I. Abstract

A planning meeting between TCE Specialists, TCE Agents, TWRI, and the Watershed Coordinator has conducted on April 16. Following this meeting, educational and outreach efforts were initiated. This quarter, 25 participants in the Nueces/San Patricio Counties 2007 Advanced Beef, Pasture and Range Short Course held in Corpus Christi and 32 participants in the Bee/Goliad/Refugio Counties 2007 Advanced Beef, Pasture and Range Short Course held at Blanconia were provided information on grazing strategies to improve water quality and water use efficiency. Another 60 people were provided with information on feral hog management options at the San Patricio County Crop Tour. TCE accepted applications for the Extension Assistant position and conducted two series of interviews. The Extension Assistant is expected to be on board by next quarter and begin working on development of a bacterial education program for horse owners and assisting with county education and outreach programs.

II. Overall Progress and Results by Task

TASK 1: Project Coordination and Administration

Subtask 1.1: Conduct quarterly TTVN meetings as appropriate with project participants to discuss project activities, project schedule, lines of responsibility, communication needs, and other requirements.

The following actions have been completed during this reporting period:

a. On April 16, 2007, a Project Coordination Meeting was held at the Welder Wildlife Refuge to discuss a strategy for carrying out education and outreach programs in the Copano Bay watershed. TCE County Extension Agents and TCE Specialists, TWRI, TSSWCB, and the Watershed Coordinator (funded by TCEQ under another CWA 319 grant) participated in this meeting (see picture on following page).

17% Complete
April 16th Project Coordination Meeting Participants included (from left to right) Liz Smith, Donnie Montemayor, Joe Paschal, Wayne Hanselka, Larry Redmon, Aaron Wendt, Terry Blankenship, Darrell Dromgoole, and others (not shown).

Subtask 1.2: TWRI will prepare electronic quarterly reports and submit them to the TSSWCB. All progress reports will also be provided to all project participants and placed on the project website maintained by TWRI.

The following actions have been completed during this reporting period:
  a. TWRI submitted Year 1, Quarter 2 Progress Report on July 16, 2007.  
    17% Complete

Subtask 1.3: Representatives from TWRI will attend meetings with the TSSWCB project manager and other meetings, as needed, to review project status, deliverables, etc.

The following actions have been completed during this reporting period:
  a. TSSWCB participated in the April 16, 2007 Coordination Meeting and was brought up to date on project activities at that time. 
    17% Complete
Subtask 1.4: TWRI will submit appropriate Reimbursement Forms.

The following actions have been completed during this reporting period:
  a. A budget amendment was approved by the TSSWCB allowing the purchase of the GPS collars.
  b. An invoice was submitted to the TSSWCB on May 30, 2007.

17% Complete

Subtask 1.5: TWRI will develop (Months 1-3), host and maintain (Months 3-36) an internet website for the dissemination of information on educational, monitoring and demonstration activities taking place across the Copano Bay watershed.

The following actions have been completed during this reporting period:
  a. Work has been initiated to develop an internet website for the project. The shell for the project website can be found at the following address: http://twri-dev.tamu.edu/copanobay/.

8% Complete

Subtask 1.6: TWRI and TCE will develop a final project report and submit to TSSWCB.

The following actions have been completed during this reporting period:
  a. No activity.

0% Complete

TASK 2: Compile Existing Information

Subtask 2.1: TCE will hire an Extension Assistant to compile existing information, develop education curriculum, and lead all outreach and education program efforts.

The following actions have been completed during this reporting period:
  a. TCE has conducted interviews and plans to have the Extension Assistant on board next quarter.

50% Complete

Subtask 2.2: TCE will assemble and assess existing data on livestock, deer, and feral hog numbers and distribution in the watershed.

The following actions have been completed during this reporting period:
  a. TCE has assembled existing data on livestock, deer, and feral hog numbers and distribution in the watershed and continues to assess the data.

50% Complete
Subtask 2.3: TCE will investigate published bacteria loading coefficients from cattle and other livestock to determine the most appropriate coefficients for use in the Copano Bay watershed.

The following actions have been completed during this reporting period:
   a. TCE has investigated published bacteria loading coefficients from cattle and other livestock and continues to assess this information to determine the most appropriate coefficients for use in the Copano Bay watershed.

   50% Complete

Subtask 2.4: TCE will perform a comparison of the bacteria levels present in Copano Bay to other coastal areas in Texas to evaluate the most realistic endpoint.

The following actions have been completed during this reporting period:
   a. TCE has gathered information on the bacteria levels present in Copano Bay and other coastal areas in Texas and continues to evaluate this data to assess similarities and disparities and determine a realistic endpoint for the Bay based on this evaluation.

   35% Complete

Subtask 2.5: TCE will perform an evaluation of the historical bacterial levels in Copano Bay to assess any potential trends or changes that have occurred.

The following actions have been completed during this reporting period:
   a. No activity.

   0% Complete

TASK 3: Develop Bacterial Education Programs for Horse Owners

Subtask 3.1: The TCE Extension Assistant will conduct a review of the literature to determine the state of current knowledge regarding the effects of horses on bacterial levels in water bodies and BMPs designed to minimize these impacts. TCE will assess and inventory education/training materials within TCE and related materials developed through similar efforts in other states addressing bacteria from horses.

The following actions have been completed during this reporting period:
   a. A review of the existing literature has been initiated; however, there is little literature available on this subject. Once the Extension Assistant is hired, work will proceed on this task.

   8% Complete
Subtask 3.2: TCE will facilitate the modification necessary to integrate existing materials from subtask 3.1 above into the education program.

The following actions have been completed during this reporting period:
   a. No activity. Once the Extension Assistant is hired, work will begin.

   0% Complete

Subtask 3.3: TCE will develop a core horse management educational component that provides producers with state-of-the-art production technology training on fundamental BMPs and strategies which can be employed to protect and conserve water resources from bacterial and other NPS contamination originating from horse operations.

The following actions have been completed during this reporting period:
   a. No activity. Once the Extension Assistant is hired, work will begin.

   0% Complete

Subtask 3.4: TCE will integrate and coordinate the horse management educational program with the proposed FY06 projects, Lone Star Healthy Streams Program and Educational Programs Focused on Fecal Coliform Bacteria and Nutrient Runoff on Dairy Operations in the Leon Watershed, to provide the state with a comprehensive program for addressing bacteria from the major sectors of agriculture.

The following actions have been completed during this reporting period:
   a. No activity. Once the Extension Assistant is hired, work will begin.

   0% Complete

Subtask 3.5: TCE will develop and provide a certificate of completion, or other appropriate mechanism which enables individuals to take credit for participation in the education and training program.

The following actions have been completed during this reporting period:
   a. No activity. Once the Extension Assistant is hired, work will begin.

   0% Complete
TASK 4: Education and Outreach

Subtask 4.1: TCE will conduct educational and outreach programs in the Copano Bay watershed. TCE will coordinate with local SWCDs, TAES, NRCS, and others to deliver and evaluate the educational program. Specific educational programs to be delivered include:

- Urban Rancher Programs for small landowners
- Lone Star Healthy Stream Programs for cattlemen
- Wildlife management programs for landowners
- Horse management curriculum developed through this project for horse owners
- General water quality education for the general public

The following actions have been completed during this reporting period:

a. At the Nueces/San Patricio Counties 2007 Advanced Beef, Pasture and Range Short Course held in Corpus Christi on April 24th, “Grazing Strategies in Improve Water Quality and Water Use Efficiency” was presented by Dr. Wayne Hanselka to the approximately 25 producers and guests in attendance.
b. The San Patricio County Extension Agent met with local SWCD Board on May 15 to discuss emerging issues and educational programs.
c. The Bee, Goliad and Refugio Counties hosted the 2007 Advanced Beef, Pasture and Range Short Course was held at Blanconia on May 16th with 32 producers and guests in attendance.
d. On May 24, San Patricio County TCE sponsored a Water Testing Program which checked water quality in 48 samples collected from irrigation and domestic wells.
e. On June 19, “Six Layers of Landscape Design” was presented to 28 persons from Aransas County. Participants received information on proper landscape design which provides for a fully functional and beautiful landscape while reducing the need for additional fertilizers and pesticides. The link between use of native and adaptive habitat and improved water quality in the bays was emphasized.
f. On June 19, a Homeowner's Composting & Irrigation Workshop was also conducted in Aransas County. The 25 participants received compost bins and irrigation audit kits and learned: (1) How proper composting can reduce need for additional fertilizers; (2) How to conduct an irrigation audit to reduce the amount of water used on their lawns; and (3) How runoff pollution from homeowners affect water quality in the bays (reduced oxygen levels, increased bacterial loads, increased sediment, etc.).

17% Complete
Subtask 4.2: TCE will conduct result demonstrations and associated Ag Tours to show changes in livestock behavior and estimated reductions in bacterial runoff resulting from implementation of various value-added BMPs to area landowners and producers. GPS collars will be used to track livestock movement in correspondence with implementation of various BMPs to demonstrate changes in livestock behavior.

The following actions have been completed during this reporting period:

a. GPS collars were ordered to track livestock movement in correspondence with implementation of various BMPs. The collars are expected to arrive next quarter. The TCE Extension Assistant will assist with this evaluation.

b. At the San Patricio County Crop Tour on June 6, the 60 in attendance were provided a presentation on Feral Hog Management Options by Dr. Jim Gallagher.

c. A Pasture Weed Control Demonstration was implemented on Welder Wildlife Refuge on April 3. Fourteen herbicide treatments were applied to evaluate their performance at controlling weeds and promoting a healthy turf, which promotes healthy streams.

d. Mesquite and Huisache Control Demonstrations were implemented on Welder Wildlife Refuge on June 27 to evaluate herbicide treatments in controlling these invasive brush species and supporting the production of a healthy turf which promotes healthy streams.

17% Complete

Subtask 4.3: TCE will provide one-on-one assistance to landowners and producers on water quality issues and measures for improving them. When appropriate, TCE will facilitate communication between landowners and local soil and water conservation districts and the NRCS to encourage conservation plan development and participation in available cost-share programs.

The following actions have been completed during this reporting period:

a. The San Patricio County Extension Agent conducted two consultations with clients during the month of June occurred regarding methods to maintain good quality water for small fish ponds as it related to use of herbicides to control aquatic weeds.

b. In June the Refugio County Extension Agent met with 2 small land owners to discuss water drainage concerns in the Bayside area.

c. The Refugio County Extension Agent assisted 5 residents with water quality testing in the watershed area through the Texas A&M Lab, Nueces County Health Lab, and the Jordan Lab located in Corpus Christi.

17% Complete
Subtask 4.4: TCE will distribute educational material and publications to landowners in the watershed through BMP exhibits, county programs, Ag Tours, and other educational programs.

The following actions have been completed during this reporting period:
  a. Sixty publications of the “Landowners’ Guide for Successful Feral Hog Control” were distributed at the San Patricio County Crop Tour on June 6.

17% Complete

Subtask 4.5: TCE will utilize local media to promote events, and publications to promote various BMPs to landowners and natural resource professionals.

The following actions have been completed during this reporting period:
  a. No activity.

0% Complete

Subtask 4.6: Utilizing participants’ surveys, TCE will evaluate changes in producer knowledge and awareness of important production and environmental issues.

The following actions have been completed during this reporting period:
  a. At the Nueces/San Patricio Counties 2007 Advanced Beef, Pasture and Range Short Course held in Corpus Christi on April 24th, there were 24 evaluations returned (96.0% response rate) as follows:
    • A total of 9 questions were asked for Knowledge Change. Four related to range management (watershed quality enhancement) and five to beef cattle management.
    • The range management questions evaluated the change in knowledge for both livestock and land requirements, the planning process for developing a grazing strategy, the factors involved in developing grazing management strategies, and the importance of decision making on the performance of grazing lands and animals. The changes in knowledge for these were 32.7, 46.8, 53.1, and 30.9%, respectively. Overall Knowledge Change averaged 70.3%. All of the knowledge changes were significant.
    • A total of 8 questions were asked in Intention to Adopt. Three were related to range management and five were related to beef production. The responses of interest were: Probably Will and Definitely Will since these indicate willingness to adopt and a high likelihood of adoption. Adopted Already were also evaluated to determine if low willingness was due to prior adoption of the recommended practice.
    • The range management questions asked about intention to adopt practices utilizing knowledge of livestock and land requirements, knowledge of planning processes in developing grazing strategies, and knowledge of the factors involved in developing grazing strategies. These practices Probably Will or Definitely Will be adopted by 91.3, 87.0, and 78.3% of the respondents.
• These practices had already been adopted by 4.3, 8.7, and 8.7%. Only 4.4, 4.3 and 13.0% remain undecided for adoption of practices utilizing knowledge of livestock and land requirements, knowledge of planning processes in developing grazing strategies, and knowledge of the factors involved in developing grazing strategies.

• Overall Adoption or Potential to Adopt for all topics averaged 68.0%. A total of 100% indicated the information presented will help them make more informed decisions.

• The average ranch size was 635 acres (20 - 2000+ acres) with an average cowherd size of 73 cows (21 - 240 cows).

b. At the 2007 Advanced Beef, Pasture and Range Short Course was held at Blanco on May 16th there were 17 evaluations returned (53.1 % response rate) as follows:

• A total of 9 questions were asked for Knowledge Change. Four related to range management and five to beef cattle management.

• The range management questions evaluated the change in knowledge for both livestock and land requirements, the planning process for developing a grazing strategy, the factors involved in developing grazing management strategies, and the importance of decision making on the performance of grazing lands and animals. The changes in knowledge for these were 29.9, 30.4, 40.8, and 28.0%, respectively. All of the knowledge changes were significant.

• A total of 8 questions were asked in Intention to Adopt. Three were related to range management and five were related to beef production. The responses of interest were: Probably Will and Definitely Will since these indicate willingness to adopt and a high likelihood of adoption. Adopted Already were also evaluated to determine if low willingness was due to prior adoption of the recommended practice.

• The range management questions asked about intention to adopt practices utilizing knowledge of livestock and land requirements, knowledge of planning processes in developing grazing strategies, and knowledge of the factors involved in developing grazing strategies. These practices Probably Will or Definitely Will be adopted by 62.5, 56.3, and 75.0% of the respondents.

• These practices had already been adopted by 25.0, 37.5, and 25.0%, so only 12.5 and 6.2% indicated they probably would not adopt the first two practices (the last practice had already been adopted or would be adopted by everyone).

• Overall Adoption or Potential to Adopt for all topics averaged 72.9%. A total of 100% of the attendees indicated that the information presented would help them make more informed decisions.

• The average size ranch was 1177 acres (60- 4000 acres) and the average cowherd size was 130 cows (9 - 400 cows).

0% Complete
III. Related Issues/Current Problems and Favorable of Unusual Developments

- As a result of the tight job market, it has been difficult to find suitable applicants for the Extension Assistant position. This has caused a minor delay in the hiring of the Extension Assistant.
- Dr. Darrell Dromgoole, district Extension administrator in District 11 (Corpus Christi) and Project Co-PI, will move to the North Region, where he will be based in Lubbock to replace Bob Robinson as regional program director for agriculture and natural resources.
- Mr. Jeffrey Ripley, Travis County Extension director, will become the district Extension administrator for District 11. Mr. Ripley will be briefed of the project when he comes on board.

IV. Projected Work for Next Quarter

- TWRI will prepare and submit the Year 1, Quarter 3 Progress Report.
- The Extension Assistant Position will be filled.
- Existing data on livestock, deer, and feral hog numbers and distribution in the watershed will continue to be assessed.
- Published bacteria loading coefficients from cattle and other livestock will continue to be assessed to determine the most appropriate coefficients for use in the Copano Bay watershed.
- Information on the bacteria levels present in Copano Bay and other coastal areas in Texas will continue to be evaluated to assess similarities and disparities and determine a realistic endpoint for the Bay.
- Review of existing literature and training programs will continue and the development of an education program will be initiated.