

BIOLOGICAL ASSESSMENT AND BIOLOGICAL EVALUATION FOR THE MADRID STORMWATER AND EROSION SAFETY PROJECT

Santa Fe County, New Mexico



August 2019

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Prepared for:

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1. Introduction and Background

The New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) Abandoned Mine Land (AML) Program, in partnership with the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement (OSMRE), are proposing to establish stormwater conveyances, fire prevention improvements, and erosion control measures within the town of Madrid, NM, located in Santa Fe County, approximately 22 miles southwest of Santa Fe, NM (Figure 1). The Area of Potential Effect (APE) consists of approximately 117 acres of private, state, and county owned land.

The NM AML Program and other abandoned mine land programs throughout the nation were formed by the passage of the Surface Mining Control and Reclamation Act (SMCRA) on May 2, 1977; the State of New Mexico and OSMRE signed an agreement in 1981 which created the New Mexico AML Program. Fees collected through the SMCRA from active coal mines are placed in the Abandoned Mine Reclamation Fund, and these monies are utilized to reclaim qualified coal and non-coal mines abandoned prior to 1977. Abandoned mine sites in New Mexico are inventoried and evaluated to determine if they qualify for AML Program funding. Reclamation priorities include: “(1) protection of public health, safety, general welfare, and property from extreme danger resulting from the adverse effects of past mineral mining practices, (2) protection of public health, safety, and general welfare from adverse effects of past mineral mining and processing practices, which do not constitute an extreme danger and (3) restoration of eligible lands and waters and the environment previously degraded by adverse effects of past mineral mining and processing practices, including measures for the conservation and development for soil, water (excluding channelization), woodland, fish and wildlife, recreation resources, and agricultural productivity” (Surface Mining Control and Reclamation Act, 1977).

Madrid, New Mexico’s history began in the early 1890s primarily serving as a new mining camp for coal mining activities. Since abandonment of the mine in the 1950s, the coal waste piles have remained relatively unstable and poorly vegetated, resulting in the movement of large quantities of sediment downslope, especially during significant precipitation events. This sediment movement has had significant negative impacts on the town of Madrid, located immediately downslope and adjacent to multiple coal gob piles. Over time, sediment has accumulated within the area, clogging drainage paths and leading to episodic flooding throughout the town. In 2011, a Madrid Mining Landscape community outreach identified two (2) main reclamation projects in the town of Madrid: the East Slope Catchment project and the Arroyo Restoration project (Dekker/Perich/Sabatini, 2011). These two (2) projects initiated the proposed action, in which the AML Program seeks to stabilize the coal gob piles and establish stormwater conveyances to reduce both the sedimentation and flooding occurring within the town. To identify a baseline water quality in the town of Madrid, the AML Program conducted a water quality monitoring study in which existing stormwater runoff contaminants were analyzed and testing levels compared to state and federal regulations. As future design plans for the proposed action will divert stormwater into the nearby arroyo, the AML Program wanted to identify existing stormwater runoff quality on unreclaimed gob piles, reclaimed gob piles, and a reference site (GMEC, 2019). Monitoring results indicated past reclamation efforts performed by the AML Program have made a positive impact on the stormwater quality (see Section 3.7 - Wetlands and Waterways) (GMEC, 2019).

Section 7 of the Endangered Species Act of 1973, as amended, requires federal agencies to use their authorities to carry out programs to conserve endangered and threatened species, and to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of listed or proposed species, or result in the destruction or adverse modification of their critical habitats. A Biological Assessment/Biological Evaluation (BA/BE) must be prepared for federal actions that are “major construction activities” (defined under the National Environmental Policy Act [NEPA] as a project significantly affecting the quality of the human environment) to evaluate the potential effects of the proposal on listed or proposed species. The contents of the BA are at the discretion of the federal agency and will depend on the nature of the federal action (Interagency Cooperation - Endangered Species Act of 1973, 2014). Appropriate analyses for federally listed species are included under the Federally Listed Species section.

1.1 Proposed Project Location

The proposed project area is located in the town of Madrid, NM, about 22 miles southwest of Santa Fe in Section 34 of Township 14 North, Range 7 East. The APE is a combination of private, state, and county owned land that makes up approximately 117 acres (Figure 2 and 3). The percentage of surface ownership within the APE includes: 84.18 acres private (~72%), 2.37 acres Madrid Landowners Association (~2%), 2.86 acres Madrid Water Cooperative (~2%), 6.84 acres NM Department of Transportation (NMDOT) (~6%), and 20.65 acres Santa Fe County (~18%).

1.2 Proposed Action / Safeguarding Activities

The proposed action is designed to help protect the general public from the hazards associated with abandoned mines around the town of Madrid by stabilizing coal gob waste piles, increasing soil infiltration, improving fire safety, and establishing stormwater conveyances to reduce further sedimentation and flooding within the town. Madrid’s town identity is rooted in its coal mining history and its economy relies heavily on tourism. It is important for the AML Program to preserve the historical integrity of the town while still safeguarding against environmental hazards.

Figure 1. Vicinity Map for Proposed Madrid Stormwater and Erosion Safety Project

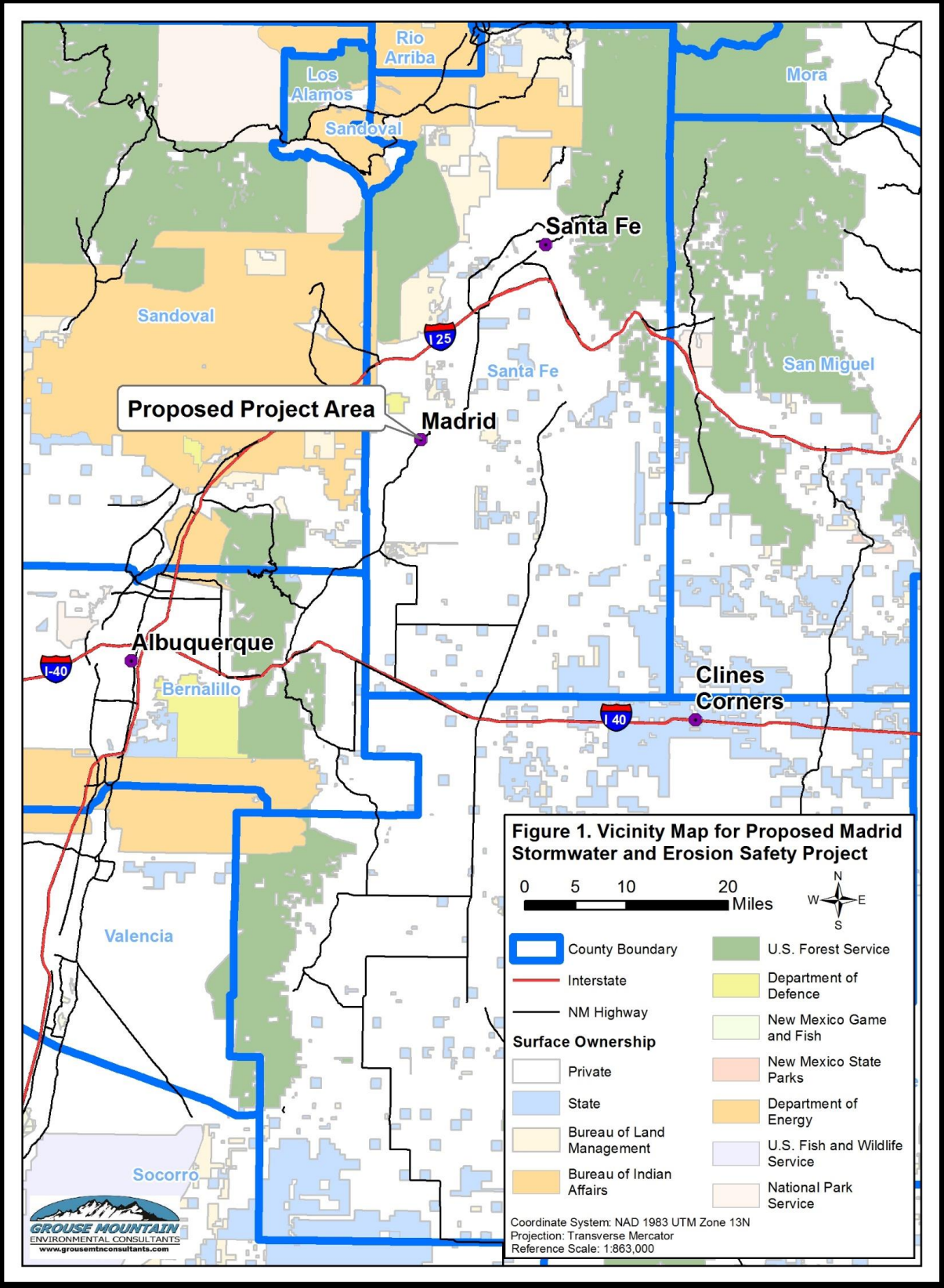


Figure 2. Area of Potential Effect (APE) Topography for Proposed Madrid Stormwater and Erosion Safety Project

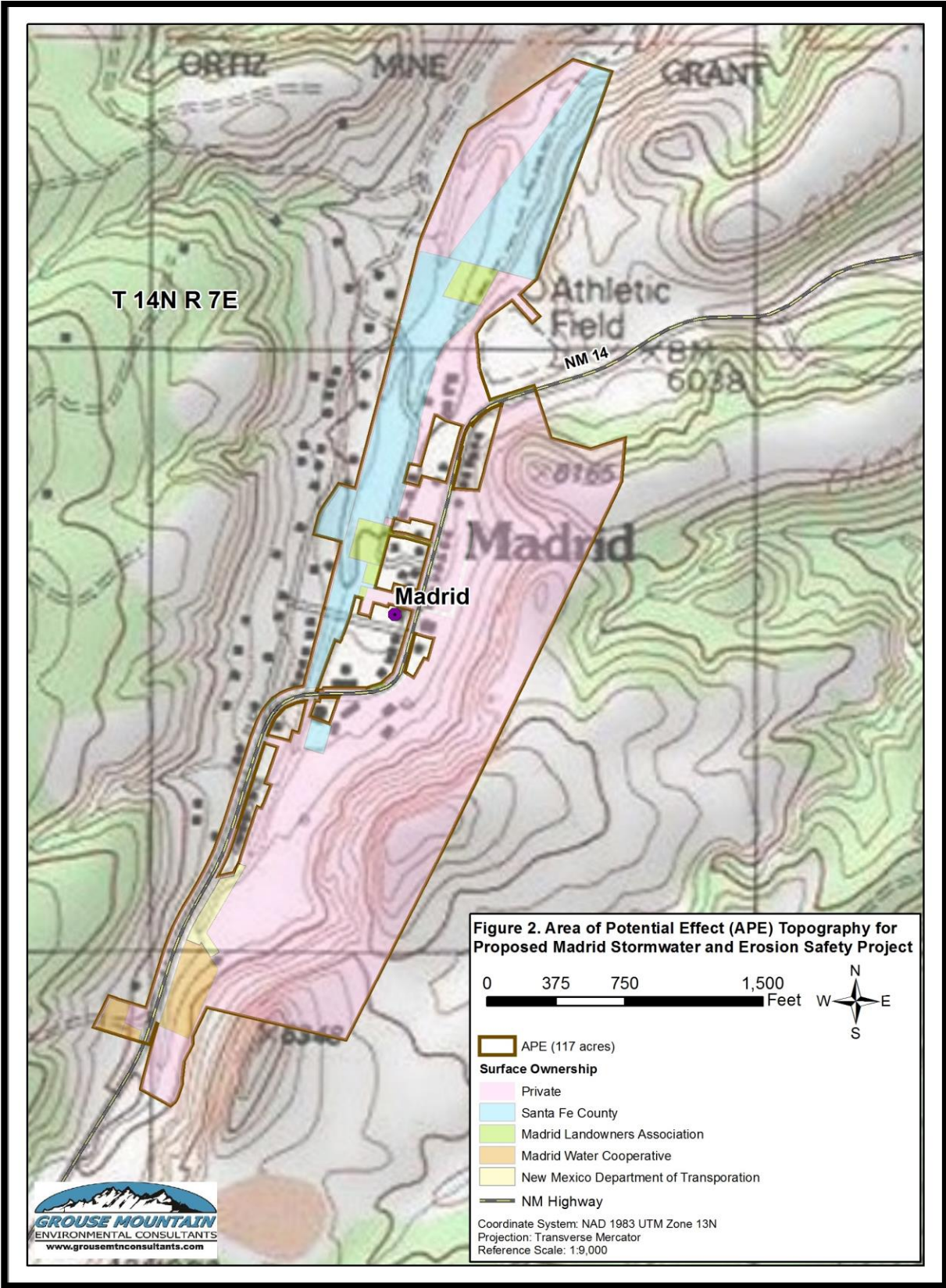
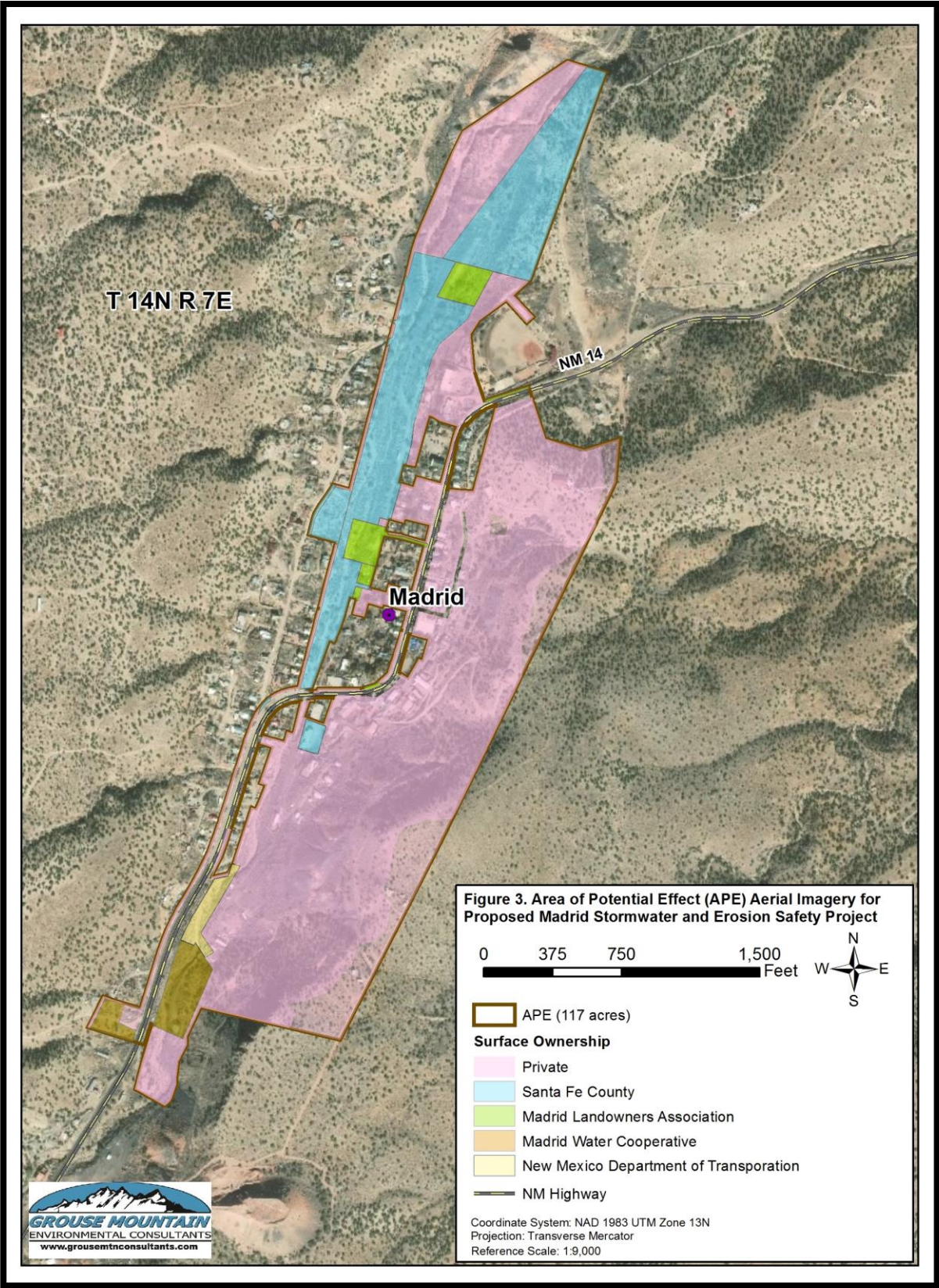


Figure 3. Area of Potential Effect (APE) Aerial Imagery for Proposed Madrid Stormwater and Erosion Safety Project



2. Methods

The Endangered Species Act (ESA) requires the evaluation of potential impacts on federally-listed species and their critical habitat. Prior to surveys, Grouse Mountain Environmental Consultants (GMEC) consulted with U.S. Fish and Wildlife Service (USFWS), New Mexico Department of Game and Fish (NMDGF), BLM Taos Field Office (BLM-TFO), NM Rare Plant Technical Council (NMRPTC), and the NM Crucial Habitat Assessment Tool (CHAT) to establish a comprehensive inventory of listed, proposed, and state sensitive species that have the potential to occur within the proposed project area. Prior to conducting fieldwork, GMEC consulted with agencies to discuss the appropriate survey methodology. Specifically, the USFWS New Mexico Ecological Services (<https://ecos.fws.gov/ipac/>) was verified for federally-listed fauna and flora within the APE and surrounding area (Appendix D). BISON-M database (<http://www.bison-m.org/Index.aspx>) was utilized for state listed fauna and the NMRPTC website (<http://nmrareplants.unm.edu/index.html>) and NM CHAT (<http://nmchat.org/>) was consulted for potential state listed flora within Santa Fe County. Once potential species were identified, habitat associations and species information were developed, then their requirements were compared to the habitat documented within the APE to identify species which are likely to occur. Species which were unlikely to occur within the proposed project area were removed from further analysis and a list of target species was developed prior to biological surveys. Vegetation surveys were scheduled prior to wildlife surveys so biologists could confirm habitat types and general wildlife supported by the different vegetation communities within the APE.

Leeland Murray and Anna Stearns conducted biological surveys of the approximately 117-acre APE. Special status plant species (SSPS) surveys were conducted May 22 - 23, 2019 and wildlife surveys were conducted May 30 - 31, 2019. Prior to conducting biological surveys, a thorough desktop analysis of the proposed project area was performed. The desktop analysis included analyzing aerial photography, New Mexico vegetation datasets, and the use of a geographical information system (GIS) to determine general locations of various habitat types across the proposed project area. For vegetation surveys, GMEC biologists conducted 100% visual coverage surveys with biologists walking parallel transects spaced 65ft (20m) apart while searching for suitable habitat. In concurrence with SSPS surveys, GMEC biologists searched for both New Mexico Department of Agriculture (NMDA) noxious weeds and potential wetlands and Waters of the U.S. (WOTUS) as defined by the U.S. Army Corps of Engineers (USACE). After consultation with NMDGF and BLM-TFO, the Integrated Monitoring in Bird Conservation Regions (IMBCR) protocol (Bird Conservancy of the Rocky Mountains, 2018) was utilized for presence/absence surveys of migratory birds. Twelve (12) point count stations were distributed throughout the proposed project area using a stratified sampling method based on habitat types and field logistics (i.e. surface ownership, topography, etc.). Habitat types included: arroyo riparian, pinyon/juniper, and juniper savanna. Each point count was spaced on average 656ft (200m) apart, except when spacing was adjusted to avoid placement in or around private dwellings and fragmented habitat (Figure 4). The biologist spent a maximum of ten (10) minutes at each point count. After completion of all counts, the biologists hiked the proposed project area listening and watching for any less detectible species not picked up during point counts.

For wetland and waters of the US (WOTUS) delineations, a GMEC biologist identified and delineated potential jurisdictional waterways within the proposed project area. The GMEC biologist documented ordinary high water mark (OHWM) indicators and any additional information that may assist with jurisdictional determination.

3. Environment and Existing Conditions

The elevation of the proposed project area ranges from approximately 5,900 to 6,350 feet, and topography varies from 1 to 55 percent slopes with various aspects (University of New Mexico, 2019). The proposed project area occurs within two main areas: Madrid's eastern hillside with moderate to steep topography, and the center of Madrid along the arroyo with gentle topography. Four (4) ephemeral drainages exist within the proposed project area, but only one meets the UACE definition of a WOTUS (see Section 3.7 - Wetlands and Waterways). Annual precipitation averages 13.79 inches, with approximately 70% of yearly precipitation occurring between June and October during the monsoon season (Western Regional Climate Center [WRCC], 2016a). Average temperatures range from 18.7°F to 42.7°F in January and from 57.9°F to 86.5°F in July (Western Regional Climate Center, 2016b).

3.1 Physiogeography

The proposed project area is located within the north central New Mexico valleys/mesas and conifer woodlands and savanna (Griffith et al., 2006). The northern half of the Madrid APE lies within the north central New Mexico valleys and mesas, characterized as mostly pinyon pine and juniper savanna with slightly cooler temperatures and greater precipitation than the lower valleys and mesas (Griffith et al., 2006). The south half of the Madrid APE is within the conifer woodlands and savannas, exhibiting a cooler and wetter climate than the north central New Mexico valleys and mesas and is seen as a transition community supporting both pinyon-juniper and ponderosa pine (Griffith et al., 2006).

3.2 Soils

The proposed project area is dominated by four major soil types: Oelop-Charalito complex, 1 to 3 percent slopes, Kech-Cerropelon-Rock outcrop complex, 5 to 50 percent slopes, Devargas-Riovista-Riverwash complex, 0 to 5 percent slopes, and Puertecito-Paraje complex, 15 to 50 percent slopes, with other minor components dispersed throughout the proposed project area (Natural Resource Conservation Service [NRCS], 2019b). The Oelop-Charalito complex occurs throughout town and within the primary Madrid arroyo and typically occurs in stream terraces and flood-plain steps. They are well-drained soils and have none-rare frequency of flooding or ponding. Runoff classification ranges from very low to low. Depth to water table is typically greater than 80 inches (NRCS, 2019b). Kech-Cerropelon-Rock complex occurs on the lower half of eastern hillside of Madrid and typically occurs on the hillsides ranging from the summit to backslope. They are well drained soils and have no frequency of flooding or ponding. Unlike the Oelop-Charalito complex, these soils have a medium-high runoff classification. Depth to water table is typically greater than 80 inches (NRCS, 2019b). The Devargas-Riovista-Riverwash complex occurs primarily within the Madrid arroyo and along stream terraces and floodplains. They are well-drained to excessively drained soils and generally have none-rare frequency of flooding or ponding. Runoff classifications range from none-very low. Depth to the water table is typically greater than 80 inches (NRCS, 2019b). The Puertecito-Paraje complex occurs on the upper half of the eastern hillside of Madrid and typically occurs

on the shoulder and backslope of low hills. They are well drained soils and have no frequency to flooding or ponding. Similar to the Kech-Ceropelon-Rock complex, they have a high-very high runoff classification, and a depth to groundwater greater than 80 inches (NRCS, 2019b).

3.3 Vegetation

Much of the APE has been historically coal mined and coal gob piles are interspersed along the eastern and northern sections of the APE. The proposed project area is dominated by species indicative of two vegetative communities: the pinyon-juniper woodland and arroyo riparian habitat types (Dick-Peddie, 1999). The Pinyon-juniper woodland is primarily composed of oneseed juniper (*Juniperus monosperma*), winterfat (*Krascheninnikovia lanata*), twoneedle pinyon (*Pinus edulis*), James' galleta (*Pleuraphis jamesii*), and siberian elm (*Ulmus pumila*). The arroyo riparian habitat located along drainage 1 (DR1) consists of a mixture between cottonwood (*Populus* spp.) trees and upland vegetation. The APE plant species recorded during the biological surveys are listed in Table 1.

Table 1. Plant species observed during biological surveys, May 2019

Common Name	Scientific Name	Status
Indian ricegrass	<i>Achnatherum hymenoides</i>	Common
Threeawn	<i>Aristida</i> spp.	Common
White sagebrush	<i>Artemisia ludoviciana</i>	Common
Milkvetch	<i>Astragalus</i> spp.	Common
Fourwing saltbush	<i>Atriplex canescens</i>	Common
Blue grama	<i>Bouteloua gracilis</i>	Common
Cheatgrass	<i>Bromus tectorum</i>	Common [Non-native]
Indian paintbrush	<i>Castilleja</i> spp.	Common
Alderleaf mountain mahogany	<i>Cercocarpus montanus</i>	Common
Bull thistle	<i>Cirsium vulgare</i>	Common [Non-native]
Missouri gourd	<i>Cucurbita foetidissima</i>	Common
Tree cholla	<i>Cylindropuntia imbricata</i>	Common
Scarlet hedgehog cactus	<i>Echinocereus coccineus</i>	Common
Squirreltail	<i>Elymus longifolius</i>	Common
Rubber rabbitbrush	<i>Ericameria nauseosa</i>	Common
Apache plume	<i>Fallugia paradoxa</i>	Common
Needle and thread	<i>Hesperostipa comata</i>	Common
New Mexico feathergrass	<i>Hesperostipa neomexicana</i>	Common
Foxtail barley	<i>Hordeum jubatum</i>	Common
Oneseed juniper	<i>Juniperus monosperma</i>	Common
Winterfat	<i>Krascheninnikovia lanata</i>	Common
Fremont's mahonia	<i>Mahonia fremontii</i>	Common
Adonis blazingstar	<i>Mentzelia multiflora</i>	Common
Bush muhly	<i>Muhlenbergia porteri</i>	Common
Hairspine pricklypear	<i>Opuntia polyacantha</i>	Common
Twoneedle pinyon	<i>Pinus edulis</i>	Common
Narrowleaf cottonwood	<i>Populus angustifolia</i>	Common

Common Name	Scientific Name	Status
James' galleta	<i>Pleuraphis jamesii</i>	Common
Globemallow	<i>Sphaeralcea</i> spp.	Common
Sand dropseed	<i>Sporobolus cryptandrus</i>	Common
Tamarisk	<i>Tamarix</i> spp.	Common [Non-native]
Siberian elm	<i>Ulmus pumila</i>	Common [Non-native]
Soapweed yucca	<i>Yucca glauca</i>	Common

Note: Nomenclature follows the USDA PLANTS database (NRCS, 2019a)

3.4 Noxious and Invasive Weeds

Four (4) noxious weed species, as defined by the New Mexico Department of Agriculture (NMDA, 2016), were located within the proposed project area during the biological surveys (Figure 4). Siberian elm (*Ulmus pumila*) and cheatgrass (*Bromus tectorum*), both class C species, were frequently located throughout the APE along the drainages (because these species were frequently documented and widespread throughout the APE, they were not included in Figure 4). Two (2) small populations of bull thistle (*Cirsium vulgare*), a class B species, were documented in the southeast and northern section of the APE. Tamarisk (*Tamarix ramosissima*), a class C species, was sporadic along the arroyo banks in the northern section of the APE.

3.5 Rare Plants

A list of potentially occurring New Mexico rare plants (State Threatened or Endangered) was obtained from the NMRPTC database prior to conducting field surveys (NMRPTC, 2019). No New Mexico rare plants were documented during biological surveys. Species considered to have the potential of occurring within the proposed project area are analyzed in Table 5.

3.6 Wildlife

During the wildlife surveys, forty-two (42) vertebrate species were recorded: thirty-seven (37) species of birds, two (2) species of mammals and three (3) species of reptile (Table 2).

Table 2. Wildlife species observed during wildlife surveys, May 2019

Common Name	Scientific Name	Status
Mammals		
Desert cottontail	<i>Sylvilagus audubonii</i>	Common
Rock squirrel	<i>Spermophilus variegates</i>	Common
Reptiles		
Eastern collared lizard	<i>Crotaphytus collaris</i>	Common
Chihuahuan spotted whiptail	<i>Aspidoscelis exsanguis</i>	Common
Common checkered whiptail	<i>Aspidoscelis tessellata</i>	Common
Birds		
Turkey vulture	<i>Cathartes aura</i>	Common
Cooper's hawk	<i>Accipiter cooperii</i>	Common
Red-tailed hawk	<i>Buteo jamaicensis</i>	Common

Common Name	Scientific Name	Status
Eurasian collared-dove	<i>Streptopelia decaocto</i>	Common [Non-native]
White-winged dove	<i>Zenaida asiatica</i>	Common
Mourning dove	<i>Zenaida macroura</i>	Common
Black-chinned hummingbird	<i>Archilochus alexandri</i>	Common
Western wood-pewee	<i>Contopus sordidulus</i>	Common
Say's phoebe	<i>Sayornis saya</i>	Common
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>	Common
Cassin's kingbird	<i>Tyrannus vociferans</i>	Common
Western kingbird	<i>Tyrannus verticalis</i>	Common
Eastern kingbird	<i>Tyrannus tyrannus</i>	Common
Steller's jay	<i>Cyanocitta stelleri</i>	Common
American crow	<i>Corvus brachyrhynchos</i>	Common
Common raven	<i>Corvus corax</i>	Common
Woodhouse's scrub-jay	<i>Aphelocoma woodhouseii</i>	Common
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	Common
Barn swallow	<i>Hirundo rustica</i>	Common
Juniper titmouse	<i>Baeolophus ridgwayi</i>	Common
Rock wren	<i>Salpinctes obsoletus</i>	Common
Eastern bluebird	<i>Sialia sialis</i>	Common
Western bluebird	<i>Sialia mexicana</i>	Common
American robin	<i>Turdus migratorius</i>	Common
Curve-billed thrasher	<i>Toxostoma curvirostre</i>	Common
Northern mockingbird	<i>Mimus polyglottos</i>	Common
European starling	<i>Sturnus vulgaris</i>	Common [Non-native]
Cedar waxwing	<i>Bombycilla cedrorum</i>	Common
Spotted towhee	<i>Pipilo maculatus</i>	Common
Canyon towhee	<i>Melospiza fusca</i>	Common
Lark sparrow	<i>Chondestes grammacus</i>	Common
Dark-eyed junco	<i>Junco hyemalis</i>	Common
Blue grosbeak	<i>Passerina caerulea</i>	Common
Brown-headed cowbird	<i>Molothrus ater</i>	Common
House finch	<i>Haemorhous mexicanus</i>	Common
Lesser goldfinch	<i>Spinus psaltria</i>	Common
House sparrow	<i>Passer domesticus</i>	Common [Non-native]

Thirty-four (34) of the thirty-seven (37) bird species documented during the wildlife surveys are federally protected under the Migratory Bird Treaty Act (MBTA) and likely breed within the area. The three (3) non-native species documented (Eurasian collared-dove, European starling, and house sparrow) have no federal or state protection. One (1) active Cooper's hawk nest (nest ID 14072501) was located along the arroyo in the northern portion of the APE (Figure 4, Appendix B).

No federally listed species or special status species were documented during the wildlife surveys. Federally listed species and special status species considered to have the potential of occurring within the proposed project area are analyzed in Table 4 and 5, respectively.

3.7 Wetlands and Waterways

The Clean Water Act (CWA) of 1972 regulates activities having the potential to impact WOTUS. Section 404 of the CWA regulates discharge of dredged and fill materials within the ordinary high water mark (OHWM) of WOTUS and is administered by the USACE. Section 401 of the CWA regulates water quality and, for the purposes of the proposed project, is administered by the New Mexico Environment Department (NMED). Prior to the biological surveys and field WOTUS delineations, the National Wetland Inventory (NWI) website was reviewed to determine potential wetlands within the APE and no wetlands were identified (USFWS, 2019b).

Based on hydrology data obtained from the Resource Geographic Information System from University of New Mexico (UNM, 2019), NWI (USFWS, 2019b), and field ground-truthing, four (4) ephemeral drainages are present within the Madrid, NM proposed project area. Two (2) ephemeral drainages (DR02 and DR03) are located on the west side of the proposed project area and enter DR01 via outlets located on the west streambank (Figure 5). Only the outlets are located within the proposed project area, and no proposed actions will occur within these drainages. DR02 (Figure C.3.) is a stormwater conveyance outlet with no OHWM indicators present and likely does not provide a significant hydrologic connection into DR01 or Galisteo Creek due to the lack of OHWM indicators. DR03 (Figure C.4.) is a concrete stormwater conveyance outlet for an ephemeral drainage located west of Highway 14, outside the proposed project area. Within the proposed project area, the outlet has no visible OHWM indicators and likely does not provide a significant hydrological connection to DR01 or Galisteo Creek. Based on these criteria, GMEC does not anticipate the need for the AML Program to acquire permits under Section 404 of the Clean Water Act for either DR02 or DR03. One (1) drainage documented on the eastern edge of the proposed project area, DR04, was identified as an erosional feature and does not meet the USACE definition of WOTUS as its an “isolated” erosional feature with no apparent hydrologic connectivity to DR01 or Galisteo Creek (Figure C.5.). As such, GMEC does not anticipate the need for the AML Program to acquire permits under Section 404 of the Clean Water Act.

One (1) ephemeral drainage located in the center of Madrid (DR01) was identified as having characteristics consistent with USACE’s definition of WOTUS. DR01 is identified as an ephemeral drainage that flows into Galisteo Creek during periods of high rainfall events (monsoon season). DR01 has numerous OHWM indicators including: bed and bank, gravel sheets, presence of litter and debris, exposed root hairs below intact soil layers, vegetation matted down, and change in particle distribution. Based on the features evaluated in the field, it is GMEC’s opinion that DR01 may contain a significant nexus to the Rio Grande TNW through Galisteo Creek. Galisteo Creek is located approximately 2.2 miles north of the proposed action APE. The flashy, infrequent flooding associated with DR01 caused by episodic monsoon rainfall events (July to October) likely transports significant sediment downstream to Galisteo Creek. Based on climate data such as precipitation (monsoon dominated), proximity to Galisteo Creek (an intermittent stream), hydrological information (infrequent, high intensity flooding), physical indicators, and the

potential for significant nexus to the Rio Grande, it is GMEC's professional opinion that DR01 would qualify as a jurisdictional non-relatively permanent water (RPW), meeting the USACE definition of WOTUS. GMEC recommends the AML Program pursue permits from the USACE and/or NMED prior to the proposed construction to remain in compliance throughout the length of the proposed project. Ultimately, the USACE will be the regulatory agency and provide a final jurisdictional determination for DR01.

Prior to and during the proposed construction, the USACE and NMED will be consulted as necessary to ensure all parties are in compliance with the CWA and surface water quality standards. Table 3 below details drainage attributes in the proposed project area, Figure 5 details various drainage locations, and Appendix C includes drainage location photographs.

Water sampling was conducted during the summer of 2019 (GMEC, 2019) to evaluate the baseline water quality of the runoff from multiple sampling locations including: downstream in DR01 (northern section of the proposed project area), within the town of Madrid, and in both reclaimed and unreclaimed coal piles on the east side of the APE.

GMEC sampling study concluded, given the instability of the coal waste gob piles and the amount of sediment that is actively eroding from these piles, it is expected that some pollutants would exceed Maximum Contaminant Level (MCLs) or Maximum Allowable Concentration (MACs) standards. However, only total dissolved solids (TDS), dissolved aluminum, and dissolved manganese exceeded these standards at specific sites. While the exceedance of dissolved aluminum and manganese may be cause for concern, it is evident that previous reclamation efforts conducted by the AML Program have made a positive impact on the water quality of the stormwater collected below reclaimed coal waste piles.

Table 3. Proposed Project Area Jurisdictional Drainage Attributes

Field Name	Drainage Direction	NHD Line	OHWI Indicators	Standing Water	Tributary To	Tributary to
DR01	North-northeast	Yes	Bed and bank Gravel sheets Levees and narrow berms Benches Debris drift	Absent	Galisteo Creek	Rio Grande River

Figure 4. Area of Potential Effect (APE) Biological Survey for Proposed Madrid Stormwater and Erosion Safety Project

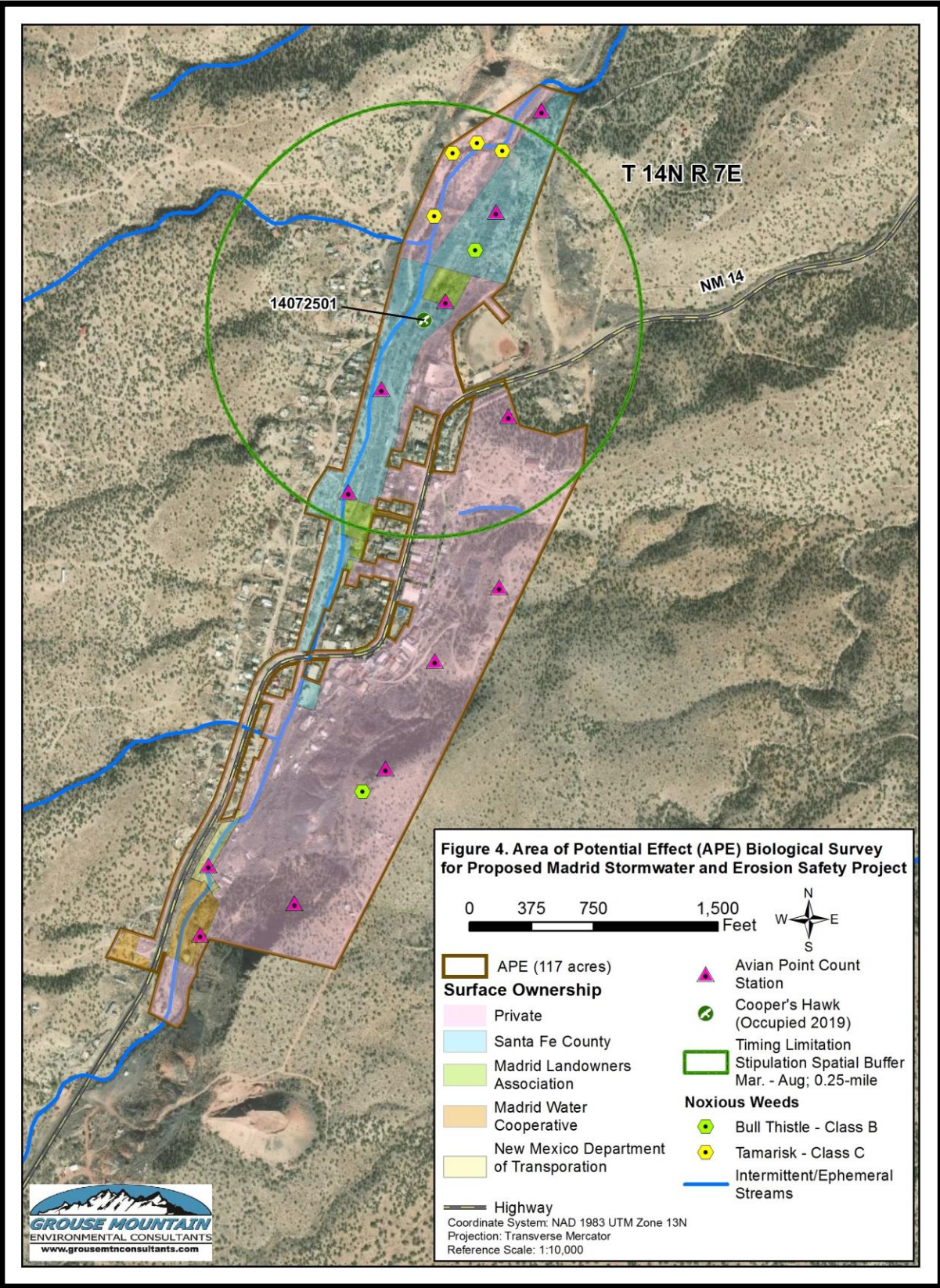
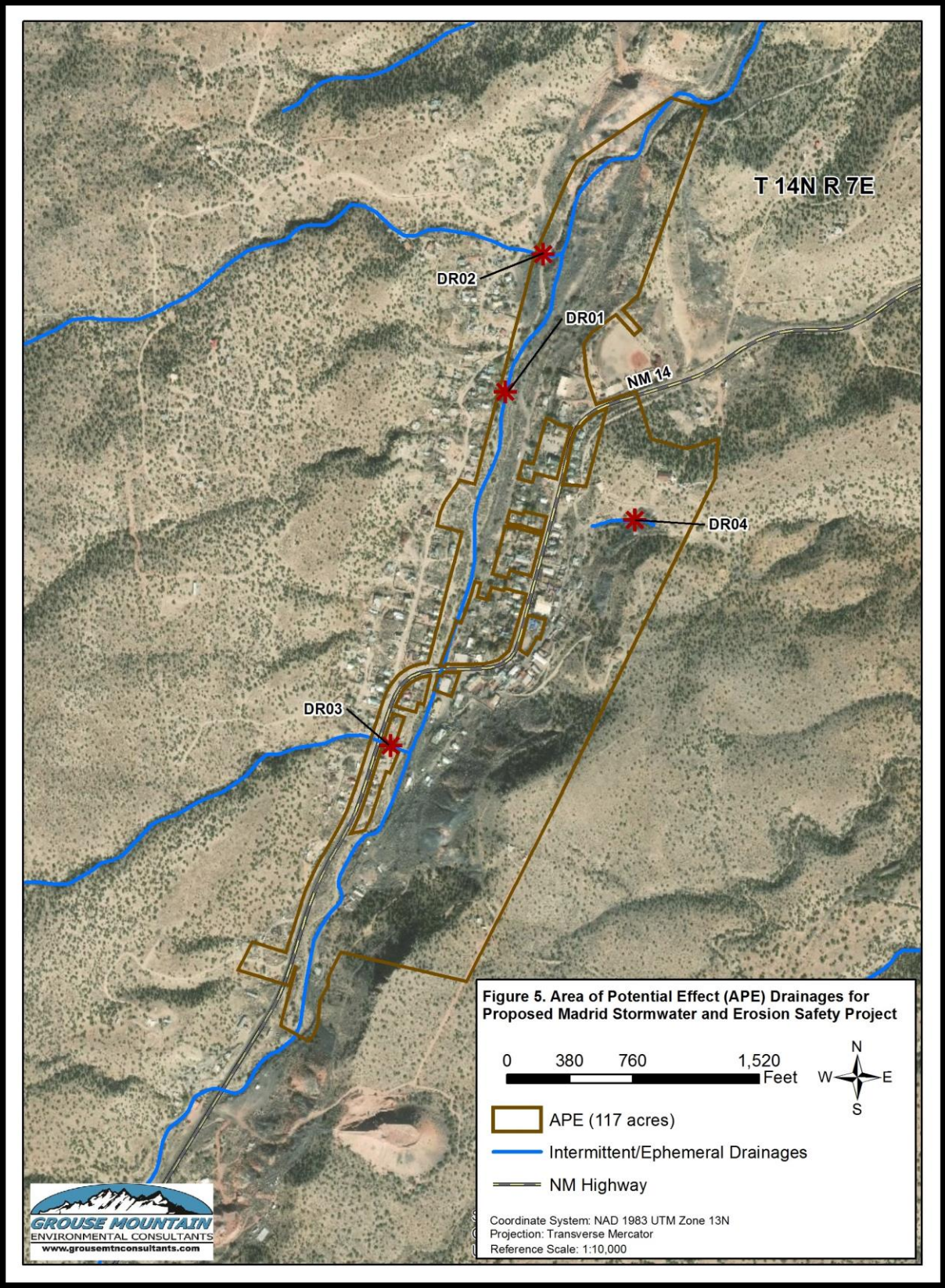


Figure 5. Area of Potential Effect (APE) Drainages for Proposed Madrid Stormwater and Erosion Safety Project



4. Threatened, endangered, and proposed species being considered

An inventory of federally listed species with the potential to occur within the proposed project area was obtained from the USFWS Information, Planning, and Conservation System (IPaC) (Appendix D). The proposed project area does not contain critical habitat for any federally listed species. Potential effects of the proposed action on threatened, endangered, and proposed species are analyzed in this section (BISON-M, 2019).

In addition to the legal status shown in Table 4, all birds analyzed are federally protected under the MBTA.

Table 4. Federally listed species for the proposed project area, as of May 15, 2019.

Species	Legal Status	Habitat Present	Habitat not Present	Habitat Present but not Affected	Does not Occur in Area	Comments
Birds (3)						
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	Endangered		X			Riparian habitat requirement is not present within the proposed project area. There will be <u>no effect</u> to the species. No further analysis required.
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	Threatened		X			Old growth or mature forests/canyons with riparian/conifer habitat is not present within the proposed project area. There will be <u>no effect</u> to the species. No further analysis required.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Threatened		X			Riparian woodland habitat is not present within the proposed project area. There will be <u>no effect</u> to the species. No further analysis required.
Mammals (1)						
New Mexico meadow jumping mouse (<i>Zapus hudsonius luteus</i>)	Endangered		X			Riparian areas with dense herbaceous riparian vegetation are not present within the proposed project area. There will be <u>no effect</u> to the species. No further analysis required.

5. Special status species being considered

Special status species (Table 5) includes state listed threatened or endangered species and Species of Greatest Conservation Need (SGCN) in the state of New Mexico that have potential habitat in the proposed project area. Additionally, the bald eagle is federally protected under the Bald and Golden Eagle Protection Act (BGEPA).

Table 5. Special status species for the proposed project area, as of May 15, 2019.

Species	Legal Status	Habitat Present	Habitat not Present	Habitat Present but not Affected	Does not Occur in Area	Comments
Mammals (3)						
Spotted bat (<i>Euderma maculatum</i>)	State NM Threatened/SGCN		X			Typical spotted bat habitat includes canyons or rock walls in close proximity to water (Luce & Keinath, 2007). No habitat is present within the proposed project area; therefore, the presence of spotted bats is considered very unlikely. There will be <u>no effect</u> to this species. No further analysis required.
Pacific marten (<i>Martes caurina</i>)	State NM Threatened/SGCN		X		X	Martens prefer subalpine coniferous forests dominated by spruce and fir mixed conifer stands of a late successional growth stage. No habitat is present within the proposed project area; therefore, the presence of martens is considered very unlikely. There will be <u>no effect</u> to this species. No further analysis required.
Meadow jumping mouse (<i>Zapus luteus</i>)	State NM Endangered/SGCN		X			Riparian areas with dense herbaceous riparian vegetation are not present within the proposed project area. There will be <u>no effect</u> to the species. No further analysis required.
Birds (11)						
White-tailed ptarmigan (<i>Lagopus leucura</i>)	State NM Endangered/SGCN		X		X	Typical white-tailed ptarmigan habitat includes alpine tundra and timberline habitats. No habitat is present within the proposed project area; therefore, the

Species	Legal Status	Habitat Present	Habitat not Present	Habitat Present but not Affected	Does not Occur in Area	Comments
						presence of white-tailed ptarmigans is considered very unlikely. There will be <u>no effect</u> to this species. No further analysis required.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	State NM Threatened/ SGCN		X			Large deciduous trees adjacent to water suitable for roosting and breeding is not present within the proposed project area; therefore, the presence of bald eagles is considered very unlikely. There will be <u>no effect</u> to this species. No further analysis required.
Peregrine falcon (<i>Falco peregrinus</i>)	State NM Threatened/ SGCN		X			Suitable cliff and forest habitat for nesting does not exist within the proposed project area; therefore, the presence of peregrine falcons is considered very unlikely. There will be <u>no effect</u> to this species. No further analysis required.
Least tern (<i>Sternula antillarum</i>)	State NM Endangered/ SGCN		X		X	No shoreline or water sources are present in the proposed project area; therefore, the presence of least terns is considered very unlikely. There will be <u>no effect</u> to this species. No further analysis required.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	State NM SGCN		X		X	Riparian woodland habitat is not present within the proposed project area. There will be <u>no effect</u> to the species. No further analysis required.
Boreal owl (<i>Aegolius funereus</i>)	State NM Threatened/ SGCN		X		X	Boreal owls typically inhabit higher elevation, mature old-growth spruce-fir forests which do not occur within the proposed project area; therefore, the presence of boreal owls is considered very unlikely. There will be <u>no effect</u> to this species. No further analysis required.

Species	Legal Status	Habitat Present	Habitat not Present	Habitat Present but not Affected	Does not Occur in Area	Comments
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	State NM Threatened/ SCGN		X			Old growth or mature forests/canyons with riparian/conifer habitat is not present within the proposed project area. There will be <u>no effect</u> to the species. No further analysis required.
Violet-crowned hummingbird (<i>Amazilia violiceps</i>)	State NM Threatened/ SCGN		X		X	Violet-crowned hummingbirds typically inhabit riparian woodlands. This type of habitat is not present within the proposed project area; therefore, the presence of violet-crowned hummingbirds is very unlikely. There will be <u>no effect</u> to this species. No further analysis required.
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	State NM Endangered/ SGCN		X			Riparian habitat requirement is not present within the proposed project area. There will be <u>no effect</u> to the species. No further analysis required.
Gray vireo (<i>Vireo vicinior</i>)	State NM Threatened/ SCGN	X				Habitat present; <u>full analysis required</u> .
Baird's sparrow (<i>Centronyx bairdii</i>)	State NM Threatened/ SCGN		X		X	Baird's sparrows typically inhabit shortgrass prairies. Habitat is not present within the proposed project area; therefore, the presence of Baird's sparrows is very unlikely. There will be <u>no effect</u> to this species. No further analysis required.
Mollusks (1)						
Lilljeborg's Peaclam (<i>Pisidium lilljeborgi</i>)	State NM Threatened/ SCGN		X		X	This species frequently inhabits lakes, usually at higher altitudes. No alpine lakes occur within the proposed project area; therefore, the presence of Lilljeborg's peaclam is unlikely. There will be <u>no effect</u> to this species. No further analysis required.

Species	Legal Status	Habitat Present	Habitat not Present	Habitat Present but not Affected	Does not Occur in Area	Comments
Plants (1)						
Santa Fe cholla (<i>Cylindropuntia viridiflora</i>)	State NM Endangered			X	X	Potential habitat exists within the proposed project area; however, this species is known to only occur between Santa Fe, NM and Chimayo, NM (NMRPTC, 2019). Biological surveys were conducted; however, no plant populations were located. Therefore, there will be <u>no effect</u> to the species. No further analysis required.

Except where otherwise noted, information for wildlife species was obtained from BISON-M website (BISON-M, 2019).

6. Potential for Effects/ Impacts

Federally endangered, threatened, and proposed species: No critical habitat or presence of endangered, threatened, or proposed species analyzed within Table 4 occur within the proposed project area; therefore, it has been determined the proposed project will have no effect on threatened or endangered species or their respective critical habitat (USFWS, 2019a).

Migratory Bird Species: Thirty-four (34) migratory bird species were identified within the proposed project area during the wildlife surveys (see Section 3.6 - Wildlife). All migratory bird species documented during the surveys occur in northern New Mexico during the breeding season and are likely nesting within the proposed project area. Of these 34 birds, one active Cooper's hawk nest was identified within the proposed project area (Figure 4, Appendix B).

To minimize potential impacts to nesting birds, it is recommended proposed construction activities take place outside of the migratory bird breeding season (March – August). Additionally, in instances where timing of construction during this season cannot be avoided, it is recommended migratory bird clearance surveys be conducted prior to proposed construction to identify any occupied nests and establish appropriate disturbance avoidance measures.

For the identified Cooper's hawk nest, USFWS recommends a 0.25-mile spatial buffer around any active nests during breeding season (March – August). All potentially impacting activities should be avoided within the 0.25-mile spatial buffer during breeding season. Potentially impacting activities are defined as any human activity or the use or operation of mechanical equipment which may disturb raptors at a nest site (Whittington & Allen, 2008).

Special status species: No general habitat associated with, or presence of, fifteen (15) of the sixteen (16) state threatened, endangered, or SGCN species analyzed in Table 5 were identified

during the biological surveys; therefore, there was a no effect determination for 15 of the 16 species analyzed.

Habitat is present within the proposed project area for one (1) SGCN, the gray vireo. Therefore, this species has the potential to occur in or near the proposed project area during proposed project construction. Full analysis of the species is provided below.

➤ **Gray Vireo**

This species' breeding habitat generally consists of open woodlands/shrublands with evergreen trees and a variety of shrubs. In New Mexico, the species is most often located on foothills and mesas in arid juniper woodlands that tend to be associated with oaks and a prominent grass understory (BISON-M, 2019).

Piñon-juniper woodland habitat within the proposed project area is limited and located east of the coal waste gob piles on the eastern edge of the APE. While this area would constitute suitable gray vireo habitat, it is heavily fragmented and most suitable habitat is located outside of the APE. Any gray vireos occurring within the proposed project area during proposed construction could be temporarily displaced by project related noise and disturbance within the area. However, seeing as habitat within the APE is adjacent to undisturbed habitat outside of the APE, any impact would be discountable. Any gray vireos potentially displaced by the proposed project related activities would be expected to move into the abundant suitable habitat areas surrounding the APE. No gray vireos were observed during the wildlife surveys.

Overall, the proposed project would not result in any measurable amount of habitat loss. Proposed project construction activities will primarily be focused in previously disturbed areas. It is highly unlikely gray vireos would directly occupy the sites identified for proposed stormwater conveyance construction. Should gray vireos be nesting within the proposed project area during proposed construction, resulting impacts such as nest abandonment could occur. To minimize impacts to potential nesting gray vireos, it is recommended proposed construction activities take place outside of the migratory bird breeding season (March – August). If timing of construction during this season cannot be avoided, a search for gray vireo nests in potential nesting habitat could be carried out prior to proposed project implementation to identify any occupied nests and establish appropriate disturbance avoidance measures. Overall, any impacts to the species would be minor, most likely resulting in temporary displacement. Therefore, the proposed action is not likely to result in a trend toward federal listing or loss of viability of the gray vireo.

7. Determination Summary

The proposed action will have the following effects/impacts:

- The proposed action will have no effect on the following federally listed species: southwestern willow flycatcher, Mexican spotted owl, yellow-billed cuckoo, and the New Mexico meadow jumping mouse for the following reasons: 1) the proposed project area does not contain the necessary habitat or prey base or 2) the analyzed species do not occur within the proposed project area.
- The proposed action will have no effect on the following state threatened, endangered and SGCC: spotted bat, Pacific marten, New Mexico meadow jumping mouse, white-tailed ptarmigan, bald eagle, peregrine falcon, least tern, yellow-billed cuckoo, boreal owl, Mexican spotted owl, violet-crowned hummingbird, southwestern willow flycatcher, Baird's sparrow, Lilljeborg's peacocks, and Santa Fe cholla for the following reasons: 1) the proposed project area does not contain the necessary habitat or prey base or 2) the analyzed species do not occur in the proposed project area.
- The proposed action may affect individuals of the state threatened/SGCN gray vireo but is not likely to contribute to federal listing or a loss of viability for the following reasons: 1) suitable habitat within the APE is limited 2) disturbance is temporary and localized; and 3) disrupted individuals can relocate to adjacent, undisturbed habitat.

8. Summary and Conclusions

Proposed construction activities would have minimal impacts to vegetation due to the temporary effects. Tree removal may occur in localized areas to permit access for heavy machinery and would be mostly limited to single trees rather than stands. This impact is considered insignificant given the high number of piñon and juniper present in and near the proposed project area. Existing roads would be utilized to the extent possible, minimizing impacts to herbaceous and shrub species in the proposed project area. Disturbed areas would be seeded with a native seed mix and/or live plant transplants following the proposed construction to reestablish the vegetative community.

During the biological surveys, no wetlands were documented, but four (4) ephemeral drainages were documented within the proposed project area. Considering the location and type of features, three (3) drainages (DR02-DR04) do not elicit characteristics consistent with USACE definition of WOTUS. As such, GMEC does not recommend the need for the AML Program to pursue permits under Section 404 of the Clean Water Act. One (1) drainage, DR01, is characterized by features consistent with WOTUS and likely a significant nexus to Galisteo Creek, a perennial stream with direct connectivity to the Rio Grande, a TNW. Based on these criteria, GMEC recommends the AML Program pursue permits under Section 404 of the Clean Water Act prior to the proposed construction to remain in compliance throughout the length of the proposed project.

Prior to and during proposed construction, the USACE and NMED will be consulted as necessary to ensure all parties are in compliance with the CWA, and surface water quality standards. Table 3 details drainage attributes in the proposed project area, Figure 5 details various drainage locations and Appendix C includes drainage location photographs.

Four (4) noxious weed species were located within the proposed project area during the biological surveys including Siberian elm (*Ulmus pumilla*), cheatgrass (*Bromus tectorum*), two (2) small populations of bull thistle (*Cirsium vulgare*), and tamarisk (*Tamarix ramosissima*) (Figure 4). Revegetation will include a native seed mix or live transplants following the proposed construction and would reduce the potential of further colonization by noxious weeds into the proposed project area.

The proposed action will have temporary effects on wildlife. During the proposed construction activities, larger mammals and birds may choose to leave the area, while individual small mammals and reptiles may be displaced. These impacts will be minimal given the temporary and localized nature of the work, coupled with the availability of expansive adjacent habitat.

To minimize potential impacts to nesting migratory birds, it is recommended proposed construction activities take place outside of the migratory bird breeding season (March – August). In instances where timing of construction during this season cannot be avoided, it is recommended migratory bird clearance surveys be conducted prior to proposed construction to identify any occupied nests and establish appropriate disturbance avoidance measures.

One (1) active Cooper’s hawk nest was documented during the wildlife surveys (nest ID 14072501, Figure 4, Appendix B). Cooper’s hawks are federally protected under the MBTA. Should work occur within the migratory bird breeding season (March - August), disturbance to nesting birds could occur. To avoid and minimize impacts to nesting birds, USFWS recommends a 0.25-mile spatial buffer around the nest (Whittington & Allen, 2008). During breeding season all potentially impacting activities should be avoided within the spatial buffer. Potentially impacting activities are defined as any human activity or the use or operation of mechanical equipment which may disturb raptors at a nest site (Whittington & Allen, 2008).

A no effect determination was made for all federally threatened or endangered species due to lack of critical habitat, general habitat, or occurrence in the proposed project area.

A no effect determination was made for fifteen (15) of the sixteen (16) state threatened, endangered and species of greatest conservation need analyzed in Table 5. Those species include spotted bat, Pacific marten, New Mexico meadow jumping mouse, white-tailed ptarmigan, bald eagle, peregrine falcon, least tern, yellow-billed cuckoo, boreal owl, Mexican spotted owl, violet-crowned hummingbird, southwestern willow flycatcher, Baird’s sparrow, Lilljeborg’s peacocks,

and Santa Fe cholla. Potential impacts to the gray vireo could occur; however, no gray vireos were documented during the wildlife surveys. Additionally, none of these impacts are likely to result in a trend toward federal listing or loss of population viability for any of these species.

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Appendix A

Proposed Project Area Photographs



Figure A.1. View of Town of Madrid southeast hillside.



Figure A.2. View of typical pinyon-juniper habitat in the northern section of the proposed project area.



Figure A.3. View of arroyo/juniper/gob pile habitat in the northern section of the proposed project area.



Figure A.4. View of arroyo riparian habitat north of town in proposed project area.



Figure A.5. View of arroyo riparian habitat south of town in the proposed project area.



Figure A.6. View of typical juniper habitat in southeast section of proposed project area.

Appendix B

Raptor Nest Photographs



Figure B.1. Location of nest ID 14072501 in tree



Figure B.2. View of nest ID 14072501 with an adult Cooper's hawk sitting in the nest. Nest photo was taken April 18, 2019 during a prior AML Program project.

Appendix C

Water Drainages Photographs



**Figure C.1. DR01 facing upstream in the northern section of the APE
(photo direction -south)**



**Figure C.2. DR01 facing downstream in the northern section of the APE
(photo direction - north)**



Figure C.3. DR02 convergence with DR01 facing upstream in the northern section of the APE (photo direction - southwest)



Figure C.4. DR03 convergence with DR01 facing upstream in the southern section of the APE (photo direction - south)



Figure C.5. DR04 facing upstream in the middle section of the APE (photo direction - east)



Figure C.6. Yellow lines mark approximate location of OHWM in DR01 (photo direction – north)

Appendix D

USFWS Official Species List



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:

May 15, 2019

Consultation Code: 02ENNM00-2019-SLI-1103

Event Code: 02ENNM00-2019-E-02327

Project Name: Madrid Stormwater and Erosion Safety Project

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
- Migratory Birds

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: 02ENNM00-2019-SLI-1103

Event Code: 02ENNM00-2019-E-02327

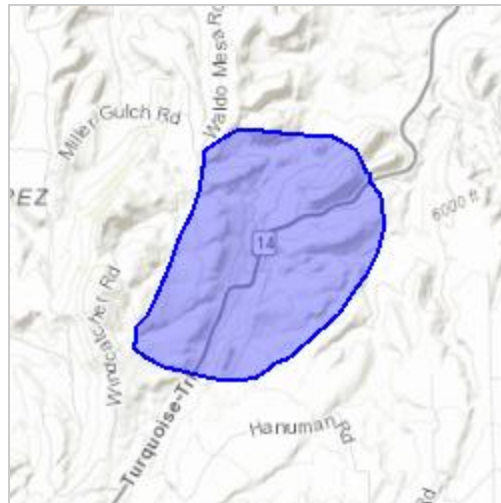
Project Name: Madrid Stormwater and Erosion Safety Project

Project Type: ** OTHER **

Project Description: Located in Madrid, NM, the Madrid Stormwater and Erosion Safety Project is an Abandoned Mine Lands (AML) safeguarding project designed to establish stormwater conveyances in the town of Madrid. The Area of Potential Effect (APE) is approximately 106 acres and the timing is not yet known because engineering plans have not been finalized.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/35.40793971603689N106.15029598290326W>



Counties: Santa Fe, NM

Endangered Species Act Species

There is a total of 4 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 Fisheries¹, 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
<p>New Mexico Meadow Jumping Mouse <i>Zapus hudsonius luteus</i></p> <p>There is final critical habitat for this species . Your location is outside the critical habitat. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ If project affects dense herbaceous riparian vegetation along waterways (stream, seep, canal/ditch). <p>Species profile: https://ecos.fws.gov/ecp/species/7965</p>	Endangered

Birds

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

Critical habitats

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

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](#).

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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
Black-chinned Sparrow <i>Spizella atrogularis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31
Brewer's Sparrow <i>Spizella breweri</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9291	Breeds May 15 to Aug 10

NAME	BREEDING SEASON
Grace's Warbler <i>Dendroica graciae</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 20 to Jul 20
Pinyon Jay <i>Gymnorhinus cyanocephalus</i> 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
Virginia's Warbler <i>Vermivora virginiae</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9441	Breeds May 1 to Jul 31
Willow Flycatcher <i>Empidonax traillii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482	Breeds May 20 to Aug 31

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 (|)

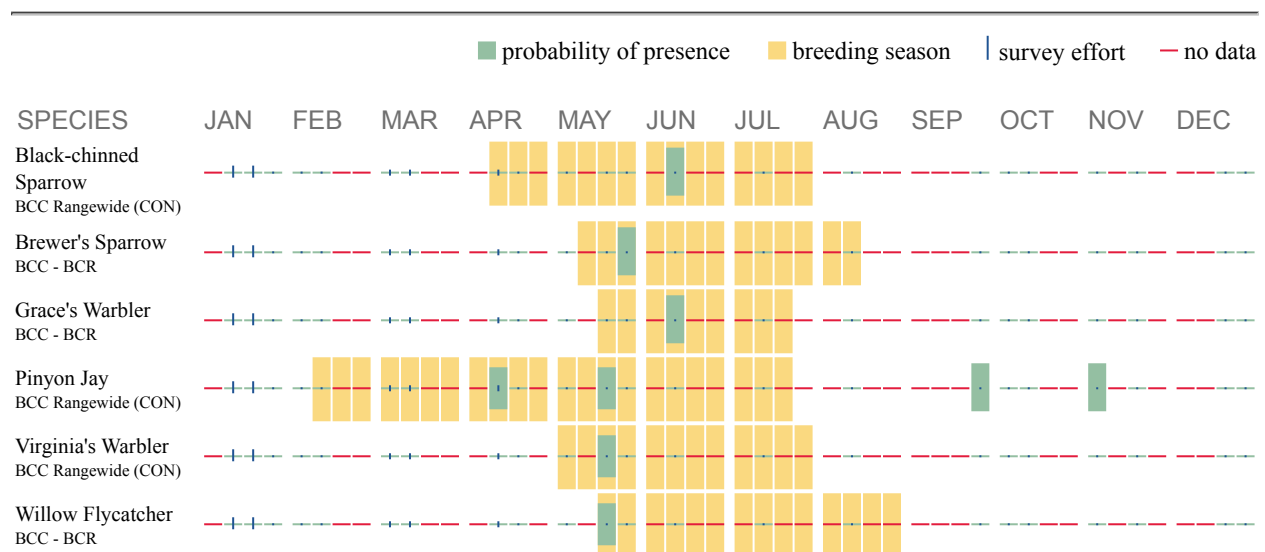
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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 <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.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](#) and/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 migratory birds potentially occurring 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 [AKN Phenology 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, migrating or present year-round in my project 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 refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). 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.
