

2016 Mt Baker-Snoqualmie Bumblebee Surveys

Objectives of the project were as follows:

1. Increase the number of known species occurrences for *Bombus occidentalis* (western bumble bee). 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. Build local capacity to survey for bumble bees.

Survey Methods

Surveys were conducted to focus on foraging habitat during the summer (late June through September) – meadow walk-throughs and roadside surveys. Conducting surveys during this time period reduced the potential for collecting queens.

Surveyors slowly walked through these areas and netted any bumblebees observed. Bees were transferred to vials with lids for species identification when needed. When able, photos were taken to provide additional documentation. Each location was recorded with a GPS point and flower information was documented.

Table 1 displays the survey sites, survey dates, species, number of bees found, and floral resources recorded.

Table 1.

Location	Date	Latitude	Longitude	<i>Bombus</i> Species Detected	Number Observed	Floral Resource	Comments
Roadside, access road used by BPA for tower access	30-Jun-2016	47.276132	-121.356070	<i>melanopygus</i>	1	road side early successional veg, wild strawberry (<i>Fragaria vesca</i>), trailing blackberry (<i>Rubus ursinus</i>)	Elevation 3525
Off Evergreen mountain road. Captures on old	3-Aug-2016	47.823107	-121.279337	<i>flavifrons</i>	1	old logging landing, nector source: (fireweed)	Elevation 4022

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logging landing, spur road.						Epilobium agustifolium)	
Off Evergreen mountain. Captures on old logging landing, spur road.	3-Aug-2016	47.823107	-121.279337	<i>Flavifrons melanopygus</i>	1 1	old logging landing, nector source: fireweed (Epilobium agustifolium)	Elevation 4022
Wellington Trailhead with parking lot.	4-Aug-2016	47.747244	-121.128109	<i>melanopygus</i>	1	trailhead, roadside (oxeye daisy, St. John's wort)	Elevation 3129
Alpental Ski Area parking lot.	15-Aug-2016	47.444014	-121.423069	Unknown sp.	1`	Ski are parking lot (St John's Wort)	Elevation 3101
Wellington Trailhead with parking lot.	30-Aug-2016	47.747244	-121.128109	<i>Bifarius Unknown sp.</i>	1 1	trailhead, roadside (oxeye daisy, St. John's wort)	Elevation 3129
Off Evergreen mountain. Captures on old logging landing, spur road.	30-Aug-2016	47.823107	-121.279337	Unknown sp.	1	old logging landing, nector source: (fireweed Epilobium agustifolium).	Elevation 4022
Alpental Ski Area parking lot.	1-Sep-2016	47.444014	-121.423069	<i>flavifrons</i>	1	Ski are parking lot (St John's Wort, Epilobium agustifolium)	Elevation 3101
Ice Caves Trail	15-Jul-2016	48.054644	-121.519914	<i>flavifrons</i>	15	Viewing area, fireweed	Elevation 1942
Segelsen – Pass/Lake	29-Jul-2016	48.339112	-121.722556	<i>flavifrons melanopygus?</i>	12 1	Wet Meadow	Elevation 3828
Segelsen – wet meadows	29-Jul-2016	48.3221	-121.73006	<i>flavifrons melanopygus?</i>	Est 200 1	Cows parship, rosy spiraea	Elevation 3300
Gee Point Trailhead	30-Jul-2016	48.4183	-121.8228	<i>flavifrons unknown sp.</i>	7 4	Decommissioned road	Elevation 4325
Gee Point wet meadow	30-Jul-2016	48.32277	-121.73000	<i>flavifrons melanopygus unknown sp.</i>	Est 40 2 10	Heather	Elevation 4573

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Curry Gap	7-Aug-2016	47.984805	-121.278950	<i>flavifrons</i> <i>melanopygus</i> <i>unknown sp</i>	24 6 8	Meadow	Elevation 3874
Miners Ridge – Below Plummer Mtn	8-sep-2016	unknown	unknown	<i>flavifrons</i> <i>melanopygus</i> <i>unknown sp</i>	Multiple A few A few	Meadow	On trail to Suiattle Pass

No *Bombus occidentalis* were found. Photo vouchers were submitted to The Xerces Society for verification. However, the specimens labeled as unknown in Table 1 were of too poor quality for a species determination. Currently, there is not a large enough sample size to infer habitat/floral preferences.

Potential Threats

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

Additional surveys for the Forest are recommended.

References

Williams, P.H., Thorp, R.W., Richardson, L.L. and Colla, S.R., 2014. Bumble bees of North America: an identification guide. Princeton University Press.