



Botanical Report 2018

Wallowa Falls Hydroelectric Project

Special Status Plant Surveys



Prepared by:

Bio-Resources, Inc.

306 NE 1st Street

Enterprise, OR 97828

January 2019



Introduction

The Wallowa Falls Hydroelectric Project (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 meter 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. 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, with 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. Geomorphology within the Project area is typical of mountain valleys. It is constrained by steep topography, mountain peaks and the valley floor and lower slopes largely forested with areas of exposed ridges, rocky 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 species.

The FERC Project Boundary, to be examined by this work, is approximately 26 acres and includes project operations, facilities, and portions of the access road and campground. The bypassed portion of the East Fork Wallowa River, within and near the Project Boundary, is approximately 1.75 miles long from the Project diversion dam to its confluence with the West Fork Wallowa River.

Special Status Plant Survey-

Botrychium montanum, Botrychium minganense, Cypripedium fasciculatum

Consultation with Wallowa-Whitman National Forest (WWNF) forest botanist, Jerry Hustafa, concluded an early and late season Special Status Plant Species Survey of the Project area was justified. All species included on the Region 6 Regional Forester Sensitive Species and Strategic Species List (see Table 1) were considered during each survey. However at the request of Mr. Hustafa, additional effort was directed towards higher probability species. An early to mid-June survey targeted *Cypripedium fasciculatum* and a late July survey was conducted to target *Botrychium* species.

Early Season Survey

An intuitive control botanical survey of the entire project area was conducted on June 12, 2018 in accordance with the Special Status Species Policy <https://www.fs.fed.us/r6/sfpnw/issssp/agency-policy/>. High intensity, 100% coverage, surveys were conducted in areas considered potential for future construction activities, especially 100 meters from north bank of the North Tailrace Channel and south bank of the South Tailrace Channel and all areas in between. A follow up survey was conducted on June 20th to collect additional information on a plant located on June 12th. With the exception of the single observations described below, no sensitive species were located during this survey.

No Clustered Lady's-slippers (*Cypripedium fasciculatum*) were located by survey efforts. However, Mountain Lady's-slipper (*Cypripedium montanum*) a closely related species, not considered sensitive, was found blooming in the project area at the lower end of the Wallowa Falls Maintenance Road (Figure 1). Clustered Lady's-slipper is a highly visible species, especially when in bloom. The Bio-Resources, Inc. field botanist, Kendrick Moholt, conducting surveys has considerable experience with this species from work in other parts of Oregon. It can be assumed with a high level of confidence that Clustered Lady's-slipper is not present in the project area and would not be impacted by any proposed construction activities.



Figure 1. Mountain Lady's-slipper (*Cypripedium montanum*) found blooming within the project area.

On the June 12th survey, a single *Botrychium minganense* plant was located next to the Wallowa Falls Maintenance Road (Figures 2 and 4). Search of the surrounding area and additional searches on June 20th and July 22nd found no additional individuals. At the time of initial detection, the sporophore (fertile frond) of this plant was missing, presumably removed by herbivory (Figure 3). This observation documents a previously unknown population of *Botrychium minganense* and was recorded using an R-6 TES Plant Element Occurrence Field Form (Appendix 1). This population of *Botrychium minganense* is located on property managed by the Wallowa-Whitman National Forest (Figure 4). However, the plant was only 100 feet from of the boundary between PacifiCorp and Federal Land and future investigations may find additional individuals on PacifiCorp property. Mitigation measures to ensure the protection of this population are included in the Construction Plan to Protect Special Status Plant Species (Appendix 2).



Figure 2. *Botrychium minganense* found in project area.



Figure 3. *Botrychium minganense* plant showing signs of sporophore herbivory.



Figure 4. *Botrychium minganense* and associated species in the Project area.

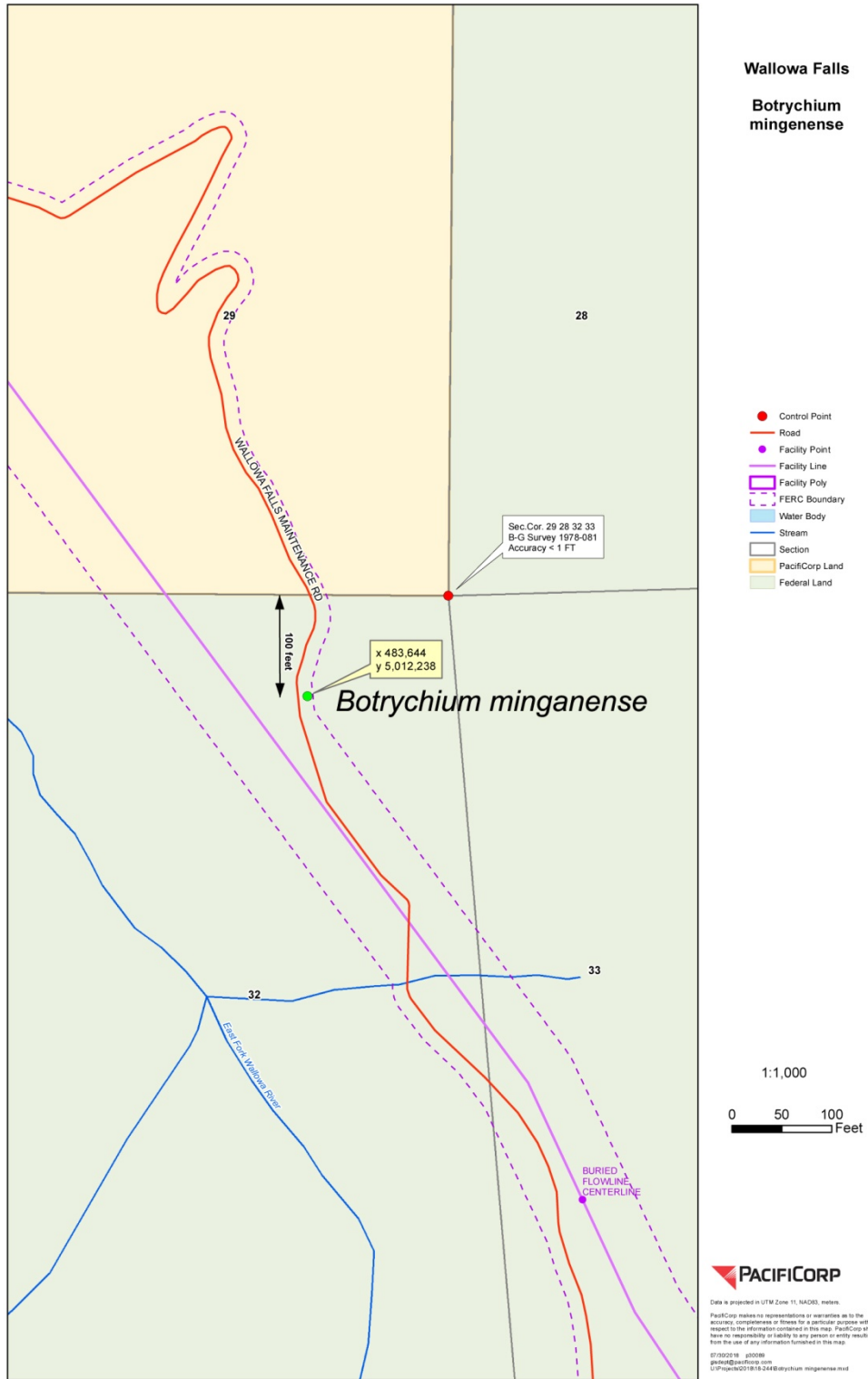


Figure 5. Location of *Botrychium minganense* next to the Wallowa Falls Maintenance Road.

Late Season Survey

A second intuitive control botanical survey of the entire project area was conducted on July 22, 2018 in accordance with the Special Status Species Policy <https://www.fs.fed.us/r6/sfpnw/issssp/agency-policy/>. High intensity, 100% coverage, surveys were conducted in areas considered potential for future construction activities, especially 100 meters from north bank of the North Tailrace Channel and south bank of the South Tailrace Channel and all areas in between. High intensity surveys were also conducted in an area considered high probability for *Botrychium montanum* and in the area around the *Botrychium minganense* plant located on June 12th.

Several data sources have identified *Botrychium* species within the Project area, and in particular near the Project forebay. The ORBIC database has a 1991 record of *Botrychium montanum*, a federal species of concern, in the Project area (ORBIC 2010; ORBIC 2012). In 1992, this plant was identified again during a botanical survey that was conducted as part of the Wallowa Falls Dam Reparation Project (PacifiCorp 1993). *Botrychium* species were relocated, but were unable to be distinguished to species. The United States Forest Service (USFS) provided Geographic Information Systems (GIS) data, received in an email, from Mike Gerdis to Russ Howison on August 2, 2010 which identified both *Botrychium minganense* and *Botrychium montanum* located near the forebay on August 4, 1991. Comments received from USFS on the PAD on June 23, 2011, identified *Botrychium montanum* as being present in the Project vicinity, at or near the forebay, as well as further up in the drainage (USFS 2011b). A survey of the Project area conducted during the 2012 and 2017 growing seasons failed to relocate any *Botrychium* species (Bio-Resources 2012, 2017).

An intensive survey for *Botrychium montanum* in the area of potential habitat was conducted on July 22, 2018. In addition to this target search, additional survey was conducted on the entire project area for potential sensitive species (Table 1) with special attention given to the area near the *Botrychium minganense* plant that was first located on June 12, 2018.

The survey of the forebay area located no *Botrychium montanum* plants. This finding was documented using an R-6 TES Plant Element Occurrence Field Form (See Appendix 1). No plants were located during a survey in 2012 and 2017 (Bio-Resources. 2012, 2017). At this time, it may be likely that the population of *Botrychium montanum* has been extirpated from the project area. However, it seems prudent to continue to avoid the highest probability areas for the plant. It is our recommendation that construction activities and material storage be minimized or avoided in the area east of the forebay cabin as outlined in the Construction Plan to Protect Special Status Plant Species (Appendix 2).

The late season survey of the Project area relocated the *Botrychium minganense* found on June 12th but did not identify any additional individuals. No other species of concern (Table 1) were located.

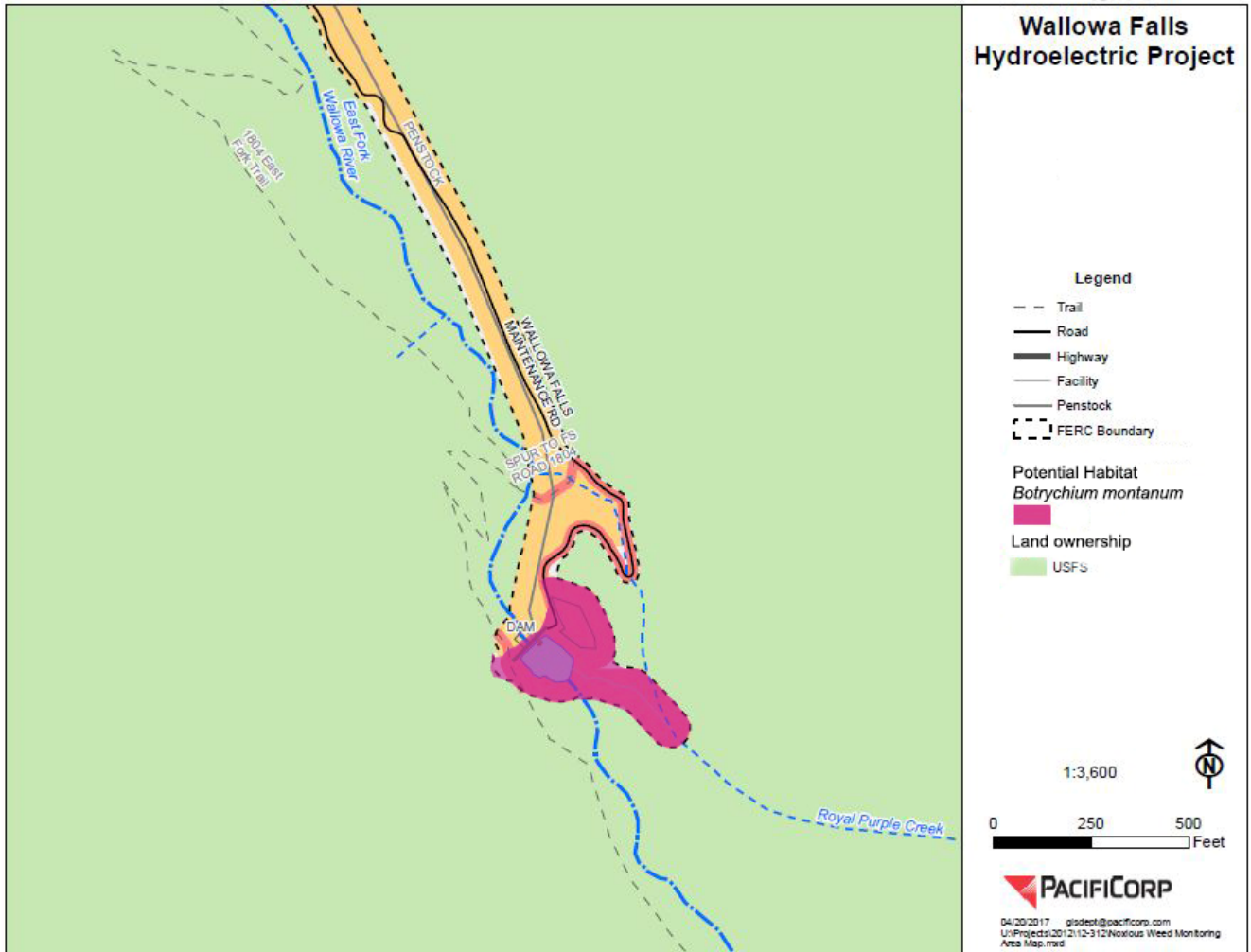


Figure 6. Potential habitat for *Botrychium montanum* on the Wallowa Falls Hydroelectric Project.

Table 1. Region 6 Regional Forester Sensitive Species and Strategic Species List

NRCS PLANTS Code	Scientific Name	Common Name
ANMI8	<i>Anastrophyllum minutum</i>	Liverwort
ANJU	<i>Anthelia julacea</i>	Liverwort
BALY	<i>Barbilophozia lycopodioides</i>	Liverwort
ENBR2	<i>Encalypta brevipes</i>	Moss
ENFA2	<i>Entosthodon fascicularis</i>	Moss
HAFL9	<i>Harpanthus flotovianus</i>	Liverwort
JUPO3	<i>Jungermannia polaris</i>	Liverwort
LOGI3	<i>Lophozia gillmanii</i>	Liverwort
PEQU7	<i>Peltolepis quadrata</i>	Liverwort
PRQU2	<i>Preissia quadrata</i>	Liverwort
PSTR5	<i>Pseudocalliergon trifarium</i>	Moss
PTPU2	<i>Ptilidium pulcherrimum</i>	Liverwort
SCCI5	<i>Schistidium cinclidodonteum</i>	Moss
TEGE	<i>Tetraphis geniculata</i>	Moss
TOMU70	<i>Tortula mucronifolia</i>	Moss
ACWA	<i>Achnatherum wallowaense</i>	Wallowa ricegrass
ACROT	<i>Acomastylis rossii</i> ssp. <i>turbinatum</i>	Slender-stemmed avens
ALGEG	<i>Allium geyeri</i> var. <i>geyeri</i>	Geyer's onion
ASVI10	<i>Asplenium viride</i>	Green spleenwort
BOHA3	<i>Boechera hastatula</i>	Hells canyon rockcress
BOAS2	<i>Botrychium ascendens</i>	Upward-lobed moonwort
BOCA5	<i>Botrychium campestre</i>	Prairie moonwort
BOCR	<i>Botrychium crenulatum</i>	Crenulate moonwort
BOHE5	<i>Botrychium hesperium</i>	Western moonwort
BOLI7	<i>Botrychium lineare</i>	Slender moonwort
BOLU	<i>Botrychium lunaria</i>	Moonwort
BOMO	<i>Botrychium montanum</i>	Mountain grape-fern
BOPA9	<i>Botrychium paradoxum</i>	Twin-spiked moonwort
BOPE4	<i>Botrychium pedunculatum</i>	Stalked moonwort
BUAM2	<i>Bupleurum americanum</i>	Bupleurum
CAMAM	<i>Calochortus macrocarpus</i> var. <i>maculosus</i>	Green-band mariposa-lily
CAAT8	<i>Carex atrosquama</i>	Blackened sedge
CACA12	<i>Carex capillaris</i>	Hairlike sedge
CACA13	<i>Carex capitata</i>	Capitate sedge
CACO81	<i>Carex cordillerana</i>	Cordilleran sedge
CADI4	<i>Carex diandra</i>	Lesser panicled sedge
CAGY2	<i>Carex gynocrates</i>	Yellow bog sedge
CAID	<i>Carex idahoensis</i>	Idaho sedge

CALAA	Carex lasiocarpa var. americana	Slender sedge
CAME9	Carex media	Intermediate sedge
CAMI16	Carex micropoda	Pyrenaean sedge
CANA2	Carex nardina	Spikenard sedge
CAPE5	Carex pelocarpa	New sedge
CARE4	Carex retrorsa	Retorse sedge
CASA10	Carex saxatilis	Russet sedge
CASU7	Carex subnigricans	Dark alpine sedge
CAVE5	Carex vernacula	Native sedge
CAFLR	Castilleja flava var. rustica	Rural paintbrush
CAFR8	Castilleja fraterna	Fraternal paintbrush
CARU8	Castilleja rubida	Purple alpine paintbrush
CAVI9	Castilleja viscidula	Sticky paintbrush
CHFE	Cheilanthes feei	Fee's lip-fern
COTE13	Comastoma tenellum	Slender gentian
CRSI2	Cryptantha simulans	Pine woods cryptantha
CRST2	Cryptogramma stelleri	Steller's rockbrake
CYLUL	Cyperus lupulinus ssp. lupulinus	Great Plains flatsedge
CYFA	Cypripedium fasciculatum	Clustered lady's-slipper
ELBR5	Elatine brachysperma	Short seeded waterwort
ELBO	Eleocharis bolanderi	Bolander's spikerush
ERDA3	Erigeron davisii	Engelmann's daisy
ERDI3	Erigeron disparipilus	White cushion erigeron
ERHY6	Erythranthe hymenophylla	Membrane-leaved monkeyflower
GEPR3	Gentiana prostrata	Moss gentian
HECU3	Heliotropium curassavicum	Salt heliotrope
JUTRA2	Juncus triglumis var. albescens	Three-flowered rush
KOMY	Kobresia myosuroides	Bellard's kobresia
KOSI2	Kobresia simpliciuscula	Simple kobresia
LIAR6	Lipocarpha aristulata	Aristulate lipocarpha
LIBO4	Listera borealis	Northern twayblade
LOER2	Lomatium erythrocarpum	Red-fruited lomatium
LOGR2	Lomatium greenmanii	Greenman's desert parsley
LOPA8	Lomatium pastoralis	Meadow lomatium
LYCO3	Lycopodium complanatum	Ground cedar
MUMI2	Muhlenbergia minutissima	Annual dropseed
OPPU3	Ophioglossum pusillum	Adder's-tongue
PEBR5	Pellaea bridgesii	Bridges' cliff-brake
PEDEV2	Penstemon deustus var. variabilis	Variable hot-rock penstemon
PHMI7	Phacelia minutissima	Dwarf phacelia
PHMU3	Phlox multiflora	Many-flowered phlox
PIAL	Pinus albicaulis	Whitebark pine
PIFL2	Pinus flexilis	Limber pine
PLOB	Platanthera obtusata	Small northern bog-orchid

PLOR3	<i>Pleuropogon oregonus</i>	Oregon semaphoregrass
PODI	<i>Potamogeton diversifolius</i>	Rafinesque's pondweed
PYDE	<i>Pyrola dentata</i>	Toothleaf pyrola
PYSC4	<i>Pyrocoma scaberula</i>	Rough pyrocoma
ROCO3	<i>Rorippa columbiae</i>	Columbia cress
RORA	<i>Rotala ramosior</i>	Lowland toothcup
RUBA	<i>Rubus bartonianus</i>	Bartonberry
SAFA	<i>Salix farriae</i>	Farr's willow
SAWO	<i>Salix wolfii</i>	Wolf's willow
SAADO2	<i>Saxifraga adscendens</i> ssp. <i>oregonensis</i>	Wedge-leaf saxifrage
SUVI	<i>Suksdorfia violacea</i>	Violet suksdorfia
THAL	<i>Thalictrum alpinum</i>	Alpine meadowrue
THEU	<i>Thelypodium eucosmum</i>	Arrow-leaf thelypody
TOMO	<i>Townsendia montana</i>	Mountain townsendia
TOPA2	<i>Townsendia parryi</i>	Parry's townsendia
TRDO	<i>Trifolium douglasii</i>	Douglas' clover
TRPA28	<i>Triglochin palustris</i>	Slender bog arrowgrass
TRLAA2	<i>Trollius laxus</i> ssp. <i>albiflorus</i>	American globeflower
UTMI	<i>Utricularia minor</i>	Lesser bladderwort

References

Bio-Resources. 2012. Final Report Wallowa Falls Hydroelectric Project Special Status Plant Study and Noxious Weed Study. August 2012.

Bio-Resources. 2017. Botanical Report 2017 Wallowa Falls Hydroelectric Project Special Status Plant and Noxious Weed Management.

Oregon Biodiversity Information Center. 2010. 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 mile of the Wallowa Falls Dam Project in T 03S R 45E Sections 28, 29, 32, and 33,WM. Unpublished report for Bio-Resources, Inc.

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



Appendix 1

Sensitive Plant Forms

Site Morphometry

38) Percent Slope: 3%

39) Slope position: FS

40) Aspect: azimuth: or cardinal: WSW

41) Elev.: Ave: Min: 1768 Max: 1768

42) Elev UOM: ®* meter

Soil Characteristics and Light Conditions

43) Substrate on which EO occurs: S

44) Parent Material: RESI

45) Soil Moisture: D

46) Soil Texture: SL

47) Soil Type: rocky, sandy loam

48) Light Exposure: PSH

Site Classifications

Record taxonomic units of the given type(s) if published classifications exist for the area.

CLASSIFICATION TYPE	CLASS CODE	CLASSIFICATION SHORT NAME	CLASSIFICATION SET
49) Existing Veg			
50) Potential Veg			
51) Ecotype			

Habitat Quality and Management Comments

52) **Habitat Description:** Mesic opening in *Picea engelmannii* and *Abies grandis*

53) **Dominant Process:** 70

54) **Community Quality (L, M, H):** M

55) **Landscape Integrity (L, M, H):** M

56) **Process Comment:** Firewood stacked nearby

57) **Disturbance/Threats (present or imminent):** Trampling

58) **Disturbance/Threats Comment:** Area SE of cabin should be avoided

59) **Non-Native Comment:** Minimal threat from non-natives

60) **Current Land Use Comment:** Potential storage area for cabin

Canopy Cover

Record % canopy cover by actual percent, **or** by cover class (as indicated in General Information Block).

Lifeform Canopy Cover	61) % Cov or Code	Ground Cover	62) % Cov or Code
Tree	65	Bare	15
Shrub	5	Gravel	
Forb	10	Rock	
Graminoid	5	Bedrock	
Non-vascular		Moss	
Lichen		Litter/Duff	
Algae		Basal Veg	
		Water	
		Road surface	
		Lichen	

Associated Species

List species directly associated with the EO species on this site. Record the NRCS Plant Code, scientific name or both. If desired, indicate lifeform, dominant species, % cover for each species and flag non-native species.

63) Completeness of Species List: @* C, R, or S C

64) Species List Comment: small area recorded

65) NRCS	66) Scientific Name	67) Life Form	68) Dom. (Y/N)	69) % Cov or	70) Non-native
Plant Code PIEN	<i>Picea engelmannii</i>	TR	Y	50	No
ABGR	<i>Abies grandis</i>	TR	N	15	No
RILA	<i>Ribes lacustre</i>	SH	Y	5	No
CARO5	<i>Carex rossii</i>	GR	Y	5	No
FRVI	<i>Fragaria virginiana</i>	FB		10	No
ARCO9	<i>Arnica cordifolia</i>	FB		10	No
TAOF	<i>Taraxacum officinale</i>	FB		T	Yes
PYSE	<i>Pyrola secunda</i>	FB		5	No
HIAL2	<i>Hieracium albiflorum</i>	FB		T	No
THOC	<i>Thalictrum occidentale</i>	FB		T	No
EPAN	<i>Epilobium angustifolium</i>	FB		T	No
ANRA	<i>Antennaria racemosa</i>	FB		T	No

EO Specimen Documentation None

71) Reference for ID:

72) Primary Collector – Last Name:

First Name:

M.I.

Other Collectors – Last Name:

First Name:

M.I.

73) Collection #: ®*

74) ID Confirmed: ®* Y: or N: or Questionable:

75) Verification:

76) Specimen Repository: ®*

Image Information

77) Image ID 78) Image Description
 Site SE of cabin

Location Information

(State, County, Region, Forest, District will be auto-populated by the database application when the spatial feature is entered)

79) USGS Quad Number: 45117-C2-TF-024 80) USGS Quad Name: Joseph, Oregon
 81) Forest Quad Number: 82) Forest Quad Name:

83) Legal Description: Required where public land survey is available.

Meridian: Township and Range: 3S 45E

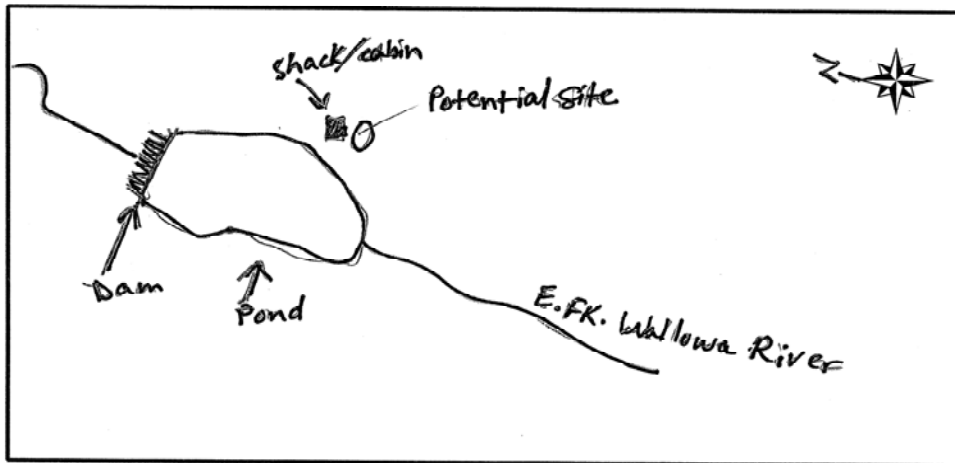
Section: <u>33</u>	Q Sec: <u>SW</u>	QQ Sec: <u> </u>	QQQ Sec: <u> </u>	QQQQ Sec: <u> </u>
84) Latitude and Longitude (either in degrees, minutes, seconds or in decimal degrees)				
Geodetic Datum:				
Latitude: Degrees <u> </u> N	Minutes <u> </u>	Seconds <u> </u>		
Longitude: Degrees <u> </u> W	Minutes <u> </u>	Seconds <u> </u>		
GPS Datum:				
GPS Lat. Dec. Degrees:		GPS Long. Dec. Degrees:		

85) UTM	
UTM Datum: NAD27	UTM Zone: <u> </u>
Easting: <u>084221</u>	Northing: <u>5011023</u>
86) GPS Equipment Used (Manufacturer and Model):	
Garmin Oregon 550t	
87) Metes and Bounds	

88) Directions to Site

From the main USFS trailhead at the end of Hwy. 82, walk the Wallowa Falls maintenance road ~1.2 miles to the dam. The site is located southeast of the shack by the dam.

89) Sketch of Site or Area



90) General EO Comments

TES Plant Element Occurrence Field Form

USDA FOREST SERVICE 2005

Ⓢ = required field, Ⓢ* = conditionally required field

General Information

1) FS SITE ID: Ⓢ		2) DATE: 14 and 20 June; 22 July 2018Ⓢ		3) SITE NAME:	
4) NRCS PLANT CODE: BOMIⓈ					
5) SCIENTIFIC NAME: Ⓢ <i>Botrychium minganense</i>					
6) RECORD SOURCE: Ⓢ		7) SURVEY ID: Ⓢ*		8) Survey Name: BRI/PacifiCorp 2018	
9) EXAMINER(S)- LAST: MoholtⓈ			FIRST: Kendrick		MIDDLE INITIAL:
LAST:			FIRST:		MIDDLE INITIAL:
10) OWNERSHIP: USFS (WWNF)Ⓢ					
11) E.O. #			12) NEW OCCURRENCE – YES: YES		
13) STATE: OregonⓈ*		14) COUNTY: Wallowa Ⓢ*			
15) REGION: R6Ⓢ*	16) FOREST: Wallowa-WhitmanⓈ*		17) DISTRICT: Wallowa RDⓈ*		
18) Entire extent mapped: Yes: YES No: Uncertain:			19) Area (Est): <0.1 acres		20) Area UOM: Ⓢ*
21) Canopy Cover Method Ⓢ* (circle one): COVER PERCENT					

Element Occurrence Data

22) EO Canopy Cover: %Cov: 50 or Cover Class Code:		23) Lifeform:	
24) Number of subpopulations: 1		XX) Plants Found: Yes	
25) Plant Count:	26) Count Type: <i>Genets/</i>		27) Count: <i>Actual</i>
28) Revisit needed - No		29) Revisit Date:	
30) Revisit Justification:			
31) Phenology by % (Sum to 100%): Vegetative ____ Flower/Bud <u>100</u> Fruit/Dispersed . ____ Seedlings/ Juvenile ____		32) Population Comments: (e.g., distribution, vigor, density, phenology, dispersal)	
		33) Evidence of disease, competition, predation, collection, trampling, or herbivory: Yes <u>X</u> or No ____	
		34) Evidence Comments: Predation- Sporophore missing	
35) Pollinator observed – No		36) Pollinator type(s):	
37) Pollinator comments: NA			

Site Morphometry

38) Percent Slope: 5%		39) Slope position: southwest	
40) Aspect: azimuth: 220 or cardinal:			
41) Elev.: Ave: Min: 5125 Max: 5125		42) Elev UOM: Ⓢ*	

Soil Characteristics and Light Conditions

43) Substrate on which EO occurs: Duff layer	
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44) Parent Material: granit	45) Soil Moisture: wet	46) Soil Texture: fine
47) Soil Type: Clay loam	48) Light Exposure: medium	

Site Classifications

Record taxonomic units of the given type(s) if published classifications exist for the area.			
CLASSIFICATION TYPE	CLASS CODE	CLASSIFICATION SHORT NAME	CLASSIFICATION SET
49) Existing Veg			
50) Potential Veg			
51) Ecotype			

Habitat Quality and Management Comments

52) Habitat Description: On trail edge with twinflower, ocean spray, mixed conifer	
53) Dominant Process:	
54) Community Quality (L, M, H):	55) Landscape Integrity (L, M, H):
56) Process Comment:	
57) Disturbance/Threats (present or imminent): present	
58) Disturbance/Threats Comment: Trail maintenance	
59) Non-Native Comment: little to no non-native	
60) Current Land Use Comment: next to trail	

Canopy Cover

Record % canopy cover by actual percent, or by cover class (as indicated in General Information Block).			
Lifeform Canopy Cover	61) % Cov or Code	Ground Cover	62) % Cov or Code
Tree	50	Bare	
Shrub	10	Gravel	
Forb	20	Rock	
Graminoid	-	Bedrock	
Non-vascular	5	Moss	5
Lichen		Litter/Duff	20
Algae		Basal Veg	
		Water	
		Road surface	
		Lichen	

FS SITE ID:

Associated Species

List species directly associated with the EO species on this site. Record the NRCS Plant Code, scientific name or both. If desired, indicate lifeform, dominant species, % cover for each species and flag non-native species.

63) Completeness of Species List: ®* C, R, OR S

64) Species List Comment:

65) NRCS Plant Code	66) Scientific Name	67) Life Form	68) Dom. (Y/N)	69) % Cov or Class	70) Non- native
	Linnaea borealis		y	5	
	Fragaria virginiana				
	Adenocaulon bicolor				
	Chimaphila umbellata				
	Goodyera oblongifolia				
	Thalictrum occidentale				
	Holodiscus discolor		y	10	
	Abies concolor				
	Picea engelmannii				
	Pinus ponderosa				
	Acer glabrum				

EO Specimen Documentation NONE

71) Reference for ID: -----NA		
72) Primary Collector – Last Name:	First Name:	M.I.
Other Collectors – Last Name:	First Name:	M.I.
73) Collection #: ®*	74) ID Confirmed: ®* Y: or N: or Questionable:	
75) Verification:		

76) Specimen Repository: ®*

Image Information

77) Image ID	78) Image Description

Location Information

(State, County, Region, Forest, District will be auto-populated by the database application when the spatial feature is entered)

79) USGS Quad Number:	80) USGS Quad Name:
81) Forest Quad Number:	82) Forest Quad Name:

83) Legal Description: Required where public land survey is available.				
Meridian:	Township and Range: T3S R45E			
Section:	Q Sec:NE	QQ Sec:NW	QQQ Sec:	QQQQ Sec:
32				

84) Latitude and Longitude (either in degrees, minutes, seconds or in decimal degrees)			
Geodetic Datum:			
Latitude:	Degrees _____ N	Minutes	Seconds _____
Longitude:	Degrees _____ W		
GPS Datum:		GPS Long. Dec. Degrees:	

85) UTM	
UTM Datum: NAD 83	UTM Zone: 11T
Easting: <u>0483644</u>	Northing: <u>5012238</u>

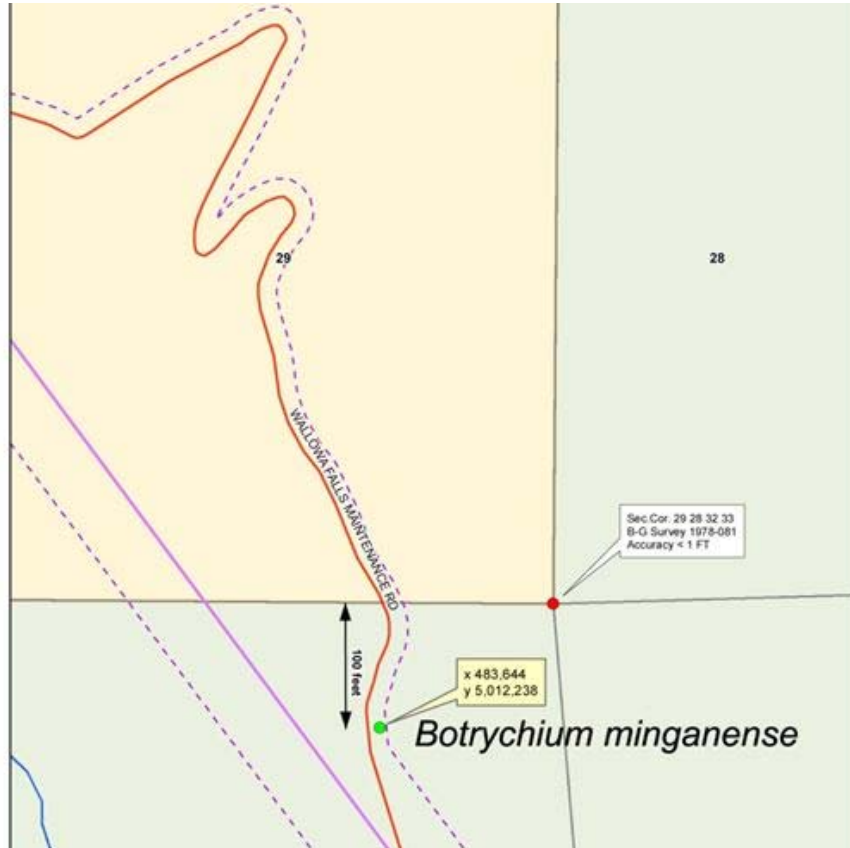
86) GPS Equipment Used (Manufacturer and Model):
Garin 62s

87) Metes and Bounds

88) Directions to Site

From the southern end of Powerhouse Road walk the Wallowa Falls Maintenance Road to the main falls (~1.0 mile) and continue ~0.2 mile (just 100 feet past the section line between sec. 29 and 32). The plant is located on the east side of the trail.

89) Sketch of Site or Area



90) General EO Comments

Appendix 2
Construction Plan to Protect
Special Status Plant Species

Wallowa Falls Hydroelectric Project

Construction Plan to Protect Special Status Plant Species

The Wallowa Falls Hydroelectric Project (Project) is located on the East Fork Wallowa River approximately 11 miles outside of the City of Joseph in Northeastern Oregon. The FERC regulated boundary of this Project is approximately 26 acres and includes project operations, facilities, and portions of the access road and campground (Figures 7, 8, 9). 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 species. In addition, several data sources have identified *Botrychium* species within the Project area. This plan has been designed in cooperation with the Wallowa-Whitman National Forest to ensure the protection of sensitive botanical resources.

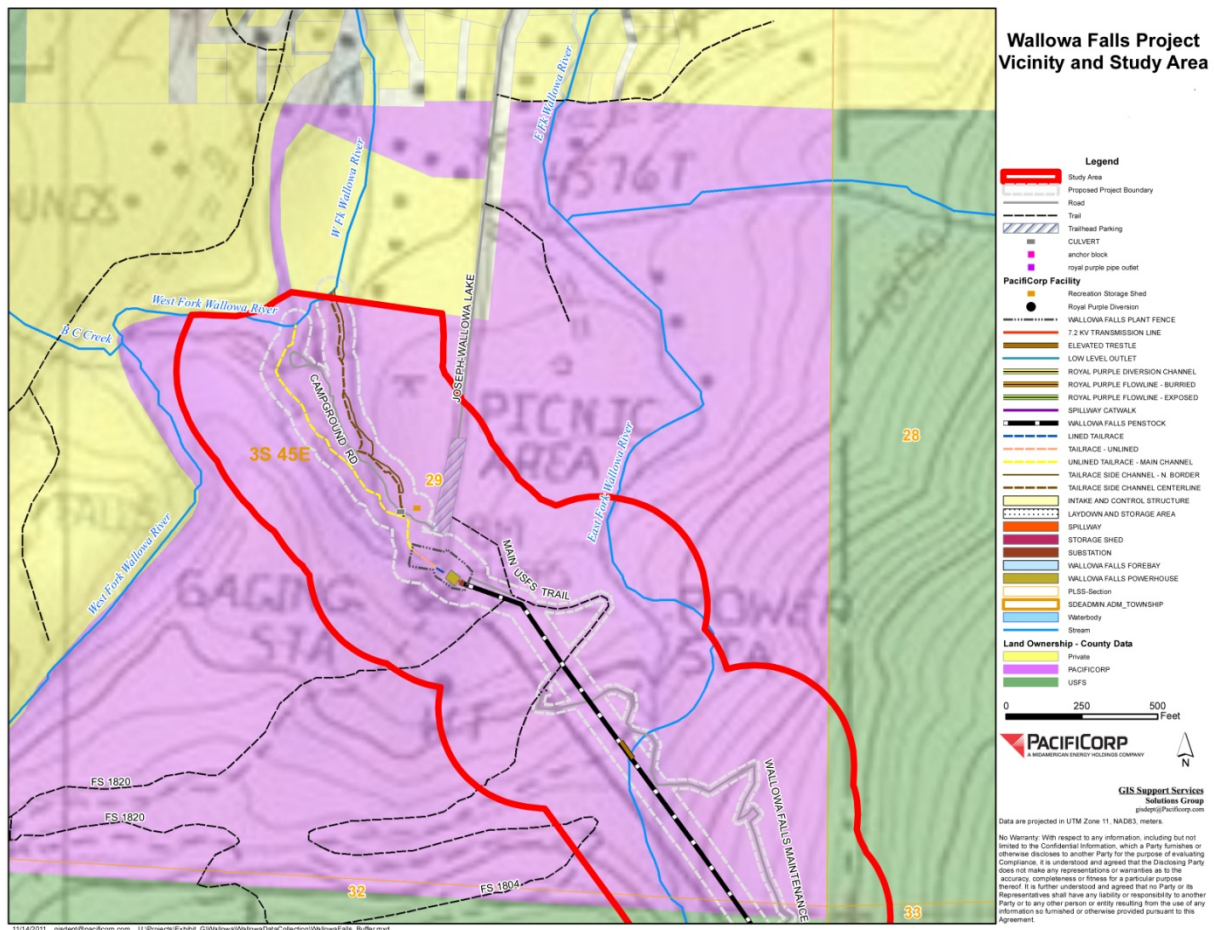


Figure 7. Wallowa-Whitman National Forest Project Area (1 of 3; North)

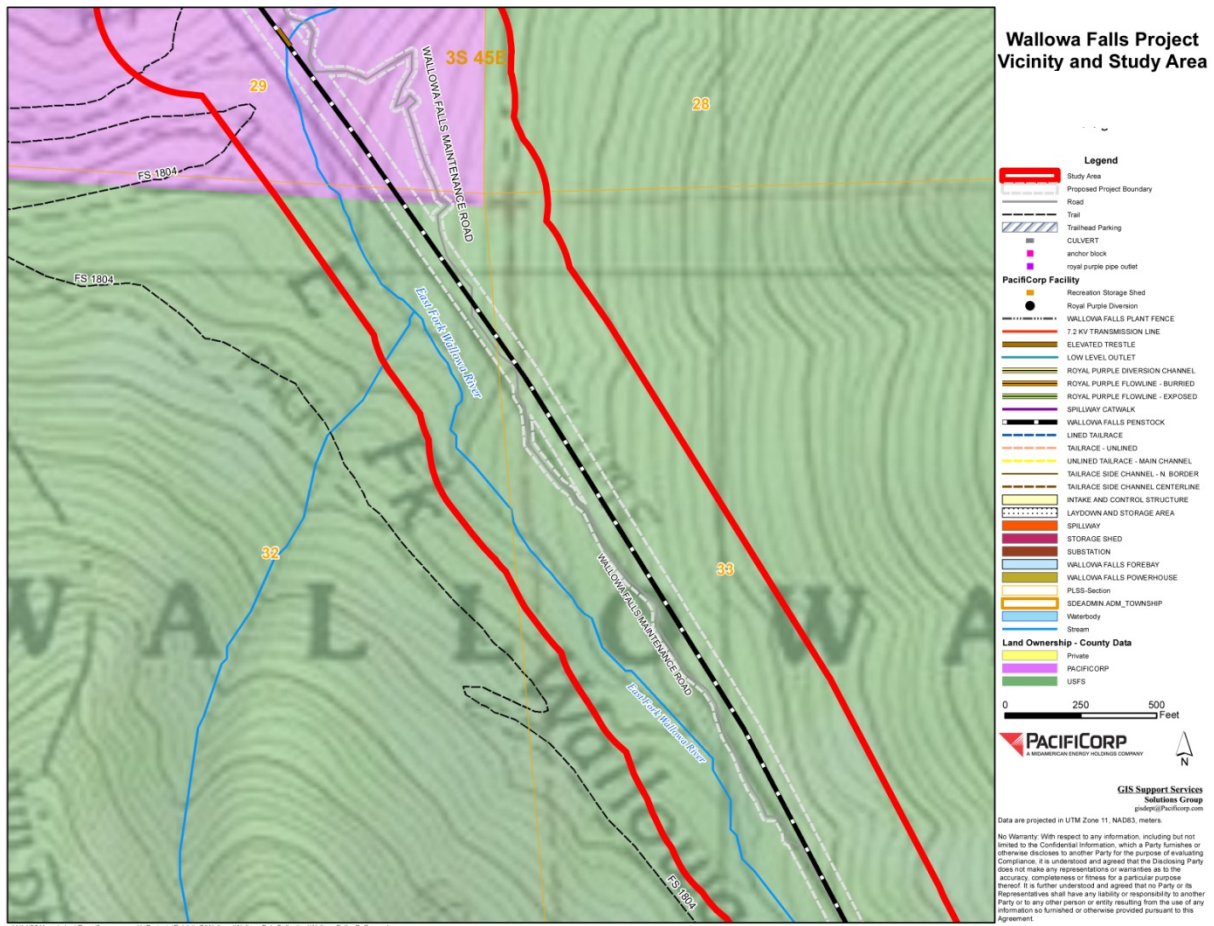


Figure 8. Wallowa-Whitman National Forest Project Area (2 of 3; Middle)

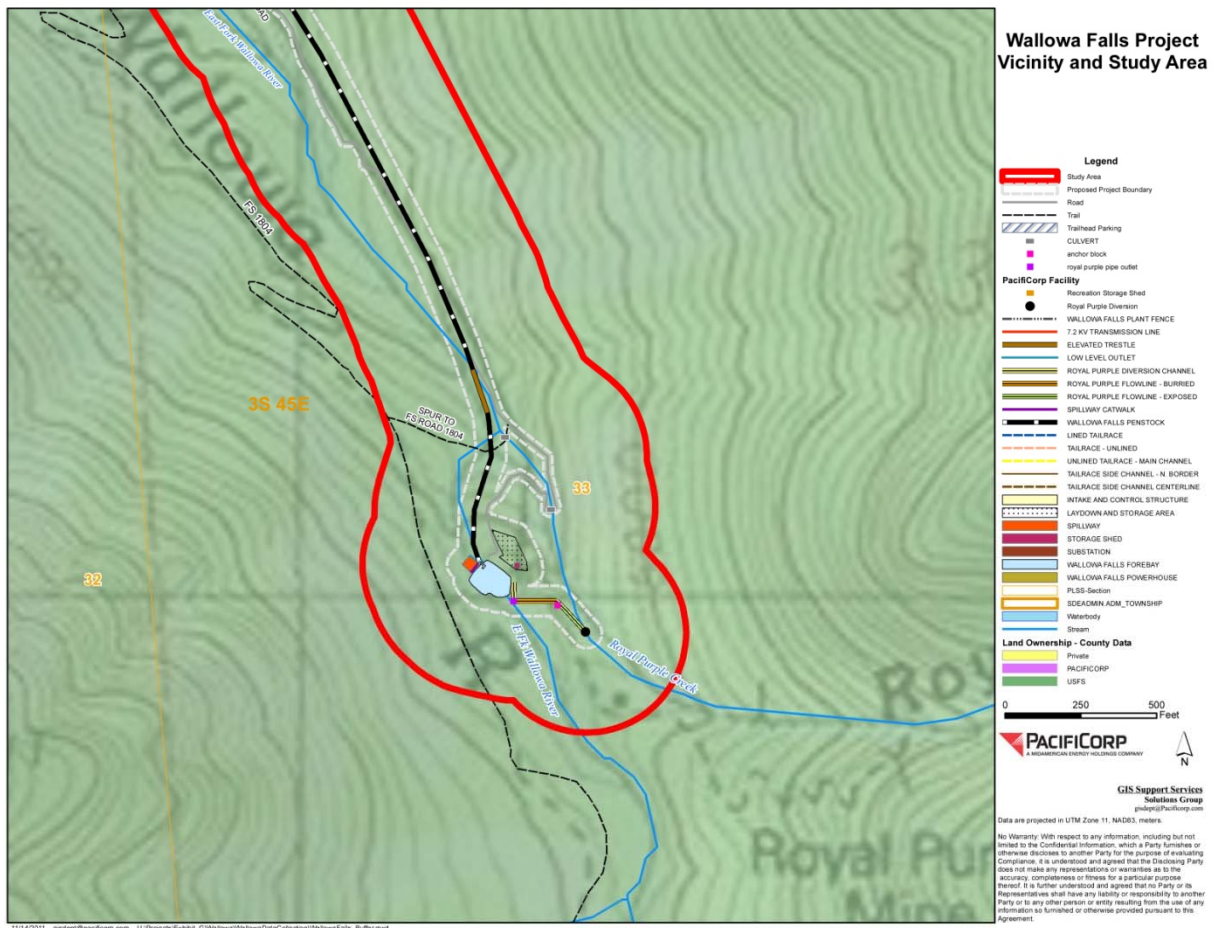


Figure 9. Wallowa-Whitman National Forest Project Area (3 of 3; South)

The area immediately southeast of the forebay cabin in the southern end of the Project area is a historic population for *Botrychium montanum*. Though the population has not been relocated in recent years, the area is considered high probability habitat for this species. Construction activities and material storage should be minimized or avoided in the area east of the forebay cabin (see Figure 10).

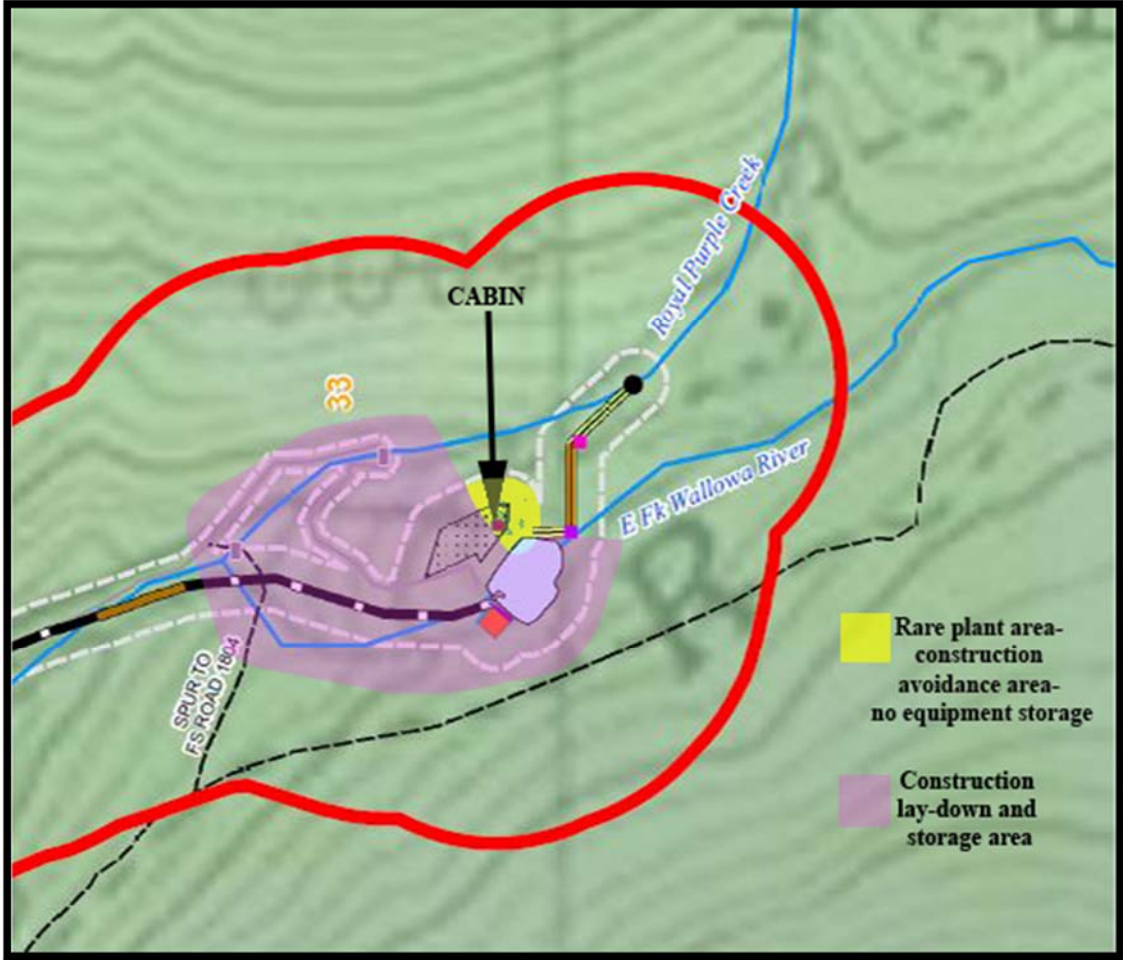


Figure 10. Construction avoidance area for *Botrychium montanum* on the Wallowa Falls Hydroelectric Project.

A population of *Botrychium minganense* is located within the Project area next to the Wallowa Falls Maintenance Road approximately 100 feet south of the PacifiCorp/Federal land boundary (line between T3S R45E section 29 and 31). The following mitigation measures are required to ensure the protection of this population:

- Activity in the area around the population of *Botrychium minganense* will be limited to standard trail maintenance **only** within the existing footprint of the previously disturbed access road.
- The avoidance area around the population of *Botrychium minganense* will be considered a 100 meter radius around the population center at NAD 83 11T E0483644 N5012238 (see Table 11).
- If any additional activity is proposed, the Company is directed to contact the WWNF forest botanist for additional consultation.

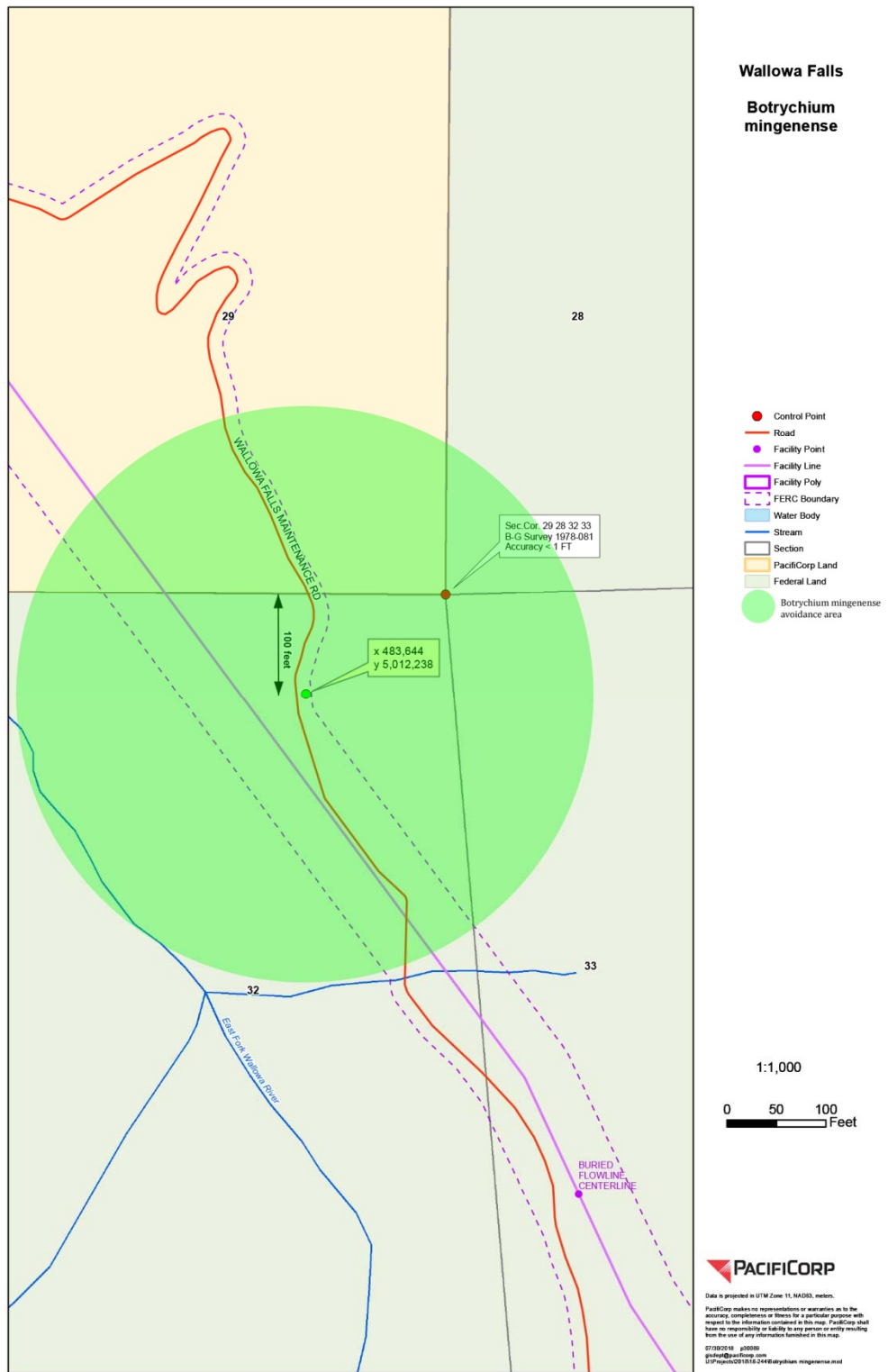


Figure 11. Off trail avoidance area for *Botrychium minganense* on the Wallowa Falls Hydroelectric Project Maintenance Road.

Attachment A

McCune, Kimberly

From: McCune, Kimberly
Sent: Thursday, December 13, 2018 12:57 PM
To: Elizabeth.A.OsierMoats@state.or.us; Jeff.Yanke@state.or.us; Gretchen Sausen (gretchen_sausen@fws.gov); 'Cuzick, Adrian L -FS'
Cc: Howison, Russ; Emmerson, Kendel
Subject: License Article 414 and Appendix B, USFS 4(e) Condition 13; Special Status Plant Species Report; 30-day review and comment period
Attachments: Attachment A ProposedTailraceSurveyArea.pdf; WF Botanical Report_2018_FINAL_30day Review.pdf
Follow Up Flag: Follow up
Flag Status: Flagged

Attn: USFWS, USFS and ODFW Representatives

On January 5, 2017, the Federal Energy Regulatory Commission issued a new operating license for the Wallowa Falls Hydroelectric Project, FERC No. 308. Pursuant to *Article 414 Special-status Plant Species Survey and Appendix B, USFS 4(e) Condition 13, Special Status Sensitive Species* of the license PacifiCorp is submitting the attached *Botanical Report 2018 Wallowa Falls Hydroelectric Project Special Status Plant Survey (Report)* for 30-day review and comment period.

Article 414. Special-status Plant Species Survey. At least 90 days before the start of any land-disturbing or land-clearing activities associated with construction of the tailrace channel realignment and tailrace barrier, the licensee must file with the Commission the results of a special-status plant species survey of the area to be affected by the construction of the lower 275 feet of realigned tailrace channel near its confluence with the West Fork Wallowa River... ..The licensee must allow the agencies a minimum of 30 days to comment and to make recommendations before submitting the filing to the Commission.

The Report was prepared on PacifiCorp's behalf by Kendrick Moholt, a consulting botanist with Bio-Resources, Inc. As described in the Report the 2018 survey area included an intuitive survey for the entire Federal Energy Regulatory Commission (FERC) Project Boundary and a high intensity (100% coverage) survey for the proposed tailrace construction area. This included an area of 100 meters from the north bank of the North Tailrace Channel and south bank of the South Tailrace Channel and all areas in between. **Attachment A** provides a figure of the proposed tailrace construction limits.

The 2018 surveys located special status plant species within the FERC Project Boundary. Appendix 2 of the Report provides a construction plan to protect these plant locations. No special status plant species were located within the proposed tailrace construction area. As a result this will conclude PacifiCorp's survey requirement for Article 414. The FERC boundary will continue to be surveyed in 2019 to meet the Appendix B, USFS 4(e) Condition 13 Special Status Sensitive Species requirements.

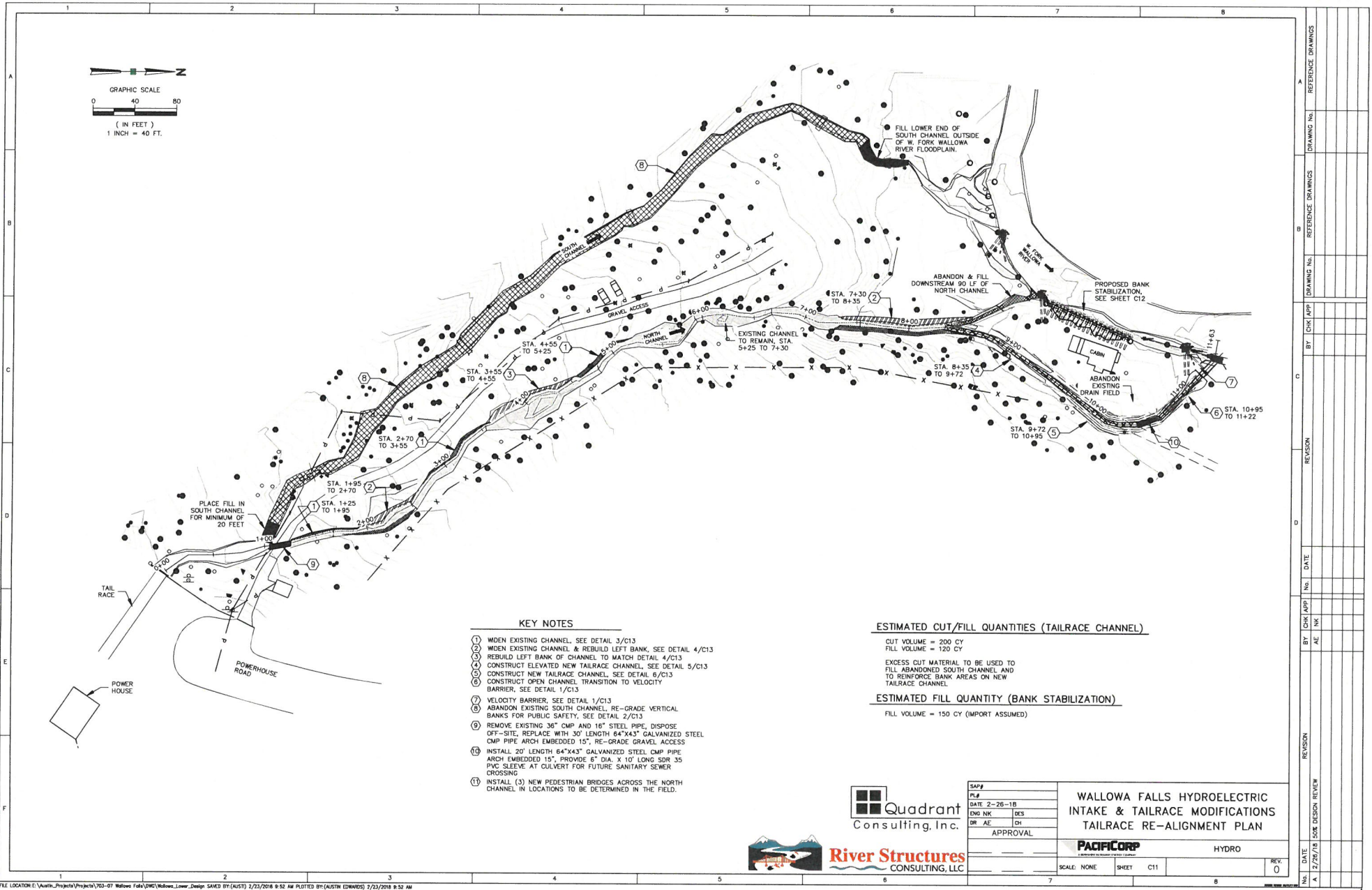
If you have any questions concerning these documents, please contact Kendel Emmerson at 503-813-6040.

We ask that you provide your comments to Kendel's attention via email at kendel.emmerson@pacificorp.com **on or before 5:00 p.m., Tuesday, January 15, 2019.**

Thank you.

Kimberly McCune
Sr. Business Administrator

Attachment B



Quadrant Consulting, Inc.



River Structures CONSULTING, LLC

SAPP
PL#
DATE 2-26-18
ENG NK DES
DR AE CH

APPROVAL

WALLOWA FALLS HYDROELECTRIC INTAKE & TAILRACE MODIFICATIONS TAILRACE RE-ALIGNMENT PLAN

PACIFICORP

HYDRO

SCALE: NONE SHEET C11 REV. 0

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