Biological Evaluation for the Rebuild of the Avista Utilities' Benton-Othello 115 kV Electrical Transmission Line on the Hanford Site, Washington

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1 Introduction

Avista Corporation (Avista), a privately-owned company, with headquarters at 1411 E. Mission St., Spokane, Washington, proposes to rebuild[1] approximately 12.6 miles (20.3 km) of the existing Benton-Othello 115 kV electric transmission line (henceforth referred to as the project), replacing 128 pole structures, within its existing easement right-of-way alignment. This electrical line crosses portions of the Hanford Site. Avista will need access to areas outside of the existing right-of-way, thus requiring a land use agreement with the U.S. Department of Energy (DOE). That land use agreement is the federal action that requires DOE to produce this Biological Evaluation (BE) of the effects of the project on species currently listed or proposed for listing under the Endangered Species Act of 1973 (ESA). This BE documents that DOE believes the project may affect, and is likely to adversely affect, both the plants and the designated critical habitat of the White Bluffs bladderpod, the only listed species in the project's action area. It provides DOE's rationale for its conclusions as to those effects and provides information to support its formal request for consultation with the United States Fish and Wildlife Service (USFWS).

2 Project Description

2.1 Project Purpose and Need

The purpose of the Project is to replace power poles and lines in order to ensure safe and reliable electric service and energy transmission to customers in an efficient manner and at reasonable rates per Revised Code of Washington (RCW) 80.28.010(1)(2).

The Project is needed because:

- The deteriorated condition of the existing transmission line and existing wires could lead to outages, which adversely affects power delivery to Avista's customers in the Othello area. In addition, the existing wires are inadequate to support the Avista, Inland Power and Light Company, and Big Bend Electric Cooperative customers in the Othello area.

- The transmission line structures are primarily 70-90 year old wooden poles that have exceeded their expected life span of approximately 60 years. The existing poles do not meet the increased load requirements for the new wires.

- The existing copper wires are deteriorated and are no longer able to support the energy needs for this area, and do not meet the National Electrical Safety Code (NESC) and

[1] Avista is the project proponent, but the construction and other rebuild activities will be done by a contractor to Avista. The contract will specify the requirements and commitments set forth in this biological evaluation.

National Energy Regulatory Commission (NERC) requirements and standards for safety and reliability.

- Deteriorated wooden poles and the higher risk of outages present fire threats to Avista's existing electrical system and the environment, including areas within the critical habitat for the White Bluffs bladderpod, an ESA-listed Threatened species.

2.2 Project Location

The existing alignment commences approximately 0.5 miles (0.8 km) south of State Route 24 and extends through the Hanford Reach National Monument (Monument) portion of the Hanford Site managed by the USFWS for approximately 9.7 miles (15.6 km), across the Columbia River, through a quarter mile (0.4 km) wide section of the Monument managed by DOE along the river, and through the main portion of the Hanford Site managed by the DOE for approximately 2.1 miles (3.4 km) to the point where the ownership of the electrical transmission line changes from Avista to the Bonneville Power Administration. The project is located in Section 6, Township 14N, Range 28E to Section 27, Township 24N, Range 27E. It is anticipated that the project will be constructed beginning in the fall or winter and will be completed the following spring.

The project location and underlying land designations are shown in Figure 2-1. The DOE is the land owner for entire Hanford Site (shown in gray in the figure below); however, the management responsibility for the Monument (shown as the cross-hatched overlay) is split between the DOE and the USFWS. On the map below, the portion of the Monument to the north and east of the Columbia River is managed by the USFWS; the portion south and west of the river is managed by the DOE.

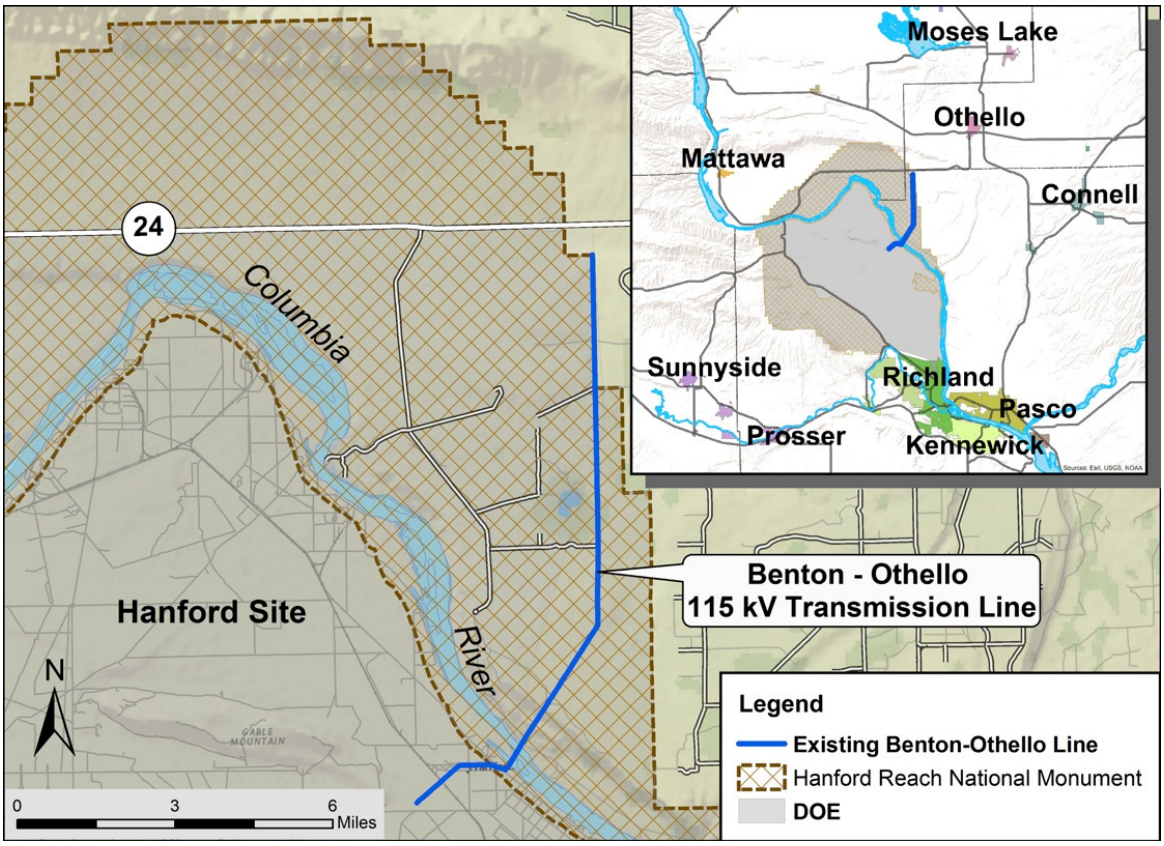

Figure 2-1. Project Location.

2.3 Project Scope

Avista will replace the 128 existing wood and steel structures with appurtenances (insulators, anchors, guys, etc.) with approximately 95 new self-weathering steel structures with appurtenances within the existing transmission line alignment for entire length of the 12.6 mile (20.3 km) transmission line. The existing copper wire on the line will also be replaced with new, larger aluminum wire. The new structures will be similarly framed (H-frame) and no more than 10 feet (3.0 m) taller than the structures that are being replaced with two exceptions: 1) several structures near the wetlands in Section 31 (T14N R28E) will be up to 30 feet (9.1 m) taller, and 2) at the Columbia River crossing two taller structures will replace the existing structures that currently carry the line over the river.

A detailed discussion of the construction activities occurs in Section 3.2.

The Project will involve the following construction activities:

1. Establish the laydown areas, staging areas, stockpile sites, and helicopter landing and refueling areas.

2. Stake the project components prior to construction, including the location of new poles, new anchors, and access roads.

3. Install erosion control and spill best management practices such as silt fence, truck wash areas, and concrete washouts.

4. Improve or construct access roads and spur roads to access the pole locations. This may involve light grading, graveling, or other work to make roads passable for the necessary equipment. A helicopter may also be used for work in some locations.

5. Clear vegetation only as necessary to remove or install the poles and appurtenances.

6. Excavate pole and anchor holes to the required depths. There are an estimated 200 pole holes 4 feet (1.2 meters) in diameter and 7-15 feet (2.1-4.6 meters) deep, and approximately 80 anchor holes 4 feet (1.2 meters) in diameter and approximately 10 feet (3.0 meters) deep.

7. Install six drilled pier foundations on either side for the Columbia River crossing requiring 8 feet (2.4 meters) diameter holes ranging in depth from 20–40 feet (6.1-12.2 meters).

8. Stage new structure components.

9. Assemble, install, and backfill the new pole structures with concrete or crushed rock.

10. Remove the old structures from the site and stockpile.

11. Install the new conductors to the new poles.

12. Sag and clip the new wires (clamping the wire to the insulator) then tension/pull them using tensioning equipment and trucks.

13. Restore temporary accesses, laydown, and staging areas to pre-construction conditions and replant as necessary.

2.4 Federal Role

Avista's real estate instruments/easements allow ingress and egress for reconstruction and maintenance of the transmission lines and do not have a designated right-of–way width. However, Avista and DOE agree that for this project, assuming a 200-foot (61 meter) right-of-way width along the transmission line alignment is reasonable. Avista is applying for a land use agreement with DOE for temporary access to areas outside the 200-foot (61 meter) width for a temporary laydown area and spur roads.

2.5 Federally Listed Species and Critical Habitat that May Occur Near the Project

Section 7 (a)(2) of the ESA requires federal agencies to ensure that their activities are not likely to jeopardize the continued existence of listed or candidate species or result in the destruction or adverse modification of designated critical habitats. On August 25, 2017, the Project received a species list from the USFWS that identified threatened, endangered, and proposed species, designated and proposed critical habitat, and candidate species that may occur within the boundary of the proposed project and/or may be affected by the proposed project. This list fulfills the requirements of the USFWS under Section 7(c) of the ESA as amended (16 U.S.C. 1531 et seq.), and can be found in Appendix A.

The project used this list to evaluate the federally listed or proposed plant and animal species and their designated critical habitat that may occur within or near the Project. This evaluation resulted in the conclusion that, with the exception of the White Bluffs bladderpod (*Physaria douglasii* ssp. *tuplashensis*), the project would have no effect on any of the listed species or their critical habitat. No candidate species were identified by the USFWS in the Project area. Table 1-1 summarizes the results of the evaluation; Appendix B provides a discussion of each federally listed, proposed and candidate and their critical habitat species and the rationale behind the “no effect” determination for each species.

Based on the evaluation of ESA listed and proposed species and their critical habitat described above, the project is only likely to affect the White Bluffs bladderpod (“bladderpod”). For this reason, this BE is focused solely on the potential effects of the project on the bladderpod and its designated critical habitat.

Table 1-1. Federally Listed Species Near the Project and Determination of Potential Effects.

Species	Scientific Name	Federal Status*	Critical Habitat	Documented in Action Area?	Effect Determination to Species/Critical Habitat
US Fish and Wildlife Service Listed Species					
White Bluffs Bladderpod	*Physaria douglasii* ssp. *tuplashensis*	Threatened	Final Designated	Yes	May Affect, Likely to Adversely Affect/May Affect, Likely to Adversely Affect
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened	Proposed	No	No Effect/Not Applicable
Upper Columbia River Bull Trout	*Salvelinus confluentus*	Threatened	Yes	Yes (limited evidence)	No Effect/No Effect
Columbia Basin Pygmy Rabbit	*Brachylagus idahoensis*	Endangered	No	No	No Effect/Not Applicable
Gray Wolf	*Canis lupus*	Threatened	No	No	No Effect/Not Applicable
National Marine Fisheries Service Listed Species					
Upper Columbia River Steelhead	*Oncorhynchus mykiss*	Threatened	Yes	Yes	No Effect/No Effect
Upper Columbia River Spring-run Chinook Salmon	*Oncorhynchus tschawytscha*	Endangered	Yes	Yes	No Effect/No Effect

* Source: (USFWS 2017)

2.6 Conservation Measures Incorporated into Project Design

This section documents the mitigation measures that Avista proposed and DOE agreed upon to reduce the potential impacts of the project on the White Bluffs bladderpod or its critical habitat.

2.6.1 Avoidance in Critical Habitat

Realigning the transmission line to avoid crossing the White Bluffs bladderpod critical habitat was considered; however, it would require realigning the lines for several miles north and south of the Project Area, adding several miles of additional transmission line in new areas. This would require significant right-of-way acquisition well beyond the project, and would result in greater cost to ratepayers, as well as greater environmental disturbance. In addition, removing the existing poles and wires located in the designated critical habitat would require disturbance

approximately to the same degree as that likely to occur if the project proceeds as is currently planned.

Although realigning the transmission line is not considered to be a practical option, the construction footprint within the critical habitat was reduced from the initially proposed 6 acres in the conceptual design to 2.33 acres in the final design. In addition, pole structure 22/9 will be removed, but will not be replaced because the new, taller poles enable a longer span eliminating the need for the pole. This will reduce the area of disturbance now and for future maintenance.

2.6.2 Minimization

The following conservation measures will be used to minimize impacts to the bladderpod or its critical habitat:

- Avista or Rare Plant Care and Conservation Program (Rare Care) flagged and recorded the locations of bladderpod plants during the flowering period prior to mobilization. Avista or Rare Care will delineate the work areas before mobilization and avoid the plants where practicable.

- Where the road is sufficiently level, Avista will mow the vegetation, rather than blade it, to allow heavy equipment and vehicles access. Mowing may lessen impacts by allowing for the regrowth of at least some of the existing vegetation in the impact area.

- Avista will prepare a Stormwater Pollution Prevention Plan and Spill Plan to help avoid, minimize and mitigate potential construction impacts and effects to the White Bluffs bladderpod due to soil disturbance, construction waste and potentially hazardous materials. Depending on conditions, Avista may use silt fencing, fiber wattles, and/or concrete washouts.

- To prevent the spread of weeds, Avista will establish truck-washing stations outside of the action area to minimize or eliminate berms during road grading, and chemically or manually kill weeds during and at the conclusion of construction.

- To limit impact to plants, plywood or other suitable barriers will be used near the excavated holes to store the spoils that will be used as backfill.

- Extra spoils that normally would have been spread around the new poles will instead be hauled off site to avoid burying existing plants or inhibiting future seed germination and reestablishment.

- The project will occur between fall and early spring when fire potential is low and when plants are dormant.

- A helicopter will be used to replace the poles below the bluff so that new roads will not have to be constructed to access poles 23/1 and 23/2.

- All fueling areas, helicopter landing pads and laydown areas will be located outside of the designated critical habitat.

- Only the existing access roads and one new spur road will be used. No vehicles will be permitted off established roads.

- Where soil conditions are suitable, Avista will use helix anchors instead of plate anchors to minimize disturbance. Excavation and large installation equipment are not needed for this type of anchor.

- Avista will keep disturbance areas around each pole structure as small as possible, reducing from the more typical 100-foot radius to between a 25-foot and 65-foot radius depending on the need for guy wires. After construction, workers will recontour disturbed areas to preconstruction conditions.

- All vehicles will carry fire extinguishers, a shovel, and other fire control equipment to minimize habitat loss in the unlikely case of fire during construction and maintenance activities. Vehicle idling will be minimized to reduce risk of fire due to engine temperatures.

- Annual maintenance checks of the transmission line are generally done by helicopter, reducing traffic on the access roads and the potential introduction of invasive species to the area.

2.6.3 Revegetation of Disturbed Areas

Avista will replant all areas disturbed by the rebuild of the Benton-Othello transmission line that are not needed to be maintained for the future operation and maintenance of the line. This revegetation will follow the guidelines and practices specified in the *Hanford Site Revegetation Manual* (DOE 2013) and will not be limited to the bladderpod. In addition, plans for any revegetation efforts that are done within the USFWS-managed portion of the Monument will be reviewed by USFWS personnel.

Avista will rectify the shrubb-steppe habitat by replacing the impacted plants on the disturbed sites and reestablishing the pre-existing plant community. It will select source-identified native plant seeds collected from the Hanford Site and nearby locations, planting and seeding methods, and timing. Both pollinator-friendly species and culturally-important species will be included in the plant mix. Planting will occur within the period from mid-November to early February. Monitoring will meet the requirements of the *Hanford Site Revegetation Manual*. The restoration area will occur annually over a five-year period. Monitoring will consider native plant cover, plant survival and growth, plant diversity, and weed cover. Areas will be replanted if necessary to

meet success criteria. If replanting is done, the replanted area will be monitored for an additional 5-year period.

2.6.4 Voluntary Conservation Measure

Avista, with assistance from Rare Care, will conduct a study that will provide additional information on the re-establishment of the White Bluffs bladderpod. Prior to construction, Rare Care will locate and mark White Bluffs bladderpod plants in the action area, collect seeds and bank seeds and develop an out-planting plan. Approximately 6,000 seeds will be collected and at least 10 percent of those will be stored in the Miller Seed Vault. The first spring after the project is constructed, Rare Care will propagate the seeds and out-plant in an area less than 1/10 acre in a site determined suitable to USFWS and DOE, ecologically suitable and appropriate for the study per the Reintroduction Plan. Avista will monitor the plants for three years, commencing with the first year of out-plantings.

Little is known about the successful reestablishment of White Bluffs bladderpod plants, so regardless of the outcome of this experimental plan, this study will add to the available information about this threatened subspecies. However, given the experimental nature of reintroducing White Bluff bladderpod plants, the final effect determination was made without consideration of this conservation commitment. Appendix D contains a brief description of the proposal, which will be developed by Rare Care at the University of Washington under contract to Avista.

3 Project Action Area and Description of Project Activities

3.1 Action Area

The Action Area includes all areas where any direct or indirect effects to White Bluffs bladderpod plants or its designated critical habitat may occur.

3.1.1 Area Directly Affected by the Proposed Project

For this BE, the area where direct effects on the bladderpod plants or its critical habitat could occur is where project activities will take place within the zone designated in the revision to the Final Rule as containing White Bluff bladderpod populations and its critical habitat (78 FR 77004). Project areas and activities that occur within the defined critical habitat for the White Bluffs bladderpod include the following:

- Improvements to existing access roads needed to reach the transmission line right of way.
- All existing and proposed pole locations in the designated critical habitat (poles 22/8, 22/9 and 22/10) and their disturbance buffers.

- The transmission line right-of-way, which is 100 feet (30.5 meter) on either side of the transmission line.
- New spur road to access pole structure 22/9.
- Tensioning areas for pole structures 22/8 and 22/10.
- Material stockpiling, assembly and disassembly areas for pole structures.

Figure 3-1 depicts the portions of the Action Area where direct effects may occur. In this figure, the solid purple area corresponds to the narrow band at the upper edge of the White Bluffs area occupied by bladderpod plants; this band is approximately 33 feet (10 meters) wide and 10.6 miles (17 kilometers) long (78 FR 24019). The critical habitat includes the area where the bladderpod grows as well as the shrub steppe area located on either side of the population boundary and is shown as a yellow-shaded area. The blue line represents the Benton-Othello transmission line with existing pole structures shown as white points along the line and the new poles indicated by a red “+”.

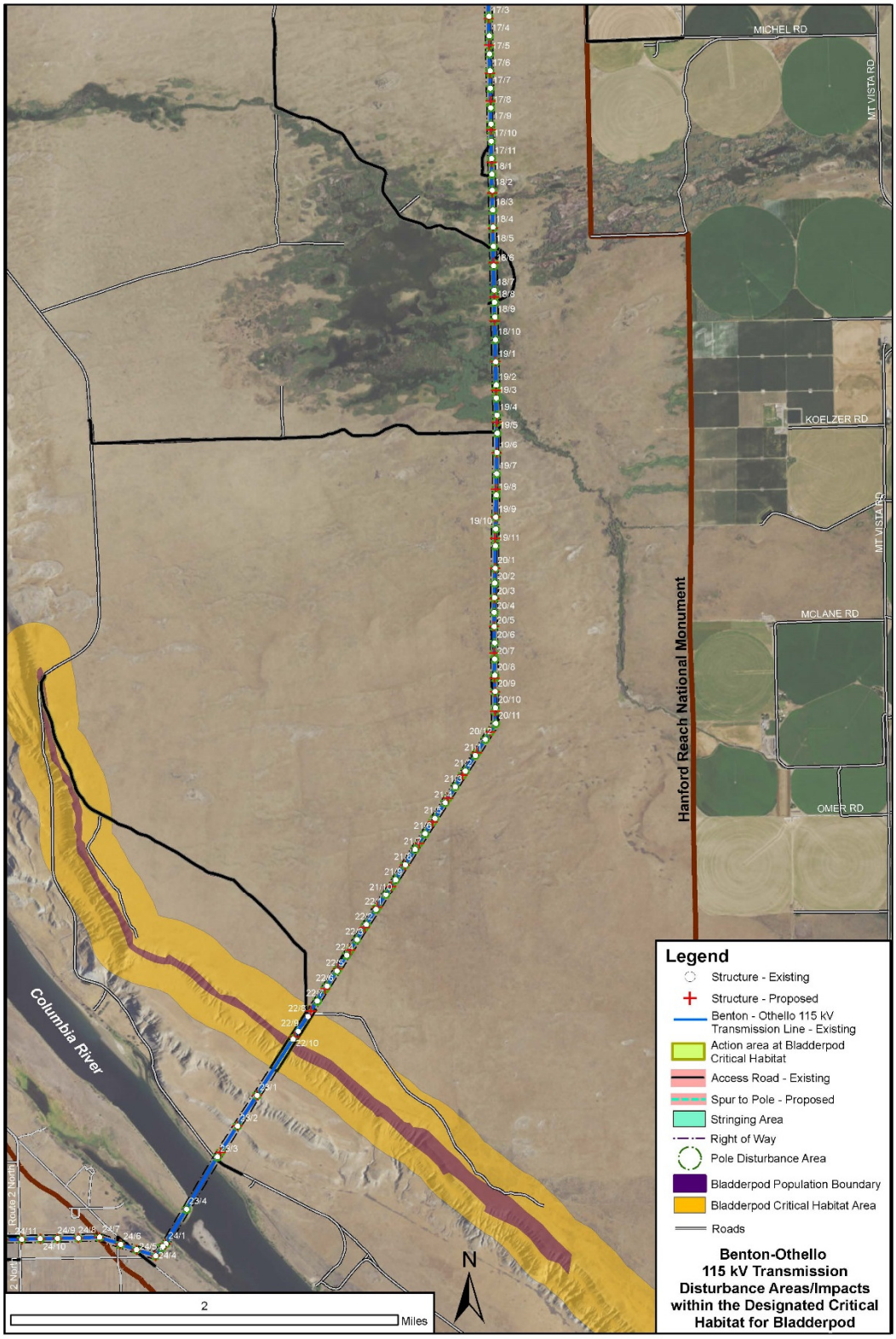

Figure 3-1. Project Actions Occurring within the Critical Habitat for the White Bluffs Bladderpod.

3.1.2 Area Indirectly Affected by the Proposed Project

Under the ESA, the determination of whether a species is an endangered or threatened species is based on any of five factors: (a) destruction, modification, or curtailment of its habitat or range; (b) overuse; (c) disease or predation; (d) inadequate existing regulations; or (e) other natural or manmade factors. White Bluffs bladderpod is threatened by wildfire, excess groundwater-induced landslides and slope failure, harm by recreational activities and off-road vehicle use, nonnative plants, small population size, and limited geographic range (78 FR 76996). Because the proposed project may affect the population numbers of non-native plants and overall population size, which affect the bladderpod population, a portion of its designated critical habitat is included in the Action Area for this BE.

3.2 Proposed Construction in the Action Area

Construction within the action area is described in the section below; the area where the majority of construction activities will occur is shown in Figure 3-2, all of which is in critical habitat. In addition to activities occurring within the transmission line right-of-way shown in this figure, Avista will make road upgrades along existing access roads. Roads that occur within the bladderpod's designated critical habitat are shown as a heavy black line within the yellow shaded critical habitat area on Figure 2-1 above.

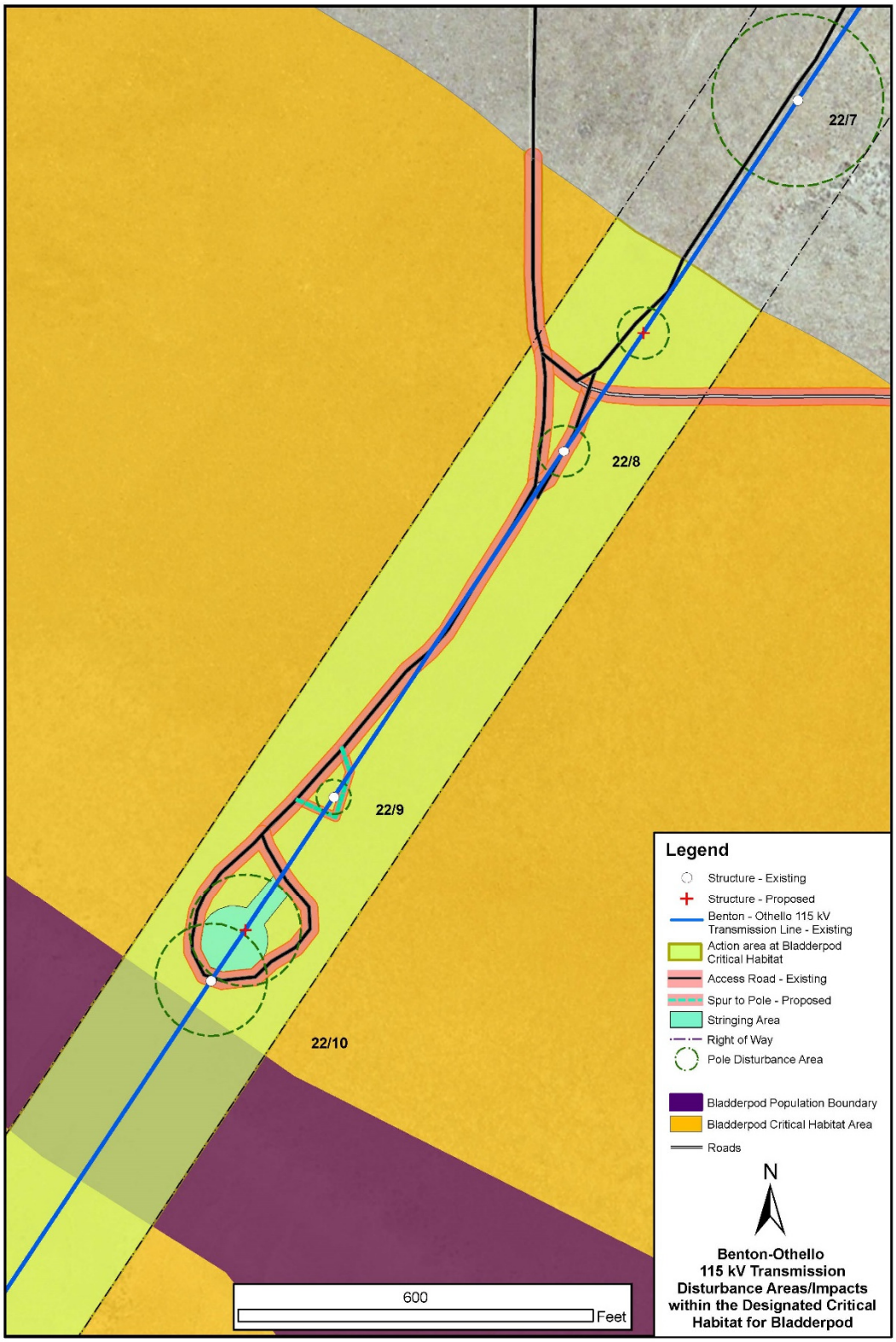

Figure 3-1. Disturbance Area along the Transmission Line Right-of-Way within the Action Area.

3.2.1 Locate and Mark Plants

Rare Care, under contract with Avista, locate, marked and recorded White Bluffs bladderpod plants in the construction area during May 2017. Rare Care marked the perimeter of both condensed populations and outlying plants with pin flags, recorded Global Positioning System (GPS) locations, and mapped bladderpod populations. Avista will use the GPS data collected to employ Best Management Practices (BMPs), such as the placement of high visibility fencing, signage, or protective matting, prior to construction.

3.2.2 Access Road Work

Avista will improve existing roads and construct a new spur road to provide access for vehicles and heavy equipment to the pole locations as described below (See Table 2-1).

- Avista will access the transmission line right-of-way from the west using existing roads that are used and maintained by the USFWS. As shown in Figure 3-1, only the southernmost access road is in the proximity of the White Bluff bladderpod population and its critical habitat. This road is gravel for the first 900 feet (274 meters) after it enters into the critical habitat and no improvements are required. Figure 3-1 displays this road with an open black line. This road then transitions to a lightly used, two-track road that is posted with a notice restricting travel to authorized use only. Approximately 4630 feet (1410 meters) of this existing road lies within the critical habitat and will be widened to approximately 10 feet (3 meters) which is approximately 1.06 acres. This access road is shown as a solid black line in Figure 3-1.

- Avista will improve the existing maintenance road that runs within Avista's right-of-way along the existing transmission line. This road is currently overgrown along some segments, and will be cleared and bladed to a width of approximately 20 feet (6.1 meters). Approximately 1910 feet (582 meters) of this existing road are located within the designated critical habitat for the bladderpod, which is 0.87 acre. This access is shown as a solid black line with red border in Figure 3-1.

- Avista will construct a new 10 feet (3.0 meters) by 133 feet (40.5 meters) spur road between the existing access road and pole structure 22/9 (Figure 3-1). This is approximately 0.03 acre. This spur road is shown in Figure 3-1.

Table 2-1. Estimated Disturbance Areas within Critical Habitat.

Construction Activity in Action Area	Permanent Impact (acres)	Temporary Impact (acres)
Access Roads		
Improve existing roads used to access the transmission line right of way (10-feet wide by 4630-feet long)[1]	0	1.06
Improve existing access roads along transmission line (20-feet wide by 1910-feet long)[1]	0	0.87
Construct Spur Road (10-feet wide by 133-feet long)	0	0.03
Replacement of Transmission Line Pole Structures[2]		
Excavate holes, anchors, and install new pole structures: 22/10 (65-feet radius) and 22/8 (30 feet radius)[3]	0.02	0.21
Remove pole structure and anchors at 22/9 (20 feet radius)	0	0.06
String and tension new wires	0	0.14
Remove rollers	None	Use of access roads
Haul material off site as needed	None	Use of access roads
Subtotal Area of Disturbance	**0.02**	**2.37**
Total Impact within Critical Habitat	**2.33 acres[3]**	

[1] The areas calculated for access road improvement is a conservative estimate. Where practicable, vegetation may be mowed in lieu of bladed. Pull-off areas may be designated to minimize access road clearing.
[2] Note that the disturbance areas vary for the three poles within the critical habitat: a 30-foot (9.1-meter) radius is anticipated around pole 22/8; a 20-foot (6.1-meter) radius is expected at 22/9 because the pole is being removed and not replaced, and 65-foot (19.8-meter) radius is expected around pole 22/10 due to the guy wires and anchors required around this structure.
[3] Some construction activities would occur in overlapping areas; therefore, the sum of the construction area acreages exceeds the total disturbance area.

The existing access roads will be widened and leveled where needed. When leveling is not needed to support heavy equipment, access roads may be mowed, rather than bladed which may allow plants to recover because the entire plant is not removed. Avista will establish pull outs or turn-around areas outside of the critical habitat as needed and traffic signs will be installed to ensure construction traffic remains within the road footprint as described above.

After the transmission line rebuild is completed, Avista will reseed the newly improved existing access roads with low growing native grasses and forbs similar to the adjacent plant communities. This will minimize the establishment and spread of non-native invasive species and increase pollinator habitat. Avista will not replant the existing access roads with shrubs or other taller species because they will continue to be used by Avista for future operation and maintenance of the transmission line or by USFWS to access to the Monument.

The spur road is only required during the transmission line rebuild, and is not needed for subsequent line operation and maintenance. Avista will trim shrubs and other vegetation then lightly blade the surface to construct the spur road. The spur road will be restored with native vegetation after the pole structures are replaced.

3.2.3 Transmission Line Replacement

The rebuild of the Benton-Othello Transmission line will replace 128 existing wood and steel transmission structures with 95 new steel structures. The transmission line and poles will be replaced within the existing Avista 200-foot right-of-way and in the same alignment, however, some poles will be moved to avoid resources, including wetlands, bladderpods, and cultural resource sites. This work will involve transporting the new steel poles, steel cross arms, steel braces, anchors, glass insulators, guy wires, and other associated material to the construction site using flatbed trucks, cranes, or forklifts then off-loading them onto the ground until assembly.

Three existing pole structures, 22/8, 22/9 and 22/10, are located within the designated critical habitat. These poles will be replaced by two new pole structures located near existing poles 22/8 and 22/10. Figure 3-1 shows the existing poles within the critical habitat and the new pole locations are indicated with a “+”.

Pole holes will be excavated using a digger derrick or Lo-Drill equipped with a full-flight auger or core barrel, or backhoe. For the crews working to replace structures within the critical habitat, there will be a total of approximately three pickup trucks, one Lo-Drill/Digger Derrick, one crane, one backhoe, two flatbed trucks with trailers, two line trucks, and two bucket trucks throughout the replacement process. This crew will be one five-person digging crew, two five-person line crews and three others likely to be an engineer, foreman and general foreman. This work is estimated to take about five days.

Replacement poles will be framed either on the ground or after they are erected. The poles will be assembled and installed using line trucks, bucket trucks, and/or a crane. The pole holes will be backfilled with crushed rock or concrete then the soil will be tamped around each hole. Workers will dig around the old anchors then cut them off below the ground. New helix anchors will be installed by screwing the anchors into the ground, which has a smaller impact area compared to traditional plate anchors. Figure 3-2 shows a typical transmission line replacement.

Once the structures have been installed, wires will be replaced by attaching the ends of the old wires to the new wires then pulling out the old wires while simultaneously pulling in the new wires. The wires will be tensioned, the rollers will be removed and the wires will be clipped to the ends of the new insulators. This operation will involve driving to each new structure and setting up one bucket truck to remove the rollers, which is estimated to one construction crew two days. It will take an additional two days to string the wires.

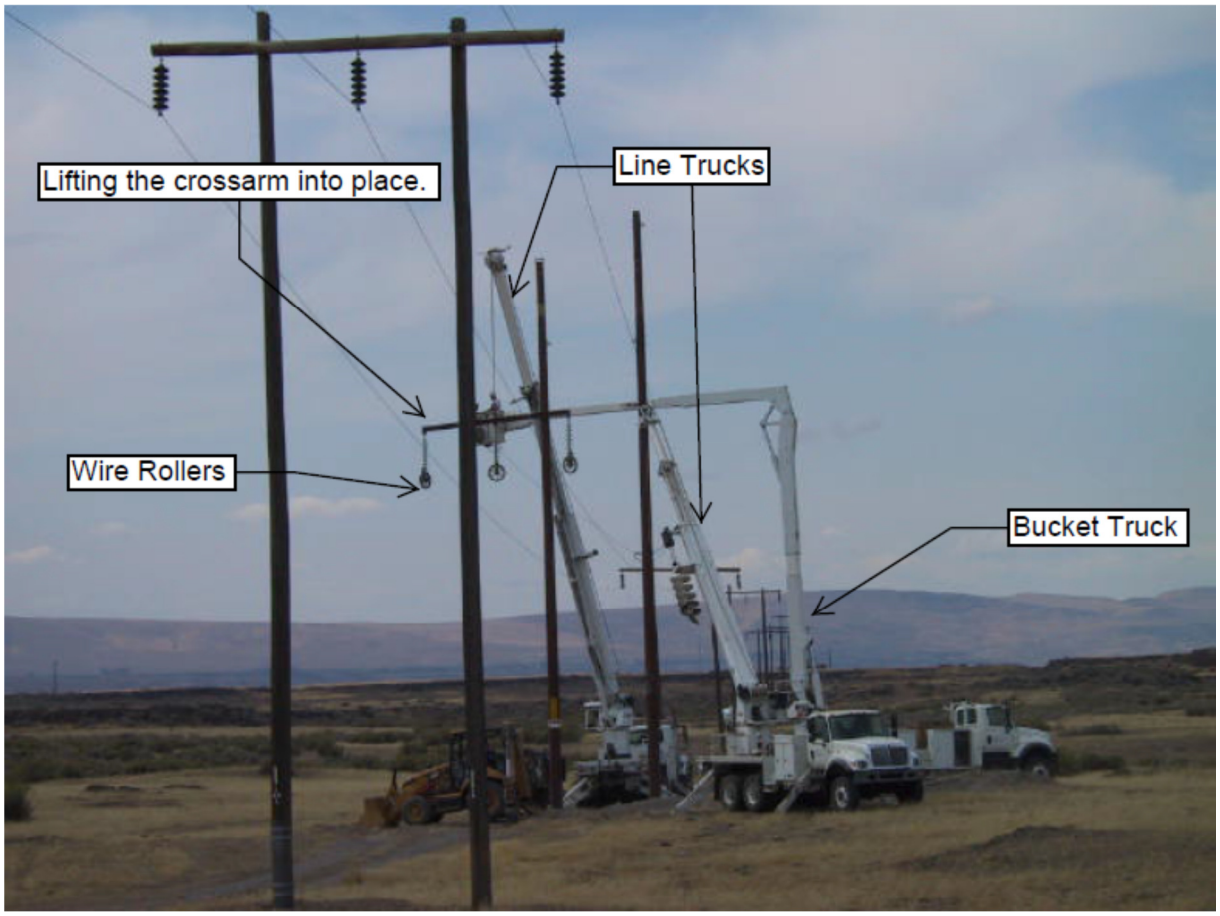

Figure 3-2. Typical Transmission Line Replacement.

After the new wire is strung, the existing pole structures (Structures 22/8, 22/9 and 22/10) will be disassembled. The entire pole structures will be removed, and the removed poles will then be cut above the preservative treatment line, and the butts, which may still retain some of the preservative, will be shipped to an approved landfill for proper disposal. The remainder of the poles will be hauled offsite and properly disposed, requiring four people for approximately two days.

Although the majority of the transmission poles will be replaced as described above, poles 23/1 and 23/2, which are located below the White Bluffs outside of the action area, will be replaced using helicopters. Where helicopters are used, workers will excavate holes using hand-held shovels, then set poles with the helicopter. The backfill will be flown in with the helicopter and will be placed around the new poles to await installation. The old structures will be removed and flown by helicopter to a designated staging location. Workers will be flown to and from the structures to clip the wires rather than using bucket trucks. Using helicopters will minimize the use of other existing access roads that are in the critical habitat and action area and will also eliminate the need to improve access roads or construct new access roads for wheeled vehicles just south of the critical habitat.

3.3 Construction Disturbance Area within the Critical Habitat

The total estimated disturbance area that may result from the construction activities described above within the critical habitat area is shown in Table 2-1. The impact areas designated as “permanent” are areas where no revegetation or other remediation activities are planned, and those designated as “temporary” are areas where replanting of native vegetation is planned and habitat is anticipated to return to pre-construction conditions within 5 years of impact. In this context, the designation of a “temporary impact” refers only to impacts to critical habitat and not to impacts on White Bluffs bladderpod plants.

4 White Bluffs Bladderpod Biology, Critical Habitat, and Population Size

The White Bluffs bladderpod was listed as a threatened species under the ESA on April 23, 2013 [78 FR 23984], and its critical habitat was designated the same day (78 FR 24008). This listing was reaffirmed on December 20, 2013 [78 FR 76995]. The rule published in December of 2013 revised the designation of critical habitat for the White Bluffs bladderpod from that originally stated in April of that year. This species is also considered a threatened species in Washington State (Washington Natural Heritage Program 2012).

The bladderpod and its critical habitat are considered to be Level 5 “Irreplaceable Resources” per the *Hanford Site Biological Resources Management Plan* (BRMP; DOE 2017). Thus, they are subject to the highest level of protection and mitigation. Impacts to Level 5 resources are considered on a case-by-case basis, and specific mitigation measures for the Benton-Othello Transmission Rebuild Project will be included in the assessment done under the National Environmental Policy Act (NEPA) process.

4.1 Taxonomy and Biology of the White Bluffs Bladderpod

Although specimens of White Bluffs bladderpod were collected in 1883, it was not until the plant was rediscovered in 1994 that the bladderpod was described and published as a species (78 FR 24011). Initially given the scientific name *Lesquerella tuplashensis*, subsequent revisions to the genus resulted in it being placed in the genus *Physaria*. At the same time, the original species was reduced to a subspecies of *Physaria douglasii*, with the scientific name of *Physaria douglasii* subsp. *tuplashensis* (Al-Shehbaz and O’Kane 2002).

The White Bluffs bladderpod is a low-growing, herbaceous perennial plant with a sturdy taproot and a dense rosette of broad gray-green pubescent leaves. This subspecies produces showy yellow flowers on relatively short stems in May, June, and July (78 FR 24011). Seeds are formed in rounded siliques from which the plant derives its common name. Figure 4-1 shows a typical bladderpod plant in flower and fruit.

Figure 4-1. White Bluffs Bladderpod in Action Area (May 25, 2017).

White Bluffs bladderpod forms a small rosette upon germination and generally reaches reproductive condition in its first or second year. Most individuals flower annually during their four to five year lifespan (Dunwiddie et al. 2002). The survival of seedlings and adults appears to be highly variable, and appears to be tied environmental conditions such as seasonal precipitation and temperatures (Newsome 2011). Population fluctuations are described in more detail in Section 3.3 below.

The subspecies inhabits dry, steep upper zone and top exposures of the White Bluffs area of the Hanford Reach at the lower edge of the Wahluke Slope. The White Bluffs are a unique exposure of the Ringold Formation made of soft Pliocene lacustrine deposits of clay, sand and silt. The top is often a harder highly alkaline, calcium carbonate (caliche-like) layer. White Bluffs bladderpod appears to be restricted to this caliche-like layer most commonly on near-vertical exposures of these soils (78 FR 24012).

4.2 Critical Habitat Description

White Bluffs bladderpod occurs as a single population in a narrow 10.6-mile (17 km) long band along the top of the White Bluffs of the Columbia River. In total, the critical habitat for this subspecies consists of approximately 2,033 acres (823 hectares), all of which are on Federal land owned by the DOE and managed by the USFWS as part of the Monument. At the time of listing in 2013, 115 acres (46.5 hectares) were considered to be occupied by the species and the remaining 1918.4 acres (776.3 hectares) were unoccupied critical habitat. The area designated as unoccupied critical habitat is contiguous with the occupied area and contains high-quality native habitat available to pollinators, which are critical to sustain essential life-history functions for the bladderpod (78 FR 77002).

Based on knowledge of the physical and biological features essential to the conservation of the White Bluffs bladderpod and the characteristics required to sustain the subspecies' life history, the USFWS developed the primary constituent elements (78 FR 24020). They are eathered alkaline Paleosols and mixed soils overlying the Ringold Formation; sparsely vegetated habitat (less than 10-15 percent total cover), containing low amounts of non-native or invasive plant species; the presence of insect pollinator species; the presence of native shrub steppe habitat within effective pollinator distance; and the presence of stable bluff formation with minimal landslide occurrence.

4.3 Population Trends and Status

Twenty permanent transects have been monitored between 1998 and 2017 in order to provide estimates of population size and track trends in the overall population. Population monitoring of flowering plants was initiated originally by The Nature Conservancy of Washington (TNC) and subsequently continued by the Washington State Department of Natural Resources Natural Heritage Program (WNHP) and USFWS. Population estimates between 1998 and 2017 have varied widely, ranging from a low of 2,529 in 2015 to a high of 58,887 in 2011. The mean size

of the population is 24,412 plants with a standard deviation of 16,599, which demonstrates the high variability of the population inter-annually (preliminary data; Newsome 2017). Figure 4-2 depicts the population fluctuations observed during this period. In years where no surveys were conducted, the figure omits lines.

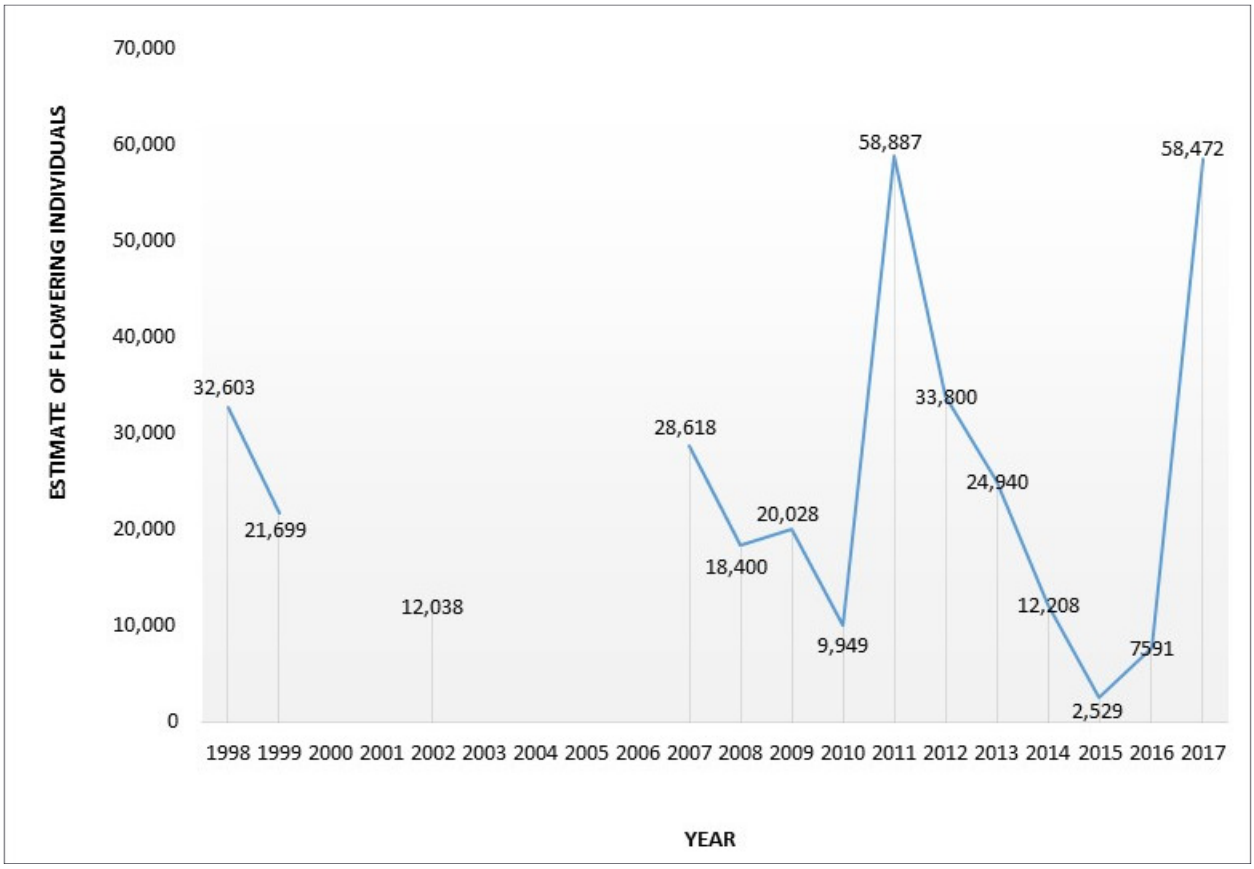

Figure 4-2. White Bluffs Bladderpod Population Size by Year.

4.4 Plant Population Size within the Area Directly Affected by the Project

Rare Care botanists conducted a census of the White Bluffs bladderpod individuals occurring within the areas expected to be directly disturbed as a result of the Project on May 25, 2017[2]. This survey identified plants in three areas shown in Figure 4-3. The areas designated as "A" and "B" in this figure are found along the access road that will be upgraded to support the transmission line rebuild; Area "C" is within the portion of transmission right-of-way located within the designated critical habitat.

[2] The annual survey of the White Bluffs bladderpod population was performed by USFWS biologists on the same date. Population estimates in Figure 4-2 were based on this survey.

A wildfire occurred in late August 2017, and according to an email from Heidi Newsome, biologist, USFWS, it burned 194 acres of White Bluffs bladderpod critical habitat. As shown in Figure 3-3, the population of bladderpod plants is found along a 17-kilometer band on the White Bluffs and the fire burned about 1.9 kilometers of that area. Ms. Newsome estimates about 11 percent of the population was affected by the fire. In addition, 10 of the 20 permanent monitoring transects were within the burned area.

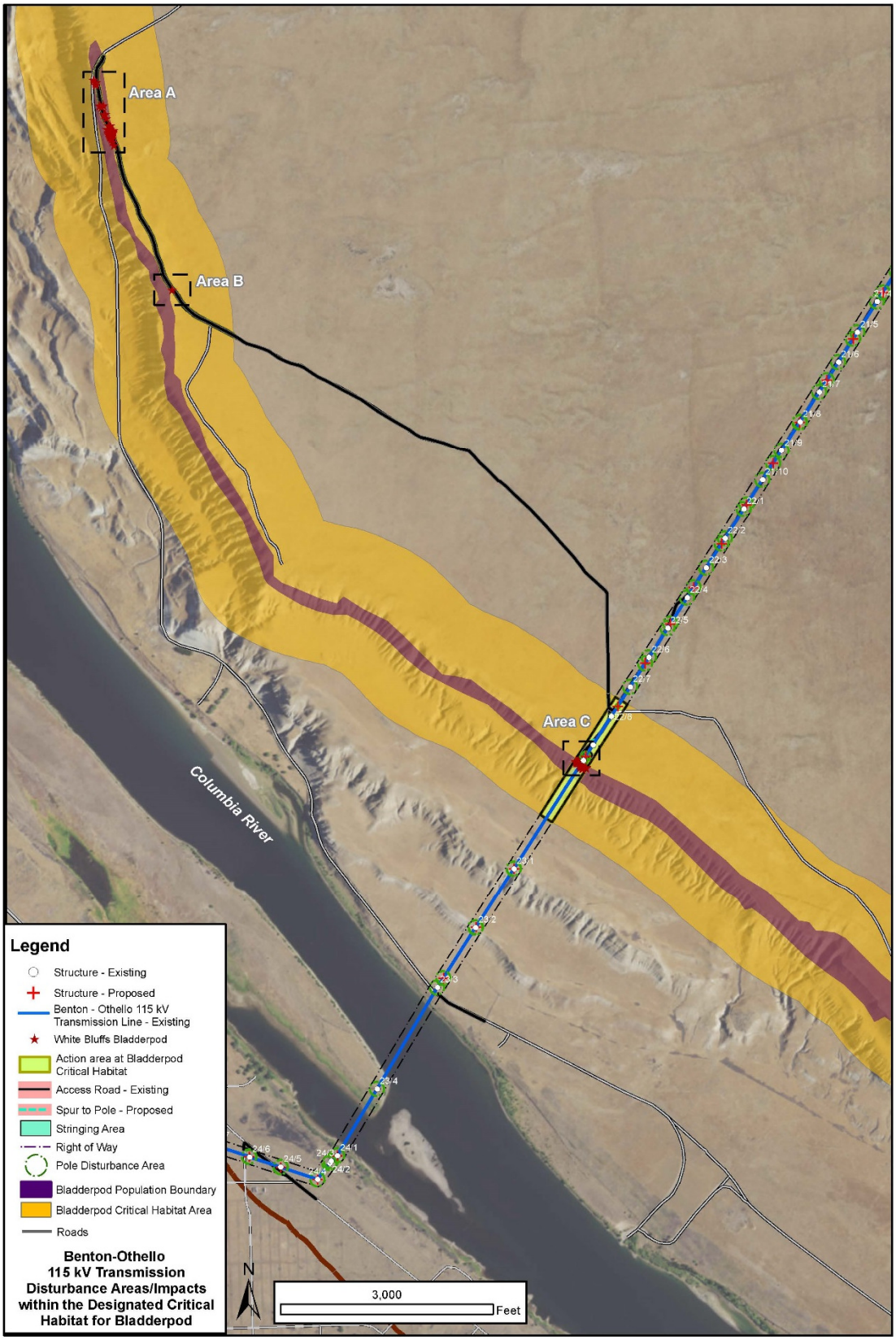

Figure 4-3. Overview of Bladderpod Plant Locations with the Project Area.

Figure 4-4 provides a closer look at the distribution of the bladderpod plants found in close proximity to the access road that with be upgraded. The panel on the left shows the location of the 55 plants found in Area “A”, and the panel on the right, the location of the 3 plants found in Area “B.” The total of 58 plants represent approximately 0.1% of the 2017 estimated population.

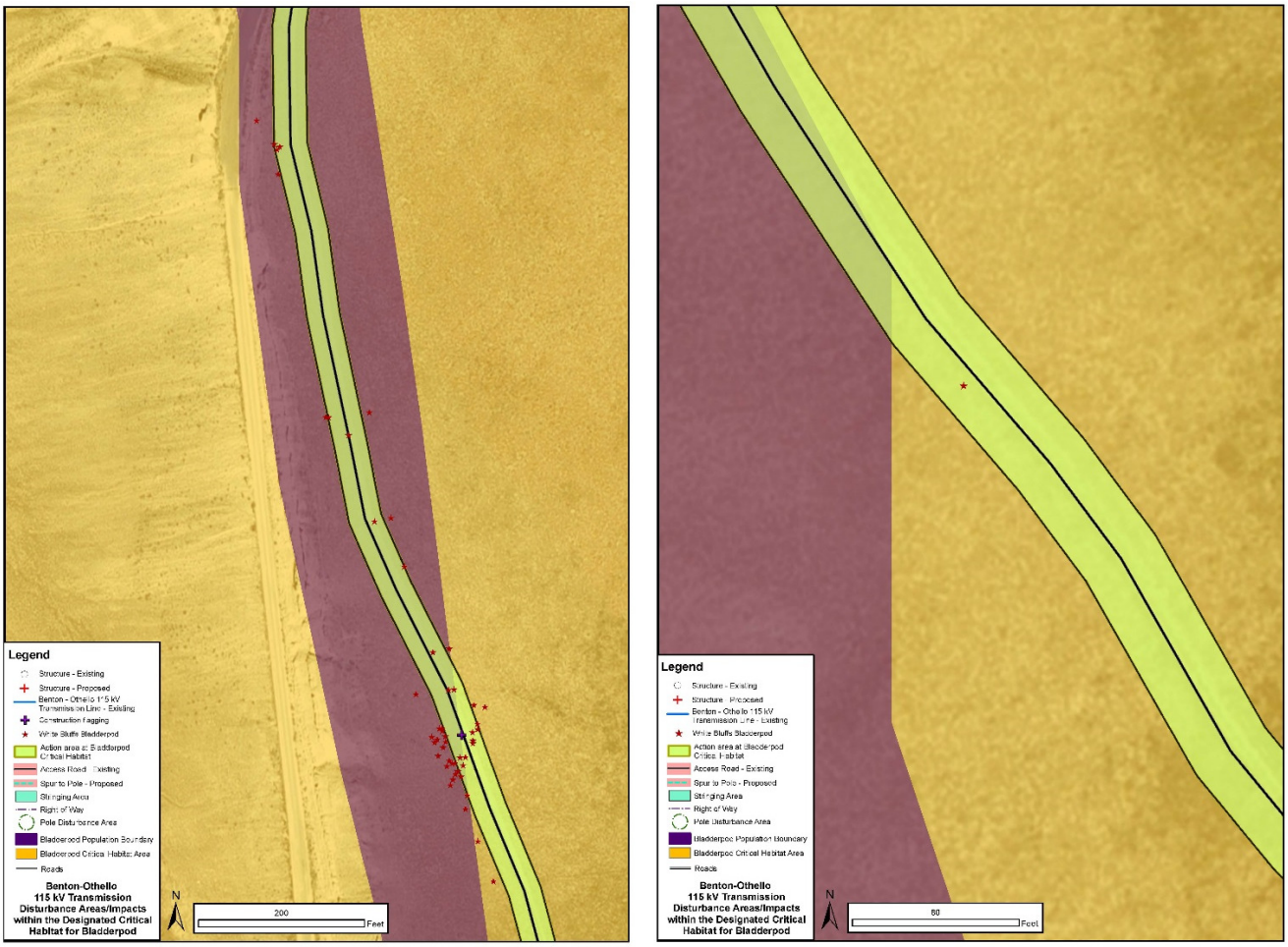

Figure 4-4. White Bluffs Bladderpod Plants Located Along the Access Road to the Transmission Line.

Figure 4-5 depicts the area of the transmission line right-of-way that crosses the critical habitat. Pole 22/10 is closest to the narrow band of caliche-like soils that supports the White Bluffs bladderpod population. Prior to the plant survey in this location, flags were placed to indicate the expected impact area around this pole, depicted as purple plus signs on the map. The red stars indicate locations of bladderpods, representing a total of 390 plants within or close to the expected impact area. This number represents roughly 0.7% of the total estimated population in 2017.

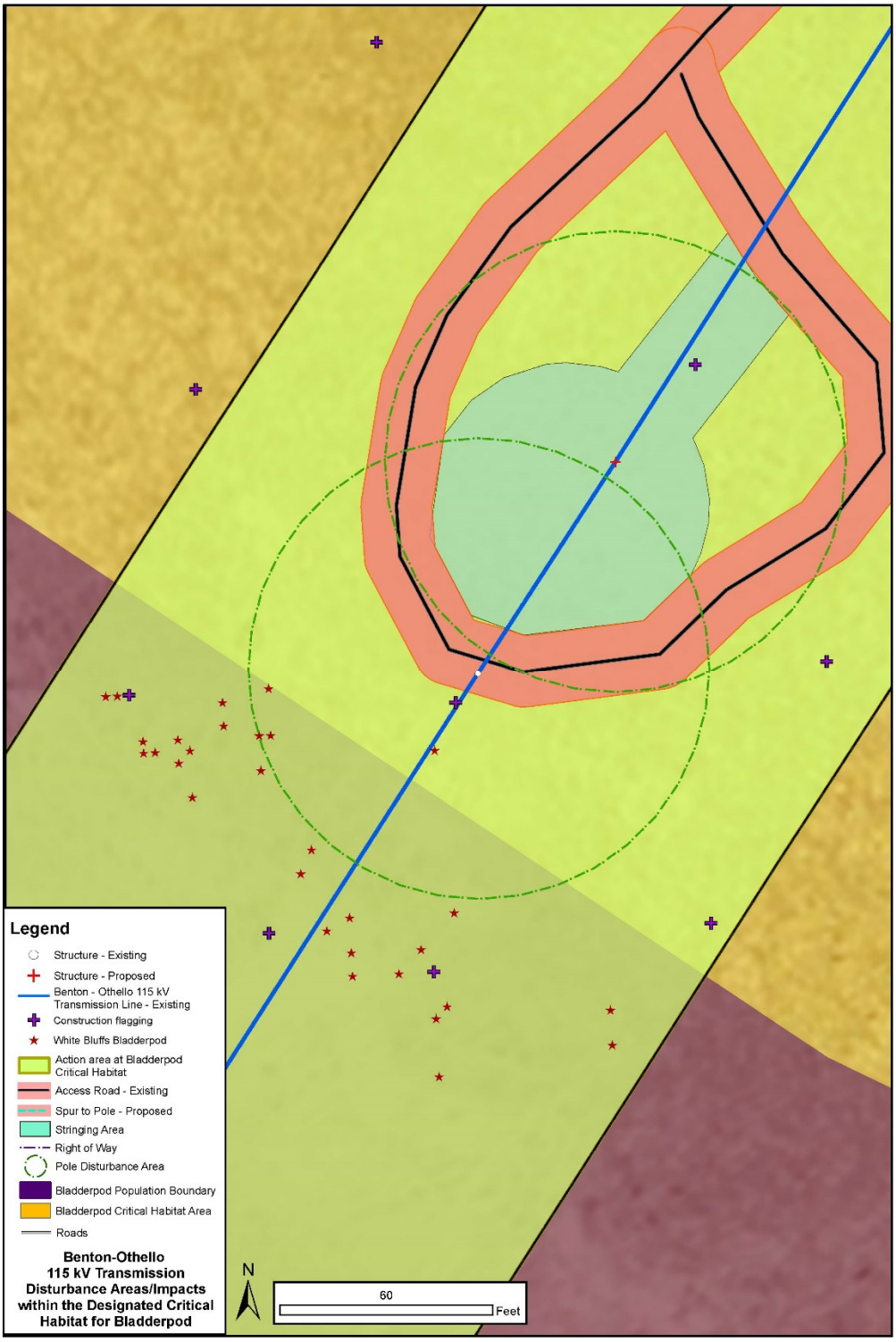

Figure 4-5. White Bluffs Bladderpod Plants Located Within the Transmission Line Right-of-Way near Pole 22/10 in the Designated Critical Habitat.

4.5 Primary Threats

The primary threats to White Bluffs bladderpod, as described in the Final Rule [78 FR 76995 - 77005] are:

- **Wildfire.** Fire may directly burn plants and open new areas to invasive species.

- **Excess groundwater-induced landslides and slope failure.** The entire population of White Bluff's bladderpod is downslope of irrigated agricultural land and impacted to varying degrees by landslides induced by water seepage. The potential for landslides is greatest in the southern portion of the subspecies distribution, adjacent to the bluffs approximately two miles east of the transmission line right-of-way.

- **Harm by recreational activities and off road vehicle use.** Recreational use and use of off-road vehicles (ORV) can crush plants, destabilize soils and spread seeds of invasive plants. ORV use is prohibited on Monument lands.

- **Non-native plants.** Non-native invasive species are a risk to bladderpod and could increase due to recreational use and fire. Non-natives could outcompete the native species that are important for pollinator habitat and are therefore important to successful reproduction of White Bluffs bladderpod.

- **Small population size and limited geographic range**. The small population size and limited range make the White Bluffs bladderpod more susceptible to impacts due to a single event, such as a wildfire.

5 Potential Project Effects on the Action Area

This section describes the potential direct, indirect and cumulative effects of the project on the White Bluffs bladderpod population and its designated critical habitat.

5.1 Direct and Indirect Effects on the White Bluffs Bladderpod Population

Except for the southernmost portion of the disturbance area needed to replace pole structure 22/10 and along a small, 1710-foot (521-meter) segment of the access road, the majority of the construction would occur outside of the recorded White Bluff's bladderpod population boundary, in "unoccupied" habitat (see Figure 2-1). As discussed above, a survey of White Bluffs bladderpod plants within or immediately adjacent to the transmission line right-of-way and along access roads identified a total of 448 plants that could be directly impacted by the Project if the project proceeds in the fall and or winter of 2017-18, as planned[3]. This number of plants represents approximately 0.8% of the total estimated population size (58,472 individuals).

Indirect effects of the Project on the bladderpod population could result through actions that influence the likelihood of wildfire, population numbers of non-native plants, and overall population size.

- Because the current transmission line includes a number of deteriorated wooden poles and a higher risk of outages, the project would be expected to decrease the risk of wildfire threats to the bladderpod population. The current pole structures will be replaced with steel structures, and the existing copper wire on the line will be replaced with new, larger aluminum wire. In addition, the Project will be constructed between fall and early spring when fire risk is less.

- Non-native invasive species have the potential to outcompete native species, including the bladderpod, and reduce population size over time. Construction activities including road grading, excavation for new transmission line poles, and removal of the existing poles have the potential to provide unvegetated areas where weedy species can become established. In addition, heavy machinery traveling to the construction site can serve as a vector to transmit weed seeds into the Project area.

- Decreases in population size or the creation of localized areas where the plants have been removed could affect future population size by impacting the total genetic pool size or diversity, or by creating distance barriers to efficient cross-pollination. However only 2.33

[3] If the project were delayed, the percentage of plants impacted would still be expected to be less than 1% of the total population.

acres in total of critical habitat will be affected and less than 1% of plants impacted, so any effect should not be significant.

No other projects are currently scheduled to occur in proximity to the bladderpod population, so the only foreseeable cumulative impact may be the increased use of off-road vehicles. Although off-road vehicle use is prohibited on Monument lands and postings indicate that the non-graveled portion of access road is restricted to official use only, planned access road upgrades could result in easier access to the area to illegal ORV use. Greater traffic could result in direct mortality of some bladderpod plants as well as increase the risk of fire and invasive weed introduction.

5.2 Project Effects on White Bluffs Bladderpod Critical Habitat

As shown in Figure 3-1, portions of the access road and the transmission line right of way lie within the designated critical habitat for the White Bluffs bladderpod.

- The total length of the portion of the current access road to the transmission line that lies within the critical habitat is about 5,530 feet. Assuming a width of 10 feet for this portion of the road, roughly 1.3 acres (0.53 hectares) of road lies within the critical habitat.

- Approximately 1,970 feet (600 meters) of the transmission line that will be rebuilt traverses the critical habitat. Considering the line right-of-way, which extends 100 feet (30.5 meters) on either side of the line, a total of 9.1 acres (3.7 hectares) lies within critical habitat.

Direct impacts expected within the critical habitat, however, would occur in a significantly smaller portion within this area. As presented above in Table 2-1, the Project would directly impact a total of approximately 2.3 acres (0.93 hectares) of the 2,033 acres (823 hectares) of the total designated critical habitat area for this subspecies (78 FR 77002).

- The majority of direct impacts, including construction of the new spur road to be used during construction, removing the existing pole structures, line tensioning and stringing activities, and material staging and other construction–related activities, will be temporary in nature because impacted areas will be replanted with native vegetation as described above. As shown in Table 2-1, this area is expected to be almost all of the 2.3 acres (0.93 hectare) impacted.

- A very small area of the disturbance within the critical habitat will not be replanted and constitutes a permanent loss of habitat. This area consists of site where the new poles and associated hardware will be placed. As shown in Table 2-1, this area is expected to be less than a tenth of an acre.

The designation of critical habitat for the White Bluffs bladderpod was based on the knowledge of the physical and biological features essential to the conservation of the White Bluffs bladderpod and the characteristics required to sustain the subspecies' life history (78 FR 24020). The potential effects of the proposed project on these features and characteristics, referred to as Primary Constituent Elements, are evaluated below. Indirect effects of the Project on the designated critical habitat would primarily be a result of impacting one or more of these Primary Constituent Elements.

Primary Constituent Element 1. Weathered alkaline soils and exposed caliche-like soils

Existing Conditions – As shown in Figure 5-1, the area immediately adjacent to the south of pole structure 22/10 contains the weathered alkaline and mixed soils characteristic of the White Bluffs formation. The pole structures and land north of pole structure 22/10 (and further from the bluff edge) do not appear to have surface exposure of caliche-like deposits, but likely have mixed alkaline soils.

Figure 5-1. Vegetation Surrounding Bladderpod Plants (Orange Flags) in Action Area and Typical Bladderpod Habitat on White Bluffs Caliche-like Substrate.

Potential Project Effects - Weathered alkaline paleosols and mixed soils could be adversely impacted by the removal and/or replacement of the pole structures, including the backfill of holes. New pole holes could displace some potential habitat. In addition, spoils have the potential to change soil composition or cover the suitable soil. Avista will minimize this potential by using geotextile fabric or other barriers for spoils, then hauling excess spoils and materials off Site.

Other soil disturbances due to staging or stockpiling may cause temporary disturbance, but would be unlikely to permanently affect the alkalinity of the soil or other important soil characteristics.

These temporary effects would be treated by restoring the spur road and reseeding the disturbed soils after construction (see Section 4.3).

Primary Constituent Element 2. Shrub-Steppe Habitat with low non-native species cover

Existing Conditions - The action area is arid, well-drained, and sparsely vegetated with low-growing shrubs adjacent to the White Bluffs, with denser shrub-steppe habitat occurring further away from the bluffs to the north. Local vegetation is dominated by big sagebrush (*Artemisia tridentata*), antelope bitterbrush (*Purshia tridentata*), green rabbitbrush (*Chrysothamnus viscidiflorus*), Sandberg bluegrass (*Poa secunda*), needle-and-thread grass (*Hesperostipa comata*), Indian ricegrass (*Acnatherum hymenoides*), and other native species. The non-native Cheatgrass (*Bromus tectorum*) is also quite prevalent in some areas. Populations of non-native invasive plants, including yellow star thistle, exist along the access roads in the action area.

Potential Project Effects - Trimming and clearing vegetation and blading to construct a spur road and improve existing access roads would impact the native habitat. In addition, other project activities that require heavy machinery may damage shrubs and/or crush local vegetation. Weeds could be introduced or spread through these access roads.

Revegetation will be used to restore the native shrub-steppe vegetation following construction. Revegetation also serves to reduce areas of bare soils where weeds may become established. The spread of weeds will be minimized by using certified weed free materials during revegetation activities, installing truck-washing areas, and chemically or mechanically controlling weed populations in and near the action area during and following project construction. Overall, upgrading the aging transmission line is expected to reduce the need for line maintenance; less traffic through the critical habitat should result in fewer opportunities for the distribution of weed seeds from offsite locations.

Perhaps the biggest threat to native plant communities in the critical habitat is wildfire. As discussed in Section 5.1, fire danger is expected to be reduced in the action area because the wood poles and aging electrical lines will be eliminated.

Primary Constituent Elements 3 and 4. Pollinator Species and their habitat flight distance.

Existing Conditions - The White Bluffs bladderpod appears to be served by several pollinators, including butterflies, flies, wasps, bees, moths, and ant species (78 FR 24019).

The presence of nearby habitat for pollinators for the bladderpod was determined by applying research on the flight distance of solitary bees, which are known to pollinate native species and are commonly observed in shrub-steppe habitat on the Hanford Reach(78 FR 24019). Habitat within pollinator flight distance of 980 feet (300m) was included in the designated critical habitat based on this research (78 FR 24020).

Potential Project Effects - Pollinators and native shrub-steppe habitat (pollinator habitat) could be affected by trimming and clearing native vegetation in the action area to replace the pole structures and provide access. Plants that support pollinator species would be affected by removal of vegetation. Work areas will be delineated with construction fencing or signage prior to construction to limit disturbance to only the area needed for the activity.

Revegetation of disturbed areas following construction will help to minimize impacts to these PCEs.

Primary Constituent Element 5. Stable bluff formations with minimal landslides.

Existing Conditions - The action area includes the White Bluffs bladderpod critical habitat, which is located above, on, and below the White Bluffs. The slopes at this location on the Monument appear to be relatively stable, and while steep, they do not show signs of recent instability such as sloughing or mass slope failures. Approximately two miles east of the action area, there are large-scale irrigation activities and mass slope failure has occurred primarily due to irrigation.

Potential Project Effects - The Project will cause temporary soil disturbance and require the use of heavy machinery, however, construction activities would not discharge large amounts of water that could cause mass slumping or otherwise cause slope instability. In addition, the impacted area will be revegetated as soon as practical after disturbance, which will lessen the opportunity for runoff during storm events. The project is not expected to have any effect on this PCE.

5.3 Potential Effects from Actions by Others on the Bladderpod

While no other construction projects are currently scheduled to occur in proximity to the designated critical habitat, Project actions in combination with USFWS management activities, local private landowner activities, and recreational use could potentially result in a cumulative effect on the designated critical habitat for the White Bluffs bladderpod.

During the construction period, vegetation management activities will continue to occur in and around the Monument and on private farmland near or adjacent to the critical habitat. This may include controlled or prescribed burning, herbicide application, mechanical plant/weed removal, and other activities. Prescribed burning can increase the risk of damaging the bladderpod and

pollinator habitat, which could adversely affect the bladderpod populations. Herbicide applications from nearby farming can drift towards the bladderpod populations and adjacent habitat resulting in additional impacts to pollinators and plant species.

Continued and potential increased use, due to Project-improved access roads, of the Monument for recreation can introduce weeds through human vectors and vehicles. Recreational activities may result in crushing or uprooting of individual plants and loss or modification of suitable habitat as well as the introduction and spread new and or existing weeds. These impacts could cumulatively impact the White Bluffs bladderpod.

6 Effect Determination and Request for Consultation

DOE has concluded the Benton-Othello Electrical Transmission Line Rebuild may affect, and is likely to adversely affect, the White Bluffs bladderpod and its critical habitat. DOE requests formal consultation with the USFWS under Section 7 of the ESA and requests that USFWS prepare a Biological Opinion for the Project.

6.1 Effect Determination for the White Bluffs Bladderpod Subspecies

The Project may affect, and is likely to adversely affect, White Bluffs bladderpod plants because:

- The existing transmission line bisects the White Bluff bladderpod population and the project will require ground disturbing activities to access the line, remove existing structures, replace pole structures, and string new wires. A total of 390 individual plants, constituting about 0.7% of the total population, were observed in or immediately adjacent to the affected area (see Figure 5-1).

- An additional 58 plants (about 0.1% of the total population) were counted within and along the access road needed to move vehicles and construction equipment to the transmission line right of way (see Figure 4-5).

Although a total of 448 bladderpod plants are known to be in or in close proximity to the Project area, only a fraction of these plants are likely to be directly impacted due to avoidance and minimization measures that will be used during construction. Key measures that will be used to keep impacts to the White Bluffs bladderpod population as low as practicable include the following:

- All bladderpod plants will be flagged and construction fencing and / or signage, will be implemented to delineate the work areas before mobilization and avoid the plants where practicable.

- Where possible, the vegetation along access roads will be mowed, which may allow for the regrowth of bladderpod plants within the impact area.

- Project construction will occur between fall and early spring when fire potential is low and when plants are dormant.

- Extra spoils will be hauled off site to avoid burying existing plants or inhibiting future seed germination and reestablishment.

- Disturbance areas around each pole structure will be reduced from the more typical 100-foot radius to between a 25-foot and 65-foot radius depending on the need for guy wire, and where possible, helix anchors will be used to minimize disturbance.

6.2 White Bluffs Bladderpod Critical Habitat:

The Project may affect, and is likely to adversely affect, the designated critical habitat for the White Bluffs bladderpod. As planned, the Project will disturb an estimated 2.3 acres of soil and vegetation within the designated critical habitat, which represents approximately 0.06 percent of the total 2033 acres of designated critical habitat for this subspecies

- The vast majority of the estimated 2.3 acres of critical habitat that will be impacted by this project will be replanted with locally-sourced, native plant seeds or plugs and monitored for success in compliance with the *Hanford Site Revegetation Manual* (DOE 2013). Therefore, these impacts are considered temporary in nature.

- Permanent impacts from construction activities, including installing new pole structures, guy wires and anchors, would affect a much smaller area. Approximately 0.02 acre of the total 2,033 acres of designated critical habitat would not be replanted with native vegetation; this area represents only about 0.001 percent of the total designated critical habitat.

- In addition to direct impacts, construction and future maintenance could increase the potential for the spread and proliferation of non-native invasive plants.

Project effects to designated critical habitat will be minimized through the following:

- Construction contractors will adhere to best management practices to reduce the risk of fire.

- The project will result in a long-term reduction in fire risk that could affect the plants and pollinator habitat because wood poles will be replaced with steel poles and the transmission line capacity will be increased, reducing the chance of outages.

- The project will be constructed between fall and early spring when the risk of fire and plant damage is lowest.

- Spoils and excess materials will be stockpiled on a barrier and then hauled off site to minimize damage to plant habitat.

- Where possible, Avista and contractors will mow shrubs instead of blading to minimize disturbance to local vegetation.

- Impacted areas will be revegetated.

7 References

This section provides a list of the people consulted during the preparation of this BE and citations for the references used in the text.

7.1 Personnel Consulted

Name	Position	Agency
Michelle Anderson	Sr. Environmental Specialist	Avista Utilities
Joe Arnett	Washington State Botanist	Washington Natural Heritage Program, Washington Department of Natural Resources
Wendy Gibble	Program Director / Botanist	Washington Rare Plant Care and Conservation, University of Washington Botanic Gardens
Bryan Hyde	Transmission Engineer	Avista Utilities
Tim McCracken	Fish and Wildlife Biologist	Central Washington Field Office, USFWS
Heidi Newsome	Supervisory Wildlife Biologist	Mid-Columbia River National Wildlife Refuge Complex, USFWS
Judy Pottmeyer	Botanist / Ecologist	Ecological Monitoring and Compliance, Mission Support Alliance, Contractor to the U.S. Department of Energy, Richland Operations Office

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Appendix A: ESA-listed and Proposed Species that May Occur in the Project Area

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
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In Reply Refer To: August 24, 2017
Consultation Code: 01EWFW00-2017-SLI-1436
Event Code: 01EWFW00-2017-E-02680
Project Name: Benton-Othello Transmission Line Rebuild

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated and proposed critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. The species list is currently compiled at the county level. Additional information is available from the Washington Department of Fish and Wildlife, Priority Habitats and Species website: http://wdfw.wa.gov/mapping/phs/ or at our office website: http://www.fws.gov/wafwo/species_new.html. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether or not the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:
http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). You may visit our website at http://www.fws.gov/pacific/eagle/for information on disturbance or take of the species and information on how to get a permit and what current guidelines and regulations are. Some projects affecting these species may require development of an eagle conservation plan: (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Also be aware that all marine mammals are protected under the Marine Mammal Protection Act (MMPA). The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas. The importation of marine mammals and marine mammal products into the U.S. is also prohibited. More information can be found on the MMPA website: http://www.nmfs.noaa.gov/pr/laws/mmpa/.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Related website:
National Marine Fisheries Service:
http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

Project Summary

Consultation Code: 01EWFW00-2017-SLI-1436

Event Code: 01EWFW00-2017-E-02680

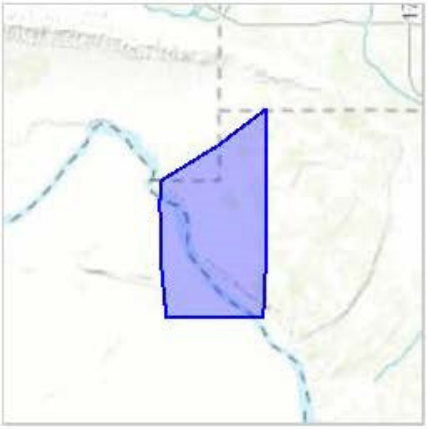
Project Name: Benton-Othello Transmission Line Rebuild

Project Type: TRANSMISSION LINE

Project Description: Replace Avista's Benton-Othello 115kV transmission line on the Monument and Hanford Site

Project Location:

Approximate location of the project can be viewed in Google Maps:
https://www.google.com/maps/place/46.65077761967326N119.37705452408068W



Counties: Adams, WA | Benton, WA | Franklin, WA | Grant, WA

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Columbia Basin Pygmy Rabbit *Brachylagus idahoensis* Population: Columbia Basin DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1126	Endangered
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered

Birds

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is a **proposed** critical habitat for this species. Your location is outside the proposed critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Bull Trout *Salvelinus confluentus* Population: U.S.A., conterminous, lower 48 states There is a **final** critical habitat designated for this species. Your location overlaps the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8212	Threatened

Flowering Plants

NAME	STATUS
White Bluffs Bladderpod *Physaria douglasii ssp. tuplashensis* There is a **final** critical habitat designated for this species. Your location overlaps the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5390	Threatened

Critical habitats

There are 11 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Bull Trout *Salvelinus confluentus* https://ecos.fws.gov/ecp/species/8212#crithab	Final designated
Chinook Salmon *Oncorhynchus (=Salmo) tshawytscha* Population: Puget Sound ESU For information on why this critical habitat appears for your project, even though Chinook Salmon is not on the list of potentially affected species at this location, contact the local field office. https://ecos.fws.gov/ecp/species/8091#crithab	Final designated
Chinook Salmon *Oncorhynchus (=Salmo) tshawytscha* Population: Upper Columbia spring-run ESU For information on why this critical habitat appears for your project, even though Chinook Salmon is not on the list of potentially affected species at this location, contact the local field office. https://ecos.fws.gov/ecp/species/8091#crithab	Final designated
Chinook Salmon *Oncorhynchus (=Salmo) tshawytscha* Population: Lower Columbia River ESU For information on why this critical habitat appears for your project, even though Chinook Salmon is not on the list of potentially affected species at this location, contact the local field office. https://ecos.fws.gov/ecp/species/8091#crithab	Final designated
Chinook Salmon *Oncorhynchus (=Salmo) tshawytscha* Population: Upper Willamette River ESU For information on why this critical habitat appears for your project, even though Chinook Salmon is not on the list of potentially affected species at this location, contact the local field office. https://ecos.fws.gov/ecp/species/8091#crithab	Final designated
Steelhead *Oncorhynchus (=Salmo) mykiss* Population: Upper Columbia River DPS For information on why this critical habitat appears for your project, even though Steelhead is not on the list of potentially affected species at this location, contact the local field office. https://ecos.fws.gov/ecp/species/1007#crithab	Final designated
Steelhead *Oncorhynchus (=Salmo) mykiss* Population: Upper Willamette River DPS For information on why this critical habitat appears for your project, even though Steelhead is not on the list of potentially affected species at this location, contact the local field office. https://ecos.fws.gov/ecp/species/1007#crithab	Final designated

Steelhead *Oncorhynchus (=Salmo) mykiss* Population: Middle Columbia River DPS For information on why this critical habitat appears for your project, even though Steelhead is not on the list of potentially affected species at this location, contact the local field office. https://ecos.fws.gov/ecp/species/1007#crithab	Final designated
Steelhead *Oncorhynchus (=Salmo) mykiss* Population: Lower Columbia River DPS For information on why this critical habitat appears for your project, even though Steelhead is not on the list of potentially affected species at this location, contact the local field office. https://ecos.fws.gov/ecp/species/1007#crithab	Final designated
Steelhead *Oncorhynchus (=Salmo) mykiss* Population: Snake River Basin DPS For information on why this critical habitat appears for your project, even though Steelhead is not on the list of potentially affected species at this location, contact the local field office. https://ecos.fws.gov/ecp/species/1007#crithab	Final designated
White Bluffs Bladderpod *Physaria douglasii ssp. tuplashensis* https://ecos.fws.gov/ecp/species/5390#crithab	Final designated

Appendix B: No Effect Determinations for ESA-listed and Proposed Species

Rebuild of the Avista Utilities' Benton-Othello 115 kV Electrical Transmission Line on the Hanford Site: No Effect Determinations for ESA-listed and Proposed Species Potentially in the Project Area

April 20, 2017

Michelle C. Anderson, Avista Utilities

Prepared for the U.S. Department of Energy

Assistant Secretary for Environmental Management

U.S. DEPARTMENT OF ENERGY | Richland Operations Office

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1 Introduction

Avista Corporation (Avista), a private, investor-owned company, is proposing to rebuild a section of the 115-kilovolt (kV) wood-pole Benton-Othello Switching Station (Othello) transmission line (Project). The existing transmission line is within Avista's right-of-way (ROW), which is aligned through Department of Energy (DOE) property. The rebuild of the existing line will be within the existing alignment, but will require a temporary land use agreement from DOE to access the line.

Section 7(a)(1) of the Endangered Species Act (ESA) charges Federal agencies to aid in the conservation of listed species, and Section 7(a)(2) requires the agencies to ensure that their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. This *No Effect Determination* describes the proposed project, defines the action area, describes the federally listed species and habitats that could be affected, and makes effect determinations for these listed species.

2 Project Description

2.1 Project Location

The existing alignment commences approximately 0.5 miles (0.8 km) south of State Route 24 and extends through the Hanford Reach National Monument (Monument) portion of the Hanford Site managed by the U.S. Fish and Wildlife Service for approximately 9.7 miles (15.6 km), across the Columbia River, through a quarter mile (0.4 km) wide section of the Monument managed by DOE along the river, and through the main portion of the Hanford Site managed by the DOE for approximately 2.1 miles (3.4 km) to the point where the ownership of the electrical transmission line changes from Avista to the Bonneville Power Administration. The project is located in Section 6, Township 14N, Range 28E to Section 27, Township 24N, Range 27E. See Figure 1. Vicinity Map.

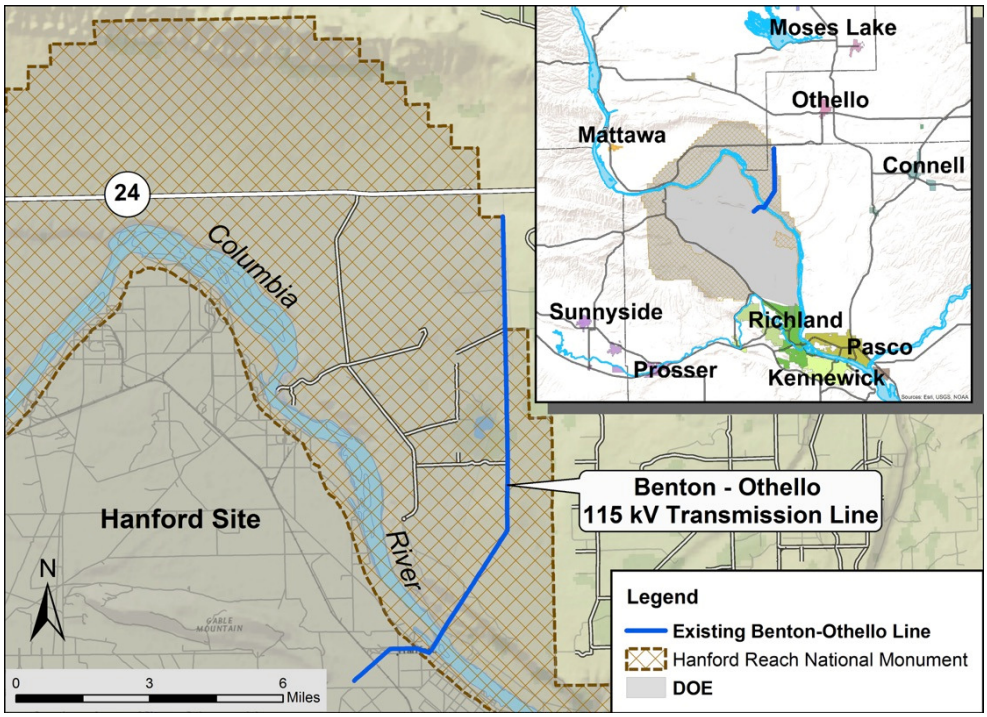

Figure 1. Vicinity Map

2.2 Project Description

The Project would rebuild a 12.6-mile-long section of the Benton-Othello Transmission Line, replacing approximately 128 existing primarily wooden or steel H-frame structures 105 with similarly configured self-weathering steel structures, which would result in an overall pole reduction. The conductors, guy wires, and other components would also be replaced. The existing copper wire conductors would be replaced with higher capacity wires; however, the amount of current transferred through the transmission line would not change. Existing access roads would be improved and new spur roads would be constructed to access pole locations as necessary.

The conductors that cross over the Columbia River aerially would be replaced, but there will be no in-water work. The pole structure on the island is approximately 100 feet from the shoreline and would be cut at the base and removed by helicopter. Existing poles in the wetlands associated with Wahluke Pond and irrigation canals would also be replaced or removed.

Best management practices (BMPs) and other measures will minimize project impacts and help protect available habitat within the action area. These measures include but are not limited to:

- Avista will develop and implement a Restoration Plan for the project that will include rectification, or replacing the impacted plants on the disturbed sites and reestablishing the pre-existing plant community. The Restoration Plan will follow the practices outlined in the

Hanford Site Revegetation Manual Version 1 (USDOE 2013a), which includes species composition, timing and other details. The Plan will include the following minimum elements:

- Restoration and revegetation goals, timing and success criteria
- Mapping of expected disturbance areas and mapping of restoration areas
- Soil preparation methods
- Planting and seeding methods, timing, plant species, amounts. This will include the use of pollinator friendly species and culturally important species. The preferred planting window is from mid-November to early February.
- Weed control practices including control of yellow star thistle (*Centaurea solstitialis*). This will include truck washing areas, truck plates and use of certified weed free materials. These requirements will be specified in the contract documents.
- Monitoring the restoration area will occur annually over a 5-year period or until success criteria are met. Monitoring may include native plant cover, plant survival and growth, plant diversity, and weed cover. Areas will be replanted if necessary to meet success criteria.

- A Stormwater Pollution Prevention Plan (SWPPP) and Spill Plan will be prepared for the project and implemented. The plans will include BMPs to control erosion and sedimentation (such as silt fencing, fiber wattles, reseeding, marking clearing limits) and to minimize risk of spills (such as secondary containment, spill kits on site, and designated staging and refueling areas). The plans will also include countermeasures should a spill occur.

- Concrete washouts will be used and disposed of off site in an approved area and will be away from any wetlands or surface waters.

- All water used for the project will be from a permitted purveyor. There will be no water withdrawn from wetlands, surface waters or other natural areas.

- There will be no discharge of wastewater, or other materials into any surface waters, wetlands or drainages.

- Only the existing access roads as shown on the plans will be used. No vehicles will be permitted off established roads unless specifically approved. The existing access roads will

be no wider than 20 ft wide which includes three ft on either side of the road for vehicles to pull off. Ten-foot (3-meter) wide spur roads will be constructed to access pole structures but will be restored after construction.

- A helicopter will be used to minimize the need for some access roads including on the island. In these cases, holes will be excavated by hand, as needed, then poles will be set with the helicopter. The backfill will be flown in with the helicopter and will be placed around the new poles to await installation. The old structures will be removed and flown by helicopter to a designated staging location. New wire installation and sagging of the new wire will be completed using traditional methods. Workers will be flown to and from the structures to clip the wires rather than using bucket trucks.

3 Action Area

The action area includes all areas that could be affected directly or indirectly by the proposed action and includes the following:

- All existing and proposed pole locations
- The transmission line ROW, which is considered to have a 200 foot (61 meter) width (100 feet on either side of the transmission line alignment)
- Material staging and any tensioning areas for pole structures
- Existing access roads and new spur roads for pole structures
- Material stockpiling and laydown for poles

3.1 Landscape and Topography

The Project is located within the interior, low elevation Columbia River Basin, which is dominated by shrub-steppe habitat (Daubenmire 1970). It is predominately flat with steeper slopes along the White Bluffs closer to the Columbia River. The northern section of the project from WA-24 to the Columbia River is within the Monument and is primarily shrub-steppe habitat dominated by an overstory of big sagebrush (*Artemisia tridentata*), bitterbrush (*Purshia tridentata*), and green rabbitbrush (*Chrysothamnus viscidiflorus*) with an understory of bunchgrass and cheatgrass (*Bromus tectorum*).

The Wahluke Ponds and canals, which originate from irrigation wastewater from the Columbia Basin Project and nearby agricultural lands have created predominantly palustrine emergent wetlands, with palustrine scrub-shrub components and riverine wetlands with emergent and scrub-shrub components. The wetlands have high densities of non-native invasive species including common reed (*Phragmites* sp.) and Russian olive (*Elaeagnus angustifolia).*

The White Bluffs, located just north of the Columbia River, are a unique exposure of the Ringold Formation. The bluffs are made of soft Pliocene lacustrine deposits of clay, sand and silt. The

top is capped in many places by a harder alkaline, calcium carbonate (caliche) layer (USFWS 2016a). The shorelines of the Columbia River contain riparian and aquatic habitats. The Hanford Site south of the Columbia River has similar shrub-steppe habitat but with a more developed landscape. See Appendix A – Photographs of the Project Area.

4 Species with No Effect Determination

A species list was obtained from the USFWS Information for Planning and Conservation (IPaC) website and was reviewed to determine the potential presence of ESA-listed species and critical habitat within the project vicinity. Data and reports were also reviewed to determine if listed species or potential suitable habitat occurs in the action area. Federally listed species and critical habitats that could potentially be found in the action area are listed in Table 1.

Table 1. Federally Listed Species that May Occur in the Project

Species	Scientific Name	Federal Status	Critical Habitat/EFH	Documented in Action Area?
USFWS Species				
White Bluffs bladderpod	*Physaria douglasii ssp. Tuplashensis*	Threatened	Final Designated	Yes
Yellow-billed cuckoo	*Coccyzus americanus*	Threatened	Final Designated	No
Bull Trout	*Salvelinus confluentus*	Threatened	Yes	Yes (limited evidence)
Columbia Basin Pygmy Rabbit	*Brachylagus idahoensis*	Endangered	No	No
Gray wolf	*Canis lupus*	Threatened	No	No
National Marine Fisheries Service Species				
Upper Columbia River Steelhead	*Oncorhynchus mykiss*	Threatened	Yes	Yes
Spring Chinook	*Oncorhynchus tschawytscha*	Endangered	Yes	Yes

Source: (USFWS 2016b)

A field survey was completed during May and November of 2016 to survey the project area for vegetation, wildlife and available habitat. The Project is expected to have “no effect” to the following species and their designated critical habitats:

- Yellow-billed cuckoo
- Bull trout
- Columbia Basin pygmy rabbit
- Gray wolf
- Upper Columbia River Steelhead
- Spring Chinook.

The project is expected to have an adverse effect to White Bluff's bladderpod, a threatened species, and its designated critical habitat. The Project effects to White Bluff's bladderpod and its designated critical habitat are addressed in a separate document titled "*Biological Evaluation for the Rebuild of the Avista Utilities' Benton-Othello 115 kV Electrical Transmission Line on the Hanford Site, Washington*" and is not further discussed in this document.

4.1 Yellow-billed Cuckoo

Yellow-billed cuckoo *(Coccyzus americanus)* was federally listed as threatened on October 3, 2014. Critical habitat was proposed for designation on August 15, 2014, but excluded Washington State (USFWS 2015a).

Yellow-billed cuckoo require large, treed riparian corridors, preferably deciduous, with dense, low, scrubby vegetation greater than 50 acres. Nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites. (USFWS 2015a).

The western population has experienced major declines in its breeding range since the 1800s. Very few recent observations of the species have occurred in Washington State, with only about 12 records between 1950 and 2000 (WDFW 2012).

No yellow-billed cuckoos, or appropriate habitat, were observed in the action area during field surveys conducted in May and November 2016. There are no known occurrences of yellow-billed cuckoo near the project and the action area does not contain the extensive canopy/woodlands habitat the species requires; therefore, it is determined the project will have *no effect* on yellow-billed cuckoo.

4.2 Columbia Basin Pygmy Rabbit

Columbia Basin pygmy rabbit (*Brachylagus idahoensis*) was listed as endangered in 2001. Pygmy rabbits in Washington State are part of the Columbia Basin Distinct Population Segment.

Columbia Basin pygmy rabbits are the smallest rabbit in North America and the only rabbit to dig its own burrows. They are typically located in the deep loamy soils of sagebrush-dominated landscapes. Museum specimens and sighting records indicate that the Columbia Basin pygmy

rabbit likely occurred in portions of six Washington counties during the first half of the 20th century, including Douglas, Grant, Lincoln, Adams, Franklin, and Benton (USFWS 2012a).

Pygmy rabbits were thought to be extirpated from Washington by the mid-20th century, until a single unverified sighting was documented in Benton County in 1979 (USFWS 2012a). Since then, pygmy rabbits have only been found in southern Douglas and northern Grant counties (USFWS 2012a). Current reintroduction efforts are occurring in Douglas and Grant counties from captive-bred individuals as well as captured and translocated individuals from Oregon, Idaho, and Nevada (USFWS 2012a). No pygmy rabbits or their sign were observed in the action area during field surveys for the Project in May and November 2016. While there is suitable sagebrush habitat in the action area, it is not within the expected historical distribution of the species. Since the most recent observation was unverified and occurred in 1979, it is anticipated that the pygmy rabbit does not occur in the action area. Therefore, the proposed Project would have *no effect* on pygmy rabbits.

4.3 Gray Wolf

Gray wolf (*Canis lupus*) populations that are part of the Northern Rocky Mountain Distinct Populations Segment, were delisted in 2011 [76 FR 25590]; however, the action area is just west of Highway 17 and is still protected under ESA (Becker et al. 2013).

Gray wolves are not documented or known to occur in the action area. Wolves were historically common throughout the state before being extirpated by the 1930s, with only sporadic reports of individual wolves since that time (Becker et al. 2013). Currently, wolf packs and individuals have been confirmed in the Selkirk Mountains of northeastern Washington and in the northern Cascade Mountains (WDFW 2016). Wolves have also been reported in the Blue Mountains of southeast Washington and northeast Oregon. The nearest known wolf pack to the Project is the Teanaway pack in the Wenatchee National Forest, north and west of Ellensburg (Becker et al. 2013) and over 60 miles from the Project.

No gray wolves or their sign were observed in the action area during field surveys for the Project in May and November of 2016. The action area is over 60 miles from any known wolf activity and dispersal into the action area would require the wolves to move from the Wenatchee National Forest and adjacent lands and cross through dozens of miles of developed agricultural areas, other human developments, and disturbed shrub-steppe habitat. Dispersal into the action area would be unlikely (Wiles et al. 2011). Since gray wolves are not known to occur in the action area, the proposed Project will have *no effect* on gray wolves.

4.4 Bull Trout

Bull trout were originally listed as threatened on July 10, 1998. Critical habitat for Bull trout was designated on September 30, 2010. The Upper Columbia River, including the Hanford Reach is listed as part of the Columbia River Distinct Population Segment [75 FR 63898].

Bull trout are members of the char subgroup of the salmonidae family. They are typically associated with the colder streams in a river system and often spawn near cold-water springs, and areas of groundwater infiltration [64 FR 58911]. Suitable habitat requires clear and stable stream channels, clean spawning gravel, complex and diverse cover, and unblocked migration routes. Bull trout are typically found in waters not exceeding 15℃.

All life stages of bull trout are associated with complex forms of cover (large woody debris, undercut banks, boulders, and pools) and stability in both stream channel and stream flow [64 FR 58911]. Migratory corridors link important seasonal habitat for bull trout and maintaining open migratory corridors is important in order to maintain gene flow and support the persistence of local bull trout subpopulations [64 FR 58912].

The USFWS considers Hanford Reach a potential migratory corridor for this species. The habitat and water temperatures in the Hanford Reach are not ideal for spawning, and there are no reports of spawning activity by bull trout in the vicinity (DOE 2015). Individuals previously observed in this area are likely a rare result of being moved downstream during the spring.

The water features in the action area include irrigation canals, irrigation wasteways and the Columbia River. The Wahluke Pond, an irrigation wasteway located on USFWS managed Monument captures irrigation wastewater and receives water from Wahluke Branch 10, a 303d listed water, and drains to a 303d listed reach of the Columbia River (Ecology 2016).

Bull trout are not likely to reside or spawn in the Hanford Reach, and those observations in the Hanford Reach are likely either displaced fish or migrating fish passing through the reach (Poston 2010). The Project does not involve in-water work, vegetation removal or soil disturbance closer than 100 feet from bull trout utilized streams, tributaries or the Columbia River where bull trout are known to occur. The island pole structure will be removed using helicopters to minimize disturbance and any effects from noise or impacts to fish from wind or “helicopter wash” will be minimized through maintaining high clearance over the river.

The Project would not have any impacts on spawning and rearing habitat. Poles would be removed from wetlands associated with the Wahluke Ponds but they do not have suitable conditions for bull trout, and the wetlands are far from the designated critical habitat within the Columbia River. Therefore, the proposed Project would have *no effect* on designated critical habitat for bull trout.

4.5 Upper Columbia River Steelhead

Upper Columbia River Steelhead trout (*Oncorhynchus mykiss*) were federally listed as endangered in 1997, then re-classified as threatened in 2006. All of Hanford Reach is designated critical habitat for Steelhead. Steelhead trout are pelagic dwellers, prefer water temperatures near 15℃, and require sufficient stream flow and cold water refugia during migration. The area serves as a migratory corridor for steelhead with peaks from August-September, but a large population is present year-round (DOE 2015). Hanford Reach is also a spawning and rearing habitat for steelhead from February-June with peak spawning in May (DOE 2015).

While steelhead are documented in the Hanford Reach of the Columbia River in the action area, there will be no in-water work, nor will the Project remove riparian vegetation along the Columbia River or cause erosion and sedimentation that could affect water quality of the Columbia River or its tributaries. The island pole structure will be removed using helicopters and any effects from noise or impacts to fish from wind or "helicopter wash" will be minimized through maintaining high clearance over the river. Wetlands associated with the Wahluke Ponds do not have suitable conditions for steelhead, and while there will be temporary vegetation disturbance in the wetlands, they are far from the designated critical habitat within the Columbia River

Since the project will not include any work in the water or within 100 ft. of the Columbia River shoreline, the project would have *no effect* to Upper Columbia River Steelhead or their designated critical habitat.

4.6 Upper Columbia River Spring-run Chinook

Upper Columbia River Spring-run Chinook (*Oncorhynchus tschawytscha*) were federally listed as endangered on March 1999. This listing was renewed in 2005. Spring Chinook salmon prefer water temperatures around 15℃, and require stable near shore habitat, cold water refugia, and sufficient stream flow for passage (UCSRB 2007). The entire Hanford Reach National Monument is designated critical habitat for Chinook salmon. Upper Columbia River Spring-Run ESU Chinook salmon are not known to spawn in the Hanford Reach. They do, however, pass through the Hanford Reach between April and mid-June on their way to spawning areas upstream and juveniles migrate back out through the Reach April-September. (DOE 2015).

Since the project will not include any in-water work or work closer than 100 ft. of the Columbia River shoreline, the project would have *no effect* to Spring Chinook salmon or their designated critical habitat.

5 Conclusion

This *No Effect Determination* describes the proposed project, defines the action area, describes the federally listed species and habitats that could be affected, and makes effect determinations for these listed species. The Project is expected to have "*no effect*" to the following species and their designated critical habitats:

- Yellow-billed cuckoo
- Bull trout
- Columbia Basin pygmy rabbit
- Gray wolf
- Upper Columbia River steelhead
- Upper Columbia River Spring-run Chinook.

6 References

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Appendix A. Photographs of Project Site

Photo 1. Pole structure in emergent wetland

Photo 2. Shrub-steppe habitat

Photo 3. Island pole structure

Photo 4. Pond west of transmission line.

Appendix C: 2017 Monitoring Report for the White Bluffs Bladderpod

Annual Update of the Current status of *Physaria douglasii ssp. tuplashensis* on the Hanford Reach National Monument (2017)

Prepared by Heidi Newsome, June 6, 2017

Photo Jane Abel, USFWS volunteer

The White Bluffs bladderpod, *Physaria douglasii* ssp*. tuplashensis,* was federally listed as a "Threatened species" under the Endangered Species Act as of December 20, 2013. The listing identified this plant as a unique subspecies of bladderpod. The listing package also identified 2,033 acres of critical habitat for this species, all within Franklin County, Washington, and all within the Hanford Reach National Monument. The subspecies is also considered a Threatened species in Washington State (Washington Natural Heritage Program 2011). Studies of this subspecies began in 1997 on the only known population of *P. douglasii* ssp. *tuplashensis*, which is endemic to the Hanford Reach National Monument. Studies were conducted primarily by The Nature Conservancy of Washington (TNC) and later continued in cooperation with the Washington Department of Natural Resources Natural Heritage Program (WNHP). The subspecies occurs as a single population in a narrow 17 km long band along the top of the White Bluffs of the Columbia River. The subspecies is a short-lived perennial most closely related to *P. douglasii* ssp*. douglasii*, which grows on cobble bars on the Columbia River and is relatively common in sagebrush-steppe from southern British Columbia to northern Oregon and east into Idaho.

The studies of this subspecies have had three components: a taxonomic evaluation based on plant morphology and garden studies (Caplow et al. 2007), life history plots placed non-randomly throughout the population, and counts of reproductive individuals in 100 meter transects placed randomly throughout the northern half of the population. The population monitoring transects were sampled annually from 1997-99, in 2002, and were revisited and counted again in 2007. Following the monitoring in 2007, a large wildfire known as the "Overlook Fire" burned through the northern portion of the *Physaria* population, and within the area of the established population monitoring transects. The population monitoring was conducted again in 2008 – 2011 to assess whether or not the fire had an effect on the *Physaria* population. This monitoring has been continued in 2012-2017 due to the potential and eventual listing of this subspecies. Data included here are summarized with the previous results of the transect portion of the monitoring study. Results from the life history plots from 1997 to 1999 were presented at the 2000 Washington Rare Plant Conference in Seattle, and a manuscript is available from Peter Dunwiddie, botanist, or Joe Arnett of WNHP.

Following the monitoring of 2002, the data, up to that date, were summarized by Caplow, in a report issued in 2003 entitled "Studies of Hanford Rare Plants 2002" (Caplow 2003). Within the 2003 report, a management objective for *P. douglasii* ssp. *tuplashensis* was proposed to maintain at least 10,500 reproductive plants of *P. douglasii* ssp. *tuplashensis* in the northern 3.7 km of the White Bluffs population from 2003-2013. If the population were to remain below 10,500 plants for two years or more, further research into the cause(s) of the decline and/or initiation of management action(s) would be required. The most recent population estimates for 2015 recorded only 2,529 plants, which puts the population well below the threshold of 10,500 plants. During 2016, the population rebounded slightly to an estimated 7,591 plants, but this result placed the population within the defined two seasons below the management threshold. However, the population varies widely from year to year. Due to the plant's life history of being a short-lived perennial, environmental conditions are important to the expression of the population each season. Management actions have included experimental out planting of seedling plants of this subspecies that were raised in a garden setting. These experiments began in the fall of 2013 and plantings continued through fall of 2015. Those results are in a separate report entitled "White-bluffs bladder pod experimental out planting report".

The Caplow (2003) report suggests that to adequately assess the population, a full monitoring of the permanent population monitoring transects take place once every three to five years. Monitoring was conducted in 2007 to capture the 5 year interval suggested by the management objective. Monitoring was again conducted from 2008 through 2011 in order to assess the impact from the "Overlook Fire." Monitoring has continued annually due to the listing status of the plant, 2012 through 2017, because the monitoring takes little effort, only one day with the appropriate number of observers (9 total, for 3 teams of 3 observers). Map 1 shows the monitoring transects within the population boundary.

Methods

The northern 6 km area of the population contains the sampling plots for the following reasons: the northern portion is the most contiguous and least disturbed portion of the population; there are no evident impacts from nearby agricultural activities; and this portion of the population is generally <1 km from a vehicle track. The sampling area totals 3,700 m in length, resulting in a sampling population of 37, 100-meter long transects. In 1997, ten 100-m transects were chosen at random from this portion of the population for sampling, and the endpoints were permanently marked with rebar stakes. An additional ten transects were added in 1998, for a total of 20 randomly selected permanent monitoring transects, selected from the possible 37 transects. All flowering plants were counted along each transect, and tallied according to their location: "Top" plants are those growing on the top of the bluff, "caliche" plants are growing in the intersection with the caliche layer exposed at the top of the bluffs, and "slope" plants are growing below the caliche on the upper slope. Plants were surveyed in mid-May to early June in 1997-1999, 2002, and 2007-2017, which corresponds to the peak blooming period for this subspecies.

This season's monitoring took place on May 25, 2017. The weather for 201/17 winter season (December 2016, January and February 2017) was colder than normal, averaging 27.1 ºF, which is 7.2 ºF below normal (34 .3 F). This makes the 2016-17 winter season the sixth coldest on record. Winter season precipitation (December 2016 through February 2017) totaled 3.68 inches, 130% of normal (2.84 inches). Snowfall for the 2016-2017 season was 28.0 inches, 83% above the normal (15.3 inches). Spring 2017 was mild with near normal temperatures for March, cooler temperatures throughout April, May was only slightly warmer than normal by 0.9ºF. The spring period was wetter than normal, with March seeing 44% above normal precipitation, followed by April with 178% of normal precipitation. The Hanford Meteorological Station (http://www.hanford.gov/page.cfm/HMS) recorded the water year from January through May at 164% of normal, 5.35 inches. This pattern contrasts with the 2016 season in which the spring season (March, April and May) as warmer than normal, with spring season precipitation at 101% of normal, with the majority of the precipitation coming in March, while April and May were below average for the month. Although 2017 is a wet season, the timing shift of when the precipitation is available may influence the germination, growth and survival of plant species. During 2017 both the winter and spring had wetter than normal totals and therefore, there was ample moisture for plant germination and growth.

Results

Data from the 10 permanent transects installed in 1997, supplemented with an additional 10 installed in 1998, provide some indication of the magnitude and direction of trends in the overall population from 1997-2017 (Figure 1). Since these transects were randomly selected only within the northern portion of the site, they may not necessarily represent changes in the overall population. However, they should be representative of changes that occur in over half of the area occupied by *P. douglasii* ssp. *tuplashensis* and of changes to the majority of the population within the Hanford Reach National Monument. The results show that the population has a very large range of inter-annual variability. However, Caplow (2003) found that there is a definitive decrease in confidence intervals between sampling 10 and sampling 20 transects. If all 20 transects are sampled the mean should fall within 25% of the estimated true value for a given year. Figure 2 shows the total number of flowering plants counted during monitoring efforts. This represents the minimum value for the population as this is the raw count of plants within transects. Many of the transects

in the northern part of the monitoring area had sparser counts of flowering plants compared to transects in the more southern portion of the monitoring area. Although the numbers varied between transects.

The average number of plants per transect over 20 transects counted in 2017 was 1580.3 plants, up considerably from 2016 when the average per transect was only 205.2 plants. Note that this season, one of the transects was actually missed during the survey (transect 12), so that this average is for 19 transects rather than 20. This is a very high number for the counts, which vary each season. As in each monitoring season, the number of plants recorded in 2017 was variable (range 216-3869), resulting in a standard deviation around the mean of 881.8, which is a high value for this metric.

Multiplying the mean number of plants per transect by the total number of transects in the sampling area (N =37) gives a population estimate for 2017 of 58,472 plants (Figure 3). This is an increase from the 2016 population of 7,591. The population has ranged from an estimated low of 2,529 plants (2015) to a high of 58,887 plants (2011). The population estimate for 2017, is well above the 10,500 population proposed as the threshold for some sort of management action, and is the second highest population recorded within the monitoring time frame. The population had been decreasing since 2011, however with the data from the 2017 season, which is a large rebound of the population, the declining trend is no longer demonstrated in the data.

Observing the last several years of data when annual monitoring was conducted, 2008 through 2017 (10 years of data) and applying a linear trend line to attempt to illustrate a trend in the data suggests a slightly increasing trend over the past 10 years, although the correlation coefficient is not strong (R^2 = 0.0064). This indicates that the data is not sufficient (too variable) to detect a trend that is significantly different from 0 (Figure 4). However, values for mean number of plants per transect (for the 20 transect sample) from 2017 are significantly different than values from 2014 through 2016, indicating a steep increase during the 2017 season.

Figure 1: Mean number of flowering *Physaria douglasii* ssp. *tuplashensis*is plants along permanent monitoring transects. Variability shown as one SD above and below the mean.

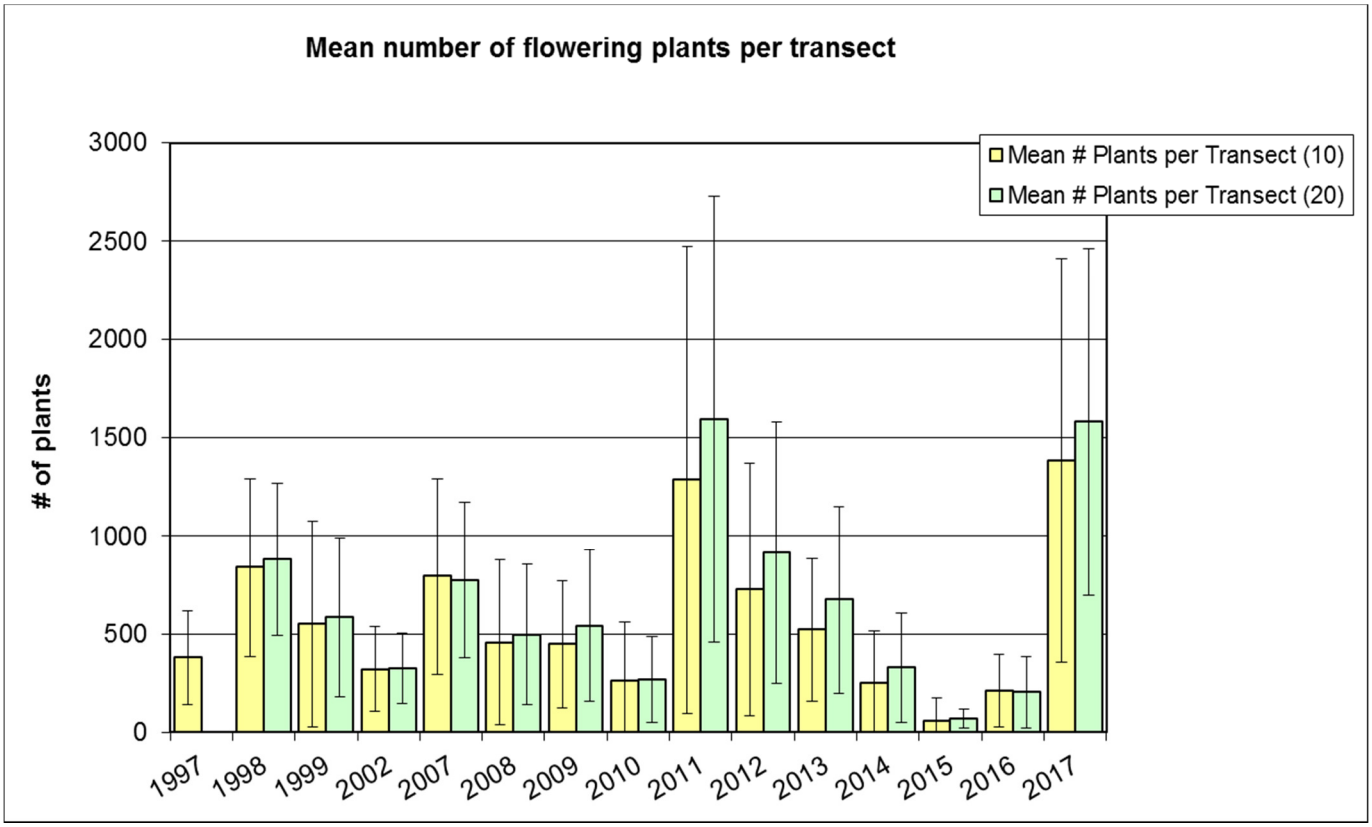


Figure 2: Total number of plants counted along 10 and 20 transects for monitoring of *Physaria douglasii* ssp. *tuplashensis*is plants along permanent monitoring transects. This represents the minimum value for the population as this is the raw count of plants within transects.

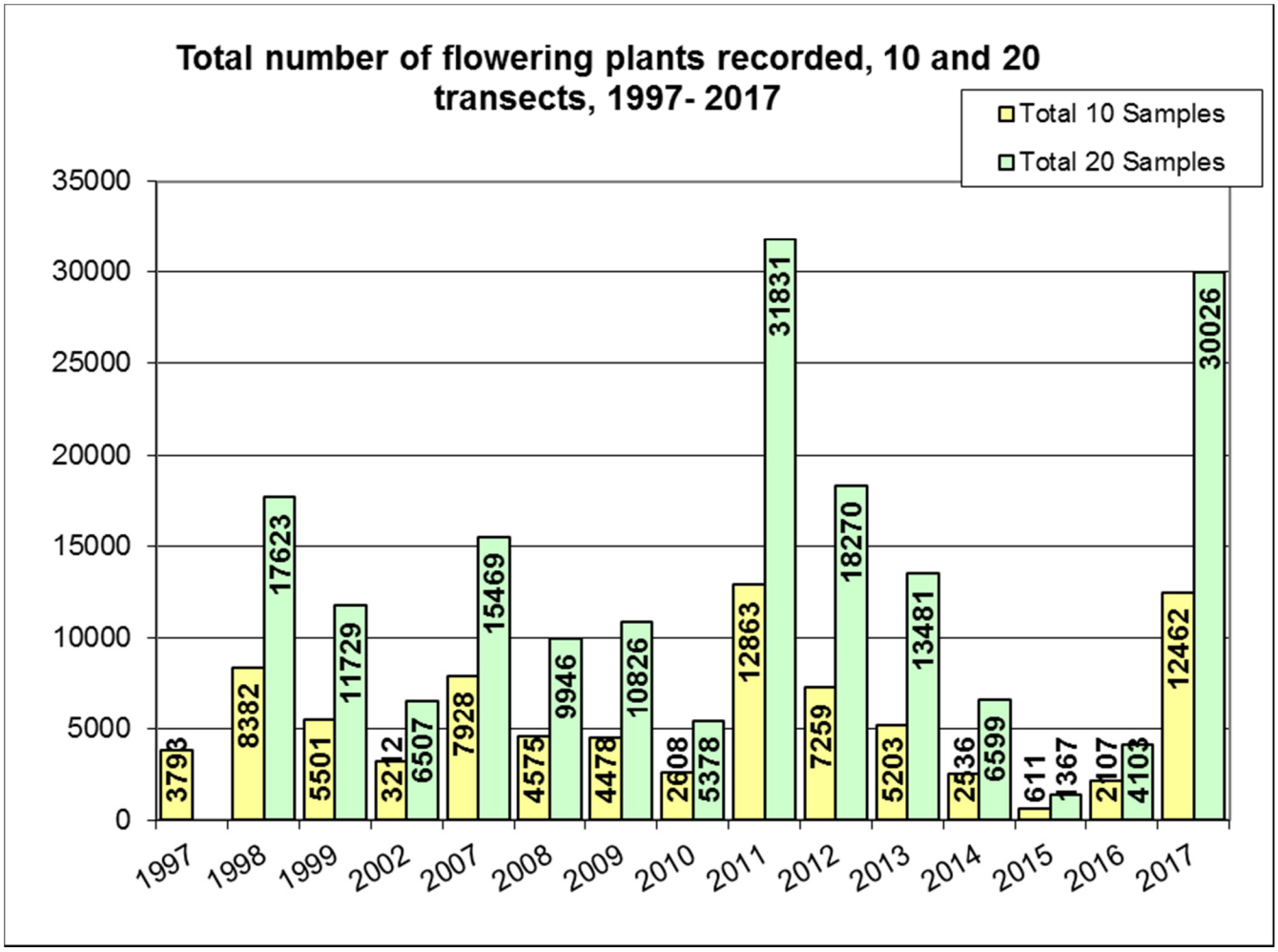


Figure 3: Estimated population size (mean # of plants per transect X total number of transects {N =37}) of *Physaria douglasii* ssp. *tuplashensis*is along permanent monitoring transects.

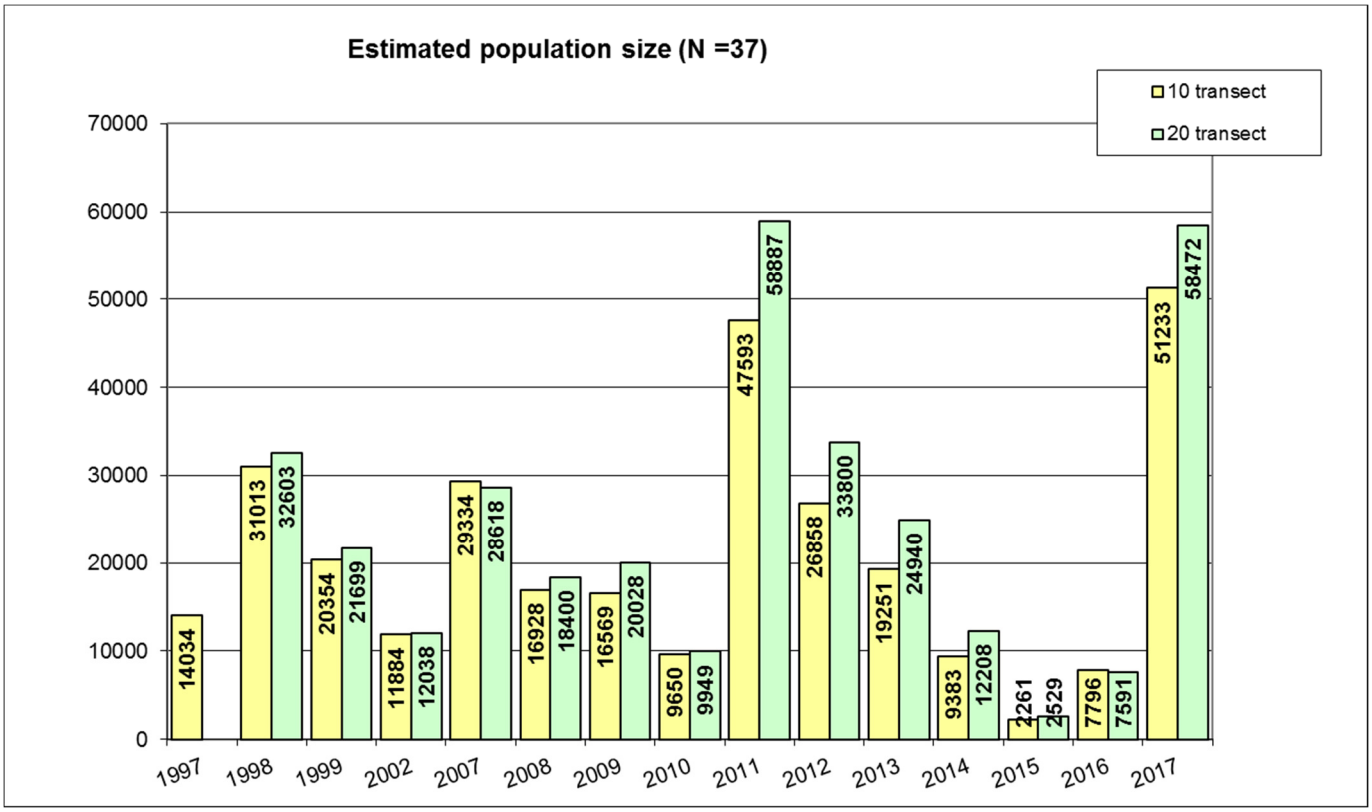
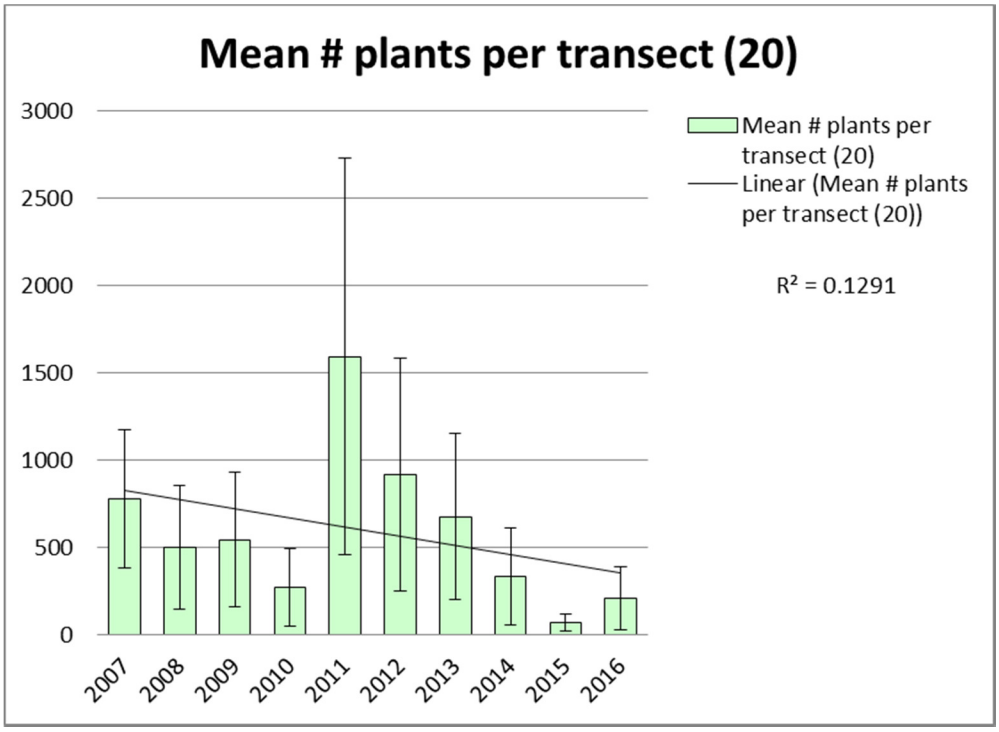
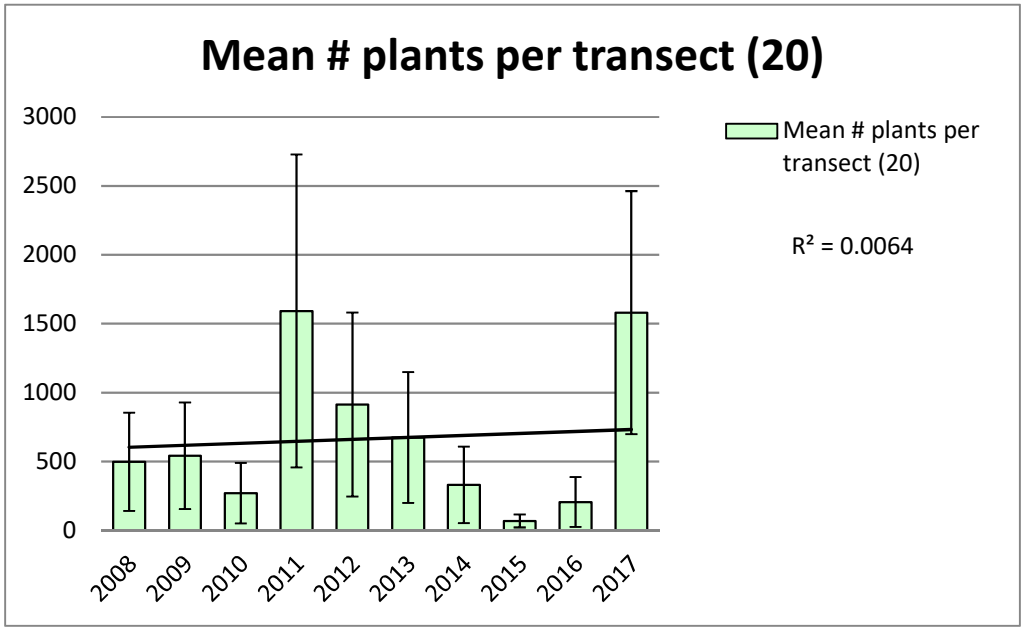


Figure 4: Annual monitoring data from 2007 through 2016 with linear trend line, compared to Annual monitoring data from 2008 through 2017 with linear trend line. The correlation coefficient in 2016 is not strong $R^2 = 0.1291$, but indicates a declining trend over the past 10 years, whereas the correlation coefficient in 2017 is also not strong $R^2 = 0.0064$, but indicates a slightly increasing trend over the last 10 years. This demonstrates the variability within this population.





Conclusions: The 2017 monitoring of *Physaria douglasii* ssp. *tuplashensisis* revealed that the plant population continues to exhibit a highly variable population level. This year the population rebounded dramatically from the 2015 season which was the lowest observed population level since monitoring began in 1997. In addition, the 2017 season, reversed the apparent decline over the past decade. The population may be cyclic in nature, with periodic increases and decreases likely based on weather conditions. Modeling the data with a linear trend line produced a slightly increasing trend over the past 10 years of annual monitoring data (Figure 4), with the correlation coefficient not strong ($R^2 = 0.0064$), indicating that the data is not sufficient to detect a strong trend due to high inter-annual variability. This variability may make it more important to attempt to conduct an analysis that would incorporate variables such as precipitation and temperature as covariates to possibly determine the relationship between environmental conditions and plant response.

Further, it would be very interesting to do some experiments or research on seed viability for this subspecies. It appears that seed may stay on the site for several years and germinate and grow based upon favorable conditions. If information on seed longevity and viability could be generated, this could help modify the thresholds for active management of this population. The management action threshold identified by Caplow (2003) suggests that a management objective for the White Bluffs bladderpod could be **"Maintain at least 10,500 reproductive plants of *Lesquerella tuplashensis* [now named *Physaria douglasii* ssp. *tuplashensis*] in the northern 3.7 km of the White Bluffs population from 2003-2013. If the population remains below 10,500 plants for two years or more, initiate further research into the causes of decline and/or initiate management action(s)."** However, additional information on the life history of this subspecies, could help increase the precision of this management objective, and could also better inform managers about when actual declines may be taking place.

Although the area where the bladderpod grows is in conservation status as part of the Hanford Reach National Monument, wildfire and invasion by non-native species have been identified as threats to the existing population. Further, it is unknown if climate change impacts could be affecting this subspecies. The plant is now listed as a Threatened subspecies, although a recovery plan has not been written. No population level objectives have been identified at this time. A reassessment of the 2003 management objective should take place following development of a recovery plan for this subspecies.

Due to the high inter-annual variability of the population, continued monitoring of this species is recommended. The monitoring can be completed in a single day with relatively low effort, and with the potential of a recovery plan that may incorporate some population level objectives, monitoring should be continued in 2018.

The Mid-Columbia River National Wildlife Refuge Complex has worked on propagation of this species, and they have experimented with out planting them in areas not currently occupied by this unique subspecies. Reports of these experimental management actions are available from H. Newsome, Supervisory Wildlife Biologist.

Acknowledgements:

Thank you to J. Abel, K. Abel, T. Knoke, M. Mease, E. Crediford, who volunteered to help collect the data during the 2016 season.

U.S. Fish and Wildlife Service employees, Heidi Newsome, Wildlife Biologist, and Meg DuhrSchultz, Wildlife Refuge Manager, and Joseph Arnett of the Washington Department of Natural Resources were present for the monitoring in 2016.

Thank you to Joseph Arnett of Washington Department of Natural Resources, Natural Heritage Program, for reviewing this report.

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Appendix A: Photos of monitoring in 2017

Scenic shot of the White-bluffs bladderpod by Ernie Crediford, Columbia Basin Chapter of the Washington Native Plant Society and USFWS volunteer

The invasion of cheat grass and growth of cheat grass within the area occupied by the White-bluffs bladderpod was obvious during this season. This photo illustrates the issue with cheat grass in the habitat along the bluffs where this plant normally grows (photo by Heidi Newsome).

Photo of monitoring, M. DuhrSchultz counting “caliche” layer plants,
T. Knoke counting “slope” plants. Photo by Ernie Crediford.

Photo of plants in “caliche” layer. Dead plant to the left
of healthy plants to the right.

Photo of rugged habitat on the White bluffs where this threatened species grows, Joseph Arnett counting plants in caliche layer.

Photo of rugged habitat on the White bluffs where this threatened species grows, Keith Abel counting plants in slope layer.

Appendix D: Proposed Reintroduction Plan for White Bluffs Bladderpod

Avista, with assistance from Rare Plant Care and Conservation Program (Rare Care), at the University of Washington will prepare a Reintroduction Plan and conduct out-plantings. The results of this effort may provide additional information on the re-establishment of White Bluffs bladderpod and may contribute to the success of future reintroductions of the species and contribute to future species recovery.

The Reintroduction Plan and implementation will include the following:

Mark Plant Location.

- Rare Care located and marked White Bluffs bladderpod plants in the project disturbance areas including access roads in June of 2017, prior to construction.
- Plant locations were marked using GPS and mapped using ArcGIS and made available to DOE and USFWS.

Seed Collection.

- Rare Care, in cooperation with USFWS, collected 6,000 bladderpod seeds in June of 2017 with onsite presence of Tim McCracken, USFWS.
- Rare Care collected seeds along maternal lines to maintain genetic diversity in future out-planted populations. Approximately 10 percent of the seeds were collected from other parts of the population outside of the disturbance area. No more than 30 percent of the seeds were collected from any one plant.
- The seeds are currently stored in the Miller Seed Vault (located in the Center for Urban Horticulture at the University of Washington) after which they will be cleaned and sorted.

Out-plantings.

- Rare Care will retain at least 1000 seeds for long-term storage in the seed vault and the remaining seeds will be germinated and propagated for out-planting. Previous out-plantings had an approximately 7 percent to 13 percent survival rate after 18 months (Gibble per. comm. 2017).
- Avista and Rare Care will develop a design for out-plantings that will include recommendations on propagation, out-planting locations, planting methods and variables and data collection. Avista and Rare Care will work with the USFWS and DOE to implement the out-planting at a mutually agreed upon location(s) outside of the action area.

- Based on preliminary information, an estimated 5000 seeds will be germinated and propagated of which, based on past data, may only result in approximately 650 seedlings for out-planting. The seedlings are expected to be planted over an approximately 1/10-acre area; however, this will be dependent upon the number of seeds that germinate and are suitable for out-planting.

Monitoring and Reporting.

- Avista and Rare Care will monitor the germination and out-plantings for three years beginning after the project is constructed.
- A detailed report will be prepared at the end of the three-year monitoring period. The report will provide data for germination rates, address out-planting success and discuss variables, including environmental conditions (moisture, soil type, etc.).
- The report will be provided to USFWS and DOE and may provide data that could contribute to the success of future efforts to re-establish White Bluffs bladderpod.