

# Final Report

## Contract No. 18-04

*Continuation of the LCRA Creekside Soil and Water Conservation Program*



Funding for Cooperative Agreement No. 18-04, titled “Continuation of the LCRA Creekside Soil and Water Conservation Program,” was 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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# Project Acknowledgements

This final report details the soil and water conservation benefits of the U.S Environmental Protection Agency Clean Water Act (CWA) §319(h) Nonpoint Source Grant provided to Lower Colorado River Authority by Texas State Soil and Water Conservation Board.

Special acknowledgement is given to the participating agricultural producers who implemented best management practices designed to reduce nonpoint source pollution within the lower Colorado River basin.

Additionally, acknowledgment is given to the following partnering agencies that make the LCRA Creekside Conservation Program possible:

- U.S. Environmental Protection Agency (EPA)
- Texas State Soil and Water Conservation Board (TSSWCB)
- USDA Natural Resources Conservation Service (NRCS)
- Soil and Water Conservation District (SWCD) boards within the project region

# Executive Summary

Project No. 18-04 titled “Continuation of the LCRA Creekside Soil and Water Conservation Program” consisted of the Texas State Soil and Water Conservation Board (TSSWCB) collectively working with Lower Colorado River Authority (LCRA), local Soil and Water Conservation Districts (SWCDs), and the United States Department of Agriculture’s Natural Resources Conservation Service (NRCS) to provide technical and financial assistance for producers to plan and implement Best Management Practices (BMPs) on private land within the lower Colorado River basin.

Through this project, **36** comprehensive conservation plans of operation were developed for over **35,000** acres of private land with the collective purpose of reducing sedimentation and agricultural nonpoint source pollution into the Colorado River watershed of Bastrop, Blanco, Burnet, Colorado, Fayette, Lampasas, Llano, Matagorda, San Saba, Travis and Wharton counties.

During the project, LCRA utilized the Texas Best Management Evaluation Tool (TBET) to estimate nutrient and sediment reductions and BMP effectiveness. TBET is a simplified and customized user interface for the Soil and Water Assessment Tool (SWAT), which estimates sediment and nonpoint source pollution reduction. Based on TBET results, the project yielded the following sediment and nutrient reductions:

- Sediment: 9,580 tons/year
- Phosphorus: 20,941 lbs./year
- Nitrogen: 191,108 lbs./year

Education and outreach (technology transfer) was also a vital component of this project. Technology transfer is used to promote soil and water conservation and highlight stewardship efforts of agricultural producers. Technology transfer activities associated with this project included the following:

- 10 educational events (i.e. field days, workshops, etc.)
- 2 LCRA news releases posted to LCRA website and local newspapers
- 1 video production posted to LCRA website
- 16 “partner” gate sign presentations



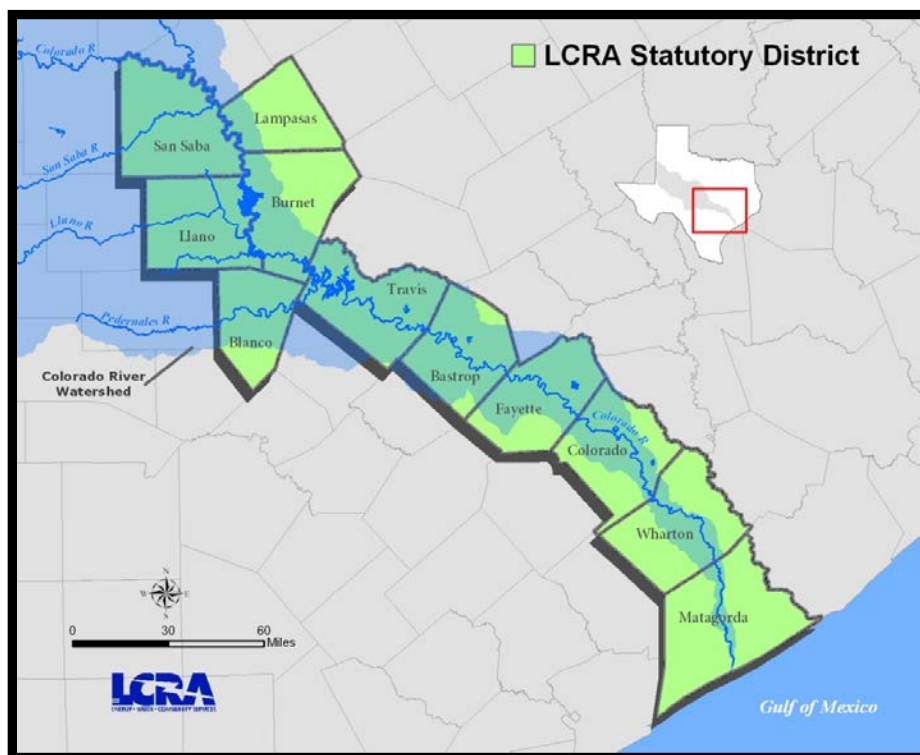
# LCRA Creekside Conservation Program History

The LCRA Creekside Conservation Program began in 1990 after a cooperative sediment reduction study was completed by the U.S. Department of Agriculture Soil Conservation Service and LCRA. The study determined that implementing agricultural BMPs on private property could be a cost-effective approach to reduce sedimentation and nonpoint source pollution into the lower Colorado River.

Operating on a 50/50 cost-share basis between LCRA and agricultural producers, the LCRA Creekside Conservation Program continued this cost-share model until 2004 when LCRA began receiving U.S. Environmental Protection Agency (EPA) §319(h) grants from the TSSWCB.

Since 2004, LCRA has received five separate three-year grants including contract 18-04 received in 2018. The EPA grants have been instrumental funding mechanism to continue the program and provide technical and financial assistance to agricultural producers.

The LCRA Creekside Conservation Program is available to producers within the Colorado River watershed in LCRA's eleven county statutory districts, including Bastrop, Blanco, Burnet, Colorado, Fayette, Lampasas, Llano, Matagorda, San Saba, Travis and Wharton counties. See the project region below:



# Project 18-04 Implementation

The LCRA Creekside Conservation Program project coordinator worked with local SWCDs and NRCS personnel to provide financial and technical assistance to multiple landowners within the project region. Project 18-04 had specific deliverables of creating a minimum of 16 plans on at least 10,000 acres of private land.

These deliverables were surpassed by creating 36 new conservation plans on 35,520 acres of private lands. These plans outlined and guided implementation of the BMPs summarized in the table below:

Project 18-04 BMP Summary									
	Bastrop	Blanco	Burnet	Fayette	Lampasas	Llano	San Saba	Travis	Total
Total Participants	2	0	1	8	4	12	5	4	36
Management Acres	462	0	99	1,543	16,996	6,790	3,900	5,730	35,520
Brush Management	4	87	39	80	169	45	0	216	640
Cross Fencing	2,210	0	0	8,383	1,675	19,036	21,356	4,274	56,934
Range Planting	0	0	0	11	0	8	0	0	19
Watering Facilities	0	0	0	0	0	3	0	3	6
Wells	0	0	0	1	0	1	0	0	2
Pumping Plants	0	0	0	1	0	3	0	0	4
Pipeline Feet	0	0	0	0	0	618	0	917	1,535
Ponds	0	0	0	1	0	0	1	0	2
Grade Stabilization Structures	0	0	0	3	0	0	0	0	3

# Best Management Practices

## Cross Fencing

During the project, producers implemented over 56,000 linear feet of cross fencing to facilitate rotational grazing plans. Cross fencing serves to improve rangeland conditions, increase the quality and quantity of forage, reduce soil erosion and enhance water quality.



**Photo 1:** Features a 3,648 ft. cross fence installed in Llano County. The fence allowed the producer to rotationally graze their livestock and was in the “Steep, Rocky” payment category.



## Brush Management

A total of 640 acres of brush management were completed through Project 18-04. Ultimately, brush management serves to enhance rangeland conditions, increase hydrologic function, reduce soil erosion and improve overall water quality of the Colorado River basin.



**Photo2:** A 131-acre brush management project in Travis County within the Barton Creek watershed. The producer targeted Ashe Juniper to improve rangeland health and enhance wildlife habitat.



## Grade Stabilization Structures

A total of three grade stabilization structures were completed through Project 18-04. Grade stabilization structures are designed to reduce soil erosion by slowing and impounding the flow of water.



**Photo 3:** This structure was implemented by a producer in Fayette County. Besides from reducing soil erosion, this structure also provides an alternative water source for the ranch's longhorn cattle.

# Load Reduction Evaluation

In 2011, TSSWCB began utilizing TBET to estimate sedimentation and nonpoint source pollution reduction to evaluate the effectiveness of BMP implementation.

Utilizing TBET, Project 18-04 had specific deliverables to reduce 10,000 tons of sediment, 18,000 pounds of phosphorus and 90,000 pounds of nitrogen from at least 10,000 acres of private lands within the project region.

Ultimately, most of the minimum nonpoint source pollution reduction deliverables were surpassed and are summarized in the table below:

Project 18-04 TBET Results Summary				
Fiscal Year	Management Acres	Sediment Reduction (tons/year)	Phosphorus Reduction (lbs./year)	Nitrogen Reduction (lbs./year)
2019	8,089	4,548	3,949	35,656
2020	5,338	2,147	3,486	27,048
2021	19,574	2,084	11,888	115,555
2022	2,519	801	1,618	12,849
<b>Total</b>	<b>35,520</b>	<b>9,580</b>	<b>20,941</b>	<b>191,108</b>

# Technology Transfer

Technology transfer was a crucial component of Project 18-04. Technology transfer is used to promote soil and water conservation and highlight stewardship efforts of agricultural producers.

Some specific deliverables outlined in the workplan of Project 18-04 included:

- Attend two education and outreach events per year for a total of six events over the three-year grant period
- Create two media feature stories to be published in local newspapers and on LCRA's website
- Produce one LCRA video production

LCRA was able to achieve these deliverables by attending and participating in multiple educational events throughout the project region. Events included various field days and workshops hosted by local SWCDs and other agencies.

Additionally, LCRA was able to create two separate news releases. One news release announced the availability of funding provided by Project 18-04 when the grant began in 2018. The other release highlighted the thirty-year history of the LCRA Creekside Conservation Program in 2020. Both news releases were submitted to local news papers and highlighted on the LCRA website.

LCRA also produced a video recognizing Mrs. Helen Miles and the Oxford Ranch as an "Outstanding Producer."

In addition, "partner" gate signs were distributed to producers who implemented BMPs during Project 18-04. Gate sign presentations took place during various site tours, field days and workshops.



**Photo 1:** LCRA news release published in the Llano County newspaper: *The Highlander*.



## Educational Events

Overall, event participation was limited due to the outbreak of COVID-19 during the timeframe of Project 18-04. However, the project coordinator was able to participate in 10 different educational events within the project region, reaching approximately 1,560 producers. The events are listed below by county:

County	Year	Event	Attendance
<b>Bastrop</b>	2018	Bastrop SWCD Fall Field Tour	35
	2019	Bastrop Prescribed Fire Workshop	75
<b>Fayette</b>	2021	Fayette County Calf Clinic	75
<b>Lampasas</b>	2019	Hill Country SWCD Field Day	330
<b>Llano</b>	2019	Llano Beef and Range Field Day	300
	2019	Llano SWCD New Landowner Workshop	45
	2021	Llano Beef and Range Field Day	320
<b>San Saba</b>	2019	San Saba SWCD Spring Field Day	160
<b>Travis</b>	2019	Texas Land Conservation Conference	100
	2020	Texas Land Conservation Conference	120
<b>10 Events</b>			<b>1560</b>



**Photo 1:** A group of landowners attending the 2018 Bastrop SWCD Fall Field Tour. During this event, the LCRA Creekside Conservation Program coordinator manned an informational table and provided promotional material to attendees.

## Outstanding Producer Recognition

During Project 18-04, LCRA celebrated the 30-year anniversary of the LCRA Creekside Conservation Program. LCRA recognized Mrs. Helen Miles and her Oxford Ranch in Llano County as an “Outstanding Producer” for her 30-year commitment to conservation.

Mrs. Miles was one of the first participants of the program in 1990 and utilized the program again for technical assistance for alternative water source development and fencing.



**Photo 1:** LCRA presents the “Outstanding Producer” award to the family of Mrs. Helen Miles in January. Included in the photo are staff from TSSWCB, LCRA, the Llano SWCD and members of the Miles Family.



## LCRA Video Production

During Project 18-04, LCRA produced a video detailing the conservation efforts and ranching heritage of a Llano County producer, Mrs. Helen Miles. The video A Legacy of Land Stewardship in Llano County highlighted Mrs. Miles thirty-year partnership with the LCRA Creekside Conservation Program. The video can be viewed at the following link:

<https://www.youtube.com/watch?v=Ei3hkSkjJKI>



**Photo 1:** LCRA staff interview and film Mrs. Helen Miles during the production of A Legacy of Land Stewardship in Llano County.



## Partner Gate Sign Presentations

During Project 18-04, 16 producers were presented with “partner” gate signs. Gate signs were given to producers who implemented BMPs during the grant period. Presentations took place during various site visits, field days and workshops.



**Photo 1:** A Llano County producer receiving his gate sign during the 2021 Llano Beef and Range Field Day.



**Photo 2:** A group of producers receive their gate signs after completing a brush management project in Travis County.



**Photo 3:** A Fayette County producer poses with his gate sign during a site visit of a recently completed grade stabilization structure.

# Conclusion

Since 1990, the LCRA Creekside Conservation Program has utilized a unique partnership to provide agricultural producers with technical and financial assistance to implement BMPs within the Colorado River basin.

Beginning in 2004, LCRA received the first Clean Water Act §319(h) grant to help fund and administer the LCRA Creekside Conservation Program. Project 18-04 was the fifth consecutive Clean Water Act grant titled “continuation of the LCRA Creekside Soil and Water Conservation Program.”

Through this project, LCRA continued to work together with the TSSWCB, NRCS and local SWCDs to help 36 producers plan, implement and fund soil and water conservation projects. As a result, a wide range of BMPs were implemented on a total of 35,520 acres of private property.

Ultimately, this assistance functioned to improve the water quality of the Colorado River by reducing sedimentation and nonpoint source pollution. By utilizing TBET, LCRA was able to determine Project 18-04 resulted in the reduction of 9,580 tons per year of sediment, 20,941 pounds per year of phosphorus and 191,108 pounds per year of nitrogen.

Technology transfer was also vital to the success of Project 18-04. LCRA worked with program partners to produce newsletters, stories and a video that was highlighted on LCRA’s website. Additionally, the project coordinator presented program information at various educational events such as field days and workshops that reached thousands of attendees throughout the project region.

Collectively, these approaches came together to implement a successful continuation of the LCRA Creekside Conservation Program.

