

Wildlife Inventory Report

Snake River Plain Geothermal Play Fairway

Analysis - Phase 3

Camas County, Idaho

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1.0 Introduction

InterWest Wildlife, Inc. was retained by John Shervais, Utah State University, Department of Geology, in December 2017 to complete a wildlife survey for a proposed geothermal drilling project in Camas County, Idaho (Appendix A: Map 1). The exact location of the drill sites was not known at the time of the field survey, so the entire area where the drill sites may occur were surveyed. The three potential areas to be drilled total approximately 600 acres (Appendix A: Map 1). It will involve a geothermal test well drilled to a depth of 2000. This will not be a permanent installation. The project will be permitted by Idaho Dept. of Water Resources.

The project sites are located in Camas County Idaho, just south US Highway 20, near the town of Fairfield. More specifically, site #1 (the middle site) is located in Sections 27, 28, 33, and 34, Township 1 South, Range 13 East; site #2 (the southeast site) is located in Section 34, Township 1 south, Range 13 East and Section 3, Township 2 South, Range 13 East; Site #3, (the northwest site) is located in Section 28, Township 1 South, Range 13 East. The property is privately owned.

The project is located in the Owyhee Uplands region of Idaho (IDFG 2015). The project sites are located on sagebrush steppe, riverine riparian forest and shrubland, and nonnative annual and perennial grasslands (IDFG 2015).

A wildlife field survey was conducted on 21-22 December 5, 2017. This wildlife report was prepared for John Shervais, USU Department of Geology. The project areas are currently used for irrigated farmland and pasture and includes a riverine riparian area along Camas Creek (Appendix A: Map 2).

1.1 Project Description

The Snake River Plain Geothermal Play Fairway Analysis has three main goals: (1) to adapt the methodology of Play Fairway Analysis for geothermal exploration, creating a formal basis for its application to geothermal systems, (2) to assemble relevant data for the Snake River Plain volcanic province from publicly available and private sources, and (3) to build a geothermal play fairway model for the Snake River Plain that will allow us to identify the most promising plays. The model will serve to integrate the diverse data sets and serve as a point of departure for future exploration efforts in the region. Our specific objectives include defining the critical elements that define a viable geothermal system, integration of diverse data sets (gravity, magnetics, seismic, EM, MT, lithology, temperature, permeability, recharge etc.) within a single analytical platform (Arc GIS), and evaluation of these data to define and characterize specific types of plays and their distribution. Phase 2 of this project focused on the collection of critical new data in selected areas of interest.

During Phase 3 we will validate our methodology by drilling a slim hole designed to intersect permeability in a hydrothermal system. Prior to drilling we will carry out additional studies to approximate the exact site location within the target area previously identified by our Play Fairway analysis. We will complete the PFA project by documenting and publishing our conceptual models and methodology, and a detailed evaluation of our drilling validation program, borehole logging, and reservoir testing.

2.0 Wildlife

2.1 Wildlife Survey Methodology

A search for documented occurrences of federal and state species within the project area was conducted and a request was made to Idaho Department of Fish and Game, Idaho Fish and Wildlife Information System, Species Diversity Database, Idaho Natural Heritage Data. The results are presented in Appendix A, Map 3.

The Project Area was surveyed for Federal and State listed wildlife species on foot and vehicle ensuring that the entire Project Area and a half mile buffer around the proposed survey areas were thoroughly covered. Any observations of species or their sign were documented and recorded. A 1-mile raptor buffers was established around the Project Area and surveys for raptor nests were conducted within these buffer zones by vehicle, and on foot where necessary, using binoculars and a spotting scope and utilizing terrain for better vantage points. Access was not allowed on some private land and these areas were not covered thoroughly at this time. All potential nesting habitats within the raptor buffer were examined for nests or potential nests. The burrowing owl survey included locating suitable nesting habitat for burrowing owls on site and within a quarter mile buffer surrounding the sites. Each raptor nest encountered was spatially documented and condition, substrate, and in situ habitat were recorded. All located nests were inactive during the field survey, therefore species could not be determined. Surveys were conducted outside of the typical regional nesting and breeding season.

Wildlife surveys for federal listed species (USFWS, BLM) and Idaho sensitive and Species of Greatest Conservation Need (SGCN) involved documenting suitable habitat for these species. Habitat suitable to any of the TEPC wildlife species known to occur in Camas County were noted and discussion specific to each potential species are included within the results section of this report. Wildlife surveys were conducted by Glen Gantz; his vita is in Appendix G.

Greater sage-grouse are known to occur in the area and the habitat on and adjacent to the project sites was assessed for potential use by Sage-Grouse

2.2 Threatened and Endangered Species

Table 2-1 includes the only species listed on the USFWS IPaC (Appendix C) report as proposed threatened that could potentially occur on the project site. The Project Site is within the potential geographic distribution North American Wolverine (*Gulo luscus*).

Table 2-1. USFWS List of Threatened and Endangered Species with the Potential to Occur in the Project Area (USFWS IPaC, Appendix C)

Common Name	Scientific Name	Status	Potential to Occur in the Project Area
North American Wolverine	<i>Gulo luscus</i>	Proposed Threatened status. Idaho Species of Greatest Conservation Need, Tier I	No; no suitable habitat in the project area

2.2.1 North American Wolverine

The North American wolverine is proposed as a USFWS threatened species and is listed as such on the USFWS IPaC report (Appendix C).

The North American wolverine occupies primarily boreal forests, tundra, and mountains in western North America that are cold and receive enough snow to reliably maintain a snow pack late into spring (Copeland et al., 2010, USFWS 2014).

2.2.2 Critical Habitat

There is no designated or proposed critical habitat on or near the project site.

2.3 BLM, Shoshone Field Office, Target Species

Table 2-2 lists the 52 species identified by the BLM, Shoshone Field Office as having potential to occur on the project area. The letter from Idaho Department of Fish and Game, Idaho Fish and Wildlife Information System, documenting the records search of the Idaho Natural Heritage Data Base is provided in Appendix E. The draft Idaho State Wildlife Action Plan (IDFG 2015), Idaho Partners in Flight (Ritter 2000), and Nature Serve was used to verify key habitat types and seasonal occurrences, as well as determining the rationale for occurrence or non-occurrence.

2.4 Raptors

Table 2-3 includes the USFWS list of the two species of raptors that could potentially occur in the project area (USFWS IPaC, Appendix C). The project area is within the potential geographic distribution for all seven BLM Special Status Species listed in Table 2-2.

Raptors (eagles, hawks, owls, etc.) are migratory birds and are protected under several federal and state legal mandates, the most important being the Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703-712, but also the Eagle Protection Act; 16 U.S.C. 668, the Endangered Species Act (ESA); 16 U.S.C. 1513-1543. These laws apply to federal, state, tribal and private land.

In order to protect nesting raptor species, spatial and seasonal buffers may be required around raptor nests. Surveys are required within these spatial buffers to locate any raptor nests. Any nest that is or becomes occupied during the nesting season is afforded protection from disturbance within the spatial buffer. Consultation with federal state and tribal agencies are required for raptor nesting issues. The wildlife surveys conducted for this project included locating raptor nests within the project area and within the surrounding buffer.

The start of the nesting season is generally early February for great-horned owls, late March for hawks, to late April or early May for Swainson's hawks and burrowing owls. The nesting season ends by the end of August for most of the common raptors.

2.5 Migratory Birds

Table 2-4 contains the 11 species of migratory birds that appear on the USFWS IPaC list (USFWS IPaC, Appendix C). The 2 seven species of raptors on the BLM Special Status Species list in Table 2-2 are also considered migratory birds and are protected under the Migratory Bird Treaty Act.

The Migratory Bird Treaty Act makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations. The migratory bird species protected by the Act are listed in 50 CFR 10.13. The U.S. Fish and Wildlife Service (USFWS) has developed a document titled "Migratory Bird Conservation Actions for Projects to Reduce the Risk of Take during the Nesting Season," which is provided in Appendix D.

Table 2-2: Potential Occurrence of BLM Special Status Species and Important Habitat Values within the Project Area (BLM 2014, IDFW 2017, IDFW 2018).

Species/Habitat Value	Status ¹	Key Habitat Type (From ID SWAP)	Potential Occurrence (Y/N)	Rationale for Occurrence/Non-occurrence	Description of Wildlife Use (year-round, breeding, wintering, migratory/stop over)
Amphibians					
Western/Boreal Toad (Western and Eastern sub-groups)	Sensitive, Tier 2 IDFG SGCN	Proximity to water Mountain Meadow to Low elevation deserts	Yes Observation 3 miles southeast	There is habitat on site. There are irrigation ditches and natural waterways on or within 100 M of the site. There are multiple observations 3 miles southeast around Mormon Reservoir and 3 other observations within 10 miles of the site.	Year-round
Northern Leopard Frog	Sensitive, Tier 2 IDFG SGCN	Springs, slow streams, marshes, bogs, ponds, canals, floodplains, reservoirs, and lakes; usually with permanent water	Yes No observations	There is habitat on site. There are irrigation ditches and natural waterways on or within 100 M of the site. There are no observations within 10 miles of the site.	Year-round
Birds					
Bald Eagle	Sensitive, Eagle Protection Act	Associated with aquatic habitats.	No nesting Observations	There is no suitable nesting habitat on site or within one mile. There are 14 observations within 10 miles of the site.	Wintering (IPaC) Year-round (observations)
Black Tern	Sensitive, Tier 2 IDFG SGCN	Shallow freshwater marshes	Not Onsite	There is no suitable habitat on site. There is no suitable habitat in the general area. Multi- observations within 10 miles of the site.	Breeding
Black-throated Sparrow	Sensitive	Desert Scrub	Yes	There is limited habitat on site. Habitat present to the south. There are no observations within 10 miles of the site.	Year-round
Brewer's Sparrow	Sensitive	sagebrush-dominated shrublands, seldom in pinon- juniper or coniferous forests	Yes	There is limited habitat on site. Habitat present to the south. Multi-observations within 10 miles of the site.	Breeding (IPaC)
Burrowing Owl	Sensitive, Tier 2 IDFG SGCN	open well-drained grasslands, farmlands, steppe	Yes	There is marginal habitat on site because of the high water table. There is suitable habitat in the general area, mainly to the south. No observations within 10 miles of the site.	Breeding (IPaC)
Cassin's Finch	Sensitive	Coniferous and deciduous forests	No	There is no suitable habitat on site. There is no suitable habitat in the general area. Two observations within 10 miles of the site.	Year-round (IPaC)

Species/Habitat Value	Status ¹	Key Habitat Type (From ID SWAP)	Potential Occurrence (Y/N)	Rationale for Occurrence/Non-occurrence	Description of Wildlife Use (year-round, breeding, wintering, migratory/stop over)
Columbian Sharp-tailed Grouse	Sensitive, Tier 2 IDFG SGCN	Habitat Generalist - agriculture and rangelands, grasslands, shrub-bunchgrass	No	There is suitable habitat on site and in the general area. There are no leks or observations within 10 miles of the site.	Year-round
Ferruginous Hawk	Sensitive, Tier 2 IDFG SGCN	Grassland, shrub-steppe, pinyon-juniper	No nesting	There is no suitable nesting habitat on site. There is suitable winter foraging habitat on site and in the general area. There are four observations within 10 miles of the site.	Breeding (IPaC)
Flammulated Owl	Sensitive	Coniferous forests	No	There is no suitable habitat on site. There is no suitable habitat in the general area. No observations within 10 miles of the site.	Breeding (IPaC)
Golden Eagle	Sensitive, Eagle Protection Act, Tier 2 IDFG SGCN	open and semi-open shrublands, grasslands, and coniferous forests	No nesting	There is no suitable nesting habitat site. There are 7 observations within 10 miles of the site.	Year-round
Grasshopper Sparrow	Sensitive, Tier 3 IDFG SGCN	Open grasslands	Yes	There is suitable habitat on site and in the general area. There is one observations within 10 miles of the site.	Breeding
Greater Sage-grouse	Sensitive, Tier 1 IDFG SGCN	Sagebrush-dominated shrublands	Yes	There is marginal habitat on site. There is suitable habitat in the general area. There are 8 leks within 5 miles and 20 leks within 10 miles of the project area. There are multiple observations within 10 miles of the site.	Year-round (IPaC)
Green-tailed Towhee	Sensitive	Sagebrush, shrubsteppe	No	There is suitable habitat on site and south of the sites. There are no observation within 10 miles of the site.	Breeding (IPaC)
Lewis' Woodpecker	Sensitive, Tier 2 IDFG SGCN	Burned ponderosa, cottonwood, and aspen stands	No	There is no suitable habitat on site or adjacent to the site. There are 8 observation within 10 miles of the site.	Breeding (IPaC)
Loggerhead Shrike	Sensitive	agricultural fields, pastures, open country with short vegetation and well-spaced shrubs or low trees	Yes	There is suitable habitat on site and in the general area. There are two observations within 10 miles of the site.	Breeding (IPaC)
Long-billed Curlew	Sensitive, Tier 2 IDFG SGCN	short-grass, mixed prairie, and pasture-wet meadow complexes	Yes	There is suitable habitat on site and in the general area. There are 75 observations within 10 miles of the site.	Breeding (IPaC)
Mountain Quail	Sensitive, Tier 2 IDFG SGCN	Chaparral	No	Not within species range	Year-round

Species/Habitat Value	Status ¹	Key Habitat Type (From ID SWAP)	Potential Occurrence (Y/N)	Rationale for Occurrence/Non-occurrence	Description of Wildlife Use (year-round, breeding, wintering, migratory/stop over)
Northern Goshawk	Sensitive	Deciduous and coniferous forests	No	There is no suitable habitat on site or adjacent to the site. There are four observations within 10 miles of the site.	Year-round
Olive-sided Flycatcher	Sensitive, Tier 3 IDFG SGCN	Open forests	No	There is no suitable habitat on site or adjacent to the site. There are two observations within 10 miles of the site.	Breeding
Sage Sparrow	Sensitive, Tier 2 IDFG SGCN	Big sagebrush, shrublands	No	There is suitable habitat on site and south of the sites. There are no observation within 10 miles of the site.	Breeding
Sage Thrasher	Sensitive, Tier 2 IDFG SGCN	Sagebrush	No	There is suitable habitat on site and south of the sites. There are 15 observations within 10 miles of the site.	Breeding (IPaC)
Short-eared Owl	Sensitive, Tier 3 IDFG SGCN	marshes, grasslands, shrubsteppe	Yes	There is suitable habitat on site and in the general area. There are six observations within 10 miles of the site.	Year-round (IPaC)
Trumpeter Swan	Sensitive, Tier 2 IDFG SGCN	Lakes and wetlands with slow water	No	There is no suitable habitat on site or adjacent to the site. There is suitable habitat in the general area. There are two observations within 10 miles of the site.	Breeding
White-headed Woodpecker	Sensitive, Tier 3 IDFG SGCN	Pine forests and mountains	No	There is no suitable habitat on site or adjacent to the site. There is suitable habitat in the general area. No observations within 10 miles of the site.	Breeding
Willow Flycatcher	Sensitive	Multi-storied riparian habitat	No	There is no suitable habitat on site or adjacent to the site. There is limited suitable habitat in the general area. There are no observations within 10 miles of the site.	Breeding (IPaC)
Yellow-billed Cuckoo	Threatened, Potential CH, Tier 1 IDFG SGCN	Multi-storied riparian habitat	No	There is no suitable habitat on site or adjacent to the site. There is limited suitable habitat in the general area. There are no observations within 10 miles of the site.	Breeding
Invertebrates					
Ashy (Columbia) Pebblesnail	Sensitive	Rivers with swift current	No	No observations within 10 miles of the site.	
Blind Cave Leioidid Beetle	Sensitive, Tier 1 IDFG SGCN	Lave tubes	No	No observations within 10 miles of the site.	

Species/Habitat Value	Status ¹	Key Habitat Type (From ID SWAP)	Potential Occurrence (Y/N)	Rationale for Occurrence/Non-occurrence	Description of Wildlife Use (year-round, breeding, wintering, migratory/stop over)
California Floater	Sensitive, Tier 3 IDFG SGCN	Low elevation clear water	Yes	There is no suitable habitat on site or in the general area. No observations within 10 miles of the site.	
Shortface Lanx	Sensitive	Fast rivers and streams, 30 – 100 m wide, well oxygenated	No	No observations within 10 miles of the site.	
St. Anthony Sand Dunes Tiger Beetle	Sensitive	Sand dunes	No	No observations within 10 miles of the site.	
Fish					
Northern Leatherside Chub	Sensitive, Tier 2 IDFG SGCN	Permanent water	Not onsite	No permanent water on site. There are no observations within 10 miles of the site.	
Redband Trout	Sensitive	Permanent water	Not onsite	No permanent water on site. There are two observations in Monument Gulch Creek, 7 miles south of the sites.	
Shoshone Sculpin	Sensitive	Permanent water	Not onsite	No permanent water on site. There are two observations of unclassified sculpins within 10 miles of the site.	
White Sturgeon	Sensitive, Tier 3 IDFG SGCN	Permanent water	Not onsite	No permanent water on site. There are no observations within 10 miles of the site.	
Wood River Sculpin	Sensitive	Permanent water	Not onsite	No permanent water on site. There are three observations in Soldier Creek, 6 miles east of the sites.	
Mammals					
Big Brown Bat	Sensitive	Deserts, meadows, forests	No	There is no suitable roosting habitat on site or adjacent to the site. Site could be used for foraging. There is suitable habitat in the general area. No observations within 10 miles of the site.	Year-round
Bighorn Sheep	Sensitive, Tier 2 IDFG SGCN	Rugged canyons, mountain terrain	No	There is no suitable habitat on site and in the general area. There are no observations within 10 miles of the site.	Year-round
Canyon Bat	Sensitive	Desert	No	There is suitable habitat on site and in the general area. There are no observations within 10 miles of the site.	Breeding

Species/Habitat Value	Status ¹	Key Habitat Type (From ID SWAP)	Potential Occurrence (Y/N)	Rationale for Occurrence/Non-occurrence	Description of Wildlife Use (year-round, breeding, wintering, migratory/stop over)
Fisher	Sensitive, Tier 2 IDFG SGCN	Conifer and mixed forest	No	There is suitable habitat on site and in the general area. There are no observations within 10 miles of the site.	Year-round
Gray Wolf	Delisted, Sensitive	Forests, mountains, grasslands	No	There is suitable habitat on site and in the general area. There are no observations within 10 miles of the site. There are no known packs within 10 miles of the sites.	Year-round
Hoary Bat	Sensitive, Tier 2 IDFG SGCN	Coniferous and deciduous forests	No	There is no suitable habitat on site or adjacent to the sites. There is suitable habitat in the general area. No observations within 10 miles of the sites.	Breeding
Kit Fox	Sensitive	Desert Scrub, chaparral, grasslands	No	There is suitable habitat on site or adjacent to the sites and in the general area. No observations within 10 miles of the sites.	Year-round
Little Brown Bat	Sensitive, Tier 3 IDFG SGCN	Variety of habitats	No	There is no suitable roosting habitat on site or adjacent to the sites. Sites could be used for foraging. There is suitable habitat in the general area. No observations within 10 miles of the sites.	Breeding
Long-eared Myotis	Sensitive	Semi-arid shrublands, shortgrass prairie, subalpine forests	Yes	There is suitable habitat on site and in the general area. No observations within 10 miles of the sites.	Year-round
Long-legged Myotis	Sensitive	Woodlands and mountain meadows	Yes	There is suitable habitat on site and in the general area. No observations within 10 miles of the sites.	Year-round
Pallid Bat	Sensitive	Arid/semi-arid mountains, grasslands, near water and rocky outcrops	Yes	There is suitable habitat on site and in the general area. No observations within 10 miles of the sites.	Year-round
Piute Ground Squirrel	Sensitive	Arid desert, sagebrush, and cheatgrass	Yes	There is suitable habitat on site or adjacent to the sites and in the general area. No observations within 10 miles of the sites.	Year-round
Pygmy Rabbit	Sensitive, Tier 2 IDFG SGCN	Sagebrush	No	There is no suitable habitat on site or adjacent to the sites. There is suitable habitat in the general area. There are 249 observations approximately 5 miles southeast of the sites.	Year-round
Silver-haired Bat	Sensitive, Tier 2 IDFG SGCN	Coniferous forests and mixed conifer/hardwood forests	No	There is no suitable habitat on site or adjacent to the sites. There is suitable habitat in the general area. No observations within 10 miles of the sites.	Breeding

Species/Habitat Value	Status ¹	Key Habitat Type (From ID SWAP)	Potential Occurrence (Y/N)	Rationale for Occurrence/Non-occurrence	Description of Wildlife Use (year-round, breeding, wintering, migratory/stop over)
Spotted Bat	Sensitive	Variety of habitats	No	There is suitable habitat on site or adjacent to the sites and in the general area. No observations within 10 miles of the sites.	Breeding
Townsend's Big-eared Bat	Sensitive, Tier 3 IDFG SGCN	Desert scrub, sagebrush steppe, woodlands, forests	No	There is suitable habitat on site or adjacent to the sites and in the general area. No observations within 10 miles of the sites.	Year-round
Western Small-footed Myotis	Sensitive, Tier 3 IDFG SGCN	Semi-arid coniferous forests, cliffs, rock crevices, caves, and mines	No	There is no suitable habitat on site or adjacent to the sites or in the general area. No observations within 10 miles of the sites.	Year-round
Wolverine	Proposed Threatened, No CH Designated, Tier 1 IDFG SGCN	Remote mountains	No	There is no suitable habitat on site or adjacent to the sites or in the general area. No observations within 10 miles of the sites.	Year-round
Yuma Myotis	Sensitive	Lowland habitats, from arid thorn scrub to coniferous forest, but always close to standing water such as lakes and ponds.	No	There is no lowland habitat on site or adjacent to the sites or in the general area. No observations within 10 miles of the sites.	Year-round
Reptiles					
Longnose Snake	Sensitive	Deserts, dry prairies, arid river valleys, shrublands	Yes	There is suitable habitat on site or adjacent to the sites and in the general area. No observations within 10 miles of the sites.	Year-round
Ground Snake	Sensitive	Arid/semiarid, deserts, sand, rocky,	Yes	There is suitable habitat on site or adjacent to the sites and in the general area. No observations within 10 miles of the sites.	Year-round
Other Habitat Values²					
Elk – Winter, migration	Important habitat Value	Winter range, Migration	No	Idaho Fish and Game observation	Winter
Fisheries	Important habitat Value	Permanent water	Yes	Idaho Natural Heritage Data	Year-round
Migratory Birds	Important habitat Value	See migratory birds above	Yes	Idaho Natural Heritage Data	Year-round
Mule Deer - Winter, migration	Important habitat Value	Winter range, Migration	Yes	Idaho Fish and Game observation	Winter

Species/Habitat Value	Status ¹	Key Habitat Type (From ID SWAP)	Potential Occurrence (Y/N)	Rationale for Occurrence/Non-occurrence	Description of Wildlife Use (year-round, breeding, wintering, migratory/stop over)
Pronghorn – Summer, fawning, migration	Important habitat Value	Summer, Fawning, Migration	Yes	Idaho Fish and Game observation	Summer, fawning
Raptor Nests	Important habitat Value	See raptor species above	Yes	Idaho Natural Heritage Data	Spring
Waterfowl	Important habitat Value	permanent water	Yes	Idaho Natural Heritage Data	Year-round

¹ CH – Critical Habitat, IDFG – Idaho Fish and Game, SGCN – Species of Greatest Conservation Need

² IDFG 2016a, IDFG 2016b, IDFG 2018,

Table 2-3. USFWS IPaC (USFWS 2018) List of Raptor Species with the Potential to Occur in the Project Area

Common Name	Scientific Name	Season	Potential to Occur in the Project Area
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Year-round	High; foraging habitat; Six documented occurrence 5 miles, fourteen occurrences within 10 miles.
Golden Eagle	<i>Aquila chrysaetos</i>	Year-round	High; foraging habitat; Two documented occurrence 5 miles, seven occurrences within 10 miles.

Table 2-4. USFWS IPaC (USFWS 2018) List of Migratory Bird Species, Seasonal Occurrence, and USFWS Status with the Potential to Occur in the Project Area

Common Name	Scientific Name	Season	USFWS Status
Brewer's Sparrow	<i>Spizella breweri</i>	Breeding	Bird of conservation concern
Clark's Grebe	<i>Aechmophorus clarkii</i>	Breeding	Bird of conservation concern
Lesser Yellowlegs	<i>Tringa flavipes</i>	Migrant	Bird of conservation concern
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Breeding	Bird of conservation concern
Long-billed Curlew	<i>Numenius americanus</i>	Breeding	Bird of conservation concern
Marbled Godwit	<i>Limosa fedoa</i>	Migrant	Bird of conservation concern
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Breeding	Bird of conservation concern
Sage Thrasher	<i>Oreoscoptes montanus</i>	Breeding	Bird of conservation concern
Willet	<i>Tringa semipalmata</i>	Breeding	Bird of conservation concern
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>	Breeding	Bird of conservation concern
Willow Flycatcher	<i>Empidonax traillii</i>	Breeding	Bird of conservation concern

2.6 Greater Sage-Grouse

Greater sage-grouse observations and lek locations was obtained from the Idaho Department of Fish and Game, Idaho Fish and Wildlife Information System, Species Diversity Database, Idaho Natural Heritage Data in December 2017 before the field surveys. Greater sage-grouse habitat classifications (Appendix A, Map 4) were obtained from Inside Idaho, Idaho Geospatial Office, Greater Sage-grouse Conservation Areas and IDFG (pers. comm. With Glen Gantz).

3.0 Wildlife Results

3.1 Survey Results

The results of the Idaho Department of Fish and Game, Idaho Fish and Wildlife Information System, Species Diversity Database, Idaho Natural Heritage Data (IDFG 2017) are presented in the appropriate sections of this report. Within a 10 mile radius of the project location, the Species Diversity Database listed 4939 observations of fish and wildlife, including 333 raptor observations, two raptor nests, 20 greater sage-grouse leks, 252 mammal observations, 49 observations of fish on 67.5 miles of streams and Mormon Reservoir, 20 herp observations, 961 waterfowl observations, and 3299 migratory bird observations. The exact location of observations obtained from the Idaho Natural Heritage Data Center cannot be disclosed under an agreement signed to obtain the observations.

The three sites contain a mixture of habitat types as presented on Map 3, Appendix A. Photos of the sites and habitats are presented in Appendix B. Site #1 is dominated by riparian and meadow habitats created by Corral Creek with agricultural fields on the east and west. Site #2 is dominated by shrub steppe habitat with a border of agricultural fields on the north separating the site from the riparian corridor along Camas Creek. The majority of Site #3 is agricultural fields divided by an unnamed swale running roughly east from the west corner to the center, then south to join Camas creek just south of the site.

3.2 Threatened and Endangered Species

3.2.1 *North American Wolverine*

There is no suitable habitat within the project area or in the vicinity. There are no documented occurrence wolverine within 10 miles of the project (Appendix A, Map 3, IDFW 2017).

3.2.2 *Critical Habitat*

There is no designated or proposed critical habitat on or near the project sites (USFWS, Appendix C).

3.3 BLM, Shoshone Field Office Target Species

Twelve species listed in Table 2-2 potentially occur on site. Data on known raptor nests, grouse leks, and species observations was obtained from Idaho Department of Fish and Game, Idaho Fish and Wildlife Information System and is presented in Table 2-2 and Appendix A.

3.3.1 *Western/Boreal Toad*

There is suitable habitat on or near all three sites for boreal toads. Boreal toads are known to occur in the area, specifically near Mormon Reservoir. There are multiple observation within 10 miles of the project, with a concentration near Mormon Reservoir.

3.3.2 *Northern Leopard Frog*

There is suitable habitat on or near all three sites for northern leopard frogs. The natural waterways and irrigation ditches provide suitable habitat. There are no known observations of northern leopard frogs within 10 miles of the project area.

3.3.3 Bald Eagle

There is no suitable nesting habitat and the sites themselves would not be considered good foraging habitat. The sites potential winter foraging habitat on carcasses because the area is big game winter range and therefore may contain winter kill. There are 14 observations of bald eagles within a 10 mile radius of the project in the Idaho Natural Heritage Data in Appendix A on Map 3.

3.3.4 Black-throated Sparrow

There is suitable habitat for black-throated sparrows in the shrub steppe habitat on the southern portion of site #3.

3.3.5 Brewer's Sparrow

There is suitable habitat for Brewer's sparrows in the shrub steppe habitat on the southern portion of site #3.

3.3.6 Burrowing Owl

There is suitable habitat for burrowing owls on and near all three sites. Suitable burrows for nesting were observed during the field survey (Appendix B, Photo 9).

3.3.7 Columbian Sharp-tailed Grouse

Columbian sharp-tailed grouse utilize grasslands and rangelands which is the predominant habitat on all three sites. There are no known sharp-tailed grouse leks within 10 miles of the project (Appendix A, Map 3).

3.3.8 Ferruginous Hawk

Ferruginous nest primarily in arid shrubsteppe, in proximity to cliffs and in pinyon-juniper stands. Ferruginous hawk are known to nest in the general area but the sites do not provide any nesting habitat. There are four observations of ferruginous hawks within 10 miles of the sites (IDFG 2017). Ferruginous hawks forage on grasslands in the non-breeding season, are known to occur in the area, and therefore may use the project area for foraging habitat.

3.3.9 Golden Eagle

Golden eagles nest in open and semi-arid open shrublands, grasslands and coniferous forests. There are seven observations of golden eagles within 10 miles of the sites, five are observations and two are nest locations. One nest is approximately 7 miles and the second nest is approximately 9 miles to the southwest (IDFG 2017). The sites do not provide any nesting habitat for golden eagles. Vegetation on the sites is primarily grassland pasture. The sites have suitable Golden eagle habitat are may be utilized for foraging habitat.

3.3.10 Grasshopper Sparrow

Grasshopper sparrows nest in open grasslands. Grasshopper sparrows are known to occur in the area and there is one observations within 10 miles of the sites (IDFG 2017). Vegetation on the sites is primarily grassland pasture and provides suitable nesting habitat for grasshopper sparrows.

3.3.11 Greater Sage-grouse

See discussion in section 3.6 of this report.

3.3.12 Loggerhead Shrike

Loggerhead shrikes nest in agricultural fields, pastures, open country with short vegetation and well-spaced shrubs. There are two observations of loggerhead shrikes within 10 miles of the sites (IDFG 2017). Vegetation on the sites is primarily grassland pasture and provides suitable nesting habitat for loggerhead shrikes.

3.3.13 Long-Billed Curlew

Long-billed curlews nest in short grass, mixed prairie, and pastures. Vegetation on the sites is primarily grassland pasture and provides suitable nesting habitat for long-billed curlews. There are seventy-five observations of long-billed curlews within 10 miles of the sites (IDFG 2017).

3.3.14 Short-Eared Owl

Short-eared owls nest in marshes, grasslands and shrubsteppe. Vegetation on the sites is primarily grassland pasture and provides suitable nesting habitat for short-eared owls. There are six observations of short-eared owls within 10 miles of the sites (IDFG 2017).

3.3.15 California Floater

California floaters inhabit lakes and lake like streams. Corral Creek located within site #1 may provide suitable habitat.

3.3.16 Long-Eared Myotis

The long-eared Myotis inhabits semi-arid shrublands, shortgrass prairie, and subalpine forests. Vegetation on the sites is primarily grassland pasture and provides suitable foraging habitat for the long-eared Myotis. There are no observations of long-eared Myotis within 10 miles of the sites (IDFG 2017).

3.3.17 Long-Legged Myotis

The long-legged Myotis inhabits woodlands and mountain meadows. Vegetation on the sites is primarily grassland pasture and provides suitable foraging habitat for the long-legged Myotis. There are no observations of long-legged Myotis within 10 miles of the sites (IDFG 2017).

3.3.18 Pallid Bat

The pallid bat inhabits semi-arid mountains and grasslands near water and rocky outcrops. Vegetation on the sites is primarily grassland pasture and provides suitable foraging habitat for the pallid bat. There are no observations of pallid bats within 10 miles of the sites (IDFG 2017).

3.3.19 Piute Ground Squirrel

Piute ground squirrels inhabit arid deserts, sagebrush and cheatgrass habitats. There are no observations of Piute ground squirrels within 10 miles of the sites (IDFG 2017).

3.3.20 Fisheries

Camas Creek flows adjacent to all three sites and Corral Creek flows through Site #1. Rainbow trout inhabit both creeks. In addition Camas Creek has Bridgelip Suckers, Redside Shiners and Speckled Dace.

3.3.21 Elk Winter Range/ Migration Corridor

Camas Prairie is important winter range for elk. There area is also used for a seasonal migration corridor for elk, with several thousand elk migrating through the area in the spring and fall between summer and winter ranges (IDFG, pers. comm. With Glen Gantz).

3.3.22 Mule Deer/Winter Range/ Migration Corridor

Camas Prairie is important winter range for mule deer, with some years being utilized by hundred to thousands of mule deer. There area is also used for a seasonal migration corridor for mule deer, with several thousand mule deer migrating through the area in the spring and fall between summer and winter ranges (IDFG 2018, pers. comm. With Glen Gantz).

3.3.23 Pronghorn Summer, fawning Range/ Migration Corridor

Camas Prairie is important summer and fawning range for pronghorn. There area is also used for a seasonal migration corridor for pronghorn (IDFG 2018, pers. comm. With Glen Gantz).

3.3.24 Waterfowl

Waterfowl utilize both Camas Creek and Corral Creek for foraging, resting, and nesting. Camas Creek is adjacent to all three sites, while Corral Creek intersect Site #1. The area adjacent to both creeks provide suitable nesting and foraging habitat.

3.4 Raptors

There are two previously recorded raptor nest within 10 miles of the project sites, both golden eagle nests located approximately 7 and 10 miles southwest of the project area (IDFG 2017, Appendix A, Map 2). In addition, the Idaho Natural Heritage Data Center report lists 332 raptor observations, representing 16 raptor species within 10 miles of the project area that are presented in Table 3.1 (IDFG 2017).

Two new raptor nests were located within 1 mile of the project area during the site survey. One nest is located on site #1, 0.60 miles from site #2, and 0.84 miles from site #3. The second raptor nest is located 0.25 miles from site #1, 0.13 miles from site #2, and 0.74 miles from site #3 (Appendix A, Map 5). There is suitable burrowing owl nesting habitat on all three sites, but the existence of burrows was limited in the general area of the three sites. Some of the area is seasonally flooded or has a seasonally high water table. Surveys were not conducted for other ground nesting raptors within the 4-mile buffer during the wildlife survey in December 2017 because it would be difficult to locate nests outside the nesting season. There is abundant ground nesting habitat on and adjacent to the sites and in the surrounding 10-mile buffer.

3.5 Migratory Birds

No migratory bird nest surveys were conducted during the wildlife surveys, except for raptors, because it was outside of the nesting season for migratory birds. The timing of the project is uncertain at this time. It would be best to do any ground clearing construction between August and March when most migratory birds are not breeding and nesting. If project activities begin between April 1 and July 31, then a survey for migratory bird nests should be conducted on all areas to be disturbed and a 300-foot buffer surrounding the disturbance area to prevent “take” under the Migratory Bird Treaty Act (Appendix D).

The project sites do not contain suitable habitat for some of the non-raptor migratory birds listed in Table 2-4. Table 3-2 lists the species that potentially occur on the project sites by habitat and their potential to occur on the project area.

Table 3.1 *Raptor species observed within 10 miles of the project sites and their potential to nest within a half mile of the project sites.*

Common Name	Breeding Habitat	Winter Habitat	Potential to Nest in the Project Area
American Kestrel	Cavity nester		High, in the limited area of trees
Bald Eagle	Lowland riparian, Agriculture	Lowland riparian	Low, few trees large enough to build nest, winter habitat present on site
Cooper's Hawk	Mature forests and woodlands, Riparian	Mature forests, Urban	No, few mature trees for nest site, no suitable habitat on site
Ferruginous Hawk	Pinyon-Juniper, Shrubsteppe	Grasslands	No, no suitable nesting sites, foraging habitat on site
Golden Eagle	Cliff, desert scrub	Desert scrub	No, no suitable nesting sites, foraging habitat present
Great Horned Owl	Riparian, Agriculture	Agriculture	Low, limited nesting sites, foraging habitat present
Merlin	Riparian, Conifer	Agriculture	Low, limited nesting sites, foraging habitat present
Northern Goshawk	Forest nester,	Forest	No, no suitable habitat on site
Northern Harrier	Ground nester, Meadow, Desert scrub	Agriculture	Medium, suitable nesting habitat present on site, foraging habitat present
Osprey	Water	Migrant	No, no suitable habitat on site
Peregrine Falcon	Cliff nester, riparian	Wetland	No, no suitable nesting sites, foraging habitat present
Prairie Falcon	Cliff nester, desert scrub	Agriculture	No, no suitable nesting sites, foraging habitat present
Red-tailed Hawk	Tree nester, riparian, forests	Agriculture	Medium, limited nesting sites, foraging habitat present
Rough-legged Hawk	Migrant	Migrant	No, migrant
Short-eared Owl	Wetland, Grassland	Agriculture	Medium, suitable nesting habitat present on site, foraging habitat present
Swainson's Hawk	Tree nester, agriculture, riparian, forests	Migrant	Medium, limited nesting sites, foraging habitat present

Table 3-2. Non-Raptor Migratory Birds on the USFWS IPaC List and Their Potential to Occur On the Project Sites

Common Name	Breeding Habitat	Winter Habitat	Potential to Occur in the Project Area
Brewer's Sparrow	Shrubsteppe	Migrant	Low, marginal habitat on site
Clark's Grebe	Wetland, Water	Migrant	Low, marginal habitat on site
Lesser Yellowlegs	Transient	Migrant	Low, marginal habitat on site
Lewis's Woodpecker	Mountain riparian	Lowland Riparian	Low, marginal habitat on site
Long-billed Curlew	Grassland, Agriculture	Migrant	Medium, habitat present on site
Marbled Godwit	Transient	Migrant	No, no suitable habitat on site
Olive-sided Flycatcher	Forests and woodlands	Migrant	No, no suitable habitat on site
Sage Thrasher	Shrubsteppe, High desert scrub	Migrant	Medium, habitat present on site
Willet	Wetlands, lakes, grasslands	Migrant	Medium, habitat present on site
Williamson's Sapsucker	Forest	Migrant	No, no suitable habitat on site
Willow Flycatcher	Riparian	Migrant	Low, marginal habitat on site

3.6 Greater Sage-Grouse

The projects are located in Management Zone IV (Snake River Plain Management Zone), West Magic Valley Sage-grouse Planning Area. Site #2 is partially in a Idaho Priority Area for Conservation and federal Important Habitat Management Area, while sites #1 AND #3 are adjacent to Priority Area for Conservation and federal Important Habitat Management (Appendix A, Map 4).

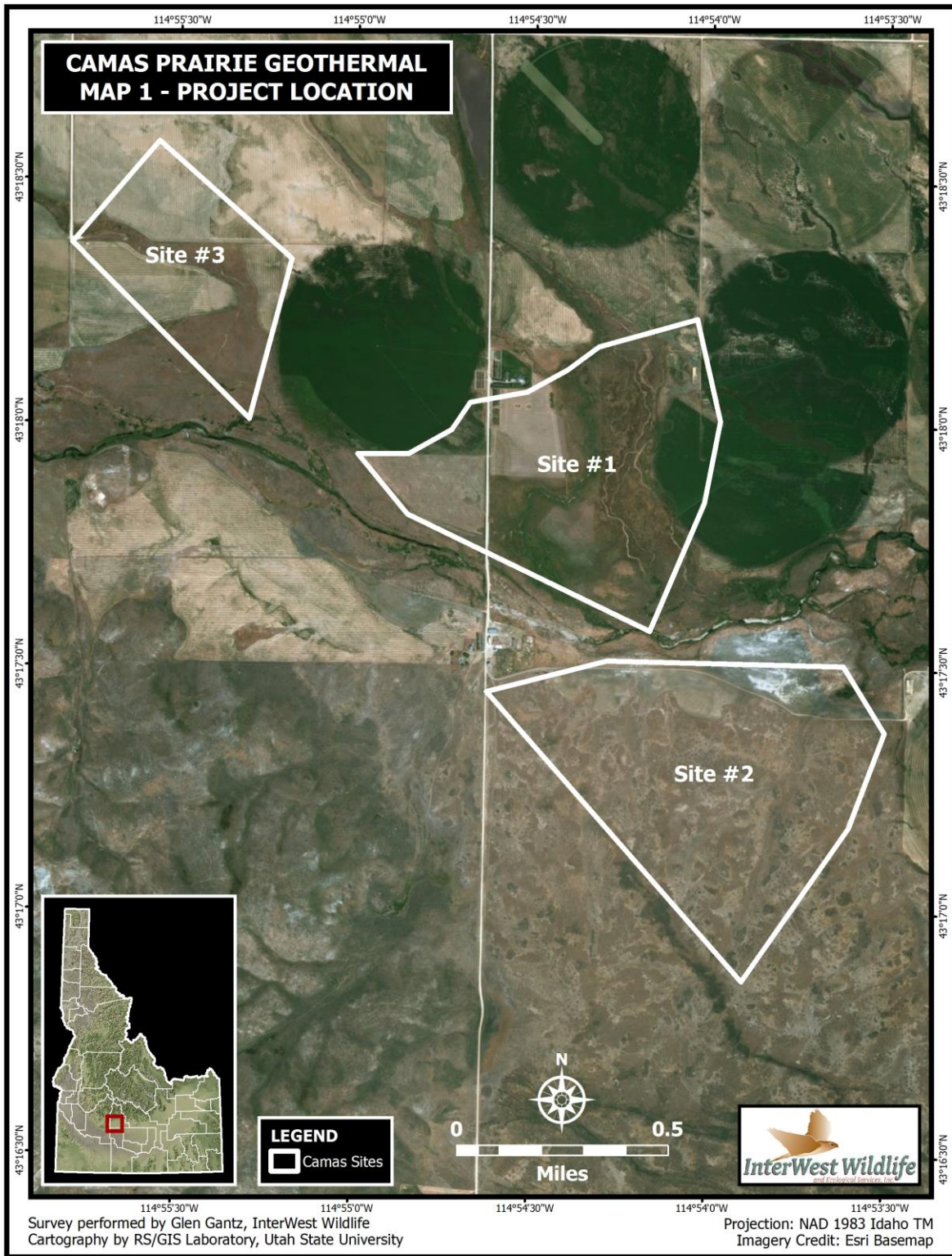
The habitats present on the sites are consistent with Nesting and Early Brood-rearing Habitat. There is no winter habitat in the area (IDFG 2018. Pers. Comm with Glen Gantz). Greater sage-grouse habitat may need to be assessed in greater detail depending on the scale of the project using the Sage-grouse Habitat Assessment Framework: A Multiscale Assessment Tool (Stiver et al. 2015).

4.0 References

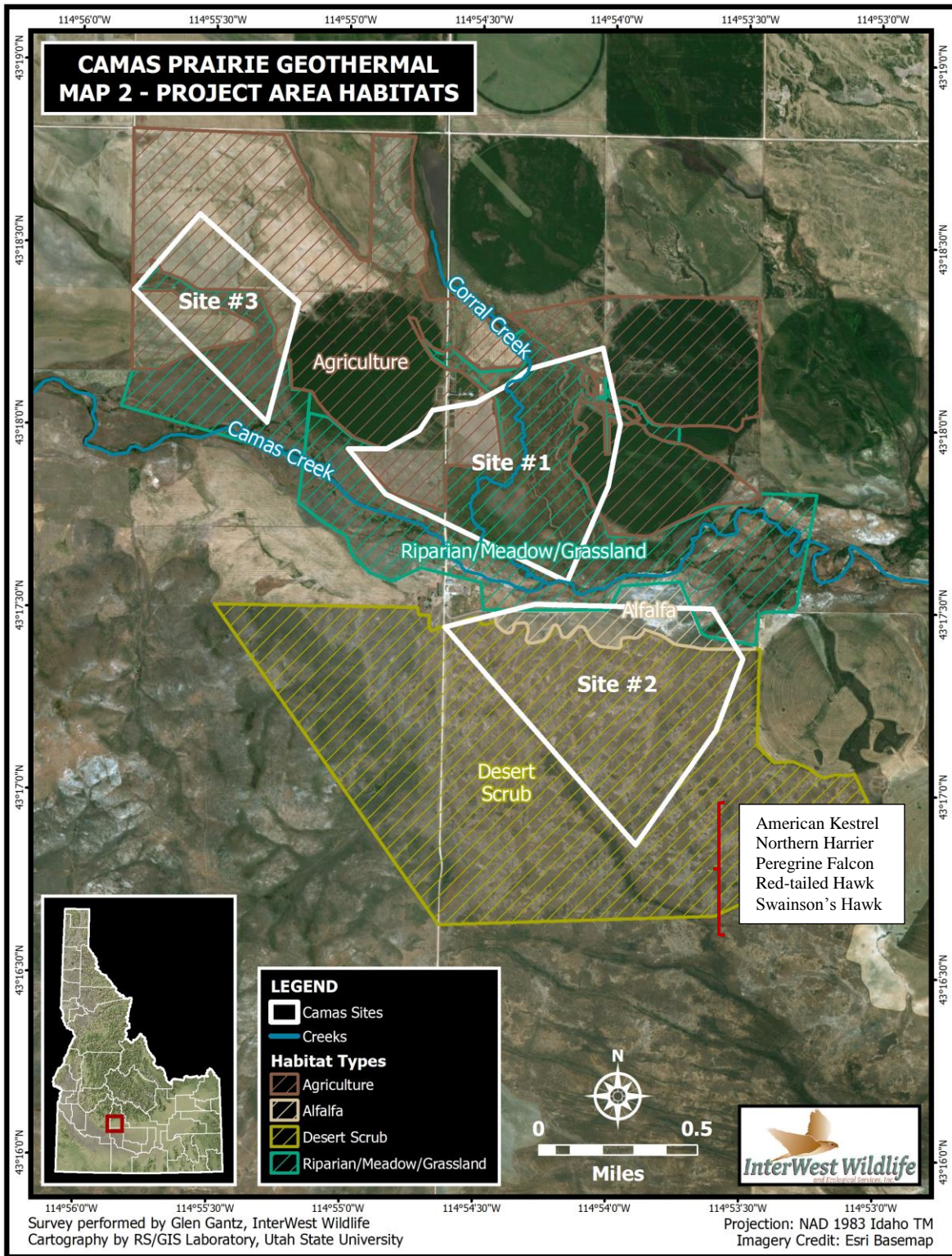
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5.0 Appendices

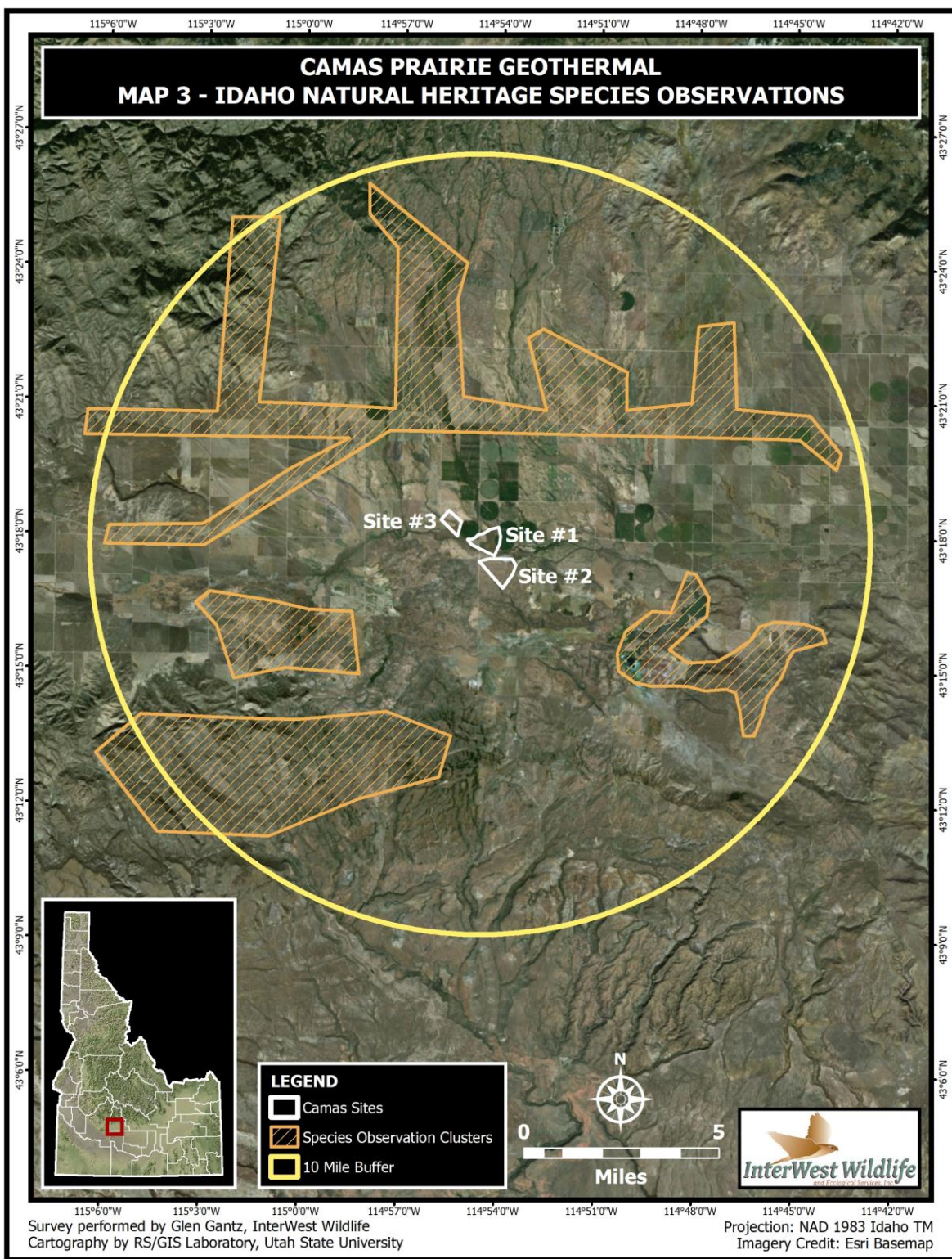
Appendix A - Maps



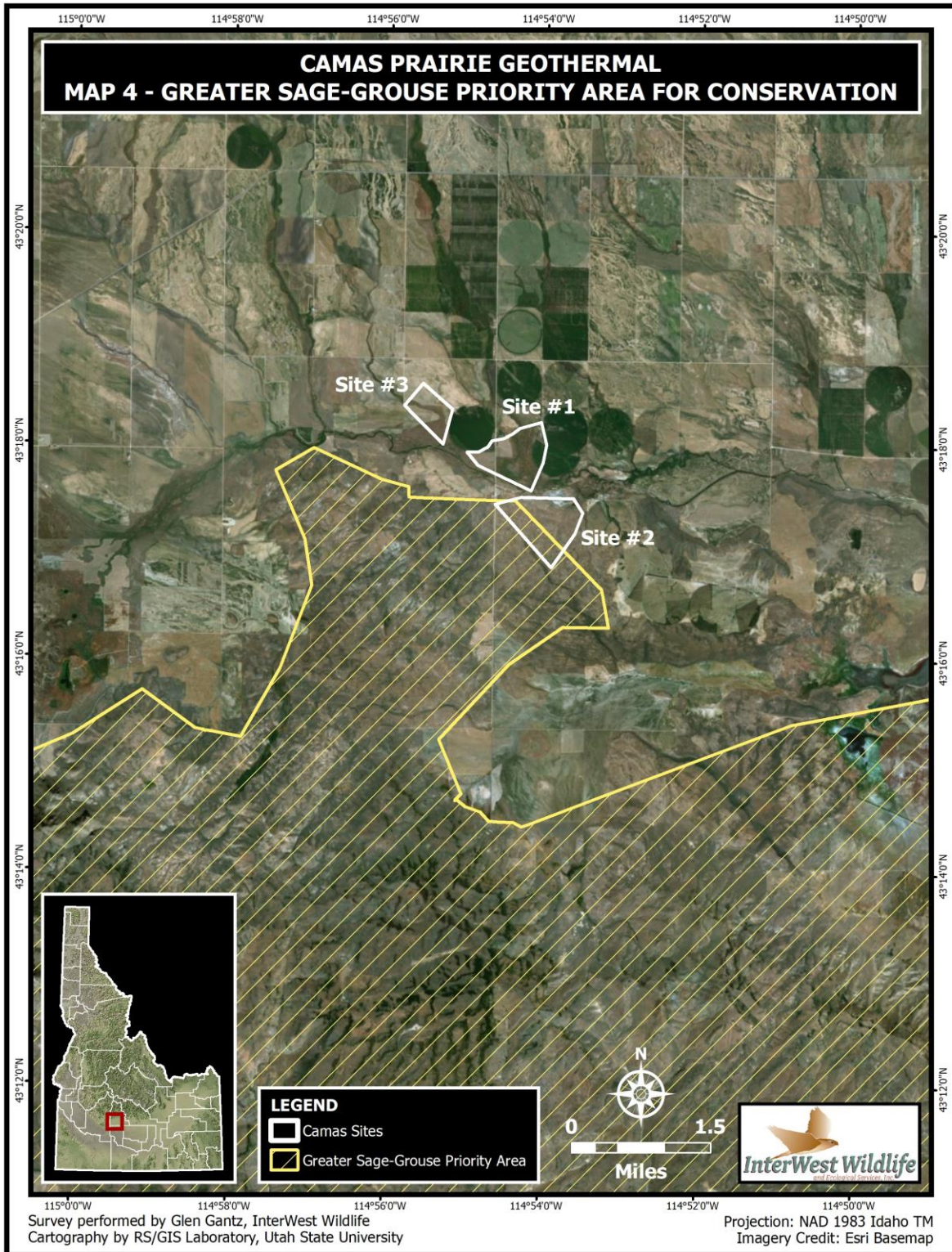
Map 1 – Project Location



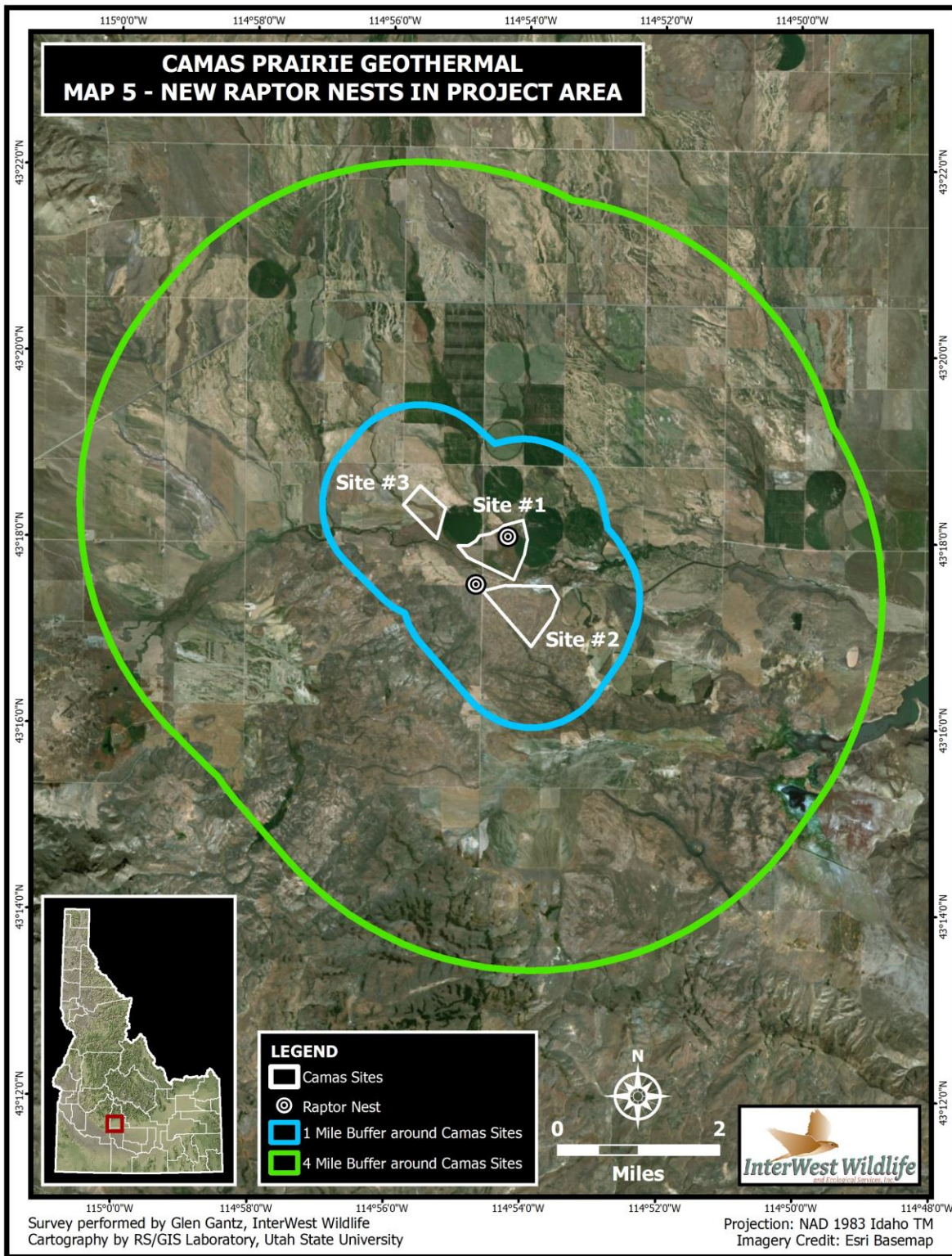
Map 2 – Project Area Habitats



Map 3 – Idaho Natural Heritage Species Observations



Map 4 – Greater Sage-grouse Priority Area for Conservation



Map 5 – New Raptor Nests in Project Area

Appendix B – Photographs



Photo 1. Riparian shrubland and meadow habitat along Camas Creek looking west from Baron Road in Site #1. Camas Creek is at the bottom of the photo.



Photo 2. Riparian shrubland and meadow habitat along Camas Creek looking northwest from Baron Road in Site #1. Camas Creek is in the photo.



Photo 3. Riparian shrubland and meadow habitat along Camas Creek looking east from Baron Road in Site #1. Camas Creek is in the photo.



Photo 4. Riparian shrubland and meadow habitat along Corral Creek looking south, just north of Site #1. Corral Creek is in the photo.



Photo 5. Sagebrush steppe habitat looking south from Site #2. Sagebrush steppe habitat makes up the majority of Site #2, with agricultural field along the northern portion of the site.



Photo 6. Sagebrush steppe habitat looking south from Site #2. Sagebrush steppe habitat makes up the majority of Site #2, with agricultural field along the northern portion of the site.



Photo 7. Agricultural habitat typical of all three sites. Photo is of Site #3, looking east from the west corner of Site #3.



Photo 8. Meadow (grassland) habitat typical of all three sites. Photo is of Site #3, looking east from near the center of Site #3.



Photo 9. Typical burrow scattered throughout all three sites, but especially on Site #3. These burrows could potentially be used by Burrowing Owls for nesting.

Appendix C - IPaC Trust Resource Report

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

Camas Prairie Geothermal

LOCATION

Camas County, Idaho



Local office

Idaho Fish And Wildlife Office

☎ (208) 378-5243

📠 (208) 378-5262

1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657

IPaC: Resources

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NOT FOR CONSULTATION

<https://ecos.fws.gov/ipac/project/7HDIBW7J7ZGIPEBUCNU37X5LEA/resources>

2/4/2018

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species

¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
North American Wolverine <i>Gulo gulo luscus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5123	Proposed Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered

species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY

	BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
<p>Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626</p>	Breeds Dec 1 to Aug 31
<p>Brewer's Sparrow <i>Spizella breweri</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9291</p>	Breeds May 15 to Aug 10
<p>Clark's Grebe <i>Aechmophorus clarkii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Jan 1 to Dec 31
<p>Golden Eagle <i>Aquila chrysaetos</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/1680</p>	Breeds Dec 1 to Aug 31
<p>Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Lewis's Woodpecker <i>Melanerpes lewis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408</p>	Breeds Apr 20 to Sep 30
<p>Long-billed Curlew <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511</p>	Breeds Apr 1 to Jul 31

<p>Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481</p>	Breeds elsewhere
<p>Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914</p>	Breeds May 20 to Aug 31
<p>Sage Thrasher <i>Oreoscoptes montanus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9433</p>	Breeds Apr 15 to Aug 10
<p>Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 20 to Aug 5
<p>Williamson's Sapsucker <i>Sphyrapicus thyroideus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8832</p>	Breeds May 1 to Jul 31
<p>Willow Flycatcher <i>Empidonax traillii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482</p>	Breeds May 20 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

- To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
- The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (🟡)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

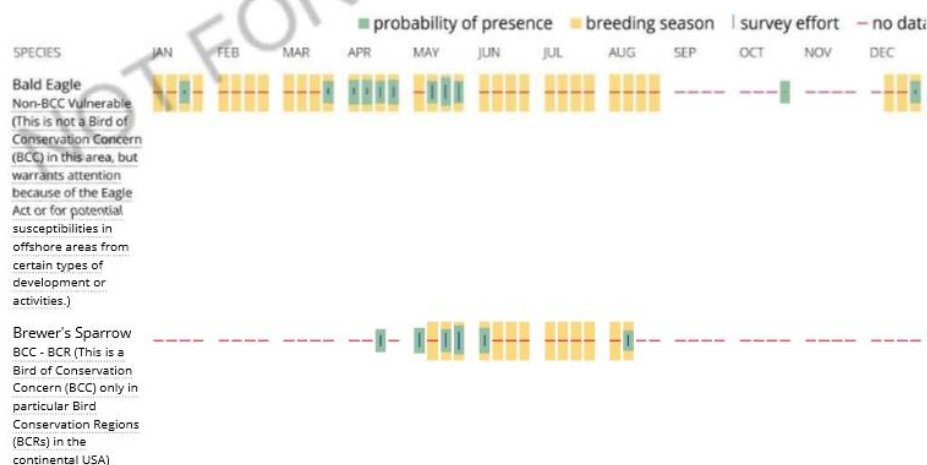
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

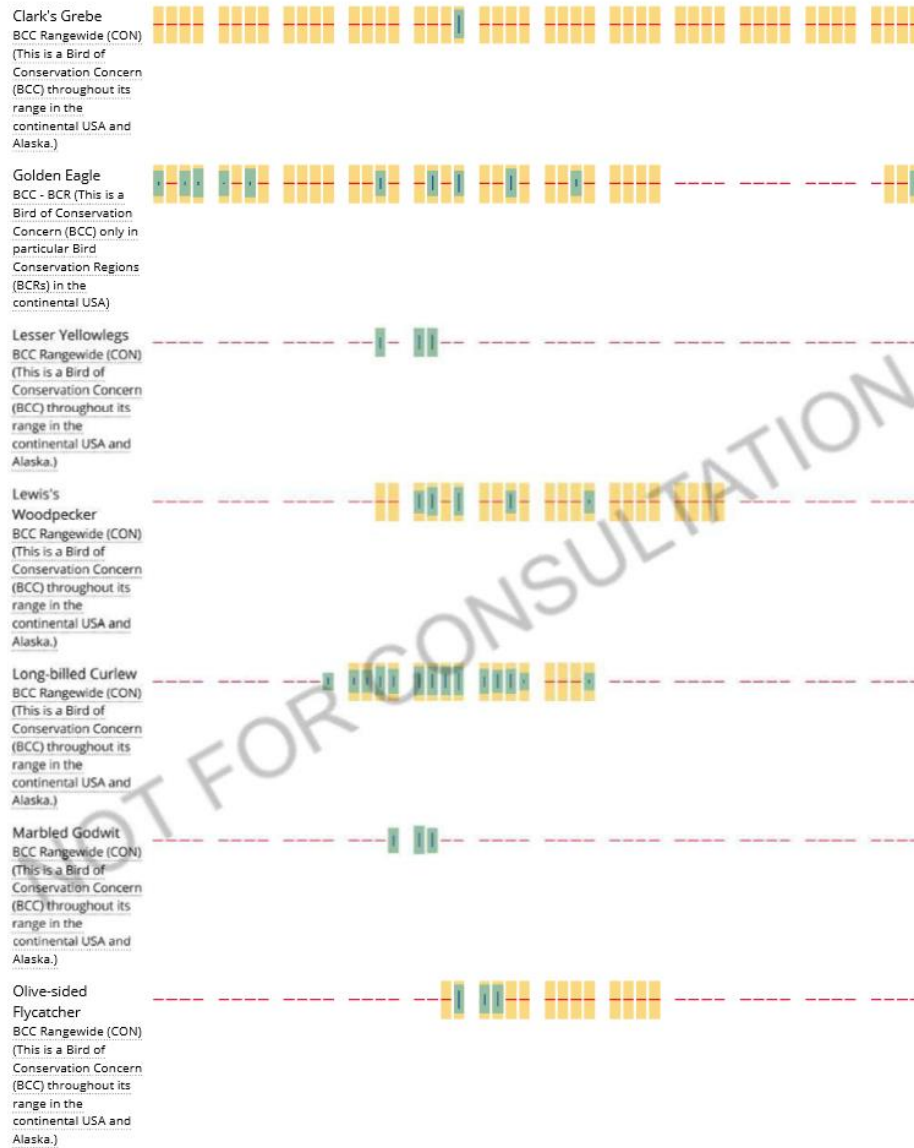
No Data (—)

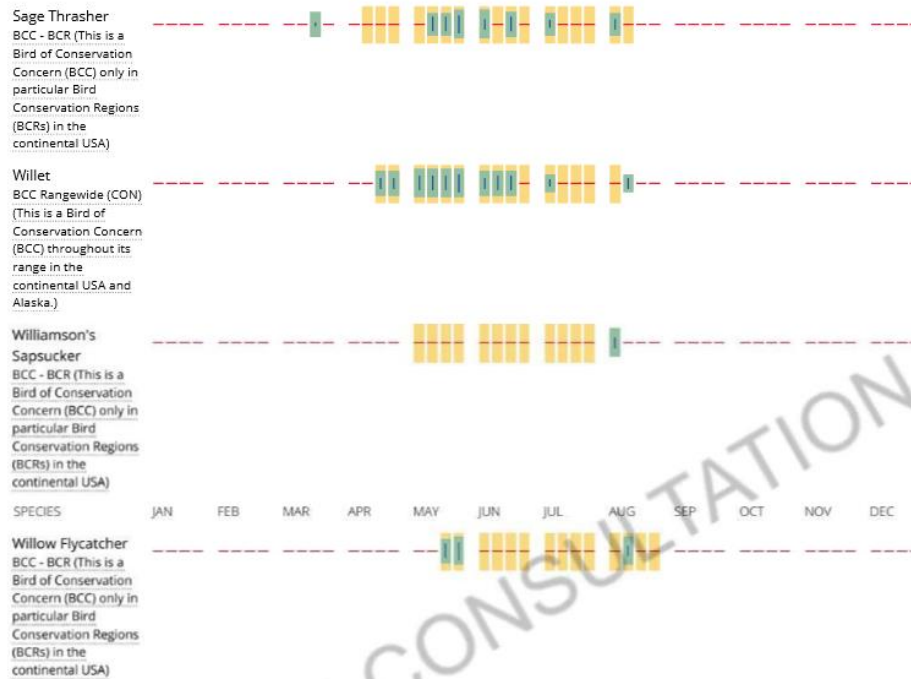
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.







Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEMA](#)
[PEMC](#)
[PEMF](#)
[PEMB](#)
[PEMCh](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PSSC](#)
[PSSA](#)
[PSSAh](#)

FRESHWATER POND

[PABFh](#)
[PUBFh](#)
[PABC](#)

OTHER

[PUSC](#)
[PUSCh](#)

RIVERINE

[R2UBH](#)[R2ABH](#)[R2USA](#)

A full description for each wetland code can be found at the National Wetlands Inventory website:
<https://ecos.fws.gov/ipac/wetlands/decoder>

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix D - Migratory Bird Conservation Actions

Migratory Bird Conservation Actions for Projects to Reduce the Risk of Take during the Nesting Season*

U.S. Fish and Wildlife Service (USFWS) Region 6, Migratory Bird Management June 2014

Goal: Avoid take of migratory birds and/or minimize the loss, destruction, or degradation of migratory bird habitat while completing the proposed project or action. Under the Migratory Bird Treaty Act (MBTA) take is defined as “pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect” a migratory bird (50 CFR § 10.12). **

Determine if the proposed project or action will involve below- and/or above-ground construction or habitat-altering activities, because recommended practices and timing of surveys could differ accordingly.

If the proposed project or action includes a reasonable likelihood that take of migratory birds will occur, then complete the project or those actions expected to take migratory birds outside of their nesting season to the greatest extent possible. Examples of actions that may take migratory birds include, clearing or cutting of vegetation, burning vegetation, driving or parking equipment on vegetation that may harbor nesting birds, etc. The primary nesting season for migratory birds varies greatly among species and geographic locations, but generally extends from early April to mid-July. However, the maximum time period for the migratory bird nesting season can extend from early January through late August. Due to this variability, project proponents should consult with the USFWS for specific nesting seasons of birds in your project or action area. As early as possible please consult the USFWS in the planning stages of your project for other input on conservation measures to avoid and minimize the take of migratory birds.

Complete all project activities that could result in migratory bird take outside the maximum migratory bird nesting season (early January through late August) to the greatest extent possible. If this is not possible, then avoid any habitat alteration, removal, or destruction during the primary nesting season for migratory birds (early April to mid- July).

If a proposed project or action includes the potential for take of migratory birds and/or the loss or degradation of migratory bird habitat, and work cannot occur outside the migratory bird nesting season (either the maximum or primary nesting season), project proponents should provide USFWS with an explanation for why work has to occur during the migratory bird nesting season. Further, in these cases, project proponents also should demonstrate that all efforts to complete work outside the migratory bird nesting season were attempted, and that the reasons work needs to be completed during the nesting season were beyond the proponent’s control.

Where project work must occur during the migratory bird nesting season, project proponents should utilize a qualified biologist to survey those portions of the project area during the nesting season (but prior to the project or action occurring) to determine if migratory birds are present and nesting in those areas. These bird surveys should occur no more than 7-10 days prior to when work actually begins on the project sites. In addition to conducting surveys during the

nesting season, entities may also benefit from conducting surveys during the previous nesting season. Such surveys will serve to inform the likely presence of nesting migratory birds in the proposed project or work area. While individual migratory birds will not necessarily return to nest at the exact site as in previous years, a survey in the nesting season the year before the project or action allows the company to become familiar with bird species and numbers present in the project area well before the nesting season in the year of proposed action. Migratory bird surveys also should be completed during the best timeframe for detecting the presence of nesting migratory birds, using accepted bird survey protocols. USFWS Offices can be contacted for recommendations on appropriate survey guidance. Project proponents should also be aware that results of migratory bird surveys are subject to spatial and temporal variability.

If no migratory birds are found nesting in proposed project or action areas immediately prior to the time when construction and associated activities are to occur, then proceed with your project activity as planned.

If migratory birds are present and nesting in the proposed project or action area, contact your nearest USFWS Ecological Services Field Office and/or USFWS Regional Migratory Bird Management Office for guidance on appropriate next steps to avoid and minimize impacts to (and take of) migratory birds associated with the proposed project or action. Although bald and golden eagles are protected under MBTA they are also covered under BGEPA. Please consult USFWS if there are eagles or eagle nests in or near your proposed project area ***.

* Note: these recommended conservation measures assume that there are no Endangered or Threatened migratory bird species present in the project/action area, or any other Endangered or Threatened animal or plant species, or any designated critical habitat for Endangered or Threatened species present in this area. If Endangered or Threatened species or designated critical habitat are present, or they could potentially be present, and the project/action may affect these species or designated critical habitat for them, then consult with your nearest USFWS Ecological Services Office before proceeding with any project/action.

** The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. While the MBTA has no provision for allowing unauthorized take, the USFWS realizes that some birds may be killed during construction or through other project activities, even if all known reasonable and effective measures to protect birds are used. The USFWS Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to avoid take of migratory birds and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals, companies, or agencies from liability even if they implement bird mortality avoidance, or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating and undertaking enforcement actions against individuals and companies that take migratory birds without identifying and implementing all reasonable, prudent, and effective measures to avoid that take. Companies are encouraged to work closely with USFWS biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures

prior to/during construction or similar activities.

*** Also note that Bald and Golden Eagles receive additional protection under the Bald and Golden Eagle Protection Act (BGEPA). BGEPA prohibits the take, possession, sale, purchase, barter, offer to sell, purchase, or barter, transport, export or import, of any Bald or Golden Eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. BGEPA also defines take to include “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb,” 16 U.S.C. 668c, and includes criminal and civil penalties for violating the statute.

Further, activities that would disturb Bald or Golden Eagles are prohibited under BGEPA. “Disturb” means to agitate or bother a Bald or Golden Eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an Eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. If a proposed project or action would occur in areas where nesting, feeding, or roosting eagles occur, then project proponents may need to take additional conservation measures to achieve compliance with BGEPA. New regulations (50 CFR § 22.26 and § 22.27) allow the take of bald and golden eagles and their nests, respectively, to protect interests in a particular locality provided that the USFWS finds that such take is compatible with the goal of maintaining stable or increasing eagle breeding populations. However, consultation with the USFWS Migratory Bird, Ecological Services, and Law Enforcement programs will be required before a permit may be issued.

Appendix E - Idaho Natural Heritage Data Search


IDAHO DEPARTMENT OF FISH AND GAME

600 S Walnut / P.O. Box 25
Boise, Idaho 83707

C.L. "Butch" Otter / Governor
Virgil Moore / Director

README

Thank you for your request of data from the Idaho Fish and Wildlife Information System (IFWIS), Idaho Department of Fish and Game. Idaho Natural Heritage Data is included within this data request.

The area of interest you submitted may have one or more of the following files. The possible omission of files is based on the size of the study area submitted, where it is located within Idaho, and the type of data requested. These data are managed in part via a Geographic Information System (GIS). If you are not familiar with GIS please go to <http://www.gis.com/whatisgis/index.html> for further information. If you do not have a GIS the .dbf portions of each shapefile can be opened within Microsoft Excel, but may not fully describe locational details for each record. Please see the short explanation of each file below and be sure to read the FGDC compliant metadata for detailed explanations of each field and field values.

Animal shapefiles (.shp) and metadata (.xml)

Animal_Observations_2016	Animal Observations (Animal Conservation Database and online together)
Animal_Observations_SpecialStatusSpecies_2016	Point shapefile (same as above), but only special status species
FishGenDist	Fish General Distribution
FishPresLakes	Fish Presence in Lakes
FishPresStreams	Fish Presence in Streams
Griz_Caribou	Grizzly and Caribou recovery areas
SageGrouseLeks2016	Greater Sage-Grouse Leks 2016
SharpTailGrouseLeks2016	Sharp-tailed Grouse Leks 2016
WolfActivity2015	Wolf 2015 minimum convex polygons pack activity

Plants shapefiles (.shp) and metadata (.xml)

PalouseGrassland_Remnants	Palouse Grassland Remnants.
PalouseGrassland_SmallRemnants	Small Palouse Grassland Remnant/good condition meadow steppe habitat.
Plant_EO_2016	Plant Element Occurrences. <i>These EO's have been updated to incorporate new observations of federally listed at-risk plants and requested species by federal partners.</i>
Plant_Lines_2016	Plant Observations lines (Plant Conservation Database lines and online together; raw observation data not in element occurrence format)
Plant_Points_2016	Plant Observations points (Plant Conservation Database lines and online together; raw observation data not in element occurrence format)
Plant_Polys_2016	Plant Observations polygons (Plant Conservation Database lines and online together; raw observation data not in element occurrence format)

Keeping Idaho's Wildlife Heritage

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US Fish and Wildlife Service Designated Critical Habitat

Canada Lynx, Kootenai River White Sturgeon, and Bull Trout have USFWS Designated Critical Habitat within Idaho. The designated habitat shapefiles are included if your study area intersects any of the areas:

Designated Critical Habitat (.shp) and metadata (.xml)

DesigCriticalHabitat_BullTroutStreams	Bull Trout Designated Critical Habitat Streams
DesigCriticalHabitat_BullTroutLakes	Bull Trout Designated Critical Habitat Lakes
DesigCriticalHabitat_Lynx	Canada Lynx Designated Critical Habitat.
DesigCriticalHabitat_SnakeRiverSteelhead	Snake River Basin Steelhead Designated Critical Habitat.
DesigCriticalHabitat_Sturgeon	Kootenai River White Sturgeon Designated Critical Habitat.
DesigCriticalHabitat_WoodlandCaribou	Woodland Caribou Designated Critical Habitat.
ProposedCritical_Habitat_SlickspotPeppergrass	Proposed Critical Habitat for SlickspotPeppergrass
ProposedCritical_Habitat_YellowBilledCuckoo	Proposed Critical Habitat for Yellow Billed Cuckoo

*If you are not familiar with GIS shapefiles, please note that each one consists of several files working together. For instance, all the files named "Animal_Observations_2014" work together to create one shapefile. To avoid corruption, it is important to keep these files together in the same directory.

**If you do not have a GIS application, a free GIS viewer, ArcGIS Explorer Desktop, is available from <http://www.esri.com/software/arcgis/explorer>.

If you requested plant information, one or more PDF files may also be included. If you received the "Plant_EO_2016" shapefile, then PDFs accompany the plant Element Occurrence (EO) data and provide additional information for each plant EO. The PDF files contain supplemental information in addition to what is provided within the EO feature class. Hyperlinking the PDF files to the EO feature class is recommended. To hyperlink, calculate the EO feature class field, 'hotlink', to point your of the location of PDF folder.

Each EO pdf has the file name of the unique identifier, EO_ID. For instance, the file '*Lepidium papilliferum_EO-1_EOID-2375.pdf*', indicates it is tied to Slickspot peppergrass (*Lepidium papilliferum*) EO #1 with EO_ID #2375. In February 2012, we renumbered our EO_ID's in the transition to a new system. EO number, however, remain unchanged.

Please Note: The quantity and quality of data are dependent on the research and observations of many individuals and organizations. In most cases, these data are not the result of comprehensive or site-specific field surveys; many natural areas in Idaho have never been thoroughly surveyed. For these reasons, we cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Idaho. Our data summarize the existing information known to us at the time of your request. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

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Appendix F - Qualifications

GLEN GANTZ – WILDLIFE BIOLOGIST and COMMERCIAL PILOT

Mr. Gantz is a Certified Wildlife Biologist and commercial pilot with 35 years of experience leading and conducting wildlife surveys throughout the United States, with the last 25 years focused in the Intermountain west. He has 25 years of experience conducting aerial surveys and aerial telemetry studies in the Intermountain west and is an experienced mountain pilot. Mr. Gantz has been conducting both aerial and terrestrial wildlife surveys in Utah for the past 18 years, with the past several years focusing on projects for the energy industry. Wildlife surveys are focused mainly on raptors and migratory birds, as well as threatened, endangered and sensitive species. Mr. Gantz led the wildlife surveys on 240 miles of the Ruby Pipeline in Wyoming, Utah, and portions of Nevada from 2009 to 2011. This project included:

- Conducting and managing greater sage-grouse lek surveys and monitoring these leks;
- Surveying and weekly monitoring of raptor nest via helicopter;
- Conducting migratory bird nest surveys;
- Conducting pygmy rabbit surveys, including telemetry monitoring and scientific study design
- Mapping white-tailed prairie dog towns and surveying burrowing owl and black-footed ferret in the mapped towns
- Conducting yellow-billed cuckoo surveys

Mr. Gantz manages the biological data for the wildlife surveys including data transfer to/from GPS units and GIS. He also compiles summaries and results of field data, produces maps for field use and reports, and prepares NEPA documents, including Biological Assessments, Biological Reports and wildlife portions of EIS. Mr. Gantz is trained in Mexican Spotted Owl surveys, Utah Prairie Dog surveys, Southwestern Willow Flycatcher surveys, Black-footed Ferret surveys, as well as several other endorsements. Mr. Gantz holds a B.S. in Wildlife Science from The Pennsylvania State University, University Park Pennsylvania and an M.S. in Wildlife Ecology from Utah State University, Logan Utah.