LCRA LAND STEWARDSHIP
"CREEKSIDE CONSERVATION" PROGRAM

Final Report
TSSWCB Project 07-05

Prepared By:
Lower Colorado River Authority

Funding provided through a Clean Water Act §319(h) Nonpoint Source Grant from the Texas State Soil and Water Conservation Board and the U.S. Environmental Protection Agency

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ACKNOWLEDGEMENTS

This report highlights the soil and water conservation benefits the federal Clean Water Act (CWA) §319(h)Nonpoint Source grant provided by the Texas State Soil and Water Conservation Board and the U.S Environmental Protection Agency to the lower Colorado River basin of Texas, and recognizes the conservation partnerships that made this project a success.

Special acknowledgement is given to the landowners who invested time and resources in the interest of land stewardship, to the U.S. Environmental Protection Agency and the Texas State Soil and Water Conservation Board for providing support to this partnership, and to the following organizations and staff for providing an invaluable service in the interest of land stewardship.

- Soil and Water Conservation District (SWCD) Boards of Directors and staff in project region
- Texas AgriLife Extension Service
- Texas State Soil and Water Conservation Board (TSSWCB) Board of Directors, Management and Staff
- USDA Agricultural Research Service (ARS)
- USDA Natural Resources Conservation Service (NRCS)

EXECUTIVE SUMMARY

This project consisted of the TSSWCB working cooperatively with the LCRA, SWCDs, NRCS and ARS to provide technical assistance, education and cost-share incentives for landowners to plan and implement soil and water conservation Best Management Practices (BMPs) on private land. Through this project, 55 comprehensive conservation plans of operation were developed for over 43,000 acres of private land with the collective purpose of reducing sedimentation and agricultural nonpoint source pollution throughout the Colorado River basin area of Bastrop, Blanco, Burnet, Colorado, Fayette, Lampasas, Llano, Matagorda, San Saba, Travis and Wharton Counties.

As part of a continually improving process, LCRA solicited the guidance of NRCS and ARS to estimate sediment load reductions resulting from implementation of conservation practices and evaluating the effectiveness of the project. Based on the findings of the Rangeland Hydrology Erosion Model (RHEM) data, this project achieved an estimated **46,951 tons of sediment load reduction**.

Education and outreach is vital to instill a land stewardship ethic for long-term soil and water conservation. This project provided the technology transfer impetus for delivering a positive land conservation message. Education and outreach activities associated with this project included the following:

- 12 project site tours
- 22 public presentations
- 500 LCRA Creekside Conservation Program brochures distributed
- 1000 range management sticks distributed
- 2 Grant participant feature stories in newspapers and other publications
- 1 magazine article
- 24 newspaper articles/releases
- 40 “Conservation Partner” gate signs distributed

INTRODUCTION

The Lower Colorado River Authority (LCRA) was created in 1934 as a Texas conservation and reclamation district. The Enabling Legislation directs LCRA to "…prevent and aid in the prevention of soil erosion." As manager and protector of the region's main source of water, LCRA continues to encourage landowners in the lower Colorado River basin to practice soil and water conservation.

LCRA began the Creekside Conservation Program in 1990 after a study determined that reducing sedimentation could be the cost-effective way to lengthen the lives of the Highland Lakes reservoirs and protect aquatic resources throughout the lower Colorado River basin of Texas. The resulting partnership between LCRA, private land owners, NRCS and local SWCDs provides a cost-share incentive for projects that help retain soil and enhance productivity on privately owned land. Through the program, NRCS field staff work with landowners to implement conservation plans that improve the condition of their land according to NRCS technical guidelines, thereby increasing the land's hydrologic function.

This §319(h) project focused on the Colorado River basin area of LCRA's eleven statutory counties including Bastrop, Blanco, Burnet, Colorado, Fayette, Lampasas, Llano, Matagorda, San Saba, Travis and Wharton. In these counties, landowners were provided technical and financial assistance to develop and implement 55 conservation plans of operation. See figure 1.

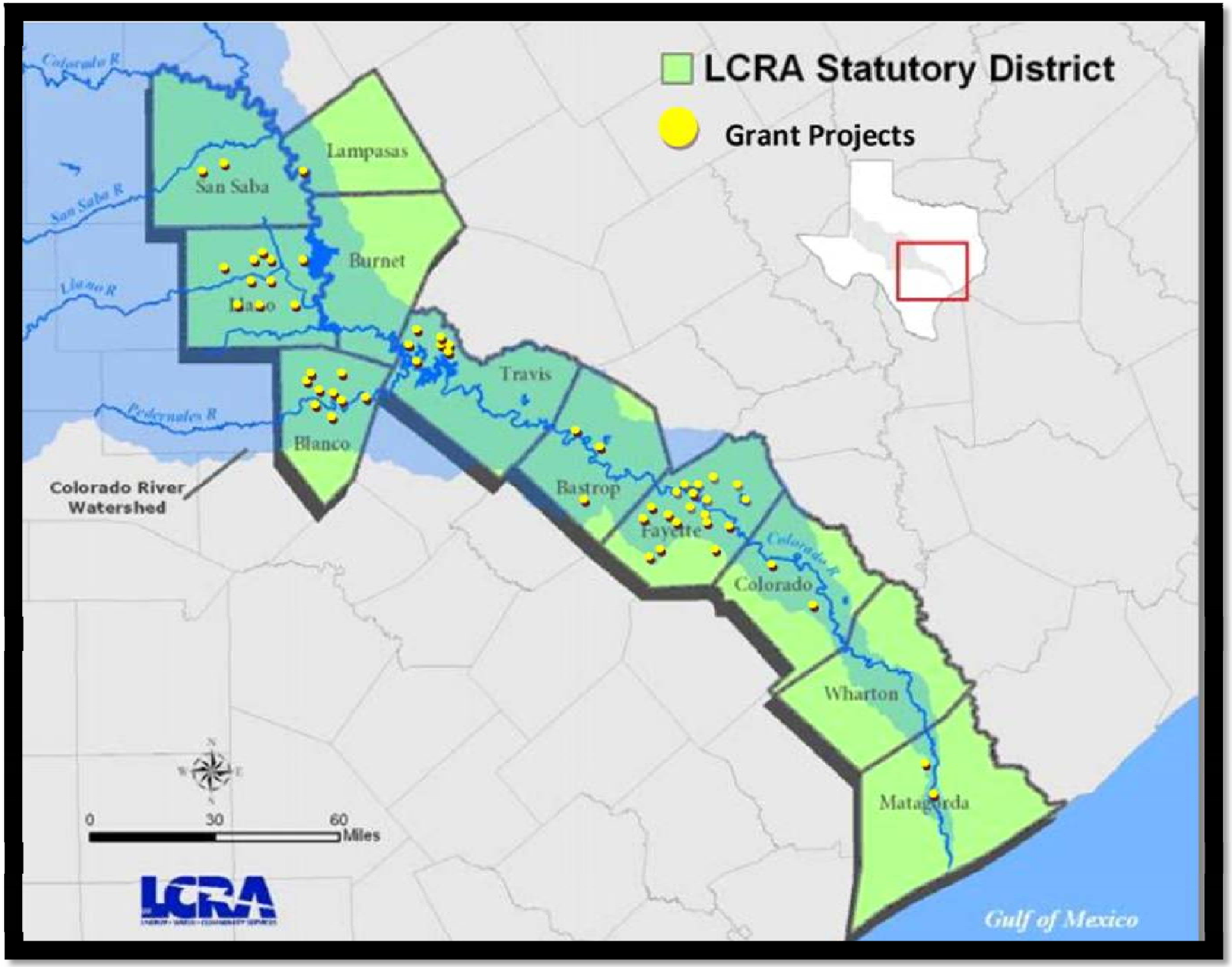


Figure 1 LCRA Statutory Counties and Grant Projects

IMPLEMENTATION

LCRA project coordinators worked with SWCD and NRCS personnel to develop conservation plans for private landowners across the project region. NRCS provided the technical assistance necessary to compile and execute project plans, and conducted follow up certification and evaluation of project success. Local SWCD's provided a place for project participants to sign up for the program, and to get technical assistance as well and education and outreach materials. The following is an overview of the process used throughout the duration of the project.

A. Project Solicitation: LCRA worked with NRCS and local SWCDs to promote the project through news releases, feature stories, workshops, field days and presentations before various civic groups.

B. Application Process: Individuals Interested in participating in the project applied with the NRCS/SWCD office in their respective county. An applicant log was maintained at each NRCS/SWCD office in the eligible counties, and a master log was maintained by LCRA.

C. Determining Eligibility: NRCS conducted field work to determine if proposed conservation practices met NRCS and LCRA guidelines for approval. If requirements were met, then NRCS proceeded with conservation planning.

D. Planning and Implementation: NRCS developed Comprehensive Plans of Operation, compiled plan folders and provided copies to producers and LCRA. These folders contained maps, schedules, and contractual documents.

E. Project Certification and Payment: Upon project completion, NRCS field staff conducted certification procedures, insuring that completed projects met NRCS technical guidelines. LCRA would then provide cost-share reimbursement for the completed project.

F. Follow-up Monitoring: LCRA and NRCS staff routinely conducted photo tours of project sites to document progress before, during and after treatment. Each contract stipulated a period of three years in order to allow for longer term follow-up activities.

Comprehensive management plans were written to encompass the land unit as a whole, with the collective purpose of:

- Improving water quality
- Controlling erosion
- Restoring natural resource community balance
- Creating the desired plant community
- Restoring desired vegetative cover to protect soils
- Reducing sedimentation
- Enhancing stream flow
- Maintaining and/or enhancing wildlife habitat including that associated with threatened and endangered species
- Improving forage accessibility, quality and quantity for livestock

Practices implemented through the project included the following:

- Grade Stabilization Structures
- Pond Construction
- Critical Area Shaping and Planting
- Range and Pasture Planting
- Watering Facility Installation (Pipeline, Trough, Well)
- Cross Fencing
- Prescribed Grazing
- Upland Wildlife Habitat Management
- Brush management

PROJECT TRACKING

The LCRA project coordinator worked closely with NRCS staff to develop tract maps and to make regular project site visits. Through the Creekside Program, a holistic approach is taken towards land management, and for each project, a conservation plan of operation is developed to encompass the entire land unit. This includes prescribed grazing and upland wildlife habitat management. Within these conservation planned acres, specific treatments are applied as indicated in Table 1.

County	Conservation Planned Acres	Brush Treatment Acres	Critical Area Planting/ Shaping Acres	Cross Fence Linear Feet	Grade Stabilizatio Structures	Pasture Planting Acres	Pipeline Linear Feet	Ponds	Range Reseeding Acres	Troughs	Wells
Bastrop	158	0	3	0	0	7	0	0	17	0	0
Blanco	12,608	339	0	37,079	0	0	0	0	0	0	0
Colorado	130	0	3	0	0	0	0	1	0	0	0
Fayette	4,125	59	65	4,672	5	0	1,200	8	18	1	0
Lampasas	2,912	182	0	0	0	0	0	0	0	0	0
Llano	18,503	559	0	10,028	0	0	9,800	0	0	7	1
Matagorda	990	0	0	4,225	0	0	0	0	0	0	0
San Saba	996	114	0	0	0	15	0	0	0	0	0
Travis	2,652	432	0	0	0	0	0	0	134	0	0
TOTAL:	**43,074**	**1,685**	**71**	**56,004**	**5**	**22**	**11000**	**9**	**169**	**8**	**1**

Table 1: LCRA Creekside Conservation Program Participation by County

TECHNOLOGY TRANSFER

Throughout the duration of the project, LCRA project coordinators worked with local soil and water conservation districts as well as NRCS field staff to promote and recommend appropriate land treatment practices, production practices, management measures and technologies to reduce soil erosion and sediment load.

Technology transfer was pivotal to the success of this project. Feature stories focusing on participating landowners were submitted into local news publications and highlighted on LCRA's web site (www.lcra.org). See appendix A for project snapshots. LCRA presented program successes to potential participants during regularly scheduled educational field days, workshops and seminars. Participating landowners in each of the counties also received gate signs that recognized participants as "Creekside Conservation Partners."

LCRA's Lee Fritsch speaks at a Fayette County Landowner Field Day

Please join us for Blanco County's

SPRING FIELD DAY

AT

ROY BRUEMMER'S HISTORIC RANCH

When: Friday, May 22, 2009; 8:00 A.M. to Noon
Where: 1275 East RR 473, Blanco
Cost: Free

Presenters from Texas AgriLife Extension Service and Natural Resources Conservation Service will be discussing various methods for treating re-growth cedar and conserving soil and water in the Texas Hill Country.

An attentive crowd at the Blanco County Spring Field Day

Awards

Texas Commission on Environmental Quality (TCEQ) Environmental Excellence Award

Presented annually by the Governor of Texas and the TCEQ Commissioners, the Texas Environmental Excellence Awards spotlight the state's highest achievements in environmental preservation and protection. Selected by a Blue Ribbon Committee, the awards recognize outstanding, innovative, environmental programs. The mission of this program is to honor the state's most outstanding waste reduction and pollution prevention projects. The LCRA Creekside Conservation Program was recognized as a 2010 finalist in the government category.

Fayette County Soil and Water Conservation District 2010 Conservation Awards Program

A Fayette County Creekside Program participant, Robert McDowell received the 2010 Fayette County Soil and Water Conservation District's "Outstanding Absentee Farmer/Rancher" Award for his efforts to restore native vegetation and improve water quality and quantity.

Bob and Marilyn McDowell receive their Absentee Landowners of the Year Award from Brenda Seberger of Prosperity Bank.

Field Tours and Presentations

Project coordinators led field tours throughout the region, stayed in contact with the various SWCD Boards by regularly attending their monthly board meetings, and provided presentations and project updates to the SWCDs in the region. The various events participated in are listed below by county:

Bastrop County

- 2009 Annual Meeting of Texas Soil and Water Conservation Districts: Booth presentation

Blanco County

- 2009 NRCS Range Site Evaluation Tour
- 2009 Johnson City ISD 7th Grande Teaching Partnership with Science Department
- 2009 Spring Field Day at Bruemmer Ranch
- 2010 Blanco County Land Stewardship Field Day
- 2010 Blanco County "Conservation Partner" Gate Sign Tour and Presentation
- 2010 Blanco County Spring NRCS Tour
- 2010 Blanco County Farm Bureau Annual Meeting Presentation
- 2010 Central Texas Conservation Partnership Land Stewardship Workshop

Burnet County

- 2008 Ecological Range Site Tour
- 2009 Texas AgriLife Extension Service Leadership Development Committee Presentation
- 2010 Highland Lakes Master Naturallists Quarterly Meeting

Colorodo County

- 2009 Multi-county New Landowner Workshop
- 2010 Texas AgriLife Colorado County Range Management Workshop

Fayette County

- 2008 Regional SWCD FFA Soil and Range Judging Contest: Creekside Presentation
- 2008 Eagle Lake Lions Club Presentation
- 2008 Fayette County Wildlife Coop Annual meeting Presentation
- 2008 Fayette County New Landowner Workshop
- 2008 Last Drop Ranch Field Tour
- 2008 Cooper Farm Landowner Workshop
- 2008 North Fayette County Wildlife Workshop
- 2009 Fayette County Wildlife Management Association Outdoor Expo
- 2009 Fayette County Beef Cattle Committee Annual Meeting Presentation
- 2009 NRCS Field Staff Tour of Creekside Projects
- 2009 LaGrange Lions Club Presentation

- 2010 Fayette County 4-H Range, Water and Wildlife Workshop
- 2010 Fayette County 4-H Banquet
- 2010 North Fayette Couny Wildlife Managementi Cooperative Conservation Workshop
- 2010 LaGrange Intermediate School Rangeland Ecology Presentation
- 2010 Fayette County Spring NRCS Tour
- 2011 Fayette SWCD Tour of the McDowell Ranch, winner of Absentee Rancher Award

Lampasas County

- 2008 Land Stewardship Workshop Creekside Program Presentation

Llano County

- 2009 Llano County Beef And Range Field Day
- 2010 US Representative, Mike Conaway Field Tour of Creekside Program Participant, Slator Ranch

San Saba County

- 2009 Spring Field Day

Travis County

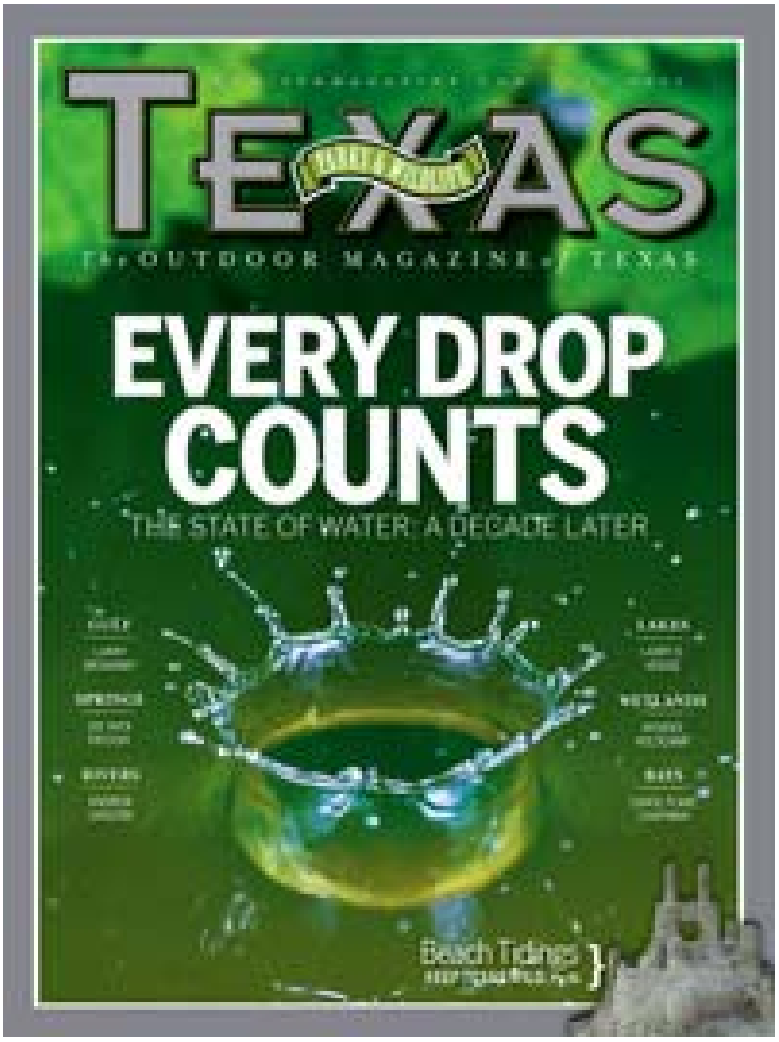
- 2008 "Landowner's Toolbox" Workshop

LCRA Creekside Conservation Partner Gate Signs

LCRA presented each participating landowner with a "Conservation Partner" gate sign upon project completion. These gate signs provide an excellence means of recognizing landowners and the contributing agencies alike for their conservation partnership. Also, they promote the Creekside Conservation Program and may potentially raise awareness of land stewardship efforts in the area.

Publications

The project was also featured in other publications such as the ***Texas Parks and Wildlife Magazine***, July 2011 Edition, various agency websites, and local papers.



Texas Parks and Wildlife Magazine cover in which the LCRA Creekside Conservation Program article can be found. For full article, view http://www.tpwmagazine.com/archive/2011/jul/ed_6_lakes/index.phtml

EVALUATION

With guidance from NRCS and ARS, The Rangeland Hydrology and Erosion Model (RHEM) was used to compare estimated sediment loading from project sites before and after project implementation. Widely accepted as a more appropriate tool for predicting soil loss on rangeland than the Revised Universal Soil Loss Equation, RHEM is a process-based erosion prediction tool specific for rangeland application, based on fundamentals of infiltration, hydrology, plant science, and erosion mechanics.

Sediment loading (tons/acre) was derived by comparing the various ecological site descriptions throughout the project region and the state and transition models for each site.
More information regarding RHEM and project acreage can be found in appendices B-D.

Sediment Load Reduction

- Acres under Conservation Plans of Operation: 43,074
- Sediment Loading Before Project: 1.67 tons/acre x 43,074 acres = 71,934 tons
- Sediment Loading After Project: .58 tons/acre x 43,074 acres = 24,983 tons
- Sediment Load Reduction Total: 71,933 – 24,983 = 46,951 tons.

CONCLUSION

The Creekside Conservation Program began in 1990 with the goal of working cooperatively with private landowners to reduce erosion and increase water infiltration, thereby reducing sediment loads reaching LCRA-controlled reservoirs and waterways. The CWA §319(h) grant from the TSSWCB and EPA enabled LCRA to promote good land stewardship and increase the number of participating landowners throughout the Colorado River basin area of LCRA's statutory district. The grant provided a financial incentive for 54 landowners to implement soil saving best management practices, and to take a holistic, long-term approach to land management through the creation of 55 conservation plans of operation. Not only have these landowners benefited, so has the entire lower Colorado River basin through a reduction in soil erosion and sediment load reaching receiving water bodies and the resulting improvement in water quality.

LCRA relied on its partnership with NRCS and local SWCD's for project coordination and implementation. The TSSWCB provided timely guidance and support during the project. Private landowners trusted these agencies to provide the technical expertise necessary to conduct conservation planning.

Technology transfer was vital to the success of this project. LCRA worked with local SWCDs to select landowners for feature stories that were submitted into local news publications and highlighted on LCRA's public web site. Project coordinators presented program information at various field days and workshops, and landowners displayed "Conservation Partner" gate signs throughout the project region.

LCRA worked with NRCS and ARS to quantify sediment load reduction resulting from this project. The Rangeland Hydrology Erosion Model provided the advanced technology necessary to accomplish this task. Estimating erosion and sediment load reduction rates on rangeland is a continually improving process, and this project was not only a benefit to private landowners, but to cooperating agencies joined together in an effort to improve rangeland science.