Stewart Meadows Phase 1 Restoration Project

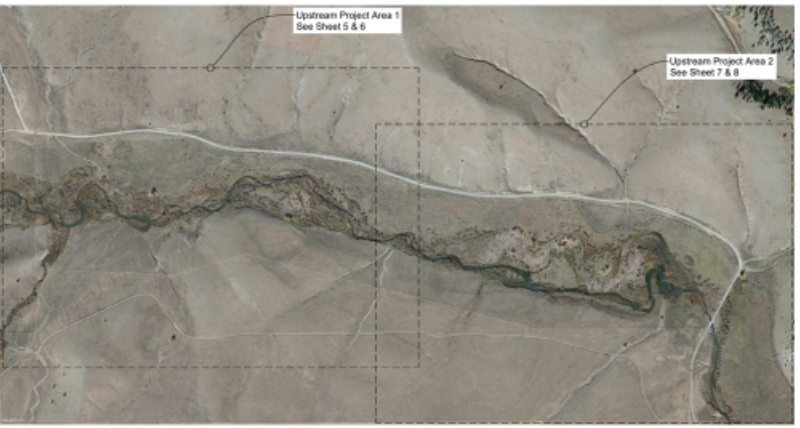
- The Stewart Meadows Phase 1 Restoration Project Area is located along one of the few laterally unconfined reaches of the Rio San Antonio, where the river exits the Tusas Mountains and creates the western boundary of the Taos Plateau Volcanic Field. Much of the Rio San Antonio Watershed is composed of highly erodible fine textured soils and loosely consolidated rock. The grazing management history and logging following the arrival of the railroad in 1880 has contributed to erosion related degradation across this watershed.

- Since its acquisition by the Carson National Forest in 1973, efforts have been underway to restore the Stewart Meadows area due to its unique and sensitive wetland and riparian habitat. These efforts have included the exclusion of livestock, previous wetland restoration work, and recent instream work in the upper watershed. Continuing this legacy, NMDGF has funded conceptual engineering designs of a phased approach for instream, riparian, and floodplain restoration work at Stewart Meadows.

- Previous efforts have been essential primers to prepare the Stewart Meadows area for Phase 1 of instream, riparian, and floodplain restoration work. The goals of this work include:
  - Reconnecting historic floodplain with channels, wetlands, and backwater habitat
  - Redistributing flood energy and sediment across the valley bottom
  - Increasing overbank flow at lower flood stages
  - Accelerating floodplain development
  - Improving water quality: reduced turbidity and increased stream shading
  - Increased growth and footprint of riparian vegetation

Project Contacts

USFS – Nessa Rasmussen Jenny.Rasmussen2@usda.gov
NMDGF – Brock Lorenzen Brock.Lorenzen@dgf.nm.gov



Estimated Budget: $435,000

Proposed Management Action Google Earth Link

- The NMDGF, in collaboration with the USFS, will contract the construction of instream, riparian, and floodplain restoration features along 1 mile of the Rio San Antonio including:
  - Earthen channel plugs
  - Lead-out channels
  - Channel shaping features
  - Shallow burrow wetland areas

- HSP Funds will be utilized for the purchase of material, mobilization of heavy equipment, labor wages to operate machinery and construct restoration features, de-mobilization of equipment, and the mitigation of implementation footprints by seeding disturbed areas.

- Following the implementation, the NMDGF and USFS will monitor and evaluate the efficacy and effects of this landscape restoration effort as part of planning and implementing future phases of this work.

Stewart Meadows Phase 1

Tres Piedras District, Carson National Forest

New Mexico Department of Game and Fish

Stewart Meadows Phase 1

Project Contacts

Brock Lorenzen
Brock.Lorenzen@dgf.nm.gov

Nessa Rasmussen
Jenny.Rasmussen2@usda.gov

New Mexico Department of Game and Fish

Phase 1: Project Overview

Location

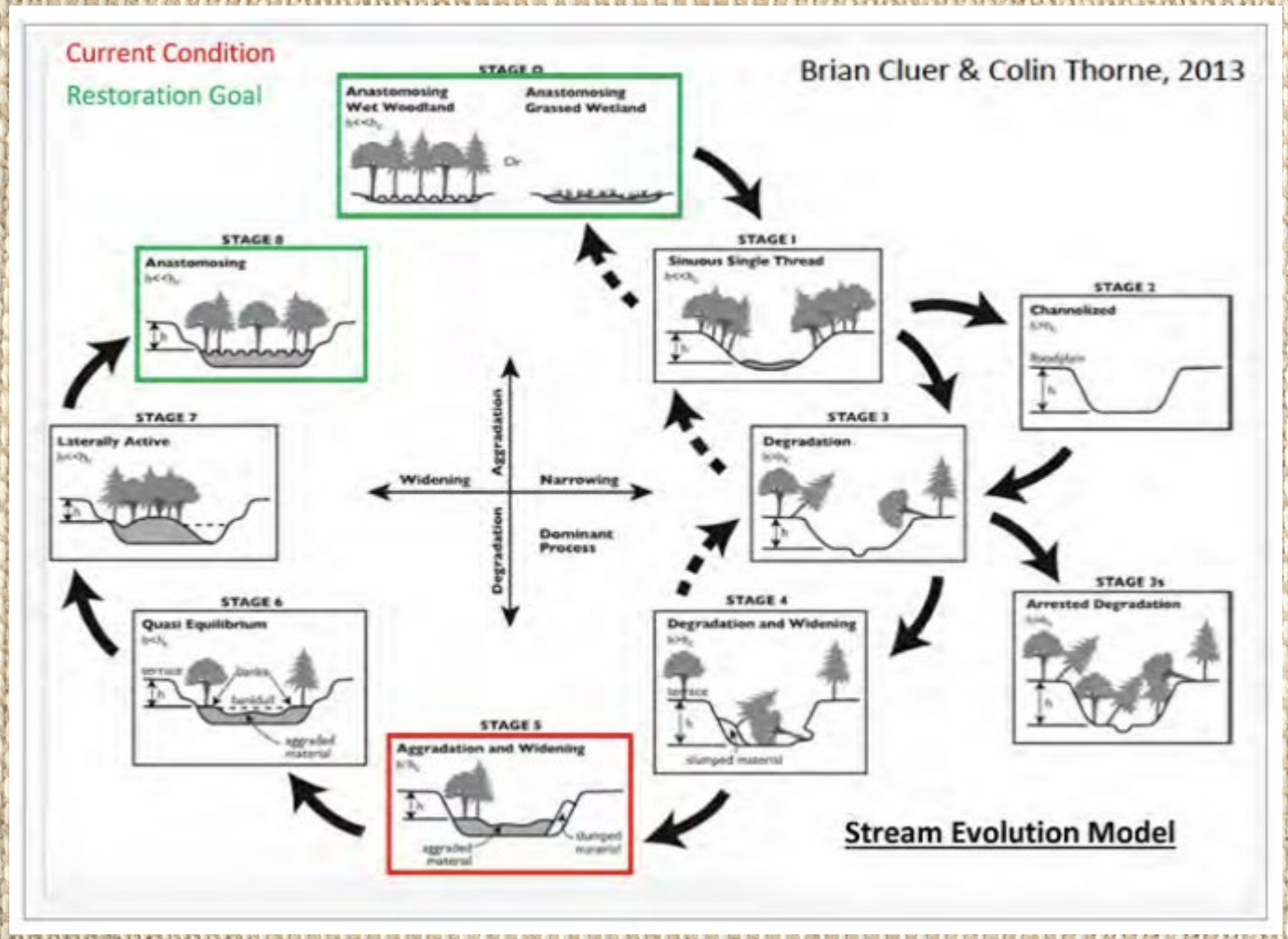
Background

Current Conditions

Proposed Actions

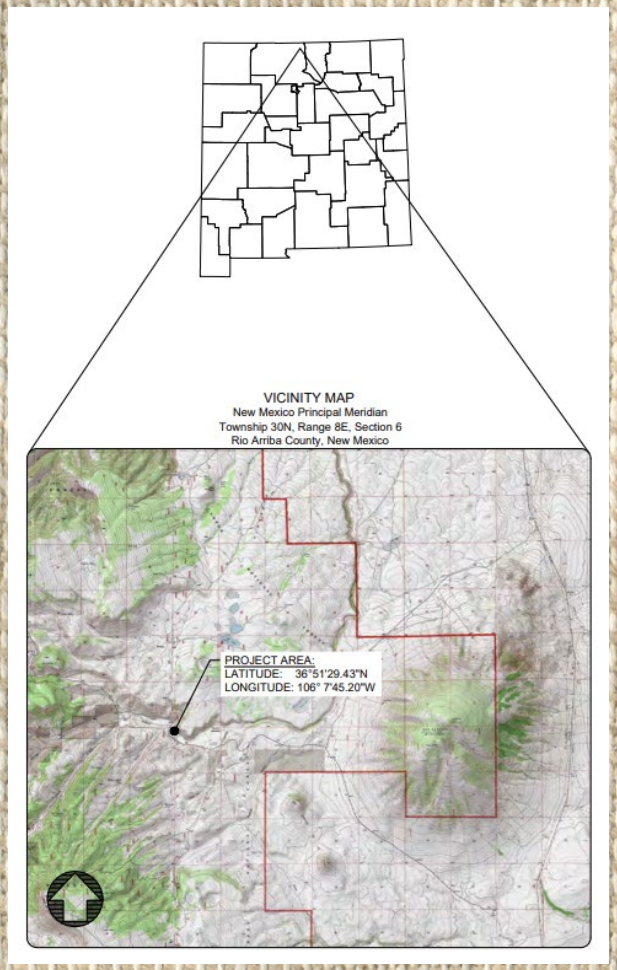
Landscape Benefits

Wildlife Benefits



New Mexico Department of Game and Fish

Location



New Mexico Department of Game and Fish

Background

1973

Stewart Meadows is acquired by the Carson NF

New Mexico Department of Game and Fish

Background

1973

Stewart Meadows is acquired by the Carson NF

1980's

Restoration of 350 acres of wetlands

New Mexico Department of Game and Fish

Background

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Stewart Meadows is acquired by the Carson NF

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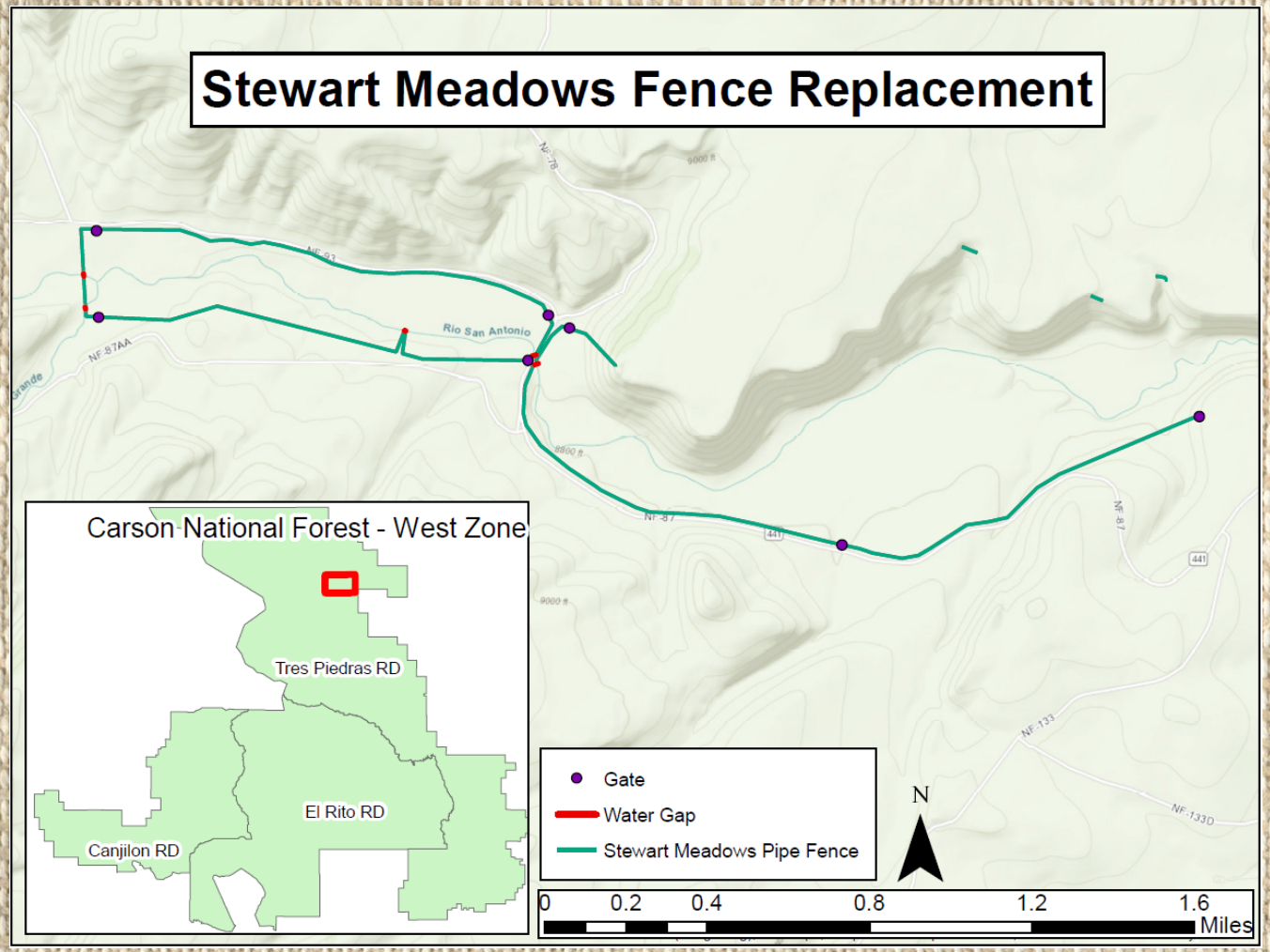
Restoration of 350 acres of wetlands

2021

6 miles of dilapidated wood fence replaced with pipe and cable fence using HSP funds



New Mexico Department of Game and Fish

Background

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Stewart Meadows is acquired by the Carson NF

1980's

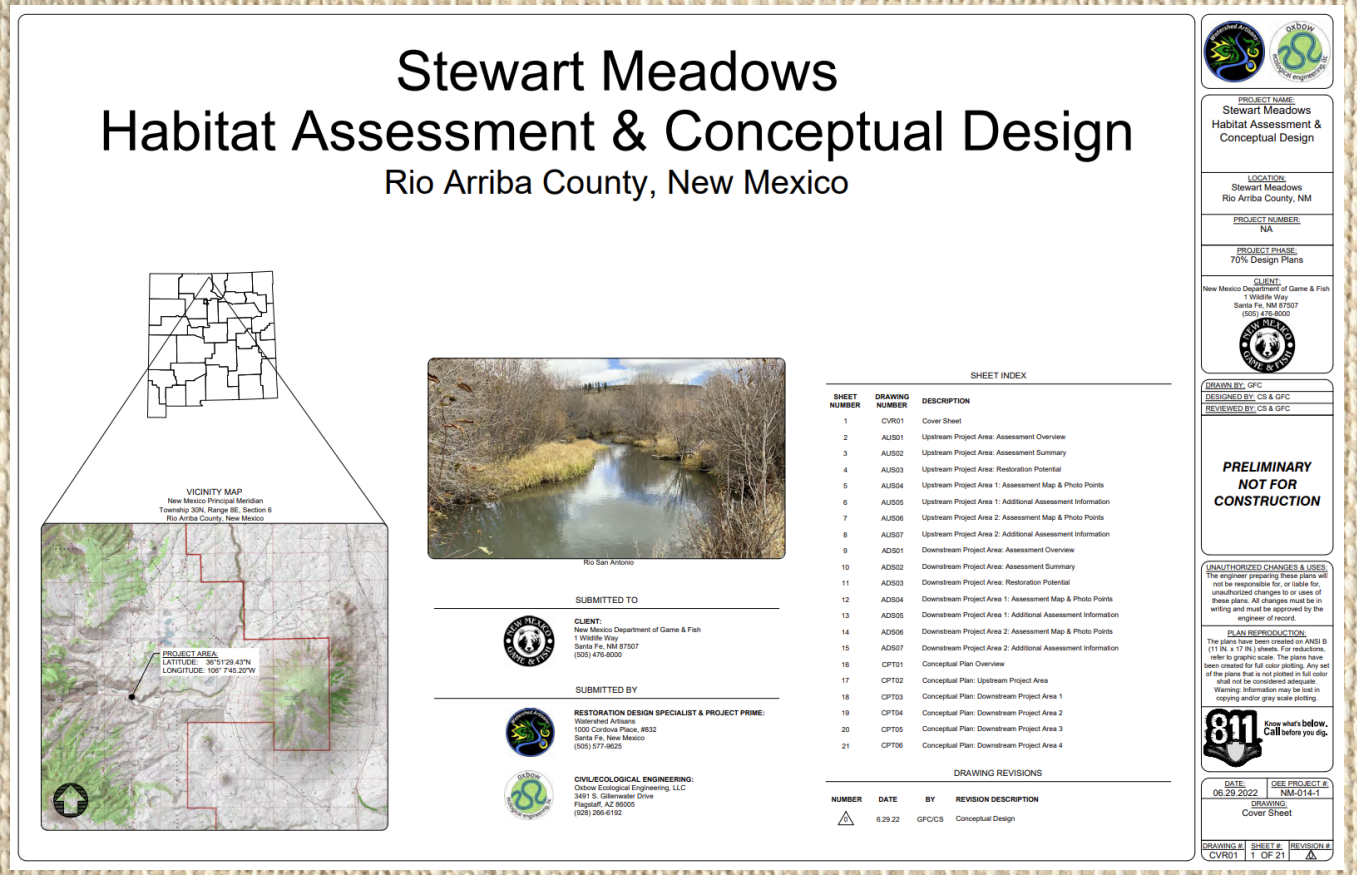
Restoration of 350 acres of wetlands

2021

6 miles of dilapidated wood fence replaced with pipe and cable fence using HSP funds

2022

Conceptual engineering designs created for Phases 1 and 2



Stewart Meadows
Habitat Assessment & Conceptual Design
Rio Arriba County, New Mexico

VICINITY MAP
New Mexico Principal Meridian
Township 30N, Range 8E, Section 6
Rio Arriba County, New Mexico

PROJECT AREA:
LATITUDE: 36°51'29.43"N
LONGITUDE: 106° 7'45.20"W

Rio San Antonio

SUBMITTED TO

CLIENT:
New Mexico Department of Game & Fish
1 Wildlife Way
Santa Fe, NM 87507
(505) 476-8000

SUBMITTED BY

RESTORATION DESIGN SPECIALIST & PROJECT PRIME:
Watershed Artisans
1000 Cordova Place, #832
Santa Fe, New Mexico
(505) 577-9625

CIVIL/ECOLOGICAL ENGINEERING:
Oxbow Ecological Engineering, LLC
3491 S. Gillenwater Drive
Flagstaff, AZ 86005
(928) 266-6192

SHEET INDEX

SHEET NUMBER	DRAWING NUMBER	DESCRIPTION
1	CVR01	Cover Sheet
2	AUS01	Upstream Project Area: Assessment Overview
3	AUS02	Upstream Project Area: Assessment Summary
4	AUS03	Upstream Project Area: Restoration Potential
5	AUS04	Upstream Project Area 1: Assessment Map & Photo Points
6	AUS05	Upstream Project Area 1: Additional Assessment Information
7	AUS06	Upstream Project Area 2: Assessment Map & Photo Points
8	AUS07	Upstream Project Area 2: Additional Assessment Information
9	ADS01	Downstream Project Area: Assessment Overview
10	ADS02	Downstream Project Area: Assessment Summary
11	ADS03	Downstream Project Area: Restoration Potential
12	ADS04	Downstream Project Area 1: Assessment Map & Photo Points
13	ADS05	Downstream Project Area 1: Additional Assessment Information
14	ADS06	Downstream Project Area 2: Assessment Map & Photo Points
15	ADS07	Downstream Project Area 2: Additional Assessment Information
16	CPT01	Conceptual Plan Overview
17	CPT02	Conceptual Plan: Upstream Project Area
18	CPT03	Conceptual Plan: Downstream Project Area 1
19	CPT04	Conceptual Plan: Downstream Project Area 2
20	CPT05	Conceptual Plan: Downstream Project Area 3
21	CPT06	Conceptual Plan: Downstream Project Area 4

DRAWING REVISIONS

NUMBER	DATE	BY	REVISION DESCRIPTION
1	6.29.22	GFC/CS	Conceptual Design

PROJECT NAME: Stewart Meadows Habitat Assessment & Conceptual Design
LOCATION: Stewart Meadows Rio Arriba County, NM
PROJECT NUMBER: NA
PROJECT PHASE: 70% Design Plans
CLIENT: New Mexico Department of Game & Fish 1 Wildlife Way Santa Fe, NM 87507 (505) 476-8000
DRAWN BY: GFC
DESIGNED BY: CS & GFC
REVIEWED BY: CS & GFC

PRELIMINARY NOT FOR CONSTRUCTION

UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes must be in writing and must be approved by the engineer of record.

PLAN REPRODUCTION: The plans have been created on ANSI B (11 IN. x 17 IN.) sheets. For reductions, refer to graphic scale. The plans have been created for full color plotting. Any set of the plans that is not plotted in full color shall not be considered adequate. Warning: Information may be lost in copying and/or gray scale plotting.

811 Know what's below. Call before you dig.

DATE: 06.29.2022 | OEE PROJECT #: NM-014-1
DRAWING: Cover Sheet
DRAWING #: CVR01 | SHEET #: 1 OF 21 | REVISION #: 1

New Mexico Department of Game and Fish

Background

1973

Stewart Meadows is acquired by the Carson NF

1980's

Restoration of 350 acres of wetlands

2021

6 miles of dilapidated wood fence replaced with pipe and cable fence using HSP funds

2022

Conceptual engineering designs created for Phases 1 and 2

2024

Pipe fence maintenance and new water gap

New Mexico Department of Game and Fish

Background

1973

Stewart Meadows is acquired by the Carson NF

1980's

Restoration of 350 acres of wetlands

2021

6 miles of dilapidated wood fence replaced with pipe and cable fence using HSP funds

2022

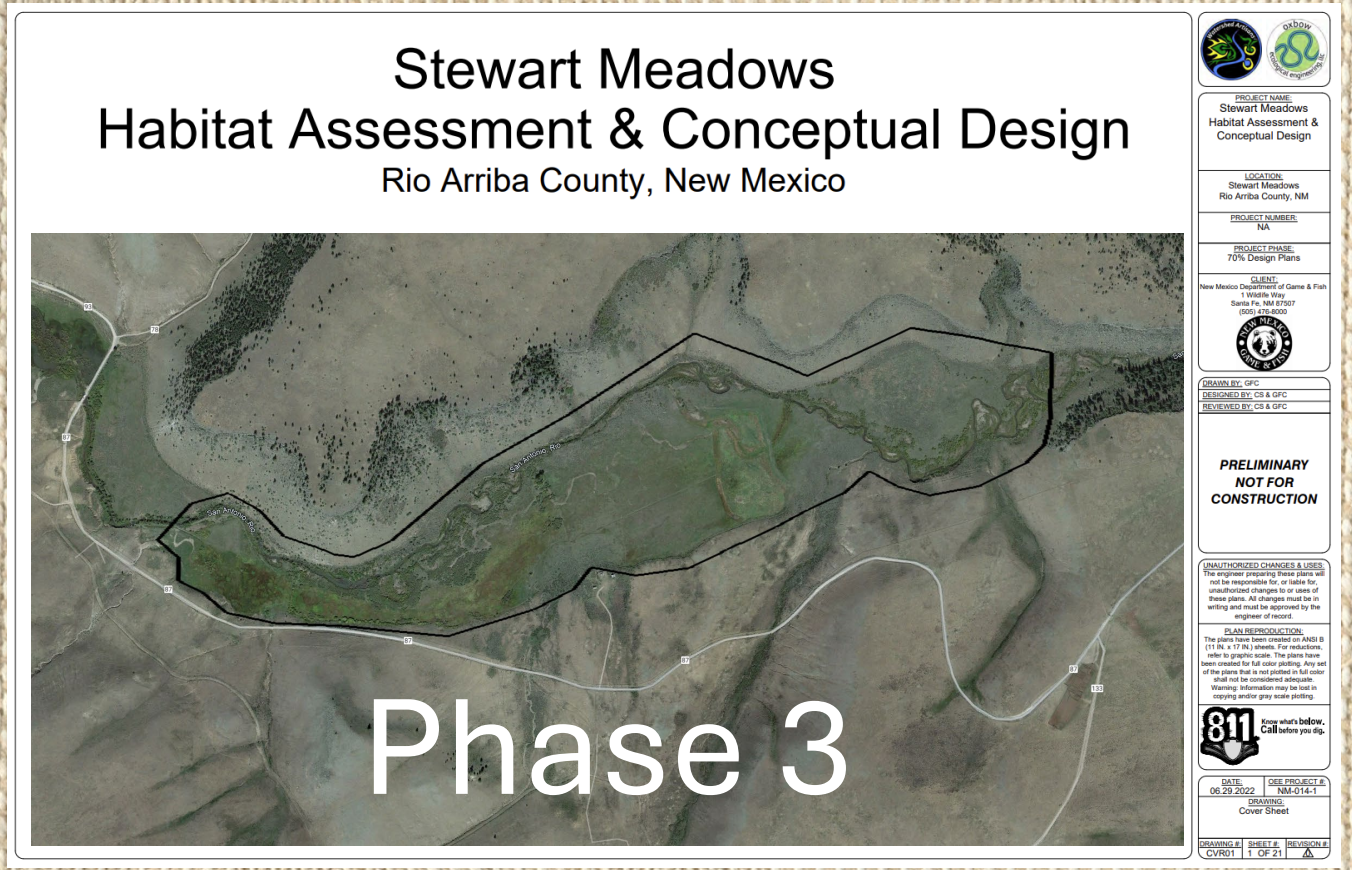
Conceptual engineering designs created for Phases 1 and 2

2024

Pipe fence maintenance and new water gap

2025

Phase 3 conceptual engineering designs funded



New Mexico Department of Game and Fish

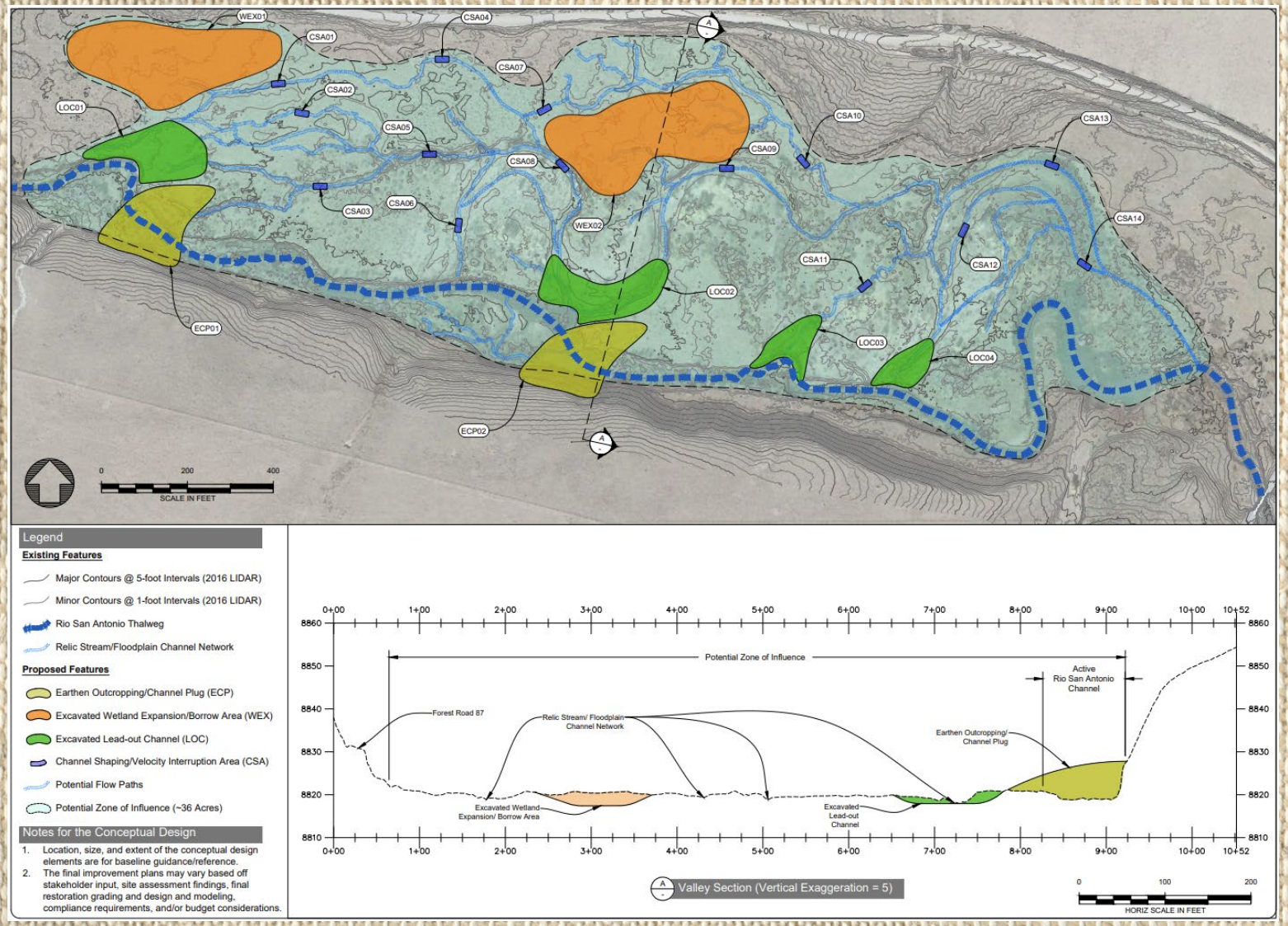
Current Conditions

- High sediment loads
- Slightly to moderately entrenched river channel
- Critical sediment buffer for downstream reaches of Rio San Antonio
- Isolation from historic floodplain, channel connected wetlands, and backwater habitat
- Risk of bank erosion and downcutting
- Active beaver population

New Mexico Department of Game and Fish

Proposed Actions

- Implement Stewart Meadows Phase 1 (upstream reach)
- Encompasses 1 mile of the Rio San Antonio
- Construction of earthen channel plugs to redirect water flow
- Construction of lead-out channels to reconnect the historic floodplain
- Channel shaping to spread out runoff water
- Creation of shallow burrow areas to enhance off channel wetlands



New Mexico Department of Game and Fish

Landscape Benefits

- Reconnect historic floodplain with channels, wetlands, and backwater habitat
- Redistribute flood energy and sediment across valley bottom
- Increase overbank flow at lower flood stages
- Accelerate floodplain development
- Improve water quality by increasing stream shading and reducing downstream sediment loads
- Increase growth and footprint of riparian vegetation

New Mexico Department of Game and Fish

Wildlife Benefits

- Increases quality and quantity of waterfowl habitat
- Increased resiliency of water for ungulate species
- Increased browse and cover for deer and elk
- Expands opportunity for beaver population
- Increased water quality downstream to benefit many fish and wildlife species.

New Mexico Department of Game and Fish

Project Summary

Stewart Meadows Phase 1 continues a legacy of restoration work in this areas made possible through diverse partnerships among conservation minded groups

All compliance, permitting, and design work is completed.

Spring 2026 is the expected start date for implementation.

Implementation will cost an estimated $435,000

New Mexico Department of Game and Fish

Project Name: Stewart Meadows Phase 1 Restoration Project

Project relation to CAC advice or prioties:

This project benefits many wildlife species in the Rio San Antonio Watershed. This project also continues a legacy of restoration work in the Stewart Meadows area and other upstream riparian restoration on the Upper Rio San Antonio. Once implemented this project will help to maintain the hydrological function of this watershed, as well as improve waterfowl habitat, improve resources for ungulates and other wildlife species, and provide downstream benefit to fish through improved water quality.

Project Specific Details:

This project is the first of three phases of riparian and floodplain restoration work planned for the Stewart Meadows area. A conceptual design packet for the first two phases of this work is attached at the end of this document for additional details. This action would reconnect the floodplain and off channel wetlands in the upper reach of the project area and improve water quality and aquatic habitat downstream.

Historical Data:

In 1880, following the arrival of livestock and logging with the railroad, the Rio San Antonio Watershed and its highly erodible soils began degrading. Carson National Forest acquired Stewart Meadows in 1973 and restoration work began in the 1980s. various restoration actions and improvements have been made once every decade.

Itemized Use of Funds:

Layout and Staking of Site: $5,000
Construction Oversight: $3,000
Material Cost: $11,500
Construction and Excavation: $359,913
Mobilization/De-mobilization $27,400
GRT: $27,459.88

Comprehensive Project Analysis:

Please see the attached design packet and presentation for these details.

Google Earth Link

Monitoring Plan/ Strategy:

Monitoring of this project will take place as part of the Army Corps of Engineers 404 permitting process. In addition, ongoing monitoring by the USFS and NMDGF will continue as Phases 2 and 3 of the Stewart Meadows Restoration work are planned and implemented.

Project Emphasis Species:

Waterfowl, Deer, Elk.
