APPENDIX C

BIOLOGICAL RESOURCE REVIEW – ECOSPHERE ENVIRONMENTAL SERVICES

Durango-La Plata County Airport

Biological Resource Review

Prepared for:

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Ecosphere Environmental Services

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Cortez, CO
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ABBREVIATIONS/ACRONYMS

BCC	Birds of Conservation Concern
CPW	Colorado Parks and Wildlife
Ecosphere	Ecosphere Environmental Services
GIS	Geographic Information System
IPaC	Information, Planning, and Conservation
SWReGAP	Southwest Regional GAP Analysis Project
USFWS	US Fish and Wildlife Service

1. INTRODUCTION

1.1 Purpose

Ecosphere Environmental Services (Ecosphere) was contracted by Jviation, Inc. to conduct a biological review of the Durango-La Plata County Airport property. The purpose was to evaluate the property and surrounding areas for the presence of federal and state-listed species, describe the vegetation communities, and identify unique wildlife habitats to have provide sufficient information to master plan future improvements in a manner that avoids, if possible, sensitive species and their habitats.

1.2 Scope of Services

The scope of work for the biological resource review included the following:

- Review federal and state-listed plants and wildlife
- Review of existing Geographic Information System (GIS) data for biological resources (e.g., Colorado Parks and Wildlife Species Activity Data)
- Map the vegetation communities using Southwest Regional Gap Analysis Project (SWReGAP) data[1]
- Conduct field surveys to identify potential habitat for federal and state-listed species and unique wildlife habitats
- Report findings and present maps and photographs

1.3 Location

The airport is situated in the foothills of the San Juan Mountains in southwestern Colorado, approximately 14 miles southeast of the City of Durango (Figure 1, Appendix A). The airport is located in La Plata County in Section 29, Township 34 North, Range 8 West, New Mexico Principal Meridian on the Loma Linda, Colorado 7.5-minute United States Geological Survey quadrangle.

[1] The Southwest Regional Gap Analysis Project (SWReGAP) is an update of the Gap Analysis Program's mapping and assessment of biodiversity for the five-state region encompassing Arizona, Colorado, Nevada, New Mexico, and Utah. It is a multi-institutional cooperative effort coordinated by the U.S. Geological Survey Gap Analysis Program. The primary objective of the update is to use a coordinated mapping approach to create detailed, seamless GIS maps of land cover, all native terrestrial vertebrate species, land stewardship, and management status, and to analyze this information to identify those biotic elements that are underrepresented on lands managed for their long term conservation or are "gaps" (Lowry et al. 2007).

2. Regulatory Context

This biological review was conducted within the context of federal and state environmental regulations in support of the Durango Airport Master Plan. Federal and state environmental regulations that apply to the project include, but are not limited to, the following:

- Bald and Golden Eagle Protection Act of 1940, as amended (PL 86-70, PL 87-884, PL 92-535, PL 95-616; USC 668-668d)
- Endangered Species Act of 1973, as amended (PL 94-325; 16 USC § 1531, *et seq.*)
- Migratory Bird Treaty Act of 1918, as amended (16 USC 703-712; 50 CFR Part 21)
- National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*)
- Federal Noxious Weed Act of 1974, as amended (7 U.S.C. 2801 *et seq*.)
- Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
- Colorado Noxious Weed Act of 1991, as amended (Colorado Revised Statutes, 35-5.5.)
- Colorado's Nongame and Endangered Species Conservation Act of 1985, as amended (CO ST § 33-2-101 to 108)

3. Survey Area

The survey area is defined as the Durango–La Plata County Airport property comprising about 1,382 acres (Figure 2, Appendix A). The mesa top is the portion of the property that includes the footprint of the airport proper, but the property boundary extends down to the Florida River to the west (Figure 2).

4. Methods

4.1 Desktop Review

Prior to conducting fieldwork, biologists from Ecosphere compiled a list of U.S. Fish and Wildlife Service (USFWS) and State of Colorado listed species that occur or have the potential to occur in La Plata County, Colorado (USFWS 2104a). Information for each species includes their conservation status, habitat associations, and potential to occur in the survey area. Federally listed species were accessed from the Information, Planning, and Conservation (IPaC) decision support system (USFWS 2014a). Species listed with the State of Colorado were obtained online (CPW 2014).

Ecosphere also reviewed the USFWS Birds of Conservation Concern (BCC) list for Bird Conservation Region 16 – Southern Rockies/Colorado Plateau, prior to field work (USFWS 2008). BCC species are birds that are high conservation priority due to moderate to severe threats to the species or their habitats. Reviewing BCC species helps federal agencies to address migratory birds in planning, as mandated by Executive Order 13186.

Unique wildlife habitats are those that provide important elements required for the ecological processes of wildlife species relative to their natural environment. In arid southwestern Colorado, unique wildlife habitats may include water features (rivers or streams, ponds, and wetlands), tall trees in an otherwise open landscape, or habitats created by keystone species that provide habitat for many other species (i.e., prairie dog colonies). Colorado Parks and Wildlife Species Activity Data also provide Geographic Information System (GIS) data of unique habitats, such as elk highway crossing, bald eagle winter concentration, etc. (CPW 2013). Ecosphere reviewed the Wildlife Species Activity Data to locate unique wildlife habitat relative to the survey area (Figure 3, Appendix A); and identified unique habitat based on field surveys and review of aerial maps (Figure 4, Appendix A).

4.2 Field Review

Ecosphere Biologist, Aimee Way, conducted driving and pedestrian surveys of the property on August 26 and 29, 2014. Ms. Way also conducted further investigations and made additional observations while assisting wetland specialist Ryan Unterreiner on August 27, 2014. The biological surveys included identification of plants and wildlife observed, wildlife signs, vocalizations, and unique and potential habitats for wildlife species (Appendix B). Binoculars were used to aid in visual surveys. Photographs of the survey area and the airport property were also taken (Appendix C).

5. RESULTS

5.1 Existing Conditions

The airport is located on a mesa above the Florida River with an elevation range of 6,450 to 6,690 feet above mean sea level. The south-flowing Florida River, a tributary of the Animas River, is located less than 0.5 mile west of the runway facility, and is the predominant water feature within the airport vicinity. Salt Creek, an intermittent tributary of the Florida River, is located approximately 0.5 mile east of the airport. The Animas River is located approximately 6.5 miles west of the airport. Existing land use within the airport vicinity is predominantly agricultural/open space with some scattered rural residences, along with some industrial development.

According to SWReGAP, the primary vegetation community in the survey area is mapped as Agriculture both on the mesa top and in the Florida River valley, as shown in Figure 5 (Lowry et al. 2007). Although the airport is industrial, the historical land use was agricultural. Agriculture, especially ranching, continues to dominate the surrounding area. The second-most dominant vegetation community is Colorado Plateau Piñon (*Pinus edulis*) - Juniper (*Juniperus scopulorum*) Woodlands, covering the slopes leading up to the mesa and the slope along the Florida River valley. Other vegetation types include Inter-Mountain Basins Big Sagebrush Shrublands interspersed within the piñon–juniper woodlands and Inter-Mountain Basins Semi-Desert Shrub Steppe. The airport facilities and buildings occur in an area mapped as Inter-Mountain Basins Greasewood Flats.

Weather in the survey area is characterized by cold winter temperatures and moderate summer temperatures. The airport is located in an arid landscape; annual precipitation is 12.6 inches per year (WRCC 2014).

5.2 USFWS Listed Species with Potential to Occur

The list of USFWS threatened, endangered, and candidate species accessed from the Information, Planning, and Conservation (IPaC) decision support system recognizes 12 species potentially occurring in La Plata County (Table 5-1; USFWS 2014a). IPaC also identified critical habitat[2] present in La Plata County for southwestern willow flycatcher (*Empidonax traillii extimus*) and New Mexico meadow jumping mouse (*Zapus hudsonius luteus*).

Table 5-1. Species listed by the USFWS under the authority of the Endangered Species Act of 1973 for La Plata County, Colorado

Species	Federal Status[1]	Habitat Description	Potential to Occur in the Survey Area
Mammals			
Canada lynx (*Lynx canadensis*)	T	High elevation (8,000 to 11,500 feet in the southern Rocky Mountains), mesic spruce-fir and mixed-conifer forests, especially mixed with aspen.	None. The survey area does not contain high elevation forests.
New Mexico meadow jumping mouse (*Zapus hudsonius luteus*)	**E**	**Habitat specialist occurring in herbaceous emergent wetlands, especially dominated by sedges and broad-leaved forbs. Also may utilize riparian communities containing scrub-shrub wetlands along perennial streams.**	**Potential. The survey area contains potential habitat along the Florida River, a tributary to Salt Creek, and a ditch and wetland on the northwestern survey boundary.**
Birds			

[2] Critical habitat is defined by the USFWS as is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection http://www.fws.gov/midwest/endangered/saving/CriticalHabitatFactSheet.html.

Species	Federal Status[1]	Habitat Description	Potential to Occur in the Survey Area
Mexican spotted owl (*Strix occidentalis lucida*)	T	Nests in caves, cliffs, or trees in steep-walled canyons with distinct cliff bands and vegetated benches.	None. No caves, cliffs, or steep-walled canyons occur in the survey area.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	**E**	**Breeds in dense, shrubby riparian habitats, usually in close proximity to surface water or saturated soil.**	**Potential. Habitat occurs on the tributary to Salt Creek in the eastern survey area. Individual heard and observed in survey area on two occasions in late June 2012 by an Ecosphere biologist experienced with this species conducting surveys for the Wildlife Hazard Assessment (Ecosphere 2013).**
Western yellow-billed cuckoo (*Coccyzus americanus*)	PT	Breeds in mature cottonwood gallery forests with dense understory vegetation.	None. No cottonwood gallery forests with adequate understory vegetation occur in the survey area.
Fish			
Bonytail chub (*Gila elegans*)	E	Pools and eddies of large main stem rivers; tributaries of the Colorado River.	None. Species does not have potential to occur in the San Juan River Drainage.
Colorado pikeminnow (*Ptychocheilus lucius*)	E	Large rivers with strong currents, deep pools, and quiet backwaters; tributaries of the Colorado and San Juan Rivers.	None. May be affected by water depletions from the San Juan River.
Humpback chub (*Gila cypha*)	E	Deep, fast-moving, turbid waters often associated with large boulders and steep cliffs. Occurs in the Upper Colorado River basin.	None. Species does not have potential to occur in the San Juan River Drainage.
Razorback sucker (*Xyrauchen texanus*)	E	Deep, clear to turbid waters of large rivers and some reservoirs over mud, sand or gravel.	None. May be affected by water depletions from the San Juan River.
Plants			
Knowlton's cactus (*Pediocactus knowltonii*)	E	Piñon-juniper woodland and sagebrush with loamy, gravelly alluvial soils.	None. Although the survey area contains habitat with vegetation and cobbles that appear similar, the soil type and geology is

Species	Federal Status[1]	Habitat Description	Potential to Occur in the Survey Area
			different from the known population.
Schmoll's milkvetch (*Astragalus schmolliae*)	C	Thin, wind-deposited, sandy/gravelly soil on mature piñon-juniper woodland mesa-top and mesa terraces at elevations of 6,790-7,000 feet.	None. Known only from the Mesa Verde area.
Insects			
Uncompahgre fritillary butterfly (*Boloria acrocnema*)	E	Alpine environments above 12,000 feet elevation; host plant is snow willow.	None. Alpine environments do not occur in the survey area.

[1] E = endangered; T = threatened; PT = proposed threatened; C = candidate

Bolded text indicates species has the potential to occur in the survey area.

Both the endangered southwestern willow flycatcher and the endangered New Mexico meadow jumping mouse have potential to occur within the survey area as identified during field surveys. The remaining 10 listed species were eliminated from further discussion due to a lack of habitat in the survey area or because their known range is beyond the survey area (Table 5-1). Critical habitat, as identified by iPaC, does not occur in the survey area for either of these species. Both southwestern willow flycatcher and New Mexico meadow jumping mouse are discussed in greater detail in Sections 5.2.1 and 5.2.2.

5.2.1 Southwestern Willow Flycatcher – USFWS Endangered

The southwestern willow flycatcher was listed as an endangered species by the USFWS on March 29, 1995. This is one of four recognized subspecies of willow flycatchers in North America. Willow flycatchers are distinguishable from other similar *Empidonax* flycatchers by their song (Sogge et. al. 2010). The southwestern willow flycatcher usually breeds in patchy to dense riparian habitats along streams or wetlands that are near or adjacent to surface water or underlain by saturated soil. Common tree and shrub species comprising nesting habitat include willows (*Salix* spp.), seepwillow (*Baccharis* spp.), boxelder (*Acer negundo*), stinging nettle (*Urtica* spp.), blackberry (*Rubus* spp.), cottonwood (*Populus* spp.), arrow weed (*Tessaria sericea*), tamarisk (*Tamarix ramosissima*), and Russian olive (*Elaeagnus angustifolia*) (USFWS 2002). Occupied sites usually consist of dense vegetation in the patch interior or a mosaic of dense patches interspersed with openings and lower vegetation. Standing or flowing water is usually present at the site. Trees and shrubs used for nesting are at least 6 feet in height, with lower stature thickets occurring at higher elevation (USFWS 2002). Flycatchers prefer to nest in dense thickets, which are usually difficult to traverse on foot. Minimum patch size is 0.25 acre for potential breeding habitat, though the average occupied patch size is 21.2 acres (USFWS 2002).

On the east side of the survey area, the ditch and drainage that flow southeast into Salt Creek contain a patch of narrowleaf willow (*Salix exigua*) that meets the size and density needed for willow flycatchers: the patch is 0.5 acres, dense, and the willows range from 5 to 9 feet tall with the taller shrubs in the

southern portion (Photograph 1, Appendix C). The patch is narrow and linear, varying from 20 to 45 feet wide but about 30 feet on average (Photograph 2, Appendix C). Southwestern willow flycatchers have only rarely been found nesting in isolated, narrow, linear riparian habitats that are less than about 30 feet wide, although they will use such linear habitats during migration (Sogge et. al., 2010). Because the patch is small, narrow, and disconnected from other willow habitat, the habitat may be used during migration and less likely for breeding.

The Florida River within the survey area is not suitable southwestern willow flycatcher breeding habitat. The river corridor is heavily grazed, and there are only scattered willow patches, none of which meets the acreage, height, and density requirements (Photograph 3, Appendix C). Suitable habitat is likely present upstream and downstream along the Florida River, but not along the Florida River in the survey area. No other potential southwestern willow flycatcher habitat was observed.

In 2012, an individual southwestern willow flycatcher was heard and observed on two occasions (June 19 and 21, 2012) within the airport boundary (near the boneyard) and along the Florida River by an Ecosphere biologist conducting surveys as part of the Wildlife Hazard Assessment (Ecosphere 2013). Southwestern willow flycatcher generally begin egg laying in mid-May though mid-June (Sogge et al. 2010); therefore, it is unlikely these birds were migrants just passing through the area.

5.2.2 New Mexico Meadow Jumping Mouse – USFWS Endangered

The final rule to list the New Mexico meadow jumping mouse as endangered was published in the Federal Register by the USFWS on June 10, 2014. The subspecies is a habitat specialist occurring in herbaceous wetlands dominated by sedges. Habitat requirements are tall (averaging at least 24 inches), dense, riparian herbaceous vegetation (i.e., plants with no woody tissue) primarily composed of sedges (plants in the Cyperaceae Family) and forbs (broad-leafed herbaceous plants) (USFWS 2014b). Suitable habitat occurs when wetland vegetation achieves full growth potential associated with perennial flowing water (USFWS 2014*b*). Herbaceous vegetation in these community types is composed primarily of sedges (*Carex* spp. or *Schoenoplectus pungens*) and forbs including, but not limited to spikerush (*Eleocharis macrostachya*), beaked sedge, reed canarygrass, rushes (*Juncus* spp. and *Scirpus* spp.); grasses such as bluegrass (*Poa* spp.), slender wheatgrass (*Elymus trachycaulus*), brome (*Bromus* spp.), foxtail barley (*Hordeum jubatum*); and other forbs such as water hemlock (*Cicuta douglasii*), field mint (*Mentha arvense*), and asters (*Aster* spp.) (USFWS 2013).

The New Mexico meadow jumping mouse nests and hibernates in dry upland soils in grassy areas or riparian shrublands, but uses moist soils in riparian zones for feeding. Its range extends an average of 330 feet along banks of permanent waterways (Arizona Game and Fish Department 2007). The New Mexico meadow jumping mouse occurs from 4,500 to 8,000 feet in elevation, with historical records up to 9,600 feet (USFWS 2013).

Three areas contain suitable habitat for the New Mexico meadow jumping mouse. The first area is along the Florida River in the valley west of the airport. The Florida River has fringe wetlands along its banks that contain sedges that are 2 to 3 feet tall and about 4 to 5 feet wide (Photograph 4, Appendix C). A

drainage swale that flows to the Florida River also contains the vegetative characteristics preferred by the mouse (Photograph 5, Appendix C). New Mexico meadow jumping mouse was captured along the Florida River in 2007 (Frey 2008).

The second area occurs along wetlands and a tributary that flows into Salt Creek, on the east side of the survey area and northwest of County Road (CR) 309A between the airport fence and the road (Photograph 6, Appendix C). The ditch/drainage contains standing to slightly flowing water, broadleaf cattails (*Typha latifolia*) in the channel, and dense grasses, rushes and sedges in wetlands that parallel the ditch (Photograph 6). The size of the habitat patch is about 0.9 acres.

Thirdly, suitable habitat occurs in the large portion of the survey area north of Country Road 309A within the wetlands and surrounding ditches; the irrigation return flow water feeds the wetlands in this large field. Within this area dense sedges and grasses approximately 3 to 4 feet tall with both standing and flowing water that appeared to be irrigation return flow from an adjacent flood-irrigated field (Photographs 7 and 8, Appendix C) were observed. The area was leased and irrigated, and currently contains ditches and depressions that provide the vegetation preferred by New Mexico meadow jumping mouse, including some gently flowing water scattered throughout. Therefore, potential habitat occurs throughout the large northern portion of airport property north of County Road 309a; the extent to which should be evaluated in the context of any planning activities.

5.3 Colorado Listed Species with Potential to Occur

Colorado listed threatened and endangered species were reviewed for their potential to occur in the survey area. Thirty-one wildlife species are listed by the State of Colorado (Table 5-2). Of those 31 species, only 2 have the potential to occur in the survey area: southwestern willow flycatcher and burrowing owl (*Athene cunicularia*). The southwestern willow flycatcher (Section 5.2.1) is both a federally endangered species (Section 5.2.1.) and a State Endangered species.

Table 5-2. Colorado Parks and Wildlife Listed Threatened and Endangered Species

Species	State Status[1]	Habitat Description	Potential To Occur In the Survey Area
MAMMALS			
Black-footed ferret (*Mustela nigripes*)	SE	Open grasslands with prairie dog colonies year round.	Although prairie dog towns have not been mapped, they do not appear to be >200 acres around the survey area.
Canada lynx (*Lynx canadensis*)	SE	Large tracts of high elevation (> 8,000 feet) mixed coniferous forest.	None. Survey area does not include mixed coniferous forest. Elevation is below 8,000 ft.
Gray wolf (*Canis lupus*)	SE	Occurs in a variety of habitats where large prey (primarily ungulates) occurs.	None. Gray wolves have been extirpated in Colorado.

Species	State Status[1]	Habitat Description	Potential To Occur In the Survey Area
Grizzly bear (*Ursus arctos*)	SE	Found in a variety of habitats where forage is abundant.	None. Grizzly bears have been extirpated in Colorado.
Kit fox (*Vulpes macrotis*)	SE	Saltbush, shadscale, and greasewood-dominated shrublands.	None. No saltbush, shadscale, or greasewood-dominated shrublands occur in the survey area.
North American River otter (*Lontra canadensis*)	ST	Riparian habitats with an abundant food base of fish and/or crustaceans. Minimum estimated water flow requirement is 10 cubic feet per second.	None. No riparian habitats in survey area. Florida River flows likely fall below minimum 10 cubic feet per second
Preble's meadow jumping mouse (*Zapus hudsonius preblei*)	ST	Riparian areas dominated by shrubby vegetation.	None. Distribution of this species in Colorado is restricted to the front range.
Wolverine (*Gulo gulo*)	SE	Large, remote tracts of boreal forest and alpine tundra.	None. No boreal forest or alpine tundra habitats exist in the survey area.
BIRDS			
Burrowing owl (*Athene cunicularia*)	**ST**	**Dry, open, short-grass plains, usually associated with prairie dog towns.**	**Potential. Prairie dog towns provide suitable nesting and foraging habitat.**
Least tern (*Sterna antillarum*)	SE	Bare or sparsely vegetated sand or dried mudflats along coasts or rivers.	None. No sand or mudflats occur in the survey area.
Lesser prairie chicken (*Tympanuchus pallidicinctus*)	ST	Prefer sandy grasslands with an abundance of mid-grasses, sandsage, and yucca.	None. No sandy grasslands exist in or adjacent to the survey area.
Mexican spotted owl (*Strix occidentalis lucida*)	ST	Nests in caves, cliffs, or trees in steep-walled canyons with distinct cliff bands and vegetated benches.	None. No caves, cliffs, or steep-walled canyons occur in the survey area.
Piping plover (*Charadrius melodus circumcinctus*)	ST	Sandy lakeshore beaches, river sandbars, and sandy wetland pastures.	None. No suitable sandy substrates occur in the survey area.
Plains sharp-tailed grouse (*Tympanuchus phasianellus jamesii*)	SE	Rolling hills with scrub oak thickets and grassy glades. Leks located in meadows, burned areas, or ridges/knolls.	None. Distribution of this species in Colorado is restricted Douglas County.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	**SE**	**Dense, shrubby riparian vegetation, usually in close proximity to surface water or saturated soil.**	**Potential. Habitat occurs on the tributary to Salt Creek in the eastern survey area. Individual heard and observed in survey**

Species	State Status[1]	Habitat Description	Potential To Occur In the Survey Area
			area on two occasions in late July 2012 by an Ecosphere biologist experienced with this species conducting surveys as part of the Wildlife Hazard Assessment (Ecosphere 2013).
Whooping crane (*Grus americana*)	SE	Mudflats around reservoirs and agricultural areas. Winters on salt flats.	None. No mudflats or salt flats exist in the survey area.
AMPHIBIANS			
Boreal toad (*Bufo boreas boreas*)	SE	Springs, streams, ponds, lakes, and marshes in spruce-fir or sub-alpine forests or meadows at elevations > 7,500 feet.	None. Survey area does not include any perennial water sources over 7,500 feet elevation.
FISH			
Arkansas darter (*Etheostoma pallididorsum*)	ST	Clear waters of low current with sandy bottoms and abundant aquatic vegetation. Occurs in tributaries of the Arkansas River.	None. Outside of known range of the species.
Brassy minnow (*Hybognathus hankinsoni*)	ST	Inhabits pools of sluggish clear creeks and small rivers, usually over sand, or gravel. Occurs in South Platte, Republican, and Colorado Rivers.	None. Outside of known range of the species.
Bonytail (*Gila elegans*)	SE	Flowing pools and backwaters in deep water of the Upper Colorado River basin.	None. Outside of known range of the species.
Colorado pikeminnow (*Ptychocheilus lucius*)	ST	Large rivers with strong currents, deep pools, and quiet backwaters; tributaries of the Colorado and San Juan Rivers.	None. May be affected by water depletions from the San Juan River.
Common shiner (*Luxilus cornutus*)	ST	Cool, clear, shaded streams with gravelly bottoms. Occurs in South Platte River and tributaries.	None. Outside of known range of the species.
Greenback cutthroat trout (*Oncorhynchus clarki stomias*)	ST	Cold, clear, gravelly headwater streams with overhanging branches, undercut banks, and eddies behind rubble.	None. Florida River is not a suitable cold, headwater stream.
Humpback chub (*Gila cypha*)	ST	Deep, fast-moving, turbid waters often associated with large boulders and steep cliffs. Occurs in the Upper Colorado River Basin.	None. Outside of known range of the species.

Species	State Status[1]	Habitat Description	Potential To Occur In the Survey Area
Lake chub (*Couesius plumbeus*)	SE	Occupies lake habitats, but migrates to streams to spawn. Extirpated from Colorado	None. Lake chub has been extirpated from Colorado.
Northern redbelly dace (*Phoxinus eos*)	SE	Found in lakes, ponds, bogs, and pools of headwaters and creeks with vegetation. Occurs in the South Platte River Basin.	None. Outside of known range of the species.
Plains minnow (*Hybognathus placitus*)	SE	Rivers with some current, turbid waters, and sandy bottoms. Occurs in South Platte and Republican River Basins,	None. Outside of known range of the species.
Razorback sucker (*Xyrauchen texanus*)	SE	Deep, clear to turbid waters of large rivers and some reservoirs over mud, sand or gravel.	None. May be affected by water depletions from the San Juan River.
Rio Grande sucker (*Catostomus plebeius*)	SE	Small streams with clear pools and riffles. Occurs in Rio Grande Basin.	None. Outside of known range of the species.
Southern redbelly dace (*Phoxinus erythrogaster*)	SE	Small, slow, clear creeks with algae covering the streambed and deep silt deposits. Occurs in a tributary of the Arkansas River.	None. Outside of known range of the species.
Suckermouth minnow (*Phenacobius mirabilis*)	SE	Riffles of warm creeks, streams, and rivers with low to moderate currents. Occurs in mainstem South Platte and tributaries of the Arkansas River.	None. Outside of known range of the species.

[1](SE = State Endangered; ST = State Threatened)

Colorado Parks and Wildlife. http://cpw.state.co.us/learn/Pages/SOC-ThreatenedEndangeredList.aspx. Accessed August 2014.

Bolded text indicates species has the potential to occur in the survey area.

Burrowing owls nest primarily in rodent burrows in grasslands, shrublands, deserts and grassy urban areas (Jones 1998). Potential nesting habitat occurs wherever prairie dog colonies are present. In the survey area, prairie dog colonies are active on and around the runway and terminal, the irrigated fields north of CR 309a, and the valley adjacent to the Florida River. Burrowing owls occur infrequently in La Plata County yet they have been confirmed nesting. In the survey area, no burrowing owls have been detected during past general wildlife surveys (Ecosphere 2013).

5.4 Migratory Birds

5.4.1 Birds of Conservation Concern

A variety of open grassland, sagebrush shrubland, and piñon-juniper woodland bird species were documented during the August survey. Several BCC species were observed, including juniper titmouse (*Baeolophus ridgwayi*), piñon jay (*Gymnorhinus cyanocephalus*), and Lewis's woodpecker (*Melanerpes*

lewis). Additionally, both bald and golden eagle are known to use the survey area. Table 5-3 identifies BCC species in BCR 16 and their habitat associations. Migratory bird nesting depends on the species; raptors begin to nest earlier in the spring while South American migrants begin nesting around early May when they return to the breeding grounds. CPW recommends raptor nesting dates as guidelines to avoid disturbing nesting birds (CPW 2008). Published breeding season dates for small migratory birds are more variable. In general, May 1 to August 1 is a practical timeframe for the majority of birds to nest in the survey area.

Table 5-3. USFWS Birds of Conservation Concern (BCC) Bird Conservation Region (BCR) 16 – Southern Rocky Mountains/Colorado Plateau, with Potential to Occur in the Study Area

Species	Habitat Description	Potential To Occur In the Survey Area
American bittern (*Botaurus lentiginosus*)	**Cattails, rushes, grasses, or sedges of wet meadows or marshes.**	**Potential to occur. Northeastern past irrigated fields contains dense and tall marshy habitat.**
American peregrine falcon (*Falco peregrinus anatum*)	Rugged terrain with rocky cliffs and canyons, 30 to 1,000+ feet high, adjacent to rivers, lakes, or streams.	None. Survey area does not include any rocky cliffs.
Bald eagle (*Haliaeetus leucocephalus*)	**Found around lakes, reservoirs, and rivers. Large branched trees used for nesting, roosting and foraging.**	**Known to occur. Survey area within CPW-defined bald eagle winter concentration area and a known winter roost occurs. Individuals regularly observed in roost trees north of survey area during 2012 surveys conducted for the Wildlife Hazard Assessment (Ecosphere 2013).**
Bendire's thrasher (*Toxostoma bendirei*)	Scrub lands, dry and thin grasslands, open woodland, and cactus.	None. Outside of known range of species.
Black rosy-finch (*Leucosticte atrata*)	Alpine areas above treeline.	None. High elevation habitat is not present.
Brewer's sparrow (*Spizella breweri*)	**Sagebrush shrublands, sagebrush obligate species.**	**Potential to occur. Sagebrush is present east of the runway.**
Brown-capped Rosy Finch (*Leucosticte australis*)	Alpine zone of the high mountains.	None. High elevation habitat is not present.
Cassin's finch (*Haemorhous cassinii*)	**Conifer forests of the high country (8,000 to 11,000 feet), but also will use piñon-juniper woodlands.**	**Potential to occur. Piñon-juniper woodlands provide habitat.**
Chestnut-collared longspur	Short-grass prairie/plains grasslands.	None. Short-grass prairie habitat is not present in the survey area.

Species	Habitat Description	Potential To Occur In the Survey Area
(*Calcarius ornatus*)		
Ferruginous hawk (*Buteo regalis*)	**Flat or rolling terrain in grassland, shrub-steppe, and desert habitats.**	**Potential to occur. Grassland, shrub-steppe, or desert habitats occur in the survey area. Prairie dog towns provide prey base.**
Flammulated owl (*Psiloscops flammeolus*)	Ponderosa pine, aspen, or mixed conifer forests with cavities for nesting, open forests for foraging, and dense shrubs for roosting.	None. The southwestern wooded slope is narrow and does not provide the preferred "forest" structure.
Golden eagle (*Aquila chrysaetos*)	**Open habitat with grasslands, shrublands, and farmlands for foraging. Nests on cliffs or in trees.**	**Known to occur. Nest occurs in survey area and prairie dog colonies provide foraging.**
Grasshopper sparrow (*Ammodramus savannarum*)	Tall grasslands of the prairies.	None. Outside of the known range of the species.
Grace's warbler (*Setophaga graciae*)	**Ponderosa pine forest with a scrub oak understory.**	**Potential to occur. Some ponderosa pine present on the southwestern slopes, but not extensive.**
Gray vireo (*Vireo vicinior*)	**Piñon-juniper woodlands with an open, grassy understory.**	**Potential to occur. Slopes to the mesa contain piñon-juniper woodlands.**
Gunnison sage grouse (*Centrocercus minimus*)	Big sagebrush shrub-steppes with low vegetation.	Although the survey area is within the historical range for this species, development precludes potential habitat for this species and this species has been extirpated from this area.
Juniper titmouse (*Baeolophus ridgway*i)	**Piñon-juniper woodlands.**	**Known to occur. Southwestern survey area.**
Lewis's woodpecker (*Melanerpes lewis*)	**Open pine forests, areas with abundant snags and stumps, riparian areas with cottonwoods, and piñon-juniper woodlands.**	**Known to occur. Northeastern survey area.**
Long-billed curlew (*Numenius americanus*)	Short-grass prairies.	None. Outside of the known range of the species.
Mountain plover (*Charadrius montanus*)	Short grass prairies or flat, open (30% bare) grasslands, often associated with prairie dog towns and intensive grazing.	None. Although survey area contains habitat, it is outside the known range of the species.

Species	Habitat Description	Potential To Occur In the Survey Area
Piñon jay (*Gymnorhinus cyanocephalus*)	**Piñon-juniper woodlands.**	**Known to occur. Southwestern survey area.**
Prairie falcon (*Falco mexicanus*)	Nest on cliff faces in open country below 10,000 feet.	None. No cliff faces present.
Veery (*Catharus fuscescens*)	Breed in moist, dense riparian thickets, such as willow carrs or cottonwood saplings, in tangles of alders and willows.	None. Outside of known range of species.
Western snowy plover (*Charadrius alexandrinus*)	Alkali flats around reservoirs; migrants use mudflats and sandy shorelines.	None. No alkali flats, mudflats, or sandy shoreline habitats occur in the survey area.

Bolded text indicates species has the potential to occur in the survey area.

5.4.2 Bald and Golden Eagle Protection Act

A golden eagle nest is located in the southwestern portion of the survey area in a ponderosa pine tree on a slope between the mesa top and the Florida River. This golden eagle territory was first documented in 2006. The nest successfully fledged young in 2006 and has been successful in several other years since then. Although golden eagles were observed by airport staff in the vicinity of the airport in 2014 (Dennis Ray, Fire Chief/Operations Manager, personal communication), a biologist from Ecosphere monitored the nest in early 2014 and determined in was inactive. In August 2014, Ecosphere observed the nest in poor condition, with no fresh whitewash or prey remains below it (Photograph 9, Appendix C).

CPW identifies the survey area as bald eagle winter concentration with winter roost sites straddling CR 309a (Figure 3, Appendix A; CPW 2013). CPW defines a bald eagle winter concentration as areas within an existing winter range where eagles concentrate between November 15 and April 1. These areas may be associated with roost sites. Roost Sites are defined as individual trees or groups of trees that provide diurnal and/or nocturnal perches for less than 15 wintering bald eagles, and includes a buffer zone extending 0.25-miles around these sites.

Ecosphere documented bald eagles roosting in three tree snags in this area in 2011 and 2012 while conducting surveys of potential wildlife hazards as part of the Wildlife Hazard Assessment (Ecosphere 2013); however, airport staff removed the trees to eliminate the hazard of eagles roosting so close to the runway. A group of three partially dead cottonwood trees still occur in the northeastern portion of the field, two of which are located on the city-owned property (Photograph 10, Appendix C). These trees all possess the large, open-branch structure preferred for roosting and are likely to attract eagles to use them in the future, since bald eagle populations are increasing nationwide.

No bald eagle nests are known to occur in the survey area; however, good nesting trees are present along the Florida River in the valley below the Airport.

5.5 Unique Wildlife Habitats

The general area that includes the survey area is also identified as severe winter range for both elk (*Cervus elaphus*) and mule deer (*Odocoileus hemionus*) by CPW (CPW 2013). Severe winter range is defined as that part of the range where 90 percent of the individuals are located when the annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten. An elk highway crossing, where elk movements traditionally cross roads and present potential animal-vehicle collisions, is also identified near the airport entrance (Figure 3, Appendix A) (CPW 2013).

Three ponds were observed in the fields northeast of the runway and across CR 309a. These ponds provide habitat for migratory waterfowl and amphibians, and a potential food source (i.e., ducks) for bald and golden eagles (Photograph 10). The irrigated fields northeast of the runway provide suitable nesting habitat for marsh-birds such as American bittern (*Botaurus lentiginosus*). A herd of about 15 mule deer bucks were using the fields for resting, foraging, and cover on August 29, 2014.

The prairie dog colony surrounding the runway and within the fenced boundaries was very active during the surveys in August with (Photograph 11). Pocket gophers, open grassland songbirds, and raptors were all seen using the prairie dog colony on August 26, 2014.

A suspected stick raptor nest was observed in a cottonwood tree on the southeast survey area on August 29. Raptors will re-use nests year to year. It is possible that other raptor nests exist in the piñon-juniper woodlands surrounding the airport and could be a concern if construction is planned close to them during the breeding season.

5.6 Noxious Weeds

A variety of noxious weeds were observed in the survey area during the August surveys. Colorado List B species are invasive weeds with populations of varying distribution and densities within the state. The level of mandated control is based on local conditions; the List B species observed are all enforceable in La Plata County. List B species observed in the survey area include: bull thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), houndstongue (*Cynoglossum officinale*), musk thistle (*Carduus nutans*), oxeye daisy (*Chrysanthemum leucanthemum*), Russian knapweed (*Acroptilon repens*), Russian-olive (*Elaeagnus angustifolia*), salt cedar (*Tamarix sp*.), and Scotch thistle (*Onopordum acanthium*). List C species, which are widespread and common within the state, include chicory *(Cichorium intybus*), common mullein (*Verbascum thapsus*), field bindweed (*Convolvulus arvensis*), and redstem filaree (*Erodium cicutarium*).

6. Discussion and Recommendations

In order to comply with the state and federal environmental regulations outlined in this document, Ecosphere recommends the following actions:

Potential breeding habitat for southwestern willow flycatcher occurs along CR 309a; therefore, Ecosphere suggests the following:

- Conduct USFWS protocol surveys by a permitted biologist to determine the presence or absence of any southwestern willow flycatcher.
- Initiate discussions with the USFWS to determine the extent of survey requirements: surveys are only valid for one year.

Potential habitat for New Mexico meadow jumping mouse occurs at three locations within the survey area and was documented on the Florida River in 2007 (Frey 2008). Therefore, to determine presence or absence of the species in those areas Ecosphere suggests the following:

- Conduct USFWS protocol survey for Mexico meadow jumping mouse by a permitted biologist.
- Contact USFWS for "Interim Survey Guidelines for the New Mexico Meadow Jumping Mouse," which are currently in preparation.

In 2009, a golden eagle nest in the survey area blew down presumably from natural causes. A pair of golden eagle was observed in 2010; in 2011 the nest was rebuilt and a nesting attempt was, but failed. In 2012 the nest was again successful. Therefore, even though the nest was inactive in 2014 and the nest is in somewhat dilapidated condition, the pair have demonstrated they could repair the nest and successfully breed again in the future. Golden eagles typically maintain more than one nest in a territory so an alternate golden eagle nest may also occur in vicinity of the airport.

Consequently, Ecosphere suggests the following:

- Monitor the known golden eagle nest beginning this breeding season (January/February).
- Pedestrian surveys to locate alternate golden eagle nests within the known territory.

To avoid the potential for bald eagles to roost near the project during construction and avoid seasonal restrictions on construction activity, Ecosphere suggests the following:

- Remove the two cottonwood trees that are potential bald eagle winter roosts. It is appropriate to do this only outside the bald eagle roosting period from March 16 to November 14.

For other raptors, including burrowing owls and breeding birds all protected by the Migratory Bird Treaty Act, Ecosphere suggests the following to avoid non-compliance:

- Conduct a nesting raptor survey the year of construction to determine active nests (including burrowing owls). Surveys should begin in April to capture the most raptors.
- Avoid ground disturbance or vegetation clearing during the breeding bird season, from approximately May 1 through August 1.
- If ground disturbance/vegetation clearing cannot avoid the May 1 to August 1 timeframe, use a qualified biologist to conduct a nest clearance survey of the project area no more than 5 days

prior to construction. If active nests are found, options are available to avoid impacts to migratory birds while allowing activities to continue; however, agency coordination may be required.

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Appendix A–Maps of Project Area

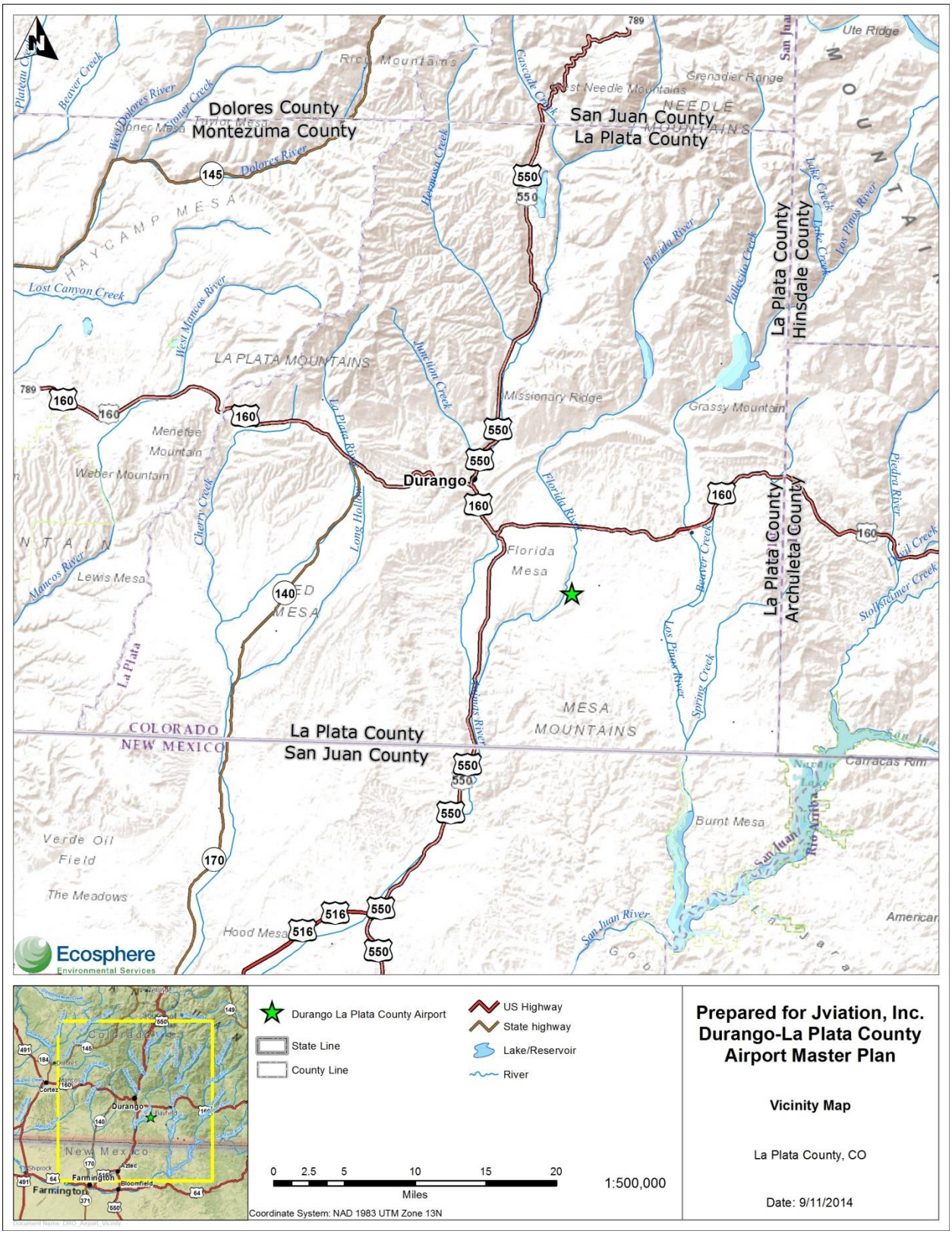


Figure 1: Vicinity of the Durango-La Plata County Airport

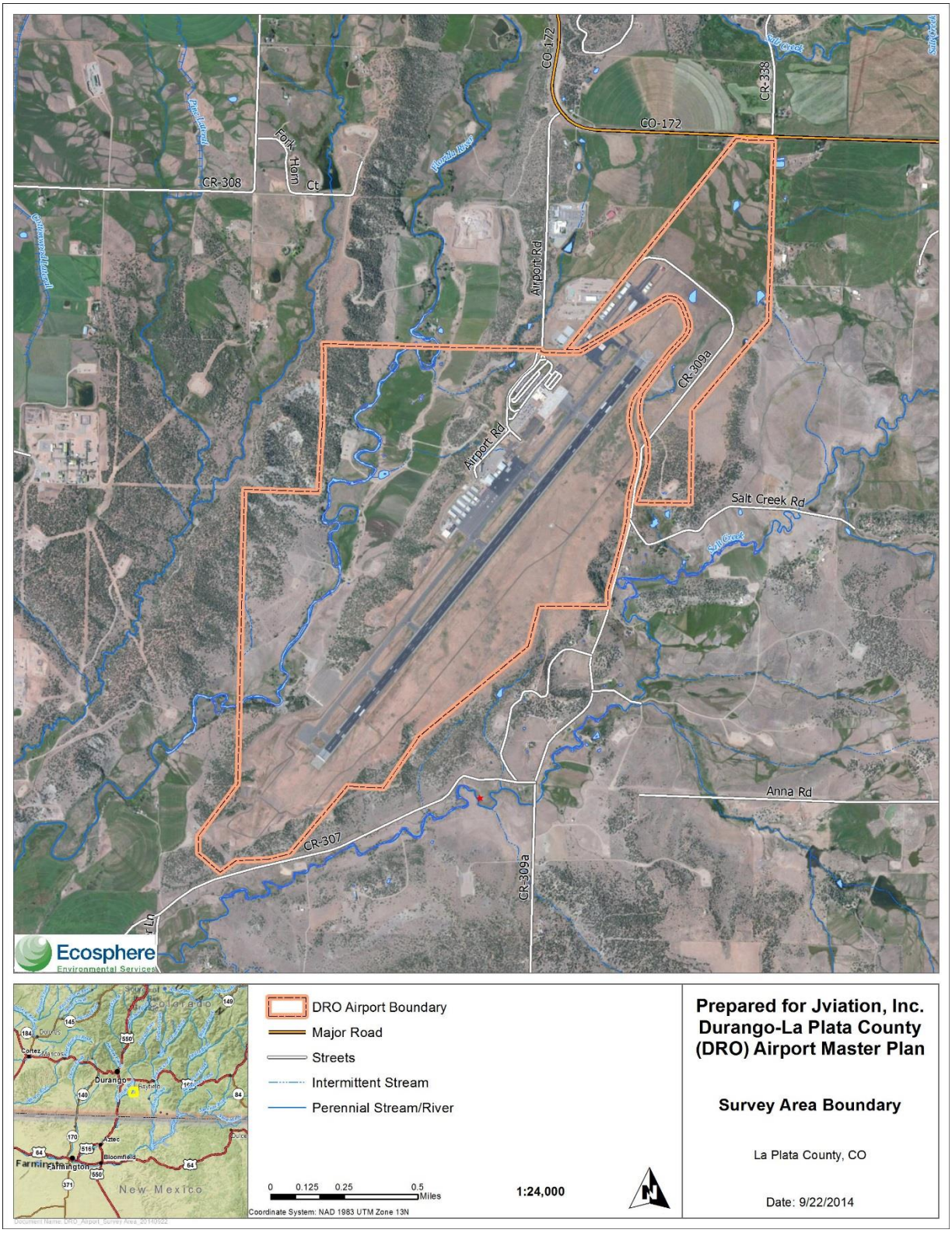


Figure 2: Survey area for biological resources

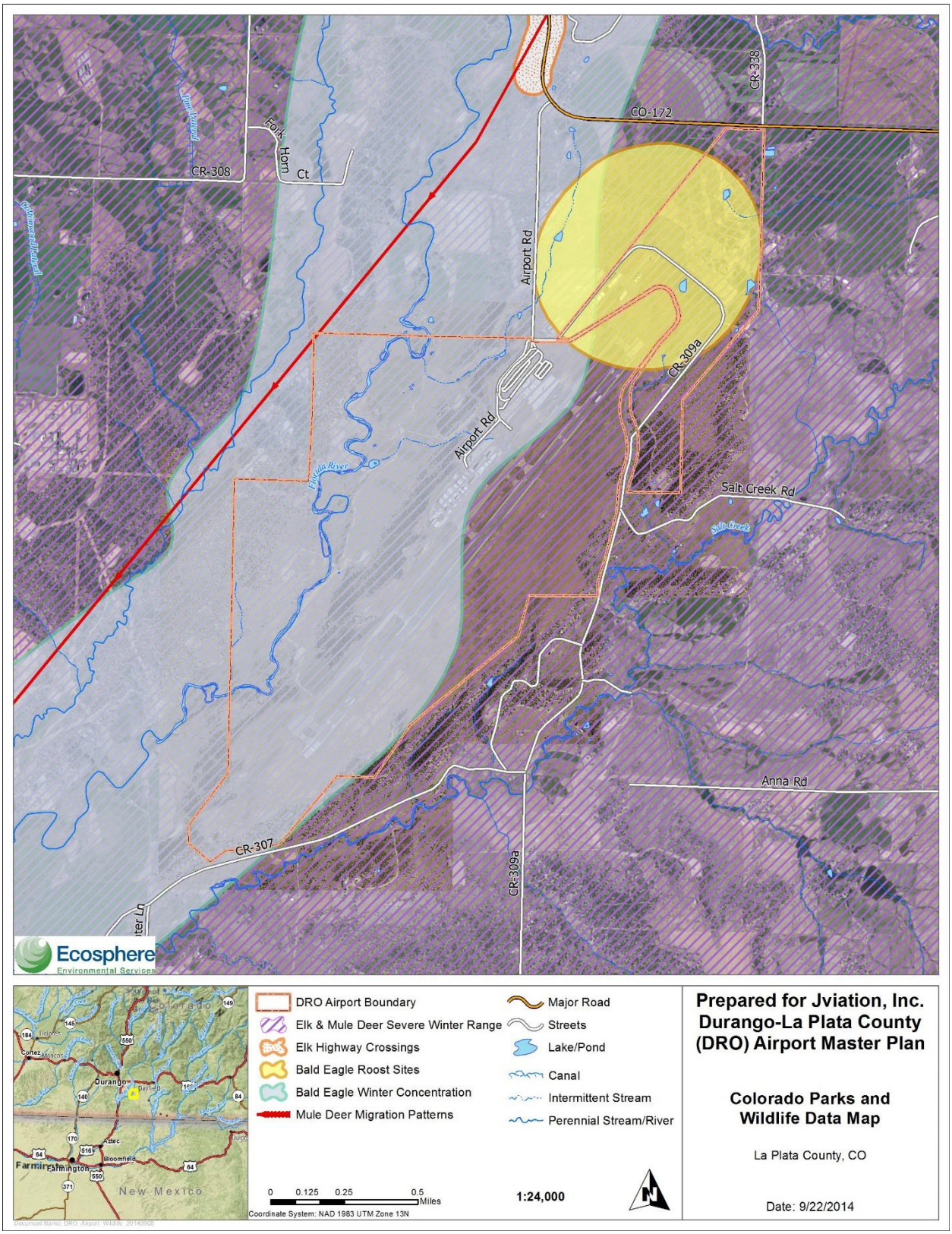


Figure 3: Wildlife habitats in and around the survey area (Colorado Parks and Wildlife 2013)

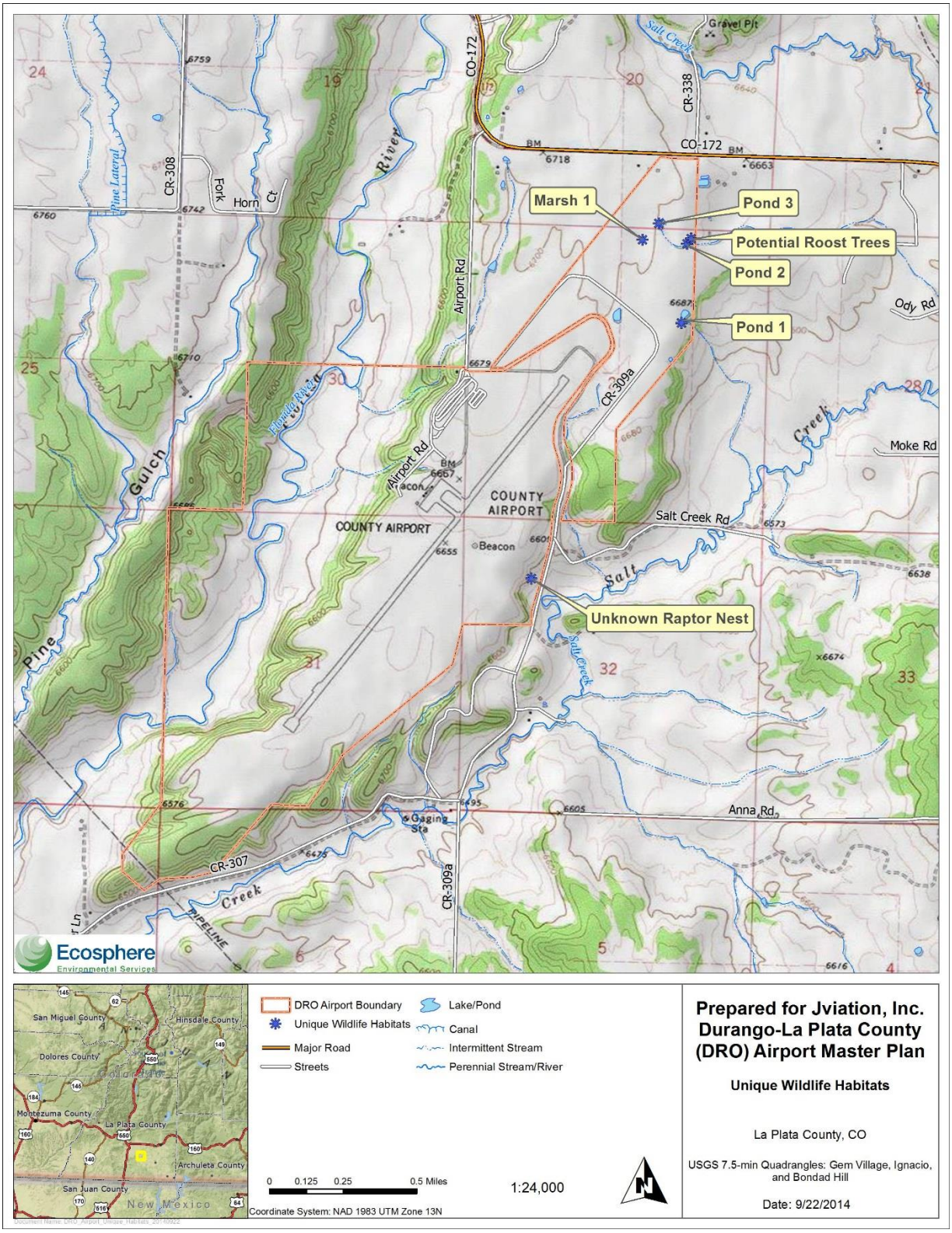


Figure 4: Unique wildlife habitats

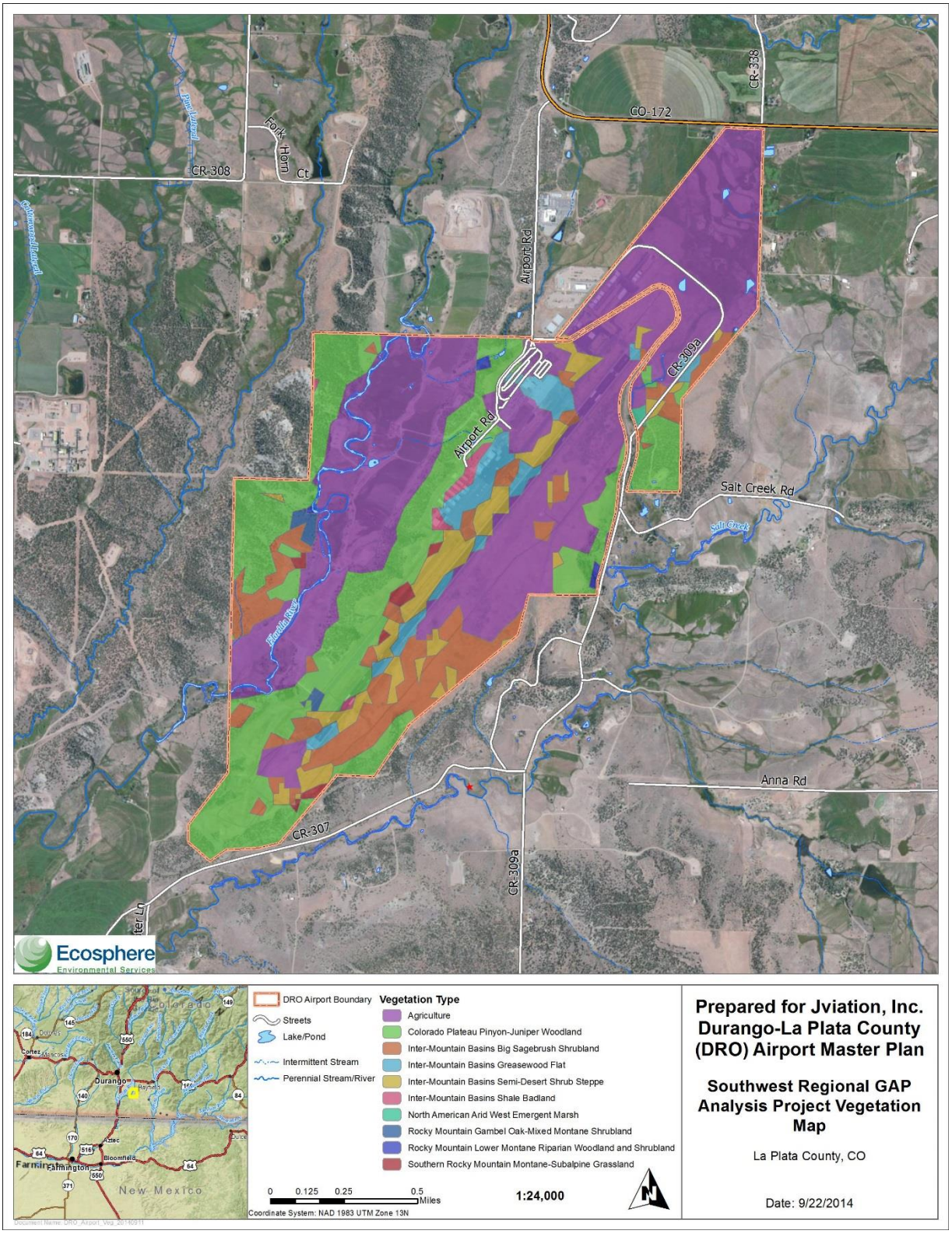


Figure 5: Vegetation communities in the survey area according to Southwest Regional Gap Analysis Project (Lowry et al. 2007)

Appendix B–Wildlife and Plant List

Species	Latin Name
Birds	
American goldfinch	*Spinus tristis*
American robin	*Turdus migratorius*
Ash-throated flycatcher	*Myiarchus cinerascens*
Barn swallow	*Hirundo rustica*
Black-billed magpie	*Pica hudsonia*
Black-capped chickadee	*Poecile atricapillus*
Black-chinned hummingbird	*Archilochus alexandri*
Blue-gray gnatcatcher	*Polioptila caerulea*
Broad-tailed hummingbird	*Selasphorus platycercus*
Brewer's blackbird	*Euphagus cyanocephalus*
Cliff swallow	*Petrochelidon pyrrhonota*
Common raven	*Corvus corax*
Great-blue heron	*Ardea herodias*
Hairy woodpecker	*Picoides villosus*
House finch	*Haemorhous mexicanus*
Juniper titmouse	*Baeolophus ridgwayi*
Lark sparrow	*Chondestes grammacus*
Lesser goldfinch	*Spinus psaltria*
Lewis's woodpecker	*Melanerpes lewis*
MacGillivray's warbler	*Geothlypis tolmiei*
Mallard	*Anas platyrhynchos*
Mountain bluebird	*Sialia currucoides*
Mourning dove	*Zenaida macroura*
Northern flicker	*Colaptes auratus*
Northern mockingbird	*Mimus polyglottos*
Pine siskin	*Spinus pinus*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Aelaius phoeniceus*
Say's phoebe	*Sayornis saya*

Species	Latin Name
Turkey vulture	*Cathartes aura*
Vesper sparrow	*Pooecetes gramineus*
Violet-green swallow	*Tachycineta thalassina*
Western meadowlark	*Sturnella neglecta*
Western scrub-jay	*Aphelocoma californica*
Western tanager	*Piranga ludoviciana*
Wilson's snipe	*Gallinago delicata*
Mammals	
Mountain cottontail	*Sylvilagus nuttallii*
Mule deer	*Odocoileus hemionus*
Gunnison's prairie dog	*Cynomys gunnisoni*
Grasses	
Indian ricegrass	*Achnatherum hymenoides*
Smooth brome	*Bromus inermis*
Western wheat	*Pascopyrum smithii*
Forbs	
Alfalfa	*Medicago* sp.
Broadleaf cattail	*Typha latifolia*
American wild mint	*Mentha arvensis*
Bull thistle	*Cirsium vulgare*
Chicory	*Cichorium intybus*
Canada thistle	*Cirsium arvense*
Field bindweed	*Convolvulus arvensis*
Houndstongue	*Hieracium cynoglossoides*
Mullein	*Verbascum thapsus*
Musk thistle	*Carduus nutans*
Oxeye daisy	*Leucanthemum vulgare*
Redstem stork's bill	*Erodium cicutarium*
Russian thistle	*Salsola kali*
Russian knapweed	*Acroptilon repens*
Annual yellow sweetclover	*Melilotus indicus*

Species	Latin Name
sunflower	*Helianthus sp.*
Cacti	
Spinystar	*Escobaria vivipara*
Hedgehog cactus	*Echinocereus fendleri*
Pricklypear	*Opuntia polyacantha*
Shrubs	
Big sagebrush	*Artemisia tridentata*
Black sagebrush	*Artemisia nova*
Rubber rabbitbrush	*Ericameria nauseosa*
Gambel's oak	*Quercus gambelii*
Narrowleaf willow	*Salix exigua*
Tamarisk	*Tamarix sp.*
Trees	
Fremont cottonwood	*Populus fremontii*
Two needle piñon	*Pinus edulis*
Narrowleaf cottonwood	*Populus angustifolia*
Ponderosa pine	*Pinus ponderosa*
Rocky Mountain juniper	*Juniperus scopulorum*
Russian olive	*Elaeagnus angustifolia*

Appendix C–PHOTOGRAPHS

Photograph 1: Potential southwestern willow flycatcher habitat, eastern tributary to Salt Creek. (Willows range from 5 to 9 feet tall.)

Photograph 2 : Potential southwestern willow flycatcher habitat, eastern tributary to Salt Creek. (Willows are tall and dense, habitat patch ranges from 20 to 45 feet wide.)

Photograph 3: Florida River lacks shrubs along the banks within the survey area to qualify as potential southwestern willow flycatcher habitat

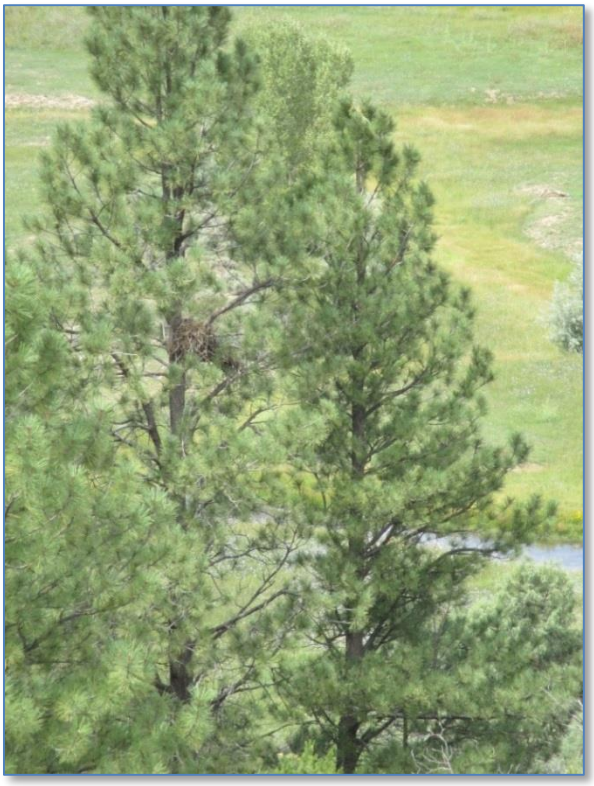
Photograph 4: Looking downstream on the Florida River: potential habitat for New Mexico meadow jumping mouse

Photograph 5: Potential habitat for New Mexico meadow jumping mouse along a wide drainage flowing to the Florida River.

Photograph 6: Potential New Mexico meadow jumping mouse habitat along the eastern drainage to Salt Creek

Photograph 7: Northwestern field containing potential New Mexico meadow jumping mouse habitat

Photograph 8: Rodent (potential mouse) scat in potential habitat shown in photograph 7



Photograph 9: Golden eagle nest

Photograph 10: Potential bald eagle roosts near pond in the northeastern portion of the survey area

Photograph 11: Active Gunnison's prairie dog colony adjacent to the runway