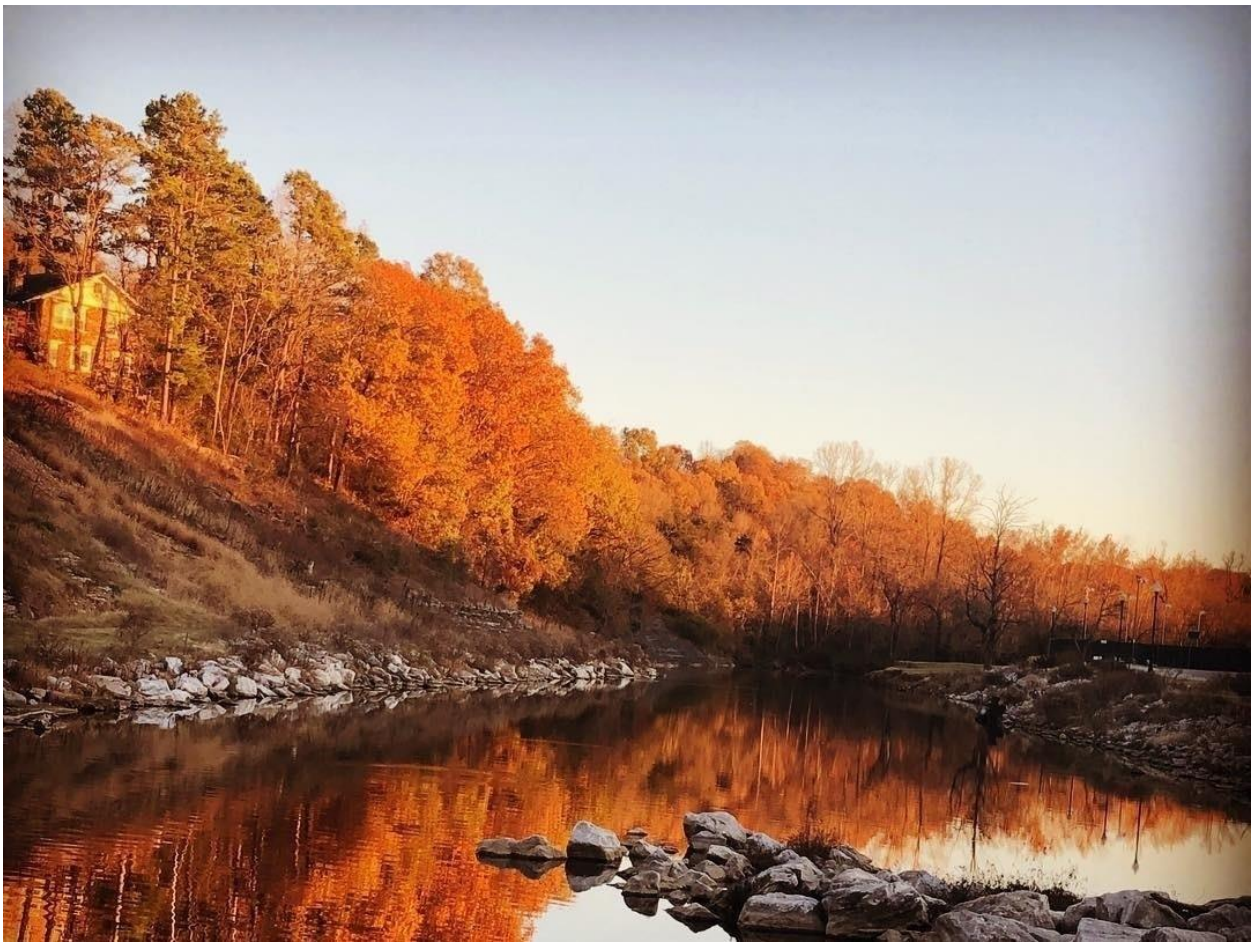
Boone County Crooked Creek Project

Project# 19-600



Boone County Conservation District

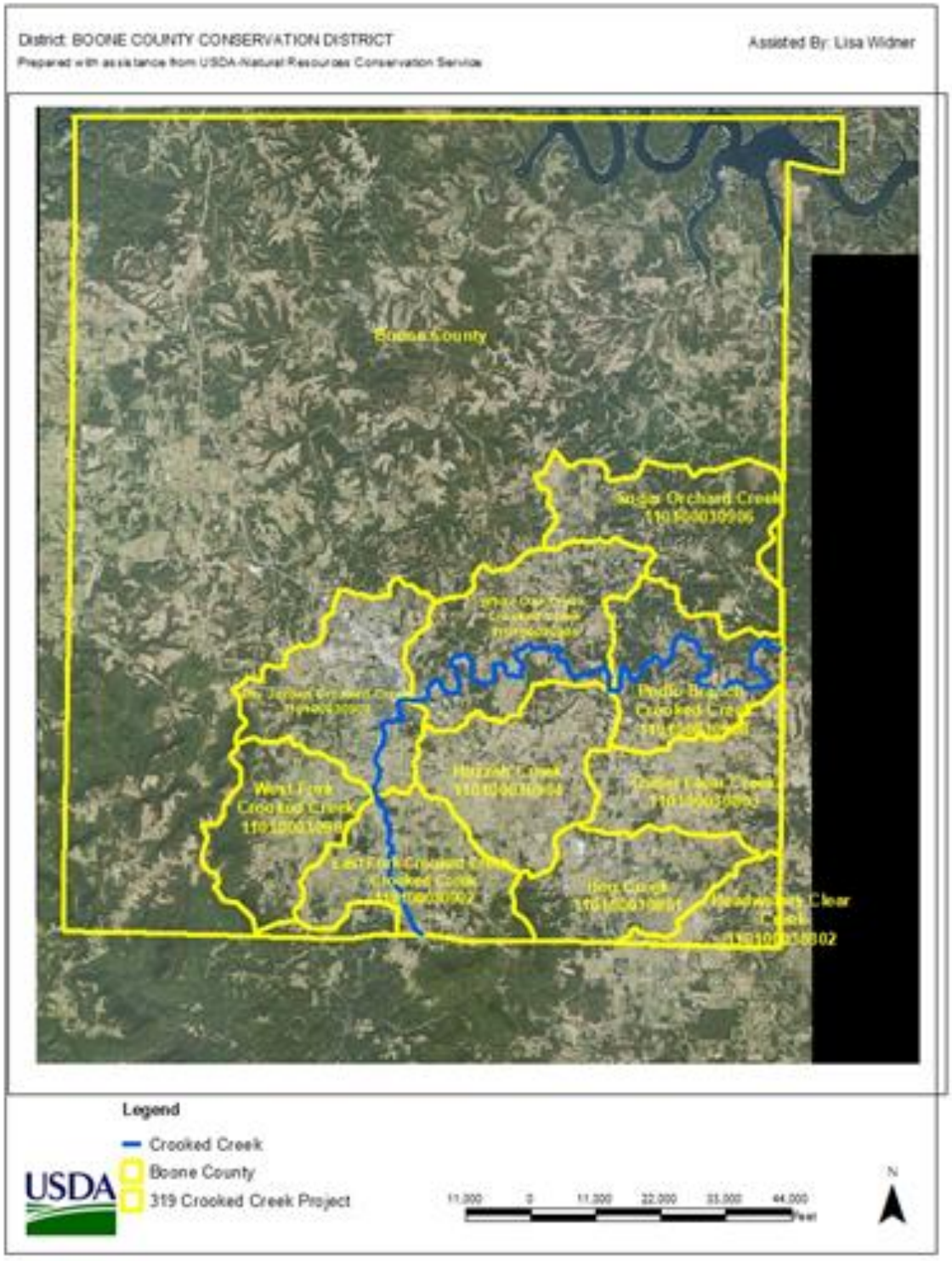
October 2019- June 2023

Overview

The primary objective was to implement a program that encouraged voluntary participation of landowners and operators in applying BMPs within sub watersheds (11010003) that contain or feed Crooked Creek. Priority was for the sub watersheds of East Fork Crooked Creek-Crooked Creek (110100030902); Dry Jordan Creek-Crooked Creek (110100030903); White Oak Creek-Crooked Creek (110100030905); Pedlo Branch-Crooked Creek (110100030908). Secondary focus was given to the watersheds (11010003) feeding Crooked Creek: West Fork Crooked Creek (110100030901); Huzzah Creek (110100030904); Outlet Clear Creek (110100030803); Hog Creek (110100030801); Headwaters Clear Creek (110100030802) and Sugar Orchard Creek (110100030906). The project area was in Boone County.

Crooked Creek originates near Dogpatch in Newton County, flows north and then east through Boone County, and continues east across Marion County. Portions of Crooked Creek in Boone County had been included in the Arkansas Department of Environmental Quality's 2016 303'd list and was classified as (category 5) (Impaired.) Cause of the impairment was from total dissolved solids, but the source of the pollutant was unknown. Nonpoint source pollution in urban/rural areas was thought to be a major contributor.

The sub watersheds included in the project area were not located in the Nutrient Surplus Area designated by the 83rd Arkansas General assembly ACT 1059 of 2003. But with the amount of agriculture operations in the sub watersheds, there was potential for pollutants to enter the water ways of Crooked Creek.


District: BOONE COUNTY CONSERVATION DISTRICT
Prepared with assistance from USDA-Natural Resources Conservation Service
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Boone County
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Crooked Creek
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Project Description

Boone County Conservation District realized that focusing on installing voluntary BMPs was the best method of controlling nutrient, sediment, and bacteria runoff into Crooked Creek. After funding was received, one of the first official tasks for the district was to establish priority BMPs for the project area.

Recommended Practices for Cost Share		
Practice	**NRCS Practice Code**	**Lifespan (yrs)**
Fence	382	20
Watering Facility	614	20
Pipeline	516	10
Spring Development	574	20
Heavy Use Area Protection	561	10
Filter Strip	393	10
Roof Runoff Structure	558	15
Access Control	472	10
Prescribed Grazing	528	1
Nutrition / Grazing Mgt.	E528140Z1 (CSP)	1

Planned Project Funding:

Federal: $87,485

Non-Federal: $94,376

Total: $181,861

Project Goals/Objectives:

The district planned to complete BMPs on approximately 8000 acres of the pastureland in the project area. Using the Revised Universal Soil Loss Equation II to calculate tons per acre per year, a reduction of sediment runoff by 3.59 tons/acre/year on those acres was desired. Creation of nutrient management and prescribed grazing plans and two field day demonstrations promoting the project were all planned as well.

Project Accomplishments:

22 applications were received, and each was developed into a contract. Two contracts were completely cancelled. Both cancellations were due to the high cost of materials following the year 2020. Best management practices tied to contracts were established on 2000 acres. Only one prescribed grazing plan was completed on 69.1 acres.

Thirty farm/conservation plans were written for this project. Nineteen plans were associated with contracts leaving 11 plans voluntarily requested by operators. Conservation planning was completed on 3400 acres.

ITEMS IN PROJECT FOR FUNDING

Item	# Planned	# Accomplished	% Accomplished
Farm Plans	30	30	100
Assistance & Return Visits	60	50	83

BMP's Actually Applied in Project Area

Practice	NRCS Practice Code	Units	# of Farms Applied	Total Documented Costs of Practices
Fencing	382	21,506 ft	17	$128,910.13
Livestock Pipeline	516	3226 ft	8	$10,235.28
Heavy Use Area	561	9	6	$2538.47
Watering Facility	614	9	8	$11849.95
Prescribed Grazing	528	69.1	1	$2,616.12

As far as reaching our project goal of implementation of BMPs on 8000 acres of pastureland, we were significantly lower. The grand total of 3400 acres was impacted not only by BMPs but nutrient planning only. The BMP that most operators were interested in was fencing to improve and establish rotational grazing systems.

From the time the district applied and received funding for the project, material and labor cost rose significantly. Inflation from the pandemic fueled and maintained those costs for the duration of the project. Therefore, we were not able to reach as many operations.

Goal Accomplishment

Item	# of Acres	% Accomplished	Total Reduction of Sediment Loss	% Accomplished
Total Farm Plans (30)	3400	100%	12,206 tons	42.5%
Completed Contracts Only	2000	25%	7180 tons	25%

Actual Expenditures and Match:

Federal: $86,585

Non-Federal: $91,039

Total: $177,624

Project Roles and Responsibilities:

1. Environmental Protection Agency- The primary source of funding for the project.
2. Arkansas Natural Resource Division-Project funding and oversight.
3. Boone County Conservation District-Develop plans, cost-share contracts, assistance with BMP installation, and provide public information and awareness.
4. Natural Resources Conservation Service-Provided engineering design of BMPs and assisted with final inspections.

Cross Fencing & Exclusion Fencing:

21,506 ft of cross and exclusion fencing was installed in our project area. Cross fencing of pastures provides rotational grazing. Productive grazing leads to increased ground cover and a reduction of sediment and nutrients/chemicals from entering waterways. Greater forage quality for livestock leads to increased better animal health and nutrition.

Exclusion fencing installed around a sink hole that leads to a cave. Operator wanted to discourage livestock from entering and illegal dumping by highway traffic.

Above left: standard barb wire cross fence Above right: Web wire fence

Cross fencing in a silvopasture operation.

Watering Facilities, Heavy Use Areas & Pipeline:

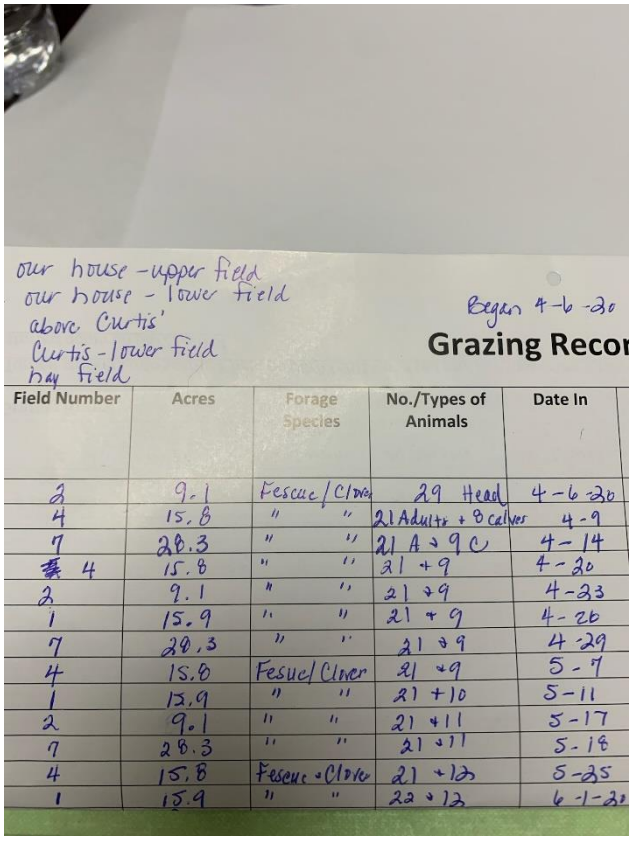
These three BMPs help to encourage operators to exclude livestock from waterways and provide water in rotational grazing situations. Livestock distribution operations is improved, and heavy use areas discourage erosion around this frequently use features.

Examples of watering facilities installed. Underneath the gravel, a heavy filter fabric is laid first.

Rotational Grazing:

This BMP was completed on one operation. This operation also completed cross fencing and a livestock pipeline to a watering facility with a heavy use area. These BMPs increased the number of pastures needed to do the rotational practice.

The rotational grazing BMP requires the operators to document the rotations thru the fields. A map of the fields matching field number was provided to the district along with a copy of the records.



our house - upper field
our house - lower field
above Curtis'
Curtis - lower field
hay field

Began 4-6-20

Grazing Recor

Field Number	Acres	Forage Species	No./Types of Animals	Date In
2	9.1	Fescue/Clover	29 Head	4-6-20
4	15.8	" "	21 Adults + 8 calves	4-9
7	28.3	" "	21 A + 9 C	4-14
~~4~~ 4	15.8	" "	21 + 9	4-20
2	9.1	" "	21 + 9	4-23
1	15.9	" "	21 + 9	4-26
7	28.3	" "	21 + 9	4-29
4	15.8	Fescue/Clover	21 + 9	5-7
1	15.9	" "	21 + 10	5-11
2	9.1	" "	21 + 11	5-17
7	28.3	" "	21 + 11	5-18
4	15.8	Fescue + Clover	21 + 12	5-25
1	15.9	" "	22 + 12	6-1-20

Outreach:

294 fact sheets were mailed to landowners in the project area. The district also sent 12 quarterly newsletters throughout the project period. These newsletters highlighted completed practices and specifics on the project. 56 two-minute radio discussions were held. Our project gained momentum beginning early 2020. We had planned on two field days however, the district only held one due to rules regarding social distancing.

Photos from Field Day held on July 30, 2022.

It was a rainy day but many came to view demos of electric fencing and rotating cattle.

Conclusion:

As with past projects that the district has provided to Boone County, we believe that the greatest accomplishment was providing much needed financial assistance to operators. These operators have not had to wait for funding with NRCS through the EQIP program. Costs of materials and labor have also skyrocketed during this project. The district has been delighted to provide prompt technical assistance while lessoning the financial burden to producers.

During our project, several producers that manage three species of livestock reached out for assistance. One of these producers has a very profitable business that provides for a statewide co-op. The district is very satisfied with the results of providing BMPS on operations that have an impact far beyond the farm.

Even though the total of acres directly influenced by the project fell short, the district did exhaust nearly all cost share funds. Rising costs of practices greatly influenced the ability to establish more BMPs on farms. Overall, much assistance, education, and working relationships have been built between the Boone County Conservation District and operators surrounding Crooked Creek.