ATTACHMENT P1-7A
BIOLOGICAL SURVEYS SUMMARY REPORT 2010–2016

TETRA TECH

Boardman to Hemingway Transmission Line Project

Biological Surveys Summary Report 2010-2016

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Biological Surveys Summary Report 2010-2016

Boardman to Hemingway Transmission Line Project

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ACRONYMS AND ABBREVIATIONS

Amended pASC	Amended Preliminary Application for Site Certificate
BLM	Bureau of Land Management
EFSC	Energy Facility Siting Council
FWS	U.S. Fish and Wildlife Service
GIS	Geographic Information System
GPS	Global Positioning System
IDFG	Idaho Department of Fish and Game
IPC	Idaho Power Company
kV	kilovolt
MP	milepost
mph	miles per hour
OAR	Oregon Administrative Rules
ODA	Oregon Department of Agriculture
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
ORBIC	Oregon Biodiversity Information Center
OSWB	Oregon State Weed Board
Project	Boardman to Hemingway Transmission Line Project
SSP	special status plant
TVES	Terrestrial Visual Encounter Surveys
USFS	U.S. Forest Service
WAGS	Washington ground squirrel

1.0 INTRODUCTION

1.1 Project Description

Idaho Power Company (IPC) has proposed to construct and operate a new, approximately 300-mile long, single-circuit 500-kilovolt (kV) electric transmission line between northeast Oregon and southwest Idaho called the Boardman to Hemingway Transmission Line Project (hereinafter referred to as the Project). The overhead, 500-kV transmission line will carry energy bi-directionally between the proposed Longhorn switching station near Boardman in Morrow County, Oregon, and IPC's existing Hemingway Substation, located near Melba in Owyhee County, Idaho. The Project will traverse public and private lands in five counties in Oregon (Morrow, Umatilla, Union, Baker, and Malheur) and one county in Idaho (Owyhee) (Figures 1-1 and 1-2).

The Project would result in disturbances related to the construction of permanent facilities such as transmission tower pads, stations, communication sites, and permanent access roads, as well as temporary disturbances related to multiuse areas and tensioning sites, and temporary construction areas associated with the permanent facilities. In addition, the Project would include the initial construction clearing and continued maintenance of tree heights located near the transmission line, resulting in permanent conversion of some forested areas to shrub or grassland. To help determine the species that could be affected by the construction of these Project components, IPC has performed both general and species-specific vegetation and wildlife surveys across the Project.

The proposed Project crosses both public and private lands. Public lands are managed, in part, with the intent of conserving and improving wildlife and plant populations, including maintaining species use and occurrence data on public lands. Data on occurrences of sensitive wildlife and plant species on private lands, with the exception of some statewide data gathered by state agencies, are largely unavailable. As a result, existing databases could not be relied upon to determine the locations of these sensitive resources that could be affected by the Project. Therefore, several vegetation and wildlife surveys were implemented to supplement existing data.

Each resource in this summary report based its survey area on the Project's Site Boundary. For some resources the survey area is the Site Boundary, but for others the survey area was extended beyond the Site Boundary a specified distance. The Site Boundary is defined as "the perimeter of the site of a proposed energy facility, its related or supporting facilities, all temporary laydown and staging areas, and all corridors and micrositing corridors proposed by the applicant" (Oregon Administrative Rule [OAR] 345-001-0010(55)). The Site Boundary encompasses the following facilities in Oregon:

- The Proposed Route, consisting of 270.8 miles of new 500-kilovolt (kV) electric transmission line, removal of 12 miles of existing 69-kV transmission line, rebuild of 0.9 mile of a 230-kV transmission line, and rebuild of 1.1 miles of an existing 138-kV transmission line;
- Four alternatives that each could replace a portion of the Proposed Route, including the West of Bombing Range Road Alternative 1 (3.7 miles), West of Bombing Range Road Alternative 2 (3.7 miles), Morgan Lake Alternative (18.5 miles), and Double Mountain Alternative (7.4 miles);
- One proposed 20-acre station (Longhorn Station);

- Ten communication station sites of less than ¼-acre each and two alternative communication station sites;
- Permanent access roads for the Proposed Route, including 206.3 miles of new roads and 223.2 miles of existing roads requiring substantial modification, and for the Alternative Routes including 30.2 miles of new roads and 22.7 miles of existing roads requiring substantial modification; and
- Thirty-one temporary multi-use areas and 299 pulling and tensioning sites, of which four will have light-duty fly yards within the pulling and tensioning sites.

The Project features are fully described in Exhibit B and the Site Boundary for each Project feature is described in Exhibit C, Table C-24 of the Amended Preliminary Application for Site Certificate (Amended pASC). The location of the Project features and the Site Boundary is outlined in Exhibit C.

1.2 Purpose

Biological surveys for the Project began in 2010, with additional surveys conducted in 2011, 2012, 2013, 2014, and 2016. Additional surveys were needed as the location of the route was adjusted from year to year to avoid sensitive resources, improve engineering, or meet land owner requests. As a result, some previously surveyed areas are still part of IPC's currently proposed route and others are not. The purpose of this document is to summarize all previous biological surveys for which the survey area is contained within IPC's current Proposed Route and alternatives. Results of each year's survey for each survey type are documented in annual survey technical reports that are kept in the Project file.

As required by Oregon Administrative Rule (OAR) 345-021-0010(1)(p)(E) and consistent with direction provided to IPC in the Project Order, IPC consulted with state and federal agencies in developing its field survey protocols for the Project. IPC met with Oregon Department of Fish and Wildlife (ODFW), Bureau of Land Management (BLM), U.S. Forest Service (USFS), Oregon Department of Energy, (ODOE), National Oceanic and Atmospheric Administration National Marine Fisheries Service, and U.S. Fish and Wildlife Service (FWS) to develop the Biological Survey Work Plan for the Project. The Biological Survey Work Plan contains a list of all agency-required biological surveys, as well as a detailed description of the final protocols used (Exhibit P1, Attachment P1-2).

This report summarizes six different biological surveys conducted in support of the Project. These surveys include:

- Terrestrial Visual Encounter Surveys (TVES)
- Special Status Plant (SSP) Surveys
- Washington Ground Squirrel (WAGS) Surveys
- Aerial Raptor Nest Surveys
- Northern Goshawk and American Three-Toed Woodpecker Surveys
- Great Gray and Flammulated Owl Surveys

Surveys were also conducted for fish habitat and presence at Project road and transmission line crossings of streams in 2014 and 2016. The fish presence and habitat surveys are summarized in the Fish Habitat and Stream Crossing Assessment Report that is Attachment P1-7B to Exhibit P1. Surveys for sage-grouse (*Centrocercus urophasianus*) were conducted in 2010, 2012, and 2013. These aerial lek surveys were conducted by helicopter. The results of the sage-grouse surveys are contained in Exhibit P2, Sage-Grouse, and in annual surveys reports that are contained in the Project file.

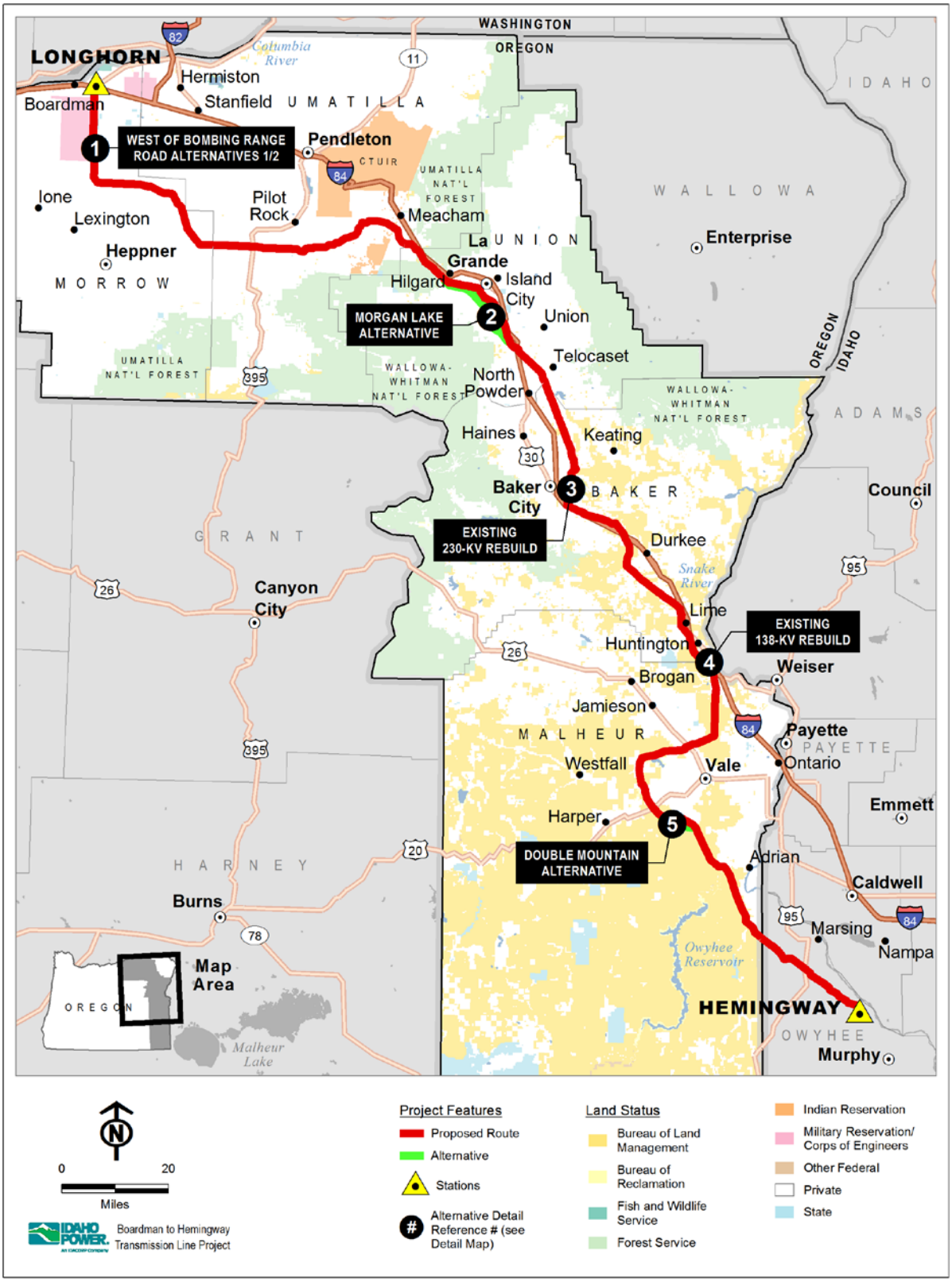

Figure 1-1. Project Overview

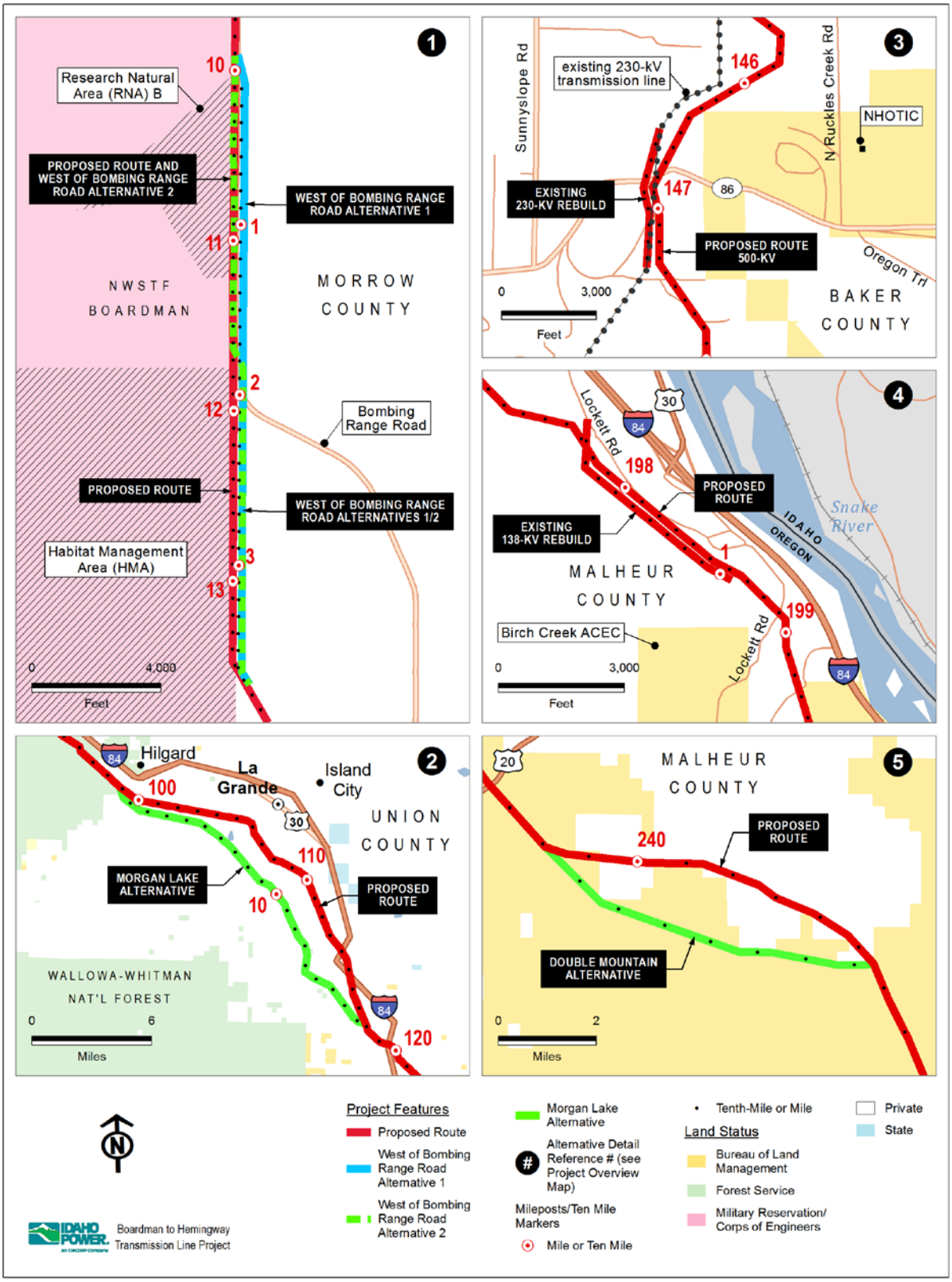

Figure 1-2. Project Overview (Detail Areas)

1.3 Background

The Site Boundary crosses four broad ecoregions: the Blue Mountains, the Columbia Plateau, the Snake River Plain, and the Northern Basin and Range. The northern portion of the Project crosses through the Columbia Plateau and Blue Mountains Level III ecoregions (EPA 2013). The native vegetation within the Columbia Plateau ecoregion typically consists of arid sagebrush steppe and grassland vegetation communities; however, much of this ecoregion has been converted to agricultural use in the form of wheat cultivation (EPA 2013). The Blue Mountain ecoregion consists of a complex of mountain ranges generally lower and more open than the neighboring ranges (e.g., the Cascades and Northern Rockies). This ecoregion typically supports mixed coniferous vegetation communities; however, portions of this ecoregion are currently disturbed by livestock use as well as other disturbance types (EPA 2013; Powell et al. 2007).

The southern portion of the Project crosses through the Snake River Plain and the Northern Basin and Range Level III ecoregions (EPA 2013). The native vegetation within the Snake River Plain ecoregion typically consists of sagebrush-grassland vegetation communities. This ecoregion is considerably lower in elevation and has more gently sloping areas than the surrounding ecoregions, resulting in a greater availability of water. As a result, much of the Snake River Plain ecoregion has been converted to agricultural use, the principal crops being sugar beets, potatoes, alfalfa, and vegetables (EPA 2013). The Northern Basin and Range ecoregion contains a diverse range of landforms, including tablelands, dissected lava plains, valleys, alluvial fans, and scattered mountains. Non-mountainous areas in this ecoregion typically contain sagebrush steppe vegetation communities, while mountainous areas typically contain big sagebrush (*Artemisia tridentata*), Idaho fescue (*Festuca idahoensis*), Douglas-fir (*Pseudotsuga menziesii*), and quaking aspen (*Populus tremuloides*). Portions of the Northern Basin and Range ecoregion have been converted into rangeland and agricultural uses (EPA 2013).

2.0 TERRESTRIAL VISUAL ENCOUNTER SURVEY

2.1 Introduction

The TVES is a general wildlife and vegetation survey adapted from methods described in the USFS Multiple Species Inventory and Monitoring Technical Guide (Manley et al. 2006). The TVES was designed to gather baseline data for both wildlife and vegetation, with some of these data being utilized for further data analysis, specifically the habitat categorization process.

The summary of TVES performed from 2011 to 2014 and in 2016 provides the following for the Energy Facility Siting Council (EFSC) process: 1) identifies locations of special status animal species listed as sensitive by the BLM, USFS, and ODFW, and/or threatened, endangered, or candidate species by the FWS in order to avoid, minimize, or mitigate Project impacts to the species; 2) classifies habitat types consistent with ODFW's habitat mitigation policy (OAR 635-415-0025); and 3) identifies locations of noxious weeds. SSP surveys were typically performed concurrently with TVES; however, a summary of those surveys is presented in a separate section (Section 3.0).

2.2 Survey Area

The survey area for the TVES is the Site Boundary as defined in Exhibit C of the Amended pASC. The Site Boundary varies based on the Project features, but in general it includes a 500-foot-wide corridor around the centerline of the transmission line; a 188.9-acre area for the Longhorn Station; a 100-foot-wide corridor around existing roads with substantial modification; a 200-foot-wide corridor around new roads; a 50-foot-wide corridor around distribution lines providing power to communication stations; and the mapped area (footprint) of multi-use areas, light-duty fly yards, and pulling and tensioning sites that fall outside of the transmission line Site Boundary.

The survey area crossed public and private lands. Public lands were surveyed in their entirety, except where access restrictions on adjacent private land prevented reasonable access or where terrain was prohibitive. Surveys on private lands occurred where landowners agreed to allow access for biological surveys. The survey area encompassed a total of 22,904 acres. Approximately 6,543 acres (29 percent) of the survey area occurred on public land with an additional 16,361 acres (71 percent) on private land (Figures 1-1 and 1-2).

2.3 Methods

2.3.1 Wildlife

A list of special status animal species with the potential to occur within the survey area was created for the Project. The Project list was derived from the most current BLM (BLM 2015a), USFS (USFS 2015), ODFW (ODFW 2008, 2015), and FWS (FWS 2016) species lists (Appendix 2-A).

To conduct TVES, three biologists systematically surveyed for wildlife, wildlife sign, and unique wildlife habitat (i.e., snags, cliffs, rock outcrops, ponds) by traversing the survey area along meandering transects. Survey data were recorded using global positioning system (GPS) technology and Esri ArcPAD mobile data collection software. A wildlife observation was recorded when an individual or group of species was observed visually, audibly, or if sign (e.g., feathers or scat) was encountered. As possible, information was recorded on the number of individuals observed, distance from the observer, and the age/sex of the individual. Observers

recorded wildlife species outside of the survey area if detected while the observer was walking through the survey area. Surveys were performed during daylight hours in April, May, or June of the survey year. In 2011 and 2012, some survey work was also performed in July.

Species-specific wildlife surveys were performed during TVES for pygmy rabbits (*Brachylagus idahoensis*), burrowing owls (*Athene cunicularia hypogea*), and Columbia spotted frogs (*Rana luteiventris*); methods for these surveys can be found in the most recent technical report (Tetra Tech 2016). Other species-specific surveys were performed outside of the TVES and are discussed in Sections 4, 5, 6, and 7 of this report. Otherwise, the TVES method was relied upon to gather information on the presence of special status animals within the survey area.

2.3.2 Vegetation

The purpose of the vegetation surveys was to identify and map habitat types, categorize habitats based on condition, identify and map unique habitats including potential wetlands and potential SSP habitat, and identify and map noxious weed presence within the survey area. All components were conducted concurrently during the vegetation portion of this survey. Meandering pedestrian surveys were conducted to collect data. More detailed information on each portion of the vegetation survey is described in the sections below.

2.3.2.1 Ecological Systems and Habitat Types

The objective of the ecological system and habitat type portion of TVES was to categorize habitat types for use in the wildlife habitat categorization process, driven by OAR 635-415-0025 and the Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0025). The Policy provides a framework for assigning one of six category types to habitats based on the relative importance of these habitats to fish and wildlife species.

Ecological system and habitat type information was collected in the field and recorded on electronic forms. Regional ecological systems descriptions and keys, general vegetation types, and habitat types were utilized to help categorize habitats in the field. Surveyors documented existing habitat type and condition based on the habitat categorization matrix (Appendix 2-B). At each change in habitat type or habitat category, the plant biologist took a photograph and then recorded dominant tree, shrub and herbaceous plant species and their average percent aerial cover composition. The habitat category was also recorded, using the habitat categorization metric presented in Appendix 2-B. Unique habitats, such as drainages, streams, and potential wetlands, were also recorded.

All unsurveyed areas were assigned an ecological system, general vegetation type, habitat type, and category based on desktop analysis. The desktop analysis utilized geographic information system (GIS) datasets including aerial imagery, adjacent survey data, National Wetlands Inventory, National Hydrography Dataset, and vegetation mapped from the Gap Analysis Project (GAP; USGS 2011).

2.3.2.2 Noxious Weeds

The noxious weed section of this report details the results of field surveys conducted by Tetra Tech biologists and desktop reviews of spatial datasets provided by the BLM and the USFS. Noxious weeds are nonnative, invasive species that threaten agriculture, rangelands, waterways, parks, wildlife, property values, public health and safety, and the general ecological health and diversity of native ecosystems. The Oregon State Weed Board (OSWB) defines noxious weeds as plants that have the potential to cause injury to public health, agriculture, recreation, wildlife, livestock, land, or other property, public or private property (Oregon Department of Agriculture [ODA] 2016a).

The OSWB was established under ORS 561.650. The OSWB provides direction to control noxious weeds at the state level and develops and maintains the State Noxious Weed List. The OSWB and the ODA classify noxious weeds in Oregon in accordance with the ODA Noxious Weed Classification System (ODA 2016a). There are three designations under the State's system:

- **Class "A" State Listed Noxious Weed:** A weed of known economic importance which occurs in the state in small enough infestations to make eradication or /containment possible; or is not known to occur in Oregon, but its presence in neighboring states makes future occurrence seem imminent.
- **Recommended action:** Infestations are subject to eradication or intensive control when and where found.
- **Class "B" State Listed Noxious Weed:** A weed of economic importance that is regionally abundant but may have limited distribution in some counties.
- **Recommended action:** Limited to intensive control at the state, county, or regional level as determined on a site-specific, case-by-case basis. Where implementation of a fully integrated statewide management plan is not feasible, biological control (when available) shall be the primary control method.
- **Class "T" Designated State Noxious Weeds:** Priority noxious weed species selected and designated by the OSWB as the focus of prevention and control actions by the Noxious Weed Control Program. "T"-designated noxious weeds are selected annually from either the "A" or "B" list and the ODA is directed to develop and implement a statewide management plan for these species.

In addition to the state-listed noxious weeds, the five Oregon counties crossed by the Project (Baker, Malheur, Morrow, Umatilla, and Union) each maintain a county-designated noxious weed list. These lists also classify noxious weeds into different categories (typically Class A, B, and C); however, the definition of each class differs slightly from the state classification system and differs slightly by county. Recommended actions for noxious weeds in the five Oregon counties crossed by the Project are as follows:

- **Class "A" County Noxious Weed:** Recommended for mandatory control county-wide in Baker, Malheur, and Morrow counties and subject to intensive control where found in Umatilla and Union counties.
- **Class "B" County Noxious Weed:** Recommended for moderate to intensive control at the county level in Baker County; subject to intensive control or eradication where feasible at the county level in Malheur and Morrow counties; limited to intensive control county-wide as determined on a case-by-case basis in Umatilla County; recommended for moderate control and/or monitoring at the county level in Union County. Additionally, in Malheur County, Class B weeds are required to be controlled within 50 feet of all property lines, easements, and ROWs, pursuant to ORS 570.525.
- **Class "C" County Noxious Weeds:** Recommended for moderate control at the county level in Baker County; treated at landowner's discretion in Malheur County. Morrow, Umatilla, and Union counties do not currently list Class C noxious weeds.

The list of noxious weeds that Tetra Tech biologists surveyed for varied from year to year based on location of the year's survey, updates to the state or county lists, and comments from state and federal agency personnel. In the 2011, biologists surveyed for Oregon and Idaho listed noxious weeds, as surveys were conducted in both states. In 2013, the list expanded to include species listed by the counties where surveys occurred. Due to comments from previous survey reports, in 2013 biologists also expanded the list of weeds to include those from the BLM Weed

Species of Concern (BLM 2013). In 2016 after consultation with the BLM (Fritts and Silva 2016), the BLM Weed Species of Concern were removed from the list. A comprehensive list of all noxious weed species surveyed throughout the course of the Project to date is included in Appendix 2-C.

Biologists estimated the population size based on the following categories which were recorded in the field: individuals, less than 1 acre, 1 to 5 acres, greater than 5 acres, or scattered throughout. For purposes of calculating estimated acres of each noxious weed identified, each category was converted to an area value using the crosswalk provided in Table 2-1. For analysis, noxious weed points were buffered according to this crosswalk and are displayed on maps as circles of varying sizes.

Table 2-1. Crosswalk for Noxious Weed Acreages

Category Recorded in the Field	Value Used in Acreage Calculation
Individuals	0.1 acre
Less than 0.1 acre	0.1 acre
0.1 to 1 acre	0.5 acres
1-5 acres	2 acres
Scattered throughout	10 acres

In addition to identifying and mapping the noxious weeds, biologists identified adjacent land uses that have the potential to contribute to noxious weed proliferation and establishment. There are some limitations when surveying for and detecting noxious weed locations. Plant phenology varies through the growing season, with every noxious weed not being detectable at any given time. As a result, we acknowledge that some noxious weeds may have been overlooked during these surveys. To help fill in potential gaps in noxious weed detection during these surveys, BLM (2016a) and USFS (2016) noxious weed location data were obtained and compiled with survey results. Compiled data were dissolved to remove potential spatial overlap and avoid double reporting of acreage present within the survey area.

2.4 Results

The TVES completed approximately 15,331 acres (67 percent) of the total 22,904-acre survey area between 2011 and 2016 (Figure 2-1). The completed portion of the survey area consisted of approximately 194 miles (69 percent) of the total 281 miles of access roads and 211 miles (69 percent) of the total 304 miles of route. Most of the areas not surveyed were due to right-of-entry not being granted by the private landowner.

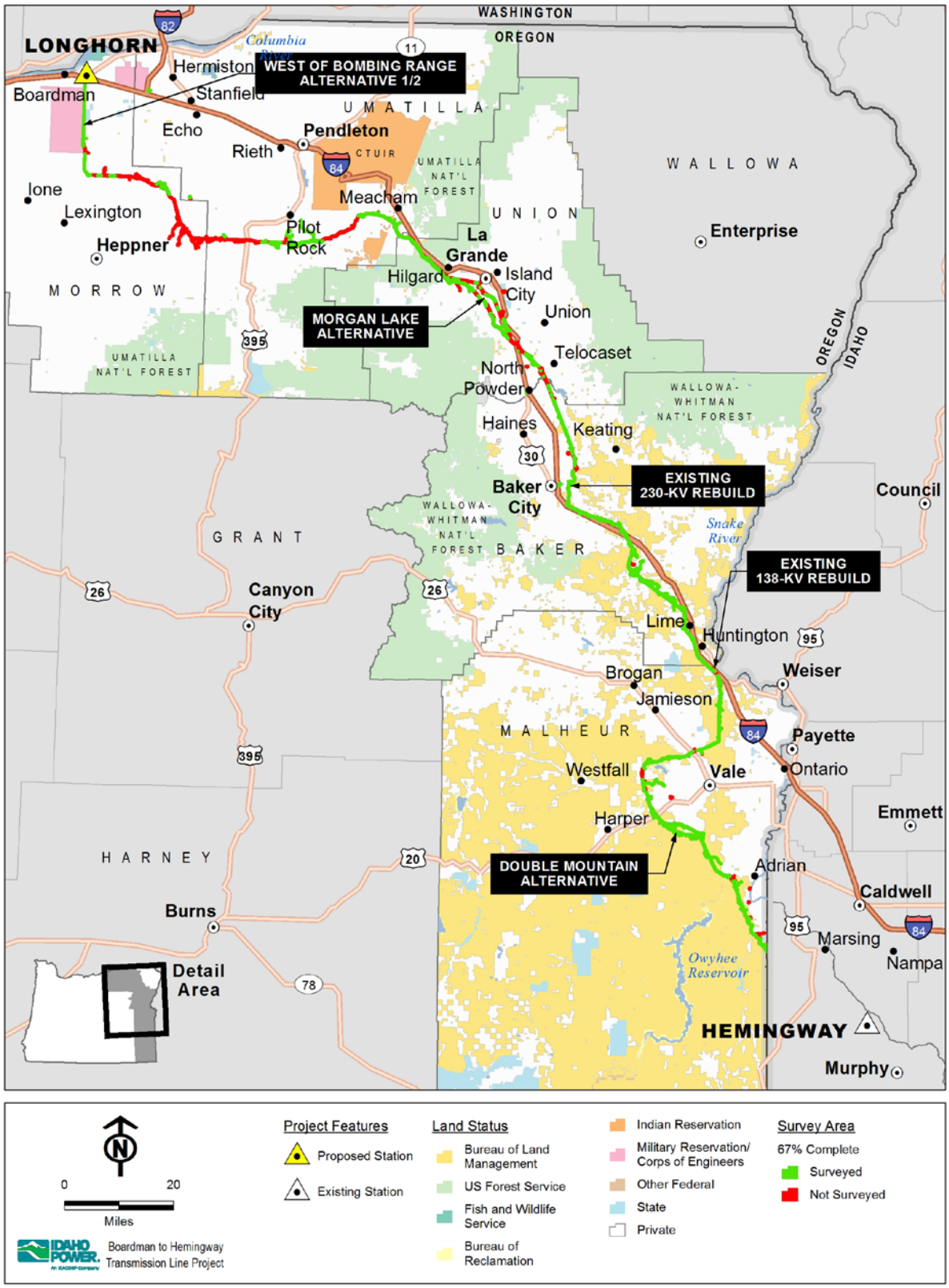

Figure 2-1. TVES Survey Area

2.4.1 Wildlife

2.4.1.1 General Wildlife

During the TVES, 174 wildlife species were recorded within the survey area (136 birds, 23 mammals, 13 reptiles, and 2 amphibians). All TVES wildlife data recorded within the survey area is maintained in the Project record. There may be elk calving areas located near the Project as indicated by observations of large calf/cow herds. There was a herd of at least 173 calf/cows near milepost (MP) 17 of the Morgan Lake Alternative and over 50 calf/cows near MP 4.5 of the Morgan Lake Alternative.

2.4.1.2 State Sensitive and T&E Wildlife

There were 17 special status animal species recorded during the TVES (1 mammal, 14 birds, 1 reptile, and 1 amphibian). Table 2-2 provides a summary of the special status animal species recorded during TVES within or near the survey area. The quantities of each species does not infer population estimates, but rather give a relative abundance within the habitat types surveyed. Appendix 2-D displays locations of special status animal species recorded during TVES, as well as database search results dating back to 1985 from Oregon Biodiversity Information Center (ORBIC; ORBIC 2016), GeoBOB (BLM 2016b), and USFS (2016). In Appendix 2-D, some special status animal species may appear outside of the survey area; these recorded points were buffered based on the estimated distance they were from the observer, as documented in the field. When the buffered observation intersected the survey area, those observations were included in the results and figures.

Grasshopper sparrow and long-billed curlew were the most abundantly observed special status animal, with over 100 individuals recorded for each species (Appendix 2-D, Figures 51-54 and 61-64). In contrast, western toad and northern goshawk had the fewest observations with all observations occurring in the short stretch of the Blue Mountains portion of the Project (Appendix 2-D, Figures 20-22). Other species of note observed during the TVES include four Lewis' woodpeckers and an active nest cavity (Appendix 2-D, Figure 46) and two active burrowing owl burrows (Appendix 2-D, Figures 34 and 38). Individual burrowing owls have moderate to high site fidelity to general breeding areas and to particular nest burrows, especially if the bird has reproduced successfully during the previous year at that burrow (Klute et al. 2003). Therefore, these burrow locations may be reused annually.

Table 2-2. Summary of Special Status Animals Observations during TVES

Special Status Animals	Scientific Names	Number of Individuals Recorded
Mammals		
White-tailed jackrabbit	*Lepus townsendii*	3
Birds		
American white pelican	*Pelecanus erythrorhynchos*	12
Burrowing owl	*Athene cunicularia*	9
Ferruginous hawk	*Buteo regalis*	5
Grasshopper sparrow	*Ammodramus savannarum*	159
Greater sandhill crane	*Antigone canadensis tabida*	5
Lewis's woodpecker	*Melanerpes lewis*	9
Long-billed curlew	*Numenius americanus*	119
Loggerhead shrike	*Lanius ludovicianus*	21
Northern goshawk	*Accipiter gentilis*	2
Olive-sided flycatcher	*Contopus borealis*	14
Pileated woodpecker	*Dryocopus pileatus*	5
Sagebrush sparrow	*Artemisiospiza nevadensis*	8
Swainson's hawk	*Buteo swainsoni*	29
Willow flycatcher	*Empidonax trailii*	5
Reptiles		
Northern Sagebrush lizard	*Sceloporus graciosus*	9
Western toad (Northern Rocky Mountain Population)	*Bufo woodhousii*	2

2.4.2 Vegetation

2.4.2.1 Ecological Systems and Habitat Types

OAR 635-415-0025 defines the Fish and Wildlife Habitat Mitigation Policy and provides a framework for assigning one of six category types to habitats based on the relative importance of these habitats to fish and wildlife species. Habitats located within the survey areas were classified into these six category types in accordance with OAR 635-415-0025.

Tetra Tech biologists identified and mapped ecological systems, which were rolled up into general vegetation types and habitat types within the survey area following the habitat categorization matrix (Appendix 2-B). General vegetation types and habitat types are summarized in this section. The general vegetation types and habitat types summarized in this section were derived from TVES field surveys and desktop analysis in areas that were not surveyed. These types will not match what is presented in Exhibit P1 and other Attachments to P1 as these base data were further refined before use in Exhibit P1 and its Attachments, as described in Exhibit P1, Section 3.3 and Attachment P1-1, Appendix A.

Six broad general vegetation types and 19 more specific habitat types have been mapped within the survey area and are listed in Table 2-3, and displayed on figures in Appendix 2-E. Shrub/grass was the most common general vegetation type, followed by forest/woodland, then agriculture/developed. Within the shrub/grass vegetation type, Shrub-Steppe with Big Sage was the most common habitat type. Other – shrub grass was the second most common habitat type; this habitat type consists mostly of the introduced upland grassland- Annual grassland ecological system.

Unique habitats and photographs taken during the TVES surveys between 2011 and 2016 are included in the annual field survey reports that are kept in the Project file.

Table 2-3. Summary of General Vegetation Types and Habitat Types Identified

General Vegetation Type	Habitat Types	Acres	Percent of Survey Area
Agriculture / Developed	Agriculture	1,978	9
	Developed/Disturbed	159	1
Bare Ground	Bare Ground Cliffs Talus	59	<1
Forest / Woodland	Forested-Other	111	<1
	Mixed Grand Fir/Douglas Fir	1,427	6
	Ponderosa Pine	1,126	5
	Western Juniper / Mountain Mahogany Woodland	373	2
Open Water / Unvegetated Wetland	Intermittent Streams	19	<1
	Perennial Streams	7	<1
	Ponds and Lakes	<1	<1
Shrub / Grass	Desert Shrub	306	1
	Native Grasslands	4,160	18
	Other – Shrub/Grass	4,749	21
	Shrub-Steppe with Big Sage	7,251	32
	Shrub-Steppe without Big Sage	1,045	5
Wetland	Emergent Wetland	52	<10
	Forested Wetland	73	<1
	Scrub-Shrub Wetland	5	<1
	Wetland-Other	7	<1
Total		**22,904**	**100**

2.4.2.2 Noxious Weeds

Table 2-4 presents the noxious weeds within the survey area that were encountered by Tetra Tech biologists, or mapped by BLM or the USFS. The location of these observations are displayed in the figures in Appendix 2-E. In the field, each observation of a species that was listed during a given survey event was recorded and the extent estimated. Whitetop (*Cardaria draba*) had the highest frequency of occurrence during the 2011 and 2013 survey seasons. In 2012 and 2016, scotch thistle (*Onopordum acanthium*) was the most commonly sighted species in the survey area. In 2014, diffuse knapweed (*Centaurea diffusa*) was the most commonly sighted species. When results from all survey years and agency data are combined, the most representative species were scotch thistle, medusahead (*Taeniatherum caput-medusae*), and whitetop.

Table 2-4. Summary of Noxious Weed Species Observed in the Field and Identified from BLM and USFS Spatial Data

Scientific Name (Synonym name)	Common Name	Noxious Weed Designation and List[1]	County Where Observed	Observation Source(s)[2]	Estimated Acres within Survey Area
Acroptilon repens (Centaurea repens)	Russian knapweed	B (Oregon) A (Union) B (Baker, Malheur[3], Morrow, Umatilla)	Morrow	TT, BLM	5.5
			Umatilla	TT, BLM	13.0
			Union	TT, BLM	0.5
Aegilops cylindrica	Jointed goatgrass	B (Oregon) A (Baker, Malheur) B (Morrow, Umatilla, Union)	Baker	TT, BLM	37.1
			Umatilla	TT, BLM	21.7
			Union	TT, BLM	0.5
Ailanthus altissima	Tree of heaven	B (Oregon)	Umatilla	TT	0.5
Bassia scoparia (Kochia scoparia)	Kochia; burning bush	B (Oregon) B (Morrow, Umatilla, Agricultural Class B[4] Union) C (Baker, Malheur)	Baker	TT, BLM	6.2
			Malheur	TT, BLM	6.3
			Morrow	TT, BLM	4.9
			Umatilla	TT, BLM	1.2
			Union	TT, BLM	0.5
Cardaria draba (Lepidium draba)	Whitetop; hoary cress	B (Oregon) A (Morrow, Union) B (Baker[5], Malheur, Umatilla)	Baker	TT, BLM, USFS	208.8
			Malheur	TT, BLM, USFS	185.8
			Union	TT, BLM, USFS	6.1
Carduus nutans	Musk thistle	B (Oregon) A (Morrow) B (Malheur, Umatilla) Watch List (Baker)	Baker	TT	4.3
			Malheur	TT	6.5
			Union	TT	10.1
Centaurea diffusa	Diffuse knapweed	B (Oregon) A (Baker, Malheur) B (Morrow, Umatilla, Union)	Baker	TT, BLM, USFS	5.0
			Malheur	TT, BLM, USFS	1.8
			Morrow	TT, BLM, USFS	23.6
			Umatilla	TT, BLM, USFS	0.5
			Union	TT, BLM, USFS	11.8

Scientific Name (Synonym name)	Common Name	Noxious Weed Designation and List[1]	County Where Observed	Observation Source(s)[2]	Estimated Acres within Survey Area
Centaurea stoebe subsp. *micranthos (Centaurea maculosa)*	Spotted knapweed	B, T (Oregon) A (Baker, Malheur, Umatilla) B (Morrow, Union)	Baker	TT, BLM, USFS	0.6
			Malheur	TT, BLM, USFS	1.9
			Morrow	TT, BLM, USFS	0.1
			Umatilla	TT, BLM, USFS	2.0
Centromadia pungens subsp. *pungens*[6] *(Hemizonia pungens)*	Spikeweed; common tarweed	B (Oregon) A (Morrow)	Morrow	TT	0.5
Ceratocephala testiculata (Ranunculus testiculatus)	Bur buttercup	C (Baker)	Baker	TT	27.0
			Malheur	TT	185.1
			Umatilla	TT	0.1
Chondrilla juncea	Rush skeletonweed	B, T (Oregon) A (Baker, Malheur, Morrow, Umatilla, Union)	Baker	TT, BLM	9.1
			Malheur	TT, BLM	326.8
			Morrow	TT, BLM	0.1
Cichorium intybus	Chicory	B (Baker)	Baker	TT	0.1
			Union	TT	10.8
Cirsium arvense	Canada thistle	B (Oregon) B (Malheur, Morrow, Umatilla, Union)	Baker	TT, BLM, USFS	10.7
			Malheur	TT, BLM, USFS	3.9
			Morrow	TT, BLM, USFS	7.2
			Umatilla	TT, BLM, USFS	28.6
			Union	TT, BLM, USFS	21.6
Cirsium vulgare	Bull thistle	B (Oregon) B (Baker) Agricultural Class B[4] (Union) C (Malheur)	Baker	TT, BLM	1.7
			Morrow	TT, BLM	0.1
			Umatilla	TT, BLM	3.5
			Union	TT, BLM	3.2
Conium maculatum	Poison hemlock	B (Oregon) B (Morrow) Agricultural Class B[4] (Union) C (Baker, Malheur)	Baker	TT	1.9
			Morrow	TT	0.3
			Umatilla	TT	0.2

Scientific Name (Synonym name)	Common Name	Noxious Weed Designation and List[1]	County Where Observed	Observation Source(s)[2]	Estimated Acres within Survey Area
Convolvulus arvensis	Field bindweed	B, T (Oregon) B (Morrow) C (Baker, Malheur)	Baker	TT	67.8
			Malheur	TT	59.5
			Umatilla	TT	27.3
			Union	TT	4.9
Cynoglossum officinale	Houndstongue	B (Oregon) A (Morrow) Agricultural Class B[4] (Union) B (Malheur)	Baker	TT, BLM, USFS	24.2
			Umatilla	TT, BLM, USFS	21.8
			Union	TT, BLM, USFS	63.4
Dipsacus fullonum	Fuller's teasel	B (Baker)	Baker	TT, USFS	3.5
			Morrow	TT, USFS	0.3
			Umatilla	TT, USFS	23.2
			Union	TT, USFS	3.8
Equisetum arvense[7]	Western horsetail	C (Malheur)	Umatilla	TT	0.1
Euphorbia esula	Leafy spurge	B, T (Oregon) A (Baker, Malheur, Morrow, Umatilla, Union)	Baker	TT, BLM	0.7
Galium aparine	Catchweed bedstraw	Agricultural Class B[4] (Union)	Baker	TT	1.1
			Union	TT	0.1
Halogeton glomeratus	Halogeton	B (Oregon) C (Malheur)	Malheur	TT, BLM	6.5
			Umatilla	TT, BLM	0.1
Hypericum perforatum	Klamathweed; St. Johnswort	B (Oregon) A (Malheur) Agricultural Class B[4] (Union) B (Baker, Morrow, Umatilla)	Baker	TT, USFS	0.1
			Umatilla	TT, USFS	24.4
			Union	TT, USFS	10.5
Lepidium latifolium	Perennial pepperweed	B, T (Oregon) A (Baker, Union) B (Malheur[8], Morrow, Umatilla)	Baker	TT, BLM	4.2
			Malheur	TT, BLM	5.5
Linaria dalmatica	Dalmatian toadflax	B, T (Oregon) A (Baker, Malheur, Morrow) B (Umatilla, Union)	Malheur	BLM, USFS	0.2
Linaria vulgaris	Yellow toadflax	B, T (Oregon) A (Malheur, Morrow) B (Baker)	Umatilla	TT	9.9

Scientific Name (Synonym name)	Common Name	Noxious Weed Designation and List[1]	County Where Observed	Observation Source(s)[2]	Estimated Acres within Survey Area
Melilotus officinalis	Sweet clover	C (Malheur)	Baker	TT	0.8
			Malheur	TT	1.0
			Umatilla	TT	0.1
Onopordum acanthium	Scotch thistle	B (Oregon) A (Baker, Morrow) B (Malheur, Umatilla, Union)	Baker	TT, BLM, USFS	156.4
			Malheur	TT, BLM, USFS	263.1
			Morrow	TT, BLM, USFS	2.5
			Umatilla	TT, BLM, USFS	3.2
			Union	TT, BLM, USFS	16.4
Potentilla recta	Sulfur cinquefoil	B (Oregon) A (Malheur, Union[9]) B (Baker, Union[9])	Baker	TT, USFS	0.1
			Union	TT, USFS	19.1
Salsola tragus (S. iberica; S. kali)	Russian thistle	Agricultural Class B[4] (Union) C (Baker, Malheur)	Baker	TT, BLM	20.3
			Malheur	TT, BLM	75.9
			Morrow	TT, BLM	38.9
			Umatilla	TT, BLM	5.3
			Union	TT, BLM	0.5
Salvia aethiopis	Mediterranean sage	B (Oregon) A (Malheur, Morrow) Watch List (Baker)	Malheur	BLM	5.6
Taeniatherum caput-medusae	Medusahead	B (Oregon) A (Union) B (Morrow) C (Baker, Malheur)	Baker	TT, BLM	156.3
			Malheur	TT, BLM	101.6
			Morrow	TT, BLM	0.1
			Umatilla	TT, BLM	124.6
			Union	TT, BLM	41.9
Tamarix ramosissima	Saltcedar	B, T (Oregon) A (Baker) C (Malheur)	Malheur	TT, BLM	102.9
			Umatilla	TT, BLM	0.7
Tribulus terrestris	Puncturevine	B (Oregon) B (Baker, Morrow, Umatilla, Union) C (Malheur)	Baker	TT, BLM	0.2
			Union	TT, BLM	0.4

Scientific Name (Synonym name)	Common Name	Noxious Weed Designation and List[1]	County Where Observed	Observation Source(s)[2]	Estimated Acres within Survey Area
Ventenata dubia	Ventenata; North Africa grass	B (Malheur, Morrow)	Baker	TT	0.5
			Union	TT	0.5
Verbascum blattaria	Moth mullein	C (Baker)	Baker	TT	0.1
			Malheur	TT	0.1
			Umatilla	TT	0.1
Verbascum thapsus	Common mullein	C (Baker)	Baker	TT	17.2
			Morrow	TT	0.1
			Umatilla	TT	0.5
			Union	TT	9.0

[1] Designations are defined in Section 2.3.2.2. Lists are in parentheses: Oregon list and/or County List(s).
[2] TT=Project surveys, BLM (2016a), USFS (2016)
[3] Owners or occupants in Malheur County with Russian knapweed infestations are required to control a minimum 20 percent of their annual infestation per discreet parcel of land per year. This includes a 50-foot buffer plus additional amounts that total 20 percent of the infestation.
[4] Agricultural Class B is defined as "…a weed of economic importance, specifically in Union county agriculture, which is both locally abundant and abundant in neighboring counties."
[5] *Whitetop* is listed as a "B" weed in the portion of Baker County that the Project overlaps, though considered an "A" weed in nearby areas of the county, including West Baker Valley, where control is mandatory.
[6] Considered native in California, but introduced in Oregon (Baldwin and Strother 2006; Jaster et al. 2016).
[7] This species is native to Oregon.
[8] Perennial pepperweed is a "B" weed in the portion of Malheur County that the Project overlaps, though considered an "A" weed in a portion of Malheur County south of the Project.
[9] This species is listed on both the Class A and Class B lists in Union County.
* Cheatgrass (*Bromus tectorum*) is listed as a Class C noxious weed by Malheur County, but was not mapped in the field due to the abundance of the species throughout the survey area.

2.5 Conclusion

The TVES provided an effective passive sampling technique for detecting mammals, birds, reptiles, and amphibians. The TVES results offer an insight into the likelihood of a species occurring within the survey area, although the lack of detecting a species does not infer absence of that species due to the limitations existing with this survey technique. There were 174 wildlife species recorded within the survey area during the TVES, including 136 birds, 23 mammals, 13 reptiles, and 2 amphibians. Of the 174 recorded wildlife species, 26 were special status species. Some special status species observations of note include two active burrowing owl burrows and a Lewis' woodpecker nest cavity. Approximately 3,435 acres of potential pygmy rabbit habitat were mapped within the Baker County survey area and 1,504 acres within the Malheur County survey area. A couple large calf/cow elk herds were observed on the Morgan Lake Alternative, which appears to be a valuable area for elk.

Furthermore, the TVES contributed information necessary to refine ODFW's habitat categorization process, a process designed to determine the appropriate mitigation values for loss of or damage to wildlife habitat during Project construction and operation. During TVES, six broad general vegetation types and 19 more specific habitat types have been mapped within the

survey area. Shrub/grass was the most common general vegetation type followed by forest/woodland, then agriculture/developed.

The summary report identifies noxious weeds that were identified during field surveys and desktop analyses of spatial datasets from the BLM and the USFS. In the field, noxious weeds were recorded throughout the survey years based on the most appropriate species list available for a given year. The list evolved over the years due to survey location, changes in the lists themselves, and recommendations of agency personnel. Scotch thistle, medusahead, and whitetop were the most commonly observed species when considering survey data in combination with agency-provided data.

Additional TVES will be conducted in the future to close data gaps where access to private property was denied or changes to the Site Boundary are proposed. This will ensure that necessary data on special status animal species, habitat types, and noxious weeds are collected prior to ground-disturbing activities. The results from the TVES provide IPC and Project permitting agencies specific information on wildlife and plant species and their occurrence within the Site Boundary. TVES will be used to assist with final siting of the proposed transmission line and related and supporting facilities; evaluate the potential impacts of construction, operations, and maintenance of the Project; provide the basis for environmental protection measures; and inform mitigation plans.

3.0 SPECIAL STATUS PLANT SURVEY

3.1 Introduction

To help determine impacts to SSP species that could occur from construction of Project components, the presence of BLM and USFS listed sensitive plant species; FWS listed threatened, endangered, proposed, and candidate plant species; and Oregon-state-listed threatened and endangered species, collectively referred to in this report as SSPs, within the proposed Site Boundary is required to be evaluated. No Project disturbance would occur outside of the Site Boundary. Nomenclature for SSP species in this report first follows the ODA's list of Oregon threatened, endangered, and candidate species (ODA 2016), then the Oregon BLM special status species list (BLM 2015) and the Idaho BLM special status species list (BLM 2016a); the Natural Resources Conservation Service's PLANTS database (USDA, NRCS 2016) is used for all other species.

The Project, as proposed, would cross private and public lands. Public lands that would be crossed are managed, in part, with the intent of conserving and improving SSP occurrences, and public land managers have gathered data on SSP species on lands they manage. Am SSP occurrence is a location where an SSP species is known to occur. The default separation distance between occurrences is 1 kilometer (0.62 mile), which provides a repeatable method for assigning observations in different but nearby places into occurrences for discussions of distribution and ranking (NatureServe 2004). Data on occurrences of SSPs on private lands, with the exception of some statewide data gathered by state agencies, are largely unavailable. As a result, existing databases could not always be relied upon to determine the locations of SSP species that could be impacted by the Project. Therefore, SSP surveys were implemented to supplement existing data. Field surveys could not be conducted in all suitable habitats crossed by the Project because IPC does not currently have access to all private land crossed by the Proposed Route and alternatives.

Preliminary SSP surveys for the Project began in 2011, with additional surveys completed in 2012, 2013, 2014, and 2016 due to changes in route and alternative alignment and private land access; results of each year's survey are provided in previous technical reports (Tetra Tech 2011a, 2012, 2013, 2014, and 2016). This report provides a summary of the results of Project surveys from 2011 to 2016 within the Site Boundary for the Amended pASC. Additionally, known observations and occurrences of plants, provided by ORBIC (2016a), BLM (2016b), USFS (2016), and IDFG (2016), were compiled and are summarized.

3.2 Survey Area

The survey area for SSP species is the Site Boundary as defined in Exhibit C of the Amended pASC. The Site Boundary varies based on the Project features, but in general it includes a 500-foot-wide corridor around the centerline of the transmission line; a 188.9-acre area for the Longhorn substation; a 100-foot-wide corridor around existing roads with substantial modification; a 200-foot-wide corridor around new roads; a 50-foot-wide corridor around distribution lines providing power to communication stations; and the mapped area (footprint) of multi-use areas, light-duty fly yards, and pulling and tensioning sites that fall outside of the transmission line Site Boundary.

The survey area crossed public and private lands. Public lands were surveyed in their entirety, except where access restrictions on adjacent private land prevented reasonable access or where terrain was prohibitive. Surveys on private lands occurred where landowners agreed to allow access for biological surveys. The survey area encompassed a total of 22,904 acres.

Approximately 6,543 acres (29 percent) of the survey area occurred on public land with an additional 16,361 acres (71 percent) on private land (Figures 1-1 and 1-2).

3.3 Methods

Prior to surveys, a list of SSPs with potential to occur within each year's survey area and a survey schedule were prepared and approved by the BLM and ODA. Each year's list of potentially occurring SSP species was compiled from several data sources: the ODA Threatened, Endangered, and Candidate Plant List, the BLM Oregon/Washington Special Status Species List, and a selection of species from the ORBIC database, BLM's SSP dataset called GeoBOB, and SSP species observed during previous years of Project specific surveys that occurred within 5 miles the survey area.

Species were included if they were known or suspected to occur within Malheur, Baker, Union, Umatilla, or Morrow counties and in habitats similar to those traversed by each year's survey area based on a cursory review of the GAP vegetation map (USGS 2011). Additionally, some species that occur in adjacent counties were included on the list based on habitat requirements and their potential to occur in the survey area. The compiled list of SSP that were considered for survey between 2011 and 2016 is included in Appendix 3-A.

Surveys were conducted in April through early July, within the agency-recommended survey window for the SSP species and when species phenology was conducive to identification. Prior to conducting pedestrian field surveys within the survey area, biologists visited known occurrences of several SSP species, as described in individual years' survey reports, to observe habitat requirements and current phenology. Additionally, biologists visited the herbarium at the College of Idaho to review specimens of potentially occurring SSPs.

Initial surveys began in 2011 and followed a two-phased approach where suitable habitat polygons for SSP species were identified through GIS analysis of National Agriculture Imagery Program, GAP vegetation map (USGS 2011), and ORBIC occurrence data. These suitable habitat polygons were the areas targeted for surveys. Spacing between the individual botanists while in the field was adjusted based on habitat, in order to achieve 100 percent visual coverage. This method of habitat mapping, as well as the list of potential SSPs, was developed through discussions with land managers and biologists from the BLM, USFS, and other agency meetings held during summer 2008 and fall 2010 (Tetra Tech 2011b).

The method of limiting surveys to suitable habitat polygons was later deemed ineffective as some SSP plants were identified outside of those polygons, so in 2012, 2013, 2014, and 2016 surveys were expanded to include all areas within the Site Boundary. The 2012 SSP survey area was updated from 2011 to include additional survey areas resulting from changes in alternate routes and methodology. The 2013, 2014, and 2016 surveys included additional alternate routes and changes in Project alignment and were conducted concurrently with the TVES, but timed to meet the phenology of potential SSP species.

During field surveys, biologists familiar with the potential SSP species and their associated habitats traversed accessible portions of the survey area searching for SSP species and identifying locations with high potential for SSP occurrence using USFS and BLM's intuitive-controlled pedestrian survey method (USFS/BLM 1998). During 2012 surveys, biologists traversed representative cross sections of accessible portions of the survey area to identify locations with high potential for SSP species occurrence. When potential habitat, based on published data for each species, was identified, botanists walked a systematic transect looking for SSP species. The 2013, 2014, and 2016 field surveys were conducted concurrently with the TVES survey and accessible portions of the survey area were traversed to identify potential

habitat and SSP occurrence. Additionally, any unique habitat particular to potential SSP species was recorded with a GPS point and a photograph.

The survey area was located using a Trimble GeoXT 6000 GPS unit equipped with Esri ArcPAD 10 field mapping and data collection software. Species identification was verified using *Flora of the Pacific Northwest* (Hitchcock and Cronquist 1973) and *Intermountain Flora* (Cronquist et al. 1972; Holmgren et al. 2012) and habitat for SSPs was defined from the ODA Plant Conservation program (ODA 2016a), BLM field guide (BLM 2000), and entries in *Flora of the Pacific Northwest* (Hitchcock and Cronquist 1973) and *Intermountain Flora* (Cronquist et al. 1972; Holmgren et al. 2012).

When an SSP was located, a GPS position was recorded, along with associated data consistent with the Oregon Rare Plant Field Survey Form (ORBIC 2016b), in the form of a GIS survey geodatabase. Point locations were recorded for SSP observations occupying an area less than 100 meters in diameter; the approximate area occupied was then noted in the SSP survey geodatabase. Surveyors walked polygons around larger observations where possible, otherwise boundaries were delineated by taking several GPS points and connecting the points into polygons in the office. In addition to GPS location and area occupied by an SSP, the following information was recorded in the SSP survey geodatabase for each occurrence:

- Aspect of slope
- Phenological phase
- Slope angle
- Soil type
- Associated plant species
- General plant community/habitat
- Light available
- Number of individuals found
- Soil moisture
- Topographic position
- Vigor
- Visible threats

A geotagged photo of the SSP was also taken at each location using the built-in camera on the GPS unit. Photos are included in each years' survey report (Tetra Tech 2011a, 2012, 2013, 2014, and 2016).

Assigning groups of SSP species observations into occurrences helps provide a repeatable method of discussing distribution. Observations from the 2011 through 2016 Project surveys were grouped with existing data sources (ORBIC 2016a; BLM 2016b; USFS 2016; IDFG 2016) to illustrate the number of occurrences of each SSP within the survey area. Observations were considered part of the same SSP species occurrence if it was within 0.62 mile from another observation (NatureServe 2004). Observations greater than 0.62 mile away from other observations were considered a different occurrence. Occurrences and observations from BLM, ORBIC, and USFS that were ranked as historic, extirpated, or unable to find were removed from the groupings.

3.4 Results

Surveys for SSP were completed on approximately 14,727 acres or 64 percent of the survey area (Figure 3-1). Approximately 7,762 acres of private land were not surveyed because landowners had not granted right-of-entry for biological surveys. An additional 415 acres of public lands were not surveyed due to access restrictions on adjacent private land or prohibitive terrain.

Ten SSPs are known to overlap the survey area. Nine SSP species were observed during Project surveys between 2011 and 2016, and 1 additional species has a previously known occurrence (ORBIC 2016a; Table 3-1). Four of the these species are listed as either threatened or endangered by ODA (ODA 2016), seven are listed as strategic or sensitive by Oregon BLM (BLM 2015), eight are listed as sensitive by Idaho BLM (BLM 2016a), and three are listed as strategic or sensitive by USFS (USFS 2015). None of these species are listed as threatened or endangered by FWS (FWS 2016). Three of the 10 species are not listed by ODA, Oregon BLM, or USFS, but are listed as a SSP in Idaho by Idaho BLM (BLM 2016a). Douglas' clover (*Trifolium douglasii*) has a known occurrence (ORBIC 2016a) that overlaps a small portion of the survey area. Surveys were not conducted in the area of overlap due to access restrictions on private land, so it could not be confirmed. No individuals or potential habitat were identified within areas surveyed for the FWS listed threatened Howell's spectacular thelypody (*Thelypodium howellii* ssp. *spectabilis*).

Snake River goldenweed (*Pyrrocoma radiata*) covers the most acreage within the survey area, while Cronquist's stickseed (*Hackelia cronquistii*) has the most occurrences, but occupies the second most acres. Mulford's milkvetch (*Astragalus mulfordiae*) has the third-most acres within the survey area. All other SSP species occupy less than 4 acres within the survey area.

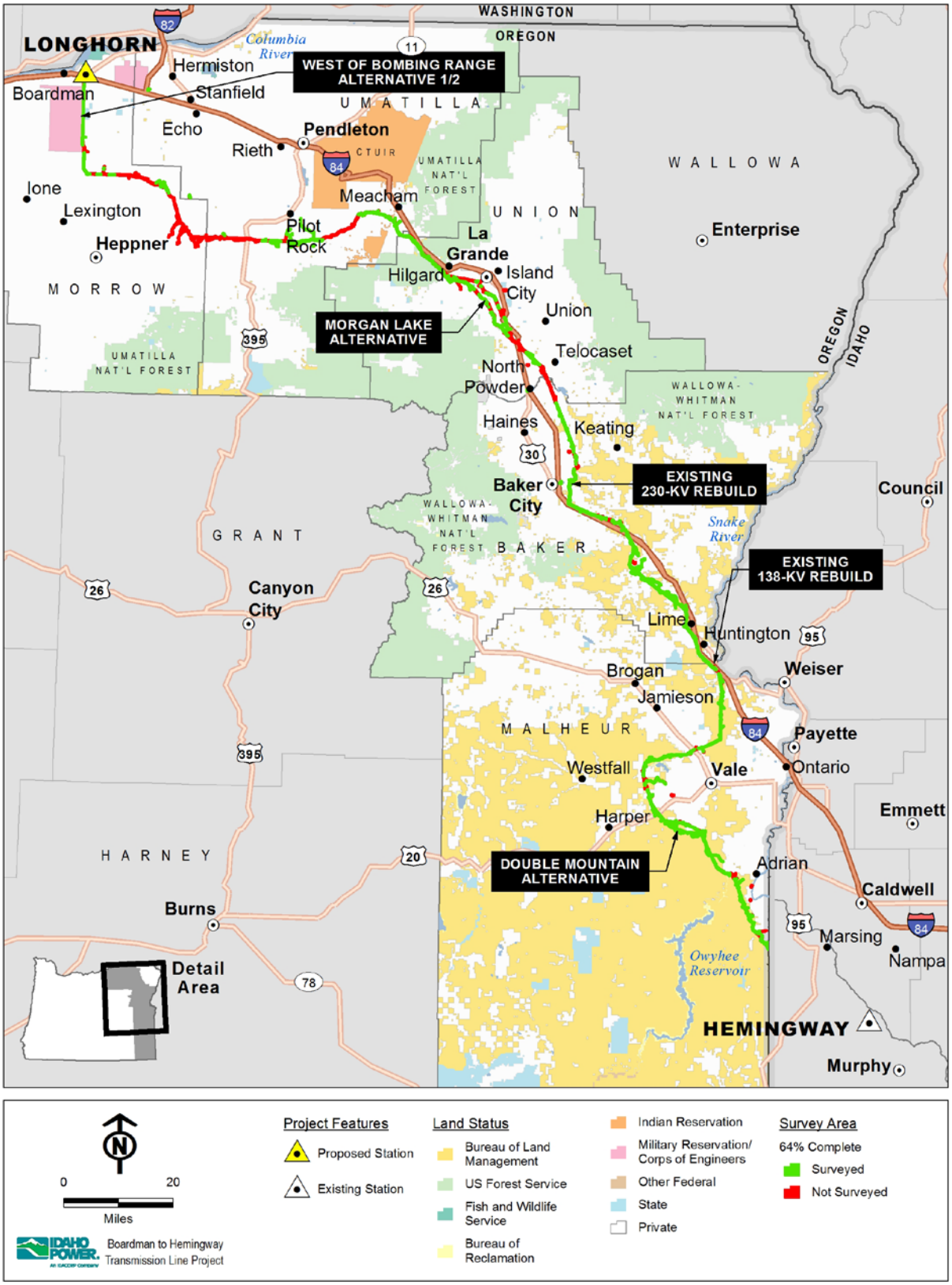

Figure 3-1. Special Status Plant Survey Area

Table 3-1. Special Status Plant Species Overlapping the Survey Area

Common Name	Scientific Name	ODA Status[1]	BLM Status[2]	USFS Status[3]	Survey Window	County of Occurrence	Number of Occurrences Overlapping the Survey Area	Acres within Survey Area	Observation Source(s)	Appendix 3-B Figure Number(s)
Calcareous buckwheat	*Eriogonum ochrocephalum* var. *calcareum*	NA	ID Type 3	NA	May-July	Malheur	2	3.21	2013 survey 2016 survey	Figure 18
Cronquist's stickseed	*Hackelia cronquistii*	T	OR Sensitive, ID Type 3	NA	May	Malheur	8	32.73	2012 survey 2013 survey 2016 survey ORBIC 2016a BLM 2016b	Figures 18, 19, 20, 21, and 22
Cusick's pincushion	*Chaenactis cusickii*	NA	ID Type 2	NA	May-June	Malheur	1	0.01	2016 survey	Figure 20
Douglas' Clover	*Trifolium douglasii*	NA	OR Sensitive, ID Type 2	OR Sensitive	June-July	Union	1	0.04	ORBIC 2016a	Figure 9
Greeley's Cymopterus	*Cymopterus acaulis* var. *greeleyorum*	NA	OR Sensitive, ID Type 3	NA	Flower March-April, Fruiting into June	Malheur	1	0.08	2011 survey	Figure 22
Lawrence's milkvetch	*Astragalus collinus* var. *laurentii*	T	OR Strategic	OR Strategic	Late May-August	Morrow, Umatilla	3	0.18	2016 survey ORBIC 2016a	Figures 5 and 6
Malheur cryptantha	*Cryptantha propria*	NA	ID Type 4	NA	April-May	Malheur	3	0.45	2012 survey 2016 survey	Figures 21 and 22
Mulford's milkvetch	*Astragalus mulfordiae*	E	OR Sensitive, ID Type 2	NA	May-June	Malheur	1	9.74	2016 survey ORBIC 2016a BLM 2016b	Figures 21 and
Playa buckwheat	*Eriogonum salicornioides*	NA	OR Sensitive	OR Sensitive	May-July	Malheur	2	1.03	2016 survey	Figure 20
Snake River goldenweed	*Pyrrocoma radiata*	E	OR Sensitive, ID Type 3	NA	June-July	Baker	3	69.56	2012 survey 2013 survey 2016 survey ORBIC 2016a BLM 2016b	Figures 15 and 16

[1] ODA 2016: T=threatened, E=endangered
[2] BLM 2015, BLM 2016a
[3] USFS 2015

Figures in Appendix 3-B include compiled observations included in each occurrence grouping that overlaps the survey area and are listed in Table 3-1. ORBIC (2016a) occurrences that overlap the survey area that were removed from the groupings are summarized in Table 3-2. Additionally, all other historic occurrences or observations that do not overlap the survey area are included on the figures (Appendix 3-B) and labeled as historic. Six occurrences from five different SSPs were removed from groupings that overlap the survey area because the records are historic and no longer exist at that location. Unique habitats particular to potential SSP species are summarized in field survey reports, but not included in this summary report (Tetra Tech 2011a, 2012, 2013, 2014, and 2016).

Table 3-2. Special Status Plant Occurrences Removed From Groupings

Common Name	Scientific Name	ODA Status[1]	BLM Status[2]	USFS Status[3]	Observation Source(s)	Reason for Removal	Appendix 3-B Figure Number
Hairy wild cabbage	*Caulanthus pilosus*	NA	OR Sensitive	NA	ORBIC 2016a, Occurrence 14	Historic rank	Figure 15
Lawrence's milkvetch	*Astragalus collinus* var. *laurentii*	T	OR Strategic	OR Strategic	ORBIC 2016a, Occurrence 1	Two individuals observed in 1976. Positive identification not confirmed. Rank of D-poor estimated viability.	Figure 2
Oregon Semaphore grass	*Pleuropogon oregonus*	T	OR Sensitive	Sensitive	ORBIC 2016a, Occurrence 7	Few plants last observed in 1986 and not found during 2016 surveys.	Figure 9
Salt Heliotrope	*Heliotropium curassavicum*	NA	OR Sensitive	NA	ORBIC 2016a, Occurrences 10 and 12	Historic rank (#10) and no rank but from herbarium collection with no date (#12).	Figures 8 and 13
Swamp willow-herb	*Epilobium palustre*	NA	ID Type 4	NA	ORBIC 2016a, Occurrence 2	Historic rank and Idaho BLM SSP only in Union County	Figure 9

[1]ODA 2016: T=threatened
[2]BLM 2015, BLM 2016a
[3]USFS 2015

3.5 Conclusion

Tetra Tech surveyed approximately 14,893 acres of public and private land in Oregon for the presence of SSPs. Of the total 23,198 acres of survey area, 64 percent were surveyed for the presence of SSPs; 7,885 acres were not accessible due to access restrictions on private land,

and approximately 420 acres of public land were not accessible due inability to access parcels without crossing restricted private land or due to terrain restrictions. Nine SSP species were found within the survey area during field surveys between 2011 and 2016, and one additional SSP species has a known occurrence that overlaps the survey area, but due to lack of right-of-entry on the private parcel, the occurrence could not be confirmed. Four of the ten SSP species with occurrences that overlap the survey area are listed as threatened or endangered in Oregon by ODA, while the remaining six are listed as sensitive by Oregon and/or Idaho BLM offices or USFS.

The four Oregon threatened or endangered species include Lawrence's milkvetch, Mulford's milkvetch, Cronquist's stickseed, and Snake River goldenweed. Snake River goldenweed, Cronquist's stickseed, and Mulford's milkvetch cover the most acres within the survey area with 70, 33, and 10 acres, respectively. No individuals or potential habitat was identified for Howell's spectacular thelypody, which is listed as threatened by FWS and as endangered by ODA.

4.0 WASHINGTON GROUND SQUIRREL SURVEY

4.1 Introduction

The objective of these surveys was to identify the presence of WAGS (*Urocitellus washingtoni*) colonies in the vicinity of the Proposed Route and alternatives so that Project impacts to WAGS may be avoided and/or minimized. Surveys were conducted in 2011, 2012, 2013, and 2014.

WAGS was recognized as a candidate species for listing under the Endangered Species Act in 1994 (59 FR 58982). The species remained a candidate for listing during Tetra Tech's surveys from 2011 to 2014. However, a recent finding by the FWS in September, 2016 has led to a decision that the species is not in danger of extinction, and therefore does not warrant listing under the Endangered Species Act (81 FR 64854). The finding cites an abundance of potential habitat, connectivity between patches of habitat, and current management actions and policies favorable to the species as critical factors in the decision making (81 FR 64855). The State of Oregon lists WAGS as an endangered species under Oregon Revised Statutes 496.172(2).

4.2 Survey Area

ODFW considers a 785-foot buffer in continuous suitable habitat around WAGS colonies as Category 1 habitat pursuant to the ODFW habitat mitigation policy (OAR 635-415-0025). As a result, the survey area consisted of the Site Boundary plus a 785-foot buffer in suitable habitat (Figure 4-1). Suitable habitat for WAGS includes native grasslands and shrub-steppe; however, the species is also known to use lesser quality habitat such as non-native annual grasslands. The survey area extends from Bombing Range Road in Morrow County east to East Birch Creek Road south of Pilot Rock, OR in Umatilla County (milepost 0 to 64 of the Proposed Route). IPC has identified a total of 18,263 acres of survey area.

Of the 18,263 acres of WAGS survey area, 1,757 acres have been surveyed including all of the survey area along the Naval Weapons Systems Training Facility in Boardman, Oregon. The vast majority of unsurveyed WAGS habitat is attributed to the recent modification of the location of the Proposed Route in Morrow and Umatilla counties. ODFW has provided guidance on WAGS pre-construction surveys, and has indicated that surveys for this species are good for 3 years (i.e., the year of survey and 2 years after). With this in mind, IPC in consultation with ODOE, has decided to delay additional WAGS surveys until later in the Project schedule so that survey results will be valid for Project construction. IPC will survey for WAGS on all previously unsurveyed parcels, where ROE is granted, prior to issuance of a site certificate. IPC will perform pre-construction WAGS surveys of all previously surveyed and unsurveyed areas of ground squirrel habitat within the three years prior to scheduled construction. Survey results will be provided to ODOE. Areas of potential habitat that were surveyed and those that were not surveyed are displayed in Appendix 4.

4.3 Methods

The survey methods used during the WAGS surveys were based on the survey protocols described in Morgan and Nugent (1999). The details and justifications for these methods are provided in the Revised Final Biological Survey Work Plan (Attachment P1-2).

The use of this protocol was approved by ODFW prior to commencing the surveys. Clarification on the survey methods was provided by Russ Morgan, Steve Cherry and Jon Germond of ODFW prior to and during surveys.

Prior to commencing surveys, Tetra Tech identified suitable habitat for the WAGS based on aerial photography and guidance from ODFW. Although WAGS are found in the highest densities in sagebrush habitats and bunchgrass grasslands with few invasive species (Betts

1990), ODFW advised Tetra Tech that WAGS colonies can be found in all habitats, regardless of quality, with the exception of active agricultural fields and developed areas. In addition, ODFW advised Tetra Tech that WAGS can use the burrows of other species and, therefore, any burrows of the appropriate size could potentially contain this species.

The survey area was surveyed twice, once in April and once in May during survey years to correspond with the highest WAGS activity period when juveniles have emerged and alarm calls are most frequent. Prior to the commencement of the survey effort, confirmation of WAGS activity was obtained by contacting local specialists or visiting known colonies.

The survey area was traversed via a walking meandering transect, with a transect spacing of 165 feet. When surveyors observed potential burrows, potential scat, heard possible alarm calls or inter-colony communications, they alerted the group and then listened and visually scanned the area in detail for any squirrels or additional sign. Surveys were not conducted when sustained wind speeds exceeded 15 miles per hour (mph). Professional judgment was used when wind speeds were greater than 6 mph or when visibility was poor, as both of these conditions could limit the observer’s ability to detect alarm calls or observe sign.

Potential burrows were recorded on the field datasheet and labeled with a unique numeric identifier. Information recorded on the datasheet for potential burrows included location of burrows (using GPS units to record burrow location in Universal Transverse Mercator coordinates), number of burrows, habitat, and identifying features of location. Weather, survey personnel, time of day, and areas surveyed were recorded each day surveys were conducted. Precipitation, average wind speed and direction, cloud cover, and temperature were recorded at the start, middle, and end of each survey day.

4.4 Results

Tetra Tech has surveyed 1,757 of the total 18,263 acres of potential WAGS habitat within the survey area. Surveys identified 52 acres of Category 1 habitat associated with three active WAGS colonies. Category 1 habitat was found adjacent to Bombing Range Road, north of milepost eight, and north and east of milepost fourteen of the proposed route. ODFW considers an active WAGS colony to be the single or cluster of holes as well as the required habitat for squirrel survival, which is a 785-foot buffer around the active holes. For the purposes of this survey, an active WAGS colony was identified by a combination of visual and audible confirmations (hearing alarm calls) and presence of characteristic WAGS scat around burrow entrances.

There were 415 acres of Category 2 habitat. These areas occurred adjacent to Bombing Range Road nearest to mileposts 7, 14, and 15 of the Proposed Route. This is an area of "potential WAGS use" and extends 4,921 feet beyond the colony in similar habitat type and quality. The 4,921 feet distance corresponds to the 75th percentile for documented dispersal events of juvenile male squirrels as reported by Klein (2005). All Category 1 and Category 2 habitat were found along the Bombing Range Road on the West of Bombing Range Alternative. Figures displaying Category 1 and Category 2 WAGS habitat are found in Appendix 4.

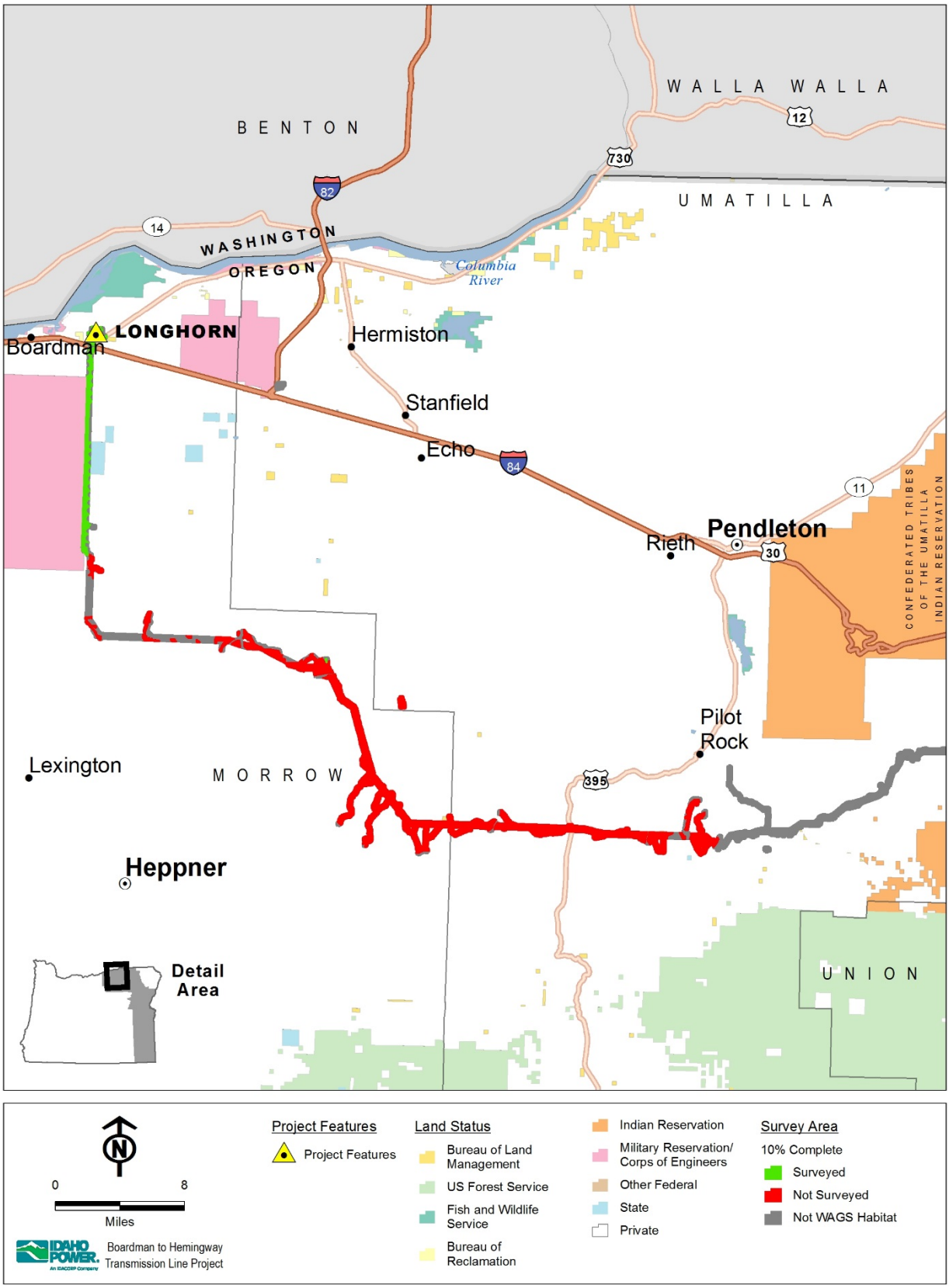

Figure 4-1. Washington Ground Squirrel Survey Area

4.5 Conclusion

Tetra Tech has surveyed 1,757 of the total 18,263 acres of potential WAGS habitat within the survey area. The 16,506 acres of unsurveyed habitat is associated with changes to the Project location in Morrow and Umatilla counties. IPC, in consultation with ODOE, has decided to delay any future WAGS surveys based on the Project schedule. This is due to the fact that the results of the WAGS surveys are only valid for 3 years with ODFW and that full pre-construction surveys are anticipated.

Within the surveyed area, there are 52 acres of Category 1 habitat, and 415 acres of Category 2 habitat. The 52 acres of Category 1 habitat are associated with three colonies identified adjacent to Bombing Range Road. All of the Category 1 habitat is located outside of the Site Boundary.

Because ground squirrel use of the landscape changes both within and between years, the colony delineations in this report represent the areas of WAGS activity during the year of survey and does not infer current activity. Research by Finger (2007) and Delavan (2008) indicate that WAGS have strong site fidelity to colonies; however, within and between years there are drift and shifts in home ranges due to local annual variation such as survival, reproduction, food availability, and juvenile dispersal. Due to the relatively narrow width of the survey area (approximately 2,000 feet at its widest), surveys may not have encompassed the full extent of these colonies given the spatial and temporal dynamics of the species.

5.0 AERIAL RAPTOR NEST SURVEY

5.1 Introduction

The objective of this survey was to identify nesting raptor species in the vicinity of the Project so that impacts to these species may be avoided and/or minimized. Aerial raptor nest surveys were performed for the Project in 2011, 2012, 2013, and 2016.

5.2 Survey Area

The FWS Draft Guidelines for Raptor Conservation in the Western United States (Whittington and Allen 2008) provides the basis for delineating survey areas for raptors. Whittington and Allen identify spatial buffers for nests of breeding raptors. These buffers reflect the species conservation ranking, species' tolerance of disturbance, and whether the species nests predominantly in open or forested habitats. The buffers are intended to protect breeding raptors from activities that could disturb the nesting attempt. Each BLM field office or USFS ranger district may have their own raptor nest stipulations defined in land use plans that may differ from the draft guidelines of the FWS (Whittington and Allen 20008).

Table 5-1 identifies the recommended spatial buffers of raptors with potential to occur within the Project area. Some of the species listed in Table 5-1 are uncommon and/or unlikely to be found in the Project area, and the survey methodology in Section 5.3 is not necessarily the preferred methodology for all species (e.g., forest-dwelling owls).

Table 5-1. FWS Recommended Raptor Spatial Buffers (Whittington and Allen 2008)

Species		Spatial Buffer in Non-urban Areas (miles)
Osprey	*Pandion haliaetus*	0.25
Bald eagle[1]	*Haliaeetus leucocephalus*	0.5 – 1.0
Northern harrier	*Circus cyaneus*	0.25
Sharp-shinned hawk	*Accipiter striatus*	0.25
Cooper's hawk	*Accipiter cooperii*	0.25
Northern goshawk	*Accipiter gentilis*	0.5
Swainson's hawk	*Buteo swainsoni*	0.25
Red-tailed hawk	*Buteo jamaicensis*	0.33
Ferruginous hawk	*Buteo regalis*	1.0
Golden eagle	*Aquila chrysaetos*	0.5
American kestrel	*Falco femoralis*	0.25
Peregrine falcon	*Falco peregrinus*	1.0
Prairie falcon	*Falco mexicanus*	0.5
Barn owl	*Tyto alba*	0.125
Flammulated owl	*Otus flammeolus*	0.25
Western screech owl	*Megascops kennicottii*	0.125
Great horned owl	*Bubo virginianus*	0.125
Northern pygmy owl	*Glaucidium gnoma*	0.25
Burrowing owl	*Athene cunicularia*	0.25
Great gray owl	*Strix nebulosa*	0.25
Long-eared owl	*Asio otus*	0.125

Species		Spatial Buffer in Non-urban Areas (miles)
Short-eared owl	*Asio flammeus*	0.25
Boreal owl	*Aegolius funereus*	0.125
Northern saw-whet owl	*Aegolius acadicus*	0.125

[1]Avoidance of 0.5 mile, if topographic or vegetative buffers exist, to 1 mile if nest is in line-of-sight of activity.

Habitat determines the extent of the survey area based on the raptor species that are likely to occur within them. Two different raptor buffer distances were applied to the Site Boundary to create the survey area. The survey area for this summary report includes the area within 0.5 mile or 1.0 mile of the Site Boundary (9/2/2016 GIS dataset), depending on the largest buffer for the raptor species likely to use the habitat. The survey area included 458,136 acres within Morrow, Umatilla, Union, Baker, and Malheur counties (Figures 1-1 and 1-2).

5.3 Methods

The raptor nest survey was performed using a Bell 206 Jet Ranger operated by JL Aviation of Boring, Oregon. JL Aviation has over 10 years of experience flying multiple wildlife surveys for ODFW, as well as raptor nest–specific survey experience in Alaska, Oregon, Idaho, and Wyoming. In 2011, 2012, and 2013, observers included a retired regional wildlife biologist from the Idaho Department of Fish and Game who has over 4,000 hours of helicopter wildlife survey experience within the states of Idaho and Oregon, and the raptor field lead who is a Tetra Tech biologist with helicopter survey experience performing sage-grouse lek and raptor nest surveys in Oregon, Idaho, Washington, and Wyoming. In 2016, two biologists who have helicopter wildlife survey experience from Tetra Tech, including the raptor field lead, observed and recorded raptor activity.

In general, the survey areas are flown by helicopter carrying two observers and the pilot. The helicopter flies at a distance of approximately 0.25 mile from the Site Boundary or centerline to allow observers to see out to 0.5 mile and back to the Site Boundary or centerline. Another transect is flown at 0.75 mile from the Site Boundary or centerline to allow observers to see out to 1.0 mile (edge of the survey area) and back to the 0.5-mile distance. This is a transect spacing of 0.5 mile. In forested habitat, transect spacing is reduced due to the increased availability of hiding cover for raptors. Occasionally, transects are abandoned for a more intuitive search method in quality habitats such as canyons, rock faces, or lone trees in open sagebrush habitat. Once the intuitive search is completed, survey continues from the point of departure from the transect. Both sides of the Site Boundary or centerline are surveyed in this manner. Private residences and associated livestock corrals are typically avoided or flown over at a higher altitude and higher rate of speed to keep disturbance from the helicopter to a minimum. As a result, nesting habitat in these areas may not be thoroughly observed.

The entire survey area was flown twice during the breeding season. The timeframe of the first raptor nest survey corresponds with late courtship and incubation or hatchling/nestling stages of most raptors expected to occur within the Project area. The second raptor nest survey corresponds with the late nestling and early fledgling period for many raptors. The second survey event also allowed the survey crew to identify nests of later breeding species such as Swainson’s hawks or any second nesting attempts of earlier nesting raptors. The survey was conducted from one hour after sunrise to one hour before sunset, as conditions allowed.

The aerial survey crew used both handwritten notes and GPS technology for data collection activities. Survey area boundaries were uploaded to the onboard Garmin aeronautical GPS unit for navigational purposes. Transect spacing was monitored by the helicopter pilot using the

aeronautical GPS unit. Raptor observations were marked using Garmin hand-held GPS units. Corresponding handwritten notes are taken and transferred to a Microsoft Excel database that contains all of the survey results. Pictures were taken when possible to document nests and aid in species identification and copies were placed in the Project file.

To avoid over-stressing adult raptors or exposing young raptors to harsh elements, surveys did not occur during inclement weather (heavy precipitation, high winds, and extreme temperatures). In addition, a minimum distance of approximately 50 feet was maintained from active nests and observation time is typically less than 10 seconds and rarely exceeds 20 seconds. As a result of trying to avoid disturbance to raptors and maintain survey crew safety, GPS locations of the nest sites can be offset up to 50 to 200 feet from the actual nest location. Even with some offset from the actual nest locations, the GPS data will be sufficient for relocating the identified nests, planning, and applying appropriate mitigation measures, where warranted.

5.4 Results

The aerial raptor nest surveys completed approximately 425,735 acres (93 percent) of the total 458,136-acre survey area (Figure 5-1) and recorded approximately 1,100 unique records of raptor activity or nest sites within the survey area. All raptor activity recorded within the survey area is maintained in the Project record. A data point was collected when one of the three following observation types occurred:

1. Observation—A raptor(s) is observed but cannot be associated with any type of nest structure. An observation typically occurs when a raptor is soaring or foraging or when a raptor is flushed from a perch or roost site.
2. Active Nest—A raptor(s) is observed and is associated with a nest site. Active nests (occupied nest) are identified by a raptor sitting/incubating on the nest, eggs on the nest, or a hatchling/nestling on the nest or a fledgling nearby the nest.
3. Inactive Nest—A nest is observed but no recent raptor activity can be associated with it.

Raptor nest buffers applied to active nests in this summary report correspond with the seasonal and spatial restrictions for biological resources identified in Appendix B of the Project Final Environmental Impact Statement and Proposed Land Use Plan Amendments (BLM 2016, Table 5-2). These BLM recommended spatial buffers differ from the FWS spatial buffers used for the survey area (Section 5.2) and annual survey technical reports.

Table 5-2. BLM Modified Spatial Buffers for Active Raptor Nests

Species	Spatial Buffers (miles)	Seasonal Restriction
Northern goshawk	0.25	April 1 to August 30
Bald eagle	0.5	February 1 to July 30
Golden eagle	0.5	February 1 to June 30
Ferruginous hawk	0.5	March 15 to July 15
All other raptor species	0.5	March 15 to June 30

A total of 125 active raptor nests were identified within the survey area. After buffering these active nests, 88 of the active nests' buffers intersect the Site Boundary. The most common nesting raptor in the survey area was the red-tailed hawk, with 67 active nests recorded. A total of 321 inactive nests were also identified within the survey area, only three of those were within the Site Boundary. There were also 51 common raven (*Corvus corax*) nests recorded within the survey area (22 within the Site Boundary) that could be used by raptors in subsequent years.

A total of 589 raptor observations not associated with a nest site were also recorded within the survey area. The most frequently observed raptor was the red-tailed hawk, followed by the northern harrier. Some raptor nests are difficult to find by aerial surveys due to their nest size or nesting habitat (e.g., grassland and forest); there were 75 northern harriers recorded, although no nests were located. Table 5-3 presents the total number of active nests by species within the survey area, those active nests whose buffers intersect the Site Boundary, as well as the number of raptor observations within the survey area that were not associated with a nest. Appendix 5 is a mapbook showing all active nests identified within the survey area.

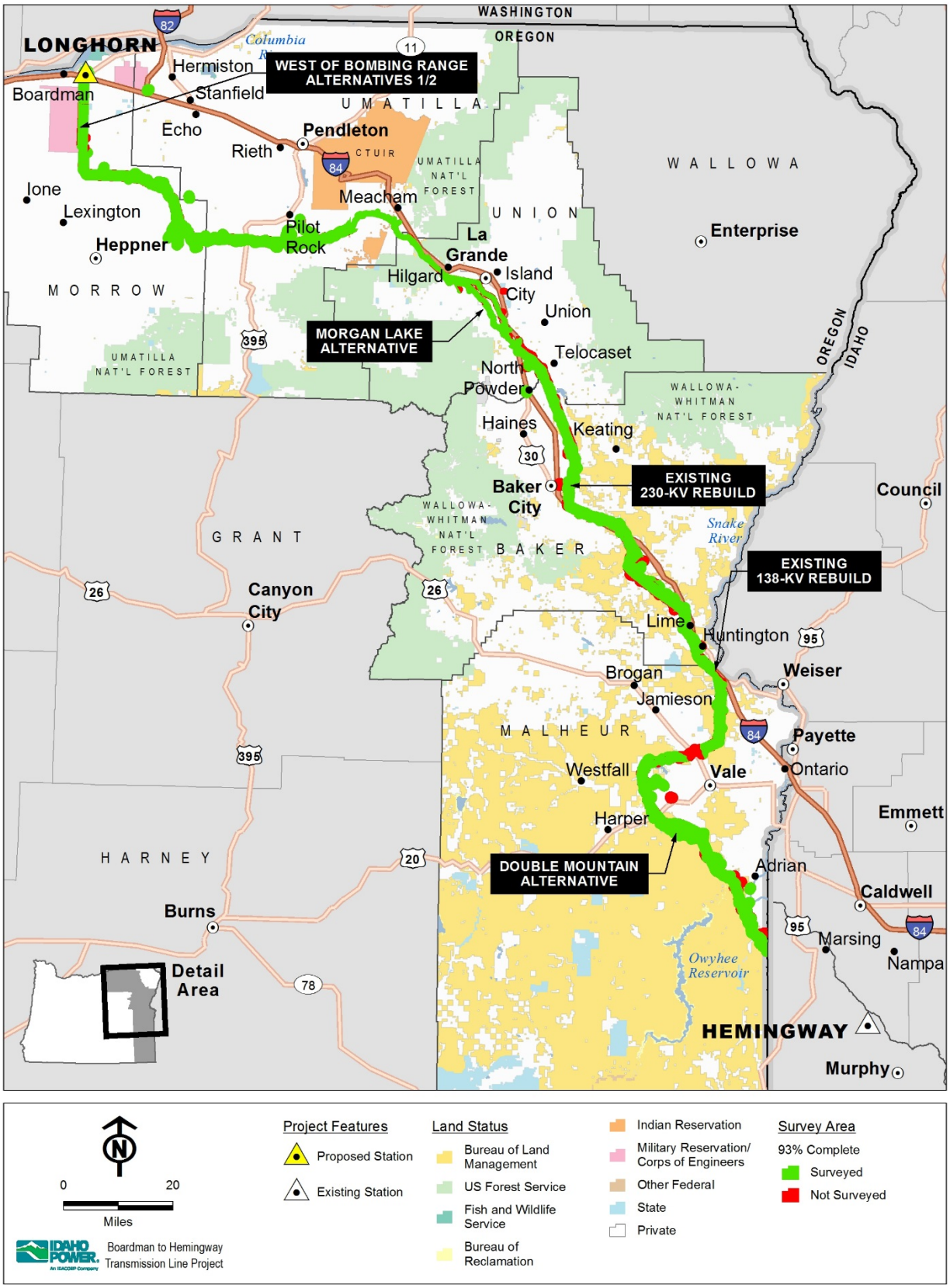

Figure 5-1. Raptor Survey Area

Table 5-3. Raptor Observations

Species	Number of Active Nests within Survey Area	Number of Active Buffered Nests that Intersect the Site Boundary	Total Number of Individuals Not Associated with a Nest
American kestrel	2	2	62
Bald eagle	1	1	6
Barn owl	4	2	15
Burrowing owl	3	2	9
Cooper's hawk	0	0	5
Ferruginous hawk	6	6	14
Golden eagle	14	7	53
Great horned owl	5	3	21
Long-eared owl	1	1	1
Northern harrier	0	0	75
Osprey	1	1	1
Prairie falcon	7	3	18
Red-tailed hawk	67	51	250
Rough-legged hawk	0	0	21
Sharp-shinned hawk	0	0	1
Short-eared owl	1	1	14
Swainson's hawk	13	8	16
Turkey vulture (*Cathartes aura*)	0	0	3
Unknown (owl, falcon, or accipiter)	1	-	4
Total	**125**	**88**	**589**

5.5 Conclusion

The goal of this survey is to identify all active raptor nests within the defined survey area, in particular those active nests whose distance to Project features is within the BLM-recommended spatial buffers (Table 5-3). Understanding the spatial relationship between the active raptor nests is important for planning purposes by providing information to assist in routing considerations, construction scheduling, and informing planners of the potential impacts on raptors from the Project.

During aerial raptor nest surveys, the most common species of raptor observed were red-tailed hawk and northern harriers. Red-tailed hawks (67), golden eagles (14), and Swainson's hawks (13) were the species with the most active nests identified in the survey area. Red-tailed hawks (51), Swainson's hawks (8), golden eagles (7), and ferruginous hawks (6) were the species with the most active nests whose 0.5-mile buffer intersected the Site Boundary. Other species confirmed to be nesting within the survey area include American kestrels, bald eagles, barn owls, burrowing owls, great horned owls, long-eared owls, ospreys, and prairie falcons.

Excluding common ravens, there were 125 active nests within the survey area. Of those nests, there were 88 active nests whose 0.5-mile BLM-recommended spatial buffer intersected the Site Boundary. The inactive nests (as well as all active nest sites) within 0.5 mile of the Site Boundary provide future nesting opportunities for several raptor species and may warrant follow-up visits prior to construction.

6.0 NORTHERN GOSHAWK AND AMERICAN THREE-TOED WOODPECKER SURVEY

6.1 Introduction

The objective of this survey was to identify the presence of northern goshawk (*Accipiter gentilis*) and American three-toed woodpecker (*Picoides dorsalis*) in the vicinity of the Project so that impacts to these species may be avoided and/or minimized. Surveys were performed for both species in 2011 and 2012. Changes to the Project location since 2012 moved the Project into previously unsurveyed potential habitat. In 2016, only northern goshawk surveys were performed in these areas. Both species are classified sensitive vulnerable in Oregon (ODFW 2008) and are also a Management Indicator Species on the Wallowa-Whitman National Forest (USFS 1990).

The northern goshawk is found throughout the northern hemisphere near the northern timberlines to the southern sub-tropical regions. The northern goshawk occupies dense coniferous and deciduous forests. During its nesting period, it prefers mature forests consisting of a combination of old, tall trees with intermediate to high canopy coverage and open understories within the forest for foraging (Woodbridge and Hargis 2006). Within its home range, the northern goshawk uses a diverse array of habitats for foraging, both in terms of vegetation type and the degree of openness (Woodbridge and Hargis 2006).

American three-toed woodpeckers are largely restricted to high-elevation conifer forests and are distributed in a mosaic pattern, mirroring the pattern of high-elevation mountains. They occur in dense coniferous forests and are associated with subalpine fir and Engelmann spruce at higher elevations; they occur mainly in lodgepole pine forests or in mixed-conifer forests with a lodgepole component at lower elevations (Leonard 2001), and seem to prefer coniferous forests with trees that exhibit thin, flaky bark such as spruce and lodgepole pine. However, areas of disturbed forests (e.g., recent burns, beetle infestations) have also been widely cited as important habitat. It is a relatively specialized species, feeding primarily on beetles within decaying and dead trees and occurring in low densities throughout its range. Seventy-five percent of its diet consists of wood-boring beetles and caterpillars that attack dead or dying conifers (Wiggins 2004).

6.2 Survey Area

The survey area for the northern goshawk and American three-toed woodpecker included all conifer forested habitat with moderate to high canopy cover within 0.5 mile of the Site Boundary from approximately mileposts 78 to 120 of the Proposed Route and the entire Morgan Lake Alternative. The survey area encompassed approximately 46,077 acres.

6.3 Methods

Acoustical call-back surveys were used for both species with methods adapted from Woodbridge and Hargis (2006) for northern goshawks and Dudley and Saab (2003) for American three-toed woodpeckers. Visual observation with acoustical call-back surveys is the recommended method of survey for cavity-nesting birds that are rare or have large home ranges, as with the American three-toed woodpecker (Dudley and Saab 2003). Acoustical call-back surveys for northern goshawks is currently the standard method used by the USFS and many others. The 2011 northern goshawk and three-toed woodpecker survey report (Tetra Tech 2011a) and the biological survey work plan (Tetra Tech 2011b) for the Project describe in more detail the data review process and agency coordination that occurred prior to any field surveys.

Calling stations were placed approximately 650 feet apart (200 meters) (Woodbridge and Hargis 2006) in areas that had moderate to high conifer canopy cover within fairly contiguous stands of forest. This spacing varied based on topography and habitat, while trying to establish stations at useful geographic features to ensure complete coverage of habitat. Some stations were dropped if they were in steep or unsafe terrain. Calling stations were identified by a unique number and Universal Transverse Mercator (UTM) geographic coordinates for each point were recorded.

Two calling station visits for both species, within the same year during the recommended survey periods, was required for a station to be considered complete in 2011 and 2012. The first survey period was for three-toed woodpeckers, designed to correspond with their nesting stage (late April). The second survey period was for both northern goshawks and three-toed woodpeckers, designed to correspond with the fledging period for three-toed woodpeckers and nesting period for northern goshawks (mid-June). The third survey period was for northern goshawks, intended to correspond with their fledging period (July). Only northern goshawk was surveyed in 2016; therefore, two calling station visits during the recommended survey period for the northern goshawk (June and July) was required for a station to be considered complete.

While in the field, observers listened for 3 minutes after arriving at a calling station, and then proceeded with calling. The calls consisted of 10 seconds of calling followed by 30 seconds of listening for a reply and watching for individuals to fly into the area. Calls were played three times, directing calls in three directions, 120 degrees apart. If a reply was heard or an individual was observed, surveyors tried to locate the bird and any nests in the immediate area. The male territorial call was used for the American three-toed woodpecker during both survey periods for this species. The adult alarm call was used for the northern goshawk during the second survey period and the juvenile wail call was used during the third survey period. During the second survey period in 2011 and 2012, when both species were called at each station, the calling sequence was completed for American three-toed woodpeckers first. When the sequence was completed and there was no response from an American three-toed woodpecker, the calling sequence started over and northern goshawk calls were played. Calls were broadcast using Edge® digital game callers made by Expedite, Inc., or MP3 players with amplifiers. Field crews used Trimble GeoXT or Juniper Mesa GPS technology loaded with Esri ArcPAD 10 software for data collection and navigation activities.

6.4 Results

Surveys were conducted for both species in 2011 and 2012 (Tetra Tech 2011, 2012). Only Northern goshawk surveys were conducted again in 2016 (Tetra Tech 2016). Appendix 6 shows all calling stations and the locations of the target species recorded within the survey area. American three-toed woodpeckers were detected at four different calling stations with no active nest cavities located during the 2011 and 2012 call-back surveys. One northern goshawk was detected during call-back surveys, although no nests were located during the 2011, 2012, and 2016 call-back. Two northern goshawk detections were also recorded during the 2011 TVES efforts. Table 6-1 summarizes all observations of these target species recorded during Project surveys.

Table 6-1. Northern Goshawk and American Three-toed Woodpecker Survey Summary

Species	Year Detected	Calling Station	Closest MP and Figure Reference	Nest Located
Northern goshawk	2011	115	12.75 (Morgan Lake Alternative) Appendix 6, Figure 9 of 10	No
Northern goshawk	2011	NA	90.25 (road off Proposed Route) Appendix 2-D, Figure 22 of 67	No
Northern goshawk	2011	NA	79.5 (Proposed Route) Appendix 2-D, Figure 20 of 67	No
American three-toed woodpecker	2012	405.1	94 (Proposed Route) Appendix 6, Figure 4 of 10	No
American three-toed woodpecker	2011	394	95 (Proposed Route) Appendix 6, Figure 4 of 10	No
American three-toed woodpecker	2011	516	91.5 (Proposed Route) Appendix 6, Figure 3 of 10	No
American three-toed woodpecker	2011	526	91.5 (Proposed Route) Appendix 6, Figure 3 of 10	No

Several additional woodpecker and raptor species were heard or seen during the call-back surveys, including black-backed woodpecker (*Picoides arcticus*), downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), pileated woodpecker (*Dryocopus pileatus*), American kestrel (*Falco sparverius*), Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsonii*), turkey vulture (*Cathartes aura*), and a great gray owl (*Strix nebulosa*). A follow-up visit to the great gray owl observation was conducted by the owl survey crew; a broken eggshell and whitewash was located at the base of a tree in the vicinity of the observation but could not be positively identified to species and a nest could not be located (Tetra Tech 2011c).

Of the total 853 calling stations created from three years of call-back surveys within the survey area, surveys were completed at 566 (66 percent) of the calling stations. Of the remaining 287 incomplete calling stations, 91 were incomplete for both species and 196 were incomplete for northern goshawk only. Figure 6-1 summarizes which calling stations were surveyed within the survey area.

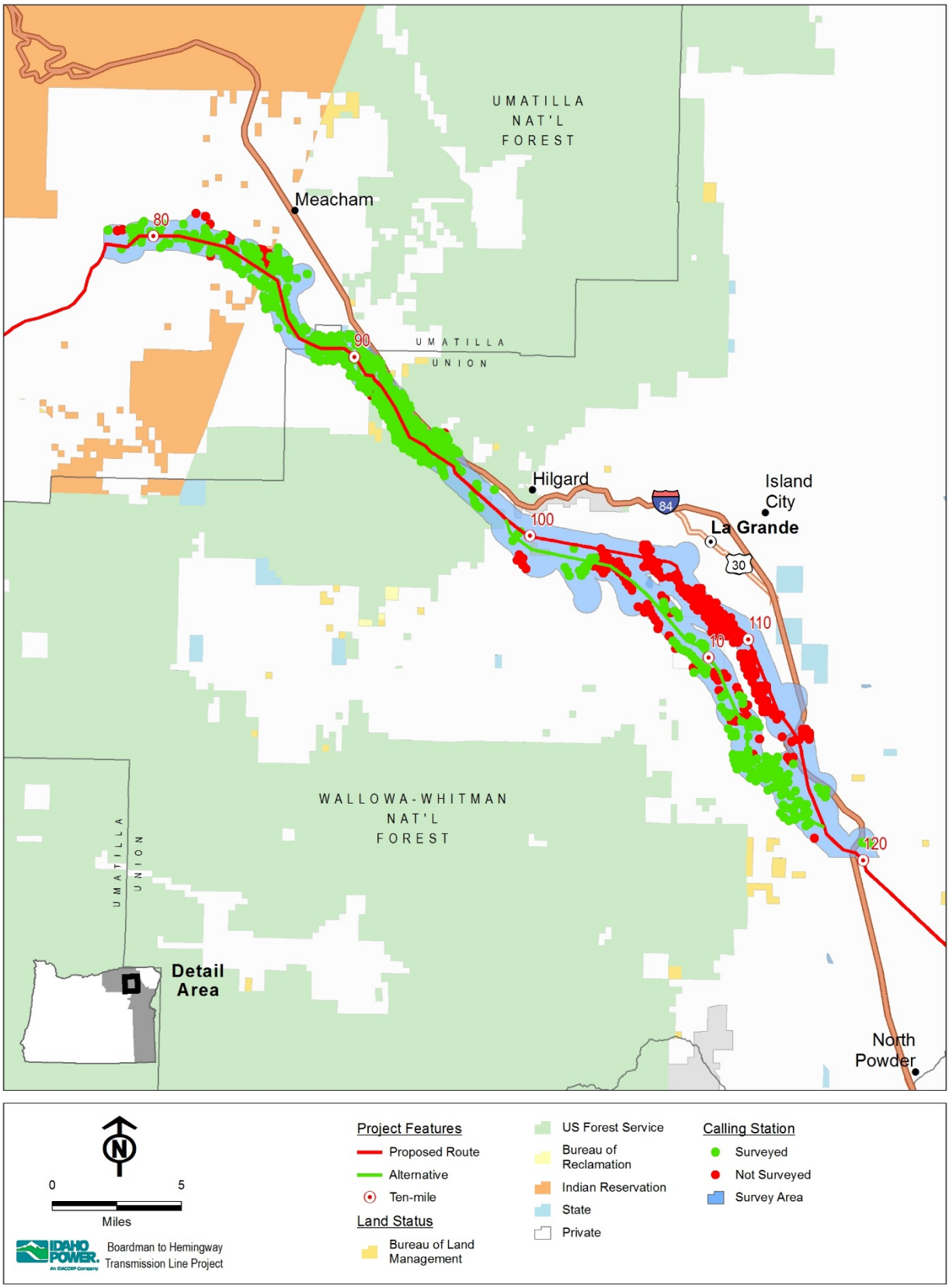

Figure 6-1. Northern Goshawk and American Three-toed Woodpecker Calling Stations and Survey Area

6.5 Conclusion

The survey efforts used accepted methodologies for identifying the location of northern goshawk nests and American three-toed woodpecker nest cavities. American three-toed woodpeckers were detected at four calling stations and northern goshawks at three locations (one detection at a calling station and two detections during TVES). The proximity of the observations of American three-toed woodpeckers near MP 91.5 (at calling stations 516 and 526) and the proximity of the observations of American three-toed woodpeckers near MP 94.5 (at calling stations 394 and 405.1) confirm repeated presence of the species in those areas. However, no territories or nesting pairs of either species were positively identified during the survey efforts.

Of the 853 calling stations within the survey area, 566 were completed. The remaining calling stations were located on properties that had not granted right-of-entry for the survey or could not be safely reached due to steep terrain. Due to lack of right-of-entry at the time of survey planning, the Proposed Route between MPs 103 and 115 was not surveyed. Northern goshawk and American three-toed woodpecker detections have been rare during all wildlife Project surveys.

7.0 GREAT GRAY OWL AND FLAMMULATED OWL SURVEY

7.1 Introduction

The objective of this survey was to identify the presence of great gray owl (*Strix nebulosa*) and flammulated owl (*Psiloscops flammeolus*) in the vicinity of the Project so that impacts to these species may be avoided and/or minimized. Surveys were performed for both species in 2011 and 2012. Both species are classified sensitive vulnerable in Oregon (ODFW 2008).

The great gray owl is the largest owl in North America. It inhabits coniferous and hardwood forests, pine and spruce in particular, and utilize older seral stages of forest and second-growth stands, typically near a water source. The great gray owl nests in broken-top snags or uses abandoned stick nests of other species such as northern goshawks. It usually forages in open areas where scattered trees or forest margins provide suitable sites for visual searching. When the owl is nesting, it hunts during both day and night (Quintana-Coyer et al. 2004). Great gray owl nesting habitat in the vicinity of the Project typically has a minimum of 60 percent canopy cover (Bull and Henjum 1990), and generally occurs in the Blue Mountains portion of the Project in Oregon.

The flammulated owl is North America's smallest eared owl. It is generally associated with montane forests with brushy understory. It prefers aspen and ponderosa pine and can occur in mixed conifer forests of oak, Douglas fir, white fir, incense cedar, or sugar pine. Flammulated owls typically nest in cavities made by northern flickers and similar-sized woodpeckers. They are almost exclusively insectivorous, foraging at dawn and dusk (BLM 1997). The flammulated owl is one of the most migratory owls in North America. Even with lengthy migrations, breeding site fidelity is high and nests are used for multiple years.

7.2 Survey Area

The survey area for the great gray owl and flammulated owl survey included conifer forested habitats within 0.25 mile of the Site Boundary from approximately MP 78.5 to 101 of the Proposed Route and all of the Morgan Lake Alternative, and encompasses approximately 19,716 acres. While not all of the survey area is suitable nesting habitat for either species, this entire area was considered during placement of calling stations.

7.3 Methods

Nocturnal acoustical call-back surveys was used for both species with methods adapted from Quintana-Coyer et al. (2004) for great gray owls and Smucker et al. (2008) for flammulated owls. Nocturnal call-back surveys are recognized as the most efficient method for detecting great gray and flammulated owls because most owls respond are more likely to respond at night. In addition, sound travels more readily at night with less background noise, so owls can hear the recordings better and the observers are more likely to hear the owls responding. Both the 2011 owl survey report (Tetra Tech 2011a) and the survey work plan (Tetra Tech 2011b) for the Project describe in more detail the data review process and agency coordination that occurred prior to any field surveys.

Surveys for these two owl species took place over three survey periods each in 2011 and 2012, with each species being surveyed for twice. For a calling station to be considered complete for this report, two survey visits for each species must be completed. The first survey period was selected to correspond with the great gray owl nesting stage (late March/early April). The second survey period was for both great gray and flammulated owls and selected to correspond with the late nestling and early fledgling period for great gray owls and nesting period for flammulated owls (late May). The third survey period was for flammulated owls and was

selected to correspond with their fledgling period (late June). Calling stations that were considered incomplete for great gray owls because only one visit was made during the first two survey periods were completed during the third survey period if possible. The third survey period is still within the acceptable timeframe for surveying great gray owls (Quintana-Coyer et al. 2004).

The great gray owl survey consisted of 1 minute of listening upon arrival at a calling station followed by playing recommended recording (Quintana-Coyer et al. 2004). This recording contains 5 minutes of male territorial calls and female contact calls interspersed with blocks of silence to listen for response and to change calling direction. The flammulated owl survey consisted of 1 minute of broadcast calling followed by 3 minutes of listening and then repeated. Calls were broadcast using Edge® digital game callers made by Expedite, Inc., or MP3 players with amplifiers. Field crews used Trimble GeoXT GPS technology loaded with Esri ArcPAD 10 software for data collection and navigation activities.

7.4 Results

Acoustic call-back surveys were conducted for great gray owls and flammulated owls in 2011 and 2012, resulting in seven flammulated owl and three great gray owl detections, with one additional possible great gray owl detection and one possible flammulated owl detection. There were two great gray owl detections at calling station #714, during the second and third call-back surveys. There were also two flammulated owl detections at calling station #58 during the third call-back survey. Appendix 7 shows all calling stations and the locations of the target species recorded during the survey. Table 7-1 summarizes all observations of these target species recorded during Project surveys.

Table 7-1. Great Gray Owl and Flammulated Owl Survey Summary

Species	Year Detected	Calling Station	Closest MP and Figure Reference	Nest Located
Great Gray Owl	2011	521	83.75 (Proposed Route) Appendix 7, Figure 2 of 10	No
Great Gray Owl (possible)	2011	511	83.75 (Proposed Route) Appendix 7, Figure 2 of 10	No
Great Gray Owl	2012	714	100 (Proposed Route) Appendix 7, Figure 5 of 10	No
Flammulated Owl	2011	342	93.75 (Proposed Route) Appendix 7, Figure 4 of 10	No
Flammulated Owl (possible)	2011	78	15 (Morgan Lake Alt) Appendix 7, Figure 9 of 10	No
Flammulated Owl	2012	74	14.5 (Morgan Lake Alt.) Appendix 7, Figure 9 of 10	No
Flammulated Owl	2012	75	14.5 (Morgan Lake Alt.) Appendix 7, Figure 9 of 10	No
Flammulated Owl	2012	68	14.5 (Morgan Lake Alt.) Appendix 7, Figure 9 of 10	No
Flammulated Owl	2012	58	15.5 (Morgan Lake Alt.) Appendix 7, Figure 9 of 10	No
Flammulated Owl	2012	51	15.5 (Morgan Lake Alt.) Appendix 7, Figure 9 of 10	No

During the course of the call-back surveys, several additional owl species were heard, including barred owl (*Strix varia*), great horned owl (*Bubo virginianus*), northern pygmy owl (*Glaucidium californicum*), and northern saw-whet owl (*Aegolius acadicus*).

Of the 412 calling stations that required survey in 2011 and 2012, a total of 353 were completed. The calling stations surveyed represent approximately 86 percent of the total established calling stations within the great gray and flammulated owl survey area (Figure 7-1).

Denial of right-of-entry or surveyor safely due to steep terrain account for the 59 calling stations that were not surveyed.

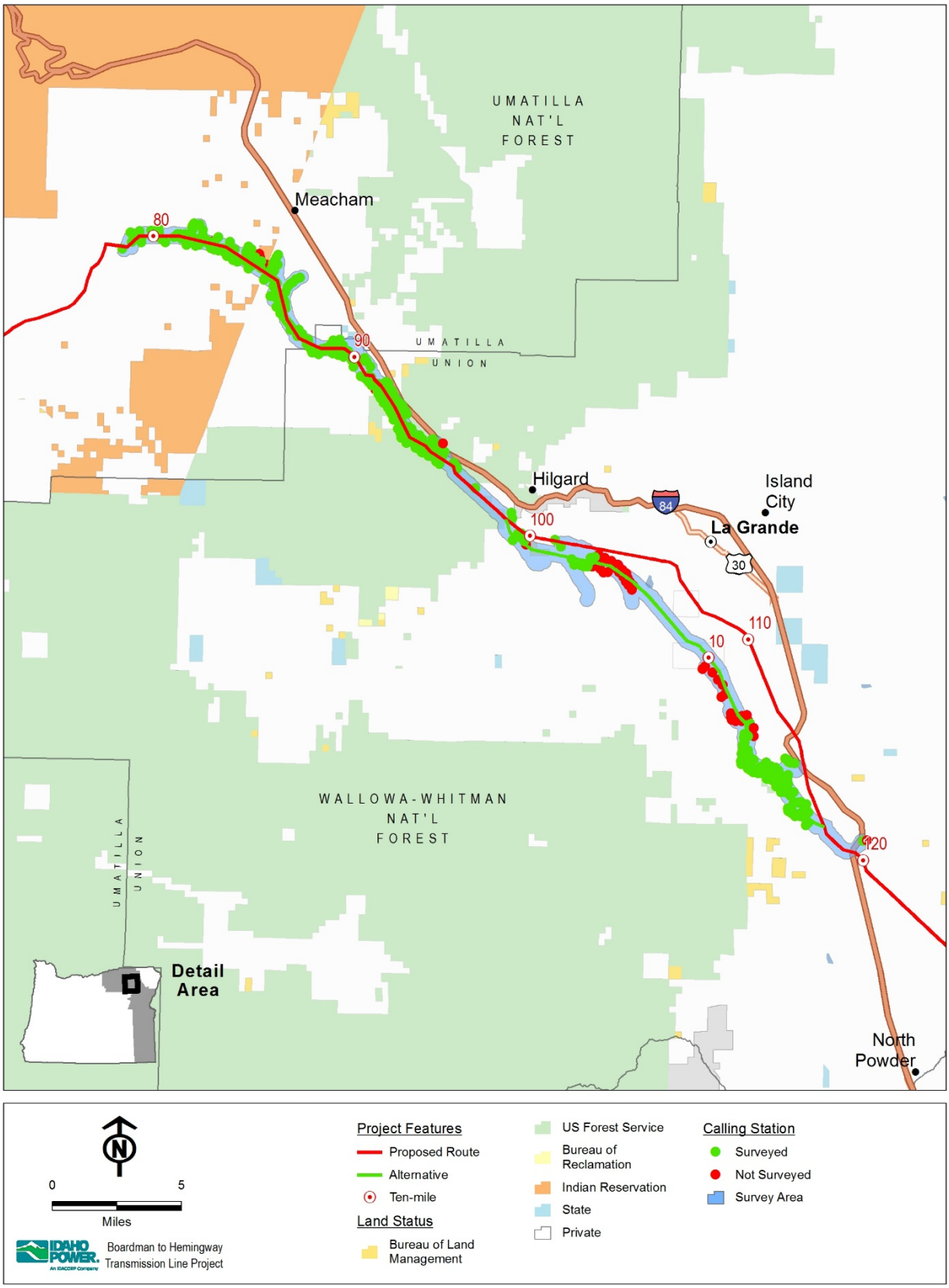

Figure 7-1. Great Gray Owl and Flammulated Owl Calling Stations and Survey Area

7.5 Conclusion

The objective of the great gray owl and flammulated owl surveys was to identify territories within or overlapping the Proposed Route and Morgan Lake Alternative and to identify all nesting pairs of owls. The survey efforts used the best available data and the appropriate recommended procedures for identifying the locations of great gray and flammulated owls that may be affected by the Project. No nest locations of great gray or flammulated owls were positively identified during this survey. However, observations during the survey confirm that both species are present within the survey area. Presence within the survey area indicates that there is a potential for the survey area to be within a breeding pair's territory.

There were seven positive flammulated owl detections recorded during the owl call-back surveys. Most of the flammulated owl detections occurred within a relatively small portion of the survey area between MP 14.5 and 15.75 of the Morgan Lake Alternative (7 detections). Two flammulated owl detections were recorded at calling station #58 during the third call-back survey, indicating there may be a mated pair with an established territory nearby, although no nest cavity was located. In addition, detections at calling stations #51 and #58 occurred on the same night and are within 1,500 feet of each other; these detections could indicate a single owl from which the field crew was eliciting a territorial response. Calling stations #68, #74, and #75 are also within 1,500 feet of each other and cover an area of 13 acres. The three detections occurred on the same night and could indicate a territorial response from a single owl as well. While no nests or individuals were identified in follow-up surveys, the detections in this small area indicate that flammulated owls may have established up to two territories in that area.

Of the three great gray owl positive detections, two detections at calling station #714 indicate that a great gray owl may have an established territory in that location. Follow-up visits did not confirm a nest site within the general vicinity. However, additional site visits could help to determine if there is an established territory and whether the individual detected is a resident single or if a mated pair exists within the area.

There were also one possible great gray owl and one possible flammulated owl detections where a positive identification could not be decided due to distance away from the bird, no vocalizations and limited visual opportunities, or background noises. These less confident detections should still be considered, although given that previous or subsequent visits to those same calling stations did not result in additional detections, it is unlikely that those areas contain a nest site or are within an established territory.

While the surveys did not identify any nests for great gray or flammulated owls, the detections indicate activity near the survey area. This information can provide insight for potential pre-construction clearance surveys if needed.

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Appendix 2-A

Special Status Animals List

Appendix 2-A. TVES Special Status Animal Species

Common Name	*Scientific Name*	USFWS[1]	BLM Oregon[2]	USFS R6[3]	ODFW[4]
MAMMALS					
American Marten	*Martes americana*				SV
California Myotis	*Myotis californicus*				SV
Canada Lynx	*Lynx canadensis*	T	VALE	WAW	
Fisher	*Pekania pennanti*		VALE		SC
Fringed Myotis	*Myotis thysanodes*		VALE	WAW	SV
Gray Wolf	*Canis lupus*	E (west of highways 395, 78, and 95 in Oregon only)	VALE		
Hoary bat	*Lasiurus cinereus*				SV
Kit Fox	*Vulpes macrotis*		VALE		LT
Long-legged myotis	*Myotis volans*				SV
Pallid Bat	*Antrozous pallidus*		VALE		SV
Pygmy Rabbit	*Brachylagus idahoensis*		VALE		SV
Silver-haired Bat	*Lasionycteris noctivagans*				SV
Spotted Bat	*Euderma maculatum*		VALE	WAW	SV
Townsend's Big-eared Bat	*Corynorhinus townsendii*		VALE		SC
Washington ground squirrel	*Urocitellus washingtoni*		VALE		LE
White-tailed Jack Rabbit	*Lepus townsendii*				SV
Wolverine	*Gulo gulo luscus*	PT	VALE		LT
BIRDS					
American Peregrine Falcon	*Falco peregrinus anatum*		VALE	WAW	SV
American Three-toed Woodpecker	*Picoides dorsalis*				SV
American White Pelican	*Pelecanus erythrorhynchos*		VALE		SV
Bald Eagle	*Haliaeetus leucocephalus*		VALE	WAW	
Black Rosy Finch	*Leucosticte atrata*			WAW	
Black Swift	*Cypseloides niger*			WAW	
Black-backed Woodpecker	*Picoides arcticus*				SV
Bobolink	*Dolichonyx oryzivorus*		VALE		SV

Appendix 2-A. TVES Special Status Animal Species

Common Name	*Scientific Name*	USFWS[1]	BLM Oregon[2]	USFS R6[3]	ODFW[4]
Broad-tailed hummingbird	*Selasphorus platycercus*		VALE	WAW	
Bufflehead	*Bucephala albeola*			WAW	
Burrowing Owl	*Athene cunicularia*				SC/SV
Ferruginous Hawk	*Buteo regalis*				SC/SV
Flammulated Owl	*Psiloscops flammeoulus*				SV
Grasshopper Sparrow	*Ammodramus savannarum*		VALE		SV
Great Gray Owl	*Strix nebulosa*				SV
Greater Sage-grouse	*Centrocercus urophasianus*		VALE	WAW	SV
Greater Sandhill Crane	*Antigone canadensis tabida*				SV
Harlequin duck	*Histrionicus histrionicus*			WAW	
Horned Grebe	*Podiceps auritus*		VALE		
Lewis' Woodpecker	*Melanerpes lewis*		VALE		SC
Loggerhead Shrike	*Lanius ludovicianus*				SV
Long-billed Curlew	*Numenius americanus*				SV
Mountain Quail	*Oreotyx pictus*				SV
Northern Goshawk	*Accipiter gentilis*				SV
Olive-sided Flycatcher	*Contopus borealis*				SV
Pileated Woodpecker	*Dryocopus pileatus*				SV
Pine Grosbeak	*Pinicola enucleator*		VALE	WAW	
Sagebrush Sparrow	*Artemisiospiza nevadensis*				SC
Swainson's hawk	*Buteo swainsoni*				SV
Trumpeter Swan	*Cygnus buccinator*		VALE		
Upland Sandpiper	*Bartramia longicauda*			WAW	SC
Wallowa rosy finch	*Leucosticte tephrocotis wallowa*		VALE	WAW	
White-headed Woodpecker	*Picoides albolarvatus*		VALE		SC
Willow Flycatcher	*Empidonax trailii*				SV
Yellow-billed Cuckoo	*Coccyzus americanus*	T	VALE		SC
REPTILES AND AMPHIBIANS					
Blotched Tiger Salamander	*Ambystoma mavortium melanostictum*		VALE		

Appendix 2-A. TVES Special Status Animal Species

Common Name	*Scientific Name*	USFWS[1]	BLM Oregon[2]	USFS R6[3]	ODFW[4]
Columbia Spotted Frog	*Rana luteiventris*		VALE	WAW	SC/SV
Northern Leopard Frog	*Lithobates pipiens*		VALE		SC
Northern Sagebrush Lizard	*Sceloporus graciosus graciosus*				SV
Rocky Mountain Tailed Frog	*Ascaphus montanus*		VALE		SV
Western Painted Turtle	*Chrtsemys picta bellii*		VALE		SC
Western Toad-Northern Rocky Mountain Population	*Anaxyrus boreas*				SV
Woodhouse Toad	*Anaxyrus woodhousii*		VALE		

1) USFWS - PT= proposed threatened, T= threatened, E= endangered, C= candidate

2) BLM Oregon - VALE= Vale District Special Status Species

3) USFS R6 - WAW= special status species documented or suspected to occur in the Wallowa-Whitman National Forest

4) ODFW- List only includes sensitive species within the Columbia Plateau, Blue Mountains, or Northern Basin and Range Ecoregions, or if the status of the sensitive species does not inhabit a particular ecoregion and the species may be present within the project area. SC= sensitive species-critical are imperiled with extirpation from a specific geographic area of the state because of small population sizes, habitat loss or degradation, and/or immediate threats. Critical species may decline to point of qualifying for threatened or endangered status if conservation actions are not taken. SV= sensitive species-vulnerable are facing one or more threats to their populations and/or habitats. Vulnerable species are not currently imperiled with extirpation from a specific geographic area or the state but could become so with continued or increased threats to populations and/or habitats. LT= Listed threatened. LE = Listed endangered.

Appendix 2-B

Habitat Characterization Matrix

Regional GAP Analysis Project (ReGAP) Ecological Systems, NWI categories, and OWC[1]	General Vegetation Type	Habitat Type[2]	ODFW Habitat Category Types[3]					
			Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
		Applicable to All Habitat Types[4]	• Trees or structures which contain a special status raptor nest; • Occupied Washington ground squirrel colony (with a 785-foot buffer around the colony, buffer extent restricted to suitable squirrel habitat[5]); or	• ODFW and USFS designated big game winter range (elk, mule deer, bighorn sheep); • Area of potential ground squirrel use; defined as the area adjacent to (within 4,921 feet [1.5km]) WAGS Category 1 habitat, but not occupied by any squirrels either for burrowing or foraging, which is of similar habitat type and quality to the adjacent WAGS Category 1 habitat.	• Elk summer range as identified by the Rocky Mountain Elk Foundation and located on USFS website; or • Mule deer summer range as identified in the Mule Deer Habitat Mapping Project developed by Utah State University in conjunction with the Western Association of Fish and Wildlife Agencies.			
Conservation Reserve Program (CRP) Pasture/Hay Cultivated Cropland High Structure Agriculture	Agriculture / Developed	Agriculture			Lands enrolled in the CRP that contain later seral stage vegetation and which could provide important habitat for special status wildlife species (e.g., areas similar to natural conditions prior to agricultural development)	Irrigated-grazed pastures and hay meadows, as well as lands enrolled in the CRP that lack later seral stage vegetation or are less important for special status wildlife species due to land management or location		All other agricultural lands with low potential to become productive wildlife habitat
Developed, Open Space Developed, Low Intensity Developed, Medium Intensity Developed, High Intensity Quarries, Mines and Gravel Pits		Developed / Disturbed						All developed areas
Columbia Plateau Ash and Tuff Badland Inter-Mountain Basins Volcanic Rock and Cinder Land Rocky Mountain Cliff, Canyon and Massive Bedrock Rocky Mountain Alpine Bedrock and Scree Inter-Mountain Basins Active and Stabilized Dune Inter-Mountain Basins Cliff and Canyon	Bare Ground	Bare Ground, Cliffs, Talus	Bat hibernacula or maternity colonies	Bat colonies	Cliffs, talus slopes, and rock outcrops that do not contain sensitive raptor nests, or bat hibernacula-colonies			Bare ground and developed areas (excluding cliffs, talus slopes, and rock outcrops; see Cat 3 description)

ReGAP Ecological Systems, NWI categories, and OWC[1]	General Vegetation Type	Habitat Type[2]	ODFW Habitat Category Types[3]					
			Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Open Water Lacustrine (OWC and NWI) Palustrine Aquatic Bed (OWC and NWI) Palustrine Unconsolidated Bottom (OWC and NWI) Palustrine Unconsolidated Shore (OWC and NWI)	Open Water / Unvegetated Wetland	Ponds and Lakes		Lakes and ponds with high quality habitat that is dominated by native species	Lakes and ponds with lower quality habitat (compared to Category 2) which contains a mix of native and non-native species; or highly degraded open water habitats (permanent or seasonal) that are located in areas where water is limited on the landscape.	Highly degraded permanent open water areas that are almost completely dominated by non-native plant species or otherwise highly degraded, and which are not limited on the landscape	Highly degraded seasonal open water areas that are almost completely dominated by non-native plant species or otherwise highly degraded.	
Riverine (OWC and NWI)		Perennial Streams (stream mapped by USGS as permanent {year-round} flow)		All fish-bearing streams will be classified as Category 2 habitats. Fish presence is assumed in all perennial streams.				
Riverine (OWC and NWI)		Intermittent Streams (stream mapped by USGS as intermittent)		Intermittent fish-bearing streams. Fish presence is determined in intermittent streams via input from agency biologists, or through the presence of macro-invertebrates (assessed via OSDAM surveys)	Intermittent non-fish-bearing streams. The absence of fish in intermittent streams is determined via input from agency biologists, or through the lack of macro-invertebrates in these streams (assessed via OSDAM surveys)	Artificial man-made intermittent waterbodies without fish		
Northern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest	Forest / Woodland	Mixed Grand Fir / Douglas Fir		Old forest multi-strata or old forest single strata (defined by the Umatilla National Land and Resource Forest Plan as > 21 inches dbh).	Understory reinitiation forests (defined by the Umatilla National Land and Resource Forest Plan as from 9 inches dbh to 20.9 inches dbh)	Stem exclusion forests (defined by the Umatilla National Land and Resource Forest Plan as 1 inch to 4.9 inches dbh for saplings and 5 to 8.9 inches dbh for pole stands).	Stand initiation forests (i.e., clearcuts, seedlings, and areas dominated by grass-forbs)	
Northern Rocky Mountain Western Larch Savanna		Mixed Tamarack		Old forest multi-strata or old forest single strata (defined by the Umatilla National Land and Resource Forest Plan as > 21 inches dbh).	Understory reinitiation forests (defined by the Umatilla National Land and Resource Forest Plan as from 9 inches dbh to 20.9 inches dbh)	Stem exclusion forests (defined by the Umatilla National Land and Resource Forest Plan as 1 inch to 4.9 inches dbh for saplings and 5 to 8.9 inches dbh for pole stands).	Stand initiation forests (i.e., clearcuts, seedlings, and areas dominated by grass-forbs)	
Rocky Mountain Lodgepole Pine Forest Rocky Mountain Poor-Site Lodgepole Pine Forest		Lodgepole Pine			Lodgepole pine forest/woodlands dominated by native species, and located in relatively undisturbed surroundings	Lodgepole pine forest/woodlands dominated by non-native species, or located in relatively disturbed surroundings (e.g., located near trails or other human disturbances)	Clearcuts, seedlings, and areas dominated by grass-forbs.	

ReGAP Ecological Systems, NWI categories, and OWC[1]	General Vegetation Type	Habitat Type[2]	ODFW Habitat Category Types[3]					
			Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Northern Rocky Mountain Ponderosa Pine Woodland and Savanna	Forest / Woodland	Ponderosa Pine		Old forest multi-strata or old forest single strata (defined by the Umatilla National Land and Resource Forest Plan as > 21 inches dbh).	Understory reinitiation forests (defined by the Umatilla National Land and Resource Forest Plan as from 9 inches dbh to 20.9 inches dbh)	Stem exclusion forests (defined by the Umatilla National Land and Resource Forest Plan as 1 inch to 4.9 inches dbh for saplings and 5 to 8.9 inches dbh for pole stands).	Stand initiation forests (i.e., clearcuts, seedlings, and areas dominated by grass-forbs)	
East Cascades Oak-Ponderosa Pine Forest and Woodland								
Rocky Mountain Aspen Forest and Woodland		Rocky Mountain Aspen		Moist areas dominated by aspen				
Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland								
North Pacific Mountain Hemlock Forest		Subalpine / Montane Forest		Subalpine / Montane forests dominated by native species, and located in relatively undisturbed surroundings	Subalpine / Montane forests dominated by non-native species, or located in relatively disturbed surroundings (e.g., located near trails or other human disturbances); Understory reinitiation forests (defined by the Umatilla National Land and Resource Forest Plan as from 9 inches dbh to 20.9 inches dbh)	Stem exclusion forests (defined by the Umatilla National Land and Resource Forest Plan as 1 inch to 4.9 inches dbh for saplings and 5 to 8.9 inches dbh for pole stands) and areas dominated by grass-forbs.	Stand initiation forests (i.e., clearcuts, seedlings, and areas dominated by grass-forbs)	
Northern Rocky Mountain Subalpine Woodland and Parkland								
Northern Rocky Mountain Mesic Montane Mixed Conifer Forest								
Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland								
Rocky Mountain Subalpine Mesic-Wet Spruce-Fir Forest and Woodland								
Rocky Mountain Subalpine-Montane Limber-Bristlecone Pine Woodland								
Columbia Plateau Western Juniper Woodland and Savanna		Western Juniper / Mountain Mahogany Woodland		Columbia Basin Area: Woodlands dominated by old-growth juniper trees with rounded tops	Columbia Basin Area: Woodlands with few old-growth junipers Intermountain Basin Area: Woodlands that are not invading sage brush habitats, or which could not be converted into sage brush habitats		Intermountain Basin Area: Shrub-steppe and grassland areas that are being invaded by young juniper woodlands.	
Inter-Mountain Basins Mountain Mahogany Woodland and Shrubland								
Introduced Upland Vegetation - Treed		Forested-Other		Old forest multi-strata or old forest single strata (defined by the Umatilla National Land and Resource Forest Plan as > 21 inches dbh).	Understory reinitiation forests (defined by the Umatilla National Land and Resource Forest Plan as from 9 inches dbh to 20.9 inches dbh)	Stem exclusion forests (defined by the Umatilla National Land and Resource Forest Plan as 1 inch to 4.9 inches dbh for saplings and 5 to 8.9 inches dbh for pole stands).	Stand initiation forests (i.e., clearcuts, seedlings, and areas dominated by grass-forbs)	
Recently burned forest								
Harvested forest-tree regeneration								
Harvested forest-shrub regeneration								
Harvested forest-grass regeneration								

ReGAP Ecological Systems, NWI categories, and OWC[1]	General Vegetation Type	Habitat Type[2]	ODFW Habitat Category Types[3]					
			Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Northern Rocky Mountain Lower Montane, Foothill and Valley Grassland Columbia Plateau Steppe and Grassland Columbia Basin Foothill and Canyon Dry Grassland Inter-Mountain Basins Semi-Desert Grassland Northern Rocky Mountain Subalpine-Upper Montane Grassland Columbia Basin Palouse Prairie Rocky Mountain Subalpine-Montane Mesic Meadow	Shrub / Grass	Native Grasslands		Columbia Basin Area: Undisturbed habitat dominated by native species (i.e., greater than 75% ground cover is native), or moderately disturbed habitat (i.e., between 50 to 75% ground cover is native) that contains a sage brush component Intermountain Basin Area: Undisturbed habitat dominated by native species (i.e., greater than 75% ground cover is native)	Columbia Basin Area: Moderately disturbed habitat with a mix of natives and non-natives (i.e., between 50 to 75% ground cover is native), or highly disturbed habitat (i.e., between 15 to 50% ground cover is native) that contains a sage brush component Intermountain Basin Area: Moderately disturbed habitat with a mix of natives and non-natives (i.e., between 50 to 75% ground cover is native)	Columbia Basin Area: Highly disturbed habitat with a high percentage of non-native plant species (i.e., between 15 to 50% ground cover is native), or very highly disturbed habitats (i.e., less than 15% ground cover is native) that contain a sage brush component Intermountain Basin Area: Highly disturbed habitat with a high percentage of non-native plant species (i.e., between 15 to 50% ground cover is native)	Columbia Basin Area: Very highly disturbed habitats with a high percentage of non-native plant species (i.e., less than 15% ground cover is native), but which do not contain a sage brush component Intermountain Basin Area: Very highly disturbed habitats with a high percentage of non-native plant species (i.e., less than 15% ground cover is native)	
Inter-Mountain Basins Mixed Salt Desert Scrub Inter-Mountain Basins Greasewood Flat		Desert Shrub		Columbia Basin Area: Undisturbed habitat dominated by native species (i.e., greater than 75% cover is native).	Columbia Basin Area: Moderately disturbed habitat with a mix of natives and non-natives(i.e., between 25 to 75% cover is native) Intermountain Basin Area: Undisturbed habitat dominated by native species (i.e., greater than 75% cover is native).	Columbia Basin Area: Highly disturbed habitat with a high percentage of non-native species (i.e., less than 25% cover is native) Intermountain Basin Area: Moderately disturbed habitat with a mix of natives and non-natives (i.e., between 25 to 75% cover is native), may contain juniper encroachment into habitat	Intermountain Basin Area: Highly disturbed habitat with a high percentage of non-native plant species (i.e., less than 25% cover is native)	
Inter-Mountain Basins Big Sagebrush Shrubland Inter-Mountain Basins Big Sagebrush Steppe Inter-Mountain Basins Montane Sagebrush Steppe		Shrub-Steppe with Big Sage		Columbia Basin Area: Undisturbed habitat dominated by native species (i.e., greater than 75% cover is native).	Columbia Basin Area: Moderately disturbed habitat with a mix of natives and non-natives (i.e., between 25 to 75% cover is native) Intermountain Basin Area: Undisturbed habitat dominated by native species (i.e., greater than 75% cover is native).	Columbia Basin Area: Highly disturbed habitat with a high percentage of non-native plant species (i.e., less than 25% cover is native) Intermountain Basin Area: Moderately disturbed habitat with a mix of natives and non-natives (i.e., between 25 to 75% cover is native), may contain juniper encroachment into habitat	Intermountain Basin Area: Highly disturbed habitat with a high percentage of non-native plant species (i.e., less than 25% cover is native)	

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ReGAP Ecological Systems, NWI categories, and OWC[1]	General Vegetation Type	Habitat Type[2]	ODFW Habitat Category Types[3]					
			Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Columbia Plateau Scabland Shrubland Great Basin Xeric Mixed Sagebrush Shrubland North Pacific Montane Shrubland Rocky Mountain Lower Montane-Foothill Shrubland Northern Rocky Mountain Montane-Foothill Deciduous Shrubland Northern Rocky Mountain Subalpine Deciduous Shrubland Columbia Plateau Low Sagebrush Steppe Inter-Mountain Basins Semi-Desert Shrub-Steppe	Shrub / Grass	Shrub-Steppe without Big Sage		Columbia Basin Area: Undisturbed habitat dominated by native species (i.e., greater than 75% cover is native).	Columbia Basin Area: Moderately disturbed habitat with a mix of natives and non-natives (i.e., between 25 to 75% cover is native) Intermountain Basin Area: Undisturbed habitat dominated by native species (i.e., greater than 75% is native).	Columbia Basin Area: Highly disturbed habitat with a high percentage of non-native plant species (i.e., less than 25% cover is native) Intermountain Basin Area: Moderately disturbed habitat with a mix of natives and non-natives (i.e., between 25 to 75% cover is native), may contain juniper encroachment into habitat	Intermountain Basin Area: Highly disturbed habitat with a high percentage of non-native plant species (i.e., less than 25% cover is native)	
Introduced Upland Vegetation - Shrub Introduced Upland Vegetation - Forbland Introduced Upland Vegetation - Annual Grassland Introduced Upland Vegetation - Perennial Grassland Recently burned grassland Recently burned shrubland	Shrub / Grass	Introduced Upland Vegetation and Burned Areas					Low quality habitat	
Inter-Mountain Basins Playa Rocky Mountain Alpine-Montane Wet Meadow North American Arid West Emergent Marsh Columbia Plateau Vernal Pool Rocky Mountain Subalpine-Montane Fen Inter-Mountain Basins Alkaline Closed Depression Palustrine Emergent Wetland (OWC and NWI)	Wetland	Emergent Wetland		High quality habitat dominated by native species	Area consists of a mix of native and non-native plants with a low to moderate level of disturbance		Farmed or previously filled wetland that is highly disturbed and dominated by non-native species	

ReGAP Ecological Systems, NWI categories, and OWC[1]	General Vegetation Type	Habitat Type[2]	ODFW Habitat Category Types[3]					
			Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Columbia Plateau Silver Sagebrush Seasonally Flooded Shrub-Steppe	Wetland	Scrub-Shrub Wetland		High quality habitat dominated by native species	Area consists of a mix of native and non-native plants with a low to moderate level of disturbance		Farmed or previously filled wetland that is highly disturbed and dominated by non-native species	
North Pacific Shrub Swamp								
Rocky Mountain Subalpine-Montane Riparian Shrubland								
Temperate Pacific Subalpine-Montane Wet Meadow								
Palustrine Scrub-Shrub Wetland (OWC and NWI)								
Northern Rocky Mountain Conifer Swamp		Forested Wetland		High quality habitat dominated by native species; forested wetlands that are part of a large wetland complex, old forest, or riparian area.	Area consists of a mix of native and non-native plants with a low to moderate level of disturbance (e.g., area is predominately sapling to pole-sized timber, evidence of fire, insects or other disease)			
Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland								
Rocky Mountain Lower Montane Riparian Woodland and Shrubland								
Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland								
Columbia Basin Foothill Riparian Woodland and Shrubland								
Rocky Mountain Subalpine-Montane Riparian Woodland								
Palustrine Forested Wetland (OWC and NWI)								
Introduced Riparian and Wetland Vegetation		Wetland-Other		High quality habitat dominated by native species	Area consists of a mix of native and non-native plants with a low to moderate level of disturbance		Farmed or previously filled wetland that is highly disturbed and dominated by non-native species	

[1] Unless otherwise indicated, the entries in this column correspond to ReGAP Ecological Systems. Entries corresponding to the National Wetland Inventory (NWI) or Oregon Wetland Cover (OWC) database are indicated in brackets following the entries' name.
[2] Not all Ecological Systems or Habitat Types occur within the Site Boundary; therefore, not all Habitat Types are discussed in the text of Exhibit P1.
[3] These definitions for Habitat Categories by Habitat Type were reviewed by and agreed upon with ODFW.
[4] The modifiers in the "Applicable to All Habitat Types" row can only move the category type up to a high level, not down (e.g., if the Category type is a 2 based on vegetation and the area overlaps with big game summer range [i.e., a Category 3 modifier] the area remains a Category 2 habitat type). The GIS methods for categorizing habitat within the Site Boundary are detailed in Appendix A.
[5] The extent of a WAGS buffer is confined to areas between the colony and any break in suitable habitat within the applicable buffer (e.g., if a paved road or farmland exists 200 feet from the colony, the buffer will only extend out to that road or farmland, not to the full extent of the buffer).
*Some of the habitat types are classified differently depending on if they are located in the Columbia Basin or the Intermountain Basin ReGAP Ecological Systems. Because some habitats are less common/limited, they may be more important in one region compared to another (e.g., sagebrush habitats are less common in the Columbia Basin Area compared to the Intermountain Basin Area within the analysis area)

Appendix 2-C

Noxious Weed List

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Abutilon theophrasti	Velvetleaf	B (Oregon)	2012 2013 2014 2016
Acaena novae-zelandiae	Biddy-biddy	B (Oregon)	2011 2012 2013 2014
Acroptilon repens *(Centaurea repens)*	Russian knapweed	B (Oregon) A (Union) B (Baker, Malheur[1], Morrow, Umatilla) BLM WSC Idaho	2011 2012 2013 2014 2016
Adonis aestivali	Pheasant's eye	B (Oregon)	2014
Aegilops cylindrica	Jointed goatgrass	B (Oregon) A (Baker, Malheur) B (Morrow, Umatilla, Union) BLM WSC Idaho	2011 2012 2013 2014 2016
Aegilops ovata	Ovate goatgrass	A (Oregon)	2011 2012 2013 2014
Aegilops triuncialis	Barbed goatgrass	A (Oregon)	2012 2013 2014
Ailanthus altissima	Tree of heaven	B (Oregon) BLM WSC	2013 2014 2016
Alhagi maurorum *(A. pseudalhagi)*	Camelthorn	A (Oregon) A (Malheur, Umatilla) BLM WSC	2011 2012 2013 2014 2016
Alliaria petiolata	Garlic mustard	B, T (Oregon)	2011 2012 2013 2014 2016

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Alyssum murale & Alyssum corsicum	Yellow tuft	A (Oregon)	2012 2013 2014
Ambrosia artemisiifolia	Ragweed	B (Oregon) B (Umatilla) C (Malheur)	2012 2013 2014 2016
Ambrosia tomentosa	Skeletonleaf bursage	A (Malheur)	2011 2012 2013
Ammophila arenaria	European beachgrass	BLM WSC	2013 2014
Amorpha fruticosa	False indigo bush	B (Oregon)	2014 2016
Anchusa arvensis	Small bugloss	Idaho	2011 2012
Anchusa officinalis	Common bugloss	B, T (Oregon) A (Union) Watch List[2] (Baker)	2011 2012 2013 2014 2016
Anthemis arvensis	Scentless chamomile	BLM WSC	2013 2014
Anthemis cotula	Mayweed chamomile	BLM WSC	2013 2014
Arctium minus	Common burdock	BLM WSC	2013 2014
Arundo donax	Giant reed	BLM WSC	2013 2014
Avena fatua	Wild oat	C (Union)	2016
Azolla pinnata	Feathered mosquito fern	Idaho	2012
Bassia scoparia (Kochia scoparia)	Kochia; burning bush	B (Oregon) B (Morrow, Umatilla, Agricultural Class B[3] (Union) C (Baker, Malheur)	2011 2013 2014 2016
Bassia hyssopifolia	Fivehorn smotherweed	BLM WSC	2013 2014
Berteroa incana	Hoary alyssum	Idaho	2011 2012
Brachypodium sylvaticum	False brome	B (Oregon)	2011 2012 2013 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Brassica nigra	Black mustard	BLM WSC	2013 2014
Brassica tournefortii	Wild turnip	BLM WSC	2014
Bromus arvensis (B. japonicus)	Japanese brome	BLM WSC	2014
Bromus diandrus	Ripgut brome	BLM WSC	2014
Bromus rubens	Red brome	BLM WSC	2014
Bromus tectorum[4]	Cheatgrass	C (Malheur)	2016
Bryonia alba	White bryonia	A (Oregon) Idaho	2011 2012 2014
Buddleja davidii (B.variabilis)	Butterfly bush	B (Oregon)	2011 2012 2014
Butomus umbellatus	Flowering rush	B, T (Oregon) Idaho	2012 2014 2016
Caesalpinia gilliesii	Mexican bird-of-paradise	BLM WSC	2014
Cannabis sativa	Marijuana	A (Umatilla)	2016
Cardaria chalepensis (Lepidium chalepensis)	Lens-podded whitetop	B (Oregon) BLM WSC	2014 2016
Cardaria draba (Lepidium draba)	Whitetop; hoary cress	B (Oregon) A (Baker[5], Morrow, Union) B (Baker[5], Malheur, Umatilla) BLM WSC Idaho	2011 2012 2014 2016
Cardaria pubescens	Hairy whitetop	B (Oregon) BLM WSC	2014
Carduus acanthoides	Plumeless thistle	A (Oregon) BLM WSC Idaho	2011 2012 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Carduus nutans	Musk thistle	B (Oregon) A (Morrow) B (Malheur, Umatilla) Watch List (Baker) BLM WSC Idaho	2011 2012 2014 2016
Carduus pycnocephalus	Italian thistle	B (Oregon) BLM WSC	2012 2014
Carduus teniflorus	Slender-flowered thistle	B (Oregon) BLM WSC	2012 2014
Carpobrotus chilensis	Sea iceplant	BLM WSC	2014
Carpobrotus edulis	Hottentot fig	BLM WSC	2014
Carthamus baeticus	Smooth distaff thistle	A (Oregon)	2011 2012 2014
Carthamus lanatus	Woolly distaff thistle	A (Oregon) BLM WSC	2012 2014
Carum carvi	Common caraway	BLM WSC	2014
Cenchrus longispinus	Longspine sandbur	BLM WSC	2014
Centaurea calcitrapa	Purple starthistle	A, T (Oregon) A (Malheur, Umatilla) BLM WSC	2012 2014 2016
Centaurea cyanus	Cornflower, bachelor buttons	BLM WSC	2014
Centaurea debeauxii	Meadow knapweed	Idaho	2012
Centaurea diffusa	Diffuse knapweed	B (Oregon) A (Baker, Malheur) B (Morrow, Umatilla, Union) BLM WSC Idaho	2011 2012 2014 2016
Centaurea iberica	Iberian starthistle	A (Oregon) BLM WSC	2011 2012 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Centaurea diffusa	diffuse knapweed	B (Oregon) A (Baker, Malheur) B (Morrow, Umatilla, Union) BLM WSC Idaho	2011 2012 2014 2016
Centaurea macrocephala	Bighead knapweed	BLM WSC	2014
Centaurea melitenisis	Malta starthistle	BLM WSC	2014
Centaurea montana	Mountain cornflower	BLM WSC	2014
Centaurea nigrescens *(C. debeauxii;* *C. jacea x nigra;* *C. pratensis)*	Meadow knapweed Short-fringe knapweed	B (Oregon) A (Malheur, Union) BLM WSC	2012 2014 2016
Centaurea solstitialis	Yellow starthistle	B (Oregon) A (Baker, Malheur, Morrow, Union) B (Umatilla) BLM WSC Idaho	2011 2012 2014 2016
Centaurea stoebe subsp. micranthos *(C. maculosa)*	Spotted knapweed	B, T (Oregon) A (Baker, Malheur, Umatilla) B (Morrow, Union) BLM WSC Idaho	2011 2012 2014 2016
Centaurea trichocephala	Feather-headed knapweed	BLM WSC	2014
Centaurea virgata *(C. triumfetti)*	Squarrose knapweed	A, T (Oregon) A (Malheur) BLM WSC	2011 2012 2014 2016
Centromadia pungens subsp. pungens [6] *(Hemizonia pungens)*	Spikeweed; common tarweed	B (Oregon) A (Morrow)	2014 2016
Ceratocephala testiculata *(Ranunculus testiculatus)*	Bur buttercup	C (Baker)	2016

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Chondrilla juncea	Rush skeletonweed	B, T (Oregon) A (Baker, Malheur, Morrow, Umatilla, Union) BLM WSC	2011 2012 2014 2016
Cichorium intybus	Chicory	B (Baker) BLM WSC	2014 2016
Cicuta douglasii [7]	Water hemlock	B (Morrow) C (Baker)	2013 2016
Cirsium arvense	Canada thistle	B (Oregon) B (Malheur, Morrow, Umatilla, Union) BLM WSC Idaho	2011 2012 2013 2014 2016
Cirsium vulgare	Bull thistle	B (Oregon) B (Baker) Agricultural Class B[3] (Union) C (Malheur) BLM WSC	2012 2013 2014 2016
Clematis orientalis	Chinese clematis	BLM WSC	2013 2014
Clematis vitalba	Old man's beard	B (Oregon)	2011 2012 2013 2014
Cobomba caroliniana	Fanwort	Idaho	2012
Conium maculatum	Poison hemlock	B (Oregon) B (Morrow) Agricultural Class B[3] (Union) C (Baker, Malheur) BLM WSC Idaho	2011 2012 2013 2014 2016

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Convolvulus arvensis	Field bindweed	B, T (Oregon) B (Morrow) C (Baker, Malheur) BLM WSC Idaho	2011 2012 2013 2014 2016
Conyza canadens [7]	Horseweed; mares tail	Agricultural Class B[3] (Union)	2016
Cortaderia jubata	Jubata grass, Andean pampas grass	B (Oregon) BLM WSC	2011 2012 2013 2014
Cortaderia selloana	Pampas grass	BLM WSC	2013 2014
Crepis setosa	Bristly hawkweed	BLM WSC	2013 2014
Crupina vulgaris	Common crupina	B (Oregon) A (Malheur, Morrow) BLM WSC Idaho	2011 2012 2013 2014 2016
Cuscuta campestris	Dodder	B (Baker)	2013
Cuscuta japonica	Japanese dodder	A (Oregon)	2012 2013 2014
Cuscuta pentagona	Dodder	B (Umatilla)	2011 2013
Cuscuta spp.	Dodder	B (Oregon) B (Baker, Morrow, Umatilla) C (Malheur)	2011 2012 2013 2014 2016
Cynara cardunculus	Artichoke thistle	BLM WSC	2013 2014
Cynodon dactylon	Bermudagrass	BLM WSC	2013 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Cynoglossum officinale	Houndstongue	B (Oregon) A (Morrow) Agricultural Class B[3] (Union) B (Malheur) BLM WSC Idaho	2011 2012 2013 2014 2016
Cyperus esculentus	Yellow nutsedge	B (Oregon) C (Malheur)	2012 2013 2014 2016
Cyperus rotundus	Purple nutsedge	A (Oregon)	2011 2012 2013 2014
Cytisus junceum	Spanish broom	BLM WSC	2013 2014
Cytisus monspessulanas	French broom	BLM WSC	2013 2014
Cytisus scoparius	Scotch broom	B (Oregon) A (Union) BLM WSC Idaho	2011 2012 2013 2014 2016
Cytisus striatus	Portuguese broom	B (Oregon) BLM WSC	2012 2013 2014
Daphne laureola	Spurge laurel	B (Oregon)	2012 2013 2014
Datura stramonium	Jimsonweed	A (Malheur)	2014 2016
Digitalis purpurea	Foxglove	BLM WSC	2013 2014
Dipsacus fullonum	Fuller's Teasel	B (Baker) BLM WSC	2013 2014 2016
Dipsacus laciniatus	Cutleaf teasel	B (Oregon)	2011 2012 2013 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Echium plantagineum	Paterson's curse	A (Oregon)	2011 2012 2013 2014
Echium vulgare	Blueweed, Viper's bugloss	BLM WSC Idaho	2011 2012 2013 2014
Egeria densa	Brazilian waterweed	B (Oregon) BLM WSC Idaho	2011 2012 2013 2014
Ehrharta calycina	Veldt grass	BLM WSC	2013 2014
Eichhornia crassipes	Water hyacinth	BLM WSC	2011 2013 2014
Elaeagnus angustifolia	Russian olive	BLM WSC	2013 2014
Elymus repens *(Agropyron repens)*	Quackgrass	B (Umatilla) Agricultural Class B[3] (Union) C (Malheur) BLM WSC	2013 2014 2016
Equisetum arvense [7]	Western horsetail	C (Malheur)	2011 2016
Eragrostis lehmanniana	Lehmann lovegrass	BLM WSC	2013 2014
Erechtites glomerata	Australian fireweed	BLM WSC	2013 2014
Erica lusitanica	Spanish heath	B (Oregon)	2012 2013 2014
Euphorbia cyparissias	Cypress spurge	BLM WSC	2013 2014
Euphorbia esula	Leafy spurge	B (Oregon) A (Baker, Malheur, Morrow, Umatilla, Union) BLM WSC Idaho	2011 2012 2013 2014 2016

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Euphorbia myrsinites	Myrtle spurge	B (Oregon) B (Baker, Morrow) BLM WSC	2012 2013 2014 2016
Euphorbia oblongata	Oblong spurge	A (Oregon)	2011 2012 2013 2014
Fallopia japonica (Polyganum cuspidatum)	Japanese knotweed (fleece flower)	B (Oregon)	2011 2012 2013 2014
Fallopia polystachyum (Polyganum)	Himalayan knotweed	B (Oregon)	2012 2013 2014
Fallopia sachalinense (Polyganum)	Giant knotweed	B (Oregon)	2011 2012 2013 2014
Ficus carica	Edible fig	BLM WSC	2013 2014
Foeniculum vulgare	Fennel	BLM WSC	2013 2014
Galega officinalis	Goatsrue	A (Oregon) BLM WSC	2011 2012 2013 2014
Galium aparine [7]	Catchweed bedstraw	Agricultural Class B[3] (Union)	2016
Genista monspessulana	French broom	B (Oregon)	2012 2013 2014
Geranium lucidum	Shiny leaf geranium	Oregon	2012 2013 2014
Geranium robertianum	Herb Robert geranium	B (Oregon)	2012 2013 2014
Gypsophila paniculata	Babys breath	BLM WSC	2013 2014
Halogeton glomeratus	Halogeton	B (Oregon) C (Malheur) BLM WSC	2011 2012 2013 2014 2016

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Hedera helix	English ivy	B (Oregon)	2011 2012 2013 2014 2016
Heracleum mantegazzianum	Giant hogweed	A (Oregon) Idaho	2011 2012 2013 2014
Hesperis matronalis	Dames's rocket	BLM WSC	2013 2014
Hibiscus trionum	Venice mallow	B (Baker)	2013 2016
Hieracium aurantiacum (Pilosella aurantiacum)	Orange hawkweed	A, T (Oregon) A (Union) BLM WSC Idaho	2011 2012 2013 2014 2016
Hieracium caespitosum (H. pratense; Pilosella caespitosuma)	Meadow hawkweed	B, T (Oregon) A (Union) BLM WSC Idaho	2011 2012 2013 2014
Hieracium floribundum	Yellow hawkweed	A (Oregon)	2011 2012 2013 2014
Hieracium glomeratum	Yellow Devil hawkweed	Idaho	2011 2012
Hieracium pilosella	Mouse-ear hawkweed	A (Oregon) BLM WSC	2011 2012 2013 2014
Hieracium piloselloides (Pilosella piloselloides)	King-devil hawkweed; Tall hawkweed	A (Oregon) A (Union) Idaho	2011 2012 2013 2014 2016
Hydrcharis morsus-ranae	Common/ European frogbit	Idaho	2012

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Hydrilla venticillata	Hydrilla	A (Oregon) A (Malheur) BLM WSC Idaho	2011 2012 2013 2014
Hyoscyamus niger	Black henbane	A (Baker) BLM WSC Idaho	2011 2012 2013 2014 2016
Hypericum perforatum	St. Johnswort; Klamathweed	B (Oregon) A (Malheur) Agricultural Class B[3] (Union) B (Baker, Morrow, Umatilla) BLM WSC	2012 2013 2014 2016
Hyposhaeris radicata	Common catsear	BLM WSC	2013 2014
Impatiens glandulifera	Policeman's helmet	B (Oregon) Idaho	2011 2012 2013 2014
Iris pseudacorus	Yellow flag iris	B (Oregon) Idaho	2012 2013 2014 2016
Isatis tinctoria	Dyers woad	B (Oregon) A (Malheur) Watch List[2] (Baker) BLM WSC Idaho	2011 2012 2013 2014 2016
Knautia arvensis	Blue buttons	BLM WSC	2013 2014
Lamiastrum galeobdolon	Yellow archangel	B (Oregon)	2012 2013 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Lathyrus latifolius	Perennial peavine	B (Oregon) BLM WSC	2011 2012 2013 2014 2016
Lepidium latifolium	Perennial pepperweed	B, T (Oregon) A (Baker, Union) B (Malheur[8], Morrow, Umatilla) BLM WSC Idaho	2011 2012 2013 2014 2016
Lepidium pubescens (Cardaria)	Hairy whitetop	B (Oregon)	2012
Lespedeza cuneata	Himalayan bush clover	BLM WSC	2013 2014
Leucantehmum vulgare (Chrysanthemum leucanthemum)	Ox-eye daisy	BLM WSC Idaho	2011 2012 2013 2014
Linaria dalmatica	Dalmation toadflax	B, T (Oregon) A (Baker, Malheur, Morrow) B (Umatilla, Union) BLM WSC Idaho	2011 2012 2013 2014 2016
Linaria vulgaris	Yellow toadflax	B, T (Oregon) A (Malheur, Morrow) B (Baker) BLM WSC Idaho	2011 2012 2013 2014 2016
Ludwigia peploides, L. hexapetala, L. grandiflora	Water primrose	B (Oregon)	2012 2013 2014
Lysimachia vulgaris	Garden loosestrife	BLM WSC	2013 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Lythrum salicaria	Purple loosestrife	B (Oregon) B (Malheur) A (Baker) BLM WSC Idaho	2011 2012 2013 2014 2016
Lythrum virgatum	Wand loosestrife	BLM WSC	2013 2014
Madia sativa	Chilean tarweed	BLM WSC	2013 2014
Melilotus officinalis	Sweet clover	C (Malheur)	2013 2016
Memizonia pungens	Spikeweed	B (Oregon)	2012
Milium vernale	Milium	Idaho	2011 2012
Myriophyllum aquaticum	Parrots feather	B (Oregon) Idaho	2011 2012 2013 2014
Myriophyllum heterophyllum	Variable-leaf-milfoil	Idaho	2012
Myriophyllum spicatum	Eurasian watermilfoil	B (Oregon) BLM WSC Idaho	2011 2012 2013 2014 2016
Nardus stricta	Matgrass	A (Oregon) BLM WSC Idaho	2011 2012 2013 2014
Nymphoides pelata	Yellow floating heart	A (Oregon) Idaho	2011 2012 2013 2014
Onopordum acanthium	Scotch thistle	B (Oregon) A (Baker, Morrow) B (Malheur, Umatilla, Union) BLM WSC Idaho	2011 2012 2013 2014 2016
Onopordum tauricum	Taurian thistle	A (Oregon) BLM WSC	2012 2013 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Orobanche minor	Small broomrape	B (Oregon)	2012 2013 2014 2016
Panicum miliaceum	Wild proso millet	A (Malheur) BLM WSC	2013 2014 2016
Peganum harmala	African rue	A (Oregon) BLM WSC	2011 2012 2013 2014
Pennisetum setaceum	Crimson fountain grass	BLM WSC	2013 2014
Phalaris arundinacea	Reed canarygrass; ribbongrass	B, T (Oregon)	2014 2016
Phragmites australis	Common reed	B (Oregon) B (Malheur) Idaho	2012 2013 2014 2016
Polygonum bohemicum	Bohemian knotweed	Idaho	2011 2012
Polygonum cuspidatum (Fallopia japonica)	Japanese knotweed	B (Oregon) A (Baker, Union)	2012 2016
Polygonum sachalinensis (Fallopia sachalinense)	Giant knotweed	B (Oregon) A (Union) Idaho	2012 2016
Potamogeton crispus	Curlyleaf pondweed	Idaho	2012
Potentilla recta	Sulfur cinquefoil	B (Oregon) A (Malheur, Union[9]) B (Baker, Union[9]) BLM WSC	2012 2013 2014 2016
Pueraria lobata	Kudzu	A (Oregon)	2011 2012 2013 2014
Ranunculus ficaria	Lesser celandine	B (Oregon)	2011 2012 2013 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Retama monosperma	Bridal veil broom	BLM WSC	2013 2014
Rorippa sylvestris	Creeping yellow cress	B (Oregon) A (Umatilla)	2011 2012 2013 2014 2016
Rubus armeniacus	Armenian (Himalayan) blackberry	B (Oregon) BLM WSC	2011 2012 2013 2014 2016
Salsola tragus *(S. iberica; S. kali)*	Russian thistle	Agricultural Class B[3] (Union) C (Baker, Malheur)	2013 2016
Salvia aethiopis	Mediterranean sage	B (Oregon) A (Malheur, Morrow) Watch List (Baker) BLM WSC Idaho	2011 2012 2013 2014 2016
Salvinia molesta	Giant salvinia	Idaho	2012
Saponaria officinalis	Bouncing bet	BLM WSC	2013 2014
Schinus terebrinthifolius	Brazillian pepper	BLM WSC	2013 2014
Schismus arabicus	Schismus	BLM WSC	2013 2014
Schismus barbatus	Mediterranean grass	BLM WSC	2013 2014
Secale cereal	Cereal rye	B (Morrow, Umatilla)	2013 2016
Senecio jacobaea	Tansy ragwort	B, T (Oregon) A (Baker, Malheur, Morrow, Umatilla, Union) BLM WSC Idaho	2011 2012 2013 2014 2016
Senecio mikanoides	German ivy	BLM WSC	2013 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Silybum marianum	Milk thistle	B (Oregon) A (Malheur)	2012 2013 2014 2016
Solanum dulcamara	Bitter nightshade	BLM WSC	2013 2014
Solanum elaeagnifolium	Silverleaf nightshade	A (Oregon) A (Malheur)	2011 2012 2013 2014 2016
Solanum rostratum	Buffalobur	B (Oregon) A (Baker, Malheur) Idaho	2011 2012 2013 2014 2016
Sonchus arvensis	Perennial sowthistle	B (Morrow) BLM WSC Idaho	2011 2012 2013 2014 2016
Sorghum halepense	Johnsongrass	B (Oregon) A (Malheur) B (Morrow, Umatilla) BLM WSC Idaho	2011 2012 2013 2014 2016
Spartina alterniflora	Smooth cordgrass	A (Oregon)	2011 2012 2013 2014
Spartina anglica	Common cordgrass	A (Oregon)	2011 2012 2013 2014
Spartina densiflora	Dense-flowered cordgrass	A (Oregon)	2011 2012 2013 2014
Spartina patens	Saltmeadow cordgrass	A (Oregon)	2011 2012 2013 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Spartium junceum	Spanish broom	B (Oregon)	2012 2013 2014
Sphaerophysa salsula	Swainsonpea; Alkali swainsonpea	B (Oregon) A (Malheur) B (Umatilla) BLM WSC	2012 2013 2014 2016
Taeniatherum caput-medusae	Medusahead rye	B (Oregon) A (Union) B (Morrow) C (Baker, Malheur) BLM WSC	2011 2012 2013 2014 2016
Tamarix aphylla	Athel tamarisk	BLM WSC Idaho	2013
Tamarix ramosissima	Saltcedar	B, T (Oregon) A (Baker) C (Malheur) BLM WSC	2011 2012 2013 2014 2016
Tanacetum vulgare	Common tansy	B (Baker) BLM WSC	2013 2014 2016
Trapa natans	European water chestnut	A (Oregon) Idaho	2011 2012 2013 2014
Tribulus terrestris	Puncturevine	B (Oregon) B (Baker, Morrow, Umatilla, Union) C (Malheur) Idaho	2011 2012 2013 2014 2016
Tussilago farfara	Coltsfoot	A (Oregon)	2011 2012 2013 2014
Ulex europaeus	Gorse	B (Oregon) BLM WSC	2011 2012 2013 2014

Appendix 2-C. Noxious Weed List

Scientific Name (Synonym Name)	Common Name	Noxious Weed Designation and List	Survey
Ulmus pumila	Siberian elm	BLM WSC	2013 2014
Ventenata dubia	Ventenata; North Africa grass	B (Malheur, Morrow)	2016
Verbascum blattaria	Moth mullein	C (Baker)	2013 2016
Verbascum thapsis	Common mullein	C (Baker)	2013 2016
Xanthium spinosum	Spiny cocklebur	B (Oregon) A (Malheur)	2012 2013 2014 2016
Zygophyllum fabago	Syrian bean-caper	A (Oregon) BLM WSC Idaho	2011 2012 2013 2014

[1] Owners or occupants in Malheur County with Russian knapweed infestations are required to control a minimum 20 percent of their annual infestation per discreet parcel of land per year. This includes a 50-foot buffer plus additional amounts that total 20 percent of the infestation.

[2] Watch List – Few known sites; controlled by Weed Supervisor county-wide (Baker County).

[3] Agricultural Class B is defined as "…a weed of economic importance, specifically in Union county agriculture, which is both locally abundant and abundant in neighboring counties."

[4] Due to the widespread nature of cheatgrass (*Bromus tectorum*) within the Site Boundary, this species was not mapped during surveys and is not included in Table 2.

[5] *Whitetop* is listed as an "A" weed in designated areas of the county (i.e., Pine Valley and West Baker Valley and Bowen Valley/Sumpter areas are mandatory control). Whitetop is a "B" weed in all other areas of the county.

[6] Considered native in California, but introduced in Oregon (Baldwin and Strother 2006; OFP 2015).

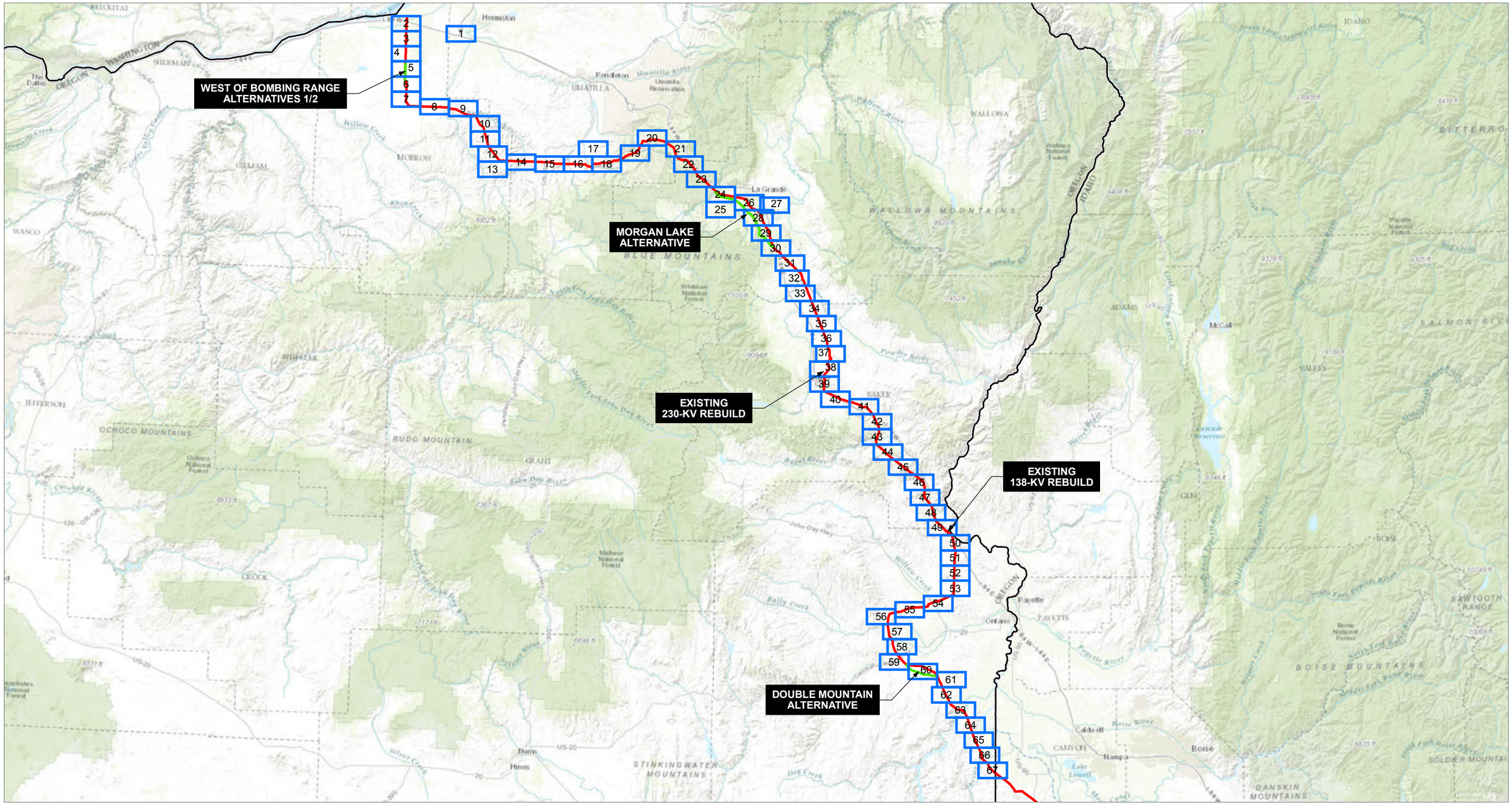
[7] This species is native to Oregon.

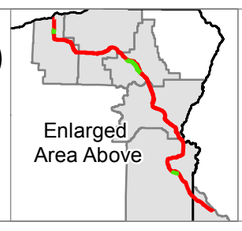
[8] Perennial pepperweed is an "A" weed only in that part of Malheur County south of the road leading from the junction of the Malheur County line and McBride Creek Road, west to Leslie Gulch Road, to Lake Owyhee and the area south of the road leading from the Rinehart Ranch to the Crowley Road, west to Highway 78, north to the Malheur County line. It is a "B" weed in all other parts of the county.

[9] This species is listed on both the Class A and Class B lists in Union County.

Appendix 2-D

Special Status Animal Results Mapbook





0 20
Miles

Project Features
Proposed Route
Alternative
Index Map

Boardman to Hemingway Transmission Line Project

Special Status Animal Overview Index

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IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed

Othe Features
- Road
- Interstate Highway
- Rivers

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 1 of 67

Date: 12/21/2016 2:17:01 PM
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Messner

Long-billed curlew

Long-billed curlew

Boardman Junction

84

PROPOSED ROUTE

West Ext Irrigation Canal

Long-billed curlew

Long-billed curlew

Grasshopper sparrow

Long-billed curlew

0 2,000 Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- US and State Highway
- Rivers

ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 2 of 67

Date: 12/21/2016 2:17:01 PM

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IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 3 of 67

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IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers

ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 4 of 67

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IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 5 of 67

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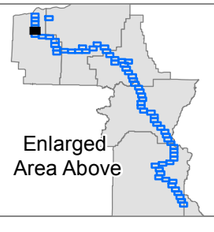
IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers

- ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 6 of 67

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IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Othe Features
- Road
- Rivers

ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 7 of 67

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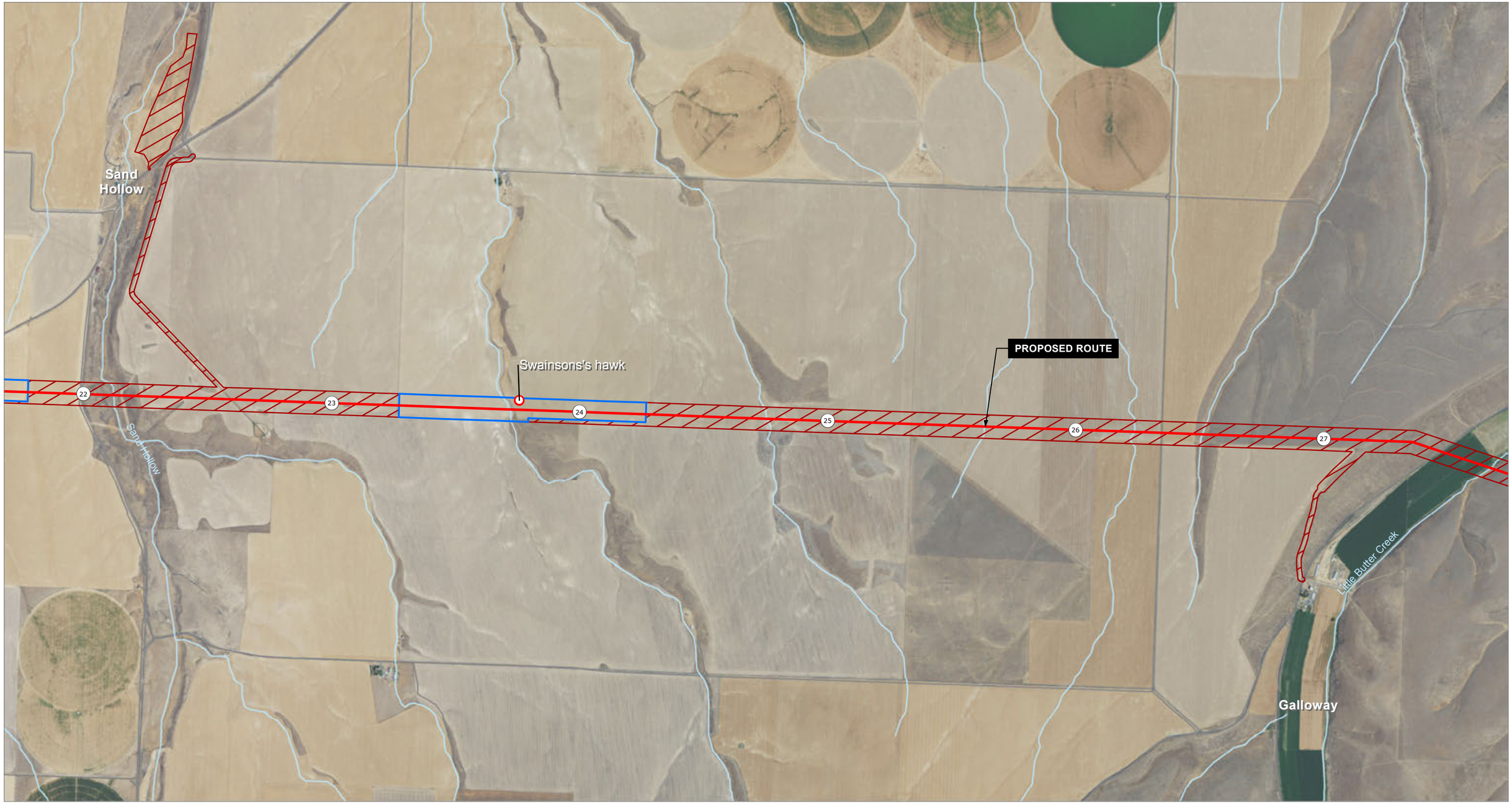

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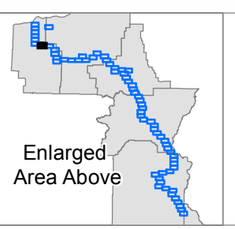

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

Figure 8 of 67

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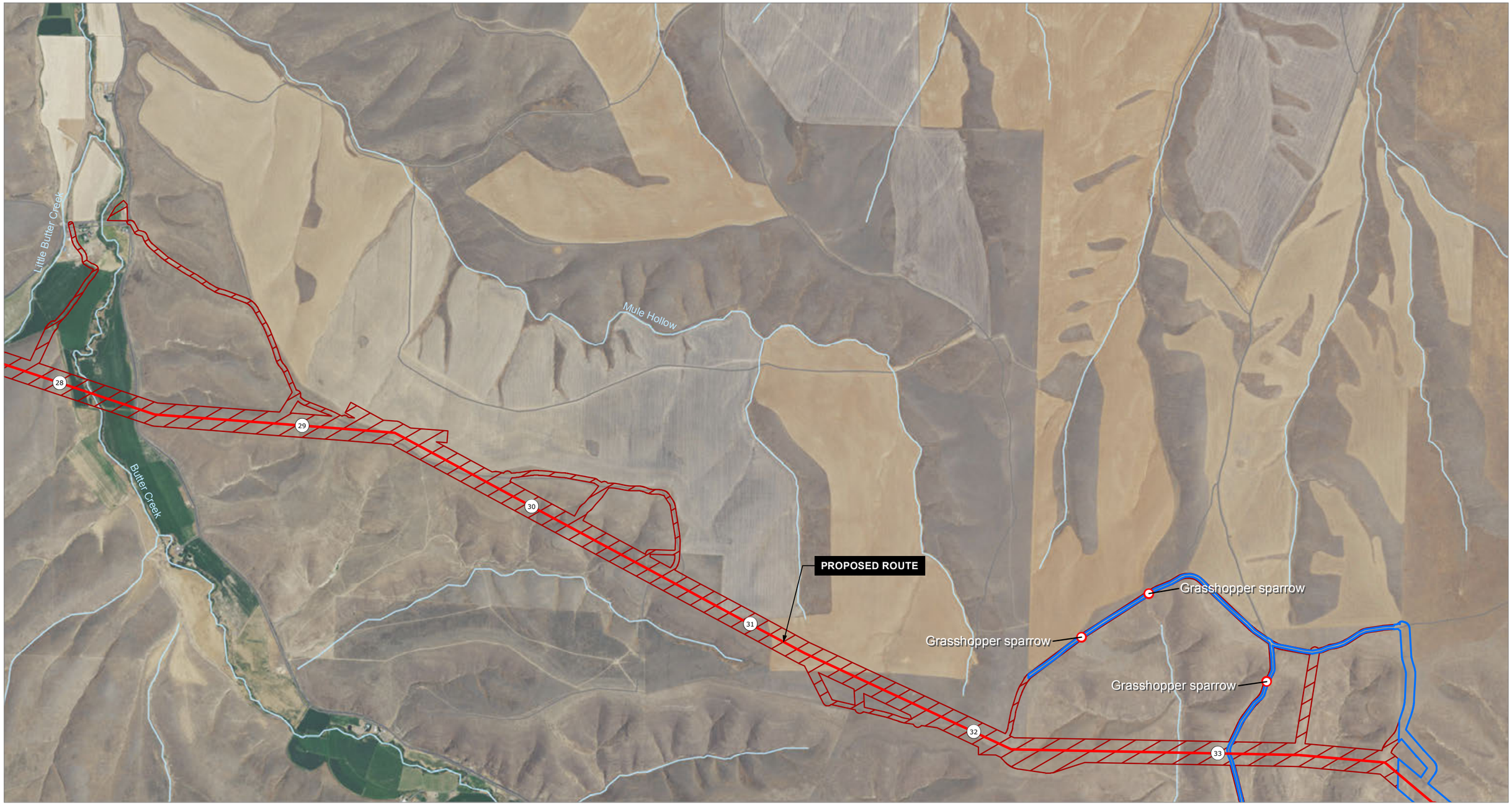

IDAHO POWER
An IDACORP Company

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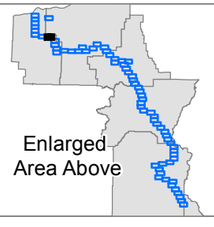
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

Figure 9 of 67

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IDAHO POWER
An IDACORP Company

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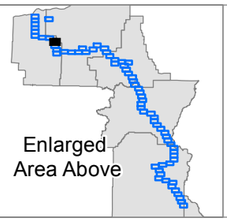
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers

Boardman to Hemingway Transmission Line Project

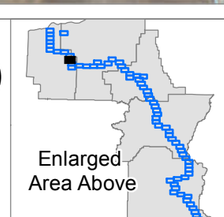
Special Status Animal Results

Figure 10 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Not Surveyed
- Milepost
- Proposed Route

Othe Features
- Road
- Rivers

Boardman to Hemingway
Transmission Line Project

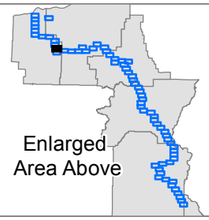
Special Status
Animal Results

Figure 11 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Not Surveyed
- Milepost
- Proposed Route

Othe Features
- Road
- Rivers

Boardman to Hemingway
Transmission Line Project

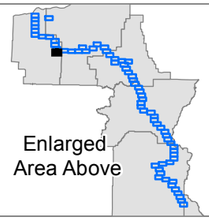
Special Status
Animal Results

Figure 12 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
Not Surveyed

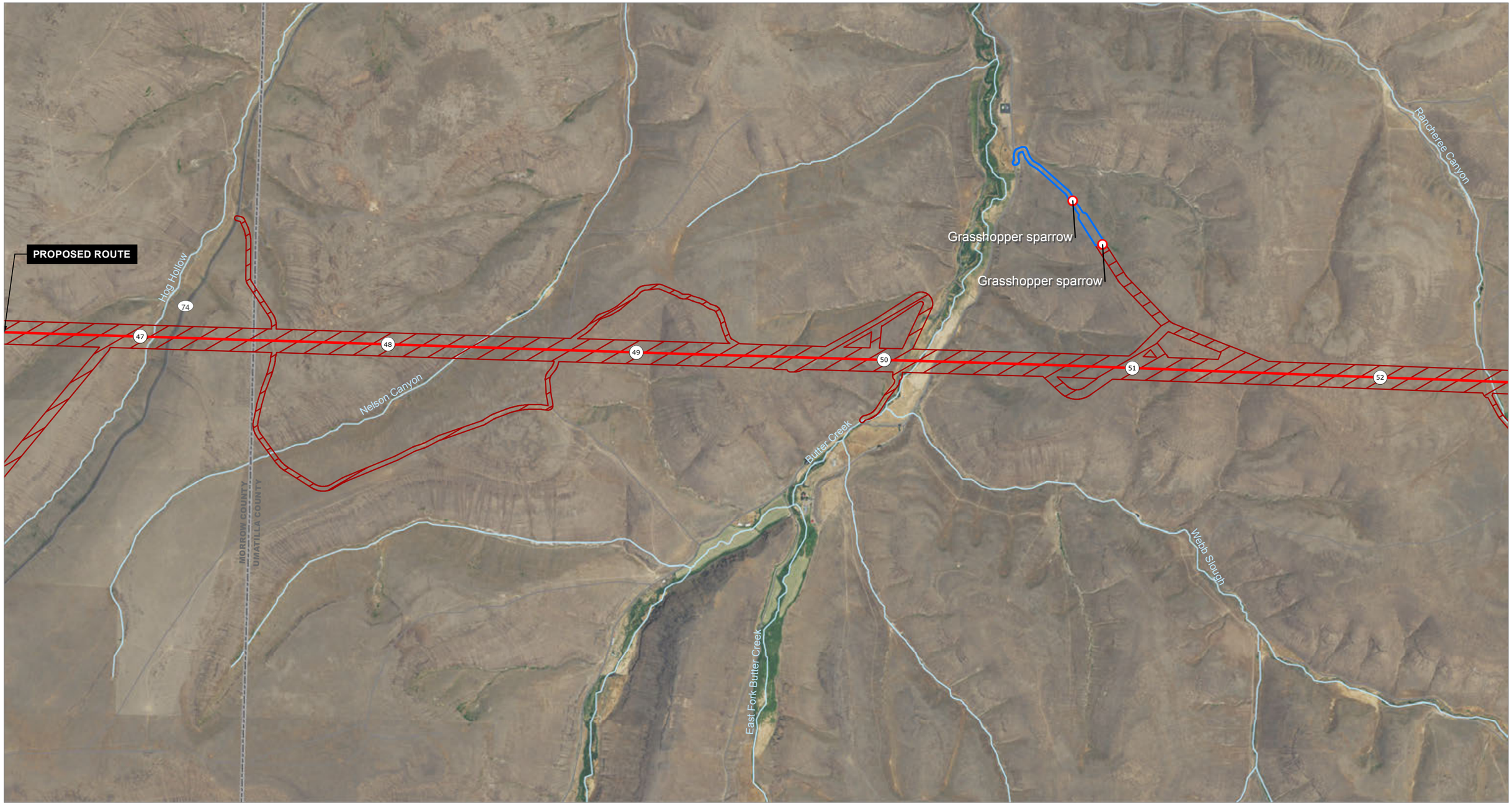
Othe Features
Road
Rivers

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

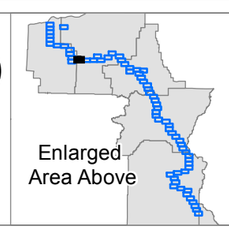
Figure 13 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

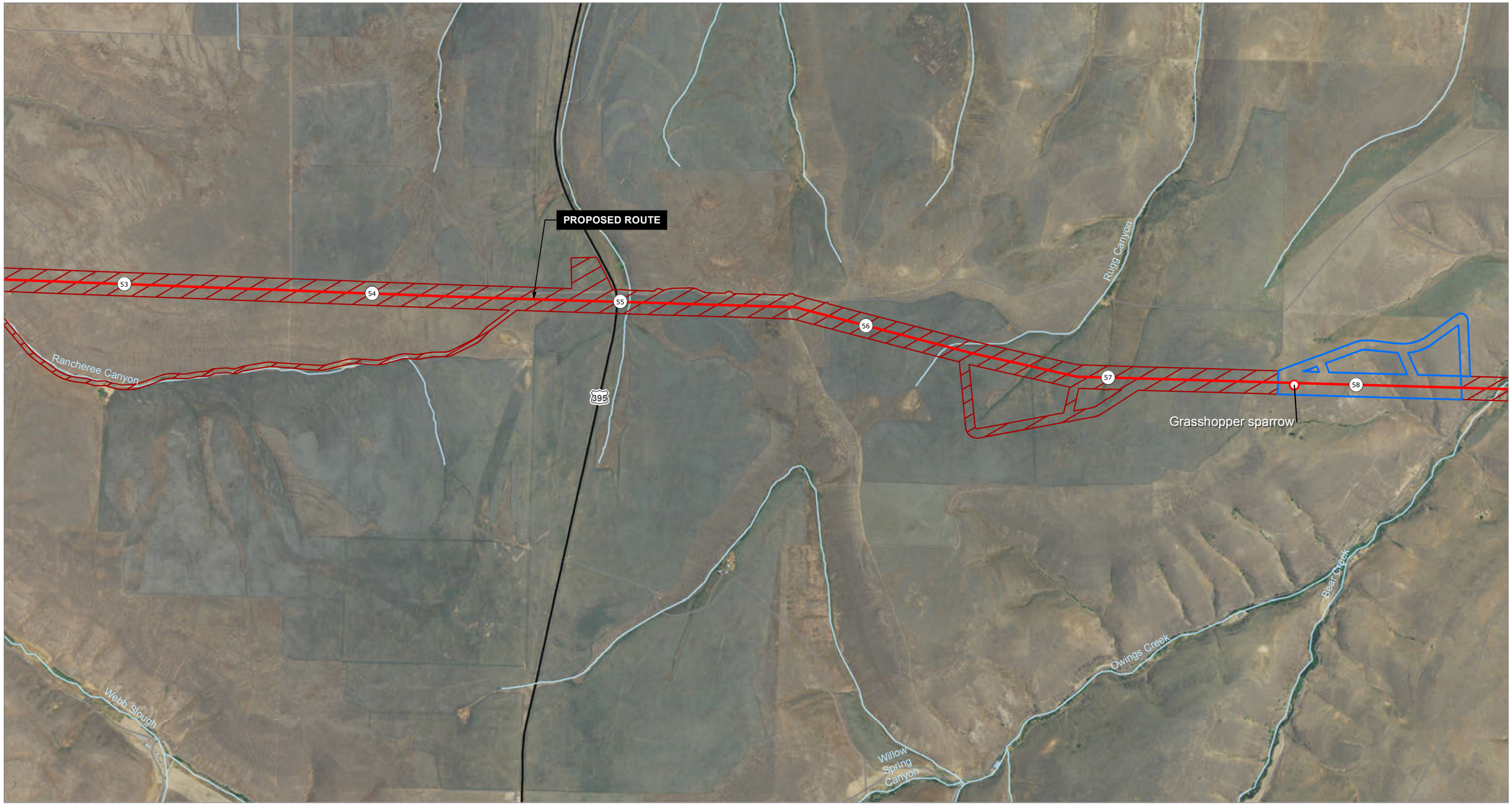
Othe Features
- Road
- Rivers

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

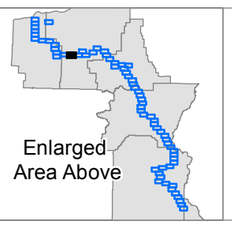
Figure 14 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

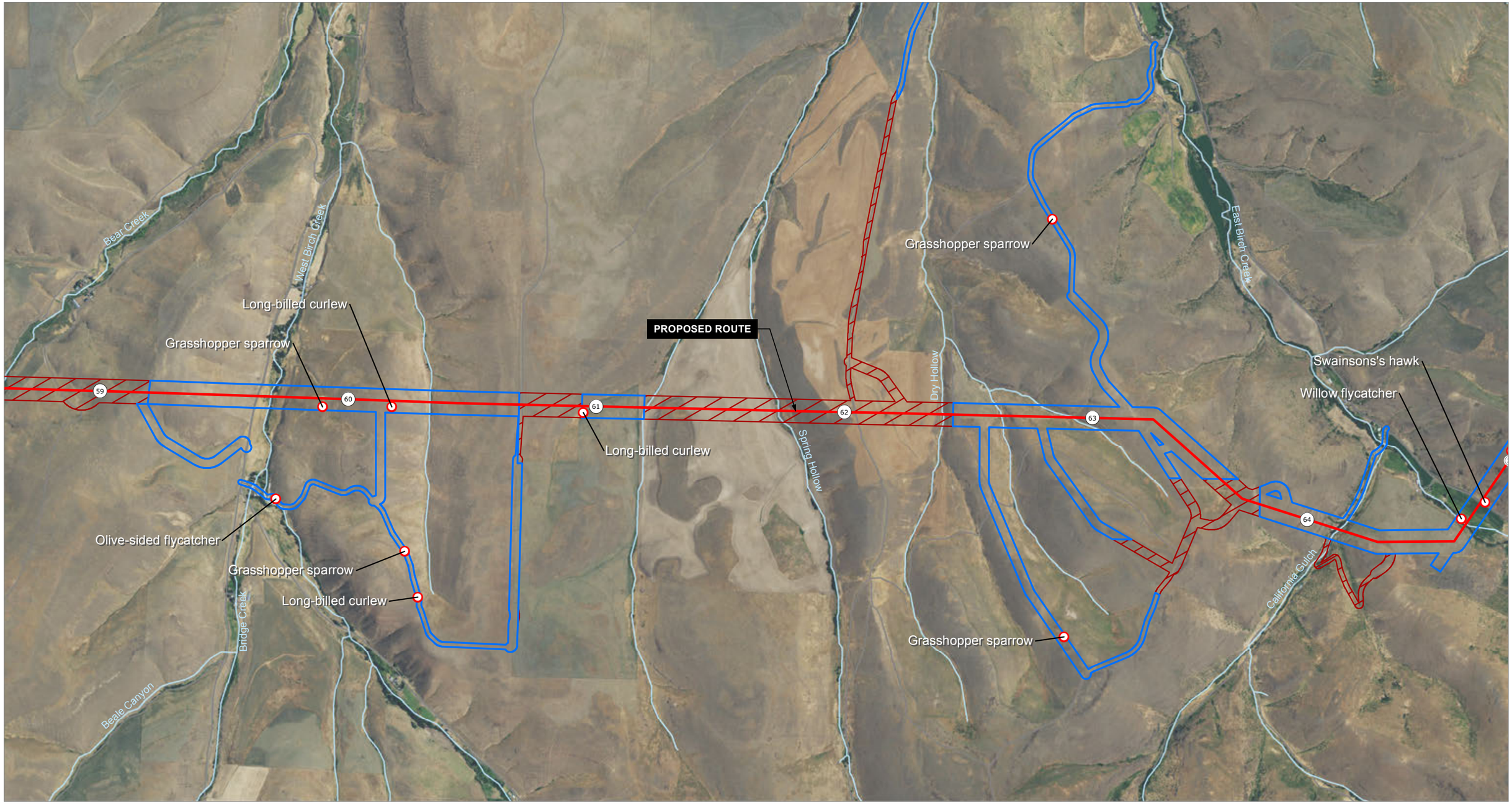
Othe Features
- Road
- US and State Highway
- Rivers

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 15 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers

Boardman to Hemingway
Transmission Line Project

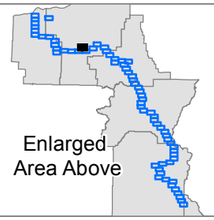
Special Status
Animal Results

Figure 16 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed

Map Features
- Special Status Animal

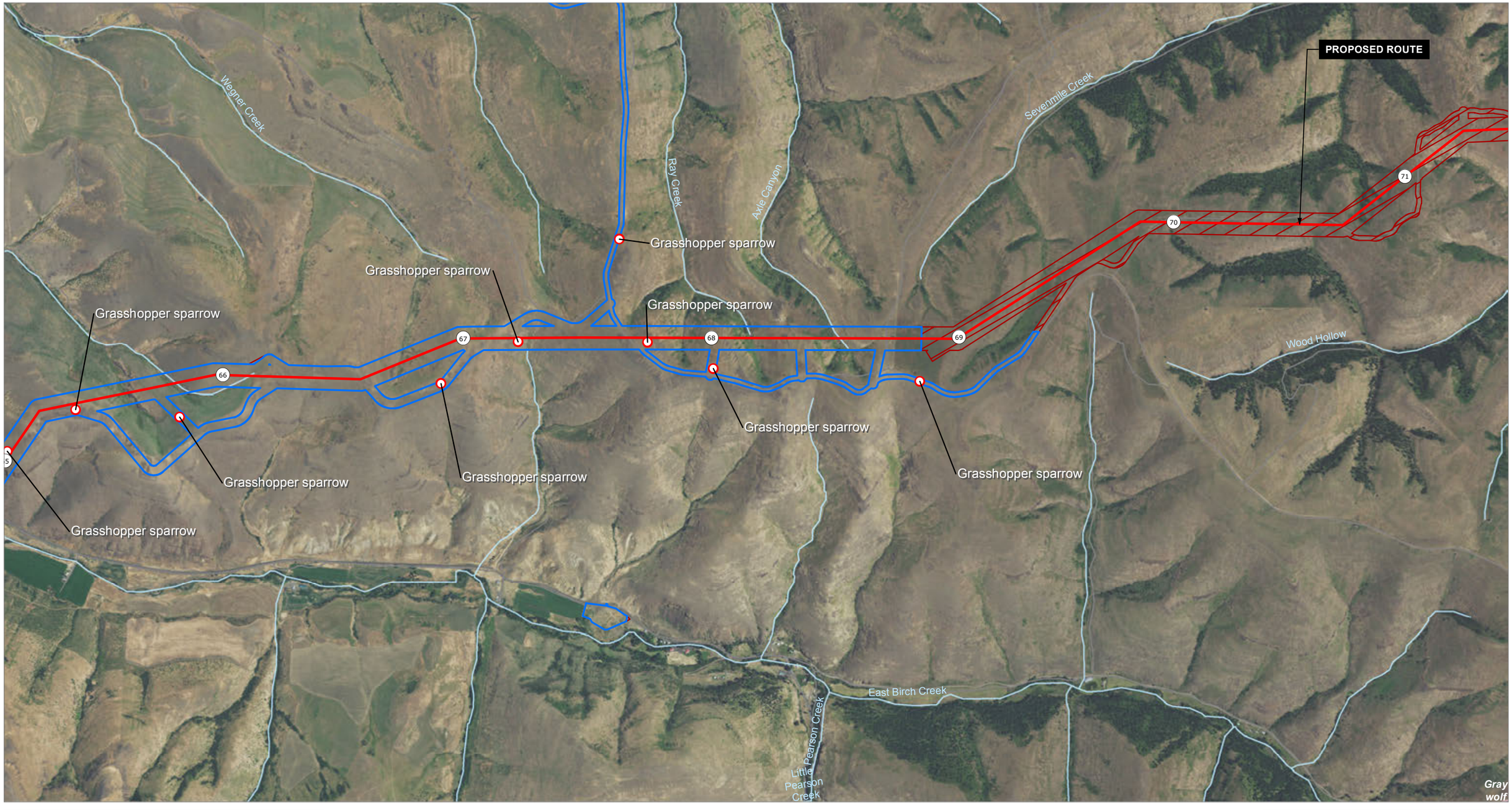
Othe Features
- Road
- US and State Highway
- Rivers

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

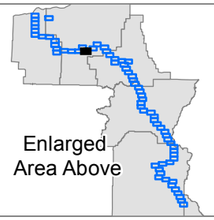
Figure 17 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers

- ORBIC Occurrence

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

Figure 18 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Not Surveyed
- Milepost
- Proposed Route

Othe Features
- Road
- Rivers

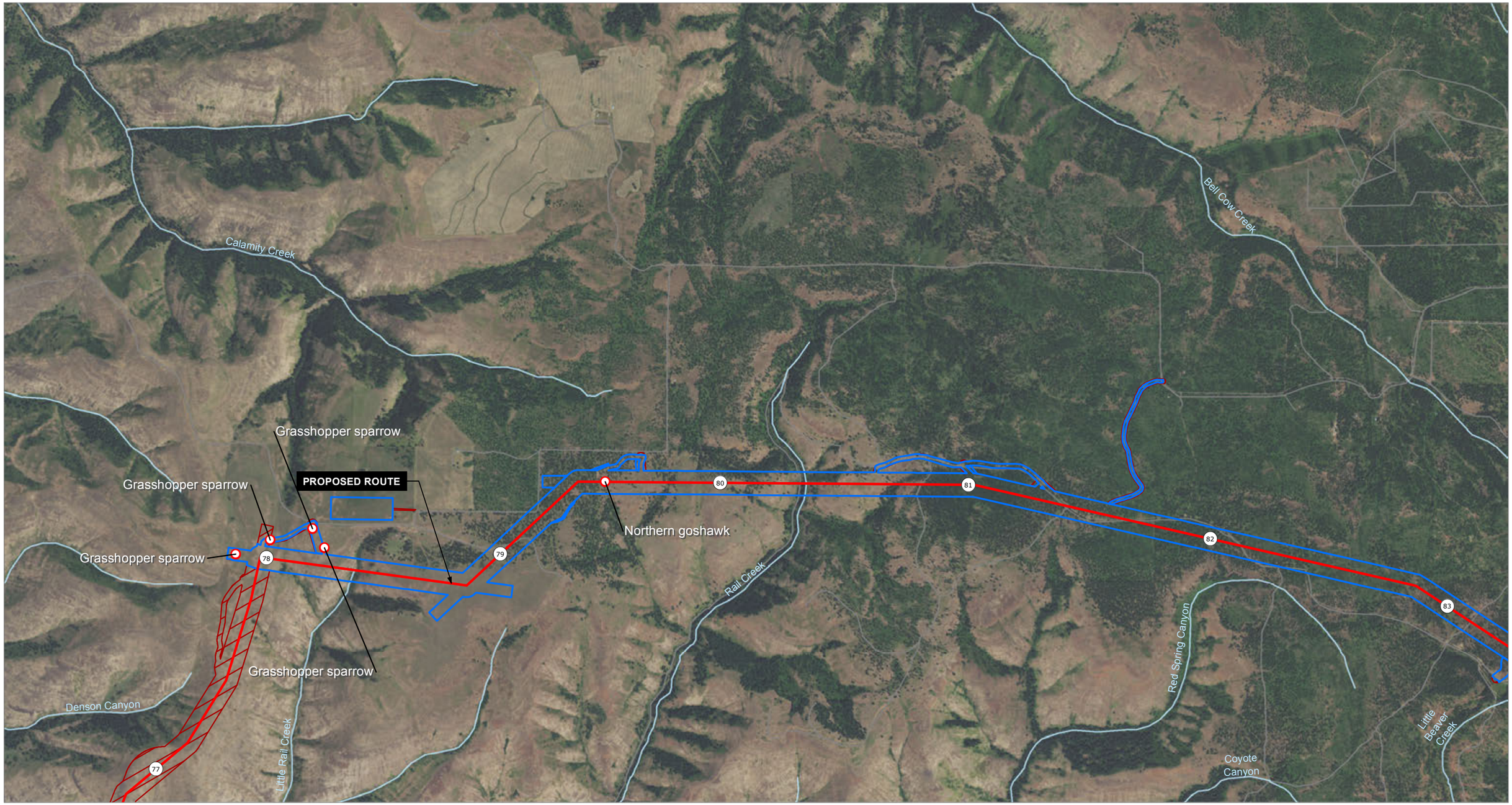
ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 19 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

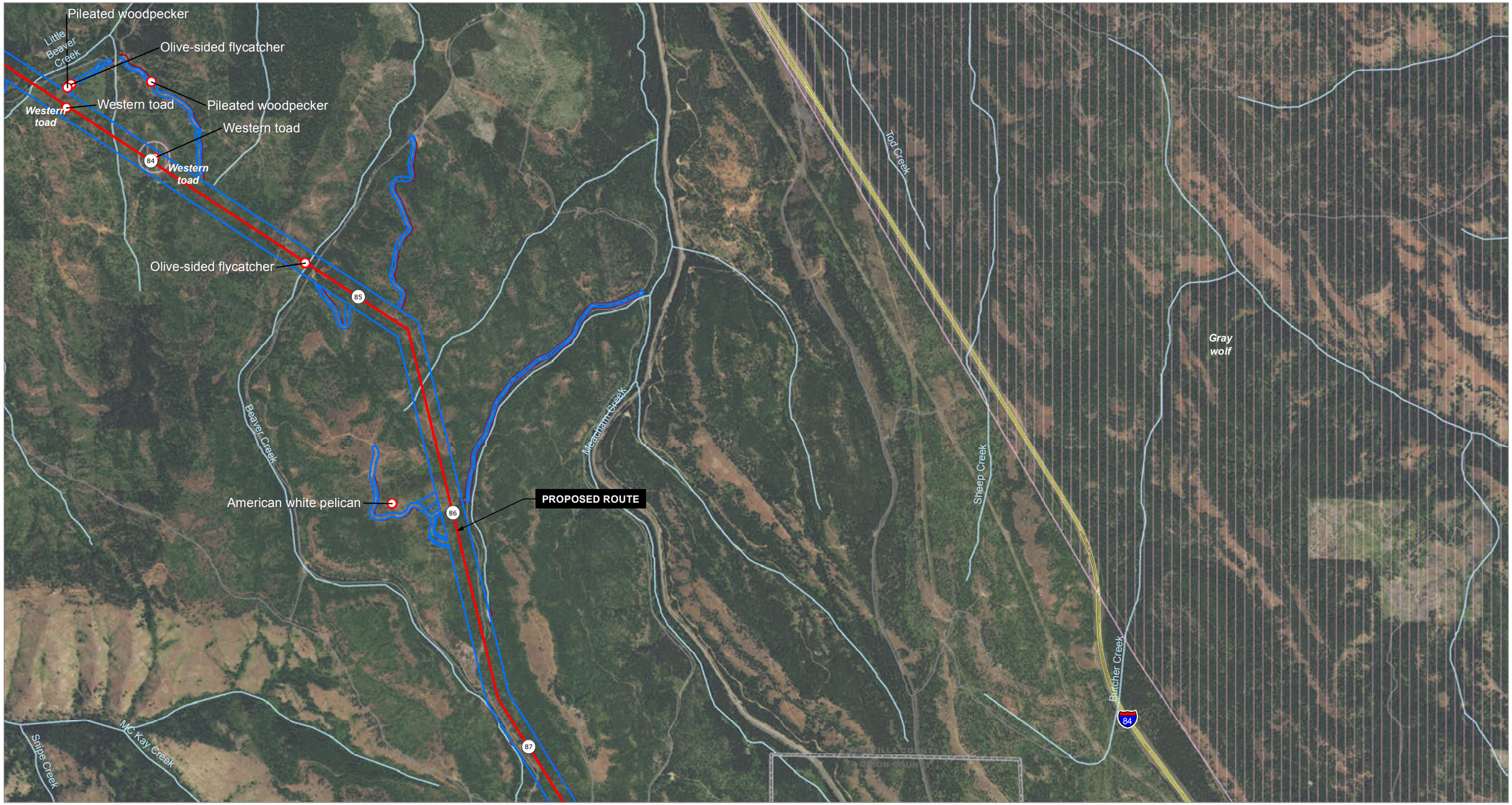
Othe Features
- Road
- Rivers

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

Figure 20 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- Rivers

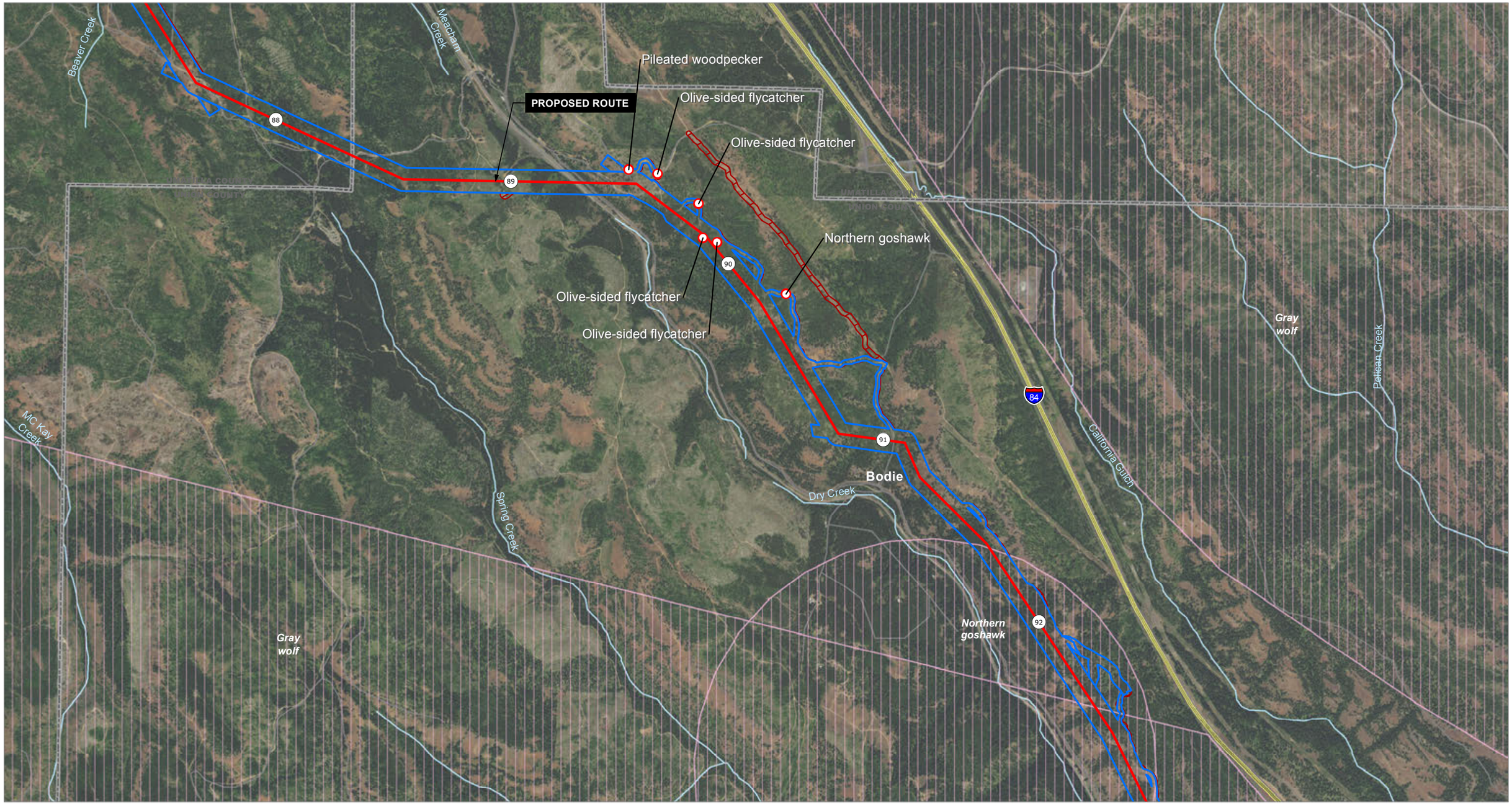
- ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 21 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- Rivers

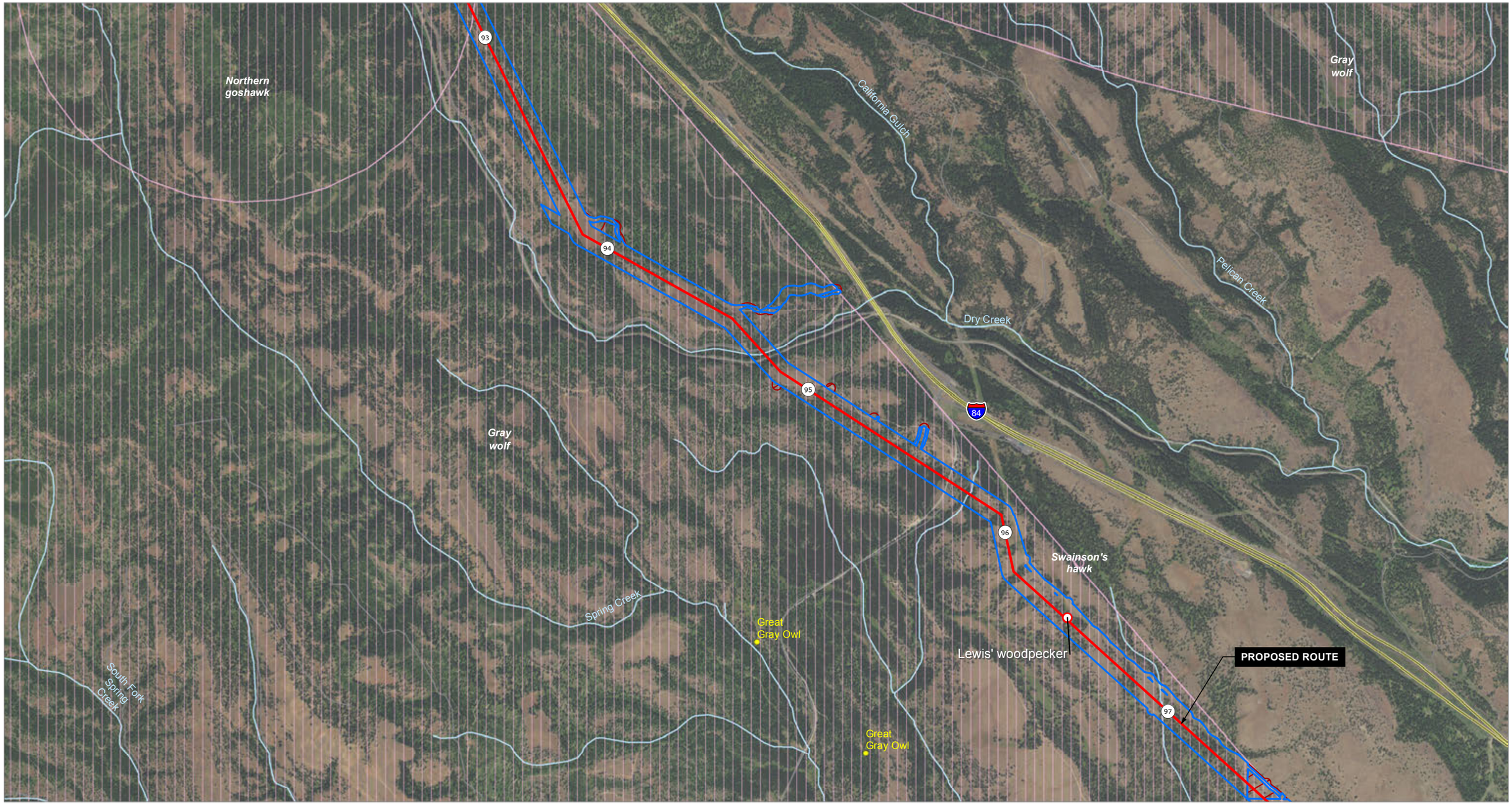
- ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

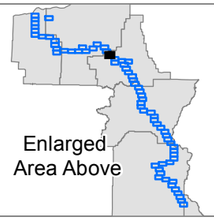
Figure 22 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- Rivers

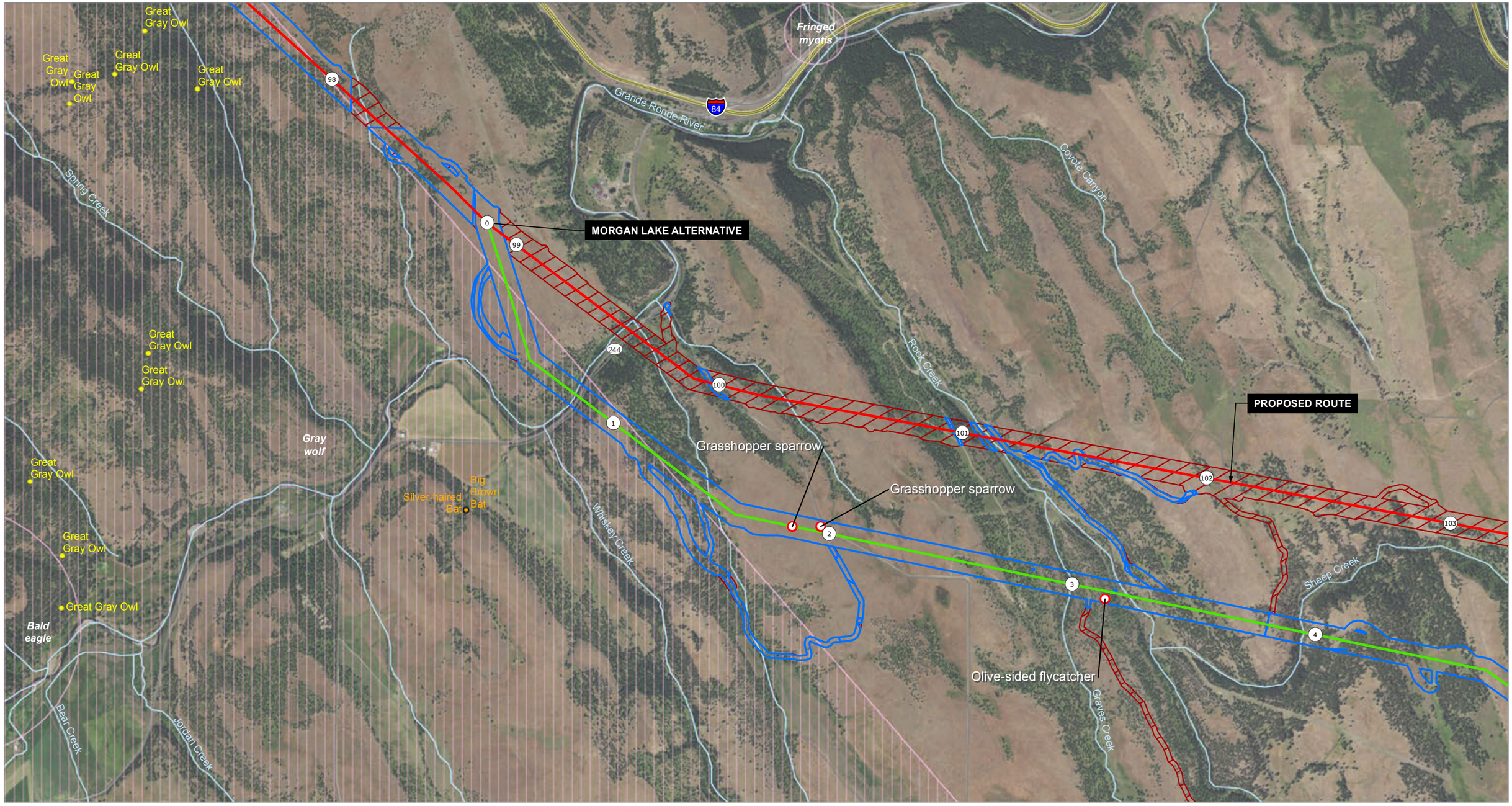
- ORBIC Occurrence
- USFS Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

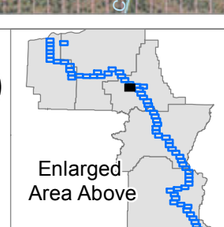
Figure 23 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd


Great Gray Owl
Great Gray Owl
Great Gray Owl

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
Not Surveyed

Othe Features
Road
Rivers

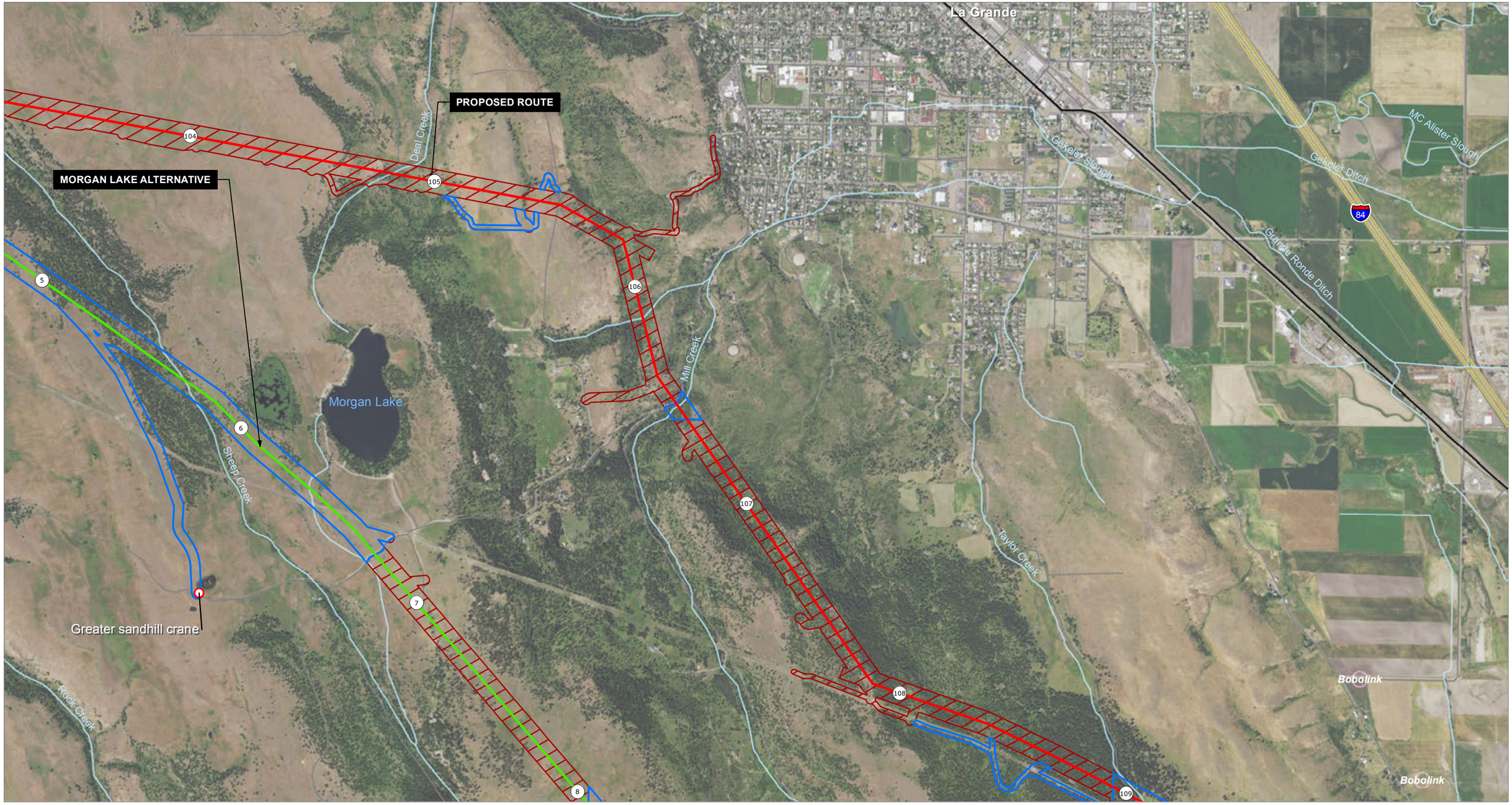
ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 25 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- US and State Highway
- Rivers

- ORBIC Occurrence

Boardman to Hemingway
Transmission Line Project

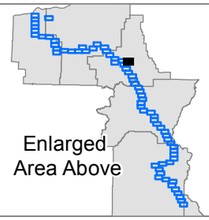
Special Status
Animal Results

Figure 26 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_WildlifeWildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Not Surveyed

Othe Features
- Road
- Interstate Highway
- US and State Highway
- Rivers

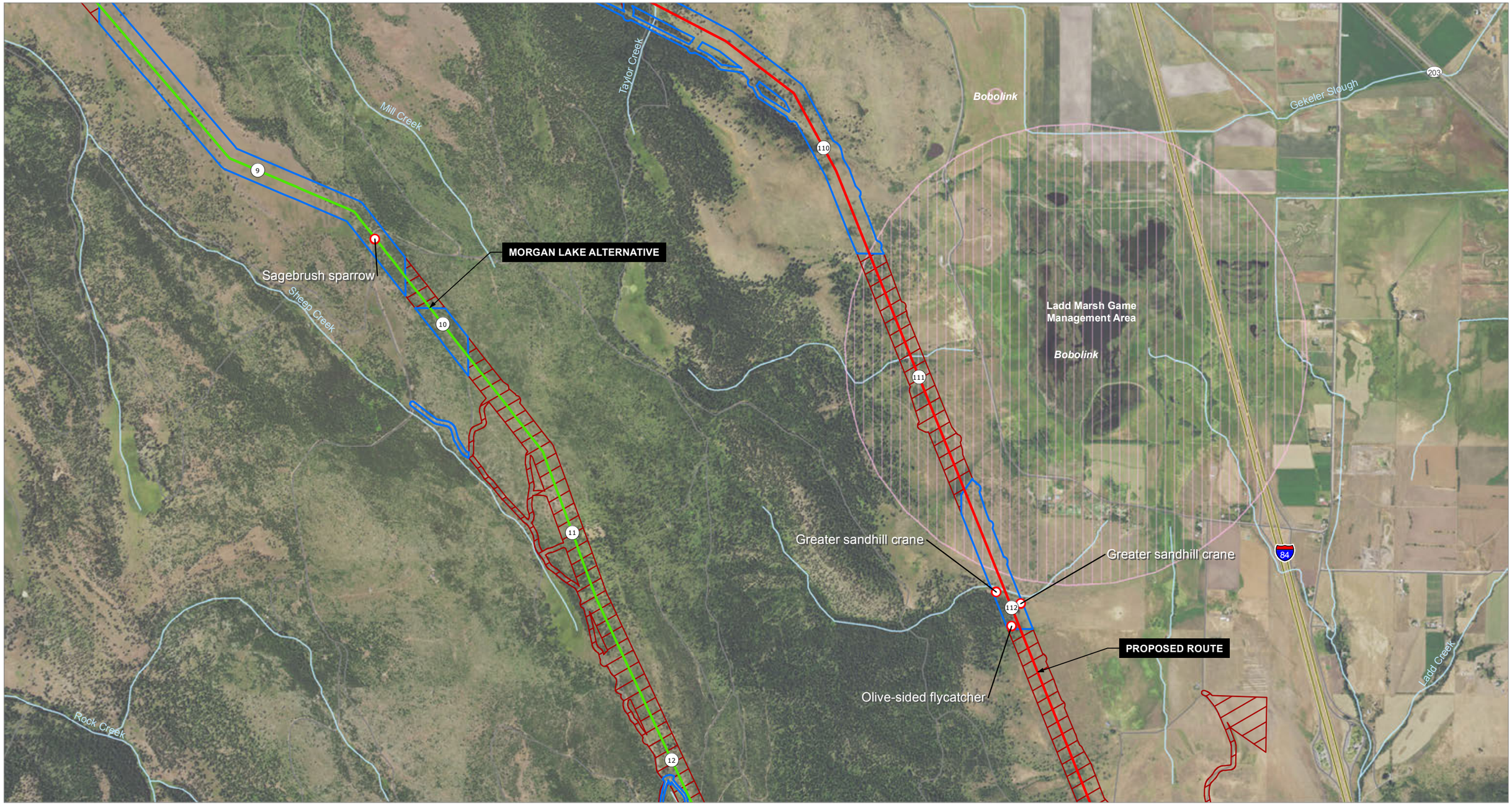
- ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

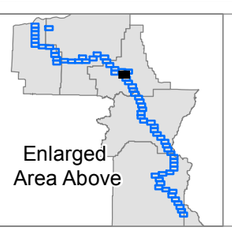
Figure 27 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- Rivers

- ORBIC Occurrence

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

Figure 28 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

Olive-sided flycatcher
Willow Flycatcher
Olive-sided flycatcher
Swainson's hawk
Olive-sided flycatcher
Olive-sided flycatcher
Willow Flycatcher
PROPOSED ROUTE
MORGAN LAKE ALTERNATIVE
Grasshopper sparrow
Ladd Creek
Ladd Canyon
13
14
15
16
113
114
115
116
84

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Map Features
- Special Status Animal

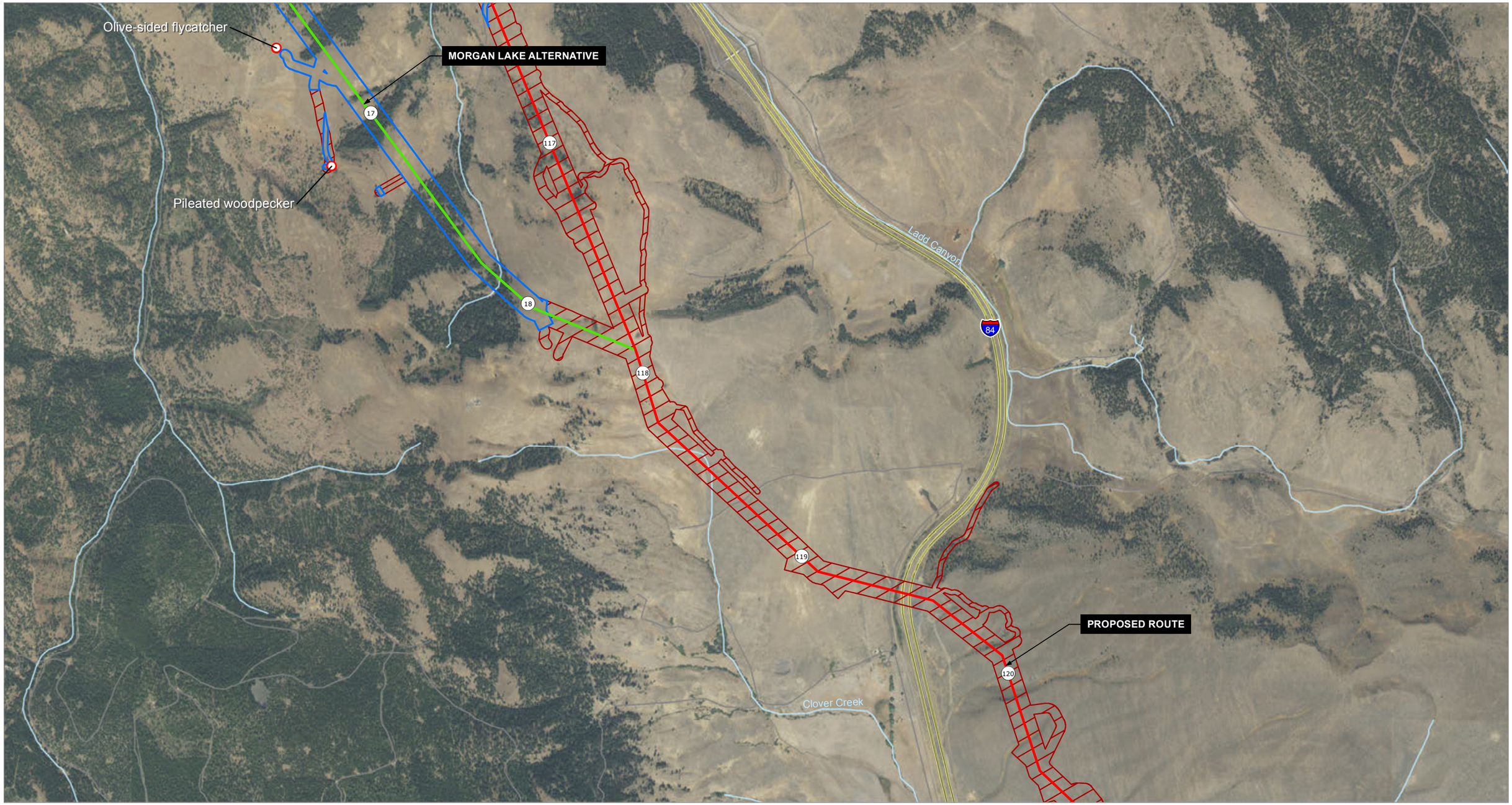
Othe Features
- Road
- Interstate Highway
- Rivers

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 29 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Map Features
- Special Status Animal

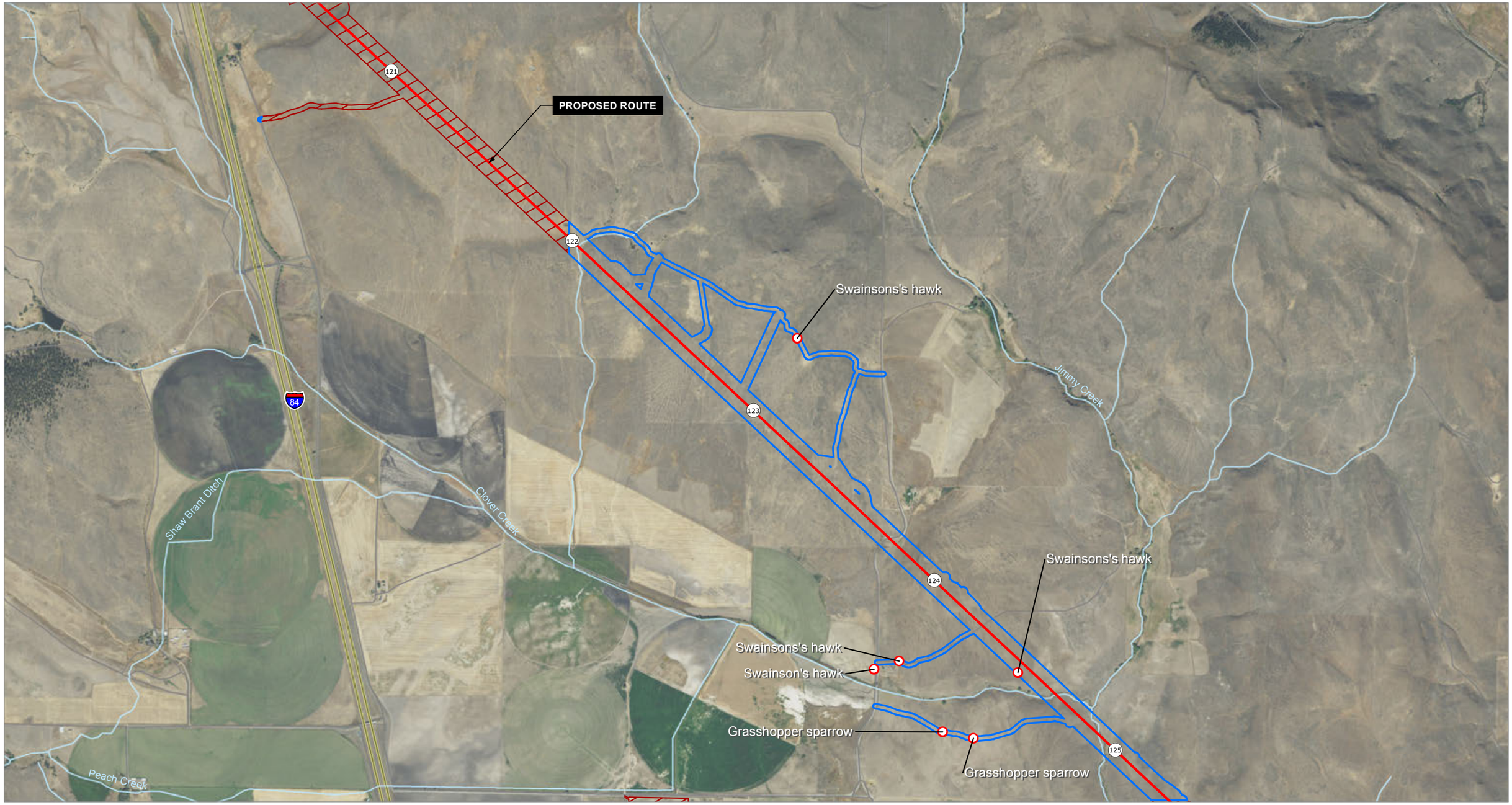
Othe Features
- Road
- Interstate Highway
- Rivers

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

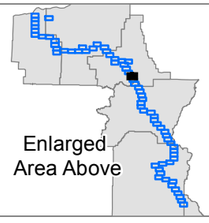
Figure 30 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- Rivers

Boardman to Hemingway
Transmission Line Project

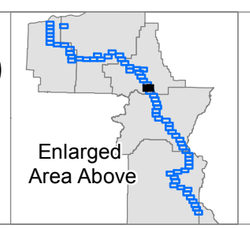
Special Status Animal Results

Figure 31 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Othe Features
- Road
- Interstate Highway
- Rivers

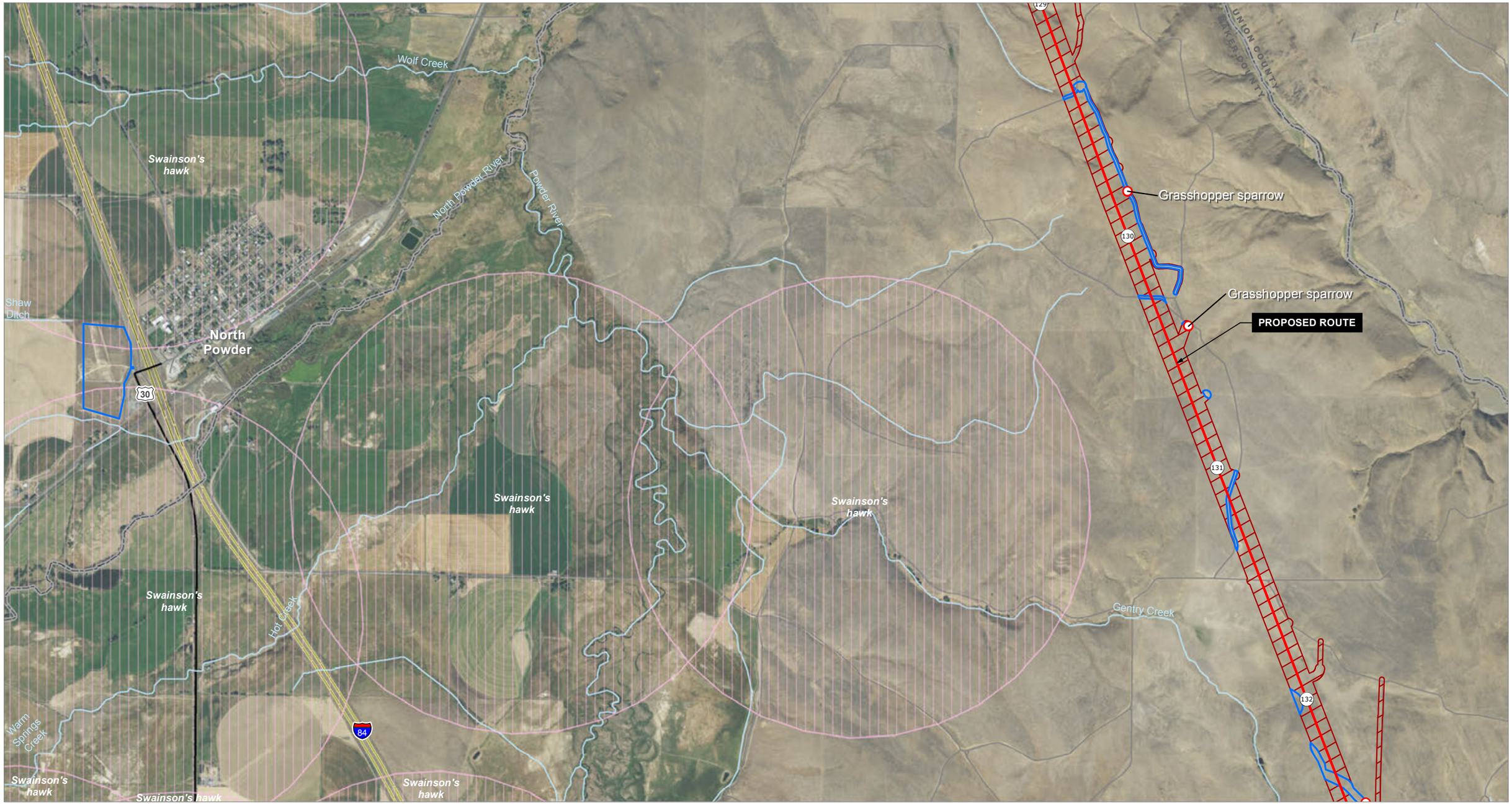
- ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

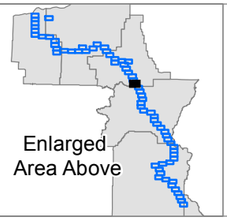
Figure 32 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- US and State Highway
- Rivers

- ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 33 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

Grasshopper sparrow

PROPOSED ROUTE

133

Burrowing owl - nest

UNION COUNTY

BAKER COUNTY

Powder River

Gentry Creek

134

135

84

Swainson's hawk

Sagebrush sparrow

Loggerhead shrike

Sagebrush sparrow

Magpie Creek

IDAHO POWER. An IDACORP Company

0 2,000 Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- Rivers

- ORBIC Occurrence
- ORBIC Sage-grouse Lek

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

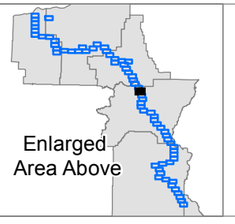
Figure 34 of 67

Date: 12/21/2016 2:17:01 PM

Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

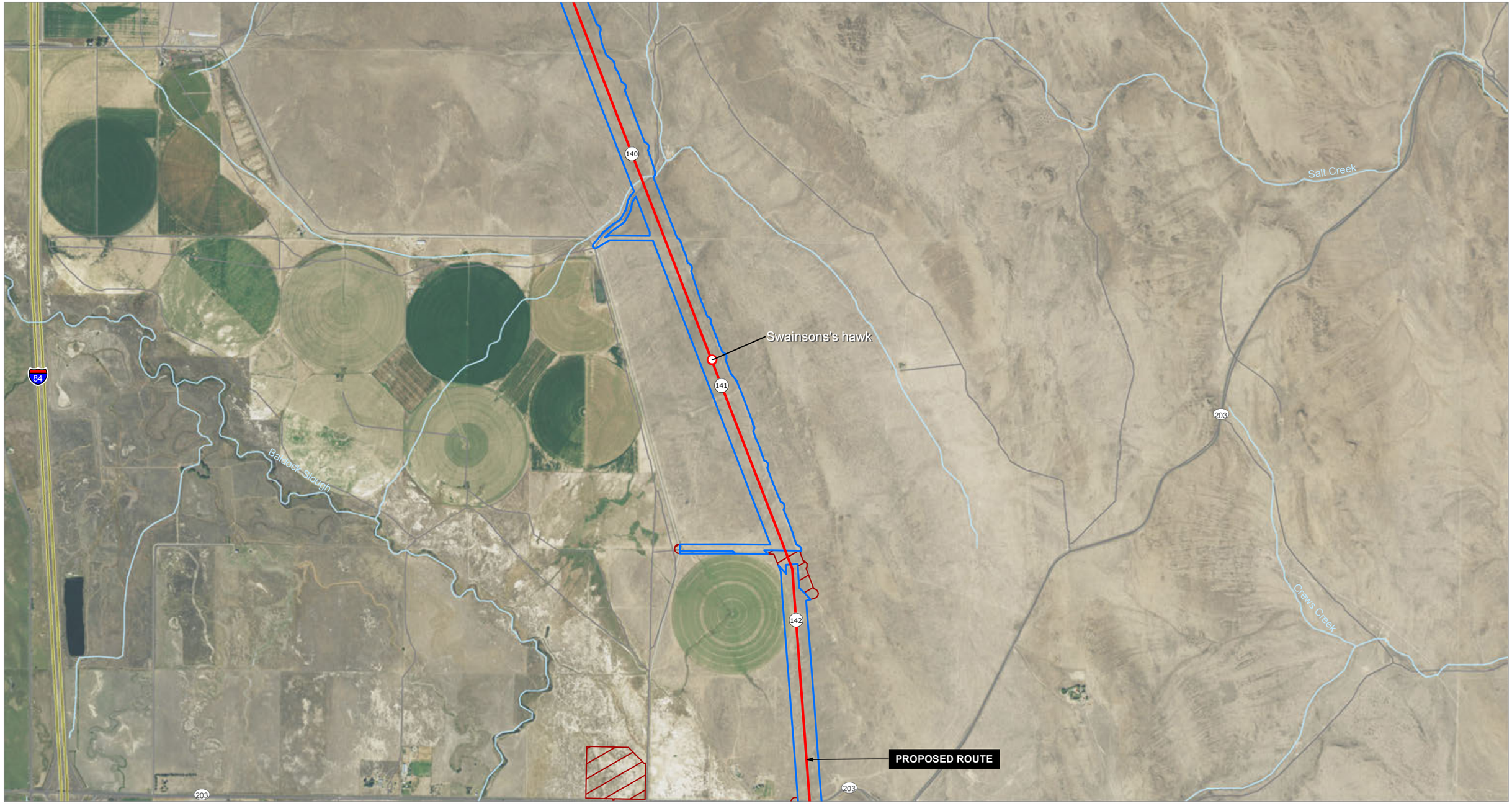
Othe Features
- Road
- Interstate Highway
- Rivers
- ORBIC Sage-grouse Lek
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 35 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

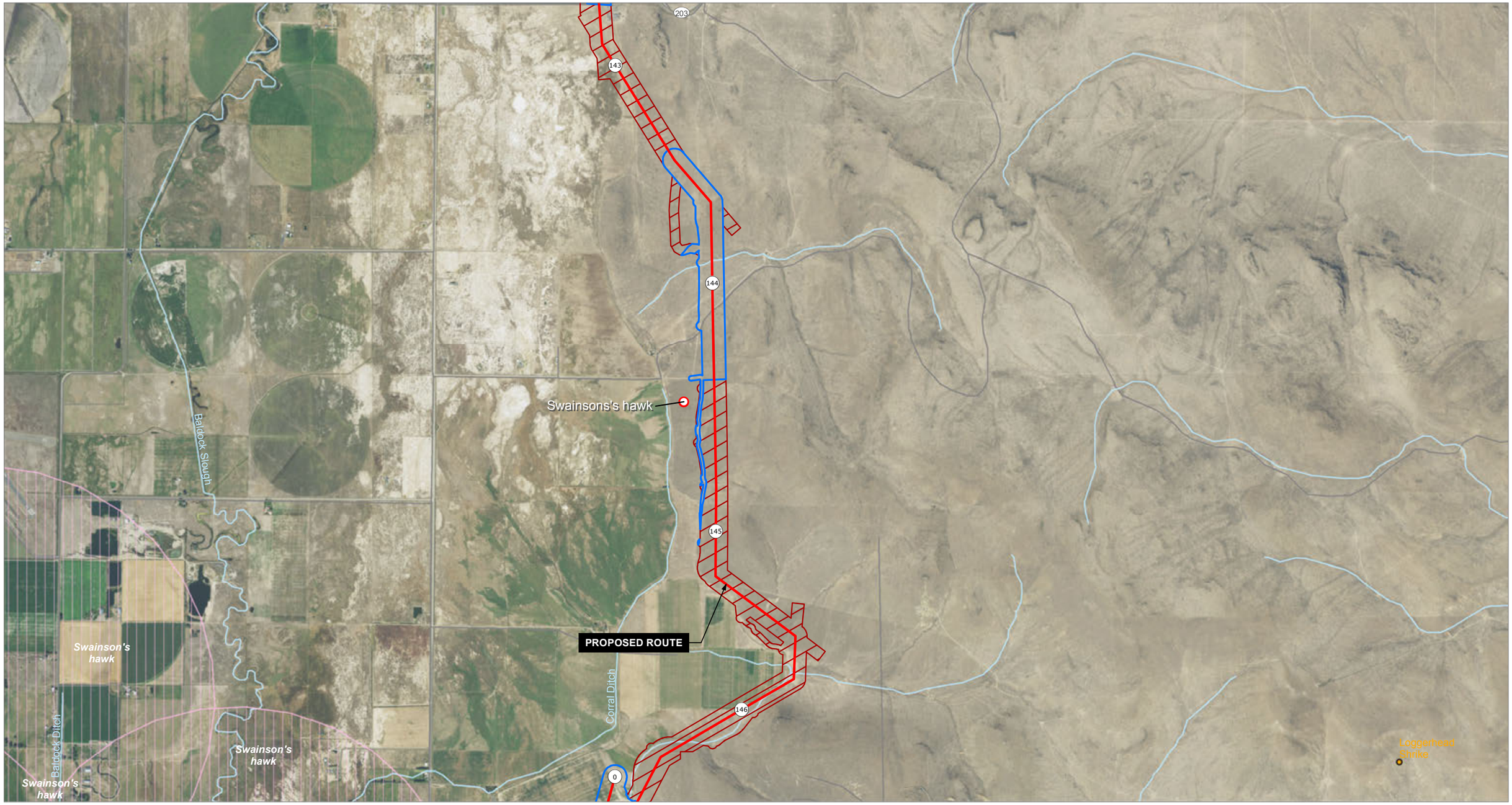
Othe Features
- Road
- Interstate Highway
- Rivers

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

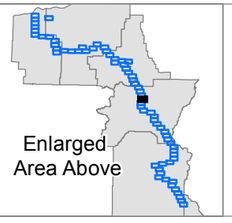
Figure 36 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

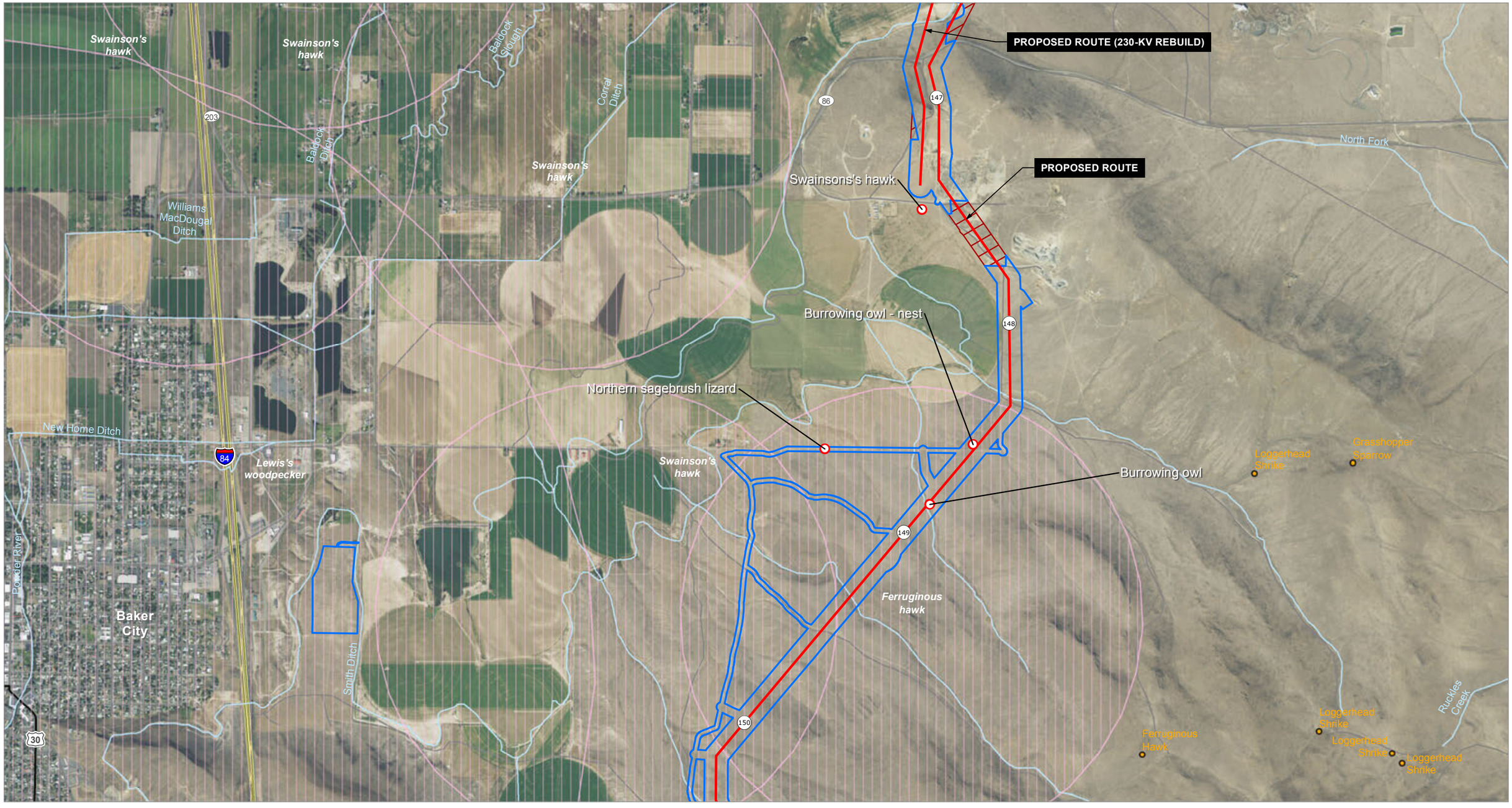
Othe Features
- Road
- Rivers
- ORBIC Occurrence
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

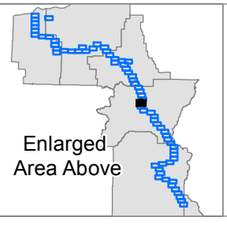
Figure 37 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- US and State Highway
- Rivers

- ORBIC Occurrence
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 38 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

Swainson's hawk

Ferruginous hawk

Powder River

Smith Ditch

Lewis's woodpecker

30

151

Loggerhead shrike

Loggerhead shrike

152

PROPOSED ROUTE

84

Sutton Creek

Swainson's hawk

153

Loggerhead shrike

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- US and State Highway
- Rivers

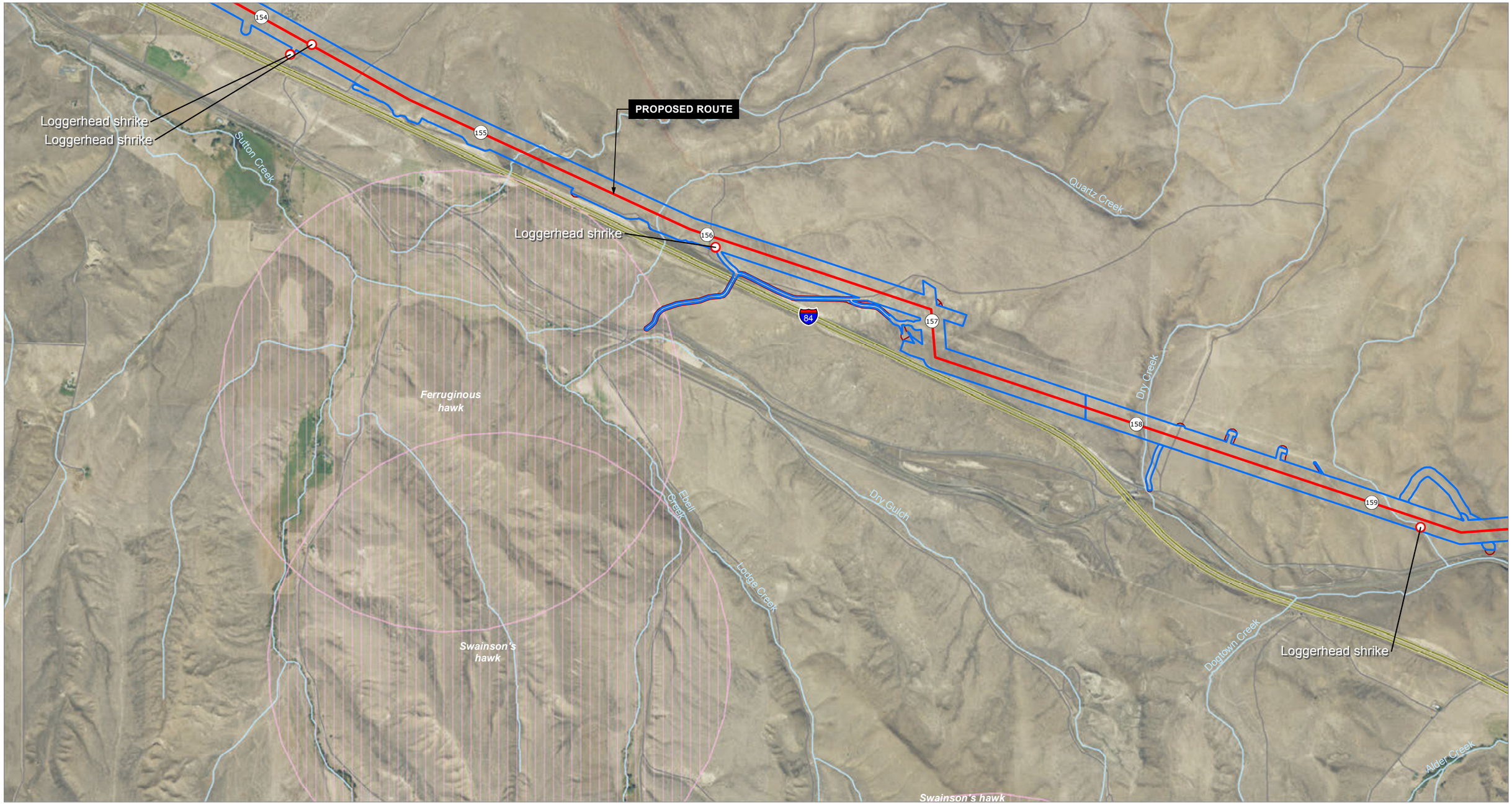
ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

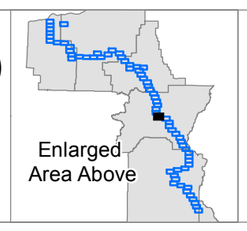
Figure 39 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- Rivers

- ORBIC Occurrence

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

Figure 40 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

PROPOSED ROUTE

Baiseley Creek

Dry Creek

Alder Creek

Grasshopper Sparrow

Grasshopper sparrow

Grasshopper sparrow

Grasshopper sparrow

Grasshopper sparrow

Grasshopper Sparrow

Straw Ranch Creek

Low Creek

Holman Creek

Kitchen Creek

160

161

162

163

164

165

84

0 2,000 Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- Rivers
- BLM Observation

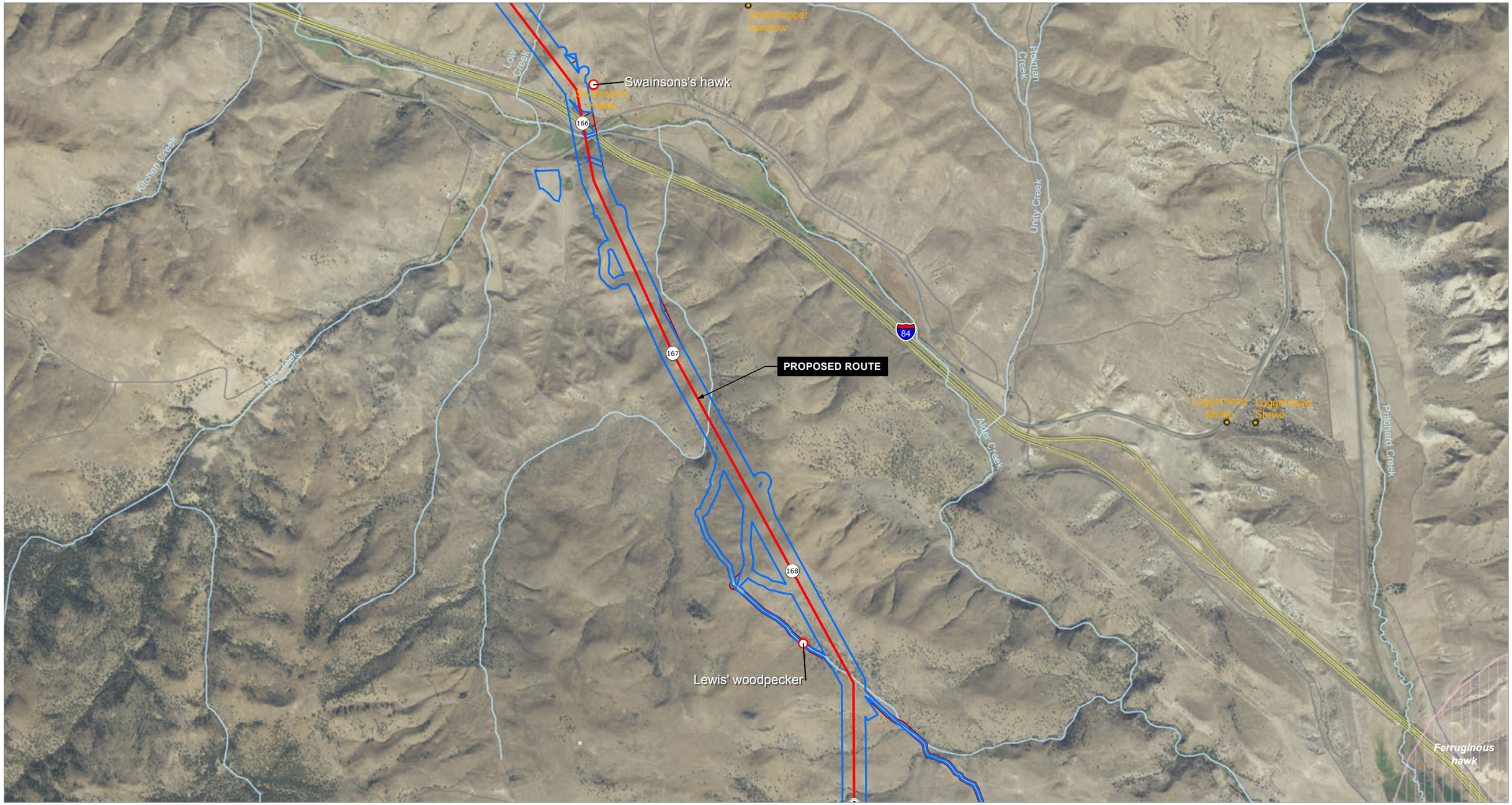
Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 41 of 67

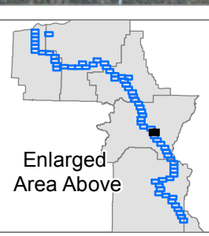
Date: 12/21/2016 2:17:01 PM

Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- Rivers

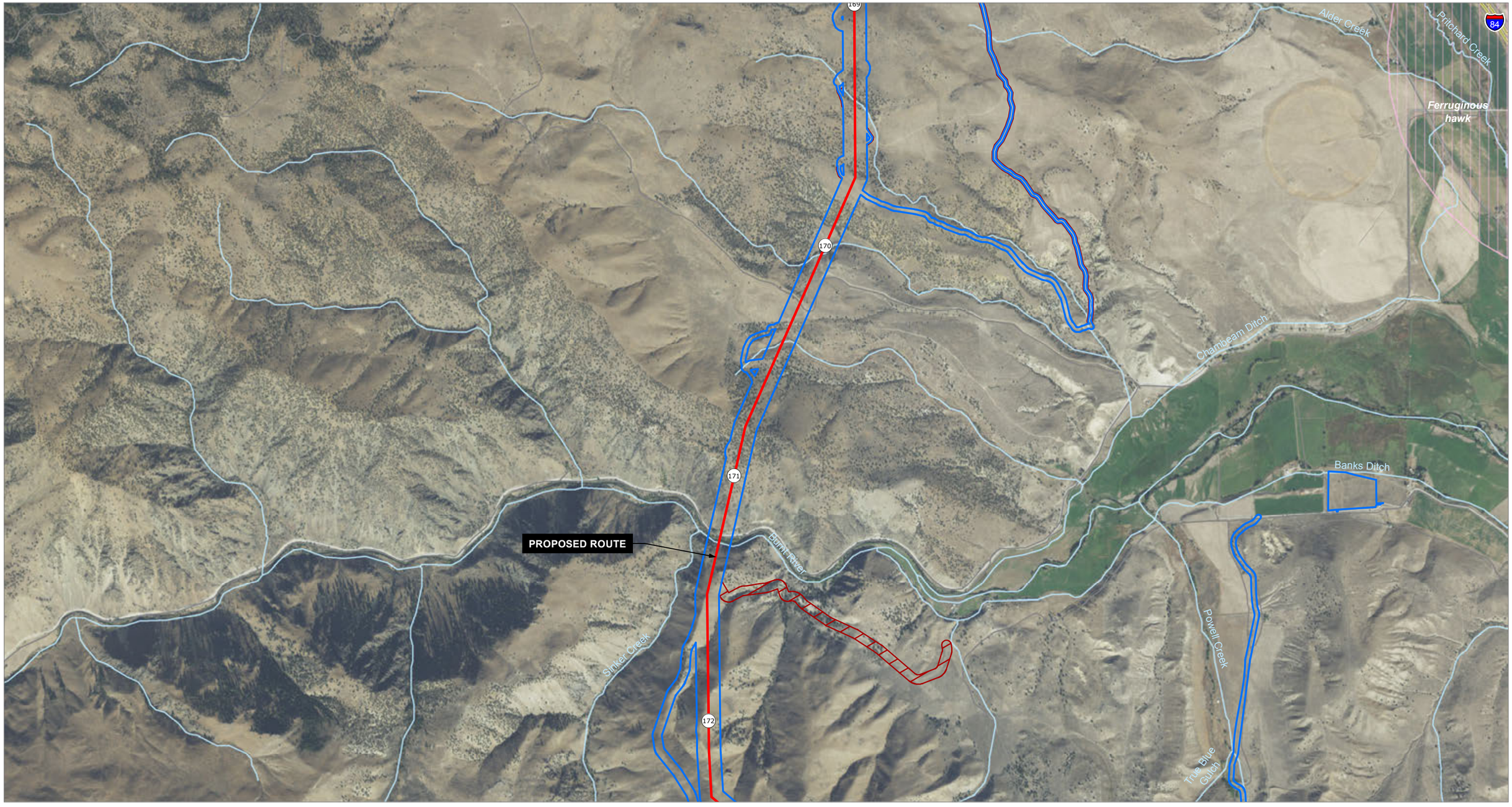
- ORBIC Occurrence
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

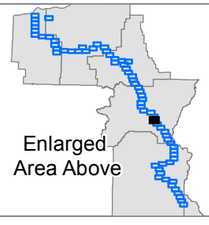
Figure 42 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Othe Features
- Road
- Interstate Highway
- Rivers

ORBIC Occurrence

Boardman to Hemingway
Transmission Line Project

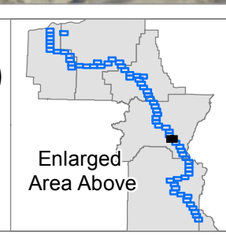
Special Status
Animal Results

Figure 43 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers

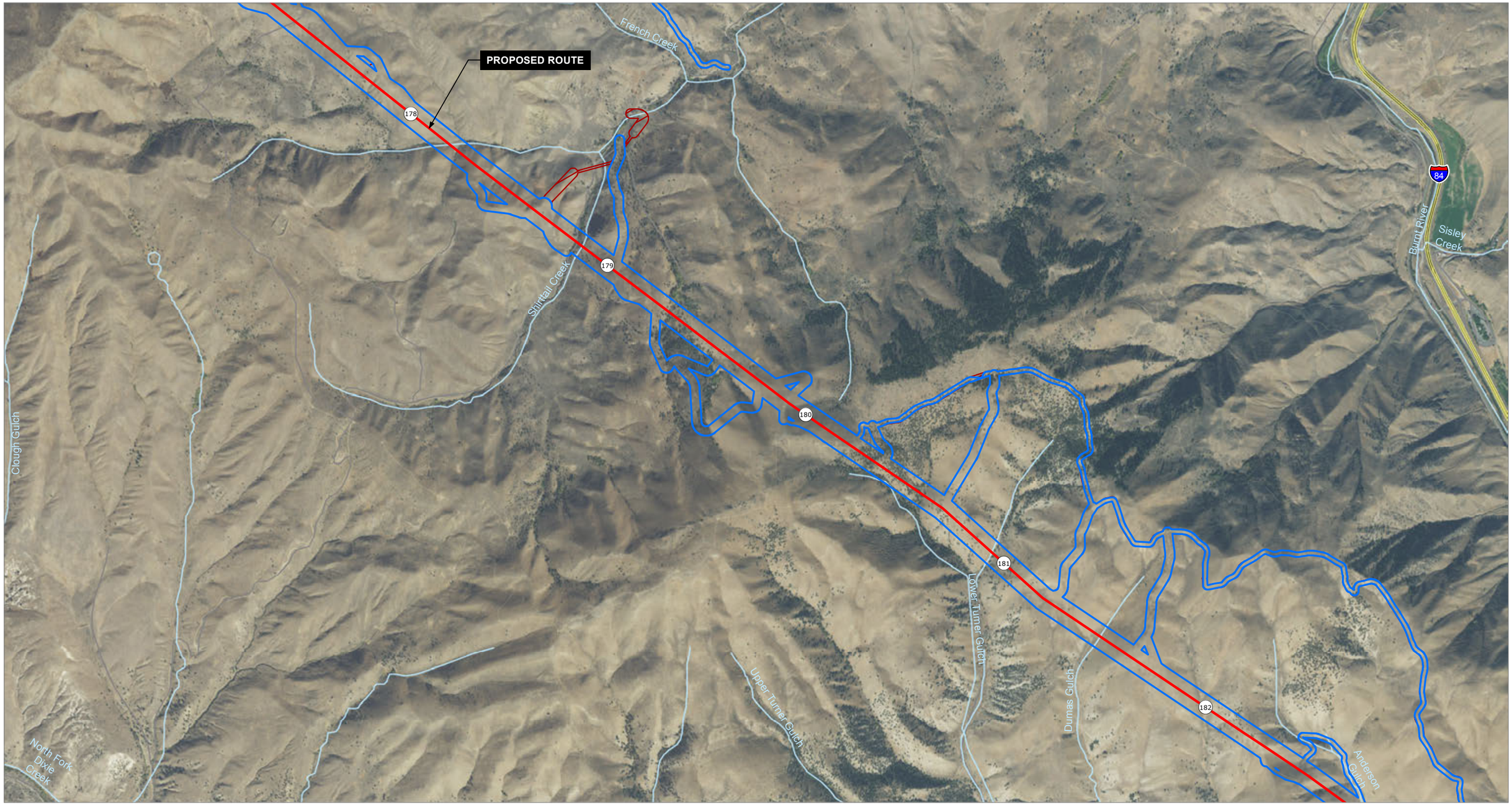
ORBIC Occurrence

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

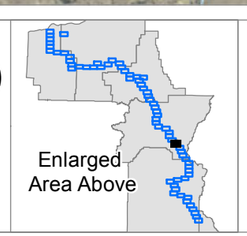
Figure 44 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Othe Features
- Road
- Interstate Highway
- Rivers

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 45 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

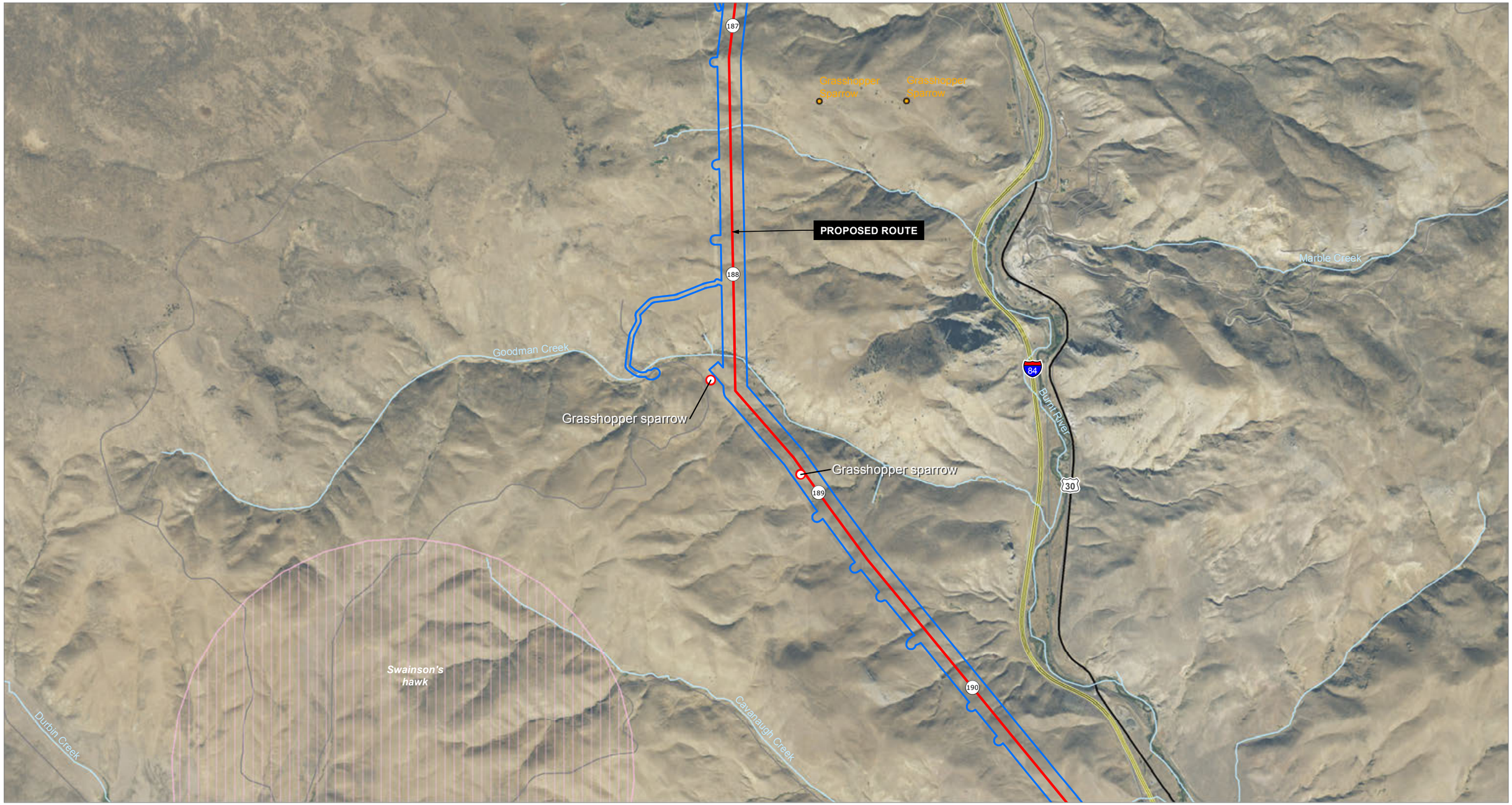
Othe Features
- Road
- Interstate Highway
- Rivers

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

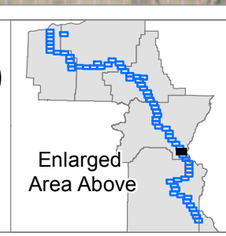
Figure 46 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\ITVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- US and State Highway
- Rivers

- ORBIC Occurrence
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 47 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

Swainson's hawk

Cavanaugh Creek

Swainsons's hawk

191

Grasshopper sparrow

Grasshopper sparrow

Grasshopper sparrow

Burnt River

Swainson's Hawk

192

Grasshopper sparrow

84

Huntington

30

PROPOSED ROUTE

Trail Gulch

Swainsons's hawk

Grasshopper Sparrow

Grasshopper Sparrow

Grasshopper Sparrow

Grasshopper Sparrow

Grasshopper Sparrow

Durbin Creek

193

Grasshopper Sparrow

Long-billed Curlew

Grasshopper Sparrow

White-tailed jackrabbit

Grasshopper Sparrow

Long-billed Curlew

Grasshopper Sparrow

Grasshopper sparrow

Grasshopper Sparrow

Long-billed Curlew

Grasshopper Sparrow

Grasshopper Sparrow

Grasshopper Sparrow

Grasshopper Sparrow

Grasshopper sparrow

194

IDAHO POWER. An IDACORP Company

0 2,000 Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- US and State Highway
- Rivers

- ORBIC Occurrence
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 48 of 67

Date: 12/21/2016 2:17:01 PM

Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- US and State Highway
- Rivers
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 49 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- US and State Highway
- Rivers

- ORBIC Occurrence
- ORBIC Sage-grouse Lek
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 50 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Interstate Highway
- Rivers
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 51 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

Grasshopper sparrow
Grasshopper sparrow
Moores Hollow
Grasshopper sparrow
206
Grasshopper sparrow
PROPOSED ROUTE
Grasshopper sparrow
Grasshopper sparrow
207
Grasshopper sparrow
Grasshopper sparrow
Short-eared owl
Alkali Gulch
Grasshopper sparrow
208
Short-eared owl
North Fork Jacobsen Gulch
Loggerhead Shrike

0 2,000
Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 52 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- ORBIC Occurrence
- BLM Observation

Boardman to Hemingway Transmission Line Project

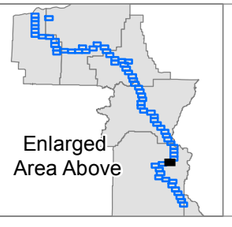
Special Status Animal Results

Figure 53 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- US and State Highway
- Rivers

- ORBIC Occurrence
- BLM Observation

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

Figure 54 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

Burrowing Owl

Ferruginous Hawk

Northern sagebrush lizard

PROPOSED ROUTE

Burrowing owl

Sagebrush sparrow

Long-billed curlew

Haymaker Gulch

Vale Main Canal

Bully Creek

224 223 222 221 220 219

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

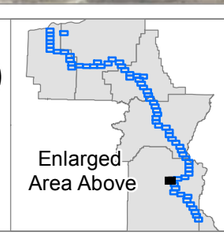
Figure 55 of 67

Date: 12/21/2016 2:17:01 PM

Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway Transmission Line Project

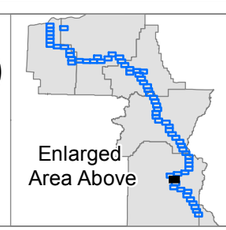
Special Status Animal Results

Figure 56 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\ITVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet



Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

Figure 57 of 67

Date: 12/21/2016 2:17:01 PM
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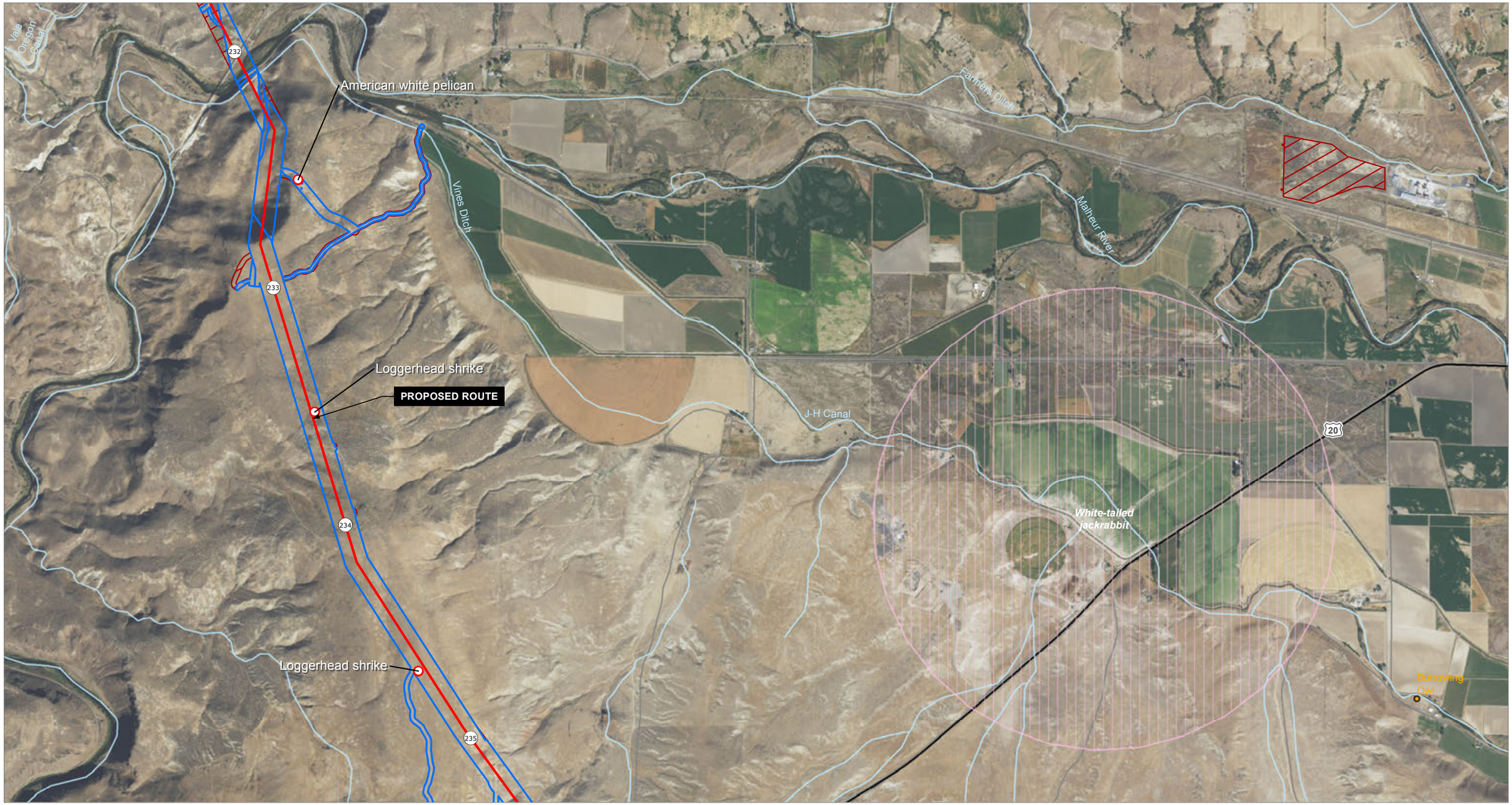


IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- US and State Highway
- Rivers

- ORBIC Occurrence
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 58 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Map Features
- Special Status Animal

Othe Features
- Road
- US and State Highway
- Rivers

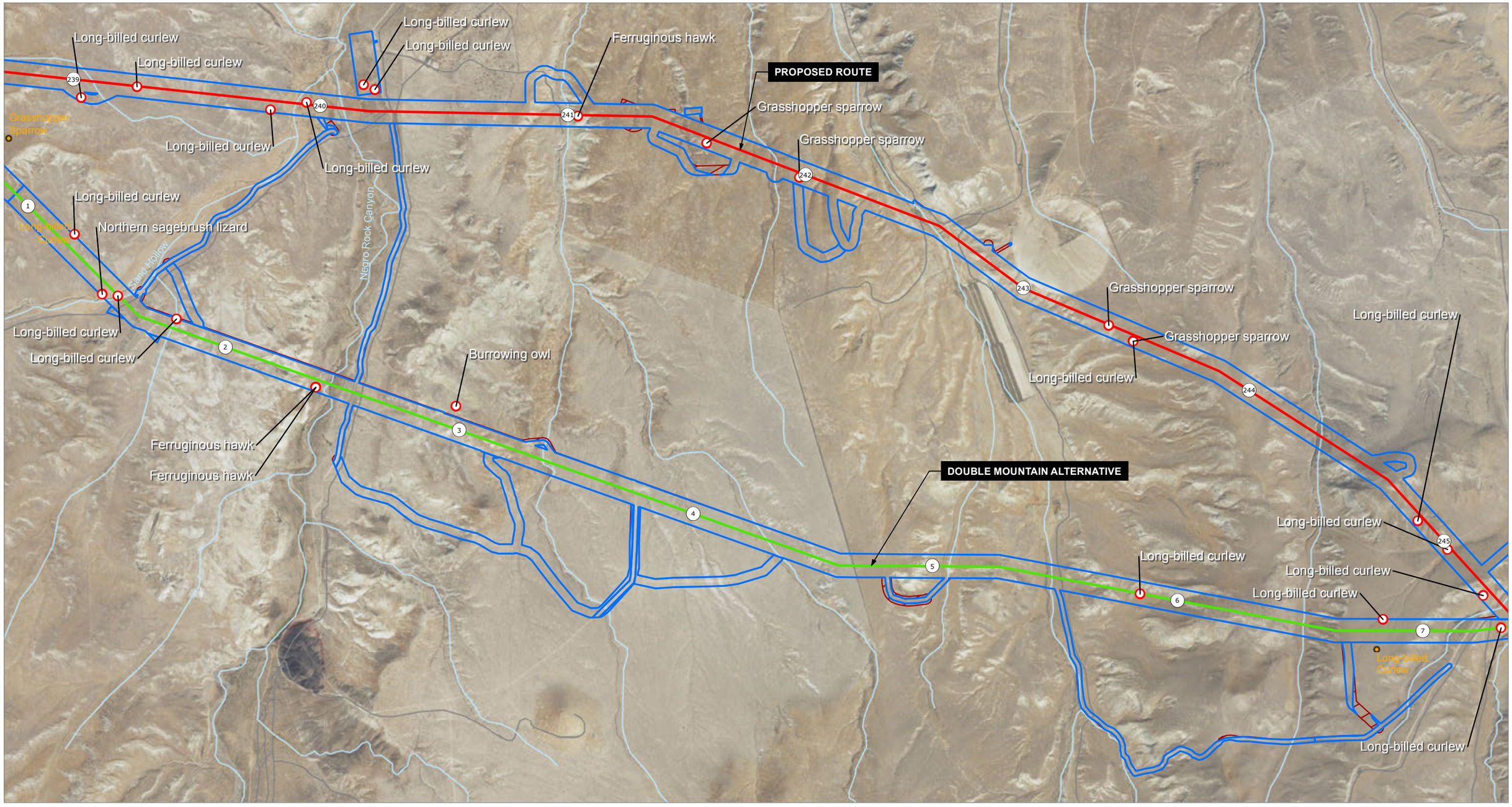
- ORBIC Occurrence
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 59 of 67

Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

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Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

Long-billed curlew

Grasshopper sparrow

Grasshopper sparrow

Grasshopper sparrow

Grasshopper sparrow

246

Grasshopper sparrow

Grasshopper sparrow

Grasshopper sparrow

Grasshopper sparrow

247

Grasshopper sparrow

PROPOSED ROUTE

Grasshopper sparrow

Grasshopper sparrow

Grasshopper sparrow

Grasshopper sparrow

248

Cow Hollow

North Canal

IDAHO POWER. An IDACORP Company

0 2,000 Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers

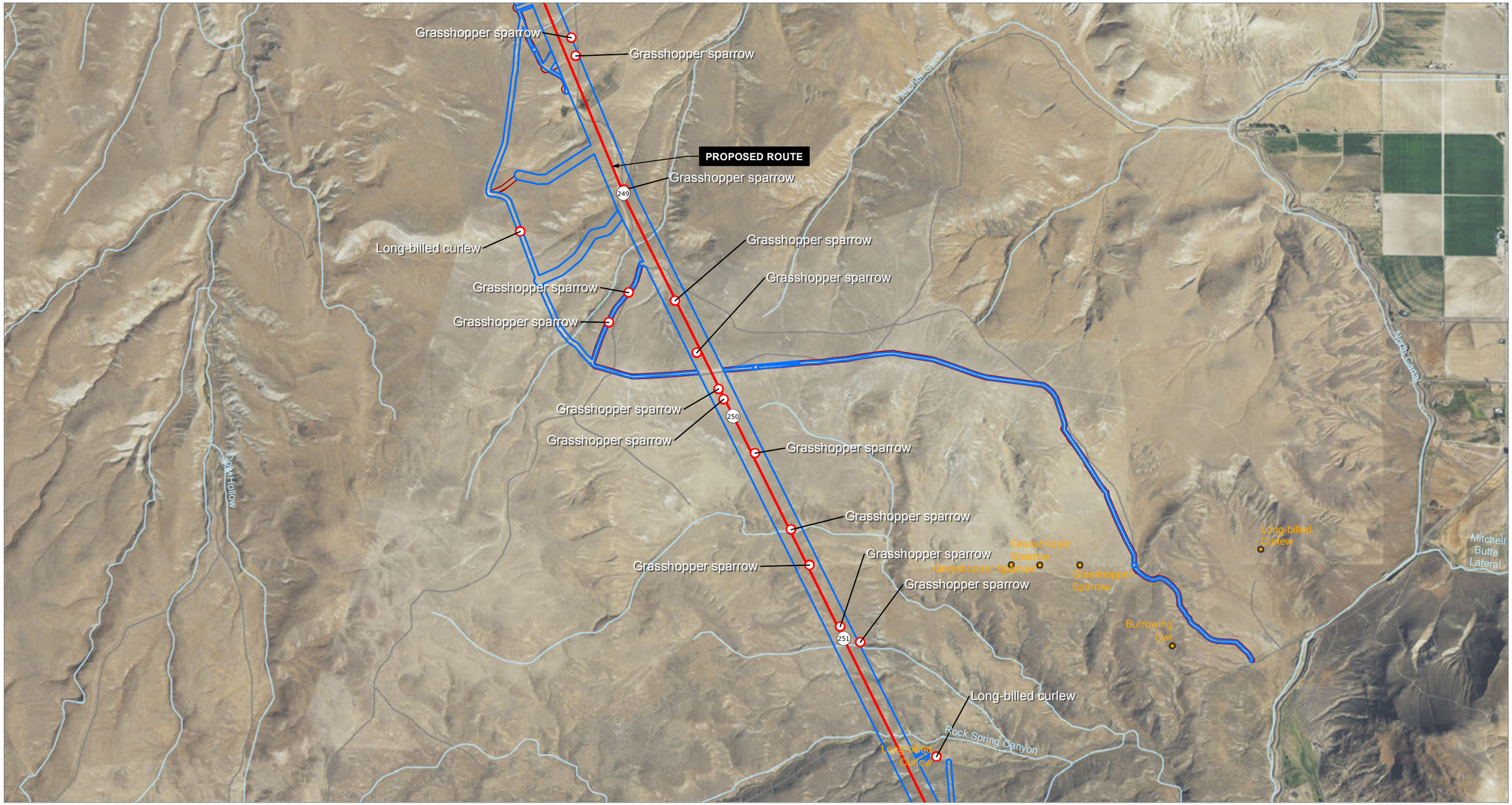
Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 61 of 67

Date: 12/21/2016 2:17:01 PM

Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

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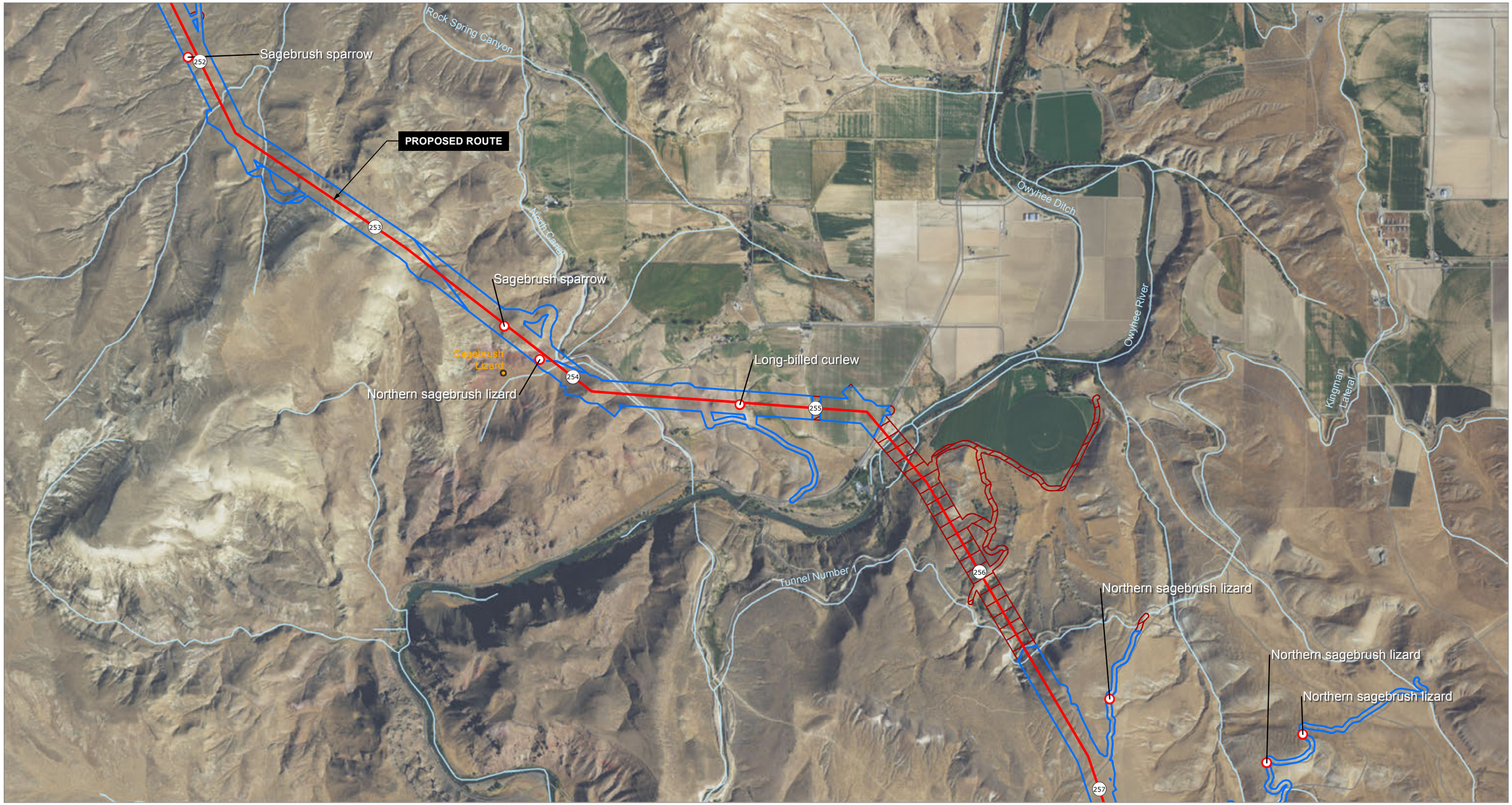
Date: 12/21/2016 2:17:01 PM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway
Transmission Line Project

Special Status Animal Results

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IDAHO POWER
An IDACORP Company

0 2,000
Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

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Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Wildlife\WildlifeMapbook_Summary.mxd

Grasshopper sparrow

Grasshopper sparrow

Grasshopper sparrow

Tunnel Number 5

261

Swainsons's hawk

Alkali Creek

Northern Leopard Frog

PROPOSED ROUTE

South Canal

262

Long-billed curlew

North Alkali Creek

Loggerhead Shrike

263

Tunnel Number 6

Long-billed Curlew

5 7/10 Canal

Coyote Gulch

Long-billed curlew

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Enlarged Area Above

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

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Date: 12/21/2016 2:17:01 PM
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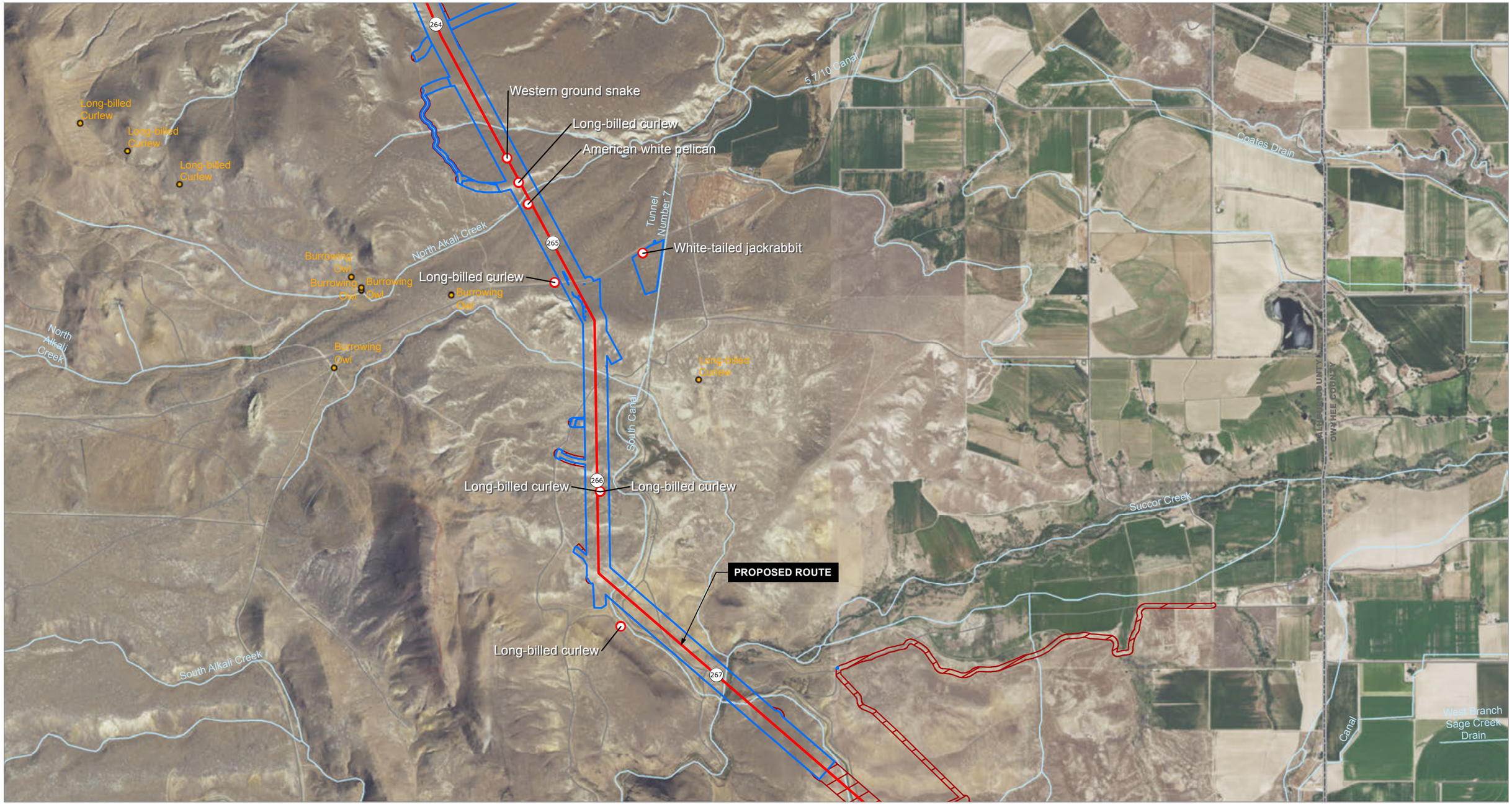

IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

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IDAHO POWER
An IDACORP Company

0 2,000
Feet

Surveyed Areas
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Map Features
- Special Status Animal

Othe Features
- Road
- Rivers
- BLM Observation

Boardman to Hemingway Transmission Line Project

Special Status Animal Results

Figure 67 of 67

Date: 12/21/2016 2:17:01 PM
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Appendix 2-E

Habitat Types and Noxious Weed Results Mapbook

Appendix 2-E

Habitat Types and Noxious Weed Results Mapbook

WEST OF BOMBING RANGE ALTERNATIVE 1/2

MORGAN LAKE ALTERNATIVE

EXISTING 230-KV REBUILD

EXISTING 138-KV REBUILD

DOUBLE MOUNTAIN ALTERNATIVE

IDAHO POWER
An IDACORP Company

0 20
Miles

Enlarged Area Above

Project Features

Proposed Route

Alternative

Index Map

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Overview Index

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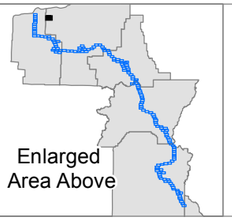
An IDACORP Company

0 1,000
Feet



Project Features
Surveyed
Not Surveyed
Noxious Weed

Habitat Types
Developed/Disturbed

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 1 of 154

Date: 12/21/2016 11:20:09 AM
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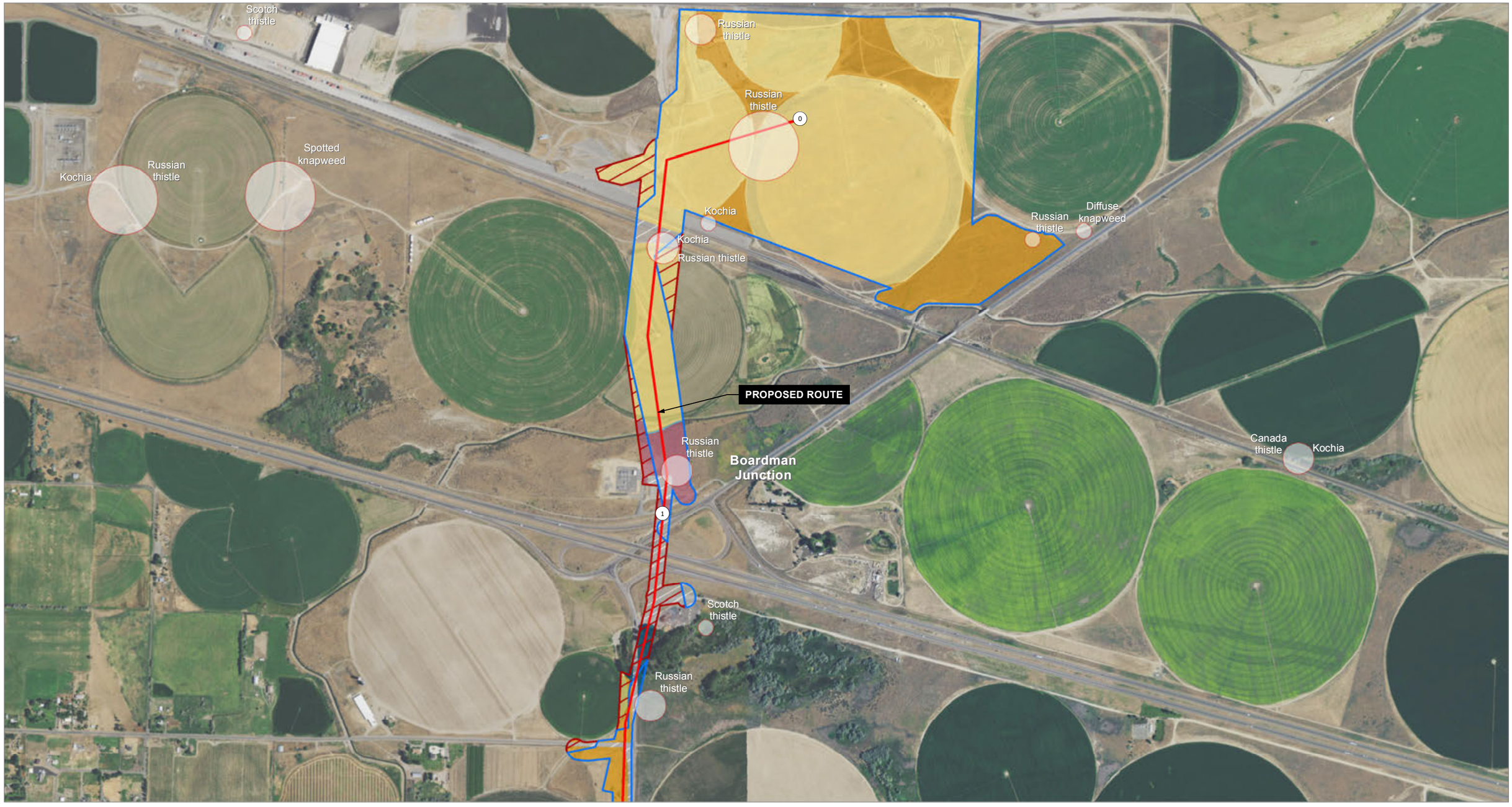

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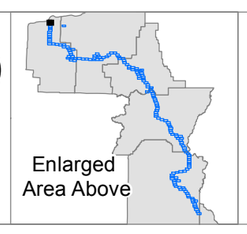
An IDACORP Company

0 1,000
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Forested Wetland
- Intermittent Streams
- Developed/Disturbed
- Agriculture
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 2 of 154

Date: 12/21/2016 11:20:09 AM
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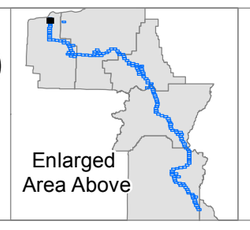
An IDACORP Company

0 1,000
Feet



Project Features
- Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Developed/Disturbed
- Agriculture

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 3 of 154

Date: 12/21/2016 11:20:09 AM
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IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
- Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 4 of 154

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An IDACORP Company

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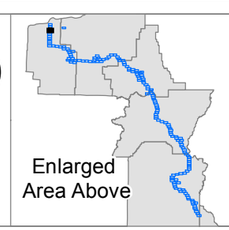
Feet



Project Features
- Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Agriculture

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 5 of 154

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IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Agriculture
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 6 of 154

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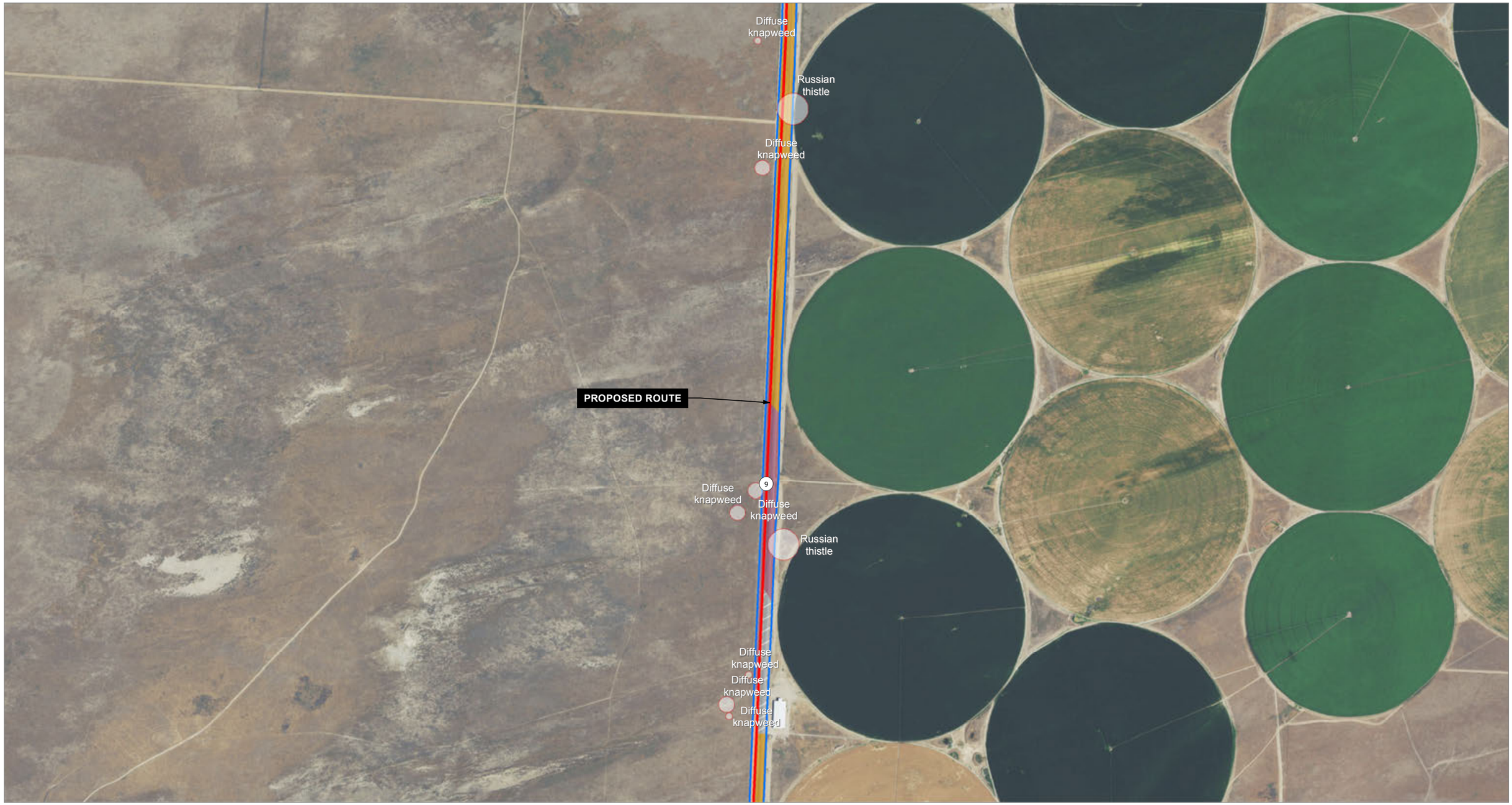
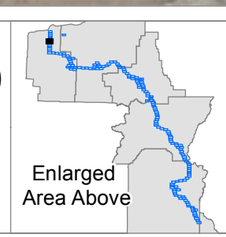


IDAHO POWER
An IDACORP Company

0 1,000
Feet



Project Features
- Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Developed/Disturbed
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 7 of 154

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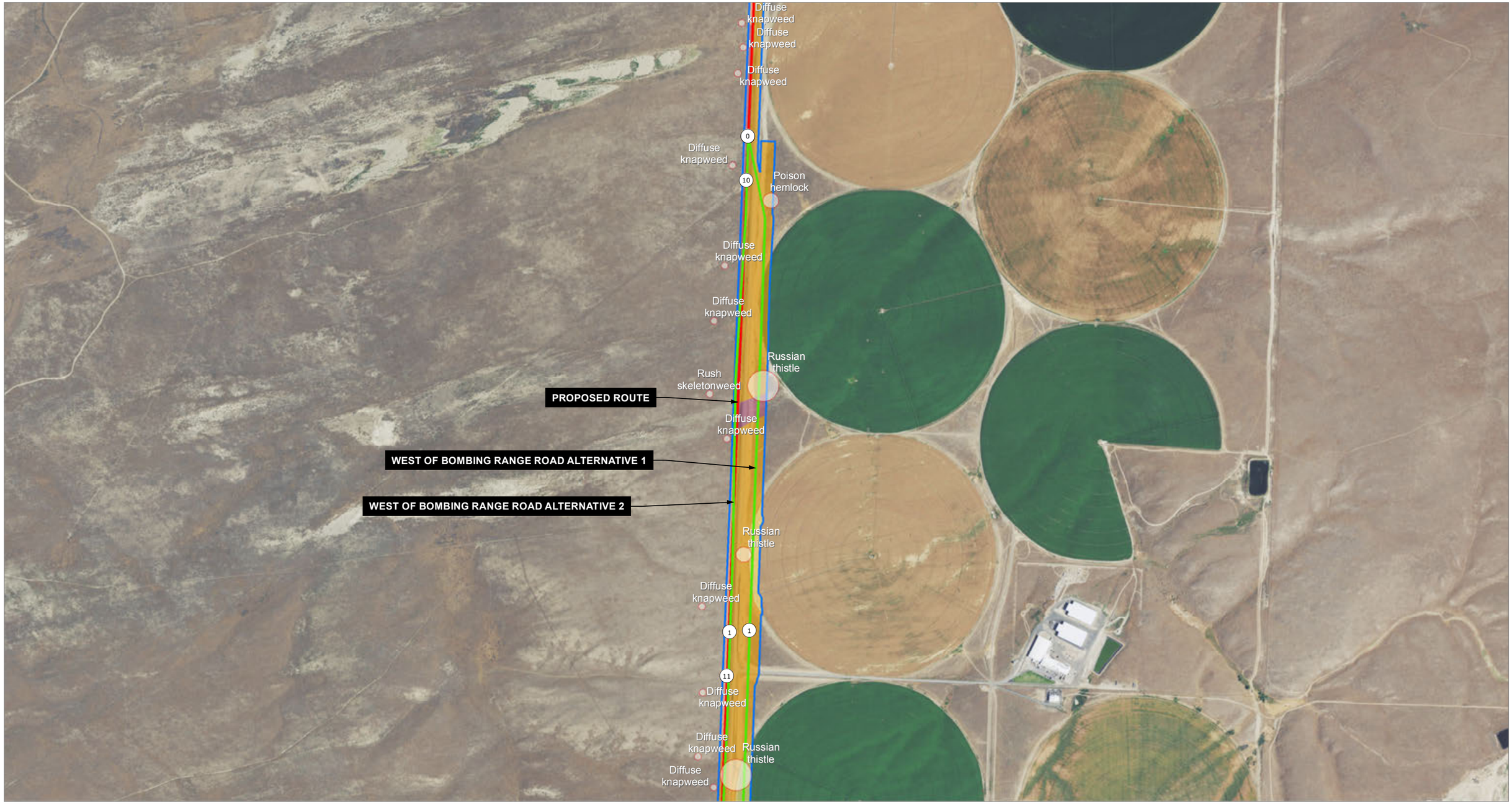
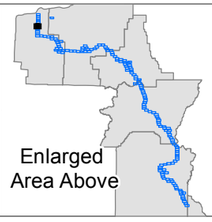


IDAHO POWER
An IDACORP Company

0 1,000
Feet



Project Features
- Surveyed
- Milepost
- Proposed Route
- Alternative
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Agriculture
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 8 of 154

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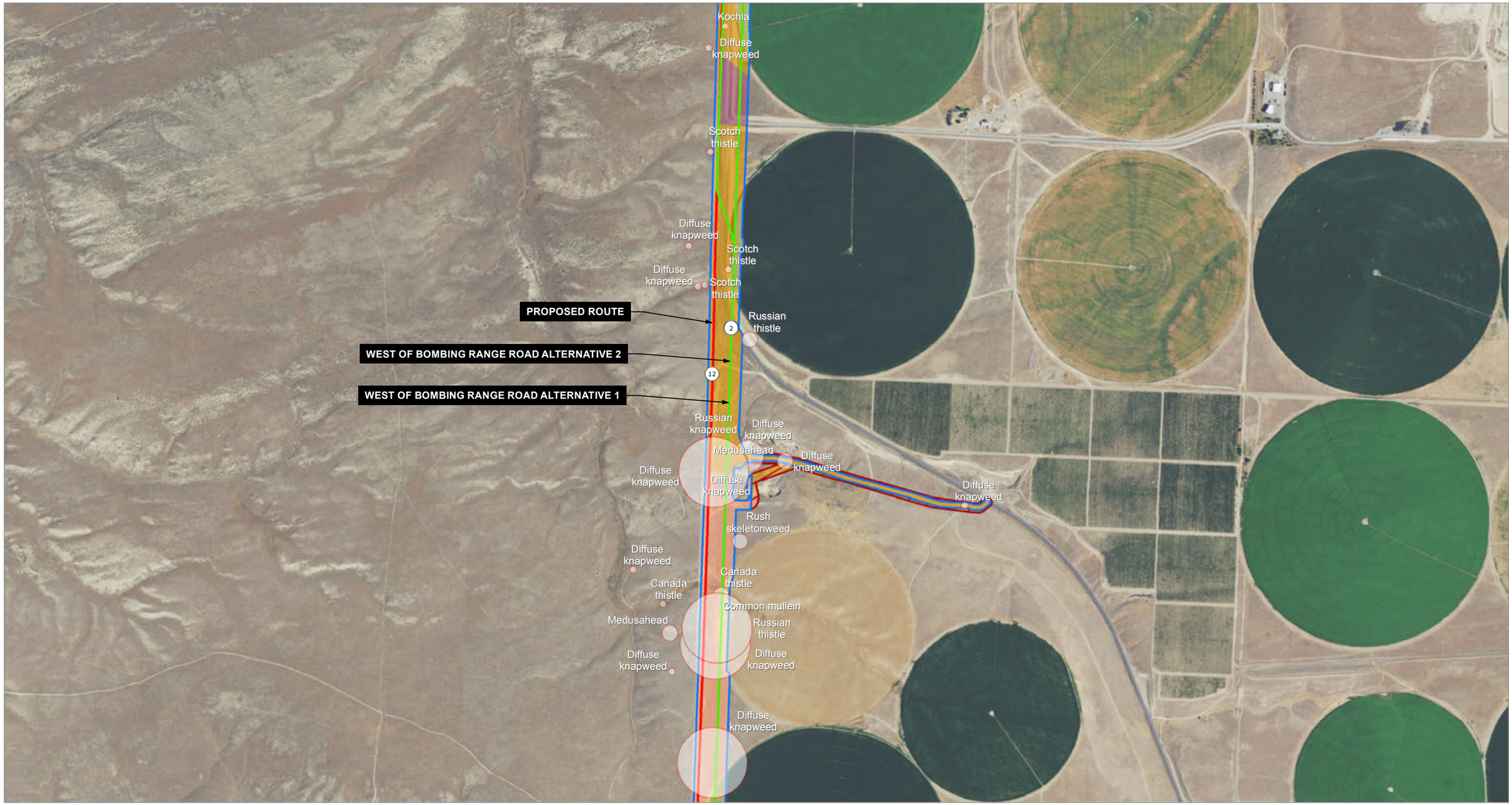

IDAHO POWER. An IDACORP Company

0 1,000 Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Developed/Disturbed
- Agriculture
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 9 of 154

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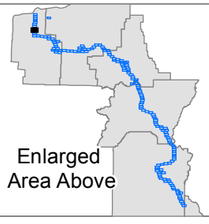
IDAHO POWER
An IDACORP Company

0 1,000
Feet



Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Agriculture

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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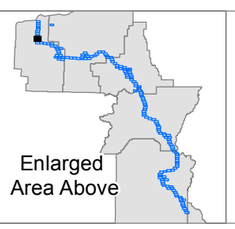
IDAHO POWER
An IDACORP Company

0 1,000
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Developed/Disturbed
- Agriculture

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
- Surveyed
- Milepost
- Proposed Route

Habitat Types
- Agriculture

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
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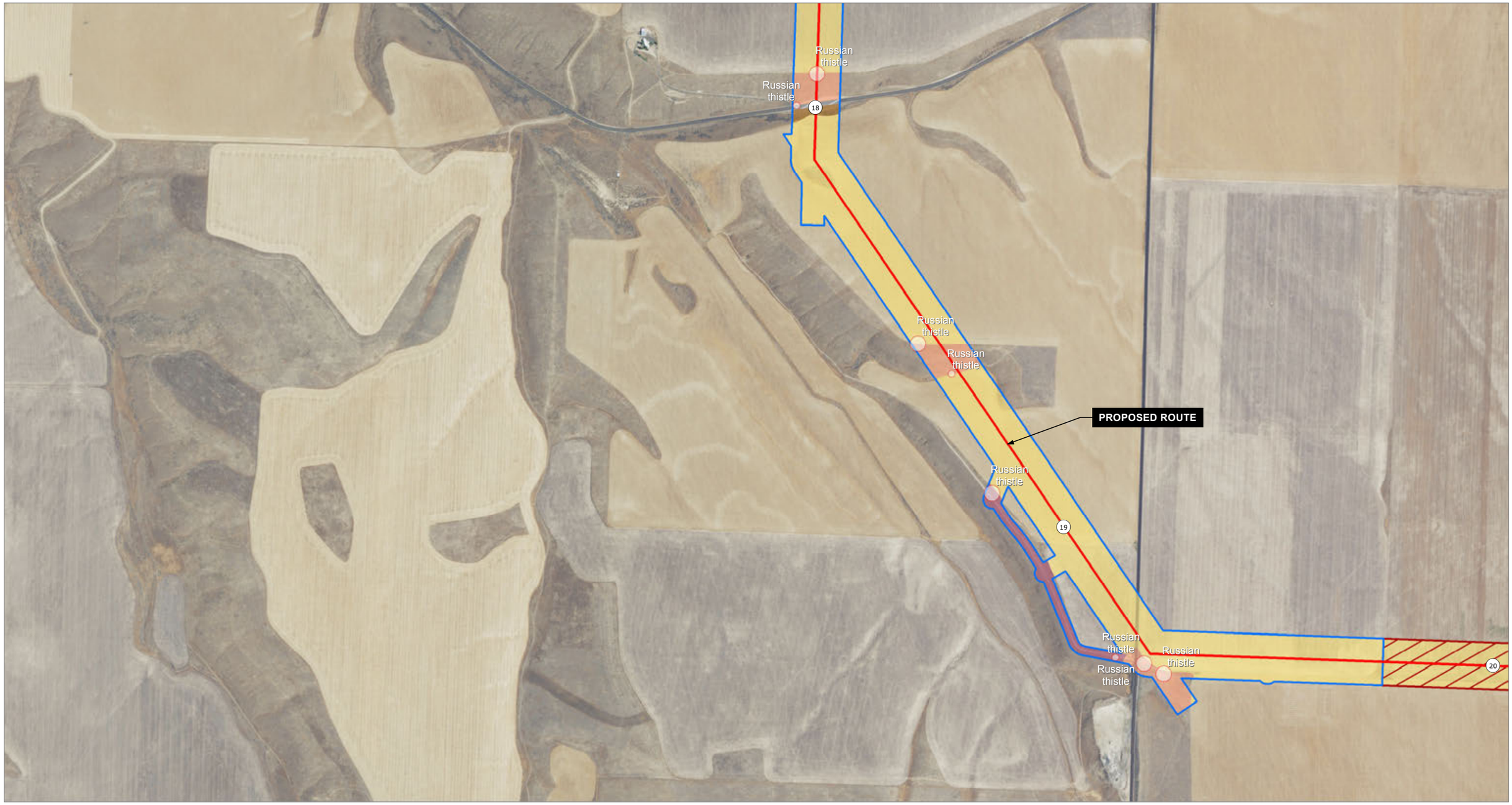

IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Native Grasslands
- Developed/Disturbed
- Agriculture
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 13 of 154

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IDAHO POWER
An IDACORP Company

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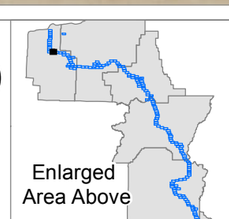

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Other - Shrub/Grass
- Developed/Disturbed
- Agriculture
- Shrub-Steppe with Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 14 of 154

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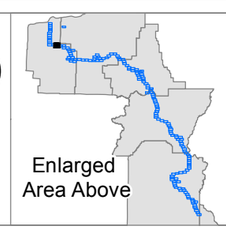
IDAHO POWER
An IDACORP Company

0 1,000
Feet



Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Agriculture

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 15 of 154

Date: 12/21/2016 11:20:09 AM
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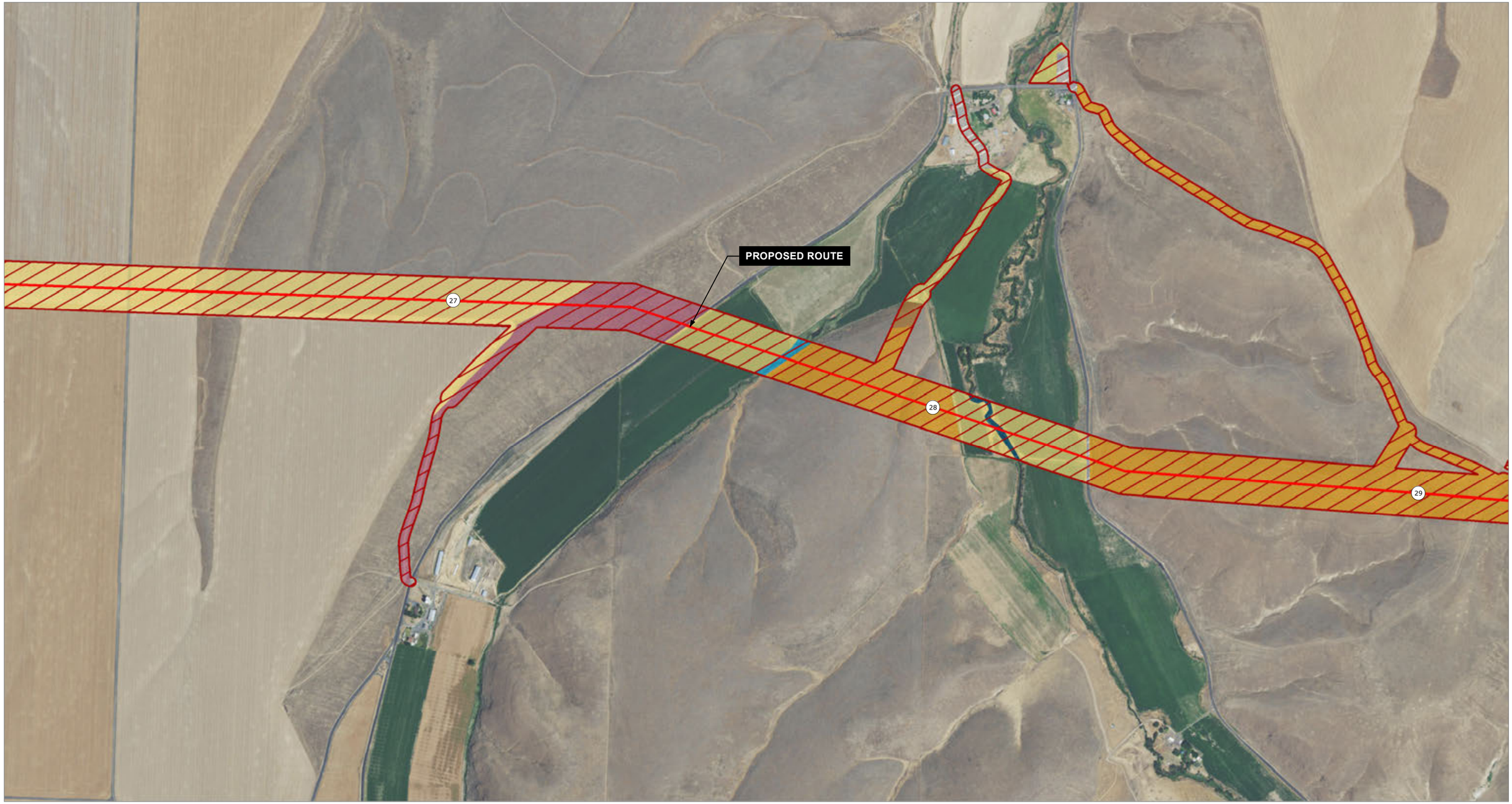
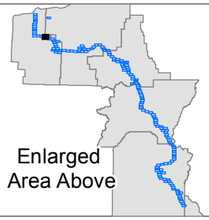


IDAHO POWER
An IDACORP Company

0 1,000
Feet



Project Features
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Other - Shrub/Grass
- Forested Wetland
- Emergent Wetland
- Developed/Disturbed
- Agriculture
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 16 of 154

Date: 12/21/2016 11:20:09 AM
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IDAHO POWER
An IDACORP Company

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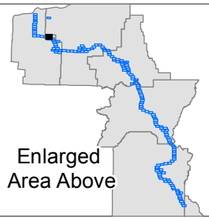
Feet



Project Features
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Other - Shrub/Grass
- Agriculture
- Shrub-Steppe with Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 17 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

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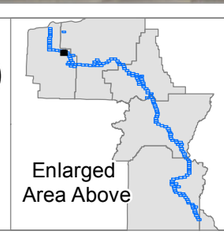

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Native Grasslands
- Agriculture
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 18 of 154

Date: 12/21/2016 11:20:09 AM
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PROPOSED ROUTE

33

34

Spotted knapweed

Canada thistle

Russian thistle

Scotch thistle

Spikeweed

Russian thistle

Russian thistle

Scotch thistle

Scotch thistle

Russian thistle

IDAHO POWER. An IDACORP Company

0 1,000 Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Emergent Wetland
- Perennial Streams
- Developed/Disturbed
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 19 of 154

Date: 12/21/2016 11:20:09 AM

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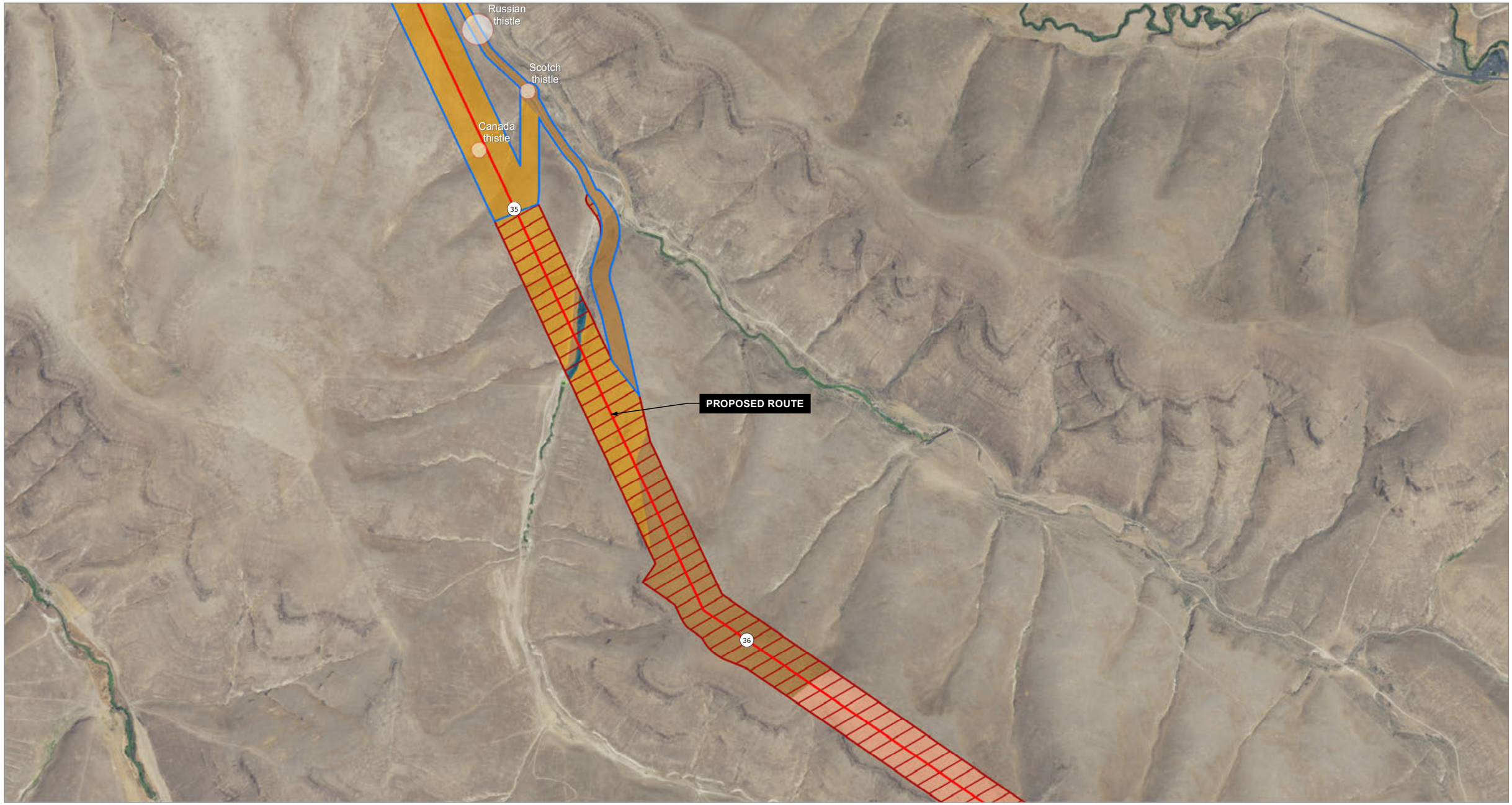

IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Shrub-Steppe with Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 20 of 154

Date: 12/21/2016 11:20:09 AM
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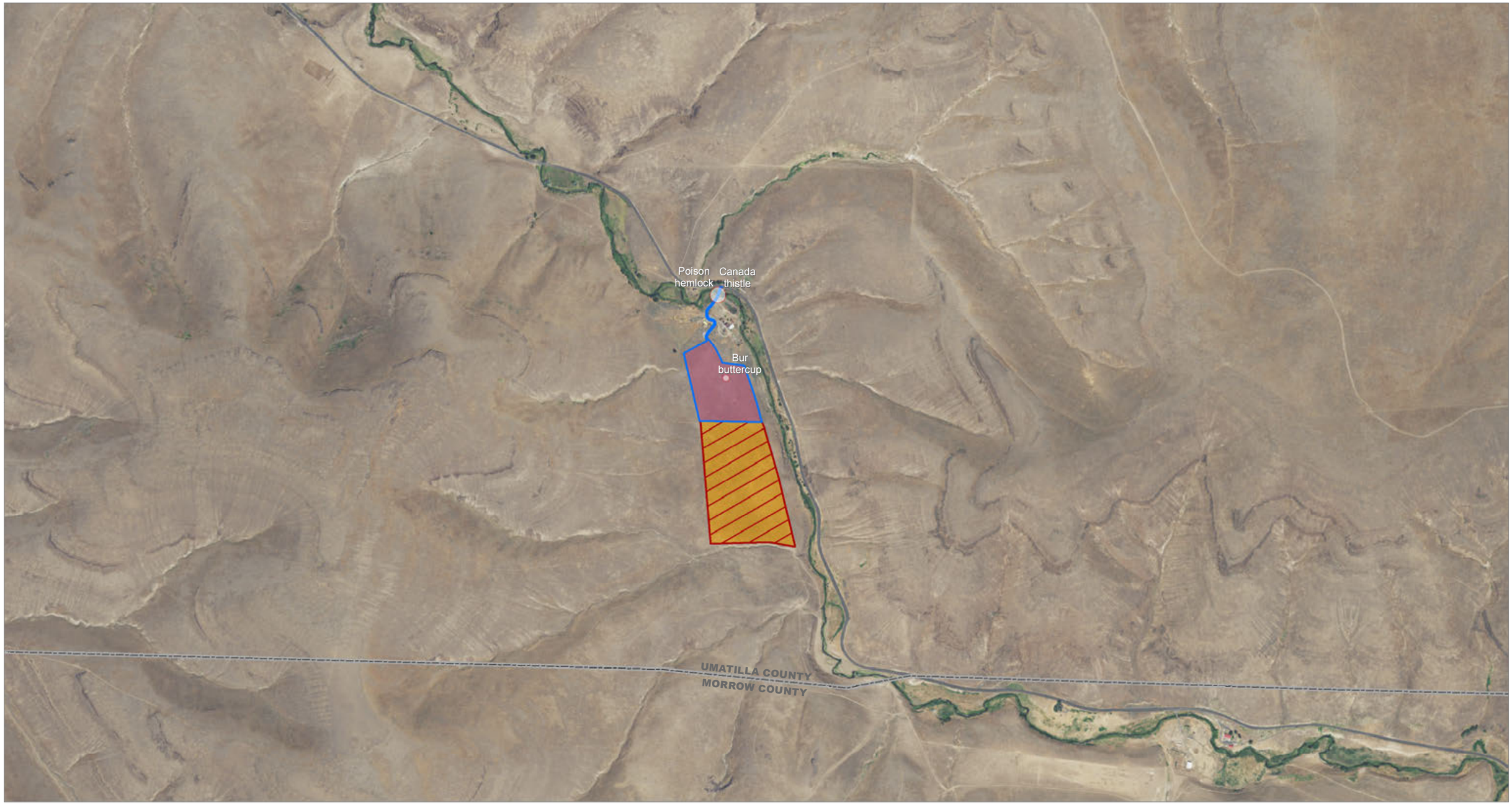
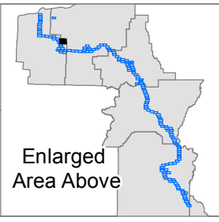


IDAHO POWER
An IDACORP Company

0 1,000
Feet



Project Features
- Surveyed
- Not Surveyed
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Developed/Disturbed
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 21 of 154

Date: 12/21/2016 11:20:09 AM
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IDAHO POWER
An IDACORP Company

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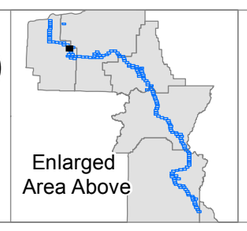
Feet



Project Features
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Native Grasslands
- Shrub-Steppe with Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 22 of 154

Date: 12/21/2016 11:20:09 AM
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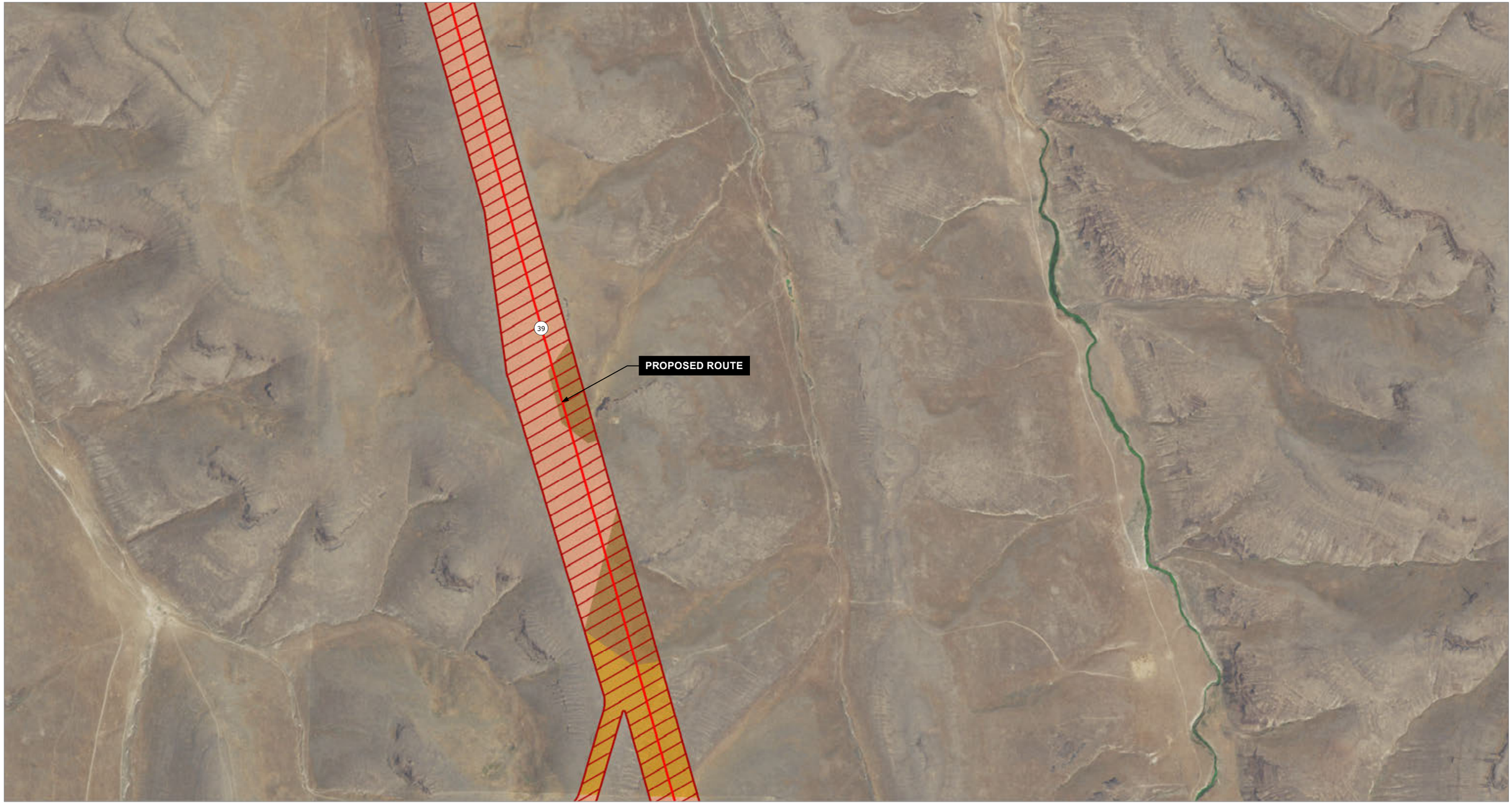

IDAHO POWER
An IDACORP Company

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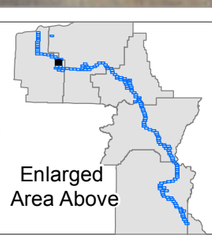
Feet



Project Features
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Shrub-Steppe with Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 23 of 154

Date: 12/21/2016 11:20:09 AM
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IDAHO POWER
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0 1,000
Feet

Enlarged Area Above

Project Features
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Emergent Wetland
- Shrub-Steppe with Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd

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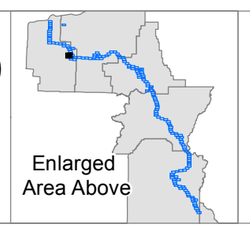

Project Features
Not Surveyed

Habitat Types
Other - Shrub/Grass
Native Grasslands
Shrub-Steppe with Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 25 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd

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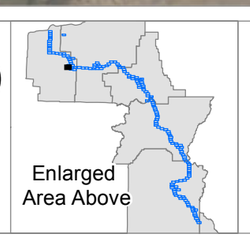


Project Features
- Not Surveyed

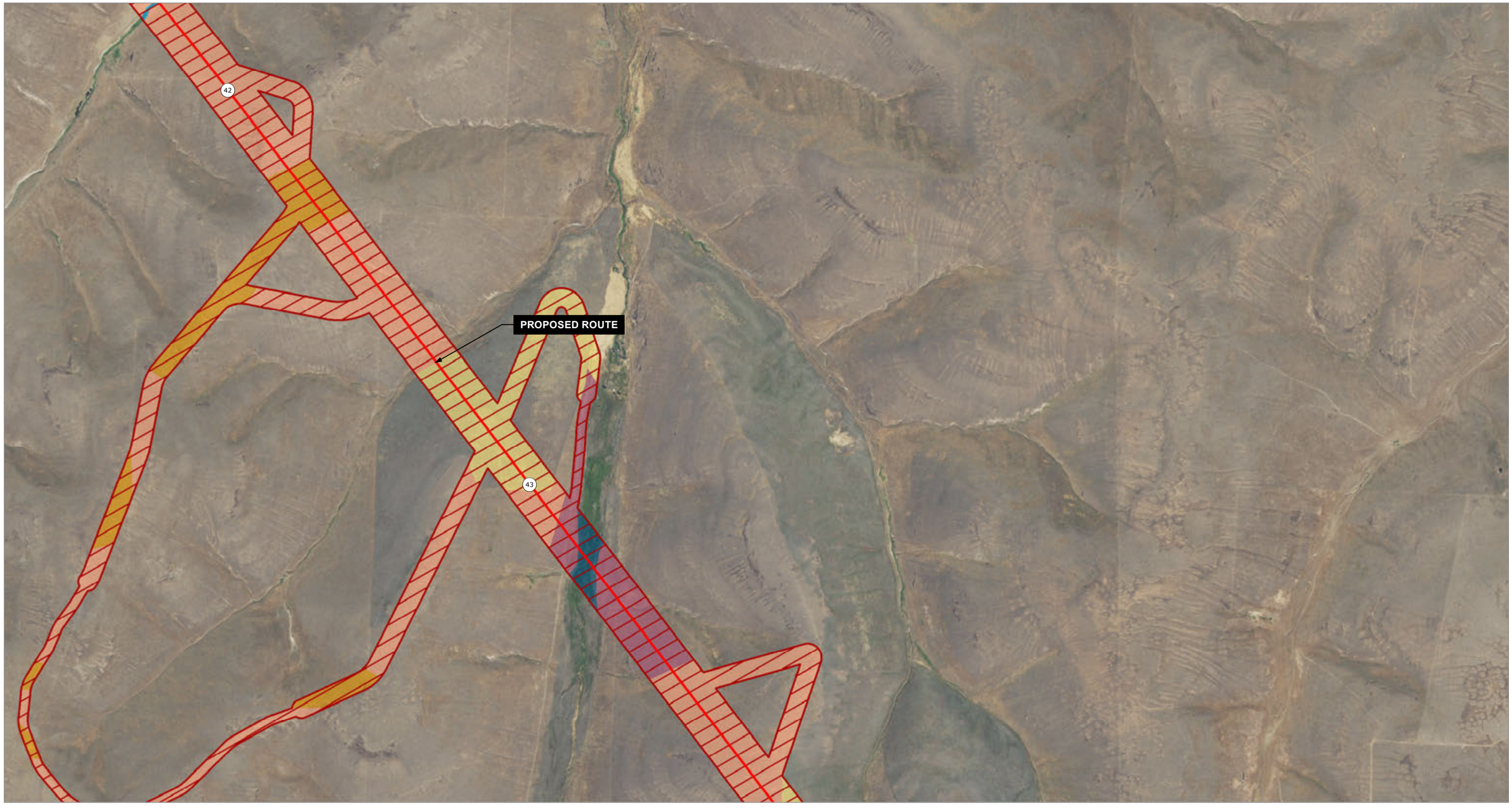
Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Developed/Disturbed
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 26 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



0 1,000
Feet

Enlarged Area Above

Project Features
- Not Surveyed
- Milepost
- Proposed Route

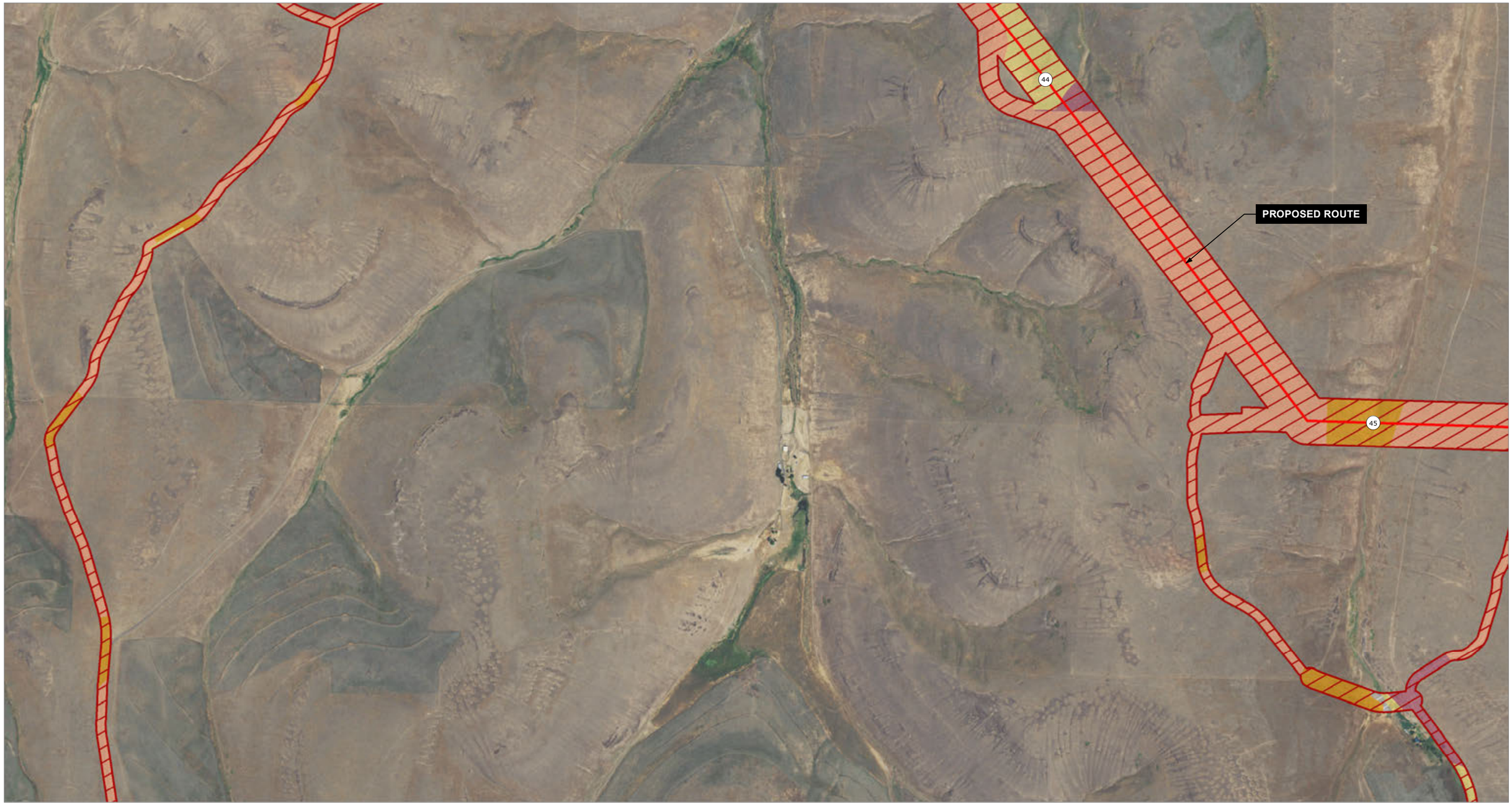
Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Emergent Wetland
- Agriculture
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 27 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
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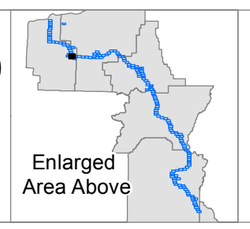
Feet



Project Features
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Developed/Disturbed
- Agriculture
- Shrub-Steppe without Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

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Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd

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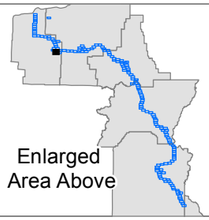


Project Features
Not Surveyed

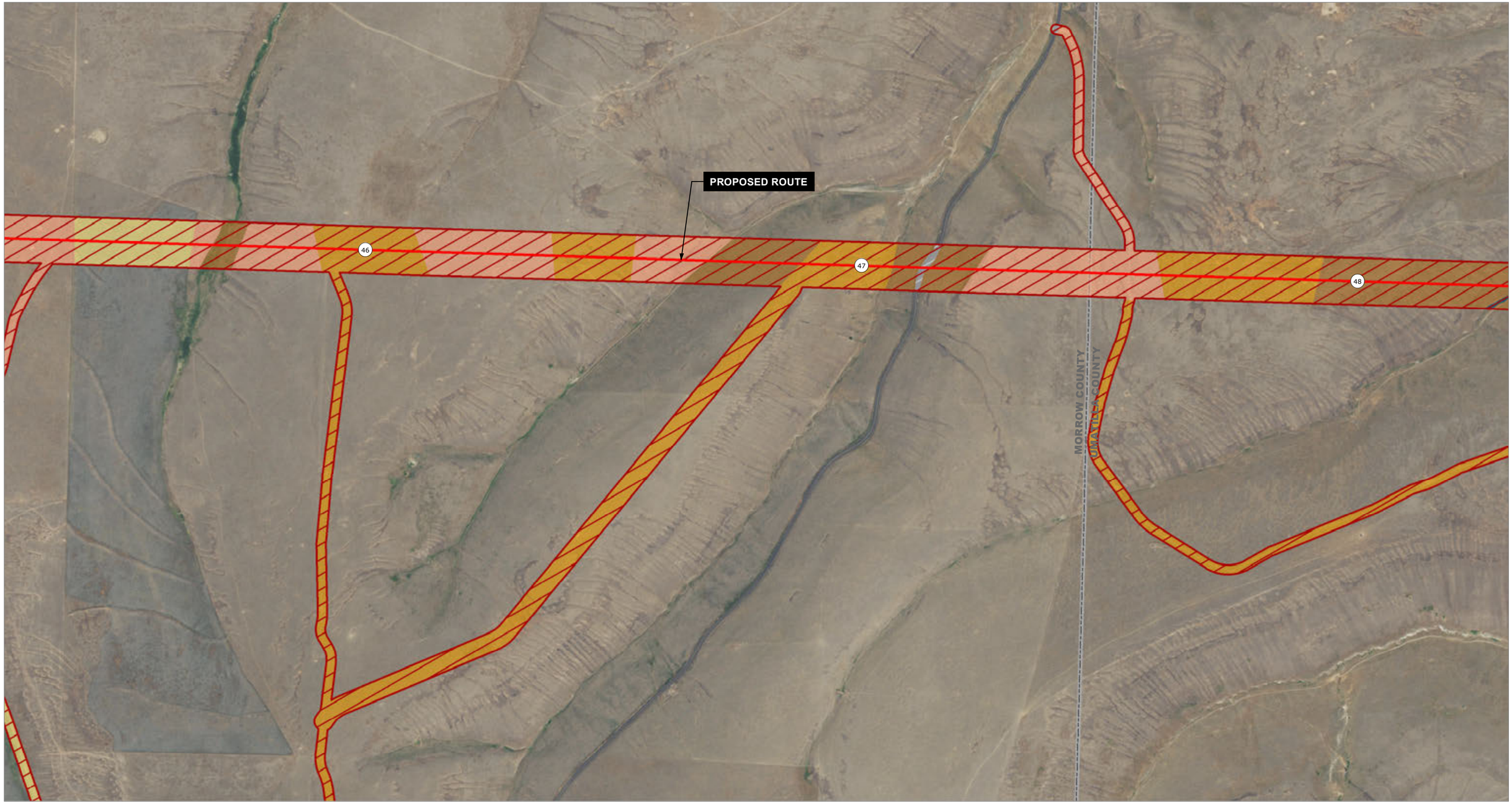
Habitat Types
Native Grasslands

Developed/Disturbed
Shrub-Steppe with Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



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An IDACORP Company

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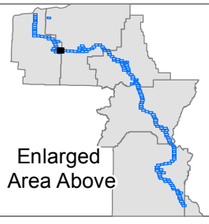

Project Features
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Developed/Disturbed
- Agriculture
- Shrub-Steppe with Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 30 of 154

Date: 12/21/2016 11:20:09 AM
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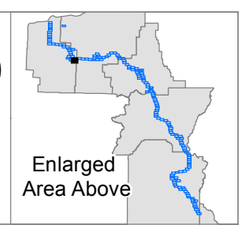
Feet



Project Features
- Not Surveyed

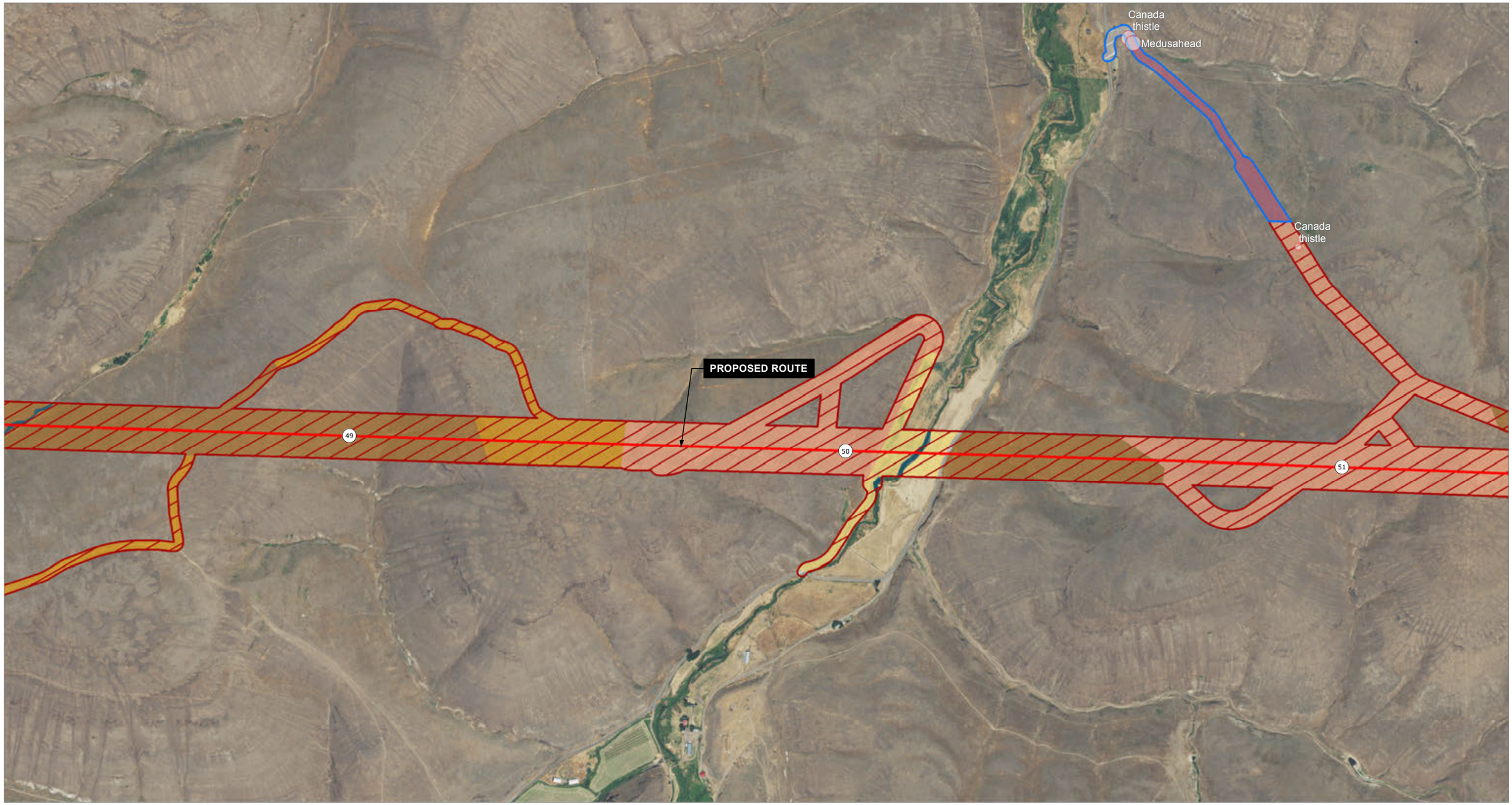
Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Developed/Disturbed
- Agriculture

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 31 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



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An IDACORP Company

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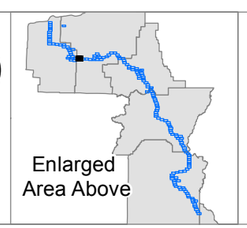
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

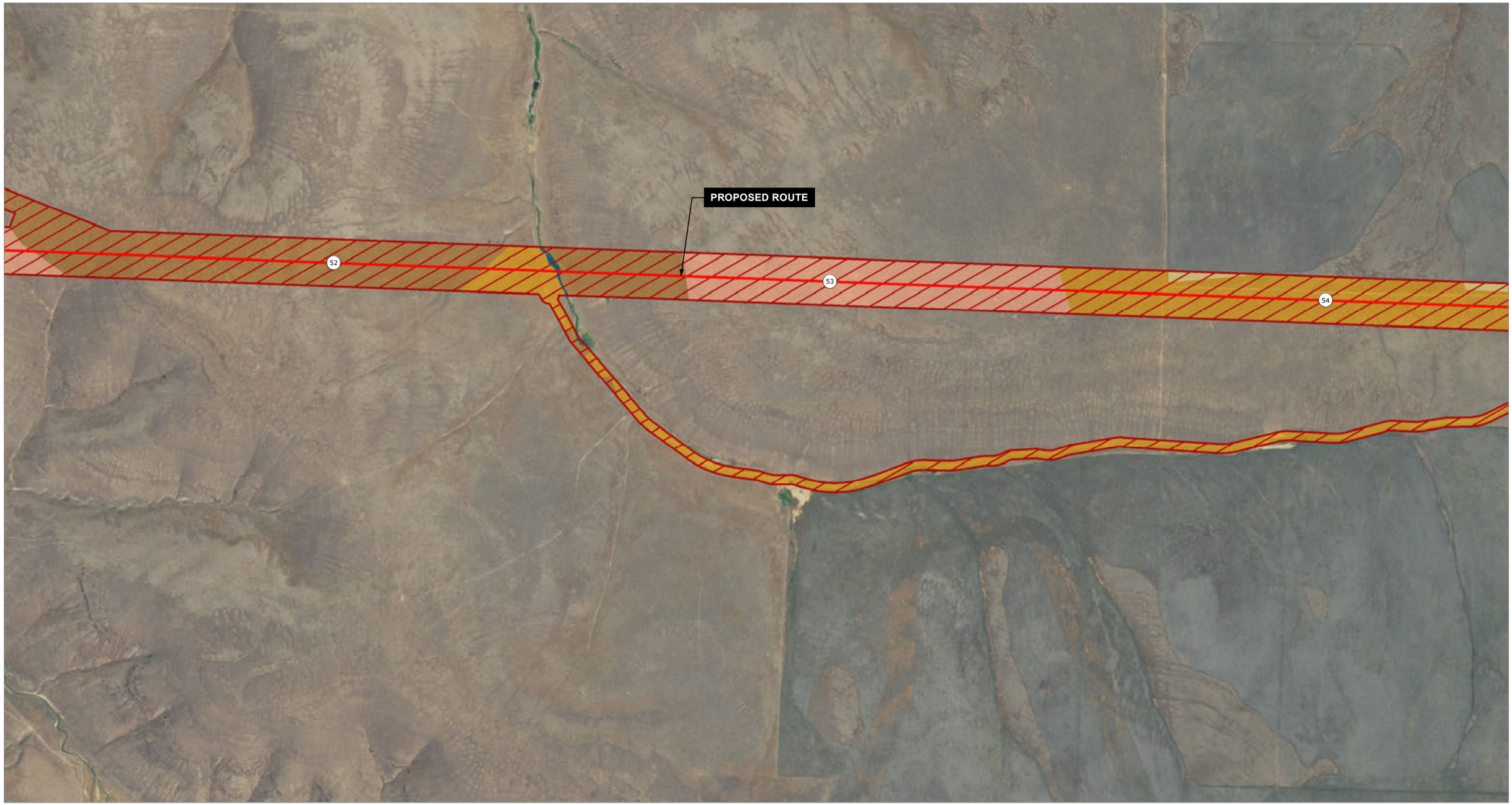
Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Developed/Disturbed
- Agriculture
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 32 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Agriculture
- Shrub-Steppe with Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 33 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd

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An IDACORP Company

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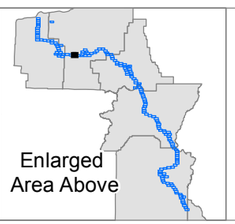
Feet



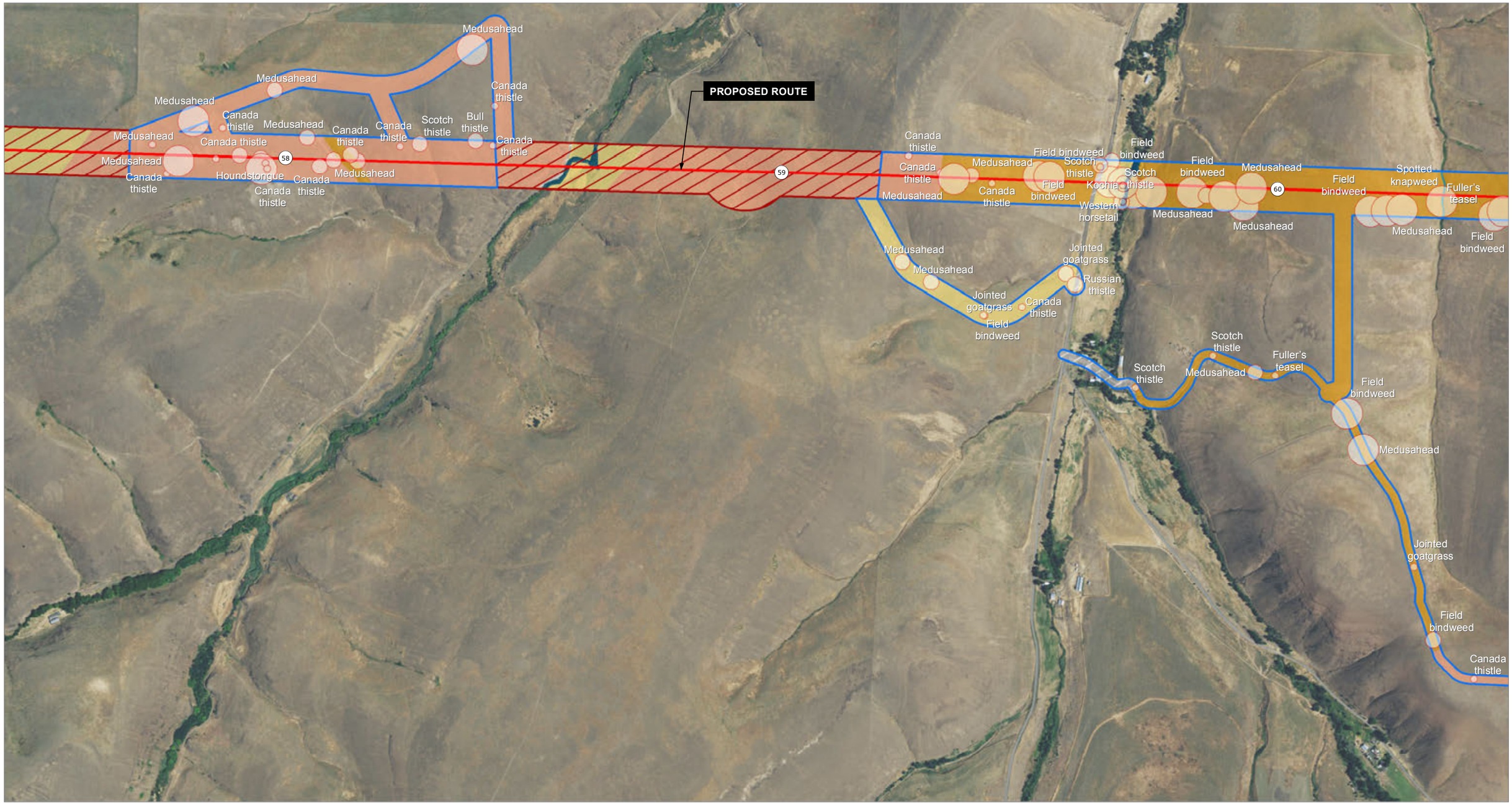
Project Features
- Not Surveyed
- Milepost
- Proposed Route

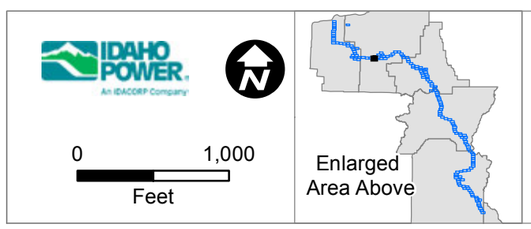
Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Emergent Wetland
- Developed/Disturbed
- Agriculture

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd





Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Emergent Wetland
- Developed/Disturbed
- Agriculture

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
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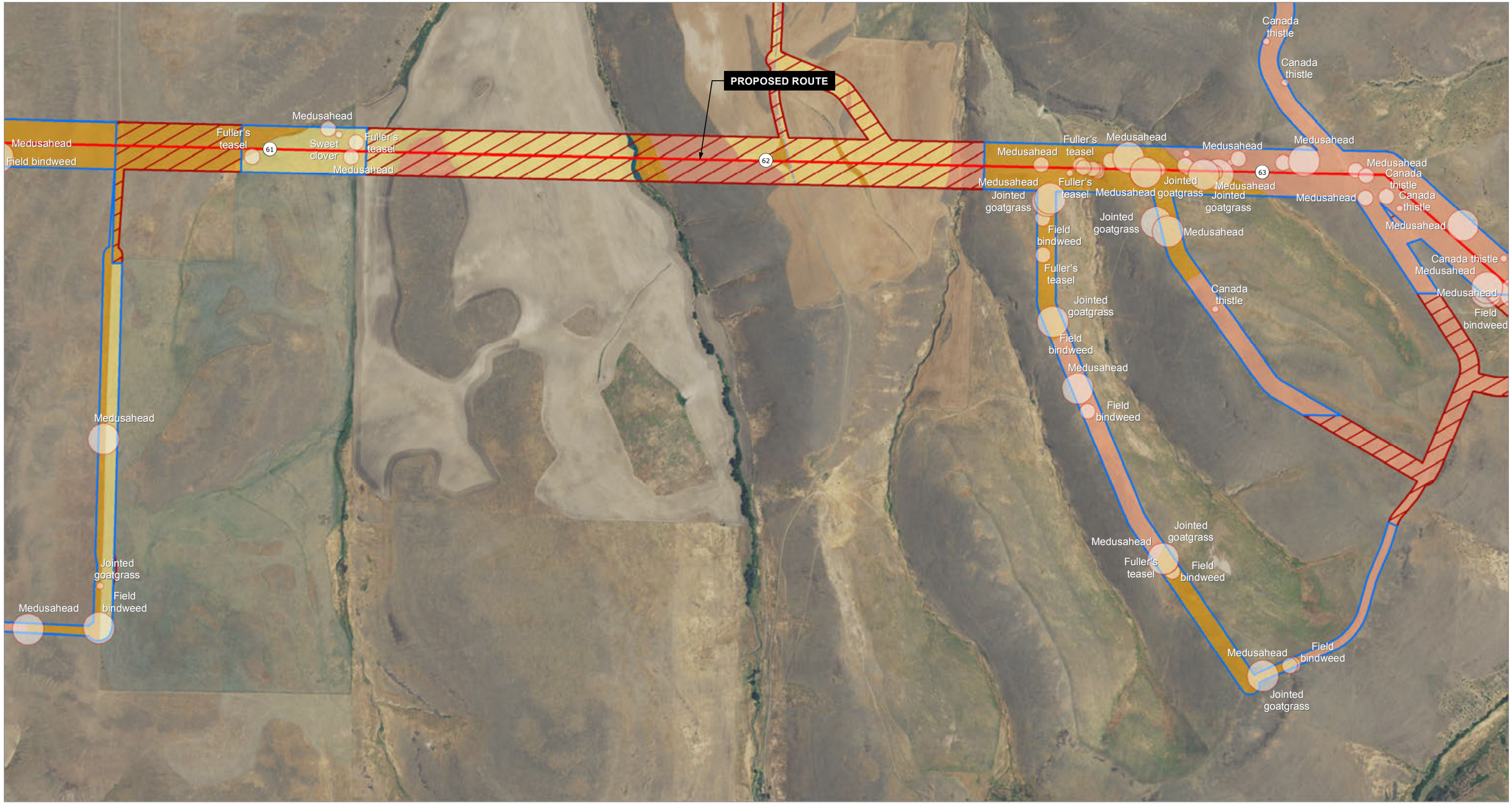


IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Developed/Disturbed
- Agriculture

Boardman to Hemingway Transmission Line Project

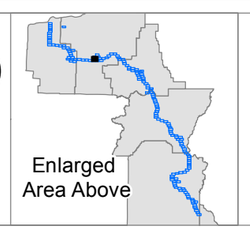
Habitat Types and Noxious Weed Results

Figure 36 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 1,000
Feet



Project Features
- Surveyed
- Not Surveyed
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Developed/Disturbed
- Agriculture
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 37 of 154

Date: 12/21/2016 11:20:09 AM
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IDAHO POWER
An IDACORP Company

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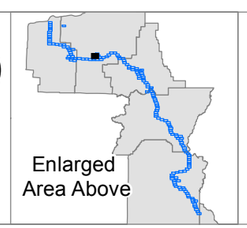
Feet



Project Features
- Surveyed
- Not Surveyed

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Developed/Disturbed
- Agriculture

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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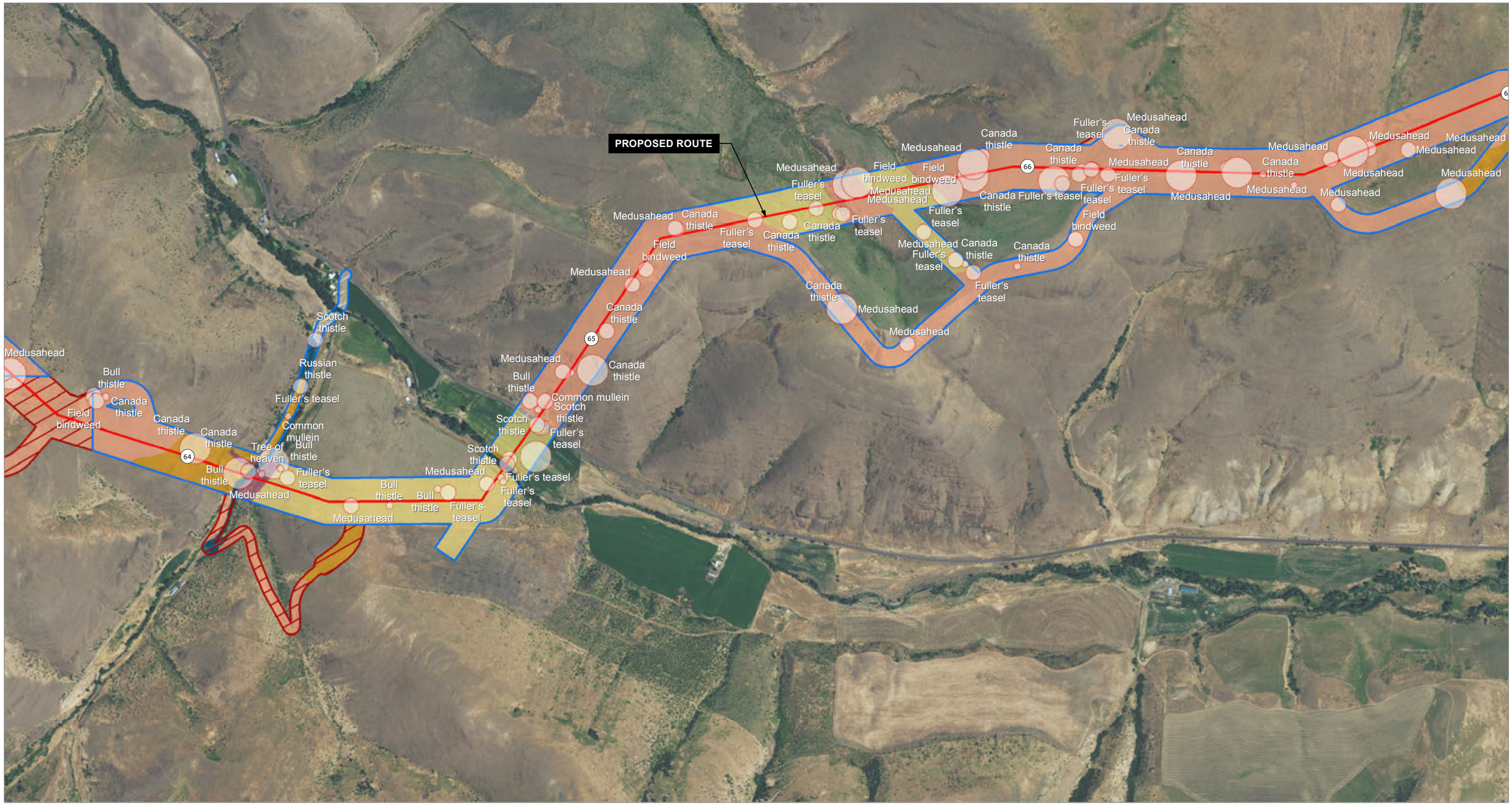
Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Developed/Disturbed
- Agriculture
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 39 of 154

Date: 12/21/2016 11:20:09 AM
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Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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Date: 12/21/2016 11:20:09 AM
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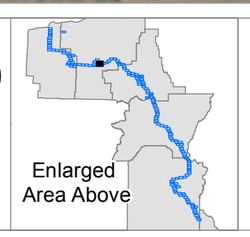

Project Features
Surveyed
Not Surveyed

Noxious Weed

Habitat Types
Native Grasslands

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 41 of 154

Date: 12/21/2016 11:20:09 AM
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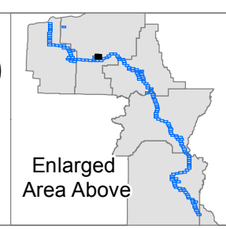

Enlarged Area Above

Project Features
Surveyed

Noxious Weed

Habitat Types
Other - Shrub/Grass

Native Grasslands
Agriculture

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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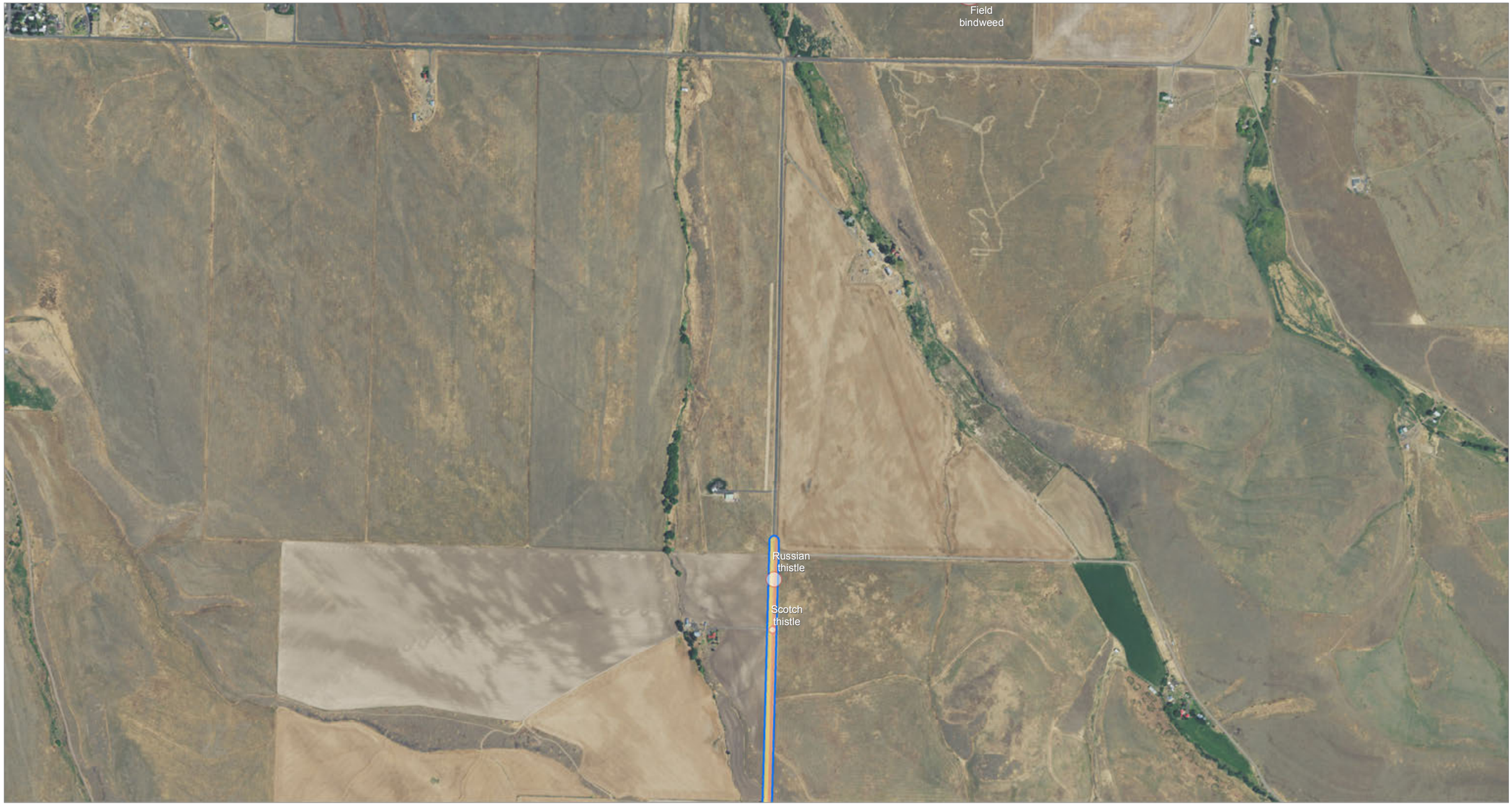
Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

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Feet

Project Features
Surveyed

Noxious Weed

Habitat Types
Native Grasslands

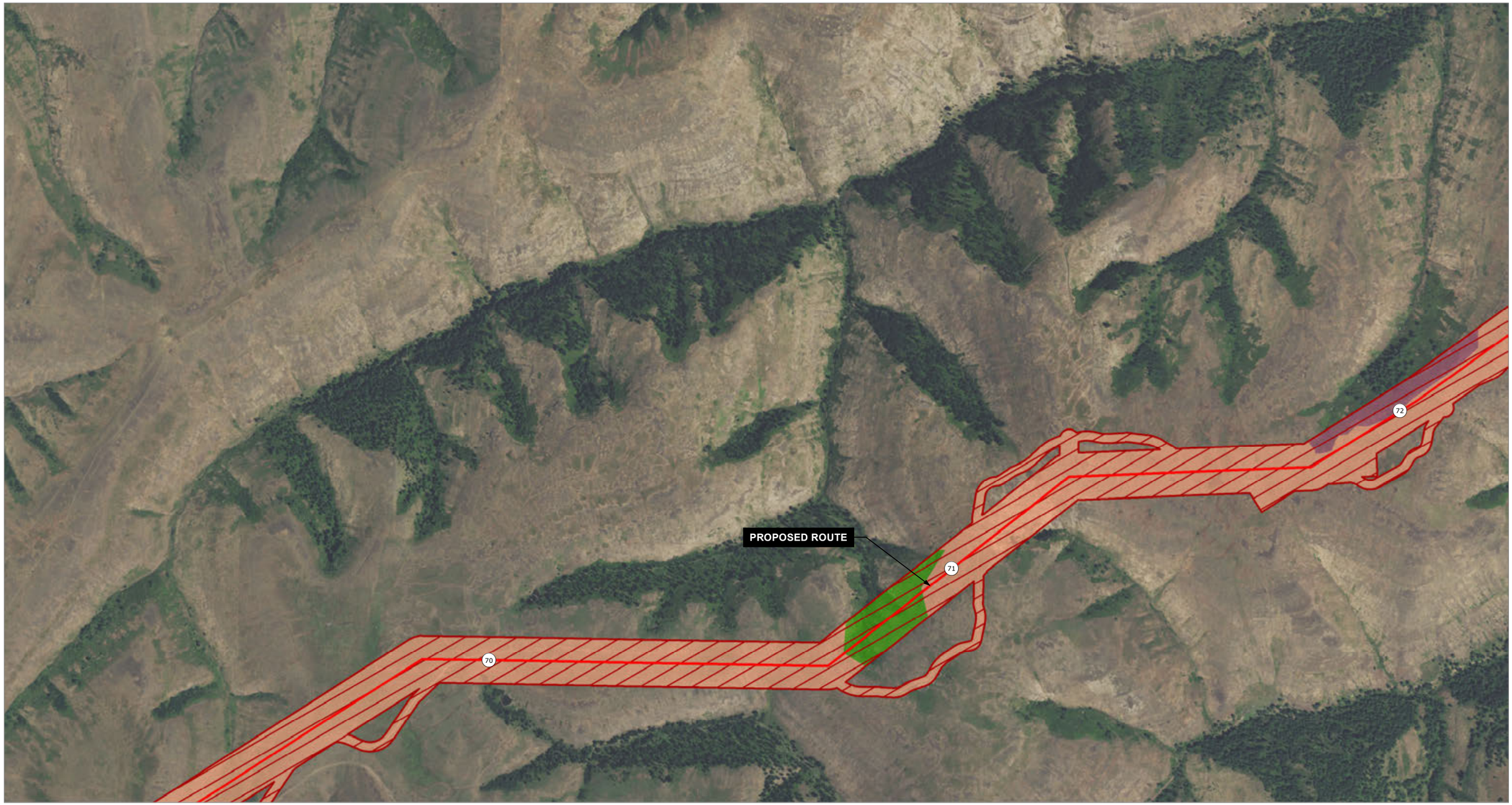
Agriculture

Boardman to Hemingway
Transmission Line Project

Habitat Types and
Noxious Weed Results

Figure 43 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

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Feet

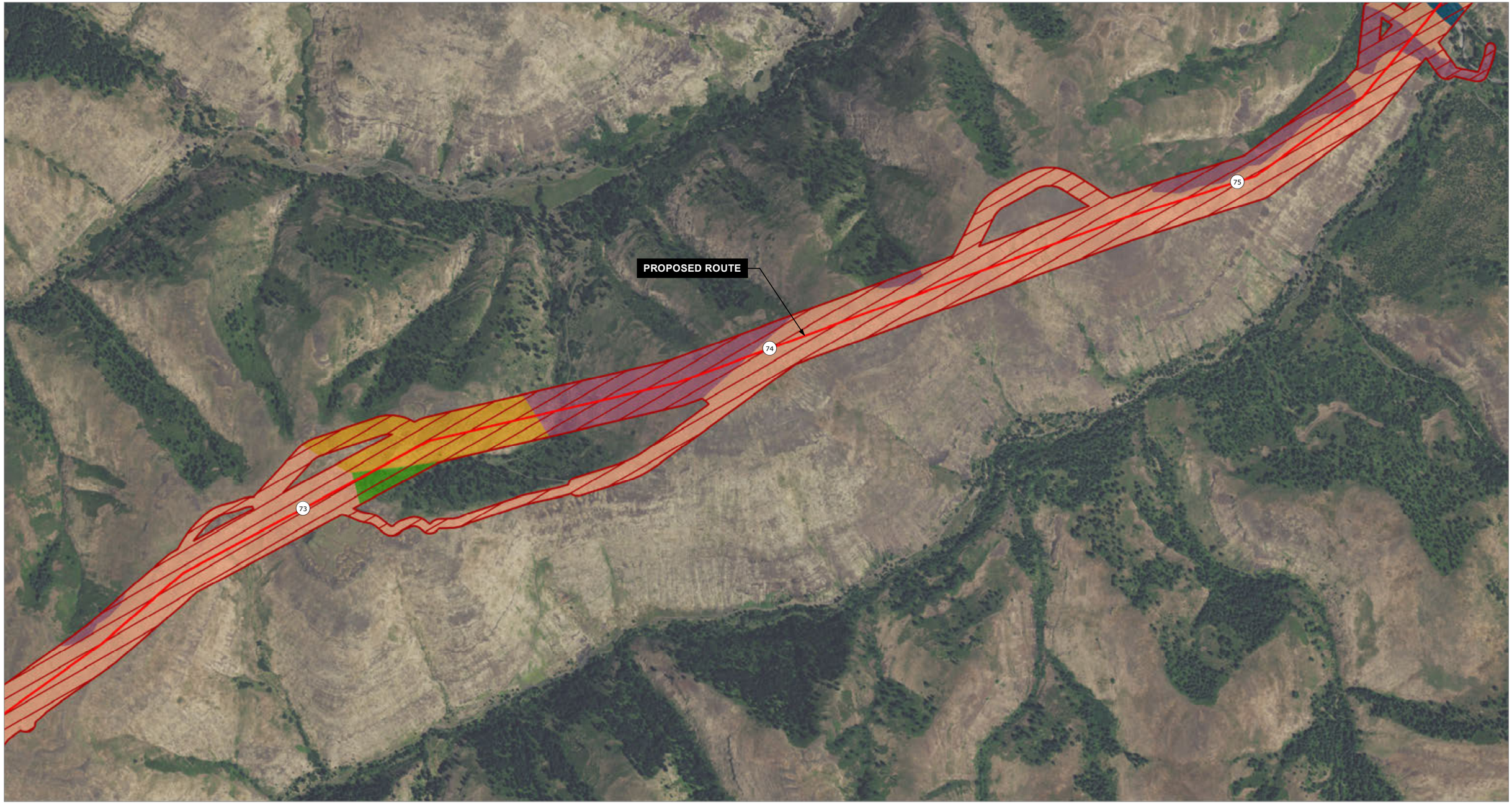
Project Features
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Native Grasslands
- Shrub-Steppe without Big Sage
- Mixed Grand Fir/Douglas Fir

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



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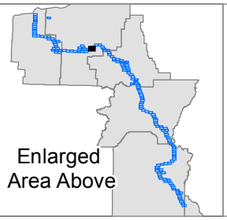

Project Features
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Shrub-Steppe without Big Sage
- Mixed Grand Fir/Douglas Fir

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

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Date: 12/21/2016 11:20:09 AM
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An IDACORP Company

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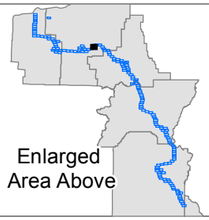
Feet



Enlarged Area Above

Project Features
- Not Surveyed
- Milepost
- Proposed Route

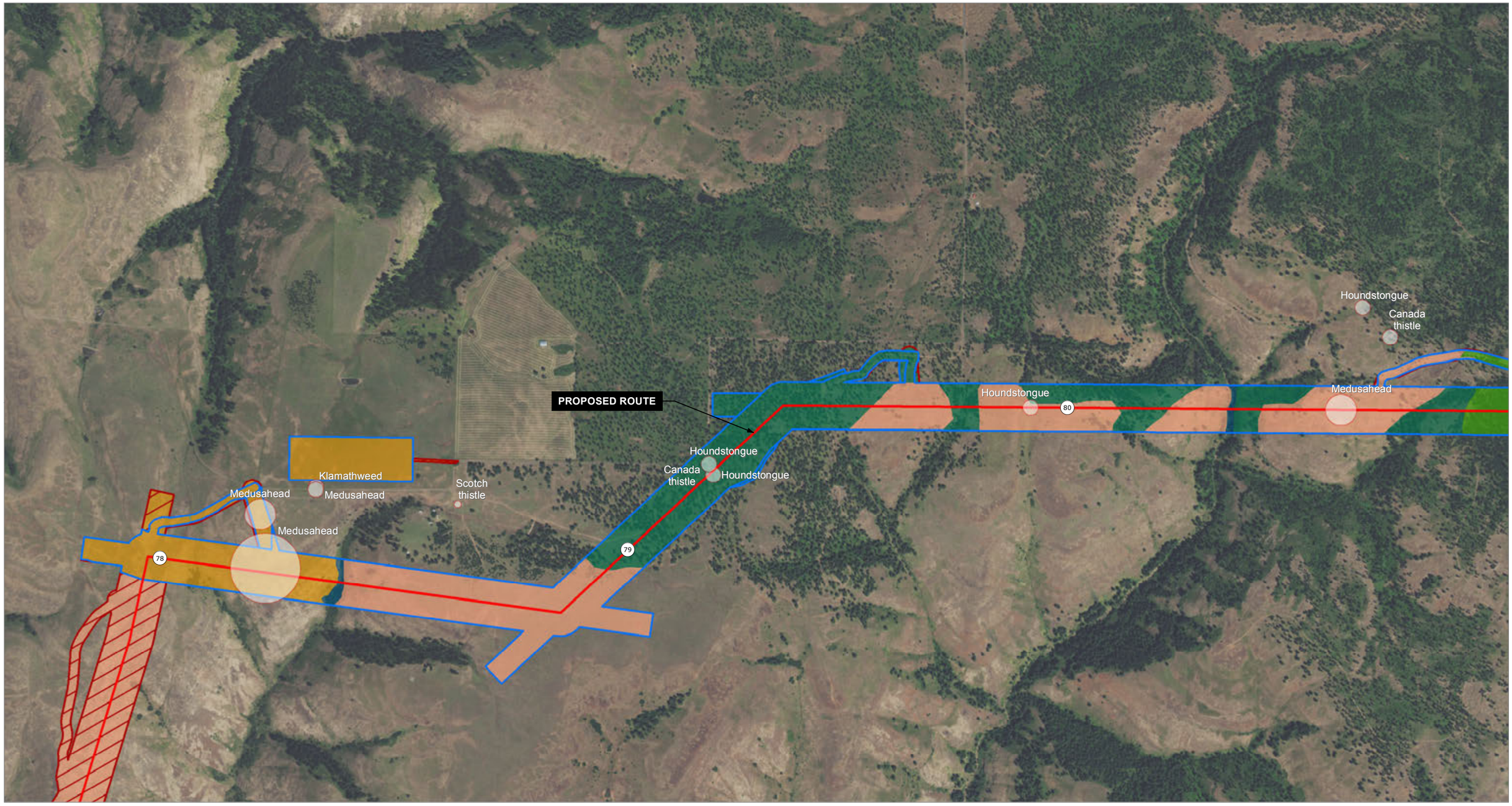
Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 46 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

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Feet

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Emergent Wetland
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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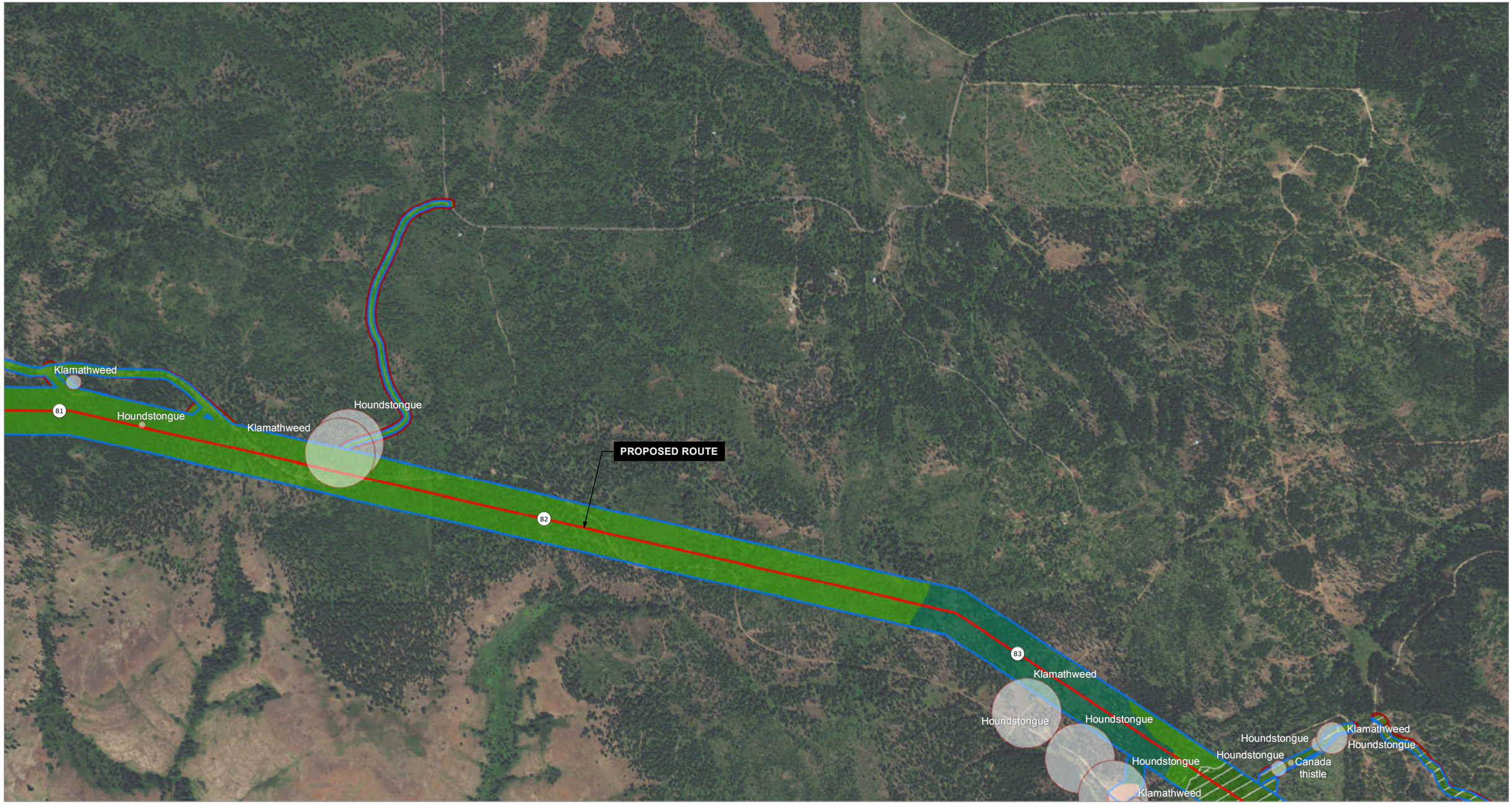
Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Native Grasslands
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine
- Forested-Other

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

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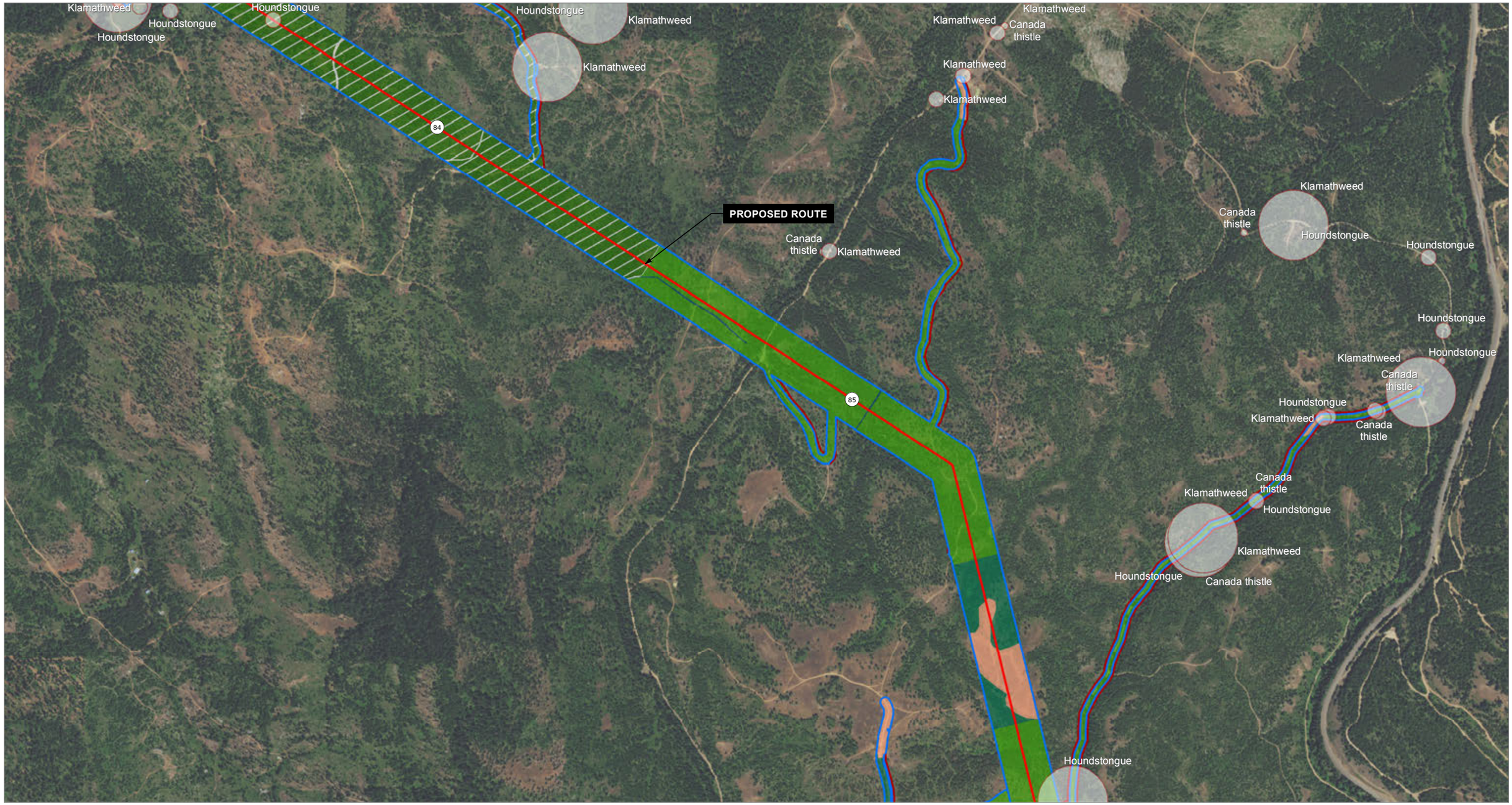
Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiIServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Native Grasslands
- Forested Wetland
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine
- Forested-Other

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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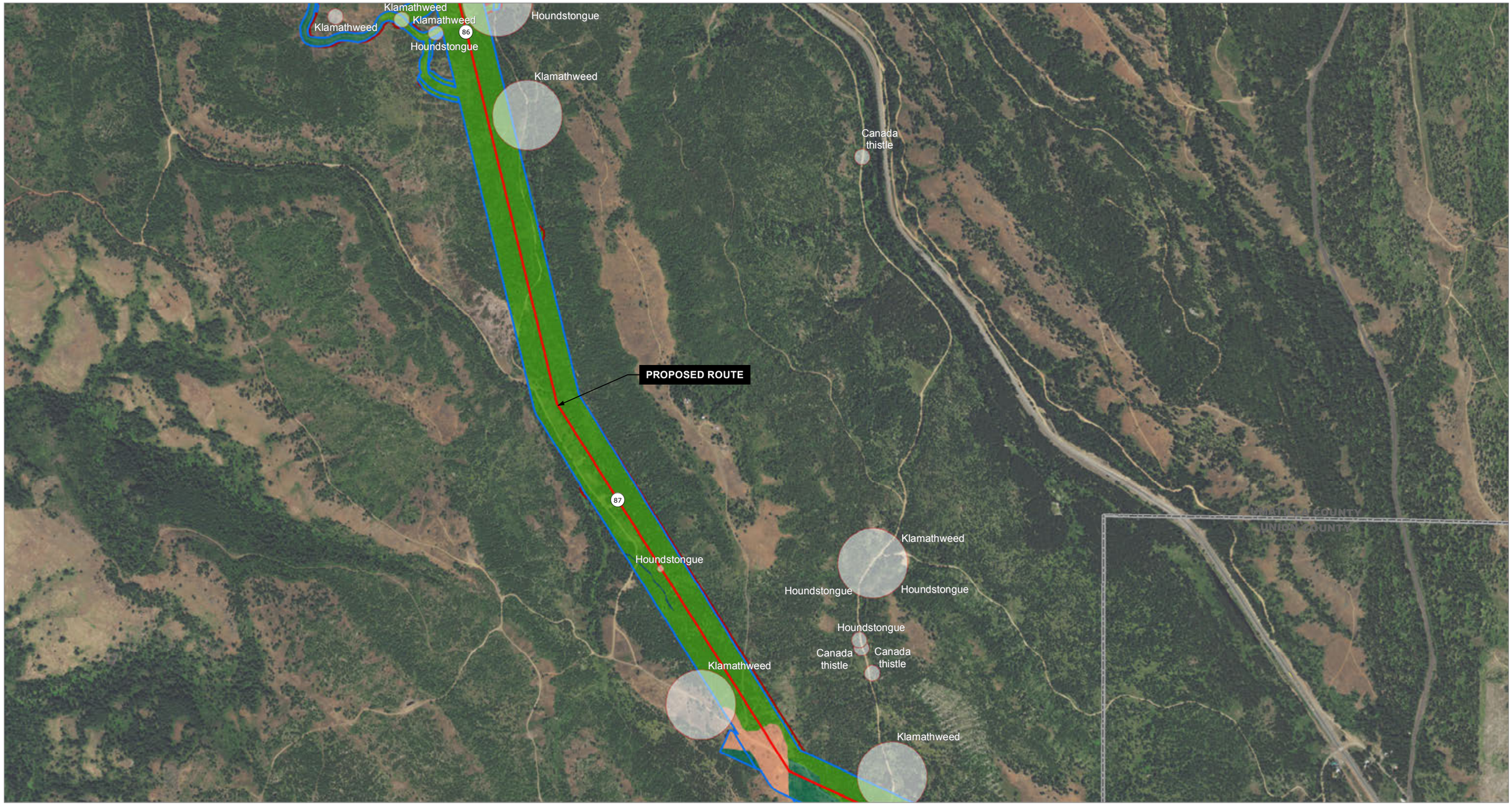
Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

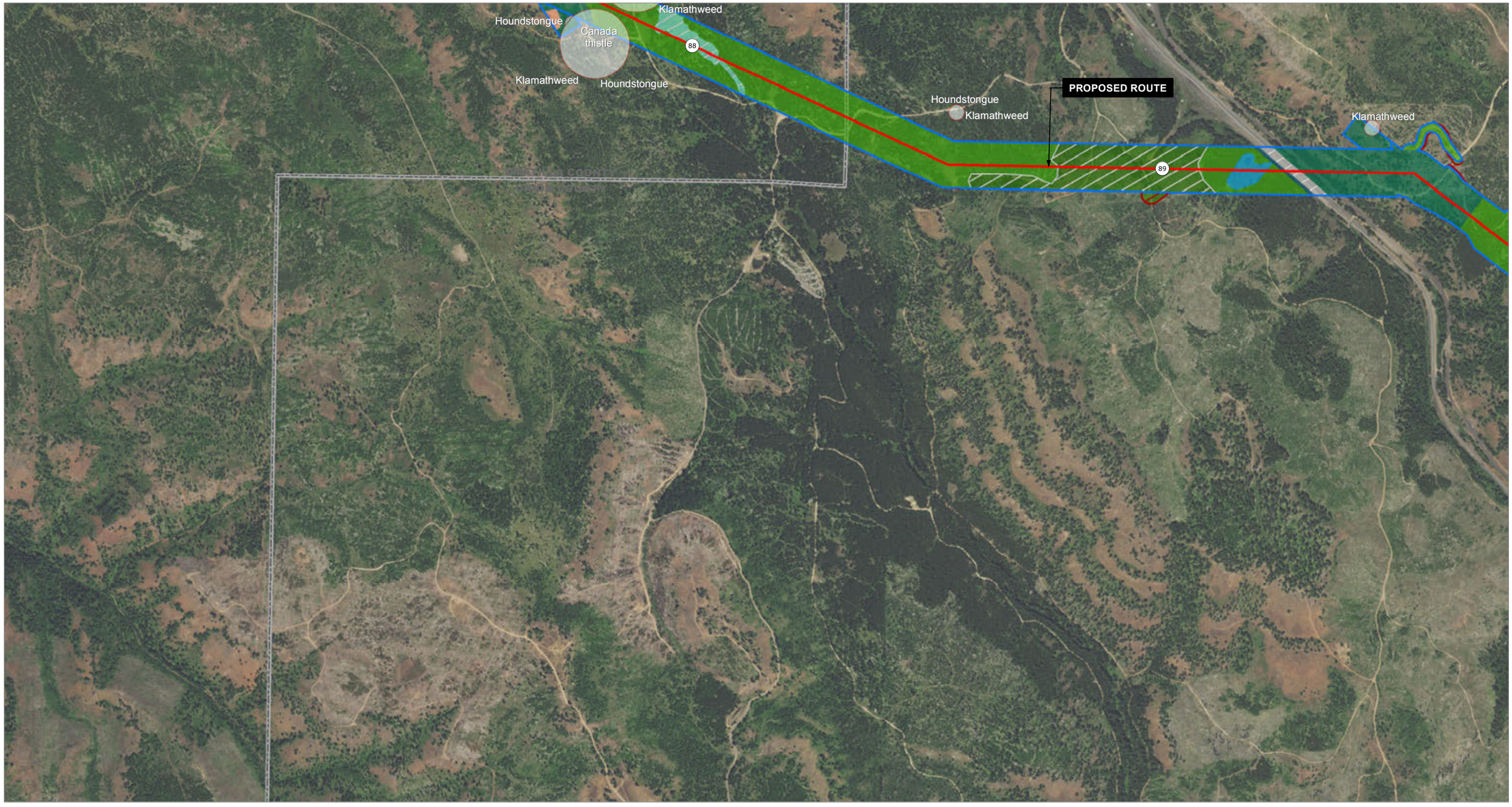
Habitat Types
- Native Grasslands
- Forested Wetland
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 50 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



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An IDACORP Company

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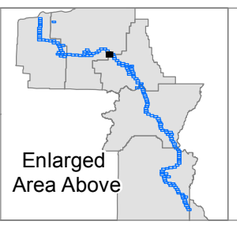
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

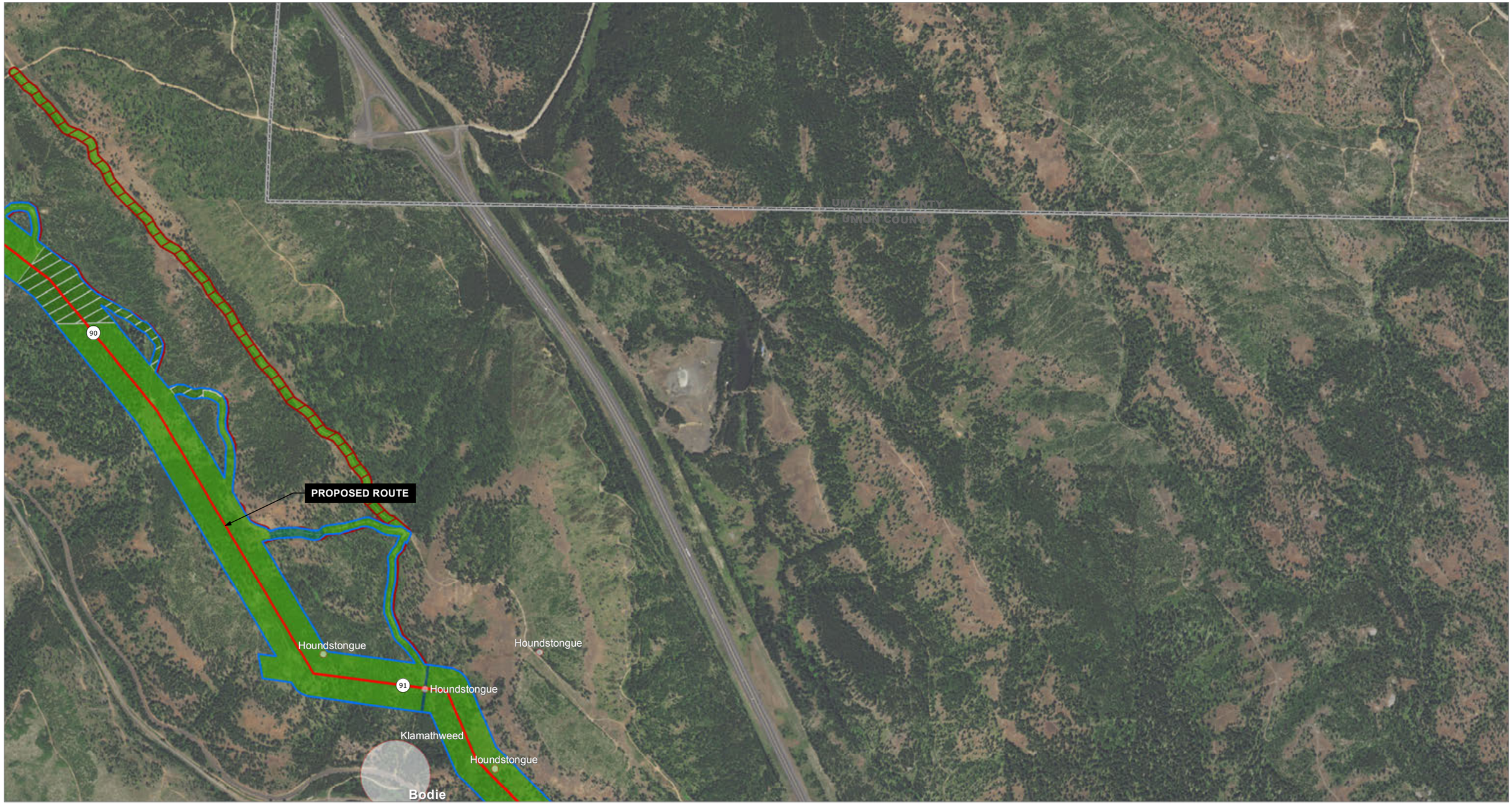
Habitat Types
- Native Grasslands
- Forested Wetland
- Emergent Wetland
- Scrub-Shrub Wetland
- Developed/Disturbed
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine
- Forested-Other

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 51 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Forested Wetland
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine
- Forested-Other

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 52 of 154

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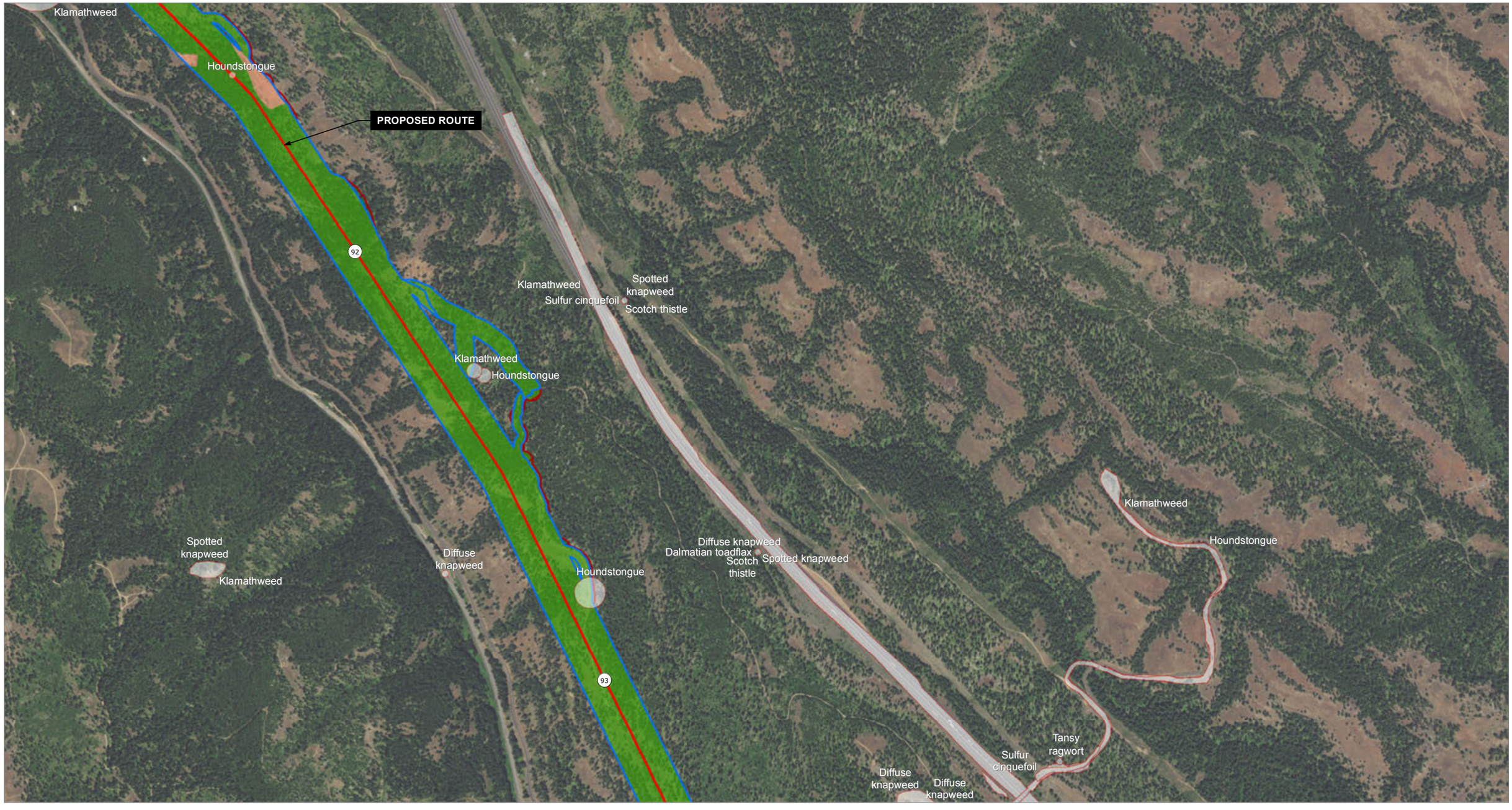
Source: Z:\UtiServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Native Grasslands
- Emergent Wetland
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 53 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd

Diffuse knapweed
Dalmatian toadflax
Klamathweed
Canada thistle
Diffuse knapweed
Diffuse knapweed
94
PROPOSED ROUTE
Klamathweed
Klamathweed
Diffuse knapweed
Diffuse knapweed
Diffuse knapweed
Spotted knapweed
Sulfur cinquefoil
Dalmatian toadflax
Scotch thistle
Canada thistle
Diffuse knapweed
Diffuse knapweed
Spotted knapweed
Diffuse knapweed
Diffuse knapweed
Diffuse

Diffuse knapweed

96

Diffuse knapweed

Dalmatian toadflax

Spotted knapweed

PROPOSED ROUTE

Fuller's teasel

Scotch thistle

Scotch thistle

97

Houndstongue

Spotted knapweed

Dalmatian toadflax

Diffuse knapweed

Houndstongue

Scotch thistle

98

IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Native Grasslands
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 55 of 154

Date: 12/21/2016 11:20:09 AM
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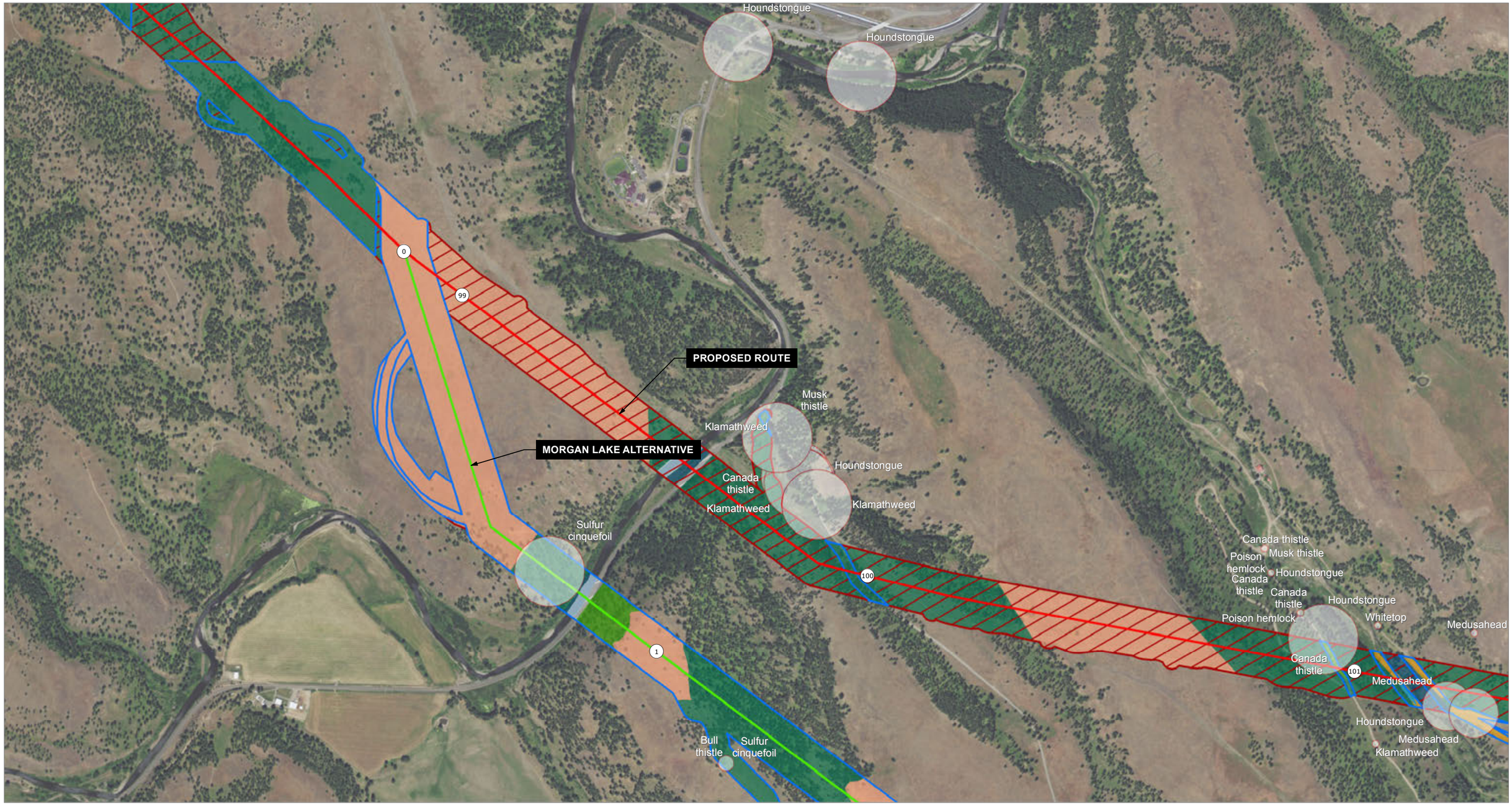

IDAHO POWER
An IDACORP Company

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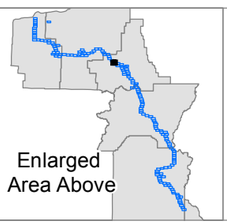
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Emergent Wetland
- Perennial Streams
- Developed/Disturbed
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 56 of 154

Date: 12/21/2016 11:20:09 AM
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IDAHO POWER
An IDACORP Company

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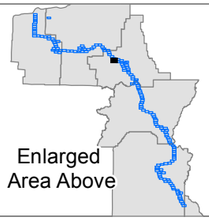
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Alternative

Noxious Weed

Habitat Types
- Native Grasslands
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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Date: 12/21/2016 11:20:09 AM
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Medusahead
Whitetop
Medusahead
Houndstongue
102
Medusahead
PROPOSED ROUTE
103
104
Medusahead
Medusahead
Houndstongue
3
Houndstongue
Medusahead
MORGAN LAKE ALTERNATIVE
Houndstongue
Houndstongue
Houndstongue
4
Houndstongue
Musk thistle
Scotch thistle
Houndstongue
Houndstongue
Bull thistle
Medusahead
Canada thistle
Medusahead
5

IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Emergent Wetland
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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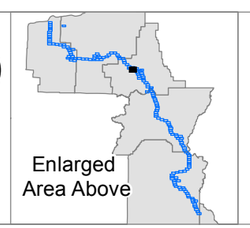
Feet



Project Features
- Surveyed
- Not Surveyed
- 2 Milepost
- Alternative

Noxious Weed

Habitat Types
- Native Grasslands
- Forested Wetland
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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Date: 12/21/2016 11:20:09 AM
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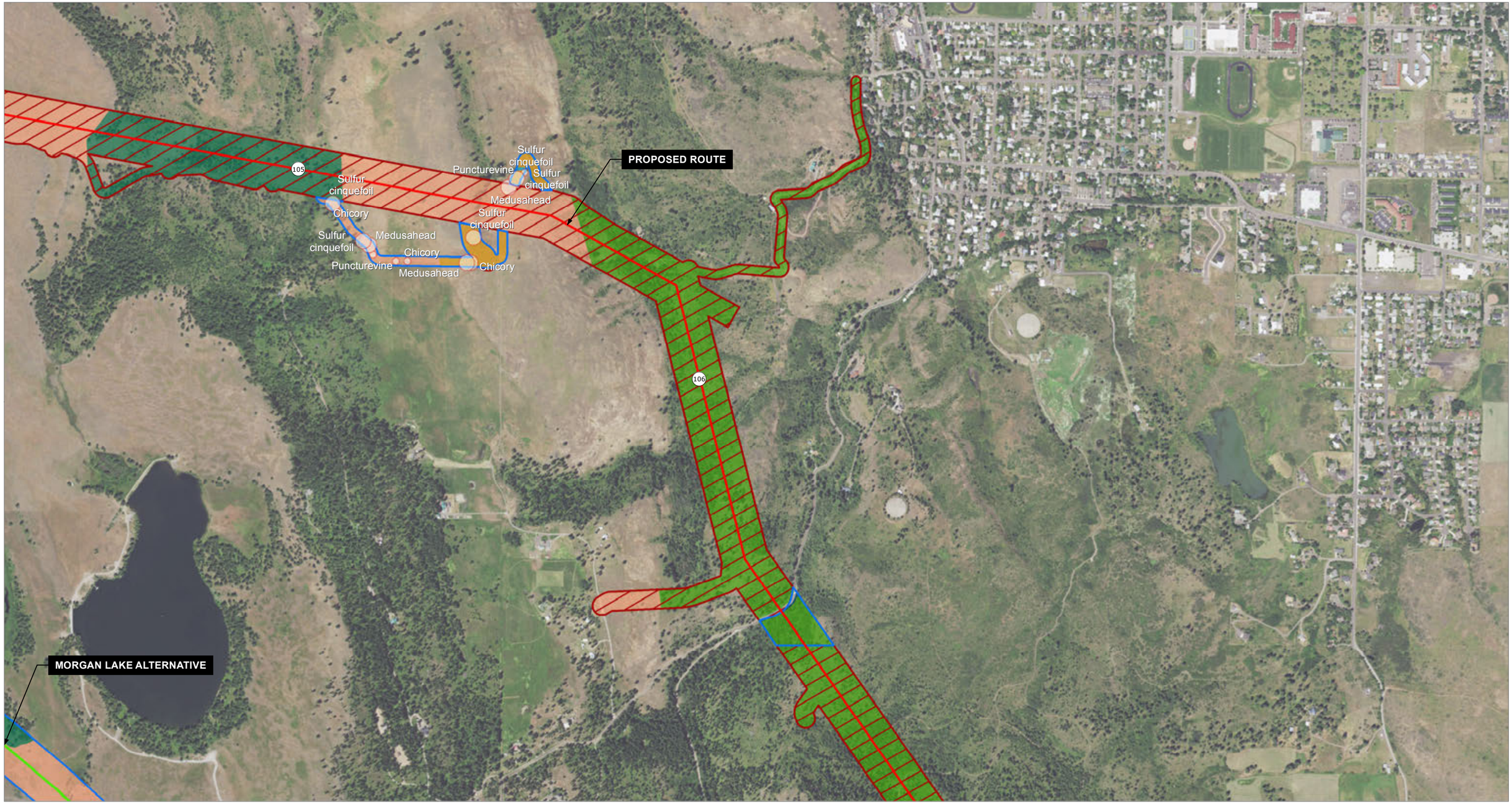

IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Emergent Wetland
- Developed/Disturbed
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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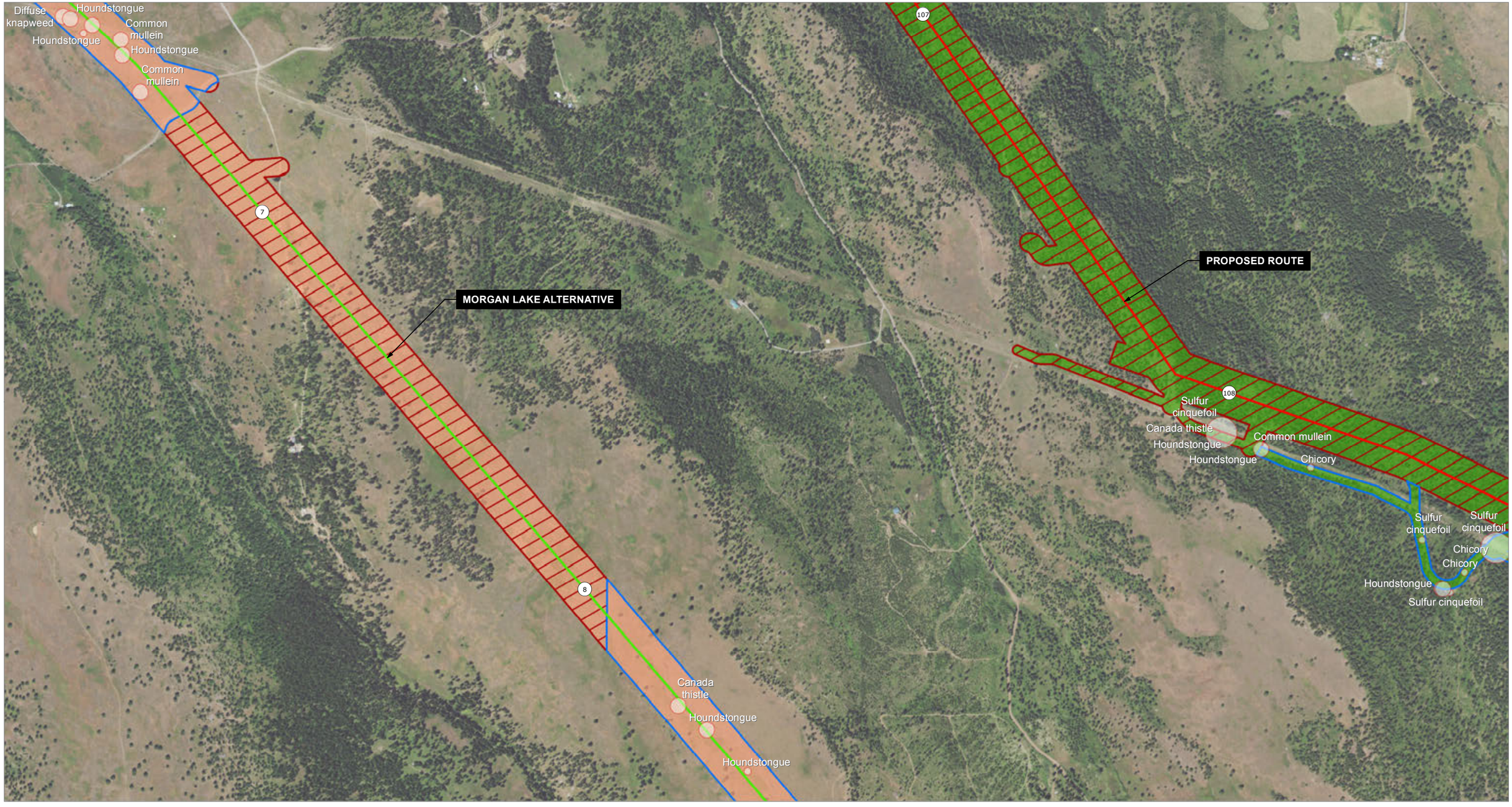
Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative

Noxious Weed

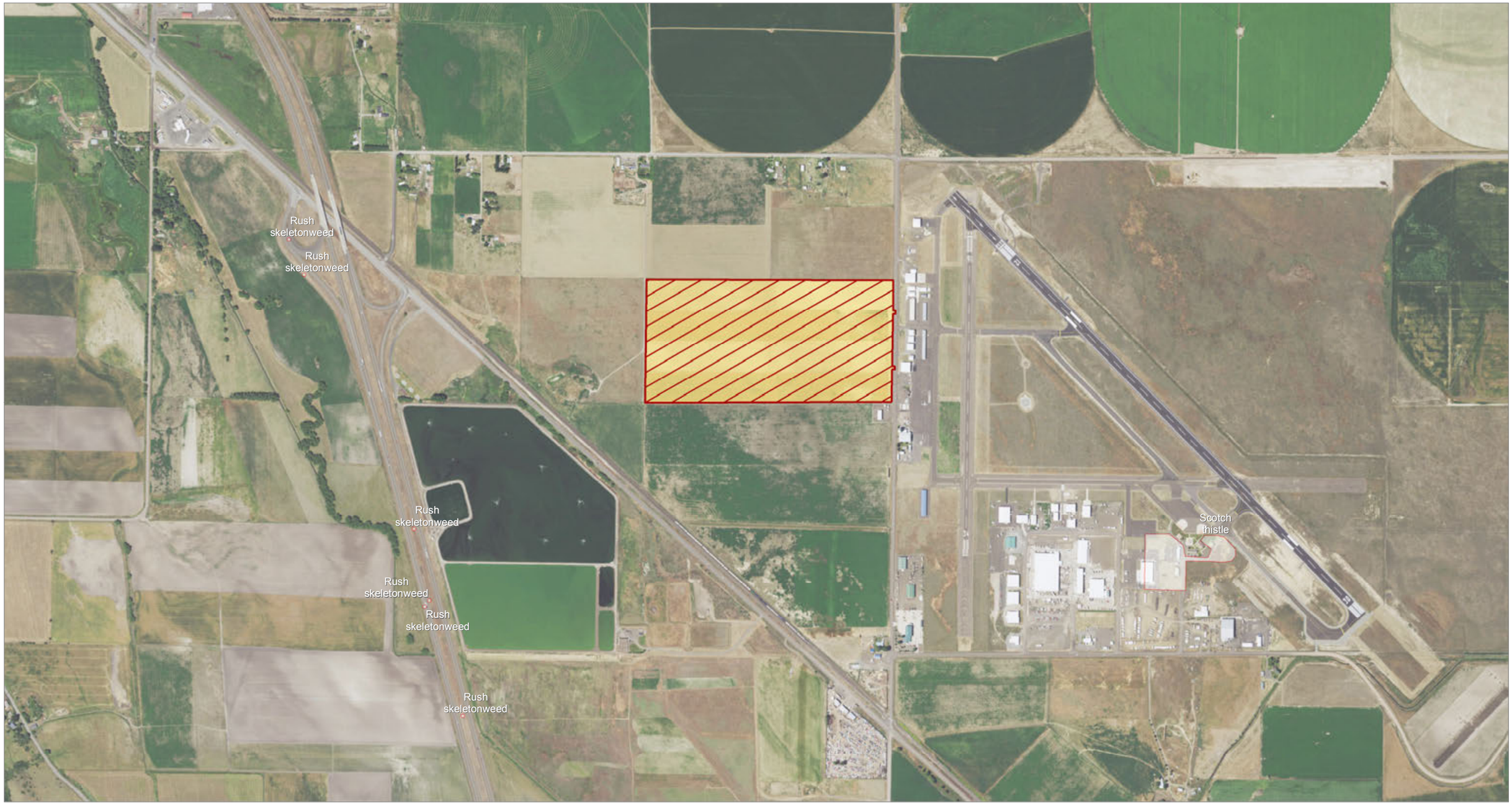
Habitat Types
- Native Grasslands
- Mixed Grand Fir/Douglas Fir

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 61 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
Not Surveyed

Noxious Weed

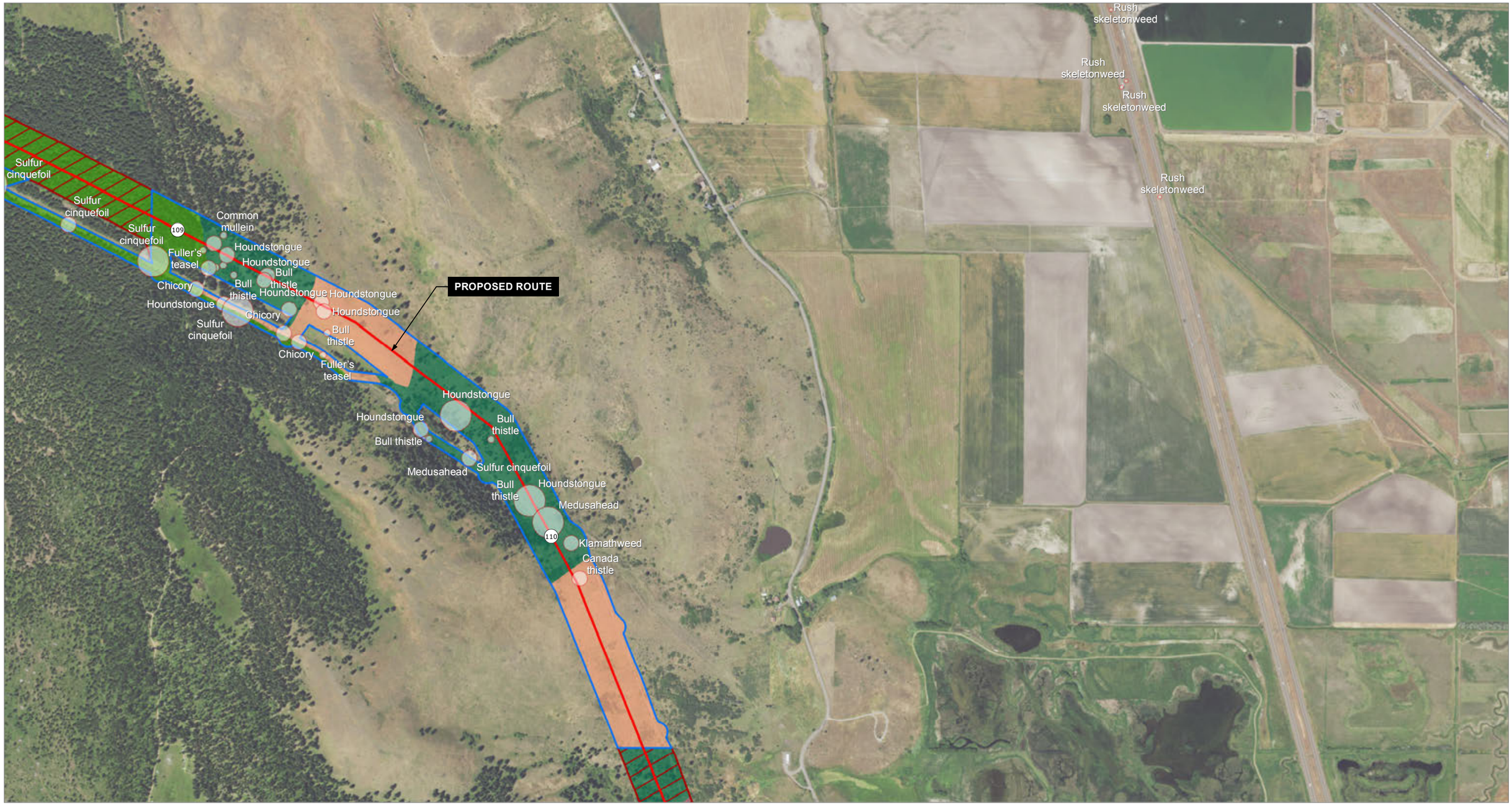
Habitat Types
Agriculture

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 62 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER. An IDACORP Company

0 1,000 Feet

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

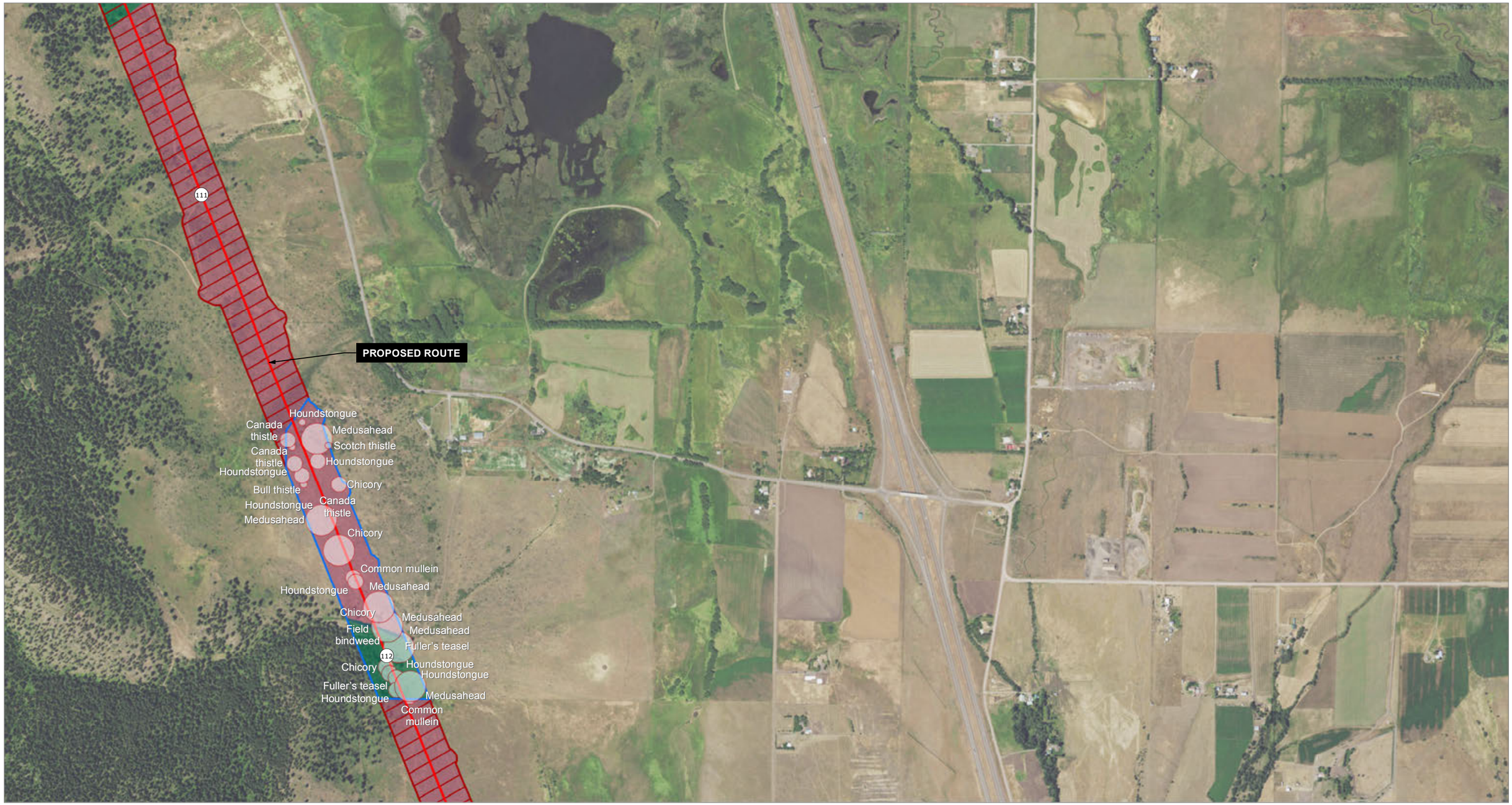
Habitat Types
- Native Grasslands
- Shrub-Steppe without Big Sage
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 63 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

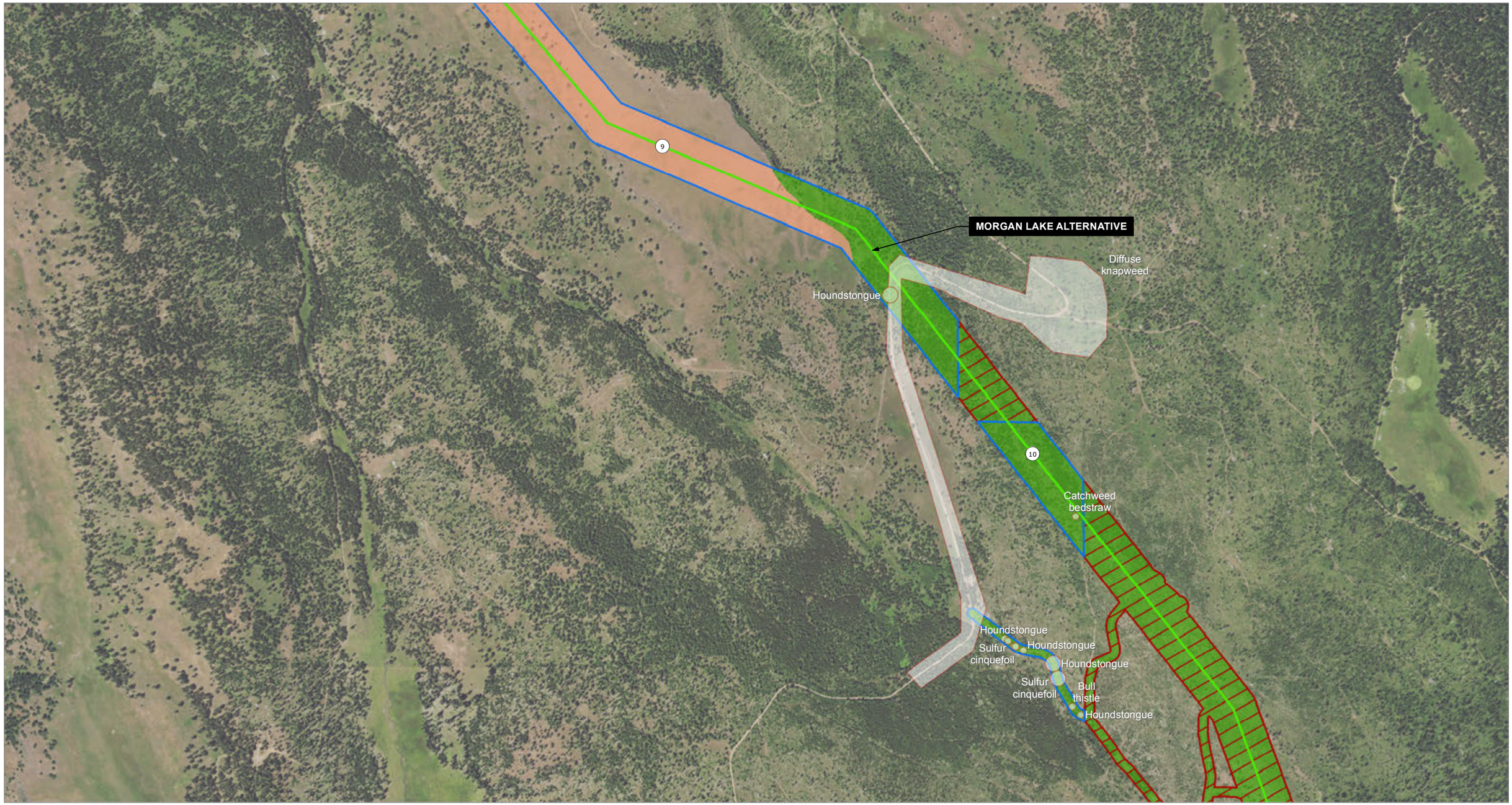
Habitat Types
- Forested Wetland
- Shrub-Steppe without Big Sage
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 64 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Alternative

Noxious Weed

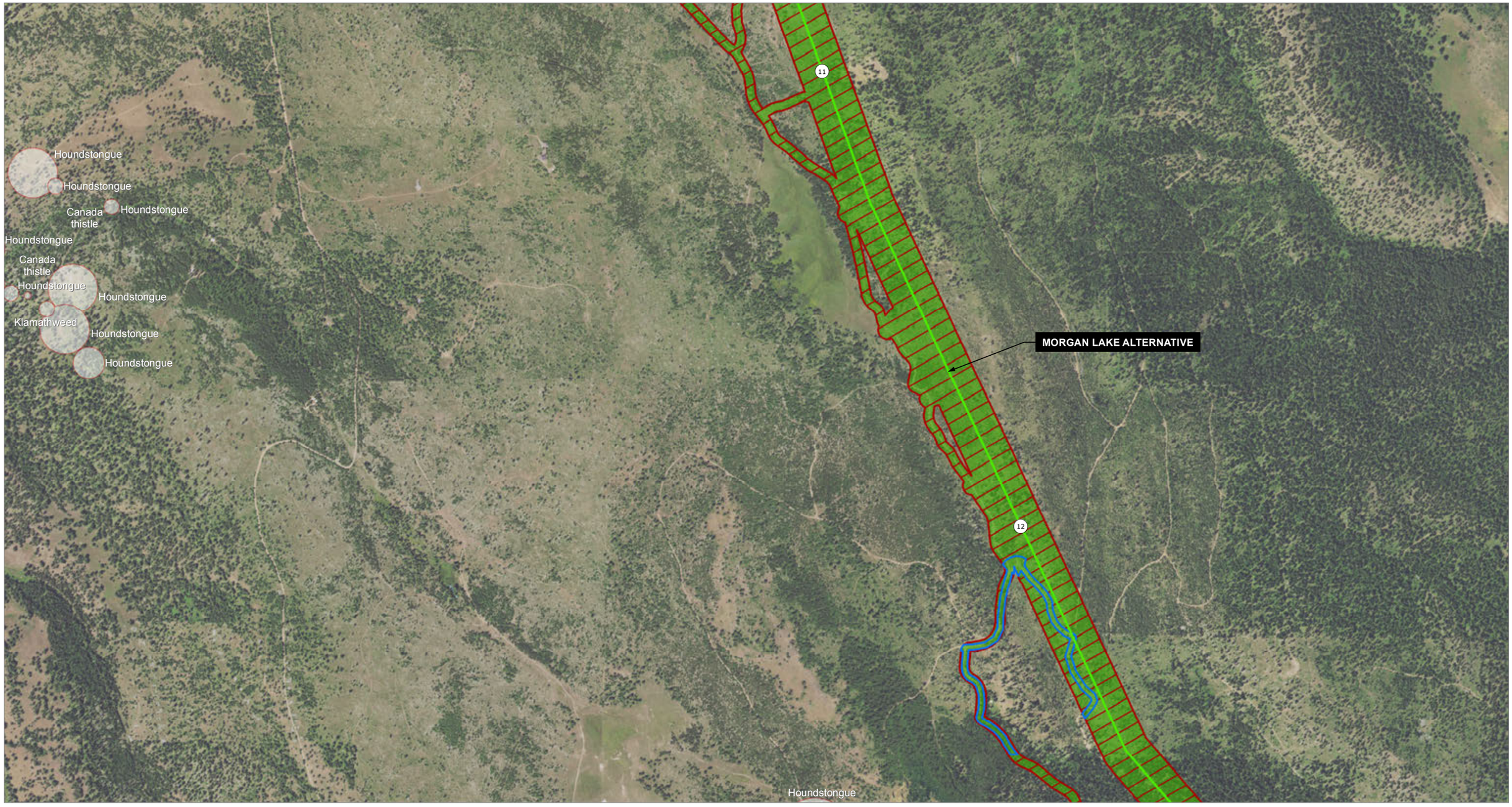
Habitat Types
- Native Grasslands
- Mixed Grand Fir/Douglas Fir

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

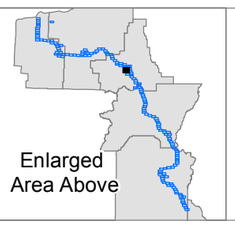
Figure 65 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Alternative
- Noxious Weed

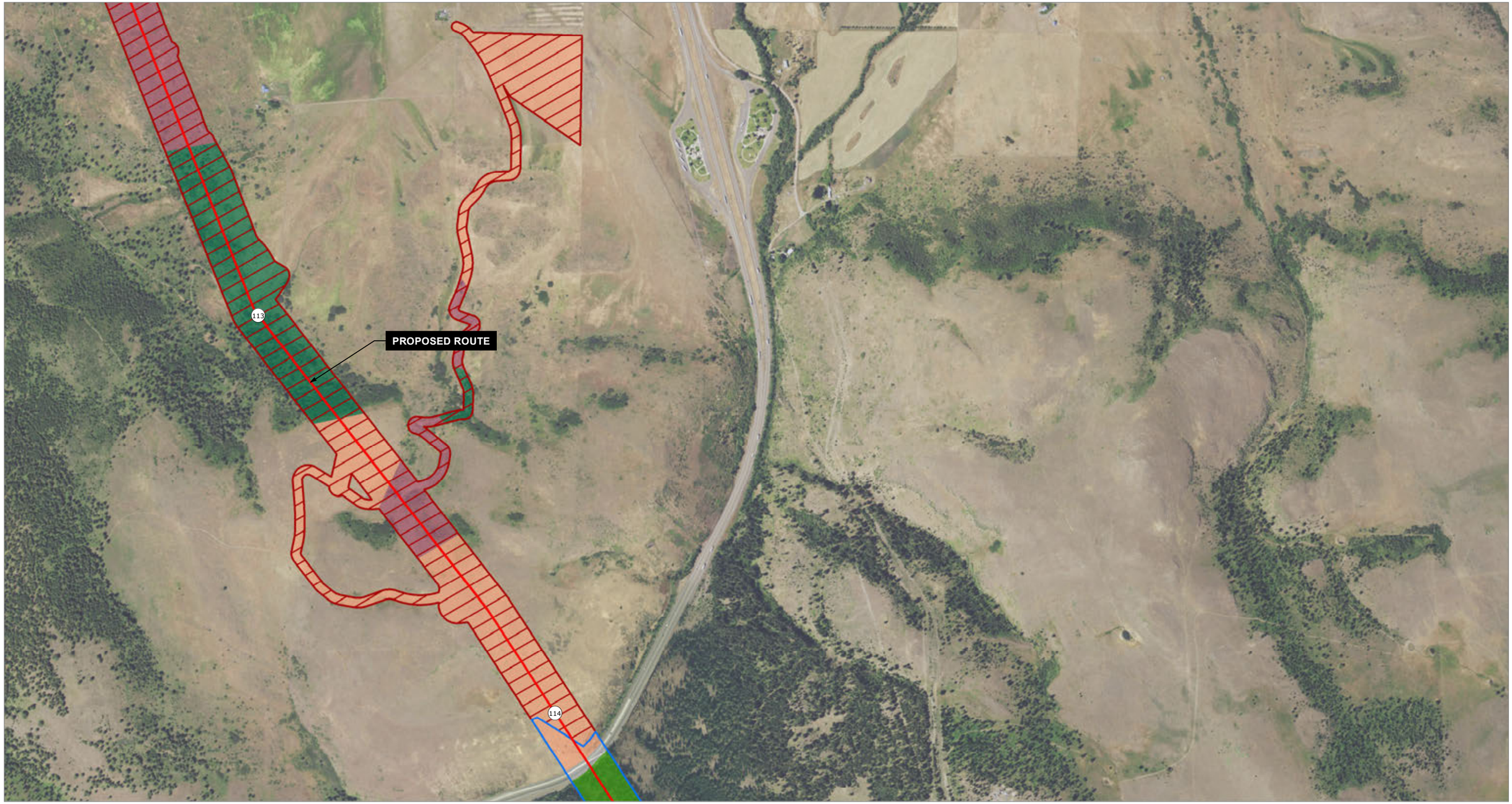
Habitat Types
- Mixed Grand Fir/Douglas Fir

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 66 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

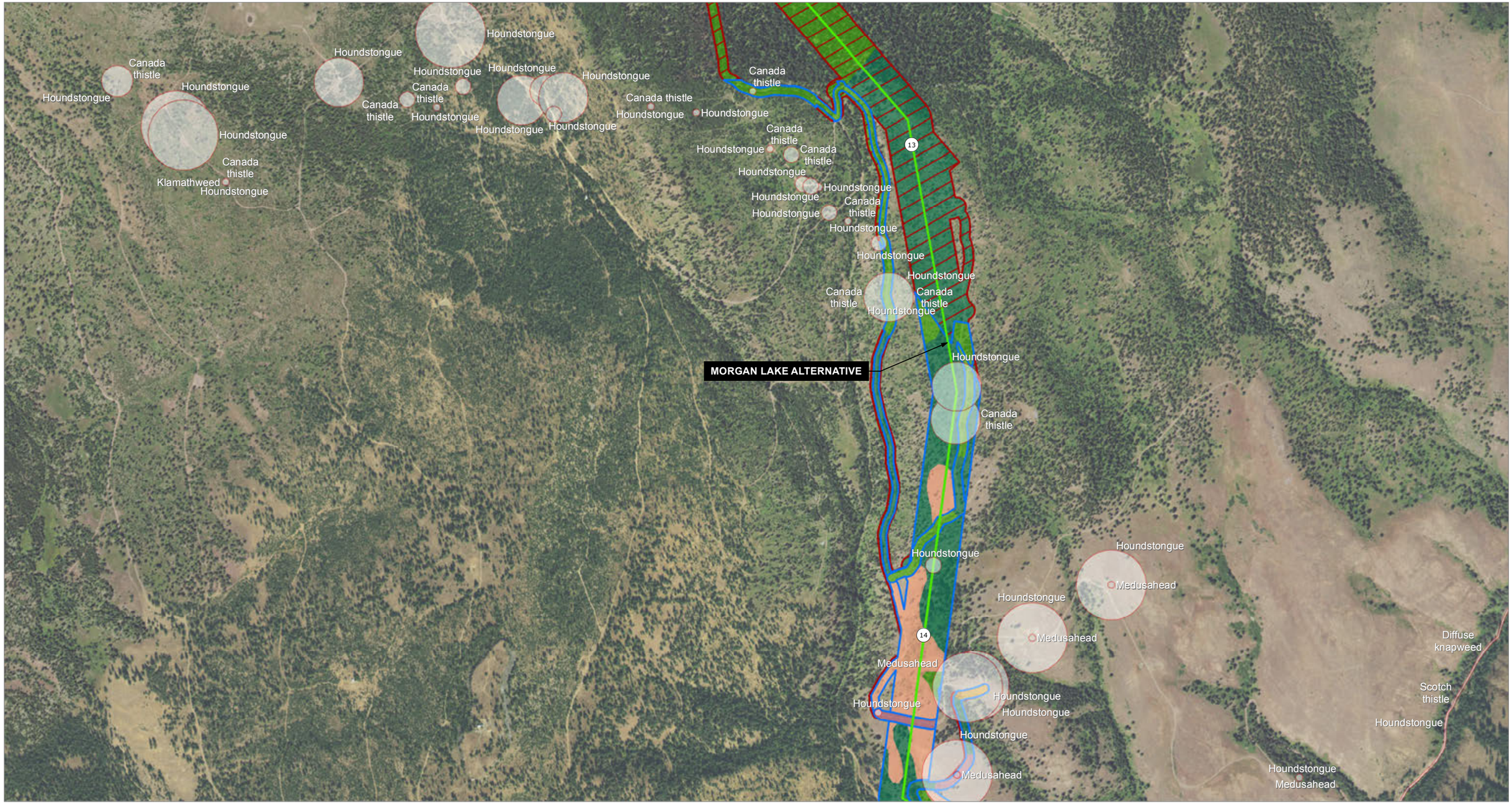
Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Native Grasslands
- Developed/Disturbed
- Shrub-Steppe without Big Sage
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway
Transmission Line Project

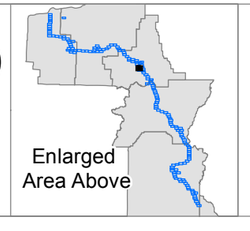
Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Alternative
- Noxious Weed

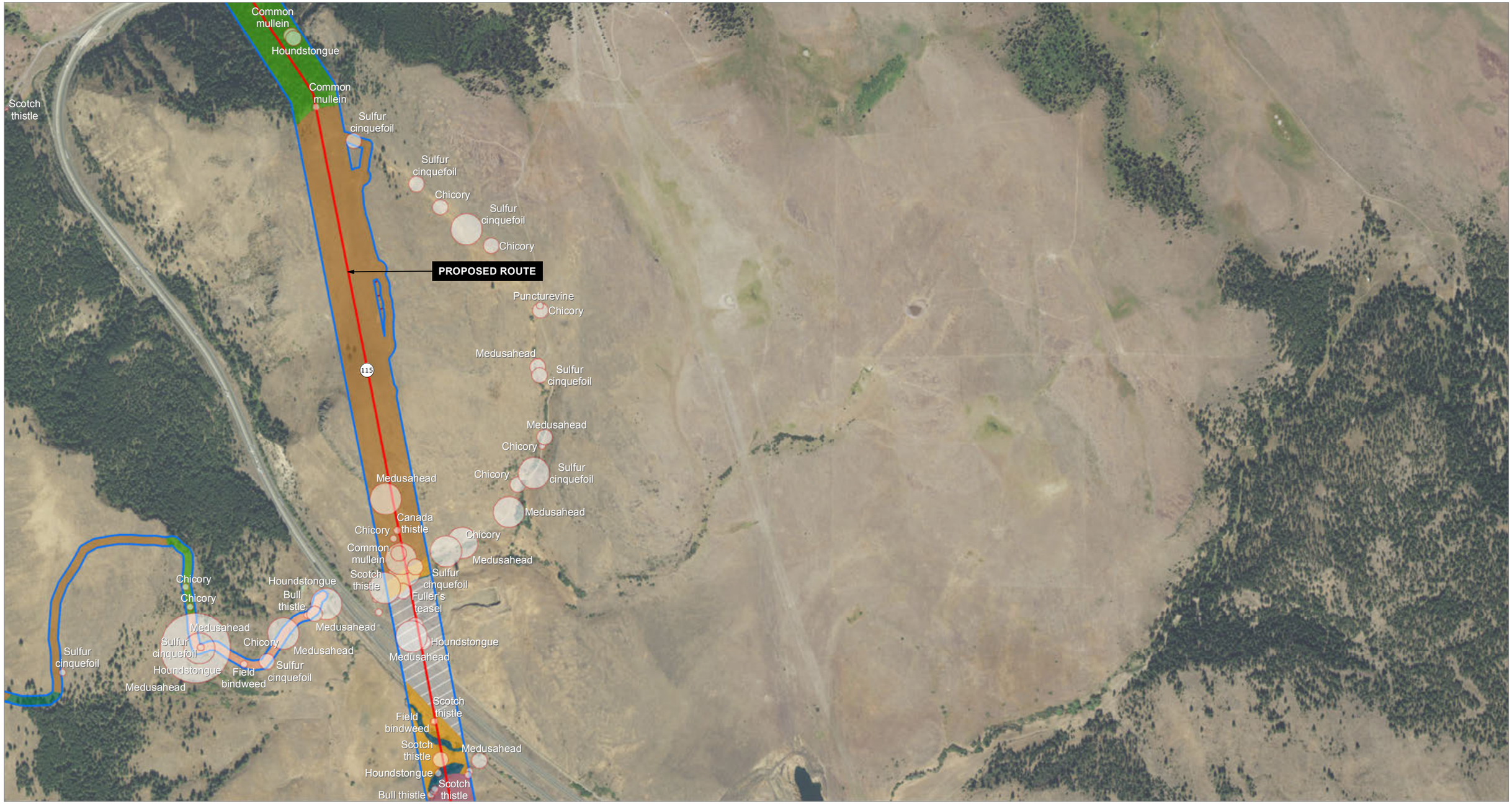
Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Shrub-Steppe without Big Sage
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Figure 68 of 154

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

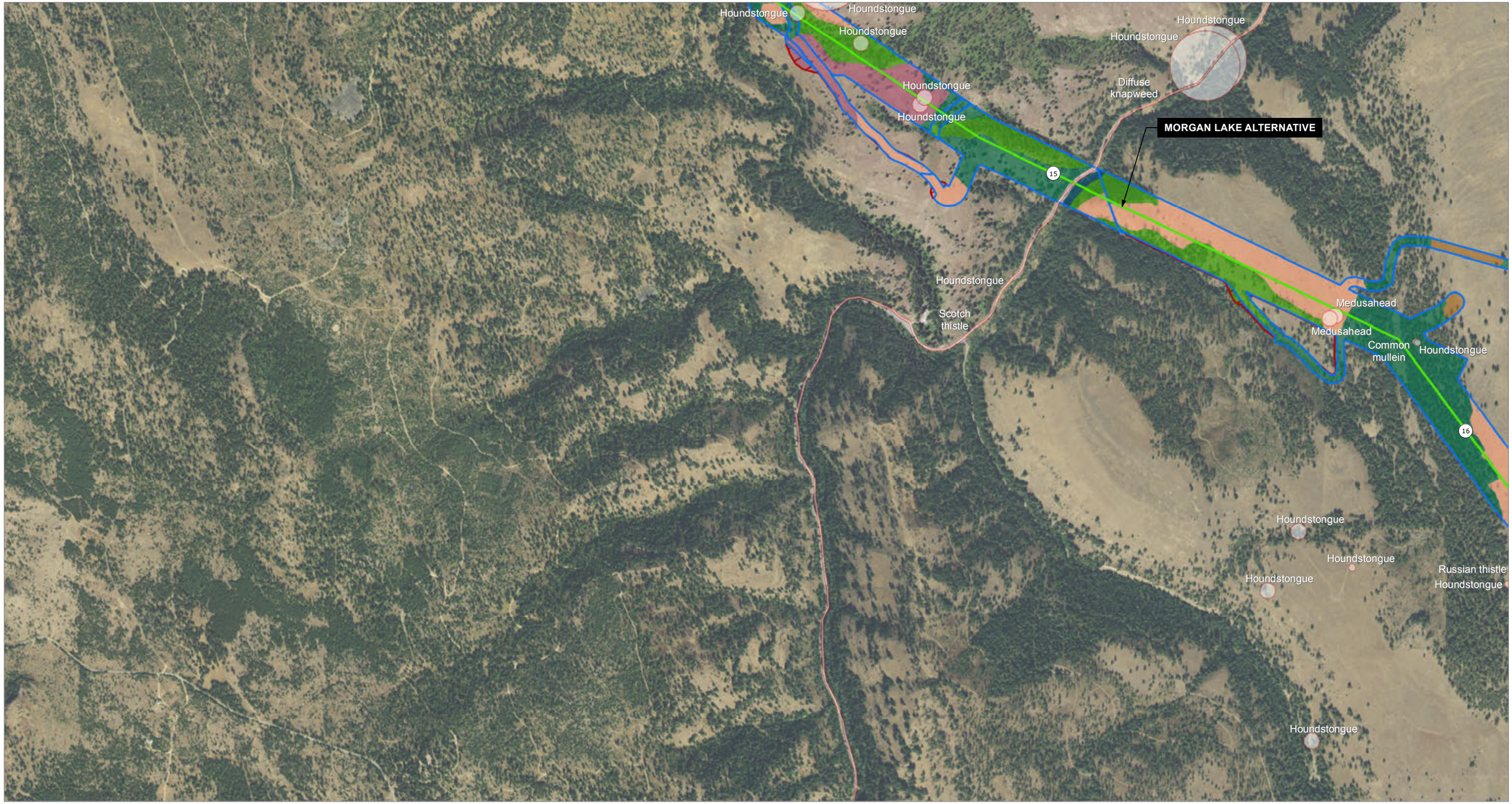
Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Developed/Disturbed
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd



IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Alternative
- Noxious Weed

Habitat Types
- Native Grasslands
- Forested Wetland
- Developed/Disturbed
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
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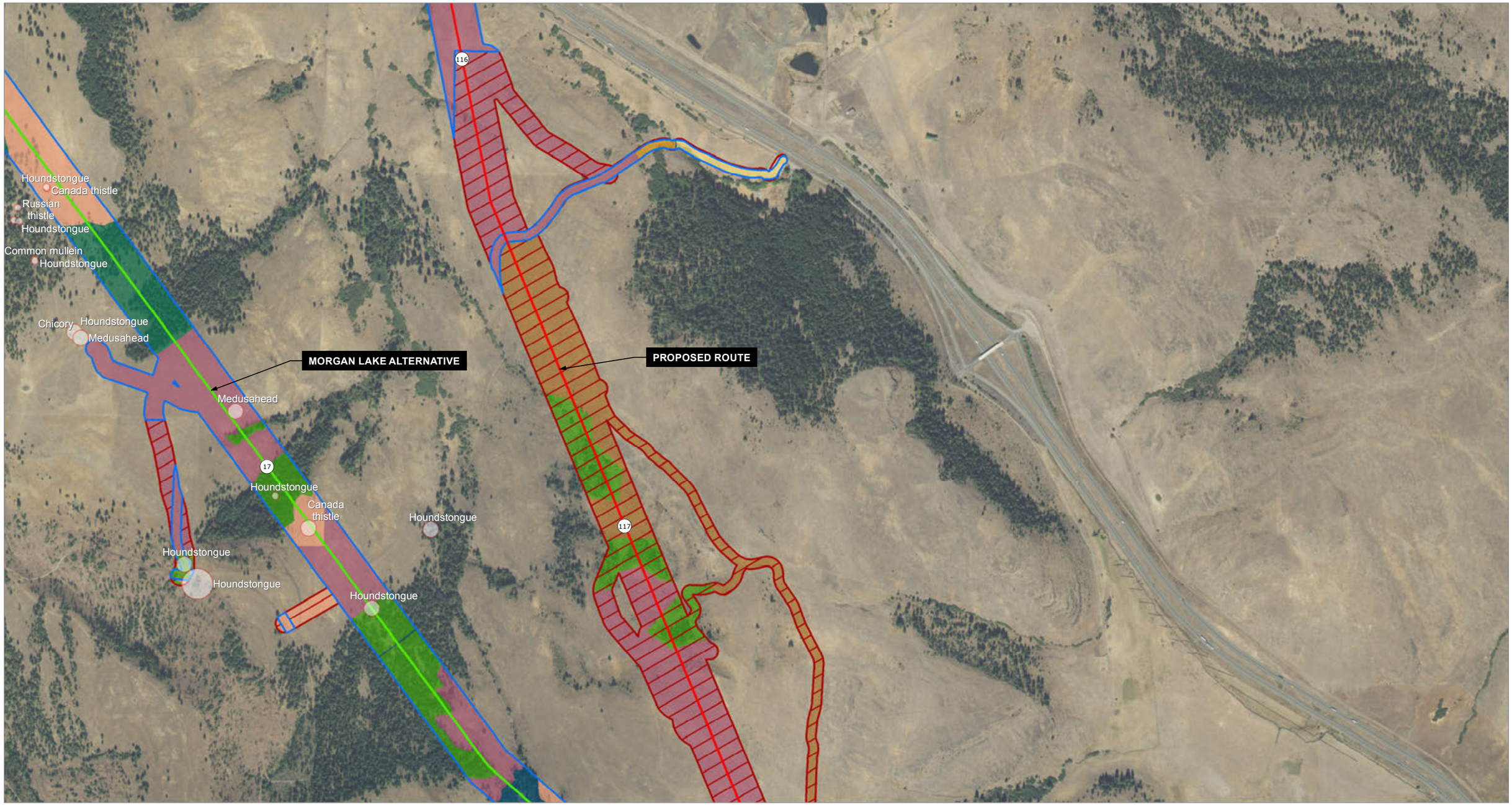

IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Emergent Wetland
- Agriculture
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage
- Mixed Grand Fir/Douglas Fir
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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Date: 12/21/2016 11:20:09 AM
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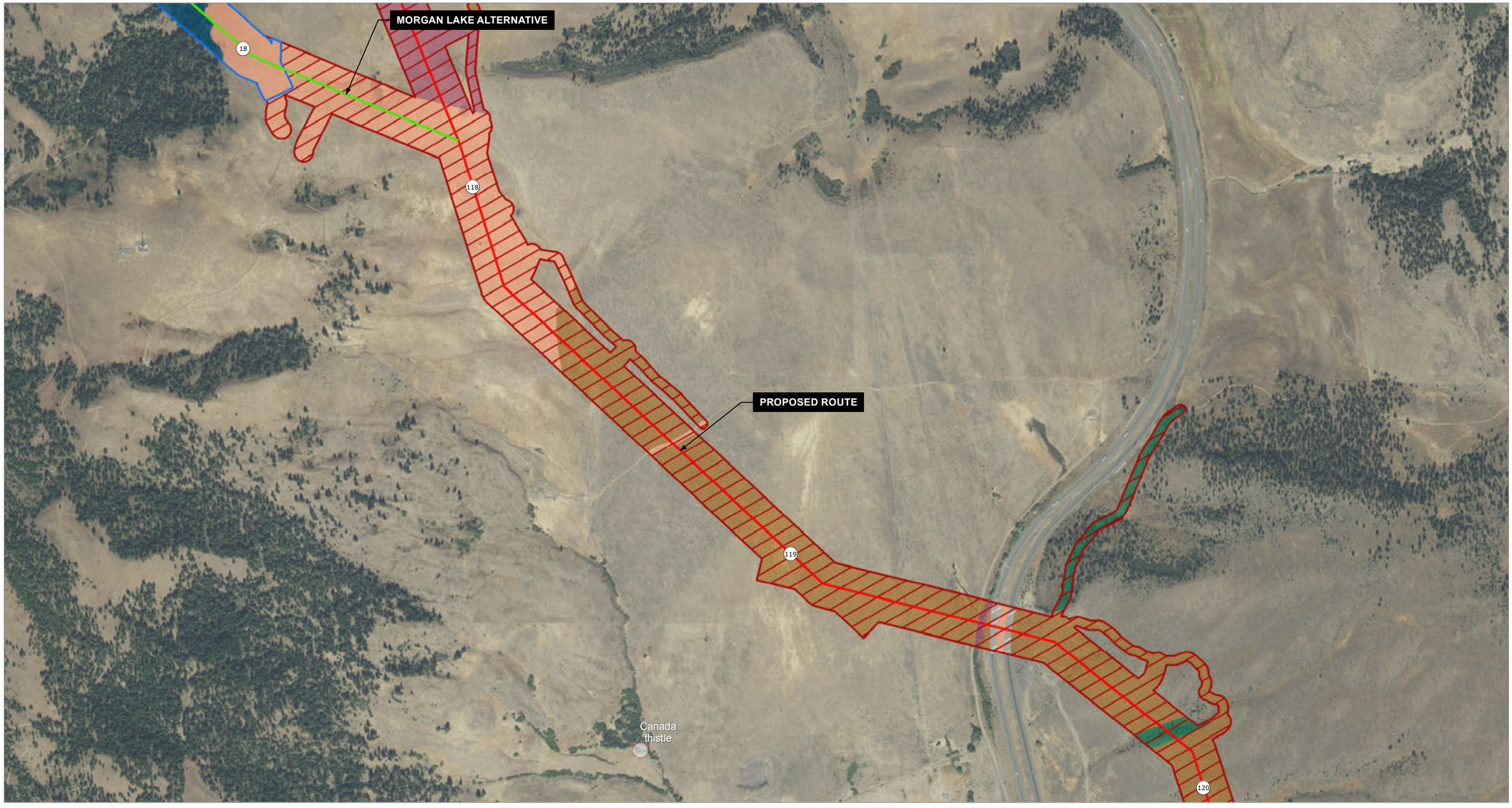

IDAHO POWER
An IDACORP Company

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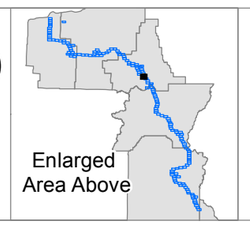
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Alternative
- Noxious Weed

Habitat Types
- Native Grasslands
- Forested Wetland
- Developed/Disturbed
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
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An IDACORP Company

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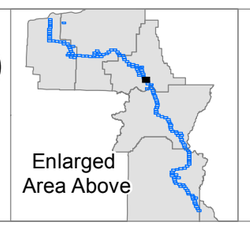
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Forested Wetland
- Developed/Disturbed
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage
- Ponderosa Pine

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

Date: 12/21/2016 11:20:09 AM
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IDAHO POWER
An IDACORP Company

0 1,000
Feet

Enlarged Area Above

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Developed/Disturbed
- Shrub-Steppe with Big Sage
- Shrub-Steppe without Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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IDAHO POWER
An IDACORP Company

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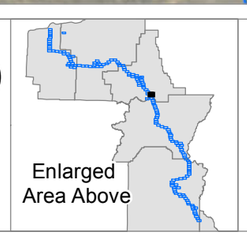
Feet



Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Developed/Disturbed
- Shrub-Steppe with Big Sage

Boardman to Hemingway
Transmission Line Project

Habitat Types and Noxious Weed Results

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Date: 12/21/2016 11:20:09 AM
Source: Z:\UtilServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd

IDAHO POWER
An IDACORP Company

0 1,000
Feet

Project Features
- Surveyed
- Not Surveyed
- Milepost
- Proposed Route
- Noxious Weed

Habitat Types
- Other - Shrub/Grass
- Native Grasslands
- Forested Wetland
- Emergent Wetland
- Developed/Disturbed
- Agriculture
- Shrub-Steppe with Big Sage

Boardman to Hemingway Transmission Line Project

Habitat Types and Noxious Weed Results

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Date: 12/21/2016 11:20:09 AM
Source: Z:\UtiliServ\Boardman_Hemingway\Reports\005_Biological_Resources\Surveys\2016\Summary_2011_2016\TVES\TVES_Vegetation\VegetationMapbook_Summary.mxd