Biological Assessment

Red Cedar Gathering Company
Arkansas Loop to Coyote Gulch Carbon Dioxide Sequestration Pipeline

Prepared for:

Red Cedar Gathering Company
125 Mercado Street, Suite 201
Durango, Colorado 81301

Prepared by:

Southern Ute Indian Tribe Growth Fund
Safety and Environmental Compliance Management Group
65 Mercado Street, Suite 260
Durango, Colorado 81301

February 2023
(*Updated May 2023*)

This page intentionally left blank.

Contents

1 Introduction 1

1.1 Purpose of the BA 1

1.2 Consultation History 2

2 Proposed Project 2

2.1 Project Overview 2

2.2 Construction 3

2.3 Water Resource Considerations 4

2.4 Reclamation 5

3 Summary of the Analysis 6

4 Existing Habitat Conditions 6

4.1 Vegetation Communities 6

4.2 Geology and Soils 7

4.3 Cumulative Effects 8

5 Threatened and Endangered Species Evaluation 9

5.1.1 Federally Listed Species Considered 9

5.2 Species Warranting Detailed Evaluation 12

5.2.1 New Mexico Meadow Jumping Mouse 12

5.2.2 Southwestern Willow Flycatcher 13

5.2.3 Yellow-billed Cuckoo 15

5.2.4 Monarch Butterfly 16

5.3 Summary of Impacts to Threatened and Endangered Species 18

6 Bald and Golden Eagles 18

7 Migratory Birds 18

8 Project Conservation Measures 19

8.1 Biological Resources 19

8.2 Water Quality 20

9 Document Preparation 20

10 Literature Cited, Reviewed and Data Sources 21

Appendix A Project Maps
Appendix B Threatened and Endangered Species List
Appendix C Plants and Animals Observed in the Project Area
Appendix D Selected Photos of the Project Area

1 Introduction

Red Cedar Gathering Company (Red Cedar) has applied for a Grant of Easement for a pipeline right-of-way (ROW) with the United States (U.S.) Department of the Interior's Bureau of Indian Affairs (BIA) to construct the Carbon Dioxide Sequestration Pipeline project. If approved by the BIA, the pipeline will capture and transport carbon dioxide (CO_2) gas from Red Cedar's Arkansas Loop natural gas treating facility to a proposed CO_2 pipeline interconnect facility adjacent to the decommissioned Coyote Gulch natural gas treating facility, a distance of approximately 20 miles. The proposed project is located within the exterior boundaries of the Southern Ute Indian Reservation (Reservation) on tribal trust and private (fee) lands in La Plata County, Colorado. See Figure 1 in Appendix A for an overview of the proposed project.

Red Cedar contracted the Southern Ute Indian Tribe Growth Fund's Safety and Environmental Compliance Management Group (SECMG) to prepare this Biological Assessment (BA), for the BIA and the Southern Ute Indian Tribe (the Tribe). A BA is required for construction projects (or other undertakings having similar physical impacts) that are major federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act [NEPA] (42 U.S.C. 4332(2) (c)). If a federal agency determines, based on a BA, that listed species and/or designated critical habitat may be affected by a proposed project, the agency is required to consult with the U.S. Fish and Wildlife Service (Service) pursuant to 50 CFR 402. Once finalized by the Tribe, the BIA and Service, this BA will provide documentation for Endangered Species Act (ESA) compliance for the following federal approvals associated with the proposed project:

1. BIA's compliance with the NEPA through the preparation of an Environmental Assessment.
2. U.S. Army Corps of Engineers compliance with the Clean Water Act (CWA), Section 404 permit coverage through Nationwide Permit 12 for the discharge of dredge or fill materials into *Waters of the United States* (WOTUS) within the project area, including the Animas and Florida Rivers and other WOTUS assumed to be jurisdictional under the U.S. Environmental Protection Agency's current definitions.
3. U.S. Environmental Protection Agency's compliance with the CWA, Section 401 water quality certification for portions of the project located on fee lands within the exterior boundaries of the Reservation.

1.1 Purpose of the BA

The purpose of this BA is to review the proposed project in enough detail to determine whether implementation of the project would affect threatened and endangered species and/or their designated critical habitat, as designated by the Service. This BA was prepared following the legal requirements set forth under the ESA of 1973, 16 United States Code (U.S.C.) 1531 et seq.

In addition, this BA contemplates potential effects to migratory birds and eagles from the proposed project, as directed by the 1918 Migratory Bird Treaty Act (MBTA) (16 U.S.C. § 703-712, Title 10 Part 13 updated in 2020), the 2001 Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," and in accordance with the 1940 Bald and Golden Eagle Protection Act (16 U.S.C. § 668-668d).

1.2 Consultation History

Matthew Zabka, Senior Environmental Compliance Specialist and Biologist with SECMG, requested a species list from the Service using the Information for Planning and Consultation (IPaC) web portal on November 29, 2021. The list identified threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of the proposed project and/or may be affected by the proposed project. A current and up to date species list is included in Appendix B.

Additionally, coordination with the Tribe's Division of Wildlife Resource Management (DWRM) specific to the proposed project was initiated by Matthew Zabka of SECMG in December 2021 regarding the potential for impacts to threatened and endangered species and otherwise culturally sensitive wildlife on the Reservation. Additional consultation meetings with the Tribe's DWRM and other interested parties were held from September through December of 2022.

2 Proposed Project

2.1 Project Overview

Red Cedar has proposed the project to capture and sequester CO_2 gas that is currently vented to the atmosphere at their Arkansas Loop natural gas treating facility. The project is located on tribal trust and fee lands within the Reservation in La Plata County, Colorado. Specifically, the proposed pipeline begins at the proposed CO_2 pipeline interconnect facility in the southeast quarter of Section 17, Township 32 North, Range 11 West, and ends at the Arkansas Loop facility tie-in in the west half of Section 30, Township 33 North, Range 9 West, New Mexico Principal Meridian (NMPM). Figures 2A – 2C in Appendix A show the project on topographic base maps.

Staging Areas and Temporary use areas (TUAs) have been proposed throughout the project area for efficient and safe construction of the project. The Staging Areas will be permitted as part of the permanent ROW for the project, as it will be requested to clear vegetation as needed from these areas. No vegetation clearing will be conducted within the TUAs. The Staging Areas and TUAs are not subject to change and are defined in the survey plats for the project. The proposed Staging Areas and TUAs are shown on Figures 2A – 2C in Appendix A.

The construction site will be accessed at various defined points throughout the project area, utilizing county, local, private, and tribal roads, as necessary. However, construction equipment and vehicles will

largely remain on the ROW and access to construction site from within the permitted area. Red Cedar has requested from the BIA a 40-foot-wide ROW for the construction of a 680-foot access road as part of the project. The road will connect an existing two-track to the proposed pipeline ROW in the southwest quarter of the northwest quarter of Section 30, Township 33 North, Range 9 West, NMPM. The details of proposed access road ROW is clearly shown on Figure 5B in Appendix A.

A grant of easement for 16.3 miles of pipeline ROW totaling approximately 79 acres will be requested from the BIA for the portions of the proposed pipeline located on Southern Ute tribal trust lands. Additional components of the project on tribal trust lands include the proposed 0.62-acre access road ROW, the four Staging Areas totaling 0.63 acre, and the seven TUAs totaling approximately 1.6 acre. Red Cedar has secured the appropriate grants of easement for pipeline ROW from the affected fee landowners totaling approximately 3.1 miles of pipeline ROW, totaling 18.2 acres. The total footprint for the proposed project is approximately 100 acres.

Table 1 displays the details of the proposed pipeline ROW on tribal trust and fee lands. Of the entire 86,098 feet of pipeline on tribal trust lands, all but 2,670 feet is sited adjacent to existing pipeline construction disturbances, roads, or otherwise previously disturbed areas. New surface disturbance would overlap existing disturbances as much as possible.

Table 1. Red Cedar Arkansas Loop to Coyote Gulch CO2 Sequestration Pipeline Right-of-Way Details.

Surface Ownership	Linear Feet	Right-of-Way Width	Acres
Tribal Trust	86,097.78	40 feet	79.1
Fee	13,661.53	50 feet	15.7
Fee	2,766.02	40 feet	2.5
	102,525.33		**97.3**

2.2 Construction

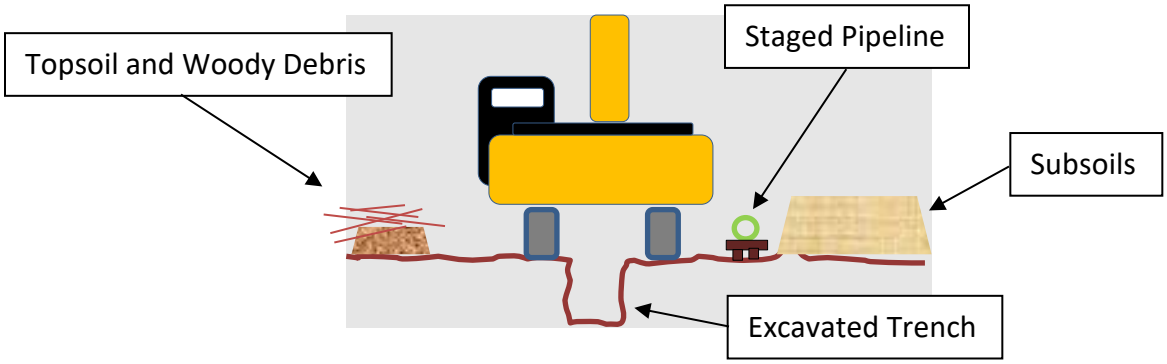
Construction is expected to begin in late-summer 2023. The timing of construction through sensitive areas, including occupied and potential threatened and endangered species habitat, perennial rivers, and valued big game hunting areas, will be coordinated with the conservation measures designed specific to the project, as well as fee landowner considerations and negotiations. Overall, it is expected that the project will be completed in 12 months.

One crew would begin work on the east side of the Florida River working to the east towards the Arkansas Loop facility. A second crew would begin work on the west side of the Animas River working west towards the Coyote Gulch facility. In mid-September 2023, work would need to begin through the Animas River valley in coordination with a biological resources contractor in occupied endangered species habitat. This would be followed by work through the Florida River in unoccupied but potential endangered species habitat in early-October 2023.

The pipeline material is 8-inch diameter steel with a wall thickness of 0.322 inches. Expected operating pressure is 2,200 pounds per square inch differential (psid). All work will be restricted to the approved

pipeline ROW easement, Staging Areas, and TUAs. Overall, construction of the project would be sequenced as follows:

- The construction area, including the ROW, Staging Areas, and TUAs, will be clearly marked and/or staked
- Equipment and vehicles shall be adequately cleaned prior to being mobilized to the site in an effort to mitigate the introduction of noxious weeds to the project area
- Vegetation within the ROW and Staging Areas will be cleared and grubbed, as needed; rough grading may be necessary at this stage of construction
- Material such as topsoil and woody debris will be salvaged for use in reclamation; salvaged materials may be stockpiled within the ROW (see diagram below for reference) or TUAs
- The pipeline will be trenched in with the exception of five bore locations
    - Trenching will be completed by a large track hoe with a 4-foot-wide bucket
        - Available topsoil (approx. top 6") will first be removed from the trench line and stockpiled, or windrowed, to one side of the trench line
        - Subsoils will then be excavated to a depth of approximately 6 feet, or appropriate depth at drainage crossings, etc.
        - Below is a diagram of a typical pipeline trenching operation. Topsoil and any woody debris to be used in reclamation is stockpiled on the left and excavated subsoils on the right. The pipe is welded together and staged along the trench prior to installation.



    - No more than one mile of trench will be left open at one time, as conditions allow.
- Once a section of pipe has been lowered into the trench it will be backfilled
- Reclamation of the surface will follow the construction phase

2.3 Water Resource Considerations

Surface water resources within the project area consist of multiple ephemeral drainages and two perennial rivers (Animas and Florida Rivers). The pipeline is proposed to be trenched, or open cut, through all surface water resources within the project area. A flume system would be used to allow surface water to flow unimpeded and reduce impacts to water quality while the pipeline is trenched

through the rivers. The flume system has been designed as three 36-inch diameter steel pipes connected together side-by-side with steel flanges on either end. The flume structure is approximately 40 feet in length. It will be necessary to create a seal on the upstream/inlet end of the flume using sandbags, jersey barriers, or other measures, to direct flow to the flumes and reduce active flow through active construction.

Red Cedar will obtain clean water from a metered water sales station near Ignacio, Colorado for hydrostatic pressure testing the pipeline for integrity. This phase will be completed in increments and the water used will be recovered and reused as needed. The maximum capacity of the entire pipeline is approximately 262,234 gallons, or 0.8 acre-feet, so the actual amount of water used will be significantly less than this. When hydrostatic testing is complete, the water will be disposed of properly at a licensed facility.

2.4 Reclamation

Red Cedar will reclaim the entire project area upon completion of construction. Overall reclamation will be completed in accordance with the Tribe's *Stormwater Recommendations for Operations on Tribal Lands within the Southern Ute Indian Reservation.* For tribal trust lands, appropriate seed mixtures have been selected by the BIA and Tribe for reclamation. Inspections of the reclaimed areas on tribal lands will be conducted until approximately 70 percent ground cover has been established, as compared to surrounding native conditions.

General reclamation efforts will include re-contouring the disturbed areas to match pre-construction conditions, preparing a proper seed bed, seeding with appropriate seed mixes, and mulching. Most of the reclamation will be to edge habitat in piñon-juniper woodland and sagebrush shrubland. There are, however, several drainages within the ROW that will be open cut, including ephemeral washes and perennial rivers. Reclamation of the ephemeral washes will include re-establishing the bed and bank features within these drainages and seeding with appropriate seed mixes.

Construction through the perennial river resources will be completed using water quality mitigation measures such as in-stream flume structures to maintain surface flows and heavy-duty timber matting to minimize compaction and mixing of surface soils adjacent to the rivers. In-stream disturbances will mostly be reclaimed naturally, however reclamation of the banks and any adjacent wetlands will be reclaimed by Red Cedar, as necessary. The portions of the project area under jurisdiction of U.S. Army Corps of Engineers CWA, Section 404 permitting authority will have unique post-construction monitoring requirements.

Restoration of the identified endangered species habitat within the project area will occur. Habitat restoration techniques will be developed and implemented, where appropriate, collaboratively by species experts, the Tribe's Division of Wildlife Resource Management, SECMG, and the Service. Monitoring procedures of the endangered species habitat restoration efforts will be established and will

generally include habitat/vegetation assessments and biological surveys for a pre-determined period of time.

Red Cedar will be responsible for minimizing the spread of noxious weeds currently found within the project area, as well as controlling the introduction of additional noxious weed species into the permitted area for the life of the pipeline. Musk thistle (*Carduus nutans*), Russian knapweed (*Acroptilon repens*), and salt cedar (*Tamarix* sp.) were observed within the project area during the on-site inspections. Prior to any herbicide treatment on tribal lands, the commercial applicator must receive approval from the Southern Ute Water Resources Division. This will ensure that the application of herbicide near sensitive surface water resources is carefully considered.

3 Summary of the Analysis

For analysis purposes in this BA, an action area was defined as the project area, or footprint, and a 0.5-mile buffer, totaling approximately 12,700 acres, or 20 square miles. The action area includes all areas to be affected directly or indirectly by the proposed action and the immediate area involved in the action. The action area was determined by several factors, including line of site from the project area and the distance that noise and fugitive dust could reasonably travel from typical pipeline construction activities. Figures 2A-2C in Appendix A show the action area on a topographical base map.

Desktop reviews were performed using available geographic information system (GIS) data in Google Earth and ESRI ArcMap software. The desktop reviews evaluated the potential impacts to threatened, endangered, and otherwise sensitive wildlife using information about the project received from Red Cedar.

On-site, pedestrian biological surveys were conducted on November 17, December 7, and December 8, 2021, and May 25, 2022. Binoculars were used to survey the action area for potential raptor nesting habitat, and to scan the surrounding area. Identifiable plants and animals observed, or signs thereof, were recorded in Appendix C. Digital photos of the project area were taken and selected photos are included in Appendix D.

4 Existing Habitat Conditions

4.1 Vegetation Communities

There are a variety of vegetation communities found in the action area as shown on Figures 3A-3C in Appendix A and summarized in Table 3. The action area is largely dominated by Colorado Plateau Pinyon-Juniper Woodland (8,896 acres) and Inter-Mountain Basins Big Sagebrush Shrubland (1,670 acres) with lesser amounts of Rocky Mountain Gambel Oak-Mixed Montane Shrubland, Colorado Plateau Mixed Bedrock Canyon and Tableland, and Rocky Mountain Lower Montane Riparian Woodland and Shrubland. Land classified as agricultural makes up for nearly 6 percent (%) of the action area, or approximately 709 acres.

The 101-acre project area is comprised of approximately 61% Colorado Plateau Pinyon-Juniper Woodland and 18% Inter-Mountain Basins Big Sagebrush Shrubland. Minor components of the project area include land classified as agricultural (7%), Inter-Mountain Basins Semi-Desert Shrub Steppe (4%), Rocky Mountain Gambel Oak-Mixed Montane Shrubland (3%), and Inter-Mountain Basins Semi-Desert Grassland (2%).

Table 2. Approximate Amounts of Vegetation Community Types Found within the Action Area and Proposed Project Area.

Community Type	Amount in Action Area (Acres)	Amount in Proposed Project Area (Acres)
Agriculture	709	7
Colorado Plateau Mixed Bedrock Canyon and Tableland	183	-
Colorado Plateau Pinyon-Juniper Woodland	8,896	62
Inter-Mountain Basins Big Sagebrush Shrubland	1,670	18
Inter-Mountain Basins Mixed Salt Desert Scrub	2	-
Inter-Mountain Basins Semi-Desert Grassland	55	2
Inter-Mountain Basins Semi-Desert Shrub Steppe	246	4
Inter-Mountain Basins Shale Badland	109	1
Rocky Mountain Aspen Forest and Woodland	5	-
Rocky Mountain Gambel Oak-Mixed Montane Shrubland	451	3
Rocky Mountain Lower Montane Riparian Woodland and Shrubland	224	2
Rocky Mountain Ponderosa Pine Woodland	95	-
Southern Rocky Mountain Montane-Subalpine Grassland	24	1
Southern Rocky Mountain Pinyon-Juniper Woodland	3	-

4.2 Geology and Soils

The U.S. Geological Survey has mapped surface geology within the action area as Nacimiento Formation containing sedimentary lithographic components from the Tertiary geologic age, San Jose Formation containing sedimentary lithographic components from the Eocene geologic age, and unconsolidated gravels and alluviums from the Quaternary geologic age.

Nacimiento Formation surface geology consists of shales and sandstones. This formation is found at middle elevations within the action area on either side of the major river valleys and in the far west portion of the action area within the Coyote Gulch and McDermott Arroyo drainages. San Jose Formation is situated on higher elevation areas within the action area and consists of siltstones and

shales. The unconsolidated gravel and alluvium surficial deposits are found within the Animas and Florida river valleys at lower elevations.

The proposed pipeline route crosses through many different soil types, predominantly Dulce-Travessilla-Rock outcrop complex, Yenlo-Florita sandy loams, Mikim loam, and Ustic Torriorthents-Ustollic Haplargids complex. Table 4 summarizes the soils that have been mapped within the project area and that would be directly affected by the proposed project. Figures 4A-4C in Appendix A show the soils found within the action area.

Table 3. Soil Types and Characteristics Found within the Proposed Project Area.

Soil Type[1]	Soil Order	Amount in Proposed Project Area (Acres)	Erosion Hazard	Runoff Class
Arboles clay	Vertisols	0.40	Moderate	High
Buckle loam	Aridisols	5.46	Moderate	Low
Dulce-Travessilla-Rock outcrop complex	Entisols	28.59	Severe	High
Durango cobbly loam	Alfisols	4.12	Moderate	Medium
Lazear-Rock outcrop complex	Entisols	5.02	Severe	Very high
Mikim loam	Entisols	9.78	Moderate	Medium
Panitchen-Dominguez variant silty clay loams	Entisols	0.90	Moderate	Low
Pescar fine sandy loam	Entisols	0.20	Slight	Very low
Picante-Rock outcrop complex	Entisols	0.15	Severe	High
Pulpit loam	Alfisols	2.76	Moderate	Not Rated
Sedillo gravelly loam	Aridisols	0.81	Slight	Low
Shalona loam	Mollisols	2.63	Moderate	Low
Sili clay loam	Aridisols	3.74	Slight-Moderate	Medium-High
Tefton loam	Entisols	0.67	Slight	Low
Ustic Torriorthents-Ustollic Haplargids complex	Entisols	6.39	Severe	High
Witt loam	Aridisols	1.11	Moderate	Medium
Yenlo-Florita sandy loams	Aridisols	20.01	Slight	Low
Zyme-Rock outcrop complex	Entisols	5.52	Severe	Very High

[1] Soil types mapped by the U.S. Department of Agriculture's Natural Resources Conservation Service.

4.3 Cumulative Effects

Under the ESA, cumulative effects are the additive effect of "reasonably certain to occur" future state, private and tribal activities. The action area for the proposed project contains fee and tribal trust lands, and various transportation and utility ROWs.

Southern Ute tribal resource specialists were contacted regarding "reasonably certain to occur" future tribal activities within the action area for the proposed project. The Tribe's Department of Energy was aware of one future energy project within the action area that will undergo appropriate federal permitting, including compliance with the ESA, NEPA, and National Historic Preservation Act (A. Abeyta,

personal communication, February 7, 2023). The Tribe's Forestry Division has a fuels unit project planned within the action area and consists of hand thinning, biomass extraction, and mastication. The forestry project has undergone environmental review (B. Gideon, personal communication, February 7, 2023). These projects will not have any cumulative effects on threatened or endangered species as analyzed in this BA since there is no potential habitat within these action areas. The Tribe's Division of Wildlife Resource Management has no "reasonably certain to occur" future activities within the action area (A. Johnson, personal communication, February 7, 2023).

The Colorado Department of Transportation (CDOT) was contacted regarding "reasonably certain to occur" future state activities within the action area for the proposed project. CDOT would like to address the rockfall and geohazard issues along U.S. Highway 550 within the action area, which would include repair work (scaling, minor drilling/blasting, and rock anchor installation), enhancement of the roadside ditch to provide catchment of debris, and riprap installation to prevent scour (M. Lawler, personal communication, February 7, 2023). This project is likely to be funded in the next few years. Ongoing transportation maintenance projects are expected to occur within the U.S. Highway 550 ROW as well. There is no potential threatened or endangered species habitat within these project areas and they will not have any cumulative effects on threatened or endangered species as analyzed in this BA.

La Plata County was contacted regarding "reasonably certain to occur" activities within the action area for the proposed project. It was suggested to access the La Plata County Planning website to identify current projects within the action area (B. Glenn, personal communication, February 7, 2023). The website did not reveal any "reasonably certain to occur" activities at the county level that would result in cumulative effects on threatened or endangered species as analyzed in this BA.

5 Threatened and Endangered Species Evaluation

Table 5 contains nine threatened, endangered, or candidate species on the Service's species list for the proposed project. Table 4 summarizes species occurrence, habitat conditions, and evaluation determination for all identified species that may occur in the action area.

5.1.1 Federally Listed Species Considered

Table 4. Threatened, Endangered, and Candidate Species that may occur in the Action Area or may be affected by the Proposed Project.[1]

Species Name	Conservation Status	Habitat	Warranting Detailed Evaluation?
MAMMALS			
Gray wolf (*Canis lupus*)	Endangered	Formerly occurring in most of the conterminous U.S. and Mexico.[2] Dispersing wolves have been documented in Colorado, and the State is planning to introduce gray wolves onto the Western Slope of Colorado by the end of 2023.[3]	NO: The proposed action does not include a predator management plan and accordingly this species does not warrant detailed evaluation in this BA.[1]

Species Name	Conservation Status	Habitat	Warranting Detailed Evaluation?
New Mexico meadow jumping mouse (*Zapus hudsonius luteus*)	Endangered	Herbaceous wetlands dominated by dense sedges adjacent to permanent water. The nearest designated critical habitat for the New Mexico meadow jumping mouse is 11 miles from the project along the Florida River.[4]	YES: The project area contains occupied jumping mouse habitat along the Animas River and potential jumping mouse habitat along the Florida River.
BIRDS			
Mexican spotted owl (*Strix occidentalis lucida*)	Threatened	Frequently associated with mature mixed-conifer, pine-oak, and riparian forests. Also found in canyon habitat. Designated critical habitat is located over 30 miles from the action area on the Carson National Forest.[5]	NO: There is no potential habitat within the action area for this species as defined by the Service.[5] There are historical records of dispersed individual spotted owls on the far east side of the Reservation, however no breeding pairs have been documented (A. Johnson, personal communication, October 24, 2022).
Southwestern willow flycatcher (*Empidonax traillii extimus*)	Endangered	Dense, shrubby riparian habitats at least 5 feet tall, 30 feet wide, and greater than 0.25 acre in size. Habitat is usually close to surface water or saturated soil. Designated critical habitat for this species is located ~15 miles from the project area along the Los Piños River south of Bayfield.[6]	YES: Potential habitat for this species is present within the action area. Presence/absence surveys for this species were conducted by ERO Resources Corporation in 2022.
Yellow-billed cuckoo (*Coccyzus americanus*)	Threatened	Nests almost exclusively in low to moderate elevation riparian woodlands that cover 50 acres or more within arid to semiarid landscapes. Although this species breeds locally in river valleys in western Colorado, it is "scarcer at elevations above approximately 6,000 feet, and almost never breeds above 7,000 feet".[7] Designated critical habitat is found far from the project area along the North Fork of the Gunnison River in western Colorado.[8]	YES: Potential habitat for this species is present within the action area. Presence/absence surveys for this species were conducted by ERO Resources Corporation in 2022.
PLANTS			

Species Name	Conservation Status	Habitat	Warranting Detailed Evaluation?
Knowlton's cactus (*Pediocactus knowltonii*)	Endangered	Tertiary alluvial deposits on San Jose Formation in piñon-juniper woodland. A foliose lichen occurs throughout Knowlton's cactus habitat in great abundance.[9] There is no critical habitat designated for this species.	NO: The action area contains unconsolidated gravel and alluvium deposits on San Jose Formation. However, riparian woodland is present where this species is expected to occur rather than the closely associated piñon-juniper woodland. Additionally, this species is not known to occur outside of the Los Piños River drainage and has not been found in Colorado (J. Gottschalk, personal communication, December 6, 2022).
FISH			
Colorado pikeminnow (*Ptychocheilus lucius*)	Endangered	Large rivers with strong currents, deep pools, eddies, and quiet backwaters. Designated critical habitat for this species is located ~20 miles to the southwest in the San Juan River.[10]	NO: The proposed project is not considered a water development project and therefore will not result in unaccounted for water depletions within the San Juan River Basin. Project design features will eliminate or greatly reduce the potential for adverse impacts to surface water resources within the action area.
Razorback sucker (*Xyrauchen texanus*)	Endangered	Swift currents, eddies, and backwaters in the San Juan, Colorado, Green, and Yampa Rivers. Designated critical habitat for this species is located ~30 miles to the southwest in the San Juan River.[10]	NO: The proposed project is not considered a water development project and therefore will not result in unaccounted for water depletions within the San Juan River Basin. Project design features will eliminate or greatly reduce the potential for adverse impacts to surface water resources within the action area.
INSECTS			

Species Name	Conservation Status	Habitat	Warranting Detailed Evaluation?
Monarch butterfly (*Danaus plexippus*)	Candidate	Found throughout eastern and western North America in the spring and summer, laying their eggs on obligate milkweed host plant (primarily *Asclepias* spp.); migrates in the fall to overwintering sites in either mountainous central Mexico or along the California coast into northern Baja California.[11] There is no critical habitat designated for this species.	YES: Potential habitat for this species is found in the action area.

Sources:

[1] IPaC Species List for Project (Service 2022)

[2] Reclassification of the Gray Wolf in the United States and Mexico (Service 1978)

[3] Colorado Parks and Wildlife Wolf Management website (CPW 2022)

[4] Designation of critical habitat for New Mexico Meadow Jumping Mouse (Service 2016)

[5] Designation of critical habitat for Mexican Spotted Owl (Service 2004)

[6] Designation of critical habitat for Southwestern Willow Flycatcher (Service 2013)

[7] Determination of threatened status for Yellow-billed Cuckoo (Service 2014b)

[8] Designation of critical habitat for Yellow-billed Cuckoo (Service 2014a)

[9] Knowlton's Cactus Recovery Plan (Service 1985)

[10] Designation of critical habitat for the Colorado River Endangered Fishes (Service 1994)

[11] Monarch Species Status Assessment Report (Service 2020)

5.2 Species Warranting Detailed Evaluation

5.2.1 New Mexico Meadow Jumping Mouse

The NMMJM has exceptionally specialized habitat requirements to support its life-history needs and maintain adequate population sizes. Habitat requirements are characterized by tall, dense riparian herbaceous vegetation primarily composed of sedges and forbs (78 FR 37365). In addition, individual jumping mice also need intact upland areas adjacent to riparian wetland areas for nesting, birthing, and hibernation. Hibernation for this species occurs from late September into October until mid-May to early-June.

The Service proposed to list the New Mexico Meadow Jumping Mouse (NMMJM) as an endangered species under the ESA on June 20, 2013 (78 Federal Register [FR] 37363-37369) and published a final rule determining endangered species status under the ESA on June 10, 2014 (79 FR 33119-33137) due to the species having an overall low viability (probability of persistence) in the near term and a decreasing viability in the long-term future.

5.2.1.1 Critical Habitat

The Service proposed to designate critical habitat for NMMJM on June 20, 2013 (78 FR 37328-37363) and published a final rule on March 16, 2016, designating an area of approximately 13,973 acres along

169.3 miles of flowing streams, ditches, and canals as critical habitat (81 FR 14264-14325). No NMMJM critical habitat has been designated on tribal lands within the exterior boundaries of the Reservation.

5.2.1.2 Existing Habitat Conditions and Species Presence

The Tribe's DWRM has been conducting presence/absence trapping for this species throughout the Reservation in an attempt to better understand its habitat use and range. The NMMJM has been found along several rivers and streams on the Reservation. It was determined early on in project planning with the Tribe's DWRM that potential NMMJM habitat occurs within the action area for the proposed project, particularly along the Animas and Florida Rivers. Considering the primary constituent elements for this species as defined by the Service, there is approximately 282 acres of potential NMMJM habitat within the proposed action area: 158 acres along the Florida River and 124 acres along the Animas River (Appendix A: Figures 5A - 5C).

Presence/absence surveys for NMMJM were conducted by Biological Resources, LLC in the proposed project location. The first trapping effort was completed along the Animas River from June 12-14, 2022, and a second along the Florida River from June 21-25, 2022. The Animas River survey consisted of 160 traps set each night for a total of 320 trap nights. Five adult male NMMJM were captured on the first two trap nights and therefore trapping was discontinued to avoid any harm to jumping mice from further unnecessary trapping. Deer mice (*Peromyscus maniculatus*) were also captured along the Animas River trapping effort. Trapping efforts along the Florida River were hampered by the presence of livestock and a monsoonal rain event, however, 175 traps were set for a total of 700 trap nights. Although several non-target species were captured, no NMMJM were captured along the Florida River.

5.2.1.3 Conclusion and Effects Determination for New Mexico Meadow Jumping Mouse

The proposed project would impact approximately 0.83 acre of occupied NMMJM habitat along the Animas River and approximately 0.95 acre of potential, unoccupied NMMJM habitat along the Florida River. A majority of the habitat impacted by the project is considered upland habitat adjacent to the more prominently used streamside riparian/wetland vegetation.

The project has the potential for direct mortality to NMMJM from the installation of heavy-duty timber matting, handling stress as a result of biological monitor intervention, and through crushing by equipment or fill material placement during construction. Furthermore, construction activity and increased noise could cause additive disturbances within the occupied habitat area by altering normal activity of the NMMJM. Therefore, a *may affect, likely to adversely affect* determination has been made for the NMMJM.

5.2.2 Southwestern Willow Flycatcher

The Southwestern Willow Flycatcher (SWFL) occurs in riparian habitats along rivers, streams, or other wetlands, where dense growths of willows (*Salix* sp.), *Baccharis*, arrowweed (*Pluchea* sp.), buttonbush (*Cephalanthus* sp.), tamarisk (*Tamarix* sp.), Russian olive (*Eleagnus* sp.) or other plants are present, often with a scattered overstory of cottonwood (*Populus* sp.) (60 FR 10694). Throughout the range of SWFL,

these riparian habitats tend to be rare, widely separated, small and/or linear locales, separated by vast expanses of arid lands (60 FR 10694).

The Service published a proposed rule announcing a 12-month finding for a petition to list the SWFL as an endangered species under the authority of the ESA on July 23, 1993 (58 FR 39495-39522). A final rule was published by the Service on February 27, 1995, determining the SWFL to be an endangered species under the authority of the ESA (60 FR 10694-10715) due to extensive loss of habitat, brood parasitism, and lack of adequate protective regulations.

5.2.2.1 Critical Habitat

On July 23, 1993, the Service proposed critical habitat for SWFL to include riparian areas along streams and rivers in southern California, Arizona, and New Mexico (58 FR 39495-39522). Critical habitat for SWFL was designated in a final rule published on July 22, 1997 and included 599 river miles in Arizona, California, and New Mexico (62 FR 39129-39146). Then, on October 12, 2004, the Service published a proposed rule designating 376,095 acres, including approximately 1,556 stream miles, of critical habitat which includes various stream segments and their associated riparian areas, not exceeding the 100-year floodplain or flood prone area, on a combination of Federal, State, Tribal, and private lands in southern California, southern Nevada, southwestern Utah, south-central Colorado, Arizona, and New Mexico (69 FR 60706-60786). Following subsequent revisions to critical habitat designations for SWFL, the Service published a final rule on January 3, 2013, designating 1,227 stream miles as critical habitat, encompassing a total area of approximately 208,973 acres on a combination of federal, state, tribal, and private lands in California, southern Nevada, southern Utah, southern Colorado, Arizona, and New Mexico (78 FR 344-534). Critical habitat for SWFL has not been designated on the Reservation.

5.2.2.2 Existing Habitat Conditions and Species Presence

Approximately 4.5 acres of potential SWFL habitat was identified by ERO Resources Corporation (ERO) in the action area for the proposed project. A majority of the potential SWFL habitat is adjacent to the Animas River in associated riparian habitat. It was determined that the riparian corridor associated with the Florida River contained approximately 0.3 acre of poor-quality migratory SWFL habitat because of the small patch size and low willow density. In addition, the area along the Florida River is heavily grazed by cattle and very little shrubby vegetation is present. See Figures 6A and 6B in Appendix A showing potential SWFL habitat within the action area for the proposed project.

Conditions along the Animas River are dynamic annually due to fluctuations in water levels in the river and periods of drought. Habitat quality along the east side of the river is good north of the proposed pipeline route based on the vegetation structure and density, however conditions beneath the willow patches were dry, and standing water or moist soils were not present below any of the habitat patches. Potential habitat along the west side of the Animas River is marginal, consisting of narrow and sparse willow patches. Of note, no SWFL habitat occurs where the proposed pipeline route crosses the Animas River.

ERO conducted protocol surveys for SWFL within the potential habitat polygons adjacent to the Animas River; no surveys were conducted at the Florida River. The surveys began on May 19, 2022 and were completed on July 15, 2022. One male flycatcher was detected during the first survey on May 19, 2022. No other flycatchers were detected during the remaining four surveys. The flycatcher detected early on was likely a migrant, was assumed to belong to the nonendangered subspecies (*Empidonax trailii adastus*) and was presumably not breeding at the site (ERO 2022).

5.2.2.3 Conclusion and Effects Determination for Southwestern Willow Flycatcher

Although approximately 4.5 acres of potential SWFL habitat was identified within the action area for the proposed project, construction of the pipeline would not impact any potential SWFL habitat (see Figures 6A and 6B in Appendix A for reference). Construction of the pipeline through the Animas and Florida river corridors, containing potential SWFL habitat as discussed, is scheduled to be completed from mid-September through February, avoiding the SWFL breeding/nesting season. In addition, altering or removing vegetation outside of the SWFL breeding season will greatly reduce potential impacts to this species. A *no effect* determination has been made for the SWFL.

5.2.3 Yellow-billed Cuckoo

The Yellow-billed Cuckoo (YBCU) breeds in riparian habitat along low gradient (surface slope less than 3 percent) rivers and streams, and in open riverine valleys that provide wide floodplain conditions (greater than 325 feet) (Service 2014a). A habitat patch is defined as an area of riparian habitat 5 hectares (considered a typical minimum size for cuckoo occupancy) or greater in extent that is separated by at least 300 meters from an adjacent patch of apparently suitable cuckoo habitat (Halterman, et al. 2015). The breeding season for the YBCU is June 1 to August 31.

On October 3, 2013, the Service published a proposed rule to list the YBCU in the western portions of the United States, Canada, and Mexico (Western Yellow-Billed Cuckoo) as a threatened distinct vertebrate population segment under the ESA (78 Federal Register 61622-61666). The Service proposed listing the species as threatened due to habitat destruction, modification, and degradation, and perceived threats due to habitat rarity and small, isolated populations. A final rule was published on October 3, 2014 listing the western distinct population segment of the YBCU as a threatened species (79 Federal Register 59992-60038).

5.2.3.1 Critical Habitat

A proposal to designate critical habitat for the western distinct population segment of the YBCU was published on August 15, 2014 (79 FR 48548). The Service published a revised proposal to designate critical habitat for this species on February 27, 2020, decreasing the total amount of critical habitat from 546,335 acres to 493,665 acres and removing critical habitat designations in Nevada and Wyoming (85 FR 11458). A final rule was published on April 21, 2021, designating 298,845 acres of critical habitat in Arizona, California, Colorado, Idaho, New Mexico, Texas, and Utah (86 FR 20798). There is no YBCU critical habitat in the action area for the proposed project.

5.2.3.2 Existing Habitat Conditions and Species Presence

ERO identified approximately 42 acres of potential YBCU habitat in dense cottonwood stands in the floodplain and banks adjacent to the Animas River (see Figure 7 in Appendix A). Habitat was considered by ERO to be generally healthy mature cottonwoods within a closed canopy and open understory. Habitat quality for YBCU is overall fair, typically lacking multilayered riparian vegetation. It was observed that upland woodland is encroaching into the riparian corridor.

Surveys were completed for YBCU beginning on June 16, 2022 and were completed on August 1, 2022. No YBCU were detected during the surveys.

5.2.3.3 Conclusion and Effects Determination for Yellow-Billed Cuckoo

The proposed project would impact approximately 0.5 acre of potential YBCU habitat that has been considered fair-quality and typically lacks multilayered riparian vegetation. The amount of habitat impacted would be relatively minor considering a typical habitat patch is approximately 12 acres in size. In addition, the presence/absence surveys for YBCU were negative. Even though there are anticipated impacts to approximately 0.5 acre of potential YBCU habitat, construction of the pipeline through the Animas and Florida river corridors is scheduled to be completed from mid-September through February, avoiding the YBCU breeding/nesting season. A *may effect, not likely to adversely affect* determination has been made for this species.

5.2.4 Monarch Butterfly

The adult Monarch butterfly is large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. The black border has a double row of white spots, present on the upper side of the wings. Adult Monarchs are sexually dimorphic, with males having narrower wing venation and scent patches. The bright coloring of a Monarch serves as a warning to predators that eating them can be toxic.

Monarch butterflies occur at elevations from 4,300 to 11,500 feet (rarely above 9,000 feet), mainly in lowlands near larval food plants. Migrating Monarchs tend to occur more frequently near water sources such as rivers, creeks, roadside ditches, and irrigated areas in the southwestern states (Service 2022b). Milkweed (*Asclepias* sp.) is an essential feature of quality Monarch butterfly habitat. Eggs, larvae, and adults require healthy and abundant milkweed for oviposition and larval consumption (Service 2022b). Adult Monarchs also require a diversity of blooming nectar resources during breeding and migration. In western North America, nectar and milkweed resources are often associated with riparian corridors, and milkweed may function as the principal nectar source for Monarchs in more arid regions (Service 2022b).

During the breeding season, Monarchs lay their eggs on their obligate milkweed host plant (primarily *Asclepias* sp.), and larvae emerge after two to five days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupate into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of Monarchs produced

during the breeding season, with most adult butterflies living approximately two to five weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live six to nine months.

Monarchs in western North America undergo long-distance migration and live for an extended period of time. In the fall, Monarchs begin migrating to their respective overwintering sites. The Monarch's migration can last for over two months and cover distances of over 3,000 kilometers. In early spring (February-March), surviving Monarchs break diapause and mate at their overwintering sites before dispersing. The same individuals that undertook the initial southward migration begin flying back through the breeding grounds and their offspring start the cycle of generational migration over again (Service 2020b).

The Service received a petition to list the Monarch butterfly (*Danaus plexippus plexippus*) as a threatened species under the ESA on August 26, 2014. A notice of 12-month finding was then published by the Service on December 17, 2020 "that listing the monarch butterfly as an endangered or threatened species is warranted but precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants" and would develop a proposed rule to list the species as priorities allow (85 FR 81813).

5.2.4.1 Critical Habitat

The Monarch is not a listed species and therefore is not afforded the protection under the ESA, including critical habitat designation.

5.2.4.2 Existing Habitat Conditions and Species Presence

The action area contains suitable vegetation to support the Monarch butterfly within the Animas and Florida River corridors. Two adult Monarchs were observed on and near milkweed plants within the Animas River floodplain during the final YBCU survey on August 1, 2022 (ERO 2022). Based on the timing of the observation, it was not assumed that the Monarchs were migrants. Milkweed plants are scattered throughout the site in low density, intermixed with other grasses and forbs (A. Way, personal communication, February 7, 2023).

5.2.4.3 Conclusion for Monarch Butterfly

The proposed project contains potential Monarch habitat that could be altered or removed during construction activities. Due to the large scale of the project and the unique timing considerations in specific areas, it is difficult to predict the intensity of the potential impacts to this species overall. However, construction of the project through the Animas and Florida River riparian corridors will take place after adult Monarch butterflies have migrated through the area to their overwintering grounds in California or Mexico, reducing potential impacts to this species.

If noxious weed species are identified within the project area over time, it is recommended that they be managed to maintain, and possibly promote, the growth of milkweed species to benefit the Monarch butterfly. It is recommended that any noxious weed management activities potentially affecting Monarch butterfly habitat occur between September 30 and May 1 (The Xerces Society 2018).

5.3 Summary of Impacts to Threatened and Endangered Species

Of the nine federally listed and candidate species with the potential to occur in the action area, three have the potential to be impacted by the proposed project: the Monarch Butterfly, New Mexico Meadow Jumping Mouse, and Yellow-Billed Cuckoo. Conservation measures have been designed to minimize and reduce potential adverse impacts to these three species. Since the Monarch Butterfly is a candidate for listing, no effects determination has been made for this species. Table 6 summarizes the effects determinations for the remaining eight listed species.

Table 5. Effects Determination Summary of Federally Listed and Candidate Species.

Species	Status	Determination of Effect
Colorado Pikeminnow	Endangered	No effect
Gray Wolf	Endangered	No Effect
Knowlton's Cactus	Endangered	No effect
Mexican Spotted Owl	Threatened	No effect
Monarch Butterfly	Candidate	NA – Candidate Species
New Mexico Meadow Jumping Mouse	Endangered	May affect, likely to adversely affect
Razorback Sucker	Endangered	No effect
Southwestern Willow Flycatcher	Endangered	No effect
Yellow-billed Cuckoo	Threatened	May affect, not likely to adversely affect

6 Bald and Golden Eagles

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) was enacted in 1940 and prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs.

The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." Regulations further define "disturb" as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 CFR 22.6).

Bald eagles are commonly seen during the winter months near perennial surface water resources on the Reservation and elsewhere in southwestern Colorado. Golden eagles have been known to nest in canyons and arid habitats throughout the region.

According to Colorado Parks and Wildlife (CPW) and the Tribe's DWRM, no sensitive bald or golden eagle sites have been documented within the action area for the proposed project. However, CPW has mapped the Animas and Florida River valleys as bald eagle winter concentration areas.

7 Migratory Birds

All migratory birds, except those species listed by the Secretary of the Interior as exempted, are protected by the MBTA of 1918. The Service administers the MBTA, which prohibits the "take" (death,

removal or capture) of migratory birds, their eggs, or their active nests. The implications of the proposed action have been assessed in combination with the site visits, to evaluate potential impacts to migratory birds. Potential impacts to migratory birds will be greatest during the typical migratory bird breeding/nesting season from March 15 to August 15.

As discussed in Section 4, Existing Habitat Conditions, the dominant vegetation community within the project area is piñon-juniper woodland, making up for approximately 61% of the project footprint, or 62 out of 101 acres. There is also approximately 18 acres of sagebrush shrubland within the project area that is potential migratory bird habitat. Other minor vegetation components found within the project area are defined in Section 4.

The proposed pipeline alignment follows existing disturbances for the entire length of the project except for approximately one-half mile through piñon-juniper woodland. Therefore, the bulk of impacts to potential migratory bird habitat will be to edge habitat in piñon-juniper woodland and sagebrush shrubland.

8 Project Conservation Measures

All applicable environmental protection measures defined in the 2009 Biological Assessment for the Proposed 80-acre Infill Oil and Gas Development on the Reservation will be implemented for the proposed project. These design features can be found on pages 11-16 in the document and include measures to protect air quality, vegetation, wildlife, and waterways.

The following site-specific conservation measures are proposed to further avoid, minimize, or reduce potential impacts from implementation of the proposed project on sensitive environmental resources.

8.1 Biological Resources

- A *Conservation Measures Protocol* is being developed in collaboration with the Tribe's DWRM, SECMG, the Service, and a NMMJM species expert.
  - The protocol will address and define project-specific conservation measures with a focus on the NMMJM.
  - The conservation protocol will be completed prior to construction and will cover on-the-ground decisions with construction crews and conservation decisions regarding NMMJM.
  - Post-construction monitoring will be defined in the final protocol, and will include a combination of habitat/vegetation assessments and presence/absence surveys.
- Pre-disturbance data will be collected in summer 2023, including an updated presence/absence survey and a baseline habitat assessment.
- Heavy-duty timber matting will be used within the riparian corridors along the Animas and Florida Rivers. The timber matting will mitigate damage by heavy equipment to sensitive habitat and vegetation, as well as minimize compaction and mixing of surface soils.
- Silt fence will be installed along the edges of the ROW through NMMJM habitat along both the Animas and Florida rivers.

- No vegetation will be brush-hogged, mowed, or otherwise altered within NMMJM habitat, other than the trench line for installation of the pipeline.
- Due to NMMJM biological (life cycle) considerations, project activities within defined habitat for this species will be restricted to early-August through late-September.
- It is expected that any physical impacts to active-season NMMJM habitat (i.e., wetlands) will be restored naturally. If necessary, wetland rehabilitation will be prescribed using native plant species.
- The drier, upland portions of NMMJM habitat within the project area will be reclaimed using a native seed mix and mulched.
- If sensitive bald or golden eagle sites are identified within the action area for the proposed project, the Service and the Tribe's DWRM shall be consulted for appropriate conservation measures.
- Migratory bird activity surveys shall be conducted by qualified biologists within potential habitat no more than seven (7) calendar days prior to construction activities scheduled from March 15 to August 15. If active migratory bird nests, or otherwise sensitive sites, are found, the Tribe's DWRM shall be consulted for appropriate conservation measures prior to construction proceeding.
- It is recommended that noxious weed management activities occur between September 30 and May 1 to avoid potential impacts to Monarch butterflies. Spot-spraying noxious weeds and avoiding overspray onto non-targeted plants, such as milkweed (*Asclepias* sp.), will further minimize adverse impacts to potential Monarch butterfly habitat.

8.2 Water Quality

- Water quality certification will be obtained from the Tribe's Environmental Programs Division and the U.S. Environmental Protection Agency in accordance with Section 401 of the CWA.
- Red Cedar will implement best management practices and control measures to minimize erosion or sediment discharge from construction activities. A project-specific Storm Water Pollution Prevention Plan (SWPPP) has been created in accordance with the *Storm Water Recommendations for Operations on Tribal Lands within the Southern Ute Indian Reservation*.
- The project will be authorized under Nationwide Permit 12 for impacts to WOTUS. A pre-construction notification will be submitted to the U.S. Army Corps of Engineers, Durango Regulatory Office.

9 Document Preparation

Matthew Zabka
Biologist and Sr. Environmental Compliance Specialist
Southern Ute Indian Tribe Growth Fund, SECMG
Durango, Colorado

In consultation/coordination with:

Jake Gottschalk
Biologist
U.S. Fish and Wildlife Service
Western Colorado Ecological Services Field Office
Grand Junction, Colorado

Terry Ireland
Biologist
U.S. Fish and Wildlife Service
Western Colorado Ecological Services Field Office
Grand Junction, Colorado

Aran Johnson
Division Head
Southern Ute Indian Tribe, Department of Natural Resources
Division of Wildlife Resource Management
Ignacio, Colorado

D. Chris Kitcheyan
Regional Biologist
U.S. Department of the Interior, Bureau of Indian Affairs
Southwest Regional Office
Environmental, Safety, and Cultural Resources Management
Albuquerque, New Mexico

Jennifer Zahratka
Wildlife Biologist/Principal
Biological Resources, LLC

10 Literature Cited, Reviewed and Data Sources

ERO Resources Corporation (ERO). 2022. Threatened and Endangered Species Surveys: CO2 Sequestration Pipeline Project – Red Cedar Gathering Company. November 7, 2022.

U.S. Fish and Wildlife Service (Service). 1985. Knowlton Cactus Recovery Plan. U.S. Fish and Wildlife Service, Albuquerque, New Mexico. iv + 53 pp.

Service. 1994. *Final rule*. Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Colorado River Endangered Fishes: Razorback Sucker, Colorado Squawfish, Humpback Chub, and Bonytail Chub. Federal Register Vol. 59, No. 54, pp. 13374. March 21, 1994.

Service. 1993. *Proposed rule*. Endangered and Threatened Wildlife and Plants; Proposed Rule to List the Southwestern Willow Flycatcher as Endangered With Critical Habitat. Federal Register Vol. 58, No. 140, pp. 39495. July 23, 1993.

Service. 1995. *Final rule*. Endangered and Threatened Wildlife and Plants; Final Rule Determining Endangered Status for the Southwestern Willow Flycatcher. Federal Register Vol. 60, No. 38, pp. 10694. February 27, 1995.

Service. 2004. *Final rule*. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the Mexican Spotted Owl. Federal Register Vol. 69, No. 168, pp. 53182. August 31, 2004.

Service. 2013a. *Final rule*. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Southwestern Willow Flycatcher. Federal Register Vol. 78, No. 2, pp. 344. January 3, 2013.

Service. 2013b. *Proposed rule*. Endangered and Threatened Wildlife and Plants; Listing Determination for the New Mexico Meadow Jumping Mouse. Federal Register Vol. 78, No. 119, pp. 37363. June 20, 2013.

Service. 2014a. *Final rule*. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the New Mexico Meadow Jumping Mouse Throughout Its Range. Federal Register Vol. 79, No. 111, pp. 33119. June 10, 2014.

Service. 2014b. *Proposed rule*. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo. Federal Register Vol. 79, No. 158, pp. 48548. August 15, 2014.

Service. 2014c. *Final rule*. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*). Federal Register Vol. 79, No. 192, pp. 59992. October 3, 2014.

Service. 2016. *Final rule*. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the New Mexico Meadow Jumping Mouse. Federal Register Vol. 81, No. 51, pp. 14264. March 16, 2016.

Service. 2020a. *Proposed rule*. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo. Federal Register Vol. 85, No. 39, pp. 11458. February 27, 2020.

Service. 2020b. Monarch (*Danaus plexippus*) Species Status Assessment Report. V2.1 96 pp + appendices.

Service. 2020c. *Notice of 12-month finding*. Endangered and Threatened Wildlife and Plants; 12-Month Finding for the Monarch Butterfly. Federal Register Vol. 85, No. 243, pp. 81813. December 17, 2020.

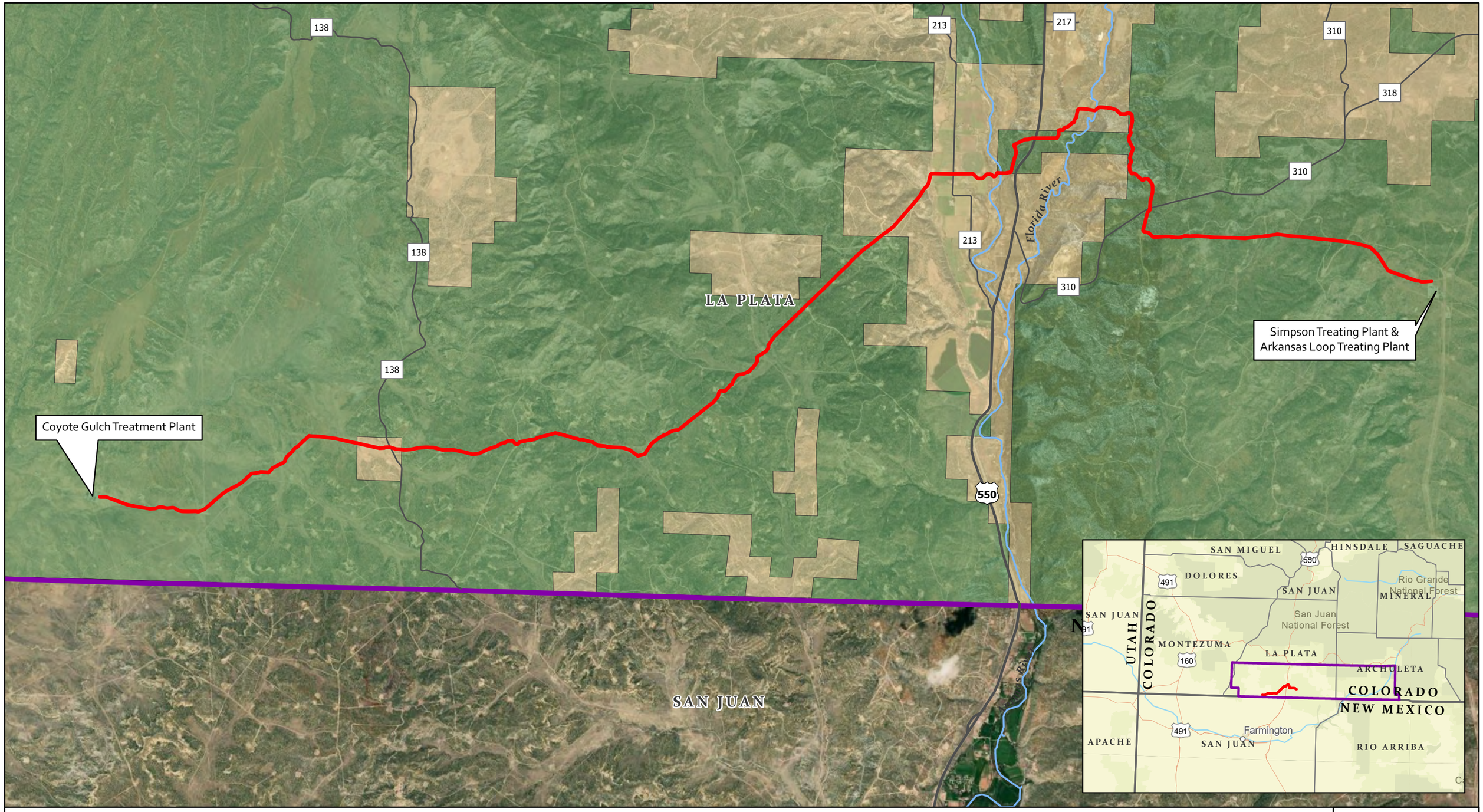
Service. 2021. *Final rule*. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Western Distinct Population of the Yellow-Billed Cuckoo. Federal Register Vol. 86, No. 75, pp. 20798. April 21, 2021.

Service. 2022. List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project. Project Code: 2023-0013945. Western Colorado Ecological Services Field Office, Grand Junction, Colorado. November 15, 2022.

Southern Ute Indian Tribe (SUIT). 2022. ESA-protected species typically evaluated in biological assessments for projects proposed on or near the Southern Ute Indian Reservation. September 29, 2022.

The Xerces Society. 2018. Managing for Monarchs in the West: Best Management Practices for Conserving the Monarch Butterfly and its Habitat. 106+vi pp. Portland, OR: The Xerces Society for Invertebrate Conservation. (Available online at www.xerces.org).

Appendix A. Project Maps



Legend

- Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline
- Road
- Tribal Trust
- Fee
- Reservation Boundary

Figure 1. Overview Map

Proposed CO2 Sequestration Pipeline Project

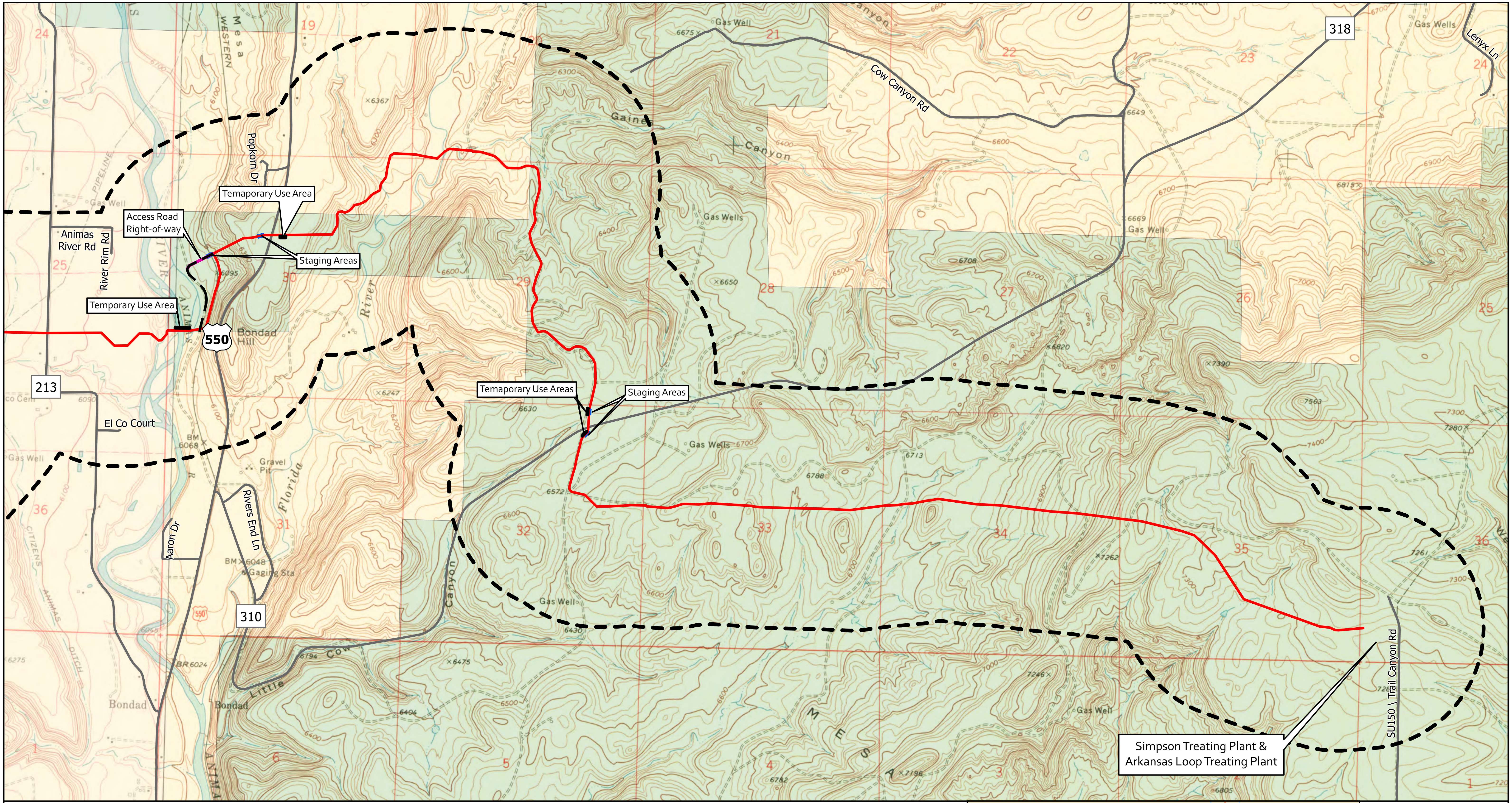
0 0.5 1 2 Miles

N

RED CEDAR GATHERING COMPANY

Date: 1/12/2023

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\


Temaporary Use Area
Access Road
Right-of-way
Staging Areas
Temporary Use Area
Temaporary Use Areas
Staging Areas
Simpson Treating Plant &
Arkansas Loop Treating Plant
Animas
River Rd
River Rim Rd
Popkorn Dr
El Co Court
Aaron Dr
Rivers End Ln
Cow Canyon Rd
Lenyx Ln
SU150 \ Trail Canyon Rd
550
213
310
318
Gas Well
Gas Wells
Bondad
Bondad Hill
Gaines Canyon
Little Cow Canyon
Florida River
M E S A
19
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
1
3
4
5
6

Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline
Access Road
Action Area
Access Road Right-of-way
Temporary Use Area
Staging Area
Fee
Tribal Trust
Reservation Boundary
Road

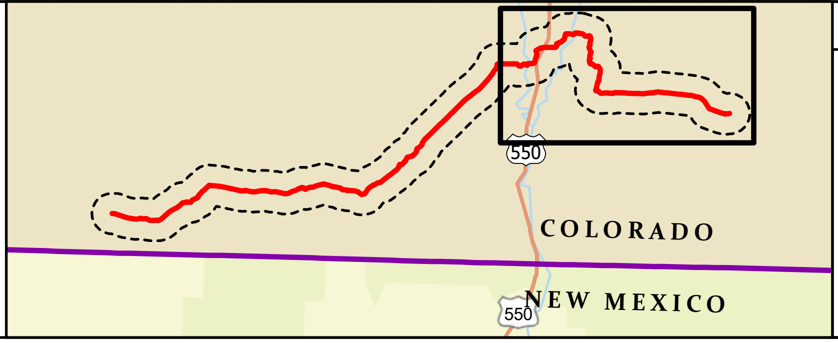
Figure 2A. Action Area Map

Proposed CO2 Sequestration Pipeline Project

N

0 2,000 4,000 Feet

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\



RED CEDAR
GATHERING COMPANY

Date: 2/7/2023

Temporary Use Area

Temaporary Use Areas

SU111 \ Rancho Durango

213

El Co Court

310

550

Rivers End Ln

Aaron Dr

Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Action Area

Temporary Use Area

Fee

Tribal Trust

Reservation Boundary

Road

Figure 2B. Action Area Map

Proposed CO2 Sequestration Pipeline Project

0 2,000 4,000 Feet

N

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\

COLORADO

NEW MEXICO

RED CEDAR GATHERING COMPANY

Date: 2/7/2023

Coyote Gulch Treatment Plant

SU112 \ Canyon 44 Rd

SU113 \ Soda Springs

SU114 \ LPC 138/Gore Rd

SU111 \ LPC 137

SU111 \ Rancho Durango

138

Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Action Area

Temporary Use Area

Fee

Tribal Trust

Reservation Boundary

Road

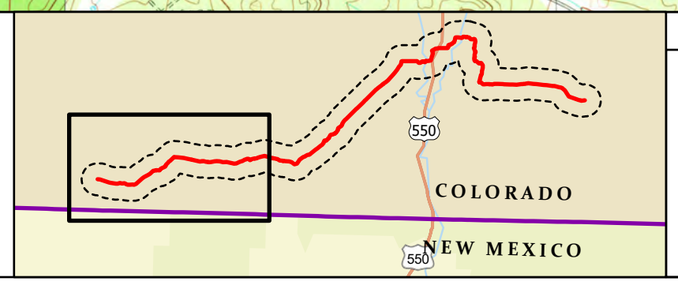
Figure 2C. Action Area Map

Proposed CO2 Sequestration Pipeline Project

0 2,000 4,000 Feet

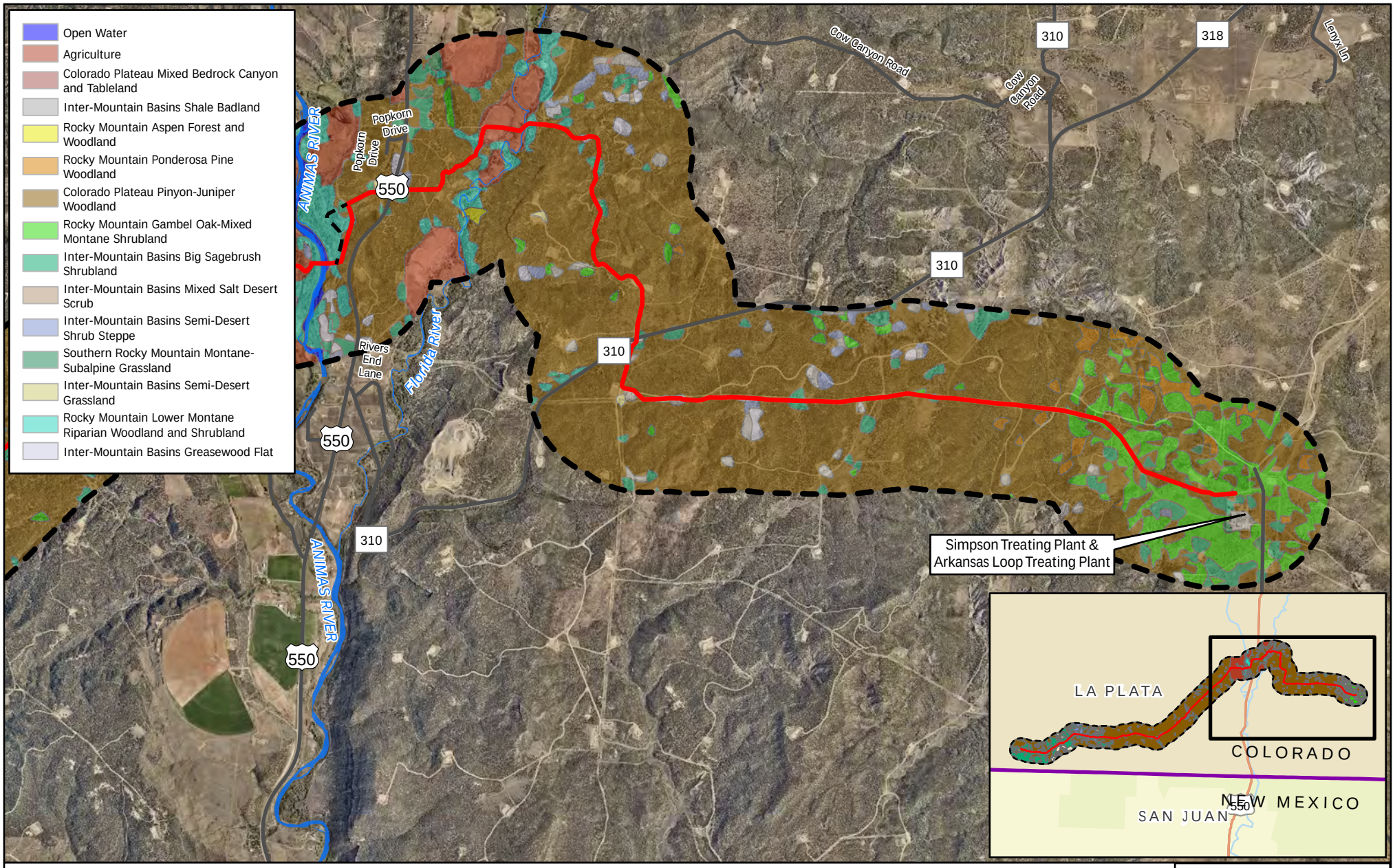
N

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\



RED CEDAR GATHERING COMPANY

Date: 2/7/2023



Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Access

Road

Action Area

Reservation Boundary

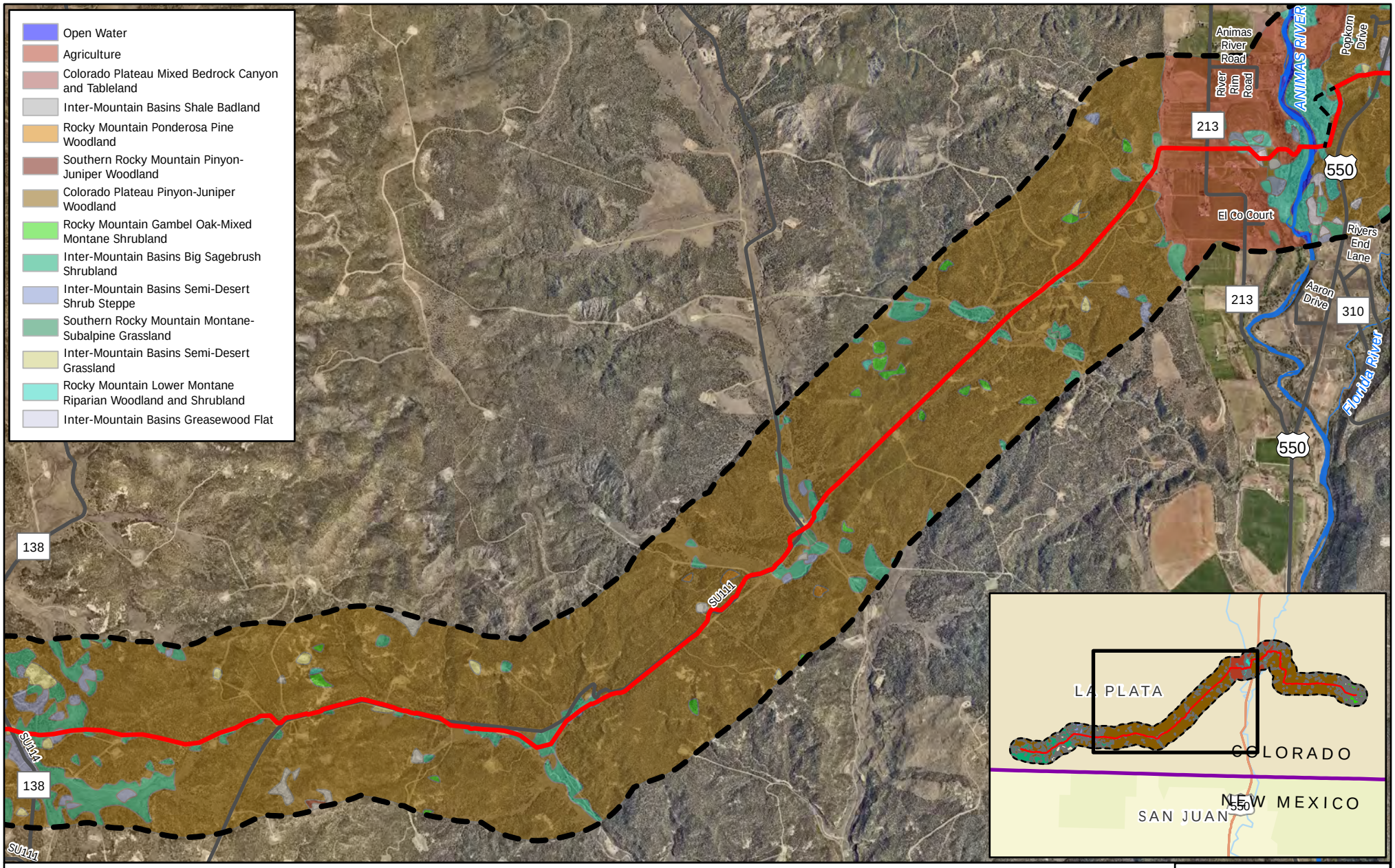
Figure 3A. Land Cover Map
Proposed CO2 Sequestration Pipeline Project

0 0.25 0.5 1 Miles

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline BA\

RED CEDAR GATHERING COMPANY

Date: 12/14/2022



Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Access

Road

Action Area

Reservation Boundary

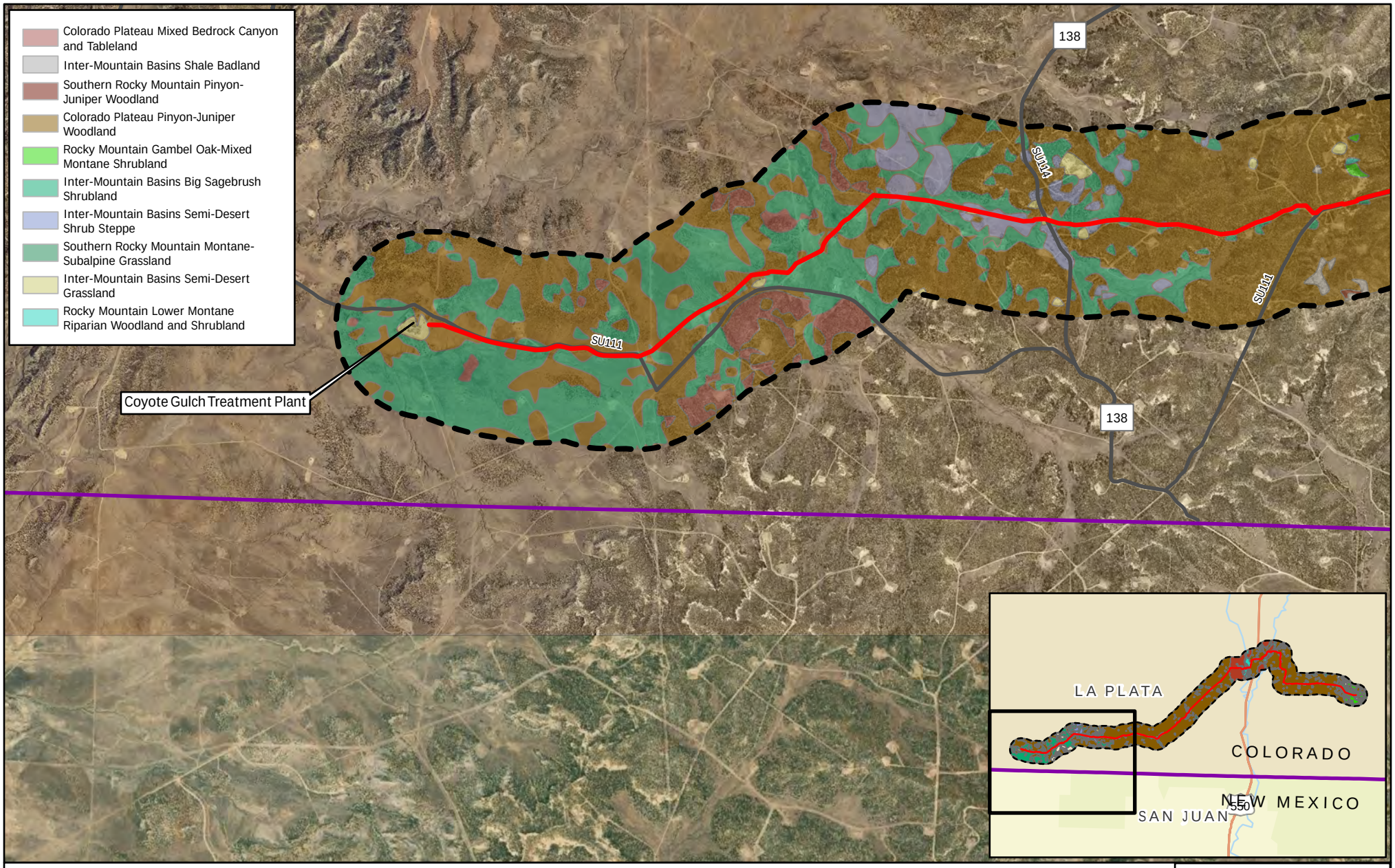
Figure 3B. Land Cover Map
Proposed CO2 Sequestration Pipeline Project

0 0.25 0.5 1 Miles

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline BA\

RED CEDAR GATHERING COMPANY

Date: 12/14/2022



Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Road

Action Area

Reservation Boundary

Figure 3C. Land Cover Map
Proposed CO2 Sequestration Pipeline Project

0 0.25 0.5 1 Miles

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline BA\

RED CEDAR GATHERING COMPANY

Date: 12/14/2022

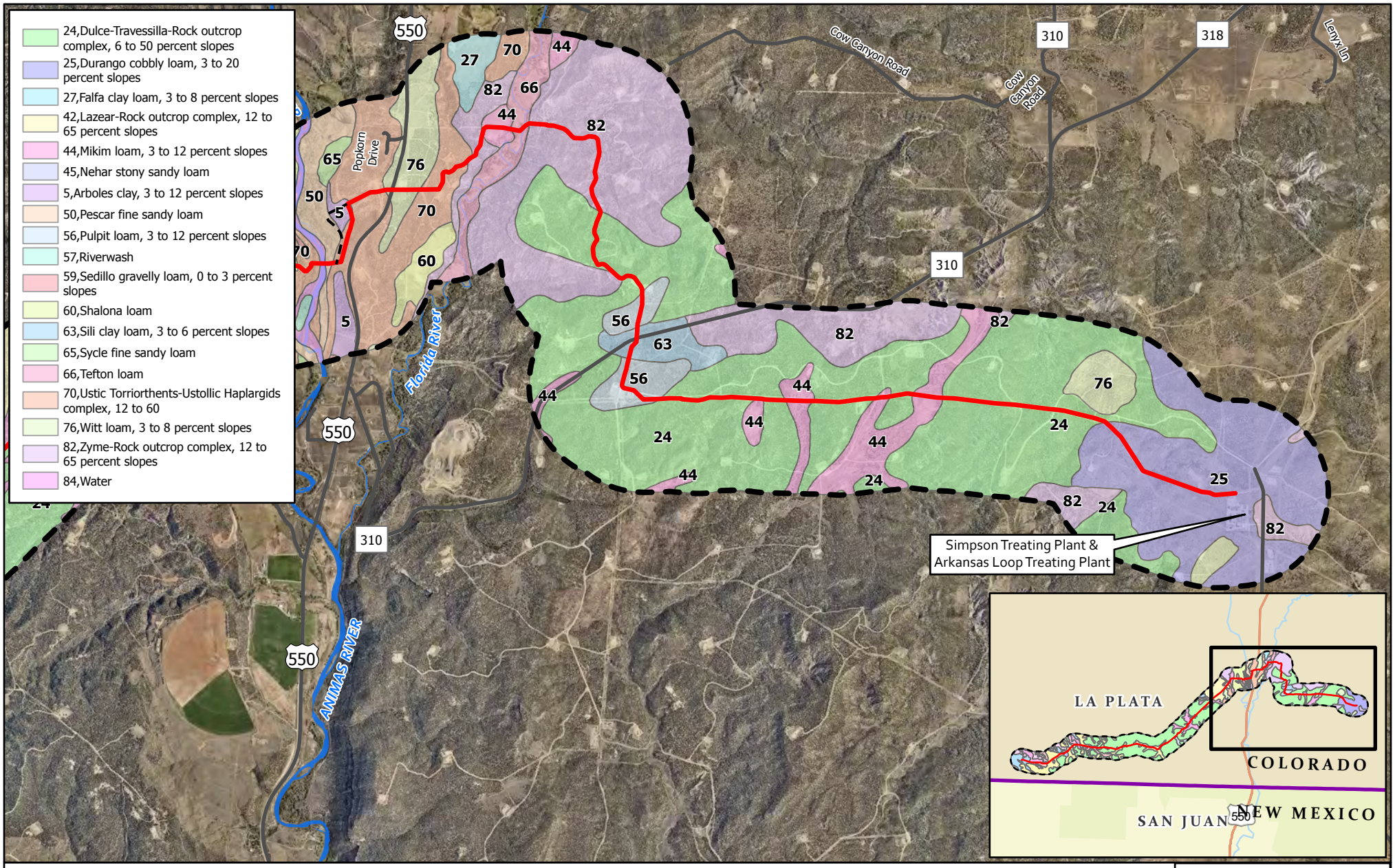


Figure 4A. Soil Map

Proposed CO2 Sequestration Pipeline Project

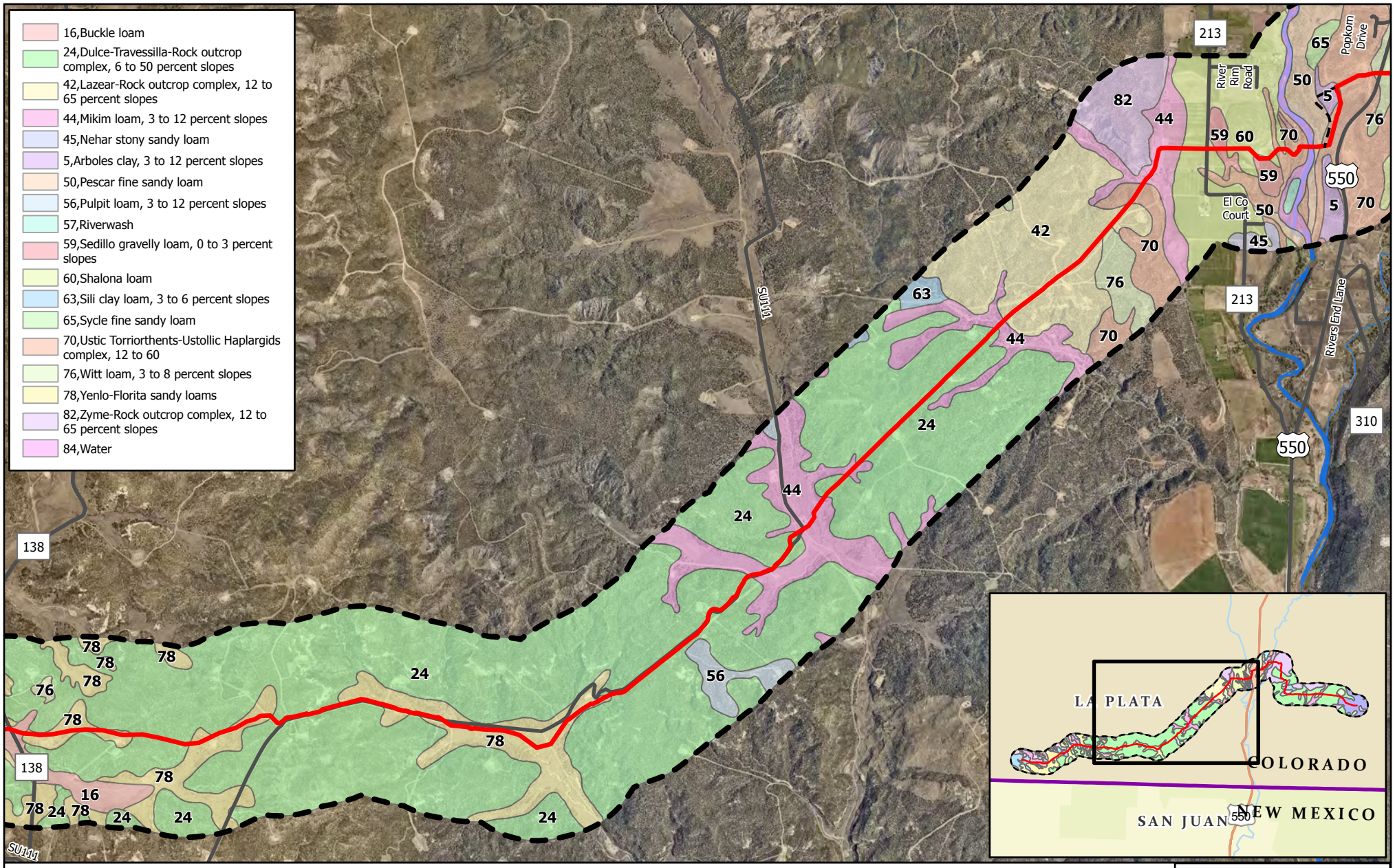
0 0.25 0.5 1 Miles

N

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline BA\

RED CEDAR GATHERING COMPANY

Date: 12/14/2022



Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Access

Road

Action Area

Reservation Boundary

Figure 4B. Soil Map

Proposed CO2 Sequestration Pipeline Project

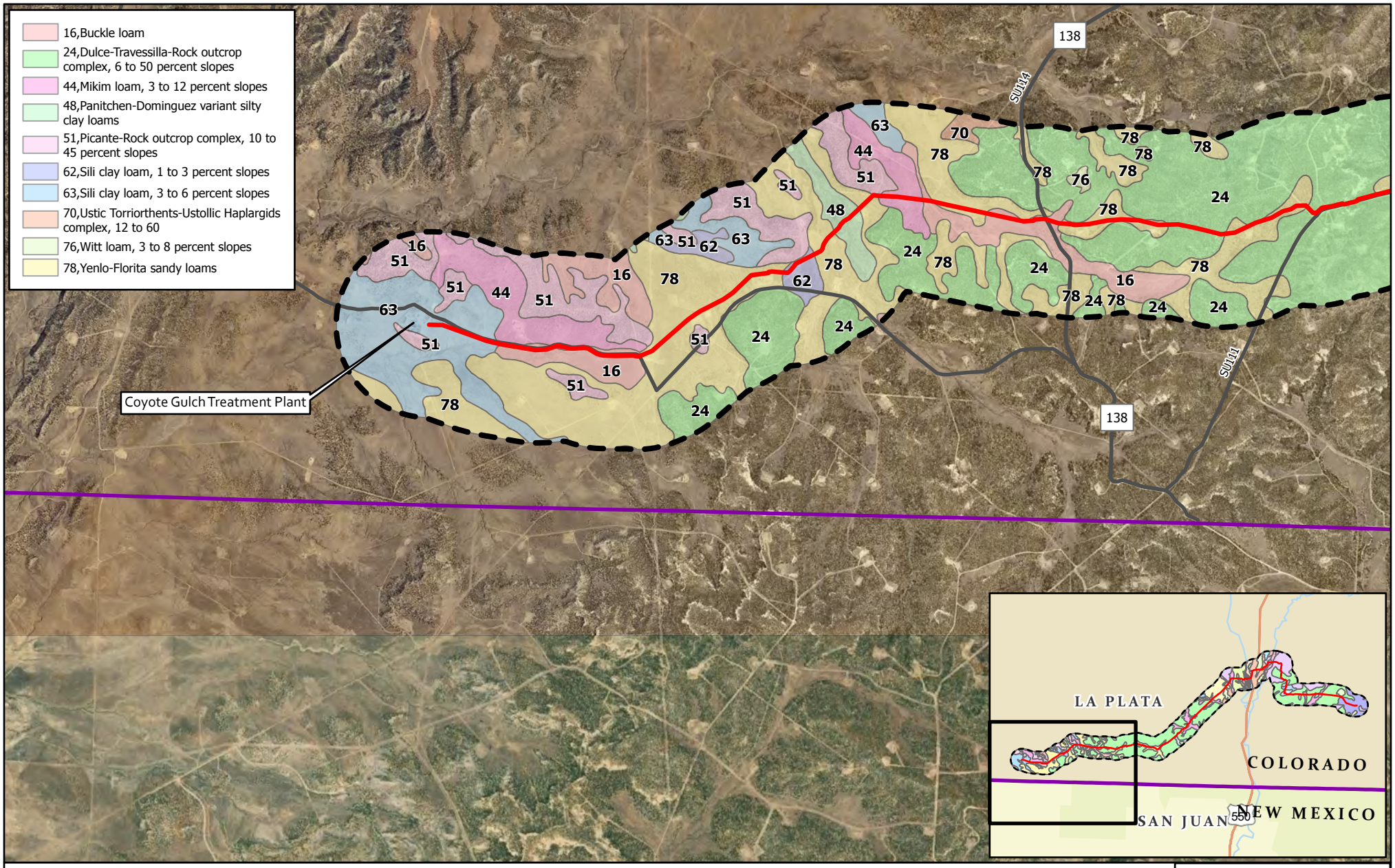
0 0.25 0.5 1 Miles

N

RED CEDAR GATHERING COMPANY

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline BA\

Date: 12/14/2022



Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Road

Action Area

Reservation Boundary

Figure 4C. Soil Map

Proposed CO2 Sequestration Pipeline Project

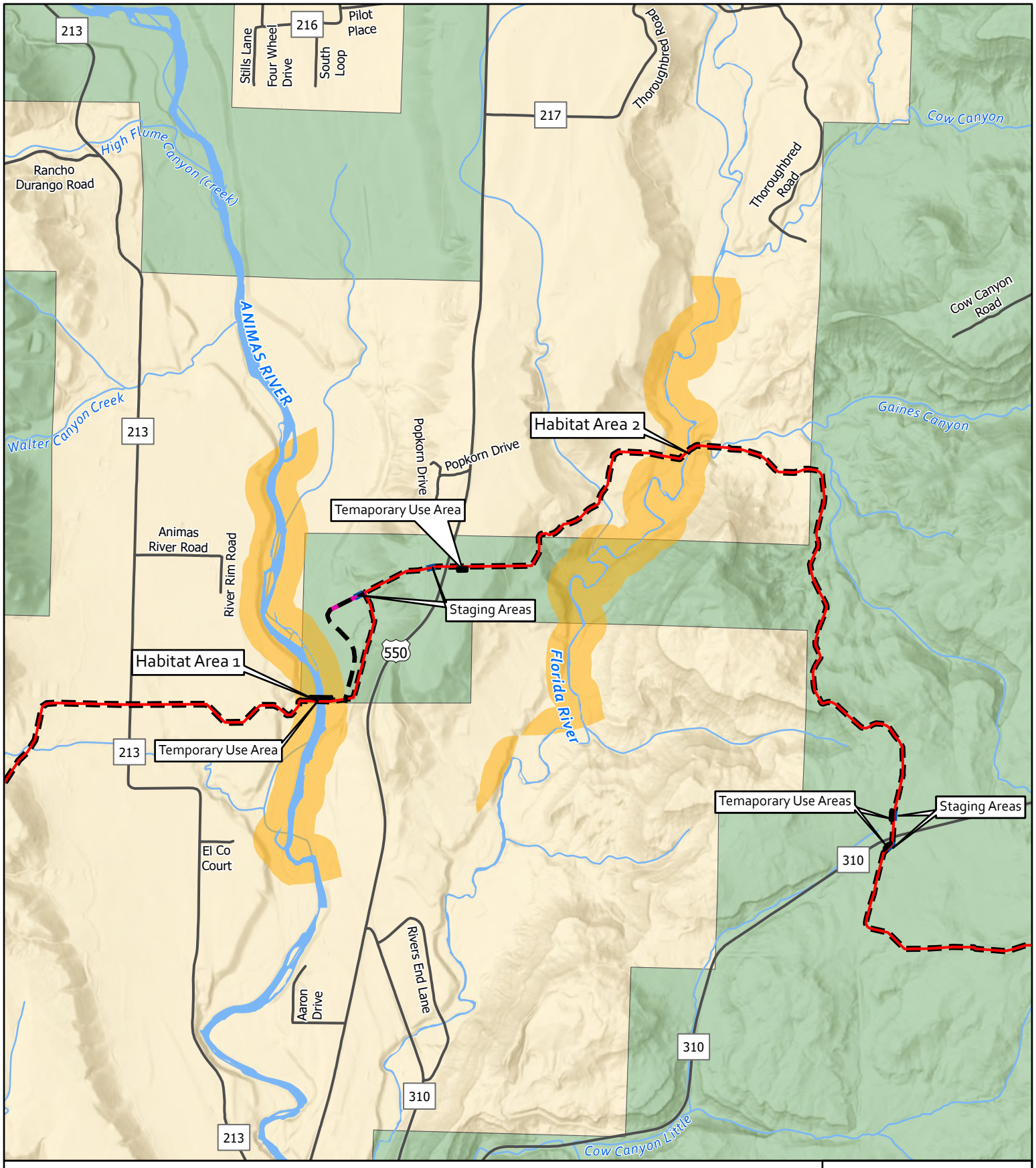
0 0.25 0.5 1 Miles

N

RED CEDAR GATHERING COMPANY

Date: 12/14/2022

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline BA\



Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Access Road

Pipeline Alignment Right-of-way

Access Road Right-of-way

NMMJM Habitat

Tribal Trust

Fee

River and Stream

Road

Figure 5A. Potential New Mexico Meadow Jumping Mouse Habitat

Proposed CO2 Sequestration Pipeline Project

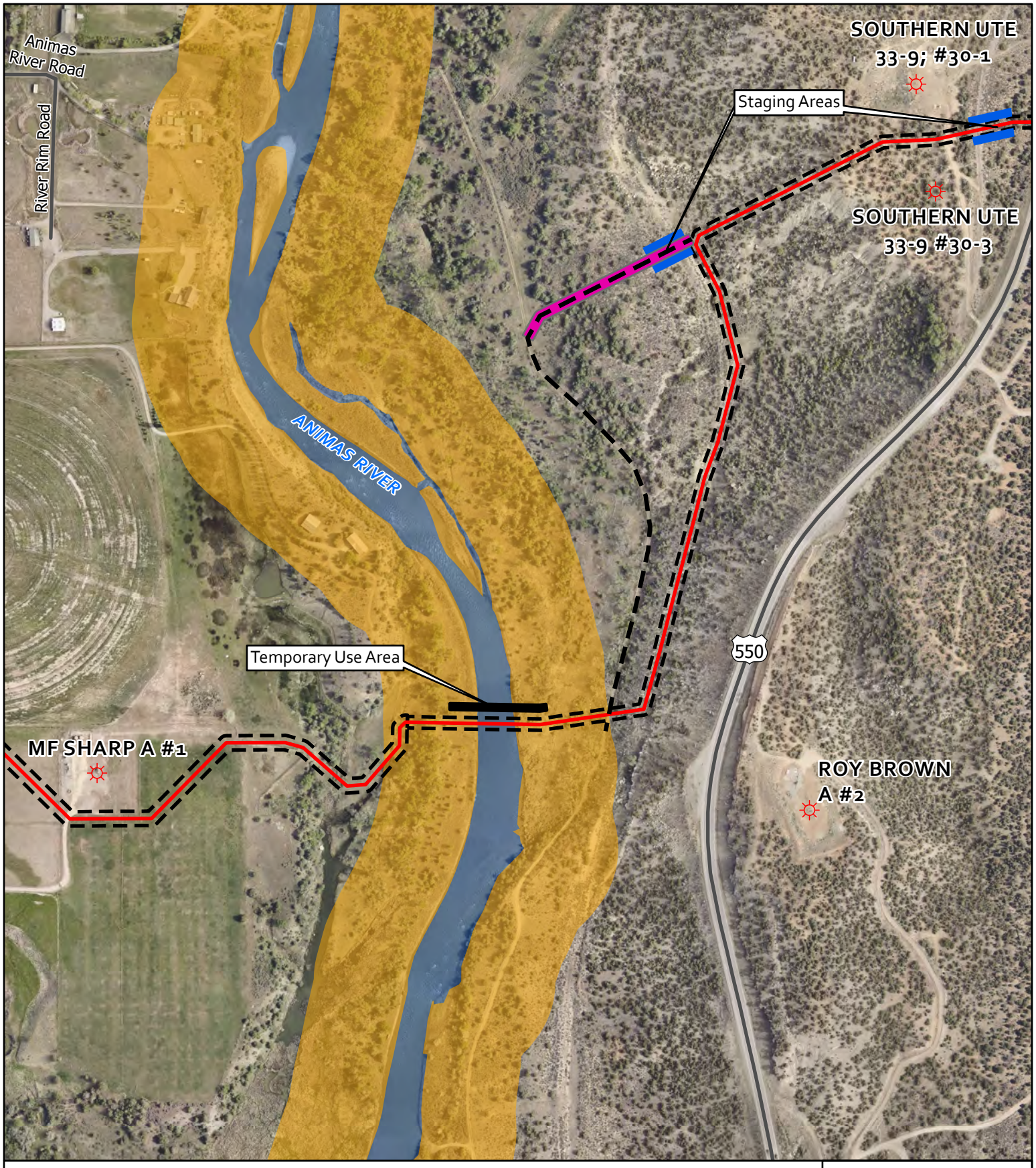
0 2,000 4,000 Feet

N

RED CEDAR GATHERING COMPANY

Date: 2/7/2023

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\



Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Access Road

Pipeline Alignment Right-of-way

Access Road Right-of-way

NMMJM Habitat

Road

Oil / Gas Well

Figure 5B. Potential New Mexico Meadow Jumping Mouse Habitat

Proposed CO2 Sequestration Pipeline Project

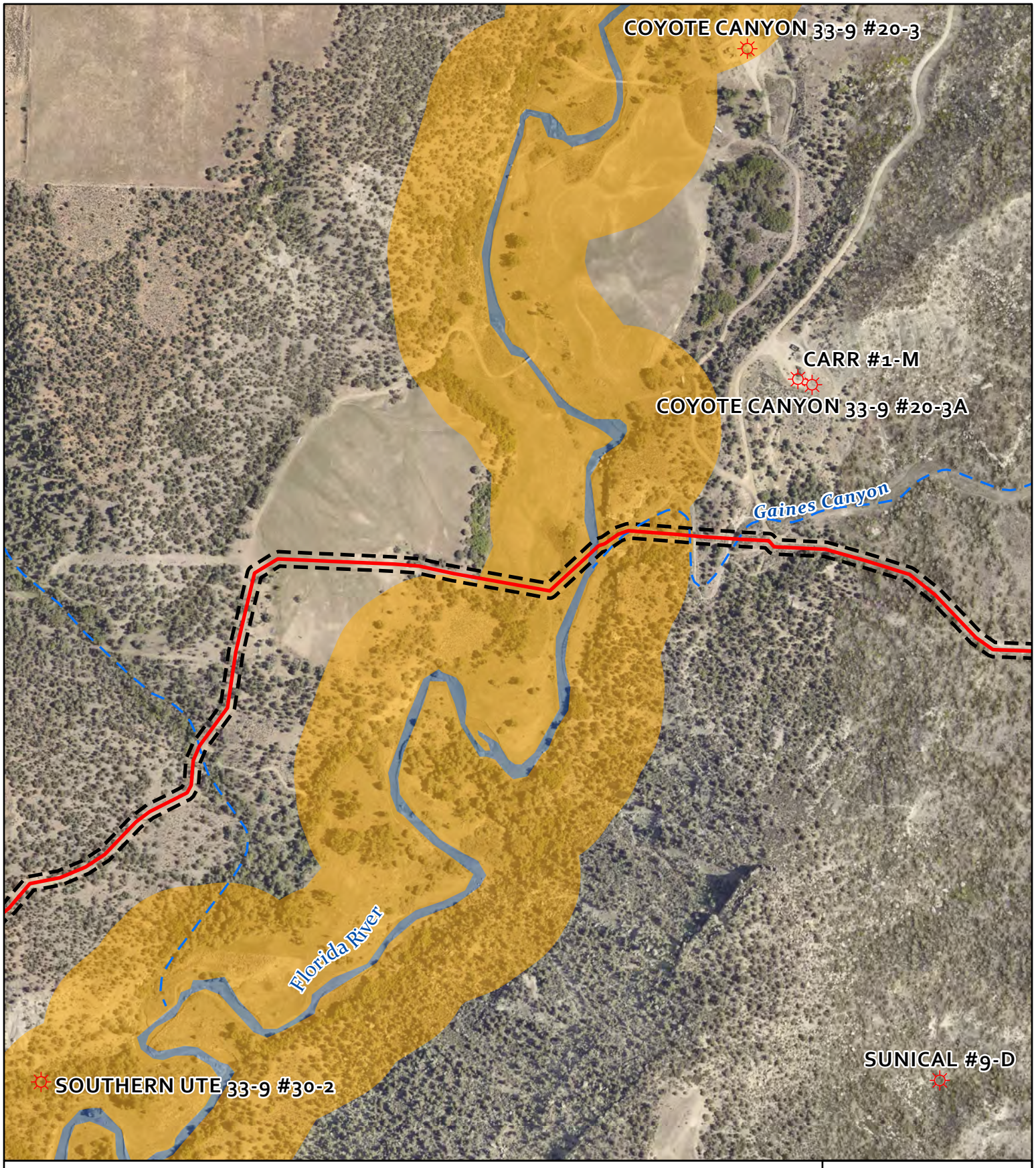
N

0 500 1,000 Feet

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\

RED CEDAR GATHERING COMPANY

Date: 2/7/2023



Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Pipeline Alignment Right-of-way

NMMJM Habitat

Intermittent Stream

Oil / Gas Well

Figure 5C. Potential New Mexico Meadow Jumping Mouse Habitat

Proposed CO2 Sequestration Pipeline Project

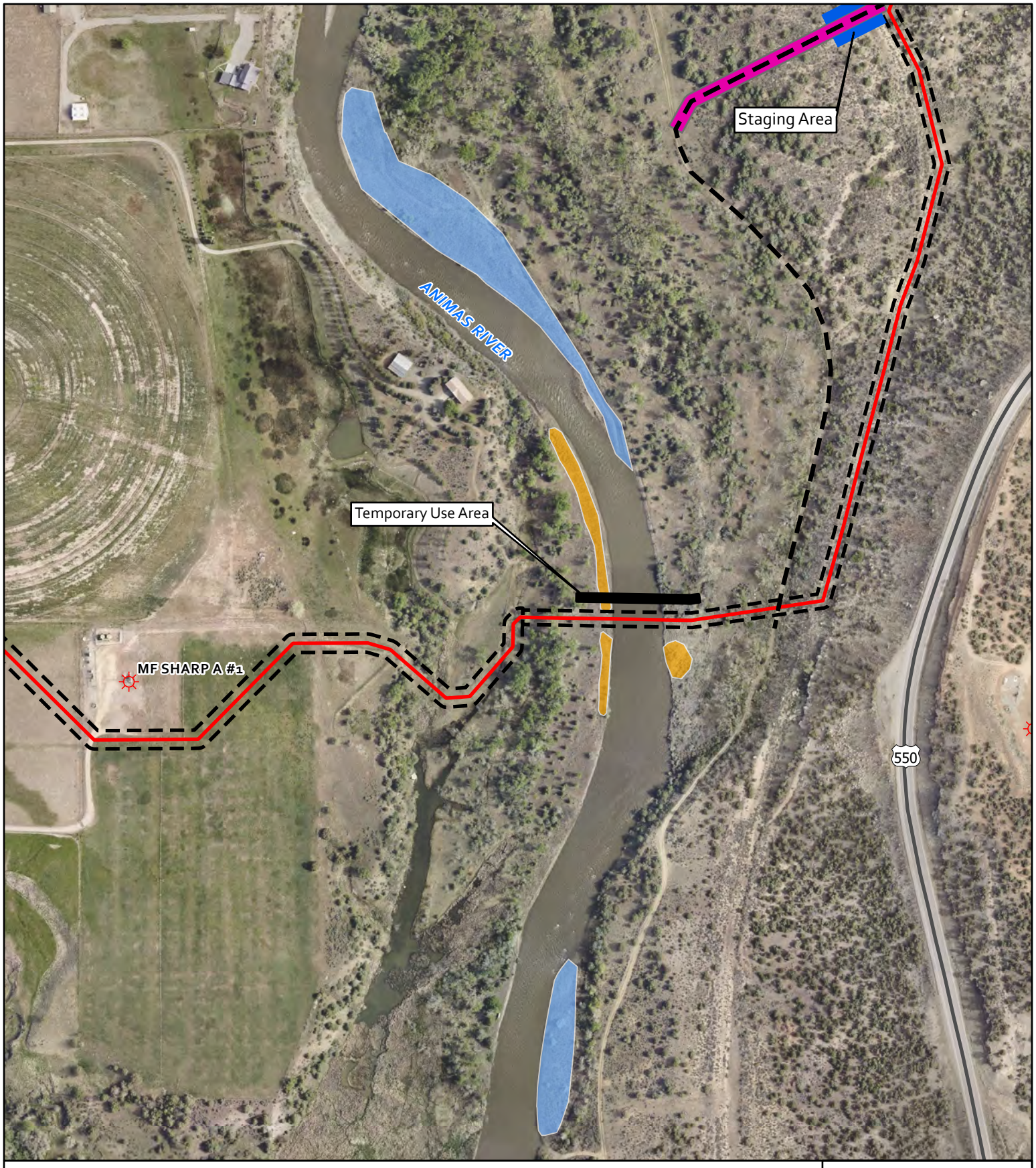
N

0 500 1,000 Feet

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\

RED CEDAR GATHERING COMPANY

Date: 2/7/2023



Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Access Road

Pipeline Alignment Right-of-way

Access Road Right-of-way

Potential SWFL

Potential SWFL-Marginal

Road

Oil / Gas Well

Figure 6A. Potential Southwestern Willow Flycatcher Habitat

Proposed CO2 Sequestration Pipeline Project

N

0 400 800 Feet

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\

RED CEDAR GATHERING COMPANY

Date: 2/7/2023

Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Potential SWFL Migrant Habitat

Pipeline Alignment Right-of-way

Intermittent Stream

Figure 6B. Potential Southwestern Willow Flycatcher Habitat

Proposed CO2 Sequestration Pipeline Project

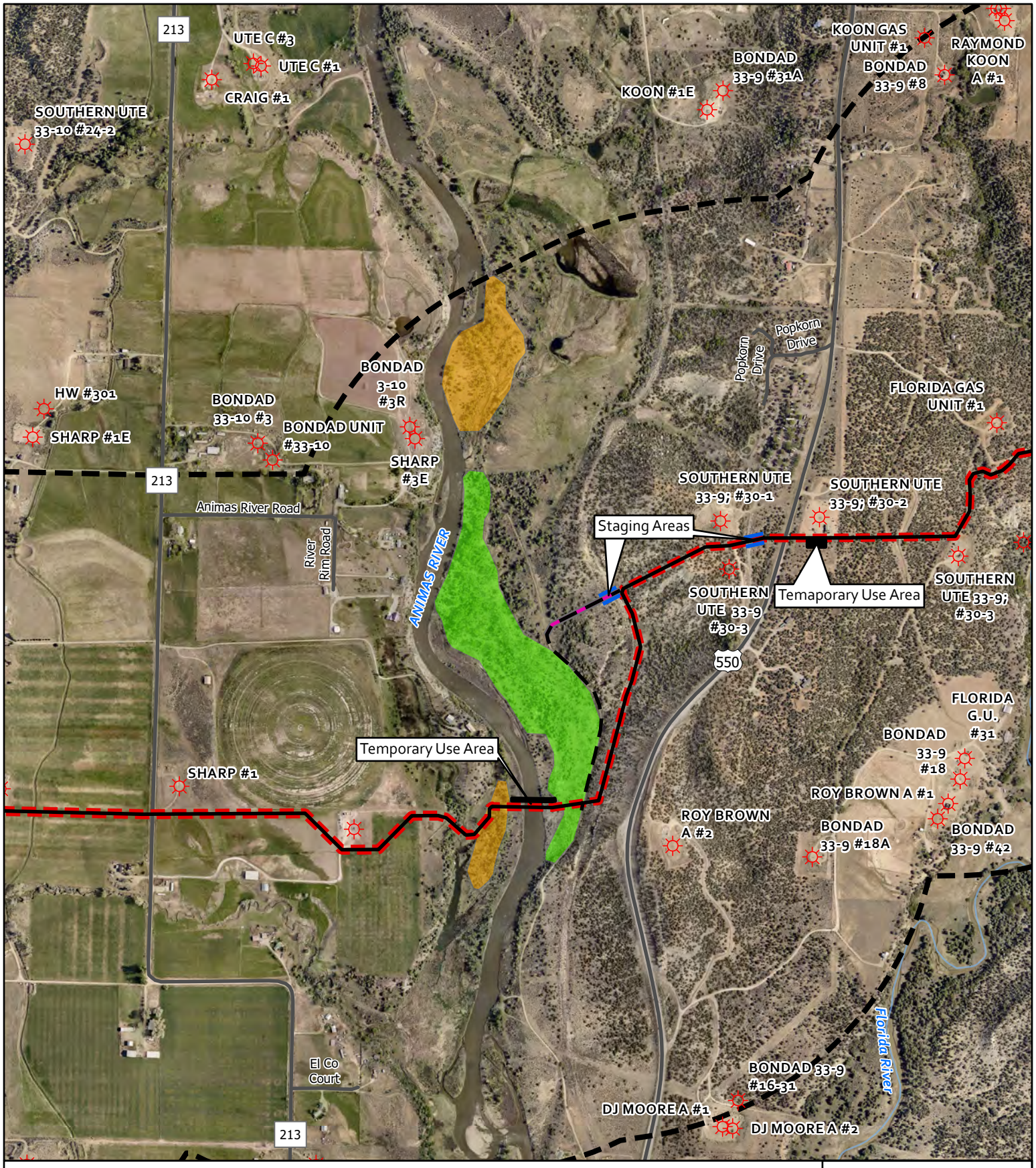
0 200 400 Feet

N

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\

RED CEDAR GATHERING COMPANY

Date: 2/7/2023



Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Access Road

Pipeline Alignment Right-of-way

Access Road Right-of-way

Potential Breeding/ Nesting Habitat

Potential Breeding/ Nesting Habitat (Marginal)

Road

Oil / Gas Well

Figure 7. Potential Yellow-billed Cuckoo Habitat

Proposed CO2 Sequestration Pipeline Project

N

0 1,000 2,000 Feet

Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\

RED CEDAR GATHERING COMPANY

Date: 2/7/2023

Appendix B. Threatened and Endangered Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Western Colorado Ecological Services Field Office
445 West Gunnison Avenue, Suite 240
Grand Junction, CO 81501-5711
Phone: (970) 628-7180 Fax: (970) 245-6933

In Reply Refer To: February 10, 2023
Project Code: 2023-0013945
Project Name: Arkansas Loop to Coyote Carbon Dioxide Sequestration Pipeline Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Western Colorado Ecological Services Field Office
445 West Gunnison Avenue, Suite 240
Grand Junction, CO 81501-5711
(970) 628-7180

Project Summary

Project Code: 2023-0013945

Project Name: Arkansas Loop to Coyote Carbon Dioxide Sequestration Pipeline Project

Project Type: Natural Gas Distribution

Project Description: Red Cedar Gathering Company is proposing to construct a 19.5-mile carbon dioxide pipeline from the Arkansas Loop natural gas treating facility to a proposed carbon dioxide pipeline interconnect facility located adjacent to the out-of-service Coyote Gulch natural gas treating facility. The project is located on tribal trust and fee lands within the exterior boundaries of the Southern Ute Indian Reservation in La Plata County, Colorado. The pipeline will carry carbon dioxide gas currently vented to the atmosphere to an existing pipeline for sequestration.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.047181249999994,-107.91642114734252,14z

Counties: La Plata County, Colorado

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is **final** critical habitat for this species. This species only needs to be considered under the following conditions: ▪ Lone, dispersing gray wolves may be present throughout the state of Colorado. If your activity includes a predator management program, please consider this species in your environmental review. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered
New Mexico Meadow Jumping Mouse *Zapus hudsonius luteus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7965	Endangered

Birds

NAME	STATUS
Mexican Spotted Owl *Strix occidentalis lucida* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Colorado Pikeminnow *Ptychocheilus lucius* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3531	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Silverspot *Speyeria nokomis nokomis* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/2813	Proposed Threatened

Flowering Plants

NAME	STATUS
Knowlton's Cactus *Pediocactus knowltonii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1590	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Lewis's Woodpecker *Melanerpes lewis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30

NAME	BREEDING SEASON
Pinyon Jay *Gymnorhinus cyanocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9420	Breeds Feb 15 to Jul 15

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

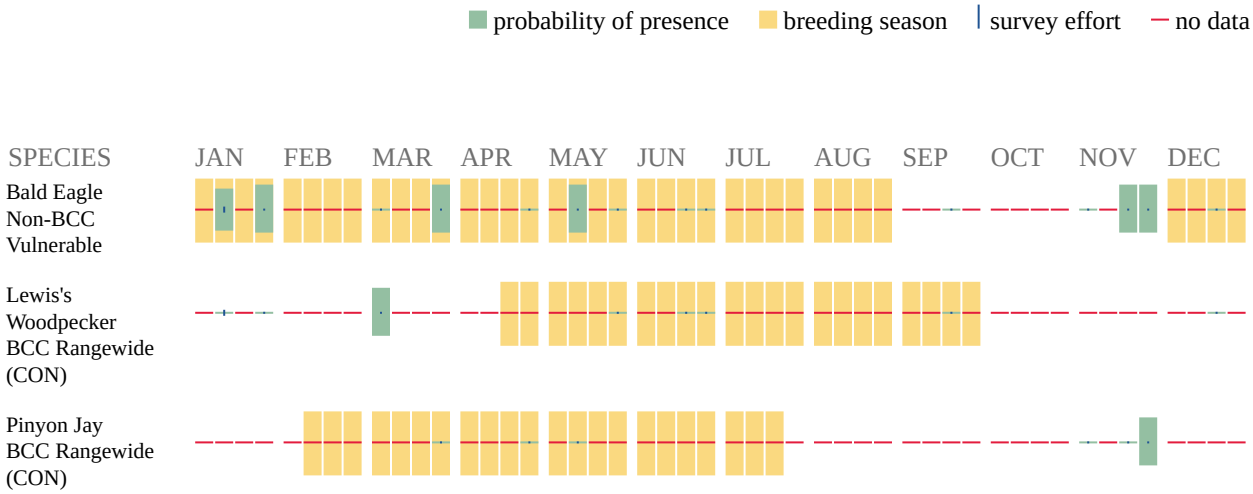
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.
Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPaC User Contact Information

Agency:	Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado
Name:	Matthew Zabka
Address:	65 Mercado Street
Address Line 2:	Suite 260
City:	Durango
State:	CO
Zip:	81301
Email	mzabka@sugf.com
Phone:	9707646491

Lead Agency Contact Information

Lead Agency:	Bureau of Indian Affairs
Name:	D. Chris Kitcheyan
Email:	david.kitcheyan@bia.gov
Phone:	5055633408

Appendix C. Plants and Animals Observed in the Project Area

Scientific Name	Common Name
Plants	
Acer negundo	Boxelder
Achillea millefolium	Common yarrow
Achnatherum hymenoides	Indian ricegrass
Acroptilon repens	Russian knapweed
Agropyron cristatum	Crested wheatgrass
Amaranthus sp.	Pigweed
Artemisia nova	Black sagebrush
Artemisia tridentata	Big sagebrush
Asclepias sp.	Milkweed
Atriplex canescens	Fourwing saltbush
Bassia scoparia	Kochia
Bouteloua gracilis	Blue grama
Bromus tectorum	Cheatgrass
Carduus nutans	Musk thistle
Carex rostrata	Beaked sedge
Castilleja sp.	Paintbrush
Cichorium intybus	Chicory
Cirsium arvense	Canada thistle
Convolvulus arvensis	Field bindweed
Echinocereus triglochidiatus	Claret cup
Elaeagnus angustifolia	Russian olive
Elymus elymoides	Squirreltail
Equisetum arvense	Field horsetail
Ericameria nauseosa	Rubber rabbitbrush
Erodium cicutarium	Redstem stork's bill
Gutierrezia sarothrae	Broom snakeweed
Helianthus annuus	Common sunflower
Hesperostipa comata	Needle and thread grass
Juncus arcticus	Arctic rush
Juniperus osteosperma	Utah juniper
Lycium pallidum	Wolfberry
Machaeranthera sp.	Tansyaster
Medicago sativa	Alfalfa
Melilotus officinalis	Yellow sweet clover
Mentha arvensis	Wild mint
Opuntia polyacantha	Prickly-pear cactus
Pascopyrum smithii	Western wheatgrass
Phalaris arundinacea	Reed canarygrass
Pinus edulis	Piñon pine
Pinus ponderosa	Ponderosa pine
Plantago major	Common plantain
Poa annua	Annual bluegrass
Populus angustifolia	Narrowleaf cottonwood
Populus deltoides	Rio Grande cottonwood
Pleuraphis jamesii	James' galleta
Quercus gambelii	Gambel oak

Rhus trilobata	Skunkbush sumac
Rosa woodsii	Woods' rose
Rumex crispus	Curly dock
Salix exigua	Coyote willow
Salsola tragus	Russian thistle
Schoenoplectus acutus	Hardstem bulrush
Sisymbrium altissimum	Tall tumblemustard
Sphaeralcea coccinea	Scarlet globemallow
Sporobolus cryptandrus	Sand dropseed
Tamarix sp.	Salt cedar
Thlaspi arvense	Field pennycress
Typha latifolia	Broadleaf cattail
Verbascum thapsus	Common mullein
Wildlife	
Agelaius phoeniceus	Red-winged blackbird
Anas platyrhynchos	Mallard
Aphonopelma behlei	Grand Canyon Black Tarantula
Branta canadensis	Canada Goose
Buteo jamaicensis	Red-tailed Hawk
Cathartes aura	Turkey vulture
Cervus elaphus	Elk (sign)
Circus hudsonius	Northern harrier
Colaptes auratus	Northern Flicker
Contopus sordidulus	Western wood pewee
Corvus corax	Common Raven
Danaus plexippus	Monarch butterfly
Empidonax traillii	Willow flycatcher
Falco sparverius	American kestrel
Haliaeetus leucocephalus	Bald eagle
Junco hyemalis	Dark-eyed Junco
Odocoileus hemionus	Mule Deer
Pica hudsonia	Black-billed Magpie
Sayornis saya	Say's phoebe
Sialia mexicana	Western bluebird
Sturnella neglecta	Western meadowlark
Sylvilagus sp.	Cottontail rabbit (sign)

Appendix D. Selected Photos of the Project Area

Photo 1. View east of proposed pipeline centerline in the western portion of the project area (November 2021). Black Ridge in background.

Photo 2. Representative photo of sagebrush shrubland habitat in the western portion of the project area (November 2021).

Photo 3. Proposed pipeline centerline sighted adjacent to dirt road in the Cox Canyon area (November 2021).

Photo 4. View west of proposed pipeline ROW centerline through piñon-juniper woodland in northern foothills of Mesa Mountains (December 2021). Black Ridge on background.

Photo 5. View west of proposed pipeline centerline in the Mesa Mountains area (December 2021).

Photo 6. View east at proposed Animas River crossing (April 2022).

Photo 7. View west from hillside above proposed Animas River crossing (December 2021).

Photo 8. View south at proposed Florida River crossing (April 2022).

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Colorado Ecological Services Field Office, Western Team
445 West Gunnison Ave, Suite 240
Grand Junction, Colorado 81501

IN REPLY REFER TO:
FWS/R6/ES

June 29, 2023

Memorandum

To: Regional Director, Southwest Regional Office
Bureau of Indian Affairs, Albuquerque, New Mexico

From: Acting Western Team Supervisor, Colorado Ecological Services Field Office, U.S. Fish and Wildlife Service, Grand Junction, Colorado *Terry Ireland*

Subject: Endangered Species Act Consultation on the Arkansas Loop to Coyote Gulch Carbon Dioxide Sequestration Pipeline

This responds to your request for Endangered Species Act (ESA) Section 7 consultation on the proposed Red Cedar Gathering Company's Arkansas Loop to Coyote Gulch carbon dioxide sequestration pipeline in La Plata County, Colorado. We received your consultation request and Biological Assessment on February 21, 2023.

You have determined that construction of this pipeline to capture and transport carbon dioxide from the Arkansas Loop natural gas treating facility to a pipeline interconnect facility may affect, but is not likely to adversely affect the federally threatened western yellow-billed cuckoo (*Coccyzus americanus*) (YBCU). The proposed action does not occur within YBCU critical habitat. Given the project description, construction timing outside YBCU breeding season, and the conservation measures defined in the BA regarding YBCU, the U.S. Fish and Wildlife Service (Service) concurs with your determination. Effects of the Arkansas Loop to Coyote Gulch carbon dioxide sequestration pipeline to YBCU or its critical habitat will not be addressed further.

You have determined that this project may affect, and is likely to adversely affect the federally endangered New Mexico meadow jumping mouse (*Zapus hudsonius luteus;* NMMJM)**.** The Service agrees with your determination. As the proposed action does not occur within NMMJM critical habitat, any effects to critical habitat will not be considered further, but effects to the NMMJM itself will be addressed. Below, we provide our biological opinion on the project.

BIOLOGICAL OPINION

Background and Proposed Action

The proposed project is located south of the City of Durango, in La Plata County, Colorado. The proposed action will occur on Southern Ute tribal trust lands and private lands.

Red Cedar Gathering Company (Red Cedar) is requesting approval from the Bureau of Indian Affairs (BIA) for a right of way to construct a pipeline to carry carbon dioxide, currently vented to the atmosphere at their Arkansas Loop natural gas treating facility, to a proposed carbon dioxide pipeline interconnect facility adjacent to the decommissioned Coyote Gulch natural gas treating facility, approximately 20 miles in length. The proposed pipeline and associated right of way (ROW) crosses Southern Ute tribal trust lands. Red Cedar has applied for a Grant of Easement for the pipeline ROW with the BIA, with the Southern Ute Indian Tribe Growth Fund Safety and Environmental Compliance Management Group (SECMG) preparing the biological assessment (SECMG 2023).

The project will involve a grant of easement for 16.3 miles of pipeline ROW from BIA for pipeline sections located on Southern Ute tribal trust lands. In addition, 3.1 miles of pipeline ROW will be secured from private landowners for a total of 19.4 miles of pipeline ROW. This ROW will be 40 feet wide on tribal trust lands, and 40 or 50 feet wide on fee lands, for a total impact of approximately 97.3 acres. Staging areas have been permitted as part of the permanent ROW for the project, and temporary use areas are also proposed in the project area. The ROW will be accessed by a combination of county, local, private, and tribal roads, along with a 680-foot two-track access road that will be constructed as part of the project. Of the entire 86,098 feet of pipeline on tribal trust lands, all but 2,670 feet of pipeline is sited next to existing disturbed land, with new disturbance overlapping existing disturbance as much as possible (SECMG 2023).

The pipeline is constructed from eight-inch diameter steel pipe, with an expected operating pressure of 2200 pounds per square inch. The pipeline will be buried in an excavated trench at a depth of approximately six feet. A typical sequence for construction follows:

1) The construction area, including the ROW, staging areas, and temporary use areas (TUAs) will be marked and/or staked.
2) Equipment will be cleaned prior to being mobilized into the site.
3) Vegetation within the ROW and staging areas will be cleared and grubbed, as needed, along with any necessary rough grading.
4) Materials such as topsoil and woody debris will be salvaged for reclamation, and be stockpiled within the ROW or TUAs.
5) The pipeline will be trenched with a large trackhoe; topsoil will be set aside for reclamation, and subsoils will be excavated to approximately 6 feet (or the appropriate depth at drainage crossings).

6) A staged pipeline section will be lowered into the trench, and the trench will be backfilled.

7) Reclamation of the surface will follow using stockpiled topsoil.

The pipeline will be trenched through all surface water resources within the project area. For areas with surface water present, a flume system will be used to allow surface water to flow unimpeded. This flume will consist of three 36-inch diameter steel pipes connected side-by-side, with a 40-foot length. It may be necessary to use sandbags or jersey barriers at the upstream side of the flume to direct flow.

Hydrostatic testing will be done using water from a metered water sales station near Ignacio, Colorado, and disposed of properly at a licensed facility.

Two crews will be working to meet in the project area. Construction is expected to occur in late summer 2023, with work in the Animas River valley, where NMMJM occupied habitat occurs, occurring between August 10th and September 10th, and work in the Florida River valley, where unoccupied NMMJM habitat occurs, happening between September 10th and October 10th. Overall, the project is expected to take approximately 12 months throughout the entire action area (SECMG 2023).

Red Cedar will reclaim the entire project in accordance with the Southern Ute Tribe's stormwater recommendations. Tribal trust lands will be reseeded with appropriate seed mixtures, and monitored until 70 percent ground cover relative to native conditions has been established. Re-contouring, preparing seed beds, and mulching may occur as well. Reclamation of ephemeral washes will include re-establishing bed and bank features, and seeding with appropriate mixes (SECMG 2023).

Restoration of endangered species habitat, both unoccupied and occupied, will occur. Habitat restoration techniques will be developed by species experts along with the Service, and may be found in the conservation protocol document. Monitoring of this restoration effort will also occur, including habitat/vegetation assessments and assessments related to NMMJM. Red Cedar will also be responsible for minimizing the spread of noxious weeds in the project area (SECMG 2023).

The action area of this project includes all project areas and a 0.5-mile buffer, totaling 20 square miles. More information regarding methods and project timelines can be found in the biological assessment.

Conservation and Measures

The following conservation measures and best management practices will be incorporated into the project to minimize potential effects to NMMJM during construction:

- A conservation protocol outlining construction conservation measures and restoration monitoring is being developed with help from the Southern Ute Tribe, the Service, and a NMMJM species expert. This conservation protocol outlines:
    - How pre-disturbance data will be collected, including an updated presence/absence survey for NMMJM and a baseline habitat assessment.
    - How long construction will be halted for NMMJM in active construction areas.
    - How NMMJM and the associated habitat at both the Animas River and Florida River will be monitored after construction is completed.
- Heavy-duty timber matting will be used in all riparian corridors along the Animas and Florida Rivers, which will mitigate damage to sensitive habitat vegetation and minimize compaction of soils.
- Silt fence will be installed along the edges of the ROW through NMMJM habitat along the Animas and Florida Rivers after a biological monitor clears the area of NMMJM individuals and day nests to discourage NMMJM individuals from coming back into the site.
- No vegetation will be brush-hogged, mowed, or otherwise altered in NMMJM habitat other than the trench line for the installation of the pipeline.
- Project activities in occupied NMMJM habitat (Animas River) will be restricted to August 10th through September 10th.
- Riparian portions of NMMJM will be reclaimed using native plants.
- Upland portions of NMMJM habitat will be reclaimed using mulching and native seed mixes.

Additional conservation measures for Monarch butterfly, migratory birds, and bald and golden eagles can be found within the prepared biological assessment (SECMG 2023).

Status of the Species

Description and Life History

On June 10, 2014, the NMMJM was listed as endangered (79 FR 33119). Final designated critical habitat was published on March 16, 2016 (81 FR 14264). In addition to the summary information provided below, we completed a species status assessment (SSA) report for the NMMJM in May 2014 (Service 2014), which was updated in January 2020 and is hereby incorporated by reference (Service 2020). The SSA report provides a thorough assessment of NMMJM biology and natural history and assesses demographic risks (such as small population sizes), threats, and limiting factors in the context of determining viability and risk of extinction for the species. In the SSA report, we

also compiled biological data and a description of past, present, and likely future threats (consequences) facing the NMMJM.

The NMMJM is a small mammal that measures approximately 7.4 to 10 in. (187 to 255 millimeters (mm)) in total length (VanPelt 1993). The coloration is typically grayish brown on the back, yellowish-brown on the sides, and white underneath. The species has large, five-toed hind feet, smaller front feet with four toes, a long tail, and the ability to make long leaps. The tail of the NMMJM is longer than its body (Miller 1911). Adult NMMJM are known to make jumps of up to three feet, but when they require speed, they reduce their jumps to approximately one foot (Hoffmeister 1986). The NMMJM is a good swimmer both at the surface and under water (Chambers 2017; Frey 2007; Frey 2017a; Hamilton 1935; Quimby 1951; Whitaker 1963).

The NMMJM is generally nocturnal but occasionally diurnal. It is active only during the growing season of the grasses and forbs upon which it depends. During the growing season, the NMMJM accumulates fat reserves by consuming seeds. Preparation for hibernation (weight gain, nest building) seems to be triggered by day length. The NMMJM hibernates about nine months out of the year from approximately October 1st through May 31st (longer than most other mammals) and is only active three or four months during the summer from approximately June 1st through September 30th (Morrison 1990, VanPelt 1993, Frey 2005). Within this short time frame, it must breed, birth, raise young, and store up sufficient fat reserves to survive the next year's hibernation period. Food availability late in the active season, grass and forb seeds that allow individuals to accumulate fat and survive the winter, is an important factor that affects population persistence (Chambers 2018a, Frey 2005). Food availability early in the active season is important as well since NMMJM emerge from hibernation at lower weights and need grass and forb seeds to gain adequate weight for breeding, rearing young, and subsequent hibernation (Chambers 2018a). Additionally, the species has low fecundity, having one litter annually with an average of five young. As a result, if resources are not available in a single season, populations are greatly stressed.

The NMMJM is considered a k-selected species because it is long-lived for a rodent species (although has a short life span in general, averaging about three years), and few offspring are produced. Although this strategy is successful in environments that are stable and predictable, k-selected species are at a higher risk of extinction because they recover more slowly from reductions in population size and are subject to genetic and demographic stochasticity.

Habitat Needs and Distribution

The NMMJM is a habitat specialist that uses moist, dense, streamside riparian/wetland vegetation ranging from 4,500 feet (ft; 1,372 m) in elevation up to about 9,500 ft (2,896 m.; Frey 2006). Streamside riparian/wetland habitats are used extensively for foraging and are also used for other life history activities such as day nests (Service 2020). The NMMJM appears to only utilize two riparian community types: 1) persistent emergent herbaceous wetlands (i.e., beaked sedge and reed canarygrass alliances); and 2) scrub-shrub wetlands with an understory of sedges and forbs (i.e., riparian areas along perennial streams that are composed of willows and alders) (Frey 2005). Specifically, the NMMJM requires tall (averaging 24 inches (in; 61 centimeters (cm)), dense riparian

herbaceous vegetation primarily composed of sedges and forbs. This suitable habitat is only found when wetland vegetation achieves full growth potential associated with seasonally available or perennial flowing water (Service 2020).

While streamside riparian/wetland vegetation is most prominently used by NMMJM, foraging and other life history activities are known to regularly occur in adjacent upland habitats. Upland habitats are used for dispersal, day nesting, maternal nests, and hibernation (Chambers 2018b; Frey 2017b). The NMMJM has limited dispersal capability and exhibit extreme site fidelity during daily activities (Service 2020). Based on telemetry data, the distance at which groups of NMMJM become separated from other groups is likely no more than approximately 2,400 ft. (731 m). Daily movements are typically less than 330 ft. (101 m) (Frey and Wright 2012; Service 2020). Home ranges were estimated to be between 0.5 acres and 10.25 acres (0.2 to 4.15 hectares) (Frey and Wright 2012), with an average minimum convex polygon (MCP) of approximately 4.2 acres (1.7 hectares) (Service 2020). It is uncommon for this species to traverse areas of non-habitat. Colonization, recolonization, and dispersal between populations is dependent upon the availability of suitable riparian habitat between populations (Service 2020). The New Mexico meadow NMMJM needs to have multiple resilient populations distributed throughout different drainages within eight geographic management areas to have high viability (Service 2020).

The NMMJM's historical distribution likely included riparian wetlands along streams in the Sangre de Cristo and San Juan Mountains from southern Colorado to central New Mexico, including the Jemez and Sacramento Mountains and the Rio Grande Valley from Española to Bosque del Apache National Wildlife Refuge, and into parts of the White Mountains in eastern Arizona. Little is known about the historical distribution of the NMMJM in the Pecos River Basin in New Mexico, but the species was documented in the Peñasco River watershed in the Sacramento Mountains in 2006 (Frey 2006; Frey and Malaney 2009).

Based on historical (1980s and 1990s) and current (from 2005 to 2018) data, the distribution and abundance of the NMMJM has declined significantly range-wide. The majority of extirpations have occurred since the late 1980s to early 1990s, as about 70 historically occupied locations are now considered extirpated. Since 2005, there have been 77 documented remaining populations spread across the eight conservation areas (23 in Colorado, 17 in New Mexico, and 37 in Arizona) (Service 2020). Nearly all current populations are isolated and widely separated, and all 77 populations have patches of suitable habitat that are too small to support resilient populations of NMMJM. Of the 39 new populations found since 2014, 32 have been outside of the designated critical habitat in the eight conservation areas. Many of these populations have been substantially compromised in recent years from water shortages, grazing, or wildfire and post-fire flooding. Some populations may already be extirpated (Service 2020).

Threats

Threats to the NMMJM include impacts from habitat loss and fragmentation, grazing pressure, drought, water utilization, and recreation.

Habitat Fragmentation and Loss

Due to the life history of NMMJM (short active period, short life span, low fecundity, low dispersal ability), and because the mouse requires such specific suitable habitat conditions, populations have a high potential for extirpation when habitat is altered, fragmented, or eliminated. There has been a significant reduction in occupied localities likely due to cumulative habitat loss and fragmentation across the range of the NMMJM (Service 2020). The past and current habitat loss has resulted in the extirpation of historical populations, reduced the size of existing populations, and isolated existing small populations. Ongoing and future habitat loss is expected to result in additional extirpations of more populations. The primary sources of past and future habitat losses are from grazing pressure (which removes the needed vegetation) and water management and use (which causes vegetation loss from mowing and drying of soils), lack of water due to drought (exacerbated by climate change), and wildfires (also exacerbated by climate change). Additional sources of habitat loss are likely to occur from scouring floods, loss of beaver ponds, highway reconstruction, residential and commercial development, coalbed methane development, and unregulated recreation (Service 2020).

Grazing Pressures

NMMJM habitat has been, and continues to be, negatively affected by domestic livestock, elk, and feral horse grazing that is incompatible with local ecosystem conditions. Livestock (Kauffman and Krueger 1984, Small et al. 2016), elk (Kay 1994), and feral horse (Chambers 2018b) use of riparian communities, which are also used by NMMJM, can adversely impact NMMJM habitat by reducing or eliminating tall, herbaceous vegetation stature and density (Belsky et al. 1999, Fleischner 1994) and impairing stream channels or riparian areas from meeting proper functioning condition (PFC) (USDOI 2015).

Disproportionate use of riparian areas can occur in the southwest due to their productivity and sources of perennial water (Service 2020). Cattle, and sometimes elk and feral horses, have contributed substantially to alterations of riparian ecosystems (Beschta et al. 2012) throughout the range of the NMMJM. Impacts to NMMJM habitat from grazing pressure includes, but are not limited to, destabilizing streambanks, burrow collapse, modification of riparian characteristics and plant communities, and disconnecting riparian areas from water sources (Belsky et al. 1999).

Water Use and Drought

Water use within NMMJM habitat varies significantly by location and infrastructure needs. Water diversions used to support anthropogenic needs can directly alter hydrologic regimes through reduced perennial water flow, dewatering stream channels, and preventing channel recharging to occur. On a smaller scale, local water use can include small scale diversions or pipeline infrastructure used to support small scale irrigation needs or offsite water sources for livestock grazing, respectively. Water removal from instream habitat and riparian areas (seeps and springs) can reduce or eliminate the moist soil conditions that sustain suitable NMMJM habitat (Frey 2005).

Drought influences the extent and timing of perennial flows within streams or riparian areas which can cause a reduction in the size of available riparian habitat. Reduced precipitation across uplands reduces soil moisture along riparian area margins causing these areas to transition to upland habitats. Drying conditions across the landscape can limit upland areas from reaching their full growth potential, further reducing habitat and forage for NMMJM use.

Recreation

Riparian habitat is known to be favored by campers and anglers, where erect riparian vegetation can be readily damaged by these activities (Frey 2005). This can reduce functional habitat for the NMMJM by reducing or eliminating cover and available food. Unregulated recreation within riparian and wet meadow habitat can directly impact NMMJM by disturbing day or nursery nests. Recreationalists have been observed driving off-highway vehicles through exclosures typically fenced to exclude livestock from riparian habitat.

Environmental Baseline

The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. (50 CFR 402.02).

The environmental baseline for this project includes all roads and existing structures in the action area, except for those being modified by the proposed project. For Tribal lands the baseline also includes actions reasonably certain to occur in the future within the action area. The Southern Ute tribe was aware of one future energy project that will occur within the action area that will undergo federal permitting, along with a fuels project planned within the action area consisting of hand thinning, biomass extraction, and mastication. These projects will not occur within NMMJM habitat, and so will not have any cumulative effects related to NMMJM.

Status of the Species within the Action Area

There are two areas within the action area that provide potential habitat for NMMJM: 158 acres along the Florida River, and 124 acres along the Animas River. Live trapping was conducted on the Animas River from June 12-14, 2022, for a total of 320 trap nights. Five adult male NMMJM were captured on the first two trap nights. Live trapping was conducted on the Florida River for a total of 700 trap nights, with no NMMJM captured. The NMMJM habitat along the Animas River is considered occupied, and the habitat around the Florida River crossing is considered suitable NMMJM habitat.

Effects of the Action

Effects of the action refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline. (50 CFR 402.02).

The BA describes consequences of the action that are anticipated to result in take of NMMJM. Nests and less-mobile young may be present into late September, and hibernation may start as early as mid-September (Service 2020). Consequently, there is no time frame in the fall where ground-disturbing construction can take place that is assured to miss either nesting or hibernating NMMJM. While the project will trench in occupied habitat from August to September, nesting and hibernation are possible in the impacted areas. Additionally, it is extremely difficult to detect nest or hibernation burrows and to determine if a hole in the ground is a nest or hibernation burrow. Mortality of mice may occur, then, from crushing during site preparation, earth movement, or reclamation. Habitat may also be lost in both potential and occupied NMMJM habitat until vegetation regrows. Construction activity and noise may also add disturbance to the local landscape affecting breeding, feeding, and sheltering by altering normal activity of NMMJM.

The proposed project would impact approximately 0.83 acres of occupied NMMJM habitat along the Animas River and approximately 0.95 acres of suitable NMMJM habitat along the Florida River. A majority of the habitat impacted by the project is considered upland habitat used by the mice for hibernation, day nesting, dispersion, and maternal nesting.

The average home range size of the NMMJM is 4.2 acres. On-the-ground impacts to habitat are expected to only occur in 0.83 acres of occupied NMMJM habitat, comprising part of the home range of one or more mice, depending on the overlap of home ranges. Home ranges for NMMJM are likely linear, following vegetation corridors (Service 2020). The trenching and associated ROW will be 40 feet wide; while more than one NMMJM may utilize this 40-foot stretch as part of their home range, it comprises a small portion of their total expected home range. Through the use of biological surveying, discouragement of NMMJM from staying in the ROW for trenching, removal of day nests or individuals, and other monitoring efforts, effects to NMMJM will be minimized to the extent possible.

While biological surveys and monitoring immediately ahead of construction and during construction will be conducted, NMMJM nests and hibernacula, along with individuals themselves, may be difficult to observe. In addition, removal of day nests or individuals, discouragement of NMMJM from staying in the ROW for trenching, and other monitoring efforts may stress and negatively impact NMMJM individuals.

The Service anticipates that up to two adults and 14 young NMMJM could be taken as a result of the proposed action. The maximum litter size of NMMJM has been observed to be seven (Service 2020). The incidental take is expected to be in the form of either killing through crushing by equipment, harm through removal of habitat, or harassment from human activity resulting in disruption to feeding, breeding, and sheltering.

Cumulative Effects

Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section, because they require separate consultation pursuant to Section 7 of the ESA. The Colorado Department of Transportation (CDOT) would like to address rockfall and geohazard issues along Highway 550 within the action area. This area does not contain any potential threatened or endangered species habitat. There are no other known actions reasonably certain to occur within the action area.

Conclusion

After reviewing the current status of NMMJM effects of the proposed action, environmental baseline for the action area, cumulative effects, and proposed conservation measures, it is our biological opinion that the Arkansas Loop to Coyote Gulch Carbon Dioxide Sequestration Pipeline project, as proposed, is not likely to jeopardize the continued existence of the species, such that effects would not be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and the recovery of NMMJM in the wild by reducing the reproduction, numbers, or distributions of the species. The Service's rational for our conclusion is presented below.

1) Take of two adult NMMJM and 14 young will not appreciably reduce the likelihood of survival and recovery of the species.

2) Within the action area, only 0.85 acres of occupied NMMJM habitat, the majority of which is upland habitat, will be affected, of the 124 acres of NMMJM habitat along the Animas River section of the action area. Consequently, NMMJM should be able to continue to use active-season habitat up and downstream of affected areas despite potential mortality from crushing and disturbance of feeding, breeding, and sheltering during the construction period.

3) Habitat loss will be reduced by minimizing destruction of existing upland and streamside vegetation as much as possible (staging of materials and construction occurring on timber matting with no clearing of riparian vegetation within the occupied or potential NMMJM habitat).

The conclusion of this biological opinion is based on full implementation of the conservation measures described in the Description of the Proposed Action section of this document and the effective management of the land and water within the action area.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by FWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by FWS as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

Amount or Extent of Incidental Take Anticipated

The Service anticipates that two adults and 14 juvenile NMMJM could be taken as a result of the proposed action. The maximum litter size of NMMJM has been observed to be seven (Service 2020). The incidental take is expected to be in the form of either killing through crushing by equipment, by harm through removal of habitat, and by harassment from human activity resulting in disruption to feeding, breeding, and sheltering.

Effect of the Take

The Service determines that the level of anticipated take is not likely to result in jeopardy to the survival and recovery of the species. The effect of any incidental take of NMMJM resulting from the proposed activities will be relatively small when considering the population as a whole.

Reasonable and Prudent Measures

Reasonable and prudent measures, and implementing terms and conditions, are designed to minimize the effects of incidental take that might otherwise result from a proposed action. In addition to the conservation measures already proposed as part of the action description, the Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of the NMMJM:

1. Construction within occupied NMMJM habitat will take place in late summer 2023 to minimize the chance of mortality of immobile young in a late nest, minimize habitat loss around a maternal nest site, minimize disturbance to mice using maternal nest areas, and minimize the chance of mortality to hibernating mice.
2. Seeding of restoration areas and access road reclamation (ripping and seeding) shall take place in late summer 2023.
3. A biological monitor shall survey for NMMJM day nests to scare mice out of the nests immediately ahead of construction and maternal nests to determine if avoidance actions need to be taken (see Terms and Conditions).
4. A biological monitor shall also record the effects of the take (mortality, amount of habitat disturbance) and a report provided to the Service (see Terms and Conditions).

Terms and Conditions

1. Construction activities within occupied NMMJM habitat shall start and end between August 10th and will be completed before September 10th. This time frame will avoid the hibernation period, and increase the chance that NMMJM have completed nesting.
2. Construction activities within suitable NMMJM habitat (Florida River crossing) shall start and end between August 10th and October 1st. This time frame will increase the chance that any NMMJM not detected have completed nesting.
3. If reclamation of occupied NMMJM habitat is not completed by September 10th, or is not fully successful, reclamation and seeding shall take place during the 2024 active season (June 15 - September 10).
4. Day nest and maternal nest searches shall take place immediately ahead of construction in 2023 and, if necessary, prior to reclamation and/or reseeding in 2024.
5. Mice shall be scared out of day nests in the proposed footprint of construction and earth movement areas immediately ahead of construction.
6. The BIA, through the Southern Ute Indian Tribe Growth Fund, shall submit a report to the Service on the effects of the take (i.e. mortality observed, habitat disturbed) by the proposed action.
7. The BIA, through the Southern Ute Indian Tribe Growth Fund, shall submit the first report following construction in 2023 regarding take and construction outcomes. Reports shall also be submitted annually after monitoring through 2028 regarding restoration monitoring.
8. Observation of mortality of mice (via crushing, etc.) shall be reported within 24 hours. Dead mice should be put in a sealable bag in the freezer and the Service should be contacted to discuss disposition of the mice.

Reinitiation Notice

This concludes formal consultation under section 7 of the ESA for the Arkansas Loop to Coyote Gulch Carbon Dioxide Sequestration Pipeline project. Reinitiation of formal consultation is required and shall be requested by the Federal agency or recommended by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If the amount or extent of taking specified in the incidental take statement is exceeded; (b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (d) If a new species is listed or critical habitat designated that may be affected by the identified action. (50 CFR 402.16).

If you have any comments or questions, please contact Jake Gottschalk of my staff at jake_gottschalk@fws.gov.

Literature Cited

Belsky, A.J., A. Matzke, and S. Uselman. 1999. Survey of livestock influences on stream and riparian ecosystems in the Western United States. Journal of Soil and Water Conservation 54:419–431.

Beschta, R.L., D.L. Donahue, D.A. DellaSala, J.J. Rhodes, J.R. Karr, M.H. O'Brien, T.L. Fleischner, and C.D. Williams. 2012. Published online: November 15, 2012. Adapting to Climate Change on Western Public Lands: Addressing the Ecological Effects of Domestic, Wild, and Feral Ungulates. Environmental Management.

Chambers, C.L. 2017. New Mexico meadow NMMJM project radio telemetry draft summary. Jul – Sep 2017. School of Forestry, Northern Arizona University, Flagstaff, AZ, 14 pp.

Chambers, C.L. 2018a. New Mexico meadow NMMJM Project Report for 2015-2017. FWS Permit No.: TE63202B-1. School of Forestry, Northern Arizona University, Flagstaff, AZ.

Chambers, C.L. 2018b. Apache-Sitgreaves and Santa Fe National Forests small mammal project annual report for 2018. FS Agreement 14-CR-11030121-024. School of Forestry, Northern Arizona University, Flagstaff, AZ.

Fleischner, T.L. 1994. Ecological costs of livestock grazing in Western North America. Conservation Biology 8:629-622.

Frey, J.K. 2005. Status assessment of montane populations of the New Mexico meadow NMMJM (Zapus hudsonius luteus) in New Mexico. Final Report Professional Services Contract number 05-516.57, submitted to Conservation Services Division, New Mexico Department of Game and Fish, Santa Fe, New Mexico.

Frey, J.K. 2006. Status of the New Mexico meadow NMMJM (Zapus hudsonius luteus) in the Sangre de Cristo Mountains, New Mexico. Final Report Professional Services Contract number 06-516-0000-0049, submitted to Conservation Services Division, New Mexico Department of Game and Fish, Santa Fe, New Mexico.

Frey, J.K. 2007. Considerations for inventory of *Zapus hudsonius luteus*. Frey Biological Research, Radium Springs, New Mexico. December 7, 2007. 2 pp.

Frey, J.K. 2017a. A Review and the Conservation Implications of Aquatic Behaviour and Drowning in Jumping Mice (Dipodidae: Zapodinae). The Ottawa Field-Naturalists' Club 131:141-143 + appendices

Frey, J.K. 2017b. Landscape scale and microhabitat of the endangered New Mexico meadow NMMJM in the White Mountains, Arizona. Journal of Fish and Wildlife Management 8(1):39-58.

Frey, J.K., and J.L. Malaney. 2009. Decline of the meadow NMMJM (Zapus hudsonius luteus) in two mountain ranges in New Mexico. Southwestern Naturalist 54:31–44.

Frey, J.K., and G.D. Wright. 2012. Multiple scale habitat selection by a small mammal habitat specialist (Zapus hudsonius luteus) in a managed floodplain landscape. Department of Fish Wildlife and Conservation Ecology, New Mexico State University, Las Cruces, NM.

Hamilton, W.J. 1935. Habits of jumping mice. American Midland Naturalist 16(2), pp. 187-200.

Hoffmeister, D.F. 1986. Mammals of Arizona. University of Arizona Press and Arizona Dept. of Game and Fish, Tucson, Arizona.

Kauffman, J.B., and W.C. Krueger. 1984. Livestock impacts on riparian ecosystems and streamside management implications: a review. Journal of Range Management 37(5).

Kay, C.E. 1994. The impact of native ungulates and beaver on riparian communities in the Intermountain West. Natural Resources and Environmental Issues 1(1).

Miller, G.S. 1911. A new NMMJM from New Mexico. Proceedings of the Biological Society of Washington 24:253-254.

Morrison J.L. 1990. The meadow NMMJM in New Mexico: habitat preferences and management recommendations. Pages 136-143, in Krausman PR, Smith NS, editors. Proceedings of the symposium on managing wildlife in the Southwest Phoenix, Arizona: Arizona Chapter, The Wildlife Society.

Quimby, D.C. 1951. The life history and ecology of the meadow NMMJM *Zapus hudsonius*. Ecological Monographs 21: 61–95.

Small, B.A., J.K. Frey, and C.C. Gard. 2016. Livestock grazing limits beaver restoration in northern New Mexico. Restoration Ecology 24(5):646-655.

Southern Ute Indian Tribe Growth Fund Safety and Environmental Compliance Management Group. 2023. Biological Assessment: Arkansas Loop to Coyote Gulch Carbon Dioxide Sequestration Pipeline. Durango, Colorado.

U.S. DOI. 2015. Riparian area management: Proper functioning condition assessment for lotic areas. Technical Reference 1737-15. Bureau of Land Management, National Operations Center, Denver Colorado.

U.S. Fish and Wildlife Service (Service). 2014. Final status review and assessment of the New Mexico meadow NMMJM (Zapus hudsonius luteus). Prepared by the Listing Review Team. Albuquerque, New Mexico. 148 pp.

U.S. Fish and Wildlife Service (Service). 2020. Species Status Assessment Report for the New Mexico meadow NMMJM (*Zapus hudsonius luteus*). U.S. Fish and Wildlife Service Region 2. Albuquerque, New Mexico. 152pp. +viii.

VanPelt, W.E. 1993. Nongame field notes: meadow NMMJM. Arizona Wildlife News.

Whitaker, J.O., Jr. 1963. A study of the meadow NMMJM, *Zapus hudsonius* in central New York. Ecological Monographs 33:215–254.