ESTERSON Sarah * ODOE

From: Konkol, Carrie <Carrie.Konkol@tetratech.com>
Sent: Friday, February 28, 2020 3:20 PM
To: ESTERSON Sarah * ODOE
Cc: Cambier, Matt; MIKE.PAPPALARDO@nexteraenergy.com; Lawlor, David
Subject: Wheatridge Wind Energy Project Exception Request #1 to Condition PRE-TE-03
Attachments: WRW Exception Request TE-03_02.28.2020.pdf

Good afternoon,

Attached is the Wheatridge Wind Energy Project Exception Request #1 to Condition PRE-TE-03 – Laurent's Milkvetch. Revisions to this Exception Request reflect conversations with ODOE over the past several weeks.
The Certificate Holder is requesting EFSC review of this Exception Request at the March 13, 2020 EFSC meeting.

Thank you,
Carrie

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Wheatridge Wind Energy Project

Exception Request #1 to Condition PRE-TE-03 – Laurent's Milkvetch

Prepared for

Wheatridge Wind Energy, LLC

245 W. Main Street, Suite 200

Ione, Oregon 97843

Prepared by

Tetra Tech, Inc.

1750 SW Harbor Way, Suite 400

Portland, Oregon 97201

February 2020

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1.0 Introduction

The Wheatridge Wind Energy Facility (Facility) is a 300 megawatt wind energy generation facility located in Morrow and Umatilla counties. The Oregon Department of Energy's (ODOE) Energy Facility Siting Council (EFSC) granted the Facility a site certificate for construction and operation on April 28, 2017 (EFSC 2017). The Certificate Holder subsequently received EFSC approval to amend the site certificate three times prior to Facility construction.

The components of the Facility that are within Morrow County are referred to as "Wheatridge West" and include the following related or supporting facilities:

- An electrical collection system;
- One collector substation;
- Permanent meteorological (met) towers;
- A communication and Supervisory Control and Data Acquisition System;
- One operations and maintenance building;
- New or improved access roads; and
- Additional temporary construction areas (including staging areas and one or more temporary concrete batch plant areas).

Wheatridge West is located entirely within Morrow County and is bisected by Oregon Highway 207. It is approximately 5 miles northeast of Lexington, and approximately 7 miles northwest of Heppner (Figure 1).

This exception request addresses the need for the Certificate Holder to construct Wheatridge West in areas occupied by the state-threatened Laurent's milkvetch (*Astragalus collinus* var. *laurentii*). Certificate Holder began construction of Wheatridge West in January 2020, with anticipation that construction will be completed in advance of a December 2020 operational date.

2.0 Pre-Construction Compliance

This request addresses site certificate condition PRE-TE-03, which reads:

PRE-TE-03: *To avoid potential impacts to Laurent's milkvetch, the certificate holder must:*

i. Conduct preconstruction plant surveys (survey area) in suitable habitat for Laurent's milkvetch within 100-feet of temporary and permanent disturbance from all facility components. If the species is found to occur, the certificate holder must install protection flagging around the plant population and avoid any ground disturbance within this zone.

ii. Ensure that any plant protection zone established under (i) above is included on construction plans showing the final design locations.

iii. If herbicides are used to control weeds, the certificated holder shall follow the manufacturer's guidelines in establishing a buffer area around confirmed populations of Laurent's milkvetch. Herbicides must not be used within the established buffers.

iv. If avoidance cannot be maintained, the certificate holder may request that the Department consider an avoidance exception, authorized through Council concurrence as further described below. The exception request must include an impact assessment and mitigation plan for the affected species including but not limited to:

- *Literature review and/or field studies that inform the current status of the species within the survey area or region, if survey area does not contain sufficient information to develop a statistically viable approach for determining impact significance;*
- *A description of the individual(s) or populations(s) identified within the survey area that would be avoided and impacted;*
- *An evaluation of facility impacts on the survival or recovery of the species, in accordance with the Threatened and Endangered Species standard;*
- *Proposed mitigation measures such as: funded studies that improve understanding of reproductive biology and pollination; development of seed germination, propagation, and transplanting protocols; and/or compensatory mitigation project including conservation easement(s) and species propagation, protection, and habitat enhancement measures, and/or other proposed mitigation measures that would benefit the affected species.*
- *The Department's review and determination of the exception request shall be conducted in consultation with the Oregon Department of Agriculture, or a third-party consultant. The Department's determination on the exception request must be concurred with by Council. Council retains authority to reject, modify or concur with the exception request.*

[Final Order on ASC; AMD3; Threatened and Endangered Species Condition 3; AMD4]

3.0 Request for Exception

During 2019 pre-construction surveys for Laurent's milkvetch, two occurrences were identified within the disturbance footprint of Wheatridge West's final design (Tetra Tech 2019). The extent of the plant occurrences continues beyond the disturbance footprint and beyond the approved site boundary of the Facility. The Certificate Holder determined that micrositing within the approved site boundary would be ineffective due to the extent of the occurrences.

Amending the site certificate to modify the site boundary to relocate turbines away from the plant occurrences was not feasible. The topography within this area limited the viable locations where turbines could be sited to maximize wind power generation. The Certificate Holder had performed

geotechnical investigations to determine if site-specific conditions would support turbine foundations, and permitting was coordinated with the Federal Aviation Administration to prevent air space violations. Therefore, the Certificate Holder determined that avoidance of the Laurent's milkvetch occurrences is not feasible and is requesting an avoidance exception through ODOE.

4.0 Current Status of Laurent's Milkvetch

4.1 Background, Habitat, and Threats

Laurent's milkvetch, a tap-rooted perennial in the pea (*Fabaceae*) family, is listed as threatened under the Oregon Endangered Species Act. It has a global rank of G5T1 (critically imperiled) and a state rank of S1 (critically imperiled; ORBIC 2019). This endemic species has a narrow distribution, limited to western Umatilla and Morrow counties, Oregon (ODFW 2019, ORBIC 2018). Laurent's milkvetch is typically found in sandy or rocky soils on dry slopes and hilltops in Palouse grasslands. Associated species include bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), and cheatgrass (*Bromus tectorum*; ODA 2019, ODFW 2019).

Habitat loss, primarily through agricultural conversion, is considered a threat to this species, as are grazing, herbicide use, road construction and maintenance, seed predation, and competition with invasive plant species (ODA 2019, ODFW 2019). Additionally, as this species is dependent on pollinators to produce seeds and cannot self-fertilize, it is sensitive to impacts/losses that occur to its pollinators (ODA 2019).

4.2 Occurrence and Distribution

Laurent's milkvetch is currently only known from Umatilla and Morrow counties, Oregon with historical locations also including Gilliam and Sherman counties (ODA 2019, NatureServe 2019). To determine the current known occurrence and distribution of this species, available spatial data were combined in a Geographic Information System (GIS) to generate species occurrence information (IPC 2018, ORBIC 2018, Tetra Tech 2019, Wheatridge 2015).

The number of occurrences for this analysis were identified based on a 0.62-mile separation distance of the combined available data, as described in NatureServe (2004). The combined data indicate 25 known extant range-wide occurrences (IPC 2018, ORBIC 2018, Tetra Tech 2019, Wheatridge 2015), plus two additional historic occurrences (ORBIC 2018). The 25 known extant occurrences include three new occurrences discovered during surveys conducted for the Facility (Tetra Tech 2019, Wheatridge 2015). Two of these occurrences were documented during surveys conducted for Wheatridge West and are discussed further in Section 5.0 below.

The Oregon Biodiversity Information Center (ORBIC) summarizes observations into element occurrences (EOs). Some of the EOs do not meet the 0.62-mile minimum separation distance utilized in this range-wide occurrence analysis. As such, two of the 25 extant occurrences in this range-wide analysis are a combination of EOs (Occurrence 16 and 23; Table 1) since they are less than 0.62-mile from one another. Table 1 provides additional details on the 25 extant occurrences.

Table 1. Range-Wide Extant Laurent's Milkvetch Occurrence Summary

Occurrence Number for Analysis	Source[1]	Last Date Observed	Size of Mapped Occurrence (Acres)	# of Plants for Analysis	Notes
1	Wheatridge 2015	May -July 2011	6.5	No estimate provided	No population estimate provided for surveys conducted in 2011 by NWC.
	Tetra Tech 2019	June 30, 2019	50.5	1,500 (estimated)	Observed during pre-construction compliance surveys for Wheatridge West. Occurrence stretches for approximately 2.6 miles within the survey area on a plateau and adjacent slopes in native grasslands. Individuals were scattered to continuous within this area. Occurrence continues to the south, southeast, and north of the survey area.
2	Tetra Tech 2019	June 29, 2019	4.7	378 (estimated)	Observed during pre-construction compliance surveys for Wheatridge West. Majority of individuals observed within native perennial grassland. Three individuals observed in adjacent revegetated/planted grassland.
3	Wheatridge 2015	May - July 2013	15.4	No estimate provided	Observed during surveys for Wheatridge East.
4	ORBIC 2018 (EO 31)	June 9, 2008	91.6	350 (estimated)	June 28, 1983: 50–100 plants in flower and fruit. Plants healthy, growing with Idaho fescue, bluebunch wheatgrass, and velvet lupine (*Lupinus leucophyllus*). Many small plants, not in fruit.
					June 9, 2008: Hundreds of plants observed. More plants may be further up the slope but surveyor unable to see that far.
5	ORBIC 2018 (EO 30)	May 29, 2015	1.9	450 (estimated)[2]	June 28, 1983: 200 - 700 plants in fruit and flower. Population healthy, growing with Idaho fescue, bluebunch wheatgrass, velvet lupine, common yarrow *(Achillea millefolium),* and traces of rubber rabbitbrush *(Ericameria nauseosa).*
					May 29, 2015: Collection made, no population data available.
6	ORBIC 2018 (EO33)	June 9, 2008	0.01	9	First and last observed in 2008 along roadside.

Occurrence Number for Analysis	Source[1]	Last Date Observed	Size of Mapped Occurrence (Acres)	# of Plants for Analysis	Notes
7	ORBIC 2018 (EO32)	June 9, 2008	0.01	4	First and last observed in 2008 along roadside.
8	ORBIC 2018 (EO 8)	June 23, 2011	2.1	19	May 25, 1983: about 30-50 plants in area; half in roadside ROW, half on adjacent private land. In flower (early flowers did not set fruit); small fruit present.
					June 30, 2009: 19 plants in roadway rights-of-way (ROW).
					June 23, 2011: 19 plants.
9	ORBIC 2018 (EO 16)	May 25, 1983	1.9	No estimate provided	Observed on rocky slopes with bluebunch wheatgrass. Other species present included Sandberg bluegrass *(Poa secunda),* lupine species (*Lupinus* spp.), and basalt milkvetch *(Astragalus filipes).*
10	ORBIC 2018 (EO 17)	May 25, 1983	1.9	No estimate provided	Observed on rocky slopes with bluebunch wheatgrass. Other species present included Sandberg bluegrass, lupine species, basalt milkvetch, and common yarrow.
11	ORBIC 2018 (EO 36)	June 30, 2010	12.3	72	June 30, 2010: 72 plants observed.
12	ORBIC 2018 (EO 37)	June 24, 2011	0.2	1	August 31, 2010: 100 plants.
					June 24, 2011: 1 plant
13	ORBIC 2018 (EO 18)	June 23, 2011	50.4	106	June 30, 2009: about 250 plants in ROW.
					June 30, 2010: 107 plants in ROW.
					June 23, 2011: 106 plant in 1.5 acres. More plants off ROW on adjacent private property.
14	ORBIC 2018 (EO 12)	June 23, 2011	58.8	2,403	June 7, 2005: 2 plants, 100% in flower, no fruit. Observed on highway ROW growing with cheatgrass *(Bromus tectorum)*, bluebunch wheatgrass, Idaho fescue, and rubber rabbitbrush.
					June 30, 2009: 17 plants.

Occurrence Number for Analysis	Source[1]		Last Date Observed	Size of Mapped Occurrence (Acres)	# of Plants for Analysis	Notes
						June 23, 2011: 2,403 plants.
15	ORBIC 2018 (EO 19)		May 25, 1983	1.9	15	1983: 12-15 plants seen along the roadside.
16	ORBIC 2018[3]	EO 20	June 23, 2011	6.5	218	May 25, 1983: 40 plants observed in roadside population.
						June 23, 2011: 218 plants.
		EO 21	May 25, 1983	1.9	20	June 17, 1951: herbarium collection, no population data.
						May 25, 1983: 15-20 plants observed in roadside population. Large and healthy plants, but limited habitat.
17	ORBIC 2018 (EO 22)		May 25, 1983	1.9	45	40-50 plants seen on east facing slope. Most plants in flower or with immature fruit; a few plants with mature fruit. Population healthy, despite the poor condition of the vegetation community/habitat. The Idaho fescue – bluebunch wheatgrass grassland community where observation had formerly been overgrazed and was dominated by cheatgrass and rubber rabbitbrush.
18	ORBIC 2018 (EO 23)		June 24, 2011	8.1	445	May 25, 1983: observed growing in Idaho fescue – bluebunch wheatgrass grassland. Roadside population with a few plants above the fence in a lightly grazed grassland pasture.
						June 30, 2010: approximately 1,100 plants in ROW, inside hairpin turn.
						June 24, 2011: 445 plants.
19	ORBIC 2018 (EO 35)		June 23, 2011	59.1	1,398	June 23, 2011: 1,398 plants.

Occurrence Number for Analysis	Source[1]		Last Date Observed	Size of Mapped Occurrence (Acres)	# of Plants for Analysis	Notes
20	ORBIC 2018 (EO 25)		June 27, 1983	1.9	100	100+ plants. Plants in flower and fruit. Found on southwest and east-facing slopes in bluebunch wheatgrass grassland. Occasionally, growing with Idaho fescue, basalt milkvetch, and broadleaf lupine *(Lupinus latifolius).*
21	ORBIC 2018 (EO 26)		June 27, 1983	1.9	100	100+ plants. Plants in flower and fruit. Found on SW and E facing slopes in *Pseudoroegneria spicata* grassland. Occasionally, growing with Idaho fescue, basalt milkvetch, and broadleaf lupine.
22	ORBIC 2018 (EO 27)		June 27, 1983	1.9	30	30 plants. Plants in flower and fruit. Found on southwest and east facing slopes in bluebunch wheatgrass grassland. Occasionally, growing with Idaho fescue, basalt milkvetch, and broadleaf lupine.
23	ORBIC 2018[3]	EO 28	June 27, 1983	1.9	100	June 27, 1983: 100 plants.
		EO 29	June 12, 2010	11.4	900	June 27, 1983: 500 plants; plants in flower and fruit. June 12, 2010: 800+ plants (estimated), very likely in excess of 1,000 plants, 85% vegetative, 15% flowering with no obvious seedling this year present. Native bunchgrass grassland; heavily grazed; cheatgrass locally abundant.
24	IPC 2018		June 2016	0.1	37	Observed during surveys for the Boardman to Hemingway Transmission Line Project.
25	IPC 2018		June 2016	0.02	7	Observed during surveys for the Boardman to Hemingway Transmission Line Project.
Total				**396.9**	**8,707**	

1. EO = ORBIC element occurrence.

2. Number of plants is based on 1983 data, as no population estimate is provided for the 2015 observation, despite it being the last observed date.

3. Two ORBIC element occurrences were combined into one occurrence for this analysis since they are less than the 0.62-mile separation distance.

The two historic occurrences do not contribute to the range-wide population estimate and have been omitted from Table 1. The historic occurrences include ORBIC (2018) EOs 1, 2, and 11 (Figure 2). Historic EOs 2 and 11are less than 0.62-miles apart are considered a single historical occurrence for this analysis.

Based on the combined data, the population estimate for the 25 known extant occurrences was estimated at approximately 8,700 individuals. Range-wide, there are a total of approximately 397 acres of extant occurrences, all of which are on private land (Table 1, Figure 2; ORBIC 2018, Tetra Tech 2019, Wheatridge 2015, IPC 2018).

The range-wide estimates of total population size and occupied acres; however, are based on incomplete data as:

1. Nine of the 25 extant occurrences have not been visited since 1983 or earlier;
2. Population estimates for some occurrences are either provided as a range or an inexact number (e.g., "hundreds of plants");
3. Population estimates are not provided for all occurrences; and
4. The survey areas for many of the known occurrences are limited (e.g., public road rights-of-way, proposed development projects) and did not map or census the entire extent of the occurrence.

In addition, several other occurrences of Laurent's milkvetch have been documented in Umatilla and Morrow counties in recent years during surveys on private land for various proposed development projects, but these are not currently included in ORBIC or other publicly available data.

5.0 Survey Findings and Impact Evaluation

5.1 Survey Findings

Surveys conducted for Wheatridge West between 2011 and 2013 identified one occurrence of Laurent's milkvetch. Subsequent to these surveys, proposed Wheatridge West facilities were sited to avoid individuals of Laurent's milkvetch documented during those surveys. Per site certificate condition PRE-TE-03, in June and July 2019, pre-construction surveys were conducted for Laurent's milkvetch within 100-feet of temporary and permanent disturbance areas. Two occurrences of Laurent's milkvetch were observed during those surveys; one of which was an extension of the occurrence previously documented in 2011 (Figure 3). These two occurrences, as delineated, cover 61.6 acres and contain an estimated 1,880 individuals. The larger of the two occurrences (Occurrence 1 in Table 1) extends from turbines 92 to 99, is approximately 57 acres, and contains approximately 1,500 individuals of Laurent's milkvetch (Figure 4). The smaller occurrence (Occurrence 2 in Table 1) extends from north of turbine 117 south to turbine 120, covers approximately, 4.7 acres, and contains approximately 378 individuals of Laurent's milkvetch (Figure 5).

It is important to note; however, that the estimated size and population for the two occurrences located during surveys for Wheatridge West are based on a limited survey area. For example, the goal of the pre-construction surveys was to identify individuals of Laurent's milkvetch within 100-feet of disturbance areas, not to map the entire occurrence of Laurent's milkvetch in the vicinity. Based on observations during the field surveys, it is highly likely that the two occurrences of Laurent's milkvetch extend into adjacent native perennial grassland habitat well beyond the areas delineated during the surveys.

5.2 Impact Evaluation

To determine potential impacts to occupied Laurent's milkvetch habitat from construction, the Certificate Holder performed an evaluation following the methods used in Exhibit Q of the Boardman to Hemingway Application for Site Certificate (IPC 2018). The impact evaluation presented in that application was recommended by ODA.

The Wheatridge West disturbance footprint was overlain on the GIS polygons of Laurent's milkvetch occurrences delineated during surveys conducted in 2011-2013 and 2019. Construction of Wheatridge West will impact approximately 14.9 acres of occupied Laurent's milkvetch habitat. This disturbance area constitutes approximately 24 percent of the total occupied area documented within the Wheatridge West survey areas. Approximately 14.3 of these 14.9 acres will impact Occurrence 1 (Figure 4), and the remaining 0.6 acres will impact Occurrence 2 (Figure 5).

Of the approximately 14.9 acres of total disturbance, approximately 12.3 acres will be temporarily disturbed and revegetated following construction, while 2.7 acres will be permanently disturbed. All of the permanent impacts are associated with Occurrence 1; no permanent facilities or roads are anticipated to overlap Occurrence 2. Areas temporarily disturbed by construction will be revegetated as specified in the revegetation plan prepared for the Facility (NWC and Tetra Tech 2019). Additionally, as noted in Section 6.1, forbs that are beneficial for pollinating insects will be included in the seed mix used to revegetate temporarily disturbed areas within occupied Laurent's milkvetch habitat.

The number of individuals of Laurent's milkvetch potentially impacted by construction of Wheatridge West was estimated based on the total count of plants in each occurrence and the percentage of that occurrence within the total disturbance footprint. Based on this calculation, approximately 428 individuals will be impacted by construction of Wheatridge West. This amounts to approximately 23 percent of the individuals documented within the Wheatridge West survey areas. The estimate of 23 percent is likely an overestimate as there was not an estimate of the number of individuals associated with that portion of Occurrence 1 (Table 1) that was observed in 2011.

As noted in Section 4.2, the current range-wide population estimate for Laurent's milkvetch is approximately 8,700 individuals. Impacts to approximately 428 individuals from construction of Wheatridge West will amount to impacts of approximately 4.9 percent of the range-wide population of Laurent's milkvetch. Similarly, impacts to 14.9 acres of occupied Laurent's milkvetch

habitat from construction and operation of Wheatridge West will result in impacts to approximately 3.8 percent of the 396.8 acres of occupied habitat range-wide.

6.0 Proposed Minimization and Mitigation Measures

6.1 Minimization Measures

In order to minimize impacts to individuals of Laurent's milkvetch, the Certificate Holder will consider implementing the following minimization measures, in consultation with ODOE and the Oregon Department of Agriculture (ODA):

Flag and Avoid

- The Certificate Holder will minimize the disturbance footprint in areas of occupied Laurent's milkvetch habitat, to the extent possible.
- The construction footprint will be flagged and vehicles and personnel will be kept within the construction disturbance limits.
- Individuals of Laurent's milkvetch near turbines 92, 95, 98, 99, 117, 119 and 120 will be flagged and avoided, where possible (Figures 4 and 5).
- The work zone for Turbines 95, 98, and 120 will be restricted to that area outside of the documented Laurent's milkvetch population, to the extent possible (Figures 4 and 5).
- Individuals of Laurent's milkvetch along the temporary disturbance to the southwest of Turbine 93 will be flagged and avoided, to the extent possible (Figure 4).
- The work zone for Turbine 95 will be restricted to the agricultural field in which it is sited and which is outside the Laurent's milkvetch occurrence (Figure 4).
- The disturbance area required at the intersection/split approaching Turbine 96 was reduced/modified, to the extent possible (Figure 4).
- Any necessary maintenance within or adjacent to known occupied Laurent's milkvetch habitat will be conducted during the spring or fall to avoid impacts to flowering and fruiting plants, as well as to pollinators during flowering.

Noxious Weed Control

- Noxious weeds and invasive plant species are listed as a threat to this species by ODA (2019) and the Oregon Department of Fish and Wildlife (ODFW 2019). Control of noxious weeds in the areas to be revegetated within and adjacent to occupied Laurent's milkvetch habitat will utilize mechanical treatment methods, where possible. If herbicides are used, the manufacturer's guidelines will be followed to establish a buffer area around confirmed individuals of Laurent's milkvetch in which herbicides must not be used.
- Vehicle wash stations - including a pressure washer and water tank - will be placed in proximity to main access points to occupied Laurent's milkvetch habitat to minimize the

introduction of noxious weeds or other invasive plant species by construction vehicles. Vehicles will be washed prior to entering these areas.

Soil Salvage, Seedbank Preservation, and Fugitive Dust Control

- During construction of temporary features, the Certificate Holder will excavate and store soils by soil horizon, so that soils could be replaced and restored appropriately including replacing topsoil on the surface. This will not only help preserve the soil seedbank of Laurent's milkvetch, but will also allow for soil conditions favorable for germination of Laurent's milkvetch and other native plant species, as well as provide soil conditions conducive to revegetation efforts.
- Water trucks will be used during construction to limit the amount of fugitive dust. Fugitive dust could affect photosynthesis, respiration, transpiration, and reproduction, which could negatively impact productivity of Laurent's milkvetch and possibly the structure of the plant community within its habitat (Farmer 1993, Trombulak and Frissell 2000).

Revegetation

- ODA (2019) lists anthropogenic disturbances that affect pollinator populations as a threat to the species. Forbs that are beneficial for pollinating insects will be included in the revegetation seed mix.

6.2 Mitigation Measures

Due to the extensive size and locations of the Laurent's milkvetch occurrences documented during pre-construction surveys, flagging and avoidance of all individuals in these occurrences is likely not feasible. Therefore, the Certificate Holder will implement the following three measures, in consultation with ODOE and ODA, to mitigate for the unavoidable impacts to Laurent's milkvetch:

1. Approximately 30 acres of habitat occupied by Laurent's milkvetch in Occurrence 1 will be preserved. This preservation will be accomplished through the wind lease agreement with the private landowner, which does not allow the private landowner to convert the 30-acre area to agriculture while the lease is active. The recent land use practices in this area have been amenable for establishment and reproduction of Laurent's milkvetch as demonstrated by Occurrence 1 being one of the largest and most densely populated known occurrences of the species (Table 1). The Certificate Holder will provide ODOE with a redacted copy of the lease agreement showing the language that restricts land use changes in this area.
2. Seeds of Laurent's milkvetch individuals that occur outside of disturbances associated with construction of Wheatridge West will be collected in the summer of 2020 and provided to the Rae Selling Berry Seed Bank. Seeds will be processed and stored for 15 years to allow them to be used in recovery planning and conservation efforts such as those being proposed for funding in #3 below. Seed collection will follow protocols recommended in *Seed Collecting Manual for Wild Species* (ENSCONET 2009) and/or the seed collection form provided by the Rae Selling Berry Seed Bank (Attachment 1). In general, the amount of seed collected should be adequate to represent the genetic variation within the occurrence while

not having a detrimental effect on the reproductive success of the occurrence. The Certificate Holder will Provide ODOE with a copy of the contract established with the Rae Selling Berry Seed Bank.

3. The Certificate Holder will establish a grant in the amount of $20,000 to be made available to individuals, universities, or organizations that can work with the ODA Native Plant Conservation Program to conduct research or other work that will enhance recovery efforts for Laurent's milkvetch. The Laurent's milkvetch seeds stored in the seed bank as described in #2 above would be available to the recipient of the grant funding. The Certificate Holder will work with ODA to develop a request for proposals to distribute the grant money within five years from the beginning of operation of the Facility. The Certificate Holder will provide ODOE with a copy of the request for proposal and the recipient of the grant will be required to create a report showing study results or detailing how the funds were used to promote conservation of the species. This report will be provided to ODOE upon completion.

7.0 Conclusion

Based on the impact analysis, and considering the minimization and mitigation measures proposed, any disturbance to the two occurrences of Laurent's milkvetch from construction and operation of Wheatridge West is not expected to lead to the loss of either of these occurrences. Both of these occurrences extend beyond the disturbance area, and only approximately 23 percent of the individuals and 24 percent of occupied habitat observed during surveys for Wheatridge West will be impacted by construction. These percentages are conservative, as field botanists noted that the population likely extended beyond the 2019 survey area.

Several of the large, known occurrences of this species are along public roads and highways (Table 1; ORBIC 2018). These known occurrences are exposed to continued disturbance associated with traffic and road maintenance, yet continue to persist. This indicates that this species is likely able to tolerate disturbances associated with road building and road maintenance activities, similar to the activities associated with construction and operation of the Facility.

Construction and operation of Wheatridge West will not affect the 23 other known range-wide occurrences of this species. Additionally, identification of the two occurrences of Laurent's milkvetch during pre-construction surveys for Wheatridge West, in particular the large occurrence containing over 1,500 individuals (Occurrence 1), have added significantly to the known range-wide population of this species. While construction will destroy individuals of this species, it would not cause a significant reduction in the likelihood of survival or recovery of the species range-wide, and the proposed mitigation measures will promote the conservation of the occurrence and the species range-wide. Therefore, the Facility meets the Threatened and Endangered Species Standard at Oregon Administrative Rule 345-022-0070.

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Figures

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Umatilla County
Morrow County

207

578

Ione

74

Lexington

1:125,000 WGS 1984 UTM Zone 11N

0 0.5 1 2 3 4 Miles

Not for Construction

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Figure 1
Overview

Wheatridge Wind Energy

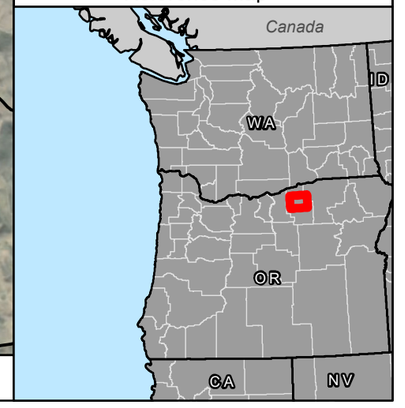
MORROW COUNTY, OR

- Wheatridge West Site Boundary
- Road
- City/Town
- County Boundary

TETRA TECH

NEXTera ENERGY RESOURCES

Reference Map



Wheatridge Wind Energy

Figure 2
Laurent's Milkvetch
Rangewide Occurrences

MORROW COUNTY, OR

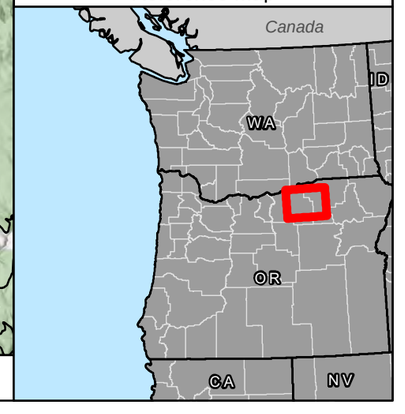
Wheatridge West Site Boundary
Survey Area
Extant Laurent's Milkvetch - Analysis Occurrence #
Historic Laurent's Milkvetch - ORBIC Occurrence #
Interstate Highway
Secondary Highway
Road
City/Town
County Boundary

Land Ownership
Bureau of Indian Affairs
Bureau of Land Management
Department of Defense
State
United States Forest Service
Private

TETRA TECH

NEXTera ENERGY RESOURCES

Reference Map



Stanfield
Echo
Pendleton
Rieth
Pilot Rock
Cecil
Ione
Lexington
Heppner
Hardman
Morrow County
Umatilla County
Gilliam County
Morrow County
82
84
37
30
74
207
578
206
395
244

1:280,000 WGS 1984 UTM Zone 11N

0 2.5 5 10 15 20 Miles

NOT FOR CONSTRUCTION

P:\GIS_PROJECTS\NextEra\Wheatridge\MXDs\LaurentMilkvetch_MitigationPlan\NEE_Wheatridge_LM_MitigationPlan_Figure2_LM_RangewideOccurrences_11i17i_20191104.mxd

Wheatridge Wind Energy

Figure 3
Locations of Laurent's Milkvetch Observations and Occurrences

MORROW COUNTY, OR

Umatilla County

Morrow County

207

578

74

Ione

Lexington

Occurrence 1

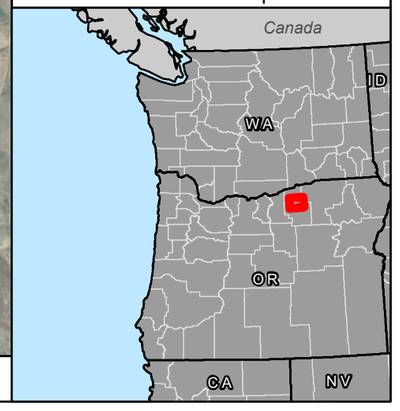
Occurrence 2

- Wheatridge West Site Boundary
- Turbine
- Survey Area
- Laurent's Milkvetch Observations (Summer 2011)
- Laurent's Milkvetch Observations (Summer 2019)
- Extant Laurent's Milkvetch - Analysis Occurrence #
- Road
- City/Town
- County Boundary

TETRA TECH

NEXTera ENERGY RESOURCES

Reference Map



1:102,000 WGS 1984 UTM Zone 11N

0 0.5 1 2 3 4 Miles

NOT FOR CONSTRUCTION

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Wheatridge Wind Energy

Figure 4
Laurent's Milkvetch
Occurrence 1

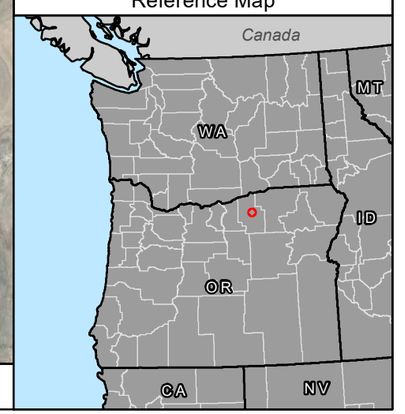
MORROW COUNTY, OR

- Wheatridge West Site Boundary
- Turbine
- Survey Area
- Permanent Disturbance
- Temporary Disturbance
- Laurent's Milkvetch Observations (Summer 2011)
- Laurent's Milkvetch Observations (Summer 2019)

TETRA TECH

NEXTera ENERGY RESOURCES

Reference Map



1:11,000 WGS 1984 UTM Zone 11N

0 0.25 0.5 1 Miles

NOT FOR CONSTRUCTION

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Wheatridge Wind Energy

Figure 5
Laurent's Milkvetch
Occurrence 2

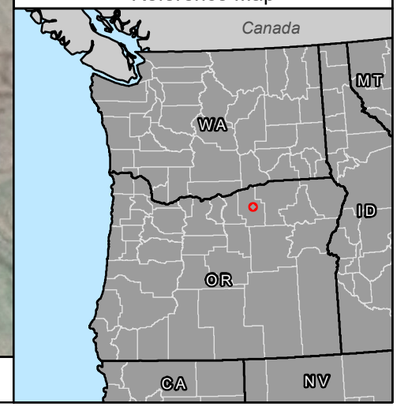
MORROW COUNTY, OR

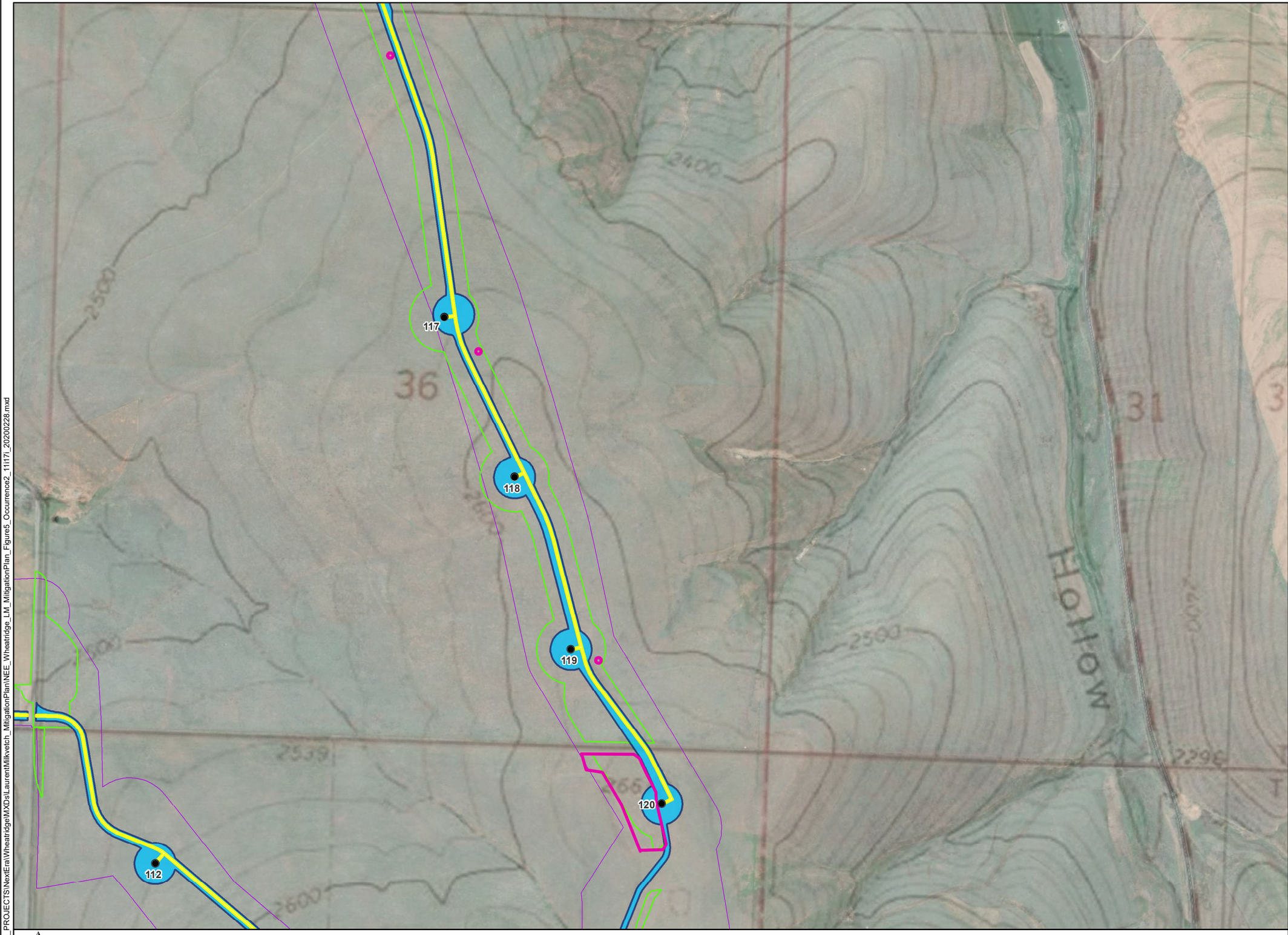
- Wheatridge West Site Boundary
- Turbine
- Survey Area
- Permanent Disturbance
- Temporary Disturbance
- Laurent's Milkvetch Observations (Summer 2019)

TETRA TECH

NEXTera ENERGY RESOURCES

Reference Map





1:8,000 WGS 1984 UTM Zone 11N

0 0.25 0.5 1 Miles

NOT FOR CONSTRUCTION

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Attachment 1. Rae Selling Berry Seed Bank Seed Collection Form

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Seed Collection Form for the Rae Selling Berry Seed Bank

Department of Environmental Science and Management, Portland State University
Mailing address: P.O. Box 751-ESM, Portland OR. 97207-0751
Shipping address: Science Research & Teaching Center, 1719 SW 10th Ave, Room 218, Portland, OR 97201
(503) 725-2468 or (503) 725-2456, e-mail: kfreitag@pdx.edu, web: www.pdx.edu/seed-bank

Directions: Please complete information in the box below. Please include a copy of a USGS/topo map showing the population location (reverse side of this form). Information outside of the box (except the map) is optional.

Species name_____
Population name/location_____
_____
Element Occurrence: Old (EO) # ,3-digit number _____, or better, EO_ID#_____
County_____ State_____
•T_____ R_____ Sec._____ _____1/4 of _____1/4 : **and/or**
• Latitude_____ Longitude_____ Datum_____
• UTM Easting_____ Northing_____ UTM Zone_____
•Method and precision of determining position.(if GPS, please include datum, and precision)
_____
USGS Quadrangle map name, if known_____
Land Ownership_____

Relocation directions_____
_____
_____
_____
_____
_____
_____

# of plants collected from_____ % of population_____
Collection date_____ Email_____
Collector_____ Phone #_____
Collector Agency/Affiliation_____
If BLM or USFS, please specify District and/or National Forest_____
Address_____
_____

For RSBSB use:
Seed accession #(s) _____ Date rec'd _____
Acknowledgment letter sent (date and initial):_____

Seed Collection Form (page 2)

Please attach a copy of the relevant USGS map with population and seed collection locations indicated. If desired, you can include a hand-drawn sketch below. On sketches, please include a rough scale bar and an arrow indicating north.
USGS 7.5 min Quadrangle Map: _____

Population Data (optional)**:**
Abundance: 0-10 plants_____ 11-30_____ 31-100_____ 101-1000____ more than 1000_____
Area covered by population (provide units)_____ x _____
Phenology at collection time: % of population flowering_____ fruiting_____ vegetative_____
Health of individuals: excellent____ good____ fair____ poor____ mixed____
Remarks_____

Habitat Data (optional)**:**
Elevation_____ Aspect_____ Vegetation type_____
Associated species_____
_____
_____

Voucher Collection Data (optional)**:**
Does a voucher already exist? If so, where is it and what is the ID#?_____
Date of collection_____ Fl._____ Fr._____ Photograph____
Collector_____ Phone #_____
Address_____

Other sites you know for this species which are <u>not</u> recorded in the Heritage Program database (optional):_____
_____
_____

Collecting Seeds for Genetic Conservation

Department of Environmental Science and Management, Portland State University
Mailing address: P.O. Box 751-ESM, Portland OR. 97207-0751
Shipping address: Science Research & Teaching Center, 1719 SW 10th Ave, Room 218, Portland, OR 97201
(503) 725-2468 or (503) 725-2456, e-mail: kfreitag@pdx.edu, web: www.pdx.edu/seed-bank

These guidelines summarize recommended methods to collect a genetically representative seed sample from a wild population without damaging its prospects for survival. Each situation will be unique and might call for adjustments. We hope that these guidelines will assist you in making collection decisions. Please feel free to contact us if questions arise.

Before You Collect:

- ✓ Please read this document and familiarize yourself with the seed collection data sheet.
- ✓ If possible, survey the population to estimate its size and the habitat occupied.
- ✓ Obtain the necessary permits and permissions. Contact us if you have questions.

Documentation:

Documentation is a critical step in seed collection. A well-documented collection will allow for the broadest use of the seed.

- Label each collection container used (envelope, bag, etc.) with 4 pieces of information: taxon, location (population name and/or EO#), date collected and collector name(s).
- Complete one seed collection form for each collection from a given population. Please complete the required portions of the collection form (data inside of the box) and include a copy of the relevant portion of a USGS topographic map indicating the population location and collection location (if a subset of the population).
- If desired, label both seed collections and data sheets with your own collection numbers or codes so that they can be matched if separated.
- We do not require a pressed voucher specimen to accompany each seed collection. If you have the information, provide the name of an herbarium where you know a voucher specimen of the population is housed, and the accession number of the voucher.
- Please provide the 'new' EO ID number, or 'old' Natural Heritage Program element occurrence number, if known. For the old system, it is not necessary to provide the entire code – the 3-digit number at the end will suffice.

Recommended Seed Collection Methods:

1. Collect in dry weather, if possible.
2. Collect mature seeds whenever possible. Slightly under-ripe dry fruits, such as capsules, can be taken if collected with several inches of stem.
3. Ideally, collect only seeds or fruits. Avoid collecting other plant material to reduce the cleaning time and the risks of seed herbivory (insects often hide in other plant parts) and fungal growth.
4. Use "breathable" containers. These include paper envelopes and bags, or waxed paper envelopes. In general, do not use plastic bags.
5. Tape the seams and corners of paper containers to avoid leakage if you are collecting small seeds.
6. Label your containers before placing seeds in them, or use care in labeling after placing seeds in containers so that you do not damage the seeds.

(Continued on next page)

7. It is best to place seeds from each individual plant in a separate container. Bulk samples are acceptable, but keeping material from individuals separate increases the reintroduction value.
8. Sample the population randomly. When possible, collect from plants throughout the population. If the population is found in two or more distinctive microhabitats, sample each one to capture potential genetic diversity.
9. To determine the appropriate sample size, review what is known about the population's biology, history and threats. The following numbers that we list here should be considered only **rough guidelines** and it is best to assess each individual situation.
   From a genetic standpoint, a sample size of 500-1,000 seeds per population is a good beginning. In general, attempt to take small numbers of seed from each plant. If possible and appropriate, collect about 10-20 seeds from at least 50 plants. This guideline should be used when an individual plant produces many seeds and when there are more than 50 reproducing individuals in the population. In populations with low numbers of reproductive individuals or seeds per individual, sample from as many plants as possible and recollect in subsequent years. In most cases, we recommend collecting less than 10% of a population's yearly seed output. If you have questions about appropriate sample sizes, please feel free to contact us.
10. If the habitat is sensitive, exercise care when collecting seeds to avoid causing lasting physical damage.

Storing and Shipping Seeds:

- ✓ Temporary storage before shipping should be in a cool, dry environment. Avoid heat (as in the trunk of a car) and direct sunlight.
- ✓ If seeds are wet, dry them on paper towels at room temperature before shipping. Please do not oven dry.
- ✓ Seeds of fleshy fruits should be removed from the pulp and allowed to dry at room temperature before shipping.
- ✓ Mail seeds and documentation to the Rae Selling Berry Seed Bank in a padded envelope or box. If using an envelope, write "Please Hand Cancel" on it to prevent damage to the seeds during postal processing. Include Kris's name or "Seed Bank Curator" on the mailing address to help us identify sensitive seed material. Send seeds to:

Attn: Seed Bank Curator
Rae Selling Berry Seed Bank

USPS Mailing address: ESM, Portland State University, P.O. Box 751
Portland OR 97207

Shipping address: ESM, Portland State University,
1719 SW 10th Ave, Room 218
Portland OR 97201

e-mail: kfreitag@pdx.edu or ed.guerrant@pdx.edu web: www.pdx.edu/seed-bank
Thank you for your assistance and best of luck in your seed collecting! Feel free to call us if you have any additional questions (Kris Freitag, 503 725-2468 or Ed Guerrant, 503-725-2456).