APPENDIX C – FY 2022 Natural Resources Evaluation in Fillmore Canyon, Parcel D, Fort Bliss Military Reservation, Doña Ana County, New Mexico

FY 2022 Natural Resources Evaluation in Fillmore Canyon Parcel D

Fort Bliss Military Reservation, Dona Ana County, New Mexico

FINAL

Submitted to:

Directorate of Public Works, Environmental Division Fort Bliss Training Complex Fort Bliss, Texas and New Mexico

And

U.S. Army Corps of Engineers, Tulsa District

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Acronyms and Abbreviations

AR	Army Regulation
BGEPA	Bald and Golden Eagle Protection Act
DOD	Department of Defense
DPW-ED	Directorate of Public Works, Environmental Division
EO	Executive Order
ESA	Endangered Species Act
FR	Federal Register
ft.	foot (feet)
GIS	geographic information systems
GOEA	Golden Eagle
MBTA	Migratory Bird Treaty Act
NM	New Mexico
TES	Threatened Endangered Species
US	United States
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
WSMR	White Sands Missile Range

1.0 Introduction

1.1 Fort Bliss

Fort Bliss Training Complex (FBTC) is a multi-mission Army Installation located in west Texas and southern New Mexico. Encompassing approximately 1.12 million acres, an estimated 11 percent of the land is in El Paso County, Texas, and 89 percent is in Dona Ana and Otero Counties in New Mexico. It consists of a Cantonment Area, which is comprised of Main Post, William Beaumont Army Medical Center, and Logan Heights; East Bliss area, which contains the Biggs Army Airfield (AAF); and portions of four mountain ranges: the Organ, Franklin, Hueco, and Sacramento Mountains (**Figure 1.1-1**).

The United States (U.S.) Army has the dual responsibility of supporting the military mission while being a responsible steward of natural resources and complying with federal and state environmental laws like the Endangered Species Act (ESA) of 1973, as amended (U.S. Fish and Wildlife Service 2014).

Fort Bliss Directorate of Public Works Environmental Division (DPW-ED) tasked Cherokee Nation Support, Service and Solution (CN3S) biologists with conducting Golden Eagle surveys, habitat assessments for various threatened and endangered species, species of concern (SoC), and verification of surface water sources for FBTC. The work completed for this task was in support of the Fillmore Canyon Parcel D project area of Dona Ana Range, Fort Bliss, New Mexico (**Figure 1.1-2**). The project footprint encompasses 2,074 acres. Surveys for Golden Eagles (*Aquila chrysaetos*) and natural springs were conducted throughout the month of May 2022 within the project footprint.

Figure 1.1-1. Fort Bliss Training Complex

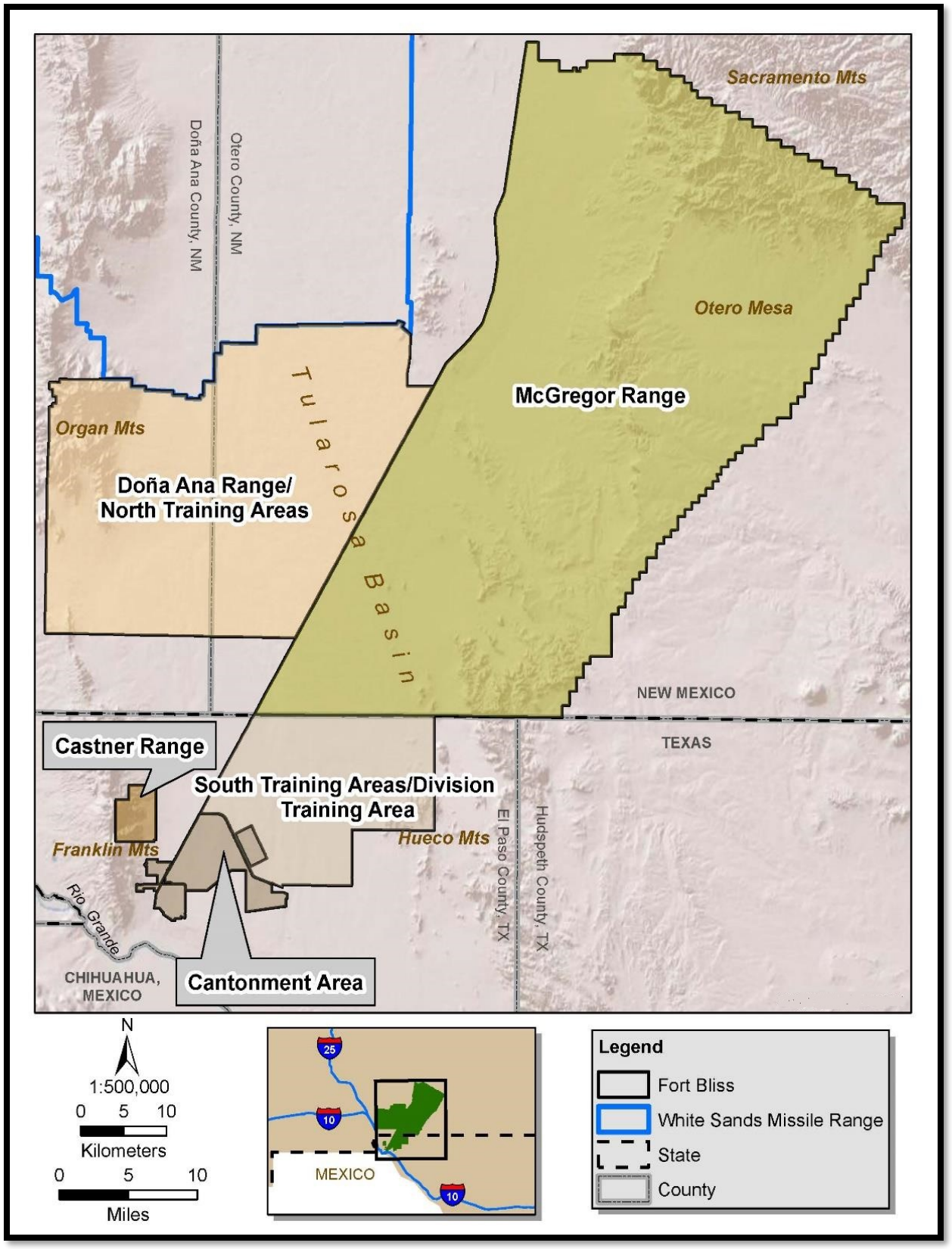
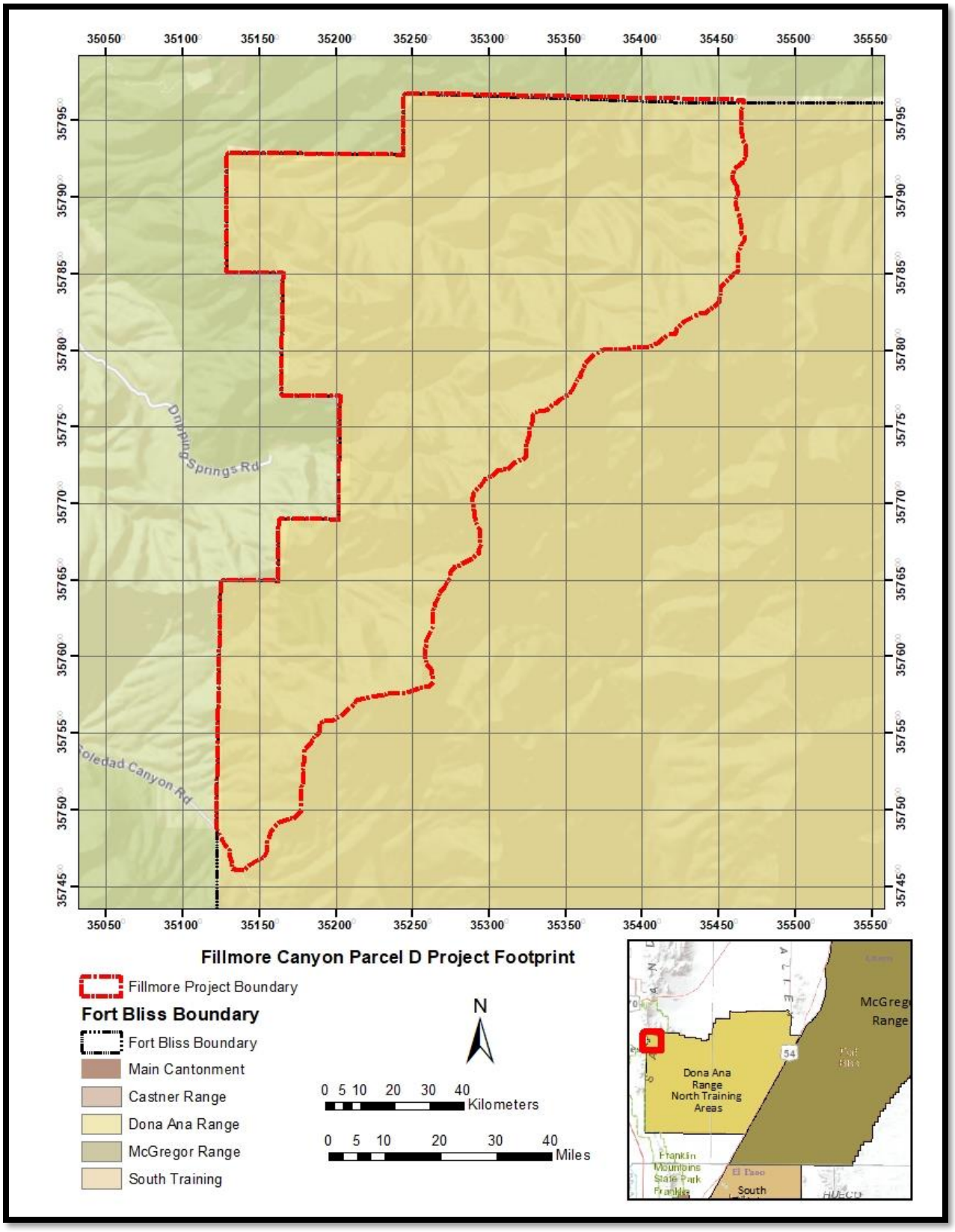


Figure 1.1-2. Fillmore Canyon Parcel D Project Footprint



1.2 Organ Mountains

The Organ Mountains, located in south-central New Mexico are part of a 150-mile-long, west-tilted fault block extending from El Paso, Texas, northward to central New Mexico (Seager 1981). The Organ Mountains rise above the Tularosa Basin on the east and the Rio Grande Valley on the west and lie between the San Andres range to the north and the Franklin range to the south in a relatively continuous chain of north-south trending ranges. The Organ Mountains differ from the San Andres Mountains and the Franklin Mountains by their greater altitude and volcanic origin (Emerson 1939). Oldest rocks exposed are Precambrian granite, overlain by 2600 meters (m) or 8,500 feet (ft) of mostly marine basement-cored block uplift. Aprons of alluvial fans mantle the foot of the range on both sides and locally the slope of the mountain bedrock declines at the mountains' base to become rock pediments.

The mountains range in elevation from desert floor to approximately 2700 m (8800 ft) at Organ Peak and rise about 1.6 kilometers (km; 1 mile) from the Chihuahuan Desert valley floor where dominant vegetation is creosote bush (*Larrea tridentata)*, soap tree yucca (*Yucca elata*), honey mesquite (*Prosopsis glandulosa*), snake weed (*Gutierrezia sarothrae*) and tarbush (*Flourensia cernua*; Seager 1981, Stark and Castetter 1982). The vegetation of the Organ Mountains is very complex for such a compact mountain range. Rainfall patterns vary between the eastern and western sides. The Organ Mountains consists of a complex pattern of vegetation associations that vary with topographical features such as slope exposure, steepness, elevation, and occurrence of large boulders and rock slabs. These factors cause great differences in the availability of moisture dividing them into four consecutive and overlapping zones (from lowest to highest elevation): Upper Desert Grassland, Savanna, and Woodland, Chaparral, and Deciduous Woodland (Dick-Peddie and Moir 1970). Common plant species include catclaw mimosa (*Mimosa aculeaticarpa*), sotol (*Dasylirion wheeleri*), netleaf hackberry (*Celtis reticulata*), oregonilla (*Aloysia wrightii*), Arizona white oak (*Quercus arizonica*). The montane forest communities of the Organ Mountains contain many threatened and endangered species (TES) such as, but not limited to, Organ Mountain figwort (*Scrophularia laevis*), Standley's draba (*Draba standleyi*), Organ Mountain evening primrose (*Oenothera organensis*). Characteristic vegetation of the montane forest includes oaks (*Quercus* spp.), one-seed juniper (*Juniperus monospermic*), alligator juniper *(Juniper deplane*), pinyon pine (*Pinus edulis*), ponderosa pine (*Pinus ponderosa*), and at higher elevations Douglas fir (*Pseudotsuga menziesii*; Kearny and Peebles 1969).

In general, stands of ponderosa pine form the lower forest boundary, adjoining either grassland, pinyon-juniper woodland, or mixed woodland. At higher elevations ponderosa pine (*Pinus ponderosa*) merge with Douglas fir, with which ponderosa pine is closely associated, and ponderosa pine may even dominate in burned areas with hot, dry southern exposures (Greenlee 1993).

To sustain such a diverse plant life, stream corridors are significantly important in an arid environment. Biological and habitat diversity are known to be higher along ephemeral and intermittent stream corridors. Monitoring of natural springs is essential to maintain the health of an ecosystem in a desert environment. Stream health is of utmost concern due to the Organ Mountains being home to endemic species, species of conservation concern, federally and state listed species, and many birds protected under the Migratory Bird Treaty Act (MBTA) of 1918.

2.0 Golden Eagle Surveys

2.1 Introduction

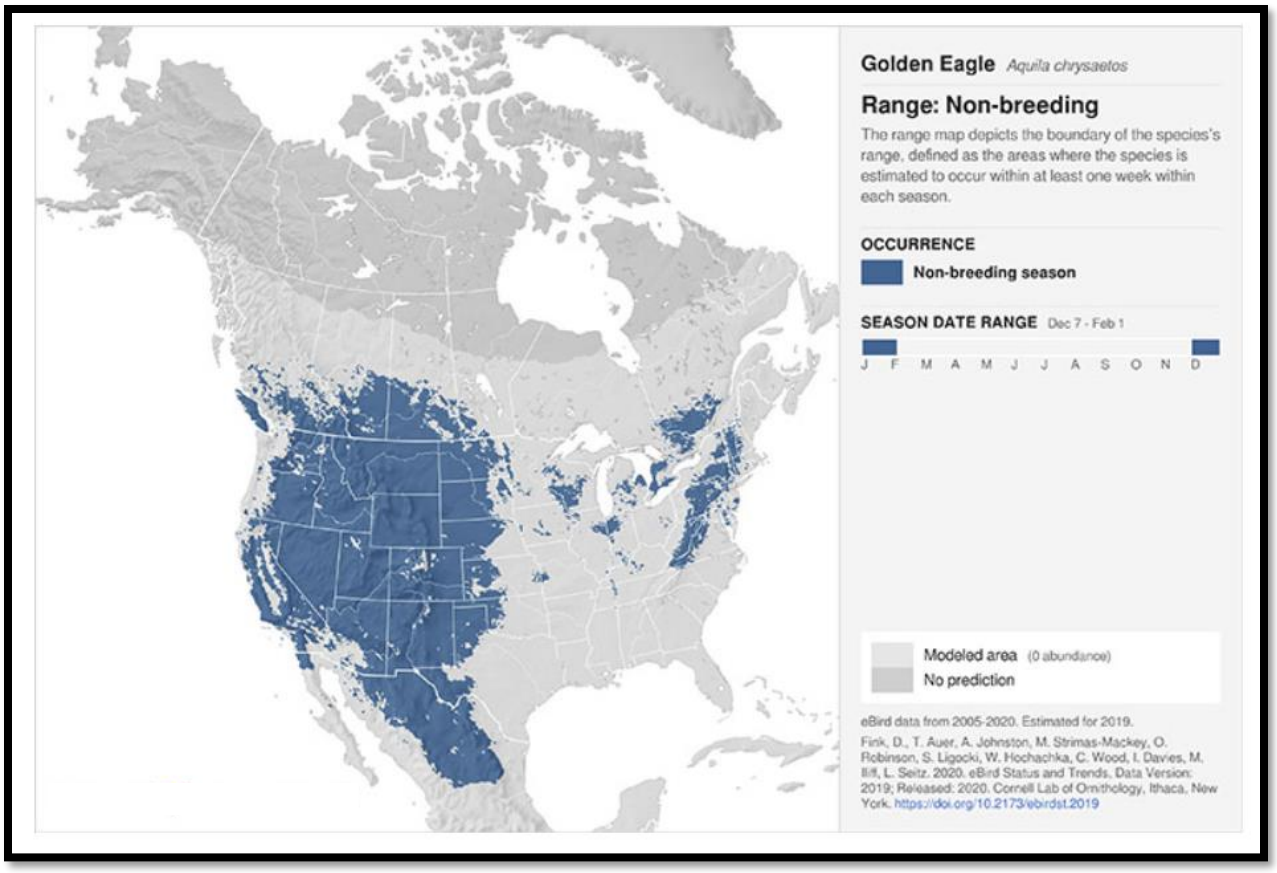
Golden Eagles are protected by the Bald and Golden Eagle Protection Act (BGEPA) of 1940, as amended (U.S.F.G. 1940). The Eagle Act provides the Secretary of the Interior may authorize certain otherwise-prohibited activities through promulgation of regulations. Golden Eagles (GOEA) are protected by three federal laws: The BGEPA, the Migratory Bird Treaty Act and the Lacey Act, in which all prohibit the possession, use and sale of eagles or their feathers and parts; as well as several other activities, including the transportation of eagles, feathers, and parts that have been illegally obtained (U.S.F.W.S. 2016).

Golden Eagles are found worldwide and are of great significance for various cultures across the world as well as an increasing global concern. In the United States, the range of the GOEA runs from Mexico throughout much of Western North America and as far north as Alaska. There are concerns that Golden Eagles are still suffering from population decline across the country, caused by many factors ranging from climate change to habitat loss and unintentionally killed in conjunction with many lawful activities (Wiens and Kolar 2017, Milsap 2021).

The GOEA is a deep brown with golden-brown feathers on the back of its head and neck. Immature eagles are distinguished from full-grown adults by the white patches at the “wrists” towards the wing tips, whereas adults wouldn’t have white at all. Immature Bald Eagles can be distinguished from young Golden Eagles by the white feathers near their armpits-young Golden Eagles have white patches towards the wing tips instead, unlike the Bald Eagle, the GOEA’s legs are completely covered in feathers up to its feet. Their wingspan ranges from 185 to 220 cm (72 to 87 in), (Miller 2017).

These eagles live and use various habitat types ranging from sea level to high mountains. Eagles can switch habitats throughout an annual cycle favoring certain types over others in response to prey availability. However, surveys have shown older GOEA appear to prefer using slightly better-quality habitats than younger birds (Young 1995). Common habitat types include open expanse dominated by short vegetation, interspersed mountain ranges, rolling hills, or other similar topographic features. The most important habitat features are the presence of prey, elevated perches, and topographic reliefs that eagles can use as perches, nesting, and roosting places (Miller 2017). In North America, their habitat ranges from Canada into central Mexico (**Figure 2.1-1**).

Figure 2.1-1. Golden Eagle's non-breeding or wintering range.



Source: Fisk et al. 2020.

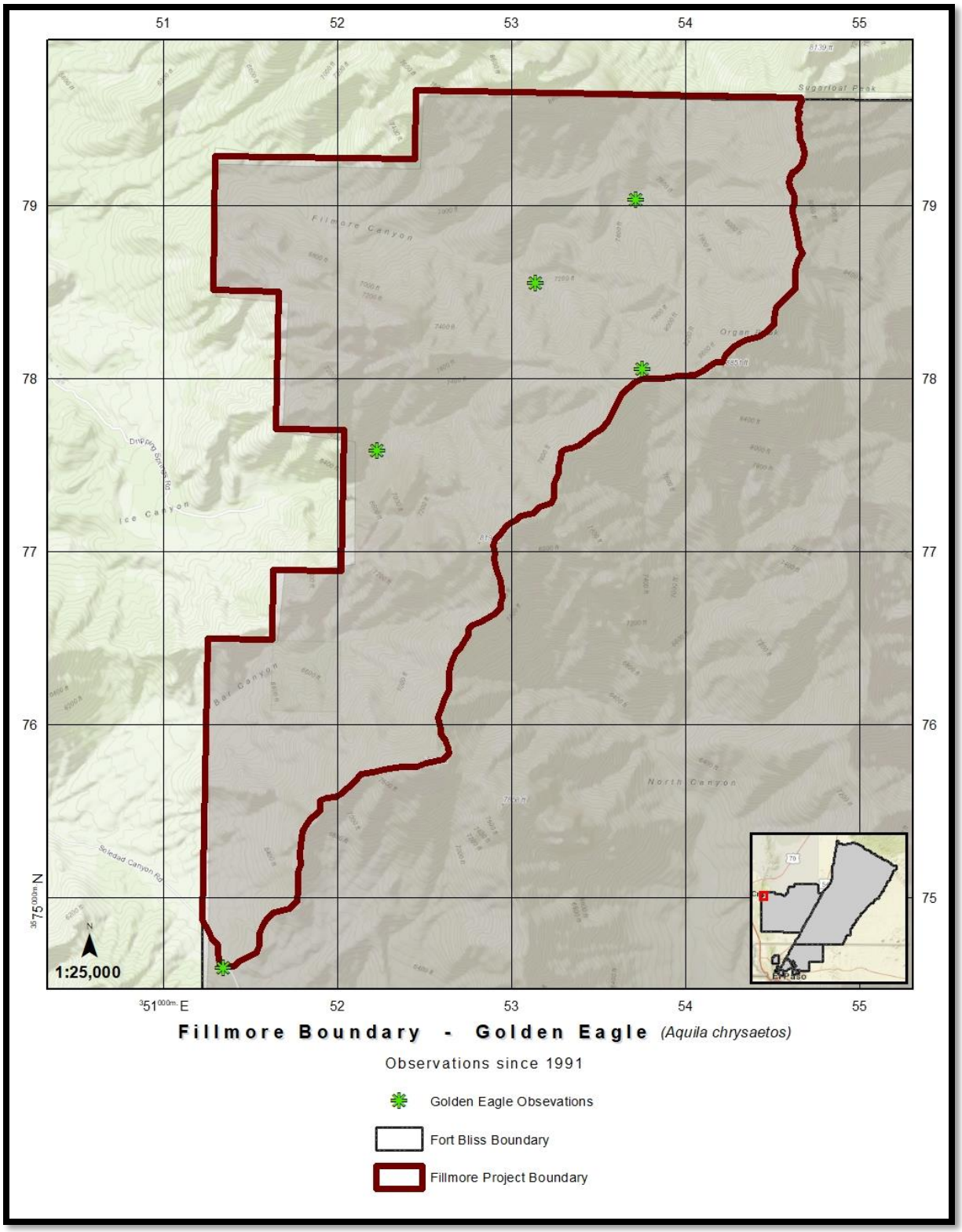
2.2 Project Summary

The primary objective of this survey was to note the presence of any Golden Eagles within the project footprint. Fort Bliss has confirmed incidental observations of GOEA within the project footprint, but no confirmed nesting sightings have been recorded. The project footprint covers 2,074 acres within the Organ Mountains. Surveys were conducted throughout the month of May 2022 along three main canyons: Fillmore Canyon, Bar Canyon, and Ice Canyon. The purpose of this survey is to identify any individuals, nesting pairs, or nests located within the project area and record all observations.

2.3 Methods

Historical records for the area were gathered from the Fort Bliss Natural Resources Database (FB NRDB), records were reviewed to assess if any confirmed observations of GOEA were within the project footprint (**Figure 2.3-1**). Due to time constraints, the entire 2,074 acres could not be surveyed; efforts were focused by ground on areas within the project footprint where these previous observations were recorded. Surveys were conducted on foot and consisted of the use of spotting scopes and high-powered binoculars. Potential nesting cliffs and rock outcrops were identified and observed for any signs of nesting or activity in general. Three main canyon systems were surveyed based on historical observation records. Biologists walked to an area with potential habitat and scoped the area for 30 minutes at each stop.

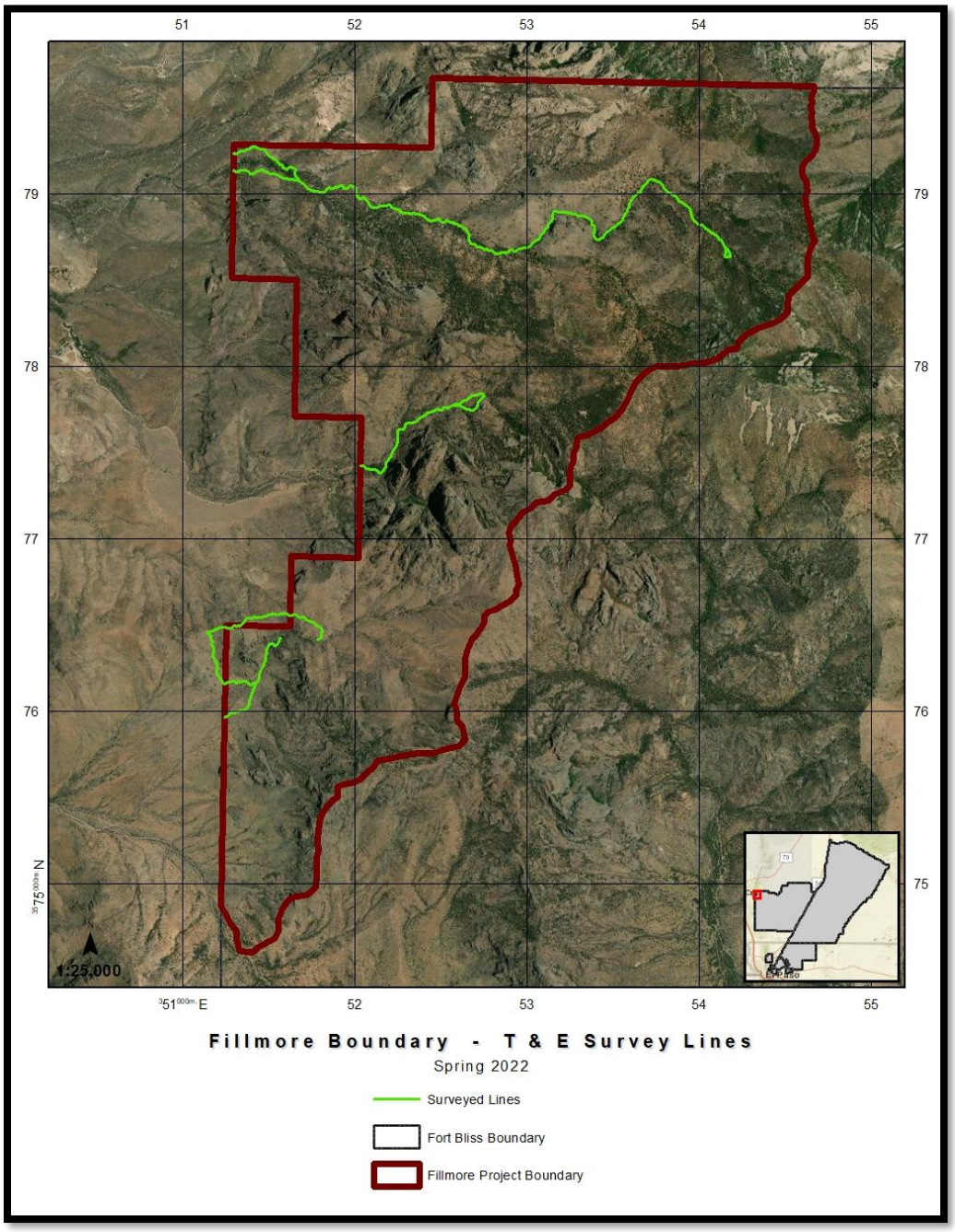
Figure 2.3-1. Historical records of Golden Eagles observed within the project footprint.



2.4 Results

During the field surveys, there were no observations of GOEA. Included in the survey were the main canyon areas that are most easily accessible through the western side of the project boundary 1) Fillmore Canyon 2) Ice Canyon and 3) Bar Canyon (**Figure 2.4-1**). During surveys, no ideal nesting cliff or rock outcrops were located within the survey areas. Cliffs were either easily accessible to predators or too visible. It was noted that these canyons are popular for hikers and human activity, which might be a deterrent for establishing nests or long-term activity. This would explain the observations only occurring as incidental, indicating that these individuals were hunting and not nesting or roosting.

Figure 2.4-1. Canyons Surveyed within Project parcel footprint



3.0 Threatened and Endangered Species Habitat Assessments

3.1 Project Summary

The Organ Mountains provides diverse habitats for a unique assemblage of rare and endemic flora and fauna species. Animal or plant species of conservation concern may be listed as threatened or endangered under the authority of state law and/or under the ESA, MBTA, and BGEPA. Species can be listed as state threatened or endangered and not federally listed. Fort Bliss has identified sixty threatened or endangered animal or plant species that are federally listed, listed by the state of New Mexico, or listed by the BLM-New Mexico as a Bureau Sensitive Species or on the watch list.

The purpose of conducting a habitat assessment is to determine if habitat is present, within the project footprint, for potentially occurring threatened, endangered, or sensitive species. Habitat assessment is a thorough characterization of habitats defined by each species within the parcel footprint. This habitat assessment will provide a detailed characterization of the quality and quantity of habitat available to support each species considered.

A potential habitat map was created for each of these species to depict potential habitat within the designated Fillmore Boundary. USFWS, BLM, BISON-N database, and NMGF lists of species with special status were reviewed to obtain the most current conservation status for all the flora and fauna located within the project boundary. Habitat assessments were completed for all species on the lists to show potential habitat and occurrence of each.

3.2 Methods

Potential habitat, or suitable habitat, is habitat featuring ecological characteristics that may provide for breeding, feeding, resting, or sheltering of any endangered or threatened wildlife species. Ecological characteristics include vegetation type, soil type and elevation. The presence, or lack thereof, of a consistent water feature (lake, pond, river, and stream) within the vicinity of the Fillmore Boundary was also a determining factor in establishing potential habitat for species of concern. Vegetation community analysis for each species was described in detail to properly assess potential habitat. For this project, two land vegetation datasets (Muldavin 1996 and Jornada 2009) were used in conjunction to delineate the land vegetation area. Sixteen land vegetation types were classified within the Fillmore Boundary ranging from a Rocky Mountain Forest of ponderosa pine to a black grama-blue grama grassland. The land vegetation types within the Fillmore Boundary are listed and described in **Table 3-1** and includes acreage percentages for each community types within the project boundary.

Potential Habitat for each species was determined initially by verifying that the species habitat range included the Fillmore Boundary. A federal and state current conservation status list including percent potential habitat for each of the species being assessed (**Table 3-2 through Table 3-6**). Once the habitat range was confirmed, the species habitat range and type description were compared to the land vegetation types located within the Fillmore Boundary (**Figure 3.2-1**). In certain instances, elevation was a determining factor in selecting potential habitat for plant species and the area was clipped to reflect the elevation range suitable for a habitat model. A map was created for each of the sixty listed species depicting the potential habitat, acreage, and vegetation types.

Fort Bliss Natural Resources and iNaturalist geodatabases were also reviewed for confirmed observation records of each species to accurately assess their occurrence within and around the project footprint.

Table 3-1. Fillmore Proposed Project Parcel Vegetation Type Descriptions

Land_Veg Data	Description	Acres within Fillmore Boundary
Forest PIPO PSME (*Pinus ponderosa - Pseudotsuga menziesii*)	This Rocky Mountain Forest occurs in the upper elevations of the Organ Mountains, generally on steep slopes. Ponderosa Pine/Gambel's Oak is the dominant Community Type. Douglas Fir-Gambel's Oak types occur just above or intermixed with the Ponderosa Pine stands. Ponderosa Pine/Mountain Muhly is in more open areas. Small inclusions are Ponderosa Pine/Prairie Junegrass, Ponderosa Pine-Grey Oak and Gambel's Oak-Whortleleaf Snowberry.	192.59
Woodland PIED JUDE (*Pinus edulis - Juniperus deppeana)*	Pinyon Pine communities dominate this Rocky Mountain Woodland on high elevation upland slopes of the Organ Mountains. Soils are rocky, but well developed and are often high in organic matter. Pinyon Pine – One-seed Juniper is the dominant Community Type and has a nearly closed tree canopy. Pinyon Pine-Sandpaper Oak is intermixed in more open tree canopies. Pinyon Pine/Scribner's Needlegrass, Pinyon Pine-Grey Oak and Pinyon Pine/Prairie Junegrass are minor inclusions.	774.00
Woodland JUMO (*Juniperus monosperma*)	This Rocky Mountain Woodland occurs on smooth rocky and gravelly slopes at moderately high elevations of the Organ Mountains. Alligator Juniper/Curlyleaf Muhly is the dominant community type. Alligator Juniper/Hairy Grama and One-seed Juniper/Oak are also prevalent. Common inclusions are One-seed Juniper/Hairy Grama and Alligator Juniper/Sideoats in similar landscape positions.	54.28
Montane Riparian	This Montane Riparian community occurs near mountain valley drainages of the Organ Mountains. Black Grama/Apache Plume is the dominant Community Type and occurs on slopes above drainages. Coyote Willow/Deergrass and Boxelder-Velvet Ash are in the drainages. Coyote Willow/Bulbous Panicum and Gambel's Oak/Whortleleaf Snowberry are small inclusions in and near the drainages.	11.18
Montane Shrubland CEMO MUSE (*Cercocarpus montanus - Muhlenbergia setifolia*)	This Montane Shrubland occurs predominately on rocky south facing slopes at mid-elevations in the Organ Mountains. It is dominated by Mountain Mahogany Community Types. Mountain Mahogany/Curlyleaf Muhly, Mountain Mahogany/Bullgrass and Mountain Mahogany/New Mexico Needlegrass are dominant types. These communities have open shrub canopies with dense herbaceous understories. Mountain Mahogany/New Mexico Muhly and Mountain Mahogany/Sideoats are inclusions that occur predominately in the Organs and have moderate closed shrub canopies and sparse herbaceous understories. Mountain Mahogany-Desert Ceanothus is a common inclusion.	395.54
Montane Shrubland QUGA SYOR (*Quercus gambelli - Symphoricarpos oreophilus*)	This Montane Shrubland is composed entirely of the Gambel's Oak-Whortleleaf Snowberry Community Type. It occurs in dense stands on north-facing slopes at mid to high elevations in the Organ Mountains.	182.83
Upper Piedmont Desert Shrubland LATR PAIN (*Larrea tridentata - Parthenium incanum*)	This Desert Shrubland is dominated by Creosotebush/Bush Muhly, Creosotebush/Sparse and Creosotebush/Mariola Community Types. They occur on gravelly soils of the upper piedmont and foothills of the Mountains. The Creosotebush/Bush Muhly stands on the upper piedmont tend to have bush muhly between as well as under the shrubs, and a higher diversity overall. Viscid Acacia/Bush Muhly and Honey Mesquite/Bush Muhly are inclusions near the transition between piedmont and basin bottom.	3.56
Foothills Desert Shrubland ACVI (*Acacia viscid*)	This Desert Shrubland is comprised mostly of Viscid Acacia Community Types on gravelly slopes of foothills, mesa scarps and upper piedmont. Soils are generally shallow. Viscid Acacia/Sideoats is the dominant community. Viscid Acacia/Mariola and Viscid Acacia/Black Grama are located at slightly lower elevations than the Sideoats Type. Viscid Acacia/Sparse and Viscid Acacia/Ocotillo are inclusions that are interspersed in the other Viscid Acacia stands.	0.44
Foothills Desert Shrubland FOSP PAIN (*Fouquieria splendens - Parthenium incanum*)	This Desert Shrubland is dominated by Ocotillo/Mariola on rocky foothills of the Organ Mountains. This community type may occur on any aspect and covers slopes, benches and ridges. Common inclusions are Ocotillo/Sparse.	21.58
Foothills Desert Shrubland MIAC BOCU (*Mimosa aculeaticarpa - Bouteloua curtipendula*)	About 93% of this Desert Shrubland is dominated by Mimosa/Sideoats on low to mid-elevation gravelly slopes of east-side canyons of the Organ Mountains. Smaller inclusions include Shrub Liveoak/Sideoats, Shrub Liveoak/Mountain Mahogany and Mimosa/Tanglehead.	20.03

Land_Veg Data	Description	Acres within Fillmore Boundary
Foothills Grassland BOCU DAWH BOHI (*Bouteloua curtipendula - Dasylirion wheeleri - Bouteloua hirsuta*)	This Foothills Grassland is located on low to mid-elevation rocky slopes of canyons in the Organ Mountains. The Sideoats-Bullgrass type dominates on north-facing slopes with Sideoats/Sotol and Hairy Grama/Sotol on south-facing slopes. Minor inclusions of Sideoats-Single Three-awn and Bullgrass/Sotol are in small patches on the slopes.	153.74
Foothills Grassland BOCU MUSE VIST (*Bouteloua curtipendula - Muhlenbergia setifolia - Viguiera stenoloba*)	This Foothills Grassland is dominated by Sideoats/Skeletonleaf Goldeneye and Sideoats/Sotol Community Types. Inclusions are Curlyleaf Muhly-New Mexico Needlegrass, Hairy Grama-Sideoats and Curlyleaf Muhly-Black Grama on similar positions in the landscape.	186.89
Foothills/Piedmont Desert Grassland BOER BOCU LATR (*Bouteloua eriopoda - Bouteloua curtipendula - Larrea tridentata*)	This Foothill/Piedmont Grassland is on the gravelly footslopes and piedmont of the Mountains. Creosotebush/Black Grama, Black Grama/Sideoats and Black Grama-Soaptree Yucca Community Types each contribute evenly to the area. Black Grama/Mariola and Black Grama/Sotol are common inclusions on the lower, rockier slopes.	31.8
Upper Piedmont Desert Grassland BOER (*Bouteloua eriopoda*)	This Desert Grassland is co-dominated by Black Grama/Torrey's Jointfir and Black Grama/Honey Mesquite Community Types. These are on coarse, gravelly piedmont of the Organ Mountains.	0.91
Mesa/Foothills Grassland STNE BOCU (*Stipa neomexicana - Bouteloua curtipendula*)	This Mesa-Foothills Grassland occurs on rocky ridges of slopes and rises and consists mostly of New Mexico Needlegrass communities. New Mexico Needlegrass/Sideoats, New Mexico Needlegrass-Black Grama and New Mexico Needlegrass-Hairy Grama each contribute equally to the area. Sideoats/Banana Yucca is a minor inclusion in similar positions in the landscape. Blue Grama-Sideoats is an inclusion occurring in shallow, rocky depressions.	0.22
Mesa Grassland BOER BOGR YUBA (*Bouteloua eriopoda - Bouteloua gracilis - Yucca baccata*)	This Mesa Grassland is located where soils are shallow and rocky. Black Grama-Blue Grama/Banana Yucca is the dominant Community Type. Black Grama-Blue Grama is an inclusion on finer, deeper soils.	0.23

Figure 3.2-1. Vegetation communities within the Fillmore Project Parcel

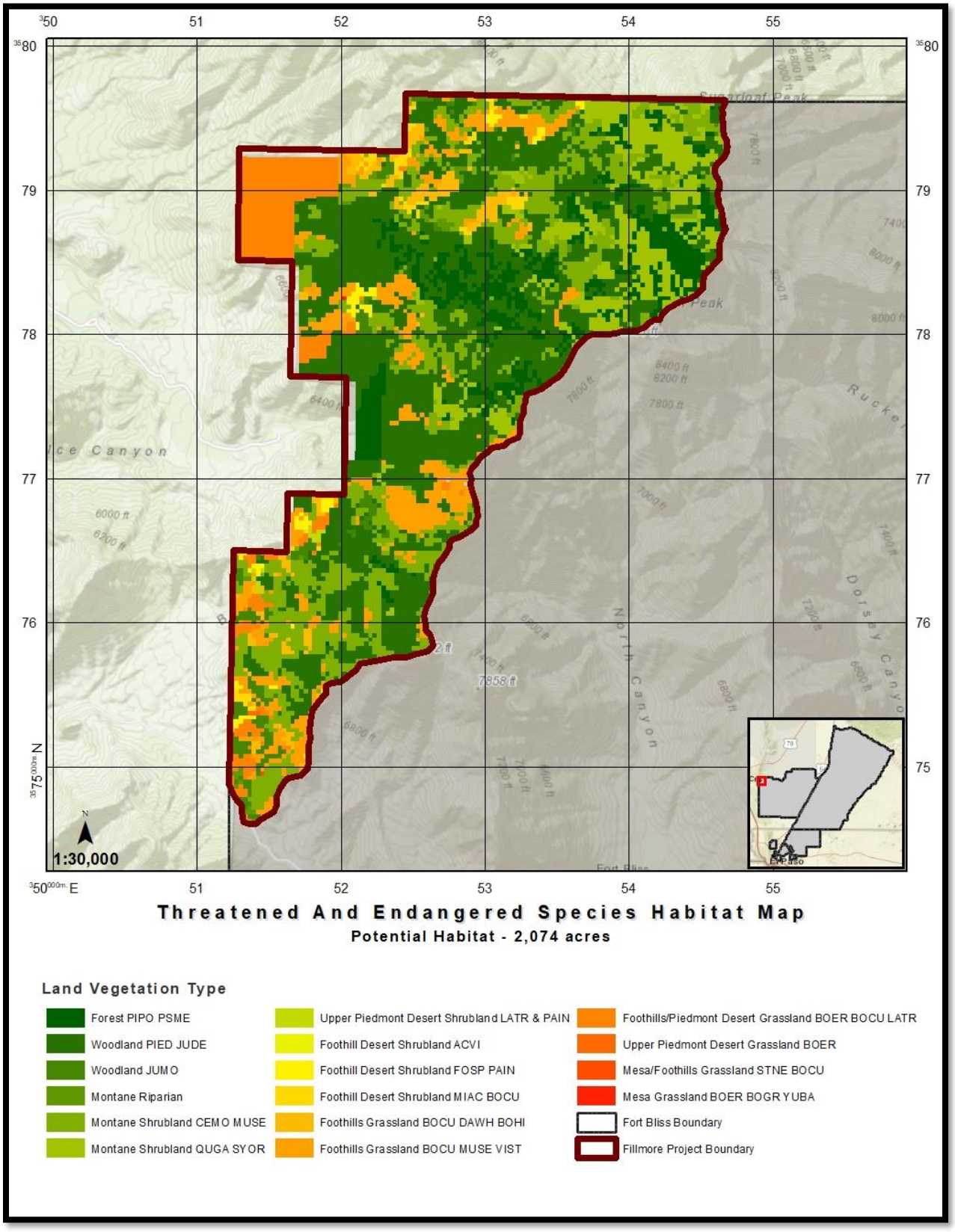


Table 3-2. Special Status Bird Species that may occur in the proposed parcel.

Common Name	Species	Federal Status	NM Status*	BLM Status *	% Potential Habitat in Fillmore Project Area	Acers of Potential Habitat
Arizona Grasshopper Sparrow	*Ammodramus savannarum perpallidus*	MBTA	SGCN/E	BLM-S	0%	0
Baird's Sparrow	*Ammodramus bairdii*	MBTA	SGCN/T	BLM-S	0%	0
Bald Eagle	*Haliaeetus leucocephalus*	MBTA	SGCN/T	BLM-M	0%	0
Bell's Vireo	*Vireo bellii*	MBTA	SGCN/T	BLM-S	**77%**	**1,592**
Black-chinned Sparrow	*Spizella atrogularis*	MBTA	SGCN	BLM-W	**2%**	**46**
Canyon Towhee	*Melozone fusca*	MBTA	--	BLM-M	**89%**	**1,840**
Cassin's Sparrow	*Aimophilia cassinii*	MBTA	SGCN	BLM-M	**6%**	**134**
Chestnut-collard Longspur	*Calcarius ornatus*	MBTA	SGCN	BLM-S	**6%**	**134**
Ferruginous Hawk	*Buteo regalis*	MBTA	--	BLM-M	**0.02%**	**0.5**
Golden Eagle	*Aquila chrysaetos*	MBTA/BGEPA	--	--	**98.02%**	**2,033.0**
Grace's Warbler	*Setophaga graciae*	MBTA	SGCN	BLM-W	**58%**	**1,204**
Gray Vireo	*Vireo vicinior*	MBTA	SGCN/T	BLM-W	**78%**	**1,613**
Interior Least Tern	*Sterna antillarum athalassos*	MBTA	SGCN/E	BLM-M	0%	0
Lark Bunting	*Calamospiza melanocorys*	MBTA	--	BLM-M	0%	0
Loggerhead Shrike	*Lanius ludovicianus*	MBTA	SGCN	BLM-M	**98%**	**2,033**
Long-Billed Curlew	*Numenius americanus*	MBTA	SGCN	BLM-M	0%	0
Mexican Spotted Owl	*Strix occientalis lucida*	MBTA/FED-T	SGCN	BLM-M	**9%**	**193**
Mexican Whip-poor-will	*Antrostomus arizonae*	MBTA	SGCN	BLM-S	**47%**	**967**
Mountain Plover	*Charadrius montanus*	MBTA	SGCN	BLM-W	0%	0
Northern Aplomado Falcon	*Falco femoralis septentrionalis*	MBTA/FED-E	SGCN/E	BLM-M	**0.02%**	**0.5**
Painted Bunting	*Passerin ciris*	MBTA	--	BLM-W	**66%**	**1,370**
Peregrine Falcon	*Falco peregrinus*	MBTA	SGCN	BLM-W	**98%**	**2,033**
Pinyon Jay	*Gymnorhinus cyanocephalus*	MBTA	SGCN	BLM-S	**49%**	**1,021**
Piping Plover	*Charadrius melodus*	MBTA/FED-T	T	BLM-M	0%	0
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	FED-E	SCCN/E	--	0%	0
Sprague's Pipit	*Anthus spragueii*	MBTA	SGCN	BLM-S	**6%**	**134**
Thick-billed Longspur	*Rhynochopanes mccownii*	MBTA	SGCN	BLM-M	0%	0
Varied Bunting	*Passerina versicolor*	MBTA	SGCN/T	BLM-M	**30%**	**627**
Virginia Warbler	*Leiothlypis virginiae*	MBTA	SGCN	BLM-S	**78%**	**1,613**
Western Burrowing Owl	*Athene cunicularia*	MBTA	SGCN	BLM-S	**49%**	**1,012**
Yellow-billed Cuckoo	*Coccyzus americanus*	MBTA/FED-T	SGCN	--	0%	0
Zone-tailed Hawk	*Buteo albonotatus*	MBTA	--	--	**20%**	**416**

*Source:2020 Biennial Review of Threatened and Endangered species of New Mexico

**Source: 2018 BLM List of Threatened and Endangered Species:

Codes: BLM-M= No status only MBTA protections; BLM-S= Sensitive Species; BLM-W=Watch list

Table 3-3. Special Status Plant Species that may occur in the proposed parcel

Common Name	Species	Federal Status	NM Status*	BLM List *	% Potential Habitat in Fillmore Project Area	Acres of Potential Habitat
Cereus Night Blooming cactus	*Peniocereus greggi v greggii*	-	E	BLM-S	0%	0
Crested Coral-Root	*Hexalectris arizonica v arizonica*	-	E	BLM-W	**49%**	**1,021**
Nodding Cliff Rockdaisy	*Perityle cernua*	-	SOC	BLM-S	**1%**	**23**
Organ Mountain evening-primrose	*Oenothera organensis*	-	SOC	BLM-W	**31%**	**637**
Organ Mountain figwort	*Scrophularia laevis*	-	SOC	BLM-S	**45%**	**924**
Organ Mountain Giant hyssop	*Agastache pringlei var verticillata*	-		BLM-S	**41%**	**845**
Organ Mountain Indian paintbrush	*Castilleja organorum*	-	SOC	BLM-S	**52%**	**1,077**
Organ Mountain scaleseed	*Spernolepis organensis*		SOC	BLM-S	0%	0
Organ Mountains foxtail cactus	*Escobaria organensis*	-	E	BLM-W	**69%**	**1,424**
Penstemon Alamoensis***	*Penstemon alamoensis*	-	SOC	BLM-S	0%	0
Roetter's Hedgehog Cactus	*Echinocereus x roetteri var. roetteri*	-	N/A	BLM-S	0%	0
Sand Prickley Pear	*Opuntia arenaria*	-	E	BLM-S	0%	0
Sneed's Pincushion Cactus	*Escobaria sneedii v sneedii*	E	E	BLM-S/F-E	0%	0
Standley's draba	*Draba standleyi*	-	SOC	N	**0.1%**	**3**

*Source:2020 Biennial Review of Threatened and Endangered species of New Mexico
**Source: 2018 BLM List of Threatened and Endangered Species
Codes: BLM-M= No status only MBTA protections; BLM-S= Sensitive Species; BLM-W=Watch list

Table 3-4. Special Status Invertebrate Species that may occur in the proposed parcel

Common Name	Genus	Federal Status	NM Status*	BLM List *	Global Conservation Rank	% Potential Habitat in Fillmore Project Area	Acres of Potential Habitat
Boulder Canyon woodlandsnail	*Ashmunella auriculata*	--	--	N	S2	**43%**	**892**
Beasley woodlandsnail	*Ashmunella beasleyi*	--	--	N		0%	0
Organ Mountain woodlandsnail	*Ashmunella organensis*	--	--	N	S2	**43%**	**892**
Franklin Mountain talussnail	*Sonorella metcalfi*	--	--	N	S1	0%	0
Organ Mountain talussnail	*Sonorella orientis*	--	--	N	S2	**43%**	**892**
Maple Canyon woodlandsnail	*Sonorella todseni*	--	SGCN/T	BLM-S	S1	0%	0

*Source:2020 Biennial Review of Threatened and Endangered species of New Mexico
**Source: 2018 BLM List of Threatened and Endangered Species
Codes: BLM-M= No status only MBTA protections; BLM-S= Sensitive Species; BLM-W=Watch list

Table 3-5. Special Status Mammals Species that may occur in the proposed parcel

Common Name	Species	Federal Status	NM Status*	BLM List *	% Potential Habitat in Fillmore Project Area	Acres of Potential Habitat
Arizona Black-tailed Prairie dog	*Cynomys ludovicianus*	--	SGCN	BLM-S	0%	0
Desert Bighorn Sheep	*Ovis canadensis mexicana or nelsoni*	DELISTED	DELISTED	BLM-W	50%	1,032
Gray-footed chipmunk	*Neotamias canipes sacramentosis*	--	E	--	0%	0
Mexican Gray Wolf	*Canis lupus baileyi*	E	E	--	49%	1,021
Organ Mountain Colorado Chipmunk	*Neotamias quadrivittatus australis*	--	SGCN/T	--	41%	844
Spotted Bat	*Euderma maculatum*	--	SGCN/T	BLM-S	80%	1,659
Townsend's Big-eared Bat	*Corynorhinus townsendii*	--	SGCN	BLM-S	80%	1,659

*Source:2020 Biennial Review of Threatened and Endangered species of New Mexico
**Source: 2018 BLM List of Threatened and Endangered Species
Codes: BLM-M No status only MBTA protections; BLM-S Sensitive Species; BLM-W Watchlist

Table 3-6. Special Status Reptile Species that may occur in the proposed parcel

Common Name	Species	Federal Status	NM Status*	BLM List *	% Potential Habitat in Fillmore Project Area	Acres of Potential Habitat
Gray-banded Kingsnake	*Lampropeltis alterna*	--	SGCN/E	BLM-W	2%	42
Mottled Rock Rattlesnake	*Crotalus lepidus ssp. Lepidus*	--	SGCN/T	BLM-W	7%	138

*Source:2020 Biennial Review of Threatened and Endangered species of New Mexico
**Source: 2018 BLM List of Threatened and Endangered Species
Codes: BLM-M No status only MBTA protections; BLM-S Sensitive Species; BLM-W Watchlist

3.3 Birds

3.3.1 Arizona Grasshopper Sparrow (*Ammodramus savannarum perpallidus*)

Species Description

The Grasshopper Sparrow (*Ammodramus savannarum perpallidus*) is a widely distributed grassland bird with four recognized subspecies (Vickery 1996). It is a small sparrow with a robust beak, flesh-colored legs, and streaked black and chestnut brown feathers on its back; its belly and breast are creamy buff or white. This sparrow has a dark crown with a light-colored crown stripe and yellowish feathers on the face surrounding the eyes, which are disrupted by a dark line extending backwards from the eye; it is stockier, bigger headed and has a relatively shorter tail than other *Ammodramus* sparrows (Dewey 2009, Ruth 2017).

Habitat Requirements and Limiting Factors

Although a common species in Northern American grasslands, the Grasshopper Sparrow populations are showing continent-wide long-term declines (Sauer et al. 2014). It inhabits grasslands, hayfields, and prairies, where it feeds off seeds and insects, including grasshoppers, beetles, caterpillars, and ants (Audubon 2022, Ruth 2017).

Fort Bliss has historical records for the Arizona Grasshopper Sparrow; however, these were all from Otero Mesa grassland area. INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment analysis showed no potential habitat within the project footprint.

3.3.2 Baird's Sparrow (*Ammodramus bairdii*)

Species Description

The Baird's sparrow (*Ammodramus bairdii*) is an endemic North American grassland small and inconspicuous bird. It is currently recognized as a National Bird of Conservation Concern by the U.S. Fish and Wildlife Service (USFWS), (USFWS 2008); it is designated on the Partners in Flight national watch list as having maximum vulnerability due to its limited distribution and declining populations. Overall, it appears flat headed, large billed and short tailed. It is Identified by its ochre-colored face and median crown stripe, dark markings on the face, a brown finely streaked breast, and scaly appearance of its upper-parts due to lighter colored edging on wing and back feathers (Rising 1996). Baird's sparrow is like the adult Grasshopper sparrow (*Ammodramus savannarum*), but the adult grasshopper sparrow has different coloration on its head and lacks the streaked necklace on the breast. Baird's sparrow is approximately 13cm (5.25 in) in size, with a wingspan of less than 23 cm (9 in), (GSRC 2013).

Habitat Requirements and Limiting Factors

Baird's sparrow is associated with native mixed, dense, and extensive tracts of native prairie ecosystems, especially those with minimal grazing and sparse shrub coverage (Arnold and Higgins 1986, Samson and Knopf 1996, Green et al. 2002); it inhabits grasslands across its breeding and winter ranges (Vickery et.al. 1999). It is thought that grassland bird species have narrower winter habitat niches and use areas with structural characteristics like those in breeding habitats (Wiens 1974, Grzybowski 1983, Ballard 1999). Individuals are not present or are recorded in exceptionally small numbers in cropland areas of high agricultural activity. Individuals can appear partially nomadic, and the species are known to exhibit

significant fluxes in population densities between years. This behavior is thought to be an evolved response to the need to shift locations and find suitable habitat elsewhere due to the once common influence of fire and grazing events in the prairie ecosystem (Dale et al. 1999).

Fort Bliss contains suitable habitat for Baird's sparrow (LTEC 2014) and in recent years, numerous confirmed observations have occurred on Fort Bliss (LTEC 2011, LTEC 2013). These observations, however, have been on the Otero Mesa portion of Fort Bliss. Based on the habitat requirements needed to support this species, the habitat assessment analysis showed no potential habitat within the project footprint.

3.3.3 Bald Eagle (Haliaeetus leucocephalus)

Species Description

The Bald Eagle (*Haliaeetus leucocephalus*) owes its name to its white-feathered head that gleams in contrast to their chocolate-brown body and wings; it has a white tail and a yellow beak. They are members of the sea eagle group (Genus *Haliaeetus*), with eight species distributed worldwide (Jackman). This is a large eagle, with a wingspread of about 7 feet. Juveniles are mostly brown with brown beaks, white mottling on the body, tail, and undersides of wings; during their third year, their beaks and eyes start turning yellow, and their head feathers lighten. Immature Bald Eagles can easily be confused with golden eagles; they can be differentiated because of their blotchy white coloration on the underwing coverts, axillaries, and tails of immature Bald Eagles. Adults usually obtain their mature plumage by the 6th year. When flying, the Bald Eagle soars or glides with the wings held at a right angle to the body.

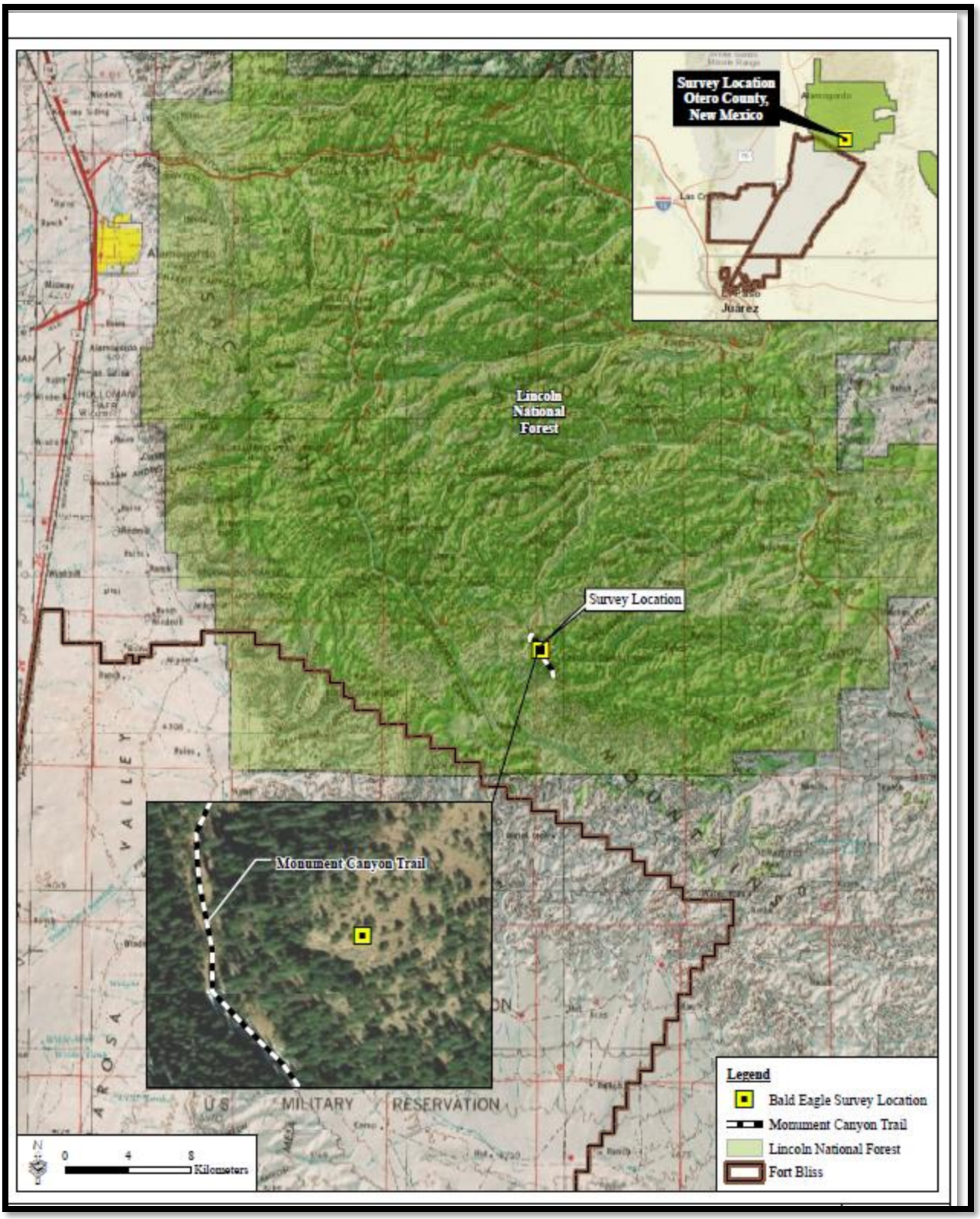
Bald eagle populations were in sharp decline in the mid 1900 due to habitat loss, pesticide contamination from DDT, and illegal shooting (Buehler 2000). Bald Eagles were listed as federally endangered in 1967 but delisted in 2007 due to widespread populations increases (32 FR 40001 and 72 FR 37373). Bald eagles are now protected under the BGEPA.

Habitat Requirements and Limiting Factors

The Bald Eagle is an opportunistic, generalized predator and scavenger adapted to aquatic habitats (Buehler 2000). They prefer areas near large water bodies such as seacoasts, coastal estuaries and inland lakes and rivers; they have been found up to 3km away from a water source. Bald Eagles typically breed and winter in forested areas adjacent to large bodies of water. Throughout its range, it selects large, super-canopy roost trees that are open and accessible, and away from human interaction (Buehler 2000, Cornell Lab 2015). In the interior west (e.g., Arizona and New Mexico) where water sources are less common and abundant, Bald Eagles can be found in a wider variety of habitats, either in ponderosa pine or pinyon-juniper habitats (Eakle et al. 1996). While wintering, Bald Eagles in these habitats feed on mammal carrion, e.g., *Cervus canadensis* (elk), *Odocoileus hemionus* (deer) or other small animals rather than fish (Grubb and Lopez 2000).

According to the FB NRDB, Fort Bliss does have historical records for Bald Eagles, these sighting were recorded in the northern ranges of Fort Bliss in the Sacramento Mountains Figure (**3.3-1**) (GSRC 2020). The records were rare and throughout wintering months. Indicating that these were, most likely, wintering birds. Based on the habitat requirements needed to support this species, the habitat assessment analysis showed no potential habitat within the project footprint.

Figure 3.3-1. Bald Eagle Survey Location, Lincoln National Forest, New Mexico (GSRC 2020)



3.3.4 Bell's Vireo (*Vireo bellii*)

Species Description

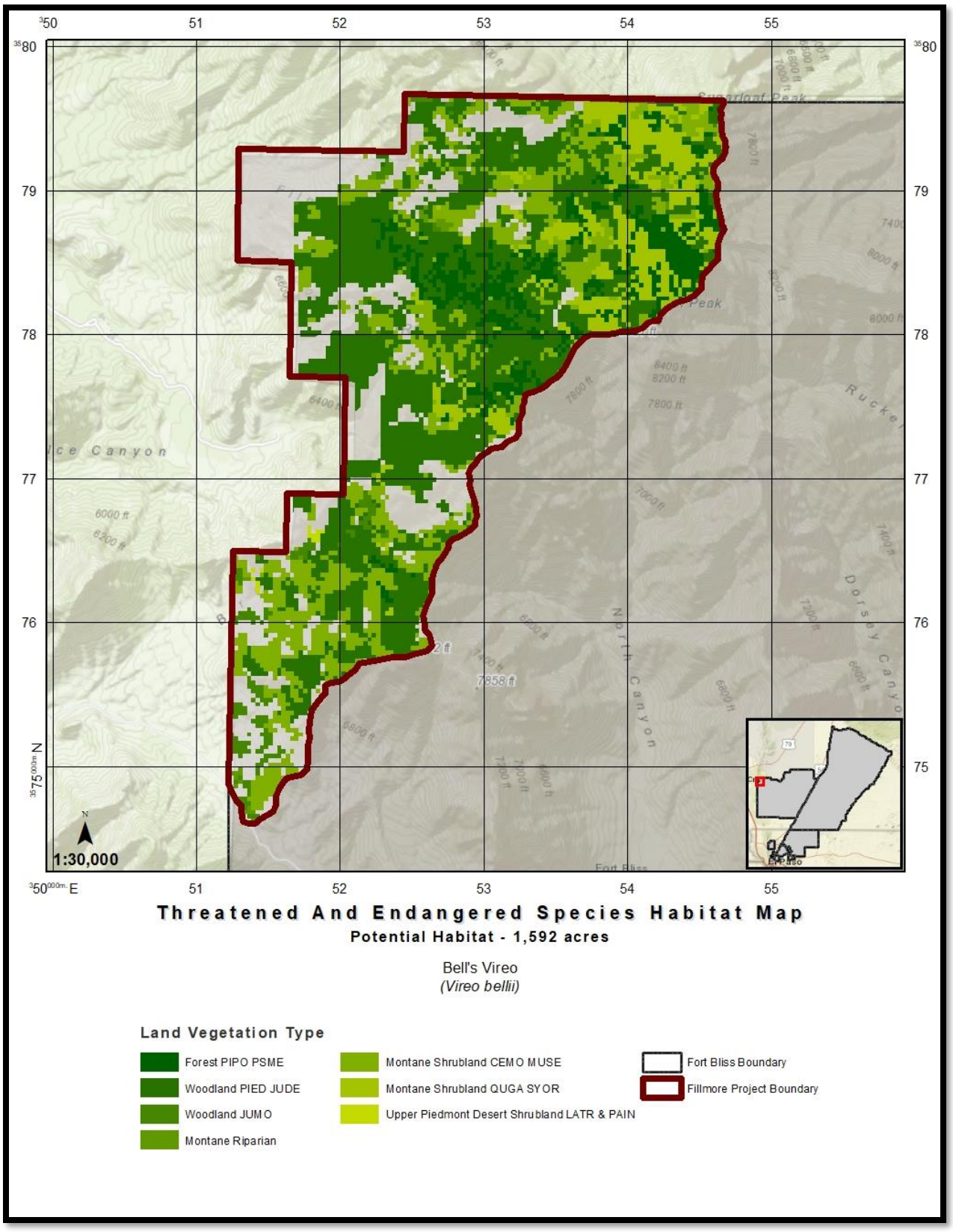
The Bell's Vireo (*Vireo bellii*) is a small, single-brooded, insectivorous Neotropical migratory songbird with a bill larger than a warbler's but small for a vireo. Bell's Vireos are colored with a dull ash gray to green on their heads and upper parts of the body. These vireos have distinguishing white spectacles and dark lores; their underside is white, and sometimes have a slight faint tint of brownish gray on their breast; they have two pale wing bars, with the upper one less distinct than the lower one, and the sides under their wings are tinted with yellow (Kus et al 2010).

Habitat Requirements and Limiting Factors

Bell's Vireo select low, dense vegetation of many types for breeding, migrating, and wintering; it breeds in low dense growth, especially in second-growth scrub or brushy fields in Midwest, streamside thickets in Southwest, but also locally in chaparral, woodland edges, or scrub oaks. Winters in the tropics in dense low scrub, mostly near water. Areas with greater density of understory vegetation is preferred for nesting, studies showed preference for restored habitats and denser cover (Reiley and Benson 2019).

Fort Bliss has historical records of Bell's Vireo, however none occurred within or near the project footprint. All records occurred at the foothills of the Sacramento Mountains (FB NRDB 2022). INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map showed 1,592 acres (77%) of potential habitat within the project footprint (**Figure 3.3-2**). It must be noted that negative findings do not indicate this species does not occur within the footprint, only that, currently, there are no confirmed records.

Figure 3.3-2. Potential habitat assessment map for Bell's Vireo



3.3.5 Black-chinned Sparrow (*Spizella atrogularis*)

Species Description

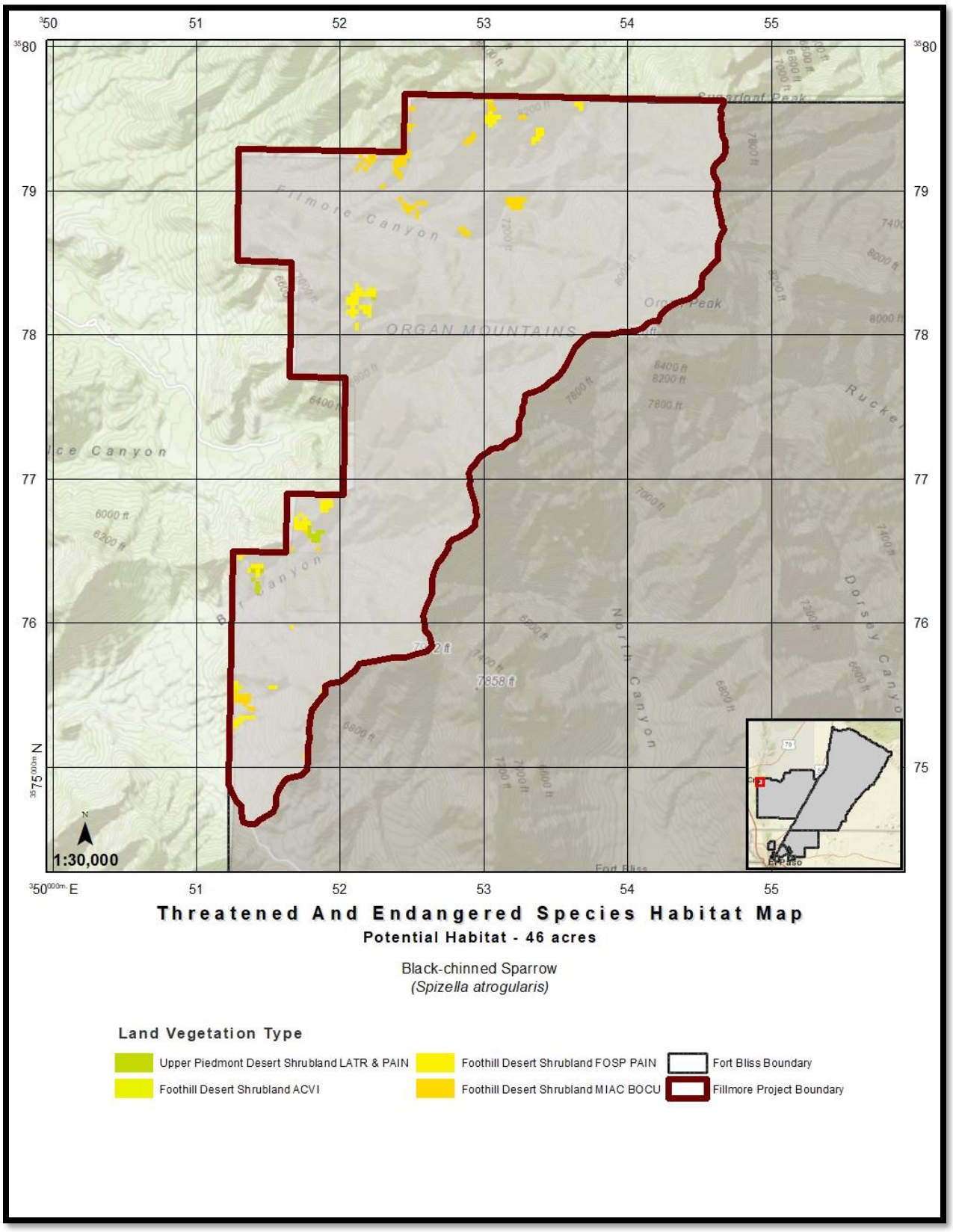
The Black-chinned Sparrow (*Spizella atrogularis*) are small with a thin notched tail. Their head, underparts, rump, and upper tail-coverts are grayish, while their lower belly is whitish gray. Breeding males have black upper throat and chin; brown wings, tail primaries, greater-coverts, median-coverts and back with blackish streaks. Females have duller, restricted black on their face and chin; juveniles and winter adults have gray throat and lores. Juveniles have paler crowns and underparts lightly streaked with brownish wash. Nests are compact but loosely constructed open cup made of interwoven stems, grasses, rootlets, or plant fibers. Females lay two to five pale blue eggs, females do most of the incubating, both parents feed the hatched nestlings (Tenny 1997).

Habitat Requirements and Limiting Factors

The Black-chinned Sparrow ranges from the southwestern United States and throughout much of Mexico. It is quite localized within brushy mountain slopes, open chaparral, and sagebrush areas. This species is mostly found in arid scrub on hillsides, from low foothills up to almost 2700 m (8000 ft) in mountains, in chaparral and open thickets of manzanita, scrub oak, sagebrush, chamise, and other low shrubs. In winter, it is also found locally in desert areas, mesquite thickets, occupying similar habitats but downslope from breeding areas with other populations inhabiting desert grasslands (Desante 1994).

On Fort Bliss, historical records from the FB NRDB and iNaturalist databases indicate multiple observations within the project footprint. Based on the habitat requirements needed to support this species, the habitat assessment map shows 46 acres (2%) of suitable habitat (**Figure 3-3.3**) this sparrow is found in high numbers in the area.

Figure 3.3-3. Potential habitat assessment map for Black-Chinned Sparrow



3.3.6 Canyon Towhee (*Melozone fusca*)

Species Description

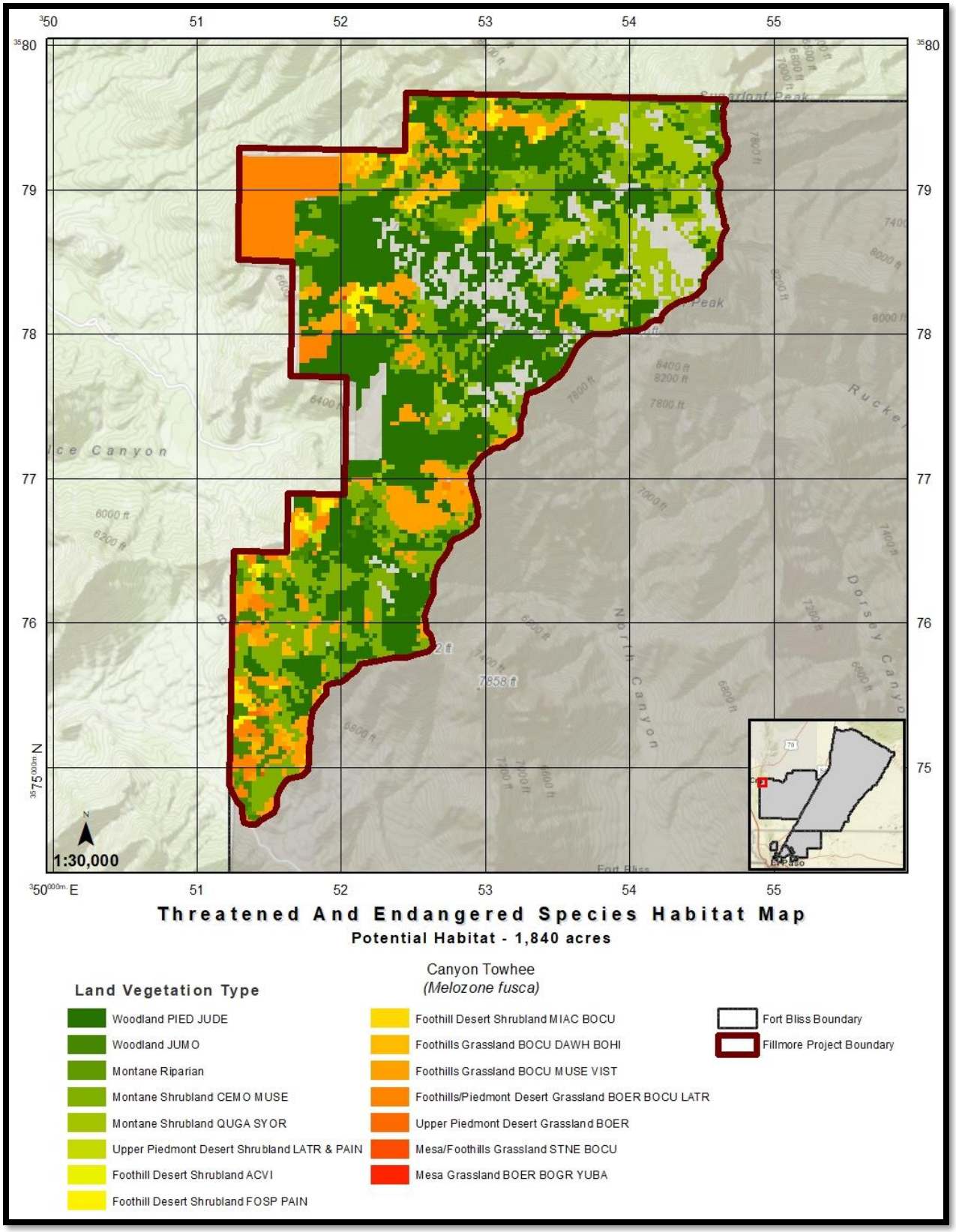
The Canyon Towhee (*Melozone fusca*) is a plain brown bird with warm rusty undertail coverts, a buffy throat, and a hint of a reddish crown. Its size ranges from 19 cm to 25 cm (7.5 to 9.8 in) long and has a noticeably long tail measuring from 8.2 to 11 cm (3.2 to 4.3 in) (Byers and Olsson 1995). The Canyon Towhee spends its time foraging on the ground, scratching the dirt. A pair of adults may raise two to three broods per year, with both parents caring for nestlings (Byers and Olsson 1995)

Habitat Requirements and Limiting Factors

The Canyon Towhee has a narrow range, preferring brushy areas, desert grasslands with scattered dense shrubs, rocky terrain, dry watercourses with mesquite. They are also found in open pinyon-juniper woodland, chaparral on dry hillsides. Canyon Towhees tend to shy away from suburban neighborhoods, favoring sparsely settled and remote areas (Sauer et al. 2005). They are permanent resident throughout its range in the United States and Mexico. Breeding occurs from 300 to 2000 m (950-6800 ft) in rough, rocky, semiarid country (Oberhosler 1974).

On Fort Bliss, historical records from the FB NRDB and iNaturalist database, indicate multiple observations within the project footprint. Based on the habitat requirements needed to support this species, the habitat assessment map 1,840 acres (89%) of potential habitat within the project footprint (**Figure 3.3-4**).

Figure 3.3-4. Potential habitat assessment map for Canyon Towhee



3.3.7 Cassin's Sparrow (*Aimophila cassinii*)

Species Description

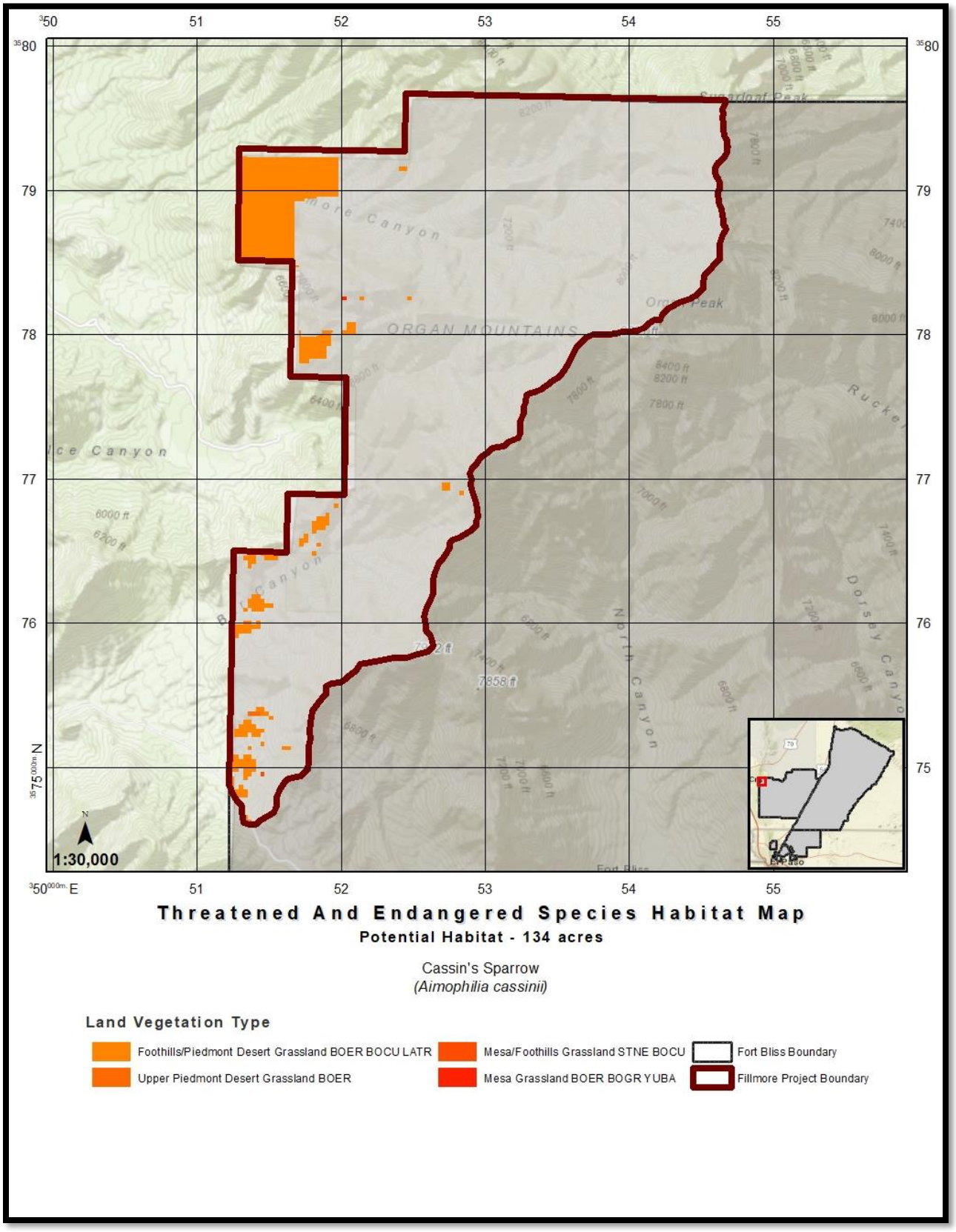
The Cassin's Sparrow (*Aimophila cassinii*) has dulled and plain plumage, a small species of songbird typically measuring 15 cm (5 in) in length and 20 g (0.7 oz) in weight with males being slightly larger than females. Both male and females have similar plumage; the foreheads and crowns are gray and show fine gray or blackish-brown streaks. Around the eyes is a dull white ring and light brown post-ocular stripes extending away from the eyes. Chis is whitish gray and the throat and breast a pale gray. The upper breast is the darkest and washed with buff, sides and flanks are pale browner gray and often sparingly marked with a few brown or dusky streaks. This species is more readily identified by its vocalizations and exhibited song-flights known as "skylarking" (Duning 1999)

Habitat Requirements and Limiting Factors

The Cassin's Sparrow. This sparrow inhabits desert grasslands and brushy fields containing wide open slopes and are in proximity to thickly vegetated gullies, however, individuals will rarely occupy an area with dense brush (Russel and Monson 1998). In the breeding range the preferred habitat is arid grasslands scattered with scrubs, yuccas, and low-lying trees, such as mesquite and oaks (Schnase 1984). This species produces two broods per year with females collecting vegetation such as sagebrush and rabbitbrush, and use these materials to construct a nest on the ground or in low lying shrub or grass clump (Schnase 1991)

Fort Bliss has historical records of Cassin's Sparrow, however none occurred within or near the project footprint. All records occurred at the foothills of the Sacramento Mountains and within the Otero Mesa grasslands (FB NRDB 2022). INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map showed only 134 acres (6%) of potential habitat within the project footprint (**Figure 3.3-5**). It must be noted that negative findings do not indicate this species does not occur within the footprint, only that, currently, there are no confirmed records.

Figure 3.3-5. Potential habitat assessment map for Cassin's Sparrow



3.3.8 Chestnut-collard Longspur (*Calcarius ornatus*)

Species Description

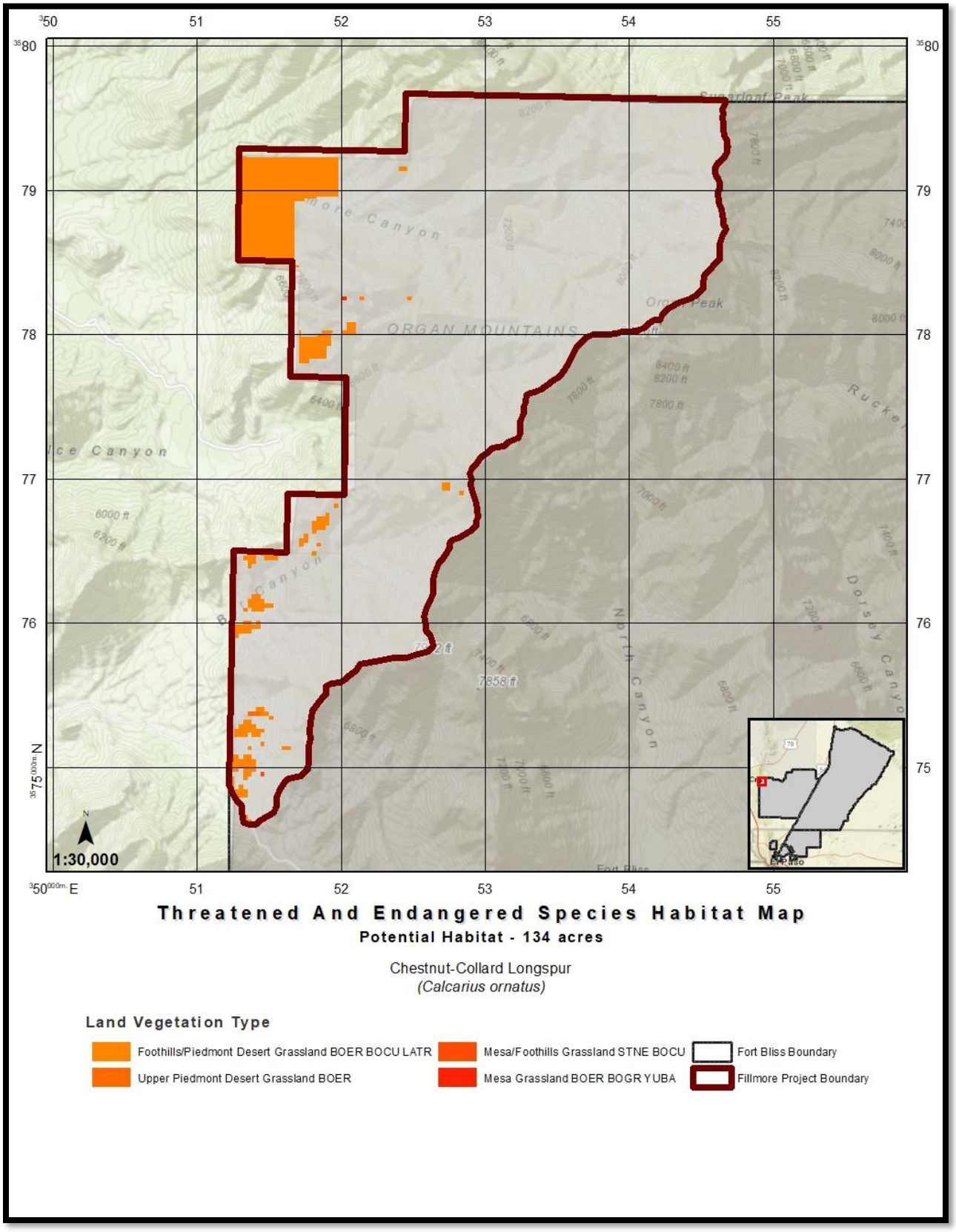
The Chestnut-collard Longspur (*Calcarius ornatus)* is a grassland species native to North American prairies (Hill and Gould 1997). Members of this genus have an elongated claw or spur of the hind toe, from which they get their name (Dick 2010). The Chestnut-collard Longspur is a sparrow like ground-dweller; crouches low to the ground and walks with pattering footsteps and the smallest of the longspur species at 15cm to 17cm (5.9 in to 6.6 in) in length. This species winter in southern portions of the United States in Arizona, central New Mexico, Colorado and Oklahoma and Kansas (Hill and Gould 1997). Breeding Bird Survey data indicated that populations are declining in every jurisdiction it occurs (Sauer et al. 2014).

Habitat Requirements and Limiting Factors

A grassland specialist most associated with native mixed-grass prairie pastures (Stewart and Kantrud 1972) the Chestnut-collard Longspur depends on grasslands year-round 99% of the summer breeding occurrences and 55% in its winter occurrences. The highest winter density occurs in eastern New Mexico and western Texas, though weather patterns and conditions can cause major shifts in the distribution and abundance of wintering populations (Sedgewick 2004). The general habitats of the Chestnut-collard Longspur prefer include open, sparsely vegetated landscapes, native grasslands of the shortgrass and dry, open mixed grass prairies, level to rolling uplands and some moist lowlands. During their breeding season, they can be found in native grassland recently burned or grazed by cattle or both, or in mowed fields, these habitats have low to moderate cover height, minimal liter cover and little accumulation of old cover (Maher 1973, Dale et al. 1999). Male territory size estimates have been made: 0.2 ha to 1 ha (Fairfield 1968). Chestnut-collard Longspurs have sensitivity to ground temperature and/or ground moisture, similar to Thick-billed longspur. Nests are placed on the ground in a depression excavated by the female in areas with short, sparse vegetation with bare ground, little dead vegetation, and intermediate forb density (COSEWIC 2009, Harris 1944, Davis 2005).

Fort Bliss has historical records of Chestnut-collard Longspur, however none occurred within or near the project footprint. All records occurred at the foothills of the Sacramento Mountains and within the Otero Mesa grasslands and sub-Mesa (FB NRDB 2022) supporting the habitat requirements in the literature. INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map showed only 134 acres (6%) of potential habitat within the project footprint (**Figure 3.3-6**). It must be noted that negative findings do not indicate this species does not occur within the footprint, only that, currently, there are no confirmed records.

Figure 3.3-6. Potential habitat assessment map for Chestnut-Collared Longspur



3.3.9 Ferruginous Hawk (*Buteo regalis*)

Species Description

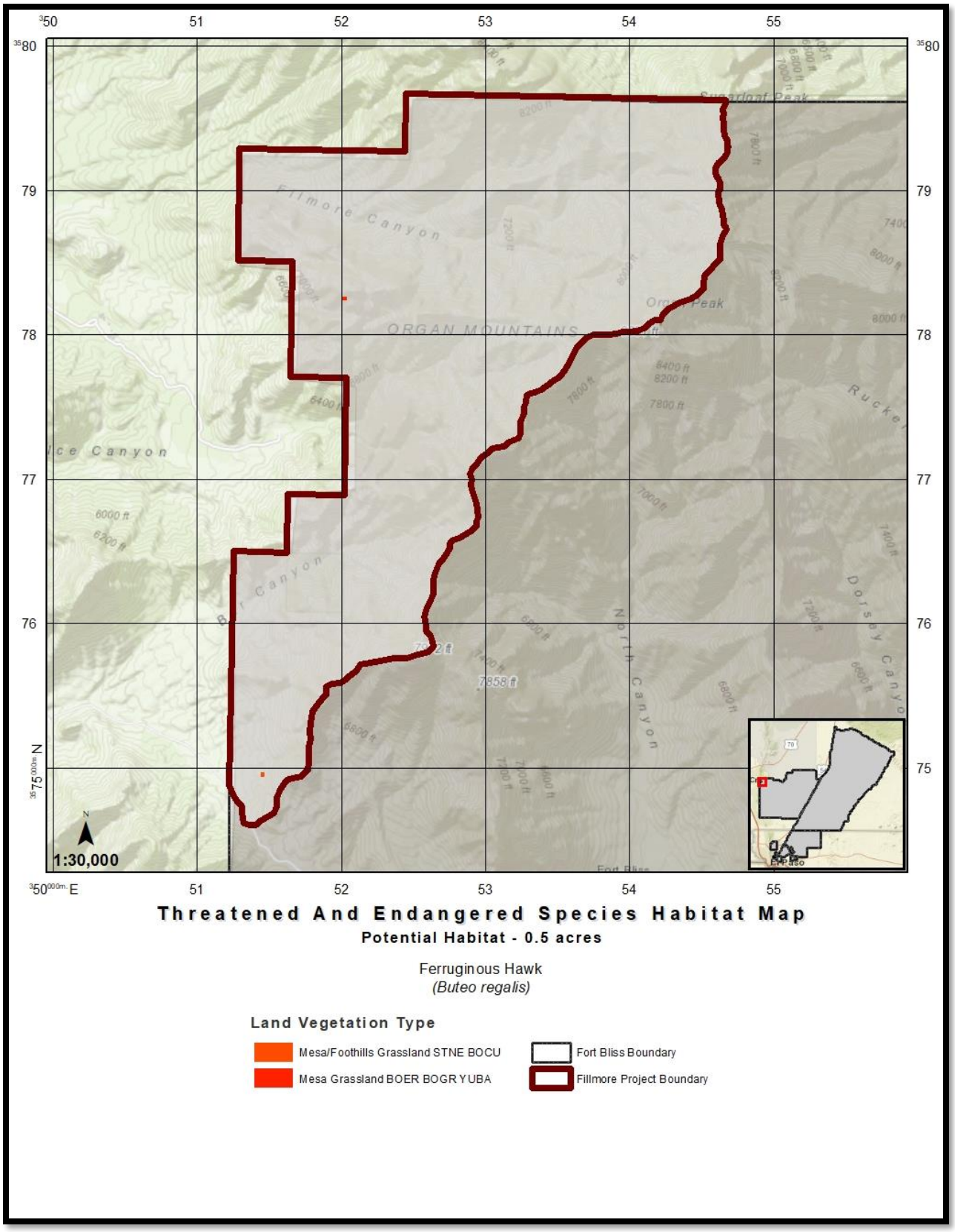
The Ferruginous Hawk (*Buteo regalis*) is the largest and heaviest hawk in North America. About midway in size between other buteo hawks and the Golden Eagle. The female up to one-and-a-half times larger than the male ranging from 50 to 66 cm (20-26 in) with a wingspan of 122 cm to 143 cm (48 to 56 in) weighing on average 1 kg (2.4 pounds). The head is heavy billed; chest is large; wings are long, broad, and pointed; the legs are feathered down to the feet, which are relatively small for the prey they routinely take. Adults have a rufous red color on the back and shoulders, and red leggings that form a conspicuous V-shape against a whitish body and tail when viewed in flight overhead. Wings are dark on both upper and lower surfaces. The tail is a mixture of pale rust and white or gray, and unbanded. The head is pale, with gray cheeks, a dark cap. They have broad wings, feathered legs, and can present a light or dark morph. The light morph Ferruginous Hawk is the most common morph, with a unique gray head, rich, ferruginous shoulders and legs, and bright white underparts. The rarer dark-morph is reddish-chocolate in color and is less than 10% of the population (Bechard and Schmutz 1995). The ferruginous hawk builds huge nests of sticks, lined with turf or cow dung. Nests in trees, cliff faces, rock outcrops, or on the ground if no other suitable site is available. These hawks fiercely protect their nests against ground predators.

Habitat Requirements and Limiting Factors

The Ferruginous Hawk is found in the open country of the West; lowlands, plateaus, valleys, plains, rolling hills of grassland, agricultural land, ranches, and the edges of deserts. Their nests can be found in trees and large shrubs; on roofs, utility structures and artificial platforms; low cliffs, buttes, cut banks, and occasionally on the ground. In these areas, learning to tell their shape at long distances is key: look for a long, narrow, and somewhat pointed wings, also note their tendency to fly with their wings in a dihedral V shape – slightly raised above the horizontal (Bechard and Schmutz 1995, Dechant 2002).

Fort Bliss has historical records of ferruginous hawk; however, the observations did not occur within or near the project footprint. All records occurred at the foothills of the Sacramento Mountains and within the Otero Mesa grasslands and sub-Mesa (FB NRDB 2022). INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded two observations in the city of Las Cruces, one from December 1989 and Jan 2021. Based on the habitat requirements needed to support this species, the habitat assessment map showed only 0.5 acres (0.02%) of potential habitat within the project footprint (**Figure 3.3-7**). It must be noted that negative findings of the species do not indicate that it does not occur within the footprint, only that, there are no confirmed records yet, however there is suitable habitat available.

Figure 3.3-7. Potential habitat assessment map for Ferruginous Hawk



3.3.10 Golden Eagle (*Aquila chrysaetos*)

Species description

Golden eagles (*Aquila chrysaetos*) are found worldwide and are of great significance for various cultures across the world as well as an increasing global concern. In the United States, the range of the Golden Eagle runs from Mexico throughout much of Western North America and as far north as Alaska. There are concerns that golden eagles are still suffering from population decline across the country, caused by many factors ranging from climate change to habitat loss and unintentionally killed in conjunction with many lawful activities (Wiens and Kolar 2017, Milsap 2021).

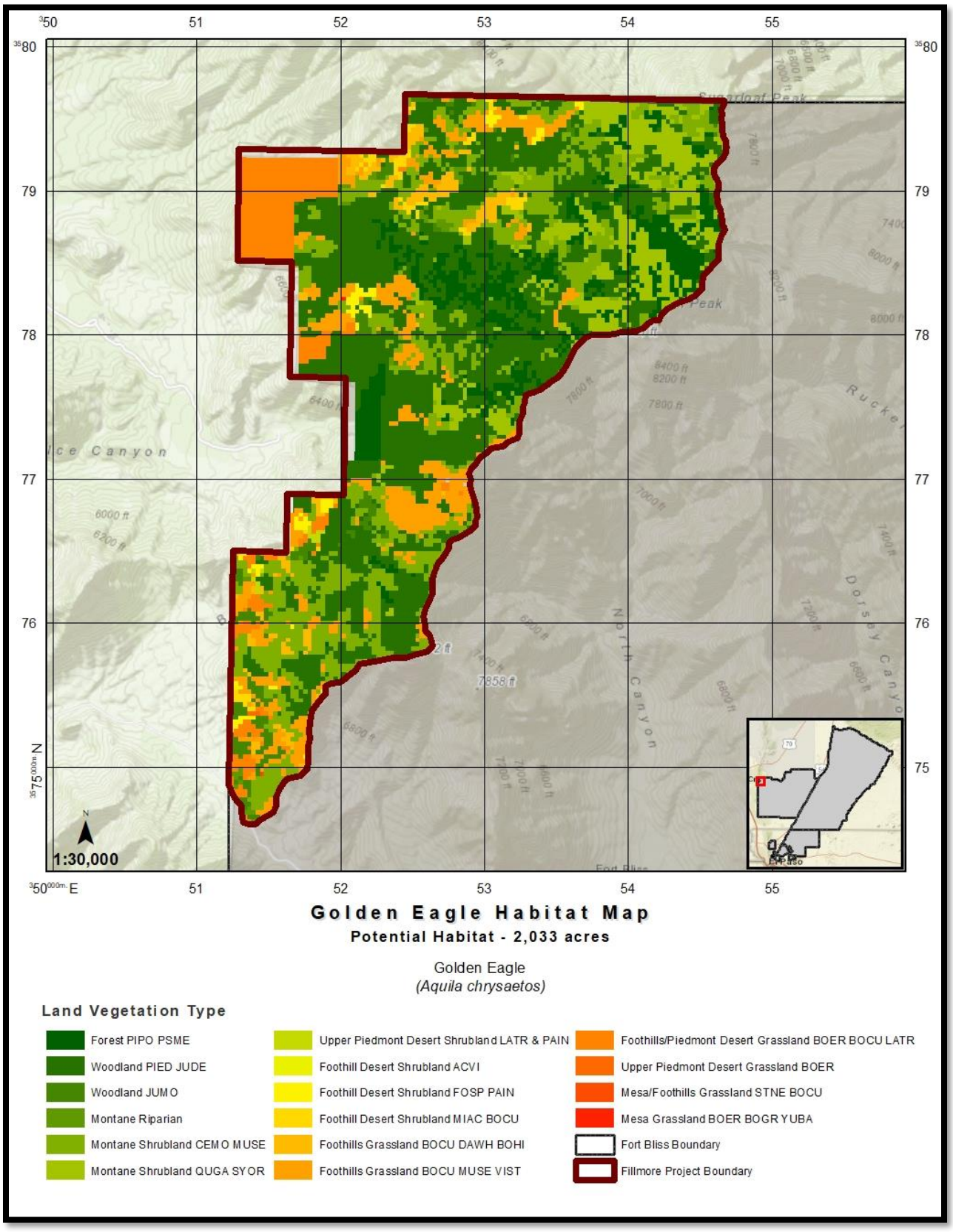
The GOEA is a deep brown with golden-brown feathers on the back of its head and neck. Immature eagles are distinguished from full-grown adults by the white patches at the "wrists" towards the wing tips, whereas adults wouldn't have white at all. Immature Bald Eagles can be distinguished from young golden eagles by the white feathers near their armpits-young Golden Eagles have white patches towards the wing tips instead, unlike the bald eagle, the GOEA's legs are completely covered in feathers up to its feet. Their wingspan ranges from 185 to 220 cm (72 to 87 in), (Miller 2017).

Habitat Requirements and limitations

These eagles live and use various habitat types ranging from sea level to high mountains. Eagles can switch habitats throughout an annual cycle favoring certain types over others in response to prey availability. However, surveys have shown older GOEA appear to prefer using slightly better-quality habitats than younger birds (Young 1995). Common habitat types include open expanse dominated by short vegetation, interspersed mountain ranges, rolling hills, or other similar topographic features. The most important habitat features are the presence of prey, elevated perches, and topographic reliefs that eagles can use as perches, nesting, and roosting places (Miller 2017). In North America, their habitat ranges from Canada into central Mexico (**Figure 3.3-8**).

Fort Bliss has historical records of GOEA within the project footprint. Based on the habitat requirements needed to support this species, the habitat assessment map showed only 2033 acres (98.02%) of potential habitat within the project footprint (**Figure 3.3-7**). It must be noted that negative findings of the species do not indicate that it does not occur within the footprint only that, there are no confirmed records yet; however, there is suitable habitat available.

Figure 3.3-8. Potential habitat assessment map for Golden Eagle



3.3.11 Grace's Warbler (*Setophaga graciae*)

Species Description

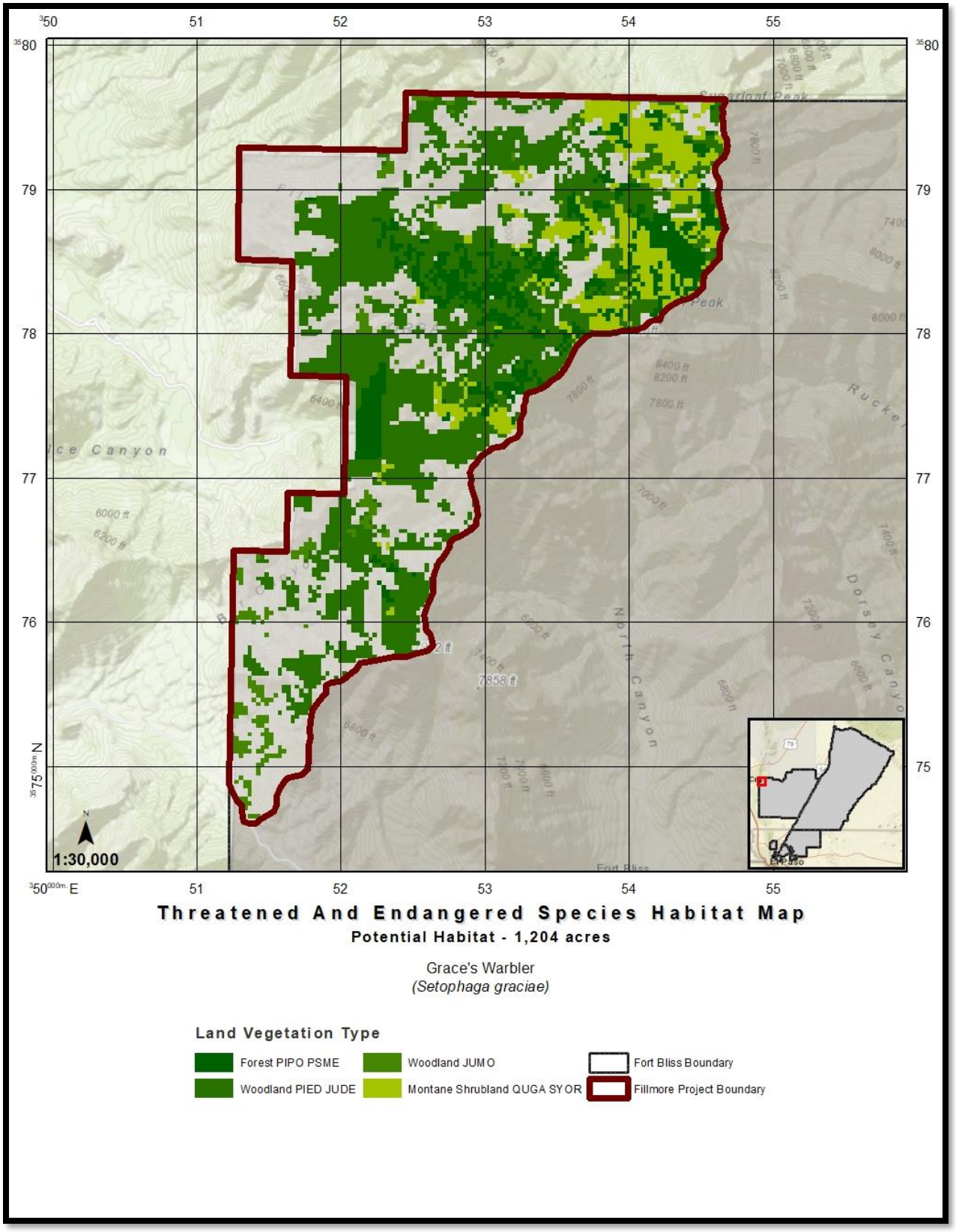
The Grace's Warbler (*Setophaga graciae*) is a tiny, restless gray warbler with a yellow throat, and a yellow eyebrow; it has white wing bars and white outer tail feathers which are visible in flight. It has a yellow half-eye ring under the eye and a long yellow "eyebrow" stripe that starts at the base of the beak and runs above the eye, fading to white after it passes the eye. It ranges in size from 11 to 13 cm (4.3 in to 5 in long). Females and immatures share the same features as males, except they are overall paler than the males. Adult males are ashy gray with a yellow face and throat, with mostly white below the black stripes on the flanks and two strong wing bars. Adult females are similar but less boldly patterned. The nests of Grace's warblers are highly unknown, as nests are rarely ever found. The nest is a compact cup of plant fibers, lined with hair and feathers, placed high on a tree branch, usually a species of pine. The female lays three to five white or cream-colored eggs, speckled with brown and ringed at the larger end (Stacier 2002). Webster (1961) describes moderate variability in color, with some colors varying geographically: "as for instance hue of the ventral yellow in *decora* and dorsal black streaking in *yaegeri.* Individual variability in wing and tail length is rather great."

Habitat Requirements and Limiting Factors

Grace's warbler is a pine wood specialist. It occurs in pine-oak forests of mountains; during breeding season, it is found on the tops of pines, sometimes also in spruce, fir, and oak thickets in higher mountains of the Southwest. Its range extends from southern Utah, southeastern Colorado, and western Texas through western Mexico. Wintering in Mexico along the Trans-volcanic range of central Mexico (Webster 1961). Its breeding range requires pine and pine-oak forests of the southwestern U.S.

Fort Bliss has 1,204 acres (58%) of preferred habitat for Grace's Warbler within the project footprint, as well as confirmed observation records (**Figure 3.3-9**). Observations were recorded in the summer months, from May to July 1991 to 2011. INaturalist was also reviewed for more recent observations, however there were only two records for the region, both located in El Paso, TX far from the project location.

Figure 3.3-9. Potential habitat assessment map for Grace's Warbler



3.3.12 Gray Vireo (*Vireo vicinior*)

Species Description

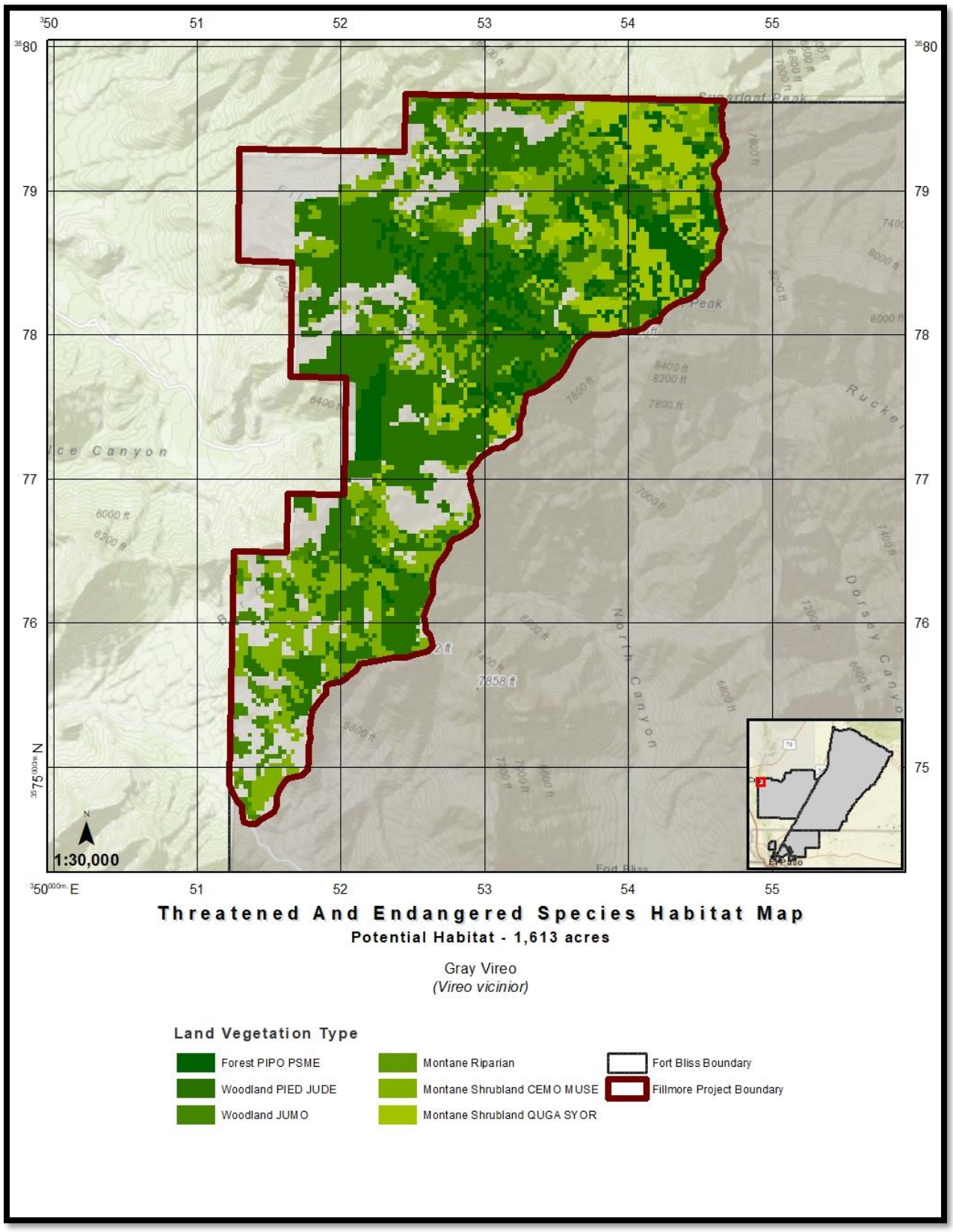
The Gray Vireo (*Vireo vicinior*) is a small songbird, plain drab gray above, and whitish below; it has a thin white eye-ring and small white line in front of the eye, as well as a slightly hooked bill that is stouter than a warbler. When silent, this bird can be hard to distinguish from sympatric, gray-colored gnatcatchers, Bushtit, Oak Titmouse, and Juniper Titmouse. Often, its harsh, three- to four- note song is the only indication of its presence. The gray vireo measures about 13 to 15 cm (5.1-5.9 in) in length, has a 21 cm wingspan and weighs 12 to 15 g (0.4 to 0.5 oz). This small songbird hops through dense vegetation and swings nimbly around branches to pick insects from leaves and twigs. Flicking the tail frequently. Males often sing from exposed perches in early spring. During breeding season, the female selects the nest site while accompanied by the male, usually in a forked branch about 6 feet off the ground. Females build a cup nest of grasses, bark, and plant fiber, festooned on the outside with leaves and spider cocoons, lined with grass, hair and plant down. Nests average about 2.7 inches across and 2.3 inches tall. Clutch size is two to four white eggs with small spots.

Habitat Requirements and Limiting Factors

The Gray Vireo inhabits dry rocky slopes with patches of dense brush and trees, especially oaks and junipers, brushy mountain slopes, mesas, open chaparral, scrub oak, and junipers. It breeds in dry thorn scrub, chaparral, pinyon-juniper and oak-juniper scrub, or sagebrush and mesquites of arid foothills and mesas, between 915 to 2000 m (3,000-6,500 ft.) elevation. Gray vireos nest in pinyon pine-juniper, mesquite scrub, oak scrub, and chaparral habitats of the Southwest. Migrants and wintering birds can occur in similar habitats as well as streambeds in deserts (Barlow 1999). Habitats include scrubby oaks (including Graves and gray oaks), alligator juniper, madrones, mountain mahoganies, sumacs, ashes (including Gregg ash), mulberry, hackberry, big sagebrush, catclaw mimosa, mesquites, creosote bush, ocotillo, and various yucca and cactus species. In southwestern Arizona and neighboring California, Gray Vireos also winter in canyons with elephant trees, jojoba, ironwood, brittlebush, and cholla (PIF 2017, Sauer et al. 2017).

Fort Bliss has confirmed observation records collected within the project footprint (FB NRDB 2022). These observation points were collected from incidental observations and seasonal surveys conducted during late spring to late summer from 1992 to 2012. Based on the habitat requirements needed to support this species, the habitat assessment map indicates that there are 1,613 acres (78%) of preferred habitat for the gray vireo within the project footprint (**Figure 3.3-10**).

Figure 3.3-10. Potential habitat assessment map for Gray Vireo



3.3.13 Interior Least Tern (*Sterna antillarum athalassos*)

Species Description

Least Terns (*Sterna antillarum athalassos*) are the smallest of the North American terns with adults averaging 8 to 10 in in length with a 20-inch wingspan. Their narrow, pointed wings make them streamlined flyers. Males and females are similar in appearance. Breeding adults are gray above and white below, with a black cap, black nape and eye stripe, white forehead, yellow bill with a black or brown tip, legs are yellow to orange. Females lay two to three eggs over a period of three to five days. The eggs are pale to olive buff and speckled or streaked with dark purplish-brown, chocolate, or blue-gray markings. Both parents incubate the eggs. The chicks hatch within one day from each other and remain in the nest for a week, chicks then venture out dependent on heavy vegetation for protection (Locknane 1988).

Habitat Requirements and Limiting Factors

The Interior Least Tern is the subspecies of Least Tern that occurs in inland North America, primarily along the Mississippi River and its tributaries (also part of the Rio Grande drainage). The Interior Least Tern inhabits bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with rivers and reservoirs; it prefers open habitat and tends to avoid thick vegetation and narrow beaches. They breed inland along the Missouri, Mississippi, Colorado, Arkansas, Red and Rio Grande. They nest on bare or sparsely vegetated areas; nests are usually away from the water's edge since nesting starts when river levels are high and there's lesser amounts of sand are exposed. They prefer open habitat and tend to avoid thick vegetation and narrow beaches. (Thompson 2020).

Fort Bliss has no recorded observations for the Interior Least Tern in their geodatabases, not surprising due to the specific preference of habitat. The habitat assessment analysis also found no suitable habitat within the project footprint. Observation searches in iNaturalist also had no results in the region.

3.3.14 Lark Bunting (*Calamospiza melancorys*)

Species Description

Chunky, thick-billed sparrow that prefers wide open habitats. Females and immature males have a thick, bluish gray bill. Females and young birds have thick brown streaking on the breast, and a pale stripe over the eye and a dark "mustache" stripe with a white throat patch. Breeding males are unmistakable: mostly jet black with a bold white wing patch. Nonbreeding males and females are overall streaky brown, but still show white wing patch. These birds can be seen on the ground or perched on a fence. They avoid bare ground when nesting, opting for short grass and taller habitats. Wintering and migrating occurs in flocks, sometimes with other sparrows, in many types of open habitats, including dry lakebed (Lutmerding 2020). Breeding females choose their nest site, indicating preference by scraping the site with her feet. Both parents build the nests into a loose cup formed of grass stalks, leaves, stems, fine roots, lined with fine-blade grasses or hair. The nests upper rim is even with or surrounding the ground or just above it. Nests will measure about 9.3 cm (3.7 in) across. Clutch size ranges from two to five unmarked light blue eggs and will produce one to two broods (Shane 2000).

Habitat Requirements and Limiting Factors

The Lark Bunting is endemic to grasslands and shrub steppe of North America. Breeds in large areas of native grassland vegetation, especially shortgrass prairies. In migration and winter, can be found in open areas from grassland to desert to agricultural areas. Sometimes gathers in huge flocks in winter. Females

select nest site, and normally a small depression at the base of a shrub, cactus or large clump of grass that will provide shade and protection (Shane 2000, Sauer 2014).

Fort Bliss has confirmed observations of the Lark Bunting, mostly occurring in the Otero Mesa grasslands and the lower shrublands in coppice dunes. However, there is one recorded observation from July 2012, just outside of the project footprint in Soledad Canyon at the base of North Canyon. INaturalist search also produced one observation from July 2017 near the Organ Mountains Desert Peak National Monument Visitors Center. Based on the habitat requirements needed to support this species, the habitat assessment analysis found no suitable habitat within the project footprint.

3.3.15 Loggerhead Shrike (*Lanius ludovicianus*)

Species Description

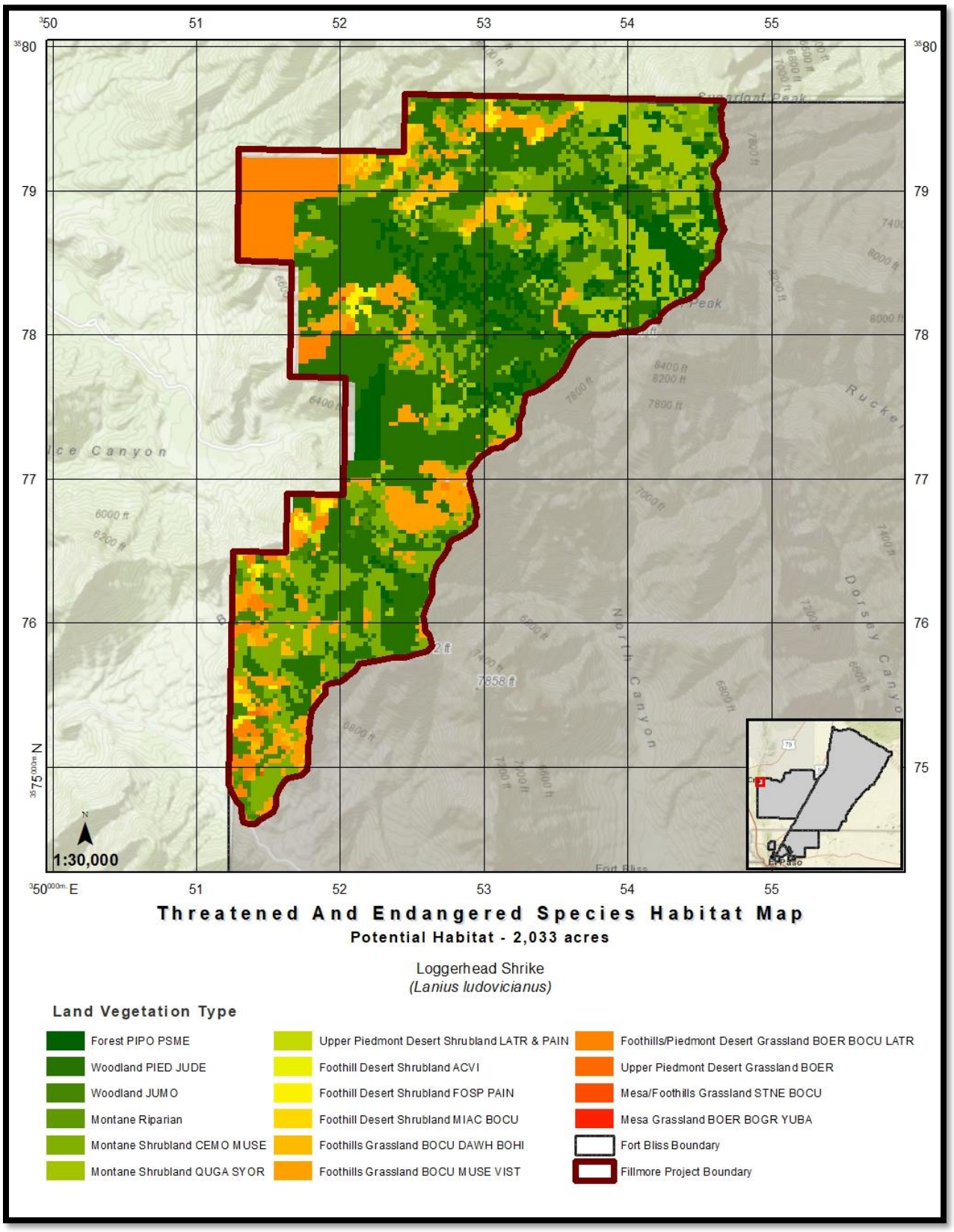
The Loggerhead Shrike (*Lanius ludovicianus*) is a grayish, robins sized, thick-bodied songbird with a big head, a hooked thick bill, and a long tail. The Loggerhead is gray with a black mask and white flashes in the black wings. The black tail has white corners; the black wings have white at the base of the primaries that form a small spot on the closed wing and a larger white patch when seen in flight. Despite its small stature, the shrike exhibits behaviors like those of raptors for its habit of impaling prey on sharp objects, such are thorns and barbed wires. During breeding season, both sexes search for suitable nesting sites and gather material, the female usually constructing the nest on her own. She builds bulky, well insulated open cup, intricately woven of rootlets, bark strips, twigs, forbs, lining it with soft materials such as flowers, lichens, grass, moss, feathers, or cloth. They will build their nests in thorny vegetation for protection from predators. Loggerhead Shrikes are known to raise two clutches in one season and to re-nest after failure (Dechant et al. 1999)

Habitat Requirements and Limiting Factors

This bird inhabits-open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorn. They frequent agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, golf courses, and even cemeteries. They can often be seen along mowed roadsides with access to fences and utility poles. It breeds in any semi-open terrain, whether it is in wooded areas, grassland, or desert. Preferred vegetation types include sagebrush (Artemisia sp.) in lowland and upland areas, mixed shrubs, in addition to having a mosaic of shrubs and openings, areas used by Loggerhead Shrikes had little slope and high horizontal and vertical structural density (Dechant et al. 1999).

Fort Bliss has multiple observation records for Loggerhead Shrike throughout its range; however, there are no records within or near the project footprint. An iNaturalist search showed multiple observations near and in the project footprint, with the most recent being from February 2022. Based on the habitat requirements needed to support this species, the habitat assessment map found 2,033 acres (98%) of suitable habitat within the project footprint (**Figure3.3-11**).

Figure 3.3-11. Potential habitat assessment map for Loggerhead Shrike



3.3.16 Long-billed Curlew (*Numenius americanus*)

Species Description

The Long-billed Curlew (*Numenius americanus*) is North America's largest shorebird reaching a height of 45 to 66 cm (18 to 26 in) with a wingspan of 91 to 101 cm (36 to 40 in). This long-legged shorebird has an exceptionally long, decurved bill, body plumage is rich buff throughout tinged with cinnamon or pink, with upperparts streaked and barred with deep brown; underwing-lining contrasting cinnamon, and upper surface of remiges contrasting orange-brown. Sexes similar in appearance, but female averages larger with longer bill than males. Juveniles are distinguished from adults by wing-coverts, which have dark-brown centers but lack dark-brown barring and pale notches. Juvenal tertials are also more brightly marked than in the adults, with darker, wider central stripes and cinnamon-buff versus grayish-buff ground color; underparts may also be less prominently streaked than in adults, and bill distinctly shorter, especially in new fledged birds. During mating season, mid-April through September, the Long-billed Curlew will build nests on the ground, in flat, open areas with clumps of grass. The nests are simple depressions in the ground, usually lined with grass. Females typically lay four greenish or buff-colored, pear-shaped eggs with brown spots (Dark-Smiley 2004).

Habitat Requirements and Limiting Factors

The Long-billed Curlew are considered a grassland species but are rarely observed far from water. They are found in habitats of short-grass or mixed prairie habitat with flat to rolling topography while breeding. After breeding season, they seek tidal estuaries, wet pasture habitats and sandy beaches. While wintering they use a wide range of habitats from southern United States and south to Guatemala (Dugger 2002).

Fort Bliss has a few recorded observations of the Long-billed Curlew; however, all observations occur on the Otero Mesa. INaturalist database search also showed no observations in the region. Based on the habitat requirements needed to support this species, the habitat assessment analysis showed no potential habitat within the project footprint.

3.3.17 Mexican Spotted Owl (*Strix occidentalis lucida*)

Species Description

The Mexican Spotted Owl (*Strix occidentalis lucida*) is a medium-sized chocolate brown to chestnut-brown owl with dark, almost black eyes; brown tail with thin white bands; and white and brown spots on their abdomen, back, and head. Its round face lacks ear tufts and has large, round, brownish facial disks with indistinct concentric circles or darker brown around each eye. The spotted owl has a yellowish green bill, and its legs and feet are fully feathered. The Mexican spotted owl differs from the two other subspecies in plumage coloration; the white spots of the Mexican spotted owl are generally larger and more numerous than in the other two subspecies, giving it a lighter appearance (Gutierrez et al. 1995). Wing and tail feathers are deep brown barred with lighter brown and white. Females are larger than males although similar in plumage. Juveniles, subadults and adults can be distinguished by their plumage characteristics (Forsman 1981, Moen et al. 1991).

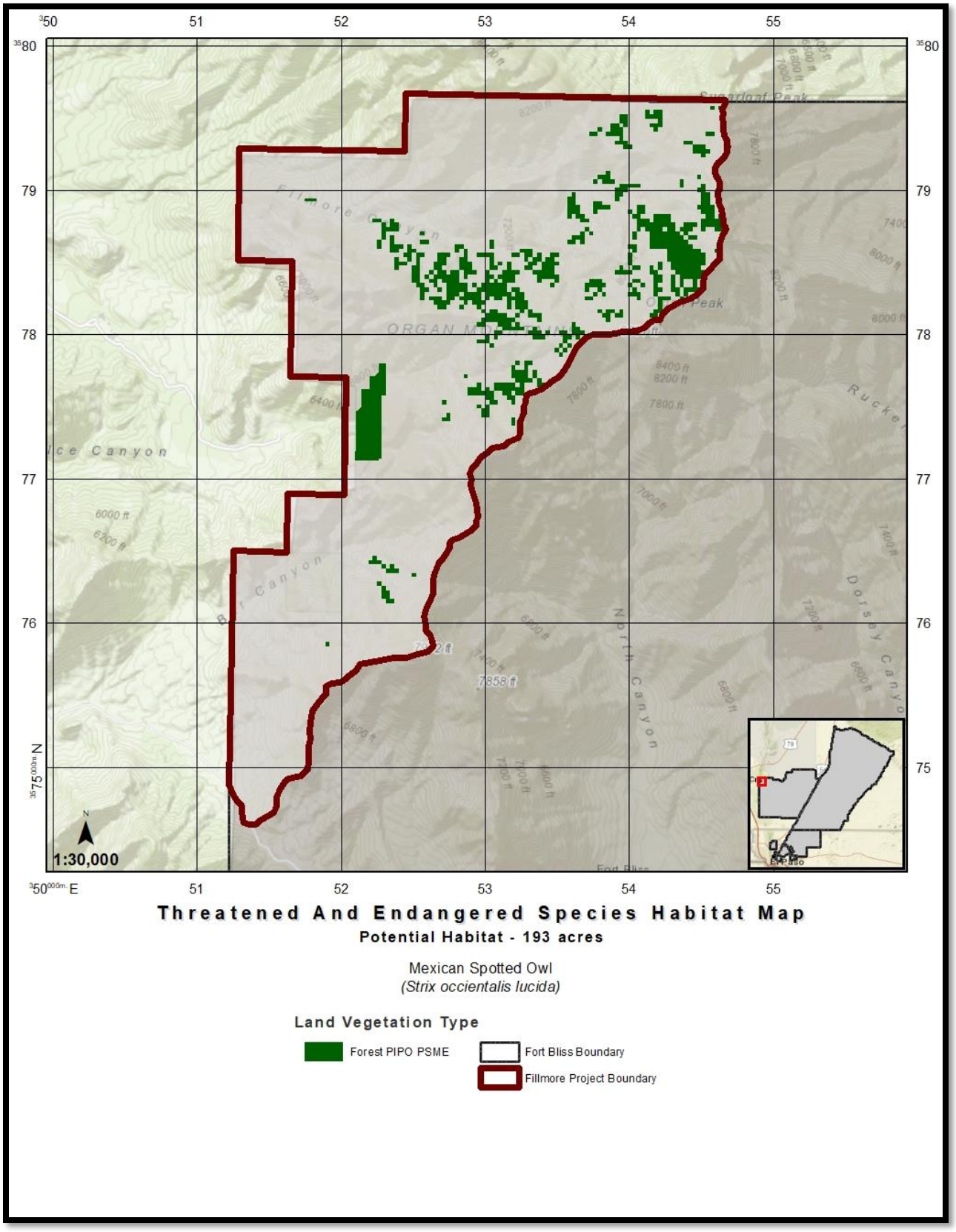
Habitat Requirements and Limiting Factors

The Mexican Spotted Owl requires mature, old-growth forests of white pine (*Pinus strobus*), Douglas fir (*Pseudotsuga menziesii*), and ponderosa pine (*Pinus ponderosa*), steep slopes and canyons with rocky cliffs

for their habitat. They occur in forested mountains and canyonlands throughout the southwestern U.S and Mexico (Guttierrez et al. 1995, Ward et al. 1995).

Fort Bliss has two recorded observations for the Mexican Spotted Owl from 1979, with an adult and an owlet being spotted. Observation searches in iNaturalist also had no results in the region. Based on the habitat requirements needed to support this species, the habitat assessment map indicated there is 193 acres (47%) of potential habitat within the project footprint (**Figure 3.3-10**).

Figure 3.3-12. Potential habitat assessment map for Mexican Spotted Owl



3.3.18 Mexican Whip-poor-will (*Antrostomus arizonae*)

Species Description

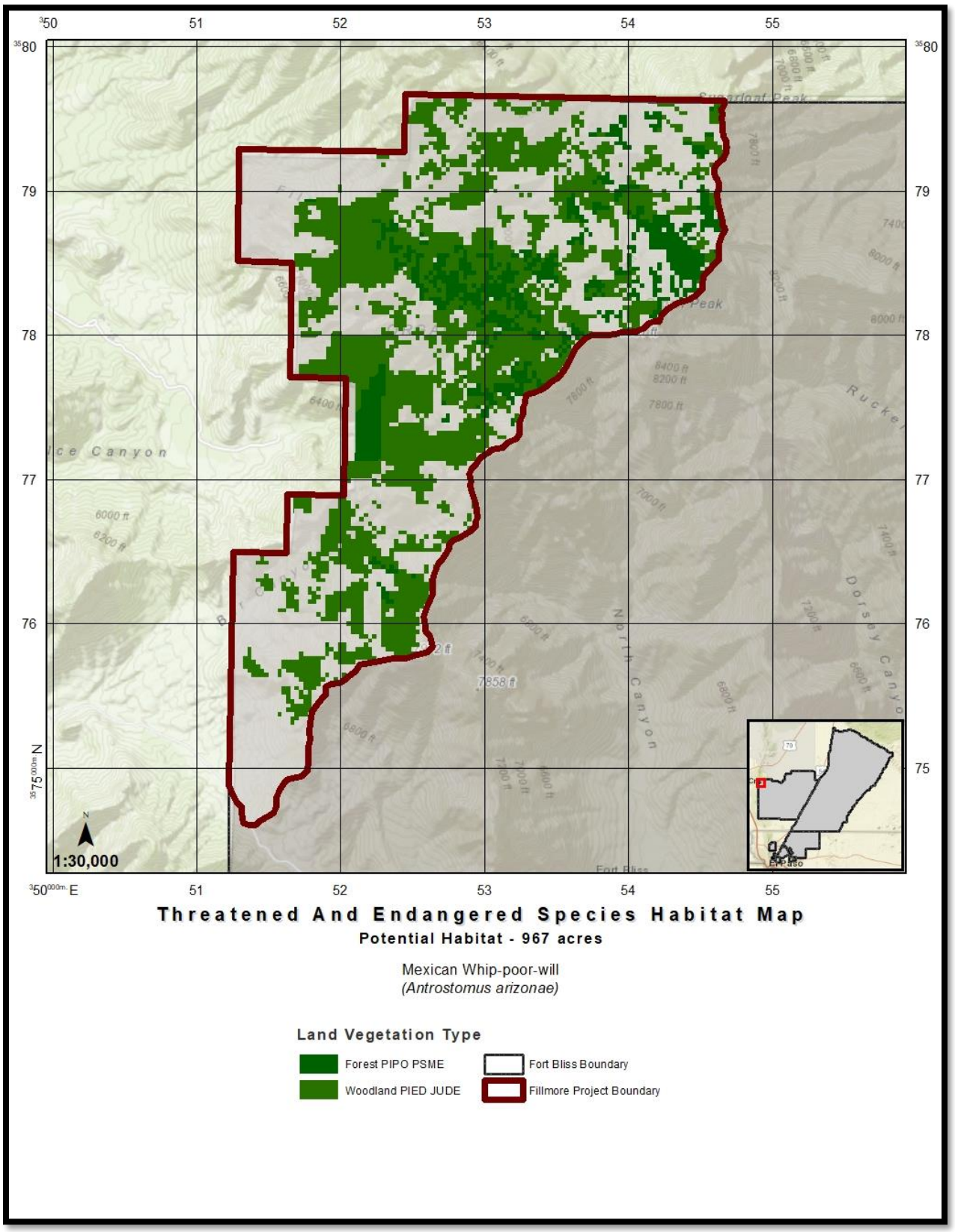
The Mexican Whip-poor-will (*Antrostomus arizonae*) is a cryptic migratory nightjar more often heard than seen. It is a medium sized nightjar with brown-gray-black mottled upperparts and pale gray-brown underparts. Throat is black; eyebrows and neckband are white. Tail is rounded with white corner patches (Ruehmann 2017).

Habitat Requirements and Limiting Factors

The Mexican Whip-poor-will inhabits primarily pine-oak forest from the southwest to Honduras, preferring mesic canyon with enough moisture to support a small amount of riparian vegetation, had steep-sided slopes or rocky canyon walls with a mixture of tall, mature ponderosa pine (*Pinus scopulorum)*, various oak species (*Quercus spp*.), narrow leaf cottonwood (*Populus angustifolia*), Arizona walnut (Juglans major), Arizona alder (*Alnus oblongifolia*), and other deciduous trees within the canyon bottom, with more arid hillsides of shorter piñon-juniper and oak woodlands. Vegetation structure was highly varied, with patches of moderate to dense under, mid, and overstory layers. Breeding and nesting habitat requirements are poorly understood, but it is a combination of tall trees, thick canopy and moisture and humidity providing food, shelter, and protection since they build their nest on the ground (Ruehmann 2017).

Fort Bliss has no recorded observations for the Mexican Whip-poor-will. Observation searches in iNaturalist also had no results in the region. Based on the habitat requirements needed to support this species, the habitat assessment map indicates there is 967 acres (47%) of potential habitat within the project footprint (**Figure 3.3-13**). It must be noted that negative findings do not indicate this species does not occur within the footprint, only that, currently, there are no confirmed records.

Figure 3.3-13. Potential habitat assessment map for Mexican Whip-poor-will



3.3.19 Mountain Plover (*Charadrius montanus*)

Species Description

The Mountain Plover (*Charadrius montanus*) is nicknamed "Prairie Ghost" for its habit of freezing in place and blending perfectly into its grassy surroundings when threatened. The Mountain Plover has sandy brown upperparts that extend along the side of the neck, ear coverts, and onto the chest; its forehead, throat, underwings, and breast are white, extending into a longish supercilium. This plover has a distinctive black loral stripe extending from the black bill to the eye, giving it the appearance of all three being one structure; the forecrown is mottled black to solid black, and the flanks on some breeding birds is rufous. Non-breeding individuals are like breeding except the black crown and lores are replaced by pale brown, the ear covets are slightly browner, the upperparts have somewhat more extensive dull rufous fringes, and the patches on the sides of the breast are buffer and cover a more extensive area (Sauer 2017).

Habitat Requirements and Limiting Factors

Mountain Plovers is generally found in open, flat, dry tablelands with low, sparse vegetation; it is primarily associated with shortgrass prairie dominated blue grama (*Bouteloua gracilis*), often mixed with buffalo grass (*Buchloe dactyloide*) or western wheatgrass (*Pascopyrum smithii*). It also occupies semi-desert scrub and grasslands habitats dominated by saltbush (*Atriplex* sp.*)* sandsage (*Artemisia* sp.), yucca. They are found at elevations ranging from 640 to 3250 m (2,100 to 10,663 ft.). They nest in fallow or recently plowed fields and overgrazed landscapes that mimic their natural shortgrass habitat. Mountain plovers often nest around prairie-dog towns on bare or nearly bare ground, sometimes in burned areas (Knopf and Wunder 2006).

Fort Bliss has recorded observations of the Mountain plover; however, all observations occur on the Otero Mesa in around the prairie-dog towns. INaturalist database search also showed no observations in the region. Based on the habitat requirements needed to support this species, the habitat assessment analysis there is no potential habitat for this species.

3.3.20 Northern Aplomado Falcon (*Falco femoralis septentrionalis*)

Species Description

Northern Aplomado Falcons (*Falco femoralis septentrionalis*) is one of three subspecies of the Aplomado Falcon and the only recorded subspecies in the United States (US), this subspecies was federally listed on February 25, 1986 (Fed.Reg. Vol 71, No. 143). They are a medium-sized falcon 14 to 18 inches in length with a wingspan of 31 to 40 inches. All genders are similar in appearance, but females tend to be larger than males.

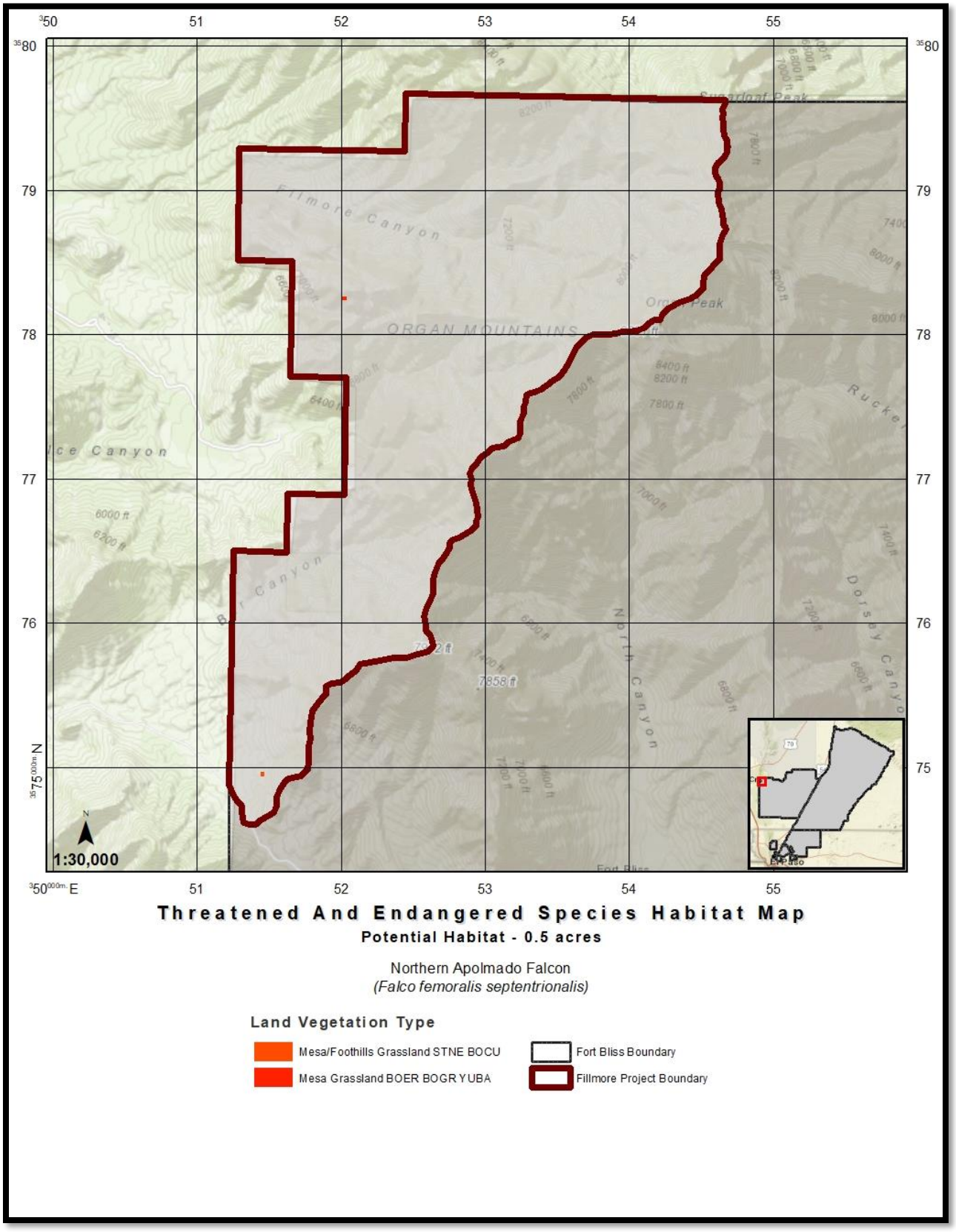
The Aplomado Falcon is as colorful as an American Kestrel, but larger. Adults are characterized by rufous (rust) underparts, a gray back, and a long and banded tail, and a distinctive black and white facial pattern. Aplomado falcons are smaller than peregrine falcons and larger than kestrels. Aplomado Falcons do not build their own nests but use stick nests built by other birds. Pairs work together to find prey and flush it from cover to feed their young up to six times per day. One brood of two to four whitish eggs is laid during nesting season (Keddy 2017).

Habitat Requirements and Limiting Factors

The Aplomado Falcon is an inhabitant of savannah and desert grassland communities of the neotropics, within this region the species occupies a broad range in terms of both latitude and elevation (Humphrey 1970). Aplomado Falcons have been observed and collected from coastal lowlands to 3500 m (11,482 ft.) above sea level, it was thought that the species was adaptable in terms of its sensitive to climatic conditions and habitat variability. (Hector 1975). Historically, it occupied coastal prairies, savannas, and desert grasslands from southern Mexico northern to southern and southwestern Texas, southern New Mexico, and southeastern Arizona (Young 2019).

Fort Bliss has historical records of the Northern Aplomado Falcon, however none occurred within or near the project footprint. All records occurred on Otero Mesa and the sub mesa (FB NRDB 2022). INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map showed 0.5 acres (0.02%) of potential habitat within the project footprint (**Figure 3.3-14**). It must be noted that negative findings do not indicate this species does not occur within the footprint, only that, currently, there are no confirmed records.

Figure 3.3-14. Potential habitat assessment map for Northern Aplomado Falcon



3.3.21 Painted Bunting (*Passerina ciris*)

Species Description

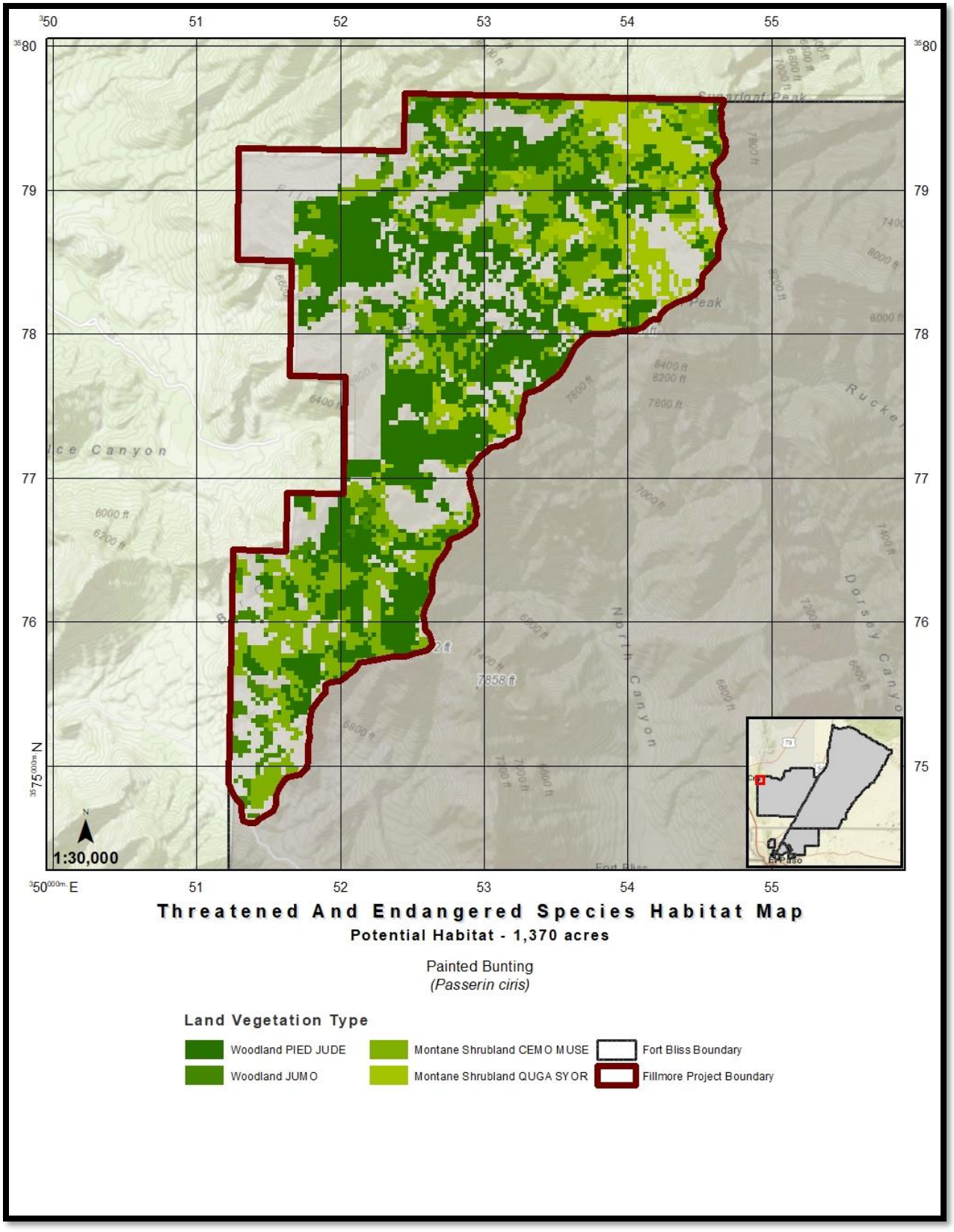
The Painted Bunting (*Passerina ciris*) is a colorful species of songbird divided into eastern and western populations. Western populations range from Kansas south to Louisiana and Texas. They are small ranging in size from 12 to 13 cm (4.7 to 5.1 in) in length with an average body weighted of 16 grams (0.5 oz). Adult birds are dimorphic, the males being brightly colored. The head and nape of the male is blue, the back is bronze-green, and the rump and underparts are red. The females are less brilliantly colored having dark greenish upperparts and yellow-green underparts. The wings and tail of both the male and female are deep brown or black contrasting with the rest of the body. The feet and legs, eyes and bill of both sexes are deep brown. Breeding season begins in late April through early August. Pairs are monogamous with rare instances of polygyny. Nests are built by females and woven into the surrounding vegetation for strength. Two broods are raised per season laying between three and four eggs per brood (Kaufman 1996).

Habitat Requirements and Limiting Factors

Painted Buntings favor partially open areas with dense low growth at all seasons. Breeds around thickets, hedgerows, woodland clearings and edges, and undergrowth of open woods. Winters in similar habitats in Florida, plus areas of scrub and second growth in the tropics. The western population's breeding habitat consists of partially open areas scattered with brush, riparian thickets, and shrubbery. Wintering habitat consists of tropical forest margins and tropical savanna (Kaufman 1996, Lowther et al. 1999). During breeding season, nests are in low lying vegetation.

Fort Bliss has recorded observations of the Painted Bunting; however, all observations occur by the Fred Hervey Water Reclamation Plant, these sightings were reported throughout August and September of 2000. Observation searches in iNaturalist also had no results in the region. Based on the habitat requirements needed to support this species, the habitat assessment map indicated there is 1,370 acres (66%) of potential habitat within the project footprint (**Figure 3.3-15**). It must be noted that negative findings do not indicate this species does not occur within the footprint, only that, currently, there are no confirmed records.

Figure 3.3-15. Potential habitat assessment map for Painted Bunting



3.3.22 Peregrine Falcon (*Falco peregrinus*)

Species Description

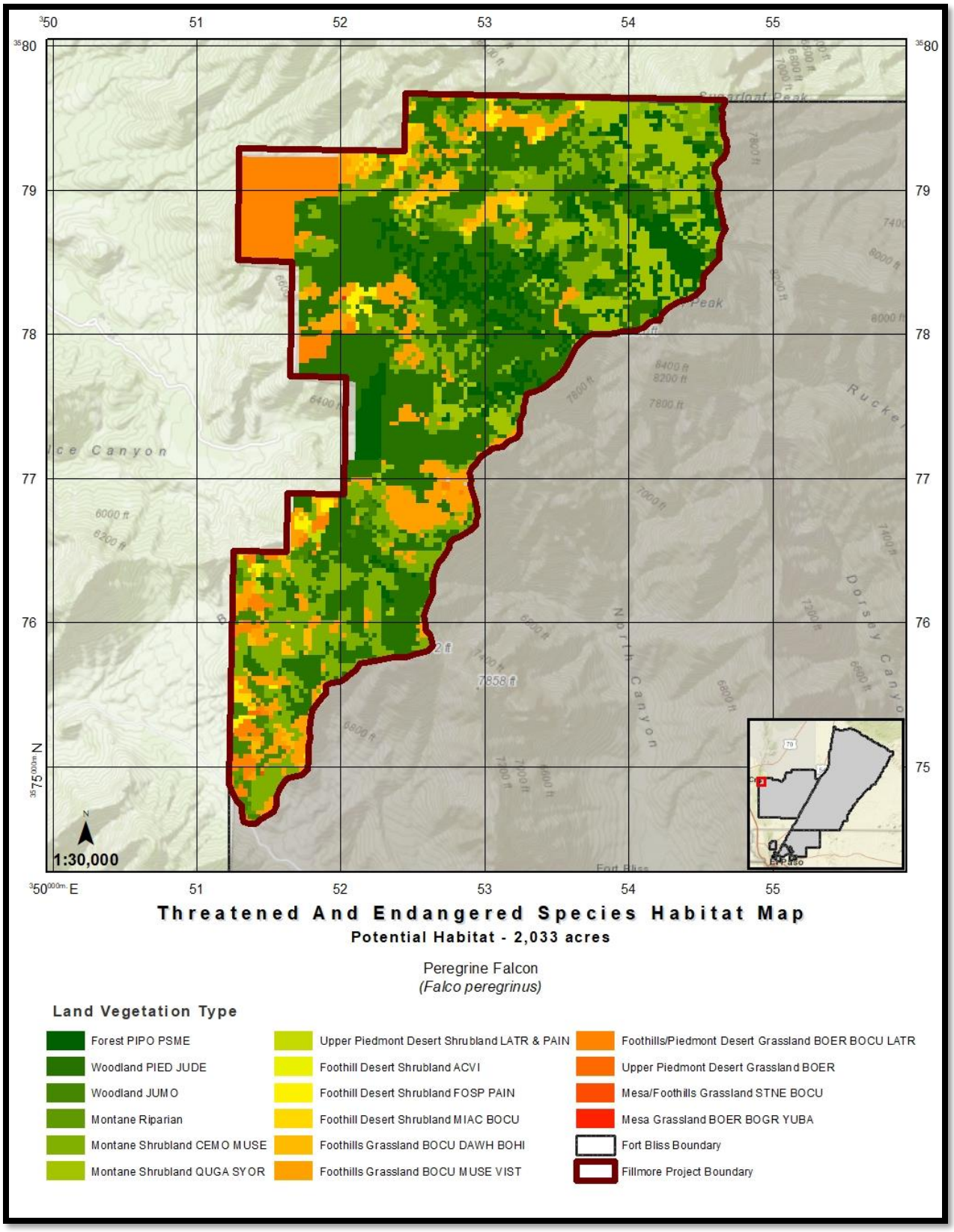
The Peregrine Falcon (*Falco peregrinus*) is a medium to large falcon with bluish-gray upperparts and a dark head with thick sideburns; underparts whitish, grayish, or buffy with variable amount of blackish spotting and barring; underwing and under tail surfaces barred pale gray and black. The immature peregrine falcon is similar except the upperparts vary from pale to slate or chocolate brown and underparts buffy with blackish streaks instead of bars. Peregrines feed mostly on birds of an enormous variety, from sandhill cranes to hummingbirds. Males typically select a few possible nest ledges at the beginning of each season with the female choosing from there. They do not build nests beyond scraping the nest ledge to create a depression in sand, gravel, or other substrate. One brood is raised during each season with a clutch size of two to five pale creamy to brownish eggs (White 2002, Lutmerding 2020).

Habitat Requirements and Limiting Factors

The Peregrine falcon occurs all over the world, inhabits open country, cliffs (mountains to coast), sometimes cities. Over its wide range, it is found in a wide variety of open habitats, from tundra to desert mountains. It is often found near water, especially along the coast, and migrants may fly far out to sea. When limited by availability of nest sites and prey, it often moves into cities, nesting on building ledges and feeding on pigeons (White 2020). They typically nest on cliffs from 7.6 to 396 m (25 to 1300 ft), on these cliffs they choose a ledge that is typically around a third of the way down the cliff face. They will also nest on transmission towers, quarries, silos, skyscrapers, and other tall buildings (White 2002).

Fort Bliss has historical records of the Peregrine falcon; four of these observations were recorded in Fillmore Canyon within the project footprint. INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded one observation in just east of Dripping Springs towards Ice Canyon. Based on the habitat requirements needed to support this species, the habitat assessment map showed 2,033 acres (98%) of potential habitat within the project footprint (**Figure 3.3-16**).

Figure 3.3-16. Potential habitat assessment map for Peregrine Falcon



3.3.23 Pinyon Jay (*Gymnorhinus cyanocephalus*)

Species Description

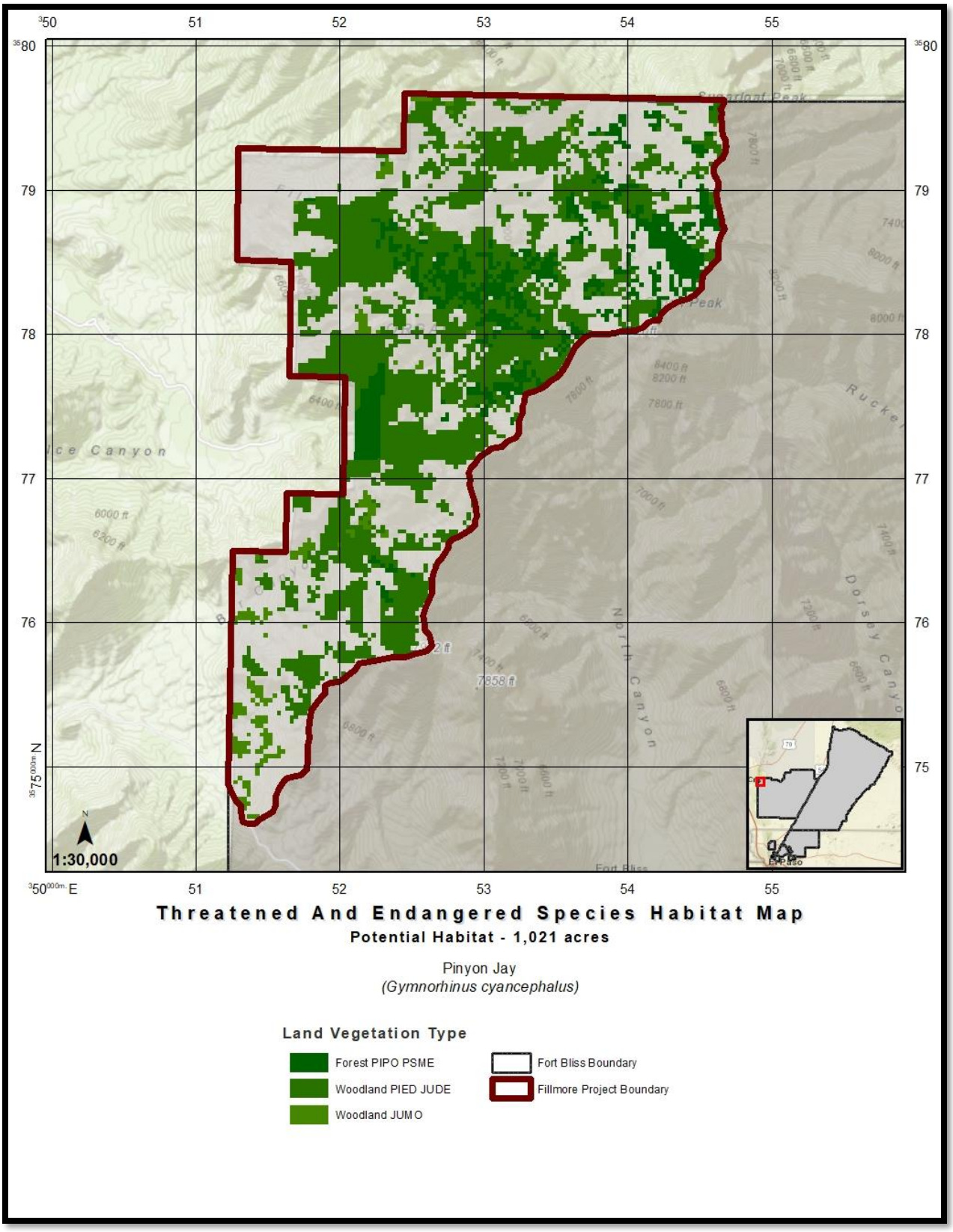
The Pinyon Jay (*Gymnorhinus cyanocephalus*) is a very social, dusty-looking blue jay with a shorter tail and longer, sharper bill than other jays. This jay travels in large noisy flocks, looks like a small blue-gray crow, and lives in the Great Basin region of the west. As its name indicates its range is tied to the distribution of the pinyon pines, they are sociable at all seasons, traveling in flocks and nesting in colonies. They fly close together giving harsh nasal calls. They nest in colonies close together but no more than three nests in any one tree. Breeding usually in late winter, the adults feed largely on stored seeds; nesting may occur again in last summer if pinyon pines produce an exceptional seed crop. Nests are built by both sexes out of twigs, the inner cup is made from shredded bark, grass, rootlets, pine needles and animal hairs. Clutch size varies from three to six very pale blue green to grayish eggs (Balda 2002, Lutmerding 2016).

Habitat Requirements and Limiting Factors

The Pinyon Jay is seldom found far from pinyon pines, as it feeds heavily on their seeds; it inhabits pinyon-juniper, chaparral, and scrub-oak woodlands. At times when the pinyon cone crop fails, flocks are seen elsewhere in streamside groves, oak woods, and other habitats (Balda 2002).

Fort Bliss has historical records of the Pinyon Jay; four of these observations were recorded in Fillmore Canyon within the project footprint. INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map showed 1,021 acres (49%) of potential habitat within the project footprint (**Figure 3.3-217**).

Figure 3.3-17. Potential habitat assessment map for Pinyon Jay



3.3.24 Piping Plover (*Charadrius melodus*)

Species Description

The Piping Plover (*Charadrius melodus*) is a small stocky plover with a short bill. Its light beige back and crown matches the white sand beaches and alkali flats that it inhabits; breeding piping plovers have a black neck band and crown stripe, white underparts, white rump, and an orange bill with a black tip. When flying, the wings show a white wing stripe with black highlights at the wrist joints and along the trailing edges (Vinelli 2000). During breeding season, Piping Plovers nest in areas with loose sand above the high tide line. Male Piping Plovers scrape away sand, gravel, and shells with their feet to make a small depression. They make several small depressions or scrapes in the sand within their territory. Usually one brood is raised, rare instances of double brooding have been described. Each brood produces a clutch size of four eggs. Both parents incubate the eggs, trading positions with the slightest possible exposure to the eggs. (USFWS 2003).

Habitat Requirements and Limiting Factors

This plover inhabits sandy beaches and tidal flats. It nests in open sandy situations near water, in a variety of settings: beaches along Atlantic Coast and Great Lakes; sandbars along major rivers on northern Great Plains; gravel or sand flats next to alkali lakes. Winters along coast, on tidal flats and beaches. Piping Plovers breed in two different regions, along oceans shores in the Northeast and along lakeshores, rivers and alkali wetlands in the northern Great Plains and Great Lakes. They nest above the high-water line in sandy areas with sparse vegetation including marshes, ocean shores, bays, spoil islands, reservoirs, alkali lakes, and rivers (U.S.F.W.S 1988, Vinelli 2000).

Fort Bliss NRDB was reviewed and yielded only one observation record from 1996 near the Fred Hervey Water Reclamation Plant. INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map indicated there is no potential habitat within the project footprint.

3.3.25 Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

Species Description

The Southwestern Willow Flycatcher (*Empidonax traillii extimus*) is one of the four recognized subspecies of the Willow Flycatcher, it has been federally listed as endangered since 1995, and it breeds only in dense riparian habitats in Arizona, New Mexico, southern California, southwestern Colorado, and the extreme southern portions of Nevada and Utah. It is a small perching bird that has a brownish-olive to gray-green upper body, a whitish throat contrasting with a dull olive to brownish breast band, a pale-yellow belly, and black wings with two light wing bars. Their head is relatively flat, with a long bill and a weak white eye-ring. Their eye-ring, wing-bars, and breast-band are most conspicuous in spring birds; their feet are brownish black to blackish. The willow flycatcher is basically indistinguishable from the Alder flycatcher unless identified by voice; identification without vocal cues requires attention to a combination of characters, although willow flycatchers generally have browner plumage and a less noticeable eye-ring.

Habitat Requirements and Limiting Factors

The Southwestern willow flycatcher breeds in dense riparian habitat, with willow, salt cedar, and box elder being the dominant tree species over 90% of the time. Habitat in New Mexico often contains a cottonwood overstory with a shrub understory of native willows and/or exotics such as Russian olive and salt cedar.

Fort Bliss NRDB was reviewed and yielded a handful of observations, two of those observations occurred just south of the project area in Soledad Canyon in 2007 and 2012. INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map indicated there is no potential habitat within the project footprint.

3.3.26 Sprague's Pipit (*Anthus spragueii*)

Species Description

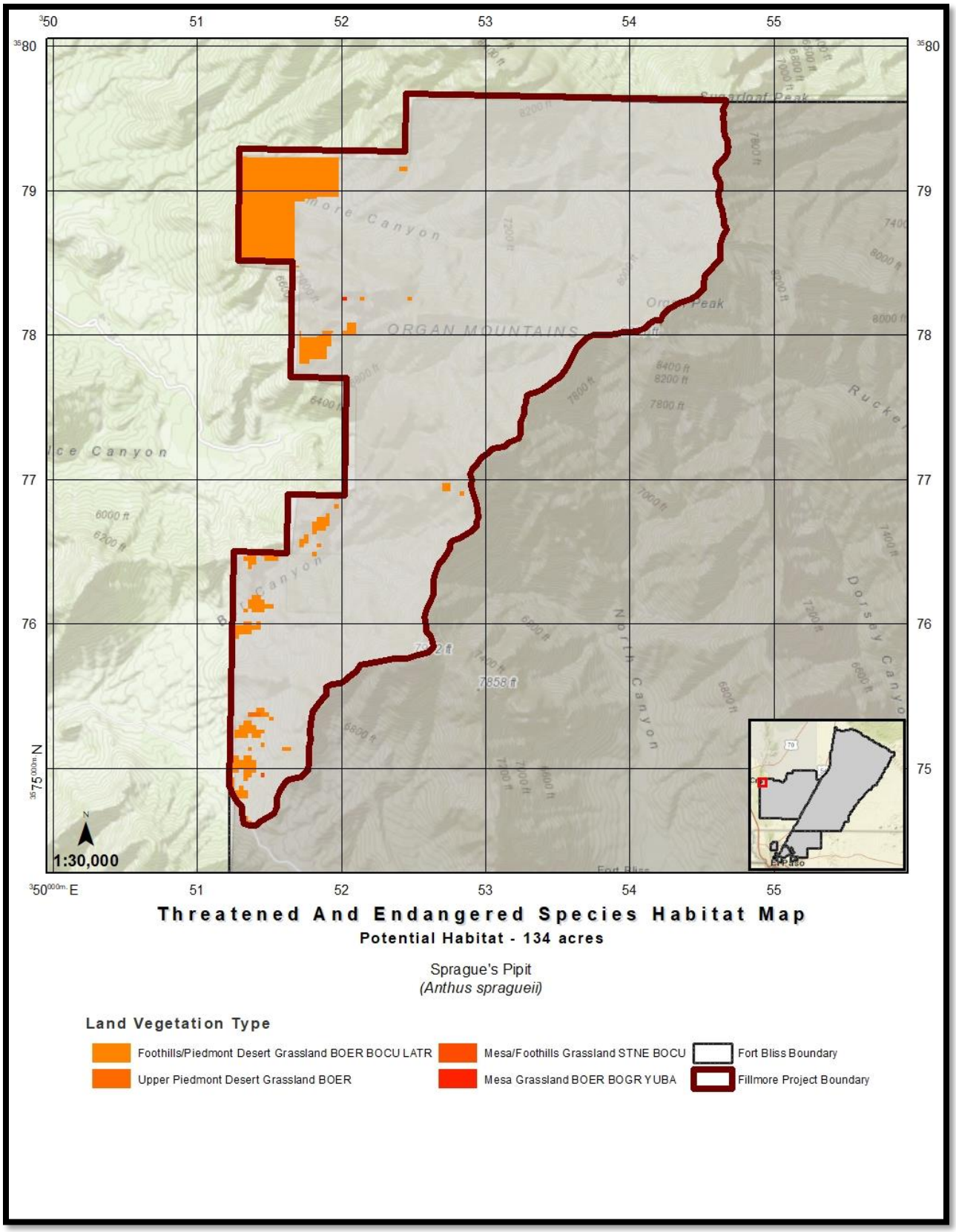
This small unassuming bird is best identified during its territorial flight displays, as it possesses an amazing song flight, hovering on rapidly fluttering wings high above its territory, singing a downward-swirling song during bursts of gliding; these displays often last for more than thirty minutes, but there have been durations of at least three hours documented. Both sexes on this species are similar; buffy overall, with extensive white feathers on outer retrices. Dark streaked crown, with plain face, large eyes, and pale eye-rings. Upperparts buff with darker streaking, with two indistinct wing-bars, and fine blackish streaks on breast and flanks (can appear as "necklace"). Legs are pale, with elongated hallux hind claw. During breeding season, adults raise two broods a year with a clutch size of four to five (rarely three to six) whitish, heavily spotted with maroon or purplish-brown eggs (Davis 2014).

Habitat Requirements and Limiting Factors

The Sprague's Pipit (*Anthus spragueii*) is a bird endemic to the North American grasslands, inhabiting plains, and shortgrass prairies usually in vegetation no more than 6 to 12 inches tall. This bird breeds in dry grassland, especially native prairie, avoiding brushy areas and cultivated fields; this reliance on native prairie and grasslands, which keep getting converted to agricultural fields or degraded due to cattle and climate change, is the reason for their decline in numbers.

Fort Bliss NRDB was reviewed and yielded a several observations, none of which occurred in near or within the project footprint. All observations occurred in the grasslands of the Otero Mesa. INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map indicated some potential habitat within the project footprint, 134 acres (6%) of piedmont grassland (**Figure 3.3-18**).

Figure 3.3-18. Potential habitat assessment map for Sprauge's Pipit



Threatened And Endangered Species Habitat Map

Potential Habitat - 134 acres

Sprague's Pipit
(Anthus spragueii)

3.3.27 Thick-Billed Longspur (*Rhynochopanes mccownii*)

Species Description

The Thick-Billed Longspur (*Rhynochopanes mccownii*) is a chunky, short-tailed, large-billed, sparrow-sized bird measuring 15 cm (5.9 in) in length. Longspur refers to the elongated claw of the hallux. Males and females differ in plumage. A breeding male is gray with black on the bill, crown, malar stripe, and upper breast, blackish on lower breast and belly, chestnut median coverts. Non-breeding males are like females, but crown often appears spotted not streaked; belly retains some black spotting and median coverts and scapulars more extensively chestnut (Byers 1995).

Pairs raise two broods per season with females incubating a clutch of three to four, sometimes up to six, white to pale olive eggs. In northeastern Colorado, usual clutch size was three (With 1994a). Nestlings are altricial. Young are tended by both adults, leave nest in 10 days, and fly 12 days after hatching (Terres 1980). Second broods were reported in north-central Colorado and in Montana (DuBois 1935, Strong 1971). Second broods may be initiated as soon as three weeks after fledging of the initial brood but may be limited by female energy reserves (Felske 1971, With 1994).

Habitat Requirements and Limiting Factors

The Thick-Billed Longspur inhabits sparse short-grass plains plowed and stubble fields, and areas of bare or nearly bare ground (AOU 1983). Use grasslands with little litter (Felske 1971) and low vegetation cover (DuBois 1935, Creighton 1974), such as that provided by shortgrass or heavily grazed mixed-grass prairie (Saunders 1914; Finzel 1964; Wiens 1970; Maher 1973, 1974; Creighton 1974; Oberholser 1974; Porter and Ryder 1974; Stewart 1975; With 1994a; Prescott and Wagner 1996). Cultivated lands also may be utilized, including small-grain stubble fields, minimum- and conventional-tilled land, and summer fallow fields (Felske 1971, Stewart 1975, Martin in prep.), although, historically, agricultural lands were avoided (DuBois 1935, Mickey 1943). Pairs often breed on high, barren hillsides with southern exposures (*Giezentanner* 1970a,b; Felske 1971; Creighton 1974). Blue grama (*Bouteloua gracilis*) and buffalo grass (*Buchloe dactyloides*) are dominant plants in nesting areas (DuBois 1935, Cassel 1952, Creighton 1974).

Nests usually in a scrape on the ground at the base of a bush or clump of grass, or beside cattle dung. Nests beside shrubs may be subject to heavy predation by ground squirrels (With 1994a). Nests tend to be oriented to the north (With and Webb 1993), and about one-third to one-half of nests are placed near clumps of grass, shrubs, plains prickly pear (*Opuntia polyacantha*), or cowpies (DuBois 1935, Mickey 1943, With 1994b). However, shrubs and prickly pear near the nest may facilitate depredation by providing protective cover to predators. In northcentral Colorado, for example, 75-80 percent of nests placed near shrubs or prickly pear were depredated (With 1994b). Nests depredated during incubation had six times more shrub cover within 1 meter of the nest than did successful nests.

Fort Bliss NRDB was reviewed and yielded a several observations, none of which occurred in near or within the project footprint. All observations occurred in the grasslands of the Otero Mesa. INaturalist observation database was also reviewed to confirm any observations near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map indicated there is no potential habitat within the project footprint.

3.3.28 Varied Bunting (*Passerina versicolor*)

Species Description

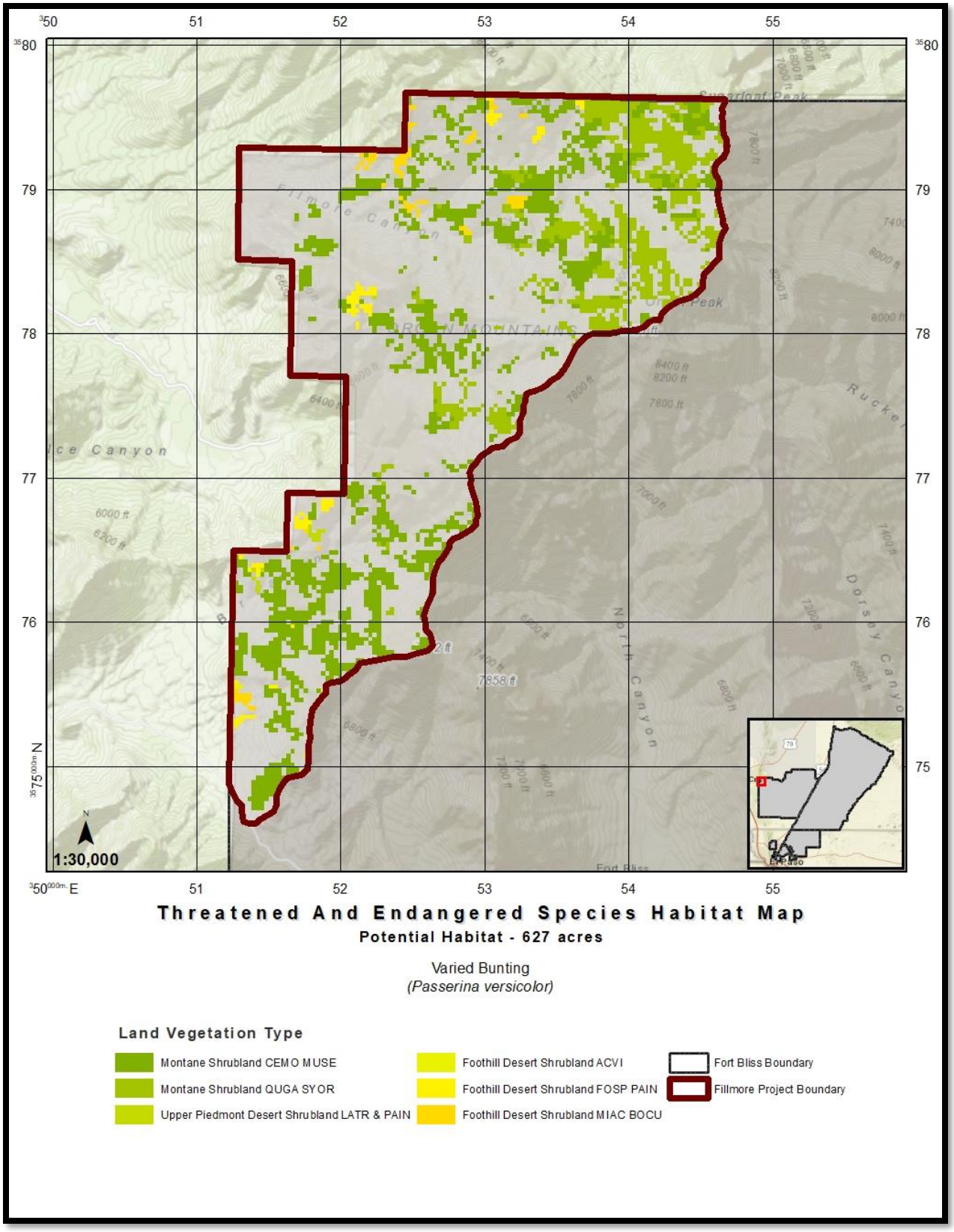
The Varied Bunting (*Passerina versicolor*) adult male's body is reddish purple, with a blue crown and rump, and a red nape; from a distance, it appears dark purplish. Females and first year males are light brown, with paler underparts, and no wing-bars, stripes, or distinctive marks. A small oscine measuring 11.4 to 14.0 cm (4.5 to 5.5 in) long with a short bill, conical; slightly decurved culmen. Breeding birds are sexually dimorphic in plumage. Alternate plumage, male body reddish purple, crown and rump blue, nape red; appears dark purplish from a distance. Females and Basic-plumaged males light brown, with paler underparts, and no wing-bars, stripes, or distinctive marks. First-year males usually resemble females and cannot be distinguished by plumage color alone; some individual males may have a few scattered red or blue feathers. Breeding in Varied Buntings depends on rainfall, if summer rains are delayed nesting may not begin until August. Eggs are polymorphic in color among populations, a rare phenomenon in passerine birds (Groschupf 2020).

Habitat Requirements and Limiting Factors

The Varied Bunting is common in southwestern United States and widespread distribution in the central Mexico preferring the shadows of desert thorn brush in canyons, stream thickets, scrubby woodlands, and overgrown clearing. Prime habitat is usually in canyons and along desert washes, edge of riparian areas; occasionally found in open desert where vegetation is dense along ephemeral stream bounded by hillsides covered with thick brush, 1,060 to 1,220 m (3477 to 4002 ft) elevation. Streamside vegetation is mesquite (*Prosopis sp.*), oak (*Quercus spp*.), willow (*Salix sp.*), netleaf hackberry (*Celtis reticulata*), graythorn (*Condalia obtusifolia*), desert hackberry (*Celtis pallida*), and hopbush (*Dodonaea viscosa*); hillside vegetation is diverse mixture of smaller mesquites, hackberry, acacias (Acacia spp.), cholla (*Opuntia spp*.), prickly pear (*Opuntia spp*.), and graythorn. Annual grasses become abundant with advent of summer monsoons (Lockwood 1995).

Fort Bliss NRDB was reviewed and yielded only two observations from 1996 and 2012, none of which occurred near or within the project footprint. INaturalist observation database was also reviewed to confirm any observations near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map showed 627 acres (30%) potential habitat within the project footprint (**Figure 3.3-19**).

Figure 3.3-19. Potential habitat assessment map for Varied Bunting



3.3.29 Virginia's Warbler (*Leiothlypis virginiae*)

Species Description

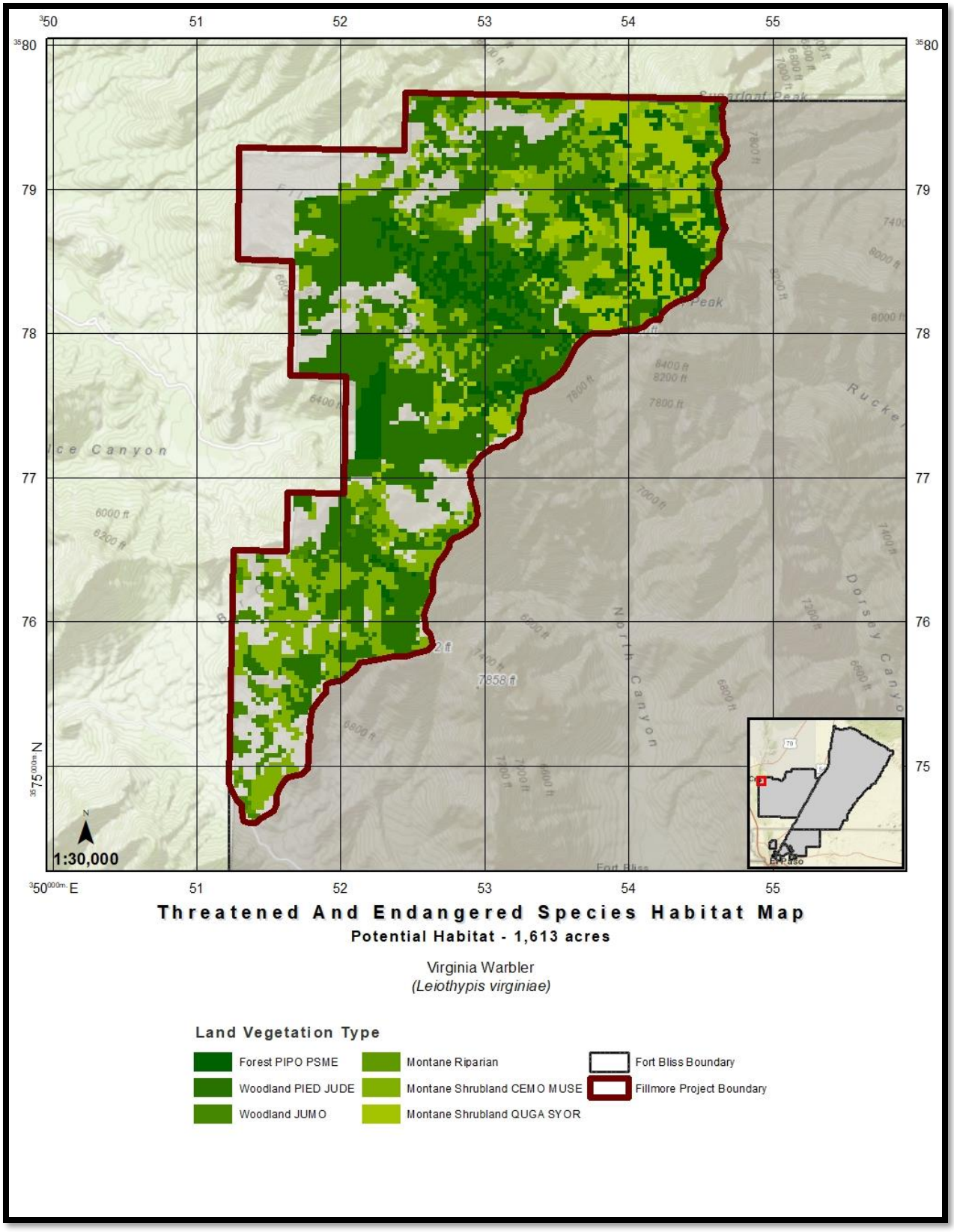
The Virginia's Warbler (*Leiothlypis virginiae)* is a small, gray warbler of the southwestern Rocky Mountain states has been described as shy, retiring, and not easy to observe. Males have a gray head (often appearing slightly bluish), becoming slightly brownish on ear coverts, and paler (without bluish tint) on lores, chin, throat, and sides of neck (behind ear coverts), with complete, narrow, white eye-ring and rufous patch on crown (8–13 mm) that is only slightly concealed by gray feather-tips. Rufous portion of crown feathers usually extends >5 mm from base of feathers. Back and scapulars gray, with slight tawny-brownish tinge, and feathers may have narrow darker margins. Rump and upper tail-coverts yellowish green. Rectrices dark brownish gray, narrowly edged paler on outer web. Lower throat and center of breast lemon yellow, but yellow varies in extent and may extend to upper throat and across entire breast to upper sides. Sides and flanks grayish. Lower breast and belly whitish, very faintly tinged yellow buff. Undertail-coverts lemon yellow. Wing-coverts (except primary coverts) gray, becoming dark brownish gray on inner webs of greater coverts. Remiges and primary coverts dark brownish gray, broadly margined (tertials and inner secondaries) or narrowly edged (primary coverts, primaries, outer secondaries) on outer web with gray. Primaries and rectrices are broader and more truncate than Juvenile feathers. Females are like males, except yellow on breast is less extensive (usually confined to center of breast), and rufous crown-patch is smaller (2–10 mm) and paler (Dunn and Garrett 1997, Pyle 1997, Olson 2020).

Habitat Requirements and Limiting Factors

The Virginia's Warbler is a common yet hard to observe plain warbler that lives in dense, low brush and chaparral on dry mountainsides of the west. It inhabits oak canyons, brushy slopes, pinyons. Breeds on dry mountainsides in scrub oak, chaparral, pinyon-juniper woods, or other low brushy habitats. In certain areas, prefers mountain mahogany and Gamble oak. In migration, frequently in woods along streams. In winter in Mexico, at mid-elevations in dry scrub. Nests are placed in habitats with needlegrass (*Stipa* sp.) or little bluestem (*Schizachyrium scorparium*) or oak leaf litter beneath a tree stem, root rock or overhang dominated by oak shrubs (Olson 2020).

Fort Bliss NRDB was reviewed and several observations for Virginia's Warbler were collected during the summer months of May to September from 1991 to 2012. Several of these observations occurred within the project footprint. INaturalist observation database was also reviewed to confirm any observations near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment map showed 1,613 acres (78%) potential habitat within the project footprint (**Figure 3.3-20**).

Figure 3.3-20. Potential habitat assessment map for Virginia Warbler



3.3.30 Western Burrowing Owl (*Athene cunicularia*)

Species Description

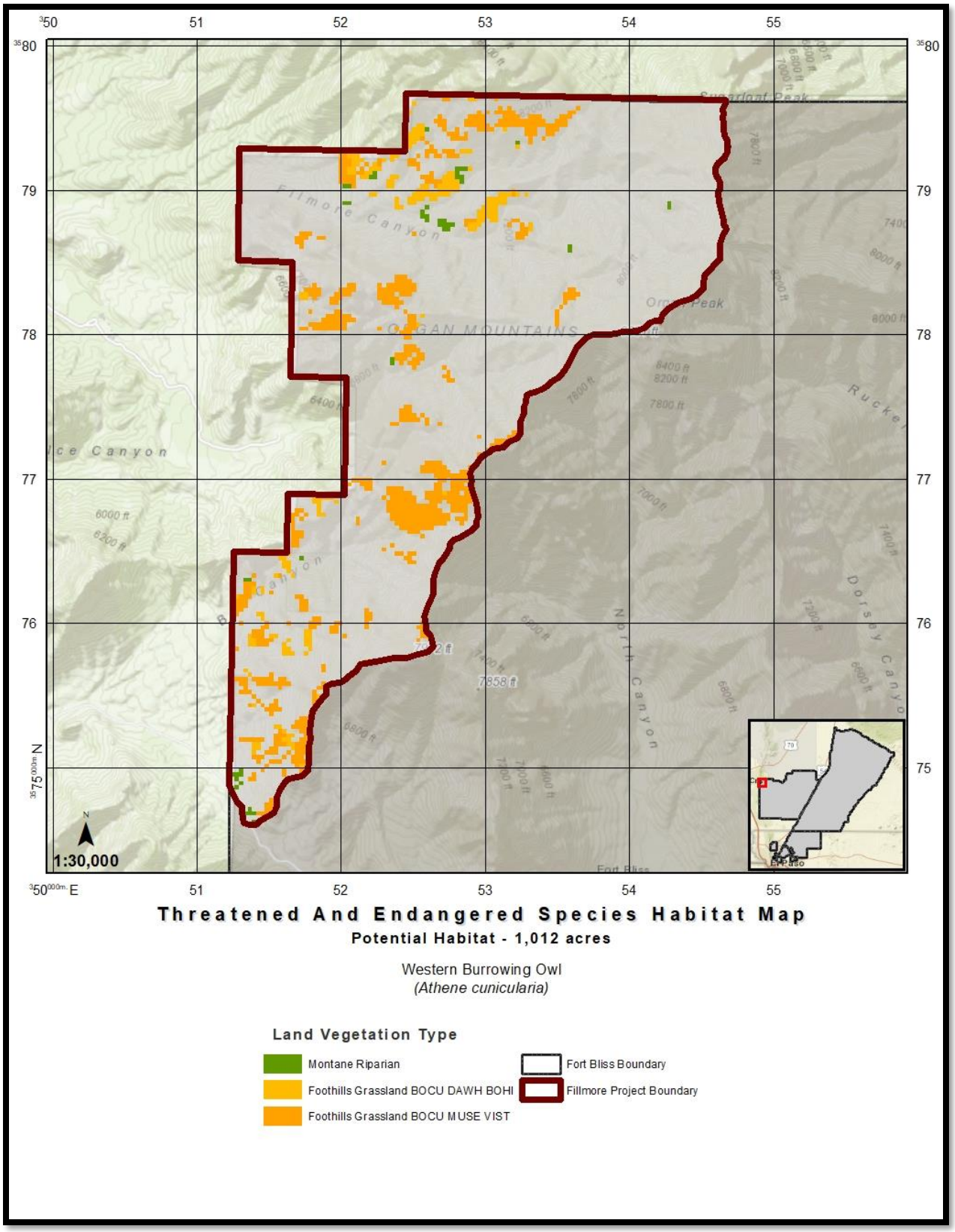
The Western Burrowing Owl (*Athene cunicularia*) is a small, ground dwelling sandy colored owl with bright yellow eyes arched by white eyebrows, and no ear tufts. Measuring in a length of 19 to 25 cm (7.5 to 9.8 in); their legs are long and sparsely feathered below tibiotarsal joint. Their head is round lacking ear tufts with distinct oval facial ruff. Wings are long and rounded, with 10 brown and buffy-white barred primaries, outermost with inner webs sinuated; tail short with 12 brown and buffy-white barred rectrices. Dorsum brown: back, scapulars, and crown profusely spotted with buffy white. Throat and undertail coverts white; remainder of underparts of adults buffy-white with broad brown barring on both sides (Poulin 2020). There are no reliably distinguishable differences between males and females by plumage or size (Pyle 1997). During breeding season females are generally darker than males. Males and females typically weigh 150 to 170 g (5.2 to 6 oz). During breeding season, sexes are best distinguished by behavioral differences; in general, females are most often at or in the nest burrow until the chicks fledge, while males stand guard at a nearby burrow or perch (Poulin and Todd 2006).

Habitat Requirements and Limiting Factors

The Western Burrowing owl has a broad range but is limited to open grassland, prairies, agricultural lands, and steppes (Campbell 1990). It favors areas of flat open ground with noticeably short grass or bare soil, where they commonly take over burrows abandoned by animals such as ground squirrels, tortoises, prairie dogs, coyotes. Throughout its breeding range, habitat preferences include open, treeless areas within grasslands, steppe, and desert biomes. Generally, inhabit gentle-sloping areas characterized by low and sparse vegetation (James et al. 1991). Wintering habitat can be different from breeding habitat, using burrows associated with barrier islands, agricultural land, roadsides and man-made objects such as road culverts, construction pipes and artificial burrows (Ortega 2003; Williford et al. 2007).

Fort Bliss NRDB was reviewed and several observations for the Western Burrowing owl have been collected throughout Fort Bliss, however none of these observations occurred near the project footprint. INaturalist observation database was also reviewed to confirm any observations near or around the project boundary. This search yielded no observations. It must be noted that negative findings do not indicate this species does not occur within the footprint, only that, currently, there are no confirmed records. Based on the habitat requirements needed to support this species, the habitat assessment map showed 1,012 acres (49%) potential habitat within the project footprint (**Figure 3.3-21**).

Figure 3.3-21. Potential habitat assessment map for Western Burrowing Owl



3.3.31 Yellow-billed Cuckoo (*Coccyzus americanus)*

Species Description

The Yellow-billed Cuckoo (*Coccyzus americanus*) is a slender medium bird with a long tail spanning a length of 26 to 30 cm (10 .2 to 11.8 in) weighing 55 to 65 g (1.9 to 2.2 oz) with two rows of four to six large white circles on the underside. They have plain grayish-brown feathers on their head and back, and dull white underparts. Their bills are moderately long and curved downward with a hooked tip, a black upper mandible and a yellow or orange lower mandible. Sexually and seasonally monomorphic in plumage; females are only slightly larger than the males. The juveniles resemble adults, but the wing coverts tinged with cinnamon brown and a less distinct undertail pattern (Hughes 2020). Both adults build the nests using twigs collected from the ground or broken off vegetation with their bill. Cuckoos have two broods a season, clutch size varies between one to five pale bluish green, marked, fading to light greenish yellow eggs (Nolan and Thompson 1975, Potter 1980).

Habitat Requirements and Limiting Factors

The Yellow-billed cuckoo prefers open woodlands with clearings and a low dense shrub layer. They are often found in woodlands near water bodies (51, 52). They are generally absent from heavily forested areas and large urban areas (Eaton 1988). In parts of its range, it occupies woodlands, abandoned farmland, overgrown fruit orchards, successional shrubland, dense thickets along streams and marshes (Johnsgard 1979), shade trees and gardens, in the midwestern portion of its range it can be found in willow (*Salix* spp.), dogwood (*Cornus spp.*) shrub wetlands, and successional hard wood forests with dense stands of small trees (Nolan 1963, Eastman 1991). Western populations of cuckoos prefer to occupy desert riparian woodlands compromised of willow, Fremont cottonwood (*Populus fremontii*), alder (*Alnus* sp.) walnut (*Juglans* sp.), box elder (*Acer negundo*), and dense mesquite (*Prosopis spp*.). Nests are frequently placed in willows, but cottonwoods are used extensively for foraging (USFWS 2013, USFWS 2014). Habitat in its nonbreeding range coastal scrub, second growth, hedgerows, forest edge (Stiles and Skutch 1989) from sea level to 2,500 m, and humid lowland forest (Parker et al. 1982, Howell and Webb 1995).

Fort Bliss has four confirmed observations of the Yellow-billed Cuckoo, only one of those observations occurred just east of the project area in Soledad Canyon in 1995. INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment indicated there is no potential habitat within the project footprint.

3.3.32 Zone-tailed Hawk (*Buteo albonotatus*)

Species Description

The Zone-tailed Hawk (*Buteo albonotatus*) is a midsized buteo measuring 45 to 56 cm (17.72 to 22.05 in) in length with a wingspan of 119 to 140 cm (46.85 to 55.12 in). A large blackish, sleek, hawk that is remarkably like the Common Black-Hawk; the Zone-tailed hawk is slimmer, with yellow legs and beak. When viewed from below, the zone-tailed hawk's tail has two to three light white bands, and the wings are two-toned with black tips. The female is slightly larger than the males of this species. The immature hawk is a little darker with white spots around the head and on under parts. The immature hawk has narrow blackish bands on the tail (Johnson et al. 2000). Zone-tailed hawks sometimes mix in with groups of turkey vultures, which look very much like the hawk; these hawks are thought to mimic turkey vultures to surprise prey that has become conditioned to the vultures. These birds fly with their wings slightly raised and occasionally rock back and forth as the vultures do. Known for their impressive courtship display, flying

in aerial loops, dives and rolls are performed reaching heights of up to 500 m (1,640.42 ft). Females lay one to three white to bluish white, sometimes spotted with lavender eggs per clutch, raising one brood per season (Johnson 2000, Lutmerding 2017).

Habitat Requirements and Limiting Factors

The Zone-tailed Hawk is a large raptor of riparian areas, mountains, they thrive in arid foothills of the Southwest, canyon lands, habitats range in elevation from 0 to 2200 m (0 to 7217.85 ft.). They often hunt in desert scrub and grasslands, and they use river courses with cottonwoods and willows for both nesting and hunting. They nest in large trees along creeks, in cactus in open desert, and sometimes on canyon walls (Johnson et al. 2000).

Fort Bliss has historical records of Zone-tailed Hawks, however none occurred within or near the project footprint. All records occurred at the foothills of the Sacramento Mountains and within the Otero Mesa grasslands and sub-Mesa. INaturalist observation database was also reviewed to confirm any observations occurring near or around the project boundary. This search yielded no observations. Based on the habitat requirements needed to support this species, the habitat assessment showed only 416 acres (20%) of potential habitat within the project footprint (**Figure 3.3-22**). It must be noted that negative findings do not indicate this species does not occur within the footprint, only that, currently, there are no confirmed records.