

**Texas AgriLife Research
Texas Water Resources Institute**

**Water Quality Monitoring in the Buck Creek Watershed and Facilitation of Buck Creek
Watershed Partnership**

**FY 10 CWA 319(h)
TSSWCB Project No. 10-06**

Quarter no. 2 From 4.1.2011 Through 6.30.2011

I. Abstract

Work conducted this quarter has focused on initiating water quality monitoring. The first sampling event was scheduled and completed May, with monthly sampling scheduled thereafter. The project QAPP was approved on April 12, 2011 thus allowing work to commence on the project. The first in a series of semi-annual newsletters was developed and delivered to stakeholders in early June. The next meeting of the Buck Creek Watershed Partnership was scheduled and will take place next quarter.

II. Overall Progress and Results by Task

TASK 1: Project Coordination and 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 posted on the project website and distributed to all project partners.*

The following actions have been completed during this reporting period:

- a. Submitted Year 1, Quarter 2 report to TSSWCB on July 14, 2011.

25% 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 May 31, 2011, a total of \$16,902 or approximately 15% of project funding has been expended.

20% Complete

Subtask 1.3: *TWRI will host coordination meetings, conference calls, or TTVN meetings, as appropriate, with project partners in order to efficiently and effectively achieve project goals, coordinate efforts and summarize activities and achievements made throughout the course of this project. 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:

- a. Numerous phone calls have transpired discussing project related items to ensure that the project is on track.
- b. A project meeting will be held next quarter.

20% Complete

TASK 2: Quality Assurance Project Plan Development

Subtask 2.1: TWRI will develop a QAPP for activities in Task 3 consistent with 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. The QAPP was approved on April 12, 2011.

100% Complete

Subtask 2.2: TWRI will submit revisions and necessary amendments to the QAPP as needed.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

TASK 3: Water Quality Data Collection and Analysis

Subtask 3.1: AgriLife Vernon will conduct routine water quality monitoring collecting water samples, field parameters (DO, pH, temperature, specific conductance) and streamflow. Samples will be collected once monthly from 7 sampling sites in the Buck Creek watershed (Sites 3, 5, 6, 10A, 10C, 11, and 13). Total number of samples budgeted for collection through this subtask is 126; however, the number actually collected will likely be lower due to the ephemeral nature of the creek.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Subtask 3.2: AgriLife Vernon will conduct biased flow water quality monitoring collecting water samples, field parameters (DO, pH, temperature, specific conductance) and streamflow during 6 storm events. Samples will be collected from 7 sampling sites in the Buck Creek watershed (Sites 3, 5, 6, 10A, 10C, 11, and 13). Total number of samples budgeted for collection through this subtask is 42.

The following actions have been completed during this reporting period:

- a. The first scheduled sampling event occurred in May; results are shown in the table at the end of the report.

- b. All sites were dry during the scheduled June sampling event. No samples were taken.

10% Complete

Subtask 3.3: AgriLife Vernon will enumerate E. coli colonies in water samples collected in subtasks 3.1 and 3.2 using EPA Method 1603. E. coli counts will be recorded electronically and in hard copy format.

The following actions have been completed during this reporting period:

- a. Colonies were enumerated from the May samples and are recorded in the table at the end of this report.

10% Complete

Subtask 3.4: AgriLife Vernon will assess nitrate levels in water samples collected in subtasks 3.1 and 3.2 using EPA Method 353.2. Nitrate concentrations will be recorded electronically and in hard copy format.

The following actions have been completed during this reporting period:

- a. Nitrate levels were assessed in the May samples and are recorded in the table at the end of this report.

10% Complete

Subtask 3.5: AgriLife Vernon will record and store all water quality data in electronic and hard copy formats. TWRI will transfer quarterly monitoring data from activities in Task 3 to TSSWCB for inclusion in TCEQ SWQMIS. 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. Data Correction Request Forms will be submitted to TSSWCB whenever errors are discovered in data already reported. TWRI will also provide necessary information on this monitoring regime to RRA for inclusion in the Coordinated Monitoring Schedule.

The following actions have been completed during this reporting period:

- a. A Microsoft Access database has been built to store all data collected through this project and will be put into use in early July.

40% Complete

Subtask 3.6: AgriLife Vernon will develop a Technical Report that summarizes data collection and analysis results.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

TASK 4: Maintain Stakeholder Communication

Subtask 4.1: TWRI and AgriLife Vernon will collaborate to develop and publish 4 semi-annual newsletters that provide updates on water quality data collection efforts and progress toward implementing the WPP and other relevant information. The newsletter shall be distributed as most

appropriate to individual landowners and entities in the watershed.

The following actions have been completed during this reporting period:

- a. The first newsletter was published in early June and sent to watershed stakeholders via USPS and email.
- b. The newsletter is attached to this report.

25% Complete

Subtask 4.2: AgriLife Vernon or TWRI as appropriate will provide information to RRA for inclusion in the Clean Rivers Program Basin Summary Report and Basin Highlights Report. TWRI and/or AgriLife Vernon shall participate in RRA-sponsored meetings of the Clean Rivers Program Basin Steering Committee and Coordinated Monitoring meetings.

The following actions have been completed during this reporting period:

- a. No new activity to report this quarter.

20% Complete

Subtask 4.3: TWRI will ensure that the currently existing Buck Creek website (<http://buckcreek.tamu.edu/>) will be updated periodically to reflect accurate and current information regarding the project, WPP, implementation and other activities.

The following actions have been completed during this reporting period:

- a. TWRI continues to maintain and update the project website.
- b. This quarter the website received 79 visits with 76% of those being new visits

85% Complete

Subtask 4.4: TWRI and AgriLife Vernon will host and facilitate meetings of the Buck Creek stakeholders. Meetings will be held at a minimum of once annually for a total of 2 planned meetings. These meetings will be held to provide updates on the status of monitoring efforts, progress in identifying implementation funding, and movement towards water quality restoration.

The following actions have been completed during this reporting period:

- a. The next stakeholder meeting has been planned for August 25th in Wellington.

10% Complete

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

- Exceptional drought and irrigation within the watershed have led to the creek largely drying up except for isolated areas. As such, sampling will be largely hampered.

IV. Projected Work for Next Quarter

The following will be accomplished during the coming quarter:

- a. Continue sampling as planned.
- b. Host stakeholder meeting August 25th in Wellington.
- c. Implement new Buck Creek database for project specific data management.

May Sampling Event Results

Site; Location; County	Number of <i>E. coli</i> Colony Forming Units:	Nitrates PPM:	Flow Rate: Cubic Feet /Second
03- County Rd 40 Collingsworth	NST- (no sample taken) no flow	-	-
05- State HWY 1056	NST- no flow	-	-
06- CR 110 Collingsworth County	NST- dry	-	-
10A- SH 256, Childress County	293	4.74	.9453
10C-SH 256, Childress County	11	3.85	2.1046
11- Hwy 83,	42	1.59	n/a
13- CR 18, Childress County	NST- dry	-	-

Buck Creek Watershed Partnership

Spring 2011 Newsletter
<http://buckcreek.tamu.edu>

Buck Creek Monitoring to Resume

Regular monthly water quality monitoring will begin again through a new project funded through the Texas State Soil and Water Conservation Board (TSSWCB) and U.S. Environmental Protection Agency (EPA). Previous monitoring efforts ceased almost two years ago and have not been conducted since due to the funds being spent. This new monitoring project will provide additional data to document improved water quality in the creek during implementation of the watershed protection plan (WPP), and it will also provide needed information regarding the distribution and loading of nitrates into Buck Creek. Monitoring will be conducted at seven locations as listed in the table below.

Site	Location	County
3	CR 40	Collingsworth
5	SH 1056	Collingsworth
6	CR 110	Collingsworth
10A	Hwy 256	Childress
10C	Hwy 256	Childress
11	US 83	Childress
13	CR 19	Childress

Environmental Soil Scientist Dr. Paul DeLaune of Texas AgriLife Research and Extension Center at Vernon will lead the continued monitoring effort, assisted by Phyllis Dyer, the Buck Creek watershed coordinator. "We think it is important to add Site 13 back into the monitoring regime as it provides needed information to quantify the impacts of what upstream watershed management will have on downstream water quality," Phyllis said.

Stakeholder engagement will be a critical part of this project as well. There has been a lull in stakeholder meetings and engagement that this project will remedy. Four additional stakeholder meetings will be held with the first planned for August 25, 2011.



Developing a Buck Creek Watershed Partnership Logo

Logos are a great way to provide identity to a company, a product, or even an organization and could be beneficial to the Buck Creek Watershed Partnership. There are several accomplished artists among you, so we would like you to send us your ideas or even a mock-up of what you think a logo for the Buck Creek Watershed Partnership should look like. If you are interested in submitting a symbol for the group to choose from, please do so at your earliest convenience by e-mailing your ideas to Phyllis (pmdyer@ag.tamu.edu). *(continued on page 2)*

Logo (continued)

All artwork will be voted on by the group during a future meeting. If you would like to peruse some artwork used by other stakeholders groups, you may find several examples in past editions of *txH2O*, *New Waves*, and the *Texas Water Journal*; all can be found at <http://www.twri.tamu.edu>.

Buck Creek Stakeholders Highlighted

Buck Creek stakeholders Burl and Mary Brim were featured in an article entitled 'Stakeholders (that's you!) hold the key to improving Texas water.' This article was published in the Winter 2011 edition of *txH2O*, a triannual publication of the Texas Water Resources Institute. Copies of this issue of *txH2O* will be provided at the upcoming Partnership meetings and can be accessed online at <http://twri.tamu.edu/txh2o>.

In developing this article, various watershed coordinators were asked: "If you were to choose someone that epitomizes watershed stewardship, who comes to your mind?" When Buck Creek Watershed Coordinator Phyllis Dyer was asked that question, she didn't take more than a few seconds to answer: "Burl and Mary Brim." But, Phyllis didn't know the extent to which the Brim's have taken their stewardship of the property on Buck Creek. "The article is really worth your time and illustrates how stakeholders can and do make a difference in local efforts to restore and or protect water quality," she said.



Mary and Burl Brim

Cooperative Effort Removes Feral Hogs

Eleven people from the U.S. Department of Agriculture – Animal and Plant Health Inspection Service (APHIS) and Texas AgriLife Research at Vernon gathered for a cooperative feral hog hunt that helped control the local feral hog population in the Buck Creek watershed. Local county animal removal officials partnered with APHIS personnel from Canyon, Austin and San Angelo to conduct aerial feral hog control. Texas AgriLife Research personnel collected fecal samples to add to the growing Texas *E. coli* bacterial source tracking (BST) Library housed at Texas AgriLife Research in El Paso. APHIS staff took blood and tissue samples for research on diseases and pathogens that the hogs may harbor.



The Buck Creek Watershed Coordinator and APHIS received permission from many landowners in the watershed to hunt an area that covered more than 30,000 acres. "This cooperative was a win-win for both groups, which have tried to combine efforts for more than two years now," Phyllis said. APHIS provided some funding for the hunt and TSSWCB provided funds for bacteria source tracking. "Cooperatives such as this are a great use of resources and result in the collection of data that otherwise would have been difficult to obtain," said Buck Creek Project Manager, Lucas Gregory, of the Texas Water Resources Institute.



Both groups found signs of feral hogs rooting around, in and burrowing underneath brush piles for shelter. Brush piles on three ranches were found to have burrows under them that were being used by feral hogs. While brush piles are great habitat for more desirable wildlife species, you should consider the prompt removal of these piles to prevent this from happening on your property. At the very minimum, these piles may present a good avenue to trap or snare feral hogs using them as shelter.

Feral Hogs: What Can You Do?

While there are several new approaches to feral hog control on the horizon, trapping, shooting, snaring and catching them with dogs are about the only viable options that currently exist. Aerial gunning is one means to shoot a lot of hogs fast, but can be costly as permits are currently required from the Texas Parks and Wildlife Department. New

state legislation (House Bill 716) has been passed by the Texas House and Senate during this year's legislative session and was sent to the Governor on May 20. This legislation will ease requirements for aerial gunning and open the door for landowners to actually recoup some of the associated costs.

While we wait for changes to happen to allow for other means of feral hog control, trapping is one way that landowners can recover some costs incurred from feral hog damage. Once trapped, feral hogs can be taken to a holding facility and sold. Prices vary depending on the size of feral hog sold, but can be quite substantial for larger animals. Facilities currently operate in and around the watershed including locations in Chillicothe, Paducah, Quannah, Turkey and Wellington. A complete list of approved holding facilities can be found online at http://www.tahc.state.tx.us/animal_health/feral_swine.html while additional feral hog information can be found at <http://feralhogs.tamu.edu>.

Update on the Buck Creek WPP

The review of the Buck Creek WPP is nearing completion. Once comments from TSSWCB have been received, AgriLife Research and the Texas Water Resources Institute personnel will work to address comments quickly and get the revised draft document out to partnership members for your review prior to the next Buck Creek Watershed Partnership meeting. The WPP will be the primary topic of discussion at this upcoming meeting scheduled for August 25, 2011. An electronic copy of the WPP will be e-mailed to everyone in the partnership and printed copies can be requested from Phyllis at 940-552-9941 x 247.

Buck Creek Water Quality Improvements a Success

As previously discussed in an earlier newsletter, Buck Creek has been recommended for removal from the Texas Commission on Environmental Quality's (TCEQ) 2010 Integrated Report. This report is still in the process of being reviewed by EPA, and Buck Creek won't be officially considered unimpaired until this review has been completed and EPA agrees with TCEQ's recommendation.

A success story is currently being drafted to illustrate the progress made through the development of the Buck Creek WPP and best management practice implementation that ensued. Once developed, this story will be sent to EPA's Regional office in Dallas for review and inclusion in the national list of Section 319 Non-point Source Success Stories. To see other similar success stories from around the state and nation, log onto <http://water.epa.gov/polwaste/nps/success319/>.

Next Partnership Meeting Set

The next meeting of the Buck Creek Watershed Partnership has been scheduled for August 25, 2011. It will be held in Wellington at the Club Room of the Wellington Auditorium, 802 10th St. from 6:30 to 8:30 p.m. Doors will open at 6 p.m. and refreshments will be available. At this meeting, the WPP will be discussed in detail along with a brief overview of the new monitoring project that is now underway.

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