APPENDIX E

BIOLOGICAL RESOURCES

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APPENDIX E.1

BIOLOGICAL RESOURCES BACKGROUND

E.1 Biological Resources Background

The Federal Aviation Administration (FAA) 1050.1 Desk Reference states that, "*biological resources are valued for their intrinsic, aesthetic, economic, and recreational qualities and include fish, wildlife, plants, and their respective habitats. Typical categories of biological resources include terrestrial and aquatic plant and animal species; game and non-game species; special status species (state or federally listed threatened or endangered species, marine mammals, or species of concern, such as species proposed for listing or migratory birds); and environmentally-sensitive or critical habitats*."

E.1.1 Affected Environment

E.1.1.1 Threatened and Endangered Species

U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) was retrieved to identify federally listed threatened and endangered species with the potential to occur in the Project Construction Area.[1] Suckley's cuckoo bumble habitat consists of meadows and grasslands with nests in underground cavities that are either naturally created or abandoned nests of other animals.[2] Yellow-billed Cuckoos use wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes.[3] Suitable habitat for the Yellow-billed Cuckoo may exist around Boise Airport (Airport), but it does not exist within Airport property. No Yellow-billed Cuckoos have been identified within the Airport property and none are known to be present at the Airport.

Monarch Butterflies use milkweed plants for habitats.[4] No milkweed or Monarch Butterflies have been identified within the Airport property.

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1 USFWS. (2025, June). Information for Planning and Consultation. Accessed September 2022, from USFWS Service: https://ipac.ecosphere.fws.gov/location/NLZ3OMELEBA6DFX3OVFAGBVNFI/resources

2 Center for Biological Diversity (202, April 23). Before the Secretary of the Interior: Petition to List Suckley's Cuckoo Bumble Bee (Bombus suckleyi) Under the Endangered Species Act and Concurrently Designate Critical Habitat. Accessed December 2025, from Ecosphere: https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/petition/895.pdf.

3 U.S. Fish and Wildlife Service (USFWS) (2022, December). Environmental Conservation Online System. Accessed December, 2022, from USFWS: https://ecos.fws.gov/ecp/species/3911

4 USFWS (2022, December). Environmental Conservation Online System. Accessed December, 2022, from USFWS: https://ecos.fws.gov/ecp/species/9743

E.1.1.2 State Sensitive Species

Idaho Fish and Game (IDFG) lists rare and sensitive species by county.[5] The species are categorized by their Species of Greatest Conservation Need (SGCN) status based on the priority for conservation. IDFG identified 34 species listed as either S1, S2, or S3[6] in the Species Conservation Status database as potentially occurring in Ada County, where the Project Construction Area is located. The SGCN designations are defined as follows:[7]

- S1: Critically imperiled: at very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors
- S2: Imperiled: at high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors
- S3: Vulnerable: at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors

Table E-1 below lists the 34 species with an S1, S2, or S3 ranking with the potential to occur in Ada County.

Table E-1
SGCN Species with the Potential to Occur in Ada County

Scientific Name	Common Name	State Conservation Rank
Aythya affinis	Lesser Scaup	S3
Allium aaseae	Aase's Onion	S3
Astragalus mulfordiae	Mulford's Milkvetch	S2
Astragalus purshii var. ophiogenes	Snake River Milkvetch	S3
Aythya affinis	Lesser Scaup	S3
Brachylagus idahoensis	Pygmy Rabbit	S2
Bufo woodhousii	Woodhouse's Toad	S2
Catapyrenium congestum	Compact Earth Lichen	S2
Centrocercus urophasianus	Greater-Sage Grouse	S2

[5] IDFG. (2021, September). Species Observations by County, Ada County. Accessed September 2021, from Idaho Fish and Game: https://idfg.idaho.gov/species/taxa/list/county.

[6] According to the Idaho Fish and Game, a S1 designation refers to species that are "critically imperiled because of extreme rarity or because some factor of its biology makes it especially vulnerable to extinction (typically 5 or fewer occurrences) and a S2 designation refers to species that are "imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (typically 6 to 20 occurrences)."

[7] IDFG. (2015 January). Key to Rare and Sensitive Species Table, by County. Accessed September 2022, from Idaho Fish and Game: https://fishandgame.idaho.gov/ifwis/portal/sites/ifwis/files/user/idfg-jstrickland/KEY%20to%20Rare%20and%20Sensitive%20Species%20Table%20by%20County.pdf.

Scientific Name	Common Name	State Conservation Rank
Chaenactis stevioides	Desert Pincushion	S2
Cicindela plutonica	A Tiger Beetle	S3
Corynorhinus townsendii	Townsend's Big-eared Bat	S3
Crotaphytus bicinctores	Mojave Black-collared Lizard	S1
Eatonella nivea	White Eatonella	S3
Eriogonum shockleyi var. packardiae	Packard's Buckwheat	S2
Glyptopleura marginata	White-margined Wax Plant	S3
Gulo gulo luscus	North American Wolverine	S2
Hypsiglena torquata	Night Snake	S3
Ipomopsis polycladon	Spreading Gilia	S2
Lanius ludovicianus	Loggerhead Shrike	S3
Lepidium davisii	Davis' Peppergrass	S3
Lepidium papilliferum	Slickspot Peppergrass	S2
Oreortyx pictus	Mountain Quail	S1
Pediocactus simpsonii	Simpson's Hedgehog Cactus	S3
Picoides dorsalis	Three-toed Woodpecker	S2
Rana pipiens	Northern Leopard Frog	S2
Rhinocheilus lecontei	Longnose Snake	S2
Sonora semiannulata	Ground Snake	S2
Sorex merriami	Merriam's Shrew	S2
Spermophilus mollis	Piute Ground Squirrel	S2
Strix nebulosa	Great Gray Owl	S3
Teucrium canadense var. occidentale	American Wood Sage	S2
Texosporium sancti-jacobi	Wovenspore Lichen	S2
Thomomys townsendii	Townsend's Pocket Gopher	S2
Utacapnia nedia	A Stonefly	S1

Source: IDFG, 2024.

E.1.1.3 Migratory Birds

The Migratory Bird Treaty Act (MBTA) prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations, and does not require intent to be proven. The Bald and Golden Eagle Protection Act (BGEPA) provides additional protection for bald and golden eagles. It prohibits the taking of bald or golden eagles,

including their parts, nests, or eggs. According to the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) report, 19 birds protected by the MBTA,[8] including the Bald Eagle protected under the BGEPA, have the potential to be found around the Project Construction Area. **Table E-2** below lists the species.

Table E-2
Migratory Birds with the Potential to Occur in the Project Construction Area

Scientific Name	Common Name
Aechmophorus clarkii	Clark's Grebe
Aechmophorus occidentalis	Western Grebe
Aquila chrysaetos	Golden Eagle
Carpodacus cassinii	Cassin's Finch
Calidris melanotos	Pectoral Sandpiper
Circus hudsonius	Northern Harrier
Coccothraustes vespertinus	Evening Grosbeak
Contopus cooperi	Olive-sided Flycatcher
Haliaeetus leucocephalus	Bald Eagle
Larus californicus	California Gull
Leucophaeus pipixcan	Franklin's Gull
Leucosticte atrata	Black Rosy-finch
Melanerpes lewis	Lewis's Woodpecker
Oreoscoptes montanus	Sage Thrasher
pelecanus erythrorhynchos	American White Pelican
Recurvirostra americana	American Avocet
Selasphorus calliope	Calliope Hummingbird
selasphorus rufus	Rufous Hummingbird
Tringa flavipes	Lesser Yellowlegs

Source: USFWS, 2024.

[8] USFWS. (2024, September). Information for Planning and Consultation. Accessed December 2024, from USFWS Service: https://ipac.ecosphere.fws.gov/location/YFLIAKRPSZEANNJJZ7LKBEC67A/resources#migratory-birds.

E.1.2 Environmental Consequences

E.1.2.1 Proposed Action

Federal species

The Project Construction Area is heavily developed and disturbed. The City of Boise (Airport Sponsor) conducts wildlife mitigation and maintenance activities based on the Wildlife Hazard Management Plan (WHMP), as required by 49 United States Code (U.S.C.) § 44706, and as implemented by 14 Code of Federal Regulations (CFR) Part 139 § 139.337 to reduce wildlife hazards at the Airport. As a result, the Project Construction Area is not expected or intended to include the presence of or suitable habitat for the federally protected species identified as having the potential to occur in Project Construction Area.

Monarch Butterfly

Monarch Butterflies lay their eggs on milkweed plants and breed year-round.[9] According to the Airport's WHMP, shrubs (including milkweed) are removed from the Airport, or a minimum of 600 feet from runway centerlines.[10] Therefore, milkweed plants are not anticipated to be in the Project Construction Area. The absence of vegetation, including milkweed, eliminates suitable habitat for the Monarch Butterfly. As a result, Monarch Butterflies are not expected to be present in Project Construction Area and implementing the Proposed Action would have no effect on the Monarch Butterfly.

Slickspot Peppergrass

The Project Construction Area showed no presence of Slickspot peppergrass.[11, 12, 13] Therefore, there would be no effect to Slickspot peppergrass due to the Proposed Action because the species is not present in the Project Construction Area. The FAA consulted the results of the 2024 survey with USFWS on December 13, 2024, with a *no effect* to Slickspot peppergrass determination. The USFWS responded on December 16, 2024, concurring with the FAA's *no effect* determination.

[9] USFWS. (2022, September). Environmental Conservation Online System, Monarch butterfly. Accessed September 2022 from USFWS: https://ecos.fws.gov/ecp/species/9743.
[10] Boise Airport. (2017, July). Boise Airport Certification Manual, Exhibit 11 – Wildlife Hazard Management Plan.
[11] HDR Engineering, Inc. (2017, April). Lepidium Papilliferum Survey Results.
[12] Ricondo. (2019, December). Boise Airport Master Plan Update.
[13] Ecosystem Sciences, (2024, December 5). Slickspot Peppergrass, BOI Survey Report.

Suckley's Cuckoo Bumble Bee

Suckley's cuckoo bumble bees typically select grasslands, prairies, and meadows with an abundance of flowering plant species. [14] The Project Construction Area has been heavily disturbed by existing development and Airport maintenance activities to reduce plant communities. Overall, the Project Construction Area does not contain grasslands, prairies, meadows, or milkweed/flowering plants that are utilized by the Suckley's cuckoo bumble bee. Due to lack of suitable habitat, the Proposed Action will have no effect on the Suckley's cuckoo bumble bee.

Yellow-billed Cuckoo

The Yellow-billed Cuckoo uses wooded habitats with dense cover and water nearby, placing their nests in willow trees along streams and rivers. They also forage in cottonwoods.[15]

The Project Construction Area is located within an active airport area and is not a wooded habitat with dense cover or water nearby, thereby making the Project Construction Area unlikely habitat for the Yellow-billed Cuckoo. There is low suitability for the Yellow-billed Cuckoo due to routine maintenance activities to keep vegetation controlled and wildlife away from aircraft movement areas. Additionally, there are no wooded habitats with dense cover in the Project Construction Area.

[14] USFWS. (2024, August). Species Status Assessment Report for the Suckley's Cuckoo Bumble Bee (Bombus suckleyi), Version 1.0. Alaska Region.

[15] USFWS. (2022, September). Environmental Conservation Online System, Yellow-billed Cuckoo. Accessed September 2022 from USFWS: https://ecos.fws.gov/ecp/species/3911.

APPENDIX E.2

SLICKSPOT PEPPERGRASS SURVEYS

Slickspot Peppergrass

BOI SURVEY REPORT

FINAL

December 5th, 2024

Ecosystem Sciences, LLC

Science. Planning. Design.

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FINAL

LEPIDIUM PAPILLIFORM

Survey Results

Prepared:

November 2024

Ecosystem Sciences

Science · Planning · Design

Ecosystem Sciences | 202 N. 9th Street, Suite 400 Boise, ID 83702

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Acronyms and Abbreviations

BLM	Bureau of Land Management
EA	Environmental Assessment
EO	Elemental Occurrence
IFWIS	Idaho Fish and Wildlife Information System
LEPA	*Lepidium papilliferum* (Slickspot Peppergrass)
BOI	Boise Airport
USFWS	U.S. Fish and Wildlife Service

INTRODUCTION

This document describes the methods and results of a Slickspot peppergrass (*Lepidium papilliferum* [LEPA]) survey within the boundaries of the Boise Airport (BOI). Slickspot peppergrass is listed as threatened under the Endangered Species Act and the survey meets the requirements under the Endangered Species Act of 1973 (ESA) 16 U.S. Code (U.S.C.) Sec 1531. Ecosystem Sciences performed this survey to support the Runway Incursion Mitigation and Related Improvements Environmental Assessment (EA). Ecosystem Sciences personnel (Tim Maguire) performed the survey in conjunction with BOI staff. The survey occurred on August 22, 2024. BOI staff facilitated safe passage throughout the airport, especially in high traffic areas associated with active runways.

The U.S. Fish and Wildlife Service (USFWS) published the final rule designating critical habitat for the Slickspot peppergrass in the Federal Register on May 4, 2023 (USFWS 2023). Critical habitat is designated geographic areas that contain features essential to the conservation of a threatened or endangered species, that may require special management and protection (USFWS 2023). For Slickspot peppergrass, critical habitat encompasses areas of the native sagebrush-steppe ecosystem in southwestern Idaho, which may require special management due to known species populations or the high quality of the habitat. **The Study Area does not contain critical habitat for Slickspot peppergrass.**

Slickspot Peppergrass (*Lepidium papilliferum* [LEPA])

Slickspot peppergrass is an annual or biennial member of the mustard family (Brassicaceae), found primarily in soil inclusions known as slick spot microsites scattered within sagebrush steppe ecosystems of southwest Idaho in Ada, Canyon, Gem, Elmore, Payette, and Owyhee counties (USFWS 2020). The species depends on its persistent seed bank to survive the climatically variable desert environment of its range. The species typically flowers and fruits in May through July, and the proportion of seeds that germinate and emerge is dependent on winter and spring rainfall levels (USFWS 2020). As mentioned above, USFWS designated critical habitat for the species, but the Study Area does not contain any USFWS designated critical habitat. However, the Study Area does contain USFWS designated “Current Range” polygons for Slickspot peppergrass (Figure 1).

Study Area (USFWS Current Range Habitat Polygons)

The Study Area is roughly 1,600 acres (Table 1). Roughly 437 acres within and adjacent to the Study Area are identified as “Current Range” for Slickspot peppergrass (Figure 1). Current Range estimates are based on Element Occurrences (EOs) from the Idaho Fish and Wildlife Information System (IFWIS) (Kinter and Miller 2016; Colket et al. 2006, USFWS 2020). EOs are areas where a species or population is or was present (USFWS 2020) (Figure 1). Over 246 acres of LEPA current range within the Study Area were previously surveyed (HDR 2017) (Table 1) (Figure 1). The surveyors did not encounter LEPA, and Tim Maguire did not resurvey these areas under this effort. Over 40 acres of the LEPA Current Range polygons are not within the Study Area and were not surveyed (Table 1). The remaining Current Range polygons, within the Study Area, account for a total of 151 acres (Table 1). These 151 acres were surveyed intently on August 22, 2024.

Figure 1. Study Area Boundary and LEPA Current Range

Table 1. Study Area Acreages and LEPA Survey Area*

Name	Acres
Study Area	1,158.9
LEPA Current Range (within and adjacent to Study Area)	437.3
LEPA Current Range **Previously Surveyed**	246.2
LEPA Current Range **Outside** EA Study Area	40.1
LEPA Current Range **Surveyed 2024**	151.0

***See Figure 4.**

Agency Consultation/Coordination

Ecosystem Sciences and the project proponents consulted and coordinated with the USFWS prior to the LEPA field survey. Agency coordination was performed through email. The goal of the coordination was to discuss the survey date (e.g. precipitation metrics met), methods employed, and plant phenology expectations due to the survey timing. USFWS personnel provided the appropriate methods documents (BLM 2010) and recent pictures of the species from a different location (Figure 2). The images provided by the USFWS not only depict the species expected condition based on timing, but also the conditions of the Slickspot in which it resides. This information was very helpful as a comparative to observed conditions during the survey.

Figure 2. Expected phenological condition of LEPA (USFWS supplied sample image from separate location)

METHODS

BLM Survey Methods

Ecosystem Sciences employed the Idaho Bureau of Land Management's (BLM) Special Status Plant Survey and Clearance Protocol to conduct the LEPA survey (BLM 2010). The reason for the using the BLM's Survey protocol (BLM 2010) is, "To ensure compliance with the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA) by having sufficient information available to adequately assess the effects of proposed actions on special status plants" (BLM 2010).

Ecosystem Sciences and BOI staff used a "Complete Survey" technique to examine the LEPA "Current Range" polygons within the Study Area. A complete survey is a 100 percent visual examination of the current range polygons within the Study Area, by meandering throughout each polygon (Figure 3). The survey areas were small enough to ensure 100 percent visual examination. Airport staff regularly mow most of the Study Area, facilitating easy visual examination. Minimal sagebrush (e.g., *Artemisia tridentata*) occurs in the Study Area. One small patch of sagebrush was identified in the southern portion of the Study Area (Figure 4, near photo points 17 & 15). This area was searched intently to see if slickspots or LEPA occurred.

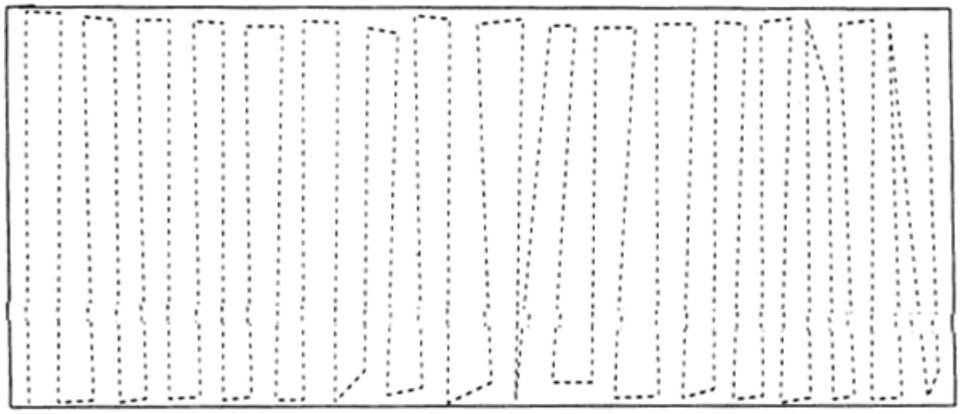

Figure 3. Complete Survey Polygon Coverage Walking Path

Figure 4 displays the surveyed areas (e.g., green-hatched polygon) and non-surveyed areas (red-hatched polygons). The green areas of Figure 4 were thoroughly investigated for slickspots and LEPA. The survey occurred August 22, 2024. Weather that day did not hinder the survey. It was sunny and warm (e.g., high of 84 degrees Fahrenheit). There was a slight smokey haze from regional wildfires, but did not impact visual examination of the Study Area. Table 2 includes representative photos of the habitats encountered during the survey and weather conditions. Photos in Table 2 correspond to photo points in Figure 4.

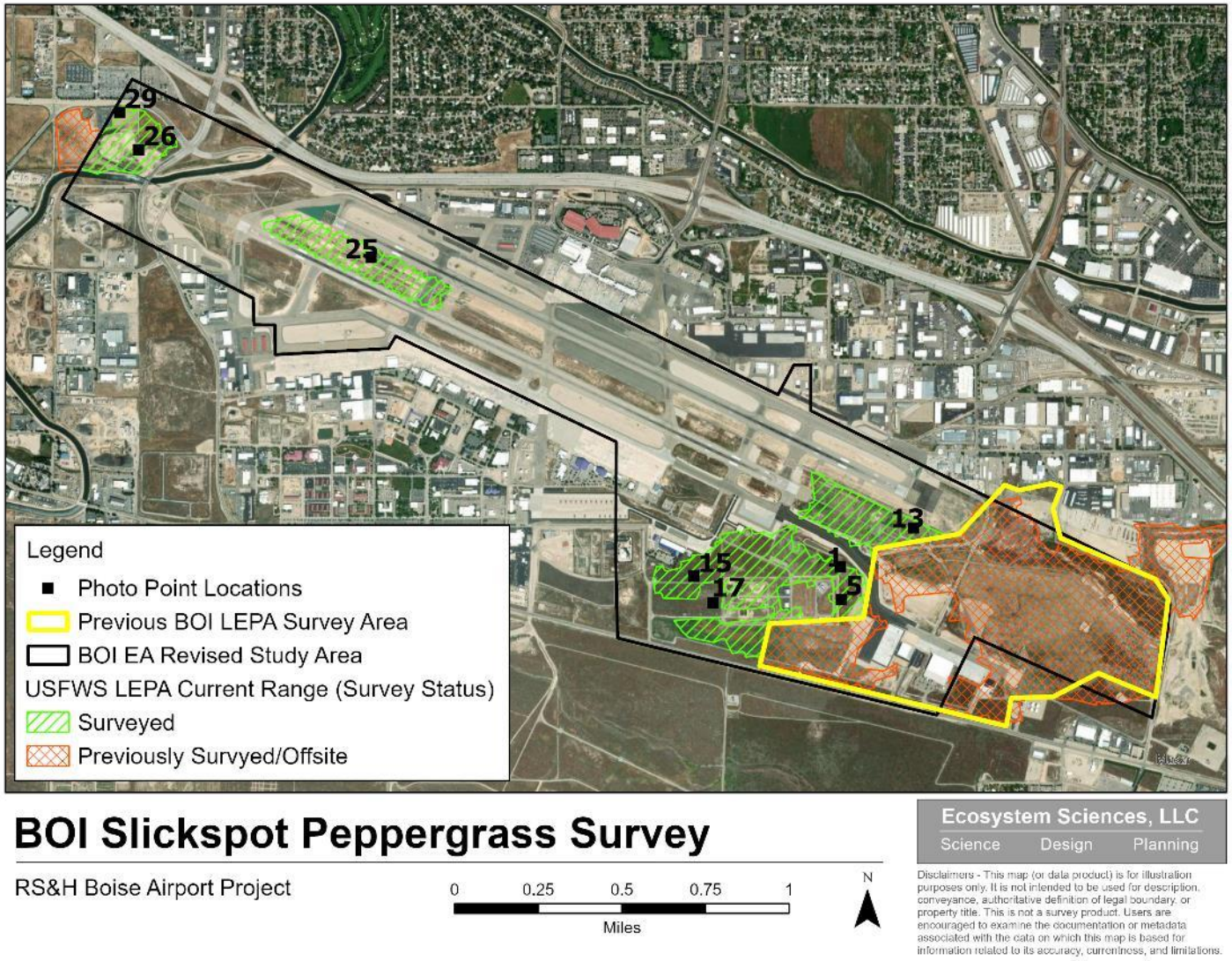

Figure 4. Surveyed Area (green hatch) and Photo Points (See Table 2)

Table 2. Reference Photo Points (see Figure 4)

Photo Point #1	
	
	

Table 1. Reference Photo Points Continued

Photo Point #12	
	
	

RESULTS AND DISCUSSION

No Lepidium *papilliferum* (LEPA) plants were identified through the survey. Airport staff manages the Study Area for aviation safety purposes that are not conducive to Slickspot peppergrass. Current Range polygons within the Study Area are disturbed for aviation safety purposes and frequently mowed or tilled (Table 2 Photo Points, 12, 25, 26, 29). Such actions disturb soil condition and facilitate the introduction of non-desirable weeds and annual grasses, reducing the likelihood of the establishment and persistence of native vegetation. The vegetation of the surveyed areas consisted primarily of undesirable species; annual grasses such as cheatgrass (*Bromus tectorum*) and medusahead (*Taeniatherum caput-medusae*); weeds such as prickly lettuce (*Lactuca serriola*), bur buttercup (*Ceratocephala testiculata*), kochia (Kochia scoparia L.) and Russian thistle (*Salsola iberica*).

A small area of native sagebrush occurs in the southern portion of the Study Area (Figure 4, Table 2, Photo Points 15 and 17). Sagebrush was the dominant shrub with rabbitbrush sub-dominant, and the understory almost completely cheatgrass. Introduced perennial grasses occur within the Study Area including crested wheatgrass (*Agropyron cristatum*), intermediate wheatgrass (*Thinopyrum intermedium L.*), and *Poa* species. While this area retains the sagebrush overstory that often accompanies Slickspot peppergrass, it is heavily disturbed (e.g., trash present) and invaded with undesirable species that outcompete desirable native plants (e.g., Slickspot peppergrass).

The previous LEPA survey at the airport noted the disturbance especially to soils, stating, “soils were significantly disturbed from historic activities associated with the construction, operation, and maintenance of the airport. There was visible evidence that soil had been mechanically removed and replaced for stormwater management purposes” (HDR 2017 & Fisher et al 1996). Similar conditions were noted during this survey, including stormwater channels with previous sedimentation and flow channels observed in surveyed areas. If slickspots had been noted in the past, the frequent disturbance altered them considerably. For example, Photo Points #1 and #5 depict potential historic slickspots that have experienced increased deposition and sedimentation resulting in a silt layer that is too thick for optimal Slickspot peppergrass emergence (Meyer and Allen 2005, USFWS 2020). These areas were devoid of vegetation and exhibited a soil condition unconducive to Slickspot peppergrass, compared to the slickspot shown in Figure 2 (USFWS supplied photos).

The historic disturbance and dominance of non-native species within the Study Area made it unlikely that Slickspot peppergrass would have persisted in the area. Additionally, it is unlikely that Slickspot peppergrass will establish in the future. The combination of historic disturbance, ongoing soil alteration and required maintenance (e.g., vegetation management aka mowing), within a landscape dominated by non-desirable weeds and annual grass does not provide an environment conducive to the propagation of Slickspot peppergrass.

CONCLUSION

A complete survey including 100 percent visual examination of the USFWS "Current Range" Slickspot peppergrass polygons within the BOI Study Area occurred on August 22, 2024. The survey did not encounter *Lepidium papilliferum* plants or slickspots. Airport staff manage the Study Area to facilitate safe travel of aircraft and other personnel carriers throughout the airport grounds. Potential areas that would harbor LEPA have been disturbed for over 50 years. These areas are subject to mowing, grading, stormwater runoff and historic and current chemical spray (e.g., de-icing spray and weed abatement), and trash deposition. Annual grasses and weeds that outcompete native species dominate the surveyed areas' current vegetation. In short, the areas surveyed are not conducive to Slickspot peppergrass establishment or survival, and essential operations (e.g., vegetation management) at the airport will not promote future establishment or survival of the species.

REFERENCES

BLM. 2010. Slickspot peppergrass inventory and clearance standards. Bureau of Land Management, Boise District Office, Boise, Idaho.

Colket, B., S. Cooke, and M. Mancuso. 2006. Element occurrence review and update for slickspot peppergrass (Lepidium papilliferum) in the Idaho Conservation Data Center BIOTICS database. Idaho Conservation Data Center, Idaho Department of Fish and Game, Boise, Idaho. December 2005. 40 pp. + appendices.

Fisher, Dr. Helen, Lucinda Eslick, and Dr. Mark Seyfried. 1996. "Edaphic Factors that Characterize the Distribution of Lepidium Papilliferum." Idaho Bureau of Land Management, Technical Bulletin No. 96-6. April 1996.

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Meyer, S.E. and P.S. Allen. 2005. Lepidium papilliferum soil and seed bank characterization on the Orchard Training Area. U.S. Forest Service, Intermountain Research Station, Shrub Sciences Laboratory, Provo, Utah. Department of Plant and Animal Science, Brigham Young University, Provo, Utah. 10 pp.

U.S. Fish and Wildlife Service. 2020. Species Status Assessment of Lepidium papilliferum (slickspot peppergrass), Version 1.0. Idaho Fish and Wildlife Office, U.S. Fish and Wildlife Service, Boise, Idaho. 157 pp. + appendices.

U.S. Fish and Wildlife Service. 2023. Final Rule Endangered and Threatened Wildlife and Plants; designation of Critical Habitat for Slickspot Peppergrass (Lepidium papilliferum) (slickspot peppergrass). 50 CFR Part 17. **[Docket No. FWS–R1–ES–2010–0071; FF09E21000 FXES1111090FEDR 223] RIN 1018–BE61.**

Technical Memo

Date:	Thursday, April 06, 2017
Project:	City of Boise Airport LEPA
To:	Jill Singer, City of Boise
From:	Matt Modlin, HDR Michael Murray, HDR
Subject:	April 5, 2017 LEPA Survey Results

Introduction

The City of Boise (City) has requested that HDR Engineering Inc. (HDR) provide consulting support to complete a slickspot peppergrass (*Lepidium papilliferum*; LEPA) survey in the area north of Gowen Road at the City's airport in order to meet requirements under the Endangered Species Act of 1973 (ESA) 16 U.S. Code (U.S.C.) Sec 1531, et seq. LEPA is currently listed as threatened under the ESA and the City requires an assessment of the species' presence or absence for future site activities.

HDR biologist, Matt Modlin, conducted a survey for LEPA on April 5, 2017, in the area north of Gowen Road at the City's airport. Matt has 5 years experience conducting rare plant surveys in the sagebrush steppe of Idaho, Nevada, Oregon, and Utah. He has visited several known LEPA populations during various stages of development to gain a thorough understanding of the species along with the skills needed to identify LEPA and LEPA habitat.

Methods

HDR's biologist conducted the survey in accordance with the Bureau of Land Management LEPA survey protocol for LEPA (BLM 2010) and completed the following:

- Performed a Stage 1 Inventory to determine the presence or absence of suitable habitat. LEPA is known to occur only in specific micro habitats, referred to as "slickspots." Slickspots can be identified by unique soil and vegetation characteristics.
- Searched linear transects that spanned the entire width and length of the project area of interest (AOI).
- Located transects no more than 300 meters apart based on the vegetation density and the visual distance slickspots could be detected.
- Collected photos at select locations deemed representative of the vegetation and survey AOI. **Attachment 1** displays the survey AOI, transect locations, and photo locations.

Results and Discussion

The soil was not snow-covered or saturated at the time of the survey and conditions were optimal for identifying the presence or absence of slickspots. Soils in the survey AOI were significantly disturbed from historic activities associated with the construction, operation, and maintenance of the airport. There was visible evidence, in all areas of the survey AOI, that soils had been mechanically removed and replaced for stormwater management purposes and did not contain any slickspot characteristics (Fisher et al 1996). **Attachment 2** contains photos of the site conditions showing the level of disturbance to soils and vegetation.

The vegetation in the survey AOI was also significantly disturbed and consisted primarily of cheatgrass (*Bromus tectorum*), bur buttercup (*Ceratocephala testiculata*), and Russian thistle (*Salsola iberica*). Native vegetation was sparse and limited to basin wildrye *(Leymus cinereus*) and crested wheatgrass (*Agropyron cristatum*). The survey area did not contain any shrub species.

Conclusions

All vegetation and soils in the survey AOI have been mechanically removed and replaced from activities associated with the airport construction, operation, and maintenance. Therefore, no slickspots were present during the survey and there is not suitable habitat for LEPA. Based on the BLM survey protocol (BLM 2010), if no slickspots are observed in a Stage 1 Inventory, no further action is needed and the area can be cleared as containing no suitable habitat for LEPA.

References

BLM [Bureau of Land Management]. 2010. “Slickspot Peppergrass Inventory and Clearance Standards.” May 13, 2010.

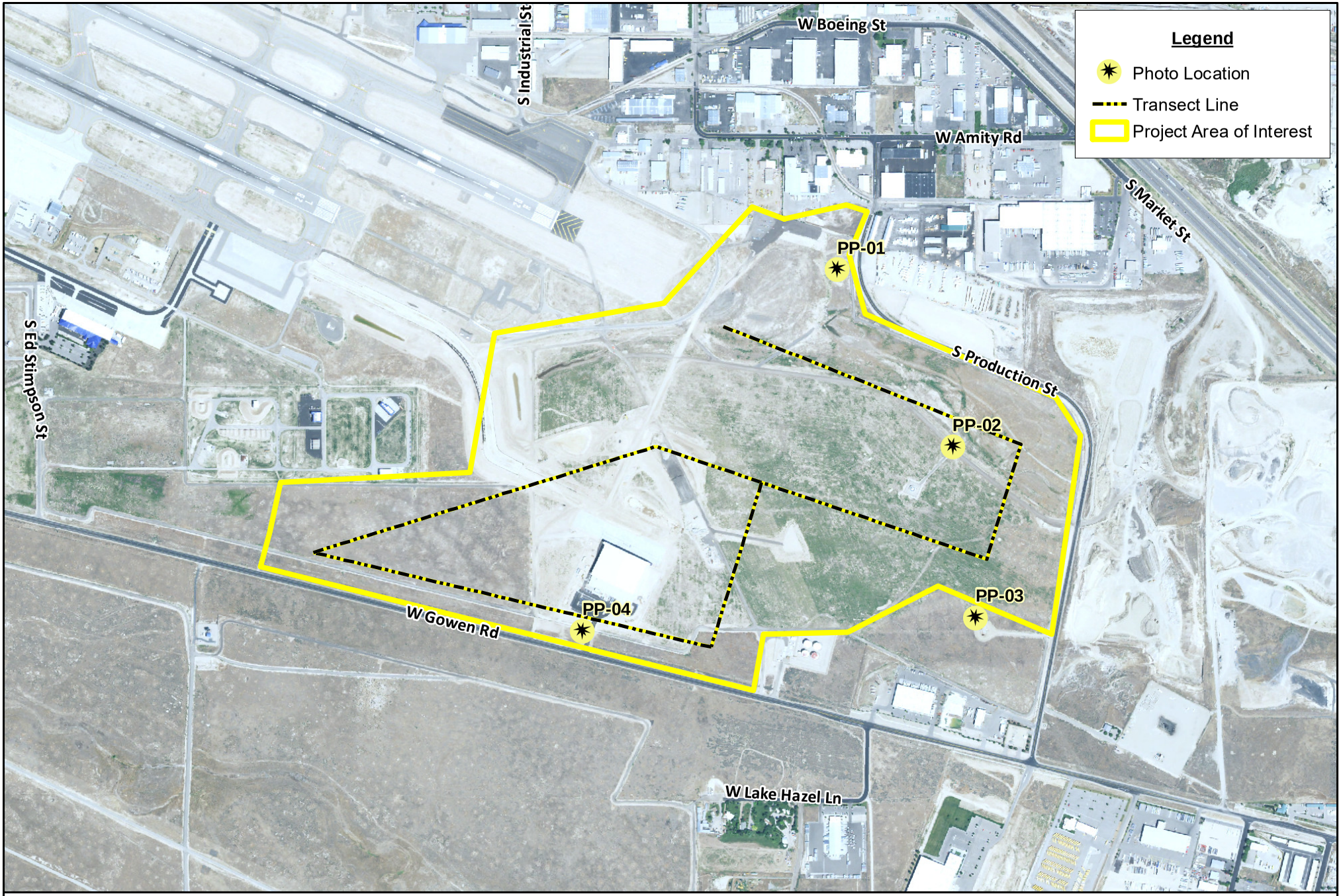
Fisher, Dr. Helen, Lucinda Eslick, and Dr. Mark Seyfried. 1996. “Edaphic Factors that Characterize the Distribution of Lepidium Papilliferum.” Idaho Bureau of Land Management, Technical Bulletin No. 96-6. April 1996.

Attachments

- Attachment 1: Site Map
- Attachment 2: Site Photos

ATTACHMENT A

SITE MAP



Site Map
Slickspot Peppergrass (Lepidium papilliferum) Survey
April 5, 2017
City of Boise

0 1,000 2,000
Feet

Imagery: 2015 NAIP, 1 Meter Resolution
Source: USDA/NRCS Digital Gateway
Other Data Sources: Ada County; Idaho Geospatial Clearinghouse (INSIDE Idaho); Community Planning Association of Southwest Idaho

Map Date: 4/5/2017
Document: Q:\BoiseCity\ESAs\map_docs\Site.mxd

ATTACHMENT B

SITE PHOTOS

Photo 1 – PP-01 looking south at the runway safety area.

Photo 2 – PP-01 looking north at the runway safety area.

Photo 3 – PP-02 looking north across survey AOI.

Photo 4 – PP-02 looking southwest across survey AOI.

Photo 5 – PP-03 looking northwest across survey AOI.

Photo 6 – PP-03 looking west across survey AOI.

Photo 7 – PP-04 looking east at disturbed survey AOI adjacent to undisturbed habitat.

Photo 8 – PP-04 looking west at disturbed survey AOI adjacent to undisturbed habitat.

APPENDIX E.3

AGENCY COORDINATION

From: Reighn, Chris <chris_reighn@fws.gov>
Sent: Monday, December 16, 2024 9:07 AM
To: Bruner, Heidy S (FAA) <Heidy.S.Bruner@faa.gov>
Cc: Markus Green <mggreen@cityofboise.org>; Barrow, Julie <Julie.Barrow@rsandh.com>; Renee New <rnew@cityofboise.org>; Adam Oliver <aoliver@cityofboise.org>; Gates, Gary (FAA) <Gary.Gates@faa.gov>; Jagoda, Kevin P (FAA) <Kevin.P.Jagoda@faa.gov>; Kolts, Jaan R <jaan_kolts@fws.gov>
Subject: [External] Re: [EXTERNAL] Boise Airport Slickspot Peppergrass Survey - No Effect Concurrence Request

Heidi,

Thank you for coordinating with us on the Boise Airport Project! It's super helpful chatting early in the process.

In response to your request for concurrence, the following is provided.

The U.S. Fish and Wildlife Service received your email regarding the Boise Airport Safety Project in Boise, Idaho. When I draw your project area in IPaC, I get a report that says that there is potential for *Lepidium papilliferum* (Slickspot Peppergrass) to be affected. Based on our understanding of the nature and location of your project, we have not identified any conflicts with your project and any species listed as threatened or endangered under the Endangered Species Act.

Again, thank you for your interest in conserving listed species.

Please let me know if you have any questions.

Regards,

Chris Reighn
Biologist
U.S. Fish and Wildlife Service
Idaho Fish and Wildlife Office
Boise, Idaho

From: Bruner, Heidy S (FAA) <Heidy.S.Bruner@faa.gov>
Sent: Friday, December 13, 2024 12:55 PM
To: Idaho Consultation Requests, FW1 <fw1idahoconsultationrequests@fws.gov>
Cc: Reighn, Chris <chris_reighn@fws.gov>; Markus Green <mggreen@cityofboise.org>; Barrow, Julie <Julie.Barrow@rsandh.com>; Renee New <rnew@cityofboise.org>; Adam Oliver <aoliver@cityofboise.org>; Gates, Gary (FAA) <Gary.Gates@faa.gov>; Jagoda, Kevin P (FAA) <Kevin.P.Jagoda@faa.gov>
Subject: [EXTERNAL] Boise Airport Slickspot Peppergrass Survey - No Effect Concurrence Request

Dear Ms. Ellis:

The Boise Airport in Ada County Idaho (3201 Airport Way, Boise Idaho) is proposing an important safety project that will be accomplished using federal funding. The Federal Aviation Administration (FAA) is the lead federal agency and is responsible for ensuring compliance with the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA). A complete survey for the threatened Slickspot Peppergrass (Lepidium papilliform) (LEPA) was conducted as part of the environmental analysis for the project. The LEPA survey report is attached along with a cover letter requesting USFWS concurrence with FAA's "No effect" (NE) determination. Please review this information and provide your concurrence.

Please let me know if more information would be helpful.

Thank you,
Heidy
Heidy Bruner, P.E.
Environmental Protection Specialist (Idaho)
Helena Airports District Office - FAA Northwest Mountain Region
406.441.5221

U.S. Department
of Transportation
**Federal Aviation
Administration**

Helena Airports District Office
2725 Skyway Drive, Suite 2
Helena, MT 59602-1213

December 13, 2024

Lisa Ellis
State Supervisor
Idaho Fish and Wildlife Office
U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Rm 368
Boise, Idaho 83709

Subject: Boise Airport (BOI) Slickspot Peppergrass (Lepidium papilliform) Survey Results

Dear Ms. Ellis:

The Boise Airport in Ada County Idaho (3201 Airport Way, Boise Idaho) is proposing an important safety project that will be accomplished using federal funding. The proposed project is intended to enhance runway safety by eliminating a "hot spot", correcting nonstandard taxiway geometry, and reducing the likelihood of wrong surface landings by aligning the thresholds of parallel runways. The Federal Aviation Administration (FAA) is the lead federal agency and is responsible for ensuring compliance with the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA).

A complete survey for the threatened Slickspot Peppergrass (Lepidium papilliform) (LEPA) was conducted as part of the environmental analysis for the project. Coordination between the US Fish and Wildlife Service, FAA, Boise Airport, and Ecosystem Sciences, LLC occurred prior to the survey to discuss methodology and plant phenology.

The survey did not identify LEPA plants or slickspot habitats. Additionally, Airport staff manage the vegetation to facilitate the safe travel of aircraft and ground service vehicles throughout the Airport. Potential areas that could harbor LEPA have been disturbed for over 50 years. These areas are subject to mowing, grading, stormwater runoff and historic and current chemical spray. Annual grasses and weeds that outcompete native species dominate the existing vegetation of the surveyed area. Please see the attached survey report for additional information.

Based on the survey results and the absence of LEPA and LEPA habitat, FAA has made a "No effect" (NE) determination. Please review this information and provide your concurrence. If more information is required, please contact me at heidy.s.bruner@faa.gov. I will be pleased to assist you.

Sincerely,

Heidy Bruner, P.E.
Environmental Protection Specialist

Attachment: Slickspot Peppergrass BOI Survey Report
cc: Markus Green, PE, Airport Engineer
Julie Barrow, RS&H

APPENDIX E.4

WILDLIFE HAZARD MANAGEMENT PLAN

Exhibit 11 – Wildlife Hazard Management Plan

1. PURPOSE

The purpose of this plan is to:

1.1. Set forth the authority and responsibilities for management of wildlife hazards.

1.2. Establish procedures to be followed by Airport employees and contractors in the event of wildlife/bird strikes and/or sightings as well as priorities for the long-term control and management of wildlife populations on and around the Boise Airport.

1.3. To increase aviation safety for passengers and flight crews by reducing the potential risks to aircraft and aerodrome operations caused by bird and mammal activities on, and in the vicinity of Boise Airport through a prioritized habitat modification plan.

2. SCOPE

2.1. The Boise Airport's WHMP addresses the specific situations required by *Title 14 CFR 139.337, Wildlife Hazard Management Plan.* To the extent possible this plan is designed to complement existing SOPs and facilitate the response situations addressed. This plan does not authorize harassment of wildlife off airport property unless specifically approved by the State or Federal agency having jurisdiction. This plan has been presented for review to based airlines, State Fish and Game, USDA-Wildlife Services, and to the FAA for final approval as part of the Airport Certification Manual.

3. PLANNING FACTORS AND ASSUMPTIONS

3.1. Boise Airport is located south of the City of Boise. It is bordered on the north by Interstate 84, and to the east and west by areas of considerable urban growth. To the south is primarily open high-desert range land. Located on the Boise Airport (BOI) are the National Interagency Fire Center (NIFC), the Idaho Air National Guard (IDANG), and the Idaho Army National Guard (IDNG). There are three Fixed Base Operators (FBOs) and several corporate facilities located on the airfield. These include ALScott, Simplot Aviation, Firehawk Helicopters, Micron Aviation, Albertsons LLC, and Idaho Helicopters.

3.2. Six airlines provide regular passenger service at the Boise Airport. Annual passenger traffic at the Boise Airport is approximately 2.7 million. The largest scheduled passenger aircraft the airport serves on a daily basis is the Boeing 737/800. In maximum configuration, it will carry about 170 passengers and crew.

3.3. Three commercial air cargo organizations operate at BOI with aircraft ranging from Cessna 210s to A-300s. These aircraft normally land and depart between 0630-0800 and 1730-1900, typically high migratory bird movement times. This creates a higher risk potential per operation over passenger aircraft.

3.4. The Armed Forces of the United States conduct frequent flights at the Boise Airport. Military aircraft based at BOI include: A-10, AH-64, and UH-60 and UH-72 type aircraft. Boise is also the primary divert field for Mt. Home AFB. MHAFB is host to the 366 wing and operates F-15 aircraft. Because of Boise's strategic location, nearly all types of military aircraft in the inventory pass through for transient services.

3.5. Boise Airport averages 320 fair weather flying days per year. However, the area is subject to seasonable inversion layers which create instrument conditions varying from 10 to 20 days per year.

3.6. There are approximately 75 businesses located on or about the airport industrial complex. These businesses range from hotels, restaurants and banks to industrial manufacturing facilities and an industrial gas transfer station.

3.7. Periodic community events such as air shows and military open houses are staged on the airport property and may involve more than 30,000 persons on a given day.

3.8. The Boise Fire Department Aircraft Rescue Fire Fighting (ARFF) Unit will respond to all aircraft accidents/incidents (A/I) occurring at the Boise Airport.

3.9. The New York Canal parallels the airport on the north and travels southwest coming within a few hundred feet of the runways. A drainage ditch parallels the south side of the airport, and two small runoff holding ponds are located on the north side of the airport. Several small ponds are adjacent to the airport at the junction of South Orchard Road and Gowen Road. In addition, parts of the Boise River are within three miles of the airport.

3.10. Bird strikes at airports usually occur at relatively low elevations as reflected in the fact that of all reported civil aviation bird strikes, 45% occur within 100 feet of the ground and 85% occur near airports, either during takeoff, climb, approach, and landing. These statistics are from the FAA's Airport Wildlife Hazard Management Advisory Circular.

3.11. The risks from bird strikes exist both when aircraft are taking off and landing, yet on average, the greater risk to human safety occurs during takeoff. However, pilots have reported bird strikes at altitudes up to 21,000 feet above sea level.

3.12. The procedures outlined here are intended to supplement, and not to supersede any airlines or other organization's internal procedures regarding wildlife hazards. It is however, intended to provide the liaison that is needed between the affected air carrier and the Airport. All users of the Boise Airport must report all wildlife strikes or problems to Airport Operations as soon as practical.

4. MISSION STATEMENT

4.1. Boise Airport's wildlife management mission is to increase aviation safety for passengers and flight crews by reducing the potential risks to aircraft and airport operations caused by bird and mammal activities on, and in the vicinity of BOI.

To that end, Boise Airport has a zero tolerance policy towards all hazardous wildlife. Airport Operations will dispatch appropriate personnel and equipment upon notification of any hazardous wildlife on or over the Boise Airport or flight approach corridors.

5. HABITAT DESCRIPTION

5.1. Food, cover, and water are powerful wildlife attractants, and are typically found (to varying degrees) on most airfields. Habitat management, when carefully planned and selected, provides the most effective long term wildlife deterrent, as it eliminates potential wildlife attractants. However, careful consideration should be given to the secondary effects of habitat modification, as decreasing the habitat's attractiveness for one species may increase its attractiveness to another potentially hazardous species. In addition, wildlife displaced from one area due to habitat alteration may increase hazards elsewhere on the airfield. For this reason, it is important to identify existing habitat characteristics on the airfield and determine how they relate to wildlife use patterns. The habitats and activity sites surrounding Boise Airport can be divided into road systems, canals, industrial sites, grassland, high-desert sagebrush, ponds, and one golf course.

5.1.1. *Vegetation*

Vegetation provides food and cover attractants for wildlife. At the Boise Airport most of the vegetation consists of grasses and shrubs. South of the runways, there is a large area leased to the military with a number of deciduous trees and some evergreens. The trees and associated lawns in this area appear much like a city park environment which is generally quality habitat for some wildlife.

5.1.2. Water

5.1.2.1 Immediately outside of the west perimeter fence is the New York Canal, a man-made structure which diverts water from the Boise River system to farm land throughout the southwest end of the Treasure Valley. This system flows beginning in early to mid-April and is generally active through mid-October. The canal does have steep cement banks which limits wildlife access.

5.1.2.2 Two runoff retention ponds are located approximately one-half mile southwest of the airport. One pond is approximately 2 acres in size and the second pond is approximately 1.5 acres in size. Both ponds are seasonal with water quantity dependent on precipitation.

5.1.2.3 North of the parking garage is a runoff retention pond for the main terminal ramp. This pond has very steep sides, and the activity at the rental car lots keeps wildlife to a minimum.

5.1.2.4 On the northwest end of the Boise Airport, two retention ponds hold runoff water and residue including run-off de-icing chemical. The ponds are approximately one acre in size with steep rocky banks. Both ponds are seasonal with water quantity dependent on precipitation.

5.1.2.5 An additional water source is a series of retention ponds along Gowen Road near the main gate to the military leasehold. These ponds are small and intermittent, and have not demonstrated any significant attraction to wildlife.

5.1.2.6 Five Mile Creek runs parallel to and adjacent to the third runway. This creek only runs approximately every 5-7 years, but does hold small pools of water during the spring into early summer. Any changes to this streambed require approval from the U.S. Corps of Engineers.

5.1.2.7 Currently there is a wastewater treatment facility 2.8 miles S.E. of the airport. In June, 2007 this facility supported a large gull nesting colony and was identified as posing a wildlife hazard and nuisance. As a result, a significant effort was made by the landowners with assistance from the Wildlife Service to eradicate the nests, remove birds and make the area undesirable. The landowners, neighbors and the airport continue to monitor gull activity in this area.

5.1.2.8 3.1 miles S.E. of the airport is a 5.9 acre water feature surrounded by residential mobile homes.

5.1.2.9 3.6 miles S.E. are industrial cooling ponds as well as stock ponds located 4.2 miles S.E.

6. LAND USE

6.1. Existing land uses includes commercial, warehouse, residential, fuel storage, manufacturing, governmental as well as aeronautical. There is a solid waste transfer station located .8 miles SW of the airfield. The transfer of waste is accomplished inside a building with no outside waste storage or exposure. There is no farming or waste disposal on airport property. South of Gowen Road the land is high-desert sagebrush.

6.1.1. Airside facilities include runways, taxiways, aircraft parking ramps, lighting, navigational aids, and grassy safety areas. The south parallel runway is 9,763 feet long, while the north runway is 10,000 feet long. Both runways are 150 feet wide. A third 5,000 x 90-foot-long runway is a mile south of the existing runways. The third runway is an uncontrolled special use runway and is used as an assault training runway for the military and helicopter training.

6.1.2. Landside facilities include the passenger terminal, fixed base operators and corporate aviation facilities, storage hangars, NIFC, ANG, Airfield Maintenance Campus, and various facilities which provide support to the airport operation.

6.2. Much of the land north and west of the airport is developed for urban uses, while areas south of the airport are relatively undeveloped.

7. AUTHORITY AND RESPONSIBILITY FOR IMPLEMENTING THE PLAN

7.1. Boise Airport, through its Director is required to meet the requirements of FAR-139 for Wildlife Management.

7.1.1. The Airport Operations Manager or designee shall be designated the Wildlife Coordinator and responsible for oversight of the management of the WHMP including the following tasks in cooperation with the USDA:

I providing recognition and reporting training to all airport employees.
II Providing training on safety, legal and the proper control techniques to be used.
III Budget for required resources.
IV Establish priorities for habitat management.

7.1.2. The Operations Specialists and Airfield Maintenance personnel shall be primarily responsible for direct wildlife control actions and habitat modifications. The following tasks will be done on a recurrent basis and as necessary.

- Report all known wildlife strikes in the FAA wildlife Strike Database Reporting System.
- Issue warnings of known wildlife hazards to the air traffic control tower and pilots.
- Ensure wildlife-attracting refuse does not accumulate in fields and ditches on or near the airport.
- Inspect critical areas for wildlife activity or strikes and maintain a record of the action, even if no wildlife was present.
- Haze wildlife from critical areas whenever encountered.
- All wildlife activity, observations, actions taken or depredation will be recorded electronically via the Eagle Data Reporting System.
- Assist with, or contract out habitat modifications addressed in the WHMP, such as vegetation maintenance along ditches, brush removal, and tree pruning.
- Install and maintain netting, reflective tape, or wire grids over ponds, ditches, and other water areas as determined necessary by the Wildlife Coordinator.
- Maintain the perimeter fence to exclude large mammals such as coyotes, badgers, deer, and dogs.
- Remove all trash and debris on the airfield.
- Minimize pooling formed by rain on tarmac and infield areas.

7.2. The Federal Aviation Administration (FAA) Air Traffic Control Tower (ATCT) is responsible for the movement of aircraft in Boise airspace and on the Movement Area. The ATCT is normally the first point of notification for any wildlife strikes. Although controllers cannot be expected to monitor all wildlife hazards on the airfield, they should notify Airport Operations immediately if pilots report hazards or observe any hazards from the tower.

7.3. U.S. Fish & Wildlife Service (USFWS) is responsible for issuing depredation permits, as authorized by the Migratory Bird Treaty Act.

7.4. U.S. Department of Agriculture - Wildlife Services (USDA-WS)

7.4.1. Boise Airport will contract with the USDA-APHIS to update the Wildlife Hazard Assessment as warranted by changing conditions. The most recent assessment was conducted from February, 2008 to January, 2009 with the report delivered to the Airport in April, 2009.

7.4.2 USDA-APHIS, US FWS, State of Idaho Fish and Game may be contracted to assist the airport with certain problem wildlife such as protected species or when certain restricted pesticides are required.

8. HABITAT MANAGEMENT

Habitat Management includes the physical removal, exclusion, or manipulation of areas that are attractive to wildlife. The goal is to make the environment relatively uniform and unattractive to the species that are considered the greatest hazard to aviation. Modifications to the habitat will be monitored carefully to ensure that they reduce the risk of wildlife hazards and do not create new attractions for different species.

8.1. Habitat Management

8.1.1. *When possible eliminate vegetated areas.* The most unattractive areas for wildlife on airfields tend to be sterile, industrial sites that are devoid of food, water, and essential cover (e.g., loafing, roosting, and/or nesting areas). Appendix 1 identifies priority areas and methods to be used when modifying habitats.

8.1.2. *Discourage nesting and loafing of birds in grass and gravel areas.* The standard recommendation for airports where gulls and flocking birds are a problem is to maintain long grass, at 6-10 inches. Gulls, shorebirds, pigeons, geese, starlings, crows, and small insectivorous birds prefer short grass, at 2-4 inches. The grass at the Boise Airport will be maintained at 6-10 inches to make the environment less attractive to gulls, crows, ravens, magpies, and small insectivorous birds. If raptors become a significant problem on the airport, maintenance of short grass or a compromise range of 4-6 inches may be necessary.

8.1.3. *Eliminate trees and woodland cover.* Trees and shrubs should be removed from the airport, or at a minimum, from within 600 feet of runway center-lines. Trees greater than two feet high should be cut to ground level. Trees provide cover, food, loafing and breeding areas for birds and squirrels.

8.1.4. *Dispose of all animal carcasses immediately.* All carcasses will be disposed of immediately to reduce hazards from scavengers. Carcasses will be disposed of by burial on-site or placed in plastic bags and put in a tightly covered solid waste dispenser. When using lethal control to haze flocks of birds, take only birds that can be easily retrieved for disposal.

8.1.5. *Airport Building Projects.* The Deputy Director- Operations and Security and / or the Operations Managers or Supervisors should participate in all phases of airport building projects to avoid an accidental increase in wildlife hazards resulting from architectural or landscaping changes (vegetation, water features, etc.).

8.1.6. *Landscaping.* Landscaping at the airport has an effect on the overall impression of passengers arriving in the Boise area for the first time. Landscaping must be aesthetically pleasing but it must also meet the airport's greater responsibility of air safety. Trees and bushes that provide hunting perches, roosting and loafing sites, nesting cover, and food for birds and other wildlife will be removed. Species that produce edible fruits, nuts or berries will not be used on airport property. BOI will monitor the landscaping to prevent communal roosting by starlings and crows, and the trees will be thinned, topped, or removed if necessary.

8.2. Wildlife Deterrence Methods

8.2.1. *Haze wildlife during all hours.* All hazardous wildlife and/or attractant wildlife shall be hazed from the airfield whenever observed. This will include hours of operation during which there are no commercial flights. This will help deter wildlife "habit pattern" use of the airfield. Record all wildlife activity, observations and action taken on the EAGLE data reporting system

8.2.2. *Haze early and consistently.* Airfield safety patrols should be particularly observant just after sunrise when birds start to become active, and they shall be hazed from the airport before they can settle into their daily routines. To prevent flocking birds from attracting more birds, all birds should be dispersed from the airfield immediately upon their arrival, and not allowed to nest, feed, or loaf.

8.2.3. *Conduct routine wildlife patrols over the entire airport.* Airport personnel should conduct frequent physical inspections of movement areas and other areas critical to wildlife hazard management as part of the daily protocol. All wildlife observed shall be documented electronically via the EAGLE data reporting system. Patrols should cover the entire airport to ensure there are no "refuge" areas for birds to congregate.

8.2.4. *Mowing.* When possible, the grass should be mowed at night when birds are the most inactive and air traffic is reduced. Mowing is attractive to several species of birds and mammals because it exposes food sources. If cutting is done during the day and birds are attracted to the activity, mowing will be stopped until the birds have been successfully removed from the area.

8.2.5. *Trash, Debris, and Handouts.* Trash and debris are often responsible for attracting species such as gulls and crows. BOI Airfield and Airport operations will continue to conduct trash and FOD (foreign object debris/damage) collection on the airfield, especially after high winds. No one will be allowed to feed birds or mammals around the airport. Individuals observed feeding wildlife shall be issued a Notice of Violation (NOV) or citation.

9. SPECIES SPECIFIC POPULATION MANAGEMENT

9.1. For the purpose of simplification, wildlife species were grouped into guilds in the Wildlife Hazard Assessment. These guilds were developed to demonstrate the general trends of particular groups.

9.1.1. *Raptors.* This group includes hawks, eagles, owls, and falcons. These birds of prey are often observed perched on prominent structures or in soaring flight as they search for prey.

I. They occur all year but highest concentrations occur during the late summer and fall.
II. They hunt, feed, fly, and loaf on existing structures, grasslands, disturbed mixed shrub lands, runway and taxiways, canal, and pond habitats. They become a hazard when they fly across or soar above the runway.
III This guild was observed using many of the existing power and light poles as perches from which to hunt. They are extremely active in the spring and early summer hunting the Piute Ground Squirrel.

9.1.2. *Waterfowl.* This guild includes any aquatic bird that feeds on floating or submerged aquatic vegetation, grass, or insects and is associated with puddles, ponds, wetlands, and short grass areas, such as Canada geese and mallard ducks. This group also includes shorebirds associated with short grass and temporary standing water, such as killdeer, avocets, and curlew.

I. Observed year-round, but greatest concentrations occur mainly in the spring and fall migrations, although many Canada geese remain year-round, and are extremely hazardous due to size and flocking tendencies.
II There is a small local population that uses the canal, temporary standing water, and waste water treatment ponds. They fly locally across all habitat types, but tend to feed, loaf, and roost near ponds, creek/rivers, and riparian areas.
III To discourage the waterfowl from airport property and possibly attracting other migratory birds, they need to be hazed immediately and continually. First priority is the reduction of standing water, or if that is not possible, installation of overhead wires and/or Mylar flash-tape. Pyrotechnic hazing, propane cannons, and effigies will also be used when appropriate.

9.1.3. *Columbiforms.* This guild includes all pigeons and doves. They generally eat grains, small seeds and nest in trees or on the ground.

Pigeon sightings occur year-round while doves were observed mainly during the summer and fall. They feed, loaf and fly across all habitat types and across runways and taxiways.
Do not use grain producing grasses on the airfield. Use of hazing, pesticides, and/or the removal of these birds whenever observed.

9.1.4. *Corvids.* Birds in the crow family whose primary means of foraging is scavenging. This guild includes; American crows, common ravens, and black-billed magpies.

I Observed year-round.
II Feed, flies, and loaf in all habitat types.
III To manage the population the food source needs to be controlled. Vegetation on airport property will be maintained at a height of 6-10 inches. Pyrotechnic hazing will also take place to deter the birds. Remove all dead carcasses immediately. In the fall, they were observed hunting grasshoppers on the paved surfaces. The management of the grasshopper population should begin upon detection to prevent them from becoming an attractant.

9.1.5. *Insectivores.* Small flocking birds that feed primarily on insects and worms, and are associated with grass and shrub cover types. This species includes swallows, and kingbirds.
I Observed in spring and summer.
II Feed, fly, and loaf in runway and taxiways, grassland, disturbed mixed shrub, along canal and near waste water treatment ponds,
III The height of vegetation will be maintained at 6-10 inches as well. This guild tends to nest under the bridge crossing the New York Canal. Measures may need to be taken to exclude the species from their nesting sites.

9.1.6. *Songbirds.* Small perching and flocking birds that feed primarily upon seeds, fruits, and some insects. These birds are associated with the tall grass, woodland, and shrub cover types. This group includes robins, finches, blackbirds, horned larks, meadow larks, starlings, and sparrows.
I Most occur in spring and summer, some year-round.
II Feed, nest, and loaf in grasslands, disturbed mixed shrub lands, with local movements across all habitat types.
III The vegetation should be maintained at a height of 6-10 inches. Nesting sites will be destroyed when appropriate.

9.1.7. *Mammals.* This category consists of: badgers, skunks, weasels, rabbits, ground squirrels, deer, and coyotes.

I Most occur year-round, but the ground squirrels hibernate for long periods.
II Feed, loaf, and burrow in grasslands, mixed shrub, along runways and taxiways. Ground squirrels found in all areas of the airport except areas that had undergone recent heavy construction. Some predators may hunt on or along the runways and taxiways.
The management and elimination of the Piute Ground Squirrels will greatly reduce the number of mammals attracted to the airport. The mammal population is greatest when the ground squirrels are out of hibernation. The trapping, gassing, hazing, and shooting of these squirrels will be done whenever observed on the airport property.
Airport fencing will also be inspected and maintained regularly to keep the wildlife out. Sub-surface fencing has been installed at some locations to prevent migration of predators from the desert.

9.1.8. *Gallinaceous birds.* This guild includes heavy bodied chicken like land birds. They are capable runners that forage on the ground for seeds and insects. California quail and pheasants are found in this group.

Ii. Occur year-round.
II. Feeding in short grass and traveling along perimeter roads.
III If they become a problem, the use of pyrotechnic hazing and the removal of this guild will take place.

9.1.9. *Feral Animals.* This guild includes house cats and dogs and mammals that have been domesticated and returned to the wild to hunt and scavenge their food.

I They will be removed immediately from the airport property. Call local animal control for assistance if required.
II. Animals may be captured and taken to the Humane Society when feasible.

10. PROTECTED WILDLIFE

10.1. *Federal and State Threatened and Endangered Species.* The Federal Endangered Species Act (sec. 2[16 U.S.C. 1531]) protects animal and plant species potentially threatened with extinction. This act classifies species as endangered or threatened. Once listed, a threatened or endangered species cannot be taken or harassed without a special permit. Eagles are also afforded protection under the U.S. Eagle Protection Act. The list on Federal Threatened and Endangered Species can be found online at *www.fws.gov/endangered.* A list of State Threatened and Endangered Species can be found at *www.fws.gov/idaho/Species.*

I. An "Endangered Species" is defined as "any species or subspecies which is in danger of extinction throughout all or a significant portion of its range."
II A "Threatened Species" is defined as "any species or subspecies which is in danger of becoming an endangered species within the foreseeable future throughout or over a significant portion of its range."

11. PERMITS

11.1. *Federal Migratory Depredation Permit.* The Wildlife Coordinator or designee shall maintain a Federal Depredation Permit for migratory birds issued by the U.S. Fish and Wildlife Service. Copies of this permit shall be carried while taking or harassing migratory birds. All conditions listed on the permit must be followed.

11.2. *Federal Eagle Depredation Permit.* The Wildlife Coordinator or designee shall also maintain a Federal Depredation Permit for Eagles issued by the U.S. Fish and Wildlife Service. Copies of this permit shall also be carried while harassing these birds. All conditions listed on the permit must be followed.

11.3. *State of Idaho, Department of Fish and Game – Wildlife Control Permit, General.* As of September 2010 the Boise Airport received a State of Idaho, Department of Fish and Game Wildlife Control Permit. The Wildlife Coordinator shall also maintain a current permit. All conditions listed on the permit must be followed.

11.4. *Pesticide Applicator License.* Restricted-use pesticides will only be used under the supervision of a State licensed Professional Applicator and under conditions required by the package label. All pesticides will be stored in appropriate containers and under approved conditions as specified on the label.

12. RESOURCES FOR IMPLEMENTATION OF PLAN

12.1. The Wildlife Coordinator or designee is responsible for implementing the BOI WHMP. Partnerships and contracts with wildlife-affiliated organizations may be used to effectively deal with wildlife problems at BOI when local resources are insufficient. (See Section 7 for listing of agencies).

12.2. The Boise Airport will provide all of the equipment, tools and supplies necessary for the successful implementation of this plan. Current tools in the WHMP inventory include:

Vehicles:
Vehicles equipped with radios for communication with the Air Traffic Control Tower and spotlights.

Firearms:
22 pistol (Lethal)
20 gauge shotgun (Lethal)
12 gauge shotgun (Lethal)
.177 cal pump action air rifle (Lethal)
Paintball Guns-Co2 (Non-lethal)

Miscellaneous:
Cameras
Reed-Joseph 15 mm Screamer Siren
Reed-Joseph 15mm Banger
Mylar reflective tape
Coyote and Fox Silhouettes
Shovels, rakes, water truck, sand truck
Rodex 4000 applicator
Burrow Blocker
Snare and Conibear traps
BirdBuffer® TF – Thermal Fogger
BDL – 650HP – Avian Dissuader

Chemicals:
Methyl Anthranilate (Bird Buffer)

13. ASSIGNMENT OF AGENCY/PERSONNEL RESPONSIBILITIES

13.1. Inspections. The Airport Operations staff conducts airfield inspections, which includes wildlife activity at BOI daily. Airfield Maintenance will report any wildlife activity observed while performing inspections or repairs to Airport Operations. The ARFF unit shall report all wildlife activity while performing airfield inspections to Airport Operations.

13.2. Documentation. All wildlife activity, observations, actions taken or depredation will be recorded electronically via the Eagle Database reporting System
Reports of wildlife strikes will be reported electronically via the FAA Wildlife Strike database.

13.3. Wildlife Strikes. Any remains of wildlife that are found along runways or taxiways and thought to be a result of a collision with an aircraft, if not readily identifiable, will be collected, tagged and sent to the U.S. Fish & Wildlife Service National Forensics Laboratory 1490 East Main Street Ashland, OR. 97520-1310 for identification. Bird feathers and/or remains will be sent to the Smithsonian Institution NHB, E-610, MRC 116, 10th and Constitution Ave. Washington DC, 20560-0116. Pertinent information such as location, time, and species are recorded in the EAGLE Database Reporting System and FAA Form 5200-7. Boise Airport staff will always respond to all reports of aircraft/wildlife collisions that occur at or near BOI to gather data from the aircraft and crew to assist in the identification of the wildlife species, location of the strike, weather conditions, etc. Staff will also provide the aircraft crew an FAA Form 5200-7.

13.4. Hazing and Depredation. Airport Operations and Airfield Maintenance staff are trained and expected to haze and harass wildlife that pose a threat to aviation safety in accordance with the appropriate Federal and / or State issued permits. All Airport Operations and Airfield Maintenance staff are authorized to use lethal force at BOI in accordance with the appropriate Federal and / or State issued permits.

13.5. Wildlife Control Measures. The following wildlife control measures are planned for BOI:

Habitat Modification:
I. Physical Barriers - badger-proof fence on east end of airfield.
II Habitat Management - see appendix 1 for priority areas and methods.
Aversive Tactics:
I Pyrotechnics - will be used to haze any hazardous wildlife immediately upon detection.
II Big Eye balloons and coyote silhouettes - will be used when appropriate for flocking birds.
Population Management:
Trap / Relocate – may be used to try and relocate hawks or other raptors.
Trap / Euthanize - animals that return to the airport will be euthanized.
Shooting – all trained employees will shoot one or two individuals from flocking birds to reinforce pyrotechnic hazing methods when needed.
Explosive Gas - The Rodex 4000 will also be used to control all burrowing rodents that may attract hazardous wildlife.
Backfilling of burrows – The Burrow Blocker will be used to fill the burrows with a water and sand mixture.

13.6. Movement Areas

13.6.1. *Access.* All drivers authorized to operate vehicles on the Movement Areas will be licensed per the BOI Drivers Training Program. Those drivers that are not licensed will be escorted while on the Movement Area.

13.6.2. *Communication.* All Airport vehicles authorized to operate on the Movement Area are equipped with two-way radios capable of communicating with the FAA ATCT. Communication with the ATCT is required prior to entering any runway, taxiway, or associated safety areas. All personnel conducting any wildlife control measure that may affect arriving or departing aircraft are required to contact the ATCT prior to beginning the control activity.

14. REVIEW AND EVALUATION OF THE PLAN

14.1. The BOI WHMP will be reviewed every 12 consecutive calendar months (ccm) by a wildlife working group committee comprised of airport stakeholders and USDA-APHIS. The Wildlife Coordinator will document any changes; coordinate with USDA-APHIS, USFWS, State of Idaho Fish and Game and FAA Certification Inspector for approval. When approved, changes will be briefed to all Operations and Airfield Maintenance staff.

14.2. The BOI WHA will also be reviewed every 12 consecutive calendar months (ccm) to determine if a revision is required and for any significant changes to the original conditions that may precipitate a need to update the assessment.

15. TRAINING

15.1. Training is essential for those personnel involved in the WHMP. The Wildlife Coordinator must ensure that all personnel working in a wildlife deterrence capacity are trained in the proper selection and application of control methods and including species identification.

15.2. All Airport Operations and Airfield Maintenance staff will receive training every 12 consecutive calendar months (ccm) by USDA – APHIS (Part 139 – qualified) wildlife management biologist in the following areas:

- Existing wildlife hazards
- Airport specific attractants
- Review of the Airports wildlife hazard management plan.
- Review of Airports permits
- Airport specific items
  - Wildlife management strategies
  - Responsibilities of Airport personnel
  - Basic local bird and mammal identification
  - Wildlife capture / handling
  - Protected / endangered wildlife
- Pyrotechnics familiarization and safety

15.3. All Airport Operations and Airfield Maintenance staff authorized to use lethal force will receive training every 12 consecutive calendar months (ccm).

15.4. In the event that any Operations or Maintenance personnel miss the yearly wildlife training or firearms training, they are not to conduct wildlife management duties until makeup training is completed.

Appendix 1

Priority areas and methods to be used when modifying habitats:

Priority Areas Identified:

~ Safety Areas of both RWY's 10L/28R and 10 R/28L
~ Safety Areas of all TWY's
~ East and West Fields

Priority methods identified for use:

~ Approved use of asphalt millings as the first option for all taxiway safety areas with work towards FAA's acceptance asphalt millings bare ground / unturfed ground as the first option for all runway safety areas.

~ Use of a specialized grass seed blend (airfield compatible) when reseeding of the safety areas as included in new projects.

~ Use of new tools and techniques – has included the following:
Burrow Blocker – limited success
Zinc Phosphide (Test areas in spring 2013 – not very successful)

Appendix 2

BOI Wildlife Working Group Hazard Identification

Wildlife Hazard Identified by the Workgroup	Airport Mitigation Strategy	Habitat Modification (if applicable)	Priority Level (Low, Medium, High)	Approximate Implementation Date
Nesting Swallows	Net Underside of west bridges	Exclusion Netting	Medium	December 31, 2017
Piute Ground Squirrels	Habitat modification and removal of food source.	Removal of Grass	Medium	Continual
Birds of Prey	Removal of food source (squirrels) and continual lethal and non-lethal depredation.	Removal of ground squirrel habitat.	Medium	Continual
Geese	Monitor field west of RWYs. Deploy Avian Dissuader as applicable.	N/A	Medium	Continual
Gull Colony 5 miles SW of BOI	Work with USDA and property owners to depredate colony immediately and over time.	Work with property owners to identify and modify the habitat	Medium	December 31, 2018