Biological Evaluation for Proposed Blocks 9–11

Naschitti, Tohatchi, Mexican Springs and Twin Lakes Chapters
Navajo Nation

San Juan and McKinley Counties, New Mexico

June 2017

Prepared for:

Bureau of Reclamation
Upper Colorado Region
125 South State Street, Room 6107
Salt Lake City, UT 84138

Prepared by:

Ecosystem Management, Inc.
3737 Princeton NE, Suite 150
Albuquerque, NM 87107
505-884-8300

Page intentionally left blank

Summary

A biological evaluation was performed of the proposed Reaches 9–11 on Navajo Nation. Specific surveys were conducted for protected species with potential to occur within proximity to the project area. One burrowing owl was observed during surveys, and since construction activities are likely to occur during the breeding season, NNDFW requires preconstruction nest surveys for owls in and around all prairie dog colonies detected during surveys. Known burrowing owl nest sites would need to be avoided until the owls have fledged. Preconstruction surveys for species protected under the Migratory Bird Treaty Act should be conducted if construction occurs during the avian breeding season because of ample nesting habitat. In addition, three active raven nests were located, with two just outside of the 400-foot ROW, and one nest was approximately 80 m outside of the ROW. NNDFW avoidance of regular bird nests is 50 m. The raven nests are outside of the 400-foot ROW, but nest surveys should be conducted before work activities in these areas to determine if they are occupied by nesting birds. Best management practices should be used to discourage the introduction of noxious weeds.

Table of Contents **Page**

List of Figures

List of Tables

List of Acronyms

BE	Biological Evaluation
BGEPA	Bald and Golden Eagle Protection Act
BLM FFO	Bureau of Land Management Farmington Field Office
BMP	Best Management Practices
BOR	Bureau of Reclamation
EA	Environmental Assessment
EMI	Ecosystem Management, Inc.
ESA	Endangered Species Act
HUC	Hydrologic Unit Code
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NGWSP	Navajo-Gallup Water Supply Project
NNDFW	Navajo Nation Department of Fish and Wildlife
RCP	Biological Resource Land Clearance Policies and Procedures
ROW	Right-of-way
USFWS	United States Fish and Wildlife Service

Table of Conversions

Distance

1 inch = 2.54 centimeters = 25.4 millimeters

1 foot = 0.30 meter

1 mile = 1.61 kilometers

Area

1 acre = 0.40 hectare

1.0 INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

Ecosystem Management, Inc., (EMI) was contracted by the Bureau of Reclamation (BOR) to conduct a biological evaluation (BE) for the Navajo Nation Department of Fish and Wildlife (NNDFW), which will encompass approximately 28 miles of Reaches 9–11 for the Navajo-Gallup Water Supply Project (NGWSP). This project proposes to connect water from the San Juan lateral pipeline and deliver it to local users along Blocks 9–11. The BOR proposes the construction of the project and implementation of environmental requirements to include Reaches 9–11, totaling approximately 1,171 acres (473.9 ha). The proposed project is located in San Juan and McKinley Counties, NM, on Navajo Nation Trust Lands (Figure 1).

The purpose of this BE is to review the proposed action to determine to what extent it may affect threatened, endangered, proposed, or candidate species listed under the Endangered Species Act (ESA), and species protected under the Navajo Endangered Species Act (No. RCS-41-08). This BE was prepared in accordance with legal requirements set forth under Section 7 of the ESA of 1973, as amended (16 USC 1536, et seq.), and the Navajo Nation code requirements for endangered species (17NNC507). This BE will also review the proposed action to determine to what extent it may affect avian species protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA).

1.2 Project Location

The project area is located on Navajo Nation, San Juan and McKinley Counties, NM on the Naschitti, Coyote Canyon NW, Chuska Lake, Big Rock Hill and Twin Lakes US Geological Survey 24k quadrangles (Figure 1). The legal description for the project area is presented in Table 1.

Table 1. Legal description for the project area.

Township	Range	Sections
21N	17W	7, 8, 17, 20, 28, 29, 33
20N	17W	4, 9, 16, 21, 28, 33
19N	17W	4, 9, 16, 20, 21, 29, 31, 32
18N	17W	6, 7
18N	18W	12, 13, 23, 24, 26, 27, 34
17N	18W	3, 4, 9, 16, 17

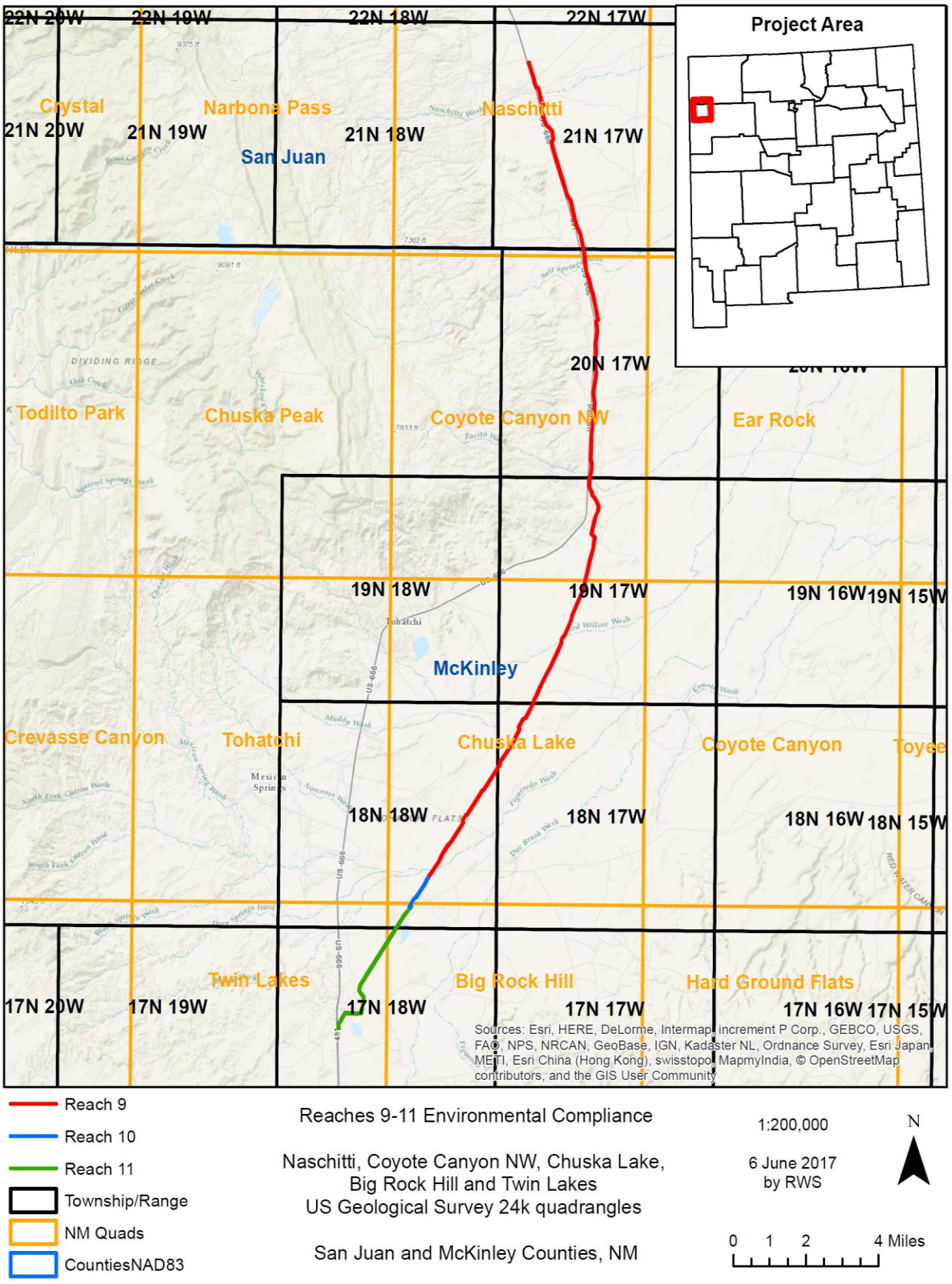

Figure 1. Project vicinity map.

2.0 AFFECTED ENVIRONMENT

2.1 Topography

The elevation ranges from approximately 5,873–6,365 feet (1,790–1,940 m). There are no major land forms in or near the project area.

2.2 Geology and Soils

Soils mapped in the project area are presented in Table 2. The geology is mapped as Menefee Formation—Mudstone, shale, and sandstone; coal-bearing (Kmf; Campanian to Santonian; Anderson et al. 1997).

Table 2. Soils mapped in the project area.

Map Unit	Symbol	Textures	Parent Materials
Badland-Hanksville complex; 35-to-60-percent slopes	7	Channery silt loam; silty clay loam; bedrock	Slope alluvium over residuum derived from shale
Betonnie-Bond families-Skyvillage complex; 3-to-8-percent slopes	14	Loamy fine sand; fine sandy loam; sandy clay loam; clay loam; loam; bedrock	Eolian deposits and slope alluvium derived from sandstone and/or eolian deposits and slope alluvium derived from sandstone and shale; eolian deposits and slope alluvium derived from sandstone and shale; eolian deposits and slope alluvium derived from sandstone
Blancot family-Chafin complex; 2-to-6-percent slopes	18	Loam; clay loam; clay; loamy sand	Fan alluvium derived from sandstone and shale
Fajada-Huerfano-Benally family complex; 1-to-5-percent slopes	33	Gravelly fine sandy loam; sandy clay loam; fine sandy loam; clay loam; loam; bedrock	Alluvium over residuum weathered from sandstone and shale; slope alluvium over residuum weathered from sandstone and shale
Jeddito loamy fine sand; 0-to-5-percent slopes	43	Loamy fine sand; stratified loamy fine sand; stratified fine sandy loam	Alluvium derived from sandstone
Mesa family; 1-to-4-percent slopes	60	Fine sandy loam; gravelly sandy clay loam; very cobbly sandy loam; very cobbly fine sandy loam; loamy fine sand	Fan and slope alluvium
Notal-Jocity family complex; 0-to-2-percent slopes	71	Clay loam; silty clay loam; clay; loam; sandy clay loam; fine sandy loam; silt loam	Stream alluvium derived from sandstone and shale
Razito-Shiprock family complex; 3-to-8-percent slopes	91	Loamy fine sand; fine sandy loam	Eolian sands derived from sandstone; eolian material and fan alluvium derived from sandstone and shale

Map Unit	Symbol	Textures	Parent Materials
Redlands-Shiprock families complex; 1-to-8-percent slopes	93	Fine sandy loam; sandy clay loam; loamy fine sand	Eolian material and fan alluvium derived from sandstone and shale
Shiprock family-Farb-Rock outcrop complex; 3-to-8-percent slopes	108	Loamy fine sand; fine sandy loam; sand; gravelly loamy fine sand; bedrock	Eolian material and fan alluvium derived from sandstone and shale; slope alluvium over residuum weathered from sandstone
Werito loam; 1-to-3-percent slopes	135	Loam; clay loam; silty clay; bedrock	Alluvium over residuum weathered from sandstone and shale

Source: U.S. Department of Agriculture Natural Resources Conservation Service Soil Survey Staff 2017.

2.3 Vegetation

The vegetation community is mapped as Great Basin conifer woodland and plains and Great Basin grassland (Brown 1994). Dominant vegetation includes tobosa (*Pleuraphis jamesii*), salt cedar (*Tamarisk* sp.), four-wing saltbush (*Atriplex canescens*) and sand dropseed (*Sporobolus cryptandrus*). Sub-dominant vegetation includes broom snakeweed (*Gutierrezia sarothrae*), western wheatgrass (*Pascopyrum smithii*), globemallow (*Sphaeralcea* sp.), silver sagebrush (*Artemisia cana*), club cholla (*Grusonia clavata*), Russian thistle (*Salsola tragus*), rubber rabbitbrush (*Ericameria nauseosa*), Greene's rabbitbrush (*Chrysothamnus greenei*), milkvetch (*Astragalus* sp.), Indian ricegrass (*Achnatherum hymenoides*), greasewood (*Sarcobatus vermiculatus*), cottonwood (*Populus* sp.), cocklebur (*Xanthium* sp.), and saltlover (*Halogeton glomeratus*).

2.4 Hydrology

Water bodies downslope of the project area include Naschitti Wash, Salt Springs Wash, Tocito Wash, Red Willow Wash, and Figueredo Wash. The 12-digit hydrologic unit code (HUC) and names are 140801061305 Naschitti Wash, 140801061303 140801061304, 140801061307 Salt Springs Wash, 140801061307 Grey Hill Spring, 140801061203 Tocito Wash, 140801061301 Outlet Red Willow Wash, 140801061006 Outlet Figueredo Wash, 140801060904 Headwaters Figueredo Wash, 140801061004 Dye Brush Wash–Coyote Wash, and 140801061003 Dye Brush Wash. The project area is in the Chaco subbasin, Upper San Juan basin, San Juan subregion and Upper Colorado region.

2.5 Special Designated Areas

The project area is classified by NNDFW as Area 3 (low sensitivity) according to the Biological Resource Land Clearance Policies and Procedures (RCP). There are no Important Bird Areas within or near the project area (Audubon 2017). Critical habitats are discussed below.

3.0 METHODOLOGY

Information on species and habitats of concern was provided by the Navajo Nation Department of Fish and Wildlife (NNDFW; data request code 17EM-103; Appendix B), and an official species list for the project area was requested by the United States Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (Appendix B). This information was reviewed by an EMI biologist to determine if any sensitive species have potential to occur in the project area based on the project location, observed habitats, soils, and geology. Potential conflicts with the MBTA and the BGEPA were also reviewed.

On May 30–June 2, 2017, a biological survey was conducted by an EMI wildlife biologist of the proposed project area. During pedestrian surveys, areas were searched for suitable habitat for protected plants and wildlife, prairie dog towns, cliffs suitable for nesting raptors, birds, noxious weeds, wetlands, drainages, and surface waters within the project area. Photos are shown in Appendix A. Surveys were conducted under NNDFW special permit 674.

The action and analysis areas for this evaluation vary by organism. For birds and large mammals, the action and analysis areas include the project area and the surrounding area, the range of which depends on species. This is because noise from the proposed action may travel beyond the project boundaries, and construction activities could disturb some species beyond the immediate project area (e.g., nesting raptors). For plants, the action and analysis areas are the project area. For fishes, the action and analysis areas include the project area and the downstream portions of water bodies intersected by the project area.

4.0 TARGET SPECIES AND HABITATS

Table 3 presents the target species potentially occurring in the project area and their status. Direct and indirect effects are discussed under Survey Results.

4.1 Critical Habitat

There is no designated or proposed critical habitat within or near the project area (U.S. Fish and Wildlife Service 2017). The nearest critical habitat is for the Mexican spotted owl (*Strix occidentalis lucida*) approximately 27 miles (43.5 km) southeast of the project area.

5.0 SURVEY RESULTS

5.1 Field Observations

Wildlife observed includes American crow (*Corvus brachyrhynchos*), ferruginous hawk (*Buteo regalis*), Bullock's oriole (*Icterus bullockii*), common raven (*Corvus corax*), western kingbird (*Tyrannus verticalis*), cliff swallow (*Petrochelidon pyrrhonota*), western meadowlark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), northern mockingbird (*Mimus polyglottos*), lark sparrow (*Chondestes grammacus*), loggerhead shrike (*Lanius ludovicianus*), brown-headed cowbird (*Molothrus ater*), southwestern willow flycatcher (*Empidonax traillii extimus*), western tanager (*Piranga ludoviciana*), mourning dove (*Zenaida macroura*), house finch (*Haemorhous mexicanus*), yellow warbler (*Setophaga petechial*), lazuli bunting (*Passerina amoena*). Other wildlife observed in the project area includes the desert cottontail (*Sylvilagus audubonii*) and Gunnison's prairie dog (*Cynomys gunnisoni*).

There were no protected plants observed during the biological survey. Protected animals included the detection of a southwestern willow flycatcher at Red Willow Wash (Photo 6), but the EMI biologist thinks that this area is not suitable breeding habitat, and the bird was likely a transient migrant. One burrowing owl was observed near the start of prairie dog colony D (Figure 3) about 80 m at 120° from point (Easting: 707104, Northing: 3963128). Several Gunnison's prairie dog colonies were observed within the vicinity of the project area (Figures 2–4).

An isolated potential wetland, or possibly a cesspool, was detected along Reach 11 (Easting: 702389, Northing: 3954665; Photos 2–4), and there was water flow within Red Willow Wash from a flowing pipe.

Table 3. Target species potentially occurring in the project area and status.

Scientific name	Common name	Status*
Aquila chrysaetos	Golden eagle	group 3, MBTA, BGEPA
Astragalus humillimus	Mancos milk-vetch	group 2, ESA E
Athene cunicularia	Burrowing owl	group 4, MBTA
Buteo regalis	Ferruginous hawk	group 3, MBTA
Catostomus discobolus yarrowi	Zuni Bluehead Sucker	group 4, ESA E
Charadrius montanus	Mountain plover	group 4, MBTA
Coccyzus americanus	Yellow-billed cuckoo	group 2, ESA T, MBTA
Cypripedium parviflorum var. *pubescens*	Yellow lady's slipper	group 4
Empidonax traillii extimus	Southwestern willow flycatcher	group 2, ESA E, MBTA
Erigeron rhizomatus	Zuni fleabane	group 2, ESA T
Falco peregrinus	Peregrine falcon	group 4, MBTA
Lithobates pipiens	Northern Leopard Frog	group 2
Mustela nigripes	Black-footed ferret	group 2, ESA experimental population, non-essential
Pediocactus knowltonii	Knowlton's cactus	ESA E
Ptychocheilus lucius	Colorado pikeminnow	ESA E
Sclerocactus mesae-verdae	Mesa Verde cactus	group 2, ESA T
Strix occidentalis lucida	Mexican spotted owl	group 3, ESA T, MBTA
Vulpes macrotis	Kit fox	group 4
Xyrauchen texanus	Razorback sucker	group 2, ESA E

*G 2–4 = Navajo Endangered Species List rankings: G 2 = endangered, G 3 = threatened, G 4 = candidate. G 4 species are not protected under Tribal Code but should be considered in project planning. ESA E, C and T = Endangered Species Act endangered, candidate and threatened. MBTA = Migratory Bird Treaty Act, BGEPA = Bald and Golden Eagle Protection Act.

There were no cliffs detected throughout the project area within the 400-foot ROW that could potentially support nesting substrate for raptors. However, three active common raven nests were observed (two in cottonwoods and one in a salt cedar) along Reach 9; two were just outside the 400-foot ROW, and one was approximately 80 m outside the 400-foot ROW (Figure 5). There were young observed in all three stick nests.

Noxious weeds observed within the project area included Russian thistle, salt cedar, saltlover, and cocklebur.

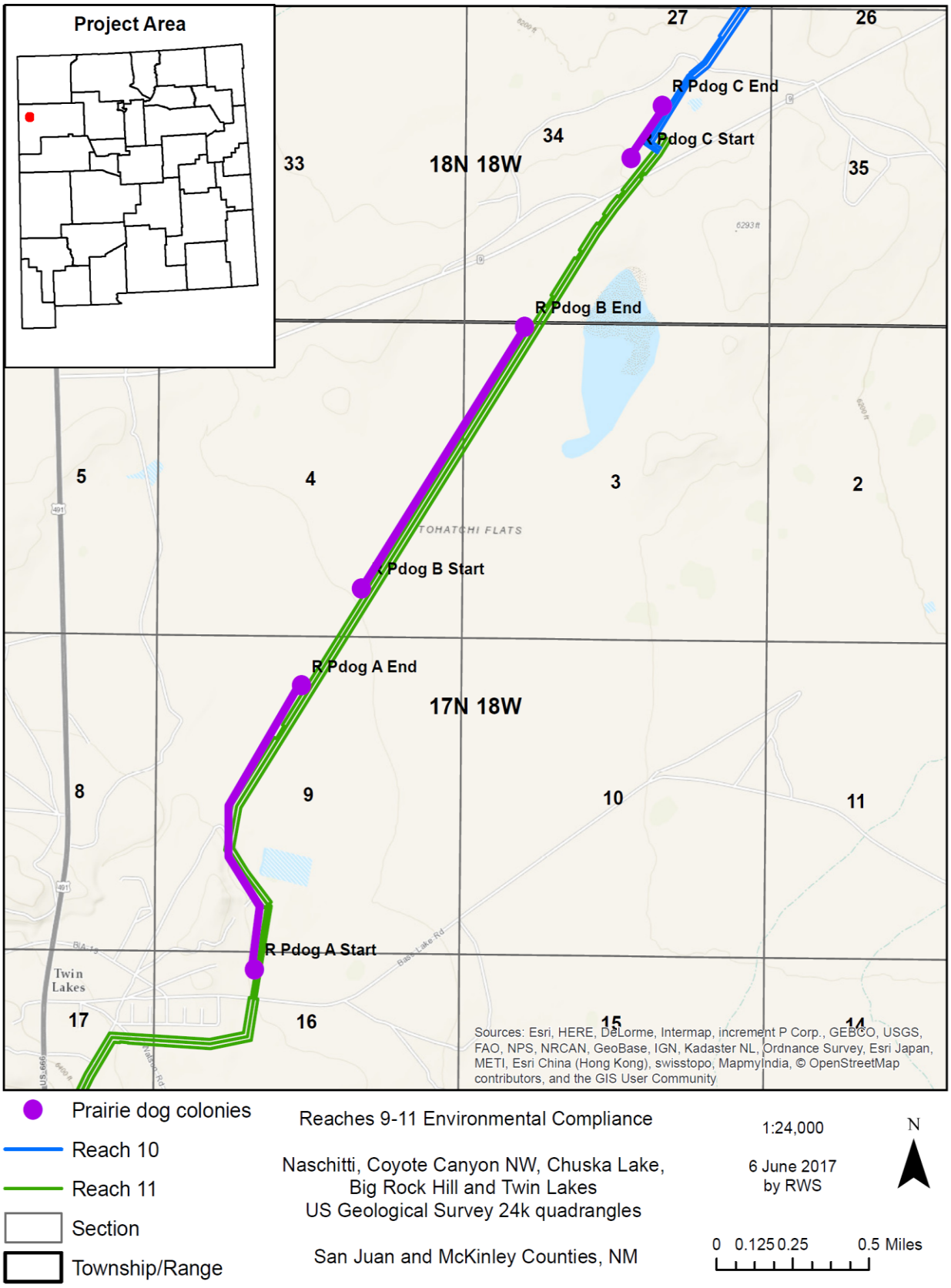

Figure 2. Active prairie dog colonies detected along Reaches 10 and 11.

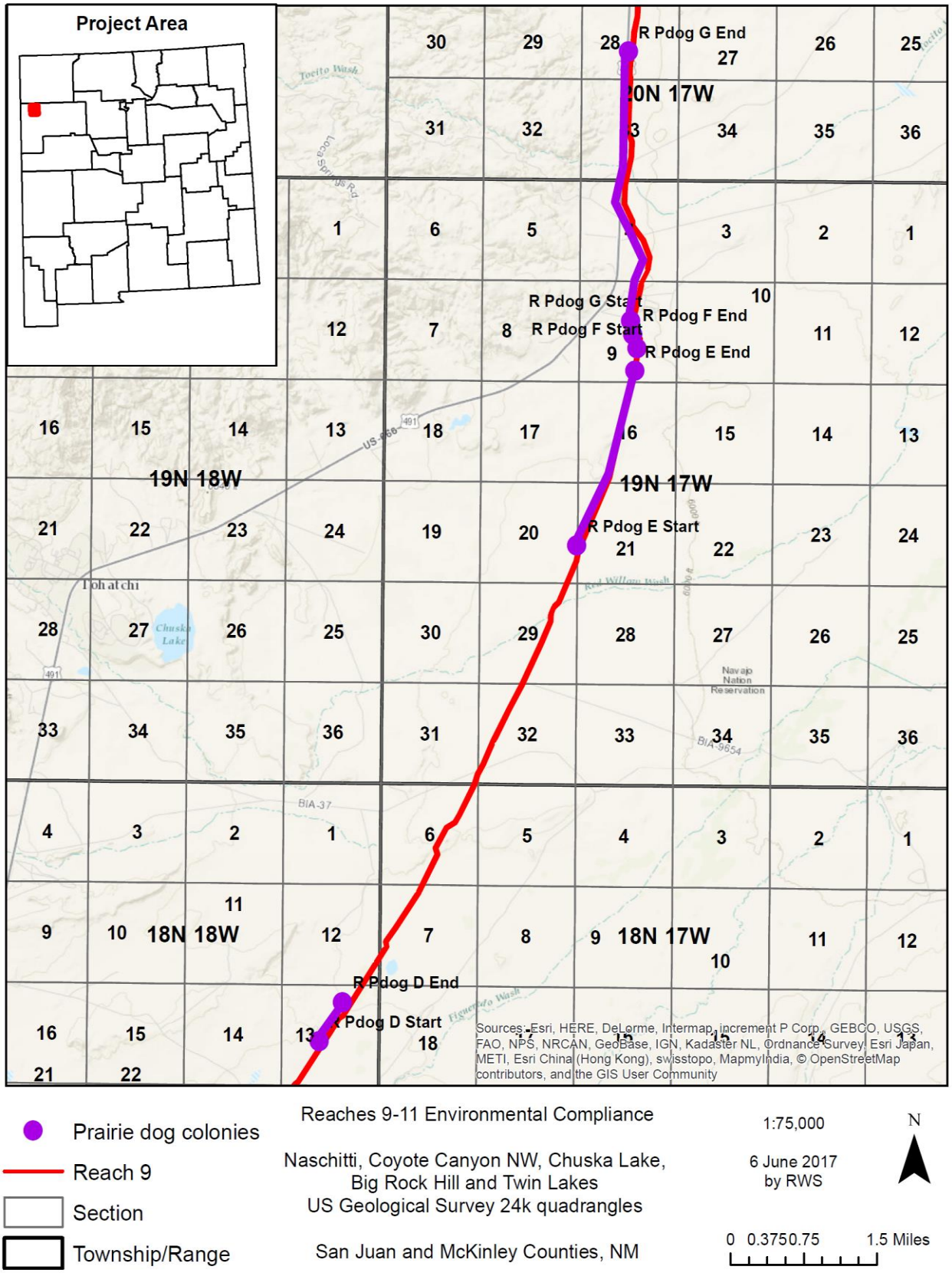

Figure 3. Active prairie dog colonies detected along Reach 9.

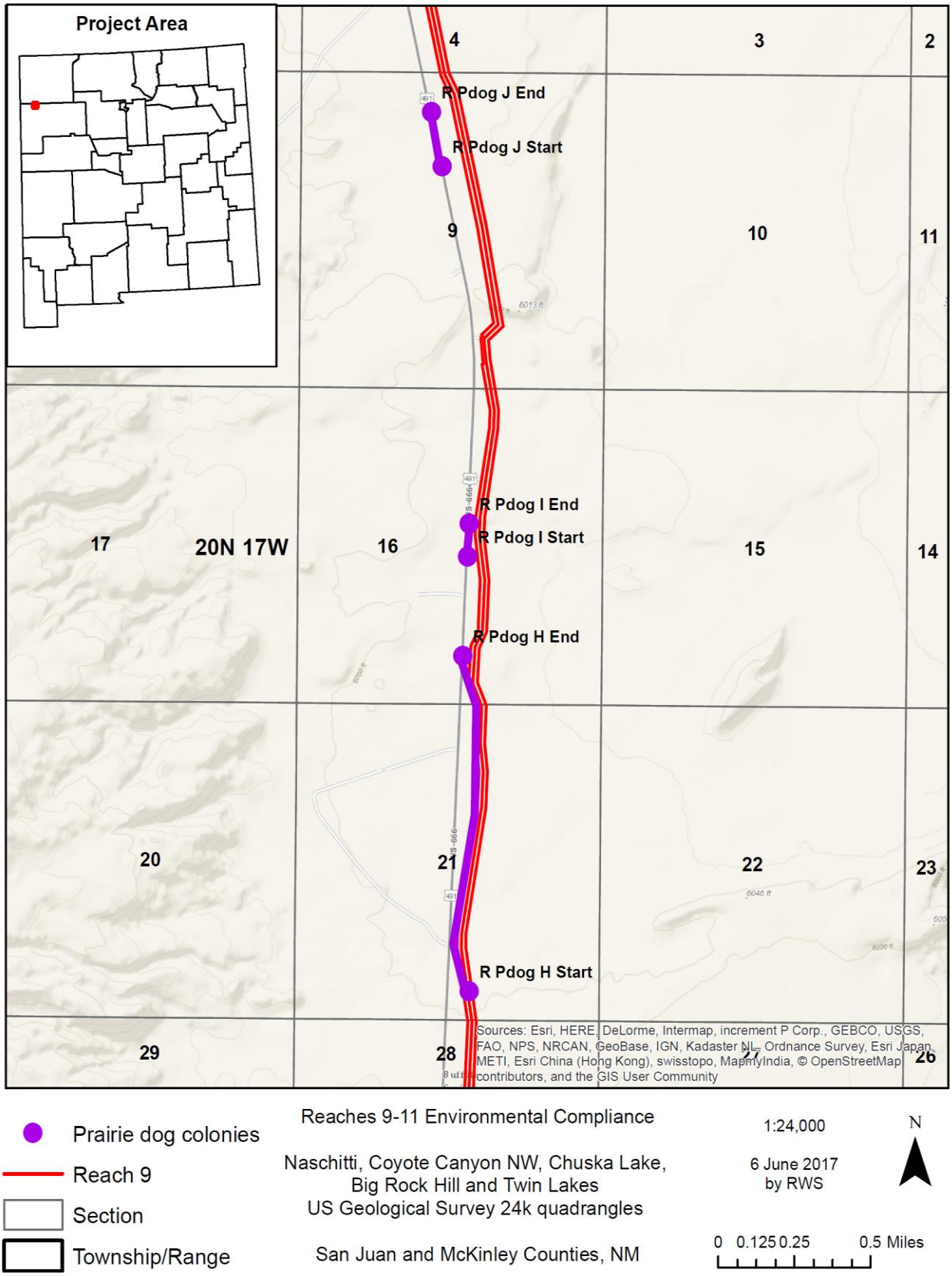

Figure 4. Active prairie dog colonies detected along Reach 9 at northern end of project area.

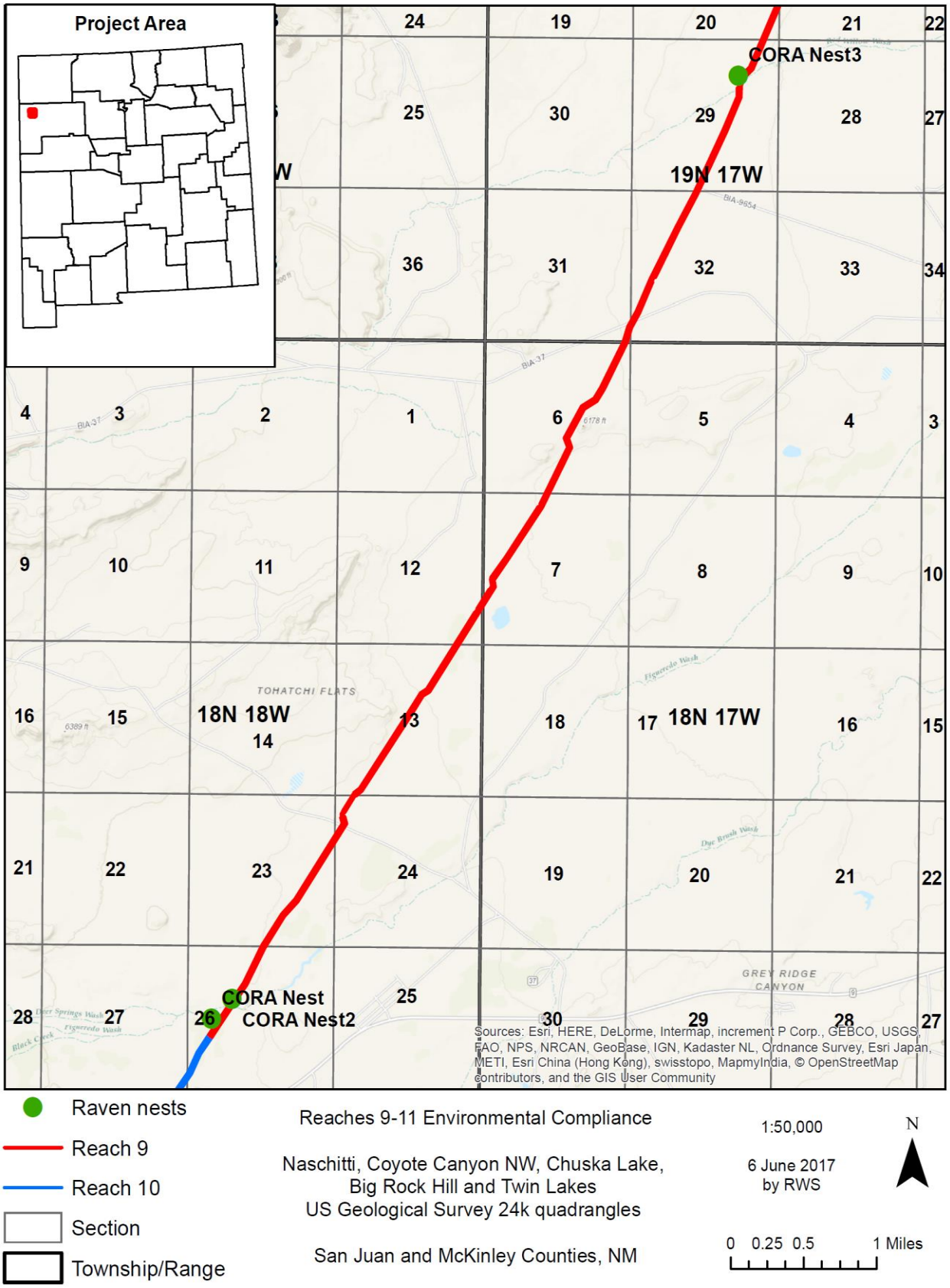

Figure 5. Active common raven nests detected along Reach 9.

5.2 Target species habitat associations and potential to occur in project area

5.2.1 Birds

Golden eagle—This bird occurs in a variety of open habitats and nests mainly on cliffs. Golden Eagles will also nest in trees and on telephone poles (Glinski et al. 1998). Open country, which allows for foraging, is the most important component for Golden Eagle habitat. However, eagles will occasionally nest in forested habitat (e.g., small rock piles in ponderosa pine forests) and travel several miles to open areas for foraging (Glinski et al. 1998).

The project area contains potential foraging habitat but lacks nesting habitat. In addition, nesting is unlikely due to the roadside proximity of the project area and nearby residences. There would be no impacts because this species is not likely to nest or frequently forage in the area. This species was not observed during the biological survey.

Burrowing owl—This bird breeds in burrows created by prairie dogs (*Cynomys* spp.) and other burrowing animals in open areas (Glinski et al. 1998). Occurrence is highly dependent on the presence of burrows. Burrowing owls are migratory and do not occur on Navajo Nation in winter.

There is suitable habitat for this species in the project area within or near the prairie dog colonies, and one owl was observed during surveys throughout the project area (Figure 2–4). Direct impacts would include the disturbance of active nests during clearing of vegetation or from nearby construction. These effects would be avoided by requiring that vegetation be cleared outside of the avian breeding season per the typical recommendations of NNDFW or by requiring preconstruction nest surveys for small, specific areas during the breeding season (see Recommendations and Conclusions below). Indirect impacts could result from noise and introduction of weeds following disturbance. NNDFW stipulates that no prairie dog town be disturbed if they host burrowing owls. There can be no activity within 0.4 km (¼ mi) of an active nest burrow during March 1–August 15; no habitat alteration year-round within 0.2 km of a documented nest site (Mikesic and Roth 2008).

Since construction activities are likely to occur during the breeding season, NNDFW requires preconstruction nest surveys for owls in and around all prairie dog colonies detected during surveys (Figures 2–4). Known burrowing owl nest sites would need to be avoided until the owls have fledged (P. Kyselka, Navajo Natural Heritage Program Wildlife Biologist, pers. comm. with R. Seeley, EMI wildlife biologist). There were no large burrowing owl nesting colonies observed in the ROW during surveys, thus the project would not likely require rerouting the waterline around the colonies. However, a simple reroute could get the project sponsor out of waiting out the nesting season or mitigating for loss of nests. If construction requires the disturbance or destruction of active burrowing owl nests, then something would have to be negotiated with the USFWS under MBTA and could require capturing and transplanting owls and/or other forms of mitigation. Typically with linear projects that must be constructed during nesting season, it is recommended that the sponsor close burrow structures in the path of construction prior to nesting season so that owls will not have access to the area when they return for breeding (C. Smith, Navajo Natural Heritage Program Zoologist, pers. comm. with R. Seeley, EMI wildlife biologist). It is likely that this linear project will result in relatively minimal loss of breeding habitat when compared to surrounding acreages of prairie dogs.

Ferruginous hawk—This species occurs in open desert, grassland, and shrub–steppe habitats and nests in isolated cliffs, trees, and buildings. This hawk will also nest on the ground if elevated nesting sites are unavailable (New Mexico Game and Fish 2010). This species preys upon ground-squirrels, prairie dogs, jackrabbits, and cottontails but is most strongly associated with prairie dog towns (Bechard and Schmutz 1995).

The project area contains potential foraging and nesting habitat. However, nesting is unlikely due to the roadside proximity of the project area and nearby residences. There would be no impacts because this species is not likely to nest or frequently forage in the area. This species was observed during the biological survey near the big gas facility around a prairie dog colony, but no ferruginous hawk nests were found during surveys.

Mountain plover—This shorebird occupies arid, short grassland habitats, including heavily grazed areas (Knopf and Wunder 2006). Breeding on Navajo Nation is known only for New Mexico (Mikesic and Roth 2008). Microhabitat variables important for nesting often include large patches of bare ground (> 30% total cover), short grass, and proximity to prairie dog towns (Knopf and Wunder 2006).

The project area contains short grass and interspersed shrubs between 0.5 and one meter high, as well as abundant prairie dog towns. However, no mountain plovers were observed in suitable habitat during the biological survey. Moreover, many of the project areas are in populated areas, roadside, and/or near residences. Plovers are not likely to breed in these areas. There would be no impacts due to lack of habitat.

Yellow-billed cuckoo—This bird nests within close proximity to water in mature riparian woodlands consisting of willow, cottonwood, alder, mesquite, hackberry, soapberry, and cultivated fruit trees with dense understories that are, preferably, ≥ 17 ha with a minimum of three hectares of closed-canopy broad-leaved forest. This bird will also nest in orchards adjacent to river bottoms (Mikesic and Roth 2008).

There is no designated or proposed critical habitat for this species within the project area, and adequate potential habitat was not detected during field surveys. There is riparian vegetation in the areas along the washes, but lacks abundant willows and cottonwoods preferred by this species and it is not dense or continuous enough to provide habitat. Transient individuals could potentially occur near the washes, but nesting is unlikely due to lack of habitat. There would be no impacts to this species.

Southwestern willow flycatcher—This subspecies nests in dense riparian vegetation near surface water or saturated soil; either in monotypic or mixed stands of native (e.g. willow) and/or exotic (e.g., tamarisk or Russian olive) species, with or without an over-story. Vegetation is typically ≥ 3 m high, and dense with a closed canopy, although the understory may be dispersed or clumped. Nesting habitat greatly varies in size and shape and may be as small at 0.8 ha, but does not include linear riparian zones < 10 m wide. Migrant flycatchers may use riparian habitats unsuitable for breeding and non-riparian areas (Mikesic and Roth 2008).

There is no designated or proposed critical habitat for this species within the project area, and adequate potential breeding habitat was not detected during field surveys. There is riparian vegetation in the areas along the washes, but it lacks the dense and continuous riparian vegetation and saturated soils preferred by this species. One individual was detected at Red Willow Wash during surveys, but this was likely a transient individual as the habitat would not support nesting willow flycatchers due to lack of tamarisk density and structure. Nesting is unlikely due to lack of preferred habitat. There would be no impacts to this species.

Peregrine falcon—This falcon inhabits open areas and nests on cliff walls. In northwestern New Mexico, the average height of cliffs used for Prairie Falcon nesting is 130 feet (40 m) with a range of 36–302 feet (11–92 m; unpublished data presented in Cartron et al. 2010).

The project area contains potential foraging habitat but lacks adequate nesting habitat. In addition, nesting is unlikely due to the roadside proximity of the project area and nearby residences. There would be no

impacts because this species is not likely to nest or frequently forage in the area. This species was not observed during the biological survey.

Mexican spotted owl—This owl subspecies is patchily distributed throughout Mexico, Arizona, New Mexico, and southern Utah and Colorado (Gutiérrez et al. 1995). It inhabits mature mixed-conifer forests and is typically associated with steep slopes and cliff/canyon complexes. The winter habitats of Mexican spotted owls include lower-elevation piñon–juniper habitat and mixed, uneven-aged coniferous forests (New Mexico Game and Fish 2010). There is also a preference for downed woody debris and snags. High canopy closure and tree density is an important component in breeding and wintering habitats (New Mexico Game and Fish 2010). Mixed-age forests are often preferred along with proximity to water (Gutiérrez et al. 1995).

The project area does not contain adequate Mexican spotted owl habitat. It is highly unlikely Mexican spotted owls would occur in or near the project area due to lack of habitat. There would be no impacts to this species.

Migratory birds—Implementation of the Proposed Action during the avian breeding season could result in impacts to migratory birds protected by the MBTA. Any of the Proposed Action alternatives would affect up to approximately 1,171 acres. Some of this is undeveloped, albeit roadside, habitat and would involve the removal of woody and ground vegetation. Shrub-nesting species would be the most impacted, e.g., sage thrasher, lark sparrow, sagebrush sparrow, Brewer's sparrow, and black-throated sparrow. There are no USFWS Species of Concern that have not been discussed above that would be impacted by the Proposed Action alternative.

Direct impacts would include the disturbance of active nests during clearing of vegetation or from nearby construction. These effects would be avoided by requiring that vegetation be cleared outside of the avian breeding season per the typical recommendations of NNDFW or by requiring preconstruction nest surveys for small, specific areas during the breeding season (see Recommendations and Conclusions below). The amount of overall habitat that will be cleared is small compared to the amount in the area, although there could be cumulative impacts to habitat from future projects.

Indirect impacts could result from noise and introduction of weeds following disturbance. Equipment should be cleaned and free of plant and soil residue. All construction equipment should be pressure washed and/or steam cleaned before entering the watershed to ensure that all equipment, machinery, rocks, gravel, and other materials are cleaned and weed free and inspected daily for leaks. If equipment is used in an area containing invasive or noxious weeds, it should be cleaned before it is moved to another location.

Several active common raven stick nests were observed throughout portions of the project area. A nest survey before work in these areas would determine if they are occupied by nesting birds.

5.2.2 Amphibians

Northern leopard frog—This frog is found around streams, rivers, lakes, marshes, and irrigation ditches from 3,670–10,000 feet (1,120–3050 m; Degenhardt et al. 1996). There are records from the San Juan River and Animas River valleys in New Mexico (Degenhardt et al. 1996).

There is an isolated potential wetland, or possibly a cesspool, that contains standing water within the project area as well as flowing water in Red Willow Wash that could provide potential habitat for this frog. A Clean Water Act 402 General Construction Permit and accompanying stormwater prevention plan (SWPPP) would assure that impacts to water quality during construction are minimized.

5.2.3 Mammals

Black-footed Ferret—This ferret inhabits medium to large active prairie dog towns (>80 ha, and ≥20 burrows/ha) or a complex of towns (two or more towns within 7 km). Prairie dogs are their main food source, and burrows are used for denning and rearing young. On the Navajo Nation, prairie dogs occupy extensive areas in low-to-mid elevation (1,200–2,000 m) plains and desert grassland and desert scrub habitats. Colonies are recognized by clusters of burrows (10–15 cm dia.) with associated dirt mounds (approximately 60 cm dia., 10–20 cm height). There are no known wild ferrets on the Navajo Nation except for those associated with the Arizona Game & Fish Dept. reintroduction on Tribal Ranch lands of Big Boquillas in Aubrey Valley, Coconino Co.; there are likely prairie dog colonies of sufficient size elsewhere to support ferrets that have not been surveyed (Clark et al. 1984).

There are several large active prairie dog towns adjacent to portions of the project area ROW (Figures 2–4). The area would not currently support black-footed ferrets without abundant prairie dogs, on which the ferret mainly feeds. Whether or not the prairie dog towns in the project area could support black-footed ferrets depends on the numbers of prairie dogs in these and the surrounding towns. Without an active complex of towns, the area cannot support ferrets. Navajo Nation has not had confirmed sightings of ferrets outside of the reintroduced population in Aubrey valley, AZ in over 30 years. There are no recent confirmed records of ferrets in San Juan County, and the most recent record is from McKinley County in the early 1980's (C. Smith, Navajo Natural Heritage Program Zoologist, pers. comm. with R. Seeley, EMI wildlife biologist).

There is likely not enough acreage of prairie dogs (>80 ha, and ≥20 burrows/ha) in the project area to support black-footed ferrets, and activities would not disturb a significant amount of that acreage to render the habitat unsuitable for ferrets. Linear projects can frequently be exempted from the need to assess impacts to ferrets, if they are in areas where ferrets have not been recently observed or their ground disturbance is not extensive (C. Smith, Navajo Natural Heritage Program Zoologist, pers. comm. with R. Seeley, EMI wildlife biologist). Black-footed ferrets are mobile, and the ROW within the project area is narrow and would not remove abundant prairie dog habitat. Therefore, there would be no impact to this species

Kit fox—This fox excavates dens in desert scrub or desert grasslands with soft, alluvial or silty-clay soils, and often with sparse saltbush, shadscale, greasewood, or sagebrush, and grasses. Dens have 2 to 25 key-hole shaped entrances (average of 3) that are 20–25 cm (8–10 inches) in height and < 20 cm wide (Mikesic and Roth 2008).

This species could potentially occur in or around the project area. No dens were observed in the 400-foot survey area during field surveys. There would be no direct or indirect impacts because no dens are located within 400 feet of the ROW centerline. It is possible that a den could be built and become active between the time of the field surveys and construction of the waterline. Discovery of a den site during construction should be reported to the appropriate wildlife agency immediately (i.e., NNDFW).

5.2.4 Fishes

Zuni bluehead sucker—This fish occupies a wide range of water conditions within river/stream habitats, including variable water temperatures (16–26° C), and stream volumes (< 1 to several hundred m^3/second). This fish often occupies the swift-water areas in mountain streams. Smaller tributaries adjacent to large rivers are often nursery areas (Minckley 1973). Propst et al. (2001) found evidence that spawning may be bimodal with most spawning occurring early in the season.

There is no flowing or standing water that could support this species in the project area. More recent surveys (early to mid-1990s) determined the distribution of Zuni bluehead sucker in New Mexico to be limited mainly to the Zuni Mountains and the Rio Nutria drainage upstream of the mouth of the Nutria Box Canyon in McKinley County (Propst et al. 2001). The Rio Nutria is not within the same watershed as the project area and is approximately 40 miles (64.4 km) south of the project area. There would be no impacts to this fish.

Colorado pikeminnow—This fish uses backwaters and flooded riparian areas during spring runoff and migrates large distances (15–64 km in the San Juan River) to spawn in riffle-run areas with cobble/gravel substrates. Post-spawning adults typically use run habitats, with eddies and slackwater also being important. Young-of-year (< 120 mm length) use warm backwaters along shorelines. Deeper backwater areas (> 1 m deep at confluence with main channel) are the preferred habitat of young fish into the sub-adult stage (> 3 yrs. age and 200–400 mm length).

There is no flowing or standing water that could support this species in the project area. A Storm Water Pollution Prevention Plan would be prepared for this project in accordance with the Clean Water Act Section 402 National Pollutant Discharge Elimination System. This would assure that project activities do not impact water bodies downstream or downslope of the project area. There would be no impacts to this fish.

Razorback sucker—This fish mostly uses low-flow areas (backwaters over sand and silt substrate, deep eddies, and impoundments), but shallow to deep runs over sandbars and seasonally flooded shorelines are also important in mainstream portions of rivers for pre- and post-spawning suckers. Spawning occurs in areas with shallow, swift riffles over gravel or cobble substrate, and they may also use backwater habitats. Young-of-year use warm, flooded bottomlands and backwaters.

There is no flowing or standing water that could support this species in the project area. A Storm Water Pollution Prevention Plan would be prepared for this project in accordance with the Clean Water Act Section 402 National Pollutant Discharge Elimination System. This would assure that project activities do not impact water bodies downstream or downslope of the project area. There would be no impacts to this fish.

5.2.5 Plants

Mancos milk-vetch—This endangered plant is found in cracks or eroded depressions on sandstone rimrock ledges and mesa tops in Point Lookout sandstone from 5,000–6,000 feet (1,500–1,800 m; NMRPTC 1999a).

The project area lacks the requisite of rimrock ledges and mesa top habitat preferred by this species, as well as the geological substrate associated with this species. There would be no impact to this species.

Yellow lady's slipper—This species prefers moderate shade along streambanks, mountain meadows and mesic places in Ponderosa pine, mixed conifer and aspen forest communities. On the Navajo Nation this species is known from above 7,000 ft. (2,130 m; Mikesic and Roth 2008).

The project area lacks the ponderosa pine, mixed conifer, and aspen forest communities preferred by this species. In addition, the project area is well outside the elevational range preferred by this species. There would be no impacts.

Zuni fleabane—This threatened plant occurs in nearly-barren detrital clay hillsides with soils derived from shales of the Chinle or Baca Formations (NMRPTC 2006). It is most often found on north- or east-

facing slopes in open piñon-juniper woodlands from 7,300–8,000 feet (2,200–2,400 m) elevation (NMRPTC 2006).

The project area lacks the open piñon–juniper woodlands preferred by this species. In addition, the project area is well outside the elevational range preferred by this species. There would be no impacts.

Knowlton's cactus—This endangered cactus is known only from the type locality in San Juan County, NM (NMRPTC 1999b). It occurs on rolling, gravelly hills in piñon-juniper and sagebrush at about 6,200–6,300 feet (1,900 m; NMRPTC 1999b).

The project area is well southwest of the known population of Knowlton's cacti. The project area also lacks the gravelly substrate and piñon–juniper vegetation preferred by this species. There would be no impacts to this species.

Mesa Verde cactus—This threatened cactus is found in San Juan County, NM, and southern Colorado in sparsely vegetated low rolling clay hills formed from the Mancos or Fruitland Shale Formations at 4,900–5,500 feet (1,500–1,700 m; NMRPTC 1999c). It has recently been found in Menefee Formation lying on top of Mancos Shale (Hazelton 2012). It requires highly alkaline, gypsiferous soils and frequently occurs on the tops of benches or hills and slopes with low vegetation cover (< 15%) with saltbush (*Atriplex corrugata*) and Gardner's saltbush (*Atriplex gardneri*; Hazelton 2012). The flowering period is April through May.

The project area lacks the geological substrate on which this species is known to occur. In addition, suitable habitat was not detected for this threatened cactus during the biological survey. There would be no impacts to this species.

6.0 CUMULATIVE IMPACTS

An increase in residents could lead to more traffic, livestock grazing, and harvesting of natural resources, which could have negative impacts on wildlife and the local ecosystem. Impacts could include increased erosion and worsened noxious weed establishment and a decrease in native flora and fauna. Although individual projects may have minimal impacts on wildlife, multiple projects can have cumulative impacts on wildlife that are harder to access on a project-by-project basis.

7.0 RECOMMENDED EFFECTS DETERMINATIONS

7.1 Target Species

A *no* effect determination is recommended for the following species because of lack of habitat, based on field surveys, or because the project area is outside the principal range of the species, both of which make occurrence in the project area unlikely: golden eagle, ferruginous hawk, mountain plover, yellow-billed cuckoo, southwestern willow flycatcher, peregrine falcon, Mexican spotted owl, Zuni bluehead sucker, Colorado pikeminnow, razorback sucker, Mancos milk-vetch, yellow lady's slipper, Zuni fleabane, Knowlton's cactus and Mesa Verde cactus.

Burrowing owl—A *no impact* to burrowing owls is recommended as long as NNDFW stipulations are adhered to. Direct impacts would include the disturbance of active nests during clearing of vegetation or from nearby construction. These effects would be avoided by requiring that vegetation be cleared outside of the avian breeding season per the typical recommendations of NNDFW or by requiring preconstruction nest surveys for small, specific areas during the breeding season (see Recommendations and Conclusions below). Known burrowing owl nest sites would need to be avoided until the owls have fledged. Indirect

impacts could result from noise and introduction of weeds following disturbance. Impacts would be to habitat but would not likely cause a trend toward federal listing or loss of species viability.

Migratory birds—A *no impact* to migratory birds is recommended because preconstruction nest surveys would be required during the breeding season, or disturbance of vegetation would be restricted to the nonbreeding season.

Northern leopard frog—A *no impact* to northern leopard frogs is recommended because impacts to habitat would be minimized by following requirements set out in the project SWPPP. Impacts could occur to individuals, but this would not likely cause a trend toward federal listing or loss of species viability.

Black-footed ferret—A *no effect* on black-footed ferrets is recommended because potential suitable habitat in the project area is very limited within the 400-foot ROW.

Kit fox—A *no impact* to kit foxes is recommended because there were no potential dens observed in the project area. Moreover, many of the project areas are in populated areas and/or near residences and this fox is not likely to utilize this area. Impacts would be to individuals and habitat but would not likely cause a trend toward federal listing or loss of species viability because this species was not detected during surveys, suggesting that it is not abundant in the area.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Staging areas should be limited to existing roads, designated pullouts and parking areas, and already disturbed areas. Any work activities or facilities outside the 400-foot buffer, such as staging areas, would have to be surveyed before use.

A Clean Water Act Section 402 National Pollutant Discharge Elimination System General Construction Permit Storm Water Pollution Prevention Plan would be acquired to assure that impacts to water quality during construction are minimized.

A hazardous spill plan should be prepared and implemented. Actions should be taken to avoid spills. Equipment would be refueled at least 100 feet from surface water and drainages. Fuel, oil, hydraulic fluid, or substances of this nature would be stored within sealed, storage containers or facilities that are located outside the floodplain. Leaking equipment would be removed from the project site until repaired and cleaned. Machinery would be kept out of the water as much as possible, and the amount and duration of in-stream work would be limited as much as possible since the inaccessibility for upstream and downstream fish through the water channel could be problematic.

Best management practices (BMP) should be used to discourage the introduction of noxious weeds during and after the proposed action. Equipment would be cleaned and free of plant and soil residue. All construction equipment would be pressure washed and/or steam cleaned before entering the watershed to ensure that all equipment, machinery, rocks, gravel, and other materials are cleaned and weed free and inspected daily for leaks. If equipment is used in an area containing invasive or noxious weeds, it would be cleaned before it is moved to another location.

EMI recommends that contractors clear vegetation outside the principal avian breeding season (March 1–August 15) to reduce impacts. NNDFW does not allow construction activities during this time period without first performing migratory bird nest surveys, which can be costly and time consuming, and no nest survey can assure 100% active nest detectability. NNDFW stipulates no disturbance within 165 feet (50 m) of active songbird nests during incubation to fledging (as determined by direct field observation or qualified literature source specific for nesting dates in the Southwestern U.S.).

The project could potentially impact prairie dogs by disturbing burrows during earth-moving activities associated with installation of access roads, fences, cattle guards, etc. since some prairie dog burrows are located along the margins of the ROW and access roads (Figures 2–4). Given that disturbance would likely be patchy and isolated, only a small number of burrows would be affected. In addition, disturbed areas would likely be recolonized quickly. Therefore, the project would not adversely impact the abundance or distribution of Gunnison's prairie dogs. General mitigation should include staying on approved access roads and not driving over burrows located off the access roads with either rubber or metal tracks. If possible, active burrows off the road should not be disturbed or trampled.

There is suitable habitat for burrowing owls in the project area within or near the prairie dog colonies, and one owl was observed during surveys throughout the project area (Figure 2–4). Direct impacts could include the disturbance of active nests during clearing of vegetation or from nearby construction. These effects should be avoided by requiring that vegetation be cleared outside of the avian breeding season per the typical recommendations of NNDFW or by requiring preconstruction nest surveys for small, specific areas during the breeding season. NNDFW stipulates that no prairie dog town be disturbed if they host burrowing owls. There would be no activity within 0.4 km (¼ mi) of an active nest burrow during March 1–August 15; no habitat alteration year-round within 0.2 km of a documented nest site (Mikesic and Roth 2008). Since construction activities are likely to occur during the breeding season, NNDFW requires preconstruction nest surveys for owls in and around all prairie dog colonies detected during surveys (Figures 2–4). Known burrowing owl nest sites would need to be avoided until the owls have fledged (P. Kyselka, Navajo Natural Heritage Program Wildlife Biologist, pers. comm. with R. Seeley, EMI wildlife biologist). It is likely that this linear project will result in relatively minimal loss of breeding habitat when compared to surrounding acreages of prairie dogs.

9.0 LIST OF PREPARERS

Prepared by Randy Seeley, Wildlife Biologist, Ecosystem Management, Inc.

CERTIFICATION

It is believed by Ecosystem Management, Inc. that the proposed action would not violate any of the provisions of the Endangered Species Act of 1973, as amended, or Navajo Nation code requirements for endangered species (17NNC507). Conclusions of this report are based on actual field examination and are correct to the best of my knowledge. I certify that I have conducted field surveys for the proposed Reaches 9–11waterline project in San Juan and McKinley Counties, NM.

Randy Seeley, Wildlife Biologist, Ecosystem Management, Inc.

10.0 LITERATURE CITED

Anderson, O.J., Jones. G.E., and Green, G.N., compilers, 1997, Geologic map of New Mexico: U.S. Geological Survey Open-File Report 97-52.

Audubon. Important bird areas program. Online: http://web4.audubon.org/bird/iba/index.html. Accessed June 2017.

Bechard, M. J., and J. K. Schmutz. 1995. Ferruginous Hawk (*Buteo regalis*), the birds of North America online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, NY. Online: http://bna.birds.cornell.edu/bna/species/172doi:10.2173/bna.172.

Brown, D. E. (Ed.). 1994. Biotic communities: southwestern United States and northwestern Mexico. University of Utah Press, Salt Lake City, UT.

Cartron, J. E. (Ed.). 2010. Raptors of New Mexico. University of New Mexico Press, Albuquerque, NM.

Clark, T.W., T.M. Campbell, M.H. Schroeder and L. Richardson. 1984. Handbook of methods for locating black-footed ferrets. Wyoming Bureau of Land Management, Wildlife Technical Bulletin No.1. 39pp.

Degenhardt, W. G., C. W. Painter, and A. H. Price. 1996. Amphibians and reptiles of New Mexico. University of New Mexico Press, Albuquerque, NM.

Glinski, R. L. (Ed.). 1998. The raptors of Arizona. University of Arizona Press, Tucson, AZ, and the Arizona Game and Fish Department, Phoenix, AZ.

Gutiérrez, R. J., A. B. Franklin, and W. S. Lahaye. 1995. Spotted Owl (*Strix occidentalis*), the birds of North America online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, New York. Online: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/179.

Hazelton, A. F. 2012. Species account for *Sclerocactus mesae-verdae*. Revised from D. Roth 2008 species account. Navajo Natural Heritage Program, Window Rock, AZ.

Knopf, F. L. and M. B. Wunder. 2006. Mountain Plover (*Charadrius montanus*), the birds of North America online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, NY. Online: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/211doi:10.2173/bna.211.

Mikesic, D., and D. Roth. 2008. Navajo Nation endangered species list: species accounts. Version 3.08. Navajo Natural Heritage Program, Department of Fish and Wildlife, Window Rock, AZ.

Minckley, W. L. 1973. Fishes of Arizona. Arizona Game and Fish Department, Sims Printing Co., Inc. Phoenix, AZ.

New Mexico Game and Fish. 2010. Biotic information system of New Mexico species reports: ferruginous hawk (*Buteo regalis*). Online: http://www.bison-m.org/speciesbooklet.aspx.

New Mexico Game and Fish. 2010. Biotic information system of New Mexico: Mexican Spotted Owl. New Mexico Game and Fish. Accessed 10 February 2016 from http://www.bison-m.org/speciesbooklet.aspx.

New Mexico Rare Plant Technical Council. 1999a. New Mexico rare plants: *Astragalus humillimus*. Online: http://nmrareplants.unm.edu/rarelist_single.php?SpeciesID=25.

——. 1999b. New Mexico rare plants: *Pediocactus knowltonii*. Online: http://nmrareplants.unm.edu/rarelist_single.php?SpeciesID=127.

——. 1999c. New Mexico rare plants: *Sclerocactus mesae-verdae*. Online: http://nmrareplants.unm.edu/rarelist_single.php?SpeciesID=163.

——. 2006. New Mexico rare plants: *Erigeron rhizomatus*. Online: http://nmrareplants.unm.edu/rarelist_single.php?SpeciesID=75.

Propst, D. L., A. L. Hobbes, and T. L. Stroh. 2001. Distribution and notes on the biology of Zuni bluehead sucker, *Catostomus discobolus yarrowi*, in New Mexico. Southwestern Naturalist 46: 158–170.

U.S. Department of Agriculture Natural Resources Conservation Service Soil Survey Staff. 2017. Web soil survey: Fort Defiance Area, Parts of Apache and Navajo Counties, Arizona and McKinley and San Juan Counties, New Mexico (AZ715). Online: http://websoilsurvey.nrcs.usda.gov/.

U.S. Department of the Interior Fish and Wildlife Service. Critical habitat portal. Online: http://criticalhabitat.fws.gov/crithab/. Accessed 6 June 2017.

U.S. Department of the Interior Fish and Wildlife Service. Information, Planning, and Conservation System. Online: http://ecos.fws.gov/ipac/. Accessed 6 June 2017.

APPENDIX A. Photographs of the project area.

Photo 1. Photo facing north from southern end of Reach 11.

Photo 2. Photo looking at potential wetland or cesspool (Easting: 702389, Northing: 3954665).

Photo 3. Photo looking at potential wetland or cesspool (Easting: 702389, Northing: 3954665).

Photo 4. Photo looking at potential wetland or cesspool (Easting: 702389, Northing: 3954665).

Photo 5. Photo facing north from southern end of Reach 9.

Photo 6. Photo facing northeast at Red Willow Wash. Note southwestern willow flycatcher heard in this area.

Photo 7. Photo looking at common raven nest 3 at Red Willow Wash (Easting: 710697, Northing: 3970168).

Photo 8. Photo facing north along Reach 11 (Easting: 711998, Northing: 3974345).

Photo 9. Photo facing north at northern end of Reach 9.

Photo 10. Photo facing south at northern end of Reach 9.

APPENDIX B. Navajo Nation Fish and Wildlife Department T&E data request 17EM-103, and USFWS official species list.

NNHP
Navajo Natural Heritage Program

PO Box 1480
Window Rock, AZ
86515

P 928.871.6472
F 928.871.7603

http://nnhp.ndfw.org

17em103

07-June-2017

Kris Graham
Ecosystem Management, Inc
3737 Princeton Dr NE
Suite 150
Albuquerque, NM 87107

SUBJECT: Navajo - Gallup Water Supply Project, Blocks 9-11

Kris Graham,

NNHP has performed an analysis of your project in comparison to known biological resources of the Navajo Nation and has included the findings in this letter. The letter is composed of seven parts. The sections as they appear in the letter are:

1. **Known Species** – a list of all species within relative proximity to the project
2. **Potential Species** – a list of potential species based on project proximity to respective suitable habitat
3. **Quadrangles** – an exhaustive list of quads containing the project
4. **Project Summary** – a categorized list of biological resources within relative proximity to the project grouped by individual project site(s) or quads
5. **Conditional Criteria Notes** – additional details concerning various species, habitat, etc.
6. **Personnel Contacts** – a list of employee contacts
7. **Resources** – identifies sources for further information

Known Species lists "species of concern" known to occur within proximity to the project area. Planning for avoidance of these species is expected. If no species are displayed then based upon the records of the Navajo Nation Department of Fish and Wildlife (NNDFW) there are no "species of concern" within proximity to the project. Refer to the Navajo Endangered Species List (NESL) Species Accounts for recommended avoidance measures, biology, and distribution of NESL species on the Navajo Nation (http://nnhp.ndfw.org/sp_account.htm).

Potential Species lists species that are potentially within proximity to the project area and need to be evaluated for presence/absence. If no species are found within the Known or Potential Species lists, the project is not expected to affect any federally listed species, nor significantly impact any tribally listed species or other species of concern. Potential for species has been determined primarily on habitat characteristics and species range information. A thorough habitat analysis, and if necessary, species specific surveys, are required to determine the potential for each species.

Species of concern include protected, candidate, and other rare or otherwise sensitive species, including certain native species and species of economic or cultural significance. For legally protected species, the following tribal and federal statuses are indicated: NESL, federal Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), and Eagle Protection Act (EPA). No legal protection is afforded species with only

Page 1 of 7

17em103

ESA candidate, NESL group 4 status, and species listed on the Sensitive Species List. Please be aware of these species during surveys and inform the NNDFW of observations. Reported observations of these species and documenting them in project planning and management is important for conservation and may contribute to ensuring they will not be up listed in the future.

In any and all correspondence with NNDFW or NNHP concerning this project please cite the Data Request Code associated with this document. It can be found in this report on the top right corner of the every page. Additionally please cite this code in any biological evaluation documents returned to our office.

1. Known Species *(NESL=Navajo Endangered Species List, FE=Federally Endangered, FT=Federally Threatened, FC=Federal Candidate)*

Species

ATCU = Athene cunicularia / Burrowing Owl NESL G4
BURE = Buteo regalis / Ferruginous Hawk NESL G3
MUNI = Mustela nigripes / Black-footed Ferret NESL G2 FE
SCMEVE = Sclerocactus mesae-verdae / Mesa Verde Cactus NESL G2 FT

2. Potential Species

Species

AQCH = Aquila chrysaetos / Golden Eagle NESL G3
ATCU = Athene cunicularia / Burrowing Owl NESL G4
BURE = Buteo regalis / Ferruginous Hawk NESL G3
CHMO = Charadrius montanus / Mountain Plover NESL G4
CYPAPU = Cypripedium parviflorum var. pubescens / Yellow Lady's Slipper NESL G4
EMTREX = Empidonax traillii extimus / Southwestern Willow Flycatcher NESL G2 FE
FAPE = Falco peregrinus / Peregrine Falcon NESL G4
LIPI = Lithobates pipiens / Northern Leopard Frog NESL G2
MUNI = Mustela nigripes / Black-footed Ferret NESL G2 FE
SCMEVE = Sclerocactus mesae-verdae / Mesa Verde Cactus NESL G2 FT
VUMA = Vulpes macrotis / Kit Fox NESL G4

3. Quadrangles (7.5 Minute)

Quadrangles

Big Rock Hill (35108-F6) / NM
Chuska Lake (35108-G6) / NM
Coyote Canyon NW (35108-H6) / NM
Naschitti (36108-A6) / NM
Twin Lakes (35108-F7) / NM

4. Project Summary *(EO1 Mile/EO 3 Miles=elements occuring within 1 & 3 miles., MSO=mexican spotted owl PACs, POTS=potential species, RCP=Biological Areas)*

SITE	EO1MI	EO3MI	QUAD	MSO	POTS	AREAS

17em103

SITE	EO1MI	EO3MI	QUAD	MSO	POTS	AREAS
block 10	MUNI	MUNI	Big Rock Hill (35108-F6) / NM	None	VUMA, LIPI, MUNI, FAPE, CHMO, BURE, ATCU, AQCH	Area 3
block 10	MUNI	MUNI	Chuska Lake (35108-G6) / NM	None	VUMA, LIPI, FAPE, EMTREX, CHMO, BURE, ATCU, AQCH	Area 3
block 11	MUNI	MUNI	Big Rock Hill (35108-F6) / NM	None	VUMA, LIPI, MUNI, FAPE, CHMO, BURE, ATCU, AQCH	Area 3
block 11	MUNI	MUNI	Twin Lakes (35108-F7) / NM	None	VUMA, MUNI, CHMO, ATCU, AQCH, CYPAPU	Area 3
block 9	MUNI	MUNI	Chuska Lake (35108-G6) / NM	None	VUMA, LIPI, MUNI, FAPE, EMTREX, CHMO, BURE, ATCU, AQCH	Area 3
block 9	None	ATCU, BURE	Coyote Canyon NW (35108-H6) / NM	None	VUMA, MUNI, FAPE, CHMO, BURE, ATCU, AQCH	Area 3
block 9	SCMEVE	SCMEVE	Naschitti (36108-A6) / NM	None	MUNI, CHMO, BURE, ATCU, AQCH, SCMEVE	Area 3

5. Conditional Criteria Notes *(Recent revisions made please read thoroughly. For certain species, and/or circumstances, please read and comply)*

A. **Biological Resource Land Use Clearance Policies and Procedures (RCP)** - The purpose of the RCP is to assist the Navajo Nation government and chapters ensure compliance with federal and Navajo laws which protect, wildlife resources, including plants, and their habitat resulting in an expedited land use clearance process. After years of research and study, the NNDFW has identified and mapped wildlife habitat and sensitive areas that cover the entire Navajo Nation.
The following is a brief summary of six (6) wildlife areas:
1. ***Highly Sensitive Area*** – recommended no development with few exceptions.
2. ***Moderately Sensitive Area*** – moderate restrictions on development to avoid sensitive species/habitats.
3. ***Less Sensitive Area*** – fewest restrictions on development.
4. ***Community Development Area*** – areas in and around towns with few or no restrictions on development.
5. ***Biological Preserve*** – no development unless compatible with the purpose of this area.
6. ***Recreation Area*** – no development unless compatible with the purpose of this area.
None - outside the boundaries of the Navajo Nation
This is not intended to be a full description of the RCP please refer to the our website for additional information at http://www.nndfw.org/clup.htm.

17em103

B. **Raptors** – If raptors are known to occur within 1 mile of project location: Contact Chad Smith at 871-7070 regarding your evaluation of potential impacts and mitigation.
   o **Golden and Bald Eagles**- If Golden or Bald Eagle are known to occur within 1 mile of the project, decision makers need to ensure that they are not in violation of the Golden and Bald Eagle Nest Protection Regulations found at http://nnhp.nndfw.org/docs_reps/gben.pdf.
   o **Ferruginous Hawks** – Refer to "Navajo Nation Department of Fish and Wildlife's Ferruginous Hawk Management Guidelines for Nest Protection" http://nnhp.nndfw.org/docs_reps.htm for relevant information on avoiding impacts to Ferruginous Hawks within 1 mile of project location.
   o **Mexican Spotted Owl** - Please refer to the Navajo Nation Mexican Spotted Owl Management Plan http://nnhp.nndfw.org/docs_reps.htm for relevant information on proper project planning near/within spotted owl protected activity centers and habitat.

C. **Surveys** – Biological surveys need to be conducted during the appropriate season to ensure they are complete and accurate please refer to NN Species Accounts http://nnhp.nndfw.org/sp_account.htm. Surveyors on the Navajo Nation must be permitted by the Director, NNDFW. Contact Jeff Cole at (928) 871-7068 for permitting procedures. Questions pertaining to surveys should be directed to the NNDFW Zoologist (Chad Smith) for animals at 871-7070, and Botanist (Andrea Hazelton) for plants at (928)523-3221. Questions regarding biological evaluation should be directed to Jeff Cole at 871-7068.

D. **Oil/Gas Lease Sales** – Any settling or evaporation pits that could hold contaminants should be lined and covered. Covering pits, with a net or other material, will deter waterfowl and other migratory bird use. Lining pits will protect ground water quality.

E. **Power line Projects** – These projects need to ensure that they do not violate the regulations set forth in the Navajo Nation Raptor Electrocution Prevention Regulations found at http://nnhp.nndfw.org/docs_reps/repr.pdf.

F. **Guy Wires** – Does the project design include guy wires for structural support? If so, and if bird species may occur in relatively high concentrations in the project area, then guy wires should be equipped with highly visual markers to reduce the potential mortality due to bird-guy wire collisions. Examples of visual markers include aviation balls and bird flight diverters. Birds can be expected to occur in relatively high concentrations along migration routes (e.g., rivers, ridges or other distinctive linear topographic features) or where important habitat for breeding, feeding, roosting, etc. occurs. The U.S. Fish and Wildlife Service recommends marking guy wires with at least one marker per 100 meters of wire.

G. **San Juan River** – On 21 March 1994 (Federal Register, Vol. 59, No. 54), the U.S. Fish and Wildlife Service designated portions of the San Juan River (SJR) as critical habitat for Ptychocheilus lucius (Colorado pikeminnow) and Xyrauchen texanus (Razorback sucker). Colorado pikeminnow critical habitat includes the SJR and its 100-year floodplain from the State Route 371 Bridge in T29N, R13W, sec. 17 (New Mexico Meridian) to Neskahai Canyon in the San Juan arm of Lake Powell in T41S, R11E, sec. 26 (Salt Lake Meridian) up to the full pool elevation. Razorback sucker critical habitat includes the SJR and its 100-year floodplain from the Hogback Diversion in T29N, R16W, sec. 9 (New Mexico Meridian) to the full pool elevation at the mouth of Neskahai Canyon on the San Juan arm of Lake Powell in T41S, R11E, sec. 26 (Salt Lake Meridian). All actions carried out, funded or authorized by a federal agency which may alter the constituent elements of critical habitat must undergo section 7 consultation under the Endangered Species Act of 1973, as amended. Constituent elements are those physical and biological attributes essential to a species conservation and include, but are not limited to, water, physical habitat, and biological environment as required for each particular life stage of a species.

17em103

H. **Little Colorado River** - On 21 March 1994 (Federal Register, Vol. 59, No. 54) the U.S. Fish and Wildlife Service designated Critical Habitat along portions of the Colorado and Little Colorado Rivers (LCR) for Gila cypha (humpback chub). Within or adjacent to the Navajo Nation this critical habitat includes the LCR and its 100-year floodplain from river mile 8 in T32N R6E, sec. 12 (Salt and Gila River Meridian) to its confluence with the Colorado River in T32N R5E sec. 1 (S&GRM) and the Colorado River and 100-year floodplain from Nautuloid Canyon (River Mile 34) T36N R5E sec. 35 (S&GRM) to its confluence with the LCR. All actions carried out, funded or authorized by a federal agency which may alter the constituent elements of Critical Habitat must undergo section 7 consultation under the Endangered Species Act of 1973, as amended. Constituent elements are those physical and biological attributes essential to a species conservation and include, but are not limited to, water, physical habitat, and biological environment as required for each particular life stage of a species.

I. **Wetlands** – In Arizona and New Mexico, potential impacts to wetlands should also be evaluated. The U.S. Fish & Wildlife Service's National Wetlands Inventory (NWI) maps should be examined to determine whether areas classified as wetlands are located close enough to the project site(s) to be impacted. In cases where the maps are inconclusive (e.g., due to their small scale), field surveys must be completed. For field surveys, wetlands identification and delineation methodology contained in the "Corps of Engineers Wetlands Delineation Manual" (Technical Report Y-87-1) should be used. When wetlands are present, potential impacts must be addressed in an environmental assessment and the Army Corps of Engineers, Phoenix office, must be contacted. NWI maps are available for examination at the Navajo Natural Heritage Program (NNHP) office, or may be purchased through the U.S. Geological Survey (order forms are available through the NNHP). The NNHP has complete coverage of the Navajo Nation, excluding Utah, at 1:100,000 scale; and coverage at 1:24,000 scale in the southwestern portion of the Navajo Nation. In Utah, the U.S. Fish & Wildlife Service's National Wetlands Inventory maps are not yet available for the Utah portion of the Navajo Nation, therefore, field surveys should be completed to determine whether wetlands are located close enough to the project site(s) to be impacted. For field surveys, wetlands identification and delineation methodology contained in the "Corps of Engineers Wetlands Delineation Manual" (Technical Report Y-87-1) should be used. When wetlands are present, potential impacts must be addressed in an environmental assessment and the Army Corps of Engineers, Phoenix office, must be contacted. For more information contact the Navajo Environmental Protection Agency's Water Quality Program.

J. **Life Length of Data Request** – The information in this report was identified by the NNHP and NNDFW's biologists and computerized database, and is based on data available at the time of this response. If project planning takes more than two (02) years from the date of this response, verification of the information provided herein is necessary. It should not be regarded as the final statement on the occurrence of any species, nor should it substitute for on-site surveys. Also, because the NNDFW information is continually updated, any given information response is only wholly appropriate for its respective request.

17em103

K. **Ground Water Pumping** - Projects involving the ground water pumping for mining operations, agricultural projects or commercial wells (including municipal wells) will have to provide an analysis on the effects to surface water and address potential impacts on all aquatic and/or wetlands species listed below. NESL Species potentially impacted by ground water pumping: Carex specuicola (Navajo Sedge), Cirsium rydbergii (Rydberg's Thistle), Primula specuicola (Cave Primrose), Platanthera zothecina (Alcove Bog Orchid), Puccinellia parishii (Parish Alkali Grass), Zigadenus vaginatus (Alcove Death Camas), Perityle specuicola (Alcove Rock Daisy), Symphyotrichum welshii (Welsh's American-aster), Coccyzus americanus (Yellow-billed Cuckoo), Empidonax traillii extimus (Southwestern Willow Flycatcher), Rana pipiens (Northern Leopard Frog), Gila cypha (Humpback Chub), Gila robusta (Roundtail Chub), Ptychocheilus lucius (Colorado Pikeminnow), Xyrauchen texanus (Razorback Sucker), Cinclus mexicanus (American Dipper), Speyeria nokomis (Western Seep Fritillary), Aechmophorus clarkia (Clark's Grebe), Ceryle alcyon (Belted Kingfisher), Dendroica petechia (Yellow Warbler), Porzana carolina (Sora), Catostomus discobolus (Bluehead Sucker), Cottus bairdi (Mottled Sculpin), Oxyloma kanabense (Kanab Ambersnail)

6. Personnel Contacts

Wildlife Manager
Sam Diswood
928.871.7062
sdiswood@nndfw.org

Zoologist
Chad Smith
928.871.7070
csmith@nndfw.org

Botanist
Nora Talkington
ntalkington@nndfw.org

Biological Reviewer
Pamela Kyselka
928.871.7065
pkyselka@nndfw.org

GIS Supervisor
Dexter D Prall
928.645.2898
prall@nndfw.org

Wildlife Tech
Sonja Detsoi
928.871.6472
sdetsoi@nndfw.org

17em103

7. Resources

National Environmental Policy Act

Navajo Endangered Species List:
http://nnhp.nndfw.org/endangered.htm

Species Accounts:
http://nnhp.nndfw.org/sp_account.htm

Biological Investigation Permit Application
http://nnhp.nndfw.org/study_permit.htm

Navajo Nation Sensitive Species List
http://nnhp.nndfw.org/study_permit.htm

Various Species Management and/or Document and Reports
http://nnhp.nndfw.org/docs_reps.htm

Consultant List
(Coming Soon)

Dexter D Prall

Digitally signed by Dexter D Prall
DN: cn=Dexter D Prall, o=Navajo Nation Department of Fish and Wildlife, ou=Navajo Natural Heritage Program, email=prall@nndfw.org, c=US
Date: 2017.06.07 09:34:55 -07'00'

Dexter D Prall, GIS Supervisor - Natural Heritage Program
Navajo Nation Department of Fish and Wildlife

Page 7 of 7

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
Phone: (505) 346-2525 Fax: (505) 346-2542
http://www.fws.gov/southwest/es/NewMexico/
http://www.fws.gov/southwest/es/ES_Lists_Main2.html

In Reply Refer To: June 06, 2017
Consultation Code: 02ENNM00-2017-SLI-0677
Event Code: 02ENNM00-2017-E-01454
Project Name: Biological Evaluation for Proposed Blocks 9-11

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

To Whom It May Concern:

Thank you for your recent request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of New Mexico wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act (MBTA) as amended (16 USC 701-715), and the Bald and Golden Eagle Protection Act (BGEPA) as amended (16 USC 668-668c). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area and to recommend some conservation measures that can be included in your project design.

FEDERALLY-LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Attached is a list of endangered, threatened, and proposed species that may occur in your project area. Your project area may not necessarily include all or any of these species. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

If you determine that your proposed action may affect federally-listed species, consultation with the Service will be necessary. Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with

Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take "after-the-fact." For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

The scope of federally listed species compliance not only includes direct effects, but also any interrelated or interdependent project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects that may occur in the action area. The action area includes all areas to be affected, not merely the immediate area involved in the action. Large projects may have effects outside the immediate area to species not listed here that should be addressed. If your action area has suitable habitat for any of the attached species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts.

Candidate Species and Other Sensitive Species

A list of candidate and other sensitive species in your area is also attached. Candidate species and other sensitive species are species that have no legal protection under the ESA, although we recommend that candidate and other sensitive species be included in your surveys and considered for planning purposes. The Service monitors the status of these species. If significant declines occur, these species could potentially be listed. Therefore, actions that may contribute to their decline should be avoided.

Lists of sensitive species including State-listed endangered and threatened species are compiled by New Mexico state agencies. These lists, along with species information, can be found at the following websites:

Biota Information System of New Mexico (BISON-M): www.bison-m.org

New Mexico State Forestry. The New Mexico Endangered Plant Program: www.emnrd.state.nm.us/SFD/ForestMgt/Endangered.html

New Mexico Rare Plant Technical Council, New Mexico Rare Plants: nmrareplants.unm.edu

Natural Heritage New Mexico, online species database: nhnm.unm.edu

WETLANDS AND FLOODPLAINS

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value.

We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's NWI program website, www.fws.gov/wetlands/Data/Mapper.html integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

MIGRATORY BIRDS

The MBTA prohibits the taking of migratory birds, nests, and eggs, except as permitted by the Service's Migratory Bird Office. To minimize the likelihood of adverse impacts to migratory birds, we recommend construction activities occur outside the general bird nesting season from March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until the young have fledged.

We recommend review of Birds of Conservation Concern at website www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html to fully evaluate the effects to the birds at your site. This list identifies birds that are potentially threatened by disturbance and construction.

BALD AND GOLDEN EAGLES

The bald eagle (Haliaeetus leucocephalus) was delisted under the ESA on August 9, 2007. Both the bald eagle and golden eagle (Aquila chrysaetos) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For information on bald and golden eagle management guidelines, we recommend you review information provided at www.fws.gov/midwest/eagle/guidelines/bgepa.html.

On our web site www.fws.gov/southwest/es/NewMexico/SBC_intro.cfm, we have included conservation measures that can minimize impacts to federally listed and other sensitive species. These include measures for communication towers, power line safety for raptors, road and highway improvements, spring developments and livestock watering facilities, wastewater facilities, and trenching operations.

We also suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding State fish, wildlife, and plants.

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. For further consultation on your proposed activity, please call 505-346-2525 or email nmesfo@fws.gov and reference your Service Consultation Tracking Number.

Attachment(s):

- Official Species List

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:

New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
(505) 346-2525

Project Summary

Consultation Code: 02ENNM00-2017-SLI-0677

Event Code: 02ENNM00-2017-E-01454

Project Name: Biological Evaluation for Proposed Blocks 9-11

Project Type: LAND - EASEMENT / RIGHT-OF-WAY

Project Description: The purpose of this project is to conduct biological surveys for any protected resources within Reaches 9-11 of the Navajo Nation, San Juan and McKinley Counties, NM, and develop a biological evaluation for the Navajo Nation Department of Fish and Wildlife (NNDFW).

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.88803023677208N108.65144130931112W

Counties: McKinley, NM | San Juan, NM

Endangered Species Act Species

There is a total of 12 threatened, endangered, or candidate species on your 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. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Canada Lynx *(Lynx canadensis)* Population: Contiguous U.S. DPS There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652	Threatened
New Mexico Meadow Jumping Mouse *(Zapus hudsonius luteus)* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. This species only needs to be considered under the following conditions: ▪ If project affects dense herbaceous riparian vegetation along waterways (stream, seep, canal/ditch). Species profile: https://ecos.fws.gov/ecp/species/7965	Endangered

Birds

NAME	STATUS
Mexican Spotted Owl *(Strix occidentalis lucida)* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Southwestern Willow Flycatcher *(Empidonax traillii extimus)* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo *(Coccyzus americanus)* Population: Western U.S. DPS There is a **proposed** critical habitat for this species. Your location is outside the proposed critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Colorado Pikeminnow (=squawfish) *(Ptychocheilus lucius)* Population: Wherever found, except where listed as an experimental population There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3531	Endangered
Razorback Sucker *(Xyrauchen texanus)* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/530	Endangered
Zuni Bluehead Sucker *(Catostomus discobolus yarrowi)* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3536	Endangered

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
Mancos Milk-vetch *(Astragalus humillimus)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7483	Endangered
Mesa Verde Cactus *(Sclerocactus mesae-verdae)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6005	Threatened
Zuni Fleabane *(Erigeron rhizomatus)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5700	Threatened

Critical habitats

There are no critical habitats within your project area.