



Survey of Rare and Sensitive Plants in Recent Acquisitions

San Juan Island National Historical Park (Public Version)

Natural Resource Report NPS/NRSS/IMD/NRR—2023/2549



ON THE COVER

Rare Douglas Fir woodland habitat on Mitchell Hill, San Juan Island National Historical Park
ECOSTUDIES INSTITUTE

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Natural Resource Report NPS/NRSS/IMD/NRR—2023/2549

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Abstract

The aim of this project is to obtain information on rare plant species of interest in two tracts of land that were recently acquired on San Juan Island, WA by the National Park Service. This information will be used to inform a vegetation management plan that will be developed for the San Juan National Historical Park. The tracts of land that are to be investigated are Mitchell and Westcott Bay in the English Camp unit.

Due to the size of the two parcels and time constraints, this project did not include formal sampling methods such as transects or grids. Instead, the focus of the surveying was on specific vegetation types with the understanding that certain species may be found in specific vegetation types. Vegetation polygons were then searched via “focused intuitive control.” We used the current trail network as our sampling path, surveying more intensely in areas where rare species are more likely and briefly surveying unlikely habitats. We also focused on the trail networks because the most likely visitor impacts are along trails and where most vegetation management will likely occur.

Out of the targeted list of twenty-seven species, we found three rare plant species in the Mitchell Hill unit: true baby stars (*Leptosiphon minimus*), Indian valley brodiaea (*Brodiaea rosea*), and shortspur white plectritis (*Plectritis brachystemon*). These species were associated with open bald habitats primarily on Haro-Hidden Ridge – Rock outcrop soils. *Leptosiphon minimus* was widely scattered across the bald habitats on the eastern upper slopes of Mitchell Hill. During our surveys in 2021 and 2022 we found at least several thousand plants widely scattered across the Mitchell Hill parcel. Because *L. minimus* is a cryptic species that is difficult to distinguish from *Leptosiphon bicolor*, the best resource on the distribution and identification of the species is Goodwillie & Stiller (2001). In 2022, we noticed many plants aborted their flowering stems prior to setting fruit.

We did not observe any rare vascular plant species of conservation concern on the Westcott Parcel, and most the property has extensive evidence of prior human use and habitat alteration. There is a high-quality tidal salt marsh primarily composed of the pickleweed (*Salicornia*) and salt grass (*Distichlis spicata*). The forest communities appear to be highly used by walkers and hikers, with several established trails within the forested area. There is a small human-made wetland in the southeastern portion of the parcel, and a large established population of thistle that may be necessary to control.

Introduction

Goals and Objectives

The aim of this project is to obtain information on rare plant species of interest in two tracts of land that were recently acquired on San Juan Island, WA by the National Park Service. This information will be used to inform a vegetation management plan that will be developed for the San Juan National Historical Park. The tracts of land that are to be investigated are Mitchell Hill (320 acres; acquired in 2010) and Westcott Bay (70 acres; acquired in 2013). Both of these areas are located within the English Camp unit.

By carefully surveying well-traveled paths within these parcels (Appendix A), the objective of this project is to document the presence or absence of rare plant species of interest. An increased understanding of rare species locations (number of individuals or area covered) will inform future management actions and decrease the potential negative impacts on these species. Confirming that certain species are absent from areas also ensures that future management activities will not have negative impacts on rare species. All suitable habitats for rare species of interest were visited, but areas adjacent to trails were the primary focus to best inform recreational management choices. In addition to survey for rare plants of interest, we also provide a list of all vascular plant species seen and identified during surveys at both the Mitchell Hill and Westcott parcels (Appendix B & Appendix C). All species identifications and nomenclature are based on the 2nd Edition of the Flora of the Pacific Northwest (Hitchcock & Cronquist 2018).

Methods

Due to the size of the two parcels (specifically Mitchell Hill) and time constraints, this project did not include formal sampling methods such as transects or grids. Instead, the focus of the surveying was on specific vegetation types with the understanding that certain species may be found in specific vegetation types (Figure 1). Vegetation polygons were then searched via “focused intuitive control” (Nelson 1985). In the context of this study, we used the current trail network as our sampling path, surveying more intensely in areas where rare species are more likely and briefly surveying unlikely habitats (Table 1). We also focused on the trail networks because the most likely visitor impacts are along trails and where most vegetation management will likely occur.



Figure 1. Author identifying *Leptosiphon minimus* in a rocky bald on Mitchell Hill.

Table 1. Survey Effort by Parcel.

Site	Dates Surveyed	Distance Surveyed (km)	Time Surveyed
Westcott Bay	6/18/21; 7/14/21	5.08	12 hr 36 min
Mitchell Hill	6/17/21; 6/19/21; 7/14/21; 7/15/21	49.10	39 hr 36 min
Mitchell Hill	4/14/22; 6/16/22; 7/14/21	19.92	19 hr 32 min

Within the Mitchell Hill parcel, the scope of work developed by The National Park Service highlighted six different vegetation types to be surveyed, derived from the park’s 2012 vegetation

map (<https://irma.nps.gov/DataStore/Reference/Profile/2233385>). They included three Douglas fir forest types (*Pseudotsuga menziesii*), two western red cedar dominated types (*Thuja plicata*) and one forest type dominated by western hemlock (*Tsuga heterophylla*). Due to the higher diversity of plants observed in rocky balds, the community types traversed for the most time were the *Pseudotsuga menziesii* – *Arbutus menziesii* / *Holodiscus discolor* Forest and the *Pseudotsuga menziesii* / *Rosa gymnocarpa* - *Holodiscus discolor* / *Festuca occidentalis* Forest (Table 2; Figure 2). The vegetation type that was surveyed the most thoroughly within the Westcott Bay parcel was the *Salicornia virginica* – *Distichlis spicata* – *Triglochin maritima* – (*Jaumea carnosa*) herbaceous vegetation.

Table 2. Survey effort by Vegetation Alliance at Mitchell Hill.

Vegetation Alliance	Area (ha)	2021 Survey Effort (km)	2022 Survey Effort (km)
(<i>Acer macrophyllum</i> , <i>Alnus rubra</i>) Riparian Forest Alliance	3.6	0.73	0.06
(<i>Tsuga heterophylla</i> - <i>Picea sitchensis</i> - <i>Thuja plicata</i> - <i>Abies</i>) / <i>Lysichiton americanus</i> Western Hemlock Alliance	1.2	0.00	0.00
<i>Acer macrophyllum</i> - (<i>Pseudotsuga menziesii</i>) Forest Alliance	1.2	0.20	0.21
<i>Agrostis capillaris</i> - <i>Holcus lanatus</i> - <i>Schedonorus phoenix</i> Mesic Ruderal Grassland Alliance	4.2	7.20	3.63
<i>Bromus hordeaceus</i> Dry Ruderal Grassland Alliance	0.3	0.00	0.00
<i>Pseudotsuga menziesii</i> - (<i>Arbutus menziesii</i>) Forest and Woodland Alliance	115.9	25.80	11.08
<i>Symphoricarpus albus</i> Pacific Coast Shrubland Alliance	0.8	0.02	0.00
<i>Thuja plicata</i> - (<i>Abies grandis</i>) Maritime Forest Alliance	63.7	15.15	4.79



Figure 2. Open Douglas Fir - Pacific Madrone habitat associated with rare plant species habitat on Mitchell Hill.

National Park Service staff provided a list of eighty-three rare plant species that occur in Washington State. From this list, we narrowed twenty-seven species that are possibly present in San Juan Island County. We refined this rare species search list based on five criteria. The five criteria were the habitat types different rare species are associated with, the known distribution of each rare species based on professional experience and expertise, published literature, herbarium records, and conversations with other regional botanists. We gave each species a likelihood of presence in the survey area (confirmed presence, possible, unlikely, very unlikely, extremely unlikely; Table 3). For each species, we provide the evidence and justification for each ranking (Table 4). We compiled the distribution of known occurrences based on records for each species found in the Consortium of Pacific Northwest Herbaria, and a species occurrence dataset compiled by A. Martin (Martin 2022). Based on these known occurrences and the habitat notes found within herbarium records, field notes, and information found in Camp, Gamon, and Arnett (2011) the 26 species were ranked by likelihood of presence at Mitchell Hill.

Table 3. Description of likelihood categories.

Category	Description
Confirmed Presence	Seen and identified based on technical characteristics based on Flora of Pacific Northwest 2 nd Edition
Possible	Not seen during surveys, but appropriate habitat is present and further survey efforts could plausibly detect species
Unlikely	Not seen during surveys, no appropriate seen on survey, but microhabitat could exist and population of species found in nearby localities
Very Unlikely	Not seen during surveys, no appropriate habitat seen on survey, appropriate microhabitats unlikely to be found, and no nearby populations
Extremely Unlikely	Not seen during surveys, no appropriate habitat on site, nor likely microhabitats. Species are habitat specialists in habitats extremely unlikely to be found at Mitchell Hill (fresh water, rocky shoreline, higher elevation), or records in San Juan county are questionable. No close by populations.

Table 4. Likelihood of occurrence for targeted rare species.

Common Name	Species	Likelihood of presence	Evidence/Justification
Indian valley brodiaea	<i>Brodiaea rosea</i> var. <i>rosea</i>	Confirmed presence	Two plants were found in full flower, pictures taken of both. Staminoidea is inrolled, bottle-shaped and violet-hued. Larger populations are found just adjacent to Mitchell Hill in the Roche Harbor Highlands and on San Juan Land Trust property. Many brodiaea vegetation stems were found in the spring, and some populations do not often, if ever, flower in the islands.
True babystars	<i>Leptosiphon minimus</i>	Confirmed presence	This species is extremely cryptic and difficult to distinguish from <i>L. bicolor</i> of which <i>L. minimus</i> used to be considered an infraspecies of. Floral traits of plants found at Mitchell Hill were on the lowest end of <i>L. bicolor</i> but on the higher end of <i>L. minimus</i> in Flora of PNW key. Plants keyed to <i>L. minimus</i> in Jepson manual (Baldwin et al. 2012). Goodwillie and Stiller (2001) suggests everything in San Juans is <i>L. minimus</i> . Using the number of hairs per calyx lobe (Per Goodwillie and Stiller (2001), and smallest corolla tube length measurements, specimens found at Mitchell hill key to <i>L. minimus</i> . We suggest treating everything at Mitchell hill as <i>L. minimus</i> .
Shortspur white plectritis	<i>Plectritis brachystemon</i>	Confirmed presence	Many hundreds of plants primarily found on trails and immediately adjacent to trails. Plants identified based on the small pale-pink to white flowers and short stigma and anthers. Known from several sites on San Juan Island (Mt. Grant, Roche Harbor Highlands, Friday Harbor Labs).
Large-flowered blue toadflax	<i>Nuttallanthus texanus</i>	Possible	Occurs in grassland and bald habitats. Not seen during surveys, but can be easily missed if not in full flower. Very difficult to distinguish from <i>N. canadensis</i> , need specimens in fruit/seed.
Puget groundsel	<i>Packera macounii</i>	Possible	Probable habitat occurs in open <i>P. menziesii</i> / <i>A. menziesii</i> open woodland, not seen during surveys. Often found on serpentine soils like <i>B. rosea</i> . Since we found <i>B. rosea</i> it is possible similar suitable habitat exists for <i>P. macounii</i> .
Sand pygmyweed	<i>Crassula connata</i>	Unlikely	Habitat possibly present in bluff habitats on Mitchell Hill. Known populations occur nearby along coastal bluffs and balds on Westside Road. No plants detected during surveys. Plants are extremely small (2–6cm) and easy to miss. Appropriate habitat not present at Westcott parcel.
Few-flowered Blue-eyed Mary	<i>Collinsia sparsiflora</i> var. <i>sparsiflora</i>	Very unlikely	No confirmed populations in San Juan County, one known population in Klickitat County. Potential habitat occurs on Mitchell hill. All <i>Collinsia</i> found on Mitchell Hill keyed to <i>C. parviflora</i>

Table 4 (continued). Likelihood of occurrence for targeted rare species.

Common Name	Species	Likelihood of presence	Evidence/Justification
Nuttall's quillwort	<i>Isoetes nuttallii</i>	Very unlikely	No appropriate habitat found: occurs in wet muddy habitats. The closest habitat would be the human-made pond at the Westcott parcel. Area was surveyed and no plants were found. However, the species is very inconspicuous and can be very difficult to detect.
Bigpod lupine	<i>Lupinus pachylobus</i>	Very unlikely	California disjunct only known from Sentinel Island on a rocky bald. Bald habitat occurs at Mitchell hill, no plants found during surveys.
Rosy owl-clover	<i>Orthocarpus bracteosus</i>	Very unlikely	No appropriate habitat: in San Juan islands historical locations never relocated, suitable habitat is associated with meadow/wetland ecotones not present at either parcel.
Swamp sandwort	<i>Arenaria paludicola</i>	Extremely unlikely	No appropriate habitat; outside of known range; no historical confirmed populations in San Juans; considered likely to be extirpated in Washington. At Westcott parcel there is a pond, but is human-made, and extremely unlikely to be suitable habitat. Species wasn't detected during survey of pond habitat.
Dense sedge	<i>Carex densa</i>	Extremely unlikely	No appropriate habitat: habitat includes wet meadows, prairie and intertidal marshland which doesn't occur on either Westcott or Mitchell Hill parcels
Few-flowered sedge	<i>Carex pauciflora</i>	Extremely unlikely	No appropriate habitat: habitat includes wet acidic soils; primarily sphagnum bogs and peat.
Golden paintbrush	<i>Castilleja levisecta</i>	Extremely unlikely	No appropriate habitat: habitat includes eroding coastal bluffs, and deeper soil prairie—neither found at Westcott or Mitchell Hill parcels.
Victoria owl-clover	<i>Castilleja victoriae</i>	Extremely unlikely	No appropriate habitat: only one known population in Washington in a coastal vernal pool habitat. Habitat type not present at Westcott or Mitchell hill.
Subalpine aster	<i>Eurybia merita</i>	Extremely unlikely	No appropriate habitat: typically occurs in rocky habitats in high elevations. One known occurrence on Mt. Constitution, which is also home to several other alpine disjunct species. Extremely unlikely that Mitchell hill is tall enough to mimic microhabitat conditions on Mt. Constitution given its mostly westerly aspect.
Oregon goldenweed	<i>Heterotheca oregona</i>	Extremely unlikely	No appropriate habitat: occurs on sand and gravel bars in riverine habitats that don't occur in islands.

Table 4 (continued). Likelihood of occurrence for targeted rare species.

Common Name	Species	Likelihood of presence	Evidence/Justification
Sharpfruit pepperweed	<i>Lepidium oxycarpum</i>	Extremely unlikely	No appropriate habitat: only populations known in San Juans occur in rock crevices near the salt-spray line in costal rocky shoreline habitat which does not occur at Mitchell Hill or Westcott parcels.
Loesel's twayblade	<i>Liparis loeselii</i>	Extremely unlikely	No appropriate habitat: Known locations in Washington occur in bog habitats that don't occur at Mitchell hill or Westcott parcels.
Water lobelia	<i>Lobelia dortmanna</i>	Extremely unlikely	No appropriate habitat: occurs in shallow water, human-made pond at Wescott parcel unlikely to be appropriate habitat. No plants detected during surveys.
Coast silverpuffs	<i>Microseris bigelovii</i>	Extremely unlikely	No appropriate habitat: species not seen since 1983. Populations in San Juans only known from shoreline dune habitat not present at Mitchell hill or Westcott parcel.
Adder's-tongue	<i>Ophioglossum pusillum</i>	Extremely unlikely	No appropriate habitat: in San Juan islands only known from bog habitat on Orcas. Bog habitat not present at Mitchell Hill or Wescott Parcel.
Slender crazyweed	<i>Oxytropis campestris</i> var. <i>gracilis</i>	Extremely unlikely	No appropriate habitat: San Juan populations occur in shoreline grassland habitats not found at either site.
Blunt-leaved pondweed	<i>Potamogeton</i> <i>obtusifolius</i>	Extremely unlikely	No appropriate habitat: habitat associated with lakes and medium sized streams.
California buttercup	<i>Ranunculus californicus</i>	Extremely unlikely	No appropriate habitat: San Juan populations occur in coastal bluff and grassland habitats not found at either site.
Bear's-foot snakeroot	<i>Sanicula arctopoides</i>	Extremely unlikely	No appropriate habitat: known from open shoreline habitats
Columbia white-topped aster	<i>Sericocarpus rigidus</i>	Extremely unlikely	No appropriate habitat: only known from glacial outwash prairie habitats.
Hall's aster	<i>Symphyotrichum hallii</i>	Extremely unlikely	No appropriate habitat: only known from glacial outwash prairie habitats.

Summary of Findings

Mitchell Hill

Out of the targeted list of twenty-seven species, we found three rare plant species (Figure 3). These three species are true baby stars (*Leptosiphon minimus*), Indian valley brodiaea (*Brodiaea rosea*), and shortspur white plectritis (*Plectritis brachystemon*). These species were associated with open bald habitats primarily on Haro-Hidden Ridge – Rock outcrop soils. *Leptosiphon minimus* was widely scattered across the bald habitats on the eastern upper slopes of Mitchell Hill. During our surveys in 2021 and 2022 we found at least several thousand plants widely scattered across the Mitchell Hill parcel. Because *L. minimus* is a cryptic species that is difficult to distinguish from *Leptosiphon bicolor*, the best resource on the distribution and identification of the species is Goodwillie & Stiller (2001). In 2022, we noticed many plants aborted their flowering stems prior to setting fruit. A species list of vascular plants for the parcel can be found in Appendix B.

Finding *Brodiaea rosea* is a particularly noteworthy detection because it has been considered historical in Washington State and generally considered to be associated with serpentine soils in California, where it is considered endangered (Preston 2013). One of the authors (A. Martin) found several populations on small serpentine islands in both San Juan and Skagit Counties, as well as extensive populations on Orcas and nearby areas on San Juan. However, no serpentine soils are found in the area, and finding the species here highlights how little is known of the habitat and distribution of *B. rosea* in Washington State. We only found three confirmed plants across the whole site and the southernmost location is right along the trail and included two individuals. However, we found many hundreds to thousands of vegetative *Brodiaea* stems in Spring 2022 across most of the open forest and bald habitats, and the population is likely significantly larger. *Brodiaea* can reproduce by bulb splitting, and some populations may not flower every year, or ever. This poses a challenge to determining the actual extent of *B. rosea* because *B. coronaria*, the more common species, is also present at the site.

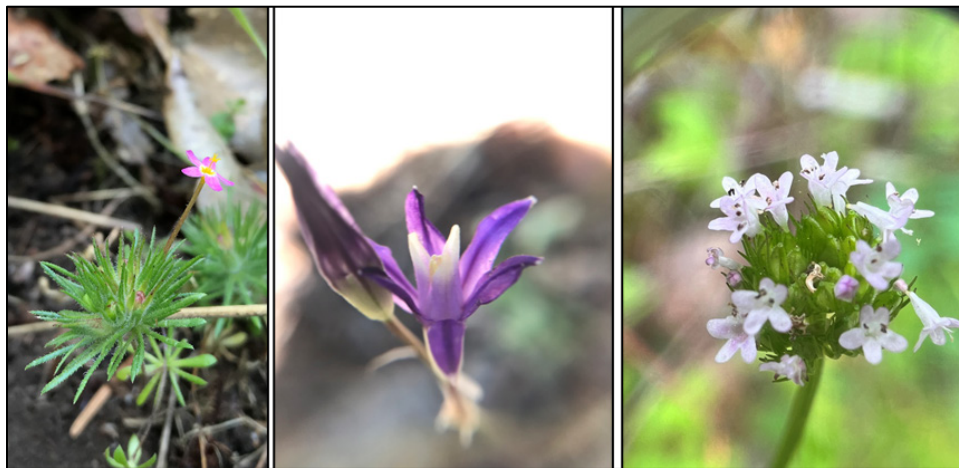


Figure 3. *Leptosiphon minimus* (left), *Brodiaea rosea* (center), *Plectritis brachystemon* (right).

The populations of *Plectritis brachystemon* are a new occurrence for the San Juans and update the range of the species in the state. The species is generally associated with open forest and bald habitats in western Washington (Camp et al. 2011). On Mitchell Hill, the species is primarily found along and within ~5m of the trails and appear to be associated with bare patches of earth along the trail and adjoining rock outcrops. We found between 500 to 700 plants along a core area of trail in the eastern half of the Mitchell Hill Parcel near Mitchell Hill summit. Thus, walkers and hikers that use the trail are likely a minimal impact on the species. However, we found several mountain bike trails in the habitat that likely pose a greater danger to populations through ripping up vegetation and removing soil from rocky outcrops.

Finally, we found extensive populations of vegetative *Camassia* within the rare and sensitive plant areas associated with the open Douglas fir and bald habitats. While not considered a rare species, the distribution of *Camassia* was of interest to park managers. Last summer, and this summer, we refound a few patches and confirmed that at least *Camassia quamash* (~ 25 flowering heads) is present on Mitchell Hill. Several of the *Camassia* populations were found right along the trail and should be considered sensitive due to the proximity to high-traffic areas, especially the trails heavily used by mountain bikers. We mapped two balds with *Camassia* and other sensitive bald species that comprise either the *Plectritis congesta* bald association (PLCO), or the *Camassia – Triteleia* association (Chappell 2004).

One challenge to determining the extent of *Camassia* and *Brodiaea* is there appeared to be significant browse by deer, given the lack of fruiting and flowering stems in prior visits in June and July. Given the well-established negative effects deer overabundance has on the meadow communities in the islands (Martin et al. 2011, Martin 2022), deer are a likely important stressor on rare and sensitive native plants on Mitchell hill. Assessing management options for deer will be imperative managing these rare plant populations.

In sum, all of the found sensitive and rare species are primarily associated with open Douglas fir and oak woodlands and open balds and meadows. Based on field experience in the islands (A. Martin), the open Douglas fir woodland found in the core area of Mitchell Hill is one of the largest and best examples of this forest type in the islands and is likely why several rare plants are found here in such sizable numbers. However, the risks to open Douglas fir woodland are many in the islands, and primarily include the sometimes-rapid infilling of the meadows with tree recruitment and the associated loss of light to the understory (Peterson and Hammer 2001). The long-term conversion of woodland to forest will likely represent the greatest long-term management challenge on Mitchell Hill, especially given the rapid colonization of some areas with small diameter Douglas fir. We mapped the extent of these high-quality open woodland habitats and balds in the field and labeled them either as “rare plant areas” or “sensitive areas”. Rare plant areas had extensive Douglas fir woodland habitat and at least one rare species of interest broadly distributed across the area. Sensitive areas had open Douglas fir woodland or bald habitat, no rare species of interest, but the vegetation was comprised of high-quality native bald vegetation or species with limited distributions in the San Juan Islands.

Westcott Parcel

We did not observe any rare vascular plant species of conservation concern on the Westcott Parcel, and most the property has extensive evidence of prior human use and habitat alteration. Although there is a high-quality tidal salt marsh (Figure 4) primarily composed of the pickleweed (*Salicornia*) and salt grass (*Distichlis spicata*). The forest communities appear to be highly used by walkers and hikers, with several established trails within the forested area. There is a small human-made wetland in the southeastern portion of the parcel, and a large established population of thistle that may be necessary to control (Appendix A, Map A2; Figure 5). A species list of vascular plants for the parcel can be found in Appendix C.



Figure 4. Salt marsh vegetation on the Westcott Parcel.

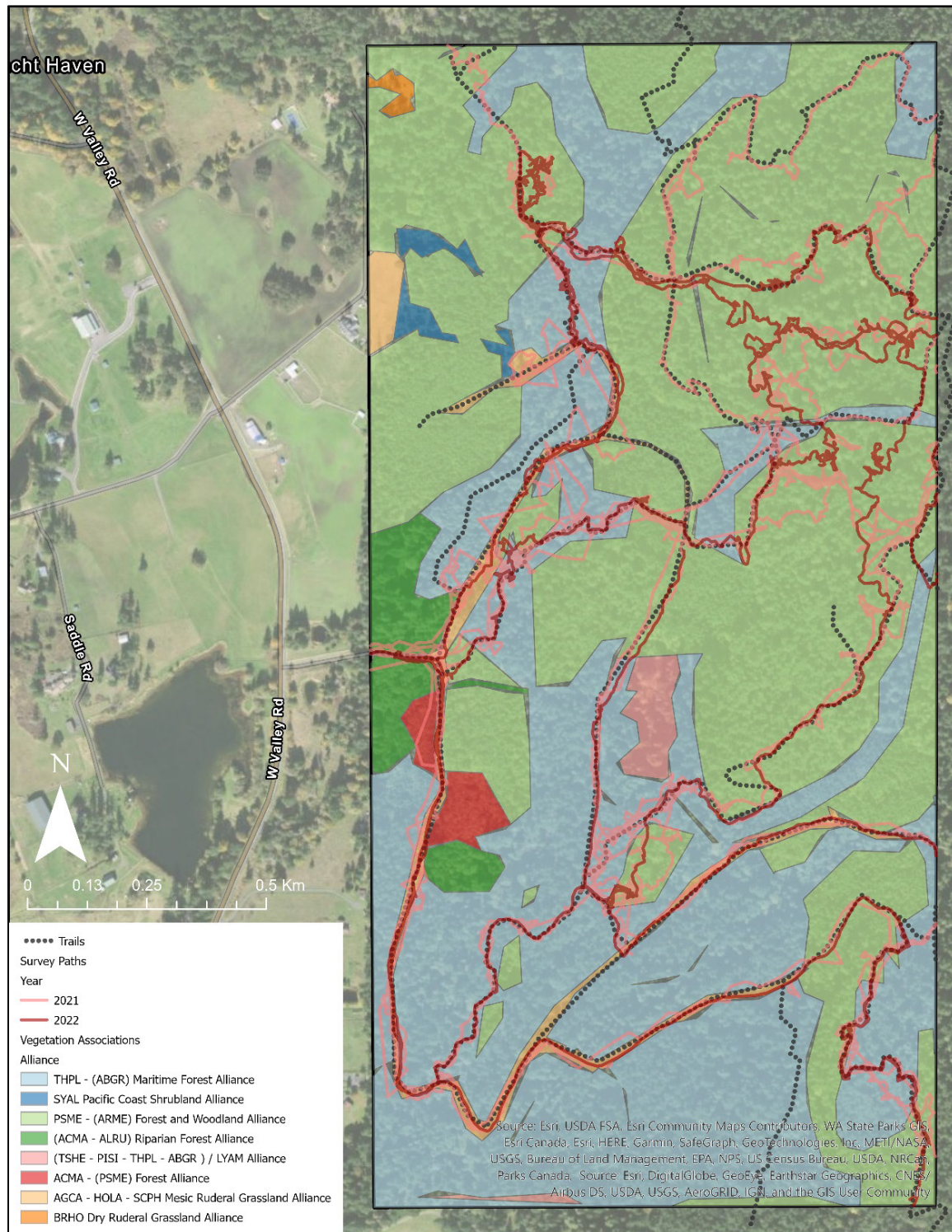


Figure 5. Extensive invasion of an old meadow by Canada thistle (*Cirsium arvense*).

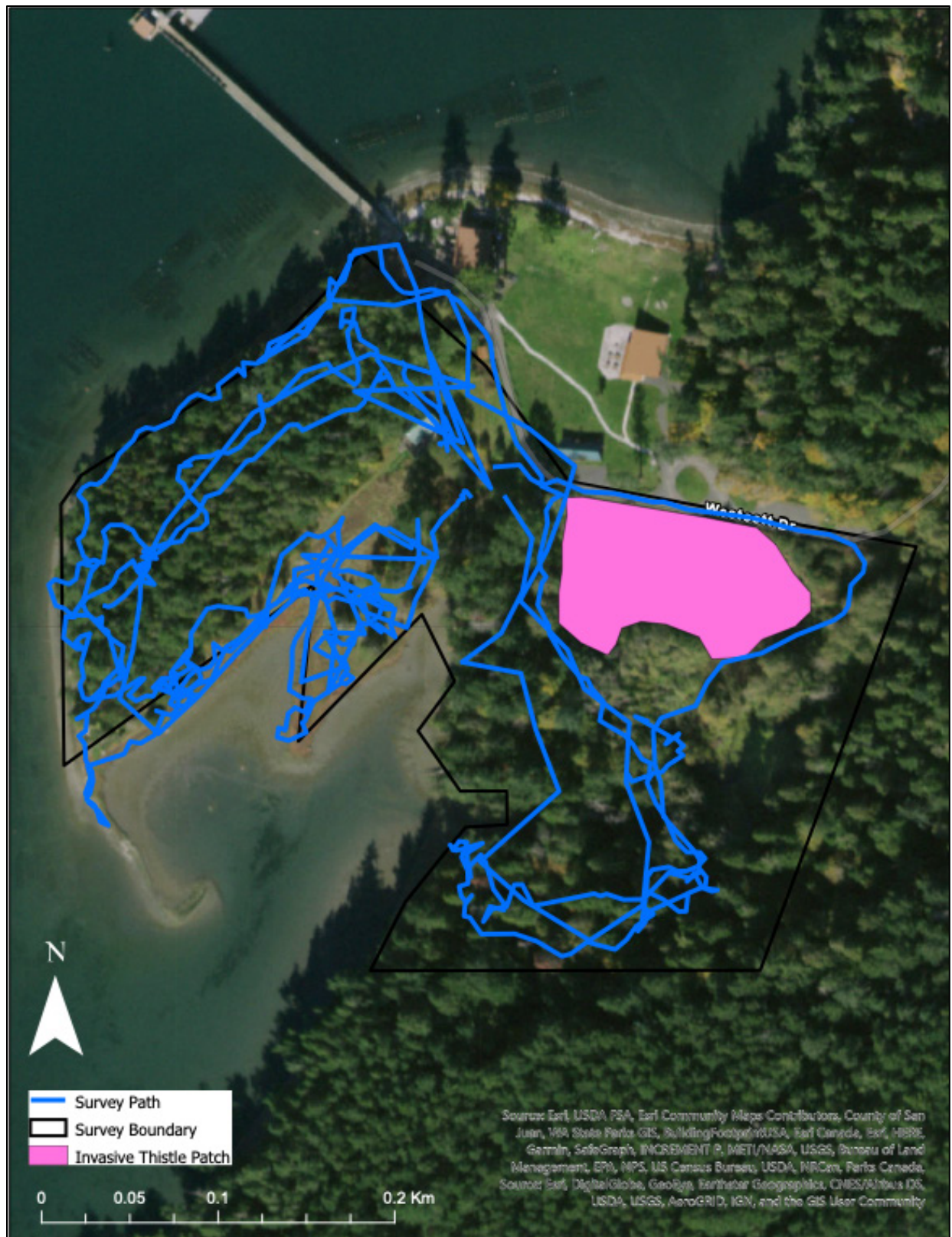
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Appendix A: Maps of Survey Efforts



Map A1. Map of Mitchell Hill parcel showing vegetation types, and survey tracks walked in 2021 and 2022.



Map A2. Aerial photo of Westcott Bay parcel with tracks.

Appendix B: Mitchell Hill Plant List

Table B1. Species observed in Mitchell Hill parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Abies grandis</i>	Pinaceae	<i>Abies grandis</i>	(Douglas ex D. Don) Lindl.
Native	<i>Acer macrophyllum</i>	Sapindaceae	<i>Acer macrophyllum</i>	Pursh
Native	<i>Achillea millefolium</i>	Asteraceae	<i>Achillea millefolium</i>	L.
Native	<i>Acmispon parviflorus</i>	Fabaceae	<i>Acmispon parviflorus</i>	(Benth.) D.D. Sokoloff
Native	<i>Adenocaulon bicolor</i>	Asteraceae	<i>Adenocaulon bicolor</i>	Hook.
Exotic	<i>Agrostis capillaris</i>	Poaceae	<i>Agrostis capillaris</i>	L.
Exotic	<i>Agrostis stolonifera</i>	Poaceae	<i>Agrostis stolonifera</i>	L.
Exotic	<i>Aira caryophyllea</i>	Poaceae	<i>Aira caryophyllea</i>	L.
Exotic	<i>Aira praecox</i>	Poaceae	<i>Aira praecox</i>	L.
Native	<i>Allium acuminatum</i>	Amaryllidaceae	<i>Allium acuminatum</i>	Hook.
Native	<i>Anaphalis margaritacea</i>	Asteraceae	<i>Anaphalis margaritacea</i>	(L.) Benth. & Hook. f.
Native	<i>Anisocarpus madioides</i>	Asteraceae	<i>Anisocarpus madioides</i>	Nutt.
Exotic	<i>Anthoxanthum odoratum</i>	Poaceae	<i>Anthoxanthum odoratum</i>	L.
Exotic	<i>Aphanes australis</i>	Rosaceae	<i>Aphanes australis</i>	Rydb.
Native	<i>Arbutus menziesii</i>	Ericaceae	<i>Arbutus menziesii</i>	Pursh
Exotic	<i>Arrhenatherum elatius</i>	Poaceae	<i>Arrhenatherum elatius</i>	(L.) P. Beauv. ex J. Presl & C. Presl

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Table B1 (continued). Species observed in Mitchell Hill parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Exotic	<i>Bellis perennis</i>	Asteraceae	<i>Bellis perennis</i>	L.
Native	<i>Berberis nervosa</i>	Berberidaceae	<i>Mahonia nervosa</i>	(Pursh) Nutt.
Native	<i>Brodiaea coronaria</i>	Asparagaceae	<i>Brodiaea coronaria</i>	(Salisb.) Engl.
Native	<i>Brodiaea rosea</i>	Asparagaceae	<i>Brodiaea rosea</i>	(Greene) Baker
Exotic	<i>Bromus hordeaceus</i>	Poaceae	<i>Bromus hordeaceus</i>	L.
Native	<i>Bromus sitchensis</i> var. <i>carinatus</i>	Poaceae	<i>Bromus sitchensis</i> var. <i>carinatus</i>	Trin. / (Hook. & Arn.) R.E. Brainerd & Otting
Native	<i>Bromus sitchensis</i> var. <i>sitchensis</i>	Poaceae	<i>Bromus sitchensis</i> var. <i>sitchensis</i>	Trin.
Exotic	<i>Bromus sterilis</i>	Poaceae	<i>Bromus sterilis</i>	L.
Native	<i>Bromus vulgaris</i>	Poaceae	<i>Bromus vulgaris</i>	(Hook.) Shear
Native	<i>Calypso bulbosa</i>	Orchidaceae	<i>Calypso bulbosa</i>	(L.) Oakes
Native	<i>Camassia quamash</i>	Asparagaceae	<i>Camassia quamash</i>	(Pursh) Greene
Native	<i>Campanula scouleri</i>	Campanulaceae	<i>Campanula scouleri</i>	Hook. ex A. DC.
Exotic	<i>Cardamine hirsuta</i>	Brassicaceae	<i>Cardamine hirsuta</i>	L.
Native	<i>Carex deweyana</i>	Cyperaceae	<i>Carex deweyana</i>	Schwein.
Native	<i>Carex inops</i>	Cyperaceae	<i>Carex inops</i>	L.H. Bailey
Native	<i>Cerastium arvense</i>	Caryophyllaceae	<i>Cerastium arvense</i>	L.
Exotic	<i>Cerastium fontanum</i>	Caryophyllaceae	<i>Cerastium fontanum</i>	Baumg.
Exotic	<i>Cerastium glomeratum</i>	Caryophyllaceae	<i>Cerastium glomeratum</i>	Thuill.

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Table B1 (continued). Species observed in Mitchell Hill parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Exotic	<i>Cerastium pumilum</i>	Caryophyllaceae	<i>Cerastium pumilum</i>	Curtis
Native	<i>Circaea alpina</i>	Onagraceae	<i>Circaea alpina</i>	L.
Exotic	<i>Cirsium arvense</i> ^c	Asteraceae	<i>Cirsium arvense</i>	(L.) Scop.
Native	<i>Cirsium brevistylum</i>	Asteraceae	<i>Cirsium brevistylum</i>	Cronquist
Exotic	<i>Cirsium vulgare</i> ^c	Asteraceae	<i>Cirsium vulgare</i>	(Savi) Ten.
Native	<i>Claytonia parviflora</i>	Montiaceae	<i>Claytonia parviflora</i>	Douglas ex Hook.
Native	<i>Claytonia parviflora</i>	Montiaceae	<i>Claytonia parviflora</i>	Douglas ex Hook.
Native	<i>Claytonia perfoliata</i>	Montiaceae	<i>Claytonia perfoliata</i>	Donn ex Willd.
Native	<i>Claytonia rubra</i>	Montiaceae	<i>Claytonia rubra</i>	(Howell) Tidestr.
Exotic	<i>Clematis vitalba</i>	Ranunculaceae	<i>Clematis vitalba</i>	L.
Native	<i>Clinopodium douglasii</i>	Lamiaceae	<i>Clinopodium douglasii</i>	(Benth.) Kuntze
Native	<i>Collinsia parviflora</i>	Plantaginaceae	<i>Collinsia parviflora</i>	Lindl.
Native	<i>Collomia heterophylla</i>	Polemoniaceae	<i>Collomia heterophylla</i>	Douglas ex Hook.
Native	<i>Corallorhiza maculata</i>	Orchidaceae	<i>Corallorhiza maculata</i>	(Raf.) Raf.
Native	<i>Corallorhiza striata</i>	Orchidaceae	<i>Corallorhiza striata</i>	Lindl.
Exotic	<i>Crataegus monogyna</i>	Rosaceae	<i>Crataegus monogyna</i>	Jacq.
Exotic	<i>Cynosurus cristatus</i>	Poaceae	<i>Cynosurus cristatus</i>	L.
Exotic	<i>Cynosurus echinatus</i>	Poaceae	<i>Cynosurus echinatus</i>	L.

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Table B1 (continued). Species observed in Mitchell Hill parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Cystopteris fragilis</i>	Cystopteridaceae	<i>Cystopteris fragilis</i>	(L.) Bernh.
Exotic	<i>Dactylis glomerata</i>	Poaceae	<i>Dactylis glomerata</i>	L.
Native	<i>Danthonia californica</i>	Poaceae	<i>Danthonia californica</i>	Bol.
Exotic	<i>Dianthus armeria</i>	Caryophyllaceae	<i>Dianthus armeria</i>	L.
Native	<i>Dodecatheon pulchellum</i>	Primulaceae	<i>Dodecatheon pulchellum</i>	(Raf.) Merr.
Native	<i>Elymus glaucus</i> ssp. <i>glaucus</i>	Poaceae	<i>Elymus glaucus</i> ssp. <i>glaucus</i>	Buckley
Native	<i>Epilobium minutum</i>	Onagraceae	<i>Epilobium minutum</i>	Lindl.
Exotic	<i>Epipactis helleborine</i>	Orchidaceae	<i>Epipactis helleborine</i>	(L.) Crantz
Native	<i>Erythronium oregonum</i>	Liliaceae	<i>Erythronium oregonum</i>	Applegate
Native	<i>Festuca occidentalis</i>	Poaceae	<i>Festuca occidentalis</i>	Hook.
Native	<i>Festuca rubra</i>	Poaceae	<i>Festuca rubra</i>	L.
Native	<i>Fragaria vesca</i>	Rosaceae	<i>Fragaria vesca</i>	L.
Native	<i>Fritillaria affinis</i>	Liliaceae	<i>Fritillaria affinis</i>	(Schult. & Schult. f.) Sealy
Native	<i>Galium aparine</i>	Rubiaceae	<i>Galium aparine</i>	L.
Native	<i>Galium palustre</i>	Rubiaceae	<i>Galium palustre</i>	L.
Native	<i>Galium triflorum</i>	Rubiaceae	<i>Galium triflorum</i>	Michx.
Native	<i>Gamochaeta ustulata</i>	Asteraceae	<i>Gamochaeta ustulata</i>	(Nutt.) Holub
Exotic	<i>Geranium dissectum</i>	Geraniaceae	<i>Geranium dissectum</i>	L.

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Table B1 (continued). Species observed in Mitchell Hill parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Exotic	<i>Geranium molle</i>	Geraniaceae	<i>Geranium molle</i>	L.
Exotic	<i>Geranium robertianum</i> ^b	Geraniaceae	<i>Geranium robertianum</i>	L.
Native	<i>Geum macrophyllum</i>	Rosaceae	<i>Geum macrophyllum</i>	Willd.
Exotic	<i>Gnaphalium uliginosum</i>	Asteraceae	<i>Gnaphalium uliginosum</i>	L.
Native	<i>Goodyera oblongifolia</i>	Orchidaceae	<i>Goodyera oblongifolia</i>	Raf.
Native	<i>Heuchera micrantha</i> var. <i>micrantha</i>	Saxifragaceae	<i>Heuchera micrantha</i> var. <i>micrantha</i>	Douglas ex Lindl.
Native	<i>Hieracium albiflorum</i>	Asteraceae	<i>Hieracium albiflorum</i>	Hook.
Exotic	<i>Holcus lanatus</i>	Poaceae	<i>Holcus lanatus</i>	L.
Native	<i>Holodiscus discolor</i>	Rosaceae	<i>Holodiscus discolor</i>	(Pursh) Maxim.
Exotic	<i>Hypochaeris glabra</i>	Asteraceae	<i>Hypochaeris glabra</i>	L.
Exotic	<i>Hypochaeris radicata</i> ^c	Asteraceae	<i>Hypochaeris radicata</i>	L.
Exotic	<i>Ilex aquifolium</i> ^a	Aquifoliaceae	<i>Ilex aquifolium</i>	L.
Exotic	<i>Jacobaea vulgaris</i>	Asteraceae	<i>Jacobaea vulgaris</i>	Gaertn.
Native	<i>Juncus effusus</i>	Juncaceae	<i>Juncus effusus</i>	L.
Native	<i>Juniperus scopulorum</i>	Cupressaceae	<i>Juniperus scopulorum</i>	Sarg,
Exotic	<i>Lapsana communis</i>	Asteraceae	<i>Lapsana communis</i>	L.
Native	<i>Lathyrus nevadensis</i>	Fabaceae	<i>Lathyrus nevadensis</i>	S. Watson
Native	<i>Lepidium virginicum</i>	Brassicaceae	<i>Lepidium virginicum</i>	L.

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Table B1 (continued). Species observed in Mitchell Hill parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Leptosiphon minimus</i>	Polemoniaceae	<i>Leptosiphon minimus</i>	(H. Mason) Battaglia
Exotic	<i>Leucanthemum vulgare</i>	Asteraceae	<i>Leucanthemum vulgare</i>	Lam.
Native	<i>Linnaea borealis</i>	Linnaeaceae	<i>Linnaea borealis</i>	L.
Native	<i>Lonicera ciliosa</i>	Caprifoliaceae	<i>Lonicera ciliosa</i>	(Pursh) Poir. ex DC.
Native	<i>Lonicera hispidula</i>	Caprifoliaceae	<i>Lonicera hispidula</i>	(Lindl.) Douglas ex Torr. & A. Gray
Native	<i>Luzula subsessilis</i>	Juncaceae	<i>Luzula subsessilis</i>	(S. Watson) Buchenau
Native	<i>Lysimachia latifolia</i>	Primulaceae	<i>Lysimachia latifolia</i>	(Hook.) Cholewa
Native	<i>Madia exigua</i>	Asteraceae	<i>Madia exigua</i>	(Sm.) A. Gray
Native	<i>Marah oregana</i>	Cucurbitaceae	<i>Marah oregana</i>	(Torr. & A. Gray) Howell
Native	<i>Melica subulata</i>	Poaceae	<i>Melica subulata</i>	(Griseb.) Scribn.
Native	<i>Micranthes integrifolia</i>	Saxifragaceae	<i>Micranthes integrifolia</i>	(Hook.) Small
Native	<i>Moehringia macrophylla</i>	Caryophyllaceae	<i>Moehringia macrophylla</i>	(Hook.) Fenzl
Native	<i>Monotropa uniflora</i>	Ericaceae	<i>Monotropa uniflora</i>	L.
Native	<i>Montia parvifolia</i>	Montiaceae	<i>Montia parvifolia</i>	(Moc. ex DC.) Greene
Exotic	<i>Myosotis discolor</i>	Boraginaceae	<i>Myosotis discolor</i>	Pers.
Native	<i>Nemophila parviflora</i>	Hydrophyllaceae	<i>Nemophila parviflora</i>	Douglas ex Benth.
Native	<i>Osmorhiza berteroi</i>	Apiaceae	<i>Osmorhiza berteroi</i>	DC.
Native	<i>Pentagramma triangularis</i>	Pteridaceae	<i>Pentagramma triangularis</i>	(Kaulf.) Yatsk., Windham & E. Wollenw.

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Table B1 (continued). Species observed in Mitchell Hill parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Philadelphus lewisii</i>	Hydrangeaceae	<i>Philadelphus lewisii</i>	Pursh
Exotic	<i>Plantago major</i>	Plantaginaceae	<i>Plantago major</i>	L.
Native	<i>Platanthera elongata</i>	Orchidaceae	<i>Platanthera elongata</i>	(Rydb.) R.M. Bateman
Native	<i>Platanthera transversa</i>	Orchidaceae	<i>Platanthera transversa</i>	(Suksd.) R.M. Bateman
Native	<i>Plectritis brachystemon</i>	Valerianaceae	<i>Plectritis brachystemon</i>	Fisch. & C. A. Mey.
Native	<i>Plectritis congesta</i>	Valerianaceae	<i>Plectritis congesta</i>	(Lindl.) DC.
Exotic	<i>Poa annua</i>	Poaceae	<i>Poa annua</i>	L.
Exotic	<i>Poa compressa</i>	Poaceae	<i>Poa compressa</i>	L.
Exotic	<i>Poa pratensis</i>	Poaceae	<i>Poa pratensis</i>	L.
Native	<i>Polypodium glycyrrhiza</i>	Polypodiaceae	<i>Polypodium glycyrrhiza</i>	D.C. Eaton
Native	<i>Polystichum munitum</i>	Dryopteridaceae	<i>Polystichum munitum</i>	(Kaulf.) C. Presl
Native	<i>Prunella vulgaris</i> var. <i>lanceolata</i>	Lamiaceae	<i>Prunella vulgaris</i> var. <i>lanceolata</i>	L. / (W.P.C. Barton) Fernald
Native	<i>Prunus emarginata</i>	Rosaceae	<i>Prunus emarginata</i>	(Douglas) Eaton
Native	<i>Pseudotsuga menziesii</i>	Pinaceae	<i>Pseudotsuga menziesii</i>	(Mirb.) Franco
Native	<i>Pteridium aquilinum</i>	Dennstaedtiaceae	<i>Pteridium aquilinum</i>	(L.) Kuhn
Native	<i>Quercus garryana</i>	Fagaceae	<i>Quercus garryana</i>	Douglas ex Hook.
Native	<i>Ranunculus occidentalis</i>	Ranunculaceae	<i>Ranunculus occidentalis</i>	Nutt.
Native	<i>Ranunculus uncinatus</i>	Ranunculaceae	<i>Ranunculus uncinatus</i>	D. Don

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Table B1 (continued). Species observed in Mitchell Hill parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Rosa gymnocarpa</i>	Rosaceae	<i>Rosa gymnocarpa</i>	Nutt.
Exotic	<i>Rubus armeniacus</i> ^c	Rosaceae	<i>Rubus armeniacus</i>	Focke
Exotic	<i>Rubus laciniatus</i> ^c	Rosaceae	<i>Rubus laciniatus</i>	Willd.
Native	<i>Rubus ursinus</i>	Rosaceae	<i>Rubus ursinus</i>	Cham. & Schldl.
Exotic	<i>Rumex acetosella</i>	Polygonaceae	<i>Rumex acetosella</i>	L.
Native	<i>Sambucus racemosa</i>	Adoxaceae	<i>Sambucus racemosa</i>	L.
Native	<i>Sanicula crassicaulis</i>	Apiaceae	<i>Sanicula crassicaulis</i>	Poepp. ex DC.
Native	<i>Sedum spathulifolium</i>	Crassulaceae	<i>Sedum spathulifolium</i>	Hook.
Native	<i>Selaginella wallacei</i>	Selaginellaceae	<i>Selaginella wallacei</i>	Hieron.
Exotic	<i>Sherardia arvensis</i>	Rubiaceae	<i>Sherardia arvensis</i>	L.
Exotic	<i>Soliva sessilis</i> ^c	Asteraceae	<i>Soliva sessilis</i>	Ruiz & Pav.
Native	<i>Spiraea douglasii</i>	Rosaceae	<i>Spiraea douglasii</i>	Hook.
Exotic	<i>Stellaria media</i>	Caryophyllaceae	<i>Stellaria media</i>	(L.) Vill.
Native	<i>Symphoricarpos albus</i>	Caprifoliaceae	<i>Symphoricarpos albus</i>	(L.) S.F. Blake
Exotic	<i>Taraxacum officinale</i>	Asteraceae	<i>Taraxacum officinale</i>	F.H. Wigg.
Native	<i>Tellima grandiflora</i>	Saxifragaceae	<i>Tellima grandiflora</i>	(Pursh) Douglas ex Lindl.
Native	<i>Thuja plicata</i>	Cupressaceae	<i>Thuja plicata</i>	Donn ex D. Don
Native	<i>Tiarella trifoliata</i>	Saxifragaceae	<i>Tiarella trifoliata</i>	L.

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Table B1 (continued). Species observed in Mitchell Hill parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Exotic	<i>Torilis arvensis</i>	Apiaceae	<i>Torilis arvensis</i>	(Huds.) Link
Exotic	<i>Trifolium dubium</i>	Fabaceae	<i>Trifolium dubium</i>	Sibth.
Exotic	<i>Trifolium hybridum</i>	Fabaceae	<i>Trifolium hybridum</i>	L.
Native	<i>Trifolium microcephalum</i>	Fabaceae	<i>Trifolium microcephalum</i>	Pursh
Native	<i>Trifolium microdon</i>	Fabaceae	<i>Trifolium microdon</i>	Hook. & Arn.
Native	<i>Trifolium oliganthum</i>	Fabaceae	<i>Trifolium oliganthum</i>	Steud.
Native	<i>Trifolium willdenovii</i>	Fabaceae	<i>Trifolium willdenovii</i>	Spreng.
Exotic	<i>Trifolium repens</i>	Fabaceae	<i>Trifolium repens</i>	L.
Native	<i>Trisetum cernuum</i>	Poaceae	<i>Trisetum cernuum</i>	Trin.
Native	<i>Triteleia hyacinthina</i>	Asparagaceae	<i>Triteleia hyacinthina</i>	(Lindl.) Greene
Exotic	<i>Verbascum thapsus</i>	Scrophulariaceae	<i>Verbascum thapsus</i>	L.
Exotic	<i>Veronica arvensis</i>	Plantaginaceae	<i>Veronica arvensis</i>	L.
Exotic	<i>Veronica officinalis</i>	Plantaginaceae	<i>Veronica officinalis</i>	L.
Native	<i>Vicia americana</i>	Fabaceae	<i>Vicia americana</i>	Muhl. ex Willd
Exotic	<i>Vicia hirsuta</i>	Fabaceae	<i>Vicia hirsuta</i>	(L.) Gray
Exotic	<i>Vicia sativa</i> var. <i>angustifolia</i>	Fabaceae	<i>Vicia sativa</i> var. <i>angustifolia</i>	L. / (L.) Wahlenb.
Exotic	<i>Vulpia bromoides</i>	Poaceae	<i>Vulpia bromoides</i>	(L.) Gray
Native	<i>Vulpia microstachys</i>	Poaceae	<i>Vulpia microstachys</i>	(Nutt.) Munro

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Appendix C: Westcott Bay Plant List

Table C1. Species observed in the Westcott Bay parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Abies grandis</i>	Pinaceae	<i>Abies grandis</i>	(Douglas ex D. Don) Lindl.
Native	<i>Acer macrophyllum</i>	Sapindaceae	<i>Acer macrophyllum</i>	Pursh
Native	<i>Achillea millefolium</i>	Asteraceae	<i>Achillea millefolium</i>	L.
Native	<i>Acmispon parviflorus</i>	Fabaceae	<i>Acmispon parviflorus</i>	(Benth.) D.D. Sokoloff
Exotic	<i>Agrostis stolonifera</i>	Poaceae	<i>Agrostis stolonifera</i>	L.
Exotic	<i>Aira caryophyllea</i>	Poaceae	<i>Aira caryophyllea</i>	L.
Exotic	<i>Aira praecox</i>	Poaceae	<i>Aira praecox</i>	L.
Native	<i>Alnus rubra</i>	Betulaceae	<i>Alnus rubra</i>	Bong.
Native	<i>Amelanchier alnifolia</i>	Rosaceae	<i>Amelanchier alnifolia</i>	(Nutt.) Nutt. ex M. Roem.
Native	<i>Anisocarpus madioides</i>	Asteraceae	<i>Anisocarpus madioides</i>	Nutt.
Exotic	<i>Anthoxanthum odoratum</i>	Poaceae	<i>Anthoxanthum odoratum</i>	L.
Native	<i>Arbutus menziesii</i>	Ericaceae	<i>Arbutus menziesii</i>	Pursh
Exotic	<i>Atriplex prostrata</i>	Amaranthaceae	<i>Atriplex prostrata</i>	Boucher ex DC.
Native	<i>Barbarea orthoceras</i>	Brassicaceae	<i>Barbarea orthoceras</i>	Ledeb.
Exotic	<i>Bellis perennis</i>	Asteraceae	<i>Bellis perennis</i>	L.
Native	<i>Berberis aquifolium</i>	Berberidaceae	<i>Mahonia aquifolium</i>	(Pursh) Nutt.

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Table C1 (continued). Species observed in the Westcott Bay parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Berberis nervosa</i>	Berberidaceae	<i>Mahonia nervosa</i>	(Pursh) Nutt.
Native	<i>Bolboschoenus maritimus</i>	Cyperaceae	<i>Bolboschoenus maritimus</i>	(L.) Palla
Exotic	<i>Bromus diandrus</i>	Poaceae	<i>Bromus diandrus</i>	Roth
Exotic	<i>Bromus hordeaceus</i>	Poaceae	<i>Bromus hordeaceus</i>	L.
Native	<i>Bromus sitchensis</i> var. <i>carinatus</i>	Poaceae	<i>Bromus sitchensis</i> var. <i>carinatus</i>	Trin. / (Hook. & Arn.) R.E. Brainerd & Otting
Exotic	<i>Bromus sterilis</i>	Poaceae	<i>Bromus sterilis</i>	L.
Native	<i>Bromus vulgaris</i>	Poaceae	<i>Bromus vulgaris</i>	(Hook.) Shear
Native	<i>Campanula scouleri</i>	Campanulaceae	<i>Campanula scouleri</i>	Hook. ex A. DC.
Native	<i>Cardamine oligosperma</i>	Brassicaceae	<i>Cardamine oligosperma</i>	Nutt.
Native	<i>Carex deweyana</i>	Cyperaceae	<i>Carex deweyana</i>	Schwein.
Native	<i>Carex obnupta</i>	Cyperaceae	<i>Carex obnupta</i>	L.H. Bailey
Exotic	<i>Centaurium erythraea</i>	Gentianaceae	<i>Centaurium erythraea</i>	Rafn
Exotic	<i>Cerastium fontanum</i>	Caryophyllaceae	<i>Cerastium fontanum</i>	Baumg.
Exotic	<i>Cerastium glomeratum</i>	Caryophyllaceae	<i>Cerastium glomeratum</i>	Thuill.
Exotic	<i>Cerastium pumilum</i>	Caryophyllaceae	<i>Cerastium pumilum</i>	Curtis
Exotic	<i>Cichorium intybus</i>	Asteraceae	<i>Cichorium intybus</i>	L.
Native	<i>Circaea alpina</i>	Onagraceae	<i>Circaea alpina</i>	L.
Exotic	<i>Cirsium vulgare</i> ^c	Asteraceae	<i>Cirsium vulgare</i>	(Savi) Ten.

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^b Class B Noxious Weed

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Table C1 (continued). Species observed in the Westcott Bay parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Claytonia parviflora</i>	Montiaceae	<i>Claytonia parviflora</i>	Douglas ex Hook.
Native	<i>Clinopodium douglasii</i>	Lamiaceae	<i>Clinopodium douglasii</i>	(Benth.) Kuntze
Native	<i>Corallorhiza maculata</i>	Orchidaceae	<i>Corallorhiza maculata</i>	(Raf.) Raf.
Native	<i>Corallorhiza striata</i>	Orchidaceae	<i>Corallorhiza striata</i>	Lindl.
Exotic	<i>Crepis capillaris</i>	Asteraceae	<i>Crepis capillaris</i>	(L.) Wallr.
Native	<i>Cuscuta pacifica</i>	Convolvulaceae	<i>Cuscuta pacifica</i>	Costea & M.A.R. Wright
Exotic	<i>Cynosurus cristatus</i>	Poaceae	<i>Cynosurus cristatus</i>	L.
Exotic	<i>Cytisus scoparius</i> ^b	Fabaceae	<i>Cytisus scoparius</i>	(L.) Link
Exotic	<i>Dactylis glomerata</i>	Poaceae	<i>Dactylis glomerata</i>	L.
Native	<i>Distichlis spicata</i>	Poaceae	<i>Distichlis spicata</i>	(L.) Greene
Native	<i>Eleocharis palustris</i>	Cyperaceae	<i>Eleocharis palustris</i>	(L.) Roem. & Schult.
Native	<i>Elymus glaucus</i> ssp. <i>glaucus</i>	Poaceae	<i>Elymus glaucus</i> ssp. <i>glaucus</i>	Buckley
Exotic	<i>Elymus repens</i>	Poaceae	<i>Elymus repens</i>	(L.) Gould
Exotic	<i>Epipactis helleborine</i>	Orchidaceae	<i>Epipactis helleborine</i>	(L.) Crantz
Native	<i>Equisetum arvense</i>	Equisetaceae	<i>Equisetum arvense</i>	L.
Native	<i>Equisetum telmateia</i>	Equisetaceae	<i>Equisetum telmateia</i>	Ehrh.
Native	<i>Festuca occidentalis</i>	Poaceae	<i>Festuca occidentalis</i>	Hook.
Native	<i>Festuca rubra</i>	Poaceae	<i>Festuca rubra</i>	L.

^a Noxious Weed Monitor List

^b Class B Noxious Weed

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Table C1 (continued). Species observed in the Westcott Bay parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Fragaria vesca</i>	Rosaceae	<i>Fragaria vesca</i>	L.
Native	<i>Fragaria virginiana</i> ssp. <i>glauca</i>	Rosaceae	<i>Fragaria virginiana</i> ssp. <i>glauca</i>	Duchesne / (S. Watson) Staudt
Native	<i>Galium aparine</i>	Rubiaceae	<i>Galium aparine</i>	L.
Native	<i>Galium triflorum</i>	Rubiaceae	<i>Galium triflorum</i>	Michx.
Native	<i>Gaultheria shallon</i>	Ericaceae	<i>Gaultheria shallon</i>	Pursh
Native	<i>Geum macrophyllum</i>	Rosaceae	<i>Geum macrophyllum</i>	Willd.
Native	<i>Goodyera oblongifolia</i>	Orchidaceae	<i>Goodyera oblongifolia</i>	Raf.
Exotic	<i>Hedera hibernica</i> ^c	Araliaceae	<i>Hedera hibernica</i>	(G. Kirchn.) Bean
Native	<i>Heuchera micrantha</i> var. <i>micrantha</i>	Saxifragaceae	<i>Heuchera micrantha</i> var. <i>micrantha</i>	Douglas ex Lindl.
Native	<i>Hieracium albiflorum</i>	Asteraceae	<i>Hieracium albiflorum</i>	Hook.
Exotic	<i>Holcus lanatus</i>	Poaceae	<i>Holcus lanatus</i>	L.
Native	<i>Holodiscus discolor</i>	Rosaceae	<i>Holodiscus discolor</i>	(Pursh) Maxim.
Native	<i>Hordeum brachyantherum</i>	Poaceae	<i>Hordeum brachyantherum</i>	Nevski
Exotic	<i>Hordeum marinum</i>	Poaceae	<i>Hordeum marinum</i>	Huds.
Exotic	<i>Hordeum murinum</i>	Poaceae	<i>Hordeum murinum</i>	L.
Exotic	<i>Hypochaeris glabra</i>	Asteraceae	<i>Hypochaeris glabra</i>	L.
Exotic	<i>Hypochaeris radicata</i> ^c	Asteraceae	<i>Hypochaeris radicata</i>	L.
Exotic	<i>Ilex aquifolium</i> ^a	Aquifoliaceae	<i>Ilex aquifolium</i>	L.

^a Noxious Weed Monitor List

^b Class B Noxious Weed

^c Class C Noxious Weed

Table C1 (continued). Species observed in the Westcott Bay parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Jaumea carnosa</i>	Asteraceae	<i>Jaumea carnosa</i>	(Less.) A. Gray
Native	<i>Juncus bufonius</i>	Juncaceae	<i>Juncus bufonius</i>	L.
Native	<i>Juncus effusus</i>	Juncaceae	<i>Juncus effusus</i>	L.
Native	<i>Juniperus scopulorum</i>	Cupressaceae	<i>Juniperus scopulorum</i>	Sarg.
Native	<i>Lathyrus nevadensis</i>	Fabaceae	<i>Lathyrus nevadensis</i>	S. Watson
Native	<i>Lemna minor</i>	Araceae	<i>Lemna minor</i>	L.
Native	<i>Lepidium virginicum</i>	Brassicaceae	<i>Lepidium virginicum</i>	L.
Native	<i>Leymus mollis</i>	Poaceae	<i>Leymus mollis</i>	(Trin.) Pilg.
Native	<i>Linnaea borealis</i>	Linnaeaceae	<i>Linnaea borealis</i>	L.
Native	<i>Lonicera ciliosa</i>	Caprifoliaceae	<i>Lonicera ciliosa</i>	(Pursh) Poir. ex DC.
Native	<i>Luzula comosa</i> var. <i>laxa</i>	Juncaceae	<i>Luzula comosa</i> var. <i>laxa</i>	E. Mey. / Buchenau
Native	<i>Lysimachia latifolia</i>	Primulaceae	<i>Lysimachia latifolia</i>	(Hook.) Cholewa
Exotic	<i>Medicago sativa</i>	Fabaceae	<i>Medicago sativa</i>	L.
Native	<i>Melica subulata</i>	Poaceae	<i>Melica subulata</i>	(Griseb.) Scribn.
Native	<i>Nemophila parviflora</i>	Hydrophyllaceae	<i>Nemophila parviflora</i>	Douglas ex Benth.
Native	<i>Oenanthe sarmentosa</i>	Apiaceae	<i>Oenanthe sarmentosa</i>	C. Presl ex DC.
Native	<i>Osmorhiza berteroi</i>	Apiaceae	<i>Osmorhiza berteroi</i>	DC.
Native	<i>Pinus contorta</i> var. <i>contorta</i>	Pinaceae	<i>Pinus contorta</i> var. <i>contorta</i>	Douglas ex Loudon

^a Noxious Weed Monitor List

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^c Class C Noxious Weed

Table C1 (continued). Species observed in the Westcott Bay parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Exotic	<i>Plantago lanceolata</i>	Plantaginaceae	<i>Plantago lanceolata</i>	L.
Native	<i>Plantago maritima</i>	Plantaginaceae	<i>Plantago maritima</i>	L.
Native	<i>Platanthera elongata</i>	Orchidaceae	<i>Platanthera elongata</i>	(Rydb.) R.M. Bateman
Native	<i>Platanthera transversa</i>	Orchidaceae	<i>Platanthera transversa</i>	(Suksd.) R.M. Bateman
Exotic	<i>Poa pratensis</i>	Poaceae	<i>Poa pratensis</i>	L.
Native	<i>Polypodium glycyrrhiza</i>	Polypodiaceae	<i>Polypodium glycyrrhiza</i>	D.C. Eaton
Exotic	<i>Polypogon monspeliensis</i>	Poaceae	<i>Polypogon monspeliensis</i>	(L.) Desf.
Native	<i>Potentilla anserina</i>	Rosaceae	<i>Potentilla anserina</i>	L.
Native	<i>Prunella vulgaris</i> var. <i>lanceolata</i>	Lamiaceae	<i>Prunella vulgaris</i> var. <i>lanceolata</i>	L. / (W.P.C. Barton) Fernald
Native	<i>Pseudotsuga menziesii</i>	Pinaceae	<i>Pseudotsuga menziesii</i>	(Mirb.) Franco
Native	<i>Pteridium aquilinum</i>	Dennstaedtiaceae	<i>Pteridium aquilinum</i>	(L.) Kuhn
Exotic	<i>Pyrus communis</i>	Rosaceae	<i>Pyrus communis</i>	L.
Native	<i>Quercus garryana</i>	Fagaceae	<i>Quercus garryana</i>	Douglas ex Hook.
Native	<i>Ranunculus uncinatus</i>	Ranunculaceae	<i>Ranunculus uncinatus</i>	D. Don
Native	<i>Ribes lacustre</i>	Grossulariaceae	<i>Ribes lacustre</i>	(Pers.) Poir.
Native	<i>Ribes sanguineum</i>	Grossulariaceae	<i>Ribes sanguineum</i>	Pursh
Native	<i>Rosa gymnocarpa</i>	Rosaceae	<i>Rosa gymnocarpa</i>	Nutt.
Native	<i>Rosa nutkana</i>	Rosaceae	<i>Rosa nutkana</i>	C. Presl

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^b Class B Noxious Weed

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Table C1 (continued). Species observed in the Westcott Bay parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Native	<i>Rubus spectabilis</i>	Rosaceae	<i>Rubus spectabilis</i>	Pursh
Native	<i>Rubus ursinus</i>	Rosaceae	<i>Rubus ursinus</i>	Cham. & Schltdl.
Exotic	<i>Rumex acetosella</i>	Polygonaceae	<i>Rumex acetosella</i>	L.
Exotic	<i>Rumex crispus</i>	Polygonaceae	<i>Rumex crispus</i>	L.
Native	<i>Rumex occidentalis</i>	Polygonaceae	<i>Rumex occidentalis</i>	S. Watson
Exotic	<i>Sagina apetala</i>	Caryophyllaceae	<i>Sagina apetala</i>	Ard.
Native	<i>Sagina decumbens</i>	Caryophyllaceae	<i>Sagina decumbens</i>	(Elliott) Torr. & A. Gray
Native	<i>Salicornia pacifica</i>	Amaranthaceae	<i>Salicornia pacifica</i>	Standl.
Native	<i>Salix lasiandra</i>	Salicaceae	<i>Salix lasiandra</i>	Benth.
Native	<i>Salix scouleriana</i>	Salicaceae	<i>Salix scouleriana</i>	Barratt ex Hook.
Native	<i>Sanicula crassicaulis</i>	Apiaceae	<i>Sanicula crassicaulis</i>	Poepp. ex DC.
Exotic	<i>Schedonorus arundinaceus</i>	Poaceae	<i>Schedonorus arundinaceus</i>	(Schreb.) Dumort.
Native	<i>Shepherdia canadensis</i>	Elaeagnaceae	<i>Shepherdia canadensis</i>	(L.) Nutt.
Exotic	<i>Sonchus oleraceus</i>	Asteraceae	<i>Sonchus oleraceus</i>	L.
Exotic	<i>Spergularia rubra</i>	Caryophyllaceae	<i>Spergularia rubra</i>	(L.) J. Presl & C. Presl
Exotic	<i>Spergularia salina</i>	Caryophyllaceae	<i>Spergularia salina</i>	J. Presl & C. Presl
Native	<i>Symphoricarpos albus</i>	Caprifoliaceae	<i>Symphoricarpos albus</i>	(L.) S.F. Blake
Native	<i>Symphyotrichum subspicatum</i>	Asteraceae	<i>Symphyotrichum subspicatum</i>	(Nees) G.L. Nesom

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Table C1 (continued). Species observed in the Westcott Bay parcel.

Nativity	Flora of the Pacific Northwest 2nd Edition (Hitchcock et al. 2018)	Family	Accepted Scientific Name	Species Authors / Infraspecies Authors
Exotic	<i>Taraxacum officinale</i>	Asteraceae	<i>Taraxacum officinale</i>	F.H. Wigg.
Native	<i>Tellima grandiflora</i>	Saxifragaceae	<i>Tellima grandiflora</i>	(Pursh) Douglas ex Lindl.
Native	<i>Thuja plicata</i>	Cupressaceae	<i>Thuja plicata</i>	Donn ex D. Don
Native	<i>Tiarella trifoliata</i>	Saxifragaceae	<i>Tiarella trifoliata</i>	L.
Exotic	<i>Torilis arvensis</i>	Apiaceae	<i>Torilis arvensis</i>	(Huds.) Link
Exotic	<i>Trifolium dubium</i>	Fabaceae	<i>Trifolium dubium</i>	Sibth.
Exotic	<i>Trifolium pratense</i>	Fabaceae	<i>Trifolium pratense</i>	L.
Native	<i>Triglochin maritima</i>	Juncaginaceae	<i>Triglochin maritima</i>	L.
Native	<i>Urtica dioica</i>	Urticaceae	<i>Urtica dioica</i>	L.
Native	<i>Veronica americana</i>	Plantaginaceae	<i>Veronica americana</i>	Schwein. ex Benth.
Exotic	<i>Veronica arvensis</i>	Plantaginaceae	<i>Veronica arvensis</i>	L.
Native	<i>Vicia americana</i>	Fabaceae	<i>Vicia americana</i>	Muhl. ex Willd.
Exotic	<i>Vicia hirsuta</i>	Fabaceae	<i>Vicia hirsuta</i>	(L.) Gray
Exotic	<i>Vulpia bromoides</i>	Poaceae	<i>Vulpia bromoides</i>	(L.) Gray
Exotic	<i>Vulpia myuros</i>	Poaceae	<i>Vulpia myuros</i>	(L.) C.C. Gmel.

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^b Class B Noxious Weed

^c Class C Noxious Weed

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

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National Park Service
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