

2016 Western Bumble Bee Surveys

Deschutes National Forest

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Introduction

The western bumblebee (*Bombus occidentalis*) was widespread and common throughout the western United States and western Canada before 1998 (Xerces Society 2009). The former range included most western states and Canadian provinces. Since 1998 populations have declined drastically throughout parts of its former range. It has been documented that viable populations still exist east of the Cascades, however only two known locations have been documented on the Deschutes National Forest in the recent years (Xerces Society records). The Xerces Society considers this species one of the most imperiled species in Oregon (Sarina Jepsen, pers. comm.) as it has declined up to approximately 70-100% in many portions of its range (NatureServe 2011).

Bumblebees are integral wild pollinators within native plant communities. They are thought to be generalist pollinators of a wide variety of flowering plants and crops. However, individual bumblebees do show high fidelity to particular flowers within a bloom period (Hatfield et al. 2012). Habitats with a greater diversity of plants can be expected to have higher bumblebee species diversity than less diverse communities. This species will travel a great distance to forage – from ½ mile (Hatfield et al. 2012) up to a mile (NatureServe 2011). Given these wide habitat parameters and potential foraging distances, it is difficult to determine potential habitat on the forest without having more specific information on their preferences.

Prior to 2014, there were two known recent (2011) records of *Bombus occidentalis* on or near the Deschutes NF – Sparks Lake and the Sunriver area. Recent surveys conducted on forest in 2014 yielded four new sites for *Bombus occidentalis*. However, due to the rapid decline of a historically common species, few known occurrences, and the extent of threats, it was imperative to continue to survey for and protect known sites and habitat. It is surmised that in a worst case scenario, some or all North American *Bombus* species could go extinct within a decade or two without intervention.

Objectives of the project were as follows:

1. Increase the number of known species occurrences. Surveys may increase the number of known sites and distribution.
2. Document other species occurrences. Surveys will record all species encountered and begin to build a more comprehensive species list for the forest.

3. Better understand potential habitat and habitat quality. Surveys will aid in identifying where this species occurs and potential habitat preferences.
4. Better assess potential threats. Information from surveys on known locations and habitats can inform potential threats of management or other actions on this species.
5. Begin building a flowering plant phenology timeline/map for occupied and potential habitat.
6. Build local capacity to survey for bumble bees.

Survey Methods

Two types of surveys were designed and conducted to focus on foraging habitat during the summer (July through September) – meadow walk-throughs and roadside surveys. Conducting surveys during this time period reduced the potential for collecting queens. However, due to the early onset of spring, floral resources began flowering in early April. Thus, surveys were started in April and continued through August. By the end of August, most plants were finished flowering due to the high heat experienced.

The first survey method included walk-throughs in meadows, riparian areas, fens, and forested habitat. Walk-through surveys were concentrated in areas with floral resources. Surveyors slowly walked transects through these areas and netted any bumblebees observed. Bees were transferred to vials with lids for species identification. When able, photos were taken to provide additional documentation. Each location was recorded with a GPS point and flower information was documented. Botanists assisted in documenting floral resources at each known site in order to begin to determine if there are any floral associations. This was the primary survey method.

The second method included roadside and trail surveys. Roadside surveys were concentrated in recent (within the last 1-15 years) wildfire areas. Transects were set up to sample areas with potential floral resources (e.g. fireweed, ceanothus, lupine, etc.). Surveyors walked the roads and trails and netted any bees observed. Methods outlined above for the meadow surveys were the same for this survey type as well.

Survey Results for 2016

Sixteen *Bombus* species were identified through the surveys. These include *B. bifarius*, *B. flavifrons*, *B. insularis*, *B. melanopygus*, *B. vosnesenskii*, *B. vandykei*, *B. mixtus*, *B. flavidus*, *B. centralis*, *B. occidentalis*, *B. rufocinctus*, *B. appositus*, *B. huntii*, *B. fernaldae*, *B. grisiocollis*, and *B. fervidus*. Surveys were conducted between April 7, 2016 and August 26, 2016 with most *B. occidentalis* being found in mid-June to late July. Approximately 150 acres were surveyed for a total of 138 hours. See Table 2 for a complete listing of the survey results for the Deschutes National Forest.

Surveys resulted in seven new *B. occidentalis* locations and reconfirmed presence at one previously known location on forest. Table 1 displays the survey sites, survey dates, number of bees found, and floral resources recorded.

Table 1. Survey Results for *B. occidentalis* sites on the Deschutes National Forest.

District*	Survey Site	Survey Date	Number Found	Floral Resources	Comments
SIS	First Creek	4/07/2016	1	None. Bee seen flying in and out of old ground squirrel hole in middle of road.	Spot Check
SIS	Meadow Lake	6/21/2016	1	None – flying back and forth down road	Lakeside area; Spot Check
SIS	Jack Lake Trailhead	6/21/2016	1	None – crawling on hemlock branch	High elevation trailhead
SIS	Prairie Farm Spring Meadow	6/22/2016	1	Wood Rose	Low Elevation, Moist Meadow
SIS	Bridge 99 Fire Area	6/22/2016	1	Columbine	Recent wildfire area
SIS	Prairie Farm Spring Meadow	7/11/2016	1	None – landed on truck	Low Elevation Moist Meadow
SIS	Meadow Lake	7/12/2016	2	Spirea	Spot Check
SIS	Prairie Farm Spring Meadow	7/14/2016	2	Oregon checker mallow	Low Elevation Moist Meadow
BFR	FS Road 4040 (Twin Project Area)	7/18/2016	1	None – landed on truck	Pine Drops were the only flowering species
SIS	Matthieu Lakes	7/27/2106	2	Lupine	High Elevation Riparian
SIS	Canyon Creek Meadow (known site)	7/28/2016	3	Water Parsley, Pink Heather, Lupine	High Elevation Moist Meadow

*SIS = Sisters Ranger District. BFR = Bend-Fort Rock Ranger District

Currently, there is not a large enough sample size to infer habitat/floral preferences. Many sites surveyed were similar to those where *B. occidentalis* was found but yielded no target species. This could be attributed to several factors – survey date, surveyor experience, not enough time spent at each site, floral resource abundance/diversity, or that *B. occidentalis* just isn't present. More surveys are needed to build a larger sample size to begin to determine habitat quality.

Potential Threats

No obvious threats were identified with this survey effort except for the presence of invasive plant species. The number of known sites is not large enough to determine threats at this time.

Phenology

Crews noted the dates of flowering for floral resources as they encountered them. However, this year may not represent a “normal” year as things started blooming very early due to the lack of snow and increased temperatures early in the season. Plants were flowering from early May through August at all elevations. Bumble bee use of flowering plants occurred throughout the season. There appeared to be more use in early June and then again in late June and July on a variety of plant species. A wildflower phenology table from the Sisters Ranger District is attached in Appendix A.

Future Recommendations

Additional surveys are needed across the forest to begin to identify habitat preferences, habitat quality, and potential threats, as well as, protect known sites. It has been difficult to determine threats in most instances. A better understanding of potential threats is needed. In addition, phenology timelines need to continue to be recorded. A small number of sites will be needed to be re-surveyed as the floral resources had already bloomed and went to seed before surveys were conducted. It is unknown if these areas could be important early season habitats. Additional surveys could help determine this.

Literature Cited

Hatfield, R., S. Jepsen, E. Mader, S.H. Black, and M. Shepard. 2012. Conserving Bumble Bees. Guidelines for Creating and Managing Habitat for America's Declining Pollinators. 32 pp. Portland, OR: The Xerces Society for Invertebrate Conservation.

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. Accessed March 26, 2011.

Table 2. Bumble Bee Survey Results for the Deschutes National Forest – 2016.

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
SIS	First Creek	4/07/2016	N.Schmidt, S.Sabin	0.5	Spot Check	<i>B. occidentalis</i> – 1	None – seen flying in and out of old ground squirrel hole
BFR	DNF Supervisors Office Natural Areas	5/31/2016	S.Manon, M.Schmeiske, T.Guardunia, G.Dunham, C. Jeffrey, N. Floyd, B. Flanagan- Caldwell	1 hour/person 6 hours	1.5	<i>B. vosnesenskii</i> – 4 <i>B. huntii</i> – 1 <i>B. centralis</i> – 1 <i>B. griseocollis</i> – 4 <i>B. bifarius</i> – 1 <i>B. fervidus</i> – 1 <i>B. rufocinctus</i> – 1	Vetch, Wood Rose, Penstemon, Yarrow
BFR	Twin Project Area	6/1/2016	T. Guardunia, N. Floyd	0.25	0.5	<i>B. vosnesenskii</i> – 2 <i>B. huntii</i> – 1	Ceanothus, Bitterbrush
SIS	Bridge 99 Fire	6/02/2016	N.Schmidt, S.Sabin	4	1.5	<i>B. bifarius</i> – 5 <i>B. . vosnesenskii</i> – 15 <i>B. melanopygus</i> – 5	Lupine, Phacelia

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
SIS	Spruce Spring	6/02/2016	N.Schmidt, S.Sabin	2	0.5	B. vosnesenskii – 5 B. flavifrons – 1 Bombus spp.	Penstemon
SIS	Bear Spring	6/06/2016	N.Schmidt, S.Sabin	2	0.5	B. bifarius – 2 B. vosnesenskii – 6	Lupine, Snowbrush, Wood Rose, Phacelia
BFR	Lex Project Area	6/07/2016	N. Floyd, M. Schmeiske	9.5	5	B. vosnesenskii – 6 B. bifarius – 3	Wax Currant, Sticky Currant, Manzanita, Mtn. Strawberry
BFR	Newberry National Volcanic Monument Scenic Overlook	6/8/2016	S. Manon, M. Schmeiske, T. Guardunia, C. Jeffrey, N. Floyd, B. Flanagan- Caldwell	2	1	B. melanopygus – 1 B. bifarius – 1 B. vosnesenskii – 5 B. centralis – 3 B. huntii – 3 B. insularis – 1	Bees all on blooming Ceanothus flowers, Manzanita, and Desert Lupine

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
BFR	Newberry National Volcanic Monument Caldera	6/8/2016	T. Gardunia, S. Manon, N. Floyd	6	10	B. melanopygus – 1 B. bifarius – 2 B. vosnesenskii – 12 B. centralis – 1 B. huntii – 1 B. insularis – 1	Davidsons Penstemon, Wax Currant, Grouseberry, Creeping Sibbaldia, Cinquefoil, Lupine, Strawberry, Ceanothus, Pinemat Manzanita
CRE	Odell Butte Lookout	6/09/2016	C. Rosterolla	0.5	0.5	B. huntii – 3 B. vosnesenskii – 4	Arctostaphylos nevadensis (Pinemat Manzanita), Ribes cereum (Wax Currant)
BFR	Pine Mountain	6/9/2016	T. Guardunia, N. Floyd	9	25	None	Bitterroot, Sulpher Buckwheat, Grouse Berry, Creeping Sibbaldia

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
BFR	Quinn Meadow	6/9/2016	C. Jeffrey	1	2	None	Creeping Buttercup, Howells Pussytoes, Howells Violet, Short-beaked Agoseris, Broadpetal Strawberry, Bighead Clover, Wax Currant, Shooting Star, Dandelion, Western Yarrow, Larkspur, Subalpine Daisy
BFR	Lex Project Area	6/9/2016	M. Schmeiske, B. Flanagan-Caldwell	8	20	B. vosnesenskii – 3	False Agoseris, Manzanita, Wax Currant
SIS	Alder Spring	6/11/2016	N.Schmidt, S.Sabin	2	0.5	B. insularis – 10 B. vosnesenskii-30 B. bifarius – 1	Fireweed, St. John's Wart, Oceanspray, Lupine
SIS	Twin Meadow	6/20/2016	N.Schmidt, S.Sabin	5	3	B. melanopygnus – 1	Wood Rose
SIS	16 Road	6/20/2016	N.Schmidt, S.Sabin	0.5	Spot Check	B. vosnesenskii – 10	Penstemon

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
SIS	Meadow Lake	6/21/2016	N.Schmidt, S.Sabin	1	Spot Check	B. flavifrons – 1 B. melanopygnus – 2 B. bifarius – 3 B. vosnesenskii- 10 B. flavidus – 1 B. occidentalis – 1	Penstemon
SIS	1260 Road	6/21/2016	N.Schmidt, S.Sabin	0.5	Spot Check	B. vosnesenskii – 30 B. flavifrons – 1	Yarrow, Phacelia
SIS	Jack Lake Trailhead	6/21/2016	N.Schmidt, S.Sabin	2	1	B. occidentalis – 1 B. vosnesenskii – 5 B. bifarius – 1	Penstemon
CRE	Odell Butte Lookout	6/21/2016	C. Rosterolla	0.5	0.5	None	NA
SIS	Bridge 99 Fire	6/22/2016	N.Schmidt, S.Sabin	3	1.5	B. bifarius – 4 B. flavifrons – 2	Phacelia, Paintbrush, Penstemon, Lupine, Cinquefoil, Columbine

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
						B. vandykei – 2 B. melanopygnus – 2 B. vosnesenskii – 200 B. occidentalis – 1	
SIS	Prairie Farm Spring Meadow	6/22/2016	N.Schmidt, S.Sabin	4	3	B. melanopygnus – 3 B. occidentalis – 1 B. vosnesenskii – 2	Wood Rose, Spirea
BFR	Cow Meadow	6/28/2016	C. Jeffrey, N. Floyd	0.25	0.5	B. vosnesenskii – 2 B. bifarius -	Yarrow, Bitterbrush, Wax Currant, Penstemon
BFR	Ryan Ranch Meadow	6/30/2016	N. Floyd, B. Flanagan-Caldwell	0.25	0.5	B. vosnesenskii – 3	Indian Paintbrush, Yarrow, Lily, Red Columbine, Aster, Lupine, Clover, Fireweed, Vetch
SIS	Prairie Farm Spring Meadow	7/11/2016	N.Schmidt, S.Sabin	4	3	B. melanopygnus – 4	Oregon checker-mallow, Lupine, Aster

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
						B. occidentalis – 1 B. vosnesenskii – 53 B. bifarius – 3	
BFR	Pumice Spring	7/11/2016	B. McCormick, N. Floyd, B. Flanagan-Caldwell	1.75	2	None	Lupine, Yarrow, Sulphur Buckwheat, Penstemon, Flax, Dandelion, Purple Aster, Yellow Composite, Dwarf Monkeyflower
BFR	Sand Spring	7/11/2016	B. McCormick, N. Floyd, B. Flanagan-Caldwell	.75	1	None	Diffuse Stickweed, Buckwheat, Yarrow, Very limited resources
BFR	Pine Mtn. (Hang Glider area)	7/11/2016	B. McCormick, N. Floyd, B. Flanagan-Caldwell	6	1	B. Huntii – 1 B. bifarius – 1 B. vosnesenskii – 1	Saxifrage, Longleaf Hawksbeard, Yarrow, Sulphur Buckwheat, Lupine, Indian Paintbrush, Penstemon
SIS	Meadow Lake	7/12/2016	N.Schmidt, S.Sabin	1.5	Spot Check	B. vosnesenskii – 8 B. bifarius – 2	Spirea, Penstemon, Thistle, Honeysuckle

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
						B. melanopygnus – 3 B. occidentalis – 2	
SIS	Invasive Species Site #6150198	7/12/2016	N.Schmidt, S.Sabin	0.5	Spot Check	B. vosnesenskii – 5 B. insularis – 4 B. bifarius – 1	Phacelia, lupine, thistle
SIS	Bridge 99 Fire	7/13/2016	N.Schmidt, S.Sabin	2	1.5	B. vosnesenskii – 100	Fireweed, Phacelia
SIS	1230-700 Road	7/13/2016	N.Schmidt, S.Sabin	0.5	Spot Check	B. vosnesenskii – 10 B. insularis – 10	Penstemon
SIS	Bridge 99 Fire	7/14/2016	N.Schmidt, S.Sabin	2	1.5	B. vosnesenskii – 50 B. fervidus – 4 B. rufocinctus – 1 B. bifarius – 3 B. flavifrons – 10 Bombus spp. – 1	Fireweed, Phacelia

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
SIS	Prairie Farm Spring	7/14/2016	N.Schmidt, S.Sabin	2	3	B. flavifrons – 3 B. occidentalis – 2 B. bifarius – 3 B. vosnesenskii – 30 B. melanopygus – 2 B. rufocinctus – 3	Oregon Checker-mallow
BFR	Paulina Lake (21 Road)	7/14/2016	N. Floyd, G. Dunham, M. Schmeiske	1.5	5	B. vosnesenskii – 2	Hawkweed, Silverleaf Phacelia, Lupine, Umber Pussytoes, Mullin, Yarrow, Buckwheat, Dandelions, Nuttalls Linanthus
BFR	Paulina Peak	7/14/2016	N. Floyd, G. Dunham, M. Schmeiske	2.25	1	B. vosnesenskii – 52 B. huntii – 9 B. bifarius – 3	Indian Paintbrush, Nuttalls Linanthus, Umber Pussytoes, Davidsons Penstemon (utilized heavily)

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
BFR	Twin Goshawk Station 4	7/18/2016	G. Dunham	0.25	0.5	B. occidentalis – 1	Pinedrops
CRE	Odell Butte Lookout	7/21/2016	C. Rosterolla	0.5	0.5	None	NA
SIS	Park Meadow	7/25/2016	N.Schmidt, S.Sabin	6	8	B. vosnesenskii – 11 B. fervidus – 4 B. flavidus – 7 B. bifarius – 5 B. rufocinctus – 1 B. melanopygus – 1 B. appositus – 1	Penstemon, Delphinium
BFR	Slough Camp and Ryan Ranch Meadow	7/25/2016	N. Floyd, M. Schmeiske	6.5	10	B. vosnesenskii – 11	Aster, Yarrow, Mullin, Forget-me-not, Columbine, Western Jacobs Ladder, Cinquefoil, Vetch, Fireweed, Thistle, Penstemon, Dandelion, Goldenrod, Spirea, Lupine, Wood Rose,

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
							Trifolium, Rabbitbrush, Goats Beard, Spreading Dogbane, Spotted Knapweed
SIS	Jefferson Lake Trailhead	7/26/216	N.Schmidt, S.Sabin	1	1	B. vosnesenskii – 1 B. insularis – 1	Clover, Fireweed
SIS	Square/Booth Lake	7/26/2016	N.Schmidt, S.Sabin	2	2	B. vosnesenskii – 57 B. bifarius – 5	Lupine, Thistle, Phacelia, Penstemon
BFR	Blue Lagoon (Lava Lake)	7/26/2016	G. Dunham, B. Flanagan-Caldwell	2	8	B. vosnesenskii – 1	Aster, Spirea, Wood Rose, Clover
SIS	Matthieu Lakes	7/27/2016	N.Schmidt, S.Sabin	5	4	B. vosnesenskii – 4 B. occidentalis – 2 B. bifarius – 16	Lupine, Penstemon, Water Parsley
BFR	Soda Creek	7/27/2016	M. Schmeiske, N. Floyd	4	4	B. fernalde	Purple Aster, Trifolium Penstemon, Primrose Monkeyflower, Mtn. Monkeyflower, Parched Fireweed, Thistle, Lewis' Monkeyflower, St.

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
							John's Wort, Indian Paintbrush, White Bog Orchid, Pussytoes, Upland Larkspur, Cow Parsnip, Orange Agosens, Forget-me-not, Dwarf Mtn. Groundsel, Willowherb, Elephants Head
SIS	Canyon Creek Meadow	7/28/2016	N.Schmidt, S.Sabin	6	6	B. vosnesenskii – 201 B. insularis – 55 B. bifarius – 37 B. appositus – 2 B. occidentalis – 3	Penstemon, Lupine, Mariposa Lily, Daisy, Aster, Pink Heather, Alpine Lake False Dandelion, Senecio spp., Valeriana spp., Sandwort, Delphinium, Water parsley
BFR	Long Meadow	7/28/2016	B. Flanagan-Caldwell, N. Floyd, G. Dunham, M. Schmeiske	5	5	B. bifarius – 15 B. vosnesenskii – 11 B. flavidus – 1 B. mixtus – 1	Purple Aster, Yarrow, Primrose, Monkeyflower, Spirea, Cinquefoil, St. Johns Wort, Trifolium,

District	Survey Site	Date Surveyed	Observers	Survey Time (hrs)	Acres Surveyed	Species and # Observed	Floral Resources
							Solomons Seal, Pussytoes
SIS	1514 Road	8/9/2016	N.Schmidt, S. Sabin	0.5	Spot Check	B. vosnesenskii – 5 B. insularis – 3	Fireweed
SIS	Trout Creek Swamp	8/10/2016	N. Schmidt. S. Sabin	4	3	B. vosnesenskii – 80 B. insularis – 25 B. bifarius – 1 Bombus spp. - 1	Purple Marshhocks, Aster
BFR	Paulina Lake Shore Trail	8/24/2016	G. Dunham, N. Floyd	0.5	0.5	B. vosnesenskii – 4 B. mixtus – 1	Bull Thistle, Canadian Thistle, Yarrow, Purple Aster, Indian Paintbrush, Common Monkeyflower, Fireweed, Fleabane, Yellow Salsify, Ladies Tresses, Parched Fireweed
TOTAL				137.75	150		

Appendix 1. Wildflower Phenology Table

Invasive species in **Red**

Highlighted = bumblebee use

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
Castle Rocks Overlook	11S- 10E-5	4130	5/3/2016	<i>Astragalus spp.</i>	Milk-vetch	No
				<i>Balsamorhiza spp.</i>	Balsamroot	No
				<i>Castilleja spp.</i>	Paintbrush	No
				<i>Delphinium spp.</i>	Larkspur	No
				<i>Eriogonum spp.</i>	Buckwheat	No
				<i>Lithophragma spp.</i>	Woodland star	No
				<i>Lomatium spp.</i>	Lomatium	No
				<i>Penstemon spp.</i>	Penstemon	Yes
				<i>Purshia tridentata</i>	Bitterbrush	Yes
				<i>Senecio spp.</i>	Groundsel	No
			<i>Zigadenus spp.</i>	Death-camas	No	
			5/16/2016	<i>Astragalus spp.</i>	Milk-vetch	No
				<i>Arenaria spp.</i>	Sandwort	Yes
				<i>Balsamorhiza spp.</i>	Balsamroot	Yes
				<i>Castilleja spp.</i>	Paintbrush	No
				<i>Delphinium spp.</i>	Larkspur	No
				<i>Eriogonum spp.</i>	Buckwheat	No
				<i>Lewisia rediviva</i>	Bitterroot	No
				<i>Lomatium spp.</i>	Lomatium	No
				<i>Lupinus spp.</i>	Lupine	No
<i>Penstemon spp.</i>	Penstemon	No				
<i>Purshia tridentata</i>	Bitterbrush	No				
<i>Zigadenus spp.</i>	Death-camas	No				
B&B Fire	12S- 8E-12	4320	5/18/2016	<i>Lepidium heterophyllum</i>	Smith's pepperwort	Yes
				<i>Ceanothus velutinus</i>	Snowbrush	No
Indian Ford	14S- 10E- 17	3200	5/19/2016	<i>Iris spp.</i>	Iris	No
				<i>Ranunculus spp.</i>	Buttercup	No
				<i>Smilacina stellata</i>	Star Solomon's seal	No
				<i>Stellaria spp.</i>	Starwort	No
				<i>Trifolium spp.</i>	Clover	Yes

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
Indian Ford	14S-10E-17	3200	5/19/2016	<i>Iris spp.</i>	Iris	No
				<i>Ranunculus spp.</i>	Buttercup	No
				<i>Smilacina stellata</i>	Star Solomon's seal	No
				<i>Stellaria spp.</i>	Starwort	No
				<i>Trifolium spp.</i>	Clover	Yes
Cache Mountain	14S-8E-9	4727	5/23/2016	<i>Arctostaphylos spp.</i>	Manzanita	No
				<i>Fragaria spp.</i>	Strawberry	No
				<i>Viola spp.</i>	Violet	No
				<i>Xerophyllum tenax</i>	Bear grass	No
Bridge 99 Fire 01	12S-10E-6	4450	6/2/2016	<i>Phacelia spp.</i>	Phacelia	Yes
				<i>Lupinus spp.</i>	Lupine	Yes
				<i>Aquilegia formosa</i>	Columbine	No
				<i>Delphinium spp.</i>	Larkspur	No
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Fragaria spp.</i>	Strawberry	No
				<i>Penstemon spp.</i>	Penstemon	No
				<i>Senecio spp.</i>	Groundsel	No
Spruce Spring	15S-9E-34	4310	6/2/2016	<i>Ceanothus velutinus</i>	Snowbrush	No
				<i>Rosa sp.</i>	Rose	No
				<i>Penstemon spp.</i>	Penstemon	Yes
Bear Spring	12S-10E-30	4273	6/6/2016	<i>Ceanothus velutinus</i>	Snowbrush	Yes
				<i>Lupinus spp.</i>	Lupine	Yes
				<i>Rosa woodsii</i>	Wood rose	Yes
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Fragaria spp.</i>	Strawberry	No
				<i>Aquilegia formosa</i>	Columbine	No
				<i>Phacelia spp.</i>	Phacelia	Yes
				<i>Vicia spp.</i>	Vetch	Yes
Six Creek	12S-10E-15, 16	3400	6/6/2016	<i>Ceanothus velutinus</i>	Snowbrush	Yes
				<i>Lupinus spp.</i>	Lupine	Yes
				<i>Rosa woodsii</i>	Wood rose	Yes
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Phacelia spp.</i>	Phacelia	No
				<i>Fragaria spp.</i>	Strawberry	No
				<i>Aquilegia formosa</i>	Red columbine	No

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
Cache Mountain	14S- 8E-9	4727	6/14/2016	<i>Smilacina stellata</i>	Star Solomon's seal	No
				<i>Anemone spp.</i>	Anemone	No
				<i>Taraxacum officinale</i>	Common Dandelion	No
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Lotus nevadensis</i>	Nevada deervetch	No
				<i>Fragaria spp.</i>	Strawberry	No
				<i>Phacelia spp.</i>	Phacelia	No
				<i>Potentilla glandulosa</i>	Sticky cinquefoil	No
				<i>Xerophyllum tenax</i>	Bear grass	No
				<i>Lupinus spp.</i>	Lupine	No
				<i>Ribes viscosissimum</i>	Sticky currant	No
				<i>Ipomopsis agregata</i>	Scarlet gilia	No
				<i>Plagiobothrys spp.</i>	Popcorn flower	No
Lower Bridge	12S- 9E-2	2750	6/18/2016	<i>Potentilla glandulosa</i>	Sticky cinquefoil	No
				<i>Physocarpus capitatus</i>	Pacific ninebark	No
				<i>Myosotis scorpioides</i>	Marsh forget-me-nots	No
				<i>Vicia spp.</i>	Vetch	No
				<i>Lotus nevadensis</i>	Nevada deervetch	No
				<i>Trifolium spp.</i>	Clover	No
				<i>Eriogonum elatum</i>	Tall buckwheat	No
				<i>Lupinus spp.</i>	Lupine	No
				<i>Veratrum californicum</i>	California corn lily	No
				<i>Heracleum maximum</i>	Cow parsnip	No
				<i>Clarkia rhomboidea</i>	Common clarkia	No
				<i>Phacelia spp.</i>	Phacelia	No
				<i>Rosa spp.</i>	Rose	No
				<i>Heuchera cylindrical</i>	Roundleaf alumroot	No
				<i>Aquilegia formosa</i>	Red columbine	No
				<i>Penstemon spp.</i>	Penstemon	No
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Antennaria spp.</i>	Pussy-toes	No
				<i>Potentilla glandulosa</i>	Sticky cinquefoil	No
				<i>Horkelia fusca</i>	Pinewoods horkelia	No
<i>Symphoricarpos albus</i>	Snowberry	No				
<i>Galium boreale</i>	Northern bedstraw	No				
<i>Polemonium spp.</i>	Polemonium	No				
<i>Stachys spp.</i>	Hedge-nettle	No				
<i>Ipomopsis agregata</i>	Scarlet gilia	No				
<i>Senecio spp.</i>	Groundsel	No				

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
1499 Rd	11S-9E-35	2690	6/18/2016	<i>Lotus nevadensis</i>	Nevada deervetch	No
				<i>Lupinus spp.</i>	Lupine	No
				<i>Lotus crassifolius</i>	Big deervetch	No
				<i>Cirsium spp.</i>	Thistle	No
				<i>Agoseris aurantiaca</i>	Orange agoseris	No
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Eriophyllum lanatum</i>	Oregon sunshine	No
				Eriogonum spp.	Buckwheat	No
				<i>Antennaria spp.</i>	Pussy-toes	No
				<i>Heiracium scouleri</i>	Scouler's hawkweed	No
				<i>Dichelostemma congestum</i>	Forktooth ookow	No
				<i>Balsamorhiza spp.</i>	Balsamroot	No
				<i>Aquilegia formosa</i>	Red columbine	No
				<i>Ipomopsis agregata</i>	Scarlet gilia	No
				<i>Apocynum androsaemifolium</i>	Spreading dogbane	No
				<i>Senecio spp.</i>	Groundsel	No
				<i>Silene spp.</i>	Catchfly	No
				<i>Vicia spp.</i>	Vetch	No
				<i>Lonicera ciliosa</i>	Orange honeysuckle	No
<i>Rubus parviflora</i>	Thimbleberry	No				
				Leucanthemum vulgare	Oxeye daisy	No
				<i>Castilleja spp.</i>	Paintbrush	No
16 Road	16S-9E-14	4523	6/20/2016	<i>Penstemon spp.</i>	Penstemon	Yes
				<i>Ceanothus velutinus</i>	Snowbrush	No
Twin Meadows	15S-9E-33	4700	6/20/2016	<i>Rosa spp.</i>	Rose	Yes
				<i>Clintonia uniflora</i>	Queen's cup	No
				<i>Saxifraga sp.</i>	Saxifrage	No
				<i>Agoseris aurantiaca</i>	Orange agoseris	No
				<i>Lupinus spp.</i>	Lupine	No
Jack Lake Trailhead	12S-8E-33	5143	6/21/2016	<i>Penstemon spp.</i>	Penstemon	Yes

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
1260 Road	12S-9E-19	3058	6/21/2016	<i>Achillea millefolium</i>	Yarrow	Yes
				<i>Horkelia fusca</i>	Pinewoods horkelia	No
				<i>Phacelia spp.</i>	Phacelia	Yes
				<i>Leucanthemum vulgare</i>	Oxeye daisy	No
				<i>Penstemon spp.</i>	Penstemon	No
				<i>Galium boreale</i>	Northern bedstraw	No
				<i>Agoseris aurantiaca</i>	Orange agoseris	No
				<i>Potentilla glandulosa</i>	Sticky cinquefoil	No
				<i>Castilleja spp.</i>	Paintbrush	No
				<i>Cirsium spp.</i>	Thistle	No
				<i>Calochortus spp.</i>	Mariposa lily	No
				<i>Lotus nevadensis</i>	Nevada deervetch	No
Meadow Lake	14S-8E-5	4429	6/21/2016	<i>Penstemon spp.</i>	Penstemon	Yes
				<i>Castilleja spp.</i>	Paintbrush	No
				<i>Clintonia uniflora</i>	Queen's cup	No
				<i>Cornus unalaschkensis</i>	Bunchberry	No
				<i>Anemone spp.</i>	Anemone	No
				<i>Aquilegia formosa</i>	Red columbine	No
				<i>Spiraea splendens</i>	Rosy spiraea	No
				<i>Antennaria spp.</i>	Pussy-toes	No
				<i>Senecio spp.</i>	Groundsel	No
				<i>Potentilla glandulosa</i>	Sticky cinquefoil	No
				<i>Ribes viscosissimum</i>	Sticky currant	No
				<i>Fragaria spp.</i>	Strawberry	No
				<i>Xerophyllum tenax</i>	Bear grass	No
				<i>Maianthemum stellatum</i>	Star Solomon's seal	No
				<i>Arnica cordifolia</i>	Heart-leaved arnica	No
				<i>Valeriana sitchensis</i>	Sitka valerian	No
<i>Lonicera involucrata</i>	Black twinberry	No				
				<i>Lonicera conjugialis</i>	Purple-flowered honeysuckle	Yes

<u>Location</u>	<u>T-R-S</u>	<u>Elev.</u> <u>(ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus</u> <u>Observed?</u>
Bridge 99 Fire 02	11S- 10E- 31	4625	6/22/2016	<i>Penstemon spp.</i>	Penstemon	Yes
				<i>Rosa spp.</i>	Rose	Yes
				<i>Potentilla glandulosa</i>	Sticky cinquefoil	Yes
				<i>Lupinus spp.</i>	Lupine	Yes
				<i>Phacelia spp.</i>	Phacelia	Yes
				<i>Clarkia rhomboidea</i>	Common clarkia	No
				<i>Ipomopsis agregata</i>	Scarlet gilia	No
				<i>Agoseris aurantiaca</i>	Orange agoseris	No
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Castilleja spp.</i>	Paintbrush	Yes
				<i>Eriophyllum lanatum</i>	Oregon sunshine	No
				<i>Lilium sp.</i>	Unknown orange lily	No
				<i>Cirsium spp.</i>	Thistle	No
				<i>Lomatium spp.</i>	Lomatium	No
				<i>Aquilegia formosa</i>	Red columbine	Yes
				<i>Geum triflorum</i>	Prairie smoke	No
				<i>Valeriana sitchensis</i>	Sitka valerian	No
				<i>Lonicera ciliosa</i>	Orange honeysuckle	No
				<i>Lotus crassifolius</i>	Big deervetch	No
				<i>Platanthera stricta</i>	Slender bog orchid	No
<i>Silene sp.</i>	Catchfly	No				
<i>Tritileia hyacinthine</i>	White hyacinth	No				
<i>Sedum sp.</i>	Stonecrop	No				

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
Prairie Farm Spring	12S-10E-6	4448	6/22/2016	<i>Rosa spp.</i>	Rose	Yes
				<i>Spiraea spp.</i>	Spiraea	Yes
				<i>Potentilla glandulosa</i>	Sticky cinquefoil	No
				<i>Mimulus spp.</i>	Monkeyflower	No
				<i>Plantago sp.</i>	Plantain	No
				<i>Veratrum californicum</i>	California corn lily	No
				<i>Arnica cordifolia</i>	Heart-leaved arnica	No
				<i>Lupinus spp.</i>	Lupine	No
				<i>Eriophyllum lanatum</i>	Oregon sunshine	No
				<i>Heiracium scouleri</i>	Scouler's hawkweed	No
				<i>Spiraea spp.</i>	Spiraea	No
				<i>Clarkia rhomboidea</i>	Common clarkia	No
				<i>Vicia spp.</i>	Vetch	No
				<i>Trifolium spp.</i>	Clover	No
				<i>Ipomopsis agregata</i>	Scarlet gilia	No
				<i>Delphinium sp.</i>	Larkspur	No
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Fragaria spp.</i>	Strawberry	No
<i>Aster spp.</i>	Aster	No				
<i>Verbascum thapsus</i>	Woolly mullein	No				
Prairie Farm Spring	12S-10E-6	4448	7/11/2016	<i>Spiraea spp.</i>	Spiraea	No
				<i>Lupinus spp.</i>	Lupine	Yes
				<i>Sidalcea sp.</i>	Mallow	Yes
				<i>Solidago sp.</i>	Goldenrod	No
				<i>Senecio sp.</i>	Groundsel	No
				<i>Prunella vulgaris</i>	Heal-all	Yes
				<i>Potentilla sp.</i>	Cinquefoil	No
				<i>Aster spp.</i>	Aster	Yes
Alder Spring	11S-10E-16, 20	3949	7/11/2016	<i>Hypericum perforatum</i>	Common St. John's wort	Yes
				<i>Chamerion angustifolium</i>	Fireweed	Yes
				<i>Holodiscus discolor</i>	Oceanspray	Yes
				<i>Lupinus spp.</i>	Lupine	Yes

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
Invasive Species Site #6150198	13S-8E-9	4045	7/12/2016	<i>Phacelia sp.</i>	Phacelia	Yes
				<i>Lupinus spp.</i>	Lupine	Yes
				<i>Cirsium spp.</i>	Thistle	Yes
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Aquilegia formosa</i>	Red columbine	No
				<i>Hypericum perforatum</i>	Common St. John's wort	No
				<i>Mimulus spp.</i>	Monkeyflower	No
				<i>Antennaria sp.</i>	Pussy-toes	No
Meadow Lake	14S-8E-5	4429	7/12/2016	<i>Spiraea splendens</i>	Rosy spiraea	Yes
				<i>Cirsium spp.</i>	Thistle	No
				<i>Penstemon spp.</i>	Penstemon	Yes
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Potentilla sp.</i>	Cinquefoil	No
				<i>Spiraea douglasii</i>	Douglas' spiraea	Yes
				<i>Rosa sp.</i>	Rose	No
				<i>Lupinus spp.</i>	Lupine	No
				<i>Lonicera involucrata</i>	Black twinberry	No
				<i>Lonicera conjugialis</i>	Purple-flowered honeysuckle	Yes
				<i>Valeriana sp.</i>	Valerian	No
				<i>Antennaria sp.</i>	Pussy-toes	No
Bridge 99 Fire 03	12S-9E-1	4600	7/13/2016	<i>Chamerion angustifolium</i>	Fireweed	Yes
				<i>Phacelia spp.</i>	Phacelia	Yes
				<i>Anaphalis margaritacea</i>	Pearly everlasting	No
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Holodiscus discolor</i>	Oceanspray	No
1230/700 Road	12S-8E-12	4546	7/13/2016	<i>Penstemon spp.</i>	Penstemon	Yes
				<i>Lupinus spp.</i>	Lupine	No
				<i>Cirsium spp.</i>	Thistle	No
				<i>Achillea millefolium</i>	Yarrow	No
Bridge 99 Fire 03	12S-9E-1	4600	7/14/2016	<i>Chamerion angustifolium</i>	Fireweed	Yes
				<i>Phacelia spp.</i>	Phacelia	Yes
				<i>Onopordum acanthium</i>	Scotch Thistle	No
				<i>Anaphalis margaritacea</i>	Pearly everlasting	No

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
1230/700 Road	12S-8E-12	4546	7/13/2016	<i>Penstemon spp.</i>	Penstemon	Yes
				<i>Lupinus spp.</i>	Lupine	No
				<i>Cirsium spp.</i>	Thistle	No
				<i>Achillea millefolium</i>	Yarrow	No
Bridge 99 Fire 03	12S-9E-1	4600	7/14/2016	<i>Chamerion angustifolium</i>	Fireweed	Yes
				<i>Phacelia spp.</i>	Phacelia	Yes
				<i>Onopordum acanthium</i>	Scotch Thistle	No
				<i>Anaphalis margaritacea</i>	Pearly everlasting	No
Prairie Farm Spring	12S-10E-6	4448	7/14/2016	<i>Sidalcea oregana</i>	Oregon checker-mallow	Yes
				<i>Aster spp.</i>	Aster	No
				<i>Spiraea spp.</i>	Spiraea	No
Park Meadow	17S-9E-10, 4, 5, 7	6200	7/25/2016	<i>Sphenosciadium capitellatum</i>	Rangers button	No
				<i>Veratrum californicum</i>	California corn lily	No
				<i>Trifolium spp.</i>	Clover	No
				<i>Anaphalis margaritacea</i>	Pearly everlasting	No
				<i>Oenanthe sarmentosa</i>	Pacific water parsley	No
				<i>Saxifraga oregana</i>	Oregon saxifrage	No
				<i>Gentiana sp.</i>	Gentian	No
				<i>Arnica sp.</i>	Arnica	No
				<i>Pedicularis groenlandica</i>	Elephant's head lousewort	No
				<i>Pedicularis attollens</i>	Little elephant's head	No
				<i>Chamerion angustifolium</i>	Fireweed	No
				<i>Descurainia sophia</i>	Flixweed tansy-mustard	No
				<i>Castilleja spp.</i>	Paintbrush	No
				<i>Pedicularis bracteosa</i>	Towering lousewort	No
				<i>Platanthera dilatata</i>	White bog orchid	No
				<i>Eriogonum spp.</i>	Buckwheat	No
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Antennaria sp.</i>	Pussy-toes	No
				<i>Ranunculus sp.</i>	Buttercup	No
				<i>Agoseris spp.</i>	Agoseris	No
				<i>Senecio sp.</i>	Groundsel	No
				<i>Spiraea spp.</i>	Spiraea	No
<i>Dodecatheon spp.</i>	Shooting star	No				
<i>Mimulus spp.</i>	Monkeyflower	No				
<i>Delphinium sp.</i>	Larkspur	Yes				
<i>Penstemon spp.</i>	Penstemon	Yes				
<i>Aster spp.</i>	Aster	No				

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
Booth Lake	13S-8E-16, 17, 18, 20, 7	4300-5200	7/26/2016	<i>Lupinus spp.</i>	Lupine	Yes
				<i>Penstemon spp.</i>	Penstemon	Yes
				<i>Anaphalis margaritacea</i>	Pearly everlasting	No
				<i>Hieracium albiflorum</i>	White-flowered hawkweed	No
				<i>Cirsium spp.</i>	Thistle	Yes
				<i>Agoseris aurantiaca</i>	Orange agoseris	No
				<i>Pedicularis racemosa</i>	Sickle-top lousewort	No
				<i>Tragopogon dubius</i>	Yellow salsify	No
				<i>Cistanthe umbellata</i>	Mt. Hood pussy-paws	No
				<i>Spiraea spp.</i>	Spiraea	No
				<i>Holodiscus dumosus</i>	Mountain spray	No
				<i>Ipomopsis agregata</i>	Scarlet gilia	No
				<i>Aquilegia formosa</i>	Red columbine	No
				<i>Phacelia spp.</i>	Phacelia	Yes
				<i>Eriogonum spp.</i>	Buckwheat	No
				<i>Prunella vulgaris</i>	Heal-all	No
<i>Aster spp.</i>	Aster	No				
<i>Hackelia</i>	Stickseed	No				
Matthieu Lakes	15S-8E-21, 27, 34	6019	7/27/2016	<i>Aster spp.</i>	Aster	No
				<i>Spiraea spp.</i>	Spiraea	No
				<i>Lupinus spp.</i>	Lupine	Yes
				<i>Eriogonum spp.</i>	Buckwheat	No
				<i>Penstemon spp.</i>	Penstemon	Yes
				<i>Pedicularis racemosa</i>	Sickle-top lousewort	No
				<i>Luetkea pectinata</i>	Partridgefoot	No
				<i>Rubus lasiococcus</i>	Dwarf Bramble	No
				<i>Hieracium albiflorum</i>	White-flowered hawkweed	No
				<i>Chimaphila umbellata</i>	Western prince's pine	No
				<i>Phyllodoce empetriformis</i>	Pink mountain-heather	No
				<i>Castilleja spp.</i>	Paintbrush	No
				<i>Calochortus spp.</i>	Mariposa lily	No
				<i>Agoseris aurantiaca</i>	Orange agoseris	No
				<i>Anaphalis margaritacea</i>	Pearly everlasting	No
				<i>Oenanthe sarmentosa</i>	Pacific water parsley	Yes
				<i>Cirsium spp.</i>	Thistle	No
				<i>Arnica sp.</i>	Arnica	No
<i>Polygonum sp.</i>	Knotweed	No				
<i>Cistanthe umbellata</i>	Mt. Hood pussy-paws	No				

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
Canyon Creek Meadows	12S-8E-29, 30, 31	5143-5755	7/28/2016	<i>Aster spp.</i>	Aster	Yes
				<i>Spiraea spp.</i>	Spiraea	No
				<i>Pedicularis racemosa</i>	Sickletop lousewort	No
				<i>Trifolium spp.</i>	Clover	No
				<i>Oenanthe sarmentosa</i>	Pacific water parsley	Yes
				<i>Anaphalis margaritacea</i>	Pearly everlasting	No
				<i>Heiracium albiflorum</i>	White-flowered hawkweed	No
				<i>Ipomopsis agregata</i>	Scarlet gilia	No
				<i>Cirsium spp.</i>	Thistle	No
				<i>Lupinus spp.</i>	Lupine	Yes
				<i>Penstemon spp.</i>	Penstemon	Yes
				<i>Polygonum sp.</i>	Knotweed	No
				<i>Veronica sp.</i>	Speedwell	No
				<i>Valeriana spp.</i>	Valerian	Yes
				<i>Senecio spp.</i>	Groundsel	Yes
				<i>Calochortus spp.</i>	Mariposa lily	Yes
				<i>Rubus lasiococcus</i>	Dwarf bramble	No
				<i>Lomatium spp.</i>	Lomatium	No
				<i>Castilleja spp.</i>	Paintbrush	Yes
				<i>Delphinium sp.</i>	Larkspur	Yes
				<i>Hackelia sp.</i>	Stickseed	No
				<i>Stellaria sp.</i>	Starwort	No
				<i>Arenaria sp.</i>	Sandwort	Yes
				<i>Eriogonum spp.</i>	Buckwheat	No
				<i>Aquilegia formosa</i>	Red columbine	No
				<i>Luetkea pectinata</i>	Partridgefoot	No
				<i>Veratrum californicum</i>	California corn lily	No
				<i>Ranunculus sp.</i>	Buttercup	No
				<i>Agoseris aurantiaca</i>	Orange agoseris	No
				<i>Mimulus spp.</i>	Monkeyflower	No
<i>Clintonia uniflora</i>	Queen's cup	No				
<i>Phyllodoce empetriformis</i>	Pink mountain-heather	Yes				
<i>Cassiope mertensiana</i>	White heather	No				
<i>Cistanthe umbellata</i>	Mt. Hood pussy-paws	No				
<i>Arnica sp.</i>	Arnica	No				
<i>Nothocalais alpestris</i>	Alpine lake agoseris	Yes				

<u>Location</u>	<u>T-R-S</u>	<u>Elev. (ft)</u>	<u>Date</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Bombus Observed?</u>
Cache Mountain	14S-8E-9	4727	8/1/2016	<i>Cirsium spp.</i>	Thistle	Yes
				<i>Solidago spp.</i>	Goldenrod	No
				<i>Aster spp.</i>	Aster	No
				<i>Achillea millefolium</i>	Yarrow	No
				<i>Silene spp.</i>	Catchfly	No
				<i>Potentilla glandulosa</i>	Sticky cinquefoil	No
				<i>Hieracium albiflorum</i>	White-flowered hawkweed	No
				<i>Heiracium scouleri</i>	Scouler's hawkweed	No
				<i>Galium boreale</i>	Northern bedstraw	No
				<i>Vicia spp.</i>	Vetch	No
				<i>Campanula scouleri</i>	Scouler's bluebell	No
Little Montana	12S-9E-18	3240	8/8/2016	<i>Cirsium spp.</i>	Thistle	No
				<i>Ipomopsis agregata</i>	Scarlet gilia	No
				<i>Chamerion angustifolium</i>	Fireweed	No
1514 Road	15S-9E-33	4320	8/9/2016			
				<i>Chamerion angustifolium</i>	Fireweed	Yes
Trout Creek Swamp	15S-9E-20, 29	4396	8/10/2016	<i>Comarum palustre</i>	Purple marshlocks	Yes
				<i>Aster spp.</i>	Aster	Yes
				<i>Hypericum scouleri</i>	Western St. John's wort	No
				<i>Ranunculus sp.</i>	Buttercup	No
				<i>Mimulus sp.</i>	Monkeyflower	No
				<i>Cirsium spp.</i>	Thistle	No
				<i>Linnaea borealis</i>	Twinflower	No
				<i>Platanthera diletata</i>	White bog orchid	No
				<i>Spiranthes spp.</i>	Ladies' tresses	No
				<i>Chamerion angustifolium</i>	Fireweed	No
				<i>Spiraea spp.</i>	Spiraea	No
				<i>Stellaria sp.</i>	Starwort	No
<i>Angelica sp.</i>	Angelica	No				
<i>Campanula scouleri</i>	Scouler's bluebell	No				
Jefferson Lake Trail	11S-9E-20, 29	3100-4100	8/26/2016	<i>Achillea millefolium</i>	Yarrow	No
				<i>Chamerion angustifolium</i>	Fireweed	Yes
				<i>Trifolium sp.</i>	Clover	Yes
				<i>Penstemon sp.</i>	Penstemon	No
				<i>Anaphalis margaritacea</i>	Pearly everlasting	No
				<i>Hieracium spp.</i>	Hawkweed	No
				<i>Epilobium sp.</i>	Willowherb	No
<i>Verbascum thapsus</i>	Woolly mullein	No				

