Wallowa Falls Hydroelectric Project
FERC Project No. P-308
Study Progress Report
(Draft Technical Report)

Terrestrial

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PACIFICORP ENERGY
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For Public Review

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1.0 INTRODUCTION

PacifiCorp Energy filed a Notice of Intent (NOI) and the associated Pre-Application Document (PAD) to commence the Federal Energy Regulatory Commission's (FERC) Integrated Relicensing Process (ILP) of the Wallowa Falls Hydroelectric Project on February 22, 2011 (PacifiCorp 2011). During compilation of the PAD, PacifiCorp found there was limited information on terrestrial species and habitat specific to the Project Area. However, through agency comments on the PAD, review of historical documents, review of applicable and available databases, PacifiCorp was able to identify adequate information to indicate that rare plants, protected wildlife species, and their associated habitats exist within the Project Area. In consideration of available information, PacifiCorp conducted 5 terrestrial resource studies to gain information on the terrestrial resources and potential impacts of the Wallowa Falls Hydroelectric Project to these resources within a defined Study Area that included PacifiCorp and United States Forest Service (USFS) lands within 100-meters of Project facilities. The following is a list of the 5 terrestrial resource studies:

- Special Status Plant Study
- Noxious Weed Study
- Riparian and Wetland Study
- Vegetation Cover Type Study
- Wildlife Observation Study

2.0 PROJECT AREA

The Wallowa Falls Hydroelectric Project is located on the East Fork Wallowa River approximately 11 miles outside of the City of Joseph in Northeastern Oregon. The Project impoundment/forebay lies over 1,600 meters above mean sea level. The Project operates as run-of-river; therefore there is no measurable storage. Water is instead diverted from the forebay into a flow line and penstock to the generating turbine in the Project powerhouse. Water exits the turbine and flows into an approximately 300 meters long tailrace channel that discharges into the West Fork Wallowa River. This channel has an average wetted-width of 3.1 meters and an average depth of 0.3 meter. Other specific components of the Project include:

- a 0.6-meter high, 2.8-meter-long concrete diversion dam with a 0.3-meter-wide spillway on Royal Purple Creek, which is a tributary to the East Fork Wallowa River and at elevation 1,824 meters; a 75-meter-long, 20-centimenter diameter PVC (polyvinyl chloride) pipeline discharging flows into the Wallowa Falls forebay approximately 62.5 meters upstream of the East Fork Wallowa River dam;

- an 5.5-meter-high, 38-meter-long, buttressed rock-filled timber crib dam with impervious gravel and asphalt core, having a 9-meter-wide spillway, at elevation 1,766 meters on the East Fork Wallowa River;

- a 0.2-acre forebay;

- a 1,734-meter-long steel penstock varying in diameter from 46 centimeters to 41 centimeters;

- a powerhouse containing a single generating unit with a rated capacity of 1,100 kilowatt operating under a head of 356 meters producing an average annual energy output of 7.0 GWh;

- a tailrace discharging Project flows into the West Fork Wallowa River; and,

- a 6-meter-long, 7.2-kilovolt (kV) transmission line which connects to Wallowa Falls substation.

The bypassed portion of the East Fork Wallowa River within and near the Project Boundary is approximately 2,800 meters long from the Project diversion dam to its confluence with the West Fork Wallowa River. Gradient in this reach is high, within the upper 1,600 meters (i.e., the area between the falls and the dam) averaging approximately 19 percent and the lower 1,200 meters (i.e., the area between the falls and the confluence with West Fork Wallowa River) averaging 8.5 percent. Habitat type within the Project Area is typical of mountain valleys in that it is constrained by steep topography and mountain peaks and the valley floor and lower slopes are largely forested with areas of exposed ridges, rock outcrops, and talus slopes. The Project is adjacent to the Eagle Cap Wilderness boundary, which is known to support several rare, threatened, and endangered, and/or special status plant and wildlife species.

Appendix A has the baseline relicensing maps that show the overall Project Area, major Project features, the proposed Project Boundary, and the Study Area for the terrestrial study plans.

3.0 SPECIAL STATUS PLANT STUDY

3.1 Objectives & Description

The primary objective of the Special Status Plant Study is to identify and map the occurrences of special status plants within the Study Area. Special Status Plants are plants listed on the Regional Forester's Special Status Species Lists for Sensitive Non-Vascular and Vascular plants on the Wallowa-Whitman National Forest or have one or more of the following status:

- United States Fish and Wildlife Service (USFWS) status that is Listed Endangered, Listed Threatened, Proposed Endangered, Proposed Threatened, Candidate, Species of Concern, and Partial Status

- Oregon Department of Agriculture (ODA) Status that is Listed Endangered, Listed Threatened, Proposed Endangered, Proposed Threatened, Candidate

- Oregon Biodiversity Information Center (ORBIC) List 1 or 2

3.2 Background Information

In 1991 PacifiCorp Energy was preparing for a construction project that would require ground disturbance to occur near the dam. Prior to beginning construction, PacifiCorp Energy conducted a rare plant survey to identify any special status plant species and to confirm the existence of the documented populations of *Botrychium montanum, B. minganense,* and *B. pinnatum* within the project area (PacifiCorp 1993). Survey results were documented in the 1993 Biological Evaluation, which lists over 157 plant species identified during the survey that included 12 species of trees, 22 species of shrubs, 94 species of forbs/herbs, 6 species of ferns, and 23 species of grasses (PacifiCorp 1993). The survey did locate the population of *Botrychium* spp., but was unable to distinguish the individual plants to species and no additional special status plants were identified during the survey.

The ORBIC has identified 25 records of special status plant species within 2-miles of the Project Area (ORBIC 2012). This list includes 2 species that are USFWS Species of Concern and one species that is an ODA Listed Threatened. Additional data was collected through consultation with the USFS Forest Service, Wallowa Valley Ranger District Botanist (J. Hutsafa 2012, pers comm.). Table 1 provides a summary of the existing data.

3.3 Methods

The Study Area for special status plant surveys included all lands owned by PacifiCorp or USFS that are within 100-meters of a Project Facility. A map of this area is provided in Appendix A. This is approximately 126.5 acres and includes the existing FERC boundary and the proposed Project Boundary as described in the Wallowa Falls Hydroelectric Project FERC No. P-308 Notice of Intent to Relicense and Pre-Application Document (PacifiCorp Energy 2011).

3.3.1 Pre-field Review

Prior to beginning field surveys a pre-field review was conducted to compile all existing data sources on special status plant occurrences within 2.0-miles of the Project area. These data were collected from PacifiCorp's 1993 Biological Evaluation (PacifiCorp 1993), a 2012 review of the ORBIC data base (ORBIC 2012), and consultation with the USDA Forest

Service, Wallowa Valley Ranger District Botanist (J. Hutsafa 2012, pers. comm.). This information was compiled into a list of special status plants, their potential to exist in the Study Area, their probability of occurrence, and targeted survey time. Table 1 provides this information for vascular plants and Table 2 for non-vascular plants.

Table 1. Probability of Occurance and Targeted Survey Time for Vascular Plants with the Potential to exist within the Study Area.

Common Name	Scientific Name	Habitat Descriptions	Probability of Occurrence	Primary Survey Time
Wallowa ricegrass	*Achnatherum wallowaensis*	Grows in shallow, rocky soils from 3,280 – 5,250 feet	Low	Spring/Early Summer
Blue Mountain onion	*Allium dictuon*	Occurs at middle to upper on moderately steep with unstable substrates dominated by loose gravel.	Medium	Spring/Early Summer
Geyer's onion	*Allium geyeri var. geyeri*	Meadows, banks, and rock outcrops in the lowland, steppe.	Low	Late Summer
Davidson's rockcress	*Arabis davidsonii*	Found in subalpine forests and alpine fell fields at higher elevation.	Low	Spring/Early Summer Late Summer
Hell's Canyon rock-cress	*Arabis hastatula*	Rocky outcrops and mountain ridges.	Low	Spring/Early Summer
Upward-lobed moonwort	*Botrychium ascendens*	Prefers well-drained open habitats that include alpine meadows, avalanche meadows.	Low	Spring/Early Summer
Crenulate grape fern	*Botrychium crenulatum*	It generally occurs in western redcedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla)*, and Engelmann spruce (*Picea englemannii*) forests with greater than 70% canopy cover.	Low	Late Summer

Common Name	Scientific Name	Habitat Descriptions	Probability of Occurrence	Primary Survey Time
Western moonwort	*Botrychium hesperium*	Found in open-canopied forests and meadows at higher altitudes, prefers gravelly soils.	Low	Spring/Early Summer
Slender Moonwort	*Botrychium lineare*	Occurs in heavily forested sites, grassy meadows, fenlike seeps, and gravelly roadsides in relatively high elevation areas. In the Wallowa Mountains, the plants have been discovered growing in packed gravel of roadside shoulders and ditches and in boulder-laden substrate in an old avalanche meadow	Medium	Spring/Early Summer
Moonwort	*Botrychium lunaria*	Occurs at high latitudes and altitudes in open to lightly wooded meadows and vegetated scree slopes. At lower elevations it occurs in mesic woodlands, meadows, and sparsely vegetated sand dunes. It most commonly occurs on moist but well-drained soils with a neutral pH.	Low	Spring/Early Summer Late Summer
Mountain grape fern	*Botrychium montanum*	The preferred habitat is under old growth western red cedar on alluvial terraces along small streams where the soil is moist and high in organic matter. The other primary habitat is fens, seeps and meadows along streams where the substrate is saturated	Low	Late Summer
Twin-spike moonwort	*Botrychium paradoxum*	Mesic to wet subalpine mountain meadows dominated by grasses, sedges and in some cases, dense herbaceous cover.	Low	Late Summer
Stalked moonwort	*Botrychium pedunculosum*	Occurs in mountain meadows, roadsides, brushy secondary woodlands, and open to closed canopy forests.	Low	Spring/Early Summer Late Summer
Capillary sedge	*Carex capillaris*	Moist to wet shorelines, bogs, fens, stream banks, and seepage slopes in the montane to alpine zones.	Medium	Late Summer
Low northern sedge	*Carex concinna*	Moist to dry forests in the montane and subalpine zones.	Medium	Spring/Early Summer Late Summer
Cordilleran Sedge	*Carex cordillerana*	Moist to dry meadows, shaded rocky slopes in the montane or subalpine zones.	Low	Spring/Early Summer Late Summer

Yellow bog sedge	*Carex gynocrates*	Bogs, swamps, fens and wet meadows in the upper montane to alpine zones.	Low	Late Summer
Intermediate sedge	*Carex media*	Found near perennial streams and ponds and in moist meadows.	Medium	Late Summer
Small-footed sedge	*Carex micropoda*	Moist meadows, stream banks, seeps, snowbeds and areas irrigated by meltwater at various elevations.	Medium	Late Summer
Spikenard sedge	*Carex nardina*	Dry fellfields, ridgecrests, rock outcrops, meadows and scree slopes in the alpine zone.	Medium	Spring/Early Summer Late Summer
Sedge	*Carex pelocarpa*	Grows on alpine slopes, ridge crests, and rocky lakeshores between 8,860–12,140 ft	Low	Spring/Early Summer Late Summer
Russet sedge	*Carex saxatilis*	Grows on poorly developed soils in wet meadows and boggy areas, especially near streams and lakes.	Low	Late Summer
Fraternal paintbrush	*Castilleja fraterna*	Alpine meadows and talus slopes in Wallowa Mountains.	Medium	Spring/Early Summer Late Summer
Steller's rock-brake	*Cryptogramma stelleri*	Grows on moist, shaded cliffs and ledges at middle and upper altitudes in the mountains.	Low	Spring/Early Summer Late Summer
Cyperus	*Cyperus lupulinus ssp. lupulinus*	In well-drained, open roadsides, fields, pine barrens, and dunes.	Low	Spring/Early Summer
Bolander's spikerush	*Eleocharis bolanderi*	Fresh, often summer-dry meadows, springs, seeps, stream margins in elevation between 3,280–11,155 feet.	Low	Spring/Early Summer Late Summer
White cushion erigeron	*Erigeron disparipilus*	Dry rocky hillsides.	Medium	Spring/Early Summer Late Summer
Englemann's daisy	*Erigeron engelmannii var. davisii*	Woods, meadows, and open hillsides from foothills to mid-elevation mountains.	Low	Spring/Early Summer Late Summer
Threeflowered Rush	*Juncus triglumis* var. *albescens*	An alpine species that grows in wet meadows, on edges of streams and river bars, and near snow banks. It grows in wet microsites with shallow soils or saturated sandy gravel that are subject to needle ice disturbance or frost hummocks	Low	Late Summer
Bellard's kobresia	*Kobresia bellardii*	Often dry to somewhat moist places in high montane areas above timberline	Low	Spring/Early Summer

Simple kobresia	*Kobresia simpliciuscula*	Grows in alpine areas in moist, peaty soils found in bogs, wet meadows, and along the edges of beaver ponds. It does well in calcareous habitats having pH 5.8 to 7.2. It also grows well in frost-shattered limestone, limestone grassland, boggy calcareous meadows, sugar limestone, and calcareous springs	Low	Late Summer
Northern twayblade	*Listera borealis*	Generally montane in moist or wet forest conditions of variable light.	Low	Late Summer
Greenman's desert parsley	*Lomatium greenmani*	This species occurs between approximately 7,700 to 8,600 feet in the Wallowa Mountains. It prefers open subalpine meadows, fell fields and eroded ridge tops with islands of subalpine fir-white bark pine *(Abies lasiocarpa-Pinus albicaulis)*	Low	Spring/Early Summer Late Summer
Least phacelia	*Phacelia minutissima*	Ephemerally moist open places at middle elevations (4,600 to 8,200 feet) in the mountains.	Medium	Spring/Early Summer Late Summer
Henderson phlox	*Phlox hendersonii*	Moderate to high elevation mountains.	Low	Spring/Early Summer Late Summer
Small Northern bogorchid	*Platanthera obtusata*	A facultative wetland species that occurs in damp or wet places in forests with an average canopy cover of 50 percent, marshes, bogs, meadows, and along stream banks.	Medium	Spring/Early Summer Late Summer
Wallowa primrose	*Primula cusickiana*	Mid-montane to subalpine	Low	Spring/Early Summer
Farr's willow	*Salix farriae*	Wet to moist meadows and stream banks in the montane and subalpine zones	Low	Spring/Early Summer Late Summer
Wolf's willow	*Salix wolfii*	Occurs in stream banks, springs, wet meadows, and bogs.	Low	Spring/Early Summer Late Summer
Wedge-leaf saxifrage	*Saxifraga adscendens* ssp. *oregonenesis*	Moist cliffs, ledges, and scree slopes in the alpine zone	Low	Spring/Early Summer Late Summer
Violet suksdorfia	*Suksdorfia violacea*	Moist rocky ledges, crevices and shady sandy places in the montane and subalpine zones	Low	Spring/Early Summer Late Summer

Mountain townsendia	*Townsendia montana*	Grows in meadows and granite and limestone ridges at elevations between 6,560–10,170 ft	Low	Spring/Early Summer Late Summer
Parry's townsendia	*Townsendia parryi*	Dry rocky slopes in the alpine zone between 4,900 and 8,200 feet	Low	Spring/Early Summer
American globeflower	*Trollius laxus var. albiflorus*	Wet to moist meadows and stream banks in the subalpine and alpine zones	Low	Late Summer

Table 2 is a list of special-status non-vascular plants. Due to limited data on non-vascular plants, all special-status non-vascular plants have potential to exist within the study area. None of the non-vascular plants are listed on USFWS or ODA list.

Table 2. Non-Vascular Plants with the Potential to exist within the Study Area.

Common Name	Scientific Name	ORBIC Status	Jan 2008 TE&P or SSS Category	Dec 2011 TE&P or SSS Category
Liverwort	*Anastrophyllum minutum*	2	OR-STR	OR-SEN
Liverwort	*Anthelia julacea*	2	OR-STR	OR-SEN
Liverwort	*Barbilophozia lycopodioides*	2	OR-SEN	OR-SEN
Moss	*Encalypta brevipes*	2	OR-SEN	OR-SEN
Moss	*Encalypta intermedia*		OR-SEN	
Moss	*Entosthodon fascicularis*	2	OR-SEN	OR-SEN
Liverwort	*Harpanthus flotovianus*	2	OR-STR	OR-SEN
Moss	*Helodium blandowii*	2	OR-SEN	OR-SEN
Liverwort	*Jungermannia polaris*	2	OR-SEN	OR-SEN
Liverwort	*Peltolepis quadrata*	2	OR-SEN	OR-SEN
Liverwort	*Preissia quadrata*	2	OR-STR	OR-SEN
Moss	*Pseudocalliergon trifarium*	2	OR-SEN	OR-SEN
Liverwort	*Ptilidium pulcherrimum*	2	OR-SEN	OR-SEN
Moss	*Rhizomnium nudum*	2	OR-SEN	
Moss	*Schistidium cinclidodonteum*	2	OR-SEN	OR-SEN
Moss	*Schistostega pennata*	2	SEN	OR-SEN
Moss	*Splachnum ampullaceum*	2	OR-SEN	OR-SEN
Moss	*Tetraphis geniculata*	2	SEN	OR-SEN
Moss	*Tomentypnum nitens*	2	OR-SEN	OR-SEN
Moss	*Tortula mucronifolia*	2	OR-SEN	OR-SEN
Lichen	*Dermatocarpon meiophyllizum*		SEN	
Lichen	*Leptogium burnetiae*	3	SEN	
Lichen	*Leptogium cyanescens*	2	SEN	
Lichen	*Peltigera pacifica*		SEN	

3.3.2 Field Surveys

Two field surveys were conducted by qualified Bio-Resources, Inc. staff botanists using the currently accepted Intuitive-Controlled Methodology, as described in "Survey protocols for survey and manage strategy 2 vascular plants" (Whiteaker et al. 1998). Using this method the botanist search for special status plants while traversing the entire Study Area to see a representative cross section of the major habitats and topographic features (Whiteaker et al.1998). The Study Area was physically surveyed using pedestrian methods with a wide observational swath to cover at least 40 percent of the total Study Area and leave no more than 5 percent of the Study Area not surveyed (USFS 2011). This survey was intense enough to locate all major topographic features and high probability areas and to have a representative cross-section of minor topographic features, plant associations, and moderate to low probability areas (USFS 2011).

The Study Area was surveyed twice during the 2012 growing season; a spring/early summer survey was conducted on June 13, 2012 and a late summer survey on July 31. The actual survey date attempted to occur when the highest likelihood of locating the special status plant species would occur based on the plants phenology and climatic conditions for the 2012 growing season.

Each habitat type was visited during each visit. Because several data sources identified *Botrychium* species within the Study Area, in particular near the Project forebay, all alluvial terraces along the streams and the fore bay area were considered high probability habitat and were intensely surveyed to cover 100 percent of the area during both surveys. The moist forest habitats were considered moderate probability and areas associated with open water were considered moderate to high probability habitat were targeted during the late summer survey. Moderate to low probability habitats were considered the rocky, gravely, or talus slopes and were visited during both surveys but were more intensively surveyed during the spring/early summer survey due to their well-drained soils and earlier phenology. Table 1 identifies Special Status Vascular Plant Species with low, moderate, or high potential for occurrence and describes when habitats that were primarily targeted. All non-vascular plants listed in Table 2 were considered to have a low to medium probability of occurrence in the Study Area and are considered detectible during both the Spring/Early Summer and Late Summer survey times.

3.4 Results

Survey methods and processes were documented using methods described in the Documentation Section of Wallowa Falls Botanical Inventory Methodology (USFS 2011), and Threatened, Endangered, and Sensitive Plants Survey Field Guide (USFS 2005). No special status plant species were detected within the Study Area during either of the plant surveys. These forms documenting the survey are in Appendix B and include the following: USDA Forest Service TES Plant Survey Forms, botanical survey route map, special habitats maps, and provides a comprehensive list of vascular plants identified within the Study Area.

3.5 Discussion & Conclusions

The habitats within the Study Area are largely intact with small areas of disturbance from trails, campground, roads, and project facilities. Because no special status plant species were detected within the study area, it is assumed that project operations and routine maintenance have no effect on special status plant species. However, if a project operation requires ground disturbance or vegetation removal in areas that are not routinely disturbed then an additional special status plant survey may be warranted to insure no special status plant species may be affected. Areas that are routinely disturbed would not require additional surveys and would include the roads, powerhouse, substation, forebay, dam, spillway, penstock trestles, trails, campground, tailrace, and royal purple diversion. This meets the study objective for field studies and no additional field studies are planned for 2013.

4.0 NOXIOUS WEED STUDY

4.1 Study Objectives & Description

Noxious weeds are becoming an increasing threat to native plants and habitat loss. The Wallowa Falls Hydroelectric Project is at the gateway to the Eagle Cap Wilderness Area. Therefore, noxious weed infestations that are undetected and/or untreated could promote the spread of noxious weeds into the pristine habitats of the Eagle Cap Wilderness Area. The noxious weed study provided a baseline on existing weeds within the Study Area.

The goal of the noxious weed study is to identify and map noxious weed populations on the lands and aquatic areas within the Study Area. The study included all terrestrial and aquatic noxious weeds on the Oregon State Noxious Weed List and the Wallowa County Noxious Weed List.

4.2 Background Information

Limited data exists for noxious weed sites in and around the Project Area. Oregon Department of Agriculture's Weedmapper database is a collection of weed locations collected from federal, state, county and local weed agencies and it has identified several state listed noxious weeds in the vicinity of the Study Area (Oregon Department of Agriculture 2011). Weeds identified in this database include Canada thistle (*Cirsium arvense*), diffuse knapweed (*Centaurea diffusa*), meadow hawkweed (*Hieracium pretense*), myrtle spurge (*Euphobia myrsinites*), spotted knapweed (*Centaurea maculosa*), and tansy ragwort (*Senecio jacobaea*).

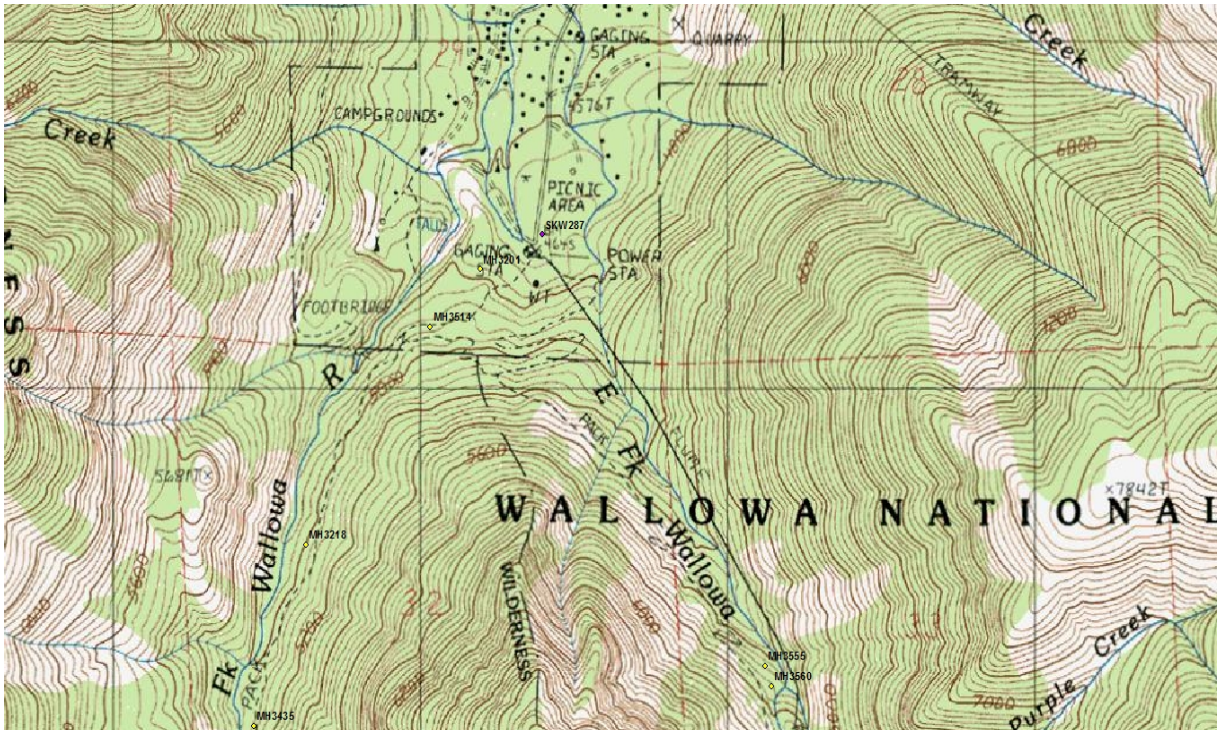
Further information was received through personal communication between Mark Porter, Coordinator of the Wallowa County Cooperative Weed Management Area and Kendrick Moholt of Bio-resources, Inc on 16 May 2012 (Figure 1). Meadow Hawkweed has been located within a small area at two points (MH3555 and MH3560 in Figure 1 table) northwest of the confluence of Royal Purple Creek and East Fork Wallowa River. Another two

Meadow Hawkweed sites are located south and west of the Wallowa Falls Powerhouse (MH3201 and MH5314 in Figure 1). These sites were treated with manual removal in 2011. Spotted Knapweed has been located near the main trailhead parking area at the main USFS trailhead in the Project Area (SKW3560 in Figure 1).

Figure 1: Known Noxious Weed Sites within the Study Area.

FID	Shape *	NAME	Y_COORD	X_COORD	SPECIES	GPS	flag
4791	Point	MH3201	45.266263	-117.215158	MHW	11/1/10 10X10 M	0
4808	Point	MH3218	45.25912	-117.222369	MHW	11/1/10 13 PL	0
5025	Point	MH3435	45.254421	-117.224512	MHW	8/23/10 5X15	0
5104	Point	MH3514	45.264769	-117.217231	MHW	9/26/10 8X5 M	0
5145	Point	MH3555	45.256015	-117.203317	MHW	8/23/10 20X10 L	0
5150	Point	MH3560	45.255489	-117.203023	MHW	8/23/10 10 PL L	0
9669	Point	SKW287	45.26716	-117.212603	SKW	9/1/10 20X20 M	0

MH- Meadow Hawkweed, (*Hieraceum pratense*); SKW- Spotted Knapweed, (*Centaurea maculosa*)



4.3 Methods

The Study Area for noxious weed surveys included all lands owned by PacifiCorp or USFS that are within 100-meters of a Project Facility. A map of this area is provided in Appendix A.

4.3.1 Pre-field Review

Prior to beginning field surveys a pre-field review was conducted to compile all existing data sources described above in Section 4.2 and to compile a list of the Oregon Department of Agriculture's State noxious weeds and the Wallowa County noxious weed.

Table 3: Noxious Weeds Listed by Oregon State Weed Board.

Common name	Scientific name	ODA Classification	Wallowa County
Velvetleaf	*Abutilon theophrasti*	B	
Biddy-biddy	*Acaena novae-zelandiae*	B	
Russian Knapweed	*Acroptilon repens*	B	A & Target
Bloodrop/Pheasant Eye	*Adonis aestivalis*		B
Jointed goatgrass	*Aegilops cylindrica*	B	B & Target
Ovate Goatgrass	*Aegilops ovata*	A	
Barb Goatgrass	*Aegilops triuncialis*	A	
Camelthorn	*Alhagi pseudalhagi*	A	
Tree of Heaven	*Ailanthus altissima*		Watch
Garlic mustard	*Alliaria petiolata*	B & Target	A & Target
Yellowtuft	*Alyssum murale, A. corsicum*	A & Target	
Ragweed	*Ambrosia artemisiifolia*	B	
Annual Bugloss	*Anchus arvensis*		B
Common bugloss	*Anchusa officinalis*	B &Target	A & Target
Bur Chevil	*Anthriscus cauculis*		Watch
Common burdock	*Arctium minus*		B
Absinth Wormwood	*Artemissa absynthium*		B
False Hoary Alyssum	*Berteroa incana*		A & Target

Common name	Scientific name	ODA Classification	Wallowa County
False brome	*Brachypodium sylvaticum*	B	
White bryonia	*Bryonia alba*	A	A
Butterfly bush	*Buddleja davidii (B. variabilis)*	B	
Flowering rush	*Butomus umbellatus*	A	
Plumeless Thistle	*Carduus acanthoides*	A & Target	A & Target
Musk Thistle	*Carduus nutans*	B	A & Target
Italian Thistle	*Carduus pycnocephalus*	B	A & Target
Slender-flowered	*Carduus tenuiflorus*	B	
Smooth distaff Thistle	*Carthamus baeticus*	A	
Wooly distaff thistle	*Carthamus lanatus*	A & Target	
Caulerpa Seaweed	*Caulerpa taxifolia*		Oregon Aquatic Weed List
Long spine Sandbur	*Cenchus longispinus*		B
Purple Starthistle	*Centaurea calcitrapa*	A & Target	A & Target
Diffuse Knapweed	*Centaurea diffusa*	B	B
Iberian Starthistle	*Centaurea iberica*	A & Target	A &Target
Meadow Knapweed	*Centaurea pratensis*	B	A & Target
Yellow starthistle	*Centaurea solstitialis*	B	A
Spotted Knapweed	*Centaurea stoebe (C. maculosa)*	B & Target	A & Target
Squarrose knapweed	*Centaurea virgata*	A & Target	
Bachelor button	*Centauria cyanus*		B
Lambsquarter	*Chenopodium berlandieri*		Watch
Oxeye daisy	*Chrysanthemum leucanthemum*		B
Chicory	*Cichorium intybus*		B
Canada Thistle	*Cirsium arvense*	B	B

Common name	Scientific name	ODA Classification	Wallowa County
Bull Thistle	*Cirsium vulgare*	B	
Rush skeletonweed	*Chondrilla juncea*	B & Target	B & Target
Old man's beard	*Clematis vitalba*	B	
Dead Man's Fingers	*Codium fragile tomentosoides*		Oregon Aquatic Weed List
Poison hemlock	*Conium maculatum*	B	B
Field bindweed	*Convolvulus arvensis*	B	B
Jubata (grass)	*Cortaderia jubata*	B	
Common crupina	*Crupina vulgaris*	B	B
Japanese dodder	*Cuscuta japonica*	A	
Dodder	*Cuscuta spp.*	B	
Toxic Algae	*Cylindrospermopsis raciborskii*		Oregon Aquatic Weed List
Houndstongue	*Cynoglossum officinale*	B	B
Yellow nutsedge	*Cyperus esculentus*	B	
Purple nutsedge	*Cyperus rotundus*	A	
Scotch Broom	*Cytisus scoparius*	B	A & Target & Watch
Portuguese Broom	*Cytisus striatus*	B & Target	
Spurge laurel	*Daphne laureola*	B	
Rock Snot	*Didymosphenia geminate*		Oregon Aquatic Weed List
Common Teasel	*Dipsacus fullonum*		B
Cutleaf teasel	*Dipsacus laciniatus*	B	
Paterson's curse	*Echium plantagineum*	A & Target	
South American waterweed	*Egeria densa (Elodea)*	B	
Russian Olive	*Elaseagnus angustifolia*		
Spanish heath	*Erica lusitanica*	B	

Common name	Scientific name	ODA Classification	Wallowa County
Leafy Spurge	*Euphorbia esula*	B & Target	A & Target
Myrtle Spurge	*Euphorbia myrsinites*	B	A & Target
Oblong spurge	*Euphorbia oblongata*	A	
Japanese Knotweeds	*Fallopia (Polygonum) japonica*	B	A & Target
Giant Knotweeds	*Fallopia (Polygonum) sachalinensis*	B	A
Goatsrue	*Galega officinalis*	A	
French Broom	*Genista monspessulana*	B	
Shiny leaf geranium	*Geranium lucidum*	B	
Herb Robert geranium	*Geranium robertianum*	B	
English ivy	*Hedera helix (H. hibernica)*	B	
Halogeton	*Halogeton glomeratus*	B	
Spikeweed	*Hemizonia pungens*	B	
Giant hogweed	*Heracleum mantegazzianum*	A & Target	
Orange Hawkweed	*Hieracium aurantiacum*	A & Target	A & Target
Yellow Hawkweed	*Hieracium floribundum*	A & Target	
Mouse-ear Hawkweed	*Hieracium pilosella*	A	
King-devil Hawkweed	*Hieracium piloselloides*	A	
Meadow Hawkweed	*Hieracium pratense*	A & Target	B & Target
Foxtail	*Hordeum leporinum*		Watch
Black Henbane	*Hyoscyamus niger*		Watch
St. Johnswort	*Hypericum perforatum*	B	B
Spotted Cats Ear	*Hypochaeris radicata*		Target & Watch
Policeman's helmet	*Impatiens glandulifera*	B	
Yellow flag iris	*Iris pseudacorus*	B	A & Target

Common name	Scientific name	ODA Classification	Wallowa County
Dyers woad	*Isatis tinctoria*	B	Target & Watch
Marsh Elder	*Iva xanthifolia*		Watch
African Water Weed	*Lagarosiphon major*		Oregon Aquatic Weed List
Yellow archangel	*Lamiastrum galeobdolon*	B	
Perennial peavine	*Lathyrus latifolius*	B	Watch
Lens-podded Whitetop	*Lepidium chalepensis*	B	
Whitetop (hoary cress)	*Lepidium draba*	B	A & Target
Perennial pepperweed	*Lepidium latifolium*	B & Target	A & Target
Hairy Whitetop	*Lepidium pubescens*	B	
Dalmatian toadflax	*Linaria dalmatica*	B & Target	B
Yellow Toadflax	*Linaria vulgaris*	B	B
Water primrose	*Ludwigia peploides, L. hexapetala, L. grandiflora ssp.*	B	
Purple loosestrife	*Lythrum salicaria*	B	A
Parrot's feather	*Myriophyllum aquaticum*	B	
Eurasian watermilfoil	*Myriophyllum spicatum*	B	
Matgrass	*Nardus stricta*	A & Target	
Yellow floating heart	*Nymphoides peltata*	A	Oregon Aquatic Weed List
Scotch Thistle	*Onopordum acanthium*	B	B & Target
Taurian Thistle	*Onopordum tauricum*	A & Target	
Small broomrape	*Orabanche minor*	B	
Oregano	*Origanum vulgare*		A &Target
African rue	*Peganum harmala*	A & Target	
Reed Canary Grass	*Phalaris arundicnacea*		B
Common reed	*Phragmites australiss, ssp. australis*	A	Watch

Common name	Scientific name	ODA Classification	Wallowa County
Bohemian Knotweed	*Polygonum bohemicus*		A
Himalayan Knotweeds	*Polygonum polystachyum*	B	Target
Sulfur cinquefoil	*Potentilla recta*	B	B & Target
Toxic Algae	*Prymnesium parvum*		Oregon Aquatic Weed List
Kudzu	*Pueraria lobata*	A & Target	
Tall Buttercup	*Ranunculus acris*		B
Lesser celandine	*Ranunculus ficaria*	B	
Bur Buttercup	*Ranunculus testiculatatus*		B
Creeping yellow cress	*Rorippa sylvestris*	B	
Sweet Briar Rose	*Rosa eglaturia*		B
Armenian (Himalayan) blackberry	*Rubus armeniacus (R. procerus, R. discolor)*	B	B
Russian thistle	*Salsola iberica*		Watch
Mediterranean sage	*Salvia aethiopis*	B	A & Target
Clary Sage	*Salvia pratensis*		Watch
Giant Salvinia	*Salvinia molesta*		Oregon Aquatic Weed List
Bouncing Bette	*Saponaria*		Watch
Tansy ragwort	*Senecio jacobaea*	B & Target	A &Target
White campion	*Silene alba*		B
Milk Thistle	*Silybum marianum*	B	A
Silverleaf nightshade	*Solanum elaeagnifolium*	A	Watch
Buffalobur	*Solanum rostratum*	B	Watch
Sow Thistle	*Sonchus arvensis*		Watch
Johnsongrass	*Sorghum halepense*	B	
Smooth Cordgrass	*Spartina alterniflora*	A & Target	Oregon Aquatic Weed List

Common name	Scientific name	ODA Classification	Wallowa County
Common Cordgrass	*Spartina anglica*	A & Target	Oregon Aquatic Weed List
Dense-flowered	*Spartina densiflora*	A & Target	Oregon Aquatic Weed List
Saltmeadow Cordgrass	*Spartina patens*	A & Target	Oregon Aquatic Weed List
Spanish Broom	*Spartium junceum*	B	
Swainsonpea	*Sphaerophysa salsula*	B	
Medusahead rye	*Taeniatherum caput-medusae*	B	B & Target
Saltcedar	*Tamarix ramosissima*	B & Target	Watch
Common Tansy	*Tanacetum vulgare*		A
European water chestnut	*Trapa natans*	A	Oregon Aquatic Weed List
Puncturevine	*Tribulus terrestris*	B	A
Coltsfoot	*Tussilago farfara*	A	
Gorse	*Ulex europaeus*	B & Target	
Ventenata	*Ventenata dubia*		B
Hydrilla Hydrilla	*verticillata*	A	Oregon Aquatic Weed List
Spiny cocklebur	*Xanthium spinosum*	B	
Common cocklebur	*Xanthium strumarium*		Watch
Syrian bean-caper	*Zygophyllum fabago*	A	

Terms and definitions under the ODA Noxious Weed Control Classification System are provided below. The ODA System includes an "A" or "B" classification and may be given an additional designation of "T" (ODA 2012):

• "A" Designated Weed – a weed of known economic importance which occurs in the state in small enough infestations to make eradication or containment possible; or is not known to occur, but its presence in neighboring states make future occurrence in Oregon seem imminent. Recommended action: Infestations are subject to eradication or intensive control when and where found.

• "B" Designated Weed – a weed of economic importance which is regionally abundant, but which may have limited distribution in some counties. Recommended action: Limited to intensive control at the state, county or regional level as determined on a site specific, case-by-case basis. Where implementation of a fully integrated statewide management plan is not feasible, biological control (when available) shall be the primary control method.

•"T" Designated Weed – a priority noxious weed designated by the Oregon State Weed Board as a target for which the ODA will develop and implement a statewide management plan. "T" designated noxious weeds are species selected from either the "A" or "B" list.

Terms and definitions under the Wallowa County Noxious Weed Rating System are provided below. The Wallowa County System includes an "A", "B", and "Watch" list. An additional rating of "Target" may also be given to the initial rating(Wallowa Resources 2005):

- An "A" designated weed is: a priority noxious weed identified as a target weed species on which the Weed Control District will comply with a state wide management plan and/or implement a county wide plan for intensive control and monitoring. An "A" rated weed may also be a weed of known economic importance which occurs in small enough infestations to make eradication/containment possible; or one that is not known to occur here, but its presence in neighboring counties make future occurrence here seem imminent. Recommended Action: Infestations are subject to intensive control when and where found.

- A "B" designated weed is: a weed of economic importance, which is both locally abundant and abundant in neighboring counties. Recommended Action: Moderate control and or monitoring at the county level.

- Plants on the "Watch List" are weeds that are known to occur in Wallowa County and are realized to have some economic or ecological importance but are not listed as "A" or "B" due to lack of information or are currently in a review process. Recommended Action: Inventory and monitor existing infestations, elevate awareness through education, contact affected landowners. Control is encouraged but at the discretion of the landowner.

The Study Area was differentiated into three areas: high, medium, and low potential for noxious weeds using the following definitions (Appendix C):

• High potential: areas with frequent or continued soil disturbance, frequent or constant exposure to weed seed vectors, or is known to have existing noxious weeds. These include the campground, forebay area, parking lot, and portions of the USFS trail within the Study Area.

• Medium potential: areas with prior or frequent soil disturbance, but has low exposure to weed seed vectors. Examples of this would include the forebay access road and penstock.

• Low potential: areas that have intact soils and a low exposure to weed seed vectors. Examples of this would include talus slopes and forested areas away from high use areas.

This information was used to develop a survey strategy that maximized efforts in the high potential areas and provided adequate, but a reduced effort, for moderate and low potential areas.

4.3.2 Field Surveys

Surveys were conducted using the same Intuitive-Controlled Methodology described in "Survey protocols for survey and manage strategy 2 vascular plants" (Whiteaker et al. 1998). This is the same method used to conduct the Special Status plant surveys consequently these surveys were conducted simultaneously. The Study Area was physically surveyed using pedestrian methods with a wide observational swath to cover at least 40 percent of the total Study Area and leave no more than 5 percent of the Study Area not surveyed (USFS 2011). This survey was intense enough to locate and survey all high probability areas and to have a representative cross-section of minor topographic features, plant associations, and moderate to low probability areas (USFS 2011).

Two noxious weed field surveys within the Study Area were conducted during the 2012 growing season. These surveys were conducted by qualified Bio-Resources, Inc. staff botanists, Kendrick Moholt and Leslie Moholt, on June 13, 2012 and a second survey was conducted on July 31, 2012 by Kendrick Moholt, Leslie Moholt and Dave McCullough, Bio-Resources, Inc. staff biologist and GPS specialist. The actual survey date targeted the period when the highest likelihood of locating the noxious weeds would occur based on the plants phenology and climatic conditions for the 2012 growing season.

4.4. Results

Survey methods and processes were documented on maps and using the Wallowa-Whitman National Forest Noxious Weed Plant Occurrence Record. These forms and the accompanying map are available in Appendix C-2. Appendix C-3 shows the noxious weed survey maps and Appendix C-1 shows a map of the high, medium, and low potential areas. The following table shows the noxious weeds identified and their associated ODA and Wallowa County classification and abundance.

Table 4: Noxious Weeds Identified within the Study Area.

Common Name	Scientific Name	ODA	Wallowa County	Infestation Size
Meadow hawkweed	*Hieracium Pratense*	A & Target	B & Target	45 plants within 100 ft^2
				20 plants within 9 ft^2
St. John's Wort	*Hypericum perforatum*	B	B	50 plants within 80 ft^2
Houndstoungue	*Cynoglossum officinale*	B	B	1 plant within 1ft^2
				40 plants within 100 ft^2
Spotted knapweed	*Centaurea stoebe*	B & Target	A & Target	2 plants within 8 ft^2
Common Burdock	*Arctium minus*		B	2 plants within ¼ mile.
Bull thistle	*Circium vulgare*	B		50 plants within 1.5 mile
Canada thistle	*Circium arvense*	B	B	1000 plants within 1.5 mile
Oxeye Daisy	*Chrysanthemum leucanthemum*		B	1000 plants within 1.5 mile

4.5 Discussion & Conclusions

Overall the noxious weed infestations are relatively small and can be easily controlled. This included both of the A classified weeds, hawkweed and spotted knapweed, which are priority species to control. The remaining species are classified as B and are also small populations, except for Oxeye daisy, Canada thistle, and bull thistle which have infestations that are between 50 to 1000 plants and are ubiquitous in the Study Area. All infestations were associated with the areas of high and medium noxious weed potential and were located along the maintenance road, trail, and campground. The primary source for most of the noxious weed infestations appears to be from foot and horse traffic. This meets the study objective for field studies and no additional field studies are planned for 2013.

Currently PacifiCorp has no noxious weed monitoring or management plan for the Wallowa Falls Hydroelectric Facility. Treatments of the meadow hawkweed and spotted knapweed will occur during the next growing season. PacifiCorp may in the future develop a monitoring and weed management plan to control and prevent future infestations. PacifiCorp will develop best management practices to reduced noxious weed infestations due to our management actions, however, the largest source of noxious weeds appears to be recreationists (camping, hiking, and horses).

5.0 WETLAND AND RIPARIAN STUDY

5.1 Study Objectives & Description

The goal of the riparian and wetland study is to identify and map the estimated boundaries of wetlands and the ordinary high water mark for rivers and streams within the Study Area. Once these areas were identified, the appropriate Riparian Habitat Conservation Area

(RHCA) standard widths were derived from appropriate categories as described in the Wallowa Whitman Land and Resource Management Plan, as amended (USFS 1990, USFS-BLM 1995):

Table 5: Riparian Habitat Conservation Area Widths

Riparian Habitat Conservation Area Category	Minimum Riparian Habitat Conservation Area Standard Widths
Category 1 - Fish-bearing Stream	Stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance, whichever is the greatest.
Category 2 - Permanently-flowing non-fish bearing streams	Stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance, whichever is the greatest.
Category 3 – Ponds, lakes, reservoirs, and wetland greater than 1 acre	Consists of the body of the water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonal saturated soil, or the extent of moderately and highly unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the maximum pool elevation of constructed ponds and reservoirs or from the edge of the wetland, pond or lake, whichever is greatest.
Category 4 - Seasonally-flowing or intermittent streams, wetlands less than 1 acre, landslides and landslide-prone areas	Must include: a. the extent of landslides and landslide prone areas b. the intermittent stream channel and the area to the top of the inner gorge. c. the intermittent stream channel or wetland and the area to the outer edges of the riparian vegetation. d. for watersheds identified as key or priority watersheds, the area from the edges of the stream channel, wetland, landslide, or landslide prone area to a distance equal to the height of one-site potential tree, or 100 feet slope distance, whichever is greatest. e. for watersheds not identified as key or priority watersheds, the area from the edges of the stream channel, wetland, landslide, or landslide prone area to a distance equal to the height of one-half site potential tree, or 50 feet slope distance, whichever is greatest.

Additional study objectives include:

- describing the existing riparian and wetland habitat location, extent, and conditions,
- assess the Project operations effects on the riparian and wetland function in the Study Area, and
- to identify any potential management measures or opportunities to protect and improve wetland or riparian habitat condition.

5.2 Background Information

There is limited data available for streams and wetlands for the Study Area. The USFWS National Wetland Inventory (NWI) identified the forebay as the only wetland within the Study Area (USFWS 2010). This data was included in the analysis but the size and shape of the forebay were corrected to more accurately describe the wetland's true conditions. Most of the streams were previously mapped within the Study Area, but locations and descriptions were updated. The Wallowa County Soil maps were reviewed and only soils on private lands have been mapped, none of which are rated as hydric (Natural Resource Conservation Service 1996).

5.3 Methods

Wetland and riparian boundaries were determined in the field using best professional judgment to determine the hydrology, soil, and vegetation characteristics as described in Wetland Delineation Manual (United States Army Corp of Engineers 1987), Regional Supplements to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Range (United States Army Corps of Engineers 2010), Oregon Administration Rules 141-085-0010 (146) Ordinary High Water Line, and Determining the ordinary high water mark on Streams in Washington State (Olson and Stockdale 2010).

5.3.1 Pre-field Work

A review of existing information, aerial imagery, topography, and other available data sources was conducted prior to beginning field work. This included available and pertinent data sources from the USFS, NRCS, and other state and federal agencies. The findings are described above in Section 5.2 Background Information.

5.3.2 Field Surveys

To locate the wetland/riparian areas, field personnel traversed the Study Area to observe a representative sample of all major plant communities and topographic features. A greater emphasis was on areas that have topographic features and/or vegetation that are known to support wetland and/or riparian areas or it was identified as a wetland/riparian area in pre-field data review.

Because riparian and wetland areas are closely associated to each other and are evaluated using the same environmental parameters (soil, vegetation, and hydrology) they were combined into a single study. However these parameters are defined and evaluated differently for wetlands and riparian areas; therefore a stream and/or wetland boundary was determined differently using the methods described below.

The preferred time to identify wetland and riparian parameters is during the growing season and following peak average flows, which are typically between mid-June and August. Therefore, the field surveys were completed simultaneously with the vegetation cover type surveys between June 12 and 14 and July 3 and 5, 2012.

5.3.2.1 Wetland

Wetlands were determined based on methods and environmental parameters (vegetation, hydrology and obvious soil characteristics) as described in Wetland Delineation Manual (United States Army Corp of Engineers 1987) and the Regional Supplement for Western Mountains, Valleys, and Coast Region (United States Army Corp of Engineers 2010). Once a wetland was identified, it was classified according to the United States Fish and Wildlife Classification System (Cowardin et al. 1979).

Vegetation

Vegetation was evaluated using the "Rapid Test for Hydrophytic Vegetation" method as described in the Regional Supplement for Western Mountains, Valleys, and Coast Region (United States Army Corps of Engineers 2010). This is where all dominant species across all strata are rated as Obligate or Facultative Wet, or Facultative based on the latest plant list approved by United States Army Corp of Engineers for the Northwest Region 9. The stratum is defined as having 5 percent or more total plant cover. If a stratum has less than 5 percent cover during the growing season, then those species and their cover values can be combined into another stratum for sampling purposes. For example, if either the tree or woody vine strata have less than 5 percent cover, then any trees or vines present may be combined with the sapling/shrub stratum (United States Army Corps of Engineers 2010). For the western mountain region the stratums are as follows:

- Tree stratum– Consists of woody plants 3 in. or more in diameter at breast height (DBH), regardless of height.

- Sapling/shrub stratum– Consists of woody plants less than 3 in. DBH, regardless of height.

- Herb stratum– Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size.

- Woody vines– Consists of all woody vines, regardless of height.

Hydrology

Wetland hydrology is defined as the area that is inundated either permanently or periodically at mean depths less than 6.6 feet or soil that is saturated to the surface at some time during the growing season. This will be determined by observing any of the following (United States Army Corps of Engineers 2010):

- Surface water
- High water table
- Saturation

Evidence of recent inundation include: water marks, sediment deposits, drift deposits, algal mat or crust, iron deposits, surface soil cracks, sparsely vegetated concave surface, aquatic invertebrates, water stained leaves, and drainage patterns.

Soils

Wetlands have soils that are classified as hydric when they possess characteristics that are associated with reducing soil conditions (United States Army Corps of Engineers 1987). Determining if soil meets the definition of a wetland soil is not as apparent as it is for the the hydrological and vegetation indicators. Therefore if an area met the definition for both wetland vegetation and hydrology, then no soil evaluation was conducted. If an area met the definition for wetland vegetation or hydrology, but not both, then soils were more closely evaluated. Site information, other than vegetation and hydrology, that indicated hydric soils include (United States Army Corps of Engineers 2010):

- Slope - the site is level or nearly level so that surface water would collect and not readily run off.
- Slope shape – Hillside with convergent slopes so the surface or groundwater is directed toward a central stream or swale.
- Landform – Soil is on a low terrace or floodplain that may be subject to seasonal high water tables or flooding or is at the toe of a slope where runoff may tend to collect or where groundwater may emerge at or near the surface.
- Soil materials – A restrictive layer in the soil could slow or prevent the infiltration of water, perhaps resulting in a perched water table or hill slope seep. Restrictive layers include consolidated bedrock, cemented layers, layers of silt or substantial clay content, or strongly contrasting soil textures (e.g., silt over sand).

5.3.2.2 Riparian

The edge of the active channel or ordinary high water mark for all streams and rivers within 300 feet of the Study Area were identified and mapped using the methods based on environmental parameters (vegetation, hydrology and obvious soil characteristics) as described in Oregon Administration Rules 141-085-0010 (146) Ordinary High Water Line, and Determining the ordinary high water mark on Streams in Washington State (Olson and Stockdale 2010).

Vegetation

Areas below the ordinary high water mark are frequently disturbed resulting in a lack of vegetation or will favor vegetation that can tolerate frequent disturbance, such as willows, cottonwoods, or grasses. Depending on the frequency of disturbance the ordinary high water mark may be the lowest extent of woody vegetation or totally void of vegetation.

Hydrology

Indicators to determine the extent of high water may occur during flood events that were well above the ordinary high water mark. Therefore, hydrological indicators should be combined with other parameters. Indicators for the ordinary high water marks include:

- The top of the zone of washed roots
- Clear natural line impressed on a bank
- Presence of litter and debris
- Silt stained leaves, silt lines on tree trunks
- Top of the zone of washed roots (roots exposed in the bank)
- Elevation of floating debris
- Elevation below which no fine debris (needles, leaves, cones) occur

Soils

Soil indicators may not be as apparent as high water and vegetation, but obvious soils changes such as the transition area between soil and rock, gravel, or cobble and the top of a bank.

5.4 Results

The Study Area is comprised of a v-shaped valley with relatively steep slopes so topographical indicators for streams are fairly apparent and wetlands are limited to few areas with flat terrain, such as in the campground and near the forebay. Only a few additional wetlands, seeps and/or seasonal flowing streams were located within the study area and most of the existing streams/rivers locations were corrected. Most of the bypass reach of the East Fork Wallowa River is inaccessible due to steep terrain, but where it was accessible points were taken to more accurately map the river alignment on aerial imagery. The map provided in Appendix D shows the wetland and stream/river locations with the associated Riparian Habitat Conservation Area (RHCA).

Riparian habitat along the West Fork Wallowa River has been drastically changed by recent large flood events. The most recent event in 2010 has almost completely scoured out all of the vegetation leaving bare rock and remnant black cottonwood trees (*Populus baslsamifera L.* ssp. *trichocarpa*). Since the last flood, some early successional vegetation is beginning to reestablish and it is likely this area will begin to develop more typical riparian vegetation characteristics within the next few years.

Figure 2: West Fork Wallowa River Riparian Habitat.

Due to the steep gradient of the East Fork Wallowa River, the river has limited hydrological influence on the vegetation. The gradient and constrained topography forces increases in flow to increase the water velocity instead of the water depth; as a result, the river rarely flows over its banks. There is no apparent transition from riparian influenced vegetation to upland vegetation. The photo to the right shows a typical section of the East Fork Wallowa River in the bypass reach during peak June flows in 2010.

Figure 3: East Fork Wallowa River bypass reach.

The tailrace channel flows are controlled by power generation so water levels rarely extend beyond its banks. As a result, the hydrological influence on vegetation is mostly confined to the banks. The photo below shows the main channel tailrace in the campground during peak June flows.

Figure 4: Main channel tailrace in the campground.

A total of 5 wetlands were found within the study area including the forebay, which was identified in the NWI. The additional wetlands were small wetlands, less than 1.0 acre in size and include two small wetlands in the campground area in the northern portion of the Study area and two small wetlands associated with springs near the forebay.

The Tailrace Wetland is approximately 0.03 acre Palustrine Emergent Wetland. The wetland hydrology is the result of flooding and ponding from a secondary channel of the tailrace side channel and partially diverted flows from a small active beaver dam at the mouth of the tailrace main channel. The vegetation is dominated with herbaceous hydrophytes plants such as arrowleaf grounsel (*Senecio triangularis*) and reed canarygrass (*Phalaris arundinacea*).

Figure 5: Photo of Tailrace Wetland taken from the northeast corner facing southwest.

The Campground Wetland is approximately 0.05 acre palustrine emergent wetland. The wetland hydrology appears to be stable and persist throughout the growing season. The source is unclear. It is either from a spring beneath the slope, is from subterranean flow from the main channel tailrace, or a combination of both. The water flows from the ground at the toe of the slope at the south end of the wetland, flows as sheet flow to the north until it goes subterranean just before the campsite access-road. The return flows are likely to the main channel tailrace. The vegetation is dominated with herbaceous hydrophyte plants that include western buttercup (*Ranunculus occidentalis),* bog wintergreen *(Pyrola asarifolia spp. Asarfolia)* and reed canarygrass (*Phalaris arundinacea*).

Figure 6: Campground Wetland taken from southern end facing north.

The Forebay Wetland is the only NWI wetland identified within the Study Area. The NWI database described the wetland as 0.44 acre freshwater pond, or more specifically as palustrine consolidate bottom that is permanently flooded by a dike (USFWS 2010). Because the forebay is typical in that it has steep banks, consistent flows, and a relatively constant water level, it lacks emergent vegetation except at the point where the East Fork Wallowa River meets the forebay. As a result the entire forebay meets the palustrine unconsolidated bottom criteria. The wetland actually is smaller than described in NWI and is only 0.30 acres.

Figure 7: Forebay taken from the SW corner facing NE.

Trail Wetland #1: This wetland is located between the East Fork Wallowa River and the Wallowa Falls Maintenance Road and is bisected by the spur trail from the maintenance road to the 1804 East Fork Trail. The water appears to be from a spring that is approximately 25 feet upslope from the trail. The wetland meets the definition of palustrine scrub-shrub wetland because the entire wetland is dominated with Sitka alder (*Alnus sinuate*) with lesser amounts red-osier dogwood (*Cornus sericea* L. ssp. s*ericea,),* western buttercup (*Ranunculus occidentalis),* Scouler's willow (*Salix scouleriana*), Rocky Mountain maple (*Acer glabrum var. douglasii*), and cow-parsnip (*Heracleum lanatum*) scattered throughout the wetland.

Figure 8: This is the Trail Wetland #1 taken from the bridge facing SW up the spur trail.

Trail Wetland #2: This wetland is 0.19 acres in size and is along the 1804 East Fork Trail just north of the dam. It begins at the base of a talus slope approximately 20 feet above the trail and extends to the banks of the East Fork Wallowa River. The water appears to be from a spring or seep that flows under the talus slope and surfaces as sheet flow. The wetland meets the definition of palustrine scrub-shrub wetland because the entire wetland is dominated with Sitka alder (*Alnus sinuate*) with lesser amounts of red-osier dogwood (*Cornus sericea* L. ssp. s*ericea*), Scouler's willow (*Salix scouleriana*), and sticky currant (*Ribes viscosissimum var. viscosissimum)* scattered throughout the wetland.

Figure 9: Trail Wetland #2 taken from the northern end facing south.

5.5 Discussion & Conclusions

The goal was to identify the location of the wetlands and streams that should be avoided, protected, or enhanced while implementing management activities and to apply Riparian Habitat Conservation Area standard widths to these areas. Due to the constraints in the topography and the nature of hydroelectric facilities, management actions within the RHCA cannot be entirely avoided. By applying these RHCA, future management activities can avoid these areas when feasible and habitat enhancement projects can focus on these sites.

Overall the riparian habitat is intact and largely undisturbed by project activities. For the entire study area only 6.6 percent or 8.37 acres is developed lands that are within the RHCA and the remaining acres are undisturbed habitat. Because the wetlands occur in areas with more gentle terrain they are also adjacent to developed areas, such as the campground or as in the case of the forebay wetland created by the dam. As a result, the RHCA surrounding the forebay, campground, and tailrace wetlands are not entirely undisturbed and partially managed for no or very low growing vegetation. Future management should be evaluated for potential impacts to adjacent wetlands and where feasible look for opportunities to enhance the wetland's RHCA where feasible.

Presently there are no ground disturbing activities scheduled to occur, but for proposed management activities that require ground disturbance and will occur within an RHCA, a wetland delineation or ordinary high water mark determination should be conducted to identify the exact boundary. This meets the study objective for field studies and no additional field studies are planned for 2013.

6.0 VEGETATION COVER STUDY

6.1 Study Objectives & Description

The goal of this study is to identify and classify vegetation cover types within the Study Area. This information was compiled to create a detailed Geographic Information Systems (GIS) database of cover types location, distribution, and extent within the Study Area. This database provides a baseline of habitat quantity and quality; identifies unique habitats and habitats that may potentially support threatened, endangered, and rare species, and the ability to assess the Project operations impacts to habitats or to avoid impacts to habitats.

6.2 Background Information

There is limited vegetation cover type data available for the Study Area. The Wallowa-Whitman National Forest maintains an existing vegetation dataset that includes geo-referenced information on vegetation cover types (USFS 2012). This dataset was reviewed but ultimately not included in this analysis because the data was too large of scale to provide detailed information for the Study Area and the classification types were too broad. The USFWS National Wetland Inventory identifies the forebay as the only wetland within the Study Area (United States Fish and Wildlife Service 2010). This data was included in the analysis but the size and shape of the forebay were corrected to more accurately describe the wetland true conditions.

6.3 Methods

The Vegetation Cover Type Study consists of creating a base map in the pre-field work and verifying the data with field surveys.

6.3.1 Pre-field Work

An ArcMap project map was created of the Study Area, topography, stream and wetland data, roads, trails, and the most recent aerial imagery available. This ArcMap project was used to delineate distinct plant communities and natural landscape breaks, such as ridgelines or draws, into discrete polygons. The minimum size polygon is 1 acre, except for unique habitats such as rock outcrops or wetlands.

6.3.2 Field Surveys

Field surveys to ground-truth the vegetation cover type polygon's boundaries and to assign the appropriate plant association groups to each polygon were conducted between June 12-14 and July 3-5. The ArcMap dataset created in the pre-field work was loaded on to a Global Positioning System (GPS) unit, which allowed for real time data correction while in the field. An attempt was made to visit each polygon from at least one point; however, due to talus slopes and steep topography several polygons were inaccessible. For those polygons that were inaccessible they were evaluated to the best ability from a vantage point. For polygons that were accessible, the biologist would attempt to find a point that was representative of the vegetation and would conduct a rapid vegetation assessment that collected the following data:

- Accurate polygon locations in Universal Transverse Mercator coordinates Zone 11
- Representative photographs
- Species and estimated cover for dominant and subdominant trees and shrubs
- Estimated average DBH of dominant trees for forested habitats
- Estimated stand age

Identify major tree/shrub/grass-forb-fern community types to determine the appropriate plant association group for each polygon by using the appropriate guides:

- Plant Associations of Wallowa-Snake Province (Johnson and Simon 1987)
- Mid-Montane Wetland Plant Associations of the Malheur, Umatilla and Wallowa-Whitman National Forests (Crowe and Clausnitzer 1997)
- Deep Canyon and Subalpine Riparian and Wetland Plant Associations of the Malheur, Umatilla, and Wallowa-Whitman National Forests (Wells2006)

For areas void of vegetation, the substrate (e.g., water, rock) will be identified. The rock mostly consisted of a talus slope that was either void of vegetation or dominated with various shrubs or aspen.

6.4 Results

Although some portions of the Study Area were inaccessible, most of these areas could be evaluated from vantage points. Combine this with available aerial imagery and knowledge of adjacent and similar habitats, every polygon within the Study Area was able to have a PAG assigned to it. The dominant plant associations belong to either the subalpine fir (*Abies lasiocarpaa*) or the grand fir (*Abies grandis*) series which had a clear transition from grand fir to subalpine fir at 4,500 feet in elevation.

The most common forest cover types within the Study Area are in the Grand fir series and comprise 60.87% of the Study Area. The grand fir series was almost entirely the Grand fir/Big Huckleberry (*Vaccinium membranaceum*) with the Grand fir/Twinflower (*Linnaea borealis*) present in the drier sites, and one stand of Grand fir/Queens cup (*Clintonia uniflora*) was located in a shady mesic area. Within this series the stands aged based on diameter breast height (DBH) are mostly mature (DBH ≥ 20 inches) and mid-successional (DBH ranging between 12 to 18 in.). Stand density is highly variable with canopy covers ranging from 15 to 100%, this largely contributed to past disturbances such as fires, storm damage and/or poor rocky soil conditions.

The other forested PAGs within the Study Area include the Subalpine fir/Big Huckleberry which comprise 14% of the total Study Area. The stand age ranges from seedling to mature depending on past disturbances and aspect. As a result, the canopy cover ranges widely from 15 to 70%. Other forest types include small isolated pockets of Ponderosa pine (*Pinus ponderosa*)/snowberry (*Symphoricarpos albus*) on a rocky ridge and black cottonwood (*Populus balsamifera L. ssp. trichocarpa*)/pacific willow (*Salix lucida*) by the West-fork Wallowa River. Combined, these two PAGs are less than 2% of the total study area.

Not all areas within the Study Area met the PAG descriptions. Therefore, to account for these areas some vegetation cover types were created. This included developed, wetland, rock outcrops, and talus slope areas. The developed areas were identified as Developed (DEV) and include project facilities and roads. Talus slopes were divided into 3 categories Talus (TALU) for areas that were bare rock with less than 25% vegetation cover, Talus-shrub (TALU-SHRU) are talus slopes with mixed shrub cover that ≥ 25 percent, and talus slopes that had quacking aspen tree (*Populus tremuloides*) cover that is ≥ 25 percent as Talus/Aspen (TALU-POTR). The rock outcrops with barren rock cliffs or sparse vegetation were denoted as rock outcrop (RO). The wetlands did not meet any the PAG descriptions, so the USFWS Classification of Wetland and Deepwater Habitats of the United States system was used (Cowardin et al. 1979). The following table shows the percent and total acres per type within the study area.

Table 6: Plant Association Group Types and Acres within the Study Area.

PAG Name	**PAG Code**	**Number of Acres within the Study Area**	**Total Percent of the of Study Area**
Black Cottonwood/Pacific willow	POTR2/SALA2	1.35	1.07
Developed	DEV	1.58	1.25
Grand Fir/ Queen's Cup	ABGR/CLUN	1.75	1.38
Grand Fir/Twinflower	ABGR/LIBO2	15.24	12.05
Grand Fir/Big Huckleberry	ABGR/VAME	59.73	47.22
Palustrine Emergent	PEM	0.11	0.09
Palustrine Scrub Shrub	PSS	0.34	0.27
Palustrine Unconsolidated Bottom	PUB	0.28	0.22
Ponderosa Pine/Common Snowberry	PIPO/SYAL	1.03	0.81
Rock Outcrop	RO	1.55	1.23
Subalpine Fir/Big Huckleberry	ABLA2/VAME	18.24	14.42
Talus	TALU	9.78	7.73
Talus/Aspen	TALU/POTR	7.74	6.12
Talus/Shrubland	TALU/SHRU	7.78	6.15
	Total	**126.50**	

6.5 Discussion & Conclusions

There are only 15 different PAGs within the study area. The maps provided in Appendix E show that the Study Area is primarily forested cover with black cottonwood, grand fir, ponderosa pine, and/or subalpine fir plant association groups that comprise a total of 76.95% of the Study Area. Talus is the second most common habitat type comprising 20.00 % of the study area. The other habitat types within the Study Area include 0.58% of wetlands, 1.23% rock outcrops, and 1.25 % of developed. These maps provide a baseline to guide management actions to avoid the more unique habitat types when planning ground disturbing management activities, and provide information on potential habitat for special status species

within the Study Area. This meets the study objective for field studies and no additional field studies are planned for 2013.

7.0 WILDLIFE OBSERVATION STUDY

Wildlife studies to document the presence of terrestrial species and, in particular, two amphibian species, the Rocky Mountain tailed frog (*Ascaphus montanus*) and Columbia spotted frog (*Rana luteiventris*), within the Study Area were conducted in May and August of 2012.

7.1 Study Objectives & Description

The goal of the wildlife study was to collect baseline information on the occurrence, distribution, and relative abundance of wildlife species within the Study Area. The study documented all wildlife detections with special emphasis on species identified on one or more of the following lists:

- USFWS status that is Listed Endangered, Listed Threatened, Proposed Endangered, Proposed Threatened, Candidate, Species of Concern, and Partial Status
- Oregon Department of Fish and Wildlife List of Threatened, Endangered and Sensitive Species
- ORBIC List 1 or 2
- Regional Forester's Special Status Species Lists for Sensitive Vertebrates and
- Federally Threatened, Endangered, and Proposed
- Management Indicator Species for the Wallowa Whitman National Forest

Appendix F provides a list of the ORBIC rare, threatened, and endangered, candidate, or special status wildlife species in Wallowa County, their federal, state, and ORBIC status, brief description of habitat, and whether or not the species or its associated habitat is known to exist within the Project vicinity. This list was originally compiled as Table 3.5-1 in the Wallowa Falls Hydroelectric Project FERC No. P-308 Notice of Intent to Relicense and Pre-Application Document (PacifiCorp 2011). Appendix F also provides the Regional Forester's Special Status Species Lists for Sensitive Vertebrates and Federally Threatened, Endangered, and Proposed species and the Management Indicator Species list (USFS 2010). The USFWS list for Wallowa County is provided in Appendix F.

7.2 Background Information

There is limited available data on wildlife use within the Project Area. However within the Project vicinity (within 2.0 miles of the Project Area), both a bald eagle (*Haliaeetus leucocephalus*) nest and roost have been documented in the ORBIC database (ORBIC 2010). The USFS comments on the PAD state that bald eagle use is high near the Project Area's campground. This is a known foraging area for eagles when kokanee (*Oncorhynchus nerka)* are spawning and the area is suspected to be a roost (USFS 2011). The ORBIC database also has a 1984 record for the Wallowa rosy-finch (*Leucosticte tephrocotis wallowa*) within the Project vicinity (ORBIC 2010b).

7.3 Methods

7.3.1 Pre-field Review

Prior to conducting field surveys, the special status wildlife species lists were updated and existing data was compiled. The list of special status wildlife were compiled by reviewing the current versions of the lists described above in Section 7.2 and in Appendix F, as well as the ORBIC Rare, Threatened, and Endangered Species of Oregon list.

7.3.2 Field Surveys

Due to the size of the Study Area and the broad scope of the study objective to document wildlife presence, no formal protocol surveys were implemented. Instead a biologist completed a pedestrian survey of the Study Area to document all wildlife species or sign (e.g. nest, tracks, scats, burrows, egg masses etc.) that were encountered.

Surveys were conducted twice during 2012, one in May and the second in August. Both were conducted during normal seasonal conditions (i.e., avoiding days that are excessively above or below average temperatures). The biologist walked the Study Area to cover a representative area for each general habitat type, including aquatic habitats, such as the forebay, tailrace, streams, rivers and the associated riparian habitats within the Study Area.

Both the visual-encounter and dip net surveys were used to determine the presence/absence of amphibians, in particular the Rocky Mountain tailed and Columbia spotted frogs. Surveys included all stream, river, and wetland habitats within the Study Area that can safely be accessed. Most of the East Fork Wallowa River is inaccessible because of the steep slopes and high gradient of the upper bypass reach, so the biologist attempted to find access at various points to conduct surveys.

Survey methods for amphibians were similar to the methods described in the Interagency Special Status Species and Sensitive Species Program Conservation Assessments (Tait 2007 and Olson 2011). Surveys were conducted at the same time as the general wildlife

observation surveys and were timed to meet preferred time/weather conditions for observing frog activities. The visual encounter method was conducted during both the spring and late-summer surveys by walking along the rivers, streams, and wetlands to identify egg masses, and/or adult frogs. Dip nets were used to capture and identify any egg masses, adults, or larvae that were observed.

The lower bypass reach, Royal Purple Creek, and the tailrace (main and side channel) each had 10 randomly selected areas surveyed with dip nets, for a minimum total of 30 dip net stations. This was conducted in the late summer, which is the optimum time to detect larva. This was achieved by one biologist placing the dip net flush to the bottom of the stream, while another biologist moved and lifted up rocks, logs, and other debris to dislodge any larva that was within 2 meters upstream of the dip net. The placement of the dip net stations was dependent on the total length of the area surveyed and accessibility to the stream. Efforts were made to select a wide array of areas within the stream.

The forebay was thoroughly searched for any egg masses, adults or larvae. Because the forebay is a relatively small area (0.30 acre) with the best suitable breeding amphibian habitat along the shoreline, and at East Fork Wallowa River inflow, the entire area could be searched by lifting most rocks or logs within the forebay.

7.4 Results

The following table lists all species detected during the wildlife surveys and/or anecdotally while conducting other surveys. The abundance column described the frequency these species were detected. Species with less than 5 occurrences were considered uncommon.

Table 7: Species Detected within the Study Area.

Common Name	**Species Name**	**Status[1]**	**Abundance**
American dipper	*Cinclus mexicanus*	None	Common
American robin	*Turdis migratorius*	None	Common
Beaver	*Castor Canadensis*	None	Uncommon
Black bear	*Ursus americanus*	None	Uncommon
Black-headed grosbeak	*Pheucticus melanocephalius*	None	Uncommon
Dark-eyed Junco	*Junco hyemalis*	None	Common
Golden-crowned kinglet	*Regulus satrapa*	None	Common
Mac Gillivary's warbler	*Oporornis philadephia*	None	Common
Mountain chickadee	*Poecile gambeli*	None	Common
Mule deer	*Odocoileus hemionus heminous*	None	Common
Northern flicker	*Colaptes aurauys*	None	Common
Norway rat	*Rattus norvegicus*	None	Uncommon
Olive-sided flycatcher	*Contopus cooperi*	Federal Status - SOC State Status –SV ORBIC List - 4	Common
Common Name	**Species Name**	**Status[1]**	**Abundance**
Pika	*Ochotona princeps*	None	Uncommon

Pileated woodpecker	*Dryocopus pileatus*	Federal Status- none State –SV WWNF – Management Indicator Species	Uncommon
Pine siskin	*Carduelis pinus*	None	Uncommon
Red-breasted nuthatch	*Sitta canadensis*	None	Uncommon
Red squirrel	*Tamiasciurus hudonicus*	None	Common
Rocky Mountain tailed frog	*Ascaphus montanus*	Federal Status –SOC State Status – SV ORBIC List – 2	Uncommon
Ruby-crowned kinglet	*Regulus calendula*	None	Uncommon
Snowshoe hare	*Lepus americanus*	None	Uncommon
Swainson's thrush	*Catharus ustulatus*	None	Common
Townsend's warbler	*Dendroica tonewnsendi*	None	Common
Western tanager	*Piranga ludoviciana*	None	Common
Western terrestrial garter snake	*Thamnophis elegans*	None	Uncommon
Western wood peewee	*Contopus sordidulus*	None	Common
White-crown sparrow	*Zonotrichia leucophrys*	None	Common
Winter wren	*Troglodytes troglodytes*	None	Common
Yellow-rumped warbler	*Dendroica coronata*	None	Common

[1]Status codes: Federal SOC= species of concern State SV= sensitive-vulnerable, ORBIC 2=threatened with extirpation from the state of Oregon, and ORBIC 4= contains taxa which are of conservation concern but are not currently threatened or endangered (ORBIC 2010a).

No egg masses were detected during any of the surveys and the August surveys detected two Rocky Mountain tailed frogs. Both were located in the East Fork Wallowa River reach directly upstream of the forebay. The detection included one juvenile and one adult frog within proximity of each other. Although no tailed frogs were detected within the bypass reach of the East Fork Wallowa River or the tailrace channels, these areas provide suitable habitat for all life stages of the tailed frogs; therefore it is assumed that tailed frogs could be found throughout the Study Area.

Figure 10: Photo of the Rocky Mountain Tailed Frog located within the Study Area.

Figure 11: The East Fork Wallowa River reach above the forebay.

7.5 Discussion & Conclusions

No threatened or endangered species were detected within the Study Area. However due to the Study Areas proximity to the Eagle Cap Wilderness, it is possible that protected species, such the wolverine, Canada lynx, and/or gray wolf, have potential to exist in the Study Area. These species have huge home ranges, in which the Study Area would only be a small portion and it assumed that the project footprint and operations would have negligible effect to these species.

The two State Sensitive Vulnerable avian species which were detected within the Study Area, the Olive-sided flycatcher and pileated woodpecker, are not likely to be affected by project operations. Both species are threatened by habitat loss and currently the project requires no vegetation removal. If future management actions require large areas of vegetation removal then snags and taller perch trees should be retained, where feasible.

The Rocky Mountain tailed-frog is a federal species of concern and state listed as sensitive-vulnerable. Even though the only tailed frogs that were detected within the Study Area were directly above the forebay, it is assumed that tailed frogs may exist in the East Fork Wallowa River and the tailrace channels, based on the available suitable habitat. Major threats to Rocky Mountain tailed frog are activities that affect stream flow, sedimentation, and water temperature (Olson 2011). Project operations have the potential to adversely affect stream flow and sedimentation. The largest impact would be sedimentation as a result of forebay flushing that occurs at least annually to remove sediment that builds up behind the dam in the

forebay. This causes a substantial temporary increase in turbidity in the bypass reach of the East Fork Wallowa River and this typically occurs following peak flows in June and prior to fall weather of September. Due to the 3-year larval life stage of Rocky Mountain tailed frogs, it is anticipated that forebay flushing has an adverse effects on their eggs, hatchlings, and larva below the dam. The dam is operated as a run-of-river project, so fluctuations with stream flow levels in the bypass reach are natural. That is stream flows will increase when flows spill over the dam during peak flow events, but these increased flows would occur naturally. However, the tailrace may be dewatered as needed for maintenance. Dewatering the tailrace would adversely affect any egg, hatchling, or larval Rocky Mountain tailed frog within the tailrace. This meets the study objective for field studies and no additional field studies are planned for 2013.

8.0 REFERENCES

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. Laroe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Dep. Int., Fish and Wildl. Serv., Publ. No. FWS/OBS-79/31. Washington, D.C. 181 pp.

Crowe, E.A. and R.R Clausnitzer. 1997. Mid-Montane Wetland Plant Associations of the Malheur, Umatilla and Wallowa-Whitman National Forests. Tech. Pap. R6-NR-ECOL-TP-22-97. Baker City, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region, Wallowa-Whitman National Forest. 299 p.

Johnson, C.G., Jr. and S.A.Simon. 1987. Plant Associations of the Wallowa-Snake Province. Tech. Publ. R6-ECOL-TP-225b-86. Baker City, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region, Wallowa-Whitman National Forest. 272 p.

Natural Resource Conservation Service. 1996. Soil Survey of Wallowa County Area, Oregon. 2288 pp.

Olson, D. 2011. Conservation assessment for the Rock Mountain Tailed Frog in Oregon and Washington. USDA Forest Service, Pacific Northwest Research Station, Corvallis, OR. 33 pp.

Olson, P and E. Stockdale. 2010. Determining the ordinary high water mark on Streams in Washington State. Second Review Draft. Washington State Department of Ecology, Shorelands, & Environmental Assistance Program, Lacey, WA. Ecology Publication #08-06-001.

Oregon Department of Agriculture. 2011. June 12, 2011 Weedmapper data for Wallowa County. On the web: http://www.weedmapper.org/wallowa_maps.html.

Oregon Department of Agriculture. 2012. October 30, 2012. Noxious Weed Policy and Classification System 2012. On the web: http://www.oregon.gov/ODA/ PLANT/ WEEDS/docs/weed_policy.pdf.

Oregon Biodiversity Information Center. 2010a. Rare, Threatened and Endangered Species of Oregon. Institute for Natural Resources, Portland State University, Portland, Oregon. 105pp.

Oregon Biodiversity Information Center. 2010b. June 29, 2010. Oregon Biodiversity Information Center data system for rare, threatened and endangered plant and animal records within one mile of the Wallowa Falls Dam Project in T 03S R 45E Sections 29, 32, and 33,WM. Unpublished report for Kendel Emmerson, PacifiCorp Energy.

Oregon Biodiversity Information Center. 2012. May 25, 2012. Oregon Biodiversity Information Center data system for rare, threatened and endangered plant and animal records within two-miles of the Wallowa Falls Dam Project in T 03S R 45E Sections 28, 29, 32, and 33,WM. Unpublished report for Bi-Resources, Inc.

PacifiCorp. 1993. Biological Evaluation Plant Species Wallowa Falls Dam Reparation Project. Prepared by Campbell-Craven Environmental Consultants. April 15, 1993.

Relicense and Pre-Application Document. February 2011. Portland, Oregon PacifiCorp 2011. Wallowa Falls Hydroelectric Project FERC No. P-308 Notice of Intent to.

Personal Communication, between Jerry Hustafa and Kendrick Moholt of Bio-Resources, Inc. and. May 16, 2012. USDA Forest Service. Wallowa Valley Ranger District. 88401 Hwy 82. Enterprise, OR 97828.

Personal Communication between Mark Port and Kendrick Moholt of Bio-Resources, Inc. May 16, 2012. Wallowa County Cooperative Weed Management Area.

Tait, C. 2007. Conservation assessment of the Great Basin population of the Columbia spotted frog. USDA Forest Service, Intermountain Region, Ogden, Utah. 79 pp.

United States Army Corps of Engineers. 1987. U.S Army Corp of Engineers Wetland Delineation Manual. Department of the Army. Vicksburg, MS.

United States Army Corps of Engineers. 2010. Regional Supplements to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Range. Vicksburg, MS. May 2010.

United States Forest Service and Bureau of Land Management. 1995. Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and portions of California (PACFISH). On the web: http://www.fs.fed.us/r6/fish/9502-pacfish.pdf

United States Fish and Wildlife Service. 2010. National Wetlands Inventory. August 2010. United States Fish and Wildlife Service. On the web at: http://www.fws.gov/wetlands/Data/Mapper.html.

United States Forest Service. 1990. Land and Resource Management Plan Wallowa-Whitman National Forest. United States Forest Service. On the web: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5260139.pdf.

United States Forest Service. 2005. Threatened, Endangered, and Sensitive Plant Survey Field Guide. United States Forest Service. March 2005. Washington D.C.

United States Forest Service. 2010. Blue Mountains Forests Revised Land and Resource Management Plan – Proposed Action. United States Forest Service. On the web: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5260254.pdf.

United States Forest Service. 2011. Wallowa Falls Hydroelectric Project, FERC Project No. 308-005 Comments on Pre-Application Document, Comments on Scoping Document No. 1, and Study Requests. On the web: http://www.pacificorp.com/wallowafalls

United States Forest Service. 2012. Wallowa-Whitman Existing Vegetation Dataset. On the web at: http://www.fs.fed.us/r6/data-library/gis/umatilla/#vegetation

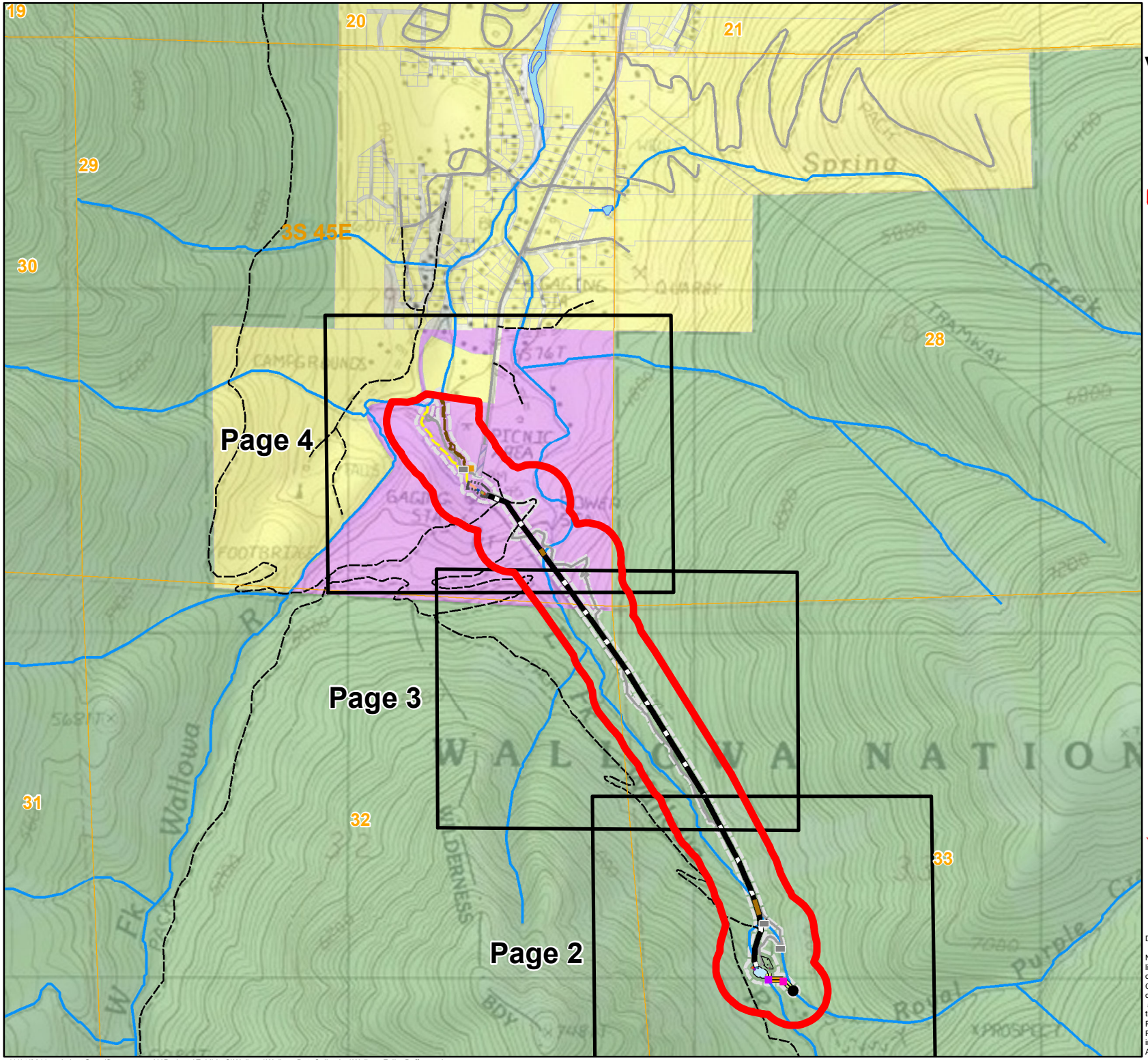
Wallowa Resources. June 5, 2005. Wallowa County Integrated Weed Management Plan. On the web: http://www.wallowaresources.org/images/pdf_docs/weeds/WCIWMPFinalJune520062.pdf

Wells, A.F. 2006. Deep Canyon and Subalpine Riparian and Wetland Plant Associations of the Malheur, Umatilla, and Wallowa-Whitman National Forests. Gen. Tech. Rep. GTR-PNW-682. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 277 p.

Whiteaker, L., J. Henderson, R. Holmes, L. Hoover, R. Lesher, J. Lippert, E. Olson, L. Potash, J. Seevers, M. Stein, and N. Wogen. 1998. Survey protocols for survey and manage strategy 2 vascular plants. Version 2.0. December, 1998.

APPENDIX A

Wallowa Falls Project Vicinity and Study Area Map



Appendix A
Wallowa Falls Project
Vicinity and Study Area

Study Area Total: 126.5 acres

Page 1

Legend

- Study Area
- Proposed Project Boundary
- Road
- Trail
- Trailhead Parking
- CULVERT
- anchor block
- royal purple pipe outlet

PacifiCorp Facility

- Recreation Storage Shed
- Royal Purple Diversion
- WALLOWA FALLS PLANT FENCE
- 7.2 KV TRANSMISSION LINE
- ELEVATED TRESTLE
- LOW LEVEL OUTLET
- ROYAL PURPLE DIVERSION CHANNEL
- ROYAL PURPLE FLOWLINE - BURRIED
- ROYAL PURPLE FLOWLINE - EXPOSED
- SPILLWAY CATWALK
- WALLOWA FALLS PENSTOCK
- LINED TAILRACE
- TAILRACE - UNLINED
- UNLINED TAILRACE - MAIN CHANNEL
- TAILRACE SIDE CHANNEL - N. BORDER
- TAILRACE SIDE CHANNEL CENTERLINE
- INTAKE AND CONTROL STRUCTURE
- LAYDOWN AND STORAGE AREA
- SPILLWAY
- STORAGE SHED
- SUBSTATION
- WALLOWA FALLS FOREBAY
- WALLOWA FALLS POWERHOUSE
- PLSS-Section
- SDEADMIN.ADM_TOWNSHIP
- Waterbody
- Stream

Land Ownership - County Data

- Private
- PACIFICORP
- USFS

0 850 1,700 Feet

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

N

GIS Support Services
Solutions Group
gisdept@Pacificorp.com

Data are projected in UTM Zone 11, NAD83, meters.

Appendix A
Wallowa Falls Project
Vicinity and Study Area

Study Area Total: 126.5 acres

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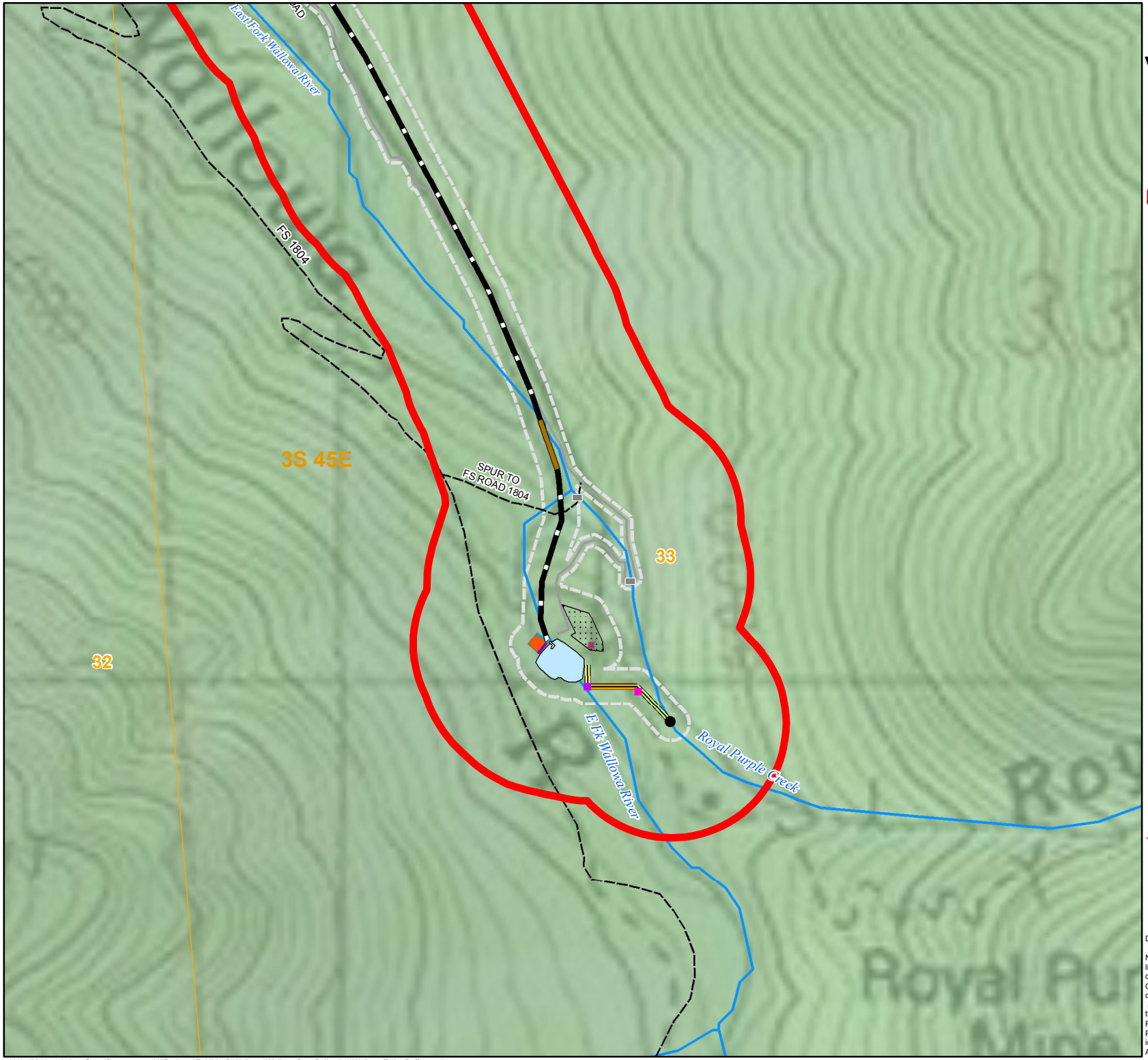

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- Waterbody
- Stream

Land Ownership - County Data

- Private
- PACIFICORP
- USFS

0 250 500 Feet

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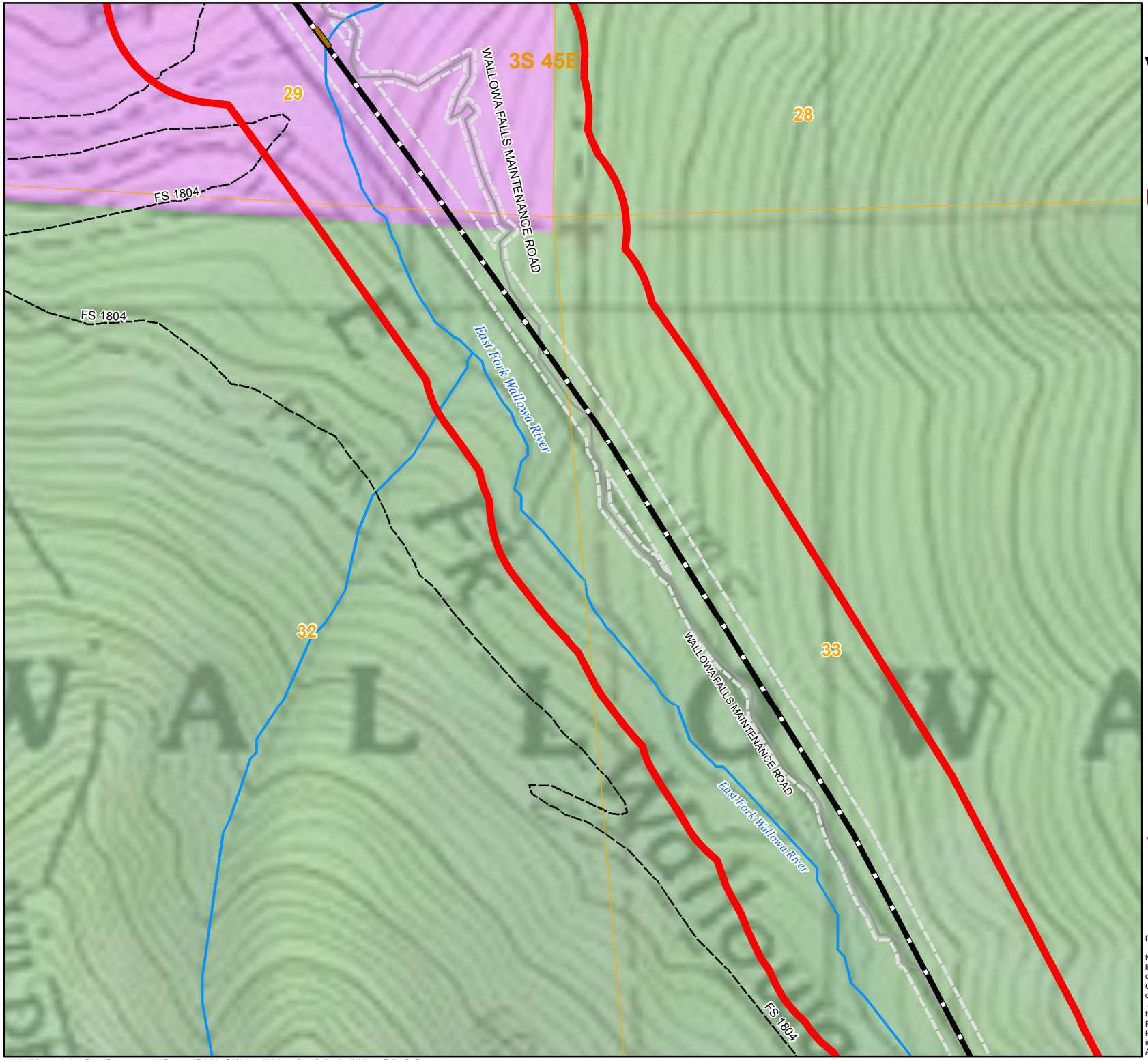
Data are projected in UTM Zone 11, NAD83, meters.

Appendix A
Wallowa Falls Project
Vicinity and Study Area

Study Area Total: 126.5 acres

Page 3



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- WALLOWA FALLS POWERHOUSE
- PLSS-Section
- SDEADMIN.ADM_TOWNSHIP
- Waterbody
- Stream

Land Ownership - County Data

- Private
- PACIFICORP
- USFS

0 250 500 Feet

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

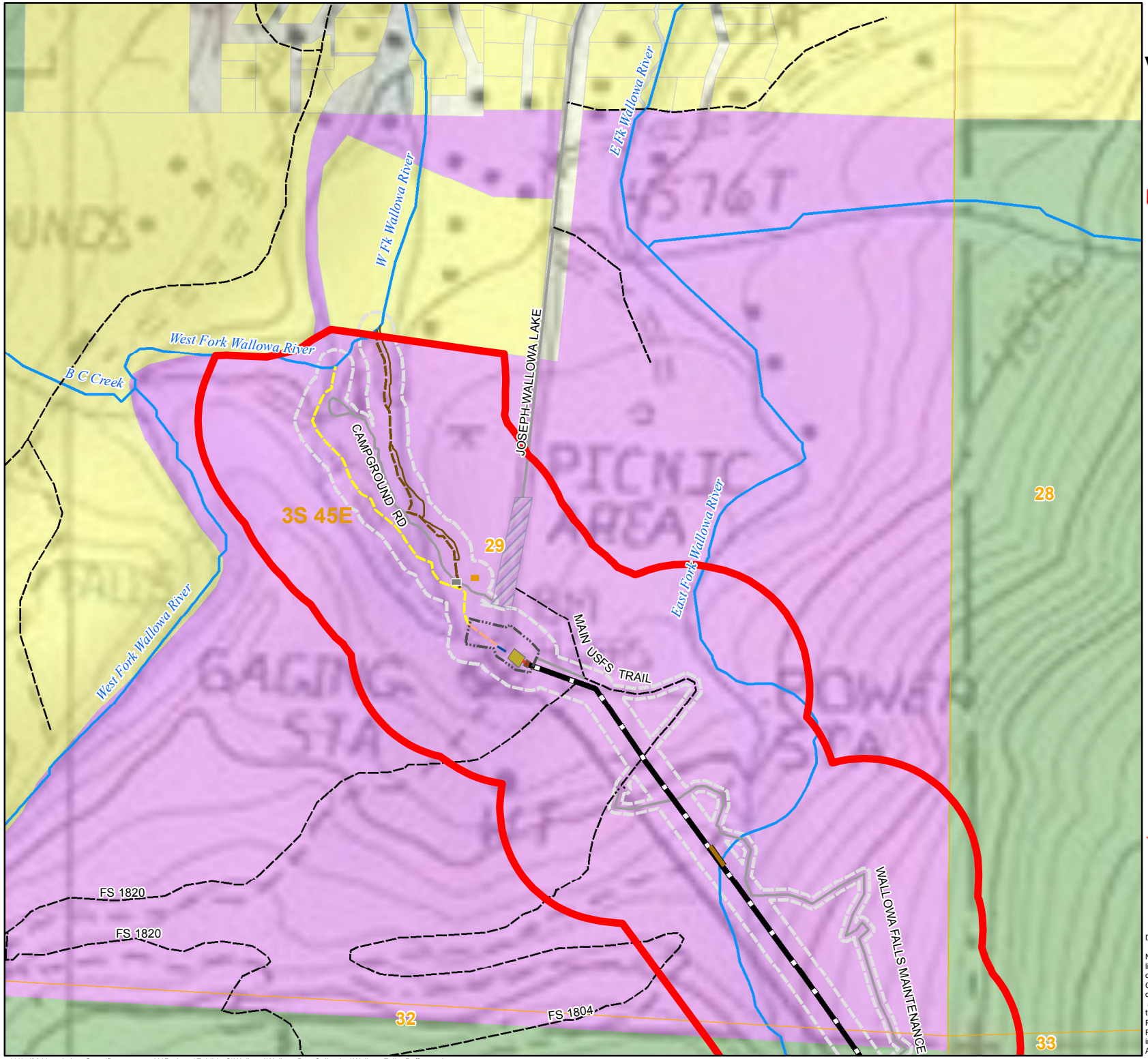
N

GIS Support Services
Solutions Group
gisdept@Pacificorp.com

Data are projected in UTM Zone 11, NAD83, meters.

Appendix A
Wallowa Falls Project
Vicinity and Study Area

Study Area Total: 126.5 acres



Legend

- Study Area
- Proposed Project Boundary
- Road
- Trail
- Trailhead Parking
- CULVERT
- anchor block
- royal purple pipe outlet

PacifiCorp Facility

- Recreation Storage Shed
- Royal Purple Diversion
- WALLOWA FALLS PLANT FENCE
- 7.2 KV TRANSMISSION LINE
- ELEVATED TRESTLE
- LOW LEVEL OUTLET
- ROYAL PURPLE DIVERSION CHANNEL
- ROYAL PURPLE FLOWLINE - BURRIED
- ROYAL PURPLE FLOWLINE - EXPOSED
- SPILLWAY CATWALK
- WALLOWA FALLS PENSTOCK
- LINED TAILRACE
- TAILRACE - UNLINED
- UNLINED TAILRACE - MAIN CHANNEL
- TAILRACE SIDE CHANNEL - N. BORDER
- TAILRACE SIDE CHANNEL CENTERLINE
- INTAKE AND CONTROL STRUCTURE
- LAYDOWN AND STORAGE AREA
- SPILLWAY
- STORAGE SHED
- SUBSTATION
- WALLOWA FALLS FOREBAY
- WALLOWA FALLS POWERHOUSE
- PLSS-Section
- SDEADMIN.ADM_TOWNSHIP
- Waterbody
- Stream

Land Ownership - County Data

- Private
- PACIFICORP
- USFS

0 250 500 Feet

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Solutions Group
gisdept@Pacificorp.com

Data are projected in UTM Zone 11, NAD83, meters.

Appendix B

USDA Forest Service TES Plant Survey Field Forms

Botanical Survey Map

Special Habitat Map

Comprehensive Plant Species List

APPENDIX B-1 USDA Forest Service TES Plant Survey Field Form

(® = Required Fields)

General Information

1) SURVEY ID: ® (to be assigned by USFS)	**2) SURVEY NAME:** Wallowa Falls Hydroelectric Project
3) SURVEY STATUS: ® Complete	**4) SOURCE OF WORK**: Contract
5) Survey Type: ® Focused (Intuitive Controlled)	
6) Survey Focus: ® Terrestrial, Riparian, Features	
7) Estimate of Survey Area Size (acres): ® 126.5 acres	
8) Elevation: Min: 4580' **Max:** 6000' **Average:**	**9) Elevation UOM:**

10) State: ®	**11) County:** ®	**12) Region:** ®	**13) Forest:** ®	**14) District:** ®
Oregon	Wallowa	R-6	Wallowa-Whitman	Eagle Cap R. D.

15) Parameters of Survey (*Describe any ecological parameters, criteria or combinations of these used to focus the survey. (I.e., north slopes, specific habitat types, certain soils within certain forest conditions, etc.):*

General survey with high probability habitat for rare plants and noxious weeds targeted (talus slope, riparian areas, meadows, disturbed areas).

16) Survey Comments *(Directions, area description, specific comments by visit date, etc.):*

Project area contains a campground, picnic area, hiking trail (horse & human), hydro-electric powerhouse, flume (85% underground, 15% exposed), maintenance road, maintenance cabin, dam and small reservoir. The project area follows the East Fork of the Wallowa River from its confluence with Royal Purple Creek downstream to the campground. The forest canopy is composed of areas of PIPO/PSME/ABGR and other areas that are predominantly ABGR with little vegetative understory, but lots of downed trees. Special habitats(aspen stands, bolder field, springs) were found in the survey area. No *Botrychium montanum* were found during two revisits (June 13, 2012 and July 31, 2012) to a known (1991) site. No other TES plant species were found. Several noxious weed species were found: *Hieracium pratense, Cynoglossum officinale, Arctium minus, Centaurea stoebe, Hypericum perforatum, Chrysanthemum leucanthemum, Cirsium arvense.*

Survey Visits

Required. Enter a Date (MM/DD/YYYY) and Examiners for each visit made.

17) VISIT DATE ®	**18) LAST NAME ® AND FIRST NAME OF EXAMINERS FOR EACH VISIT**
June 13, 2012	Moholt, Kendrick and Moholt, Leslie of BioResources, Inc.
July 31, 2012	Moholt, Kendrick and Moholt, Leslie and McCullough, Dave of BioResources,Inc.

Target Species

Required. List all targeted plant species (TES, special forest products, or other species of concern) that are the focus of the survey. Enter all the species individually using the NRCS *PLANTS* code and/or scientific name. All columns are required.

19) ® **NRCS Plant Code**	**20)** ® **Scientific Name**	**21)** ® **Suitable habitat found**	**22)** ® **Plant found**	**23)** ® **FS Site ID(s) for EOs (If EO forms completed)**
ACWA4	*Achnatherum wallowaensis*	No	No	
ALDI3	*Allium dictuon*	No	No	
ALGEG	*Allium geyeri var. geyeri*	Yes	No	
ARDA	*Arabis davidsonii*	Yes	No	
ARHA2	*Arabis hastatula*	Yes	No	
BOAS2	*Botrychium ascendens*	Yes	No	
BOCR	*Botrychium crenulatum*	Yes	No	
BOHE5	*Botrychium hesperium*	Yes	No	
BOLI7	*Botrychium lineare*	Yes	No	
BOLU	*Botrychium lunaria*	Yes	No	
BOMO	*Botrychium montanum*	Yes	No	E.O. 1340
BOPA	*Botrychium paradoxum*	Yes	No	
BOPE	*Botrychium pedunculosum*	Yes	No	
CACA12	*Carex capillaris*	Yes	No	
CACO3	*Carex concinna*	Yes	No	
CACO81	*Carex cordillerana*	Yes	No	
CAGY2	*Carex gynocrates*	Yes	No	
CAME9	*Carex media*	Yes	No	
CAMI16	*Carex micropoda*	Yes	No	
CANA2	*Carex nardina*	No	No	
CAPE5	*Carex pelocarpa*	No	No	
CASA2	*Carex saxatilis*	Yes	No	
CAFR2	*Castilleja fraterna*	Yes	No	
CRST	*Cryptogramma stelleri*	Yes	No	
CYLUL	*Cyperus lupulinus ssp. lupulinus*	Yes	No	
ELBO	*Eleocharis bolanderi*	Yes	No	
ERDI4	*Erigeron disparipilus*	Yes	No	
EREND	*Erigeron engelmannii* var. *davisii*	Yes	No	
JUTRA	*Juncus triglumis* var. *albescens*	Yes	No	
KOBE	*Kobresia bellardii*	Yes	No	
KOSI	*Kobresia simpliciuscula*	Yes	No	
LIBO	*Listera borealis*	Yes	No	
LOGR2	*Lomatium greenmani*	No	No	
PHMI7	*Phacelia minutissima*	Yes	No	
PHHE9	*Phlox hendersonii*	Yes	No	

19) ® NRCS Plant Code	20) ® Scientific Name	21) ® Suitable habitat found	22) ® Plant found	23) ® FS Site ID(s) for EOs (If EO forms completed)
PLOB	*Platanthera obtusata*	Yes	No	
PRCU	*Primula cusickiana*	Yes	No	
SAFA	*Salix farriae*	Yes	No	
SAWO	*Salix wolfii*	Yes	No	
SAADO	*Saxifraga adscendens* ssp. *oregonenesis*	No	No	
SUVI	*Suksdorfia violacea*	Yes	No	
TOMO	*Townsendia montana*	Yes	No	
TOPA	*Townsendia parryi*	Yes	No	
TRLAA	*Trollius laxus var. albiflorus*	Yes	No	

Species List of Surveyed Area

Optional. List other species found during the survey. Record the NRCS *PLANTS* Code, scientific name or both. Indicate habitat (locally defined), lifeform and cover abundance (all optional). Indicate non-native plants with "X"

24) Completeness of species list: Complete	**25) Cover Method** *(if cover recorded):*

26) Comments *(e.g. details about species list approach, habitat focus, vegetation types or structure, etc.)***:**

27) NRCS Plant Code	28) Scientific Name	29) Life Form	30) Habitat	31) % Cover or Class	32) Non-native
ABGR	*Abies grandis*	TR			
ABLA	*Abies lasiocarpa*	TR			
ACGLD4	*Acer glabrum var. douglasii*	SH			
ACMI2	*Achillea millefolium*	FB			
ACCOC3	*Aconitum columbianum var. columbianum*	FB			
ACRU2	*Actaea rubra*	FB			
ADBI	*Adenocaulon bicolor*	FB			
AGUR	*Agastache urticifolia*	FB			
AGSC5	*Agrostis scabra*	GR			
ALVIS	*Alnus sinuata*	TR			
AMAL2	*Amelanchier alnifolia*	SH			

27) NRCS Plant Code	28) Scientific Name	29) Life Form	30) Habitat	31) % Cover or Class	32) Non-native
ANMA	*Anaphalis margaritacea*	FB			
ANPI	*Anemone piperi*	FB			
ANAR3	*Angelica arguta*	FB			
ANRA	*Antennaria racemosa*	FB			
ANUM	*Antennaria umbrinella*	FB			
AQFL	*Aquilegia flavescens*	FB			
ARHIG	*Arabis hirsuta var. glabrata*	FB			
ARMI2	*Arctium minus*	FB			X
ARCO9	*Arnica cordifolia var. cordifolia*	FB			
ARLA8	*Arnica latifolia var. latifolia*	FB			
ARLU	*Artemisia ludoviciana*	FB			
MARE11	*Berberis repens*	SH			
BRIN2	*Bromus inermis*	GR			X
BRVU	*Bromus vulgaris var. vulgaris*	GR			
CARU	*Calamagrostis rubescens*	GR			
CAMA5	*Calochortus macrocarpus*	FB			
CABU	*Calypso bulbosa*	FB			
CACOL4	*Cardamine cordifolia var. lyallii*	FB			
CAGE2	*Carex geyeri*	GR			
CAHO5	*Carex hoodii*	GR			
CAPR5	*Carex praegracilis*	GR			
CAHIA2	*Castilleja hispida var. acuta*	FB			
CAMIM5	*Castilleja miniata var. miniata*	FB			
CEANO	*Ceanothus sp.*	SH			
CEST8	*Centaurea stoebe*	FB			X
CEFOV2	*Cerastium vulgatum*	FB			
CELE3	*Cercocarpus ledifolius*	SH			
CHUM	*Chimaphila umbellata*	FB			
CHLE2	*Chrysanthemum leucanthemum*	FB			X
CIAL	*Circaea alpine*	FB			
CIAR4	*Cirsium arvense*	FB			X
CICA6	*Cirsium canovirens*	FB			
CIVU	*Cirsium vulgare*	FB			X
CLCOC2	*Clematis columbiana var. columbiana*	FB			
CLUN2	*Clintonia uniflora*	FB			

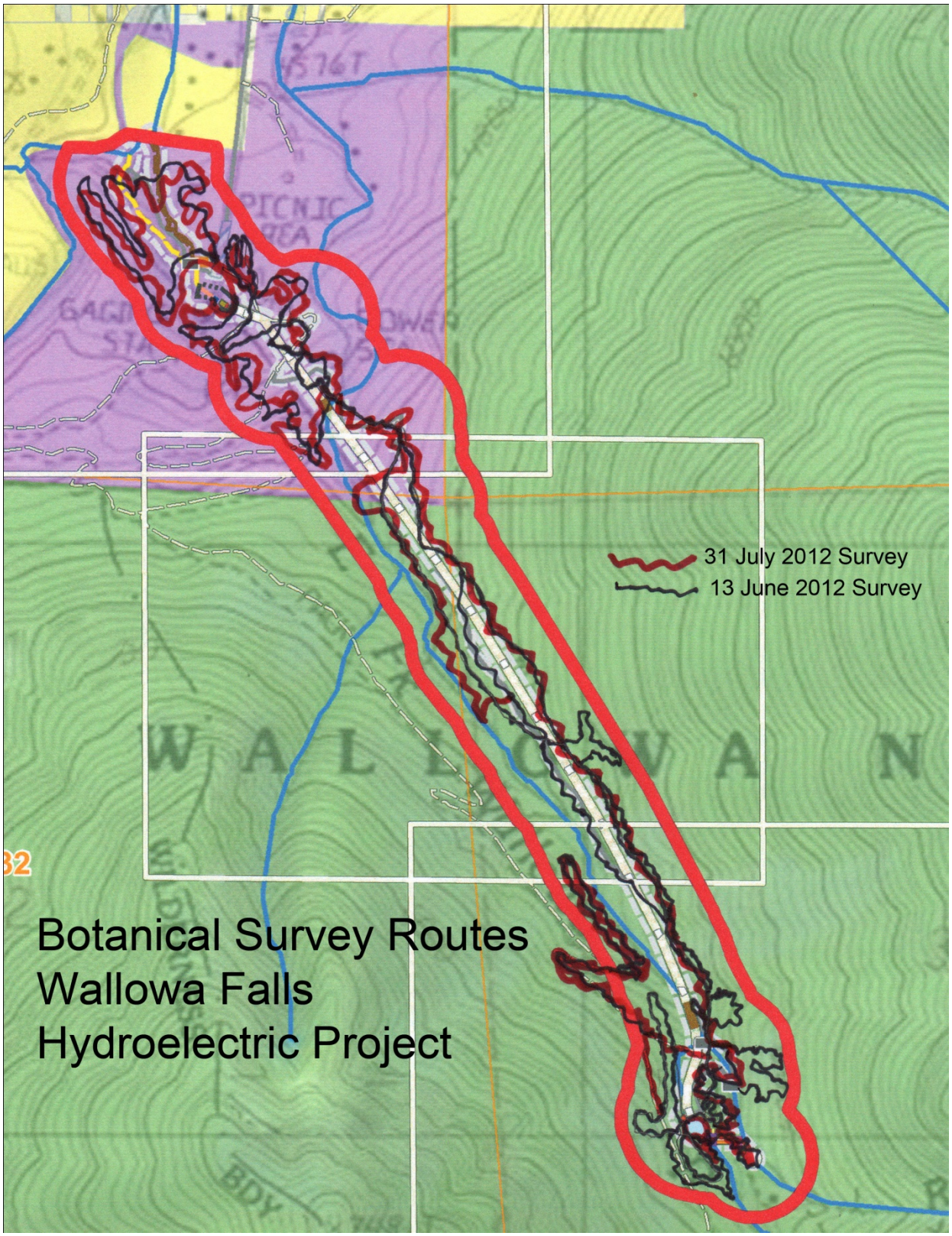
27) NRCS Plant Code	28) Scientific Name	29) Life Form	30) Habitat	31) % Cover or Class	32) Non-native
COLI2	*Collomia linearis*	FB			
COPA3	*Collinsia parviflora*	FB			
COMA25	*Corallorhiza maculata*	FB			
CRAC3	*Cryptogramma crispa var. acrostichoides*	FB			
CYOF	*Cynoglossum officinale*	FB			X
CYMO2	*Cypripedium montanum*	FB			
CYFR2	*Cystopteris fragilis*	FB			
DAGL	*Dactylis glomerata*	GR			
DEEL	*Deschampsia elongata*	GR			
PRHOT	*Disporum trachycarpum*	FB			
DRVE2	*Draba verna*	FB			
EPAN4	*Epilobium angustifolium*	FB			
EPMI	*Epilobium minutum*	FB			
EQAR	*Equisetum arvense*	FB			
EQHY	*Equisetum hyemale*	FB			
FEIDI2	*Festuca idahoensis var. idahoensis*	GR			
FRVE	*Fragaria vesca*	FB			
FRVI	*Fragaria virginiana*	FB			
GATR3	*Galium triflorum*	FB			
GEMAP	*Geum macrophyllum var. perincisum*	FB			
GOOB2	*Goodyera oblongifolia*	FB			
HAMI	*Hackelia micrantha*	FB			
HEMA80	*Heracleum lanatum*	FB			
HEGRT	*Heuchera grossularifolia var. tenuifolia*	FB			
HIAL2	*Hieracium albiflorum*	FB			
HICA10	*Hieracium pratense*	FB			X
HODI	*Holodiscus discolor*	SH			
HYCA4	*Hydrophyllum capitatum*	FB			
HYPE	*Hypericum perforatum*	FB			X
JUCOM2	*Juniperus communis var. montana*	SH			
JUSC2	*Juniperus scopulorum*	SH			
KEGA	*Kellogia galioides*	FB			
KOMA	*Koeleria cristata*	GR			
LAOC	*Larix occidentalis*	TR			
LICA2	*Linanthus septentrionalis*	FB			

27) NRCS Plant Code	28) Scientific Name	29) Life Form	30) Habitat	31) % Cover or Class	32) Non-native
LESE17	*Linnaea borealis*	FB			
LIBO3	*Ligusticum canbyi*	FB			
LIPA5	*Lithophragma parivflora*	FB			
LOUT2	*Lonicera utahensis*	FB			
LUMUM2	*Luzula campestris var. multiflora*	GR			
LYAN2	*Lycopodium annotinum*	FB			
MADI6	*Matricaria matricarioides*	FB			
MEPAB	*Mertensia paniculata var. borealis*	FB			
MIGR	*Microsteris gracilis*	FB			
MIGU	*Mimulus guttatus var. guttatus*	FB			
MILE2	*Mimulus lewisii*	FB			
MIST3	*Mitella stauropetala*	FB			
MOUN3	*Monotropa uniflora*	FB			
MOLI4	*Montia linearis*	FB			
CLPEP	*Montia perfoliata*	FB			
OSBE	*Osmorhiza chilensis*	FB			
PERAA	*Pedicularis racemosa var. alba*	FB			
PEDED2	*Penstemon deustus var. deustus*	FB			
PEFR3	*Penstemon fruticosus*	FB			
PEGL5	*Penstemon globosus*	FB			
PEVE2	*Penstemon venustus*	FB			
PEGA3	*Perideridia gairdneri*	FB			
PHHA	*Phacelia hastata*	FB			
PHLE4	*Philadelphus lewisii*	FB			
PHAL2	*Phleum alpinum*	GR			
PHPR3	*Phleum pratense*	GR			X
PHMA5	*Physocarpus malvaceus*	SH			
PIEN	*Picea engelmannii*	TR			
PICO	*Pinus contorta*	TR			
PIPO	*Pinus ponderosa*	TR			
PLLA	*Plantago lanceolata*	FB			X
PLMA2	*Plantago major* var. *major*	GR			X
POBU	*Poa bulbosa*	GR			X
POPR	*Poa praetensis*	GR			X
POSE	*Poa scabrella*	GR			

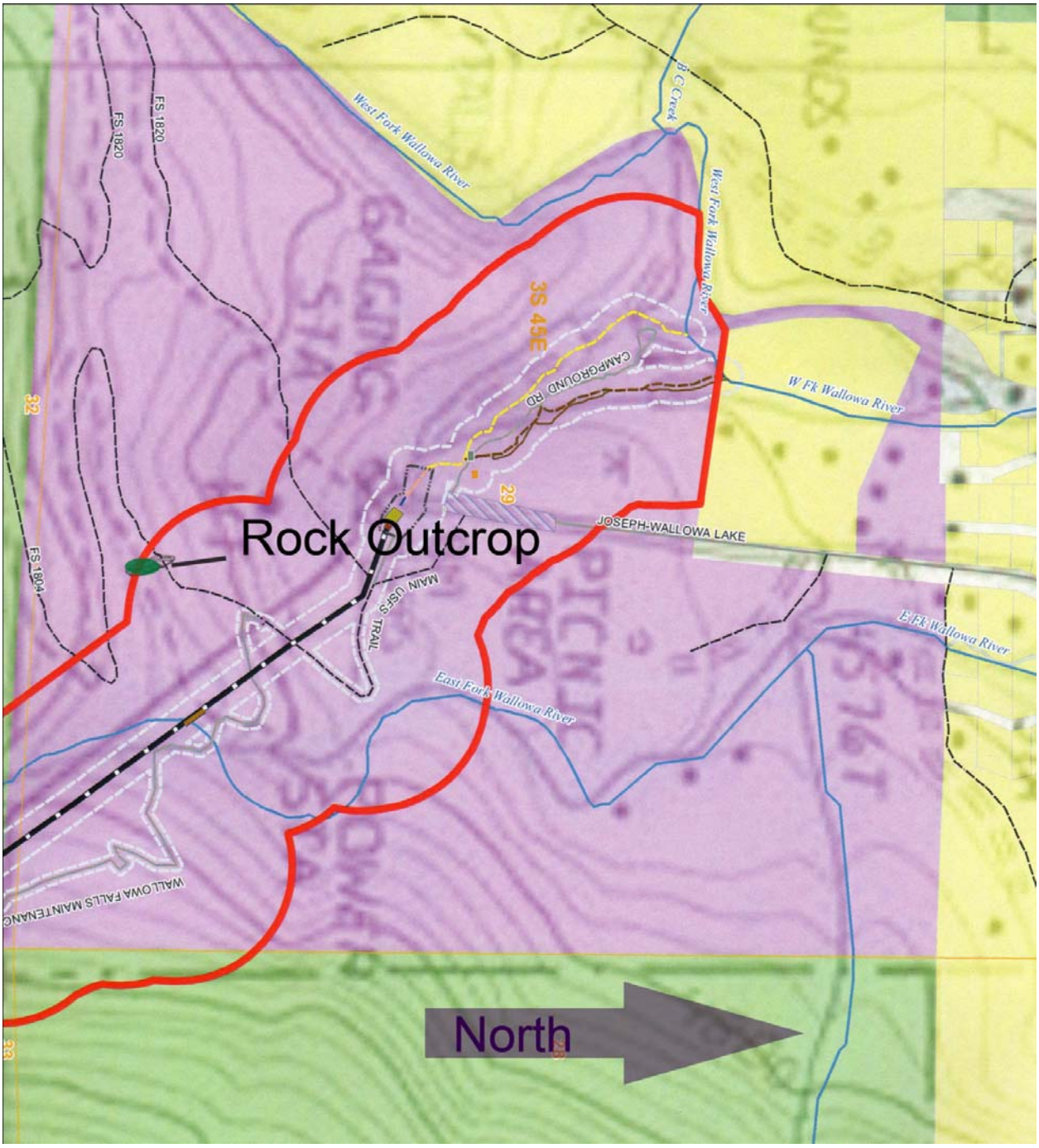
27) NRCS Plant Code	28) Scientific Name	29) Life Form	30) Habitat	31) % Cover or Class	32) Non-native
POMU	*Polystichum minutum var. minutum*	FB			
POCA3	*Polemonium pulcherrimum var. calycinum*	FB			
POTR5	*Populus tremuloides*	FB			
POBAT	*Populus trichocarpa*	FB			
POPU9	*Potentilla gracilis var. pulcherrima*	FB			
PSME	*Pseudotsuga menziesii*	FB			
PTAQ	*Pteridium aquilinum*	FB			
PTAN2	*Pterospora andromedea*	FB			
PYCH	*Pyrola chlorantha*	FB			
ORSE	*Pyrola secunda*	FB			
MOUN2	*Pyrola uniflora*	FB			
RAOC	*Ranunculus occidentalis*	FB			
RARE3	*Ranunculus repens*	FB			X
RAUNP	*Ranunculus uncinatus var. parviflorus*	FB			
RILA	*Ribes lacustre*	SH			
RIVI3	*Ribes viscosissimum var. viscosissimum*	SH			
ROGY	*Rosa gymnocarpa*	SH			
RUIDS2	*Rubus idaeus var. gracilipes*	SH			
RUPA	*Rubus parviflorus*	SH			
RUOC2	*Rudbeckia occidentalis var. occidentalis*	FB			
RUAC3	*Rumex acetosella*	FB			
SASC	*Salix scouleriana*	SH			
SANIC5	*Sambucus cerulea*	SH			
SAOD2	*Saxifraga arguta*	FB			
SELA	*Sedum lanceolatum*	FB			
SETR	*Senecio triangularis var. triangularis*	FB			
SHCA	*Shepherdia canadensis*	SH			
MARAA	*Smilacina racemosa*	FB			
MAST4	*Smilacina stellata*	FB			
SOSC2	*Sorbus scopulina*	TR			
SPBE2	*Spiraea betulifolia*	SH			
SYAL	*Symphoricarpos albus*	SH			
TAOF	*Taraxacum officinale*	FB			X
THOC	*Thalictrum occidentale*	FB			
TRDU	*Tragapogon dubius*	FB			X

27) NRCS Plant Code	28) Scientific Name	29) Life Form	30) Habitat	31) % Cover or Class	32) Non-native
TRRE3	*Trifolium repens*	FB			X
TRLO	*Trifolium longipes*	FB			
URDI	*Urtica dioica*	FB			
VASC	*Vaccinium scoparium*	SS			
VECA2	*Veratrum californicum*	FB			
VETH	*Verbascum thapsus*	FB			X
VIAMA3	*Vicia americana var. truncata*	FB			
VICAR	*Viola canadensis var. rugulosa*	FB			

Appendix B-2 Botanical Survey Map

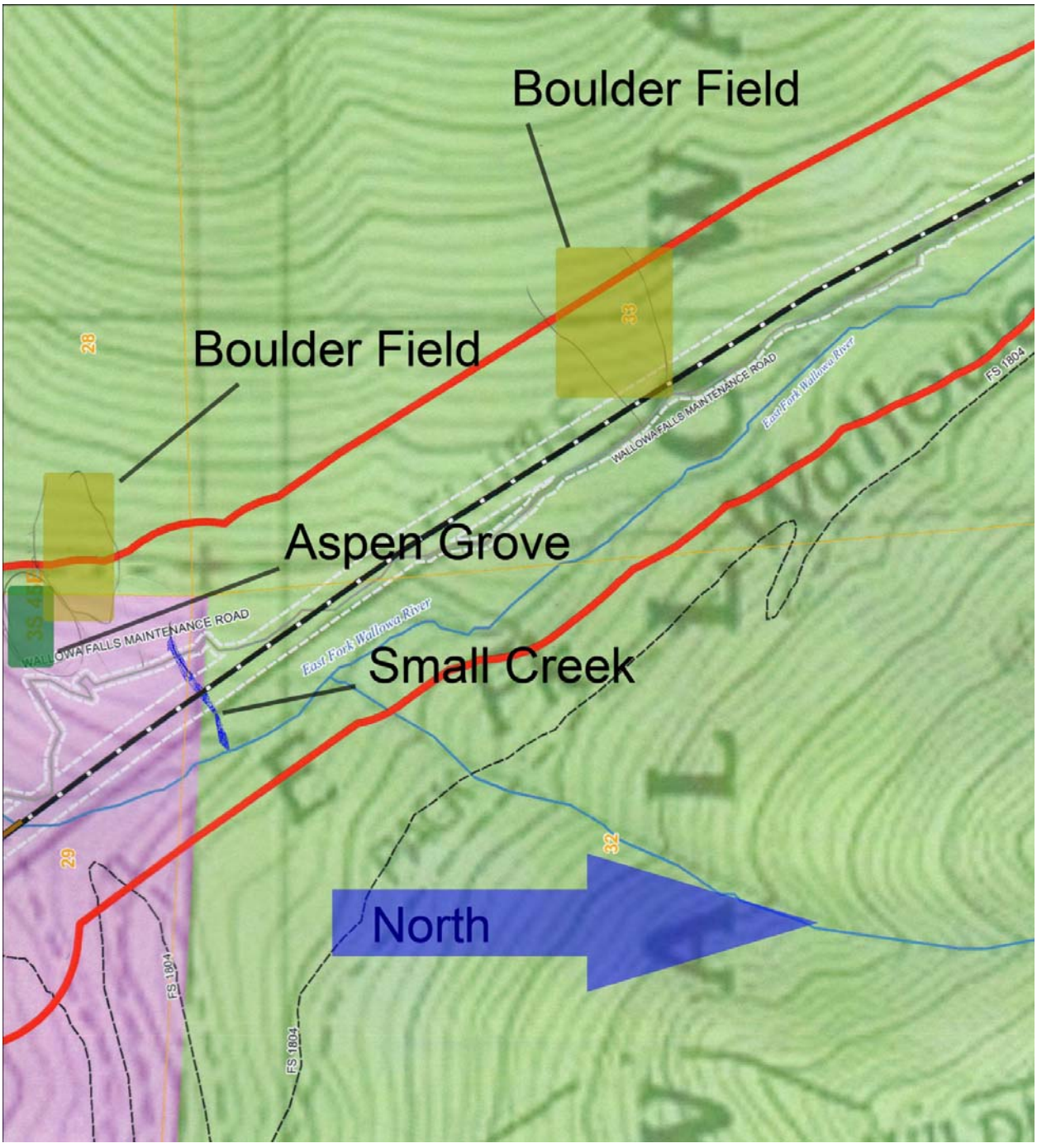


Appendix B-3 Special Habitat Maps



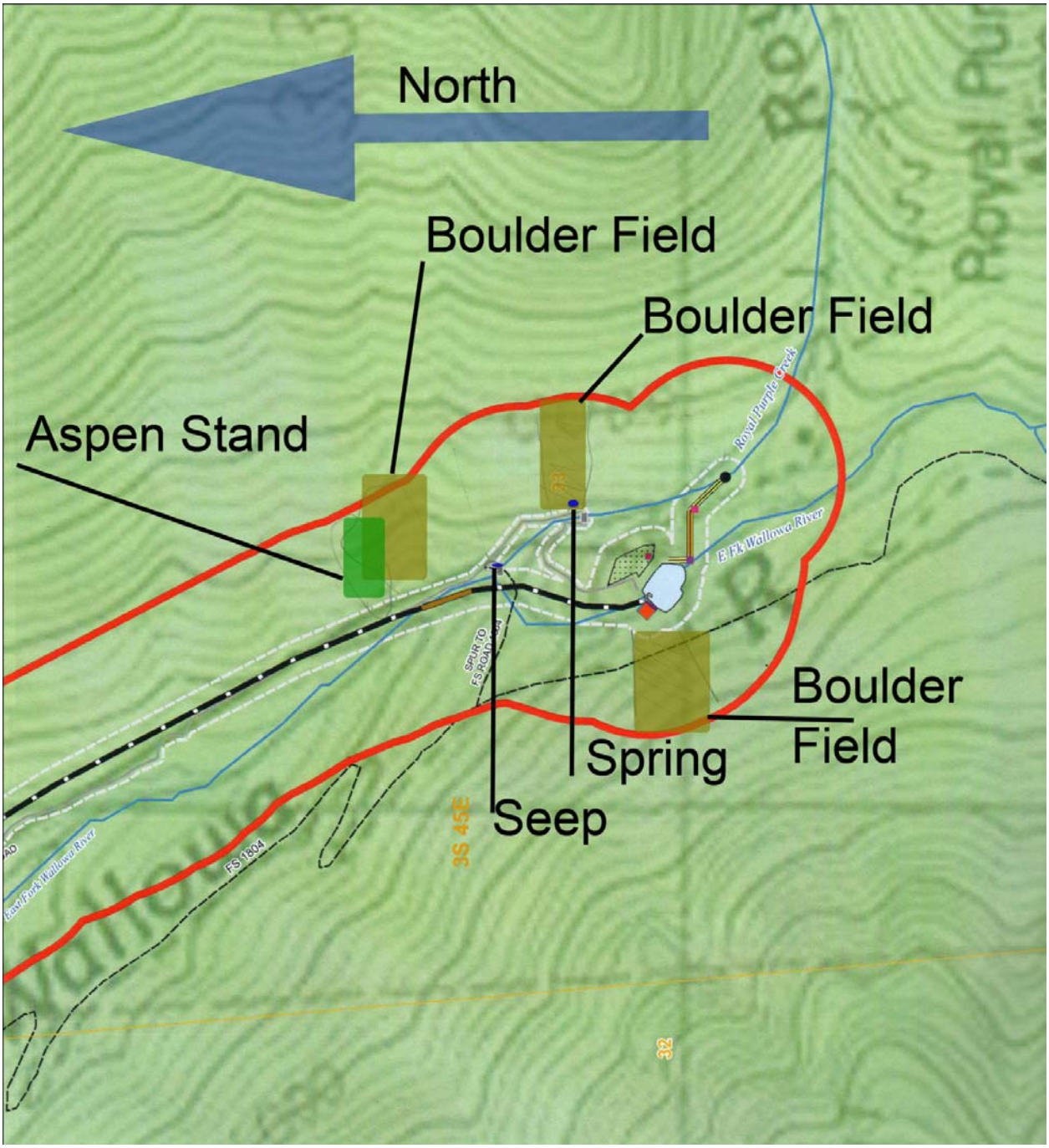
Special habitats in the northern end of the Study Area.

Appendix B-3 Special Habitat Maps



Special habitats in the middle of the Study Area

Appendix B-3 Special Habitat Maps



Special habitats in the southern end of the Study Area

APPENDIX B-4 Wallowa Falls Hydroelectric Project Comprehensive Plant Species List

Symbol	Synonym Symbol	Species Name	Common Name	Family Name
ABGR		*Abies grandis*	grand fir	PINACEAE
ABLA		*Abies lasiocarpa*	subalpine fir	PINACEAE
ACGLD4		*Acer glabrum var. douglasii*	Rocky Mountain maple	ACERACEAE
ACMI2		*Achillea millefolium*	yarrow	ASTERACEAE
ACCOC3		*Aconitum columbianum var. columbianum*	Columbian monkshood	RANUNCULACEAE
ACRU2		*Actaea rubra*	baneberry	RANUNCULACEAE
ADBI		*Adenocaulon bicolor*	pathfinder	ASTERACEAE
AGUR		*Agastache urticifolia*	nettle-leaf horse mint	LABIATAE
AGSC5		*Agrostis scabra*	tickle-grass	POACEAE
ALVIS	ALSI3	*Alnus sinuata*	Sitka alder	BETULACEAE
AMAL2		*Amelanchier alnifolia*	western service berry	ROSACEAE
ANMA		*Anaphalis margaritacea*	common pearly-everlasting	ASTERACEAE
ANPI		*Anemone piperi*	Piper's anemone	RANUNCULACEAE
ANAR3		*Angelica arguta*	sharptooth angelica	APIACEAE
ANRA		*Antennaria racemosa*	raceme pussy-toes	ASTERACEAE
ANUM		*Antennaria umbrinella*	umber pussy-toes	ASTERACEAE
AQFL		*Aquilegia flavescens*	yellow columbine	RANUNCULACEAE
ARHIG		*Arabis hirsuta var. glabrata*	hairy rockcress	BRASSICACEAE
ARMI2		*Arctium minus*	common burdock	ASTERACEAE
ARCO9		*Arnica cordifolia var. cordifolia*	heart-leaf arnica	ASTERACEAE
ARLA8		*Arnica latifolia var. latifolia*	mountain arnica	ASTERACEAE
ARLU		*Artemisia ludoviciana*	western mugwort	ASTERACEAE
MARE11	BERE	*Berberis repens*	Oregon grape	BERBERIDACEAE
BRIN2		*Bromus inermis*	smooth brome	POACEAE
BRVU		*Bromus vulgaris var. vulgaris*	Columbia brome	POACEAE
CARU		*Calamagrostis rubescens*	pinegrass	POACEAE
CAMA5		*Calochortus macrocarpus*		LILIACEAE
CABU		*Calypso bulbosa*	calypso orchid	ORCHIDACEAE
CACOL4		*Cardamine cordifolia var. lyallii*	large mountain bittercress	BRASSICACEAE
CAGE2		*Carex geyeri*	elk sedge	CYPERACEAE
CAHO5		*Carex hoodii*	Hood’s sedge	CYPERACEAE
CAPR5		*Carex praegracilis*		CYPERACEAE
CARO5		*Carex rossii*	Ross' sedge	CYPERACEAE
CAHIA2		*Castilleja hispida var. acuta*		SCROPHULARIACEAE
CAMIM5		*Castilleja miniata var. miniata*	common paintbrush	SCROPHULARIACEAE
CEANO		*Ceanothus sp.*	wild lilac	RHAMNACEAE
CEST8		*Centaurea stoebe*	spotted knapweed	ASTERACEAE

APPENDIX B-4 Wallowa Falls Hydroelectric Project Comprehensive Plant Species List

Symbol	Synonym Symbol	Species Name	Common Name	Family Name
CEFOV2	CEVU	*Cerastium vulgatum*	common cerastium	CARYOPHYLLACEAE
CELE3		*Cercocarpus ledifolius*	mountain mahagony	ROSACEAE
CHUM		*Chimaphila umbellata*	prince's pine	ERICACEAE
LEVU	CHLE80	*Chrysanthemum leucanthemum*	oxeye daisy	ASTERACEAE
CIAL		*Circaea alpine*	enchanter's nightshade	ONAGRACEAE
CIAR4		*Cirsium arvense*	Canadian thistle	ASTERACEAE
CICA6		*Cirsium canovirens*	gray-green thistle	ASTERACEAE
CIVU		*Cirsium vulgare*	bull thistle	ASTERACEAE
CLCOC2		*Clematis columbiana var. columbiana*	Columbia clematis	RANUNCULACEAE
CLUN2		*Clintonia uniflora*	bead-lily	LILIACEAE
COPA3		*Collinsia parviflora*	small-flowered blue-eyed Mary	SCROPHULARIACEAE
COLI2		*Collomia linearis*	narrow-leaf collomia	POLEMONIACEAE
COMA25		*Corallorhiza maculata*	spotted coral-root	ORCHIDACEAE
CRAC3	CRCRA2	*Cryptogramma crispa var. acrostichoides*	rock-brake	POLYPODIACEAE
CYOF		*Cynoglossum officinale*	hound's tongue	BORAGINACEAE
CYMO2		*Cypripedium montanum*	mt. lady's slipper	ORCHIDACEAE
CYFR2		*Cystopteris fragilis*	bladder –fern	POLYPODIACEAE
DAGL		*Dactylis glomerata*	orchard grass	POACEAE
DEEL		*Deschampsia elongata*	slender hairgrass	POACEAE
PRHOT	DITR6	*Disporum trachycarpum*	wartberry fairy-bell	LILIACEAE
DRVE2		*Draba verna*	spring whitlow-grass	BRASSICACEAE
EPAN		*Epilobium angustifolium*	fireweed	ONAGRACEAE
EPMI		*Epilobium minutum*	small flowered willow-weed	ONAGRACEAE
EQAR		*Equisetum arvense*	common horsetail	EQUISETACEAE
EQHY		*Equisetum hyemale*	common scouring-rush	EQUISETACEAE
FEIDI2		*Festuca idahoensis var. idahoensis*	Idaho fescue	POACEAE
FRVE		*Fragaria vesca*	woods strawberry	ROSACEAE
FRVI		*Fragaria virginiana*	strawberry	ROSACEAE
GATR3		*Galium triflorum*	fragrant bedstraw	RUBIACEAE
GEMAP	GEMAP2	*Geum macrophyllum var. perincisum*	Oregon avens	ROSACEAE
GOOB2		*Goodyera oblongifolia*	rattlesnake orchid	ORCHIDACEAE
HAMI		*Hackelia micrantha*	blue stickseed	BORAGINACEAE
HEMA80	HELA4	*Heracleum lanatum*	cow-parsnip	APIACEAE
HEGRT		*Heuchera grossularifolia var. tenuifolia*	gooseberry leaved alumroot	SAXIFRAGACEAE
HIAL2		*Hieracium albiflorum*	white-flowered hawkweed	ASTERACEAE

APPENDIX B-4 Wallowa Falls Hydroelectric Project Comprehensive Plant Species List

Symbol	Synonym Symbol	Species Name	Common Name	Family Name
HICA10	HIPR	*Hieracium pratense*	Meadow Hawkweed	ASTERACEAE
HYCA4		*Hydrophyllum capitatum*	ball-head waterleaf	HYDROPHYLLACEAE
HODI		*Holodiscus discolor*	oceanspray	ROSACEAE
HYPE		*Hypericum perforatum*	St. John's wort	CLUSIACEAE
JUCOM2		*Juniperus communis var. montana*	common juniper	CUPRESSACEAE
JUSC2		*Juniperus scopulorum*	Rocky mountain juniper	CUPRESSACEAE
KEGA		*Kellogia galioides*	Kellogia	RUBIACEAE
KOMA	KOCR	*Koeleria cristata*	prairie junegrass	POACEAE
LAOC		*Larix occidentalis*	western larch	PINACEAE
LICA2		*Linanthus septentrionalis*	northern linanthus	POLEMONIACEAE
LESE17	LISE	*Linnaea borealis*	western twinflower	CAPRIFOLIACEAE
LIBO3		*Ligusticum canbyi*	Canby's lovage	APIACEAE
LIPA5		*Lithophragma parivflora*		SAXIFRAGACEAE
LOUT2		*Lonicera utahensis*	Utah honeysuckle	CAPRIFOLIACEAE
LUMUM2	LUCAM3	*Luzula campestris var. multiflora*	field woodrush	JUNCACEAE
LYAN2		*Lycopodium annotinum*	stiff clubmoss	LYCOPODIACEAE
MADI6	MAMA11	*Matricaria matricarioides*	pineapple weed	ASTERACEAE
MEPAB		*Mertensia paniculata var. borealis*	tall bluebells	BORAGINACEAE
MIGR		*Microsteris gracilis*	microsteris	POLEMONIACEAE
MIGU		*Mimulus guttatus var. guttatus*	yellow monkey-flower	SCROPHULARIACEAE
MILE2		*Mimulus lewisii*	great purple monkey-flower	SCROPHULARIACEAE
MIST3		*Mitella stauropetala*	side-flowered mitella	SAXIFRAGACEAE
MOUN3		*Monotropa uniflora*	indian pipe	ERICACEAE
MOLI4		*Montia linearis*	narrow-leaved montia	PORTULACACEAE
CLPEP	MOPE3	*Montia perfoliata*	miner's lettuce	PORTULACACEAE
OSBE	OSCH	*Osmorhiza chilensis*	sweet-cicely	APIACEAE
PERAA		*Pedicularis racemosa var. alba*	leafy lousewort	SCROPHULARIACEAE
PEDED2		*Penstemon deustus var. deustus*	hot-rock penstemon	SCROPHULARIACEAE
PEFR3		*Penstemon fruticosus*		SCROPHULARIACEAE
PEGL5		*Penstemon globosus*		SCROPHULARIACEAE
PEVE2		*Penstemon venustus*	lovely penstemon	SCROPHULARIACEAE
PEGA3		*Perideridia gairdneri*	Gairdner's Yampah	APIACEAE
PHHA		*Phacelia hastata*	white-leaf phacelia	HYDROPHYLLACEAE
PHLE4		*Philadelphus lewisii*	mockorange	HYDRANGEACEAE
PHAL2		*Phleum alpinum*	alpine timothy	POACEAE
PHPR3		*Phleum pratense*	common timothy	POACEAE
PHMA5		*Physocarpus malvaceus*	ninebark	ROSACEAE

APPENDIX B-4 Wallowa Falls Hydroelectric Project Comprehensive Plant Species List

PIEN		*Picea engelmannii*	Engelmann spruce	PINACEAE
Symbol	**Synonym Symbol**	**Species Name**	**Common Name**	**Family Name**
PIPO		*Pinus ponderosa*	ponderosa pine	PINACEAE
PICO		*Pinus contorta*	lodgepole pine	PINACEAE
PLLA		*Plantago lanceolata*	ribwort	PLANTAGINACEAE
PLMA2		*Plantago major*	common plantain	PLANTAGINACEAE
POBU		*Poa bulbosa*	bulbous bluegrass	POACEAE
POPR		*Poa praetensis*	Kentucky bluegrass	POACEAE
POSE	POSC	*Poa scabrella*	pine bluegrass	POACEAE
POCA3	POPUC	*Polemonium pulcherrimum var. calycinum*	showy polemonium	POLEMONIACEAE
POMU		*Polystichum minutum var. minutum*	sword-fern	POLYPODIACEAE
POTR5		*Populus tremuloides*	quaking aspen	SALICACEAE
POBAT	POTR15	*Populus trichocarpa*	black cottonwood	SALICACEAE
POPU9	POGRP	*Potentilla gracilis var. pulcherrima*	soft cinquefoil	ROSACEAE
PSME		*Pseudotsuga menziesii*	Douglas-fir	PINACEAE
PTAQ		*Pteridium aquilinum*	bracken fern	POLYPODIACEAE
PTAN2		*Pterospora andromedea*	pine drop	ERICACEAE
PYCH		*Pyrola chlorantha*	green winter-green	ERICACEAE
ORSE	PYSE	*Pyrola secunda*	side-bells pyrola	ERICACEAE
MOUN2	PYUN	*Pyrola uniflora*	single delight	ERICACEAE
RAOC		*Ranunculus occidentalis*	western buttercup	RANUNCULACEAE
RARE3		*Ranunculus repens*	creeping buttercup	RANUNCULACEAE
RAUNP		*Ranunculus uncinatus var. parviflorus*	little buttercup	RANUNCULACEAE
RILA		*Ribes lacustre*	swamp gooseberry	GROSSULARIACEAE
RIVI3		*Ribes viscosissimum var. viscosissimum*	sticky current	GROSSULARIACEAE
ROGY		*Rosa gymnocarpa*	bald-hip rose	ROSACEAE
RUIDS2	RUIDG	*Rubus idaeus var. gracilipes*	red raspberry	ROSACEAE
RUPA		*Rubus parviflorus*	thimbleberry	ROSACEAE
RUOC2	RUOCO2	*Rudbeckia occidentalis var. occidentalis*	black head	ASTERACEAE
RUAC3		*Rumex acetosella*	Field sorrel	POLYGONACEAE
SASC		*Salix scouleriana*	Scouler's willow	SALICACEAE
SANIC5	SACE3	*Sambucus cerulea*	blue elderberry	CAPRIFOLIACEAE
SAOD2	SAAR13	*Saxifraga arguta*	brook saxifrage	SAXIFRAGACEAE
SELA		*Sedum lanceolatum*	lance-leaved stonecrop	CRASSULACEAE
SETR		*Senecio triangularis var. triangularis*	arrowleaf groundsel	ASTERACEAE
SHCA		*Shepherdia canadensis*	buffalo-berry	ELAEAGNACEAE

APPENDIX B-4 Wallowa Falls Hydroelectric Project Comprehensive Plant Species List

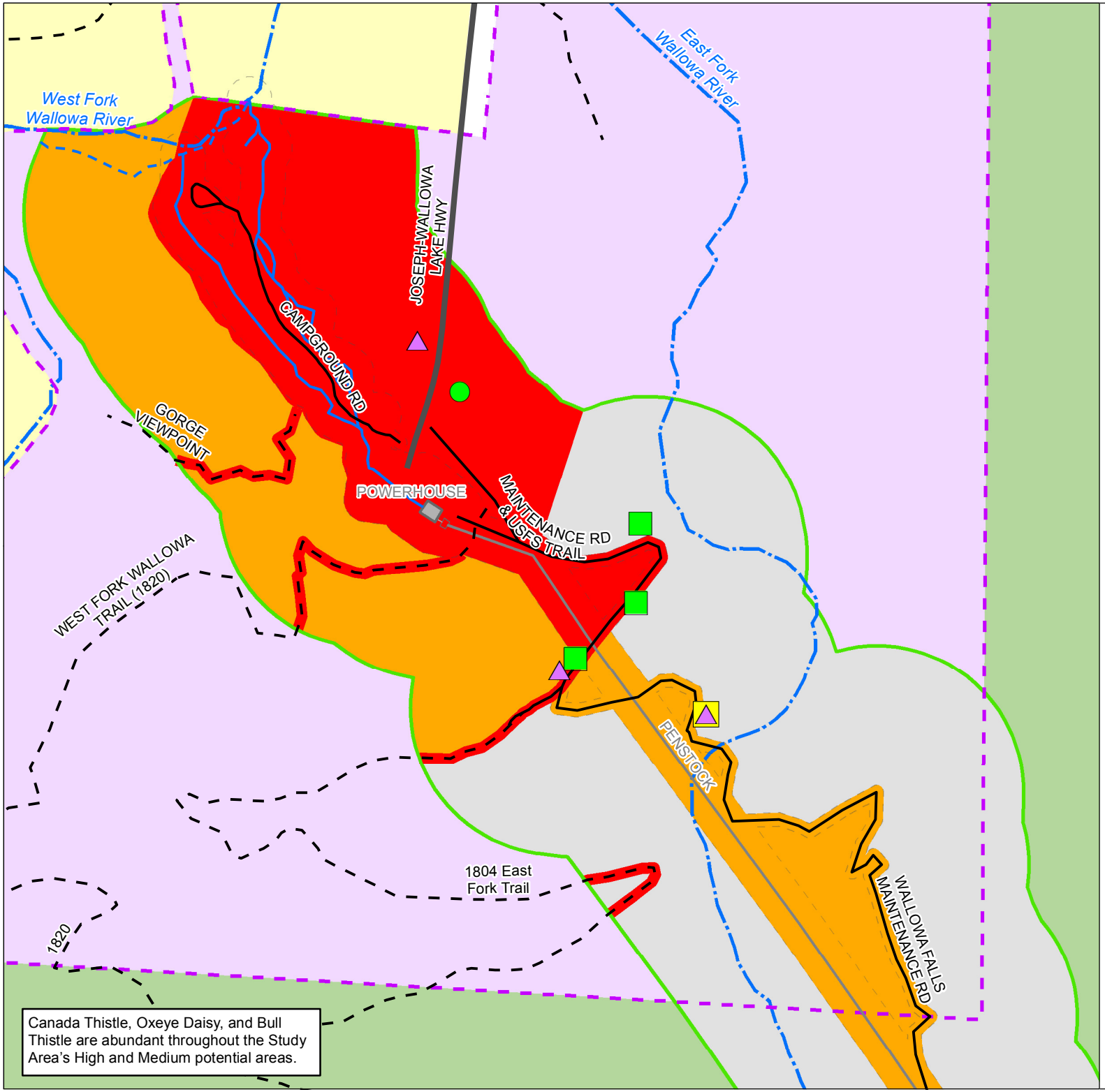
Symbol	Synonym Symbol	Species Name	Common Name	Family Name
MARAA	SMRA	*Smilacina racemosa*	false Solomon-seal	LILIACEAE
MAST4	SMST	*Smilacina stellata*	starry Solomon plume	LILIACEAE
SPBE2		*Spiraea betulifolia*	birch-leaved spiraea	ROSACEAE
SOSC2		*Sorbus scopulina*	mountain-ash	ROSACEAE
SYAL		*Symphoricarpos albus*	common snowerry	CAPRIFOLIACEAE
TAOF		*Taraxacum officinale*	dandelion	ASTERACEAE
THOC		*Thalictrum occidentale*	western meadowrue	RANUNCULACEAE
TRDU		*Tragapogon dubius*	yellow salsify	ASTERACEAE
TRLO		*Trifolium longipes*	stalked clover	FABACEAE
TRRE3		*Trifolium repens*	white clover	FABACEAE
URDI		*Urtica dioica*	stinging nettle	URTICACEAE
VASC		*Vaccinium scoparium*	grouse whortleberry	ERICACEAE
VECA2		*Veratrum californicum*	California false hellebore	LILIACEAE
VETH		*Verbascum thapsus*	common mullein	SCROPHULARIACEAE
VIAMA3	VIAMT2	*Vicia americana var. truncata*	American vetch	FABACEAE
VICAR		*Viola canadensis var. rugulosa*	western canada violet	VIOLACEAE
WOSC		*Woodsia scopulina*	Rocky mountain woodsia	POLYPODIACEAE

Appendix C

Noxious Weed Priority Areas Map

Noxious Weed Plant Occurrence Record Wallowa-Whitman National Forest

Survey Route Map



Wallowa Falls

Noxious Weeds

Page 1

Legend

- Trail
- Road
- Highway
- Facility
- Penstock
- Proposed Boundary
- Study Area

Noxious Weeds

- Common Burdock
- Houndstongue
- Meadow Hawkweed
- Spotted Knapweed
- St. John's Wort

Potential Weed Areas

- High
- Medium
- Low

Land Ownership

- Private
- USFS
- PACIFICORP

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0 250 500 Feet

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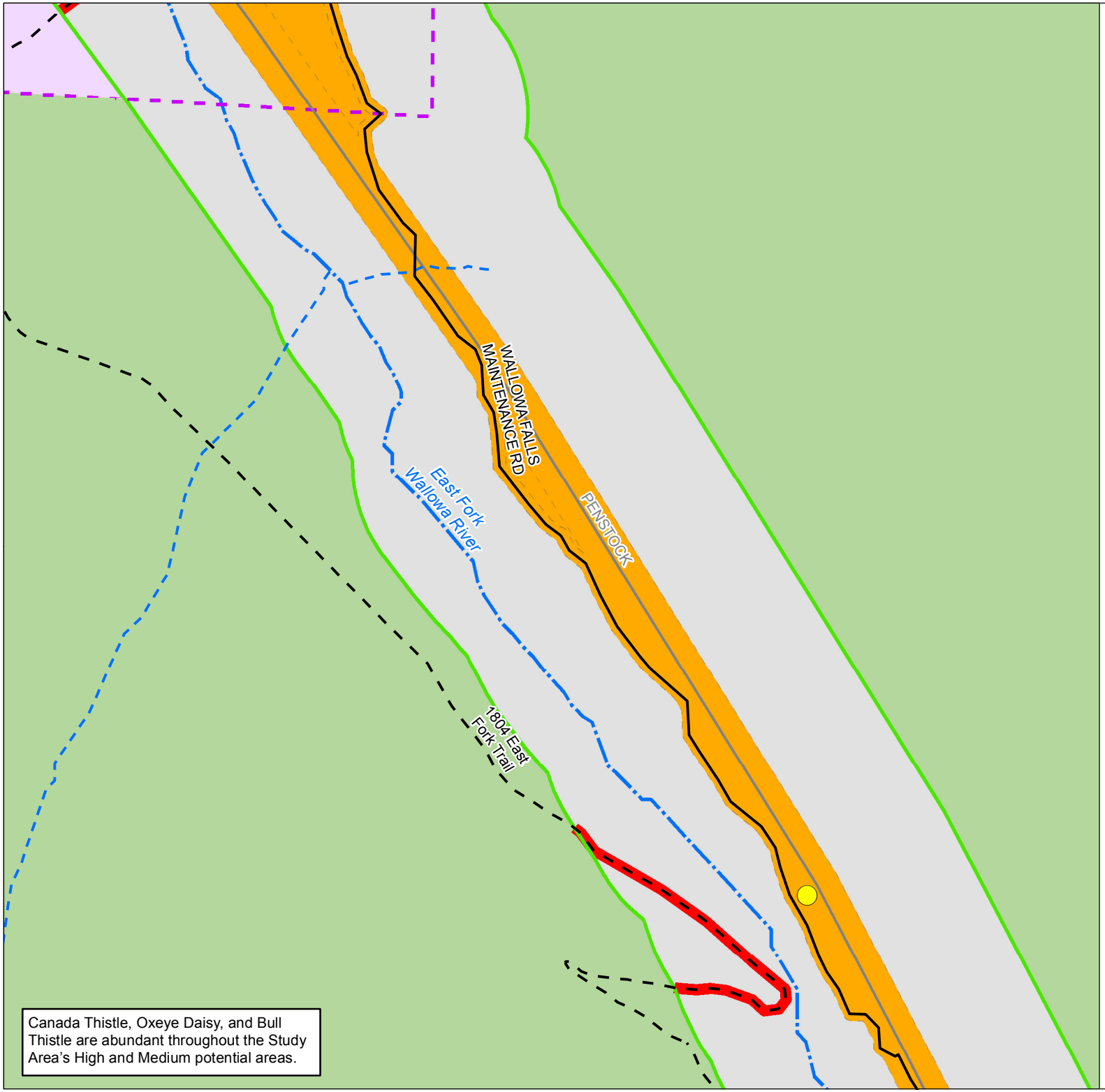

Wallowa Falls

Noxious Weeds

Page 2

Canada Thistle, Oxeye Daisy, and Bull Thistle are abundant throughout the Study Area's High and Medium potential areas.

Legend

- Trail
- Road
- Highway
- Facility
- Penstock
- Proposed Boundary
- Study Area

Noxious Weeds

- Common Burdock
- Houndstongue
- Meadow Hawkweed
- Spotted Knapweed
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Potential Weed Areas

- High
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1:3,600

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0 250 500 Feet

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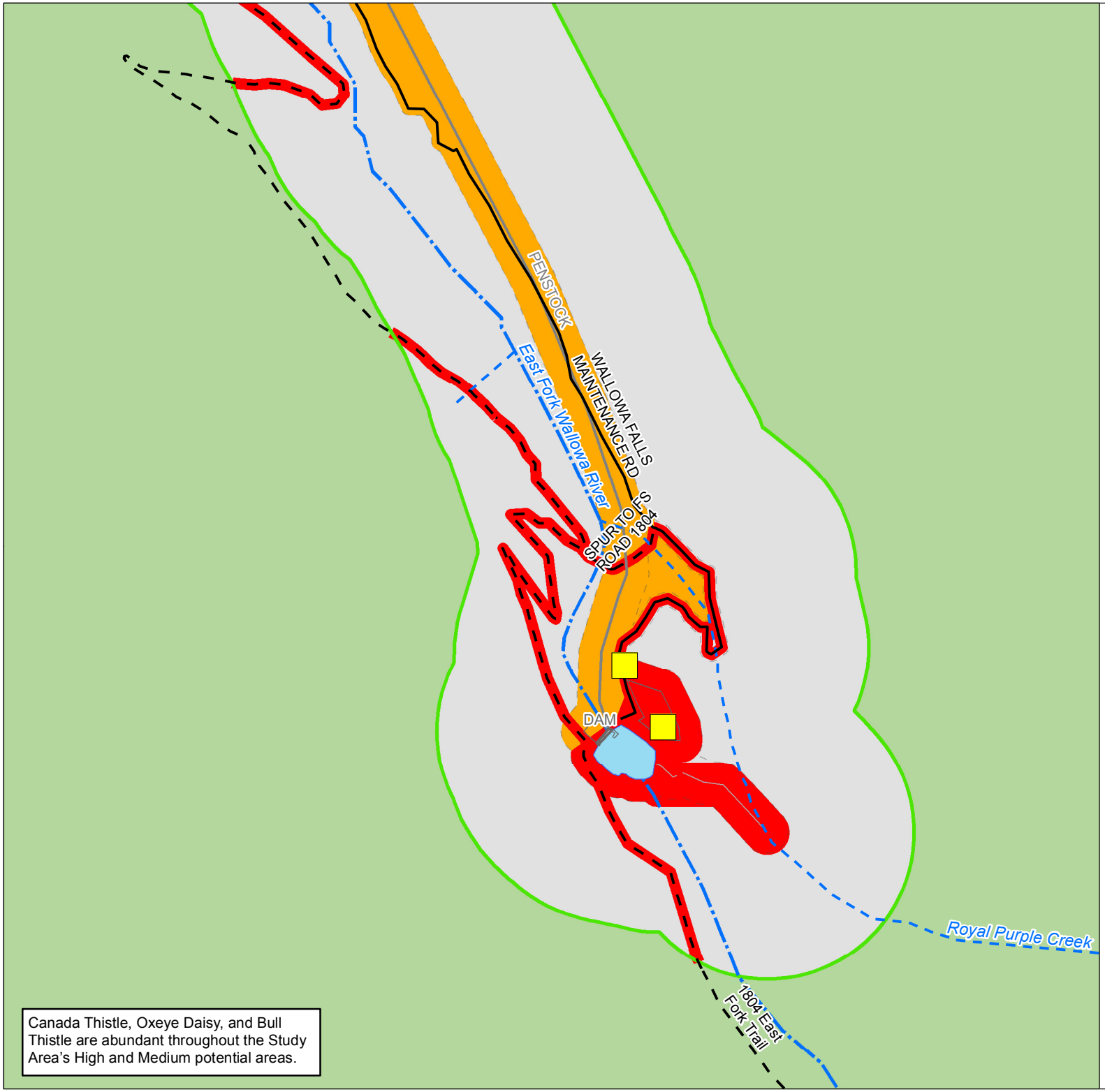

Wallowa Falls

Noxious Weeds

Page 3

Legend

- Trail
- Road
- Highway
- Facility
- Penstock
- Proposed Boundary
- Study Area

Noxious Weeds

- Common Burdock
- Houndstongue
- Meadow Hawkweed
- Spotted Knapweed
- St. John's Wort

Potential Weed Areas

- High
- Medium
- Low

Land Ownership

- Private
- USFS
- PACIFICORP

1:3,600

0 250 500 Feet

Canada Thistle, Oxeye Daisy, and Bull Thistle are abundant throughout the Study Area's High and Medium potential areas.

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NOXIOUS WEED PLANT OCCURRENCE RECORD
WALLOWA-WHITMAN NATIONAL FOREST
Noxious Weed

Listed: Yes Category: Wallowa County "A" List

SCIENTIFIC NAME: *Hieracium pratense* COMMON NAME: Meadow Hawkweed

PROJECT: Wallowa Falls Hydroelectric Project DISCOVERY DATE: 31 July 2012

LOCATION

RANGER DISTRICT: Eagle Cap Ranger District COUNTY: Wallowa County, OR

QUAD(S): Joseph, OR

LEGAL SUBDIVISION: T3S, R45E Sec. 29 SE of SE

GPS-datum/lat&long (decimal, degree): Easting 0483577
Northing 5012260

LOCATION (directions, landmarks, etc): Approximately ¾ up Wallowa Lake Trail from trailhead, ~20 meters before wooden bridge, west side of trail. Site is flagged with solid blue flagging.

LAND OWNER: PacifiCorp

DATES OF FIELDWORK: 31 July 2012 BY: Leslie Moholt, Bio Resources, Inc.

INFESTATION

SIZE OF SITE: 1 meter x 1 meter NUMBER OF PLANTS: 20 stems

DESCRIPTION (phenology, age class, density, etc.): 100% flowering

VOUCHER (collector and number, where stored): No collection made

SUITABILITY FOR MONITORING:

HABITAT

ELEVATION: 4813’ ASPECT: 40º SLOPE: 10%

Riparian: _____ Upland: Yes Site Composition: Edge of trail

DESCRIPTION (microhabitat, timber type, plant associations, soil type, etc.): Grassy disturbed opening in mixed conifer (PIPO/PSME/ABGR) forest

NATURE OF DISTURBANCE (if any): Foot and horse traffic

MONITORING STATUS: First detection

ERADICATION
METHODS USED (if any): None

RECOMMENDATIONS (for further control efforts): Herbicide application and/or manual removal

PHOTOS: _____

REPORTER: Leslie Moholt JOB TITLE: Contractor DATE: 31 July 2012

Figure 2C-2.1 *Hieracium pratense* noxious weed site.

NOXIOUS WEED PLANT OCCURRENCE RECORD
WALLOWA-WHITMAN NATIONAL FOREST
Noxious Weed

Listed: Yes Category: Wallowa County "B" List

SCIENTIFIC NAME: *Arctium minus* COMMON NAME: Common Burdock

PROJECT: Wallowa Falls Hydroelectric Project DISCOVERY DATE: 31 July 2012

LOCATION

RANGER DISTRICT: Eagle Cap Ranger District COUNTY: Wallowa County, OR

QUAD(S): Joseph, OR

LEGAL SUBDIVISION: T3S, R45E Sec. 29 SE of SE

GPS-datum/lat&long (decimal, degree):

Easting	0483488	0483529
Northing	5012298	5012336

LOCATION (directions, landmarks, etc): Two sites, the first is approximately ¼ mile up Wallowa Lake Trail from trailhead on side of trail and the second is 1/8 mile further up trail on side of trail.

LAND OWNER: PacifiCorp

DATES OF FIELDWORK: 31 July 2012 BY: Leslie Moholt, Bio Resources, Inc.

INFESTATION

SIZE OF SITE: ¼ mile x 3 feet NUMBER OF PLANTS: 2

DESCRIPTION (phenology, age class, density, etc.): 100% vegetative

VOUCHER (collector and number, where stored): No collection made

SUITABILITY FOR MONITORING:

HABITAT

ELEVATION: 4737-4725 ASPECT: 140º SLOPE: 40%

Riparian: _____ Upland: Yes Site Composition: Trail side

DESCRIPTION (microhabitat, timber type, plant associations, soil type, etc.): Edge of human/horse trail in mixed conifer (PIPO/PSME/ABGR) forest

NATURE OF DISTURBANCE (if any): Foot and horse traffic

MONITORING STATUS: First detection

ERADICATION

METHODS USED (if any): None

RECOMMENDATIONS (for further control efforts): Herbicide application or manual removal

PHOTOS: _____

REPORTER: Leslie Moholt JOB TITLE: Contractor DATE: 31 July 2012

NOXIOUS WEED PLANT OCCURRENCE RECORD
WALLOWA-WHITMAN NATIONAL FOREST
Noxious Weed

Listed: Yes Category: Wallowa County "A" List

SCIENTIFIC NAME: *Centaurea stoebe* COMMON NAME: Spotted Knapweed

PROJECT: Wallowa Falls Hydroelectric Project DISCOVERY DATE: 31 July 2012

LOCATION

RANGER DISTRICT: Eagle Cap Ranger District COUNTY: Wallowa County, OR

QUAD(S): Joseph, OR

LEGAL SUBDIVISION: T3S, R45E Sec. 29 NW of SE

GPS-datum/lat&long (decimal, degree): Easting 0483409
Northing 5012480

LOCATION (directions, landmarks, etc): Relocation of known site SKW287. Population is 58º, 25 feet from northwestern-most metal hitching post at Wallowa Lake Trail trailhead.

LAND OWNER: PacifiCorp

DATES OF FIELDWORK: 31 July 2012 BY: Leslie Moholt, Bio Resources, Inc.

INFESTATION

SIZE OF SITE: 1' x 8' NUMBER OF PLANTS: 2

DESCRIPTION (phenology, age class, density, etc.): 100% vegetative, rosettes about 10" in diameter

VOUCHER (collector and number, where stored): No collection made

SUITABILITY FOR MONITORING:

HABITAT

ELEVATION: 4634’ ASPECT: 270º SLOPE: 20%

Riparian: Upland: Yes Site Composition: Staging area for horse packing

DESCRIPTION (microhabitat, timber type, plant associations, soil type, etc.): Highly disturbed grassy opening in mixed conifer (PIPO/PSME/ABGR) forest

NATURE OF DISTURBANCE (if any): Foot and horse traffic

MONITORING STATUS:

ERADICATION

METHODS USED (if any): None

RECOMMENDATIONS (for further control efforts): Bio-control efforts may be adequate to control this small population. Otherwise, manual removal or herbicide application would be recommended.

PHOTOS:

REPORTER: Leslie Moholt JOB TITLE: Biologist DATE: 31 July 2012

NOXIOUS WEED PLANT OCCURRENCE RECORD

WALLOWA-WHITMAN NATIONAL FOREST

Noxious Weed

Listed: Yes Category: Wallowa County "A" List

SCIENTIFIC NAME: *Hieracium pratense* COMMON NAME: Meadow Hawkweed

PROJECT: Wallowa Falls Hydroelectric Project DISCOVERY DATE: 31 July 2012

LOCATION

RANGER DISTRICT: Eagle Cap Ranger District COUNTY: Wallowa County, OR

QUAD(S): Joseph, OR

LEGAL SUBDIVISION: T3S, R45E Sec. 33 SE ¼

GPS-datum/lat&long (decimal, degree): Easting 0484195
Northing 5011062

LOCATION (directions, landmarks, etc): Marked with solid blue flagging. 160º NNW of shack/cabin at Wallowa Falls Hydroelectric Project dam (southern end of Wallowa Falls Maintenance Road).

LAND OWNER: United States Forest Service

DATES OF FIELDWORK: 31 July 2012 BY: Kendrick Moholt, Bio Resources, Inc.

INFESTATION

SIZE OF SITE: 100 f^2 NUMBER OF PLANTS: ~45

DESCRIPTION (phenology, age class, density, etc.): 20% in bloom, the rest basal rosettes only

VOUCHER (collector and number, where stored): No collection made

SUITABILITY FOR MONITORING:

HABITAT

ELEVATION: 5790’ ASPECT: NNE SLOPE: 5%

Riparian: Upland: Yes Site Composition: road

DESCRIPTION (microhabitat, timber type, plant associations, soil type, etc.): trail/roadside

NATURE OF DISTURBANCE (if any): Maintenance Road

MONITORING STATUS: First detection

ERADICATION
METHODS USED (if any): Hand pulled

RECOMMENDATIONS (for further control efforts): Herbicide application

PHOTOS:

REPORTER: Kendrick Moholt JOB TITLE: Contractor DATE: 31 July 2012

Figure 2C-2.4.1 Hieracium pratense noxious weed site.

Figure 2C-2.4.2 *Hieracium pratense* noxious weed site.

NOXIOUS WEED PLANT OCCURRENCE RECORD
WALLOWA-WHITMAN NATIONAL FOREST
Noxious Weed

Listed: Yes Category: Wallowa County "B" List

SCIENTIFIC NAME: *Hypericum perforatum* COMMON NAME: St. John's Wort

PROJECT: Wallowa Falls Hydroelectric Project DISCOVERY DATE: 31 July 2012

LOCATION

RANGER DISTRICT: Eagle Cap Ranger District COUNTY: Wallowa County, OR

QUAD(S): Joseph, OR

LEGAL SUBDIVISION: T3S, R45E Sec. 33 NW ¼

GPS-datum/lat&long (decimal, degree): Easting 0484018
Northing 5011521

LOCATION (directions, landmarks, etc): Approximately 1 mile from trailhead on Wallowa Falls Maintenance Road (NE of the FS1804 trail switchback on the Sec. 32/33 border).

LAND OWNER: United States Forest Service

DATES OF FIELDWORK: 31 July 2012 BY: Kendrick Moholt, Bio Resources, Inc.

INFESTATION

SIZE OF SITE: 80 f^2 NUMBER OF PLANTS: ~50

DESCRIPTION (phenology, age class, density, etc.): Early blooming

VOUCHER (collector and number, where stored): No collection made

SUITABILITY FOR MONITORING:

HABITAT

ELEVATION: 5500’ ASPECT: 230º SLOPE: 2%

Riparian: Upland: Yes Site Composition:

DESCRIPTION (microhabitat, timber type, plant associations, soil type, etc.): Trailside on side slope

NATURE OF DISTURBANCE (if any): Trail

MONITORING STATUS: First detection

ERADICATION
METHODS USED (if any): None

RECOMMENDATIONS (for further control efforts): Small population; bio-control may be adequate if population does not expand. Population should be monitored.

PHOTOS:

REPORTER: Kendrick Moholt JOB TITLE: Contractor DATE: 31 July 2012

Figure 2C-2.5 *Hypericum perforatum* noxious weed site.

` NOXIOUS WEED PLANT OCCURRENCE RECORD

WALLOWA-WHITMAN NATIONAL FOREST
Noxious Weed

Listed: Yes Category: Wallowa County "A" List

SCIENTIFIC NAME: *Chrysanthemum leucanthemum* COMMON NAME: Oxeye Daisy

PROJECT: Wallowa Falls Hydroelectric Project DISCOVERY DATE: 31 July 2012

LOCATION

RANGER DISTRICT: Eagle Cap Ranger District COUNTY: Wallowa County, OR

QUAD(S): Joseph, OR

LEGAL SUBDIVISION: T3S, R45E Sec. 29, SW ¼; Sec. 32, NE of NE; Sec. 33, NW of NW, SW of NW, NW of SW, SE of SW

GPS-datum/lat&long (decimal, degree):	From	Easting	0483259
		Northing	5012652
	To		0484159
			5011062

LOCATION (directions, landmarks, etc): Population extends from campground and picnic area through disturbed staging areas at trailhead and along trail up to and including dam and cabin area.

LAND OWNER: PacifiCorp and United States Forest Service

DATES OF FIELDWORK: 31 July 2012 BY: Leslie Moholt, Bio Resources, Inc.

INFESTATION

SIZE OF SITE: 1 ½ miles x 10'-300' wide NUMBER OF PLANTS: 1000's

DESCRIPTION (phenology, age class, density, etc.): 100% flowering

VOUCHER (collector and number, where stored): No collection made

SUITABILITY FOR MONITORING:

HABITAT

ELEVATION: 4576'-5790' ASPECT: variable SLOPE: 0-70%

Riparian: _____ Upland: Yes Site Composition: _____

DESCRIPTION (microhabitat, timber type, plant associations, soil type, etc.): Grassy disturbed opening in mixed conifer (PIPO/PSME/ABGR) forest and trail side along heavily used trail.

NATURE OF DISTURBANCE (if any): Foot and horse traffic

MONITORING STATUS: First detection

ERADICATION

METHODS USED (if any): None

RECOMMENDATIONS (for further control efforts):

PHOTOS: _____

REPORTER: Leslie Moholt JOB TITLE: Contractor DATE: 31 July 2012

NOXIOUS WEED PLANT OCCURRENCE RECORD
WALLOWA-WHITMAN NATIONAL FOREST
Noxious Weed

Listed: Yes Category: Wallowa County "B" List

SCIENTIFIC NAME: *Cirsium arvense* COMMON NAME: Canada Thistle

PROJECT: Wallowa Falls Hydroelectric Project DISCOVERY DATE: 31 July 2012

LOCATION

RANGER DISTRICT: Eagle Cap Ranger District COUNTY: Wallowa County, OR

QUAD(S): Joseph, OR

LEGAL SUBDIVISION: T3S, R45E Sec. 29, SW ¼; Sec. 32, NE of NE; Sec. 33, NW of NW, SW of NW, NW of SW, SE of SW

GPS-datum/lat&long (decimal, degree):	From	Easting	0483259
		Northing	5012652
	To		0484159
			5011062

LOCATION (directions, landmarks, etc): Population extends from campground and picnic area through disturbed staging areas at trailhead and along trail up to and including dam and cabin area.

LAND OWNER: PacifiCorp and United States Forest Service

DATES OF FIELDWORK: 31 July 2012 BY: Leslie Moholt, Bio Resources, Inc.

INFESTATION

SIZE OF SITE: 1 ½ miles x 10'-300' wide NUMBER OF PLANTS: 1000's

DESCRIPTION (phenology, age class, density, etc.): 30% flowering, 70% vegetative

VOUCHER (collector and number, where stored): No collection made

SUITABILITY FOR MONITORING:

HABITAT

ELEVATION: 4576'-5790' ASPECT: variable SLOPE: 0-70%

Riparian: _____ Upland: Yes Site Composition: _____

DESCRIPTION (microhabitat, timber type, plant associations, soil type, etc.): Grassy disturbed opening in mixed conifer (PIPO/PSME/ABGR) forest and trail side along heavily used trail.

NATURE OF DISTURBANCE (if any): Foot and horse traffic

MONITORING STATUS: First detection

ERADICATION

METHODS USED (if any): None

RECOMMENDATIONS (for further control efforts):

PHOTOS: _____

REPORTER: Leslie Moholt JOB TITLE: Contractor DATE: 31 July 2012

NOXIOUS WEED PLANT OCCURRENCE RECORD
WALLOWA-WHITMAN NATIONAL FOREST
Noxious Weed

Listed: Yes Category: Wallowa County "B" List

SCIENTIFIC NAME: *Cynoglossum officinale* COMMON NAME: Hounds' Tongue

PROJECT: Wallowa Falls Hydroelectric Project DISCOVERY DATE: 31 July 2012

LOCATION

RANGER DISTRICT: Eagle Cap Ranger District COUNTY: Wallowa County, OR

QUAD(S): Joseph, OR

LEGAL SUBDIVISION: T3S, R45E Sec. 29 NW of SE

GPS-datum/lat&long (decimal, degree): Easting 0483297
Northing 5012651

LOCATION (directions, landmarks, etc): PacifiCorp Campground, scattered individuals along edge of parking area; scattered individuals across the road from the campground, near the metal hitching posts

LAND OWNER: PacifiCorp

DATES OF FIELDWORK: 31 July 2012 BY: Leslie Moholt, Bio Resources, Inc.

INFESTATION

SIZE OF SITE: 100' x 100' NUMBER OF PLANTS: 30-40

DESCRIPTION (phenology, age class, density, etc.): 90% vegetative, 10% in seed

VOUCHER (collector and number, where stored): No collection made

SUITABILITY FOR MONITORING:

HABITAT

ELEVATION: 4627'-4634' ASPECT: 260º SLOPE: 10%-70%

Riparian: _____ Upland: Yes Site Composition: _____

DESCRIPTION (microhabitat, timber type, plant associations, soil type, etc.): Grassy disturbed opening in mixed conifer (PIPO/PSME/ABGR) forest around Wallowa Lake Trail trailhead and nearby campground.

NATURE OF DISTURBANCE (if any): Foot and horse traffic

MONITORING STATUS: First detection

ERADICATION

METHODS USED (if any): None

RECOMMENDATIONS (for further control efforts): Herbicide application and/or manual removal

PHOTOS: _____

REPORTER: Leslie Moholt JOB TITLE: Contractor DATE: 31 July 2012

NOXIOUS WEED PLANT OCCURRENCE RECORD
WALLOWA-WHITMAN NATIONAL FOREST
Noxious Weed

Listed: Yes Category: Wallowa County "B" List

SCIENTIFIC NAME: *Cynoglossum officinale* COMMON NAME: Hounds' Tongue

PROJECT: Wallowa Falls Hydroelectric Project DISCOVERY DATE: 31 July 2012

LOCATION

RANGER DISTRICT: Eagle Cap Ranger District COUNTY: Wallowa County, OR

QUAD(S): Joseph, OR

LEGAL SUBDIVISION: T3S, R45E Sec. 29 SE of SE

GPS-datum/lat&long (decimal, degree): Easting 0483577
Northing 5012260

LOCATION (directions, landmarks, etc): Near wooden bridge, ~ ¾ mile up Wallowa Lake Trail

LAND OWNER: PacifiCorp

DATES OF FIELDWORK: 31 July 2012 BY: Leslie Moholt, Bio Resources, Inc.

INFESTATION

SIZE OF SITE: 1' x 1' NUMBER OF PLANTS: 1

DESCRIPTION (phenology, age class, density, etc.): 100% vegetative

VOUCHER (collector and number, where stored): No collection made

SUITABILITY FOR MONITORING:

HABITAT

ELEVATION: 4813 ASPECT: 40º SLOPE: 10%

Riparian: Upland: Yes Site Composition:

DESCRIPTION (microhabitat, timber type, plant associations, soil type, etc.): Side of trail, grassy disturbed opening in mixed conifer (PIPO/PSME/ABGR)

NATURE OF DISTURBANCE (if any): Foot and horse traffic

MONITORING STATUS: First detection

ERADICATION

METHODS USED (if any): None

RECOMMENDATIONS (for further control efforts): Herbicide application and/or manual removal

PHOTOS:

REPORTER: Leslie Moholt JOB TITLE: Contractor DATE: 31 July 2012

NOXIOUS WEED PLANT OCCURRENCE RECORD
WALLOWA-WHITMAN NATIONAL FOREST
Noxious Weed

State "B" Listed: Yes Category: Wallowa County "B" List

SCIENTIFIC NAME: *Cirsium vulgare* COMMON NAME: Bull Thistle

PROJECT: Wallowa Falls Hydroelectric Project DISCOVERY DATE: 31 July 2012

LOCATION

RANGER DISTRICT: Eagle Cap Ranger District COUNTY: Wallowa County, OR

QUAD(S): Joseph, OR

LEGAL SUBDIVISION: T3S, R45E Sec. 29, SW ¼; Sec. 32, NE of NE; Sec. 33, NW of NW, SW of NW, NW of SW, SE of SW

GPS-datum/lat&long (decimal, degree): From Easting 0483259

To 0484159
5011062

LOCATION (directions, landmarks, etc): Population extends from campground and picnic area through disturbed staging areas at trailhead and along trail up to and including dam and cabin area.

LAND OWNER: PacifiCorp and United States Forest Service

DATES OF FIELDWORK: 31 July 2012 BY: Leslie Moholt, Bio Resources, Inc.

INFESTATION

SIZE OF SITE: 1 ½ miles x 10'-300' wide NUMBER OF PLANTS: 50

DESCRIPTION (phenology, age class, density, etc.): 80% in bud, 20% vegetative

VOUCHER (collector and number, where stored): No collection made

SUITABILITY FOR MONITORING:

HABITAT

ELEVATION: 4576'-5790' ASPECT: variable SLOPE: 0-70%

Riparian: Upland: Yes Site Composition:

DESCRIPTION (microhabitat, timber type, plant associations, soil type, etc.): Grassy disturbed opening in mixed conifer (PIPO/PSME/ABGR) forest and trail side along heavily used trail.

NATURE OF DISTURBANCE (if any): Foot and horse traffic

MONITORING STATUS: First detection

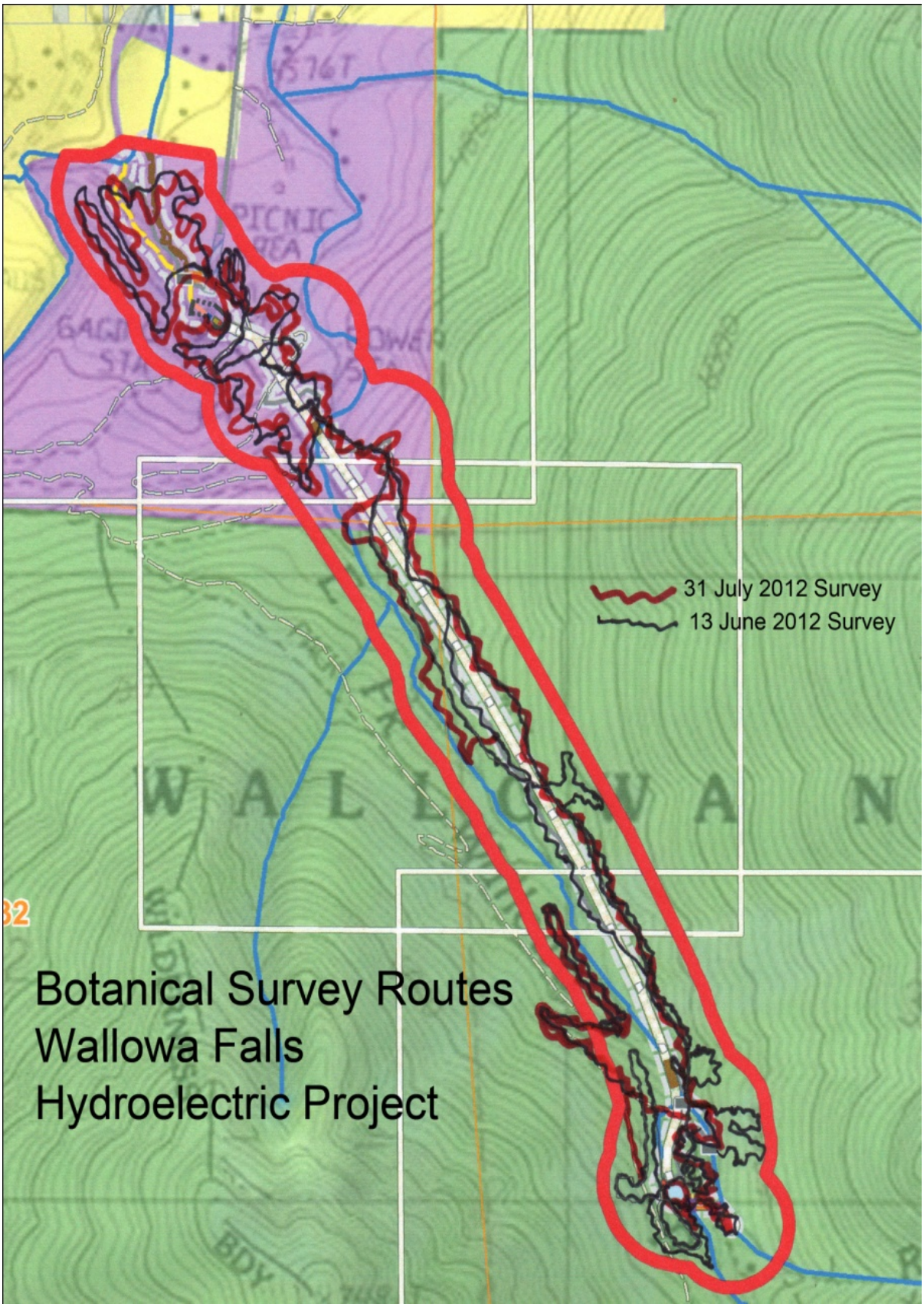
ERADICATION

METHODS USED (if any): None

RECOMMENDATIONS (for further control efforts):

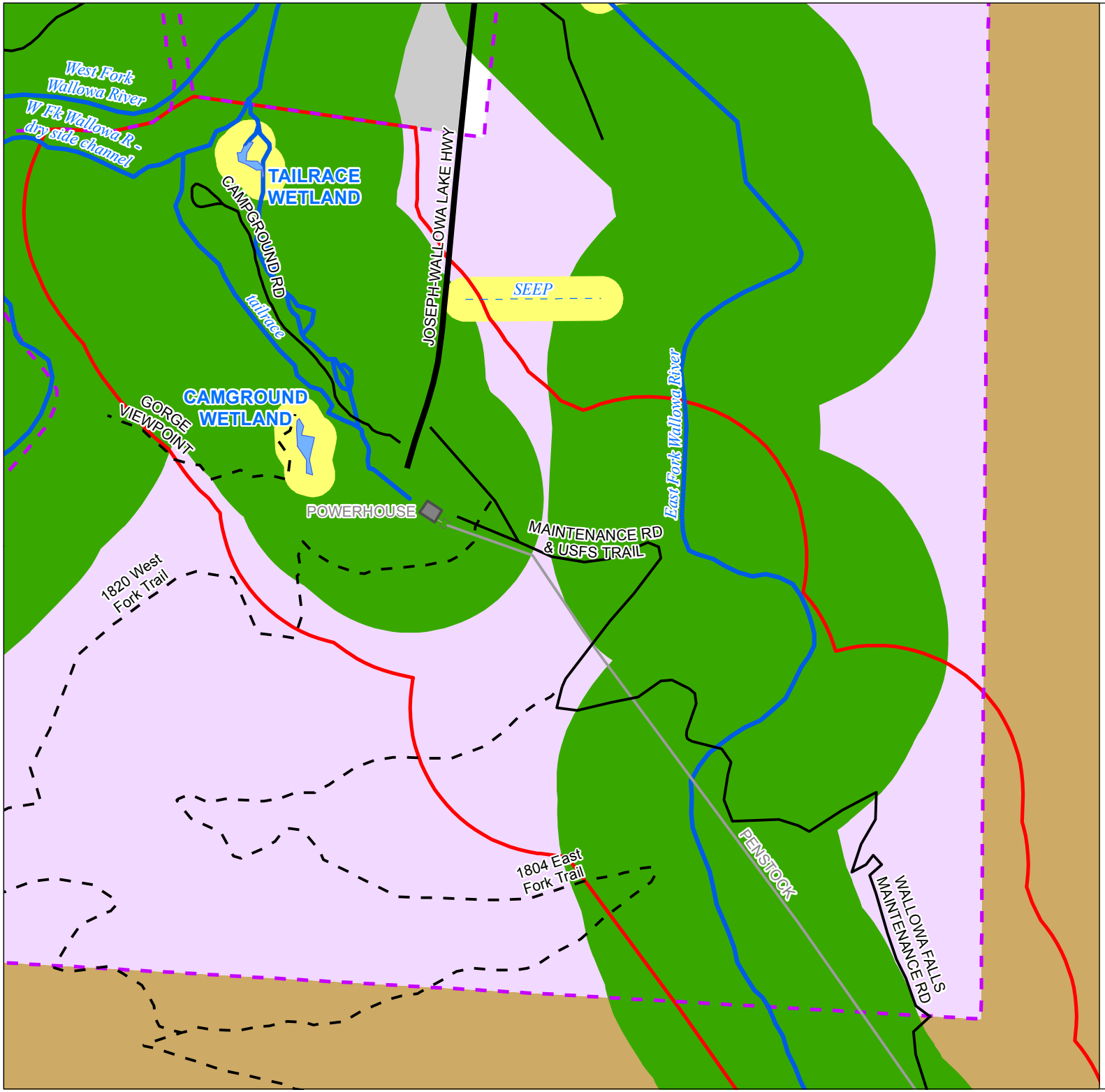
PHOTOS:

REPORTER: Leslie Moholt JOB TITLE: Contractor DATE: 31 July 2012


31 July 2012 Survey
13 June 2012 Survey
Botanical Survey Routes
Wallowa Falls
Hydroelectric Project

Appendix D

Riparian Habitat Conservation Areas within the Study Area Map



Wallowa Falls

Riparian Habitat Conservation Area

Page 1

- Trail
- Road
- Highway
- Facility
- Facility
- Penstock
- Intermittent Non-Fish
- Perennial Non-Fish
- Perennial Fish
- Wetland
- Study Area

RHCA Standard Widths

- Category 1
- Category 2
- Category 3
- Category 4

Land Ownership

- Private
- USFS
- PACIFICORP

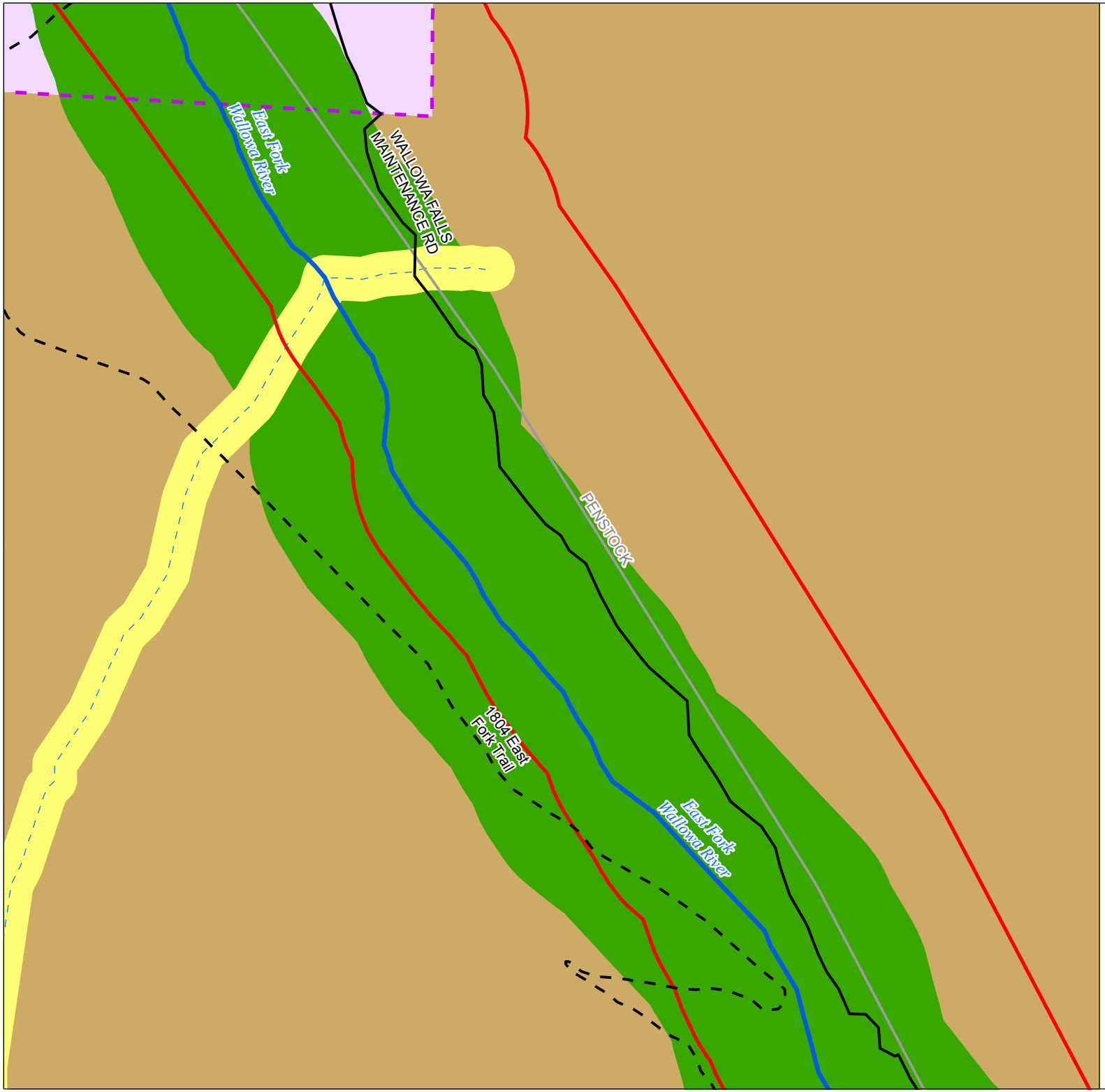
1:3,600

0 250 500

Feet

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

11/20/2012 gisdept@pacificorp.com
U:\Projects\2012\12-320\Wallowa Riparian Map.mxd



Wallowa Falls

Riparian Habitat Conservation Area

Page 2

- Trail
- Road
- Highway
- Facility
- Facility
- Penstock
- Intermittent Non-Fish
- Perennial Non-Fish
- Perennial Fish
- Wetland
- Study Area

RHCA Standard Widths

- Category 1
- Category 2
- Category 3
- Category 4

Land Ownership

- Private
- USFS
- PACIFICORP

1:3,600

0 250 500

Feet

PACIFICORP ENERGY
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11/20/2012 gisdept@pacificorp.com
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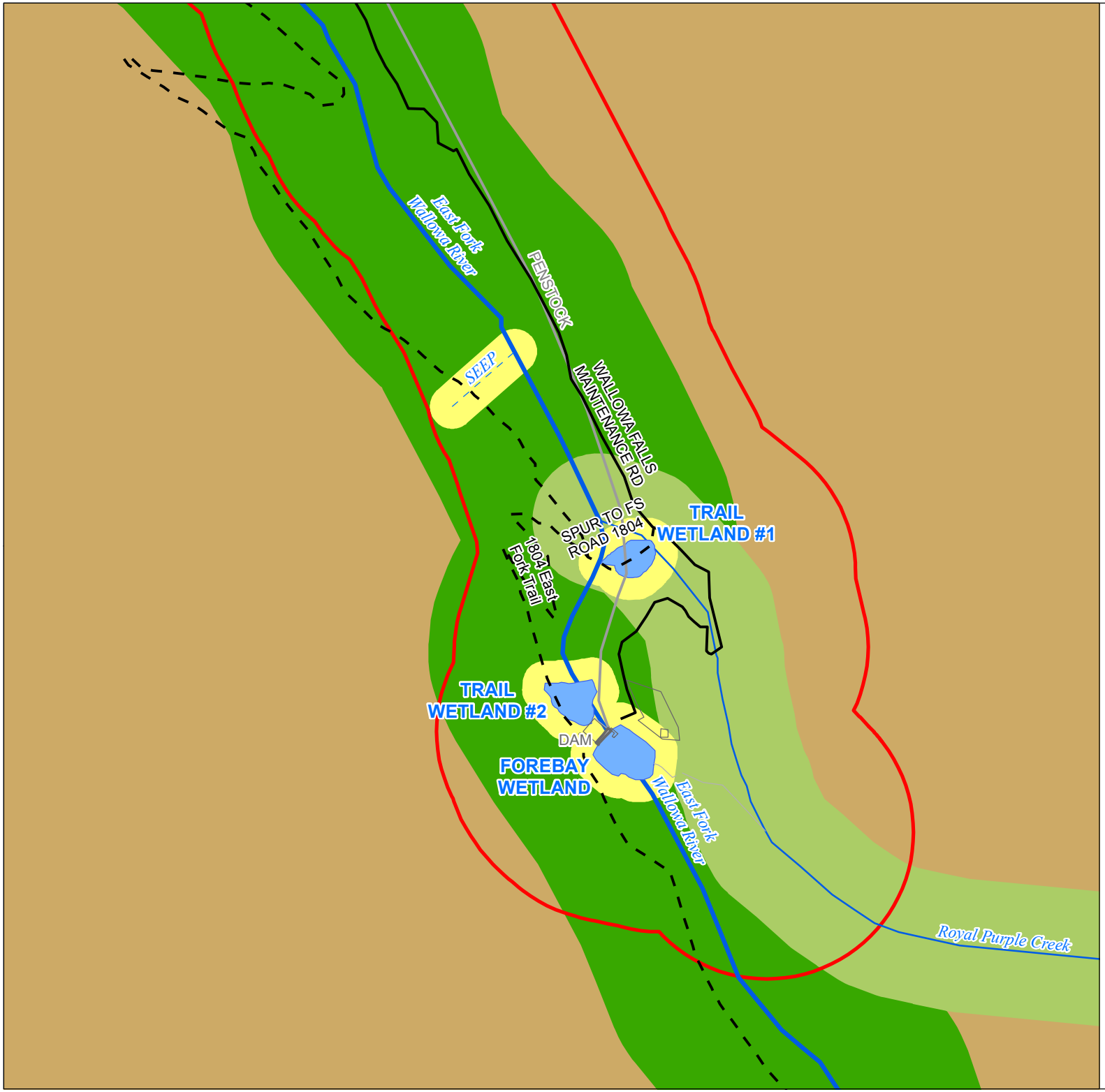


Wallowa Falls

Riparian Habitat Conservation Area

Page 3

- Trail
- Road
- Highway
- Facility
- Facility
- Penstock
- Intermittent Non-Fish
- Perennial Non-Fish
- Perennial Fish
- Wetland
- Study Area

RHCA Standard Widths

- Category 1
- Category 2
- Category 3
- Category 4

Land Ownership

- Private
- USFS
- PACIFICORP

1:3,600

0 250 500

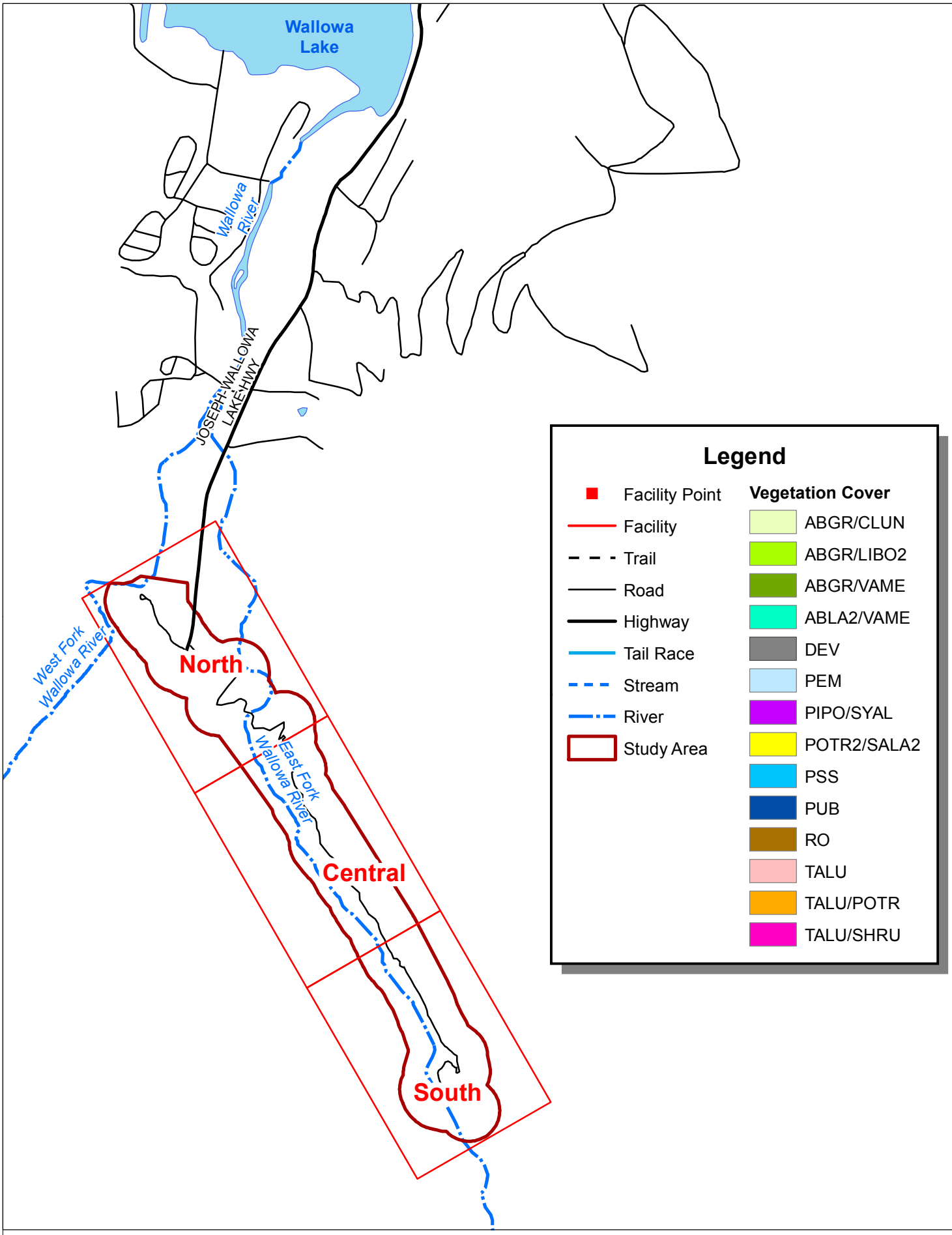
Feet

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

11/20/2012 gisdept@pacificorp.com
U:\Projects\2012\12-320\Wallowa Riparian Map.mxd

Appendix E

Vegetation Cover Types within the Study Area Map



Wallowa Falls Vegetation Cover: Index

11/07/2012 gisdept@pacificorp.com
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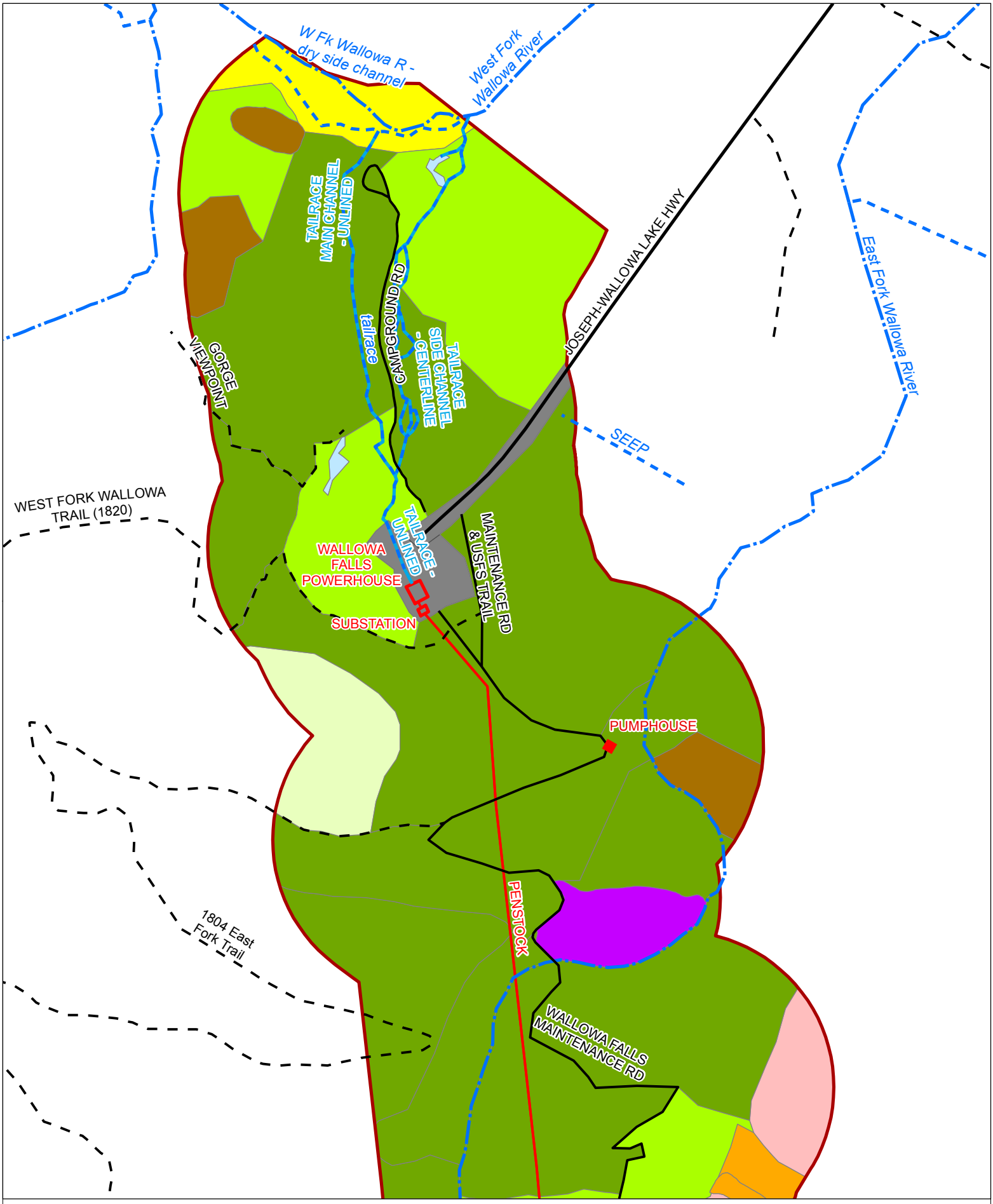
0 500 1,000
Feet

N

PACIFICORP ENERGY
A DIVISION OF PACIFICORP



Wallowa Falls Vegetation Cover: North Area

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

11/07/2012 gisdept@pacificorp.com
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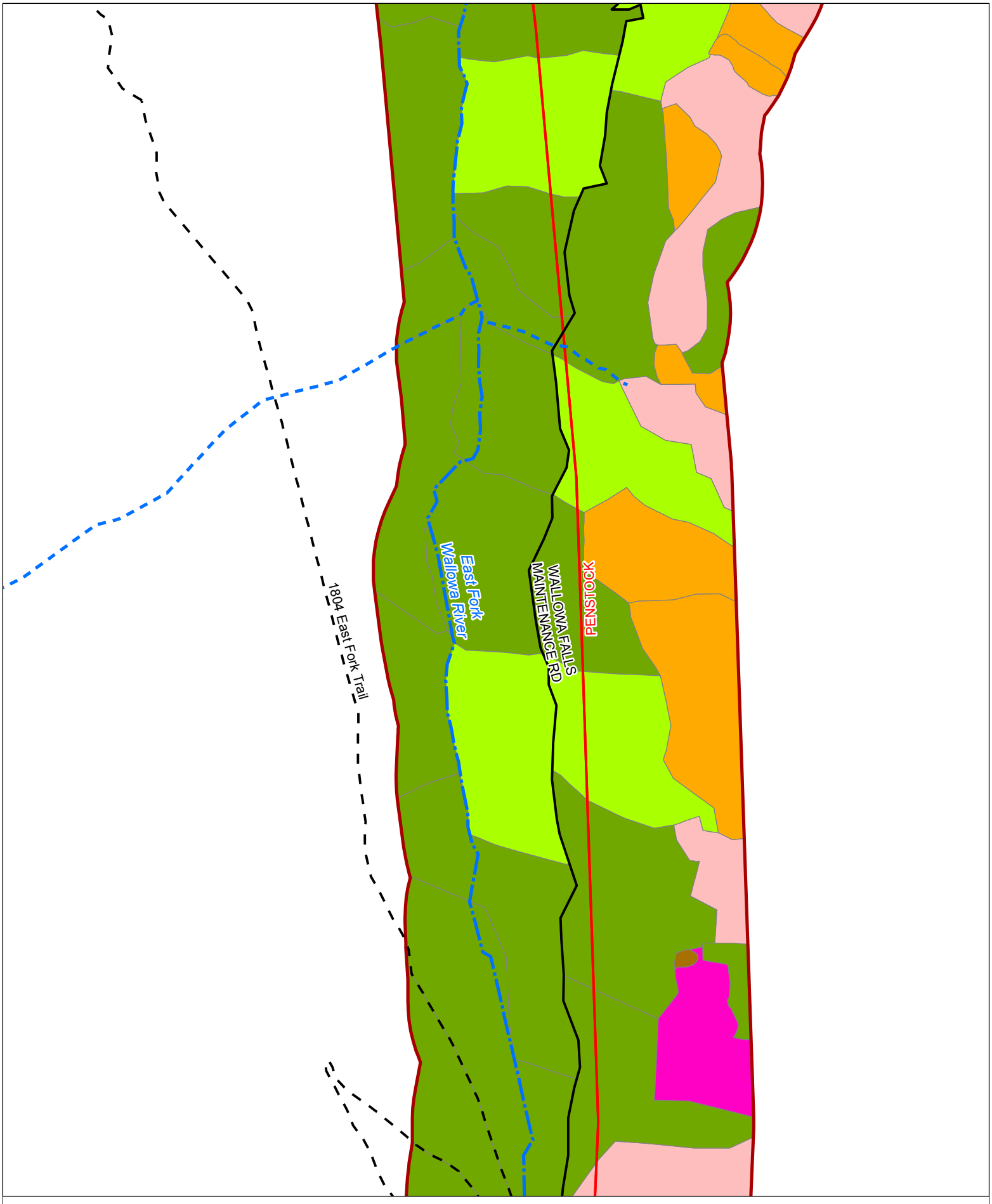
0 100 200
Feet



Wallowa Falls Vegetation Cover: Central Area

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

0 100 200
Feet

11/07/2012 gisdept@pacificorp.com
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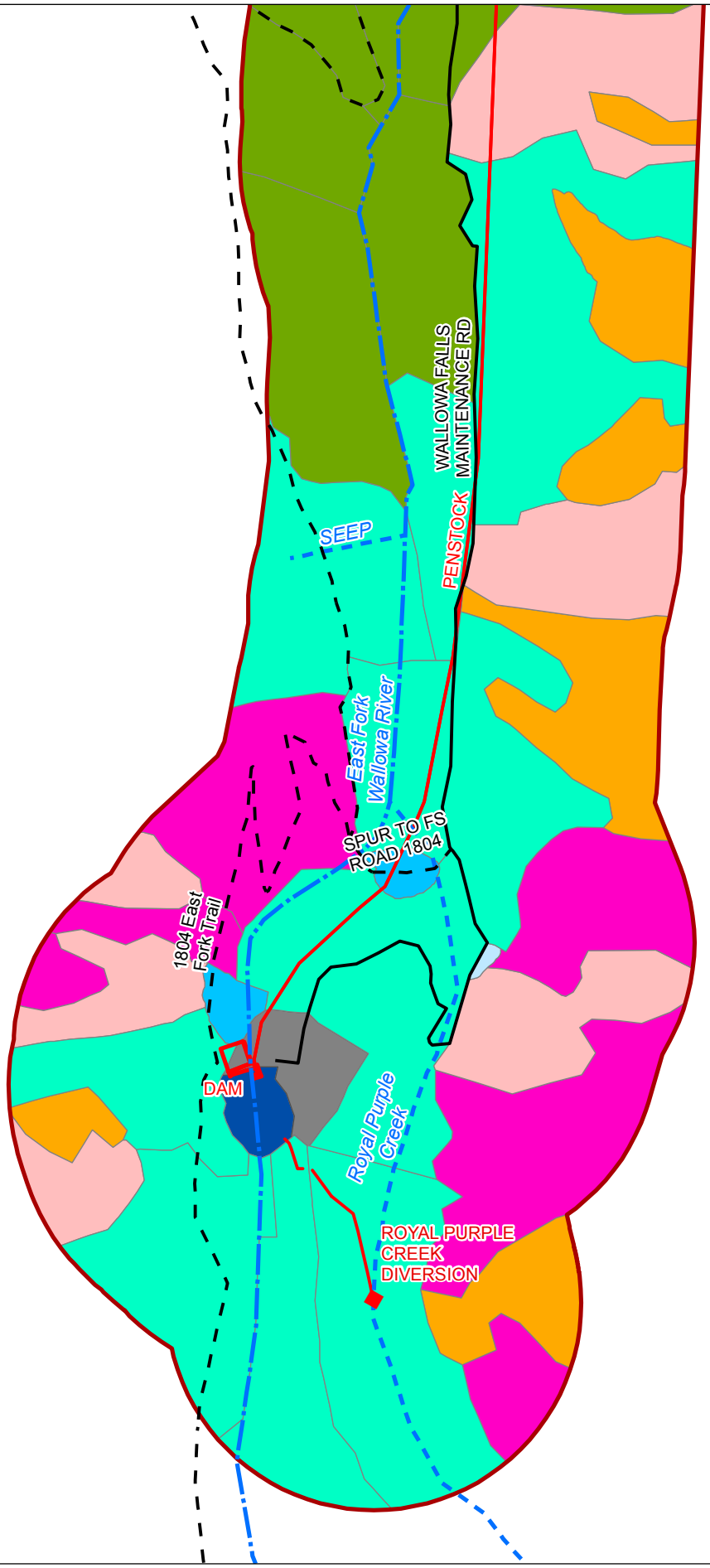

Wallowa Falls Vegetation Cover: South Area

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

11/07/2012 gisdept@pacificorp.com
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0 100 200
Feet

Appendix F

Oregon Biodiversity Information Center List of Rare, Threatened and Endangered, Candidate, or Special Status Wildlife Species in Wallowa County

Regional Forester's Special Status Species Lists for Sensitive Vertebrates and Federally Threatened, Endangered, and Proposed

Management Indicator Species and Forestwide Standards and Guidelines

Federally Listed, Proposed, Candidate Species, and Species of Concern under the jurisdiction of the Fish and Wildlife Service which may occur within Wallowa County, Oregon.

Table 3.5-1 Oregon Biodiversity Information Center List of Rare, Threatened and Endangered, Candidate, or Special Status Wildlife Species in Wallowa County.

Common Name	Scientific Name	Federal Status	State Status	ORBIC Status	Habitat	Species present in the Project Vicinity	Habitat within the Project Vicinity
Amphibians							
Rocky Mountain tailed frog	*Ascaphus montanus*	SOC	SV	2	Cold, clear, rocky perennial streams in mature forests (Washington Herp Atlas 2009).	Suspected	Yes
Columbia spotted frog	*Rana luteiventris*	C	SV	2	Slow-flowing streams, ponds, springs, and marshes with emergent vegetation. Egg masses are placed in areas where they receive little or no shading from vegetation. Waters that remain aerobic and do not freeze to the sediments (such as springs and creeks) are most likely necessary for winter survival in areas subject to freezing. (Washington Herp Atlas 2009).	Suspected	Yes
Birds							
Northern goshawk	*Accipiter gentilis*	SOC	SV	4	Mature stands with large trees, a high canopy closure, and an open understory. The stands are generally located on moderate slopes, benches, toe of slope, level ground, and typically close to perennial water (Marshall et al. 2003).	Suspected	Yes
Grasshopper Sparrow	*Ammpdramus savannarum*	--	SV	2	In Oregon their distribution is restricted to grasslands (Marshall et al. 2003).	No	No
Western burrowing owl	*Athene cunicularia hypugaea*	SOC	SC	4	Open grasslands and shrub-steppe areas including rangelands, pastures, golf course, and airports (Marshall et al. 2003).	No	No
Bufflehead	*Bucephala albeola*	--	--	2	High-elevation forested lakes. It uses cavities and artificial best boxes in trees close to water to nest. In migration and winter they use sheltered freshwater lakes, ponds, sewage ponds, slow-moving rivers, bays, and backwaters (Marshall et al. 2003).	Suspected	No

Common Name	Scientific Name	Federal Status	State Status	ORBIC Status	Habitat	Species present in the Project Vicinity	Habitat within the Project Vicinity
Ferruginous hawk	*Buteo regalis*	SOC	SV	4	Open country such as grasslands, shrub steppe, desert woodlands. Nest on cliffs and ledges, isolated trees, or riparian woodlands (Csuti et al. 1997, Marshall et al. 2003).	No	No
Swainson's hawk	*Buteo swainsoni*	--	SV	4	Open country such grasslands, sagebrush flats, juniper woodlands, and larger meadows in mountainous regions (Csuti et al. 1997).	No	No
Yellow-billed cuckoo	*Coccyzus americanius*	C	SC	2-ex	Large expanses of riparian forest that include Oregon Ash (*Fraxinus latifolia*), black cottonwood, and willow (*Salix* spp.) (Marshall et al. 2003).	No	No
Olive-sided flycatcher	*Contopus cooperi*	SOC	SV	4	Conifer forests with uneven age or open canopy stand with tall trees and snags for perching (Csuti et al. 1997)	Yes - observed	Yes
Bobolink	*Doliochonyx oryzivorus*	--	SV	2	Open prairies, grasslands, wet meadows, pastures, and grain crops (Csuti et al. 1997).	No	No
Pileated woodpecker	*Dryocopus pileatus*	--	SV	4	Dense mixed conifer forests in late-seral stages with large diameter trees and snags (Marshall et al. 2003).	Yes-observed	Yes
Willow flycatcher	*Empidonax traillii adastus*	SOC	SV	4	Tall brushy vegetation along streams, along the edge of forest clearings, or other openings (Csuti et al. 1997).	Suspected	Yes
Spruce grouse	*Falcipennis canadensis*	--	SV	3	In the Wallowa Mountains only and typically found in mix younger dense conifer forest with lodgepole pine, Engelmann spruce, and subalpine fir (Csuti et al. 1997, Marshall et al. 2003).	Suspected	Yes
American peregrine falcon	*Falco peregrinus anatum*	Delisted	SV	2	Cliffs greater than 75 ft in height and within 1.0 mile of water (Marshall et al. 2003).	Suspected	Yes
Bald eagle	*Haliaeetus luecocephalus*	Delisted	LT	4	Associated with large bodies of water. Nest in forested areas near oceans, rivers, estuaries, lakes, and reservoirs (Marshall et al. 2003).	Yes - Documented	Yes

Common Name	Scientific Name	Federal Status	State Status	ORBIC Status	Habitat	Species present in the Project Vicinity	Habitat within the Project Vicinity
Harlequin duck	*Histrionicus histrionicus*	SOC	--	2	Breeds in low-gradient, slower reaches of mountain streams in forested areas primarily in the western cascade mountains. The Wallowa Mountain reports are prior to 1935 (Csuti et al. 1997, Marshall et al. 2003).	No	No
Yellow-breasted chat	*Icteria virens*	SOC	SC	4	The edges of large, dense thickets in riparian areas and swales, floodplains areas adjacent to streams and rivers, and in unmanaged dense leafy vegetation surrounding ponds and swamps (Marshal et al. 2003).	No	No
Wallowa rosy-finch	*Leucosticte tephrocotis wallowa*	--	--	1	Nest in rock crevices and crannies in high alpine habitat (Marshall et al. 2003).	No	No
Lewis' woodpecker	*Melanerpes lewis*	SOC	SC	2	Associated with open woodland habitat near water. Breeds in Oregon white oak (*Quercus garryana*), ponderosa pine, and riparian cottonwood communities (Marshall et al. 2003).	Suspected	Yes
Long-billed curlew	*Numenius americanus*	--	SV	4	Open grasslands, prairies, and meadows, often near scattered shrubs and usually near water or wet meadows in flat or rolling topography (Csuti et al. 1997, Marshall et al. 2003).	No	No
Mountain quail	*Oreortyzx pictus*	SOC	SV	4	Generally found in shrub dominated communities in open forests, ridge tops, mountain slopes (Marshall et al. 2003).	Suspected	Yes
Flammulated owl	*Otus flammeolus*	--	SV	4	In dry open forest in mid-elevation range between 3,800 and 4,600 feet. Nest in mixed forest dominated with ponderosa pine (Marshall et al. 2003).	Suspected	Yes
Northern waterthrush	*Parkesia noveboracensis*	--	--	2	Dense and tall willow thickets in slow or standing water (Marshall et al. 2003).	No	No

Common Name	Scientific Name	Federal Status	State Status	ORBIC Status	Habitat	Species present in the Project Vicinity	Habitat within the Project Vicinity
White-headed woodpecker	*Picoides albolarvatus*	SOC	SC	2	In open ponderosa pine or mixed-conifer forests dominated by ponderosa pine. It requires large trees and snags for nesting and foraging (Csuti et al. 1997, Marshall et al. 2003).	Suspected	Yes
Black-backed woodpecker	*Picoides arcticus*	--	SV	4	Found in a variety of mix conifer forests dominated with ponderosa pine or lodgepole pine, typically below 4,500 ft with a high proportion of dead trees (Csuti et al. 1997, Marshall et al. 2003).	Suspected	Yes
American three-toed woodpecker	*Picoides dorsalis*	--	SV	4	Found in a variety of mix conifer forests dominated with or mixed with lodgepole pine, typically above 4,500 ft and contains high proportion of dead trees (Csuti et al. 1997, Marshall et al. 2003).	Suspected	Yes
Horned grebe	*Podiceps auritus*	--	--	2	Large open water areas surrounded with emergent vegetation (Csuti et al. 1997).	No	No
Great gray owl	*Strix nebulosa*	--	SV	4	Inhabit mature to old-growth coniferous forest adjacent to forest openings and clearings such as meadows (Csuti et al. 1997).	No	No
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*	SOC	SC	2	Found in grassland or grass-shrub habitats and utilize deciduous shrubs and trees for wintering (Marshall et al. 2003).	No	No
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**ORBIC Status**	**Habitat**	**Species present in the Project Vicinity**	**Habitat within the Project Vicinity**
Mammals							
Gray wolf	*Canis lupus*	LE	LE	2	Habitat generalists and will establish territories anywhere there is a sufficient food source (ODFW 2010a).	Suspected	Yes

Common Name	Scientific Name	Federal Status	State Status	ORBIC Status	Habitat	Species present in the Project Vicinity	Habitat within the Project Vicinity
Townsend's big-eared bat	*Cornorhinus townsendii*	SOC	SC	2	Occurs in wide variety of habitats, but commonly found in desert scrub, pinõn-juniper and pine forests. Roost in caves, mines, and buildings (Verts and Caraways 1998).	No	No
Spotted bat	*Euderma maculatum*	SOC	SV	2	A wide variety of habitat that contain cliffs and crevices for roosting and opening for foraging (Verts and Caraways 1998).	Suspected	Yes
California Wolverine	*Gulo gulo*	C	LT	2	Open forest at higher elevations and vast amounts of wilderness (Csuti et al. 1997, Verts and Caraways 1998).	Suspected	Yes
Silver-haired bat	*Lasionycteris noctivagans*	SOC	SV	4	Associated with older conifer forests, roosts under loose bark, and forages over ponds and streams (Csuti et al. 1997, Verts and Caraways 1998).	Suspected	Yes
Hoary bat	*Lasiurus cinereus*	--	SV	4	Solitary forest-dwelling species that roosts in trees and forages along riparian corridors and brushy areas in the forest (Csuti et al. 1997).	Suspected	Yes
White-tailed jackrabbit	*Lepus townsendii*	--	SV	3	Open habitats with sagebrush deserts and grasslands (Csuti et al. 1997).	No	No

Common Name	Scientific Name	Federal Status	State Status	ORBIC Status	Habitat	Species present in the Project Vicinity	Habitat within the Project Vicinity
Canada lynx	*Lynx canadensis*	LT	--	2	Canada lynx den in forests with large woody debris, such as downed logs and windfalls, to provide denning sites with security and thermal cover for kittens. Forests older than 200 years with lodgepole pine, spruce, and subalpine fir have been used for denning in Washington. Den sites must provide for minimal disturbance by humans and proximity to foraging habitat (early successional forests), with denning stands at least 2.5 acres in size. Intermediate-age forests allow for lynx access between den sites and foraging areas, movement within home ranges, and random foraging opportunities (USFWS 2009). USFS has identified the Project area as within Lynx Core Habitat Area and the habitat within the Project area as non-habitat, unsuitable, and no data (USFS 2010c).	Suspected	Yes
American marten	*Martes americana*	--	SV	4	Mature forest with closed canopies with adequate structure and down logs (Csuti et al. 1997).	Suspected	Yes
Fisher	*Martes pennanti*	SOC	SC	2	Mature, closed canopy forest with some deciduous component, particularly along riparian corridors (Csuti et.al. 1997).	Suspected	Yes
California myotis	*Myotis californicus*	--	SV	4	Forages around the edges of clumps of trees or over or near open water. Roost in cliff faces, crevices in trees, and caves (Csuti et al. 1997).	Suspected	Yes
Western small-footed myotis	*Myotis ciliolabrum*	SOC	--	4	Associated with arid grasslands in cliffs and rocky canyons, ponderosa pine, or mixed-conifer forests. Roosts in rock crevices, under boulders, and bark (Csuti et al. 1997).	No	No
Long-eared myotis	*Myotis evotis*	SOC	--	4	Associated with forested habitats and forest edges including juniper woodlands, open areas in ponderosa pine woodlands, Douglas-fir, spruce, true fir, and subalpine forest (Csuti et al. 1997).	Suspected	Yes

Common Name	Scientific Name	Federal Status	State Status	ORBIC Status	Habitat	Species present in the Project Vicinity	Habitat within the Project Vicinity
Fringed myotis	*Myotis thysanodes*	SOC	SV	2	Cave dweller found a variety of forested vegetation (Csuti et al. 1997, Verts and Caraways 1998).	Suspected	Yes
Long-legged myotis	*Myotis volans*	SOC	SV	4	Coniferous forests and roosts in crevices in cliff faces, abandon buildings, caves and mines (Csuti et al. 1997).	Suspected	Yes
Yuma myotis	*Myotis yumanensis*	SOC	--	4	Closely associated with open water and forests. Uses abandon buildings and other man-made structures for roosting (Csuti et al. 1997, Verts and Caraways 1998).	Suspected	Yes
Preble's shrew	*Sorex preblei*	SOC	--	3	Occurs near permanent or intermittent streams in arid to semi-arid shrub/grass associations and dense high-elevation coniferous forests (Csuti et al. 1997).	No	No
Grizzly bear	*Ursus artos horribilis*	LT	--	2-ex	Rugged and most inaccessible wilderness areas with adequate food, dens, and cover. Grizzly bears have been extirpated from Oregon since 1931 (Verts and Caraway 1998).	No	Yes
Reptiles							
Painted turtle	*Chrysemys picta*	--	SC	2	Shallow quiet waters, such as ponds, marshes, and small streams with muddy or sandy substrates with aquatic vegetation and basking sites (Csuti et al. 1997).	Suspected	Yes

REGIONAL FORESTER'S SPECIAL STATUS SPECIES LIST - Federally Threatened, Endangered, and Proposed (TE&P)

USDA FOREST SERVICE - PACIFIC NORTHWEST REGION

Date: January 2008

Taxon	ScientificName	CommonName	ESU_DPS	Federal Status	Date Listed	Critical Habitat	Recovery Plan	CRG	COL	DES	FWI	GIP	MAL	MBS	MTH	OCH	OKW	OLY	RRS	SIU	UMA	UMP	WAW	WIL
MA	CANIS LUPUS	GRAY WOLF		FE	2003	None in OR or WA	Final 1987		D			D	D	D			D				D		D	
MA	LYNX CANADENSIS	CANADA LYNX		FT	2000	Designated 2006	None		D				S				D				D		D	
VA	MIRABILIS MACFARLANEI	MACFARLANE'S FOUR O'CLOCK		FT	1979	None	Final 2000																D	
VA	SILENE SPALDINGII	SPALDING'S CATCHFLY		FT	2001	None	Final 2007														D		D	
FA	ONCORHYNCHUS MYKISS	STEELHEAD	MIDDLE COLUMBIA RIVER	FT	1999	Designated 2005	None	D				I	D		D	D	D				D		I	
FA	ONCORHYNCHUS MYKISS	STEELHEAD	SNAKE RIVER BASIN	FT	1997	Designated 2005	None	D													D		D	
FA	ONCORHYNCHUS NERKA	SOCKEYE SALMON	SNAKE RIVER	FE	1991	Designated 1993	None	D															D	
FA	ONCORHYNCHUS TSHAWYTSCHA	CHINOOK SALMON	SNAKE RIVER FALL/SPRING/ SUMMER RUNS	FT	1992	Designated 1993	None	D													D		D	
FN	SALVELINUS CONFLUENTUS	BULL TROUT	COLUMBIA RIVER	FT	6/10/1998	Final 2005	Draft 2002	I	D	D		D	D		D	D	D				D		D	D

REGIONAL FORESTER'S SPECIAL STATUS SPECIES LIST - Sensitive Vertebrates

USDA FOREST SERVICE - PACIFIC NORTHWEST REGION

Date: January 2008

(*) = Survey and Manage species that will remain Sensitive in OR and/or WA even though the criteria would place them in the Strategic category or off the list

Taxon	ScientificName	CommonName	ESU_DPS	ISSSSP Status	CRG	COL	DES	FWI	GIP	MAL	MBS	MTH	OCH	OKW	OLY	RRS	SIU	UMA	UMP	WAW	WIL
BI	BARTRAMIA LONGICAUDA	UPLAND SANDPIPER		SEN				S		D			S	S				S		D	
BI	BUCEPHALA ALBEOLA	BUFFLEHEAD		OR-SEN	D		D	D		D		D	D				D		D	S	D
BI	CENTROCERCUS UROPHASIANUS	GREATER SAGE-GROUSE		SEN			D	D		D			D							S	
BI	FALCO PEREGRINUS ANATUM	AMERICAN PEREGRINE FALCON		SEN	D	D	D	D	D	S	D	D	S	D	D	D	D	S	D	D	D
BI	HALIAEETUS LEUCOCEPHALUS	BALD EAGLE		SEN	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
BI	MELANERPES LEWIS	LEWIS' WOODPECKER		OR-SEN	D		D	D		D		D	D			D		S	D	D	S
BI	PICOIDES ALBOLARVATUS	WHITE-HEADED WOODPECKER		SEN	S	D	D	D		D		D	D	D		D		D	D	D	D
BI	TYMPANUCHUS PHASIANELLUS COLUMBIANUS	COLUMBIAN SHARP-TAILED GROUSE		OR-SEN																D	
HA	ASCAPHUS MONTANUS	INLAND TAILED FROG		OR-SEN														D		D	
HA	RANA LUTEIVENTRIS	COLUMBIA SPOTTED FROG	GREAT BASIN DPS	OR-SEN				S		D			D					D		D	
MA	GULO GULO LUTEUS	CALIFORNIA WOLVERINE		SEN	D	D	S	S	D	S	D	S	S	D		S	S	S	S	D	S
MA	MARTES PENNANTI	FISHER	OUTSIDE WEST COAST DPS	SEN	S	D								S						S	
FN	ONCORHYNCHUS CLARKII LEWISI	WESTSLOPE CUTTHROAT TROUT	ALL	SEN		D				D			D	D				D		D	
FN	ONCORHYNCHUS MYKISS	INLAND REDBAND TROUT (All stocks)		SEN		D	D	D	S	D		D	D	D		D		D		D	

	A	B	C	D	E	F	G	H	I	J
1	**REGIONAL FORESTER'S SPECIAL STATUS SPECIES LIST - Acronyms**									
2	**USDA FOREST SERVICE - PACIFIC NORTHWEST REGION**									
3	**Date: January 2008**									
4										
5	**National Forests:**				**Taxon:**	**Invertebrates**				
6	CRG	Columbia River Gorge National Scenic Area				IA = Class Arachnida: Spiders, Scorpions, Mites & Ticks				
7	COL	Colville National Forest				IBI = Class Bivalva: Clams, Oysters & Mussels				
8	DES	Deschutes National Forest				ICL = Class Clitellata: Leeches & Earthworms				
9	FWI	Fremont-Winema National Forest				ICR = Class Crustacea: Crustaceans				
10	GIP	Gifford Pinchot National Forest				IG = Class Gastropoda: Snails & Slugs				
11	MAL	Malheur National Forest				IIC = Order Collembola: Springtails				
12	MBS	Mount Baker-Snoqualmie National Forest				IICO = Order Coeloptera: Beetles & Weevils				
13	MTH	Mt. Hood National Forest				IIHE = Order Hemiptera: True Bugs				
14	OCH	Ochoco National Forest	**Federal Status:**			IIHY = Order Hymenoptera: Ants, Bees & Wasps				
15	OKW	Okanogan-Wenatchee National Forest	FE = Federal Endangered			IILE = Order Lepidoptera: Butterflies & Moths				
16	OLY	Olympic National Forest	FT = Federal Threatened			IIOD = Order Odonata: Dragonflies & Damselflies				
17	RRS	Rogue River-Siskiyou National Forest	FPT = Federal Proposed Threatened			IIOR = Order Orthoptera: Grasshoppers, Crickets & Roaches				
18	SIU	Siuslaw National Forest	*With "O" or "W" at the end, means*			IIPL = Order Plecoptera: Stoneflies				
19	UMA	Umatilla National Forest	*status only applies in Washington*			IITR = Order Trichoptera: Caddisflies & Water Moths				
20	UMP	Umpqua National Forest	*or Oregon*			IT = Class Turbellaria: Flatworms				
21	WAW	Wallowa-Whitman National Forest				**Vertebrates**		**Non-Vascular Plants**		
22	WIL	Willamette National Forest				BI = Birds		BR = Bryophytes		
23	**ISSSSP Status:**					HA = Amphibians		LI = Lichens		
24		SEN = Sensitive in OR and WA	STR = Strategic in OR and WA			HR = Reptiles				
25		SEN-OR = Sensitive in OR only	STR-OR = Strategic in OR only			MA = Mammals				
26		SEN-WA = Sensitive in WA only	STR-WA = Strategic in WA only			FA = Anadromous Fish				
27		*If species has different statuses in each state, both are noted on lists.*				FN = Non-anadromous Fish				
28	**Occurrence:**									
29	**D = Documented occurrence** = A species located on land administered by the BLM or the Forest Service based on historic or current known									
30	sites of a species reported by a credible source for which BLM and the Forest Service has knowledge of written, mapped or specimen									
31	documentation of the occurrence.									
32	**S = Suspected occurrence** = Species is not documented on land administered by the BLM or the Forest Service, but may occur on the unit									
33	because: 1) BLM District or National Forest is considered to be within the species' range ***and*** 2) appropriate habitat is present ***or*** 3) known									
34	occurrence of the species (historic or current) in vicinity such that the species could occur on BLM or FS land.									
35	**I = Influence** = downstream influence by Forest Service actions (only applied to Fish species)									
36										

MANAGEMENT INDICATOR SPECIES AND FORESTWIDE STANDARDS AND GUIDELINES

The following is a list of the management indicator species and their associated standards and guidelines at stated in the Blue Mountains Forests Revised Land and Resource Management Plan – Proposed Action (USFS 2010).

American marten

G-1 Management activities that limit the ability of American marten to disperse between patches of source habitat should be avoided; area and patch size of old forest should be maintained and road density within and between old forest patches should be maintained or reduced.

G-2 Areal extent of existing stands within the moist and cold old forest type that are 300 acres or larger should not be reduced.

G-3 Improve riparian corridors connecting moist and cold old forest type.

Bald eagle

S-1 New activities that have potential to cause abandonment or destruction of known bald eagle nest or roost sites shall be prohibited within 1,200 feet of those sites.

Bighorn sheep

S-2 Effective separation between bighorn sheep and domestic sheep and goats shall be maintained.

S-3 The use of domestic goats for noxious weed control shall not be authorized or allowed within or adjacent to source habitat for bighorn sheep.

S-4 The use of domestic pack goats shall not be authorized or allowed within or adjacent to source habitat for bighorn sheep.

Black-backed woodpecker and boreal owl

G-4 Greater than 50 percent of post-fire source habitat should be retained and should not be salvage logged.

G-5 Salvage logging should not occur within burned source habitat areas less than 100 acres, except for the removal of danger/hazard trees.

G-6 Where salvage logging occurs, all snags 21 inches DBH and greater and 50 percent of the snags from 12 to 21 inches DBH should be retained. except for the removal of danger/hazard trees. Snags should be retained in patches,

Fringed myotis and Townsend's big-eared bat

G-7 Bat maternity and roost sites should not be disturbed.

Lewis's woodpecker

S-5 Salvage logging shall not occur within burned source habitat areas that are less than 100 acres in size, except for the removal of danger/hazard trees.

G-8 Where salvage logging occurs within source habitat, all trees and snags 21 inches DBH and greater and 50 percent of the snags from 12 to 21 inches DBH should be retained. Snags should be retained in patches, except for the removal of danger/hazard trees.

Northern goshawk

G-9 Management activities should not alter stand structure within a radius of 660 feet from known goshawk nests.

G-10 Nest disturbing management activities should not occur within a radius of 1,320 feet from known active goshawk nests between April 1 and August 1.

Pileated woodpecker

G-11 To the extent practical, known cavity or nest trees should be preserved when conducting prescribed burning activities, mechanical fuel treatments, and silvicultural treatments.

White-headed woodpecker

S-6 Where silvicultural and prescribed burning activities occur within source habitat, all live trees and snags 21 inches DBH and greater and 50 percent of the snags from 12 to 21 inches DBH shall be retained, except for the removal of danger/hazard trees. Snags shall be retained in patches.

S-7 Where management activities occur within source habitat, all snags 21 inches DBH and greater and 50 percent of the snags from 12 to 21 inches DBH shall be retained, except for the removal of danger/hazard trees. Snags shall be retained in patches.

Fox Sparrow

G-12 Where management activities occur within riparian habitat, the quantity and health of shrubs should be increased and improved.

Cassin's Finch

G-13 Vigor and areal extent of seed producing grasses and forbs should not be reduced in source habitats.

Water Vole

G-14 Roads and trails should not be constructed within high elevation riparian areas.

G-15 Residual herbaceous vegetation within high elevation riparian areas should be maintained at a

level adequate to prevent stream bank degradation.

Rocky Mountain elk (winter range)

G-16 Motor vehicle use within crucial winter range should not be authorized or allowed between December 1 and April 30.

Rocky Mountain elk (summer range)

G-17 Management activities that disrupt areas identified by state fish and wildlife agencies as important elk calving areas should be avoided (from May 1 to June 30).

G-18 Management activities that disturb elk wallows should be avoided.

Reference:

United States Forest Service. 2010. Blue Mountains Forests Revised Land and Resource Management Plan – Proposed Action. United States Forest Service. On the web: http://www. fs.fed. us/r6/uma/blue_mtn planrevision/.

FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES
AND SPECIES OF CONCERN
UNDER THE JURISDICTION OF THE FISH AND WILDLIFE SERVICE
WHICH MAY OCCUR WITHIN WALLOWA COUNTY, OREGON

LISTED SPECIES

Fish

Inland:

Bull trout	*Salvelinus confluentus*	CH T

Plants

MacFarlane's four o'clock	*Mirabilis macfarlanei*	T
Spalding's catchfly	*Silene spaldingii*	T

PROPOSED SPECIES

None

No Proposed Endangered Species		PE
No Proposed Threatened Species		PT

CANDIDATE SPECIES

Mammals

North American wolverine	*Gulo gulo luscus*

SPECIES OF CONCERN

Mammals

Townsend's western big-eared bat	*Corynorhinus townsendii townsendii*
Spotted bat	*Euderma maculatum*
Silver-haired bat	*Lasionycteris noctivagans*
Small-footed myotis bat	*Myotis ciliolabrum*
Long-eared myotis bat	*Myotis evotis*
Fringed myotis bat	*Myotis thysanodes*
Long-legged myotis bat	*Myotis volans*
Yuma myotis bat	*Myotis yumanensis*
Preble's shrew	*Sorex preblei*

Birds

Northern goshawk	*Accipiter gentilis*
Western burrowing owl	*Athene cunicularia hypugaea*
Ferruginous hawk	*Buteo regalis*
Olive-sided flycatcher	*Contopus cooperi*
Willow flycatcher	*Empidonax traillii adastus*
Harlequin duck	*Histrionicus histrionicus*
Yellow-breasted chat	*Icteria virens*
Lewis' woodpecker	*Melanerpes lewis*
Mountain quail	*Oreortyx pictus*
White-headed woodpecker	*PIcoides albolarvatus*
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*

FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES
AND SPECIES OF CONCERN
UNDER THE JURISDICTION OF THE FISH AND WILDLIFE SERVICE
WHICH MAY OCCUR WITHIN WALLOWA COUNTY, OREGON

Reptiles and Amphibians

Rocky Mountain tailed frog	*Ascaphus montanus*
Coastal tailed frog	*Ascaphus truei*

Fish

Pacific lamprey	*Lampetra tridentata*

Invertebrates

Snails:

Columbia pebblesnail	*Fluminicola fuscus (= columbianus)*

Plants

Wallowa ricegrass	*Achnatherum wallowaensis*
Blue Mountain onion	*Allium dictuon*
Hell's Canyon rock-cress	*Arabis hastatula*
Upward-lobed moonwort	*Botrychium ascendens*
Prairie moonwart	*Botrychium campestre*
Crenulate grape fern	*Botrychium crenulatum*
Mountain grape fern	*Botrychium montanum*
Twin-spike moonwort	*Botrychium paradoxum*
Stalked moonwort	*Botrychium pedunculosum*
Green-band mariposa lily	*Calochortus macrocarpus var. maculosus*
Broad-fruit mariposa lily	*Calochortus nitidus*
Fraternal paintbrush	*Castilleja fraterna*
Purple alpine paintbrush	*Castilleja rubida*
Englemann's daisy	*Erigeron engelmannii var. davisii*
Hazel's prickly-phlox	*Leptodactylon pungens ssp. hazeliae*
Greenman's desert parsley	*Lomatium greenmani*
Membrane-leaved monkeyflower	*Mimulus hymenophyllus*
Least phacelia	*Phacelia minutissima*
Bartonberry	*Rubus bartonianus*

DELISTED SPECIES

Mammals

Terrestrial:

Gray wolf (Rocky Mountain distinct population segment)	*Canis lupus*

Birds

American Peregrine falcon	*Falco peregrinus anatum*
Bald eagle	*Haliaeetus leucocephalus*

Definitions:

Listed Species: An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future.

FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES AND SPECIES OF CONCERN UNDER THE JURISDICTION OF THE FISH AND WILDLIFE SERVICE WHICH MAY OCCUR WITHIN WALLOWA COUNTY, OREGON

Proposed Species: Taxa for which the Fish and Wildlife Service or National Marine Fisheries Service has published a proposal to list as endangered or threatened in the Federal Register.

Candidate Species: Taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

Species of Concern: Taxa whose conservation status is of concern to the U.S. Fish and Wildlife Service (many previously known as Category 2 candidates), but for which further information is still needed. Such species receive no legal protection and use of the term does not necessarily imply that a species will eventually be proposed for listing.

Delisted Species: A species that has been removed from the Federal list of endangered and threatened wildlife and plants.

Key:

E	Endangered
T	Threatened
CH	Critical Habitat has been designated for this species
PE	Proposed Endangered
PT	Proposed Threatened
PCH	Critical Habitat has been proposed for this species

Notes:

Marine & Anadromous Species: Please consult the National Marine Fisheries Service (NMFS) (http://www.nmfs.noaa.gov/pr/species/) for marine and anadromous species. The National Marine Fisheries Service (NMFS) manages mostly marine and anadromous species, while the U.S. Fish and Wildlife Service manages the remainder of the listed species, mostly terrestrial and freshwater species.

Marine Turtle Conservation and Management: All six species of sea turtles occurring in the U.S. are protected under the Endangered Species Act of 1973. In 1977, NOAA Fisheries and the U.S. Fish and Wildlife Service signed a Memorandum of Understanding to jointly administer the Endangered Species Act with respect to marine turtles. NOAA Fisheries has the lead responsibility for the conservation and recovery of sea turtles in the marine environment and the U.S. Fish and Wildlife Service has the lead for the conservation and recovery of sea turtles on nesting beaches. For more information, see the NOAA Fisheries webpage on sea turtles http://www.nmfs.noaa.gov/pr/species/turtles/.

Gray Wolf: In 2008, the Service published a final rule that established a distinct population segment of the gray wolf (*Canis lupis*) in the northern Rocky Mountains (which includes a portion of Eastern Oregon, east of the centerline of Highway 395 and Highway 78 north of Burns Junction and that portion of Oregon east of the centerline of Highway 95 south of Burns Junction). Any wolves found west of this line in Oregon belong to the conterminous USA population [see 73 FR 10514]. On May 5, 2011, the Fish and Wildlife Service published a final rule – as directed by legislative language in the Fiscal Year 2011 appropriations bill – reinstating the Service's 2009 decision to delist biologically recovered gray wolf populations in the Northern Rocky Mountains. Gray wolves in Oregon are State-listed as endangered, regardless of location.