

**ATTACHMENT P2-3  
GREATER SAGE-GROUSE HABITAT MITIGATION PLAN**

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# Greater Sage-Grouse Habitat Mitigation Plan

## Boardman to Hemingway Transmission Line Project



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## ACRONYMS AND ABBREVIATIONS

Action Plan	Oregon Sage-Grouse Action Plan
HMP	Habitat Mitigation Plan
HQT	habitat quantification tool
IPC	Idaho Power Company
Mitigation Manual	Greater Sage-Grouse Mitigation Manual
OAR	Oregon Administrative Rule
Project	Boardman to Hemingway Transmission Line Project
SSP	site-specific plan

## 1.0 INTRODUCTION

Oregon's Greater Sage Grouse Conservation Strategy—Chapter 635, Division 140 of the Oregon Administrative Rules (OAR)—requires compensatory mitigation to address unavoidable direct and indirect impacts to greater sage-grouse (*Centrocercus urophasianus*, hereafter sage-grouse) habitat. This Greater Sage-Grouse Habitat Mitigation Plan (HMP) describes how unavoidable impacts to sage-grouse habitat from the Boardman to Hemingway Transmission Line Project (Project) will be mitigated.

Prior to commencement of construction, Idaho Power Company (IPC) will secure the legal authority to conduct the required mitigation actions at compensatory mitigation sites with sufficient credits to offset the impacts of the Project. IPC will evaluate the types and functionality of the habitat at each site through on-the-ground surveying and will develop a comprehensive management plan for each site. In the meantime and in order to show there are mitigation site opportunities sufficient to meet the needs of the Project, IPC identifies potential mitigation sites currently on the market and provides a desktop-level assessment of the credits available at each site (see Appendix A).

## 2.0 APPLICABLE RULES AND EXECUTIVE ORDER PROVISIONS

### 2.1 General Standards for Siting Facilities

The Fish and Wildlife Habitat Standard at OAR 345-022-0060 states:

*For the Council to issue a site certificate, it must find that the design, construction, and operation of the facility, taking into account mitigation, are consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025 in effect as of September 1, 2000.*

### 2.2 Greater Sage-Grouse Conservation Strategy for Oregon

Policy 2 and 3 of Oregon's Greater Sage-Grouse Conservation Strategy at OAR 635-140-0025(2) and (3), respectively, provide:

*Policy 2. The Department may approve or recommend approval of mitigation for impacts from a large-scale development permitted by a county; or development actions permitted by a state or federal government entity on public land, within sage-grouse habitat only after the following mitigation hierarchy has been addressed by the permitting entity, with the intent of directing the development action away from the most productive habitats and into the least productive areas for sage-grouse (in order of importance: core area, low density, general, and non-habitat).*

...

*(e) Compensatory Mitigation. If avoidance and minimization efforts have been exhausted, compensatory mitigation to address both direct and indirect impacts will be required as part of the permitting process for remaining adverse impacts from the proposed development action to sage-grouse habitat, consistent with the mitigation standard in (3) Policy 3 below.*

*Policy 3. The standard for compensatory mitigation of direct and indirect habitat impacts in sage-grouse habitat (core[,] low density, and general areas) is to achieve net*

conservation benefit for sage-grouse by replacing the lost functionality of the impacted habitat to a level capable of supporting greater sage-grouse numbers than that of the habitat which was impacted. Where mitigation actions occur in existing sage-grouse habitat, the increased functionality must be in addition to any existing functionality of the habitat to support sage-grouse. When developing and implementing mitigation measures for impacts to core, low density, and general sage-grouse habitats, the project developers shall:

(a) Work directly with the Department and permitting entity to obtain approval to implement a mitigation plan or measures, at the responsibility of the developer, for mitigating impacts consistent with the standard in OAR 635-140-0025(3) or,

(b) Work with an entity approved by the Department to implement, at the responsibility of the developer, "in-lieu fee" projects consistent with the standard in OAR 635-140-0025(3).

(c) Any mitigation undertaken pursuant to (a) or (b) above must have in place measures to ensure the results of the mitigation activity will persist (barring unintended natural events such as fire) for the life of the original impact. The Department will engage in mitigation discussions related to development actions in a manner consistent with applicable timelines of permitting entities.

## 2.3 Habitat Classification

Oregon's Greater Sage-Grouse Conservation Strategy addresses impacts to the following habitat types: areas of high population richness; core area habitat; low density habitat; and general habitat. Table 1 sets forth the definition for each of those habitat types:

**Table 1. Sage-Grouse Habitat Types**

Category Type	Definition Provided in OAR 635-140-0002
Areas of High Population Richness	[M]apped areas of breeding and nesting habitat within core habitat that support the 75th percentile of breeding bird densities (i.e., the top 25%).
Core Area	[M]apped sagebrush types or other habitats that support greater sage-grouse annual life history requirements that are encompassed by areas: a) of very high, high, and moderate lek density strata; b) where low lek density strata overlap local connectivity corridors; or c) where winter habitat use polygons overlap with either low lek density strata, connectivity corridors, or occupied habitat." Core area maps are maintained by the Department.
Low Density	[M]apped sagebrush types or other habitats that support greater sage-grouse that are encompassed by areas where: a) low lek density strata overlapped with seasonal connectivity corridors; b) local corridors occur outside of all lek density strata; c) low lek density strata occur outside of connectivity corridors; or d) seasonal connectivity corridors occur outside of all lek density strata." Low density area maps are maintained by the Department.
General Habitat	[O]ccupied (seasonal or year-round) sage-grouse habitat outside core and low density habitats.

## 2.4 Executive Order No. 15-18 and the Oregon Sage-Grouse Action Plan

On September 16, 2015, Oregon Governor Kate Brown signed Executive Order No. 15-18, adopting the Oregon Sage-Grouse Action Plan (Action Plan; Sage-Grouse Conservation Partnership 2015) as the plan for the conservation of sage-grouse in Oregon. The Plan included

as Appendix 6 the Greater Sage-Grouse Mitigation Manual (Mitigation Manual),<sup>1</sup> which provides guidelines and processes for compensating for development impacts to sage-grouse habitat in Oregon.

### **3.0 ANALYSIS**

Proponents of large-scale development projects in sage-grouse habitat must first show that impacts to sage-grouse habitat have been avoided and minimized in accordance with Oregon's Greater Sage Grouse Conservation Strategy (see Mitigation Manual, p. 32). In furtherance of that objective, project proponents must provide ODFW with a mitigation plan that outlines avoidance and minimization measures, as well as an estimate of mitigation credits needed to provide a net benefit to sage-grouse and its habitat in accordance with OAR 635-140-0015 and -0025 (see Mitigation Manual, p.31).

#### **3.1 Sage-Grouse Habitat Map**

Figure 1 provides an overview of the sage-grouse habitat near the Project in Oregon. Exhibit P2, Attachment P2-1 contains a map-book that shows the same at a finer scale.

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<sup>1</sup> To the extent the content of the Mitigation Manual is used or duplicated in this HMP, the following acknowledgement applies: "This content was created in part through the adaptation of procedures and publications developed by Environmental Incentives, LLC, Environmental Defense Fund, and Willamette Partnership, but is not the responsibility or property of any of these entities" (see Mitigation Manual, p. 1) (open content license).

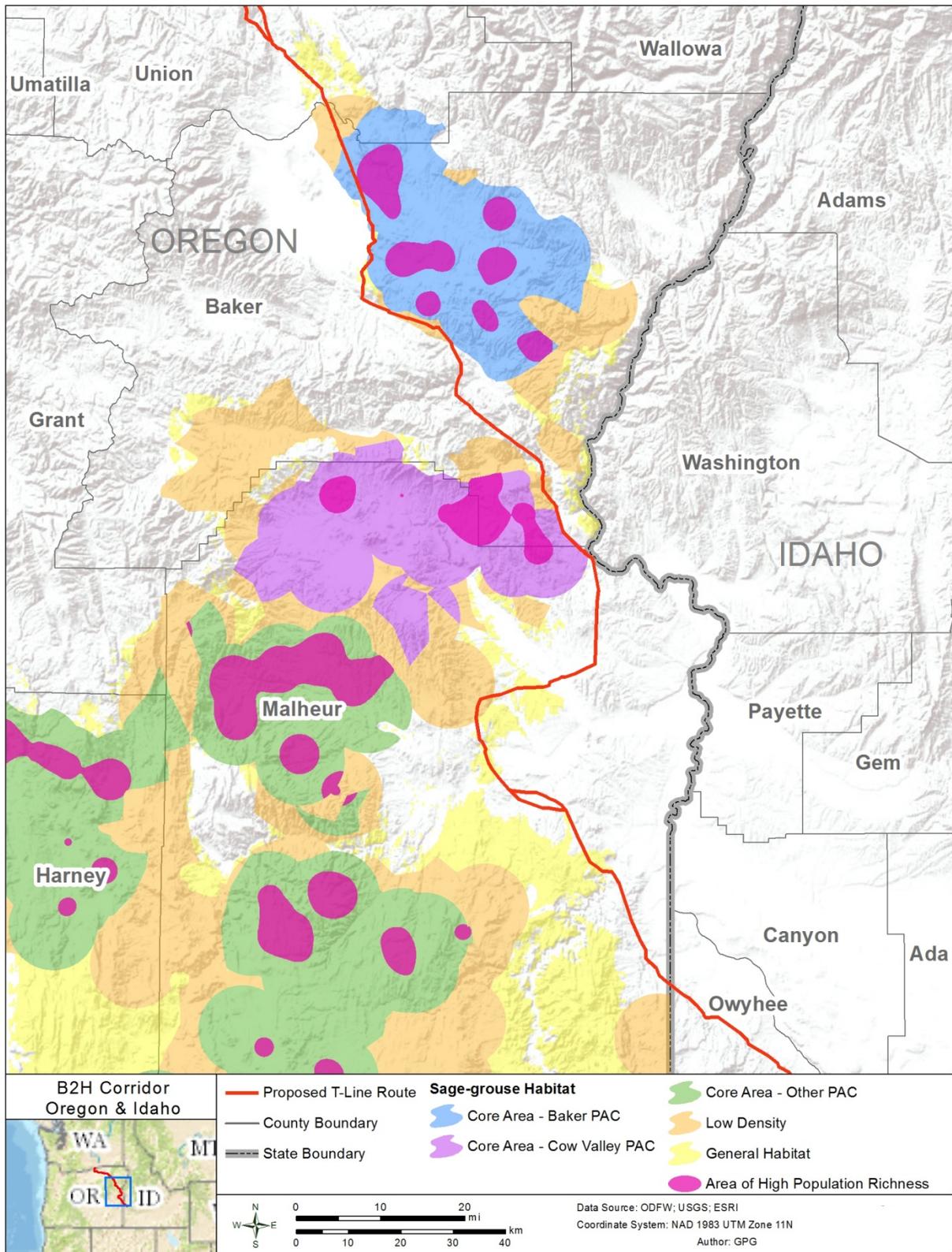


Figure 1. Sage-Grouse Habitat Near the Project in Oregon

## 3.2 Avoidance

Under OAR 635-415-0025(7), the Project is exempt from the avoidance provisions of Oregon's Greater Sage Grouse Conservation Strategy. Even so, as discussed in Section 3.7.5.1 of Exhibit P2, the history of the Project demonstrates that IPC—in response to ODFW and BLM input—has developed routes and changed the Project numerous times to avoid and minimize impacts to sage-grouse habitat. Although the Proposed Route will impact some sage-grouse habitat, there is no reasonable alternative location that would avoid the habitat.

## 3.3 Minimization

OAR 635-415-0025(7) exempts the Project from each of the minimization provisions of Oregon's Greater Sage Grouse Conservation Strategy, except for OAR 635-140-0025(2)(d)(B). OAR 635-140-0025(2)(d)(B) provides that, where general habitat will be impacted, the project developer will consult with ODFW, and ODFW will provide recommendations on how best to avoid or minimize impacts on important habitat within general habitat areas. Here, the Project will impact general habitat. As discussed in Section 3.7.5.1 of Exhibit P2, IPC has proposed certain site certificate conditions intended to minimize impacts to sage-grouse and their habitat including certain seasonal and spatial restrictions.

## 3.4 Compensatory Mitigation

Despite IPC's efforts to avoid and minimize impacts to sage-grouse habitat, certain impacts will be unavoidable. Therefore, compensatory mitigation will be required for large-scale development projects proposed in core and low density habitat. Some uses in other sage-grouse habitat—i.e., general habitat—may also require compensatory mitigation depending on the proximity to sage-grouse lek sites and/or the permitting agency involved (see Mitigation Manual, p.33).

### 3.4.1 Quantifying Project Impacts

Determining the amount of compensatory mitigation needed to ensure a net conservation benefit for a proposed development project requires a method for measuring the impacts of the debiting project and the benefit of the crediting project (see Mitigation Manual, p.21). Oregon currently is developing a habitat quantification tool (HQT) to quantify debits and credits. The Action Plan provides that Oregon's tool will measure both the quantity of habitat affected by an action and the quality of the affected habitat in terms of functional value to sage-grouse (see Mitigation Manual, p. 21). Oregon's tool will quantify impacts and benefits in terms of functional habitat acres by measuring habitat indicators that reflect the quantity and functional quality of habitat at a particular site. Individual indicators are combined into themes, which will then be summarized into a single functional acre score (see Mitigation Manual, p. 21). Further, Oregon's tool is being designed to consider the habitat indicators at four spatial orders: (1) range-wide distribution scale; (2) population/sub-population scale; (3) local scale; and (4) site scale (see Mitigation Manual, pp. 21-22).

At this time, the HQT continues to be under development. Even so, ODFW has indicated the HQT will be finalized prior to commencement of construction on the Project and ODFW intends that IPC utilize the HQT to calculate the Project's impacts to sage-grouse habitat. Accordingly, in this application, IPC has not quantified indirect impacts or the amount of compensatory mitigation required for the Project related to sage-grouse. Rather, the amount of sage-grouse habitat compensatory mitigation required for the Project will be determined by the HQT prior to commencement of construction.

### 3.4.2 Purchasing Credits to Offset Project Impacts

A large-scale development project proponent impacting sage-grouse habitat in Oregon must offset such impacts by either paying an in-lieu fee through the State's in-lieu fee sage-grouse mitigation program or conducting its own compensatory mitigation projects (see OAR 635-140-0025(3)(a), (b)). Here, IPC may offset the impacts of the Project by paying an in-lieu fee through the State's program, if available. In the alternative, IPC will implement a mitigation project or projects sufficient to offset the Project's impacts, as described in more detail below in Section 3.4.3.

### 3.4.3 Creating Credits by Implementing Mitigation Projects

If IPC chooses to acquire credits through a mitigation project or projects and not through the in-lieu fee program, IPC will secure the necessary mitigation sites prior to commencing construction on the Project. In this section, IPC describes the mitigation site selection process, the mitigation credit score assessment approach, the standards for each mitigation project, and the documentation and verification processes for the mitigation projects. In the HMP appendices, IPC provides a desktop analysis of certain potential mitigation sites that currently are on the market, demonstrating there are mitigation site opportunities sufficient to meet the needs of the Project.

#### 3.4.3.1 Mitigation Project Eligibility Requirements

As set forth in the Mitigation Manual, to help ensure that crediting projects will provide a net conservation benefit to sage-grouse habitat and support the long-term function of sagebrush ecosystems, each mitigation site must meet the eligibility criteria in Table 2 below (see Mitigation Manual, p.17).

**Table 2. Eligibility Requirements for Crediting Projects**

Eligibility Requirement	Criteria
Conservation actions are additional	<ul style="list-style-type: none"> <li>• Exceeds pre-existing legal obligations</li> <li>• Avoidance or minimization of existing impacts</li> <li>• Use of public conservation funds prohibited from generating credits</li> </ul>
Project benefits are durable	<ul style="list-style-type: none"> <li>• No imminent threat</li> <li>• Benefits expected to meet or exceed duration of impact</li> <li>• Legal protection of site</li> <li>• Plan and funding for long-term stewardship</li> </ul>
Appropriate site selection and conservation actions	<ul style="list-style-type: none"> <li>• Projects integrated with state-wide strategic conservation plan</li> <li>• All projects include enhancement actions</li> </ul>
Conservation actions are additional	<ul style="list-style-type: none"> <li>• Exceeds pre-existing legal obligations</li> <li>• Avoidance or minimization of existing impacts</li> <li>• Use of public conservation funds prohibited from generating credits</li> </ul>

### 3.4.3.2 Mitigation Project Documentation

#### **Site-Specific Plan**

For each mitigation project, IPC will produce a site-specific plan (SSP), which identifies the extent, type, and description of all proposed conservation actions, including the following:

- The type and location of ecological states present on the project site;
- Current and future threats to sage-grouse habitat function for the site; and
- Specific conservation practices that will be implemented on the site to maintain or improve habitat for the species.

#### **Stewardship Plan, Legal Protections, and Financial Assurances**

Crediting projects must be durable—that is, the period of time that mitigation is effective must be equal or greater in duration to the impacts being offset (see Mitigation Manual, p.18). Demonstrating project durability requires that legal protections be put in place to ensure the mitigation project benefits are not disturbed for the life of the credits. Legal protection may be demonstrated through term or permanent conservation easements or through other tools ensuring the protections will last for the duration of the offset impacts (see Mitigation Manual, p.18).

Financial assurances must be in place to ensure appropriate management will occur throughout the life of the credits (see Mitigation Manual, p.18). Funding for site management may occur through various mechanisms, provided they ensure management will persist throughout the life of the mitigation project (see Mitigation Manual, pp.18-19).

Each proposed crediting project will include a stewardship plan that identifies a long-term steward, stewardship goals and activities, the amount and form of financial assurances necessary to maintain the site, and documentation of the time needed to implement the full stewardship plan.

### 3.4.3.3 Mitigation Project Standards

#### **Service Areas**

Mitigation projects must occur on sage-grouse habitat or potential sage-grouse habitat,<sup>2</sup> and must occur within the same Western Association of Fish and Wildlife Agencies Management Zone impacted by the Project (see Mitigation Manual, pp.34-35). When appropriate and sufficient crediting opportunities are available, IPC will also consider the following criteria in selecting mitigation projects:

- Impacts to core area habitat should be offset by crediting projects within the same PAC area;
- Impacts to low-density habitat should be offset by crediting projects within the most proximate PAC;

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<sup>2</sup> Potential habitat is defined as “land areas within the current range of the species that have the potential, based on environmental conditions such as mean annual precipitation, topographic position, etc., to support sagebrush-dominated plant communities or other seasonal natural habitats such as wet meadows. Potential habitat may not currently support sage-grouse at any time during the year” (Mitigation Manual, p.8, Box 1.2).

- Impacts to general habitat and core and low-density impacts for which PAC specific credits are not available, should be offset by crediting projects within the same population area (see Mitigation Manual, p.35).

### **Net Conservation Benefit**

Each crediting project will provide a net conservation benefit for sage-grouse and its habitat by replacing the lost functionality of the impacted habitat to a level capable of supporting greater sage-grouse numbers than that of the habitat which was impacted (see OAR 635-140-0025(3)). To determine the amount of compensatory mitigation needed to meet that standard, IPC will use its HQT to determine the number and duration of credits needed to meet the net conservation benefit standard as part of a draft mitigation plan (see Mitigation Manual, p.33). The same quantification tool used to calculate the debit score for the Project (see Section 3.4.3.4) will be used to calculate the benefits of the crediting mitigation projects (see Mitigation Manual, p.21) (providing that the relevant quantification tool should measure impacts of both the debiting and crediting projects). Implementation of the quantification tool for calculating credits is discussed in more detail in Section 3.4.3.4 below.

### **Project Additionality**

“Additionality” refers to the requirement that credit-generating benefits from a project must be in addition to what would have happened without participation as a mitigation project and what is required by existing law and legal commitments (see Mitigation Manual, p.17). To meet the mitigation program goal of providing a net benefit for sage-grouse and its habitat, credit-producing projects and conservation actions must be in addition to all existing affirmative obligations (including land use restrictions) relevant to the project site and comply with all applicable federal, state, and local laws (see Mitigation Manual, pp.17-18). Only actions in excess of existing affirmative legal obligations will be creditable (see Mitigation Manual, p.18).

### **Conservation Actions**

Credits may be generated by the following types of conservation actions:

- **Enhancement:** Measures that increase the quantity and/or quality of sage-grouse habitat and are aimed at transitioning an area of sage-grouse habitat from a less to a more desirable ecological state. Appropriate enhancement measures may vary among sites, depending on the initial and desired future ecological states of a site.
- **Avoided loss:** Measures that prevent undesirable state changes in areas that are at a demonstrated risk of degradation from threats such as development, wildfire, and invasive species. Depending on the current and anticipated future threats at a given site, appropriate avoided loss activities may include legal protection, fire prevention, and management of invasive species.

Specific conservation actions will be developed upon identification of a mitigation site and formal evaluation of site conditions and possible habitat improvement measures. Table 3 below includes a preliminary list of potential enhancement measures that IPC might apply to its mitigation projects. Table 4 includes a preliminary list of avoided loss measures.

**Table 3. Enhancement Measures**

STM	Initial State	Desired state outcome	Practices to Implement	Uncertainty	Risk	Likelihood of state change	Time to state change	Duration of benefit/ treatment	Avoided loss (sage- grouse habitat)	Measure of Success	Cost	Comments
Low-elevation sagebrush rangeland	B	A	Time/ Sagebrush transplanting	M	Wildfire	M	Long	Long	N/A	Increase shrub cover	\$\$	Poorest success of three types of sites
	C	A	Shrub reduction/Control annuals/Revegetate	H	Moving to state D	M	Moderate	Long	H	Increase perennial bunchgrass density	\$	High uncertainty, difficult to protect from fire
	C	A	Improve grazing management of desired plants	M	Wildfire	M	Moderate-Long	Long	H	Increase perennial bunchgrass density	\$	Reducing grazing pressure may mean more fuel
	C	B	Provide fire-fighting or fire-detection equipment	M	Wildlife	M	Moderate-Long	Long	H	Increase shrub cover	S	Depends on successful use of the equipment
	D	B	Control annuals/Revegetate with natives	L		L	Moderate	Long	N/A, D is non-habitat	Increase perennial bunchgrass density	\$\$\$	High uncertainty, native seeding success is reliably poor, may include prescribed fire for site prep; drill seeding improves probability
	D	B	Control annuals/Revegetate using introduced species such as Crested Wheatgrass	L	Wildfire	M	Moderate	Long	N/A, D is non-habitat	Increase perennial bunchgrass density	\$\$	Crested wheatgrass seeding success is more reliable, may include prescribed fire for site prep
	B	A	Protect from high severity wildfire (fuel breaks)	H	Wildfire	M	Long	Long	M	Increase shrub cover	\$	High uncertainty, difficult to protect from fire
Mid elevation Sagebrush Rangeland	B	A	Time, Sagebrush planting	M		H	Moderate	Long	N/A	Increase shrub cover	\$\$	Intermediate success of sagebrush seeding
	B	A	Time, Protect from wildfire	L	Conversion to C	H	Moderate	Long	M	Increase shrub cover	\$	
	C	A	Cutting/ Mechanical juniper removal	L		H	Immediate	Moderate	N/A, non- habitat as C	Decrease Juniper density/cover	\$\$	Sagebrush usually responds quickly to release from juniper competition
	C	B	Provide fire-fighting or fire-detection equipment	M	Wildlife	M	Moderate-Long	Long	H	Increase shrub cover	S	Depends on successful use of the equipment
	D	B	Cutting/Mechanical juniper removal/ Revegetate understory	M	Conversion to E	M	Moderate	Moderate	N/A, non- habitat as D	Decrease Juniper density/cover & Increase perennial bunchgrass cover	\$\$\$	Consider partial juniper removal initially to gauge understory response
	E or D	B	Cutting/ Mechanical juniper removal/ Control annuals/ Revegetate with native perennial species	H	No perennial grass recovery	L-M	Moderate	Moderate	N/A, non- habitat as D	Increase perennial bunchgrass density	\$\$\$	Lengthy process with multiple steps
Mid elevation Sagebrush Rangeland (continued)	E or D	B	Cutting/Mechanical juniper removal/ Control annuals/ Revegetate with introduced perennial species such as crested wheatgrass	L	No perennial grass recovery	M-H	Moderate	Moderate	N/A , non- habitat as D	Increase perennial bunchgrass density	\$\$	Fire risk reduction strategy

STM	Initial State	Desired state outcome	Practices to Implement	Uncertainty	Risk	Likelihood of state change	Time to state change	Duration of benefit/ treatment	Avoided loss (sage- grouse habitat)	Measure of Success	Cost	Comments
High elevation Sagebrush Rangeland	B	A	Sagebrush seeding	L		M	Moderate	Long	N/A	Increase shrub cover	\$\$	Success much higher here than in mid and especially low elevation sites
	B	A	Time/ Protect from fire	L	Increase in Juniper cover	H	Moderate - long	Long	N/A	Increase shrub cover	\$	Success depends on seed bank and proximity to seed sources
	C	A	Prescribed fire with mosaic effects	L	Decrease shrub cover	H	Immediate	Moderate	avoided loss (sage- grouse habitat)	Decreased juniper, increase mosaic habitats	\$\$	Mosaic burn maintains seed source for sagebrush in unburned islands
	C	B	Prescribed fire with homogenous effects	L	Decrease shrub cover	H	Immediate	Long	N/A, non- habitat as C	Decreased juniper	\$\$	
	C	A	Cutting/ Mechanical juniper removal	L		H	Immediate	Short - moderate	N/A, non- habitat as C	Decreased juniper	\$\$	Moderate cost, but if understory is intact this is a low risk treatment
	D	B	Prescribed fire	M		M	Immediate	Long	N/A, non- habitat as D	Decreased juniper	\$\$	Depends on percent juniper kill and burn coverage
	D	B	Cutting/ Mechanical juniper removal/ Understory restoration	L		H	Immediate	Short- moderate	N/A, non- habitat as D	Decreased juniper	\$\$\$	
	E	B	Cutting/ Mechanical juniper removal/ Understory restoration	M		M	Moderate - long	Short- moderate	N/A, non- habitat as E	Decreased juniper	\$\$\$	Depends on pretreat BG density

<sup>1</sup> Firefighting equipment is not being proposed as a stand-alone mitigation action; it will be considered alongside other enhancement actions.

**Table 4. Avoided Loss Measures**

<b>Practices to Maintain Desired Plant Community - State A</b>						
<b>Practices List</b>	<b>Uncertainty</b>	<b>Risk</b>	<b>Avoided Loss</b>	<b>Measure Success</b>	<b>Cost</b>	<b>Comments</b>
Limit intense and/ or frequent disturbances and/ or stress to desired plants, this can include prescribed grazing practices; low intensity fire; limited equipment use	L	L		Maintenance of desired vegetation, shrub cover, perennial bunchgrass density &/ or cover	\$	Disturbances generally favor undesirable community changes any practice to minimize the intensity or frequency of disturbances will favor desired plants
Create prevention program: Map and delineate priority zones; Identify corridors of spread; action plan for early detection & rapid response and for eradicating infestations Create fuel break if weed infestations are adjacent to desired community	M	L		Maintenance of desired vegetation, shrub cover, perennial bunchgrass density &/ or cover	\$ to \$\$\$	Comprehensive prevention program ideas are available in the user guide: Establishing a Weed Prevention Area
Increase seed production and dispersal of desired plants	M	L		Maintenance of desired vegetation, shrub cover, perennial bunchgrass density &/ or cover	\$	
Limit resource availability by keeping nutrients conserved in desired plants	M	M		Maintenance of desired vegetation, shrub cover, perennial bunchgrass density &/ or cover	\$	
Maintain or increase perennial bunchgrass to reduce invasion potential	M	L		Maintenance of desired	\$\$	

#### 3.4.3.4 *Calculating Credits*

Quantifying credits and debits in a similar manner provides an “apples to apples” comparison of the impacts from the Project and mitigation area by accounting for existing disturbances and habitat suitability. Thus, if the enhanced credits are greater than the number of debits, the mitigation site is considered to achieve net conservation benefit for sage-grouse by replacing the lost functionality of the impacted habitat to a level capable of supporting greater sage-grouse numbers than that of the habitat which was impacted.

After Oregon’s habitat quantification tool is finalized, IPC transmit spatial data regarding potential mitigation sites to ODFW so conservation action credits can be calculated by ODFW.

#### ***Access Road Control***

One conservation action to improve habitat quality for sage-grouse is to eliminate or limit traffic activity on roads in sage-grouse habitat. For those mitigation sites where IPC proposes to gain credits for addressing impacts from existing roads by eliminating or limiting access to those roads, IPC will quantify the benefits of the conservation action by comparing the pre-conservation action impacts with the post-conservation action impacts as those impacts are defined in the Mitigation Manual.

#### ***Non-Access-Road-Control Conservation Actions***

As described in the Mitigation Manual, other conservation actions could be implemented to improve sage-grouse habitat quality including, but not limited to, juniper removal, fence marking, invasive plant species removal. Specific conservation actions will be identified based on the mitigation site selected. For those mitigation sites where IPC proposes conservation actions other than access road control, IPC will determine the number of functional habitat acre credits earned by the Project by running the habitat quantification analysis twice. It will be run first on the current condition of the mitigation site and then again on the future conditions of the site based on the improvements resulting from the proposed conservation actions (see Mitigation Manual, p.34). Credits are quantified based on the estimated post-conservation action number of functional habitat acres within the assessment area, subtracted from the current number of functional habitat acres within the area.

#### 3.4.3.5 *Verification*

Monitoring conducted at reclamation sites related to temporarily disturbed areas, and the associated annual reports to the applicable agencies, are discussed in IPC’s draft Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3). Monitoring conducted as part of the “Wildlife Injury and Mortality Reporting System” is discussed in IPC’s Species Conservation Plan (IPC 2013). The following discussion addresses monitoring related to mitigation sites.

#### ***Performance Measures***

The criteria used to measure success will depend on the extent of impacts and the final mitigation strategy (e.g., success criteria could be different if mitigation is conducted through payments to a conservation bank as opposed to permittee-responsible mitigation sites). The criteria used to measure mitigation success will be site-specific, will depend on the goals and objectives of the mitigation site, and will need to be developed for each individual mitigation site prior to the onset of mitigation efforts.

## **Reporting**

IPC will document the progress of mitigation efforts to applicable federal and state-management agencies in a progress report that will be provided following the periodic monitoring surveys. These reports will also contain recommendations from IPC regarding any additional remedial actions that may be necessary. It is expected that the applicable federal and state management agencies will provide comments and counter suggestions, or approval of IPC's suggestions if remedial efforts are required (i.e., corrective measures if revegetation or mitigation efforts were not successful). Separate monitoring reports may be prepared for each individual mitigation site. Reports will contain information regarding the mitigation actions taken during the reporting period, the success of these actions (based on predefined success criteria established for that mitigation site), and a description of the methods used to monitor the mitigation site.

## **4.0 DRAFT MITIGATION SITE ASSESSEMENTS**

Prior to commencement of construction, IPC will secure the legal authority to conduct the required mitigation actions at compensatory mitigation sites with sufficient credits to offset the impacts of the Project. In order to show there are mitigation site opportunities sufficient to meet the needs of the Project and to demonstrate how IPC's debiting and crediting approach will be implemented, in the HMP appendices, IPC identifies potential mitigation sites currently on the market and provides a desktop-level assessment of the credits available at each site.

## **5.0 REFERENCES**

IPC (Idaho Power Company). 2013. Draft Species Conservation Plan. Boardman to Hemingway Transmission Line Project. February.

Sage-Grouse Conservation Partnership. 2015. The Oregon Sage-Grouse Action Plan. Governor's Natural Resources Office. Salem, Oregon. <http://oregonexplorer.info/content/oregon-sage-grouseaction-plan?topic=203&ptopic=179>. Print version PDF available at <http://oe.oregonexplorer.info/ExternalContent/SageCon/OregonSageGrouseActionPlan-Print.pdf>

**APPENDIX A**  
**HABITAT MITIGATION SITES**

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**Boardman to Hemingway Transmission Line Project  
Desktop Habitat Mitigation Site Assessment Worksheet**

**Parcel Name:** Alder Creek  
**Landowner:** \_\_\_\_\_

**Date of Assessment:** 9/11/2014  
**Parcel Elevation (ft):** 3,700 – 4,450

**Parcel Size in Acres:** 3,081

**Within Mitigation Service Area?:** Yes

**Location Description**

(County, miles and direction from known location, TRS, UTM, other):

Baker County, approximately 20 miles northwest of Brogan, 20 miles southwest of Durkee.  
T13S R40E Sections 14, 15, 16, 21, 22, 23, 26, 27, 28 (**Figure 1**)

Vegetation Cover Classes (GAP <sup>1</sup> , Figure 2)	HMP Habitat Category <sup>2</sup> and Type	HMP General Vegetation Type	Acres	% of Parcel	Wildlife Habitat <sup>3</sup>
		<b>Category 1</b>		<b>0</b>	<b>0</b>
	<b>Category 2</b>		<b>0</b>	<b>0</b>	-
	Shrub-Steppe with Big Sage	Shrub/Grass	1,452.3	49.3	RMEWR
	Shrub-Steppe with Big Sage	Shrub/Grass	294.1	10.0	RMEWR, MDWR
	Introduced Upland Vegetation	Shrub/Grass	258.1	8.8	RMEWR
	Introduced Upland Vegetation	Shrub/Grass	233.7	7.9	RMEWR, MDWR
	Shrub-Steppe without Big Sage	Shrub/Grass	213.7	7.3	RMEWR
	Shrub-Steppe without Big Sage	Shrub/Grass	171.6	5.8	RMEWR, MDWR
	Native Grasslands	Shrub/Grass	41.2	1.4	RMEWR
	Native Grasslands	Shrub/Grass	27.0	0.9	RMEWR, MDWR
	Bare Ground Cliffs Talus	Bare Ground	5.6	0.2	RMEWR
	Bare Ground Cliffs Talus	Bare Ground	1.3	0.0	RMEWR, MDWR
	Emergent Wetland	Wetland	3.4	0.1	RMEWR
	Emergent Wetland	Wetland	13.5	0.5	RMEWR, MDWR
	Desert Shrub	Shrub/Grass	0.4	0.0	RMEWR
	Desert Shrub	Shrub/Grass	12.2	0.4	RMEWR, MDWR
	Forested Wetland	Wetland	0.2	0.0	RMEWR
	Forested Wetland	Wetland	0.7	0.0	RMEWR, MDWR
	Western Juniper	Forest/Woodland	13.8	0.5	RMEWR, MDWR
	Ponderosa Pine	Forest/Woodland	4.4	0.2	RMEWR, MDWR
	Scrub-Shrub Wetland	Wetland	1.1	0.0	RMEWR, MDWR
	Rocky Mountain Aspen	Forest/Woodland	0.2	0.0	RMEWR, MDWR
	Mixed Grand Fir / Douglas Fir	Forest/Woodland	0.2	0.0	RMEWR, MDWR
	<b>Category 3</b>		<b>0</b>	<b>0</b>	-
	<b>Category 4</b>		<b>0</b>	<b>0</b>	-
	<b>Category 5</b>		<b>0</b>	<b>0</b>	-
	<b>Category 6</b>		<b>198.3</b>	<b>6.7</b>	
	Agriculture	Agriculture/ Developed	194.5	6.6	RMEWR
	Developed	Agriculture/ Developed	3.8	0.1	RMEWR
	<b>Total<sup>4</sup></b>	<b>NA</b>	<b>2,947.1</b>	<b>100</b>	<b>-</b>

<sup>1</sup> USGS Gap Analysis Project (GAP) GIS data for ecological systems. Ecological systems were cross-walked to HMP Habitat Type as shown in Exhibit P1, Attachment P1-1 Habitat Categorization Matrix.  
<sup>2</sup> Represents the habitat category based on overlap with wildlife habitat layers. Agriculture and Developed habitat types' categories are not modified by overlap with wildlife habitat.  
<sup>3</sup> RMEWR = Category 2 habitat for ODFW Rocky Mountain elk winter range. MDWR = Category 2 habitat for ODFW mule deer winter range.  
<sup>4</sup> Total acres of habitat type may not match actual parcel size due to resolution of the GAP raster dataset. Pixels of the raster dataset were not simplified or smoothed to match the exact shape of the parcel boundary.

<b>Hydrologic Features Present</b> (SteamNet, NWI, NHD)	One perennial (Alder Creek) and four intermittent streams (NHD). Some spring and emergent wetlands not associated with the NHD streams are identified in the NWI dataset.
<b>Adjacent land ownership, use, and condition</b>	Property is bordered by both BLM and private lands. Land use is mostly rangeland with some agricultural developments. A majority of the adjacent landscape is classified as intermountain basins big sagebrush-steppe by GAP.
<b>Infrastructure Density within or Near the Parcel</b> (Qualitative Description)	Per the real estate listing, the property contains dwellings, shop, multiple large hay sheds, center pivot irrigation, and a livestock processing facility. HWY 26 and an existing transmission line are 5 miles to the south; state route 245 is approximately 4 miles to the north. Otherwise, the landscape is open rangeland.
<b>Soil type, soil temperature and moisture regime (NRCS 2014)</b>	<p>Detailed SSURGO data is not available for this portion of Malheur County. STATSGO2 identifies the property is within the Rucklick-Ruckles-Lookout mapunit. Ruckles soils are shallow. They have a surface layer of very dark grayish brown very stony clay loam and a subsoil of dark brown very stony clay. These soils are on south- and west-facing slopes of 2 to 70 percent. Rucklick soils are moderately deep. They have a surface layer of very dark grayish brown very cobbly silt loam and a subsoil of dark brown very cobbly and extremely cobbly clay. These soils are on all aspects of the terrain at a slope of 2 to 70 percent. Lookout soils are moderately deep to a duripan. They have a surface layer mainly of very dark grayish brown very cobbly silt loam and a subsoil of dark yellowish brown clay over a duripan. In some areas the surface layer is silt loam. These soils are on hilltops and benches with slopes of 2 to 12 percent.</p> <p>The soils in this unit are used mainly for livestock grazing. The unit also provides habitat for many kinds of wildlife. In the areas used for livestock grazing, the main limitations are the very cobbly or very stony surface layer and the slope of the Ruckles and Rucklick soils.</p> <p>The temperature regime is Mesic and the moisture regime is Aridic bordering on Xeric (Warm/Dry bordering on Moist). This area is identified as having low relative resilience and resistance to disturbances (drought, fire, invasive species).</p>
NRCS. 2014. Sage Grouse Management Zones Soil Taxonomic Temperature and Moisture Regimes. GIS Dataset.	
<b>Summary</b>	<p>The property is in sage-grouse core area within the Cow Valley PAC. According to Alternative D of the Oregon Sub-Region SAGR FEIS (Chapter 2, Figure 2-4), this property is located within or immediately adjacent to three proposed Sage-Grouse Strategic Areas: Climate Change Consideration Area – identified as higher elevation areas of high quality habitat likely to provide habitat over the long-term; Restoration Opportunity Area – within existing habitat where restoration would increase habitat quality and connectivity; and High-density Breeding Area – high quality habitat with a high density of active lek sites.</p> <p>The property is also completely within elk winter range and elk summer range and the northern 1/3 of the property is within mule deer winter range. Year-round springs, perennial stream (Alder Creek), and emergent wetlands increase the value of the property to wildlife in the arid landscape as well as provide potential for watershed improvement projects. GAP data indicates that introduced upland vegetation is present on site and could provide upland habitat restoration opportunities.</p> <p>Weed treatment and revegetation opportunities are available across the entire property but are abundant in areas currently in agricultural production and where livestock congregate. Opportunity areas generally coincide with habitat identified as Agriculture and/or Introduced Upland Vegetation by the GAP dataset (<b>Figure 2</b>). Western juniper woodlands are encroaching into sagebrush habitats on the parcel.</p>
<b>Pass/Fail Assessment?</b>	Pass

## Boardman to Hemingway Transmission Line Project

### Consideration of Property as a Potential Mitigation Site

<b>Mitigation Function</b>	<p>This mitigation site has been identified as in-kind and in-proximity mitigation for impacts on both Category 1 and category 2 sage-grouse core area habitat and Category 2 elk and mule deer winter range within the shrub/grass general vegetation type. Areas where sage-grouse habitat and big game winter range overlap are typically shrub-steppe and native grassland types with a continuous or mosaic big sagebrush component.</p> <p>The mitigation site contains important habitat features with ample opportunities to provide durable ecological uplift through implementation of standard mitigation actions.</p> <p>The mitigation actions listed below, upon successful implementation, will increase the quality of habitat available to sage-grouse and big game (among other species) within the mitigation site and result in an ecological uplift to the mitigation site above what is provided under the current management.</p>
<b>Mitigation Site Manager</b>	Fee title acquisition with transfer of ownership to State of Oregon, Federal Land Management Agency, approved NPO or Land Trust
<b>Mitigation Actions</b>	<p>The following are mitigation actions that IPC may consider implementing at this mitigation site in order to satisfy the mitigation policies/guidelines of the permitting agencies. All mitigation actions will follow reliable methods and be conducted as necessary to maintain desired habitat conditions throughout the life of the Project impacts. The mitigation actions presented here are not comprehensive. Implementation will likely be some combination of one or more of the following:</p> <ul style="list-style-type: none"> <li>• <i>Juniper/Conifer Removal</i> – There are approximately 300-450 acres of shrub-steppe and introduced upland vegetation where juniper encroachment is occurring (<b>Figure 3</b>). The juniper stands appear to be Phase I consisting of early successional young trees at very low density. Opportunity for spot-treating single trees occurs throughout the property.</li> <li>• <i>Modification of Livestock Grazing</i> – this would benefit a majority of the mitigation site as grazing has reduced native plant cover and has likely been a contributor to dispersal of non-native/invasive plant species across the site. In addition, livestock grazing may be incompatible with the short-term success of some of the mitigation actions identified, such as seeding of native plant species. Long-term maintenance of the mitigation site may consider domestic livestock grazing as a management tool.</li> <li>• <i>Fence Removal/Marking/Upgrade</i> – the mitigation site has approximately 60,000 feet of cross fencing (<b>Figure 3</b>) that can be removed. Fence removal would reduce the potential for wildlife injuries/mortalities from collisions. Fencing acts as a source of weed establishment through accumulation of windblown weeds. Fences provide perching opportunity for raptors and corvids. Marking of perimeter fencing in areas of concern would allow sage-grouse and other wildlife to more effectively visualize the fence and avoid collisions. Fences maintained on the mitigation site can be upgraded to a more wildlife friendly design that reduces the likelihood of significant injury during crossing events.</li> <li>• <i>Weed treatment</i> – the extent of noxious weed invasion on the mitigation site is unknown at this time but it is anticipated that opportunities exist to implement this mitigation action. Opportunities likely exist in areas identified for native seeding (<b>Figure 3</b>), along fence lines, within livestock handling facilities, near the residence, and other outbuildings/haysheds etc.</li> </ul>

<p><b>Mitigation Actions (cont.)</b></p>	<ul style="list-style-type: none"> <li>• <i>Native seeding/revegetation</i> – opportunity exists to seed native plant species in areas currently in agriculture and lowland areas adjacent to drainages where cattle have congregated. These areas cover approximately 300 acres of the mitigation site (<b>Figure 3</b>). Other seeding opportunities are available throughout the mitigation site.</li> <li>• <i>Wetland/Spring/Riparian Improvement</i> – drainages and riparian/wetland areas on the mitigation site are currently lacking native vegetation components. Opportunities exist to modify/improve water resources (channel modification, erosion control, vegetation treatment/plantings) on the mitigation site to reflect a more natural state and to provide water to mitigation action areas as needed to ensure success. There is approximately 3-8 miles of riparian corridor within the mitigation site and several acres of wetlands.</li> </ul>
<p><b>Monitoring</b></p>	<p>A specific plan for monitoring will be developed, but in general, mitigation progress will be monitored through vegetation plot monitoring and establishment of photo locations. Monitoring will occur annually for the first 3-5 years and an annual report will be produced. During the annual monitoring phase, a longer-term monitoring plan will be developed using similar protocols and methods to monitor the mitigation actions at larger time intervals (i.e., 5 years, 10 years).</p>
<p><b>Success Criteria</b></p>	<p>Specific success criteria will be developed once baseline conditions have been determined and potential mitigation actions have been confirmed for the site. Success criteria may include but are not limited to:</p> <ul style="list-style-type: none"> <li>• Vegetation plots show an increase in native vegetation cover and general trend toward increased habitat quality representing an ecological uplift.</li> <li>• Successful weed control through documentation of weed reduction.</li> <li>• Natural recruitment of sagebrush into areas currently in Agriculture or Introduced Upland Vegetation that were seeded to native plant species.</li> <li>• Successful juniper removal and continued control of encroachment onto the mitigation site for the life of the project.</li> <li>• Mitigation success will not be dependent on documentation of increased use of the mitigation site by sage-grouse or any other wildlife species.</li> </ul>
<p><b>Financial Outline</b></p>	<p>This financial outline provides estimated figures and data for informational purposes only. These estimates are meant to provide an overview of the potential and commercially reasonable costs of acquiring and implementing mitigation on this mitigation site. The financial outline does not guarantee the final sales price and costs for the acquisition, and the price offering is subject to prior sale, price change, correction, amendment or withdrawal.</p> <ul style="list-style-type: none"> <li>• Initial purchase of the mitigation site: \$2,750,000</li> <li>• Juniper removal: \$80 - \$200 per acre</li> <li>• Fence removal: \$1.88 per foot</li> <li>• Fence marking: \$0.11 per foot of fence (\$581 per mile)</li> <li>• Weed treatment: \$20 - \$200 per acre</li> <li>• Native Seeding: <ul style="list-style-type: none"> <li>○ Site preparation (mowing/discing) \$500 per acre</li> <li>○ Broadcast/Drill seed: \$100 - \$250 per acre</li> </ul> </li> <li>• Hydroseeding: \$792 per acre</li> </ul>

**Financial Outline (cont.)**

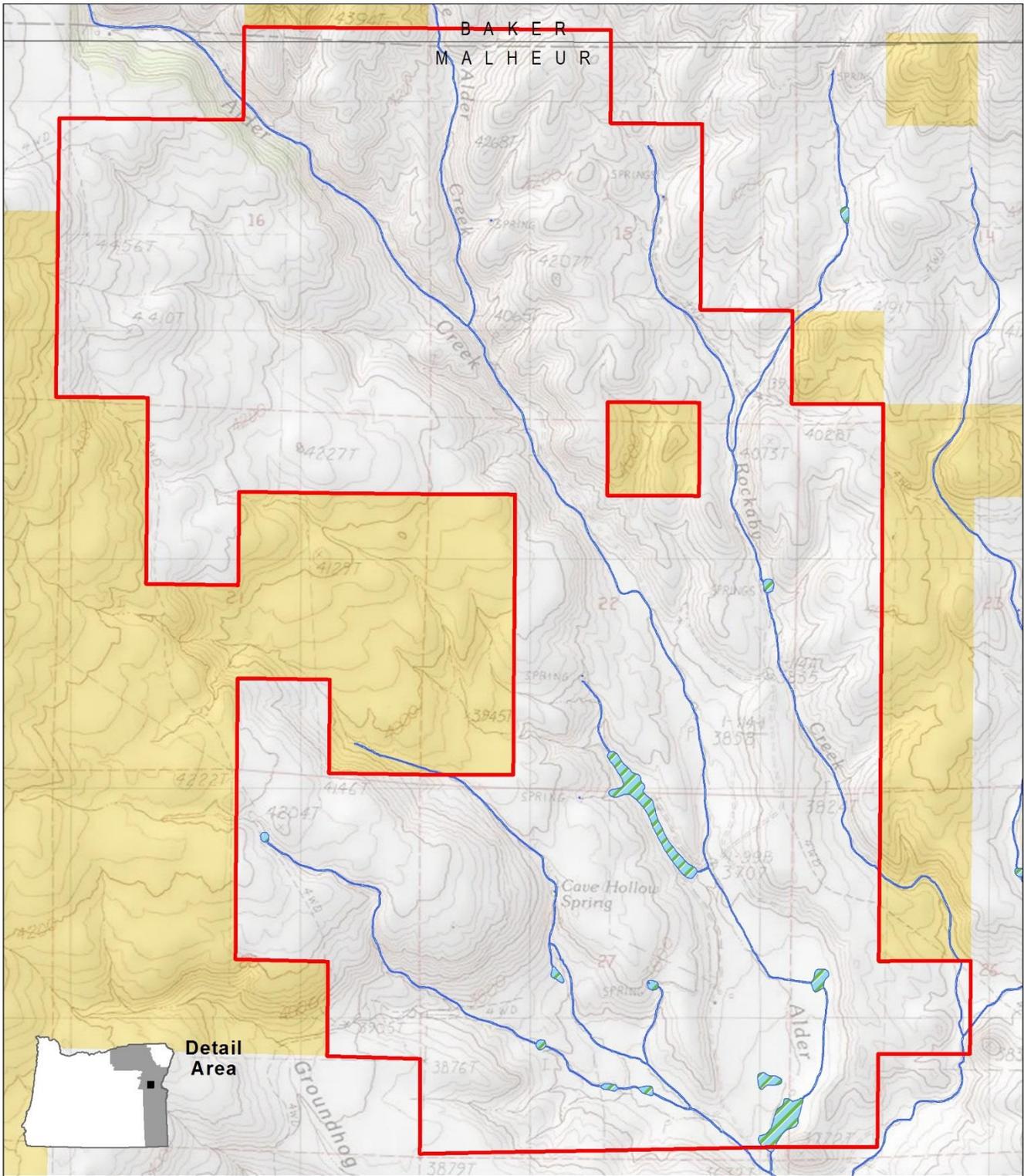
- Wetland/Spring/Riparian Improvement
  - Complex Restoration: \$2,400 per acre
  - Riparian Herbaceous Cover
    - Broadcast Seeding: \$687 per acre
    - Pollinator Cover: \$1,303 per acre
    - Plug Planting: \$13,730 per acre
    - Combo Seeding and Plug Planting: \$6,947 per acre
  - Riparian Forest Buffer
    - Hand Plant, bare root: \$768 per acre
    - Cuttings, small to medium: \$867 per acre
    - Seeding: \$106 per acre

**Estimated Budget for the Alder Creek Mitigation Site**

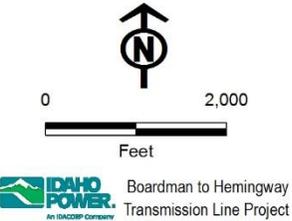
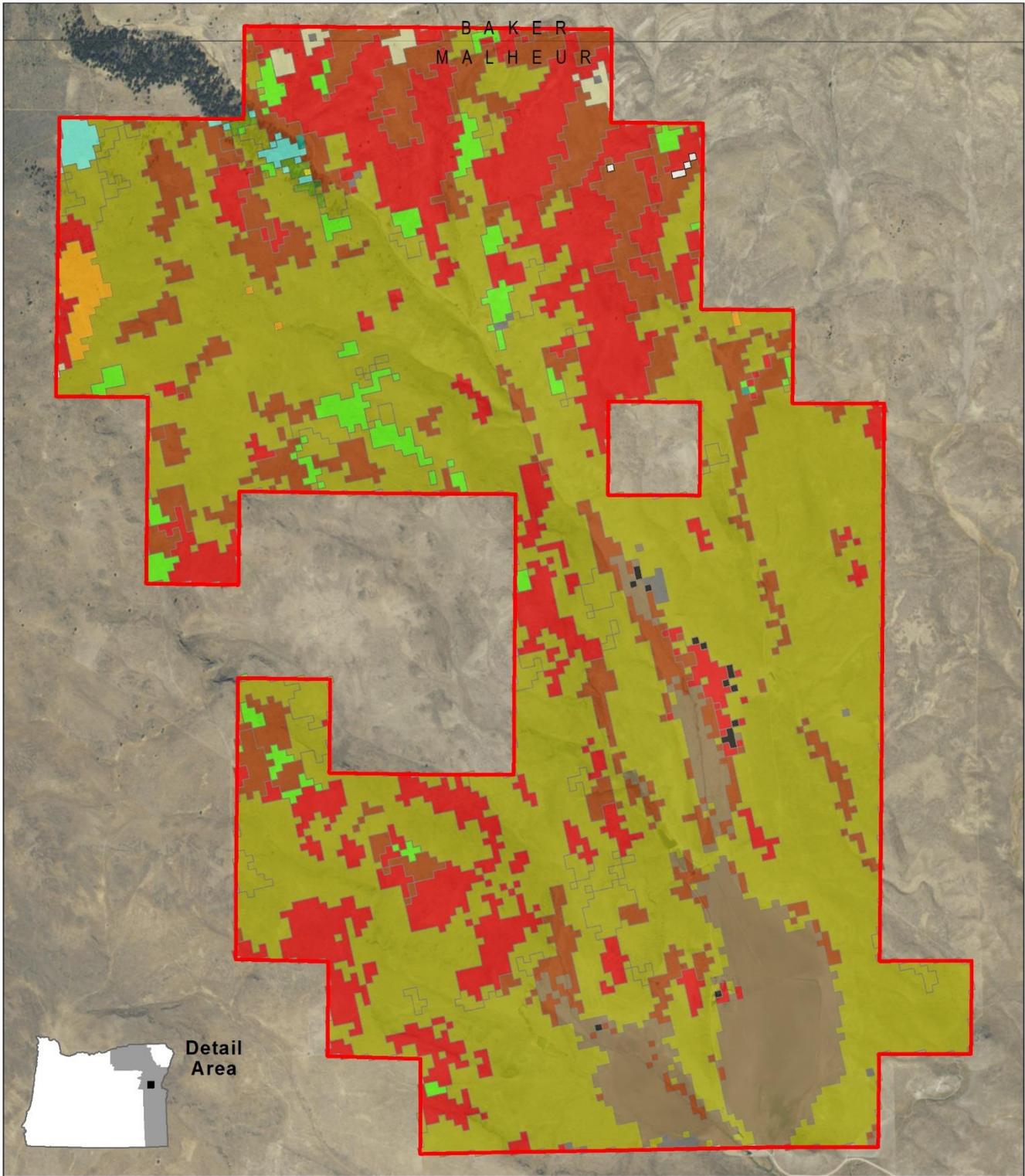
Action	Cost per Unit	Units	Years	Expense
<b>One-time Costs</b>				
Acquisition of mitigation site	\$2,750,000	1	-	\$2,750,000
Juniper Removal	\$100	450	-	\$45,000
Grazing Modification	-	-	-	-
Removal of cross fencing	\$2	60,000	-	\$120,000
Marking of perimeter fence	-	-	-	-
Weed Treatment	\$20-\$200	75	-	\$15,000
Native Seeding	\$750	300	-	\$225,000
<b>50-year Operation and Management Costs</b>				
O&M <sup>1</sup>	\$30	3,081	50	\$4,621,500
<b>Total</b>		<b>-</b>		<b>\$7,776,500</b> (\$2,524/acre) <sup>2</sup>

<sup>1</sup> This O&M cost is an estimate of the cost per acre per year (not including acquisition/easement costs) based on the research presented in the Independent Economic Analysis Board's 2007 *Investigation of Wildlife O&M Costs*. The average cost per acre presented in that document was \$24 in 2004 dollars, this has been adjusted to reflect 2015 dollars. In addition, one of the projects presented in the document was the 10,000 acre Sagebrush Flat Wildlife Mitigation area in Washington state which is within a similar habitat type and has a FY2015 budget of approximately \$300,000 (or \$30/acre).

<sup>2</sup> Cost per acre here includes cost of acquisition and initial mitigation actions and long-term O&M for 50 years.

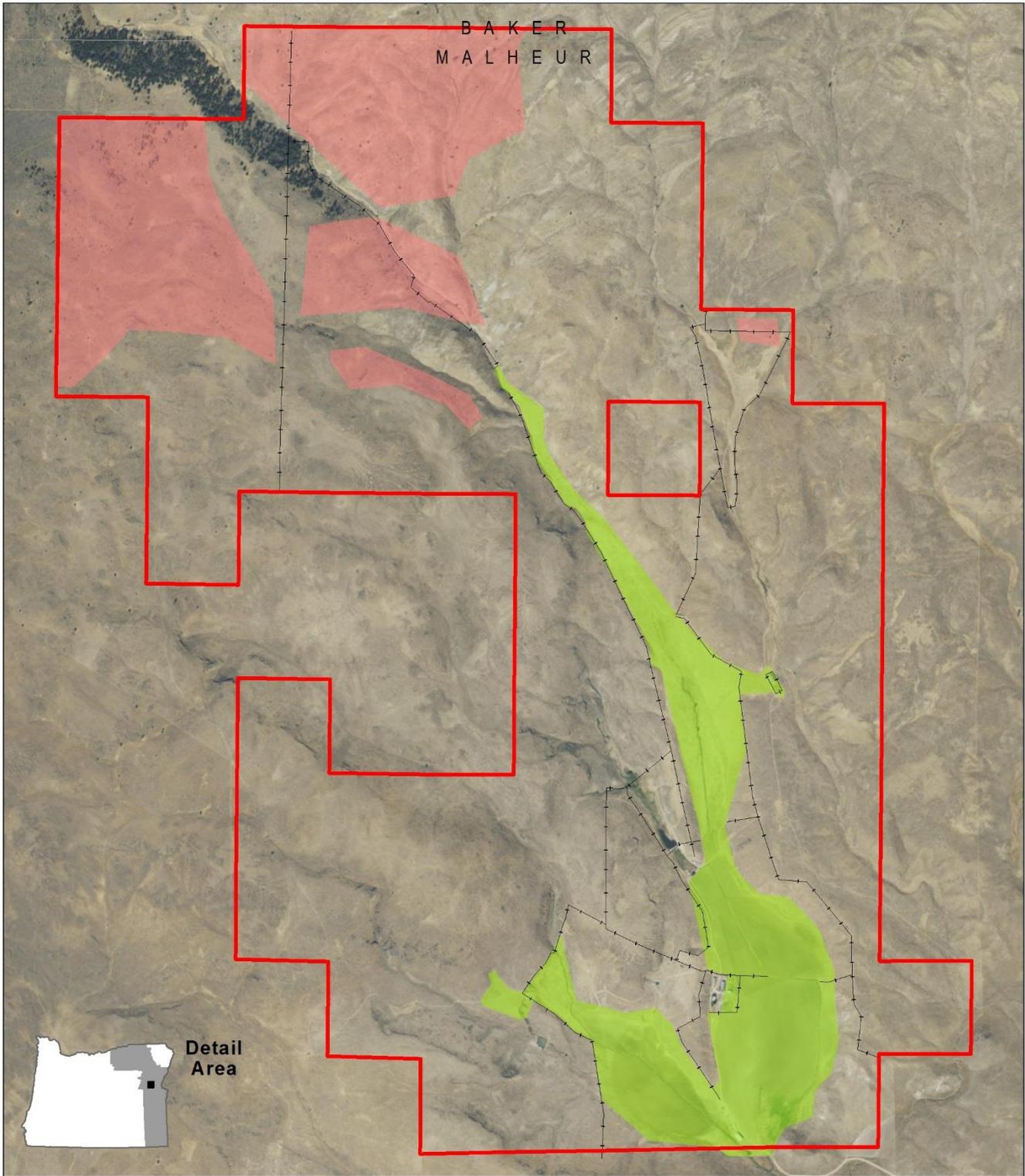


**Figure 1. Alder Creek Ownership and Water**



<b>Mitigation Features</b>		■ Developed	■ Introduced Upland Vegetation	■ Shrub-Steppe without Big Sage
□ Alder Creek	■ Emergent Wetland	■ Forested Wetland	■ Ponderosa Pine	■ Western Juniper/Mountain Mahogany Woodland
<b>Habitat Type</b>		■ Mixed Grand Fir/Douglas Fir	■ Rocky Mountain Aspen	
■ Agriculture	■ Native Grasslands	■ Bare Ground Cliffs Talus	□ Scrub-Shrub Wetland	
■ Desert Shrub			■ Shrub-Steppe with Big Sage	

**Figure 2. Alder Creek Ranch Habitat Types**



**Figure 3. Alder Creek Potential Mitigation Action Areas**

**Boardman to Hemingway Transmission Line Project  
Desktop Habitat Mitigation Site Assessment Worksheet**

Parcel Name: Glasgow (Figure 1)  
Landowner: \_\_\_\_\_

Date of Assessment: 10/13/2014  
Parcel Elevation (ft): 3,000 – 4,600

Parcel Size in Acres: 1,438

Within Mitigation Service Area?: Yes

**Location Description**

(County, miles and direction from known location, TRS, UTM, other):

Baker County, 10 miles southeast of Keating.  
T9S R43E Sections 11, 12, 13, 14, 23, 24

Vegetation Cover Classes (GAP <sup>1</sup> , Figure 2)	HMP Habitat Category <sup>2</sup> and Type	HMP General Vegetation Type	Acres	% of Total	Wildlife Habitat <sup>3</sup>
	<b>Category 1</b>		<b>0</b>	<b>0</b>	
	<b>Category 2</b>				-
	Shrub-Steppe with Big Sage	Shrub/Grass	675.9	47.0	MDWR
	Shrub-Steppe with Big Sage	Shrub/Grass	364.9	25.4	MDWR, RMEWR, RMESR
	Shrub-Steppe with Big Sage	Shrub/Grass	25.9	1.8	MDWR, RMESR
	Shrub-Steppe with Big Sage	Shrub/Grass	6.2	0.4	RMEWR, MDWR
	Shrub-Steppe without Big Sage	Shrub/Grass	76.0	5.3	MDWR
	Shrub-Steppe without Big Sage	Shrub/Grass	159.9	11.1	MDWR, RMEWR, RMESR
	Shrub-Steppe without Big Sage	Shrub/Grass	10.5	0.7	MDWR, RMEWR
	Native Grasslands	Shrub/Grass	39.6	2.7	MDWR, RMEWR, RMESR
	Native Grasslands	Shrub/Grass	35.6	2.5	MDWR
	Native Grasslands	Shrub/Grass	1.7	0.1	MDWR, RMESR
	Mixed Grand Fir/Douglas Fir	Forest/Woodland	23.8	1.7	MDWR, RMEWR, RMESR
	Western Juniper/Mountain Mahogany Woodland	Forest/Woodland	4.4	0.3	MDWR, RMEWR, RMESR
	Rocky Mountain Aspen	Forest/Woodland	1.6	0.1	MDWR, RMEWR, RMESR
	Introduced Upland Vegetation	Shrub/Grass	8.0	0.6	MDWR
	Ponderosa Pine	Forest/Woodland	0.9	0.1	MDWR, RMEWR, RMESR
	Forested Wetland	Wetland	1.1	0.1	MDWR
	Emergent Wetland	Wetland	0.7	0.0	MDWR
	Remaining	-	2.2	0.2	-
	<b>Category 3</b>		<b>0</b>	<b>0</b>	-
	<b>Category 4</b>		<b>0</b>	<b>0</b>	-
	<b>Category 5</b>		<b>0</b>	<b>0</b>	-
	<b>Category 6</b>		<b>0</b>	<b>0</b>	-
	<b>Total</b>		<b>1,438.9</b>	<b>100</b>	-

<sup>1</sup>USGS Gap Analysis Project (GAP) GIS data using ecological systems. Ecological systems were cross-walked to HMP Habitat Type as shown in the Habitat Categorization Matrix (Attachment P1-1 of Exhibit P1).

<sup>2</sup>Represents the habitat category based on overlap with wildlife habitat layers. Agriculture and Developed habitat types' categories are not modified by overlap with wildlife habitat.

<sup>3</sup>RMEWR = Category 2 habitat for ODFW Rocky Mountain elk winter range. MDWR = Category 2 habitat for ODFW mule deer winter range.

<sup>4</sup>Total acres of habitat type may not match actual parcel size due to the resolution of the GAP raster dataset. Pixels of the raster dataset were not simplified or smoothed to match the exact shape of the parcel boundary.

## Soil types

The NRCS Soil Survey Geographic Database (SSURGO) data was reviewed and the following soils were identified on the property (**Figure 3**):

*Ateron very stony loam (84 acres)*. Ateron soils consist of shallow, well drained soils found on ridge tops and side slopes of hills and mountains at elevations from 3,600 to 5,800 feet. Ateron soils are used for livestock grazing. The native vegetation is mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass.

*Brownscombe silt loam (389 acres)*. Brownscombe soils consist of moderately deep, well drained soils found on hills at elevations of 2,400 to 3,600 feet. Brownscombe soils are used for range, dryland winter wheat, and wildlife habitat. Native vegetation is bluebunch wheatgrass, Sandberg bluegrass and arrowleaf balsamroot.

*Hibbard gravelly silty clay loam (143 acres)*. Hibbard soils consist of moderately deep to a duripan, well drained soils found on fan terraces at elevations of 3,000 to 3,700 feet. Hibbard soils are used for rangeland. The native vegetation is bluebunch wheatgrass, Idaho fescue and big sagebrush.

*Lookout very cobbly silt loam (85 acres)*. Lookout soils consist of moderately deep to a duripan, well drained soils found on hills at elevations of 2,800 to 3,600 feet. Lookout soils are mainly rangeland. Small acreage is irrigated for alfalfa, hay, pasture and small grain. Native vegetation dominantly is bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, buckwheat, and big sagebrush.

*Ruckles-Ruclick complex (20 acres)*. Ruckles soils consist of shallow, well drained soils found on hill and canyon side slopes at elevations ranging from 1,200 to 3,800 feet in Oregon. Ruckles soils are used for livestock grazing. Native vegetation dominantly is bluebunch wheatgrass, Idaho fescue on north slopes, Sandberg bluegrass and Wyoming big sagebrush. Ruclick soils consist of moderately deep, well drained soils found on summits, dipslopes, and sideslopes of foothills and tablelands at elevations of 4,000 to 6,500 feet in Idaho, and as low as 1,200 feet in Oregon. Ruclick soils are used mainly for rangeland and wildlife habitat. The dominant natural vegetation is Wyoming big sagebrush, bluebunch wheatgrass, and Sandberg bluegrass.

*Skullgulch silty clay loam (196 acres)*. Skullgulch soils consist of very deep, well drained soils in concave positions on north-facing side slopes on terraces and on fans with elevations ranging from 4,000 to 5,400 feet. Skullgulch soils are used for rangeland. The native vegetation in MLRA 10 is Idaho fescue, bluebunch wheatgrass, prairie junegrass, mountain big sagebrush, and green rabbitbrush. The native vegetation in MLRA 9 is Idaho fescue, bluebunch wheatgrass and prairie junegrass.

*Snell-Ateron complex (468 acres)*. Snell series consists of moderately deep, well drained soils found on hills, plateaus, mountains and on canyon walls at elevations of 2,000 to 6,800 feet. Snell soils are used for livestock grazing and wildlife habitat. Potential native vegetation is bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass. Ateron soils consist of shallow, well drained soils found on ridge tops and side slopes of hills and mountains at elevations from 3,600 to 5,800 feet. Ateron soils are used for livestock grazing. The native vegetation is mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass.

*Virtue very gravelly silt loam (53 acres)*. Virtue soils consist of moderately deep to a duripan well drained soils found on fans and terraces at elevations of 2,300 to 4,000 feet. Virtue soils are used for rangeland, irrigated small grain, hay and pasture. The native vegetation is bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, Thurber needlegrass and Wyoming big sagebrush.

<p><b>Hydrologic Features Present</b> (SteamNet, NWI, NHD)</p>	<p>Two perennial streams and one intermittent stream within the property boundary (NHD). NWI identifies a couple of emergent wetlands, a scrub-shrub wetland, and three cold water springs in addition to riparian areas associated with NHD data.</p>
<p><b>Adjacent land ownership, use, and condition</b></p>	<p>The northern boundary of the property connects to a very large tract of BLM land that connects many of the uplands above the Lower Powder Valley; including Spring Creek and Goose Creek areas to the north of State Route 86; Love Creek, Ritter Creek and Ruckles Creek south of State Route 86; and areas extending into the upper Lower Powder Valley including Crews Creek and portions of the Powder River north of State Route 203 to the Union/Baker County line. However, a majority of the property is immediately adjacent to private properties. Adjacent land use is rangeland that appears to be heavily grazed.</p>
<p><b>Infrastructure Density within or Near the Parcel</b> (Qualitative Description)</p>	<p>Property is approximately 1 mile south of State Route 86 and contains some fencing and two-track trails; otherwise, the property is open rangeland absent of development.</p>
<p><b>Summary</b></p>	<p>The entire property is within a sage-grouse Core Area that is well-studied by ODFW. Nesting sage-grouse have been documented on the property. The property contains both elk and mule deer winter ranges and is heavily utilized by pronghorn in the spring. The property is grazed every other year, and has been managed in this manner for the last 10 years. Landowner explained that since this grazing rotation was implemented, he has seen an upward trend in desirable vegetation (Idaho fescue especially). The property is mostly Wyoming big sagebrush with islands of invasive species (Japanese brome was mentioned) that would need treatment. Landowner believes that ten years of rest from grazing and some treatments would get the property to a state where, barring fire or some other unexpected event, habitat would contain enough native desirable vegetation that few management actions would be needed to maintain the quality of habitat.</p>
<p><b>Pass/Fail Desktop Assessment?</b></p>	<p>Pass</p>

## Boardman to Hemingway Transmission Line Project

### Consideration of Property as a Potential Mitigation Site

<b>Mitigation Function</b>	<p>This mitigation site has been identified as in-kind and in-proximity mitigation for impacts on Category 2 Rocky Mountain elk winter range and mule deer winter range within the shrub/grass general vegetation type. This mitigation site could also help meet the Project need for sage-grouse habitat mitigation. It also provides opportunity for shrub/grass mitigation of Category 3, 4, &amp; 5 habitats. It contains important habitat features that could be preserved and has some uplift opportunities that could be achieved through implementation of standard mitigation actions.</p> <p>The mitigation actions listed below, upon successful implementation, will increase the quality of habitat available to sage-grouse, elk, and deer (among other species) within the mitigation site and result in an ecological uplift to the mitigation site above what is provided under the current management.</p>
<b>Mitigation Site Manager</b>	Fee title acquisition with transfer of ownership to State of Oregon, Federal Land Management Agency, approved NPO or Land Trust.
<b>Mitigation Actions</b>	<p>The following are mitigation actions that may be implemented at this mitigation site in order to satisfy the mitigation policies/guidelines of the permitting agencies. All mitigation actions will follow reliable methods. The mitigation actions presented here are not comprehensive. Implementation will likely be some combination of one or more of the following:</p> <ul style="list-style-type: none"> <li>• <i>Modification of Livestock Grazing</i> – this property has been grazed every other year for the past ten years, allowing for re-establishment of native vegetation. Future management would focus primarily on grazing practices that would not compete with native wildlife life history needs. Targeted grazing may be considered for habitat enhancement/treatment actions.</li> <li>• <i>Fence Removal/Marking</i> – opportunities are unknown at this time, but it is anticipated that some unnecessary fencing may be removed or necessary fencing can be upgraded to more wildlife friendly fencing.</li> <li>• <i>Weed treatment</i> – the extent of noxious weed invasion on the mitigation site is unknown at this time but it is anticipated that opportunities exist to implement this mitigation action. Some areas of introduced upland vegetation (specifically Japanese brome) were noted on the property in cattle congregation areas.</li> <li>• <i>Native revegetation/restoration</i> – focus of efforts would be to promote establishment of sagebrush and bunchgrasses; opportunities exist but have not been specifically identified at this time.</li> <li>• <i>Fire readiness</i> – efforts made to make the property more resistant to catastrophic fire and a fire response plan could be developed.</li> </ul>
<b>Monitoring</b>	A specific plan for monitoring will be developed, but in general, mitigation progress will be monitored through vegetation plot monitoring and establishment of photo locations. Monitoring will occur annually for the first 3-5 years and an annual report will be produced. During the annual monitoring phase, a longer-term monitoring plan will be developed using similar protocols and methods to monitor the mitigation actions at larger time intervals (i.e., 5 years, 10 years).

**Success Criteria**

Specific success criteria will be developed once baseline conditions have been determined and potential mitigation actions have been confirmed for the site. Success criteria may include but are not limited to:

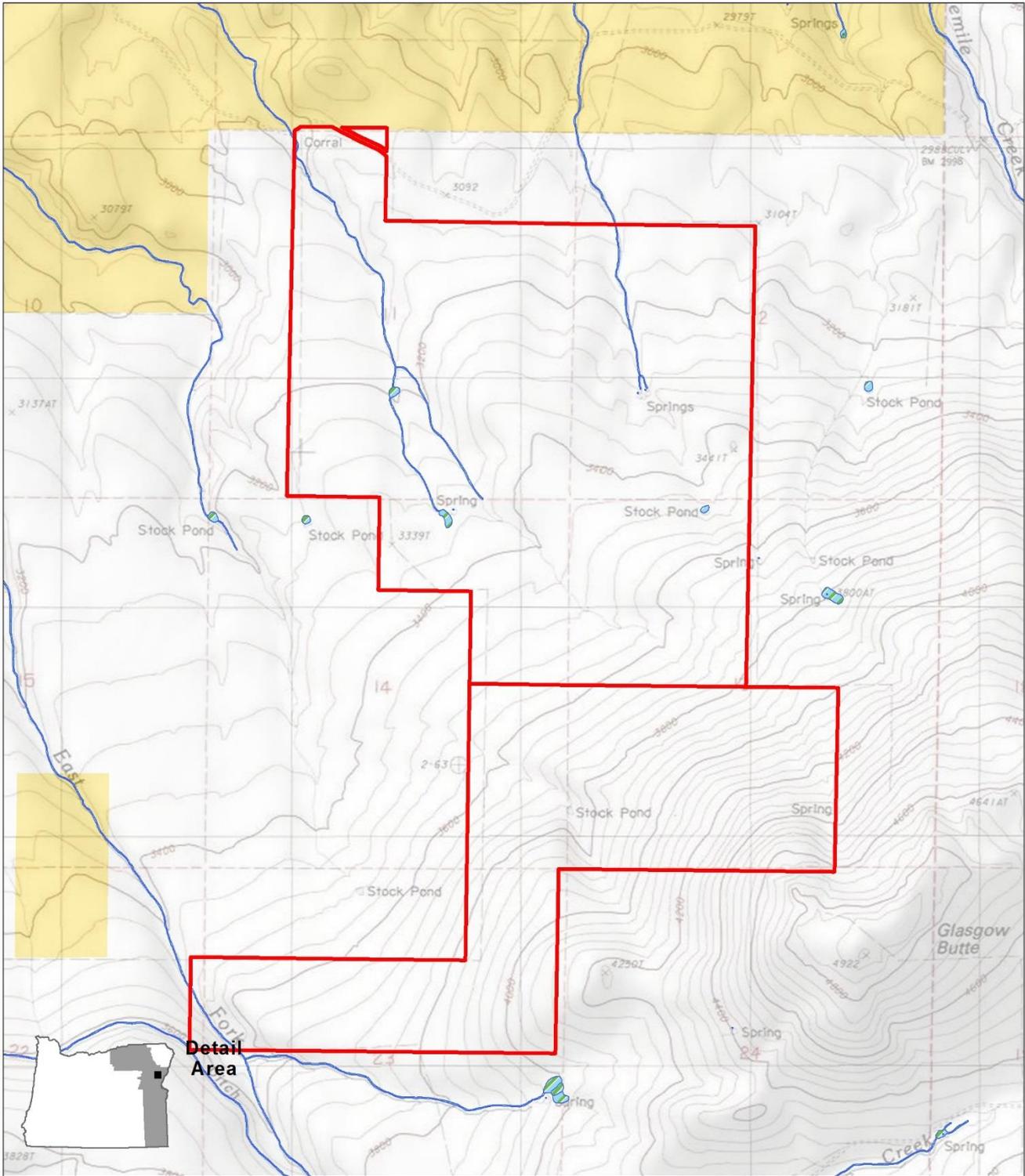
- Vegetation plots show an increase in native vegetation cover and general trend toward increased habitat quality representing an ecological uplift.
- Successful weed control through documentation of a reduction in weeds and non-native invasive plant species.
- Mitigation success will not be dependent on documentation of increased use of the mitigation site by sage-grouse or any other wildlife species.

**Financial Outline****Estimated Budget for the Glasgow Mitigation Site**

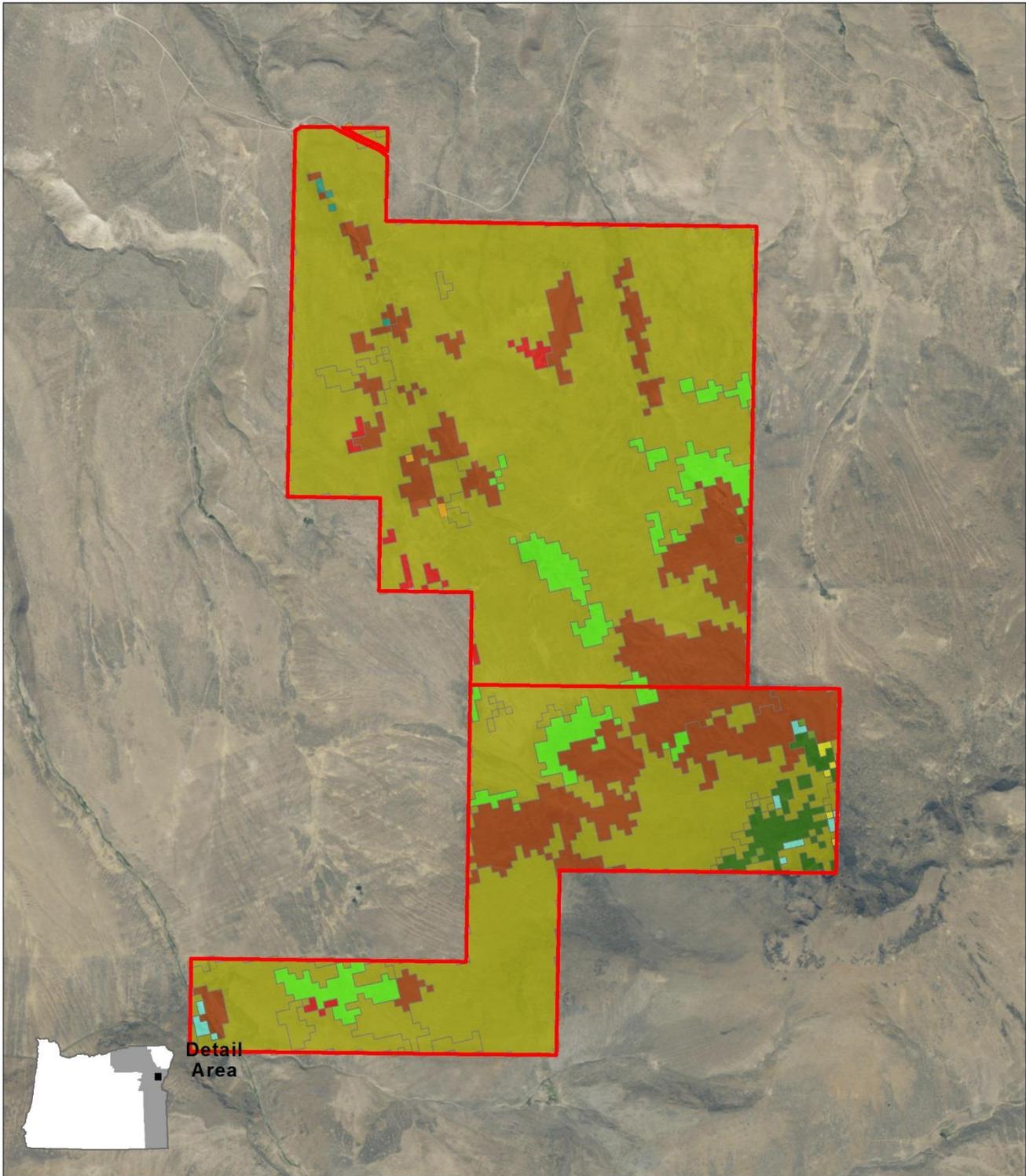
Action	Cost per Unit	Units	Years	Expense
<b>One-time Costs</b>				
Acquisition	?	1		?
<b>50-year Operation and Management Costs</b>				
O&M <sup>1</sup>	\$30.00	1,438	50	\$2,157,000
<b>Total</b>		-		<b>\$?</b> (\$?) <sup>2</sup>

<sup>1</sup>This O&M cost is an estimate of the cost per acre per year (not including acquisition/easement costs) based on the research presented in the Independent Economic Analysis Board's 2007 *Investigation of Wildlife O&M Costs*. The average cost per acre presented in that document was \$24 in 2004 dollars, this has been adjusted to reflect 2015 dollars. In addition, one of the projects presented in the document was the 10,000 acre Sagebrush Flat Wildlife Mitigation area in Washington state which is within a similar habitat type and has a FY2015 budget of approximately \$300,000 (or \$30/acre).

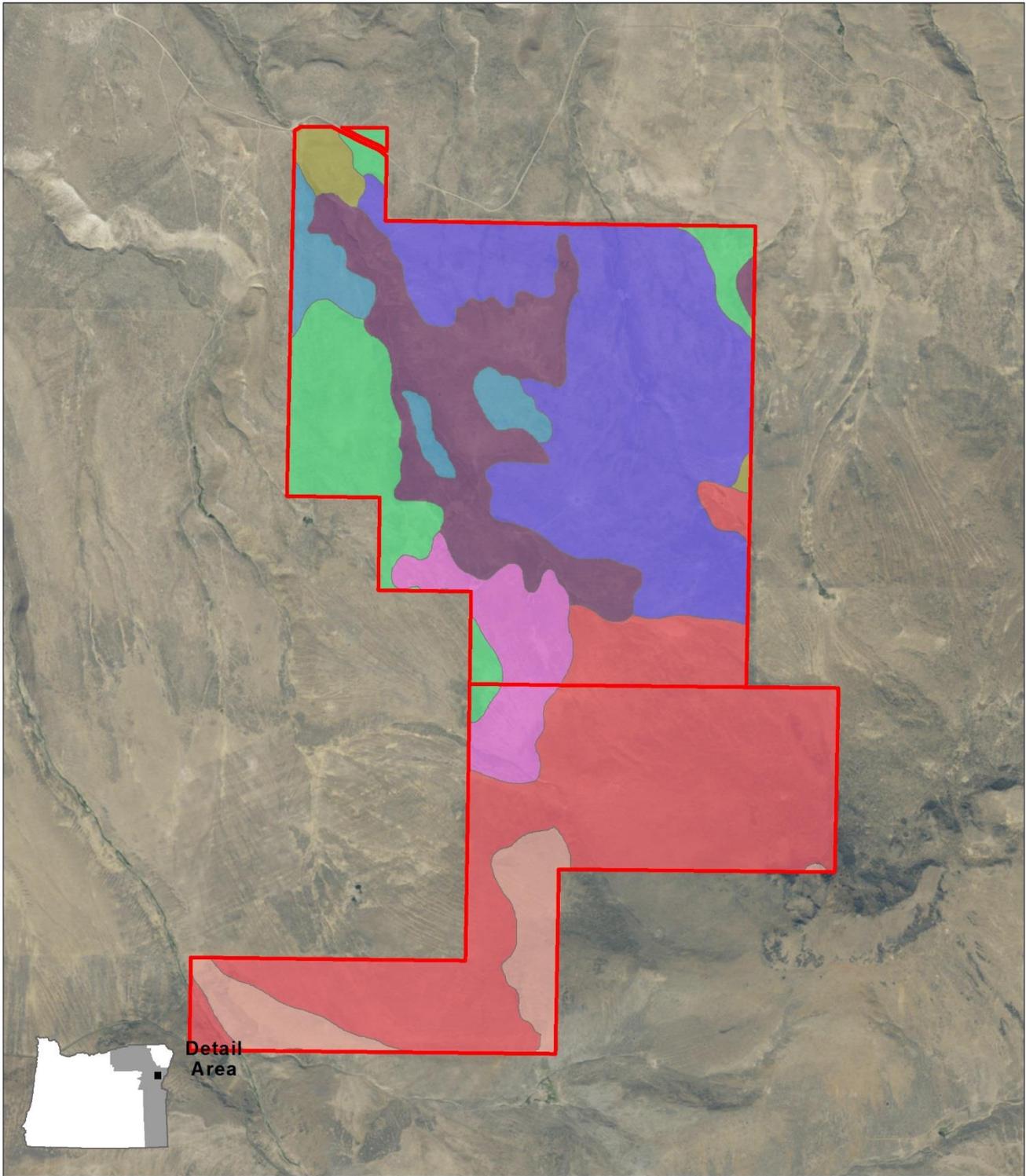
<sup>2</sup>Cost per acre here includes cost of acquisition/easement and initial mitigation actions and long-term O&M for 50 years.



**Figure 1. Glasgow Ownership and Water**



**Figure 2. Glasgow Habitat Types**



**Figure 3. Glasgow Soil Types**

**Boardman to Hemingway Transmission Line Project  
Desktop Habitat Mitigation Site Assessment Worksheet**

Parcel Name: Trail Creek  
Landowner: \_\_\_\_\_

Date of Assessment: 10/13/2014  
Parcel Elevation (ft): 3,600 – 4,580

Parcel Size in Acres: 624

Within Mitigation Service Area?: Yes

**Location Description**

(County, miles and direction from known location, TRS, UTM, other):

Baker County, approximately 5 miles northeast of Durkee.  
T10S R43E Section 36, T10S R44E Section 31, T11S R43E Section 1, T11S R44E Section 6 (**Figure 1**)

Vegetation Cover Classes (GAP <sup>1</sup> , Figure 2)	HMP Habitat Category <sup>2</sup> and Type	HMP General Vegetation Type	Acres	% of Parcel	Wildlife Habitat <sup>3</sup>
		<b>Category 1</b>		<b>0</b>	<b>0</b>
	<b>Category 2</b>		<b>624.5</b>	<b>100</b>	-
	Shrub-Steppe with Big Sage	Shrub/Grass	490.0	78.5	RMEWR, RMESR, MDSR
	Shrub-Steppe without Big Sage	Shrub/Grass	75.6	12.1	RMEWR, RMESR, MDSR
	Native Grasslands	Shrub/Grass	27.1	4.3	RMEWR, RMESR, MDSR
	Introduced Upland Vegetation	Shrub/Grass	8.2	1.3	RMEWR, RMESR, MDSR
	Western Juniper /Mountain Mahogany Woodland	Forest/Woodland	7.6	1.2	RMEWR, RMESR, MDSR
	Ponderosa Pine	Forest/Woodland	7.1	1.1	RMEWR, RMESR, MDSR
	Mixed Grand Fir / Douglas Fir	Forest/Woodland	3.1	0.5	RMEWR, RMESR, MDSR
	Rocky Mountain Aspen	Forest/Woodland	3.1	0.5	RMEWR, RMESR, MDSR
	Bare Ground Cliffs Talus	Bare Ground	2.0	0.3	RMEWR, RMESR, MDSR
	Emergent Wetland	Wetland	0.7	0.1	RMEWR, RMESR, MDSR
	<b>Category 3</b>		<b>0</b>	<b>0</b>	-
	<b>Category 4</b>		<b>0</b>	<b>0</b>	-
	<b>Category 5</b>		<b>0</b>	<b>0</b>	-
	<b>Category 6</b>		<b>0</b>	<b>0</b>	-
	<b>Total</b>	<b>NA</b>	<b>624.5<sup>4</sup></b>	<b>100</b>	-

<sup>1</sup> USGS Gap Analysis Project (GAP) GIS data using ecological systems. Ecological systems were cross-walked to HMP Habitat Type as shown in Exhibit P1, Attachment P1-1 Habitat Categorization Matrix.  
<sup>2</sup> Represents the habitat category based on overlap with wildlife habitat layers. Agriculture and Developed habitat types' categories are not modified by overlap with wildlife habitat.  
<sup>3</sup> RMEWR = Rocky Mountain Elk Winter Range.  
<sup>4</sup> Total acres of habitat type may not match actual parcel size due to resolution of the GAP raster dataset. Pixels of the raster dataset were not simplified or smoothed to match the exact shape of the parcel boundary. This is apparent in **Figure 2**.

**Soil type**

The NRCS Soil Survey Geographic Database (SSURGO) data was reviewed and the following soil was identified on the property (**Figure 3**):

*Durkee gravelly silt loam (623)*. Durkee soils consist of moderately deep, well drained soils on smooth rolling hills at elevation ranges from 3,600 to 6,100 feet.

<p><b>Hydrologic Features Present</b> (SteamNet, NWI, NHD)</p>	<p>Two intermittent streams are on the property (NHD). NWI does not indicate any additional wetland features beyond those associated with the streams identified by NHD.</p>
<p><b>Adjacent land ownership, use, and condition</b> (if possible)</p>	<p>A majority of this property shares a border with a BLM parcel that is approximately 4,000 acres in size. Also adjacent to private land ownership. Dominant land use in the area is rangeland. Adjacent private lands appear to be more degraded as a result of heavier grazing practices (per 2013 site visit).</p>
<p><b>Infrastructure Density within or Near the Parcel</b> (Qualitative Description)</p>	<p>The property contains some fencing and gates and some two track roads; otherwise open rangeland.</p>
<p><b>Summary</b></p>	<p>The property is completely within a sage-grouse Core Area and the Lookout Mountain Rocky Mountain elk herd's winter range. The property is completely within elk summer range and mule deer summer range as well.</p> <p>The property is close to the Nodine sage-grouse lek. The property provides sage-grouse breeding habitat, adequate sagebrush cover and height ensures adequate winter forage, and an abundance of forbs in the understory and a source of water in Trail Creek provides quality brood-rearing habitat. The property is able to support sage-grouse year-round and therefore provides habitat for many other sagebrush obligate species.</p>
<p><b>Pass/Fail Desktop Assessment?</b></p>	<p>Pass</p>

## Boardman to Hemingway Transmission Line Project

### Consideration of Property as a Potential Mitigation Site

<b>Mitigation Function</b>	<p>This mitigation site has been identified as in-kind and in-proximity mitigation for impacts on Category 2 Rocky Mountain elk winter range within the shrub/grass general vegetation type. This mitigation site could also help meet the Project need for sage-grouse habitat mitigation. It also provides opportunity for shrub/grass mitigation of Category 3, 4, &amp; 5 habitats. It contains important habitat features that could be preserved and has some uplift opportunities that could be achieved through implementation of standard mitigation actions.</p> <p>The mitigation actions listed below, upon successful implementation, will increase the quality of habitat available to sage-grouse and elk (among other species) within the mitigation site and result in an ecological uplift to the mitigation site above what is provided under the current management.</p>
<b>Mitigation Site Manager</b>	Fee title acquisition with transfer of ownership to State of Oregon, Federal Land Management Agency, approved NPO or Land Trust.
<b>Mitigation Actions</b>	<p>The following are mitigation actions that IPC may consider implementing at this mitigation site in order to satisfy the mitigation policies/guidelines of the permitting agencies. All mitigation actions will follow reliable methods. The mitigation actions presented here are not comprehensive. Implementation will likely be some combination of one or more of the following:</p> <ul style="list-style-type: none"> <li>• <i>Juniper/Conifer Removal</i> – Opportunity for spot-treating single trees occurs throughout the property to prevent future encroachment.</li> <li>• <i>Modification of Livestock Grazing</i> – grazing on this property appears to have been managed in a manner that allows native vegetation to remain established and provide cover and forage for wildlife species. Future management would focus primarily on grazing practices that would not compete with native wildlife life history needs. Targeted grazing may be considered for habitat enhancement/treatment actions.</li> <li>• <i>Fence Removal/Marking</i> – opportunities are unknown at this time, but it is anticipated that some unnecessary fencing may be removed or necessary fencing can be upgraded to more wildlife friendly fencing.</li> <li>• <i>Weed treatment</i> – the extent of noxious weed invasion on the mitigation site is unknown at this time but it is anticipated that opportunities exist to implement this mitigation action. Some areas of introduced upland vegetation were noted along Trail Creek where cattle congregate.</li> <li>• <i>Native revegetation/restoration</i> – focus of efforts would be to promote establishment of sagebrush and bunchgrasses; opportunities exist but have not been specifically identified at this time.</li> <li>• <i>Fire readiness</i> – efforts made to make the property more resistant to catastrophic fire and a fire response plan could be developed.</li> <li>• <i>Wetland/Spring/Riparian Improvement</i> – opportunity exists along Trail Creek to perform riparian/watershed improvements.</li> </ul>
<b>Monitoring</b>	A specific plan for monitoring will be developed, but in general, mitigation progress will be monitored through vegetation plot monitoring and establishment of photo locations. Monitoring will occur annually for the first 3-5 years and an annual report will be produced. During the annual monitoring phase, a longer-term monitoring plan will be developed using similar protocols and methods to monitor the mitigation actions at larger time intervals (i.e., 5 years, 10 years).

**Success Criteria**

Specific success criteria will be developed once mitigation actions have been confirmed for the site. Success criteria may include but are not limited to:

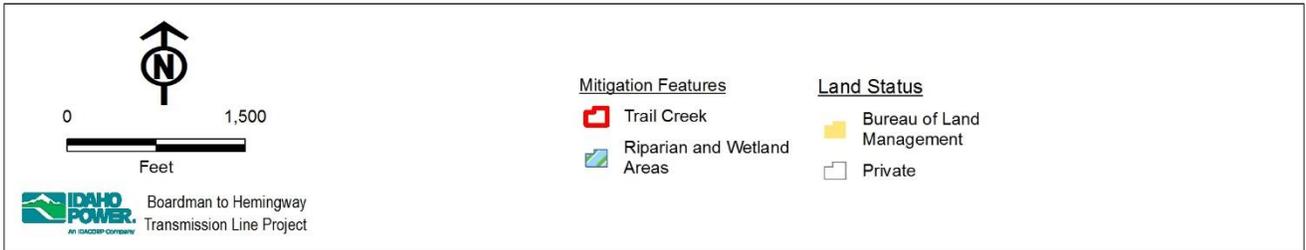
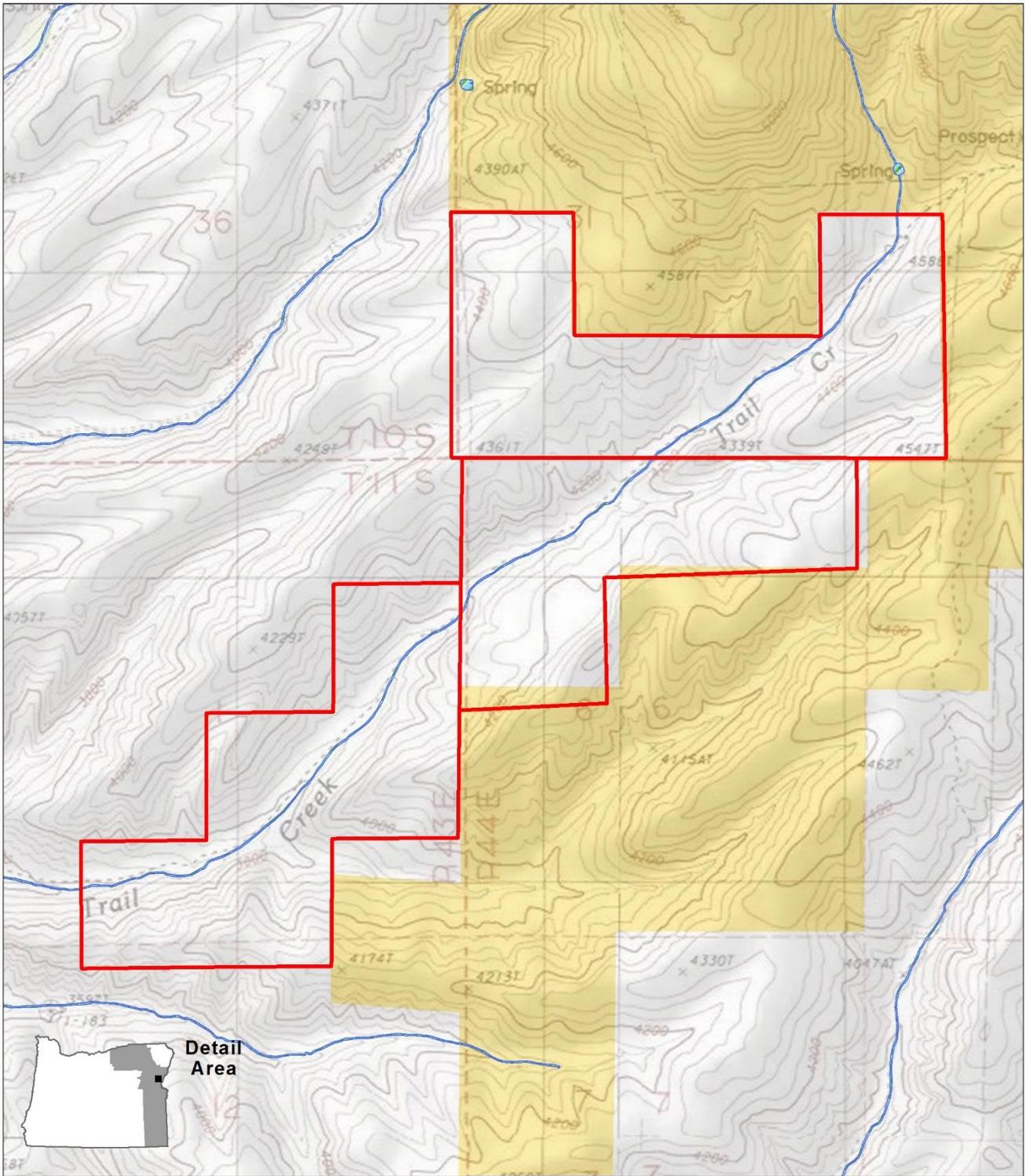
- Vegetation plots show an increase in native vegetation cover and general trend toward increased habitat quality representing an ecological uplift.
- Successful weed control through documentation of weed reduction.
- Successful juniper removal and continued control of encroachment onto the mitigation site for the life of the project.
- Mitigation success will not be dependent on documentation of increased use of the mitigation site by sage-grouse or any other wildlife species.

**Financial Outline****Estimated Budget for the Trail Creek Mitigation Site**

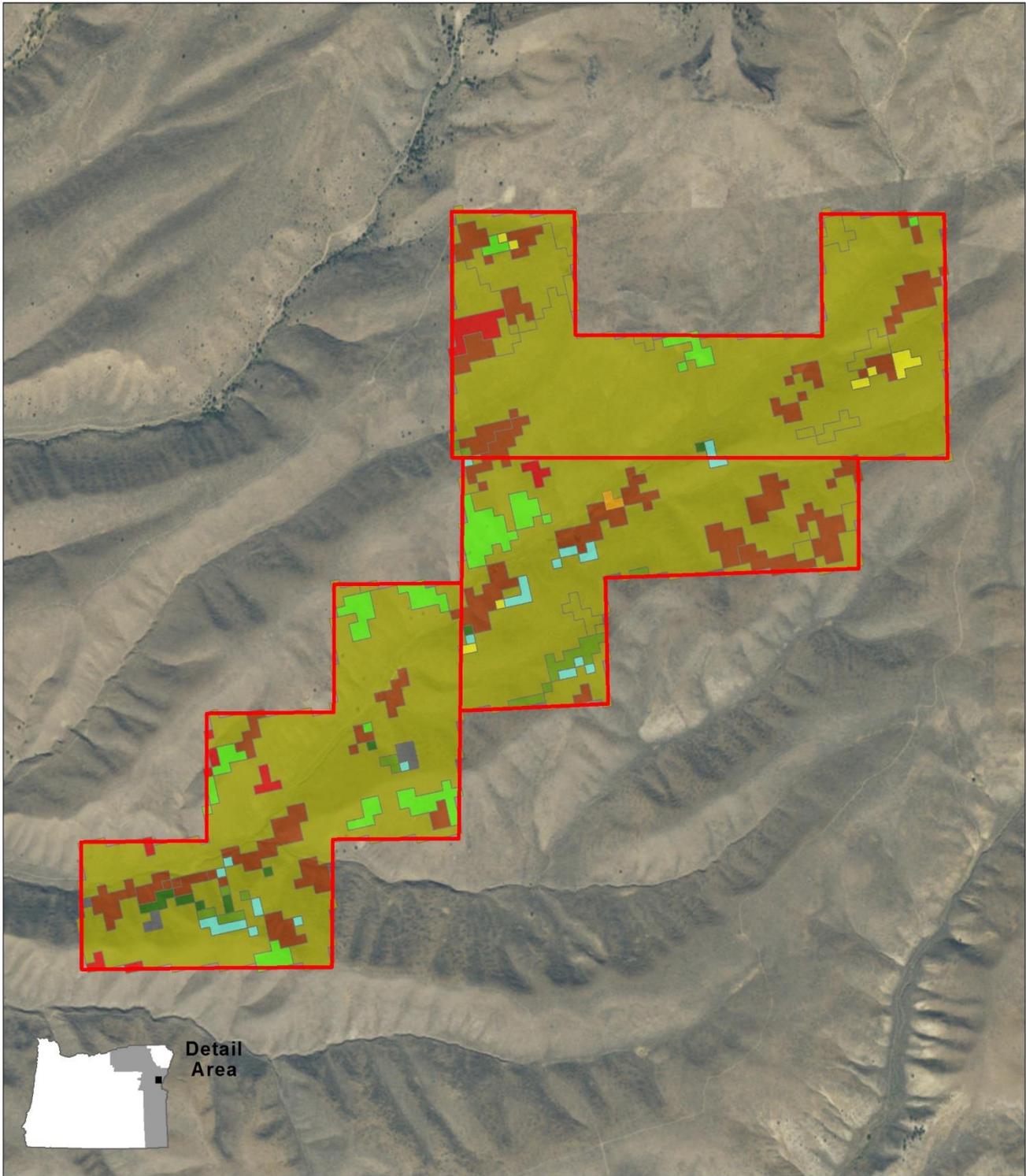
Action	Cost per Unit	Units	Years	Expense
<b>One-time Costs</b>				
Acquisition	?	1		?
<b>50-year Operation and Management Costs</b>				
O&M <sup>1</sup>	\$30.00	624	50	\$936,000
<b>Total</b>		-		<b>\$?</b> (\$?) <sup>2</sup>

<sup>1</sup> This O&M cost is an estimate of the cost per acre per year (not including acquisition/easement costs) based on the research presented in the Independent Economic Analysis Board's 2007 *Investigation of Wildlife O&M Costs*. The average cost per acre presented in that document was \$24 in 2004 dollars, this has been adjusted to reflect 2015 dollars. In addition, one of the projects presented in the document was the 10,000 acre Sagebrush Flat Wildlife Mitigation area in Washington state which is within a similar habitat type and has a FY2015 budget of approximately \$300,000 (or \$30/acre).

<sup>2</sup> Cost per acre here includes cost of acquisition/easement and initial mitigation actions and long-term O&M for 50 years.



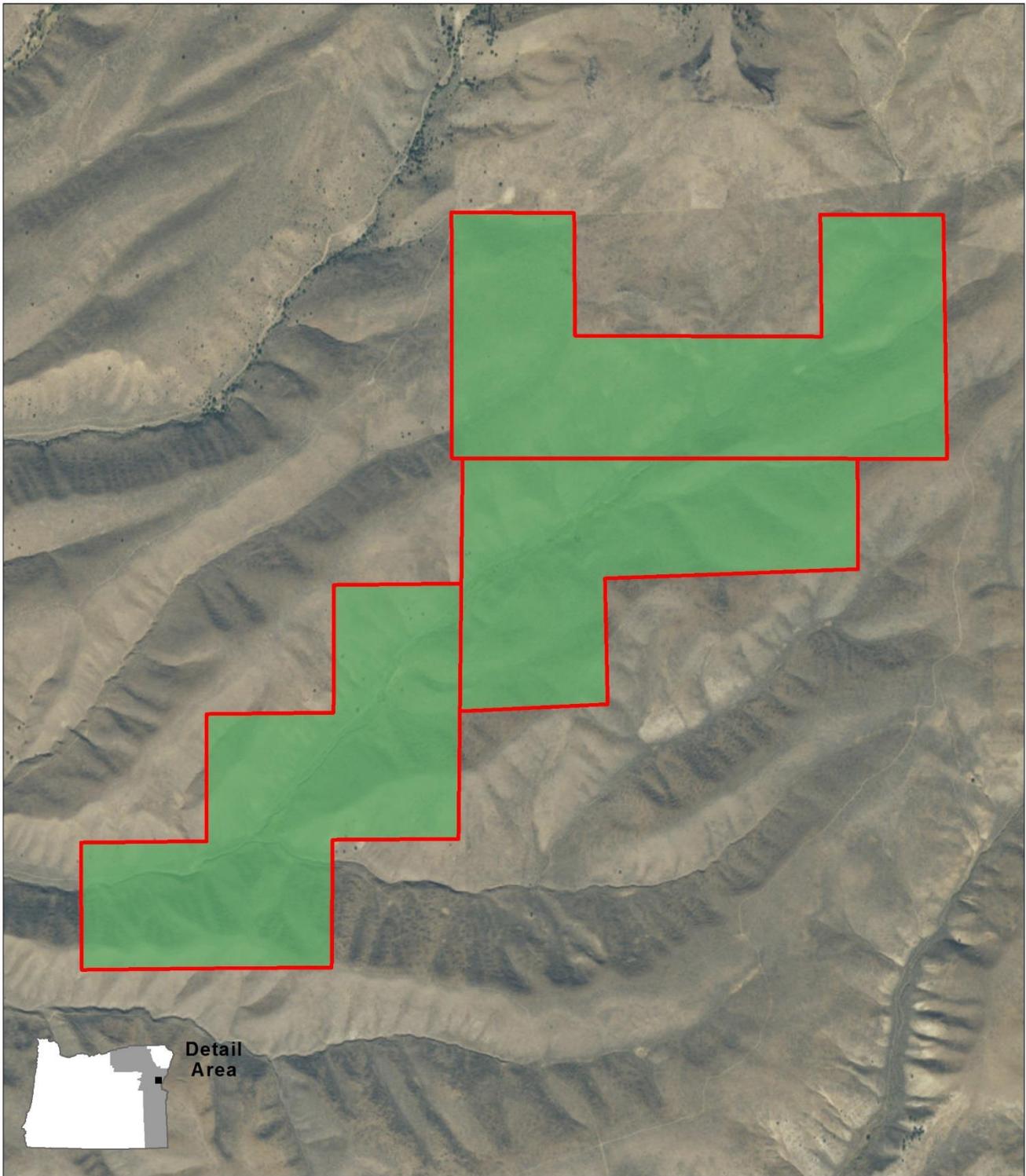
**Figure 1. Trail Creek Ownership and Water**



**Detail Area**



**Figure 2. Trail Creek Habitat Types**



**Figure 3. Trail Creek Soil Types**

## Boardman to Hemingway Transmission Line Project

### Desktop Habitat Mitigation Site Assessment Worksheet

Parcel Name: Upper Timber (Figure 1)  
 Landowner: \_\_\_\_\_

Date of Assessment: 10/13/2014  
 Parcel Elevation (ft): 3,000 – 4,800

Parcel Size in Acres: 1,577

Within Mitigation Service Area?: Yes

#### Location Description

(County, miles and direction from known location, TRS, UTM, other):

Baker County, 5 miles west of Richland.  
 T9S R44E Sections 22, 23, 26, 27, 28, 29

Vegetation Cover Classes (GAP <sup>1</sup> , Figure 2)	HMP Habitat Category <sup>2</sup> and Type	HMP General Vegetation Type	Acres	% of Total	Wildlife Habitat <sup>3</sup>
	<b>Category 1</b>		<b>0</b>	<b>0</b>	
	<b>Category 2</b>				-
	Shrub-Steppe with Big Sage	Shrub/Grass	538.1	34.2	MDWR
	Shrub-Steppe with Big Sage	Shrub/Grass	407.6	25.8	MDWR, RMESR
	Shrub-Steppe with Big Sage	Shrub/Grass	104.1	6.6	RMEWR, RMESR, MDWR
	Shrub-Steppe without Big Sage	Shrub/Grass	79.3	5.1	MDWR
	Shrub-Steppe without Big Sage	Shrub/Grass	189.7	12.0	MDWR, RMESR
	Shrub-Steppe without Big Sage	Shrub/Grass	32.1	2.0	RMEWR, RMESR, MDWR
	Native Grasslands	Shrub/Grass	19.5	1.2	MDWR
	Native Grasslands	Shrub/Grass	80.0	5.1	MDWR, RMESR
	Native Grasslands	Shrub/Grass	11.2	0.7	RMEWR, RMESR, MDWR
	Introduced Upland Vegetation	Shrub/Grass	36.2	2.3	MDWR
	Introduced Upland Vegetation	Shrub/Grass	52.2	3.3	MDWR, RMESR
	Introduced Upland Vegetation	Shrub/Grass	6.4	0.4	RMEWR, RMESR, MDWR
	Forested Wetland	Wetland	7.4	0.5	MDWR
	Forested Wetland	Wetland	1.5	0.1	MDWR, RMESR
	Agriculture <sup>4</sup>	Ag/Developed	3.3	0.3	MDWR
	Agriculture <sup>4</sup>	Ag/Developed	3.8	0.2	MDWR, RMESR
	Mixed Grand Fir/Douglas Fir	Forest/Woodland	1.8	0.1	MDWR
	Ponderosa Pine	Forest/Woodland	1.6	0.1	MDWR
	Rocky Mountain Aspen	Forest/Woodland	1.1	0.1	MDWR
	<b>Category 3</b>		<b>0</b>	<b>0</b>	-
	<b>Category 4</b>		<b>0</b>	<b>0</b>	-
	<b>Category 5</b>		<b>0</b>	<b>0</b>	-
	<b>Category 6</b>		<b>0</b>	<b>0</b>	-
	<b>Total<sup>5</sup></b>		<b>1,576.9</b>	<b>100</b>	-

<sup>1</sup> USGS Gap Analysis Project (GAP) GIS data using ecological systems. Ecological systems were cross-walked to HMP Habitat Type as shown in the Habitat Categorization Matrix (Attachment P1-1 of Exhibit P1).

<sup>2</sup> Represents the habitat category based on overlap with wildlife habitat layers. Agriculture and Developed habitat types' categories are not modified by overlap with wildlife habitat.

<sup>3</sup> RMEWR = Category 2 habitat for ODFW Rocky Mountain elk winter range. MDWR = Category 2 habitat for ODFW mule deer winter range.

<sup>4</sup> A brief review of aerial imagery indicated that ReGAP is misclassifying areas as Agriculture. In this instance, the Agriculture appears likely to be wetlands. Therefore, Agriculture is remaining as a Category 2 habitat in this case. Reviewing of ReGAP data via aerial photo interpretation is not performed for the vast majority of habitat classifications on potential mitigation properties. On the ground knowledge of this property prompted a review of the Agriculture habitat classification.

<sup>5</sup> Total acres of habitat type may not match actual parcel size due to the resolution of the GAP raster dataset. Pixels of the raster dataset were not simplified or smoothed to match the exact shape of the parcel boundary.

## Soil types

The NRCS Soil Survey Geographic Database (SSURGO) data was reviewed and the following soils were identified on the property (**Figure 3**):

*Ateron very stony loam (123 acres)*. Ateron soils consist of shallow, well drained soils found on ridge tops and side slopes of hills and mountains at elevations from 3,600 to 5,800 feet. Ateron soils are used for livestock grazing. The native vegetation is mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass.

*Bakeoven-Ruckles complex (101 acres)*. Bakeoven soils consist of very shallow, well drained soils found on mountains, ridgetops, hillslopes, mesas, and benches at elevations of 300 to 4,800 feet. Bakeoven soils are used for livestock grazing and wildlife habitat. Native vegetation is Sandberg bluegrass and stiff sagebrush. Ruckles soils consist of shallow, well drained soils found on hill and canyon side slopes at elevations ranging from 1,200 to 3,800 feet in Oregon. Ruckles soils are used for livestock grazing. Native vegetation dominantly is bluebunch wheatgrass, Idaho fescue on north slopes, Sandberg bluegrass and Wyoming big sagebrush.

*Bouldrock complex (129 acres) and Bouldrock loam (118 acres)*. Bouldrock soils consist of moderately deep, well drained soils found on south-facing side slopes of mountainous areas at elevations ranging from 4,000 to 6,200 feet. Bouldrock soils are used for rangeland. The native vegetation is bluebunch wheatgrass, mountain big sagebrush, arrowleaf balsamroot and gray rabbitbrush.

*Greenscombe loam (280 acres)*. Greenscombe soils consist of moderately deep, well drained soils on low hills at elevations 3,200 to 3,800 feet. Greenscombe soils are Rangeland. The native vegetation is Idaho fescue, bluebunch wheatgrass, Sandberg bluegrass, Thurber needlegrass, and big sagebrush.

*Hyll-Simas association (91 acres)*. Hyall soils consist of moderately deep to consolidated old alluvium (densic material), well drained soils on side slopes of dissected terraces at elevations of 2,700 to 3,500 feet. Hyall soils are used for range, watershed and wildlife habitat. Native vegetation is bluebunch wheatgrass, Idaho fescue and arrowleaf balsamroot. Simas soils consist of very deep, well drained soils found on hills at elevations of 1,200 to 4,000 feet. Simas soils are used for livestock grazing. Native plants are bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, and Wyoming and basin big sagebrush.

*Kilmerque loam (25 acres)*. Kilmerque soils consist of moderately deep, well drained soils on gently rolling bench tops to moderately steep south aspect side slopes in forested mountains at elevations ranging from 3,500 to 6,000 feet. Kilmerque soils are used for woodland. The native vegetation is ponderosa pine, Douglas fir and pinegrass.

*Ruckles-Rucllick-Snellby complex (50 acres)*. Ruckles soils consist of shallow, well drained soils found on hill and canyon side slopes at elevations ranging from 1,200 to 3,800 feet in Oregon. Ruckles soils are used for livestock grazing. Native vegetation dominantly is bluebunch wheatgrass, Idaho fescue on north slopes, Sandberg bluegrass and Wyoming big sagebrush. Rucllick soils consist of moderately deep, well drained soils found on summits, dipslopes, and sideslopes of foothills and tablelands at elevations of 4,000 to 6,500 feet in Idaho, and as low as 1,200 feet in Oregon. Rucllick soils are used mainly for rangeland and wildlife habitat. The dominant natural vegetation is Wyoming big sagebrush, bluebunch wheatgrass, and Sandberg bluegrass. Snellby soils consist of moderately deep, well drained soils on hills at elevations of 3,400 to 3,800 feet. Snellby soils are used for rangeland. The native vegetation is Idaho fescue, bluebunch wheatgrass, and big sagebrush.

**Soil types (cont.)**

**Ruckles-Ruclick complex (336 acres).** Ruckles soils consist of shallow, well drained soils found on hill and canyon side slopes at elevations ranging from 1,200 to 3,800 feet in Oregon. Ruckles soils are used for livestock grazing. Native vegetation dominantly is bluebunch wheatgrass, Idaho fescue on north slopes, Sandberg bluegrass and Wyoming big sagebrush. Ruclick soils consist of moderately deep, well drained soils found on summits, dipslopes, and sideslopes of foothills and tablelands at elevations of 4,000 to 6,500 feet in Idaho, and as low as 1,200 feet in Oregon. Ruclick soils are used mainly for rangeland and wildlife habitat. The dominant natural vegetation is Wyoming big sagebrush, bluebunch wheatgrass, and Sandberg bluegrass.

**Ruclick very cobbly silt loam (135 acres).** Ruclick soils consist of moderately deep, well drained soils found on summits, dipslopes, and sideslopes of foothills and tablelands at elevations of 4,000 to 6,500 feet in Idaho, and as low as 1,200 feet in Oregon. Ruclick soils are used mainly for rangeland and wildlife habitat. The dominant natural vegetation is Wyoming big sagebrush, bluebunch wheatgrass, and Sandberg bluegrass.

**Snell-Ateron complex (32 acres).** Snell series consists of moderately deep, well drained soils found on hills, plateaus, mountains and on canyon walls at elevations of 2,000 to 6,800 feet. Snell soils are used for livestock grazing and wildlife habitat. Potential native vegetation is bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass. Ateron soils consist of shallow, well drained soils found on ridge tops and side slopes of hills and mountains at elevations from 3,600 to 5,800 feet. Ateron soils are used for livestock grazing. The native vegetation is mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass.

**Snellby stony silt loam (79 acres).** Snellby soils consist of moderately deep, well drained soils on hills at elevations of 3,400 to 3,800 feet. Snellby soils are used for rangeland. The native vegetation is Idaho fescue, bluebunch wheatgrass, and big sagebrush.

**Taterpa loam (77 acres).** Taterpa soils consist of deep, well drained soils on north-facing side slopes of mountains at elevations ranging from 4,000 to 6,200 feet. Taterpa soils are used for rangeland. The native vegetation is Idaho fescue, bluebunch wheatgrass, mountain big sagebrush and green rabbitbrush.

**Hydrologic Features Present**  
(SteamNet, NWI, NHD)

The property contains four perennial streams. NWI identifies several (14) emergent wetlands, a couple of impounded ponds, and three cold springs.

**Adjacent land ownership, use, and condition**

A majority of the immediately adjacent lands are private ownership; however, a few small BLM parcels border the property and larger tracts of BLM land are within 1 mile of the property. Livestock rangeland is the primary land use in the area, with irrigated agriculture in the valley surrounding Richland, approximately 2 miles to the east of the property.

**Infrastructure Density within or Near the Parcel**  
(Qualitative Description)

State Route 86 is 1 mile north of the property. The property itself contains some fencing and two track trails; otherwise, the property is open range.

**Summary**

The property contains some high quality shrub-steppe and native grassland habitat, but is interspersed with invasive vegetation such as medusahead wildrye. The property contains numerous water sources and riparian habitat. The property is completely within a sage-grouse Core Area and mule deer winter range and also contains some elk winter range. The highest density of wintering mule deer in Baker County occurs just north of the property. Pronghorn are common in the area. The property is adjacent to multiple sage-grouse leks and is situated between known lek sites and Sheep Mountain where radio-collared birds have been located, indicating the property is likely used during seasonal migrations and/or for nesting and brood rearing. The Pevine Flat area to the east is important for both sage-grouse and wintering big game.

**Pass/Fail Desktop Assessment?**

Pass

## Boardman to Hemingway Transmission Line Project

### Consideration of Property as a Potential Mitigation Site

<b>Mitigation Function</b>	<p>This mitigation site has been identified as in-kind and in-proximity mitigation for impacts on Category 2 mule deer winter range and Rocky Mountain elk winter range within the shrub/grass general vegetation type. This mitigation site could also help meet the Project need for sage-grouse habitat mitigation. It also provides opportunity for shrub/grass mitigation of Category 3, 4, &amp; 5 habitats. It contains important habitat features that could be preserved and has some uplift opportunities that could be achieved through implementation of standard mitigation actions.</p> <p>The mitigation actions listed below, upon successful implementation, will increase the quality of habitat available to sage-grouse, elk, and deer (among other species) within the mitigation site and result in an ecological uplift to the mitigation site above what is provided under the current management.</p>
<b>Mitigation Site Manager</b>	Fee title acquisition with transfer of ownership to State of Oregon, Federal Land Management Agency, approved NPO or Land Trust.
<b>Mitigation Actions</b>	<p>The following are mitigation actions that may be implemented at this mitigation site in order to satisfy the mitigation policies/guidelines of the permitting agencies. All mitigation actions will follow reliable methods. The mitigation actions presented here are not comprehensive. Implementation will likely be some combination of one or more of the following:</p> <ul style="list-style-type: none"> <li>• <i>Modification of Livestock Grazing</i> – Future management would focus primarily on grazing practices that would not compete with native wildlife life history needs. Targeted grazing may be considered for habitat enhancement/treatment actions.</li> <li>• <i>Fence Removal/Marking</i> – opportunities are unknown at this time, but it is anticipated that some unnecessary fencing may be removed or necessary fencing can be upgraded to more wildlife friendly fencing.</li> <li>• <i>Weed treatment</i> – the extent of noxious weed invasion on the mitigation site is unknown at this time but it is anticipated that opportunities exist to implement this mitigation action. Some areas of introduced upland vegetation (specifically medusahead wildrye) were noted on the property.</li> <li>• <i>Native revegetation/restoration</i> – focus of efforts would be to promote establishment of sagebrush and bunchgrasses; opportunities exist but have not been specifically identified at this time.</li> <li>• <i>Fire readiness</i> – efforts made to make the property more resistant to catastrophic fire and a fire response plan could be developed.</li> <li>• <i>Wetland/Spring/Riparian Improvement</i> – opportunity exists along Canyon Creek, Upper Timber Gulch, and other areas to perform riparian/watershed improvements.</li> </ul>
<b>Monitoring</b>	A specific plan for monitoring will be developed, but in general, mitigation progress will be monitored through vegetation plot monitoring and establishment of photo locations. Monitoring will occur annually for the first 3-5 years and an annual report will be produced. During the annual monitoring phase, a longer-term monitoring plan will be developed using similar protocols and methods to monitor the mitigation actions at larger time intervals (i.e., 5 years, 10 years).

**Success Criteria**

Specific success criteria will be developed once baseline conditions have been determined and potential mitigation actions have been confirmed for the site. Success criteria may include but are not limited to:

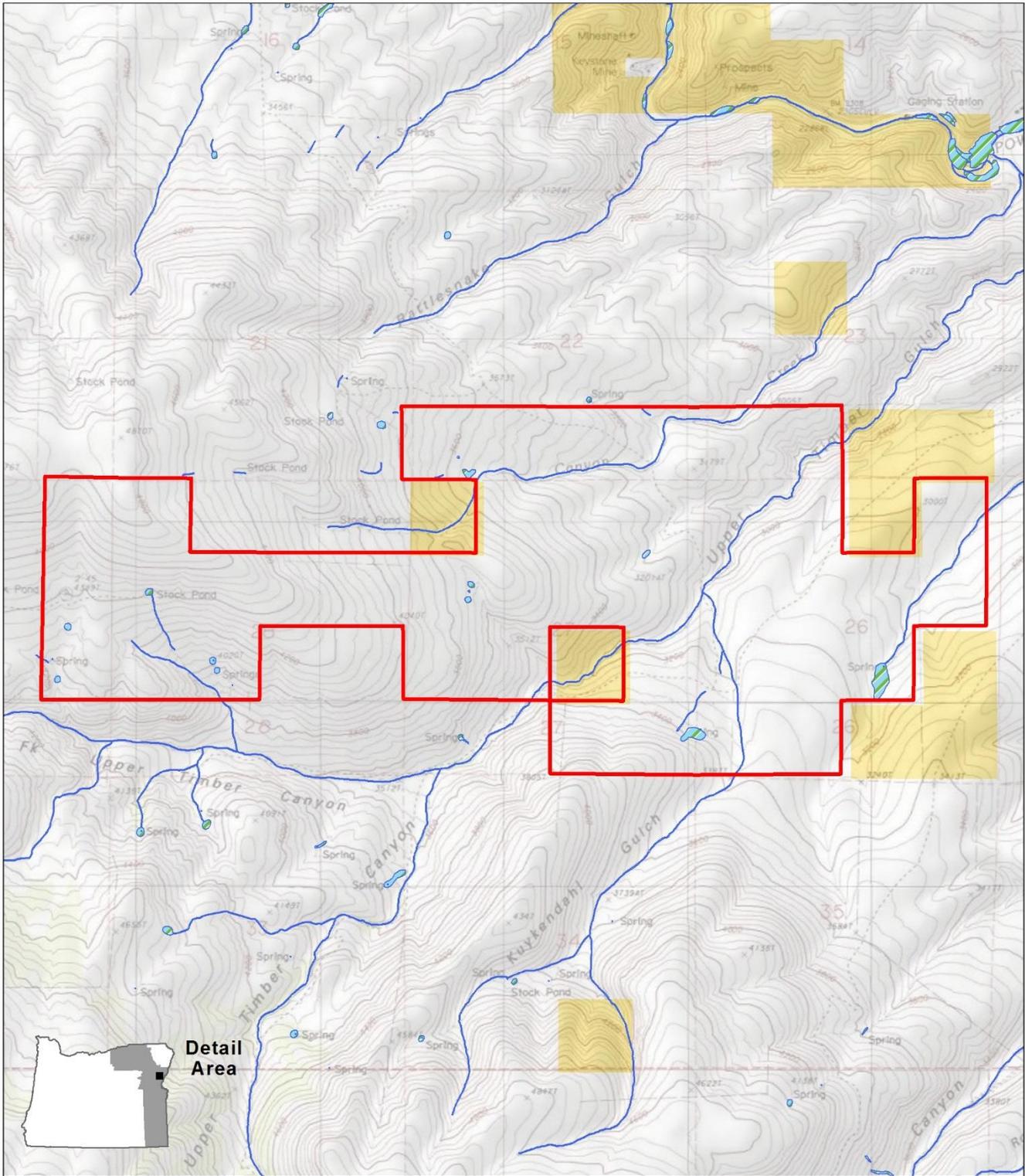
- Vegetation plots show an increase in native vegetation cover and general trend toward increased habitat quality representing an ecological uplift.
- Successful weed control through documentation of a reduction in weeds and non-native invasive plant species.
- Mitigation success will not be dependent on documentation of increased use of the mitigation site by sage-grouse or any other wildlife species.

**Financial Outline****Estimated Budget for the Upper Timber Mitigation Site**

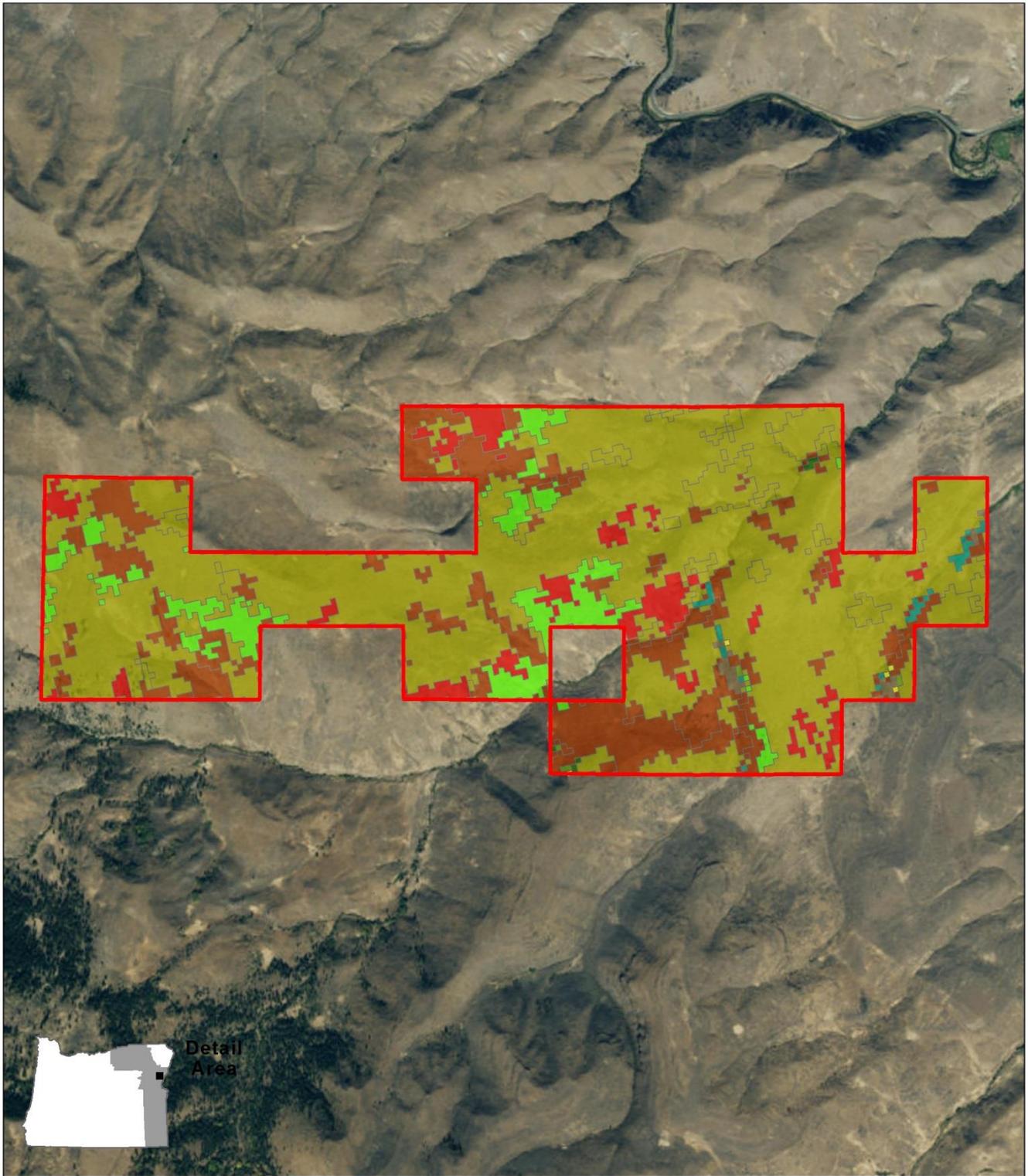
Action	Cost per Unit	Units	Years	Expense
<b>One-time Costs</b>				
Acquisition	?	1		?
<b>50-year Operation and Management Costs</b>				
O&M <sup>1</sup>	\$30.00	1,577	50	\$2,365,500
<b>Total</b>		-		<b>\$?</b> (\$?) <sup>2</sup>

<sup>1</sup> This O&M cost is an estimate of the cost per acre per year (not including acquisition/easement costs) based on the research presented in the Independent Economic Analysis Board's 2007 *Investigation of Wildlife O&M Costs*. The average cost per acre presented in that document was \$24 in 2004 dollars, this has been adjusted to reflect 2015 dollars. In addition, one of the projects presented in the document was the 10,000 acre Sagebrush Flat Wildlife Mitigation area in Washington state which is within a similar habitat type and has a FY2015 budget of approximately \$300,000 (or \$30/acre).

<sup>2</sup> Cost per acre here includes cost of acquisition/easement and initial mitigation actions and long-term O&M for 50 years.



**Figure 1. Upper Timber Ownership and Water**



Detail Area

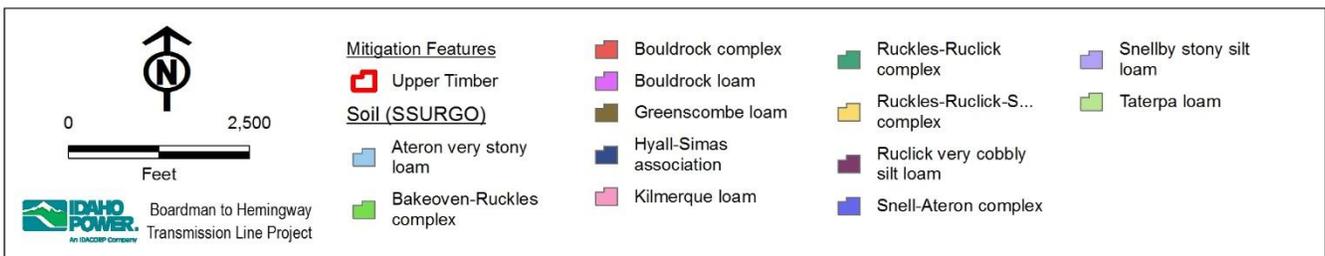
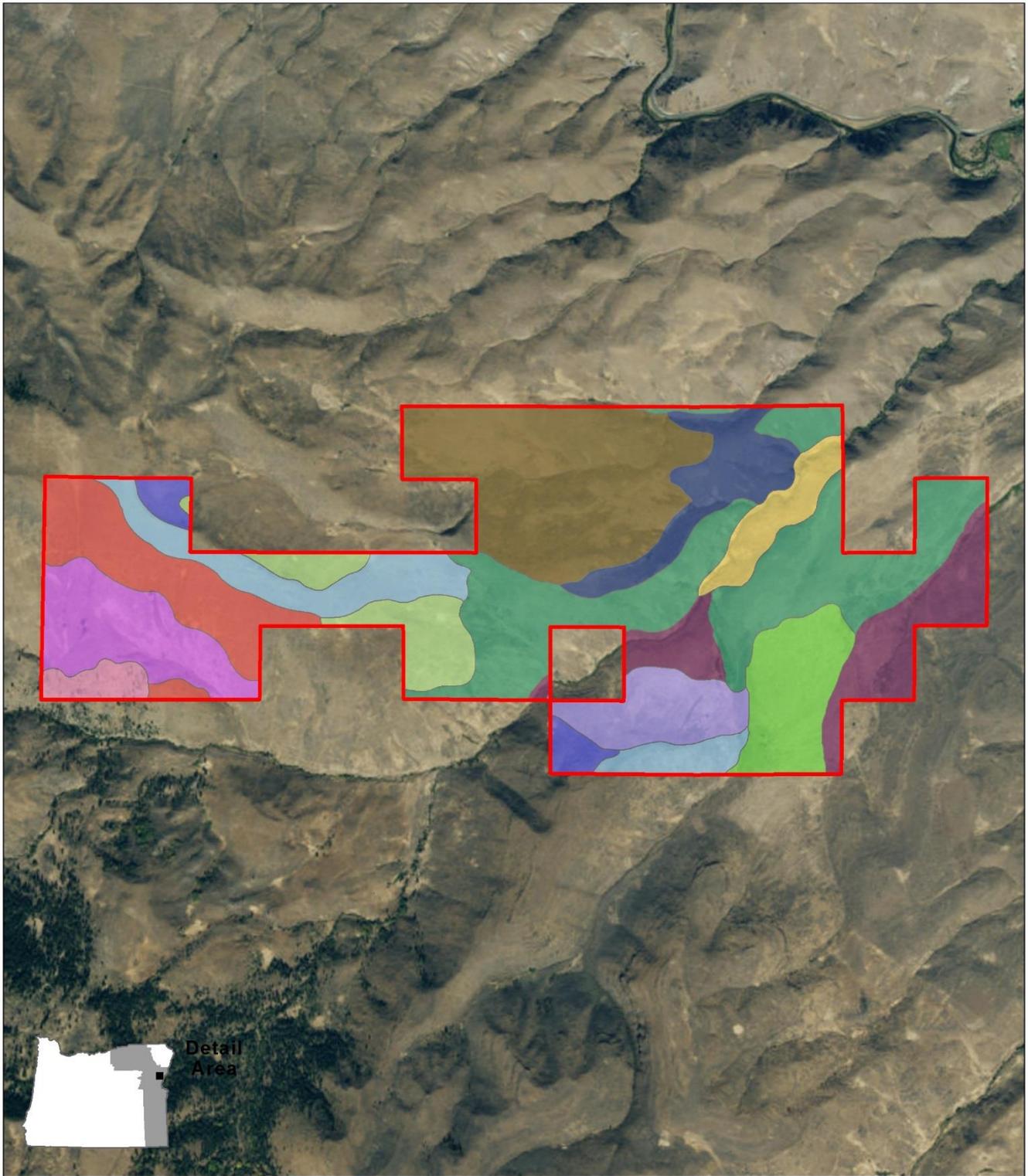


0 2,500  
Feet

**IDAHO POWER**  
AN IACORP COMPANY  
Boardman to Hemingway  
Transmission Line Project

- |                            |                  |                              |                               |
|----------------------------|------------------|------------------------------|-------------------------------|
| <u>Mitigation Features</u> |                  | Introduced Upland Vegetation | Shrub-Steppe without Big Sage |
| Upper Timber               | Ponderosa Pine   | Rocky Mountain Aspen         | Mixed Grand Fir/Douglas Fir   |
| <u>Habitat Type</u>        |                  | Shrub-Steppe with Big Sage   |                               |
| Agriculture                | Forested Wetland |                              |                               |
| Native Grasslands          |                  |                              |                               |

**Figure 2. Upper Timber Habitat Types**



**Figure 3. Upper Timber Soil Types**