservoirs, roads, public park lands, municipalities and satellite imagery or aerial photography. Locations of SWQM stations, USGS gages, public access points to the waterbodies, floodwater-retarding structures, wetlands, known OSSFs, TPDES permittees (including WWTFs, CAFOs and MS4s), and subdivisions will also be included. Sites permitted for land application of sewage sludge and septage should be included. Information from subtasks 5.4 and 5.5 should be included. The cumulative impact of TSSWCB-certified WQMPs on the management of agricultural and silvicultural lands should be documented. TAMU-SSL will provide watershed maps for stakeholder meetings as needed.

The following actions have been completed during this reporting period:

- a. Significant progress has been made on gathering existing GIS data for the watershed. Approximately 30 data layers have already been compiled.

50% Complete

Subtask 4.2 TAMU-SSL will perform a combination of satellite based image (2006-2010) classification schemes and where needed "heads-up digitizing" of the 2006-2010 NAIP aerial photos of the watershed using ESRI's ArcGIS 9.x software. TAMU-SSL will identify individual LULC classes and delineate them in shapefile or ArcGIS grid format with a minimum mapping unit of 2 ac on screen. LULC classes will be comparable to NLCD. TAMU-SSL will verify LULC classification through field sampling and ground truthing information to an accuracy of 80% or greater. Ground control points used in the field sampling will be collected for at least ten locations per land use type using GPS units with an accuracy of 1-10 m.

The following actions have been completed during this reporting period:

- a. The 2010 NAIP aerial photos (1 m resolution) have been acquired. Due to the drought last year, 2011 aerial photos were not acquired.
- b. Once the QAPP is approved, LULC classification will be completed. After the images are classified, post processing will be completed to display brush density and then accuracy assessments will be performed using field ground-truthing points.

10% Complete

Subtask 4.3 TAMU-SSL will provide the GIS inventory and LULC update to the TTU-WRC for utilization in the watershed model. TAMU-SSL will also provide TTU-LRFS needed maps for the WPP.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Task 5 Water Quality Monitoring

Subtask 5.1 TTU-LRFS will conduct routine ambient monitoring at 14 mainstem sites and tributaries quarterly, collecting field parameters, conventional parameters, and flow. The QAPP, as detailed in Task 2, will precisely identify sites. The sampling period extends over 30 months. The number of samples planned for collection through this subtask is 140. Currently, routine ambient monitoring is conducted quarterly at 2 stations by LCRA and TCEQ (16701 and 17425) through the Clean Rivers Program. Sampling will be coordinated with these entities to prevent duplication of efforts and ensure comparability. Flow data will be collected by gage, electric, mechanical or Doppler, and flow severity will be noted. Field parameters measured will include pH, temperature, conductivity, and dissolved oxygen. Conventional parameters measured will include total suspended solids, turbidity, sulfate, chloride, nitrate nitrogen, ammonia nitrogen, total kjeldahl nitrogen, chlorophyll a, pheophytin, total hardness, total phosphorus and E. coli (enumerated using USEPA Method 1603). The Edwards Aquifer Research & Data Center at Texas State University, a NELAC accredited laboratory, will conduct sample analysis, provide all containers and chain of custody.

The following actions have been completed during this reporting period:

- a. TTU-LRFS has identified the best locations for the 14 stream sampling sites for inclusion in the QAPP and coordinated with LCRA and TCEQ on this monitoring.
- b. Once the QAPP is approved, the first quarterly sampling is expected to be initiated this summer during the critical period.

0% Complete

Subtask 5.2 TTU-LRFS will conduct biological monitoring (fish, macroinvertebrate, and habitat assessment) at 14 locations twice a year for 2 years to assess the cumulative impact of pollutant loading on stream health and biological communities of stream health. Biotic conditions and assessments for main stem and lower portions of the watersheds are just beginning as part of the Guadalupe Bass Restoration Project for the South Llano River with TPWD in conjunction with TTU-LRFS and Texas State University.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter. Once the QAPP is approved, the first sampling is expected to be initiated this summer during the critical period.

0% Complete

Subtask 5.3 TTU-LRFS will conduct spring sampling at 6 sites including 700 Springs, Big Paint and Tanner Springs. TTU-LRFS will work with Kimble County Groundwater Conservation District to identify other priority springs. Quarterly field, conventional, and flow parameters will be collected. Water quality parameters to be measured are defined in Subtask 5.1. The QAPP, as detailed in Task 2, will precisely identify sites. The sampling period extends over 30 months. The number of samples planned for collection through this subtask is 60. The Edwards Aquifer Research & Data Center, a NELAC Accredited Laboratory, will conduct sample analysis and provide all containers and chain of custody.

The following actions have been completed during this reporting period:

- a. TTU-LRFS has identified the best locations for the 6 springs to be sampled for inclusion in the QAPP.

- b. Once the QAPP is approved, the first quarterly sampling is expected to be initiated this summer during the critical period

0% Complete

Subtask 5.4 TTU-LRFS will conduct surveys and map distribution and abundance of invasive emergent and aquatic plants from the headwaters (Llano Springs, 700 Springs, South Llano River and North Llano River) to Junction. TTU-LRFS and ESSM will work with the TPWD Aquatic Habitat Enhancement Program Director to determine BMPs for controlling or eradicating invasive species and develop an invasive species management plan for incorporation into the WPP.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter. Awaiting completion and approval of Monitoring QAPP.

0% Complete

Subtask 5.5 TTU-LRFS will conduct surveys and map the distribution, abundance, and severity of cut and eroding banks on the South and North Llano Rivers.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter. Awaiting completion and approval of Monitoring QAPP.

0% Complete

Subtask 5.6 TTU-LRFS will conduct a historical data review for the waterbody, to be included in the WPP, in order to assess and characterize trends and variability in water quality. Historical data collection activities will concentrate on 1) ambient water quality data (including groundwater); 2) stream flow and water level data; 3) precipitation records; and 4) biological data. U.S. Geological Survey, National Weather Service, TPWD, Texas Water Development Board, GCDs, LCRA, TCEQ, EPA and others will be queried for data related to the study area.

The following actions have been completed during this reporting period:

- a. TTU-LRFS has initiated the historical data review for the upper Llano River.

20% Complete

Subtask 5.7 Through TSSWCB project 05-02 FY05 Statewide NPS Pollution Management Project, USGS will install and operate one new real-time streamflow gage at an appropriate location on the South Llano River as near the outlet of the assessment unit as is practical. Through this project, and contingent upon TSSWCB project 05-02, TTU-LRFS will work with USGS to provide operation and maintenance for this new real-time streamflow gage. Continuous sampling extends over 36 months. This gaging station will complement the existing gages maintained by the USGS. The USGS maintains real-time gages at 08150000 Llano River near Junction and 08148500 North Llano River near Junction and collects periodic data at gages 08149500 Seven Hundred Springs near Telegraph and 08149400 South Llano River near Telegraph. TTU-LRFS will work with USGS to ensure continued operation of these other USGS gages throughout the duration of the project.

The following actions have been completed during this reporting period:

- a. The new USGS stream gage was activated on May 16, 2012 on the South Llano River at Flatrock Crossing near the Texas Tech Campus. The link to this new gage is now available on the SLWA website under Quick Links.

15% Complete

Subtask 5.8 TTU-LRFS will transfer monitoring data from activities in Subtask 5.1-5.3 and 5.7 to TSSWCB for inclusion in the TCEQ SWQMIS at least quarterly. Data will be transferred in the correct format using the TCEQ file structure, along with a completed Data Summary, as described in the most recent version of TCEQ Surface Water Quality Monitoring Data Management Reference Guide. TWRI will submit Station Location Requests to TCEQ, as needed, to obtain TCEQ station numbers for new monitoring sites. TWRI will input monitoring regime, as detailed in the QAPP, into the TCEQ CMS. Data Correction Request Forms will be submitted to TSSWCB whenever errors are discovered in data already reported. All monitoring data files, Data Summary, and Data Correction Request Forms will also be provided to LCRA. TTU-LRFS will post monitoring data from activities in Task 5 to the project website in a timely manner.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 5.9 TTU-LRFS, with assistance by TWRI, will incorporate the watershed assessment findings in the WPP developed through Task 8.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Task 6 Modeling and Data Analysis

Subtask 6.1 TTU-WRC, with cooperation from project partners, will evaluate models, such as SWAT and EDYS, to simulate flow and water quality at appropriate subwatershed scales and identify BMPs and targeted locations to enhance the quality of runoff and recharge. TTU-WRC will recommend the use of a suitable candidate model. Once the most suitable model is selected by TTU-WRC, TWRI, and TSSWCB, TTU-WRC will assist TWRI in developing a modeling QAPP (Task 2). TTU-WRC will collect and evaluate relevant hydrologic data for the Upper Llano River watershed, including rainfall, stream flow, and groundwater conditions, as well as recent land use and vegetation distributions generated through Tasks 4-5.

The following actions have been completed during this reporting period:

- a. The EDYS (Ecological Dynamics Simulation) model has been selected for use in the project.

5% Complete

Subtask 6.2 TTU-LRFS will employ EPA's Causal Analysis/Diagnosis Decision Information System (CADDIS) to conduct a causal evaluation of the benthic macroinvertebrate data. CADDIS, an online application, provides a pragmatic guide for determining the causes of detrimental changes and

undesirable biological conditions observed in aquatic systems. CADDIS supports defensible causal analyses of the mechanisms, symptoms, and stressor-response relationships for various stressors in order to draw appropriate conclusions.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 6.3 TTU-WRC, with cooperation from project partners, will summarize modeling findings to inform the stakeholders about the physical behavior of their watershed resulting from various implementation scenarios and work with project partners to incorporate this into the WPP.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Task 7 Public Outreach and Education

Subtask 7.1 ESSM, in conjunction with the TTU-LRFS, TTU-WRC, and SLWA will provide watershed training workshops for landowners on riparian protection, land stewardship, grazing management, invasive species, brush control, conservation, wildlife and habitat plans and water resource issues. Two workshops per year are planned to provide adequate coverage of the broad range of elements associated with water and watersheds and to allow a broad coverage of stakeholder groups. Pre- and post-participant surveys will be administered at selected events to evaluate (1) changes in producer knowledge and awareness and (2) expected adoption of BMPs.

The following actions have been completed during this reporting period:

- a. The TTU-LRFS, in conjunction with the Lady Bird Johnson Wildflower center, SLWA, Texas Parks and Wildlife Department, Texas Forest Service, and USDA-APHIS, hosted a workshop on “Helping Protect the South Llano River by STOPPING THE SPREAD OF INVASIVE PLANTS & PESTS” on June 9, 2012 from 9 am-4 pm.
- b. Delivery of the Texas Well Owner Network program has tentatively been planned for late Fall; however, delivery has not yet been scheduled.
- c. TWRI will also work with the Extension State Forage Specialist to coordinate delivery of the Lone Star Healthy Streams Program in the watershed as well.

20% Complete

Subtask 7.2 TTU-LRFS will develop and offer a K-12 TEKS based water and watershed curriculum unit. Students will understand the concepts of river basins and watersheds and be able to identify their river basin and local watershed. It is anticipated that about 90 ISDS and 7,500 K-12 students and teachers will receive watershed education and training over the 3 years of the project. TTU-LRFS will expand existing curriculum developed by the LRFS Outdoor School, an award winning, Texas High School Project recognized Exemplar Program (<http://www.depts.ttu.edu/hillcountry/OLC/index.php>). This program is a STEM No Child Left Behind standards-based transdisciplinary, inquiry-based, innovative curriculum that incorporates multiple best learning practices to improve instruction for at-risk students and provide

training for teachers. The Outdoor School incorporates GLOBE (Global Learning and Observations to Benefit the Environment, <http://globe.gov/>) training and protocols into the STEM curricular units. GLOBE is a federal K-12 environmental education program instituted by NASA, NOAA, and NSF. For this new curriculum unit we will use GLOBE Watershed Dynamics to enable students to investigate their own watershed in order to understand the flow of water through the watershed, how human activities within the watershed both depend on and impact its hydrology, and how land use changes can affect the plant and animal communities in the watershed. TTU-LRFS Outdoor School will also work with the TWDB Conservation Education Specialist to implement Major Rivers: A Texas Water Education Program. The curricular resources to develop this unit are free from GLOBE and TWDB.

The following actions have been completed during this reporting period:

- a. TTU-LRFS is currently evaluating established curriculums for use in achieving project objectives.

5% Complete

Subtask 7.3 TTU-LRFS will organize a Texas Water Symposium in partnership with Texas Public Radio, Schreiner University, Hill Country Alliance, SLWA, and TWRI on EPA's Healthy Watersheds Initiative with this project as a case study for Texas. The Symposium will be held at TTU- LRFS in front of a live audience and taped for broadcast during Texas Public Radio's Newsmaker Hour. TWS will include panelists from key stakeholder groups and cover the importance, process and benefits of WPPs.

The following actions have been completed during this reporting period:

- a. TTU-LRFS hosted a Texas Water Symposium on Healthy Watersheds and Upper Llano WPP efforts on March 22, 2011. The Symposium was held at TTU- LRFS in front of a live audience and taped for broadcast during Texas Public Radio's Newsmaker Hour. The TWS included panelists from TPWD, TSSWCB, Hill Country Alliance, TTU-LRFS, and TWRI.

100% Complete

Task 8 Watershed Protection Plan Development

Subtask 8.1 TTU-LRFS, in collaboration with project partners, will develop a WPP for the Upper Llano River watershed that is consistent with and satisfies the expectations of the nine elements fundamental to watershed-based plans as described in EPA's 2004 Nonpoint Source Program and Grants Guidelines for States and Territories [68 Fed. Reg. 60653-60674 (October 23, 2003)] and incorporates the elements of EPA's Healthy Watersheds Framework as described in the technical guidance document Identifying and Protecting Healthy Watersheds (EPA 2011). The WPP shall be founded on decisions made by stakeholders through the watershed planning process (Task 3) and incorporate findings from project Tasks 4-7. TTU-LRFS will facilitate public review and stakeholder approval of the WPP.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 8.2 TTU-LRFS will develop an "executive summary" style document, based on the WPP, which will serve as a public outreach tool to garner support for the implementation of the WPP and achieve long term sustainability.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 8.3 After EPA has completed a satisfactory nine element consistency review of the WPP, TWRI will publish, print, and distribute the WPP and "executive summary" document to stakeholders.

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

- N/A

IV. Projected Work for Next Quarter

- July 6 – TSSWCB provide comments on public meeting agenda
- July 13 – Finalize agenda, draft press release and send to TSSWCB for review (by July 17)
- July 13 – TTU provide stakeholder database to TSSWCB for review
- July 13 – Submit 3rd quarter QPR
- Week of July 16 – Send out press release and mail out letters/agenda
- August 8 – TTU-LRFS will meet with SWCDs
- August 14 – Public meeting
- August 14 – Quarterly project meeting & discussion on revisions to SLWA website
- August 30 – Texas Watershed Steward
- By August 31 – Complete first quarterly WQ sampling
- By August 31 - Finalize Monitoring QAPP
- TSSWCB & TTU-LRFS agreement on USGS gage maintenance
- Schedule needed workshops for coming year
- Begin work on first newsletter