Rare Plant and Vegetation Survey of Saint Edward State Park



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Table of Contents

Introduction	5
Survey Routes	5
Vegetation Communities	6
Methods	6
Results	6
Examples of Vegetation Community Types	
Rare Plant Surveys	
Methods	
Results	
Rare Plants	
Vascular Plant List for Saint Edward State Park	
Discussion	
Ecological Condition of Saint Edward State Park	
GIS Products Produced	
References	
Appendix A – Field Survey Schedule	
Appendix B – Description of Rare Element Status Codes	
Appendix C – Ecological Condition Ranking System	
Appendix D – Vegetation Survey Data	
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Introduction

Under contract with the Washington State Parks and Recreation Commission Saint Edward State Park, located in King County, was surveyed for rare plant occurrences and mapped according to vegetation communities by Pacific Biodiversity Institute (PBI). Vegetation data was collected for all the mapped vegetation types. This report summarizes the activities and findings of the contracted work.

Survey Routes



Figure 1. Survey routes for the vegetation community mapping and rare and endangered plant surveys conducted by PBI in 2006.

Vegetation Communities

Methods

Vegetation communities within Saint Edward State Park were delineated and classified using a combination of field survey and remote sensing techniques. We relied on descriptions from the Washington State Department of Natural Resources (WADNR) late-seral forested plant associations of the Puget Lowland (Chappell 2004) and freshwater wetland vegetation (Kunze 1994). In some cases, the WADNR descriptions were not adequate in describing existing vegetation associations. In these cases, alternative vegetation communities or plant associations were created by PBI or found in alternative reference material.

Remote sensing techniques consisted of manually delineating plant associations or mosaics of plant associations in a digital environment. We reviewed orthorectified aerial photography from the 1990s and recent ASTER and LANDSAT Thematic Mapper satellite images for discernable vegetation or landform patterns. When available, we also used high resolution true color orthorectified aerial photography. Topographic maps, digital elevation models (DEMs), and light detection and ranging imagery (LIDAR) were also employed to assist the process of vegetation community delineation. The final vegetation polygons were created by hand in a GIS by ocular assessment.

Field surveys consisted of visiting sites located within the vegetation polygons created during the remote sensing process. At representative sites within a polygon, vegetation data and site descriptions were recorded in a fashion consistent with the "plant community polygon" format provided by the Washington State Parks and Recreation Commission. Further refinements and editing of the drafted vegetation polygon layers were done by hand on hardcopy maps in the field, and later edited digitally in a GIS.

Results

We mapped and surveyed 27 vegetation community polygons, comprised of 10 vegetation community types, within Saint Edward State Park. Vegetation community polygons are either stand-alone plant associations or mosaics of multiple plant associations. Table 1 lists the plant associations and/or cover types found in Saint Edward State Park. See Appendix B for interpretation of "Status" codes. Figures 3 and 4 illustrate the location of the vegetation community polygons. Note that Figure 4 only shows the primary plant associations in each polygon (PA1 in the database). A printout of the complete set of data we collected for each polygon is attached in Appendix D. The ecological condition of each polygon was evaluated according to a simple ranking system described in Appendix C.

Table 1.	Vegetation	Community	Types	Encountered	in Saint	Edward	State Park.

Abbreviation	Association Name	English Name	Reference	Status
ACMA3-ALRU2/POMU-TEGR2	Acer macrophyllum – Alnus rubra / Polystichum munitum - Tellima grandiflora	Bigleaf maple – red alder / sword fern – fringecup	Chappell 2004	G2G3
ALRU2/POMU	Alnus rubra / Polystichum munitum	red alder / sword fern	Chappell 2004	G4S4
ALRU2/RUSP c.t.	Alnus rubra / Rubus spectabilis cover type	red alder / salmonberry cover type	Kunze 1994	G4G5
POTR15-ALRU2/RUSP	Populus trichocarpa - Alnus rubra / Rubus spectabilis	black cottonwood - red alder / salmonberry	Chappell 2002	G2G3
PSME-ARME/GASH	Pseudotsuga menziesii - Arbutus menziesii / Gaultheria shallon	Douglas-fir - pacific madrone / salal	Chappell 2004	G3
PSME-TSHE/GASH/POMU	Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon / Polystichum munitum	Douglas-fir - western hemlock / salal / sword fern	Chappell 2004	G4
PSME-TSHE/MANE2/POMU	Pseudotsuga menziesii - Tsuga heterophylla / Mahonia nervosa / Polystichum munitum	Douglas-fir - western hemlock / dwarf Oregongrape / sword fern	Chappell 2004	G4S3
TSHE-PSME/POMU-DREX2	Tsuga heterophylla - Pseudotsuga menziesii / Polystichum munitum - Dryopteris expansa	western hemlock - Douglas-fir / sword fern - spreading woodfern	Chappell 2004	G383
Water	Water	Water	PBI	
Developed area	Developed area	Developed area	PBI	



Figure 2. Layout of the vegetation community polygons overlaying a 2002 color orthophoto.



Figure 3. The primary vegetation community types within Saint Edward State Park.

Examples of Vegetation Community Types

Acer macrophyllum – Alnus Rubra / Polystichum munitum - Tellima grandiflora forest (ACMA3-ALRU2/POMU-TEGR2)

This plant association is limited to the steepest slopes in polygon 19, which is dominated by the ALRU2/POMU plant association. Historical logging has greatly impacted the vegetation of this community.



Alnus Rubra / Polystichum munitum forest (ALRU2/POMU)

The ALRU2/POMU plant association is very common on old clear-cut sites in the Puget Trough Lowlands. In the case of Saint Edwards State Park, it is one of the dominant plant communities, illustrating the historical logging practices that took place on the land prior to it becoming a State Park. In some areas of this community, conifer regeneration appears to be slowly taking place, while in other areas, no conifer regeneration is apparent.



Alnus Rubra / Rubus spectabilis cover type (ALRU2/RUSP c.t.)



This plant association occurs in some of the flatter regions of the park, and in the bottom of some ravines and drainages. ALRU2/RUSP c.t. is a wetland cover type, typically associated with seasonally flooded or saturated soils. Like ALRU2/POMU, it is common in previously logged areas, and is quite common in the Puget Trough Lowlands.

Populus trichocarpa - Alnus rubra / Rubus spectabilis forest (POTR15-ALRU2/RUSP)

This association occurs in a thin band along the lake shoreline of the park. It is highly disturbed by previous logging, fluctuating lake levels, and frequent recreation use. Many sanctioned paths, as well as numerous renegade paths, permeate the area of this plant association, and large infestations of invasive plants, such as English ivy and bigleaf periwinkle, are abundant.



Pseudotsuga menziesii - Arbutus menziesii / Gaultheria shallon forest (PSME-ARME/GASH)

The PSME-ARME/GASH association only occurs in one small polygon within the park. It is closely related to the PSME-TSHE/GASH/POMU association, which is a dominant association within the park. The absence of conifer species besides *Pseudotsuga menziesii* in the overstory and understory, and the ample presence of *Arbutus menziesii* and *Gaultheria shallon* distinguish this association from the more dominant matrix association. The polygon in which PSME-ARME/GASH occurs is a steep, well-drained slope, with almost complete understory cover of *Gaultheria shallon*.



Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon / Polystichum munitum forest (PSME-TSHE/GASH/POMU)



This is one of the dominant plant associations with the park. The ecological condition, age classes, and species composition of this association vary greatly within the park from patch to patch. Historic logging, and roads and trails development have impacted much of this association throughout the park. Some regions are relatively free of alien plants, while other areas contain large infestations of exotics, especially English ivy. Off trail recreation use is impacting the vegetation in some patches of this association. Protecting large areas of this plant association that are free of invasive species infestations and off-trail recreation use may be a conservation priority.



Pseudotsuga menziesii - Tsuga heterophylla / Mahonia nervosa / Polystichum munitum forest (PSME-TSHE/MANE2/POMU)

This association was found to occur as a small patch along the top of one specific ridge in the southwest section of the park. It is surrounded by PSME-TSHE/GASH/POMU and THSE-PSME/POMU/DREX2 forests on the downhill sides of the ridge. One of the park's main trails passes through the center of this small patch, impacting the understory vegetation via hiker trampling.



Tsuga heterophylla - Pseudotsuga menziesii / Polystichum munitum - Dryopteris expansa forest (TSHE-PSME/POMU/DREX2)



This is a common plant association throughout the park, although it is less common than the PSME-TSHE/GASH/POMU and ALRU2/POMU associations. This association differs from the two more dominant types by having almost no *Gaultheria shallon* in the understory while still having a tree canopy dominated by mixed conifers. *Polystichum munitum* cover in the understory is typically quite high in TSHE-PSME/POMU/DREX2 patches. The ecological condition, age classes, and species composition of this association vary greatly within the park from patch to patch.



Rare Plant Surveys

Methods

We visited Saint Edward State Park multiple times during the 2006 field season to conduct a rare plant survey. We used the Washington Department of Natural Resources Natural Heritage Program's (DNR NHP) rare plant list to determine the conservation status of vascular plants encountered in the field. When a plant from the DNR NHP list was located, we used the standard DNR NHP rare plant sighting form to complete field descriptions for the observation.

Specific dates of field surveys for each park can be found in Appendix A of this report. During the field surveys, we were equipped with reference literature, rare plant lists for the area, maps showing rare plant locations from previous surveys, and a portable plant identification lab. We looked for rare plants in habitats previously identified as being likely occurrence sites. So as not to miss a rare plant, all vascular plant species encountered during the inventory were identified on site, at base camp in the portable laboratory, or back at our office.

Survey routes were determined based on the desire to efficiently cover a large proportion of the park's area throughout the field season. We surveyed habitats of the park where we felt rare plants were more likely to occur more intensively. Survey routes for the rare plant inventory and rare plant locations were recorded either by hand, on a hardcopy topographic map, or as GPS waypoints and trackpoints, all of which were later compiled into a single GIS data layer (Figure 1).

Results

Rare Plants

We found no plants listed on the DNR NHP rare plant list in Saint Edward State Park. According to NHP GIS datasets, no known occurrences of listed plants have been recorded in or near the park.

Vascular Plant List for Saint Edward State Park

A total of 110 vascular plant species were identified during the 2006 surveys at Saint Edward State Park. Of these, 37 of the plant species are non-native, accounting for 34% of the total encountered vascular plants.

Key to Vascular Plant Species List

"Code": Four-letter plant code as shown on the USDA PLANTS database.

"Alien?": species that are not native to the park are indicated with an "a"

"Common Name / Accepted Synonym": The species list uses Hitchcock and Cronquist, *Flora of the Pacific Northwest* as the taxonomic authority, as this is still the standard reference for our area. Updated nomenclature or general common names are shown in this column when they exist.

num	Code	Scientific Name	Common Name/Accepted Synonym	Family	Alien?
1	ACMA3	Acer macrophyllum Pursh	bigleaf maple	Aceraceae	
2	ACTR	Achlys triphylla (Sm.) DC.	sweet after death	Berberidaceae	
3	ADBI	Adenocaulon bicolor Hook.	pathfinder	Asteraceae	
4	ALRU2	Alnus rubra Bong.	red alder	Betulaceae	
5	ARME	Arbutus menziesii Pursh	madrone	Ericaceae	
6	ATFI	Athyrium filix-femina (L.) Roth	common ladyfern	Dryopteridaceae	
7	BEPE2	Bellis perennis L.	lawn daisy	Asteraceae	а
8	BRPA3	Bromus pacificus Shear	Pacific brome	Poaceae	
9	BRRI8	Bromus rigidus Roth	>>Bromus diandrus ssp. rigidus	Poaceae	а
10	BRVU	Bromus vulgaris (Hook.) Shear	Columbia brome	Poaceae	
11	CAOC	Cardamine occidentalis (S. Wats. ex B.L. Robins.) T.J. Howell	big western bittercress	Brassicaceae	
12	CAOL	Cardamine oligosperma Nutt.	little western bittercress	Brassicaceae	
13	CADE9	Carex deweyana Schwein.	Dewey sedge	Cyperaceae	
14	CAHE7	Carex hendersonii Bailey	Henderson's sedge	Cyperaceae	
15	CAOB3	Carex obnupta Bailey	slough sedge	Cyperaceae	
16	CIAL	Circaea alpina L.	small enchanter's nightshade	Onagraceae	
17	CIAR4	Cirsium arvense (L.) Scop.	Canada thistle	Asteraceae	а
18	CLEMA	Clematis L.	leather flower	Ranunculaceae	а
19	CONU4	Cornus nuttallii Audubon ex Torr. & Gray	Pacific dogwood	Cornaceae	
20	COCO6	Corylus cornuta Marsh.	California hazelnut	Betulaceae	
21	COTON	Cotoneaster Medik.	cotoneaster	Rosaceae	а
22	CRMO3	Crataegus monogyna Jacq.	oneseed hawthorn	Rosaceae	а
23	CYSC4	Cytisus scoparius (L.) Link	scotchbroom	Fabaceae	а
24	DAGL	Dactylis glomerata L.	orchardgrass	Poaceae	а
25	DIFO	Dicentra formosa (Haw.) Walp.	Pacific bleeding heart	Fumariaceae	
26	DIPU	Digitalis purpurea L.	purple foxglove	Scrophulariaceae	а
27	DREX2	Dryopteris expansa (K. Presl) Fraser-Jenkins & Jermy	spreading woodfern	Dryopteridaceae	
28	ELGL	Elymus glaucus Buckl.	blue wildrye	Poaceae	-
29	EPAN2	Epilobium angustifolium L.	angustifolium	Onagraceae	
30	EPCIW	Epilobium ciliatum Raf. ssp. watsonii (Barbey) Hoch & Raven	fringed willowherb	Onagraceae	
31	EQAR	Equisetum arvense L.	field horsetail	Equisetaceae	
32	EQHY	Equisetum hvemale L.	scouringrush horsetail	Equisetaceae	[
33	GAAP2	Galium aparine L.	stickywilly	Rubiaceae	а
34	GATR3	Galium triflorum Michx.	fragrant bedstraw	Rubiaceae	
35	GASH	Gaultheria shallon Pursh	salal	Ericaceae	
36	GERO	Geranium robertianum L.	Robert geranium	Geraniaceae	а
37	GEMA4	Geum macrophyllum Willd.	largeleaf avens	Rosaceae	
38	HEHE	Hedera helix L.	English ivy	Araliaceae	а
39	HOLA	Holcus lanatus L.	common velvetgrass	Poaceae	а
40	HODI	Holodiscus discolor (Pursh) Maxim.	Indian plum	Rosaceae	
41	HYTE	Hydrophyllum tenuipes Heller	Pacific waterleaf	Hydrophyllaceae	
42	HYRA3	Hypochaeris radicata L.	hairy cat's ear	Asteraceae	а
43	ILAQ80	llex aquifolium L.	English ivy	Aquifoliaceae	а
44	LAMU	Lactuca muralis (L.) Fresen.	>>Mycelis muralis	Asteraceae	а
45	LACO3	Lapsana communis L.	common nipplewort	Asteraceae	а
46	LALA4	Lathyrus latifolius L.	perennial pea	Fabaceae	

448 LORE Loling perminal L perminal rygrass Poaceae a 449 LOCI3 Lonicera cillosa (Pursh) Poir ex DC. orange honeysuckle Caprifoliaceae > 51 LUCA* Lunafa annual L annual homesty Bressicaceae a 52 LVAM3 Lunafa annual L. annual homesty Bressicaceae > 53 MANE2 Matorian envosa (Pursh) Nutt. Caacade barberry Berbendiaceae > 54 MAD1 J.F. Mactor. false lily of the valley Liliaceae > 55 MAMA1 Porter (misapplied) >>Matricari anteritorides aut. non (Less) > 56 MELU Medicap Lupulnia L back medick Fabaceae a 57 MOSI2 Monta sibrica (L, T.J. Howell >>Claytonia sibrica var. sibrica Portulacaceae a 58 NEPA Nemophia partifica Doal, ex Bent. indian plum Rosaceae a 50 OcresA Samuthaz bilensis Hook. & Am. >>Castrohiza barterio Aplaceae 6	47	LEMI3	Lemna minor L.	common duckweed	Lemnaceae	
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50 LUAN Lunaic ampesitis (L.) DC. annual homesity Berasicoscee a 51 LUCA* Luzuia campesitis (L.) DC. field woodrush Juncaceaee - 52 LYAM3 Livischton americanus Hulter & St. John American skuncabbage Aracese - 53 MANE2 Matonia mericanus Hulter & St. John Cascade barberry Betheridaceae - 54 MADI Porter (nissapplied) ->Matricaria discoidea Astercase a 55 MEU Medicage lupulina L black medick Fabscese a 56 MEU Medicage lupulina L black medick Fabscesee a 57 MOSI2 Montia sibrifica (L.) T.J. Howell >>Claytonia sibrifica var. sibrisa Portuceaceae a 58 NEPA Nemophila parvillora Dougl, ex Benth. smallfower nemophila Hydrophylaceaee a 60 OESA Oemrite acreatiomis (Tor. & Gray ex Hoo. Indian plum Roaceaee a 60 OESA Cosandriza bindines Hook & Am. >>Oesomorhiza berle	49	LOCI3	Lonicera ciliosa (Pursh) Poir. ex DC.	orange honeysuckle	Caprifoliaceae	
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	94	TABR2	Taxus brevifolia Nutt.	Pacific yew	Тахасеае	

95	TEGR2	Tellima grandiflora (Pursh) Dougl. ex Lindl.	bigflower tellima	Saxifragaceae	
96	THPL	Thuja plicata Donn ex D. Don	western red cedar	Cupressaceae	
97	TITR	Tiarella trifoliata L.	threeleaf foamflower	Saxifragaceae	
98	TOME	Tolmiea menziesii (Pursh) Torr. & Gray	youth on age	Saxifragaceae	
99	TRLA6	Trientalis latifolia Hook.	>>Trientalis borealis ssp. latifolia	Primulaceae	
100	TRPR2	Trifolium pratense L.	red clover	Fabaceae	а
101	TRRE3	Trifolium repens L.	white clover	Fabaceae	а
102	TROV2	Trillium ovatum Pursh	Pacific trillium	Liliaceae	
103	TRCA21	Trisetum canescens Buckl.	tall trisetum	Poaceae	
104	TSHE	Tsuga heterophylla (Raf.) Sarg.	western hemlock	Pinaceae	
105	URDI	Urtica dioica L.	nettle	Urticaceae	
106	VAOV2	Vaccinium ovatum Pursh	California huckleberry	Ericaceae	
107	VAPA	Vaccinium parvifolium Sm.	red huckleberry	Ericaceae	
108	VEAM2	Veronica americana Schwein. ex Benth.	American speedwell	Scrophulariaceae	
109	VIMA	Vinca major L.	bigleaf periwinkle	Apocynaceae	а
110	VIGL	Viola glabella Nutt.	pioneer violet	Violaceae	

Discussion

Previous to Pacific Biodiversity Institute's 2006 surveys, no state or federally listed vascular plants had been documented within Saint Edward State Park. Our 2006 project did not locate any new populations of rare plants.



Figure 4. English ivy climbing trees in the park.

We encountered few sites within Saint Edward State Park that had not been disturbed or impacted by resource extraction or recreational activities. Roads and trails, both maintained and abandoned, permeate the diversity of habitats within the park, indicating a high intensity of human influence on the park's ecosystems. Invasive plant infestations are common occurrences throughout the park, especially near the roads and trails infrastructure. English ivy (*Hedera Helix*), Himalayan blackberry (*Rubus discolor*), and bigflowered perrywinkle (*Vinca major*) were all found to have exceptionally large infestations in the park (Figures 4 and 5). Eradication of these invasive plants is extremely difficult once established. Controlling the spread of these plants may be possible, however, through manual cutting of above ground vines, and pulling of the below ground new rhizomes. Such treatments are extremely labor intensive and

complete removal of the dislodged plant parts from the park premises is necessary to prohibit further infestations that might occur via vegetative propagation of the cuttings. Without control efforts, unmitigated infestations will continue to expand into new areas of the park, threatening the native vegetation and plant communities.

The significance of Saint Edward State Park in providing a "natural" setting for recreational use and enjoyment of nature in an otherwise urbanized environment cannot be overstated. During our field work in the park, we encountered a high density of trail users and sight seers. The neighboring Bastyr University was using the park for field classes identifying locally available medicinal herbs and edible plants. The park is a hotspot for urbanites wanting to get away from the built environment, but not wanting to drive significant distances out of town to do so. Although the intensity of recreation in the park is contributing to degraded plant community conditions, the popularity of the park may garner user support for volunteer labor campaigns to administer invasive species control efforts.



Figure 5. Vinca major infestation along the park's shoreline.

Ecological Condition of Saint Edward State Park

Saint Edward State Park exists as an island of forest in one of the most highly urbanized landscapes in Washington State (Figure 6). Because of this, it is not surprising that the ecological condition of the park is being negatively affected by threats of increased edge development, aggressive recreation use (off trail hiking, plant destruction, unauthorized fires), invasive species infestations, and hillside erosion and landslides. Given these setbacks, the condition of the park is in surprisingly good ecological condition relative to the immediate surrounding landscape, and when compared to other sizable urban parks within the same region. The park is unique within the urban matrix in that plant association patches of native vegetation exist, relatively exotic species free, nearing the more mature phases of forest succession. Limiting disturbances, ranging from road and trail construction to off trail hiking, will be instrumental in protecting the last intact native plant communities within the park Limiting the expansion of invasive plant infestations through control efforts, as discussed earlier, as well as conducting native plant plantings (especially of native conifers in the ALRU2/POMU forests) could contribute to improved ecological conditions within the more disturbed regions of the park.



Figure 6. Photo of the urbanized landscape surrounding Saint Edward State Park (outlined in yellow).

GIS Products Produced

Associated with this report is a polygon layer created by PBI depicting the vegetation community types mapped in Saint Edward State Park. The dataset has been converted into ESRI shapefile format and provided to the Washington State Parks and Recreation Commission. The spatial dataset is complete with metadata meeting FGDC standards. Refer to the associated metadata for descriptions and attribute definitions for each spatial dataset.

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Appendix A – Field Survey Schedule

April 27, 2006

Field Staff: Hans Smith, Scott Heller

August 1, 2006

Field Staff: Hans Smith, Scott Heller

Appendix B – Description of Rare Element Status Codes

Global Rank (GRank)

Global Rank characterizes the relative rarity or endangerment of the element world-wide. Two codes (e.g. G1G2) represent an intermediate rank.

G1 = Critically imperiled globally (5 or fewer occurrences).

- G2 = Imperiled globally (6 to 20 occurrences).
- G3 = Either very rare and local throughout its range or found locally in a restricted range (21 to 100 occurrences).
- G4 = Apparently secure globally.
- G5 = Demonstrably secure globally.

GH = Of historical occurrence throughout its range.

GU = Possibly in peril range-wide but status uncertain.

GX = Believed to be extinct throughout former range.

GNR = Not yet ranked.

Tn = Rarity of an infraspecific taxon. Numbers and codes similar to those for Gn ranks above.

Q = Questionable.

State Rank (SRank)

State Rank characterizes the relative rarity or endangerment within the state of Washington. Two codes (e.g. S1S2) represents an intermediate rank.

- S1 = Critically imperiled (5 or fewer occurrences).
- S2 = Imperiled (6 to 20 occurrences), very vulnerable to extirpation.
- S3 = Rare or uncommon (21 to 100 occurrences).
- S4 = Apparently secure, with many occurrences.
- S5 = Demonstrably secure in state.
- SA = Accidental in state.
- SE = An exotic established in state.
- SH = Historical occurrences only but still expected to occur.
- SN = Regularly occurring, usually migratory, nonbreeding animals.
- SU = Unrankable; need more information.
- SX = Apparently extirpated from the state.
- SP = Likely to occur or to have occurred but without documentation.
- SZ = Not of conservation concern (not SE or SA).
- SNR = Not yet ranked.

"B" and "N" qualifiers are used to indicate breeding and nonbreeding status, respectively, of migrant species whose nonbreeding status (rank) may be quite different from their breeding status in the state (e.g. S1B, S4N for a very rare breeder that is a common winter resident).

State Status (StStat)

State Status of plant species is determined by the Washington Natural Heritage Program. Factors considered include abundance, occurrence patterns, vulnerability, threats, existing protection, and taxonomic distinctness. Values include:

- E = Endangered. In danger of becoming extinct or extirpated from Washington.
- T = Threatened. Likely to become Endangered in Washington.
- S = Sensitive. Vulnerable or declining and could become Endangered or Threatened in the state.
- X = Possibly extinct or Extirpated from Washington.
- P1 = Priority 1. Rare nonvascular plant but with insufficient information to assign another rank.
- P2 = Priority 2. Nonvascular plant of concern but with insufficient information to assign another rank.
- R1 = Review group 1. Of potential concern but needs more field work to assign another rank.
- R2 = Review group 2. Of potential concern but with unresolved taxonomic questions.

W = Watch. More abundant and/or less threatened than previously thought.

Federal Status

Federal Status under the U.S. Endangered Species Act (USESA) as published in the Federal Register:

- LE = Listed Endangered. In danger of extinction.
- LT = Listed Threatened. Likely to become endangered.
- PE = Proposed Endangered.
- PT = Proposed Threatened.
- C = Candidate species. Sufficient information exists to support listing as Endangered or Threatened.
- SC = Species of Concern. An unofficial status, the species appears to be in jeopardy, but insufficient information to support listing.
- NL = Not Listed. Used when two portions of a taxon have different federal status.

Appendix C – Ecological Condition Ranking System

Ecological Condition Ranks

When assessing conservation priorities and management decisions, it can be useful to rank natural communities into levels of ecological condition. For example, an unfragmented area with high native species diversity, absence of non-native species and little soil erosion often has greater conservation value than another area in the same habitat type that is fragmented, infested with weeds or has erosion problems. Likewise, areas with a lower ecological condition rank may be targets for restoration activities.

The flowing ecological condition ranks were applied to vegetation polygons that were surveyed in this project:

Condition Rank 1. This condition class represents areas that have been altered to the point where the ecological condition often deviates dramatically from baseline conditions found in areas where stressors are much less prevalent. Areas characterized by Condition Class 1 often have high amounts of bare ground and/or non-native plant cover. The structure is often significantly altered from baseline conditions. Often one or more of the structural layers (trees, shrubs, herbs, grasses, mosses & lichens, biotic crust) may be significantly altered or even missing from the community. The composition of native vegetation is skewed toward species that can survive despite regular disturbance. Species diversity of native plants is usually low and native grass species are usually absent or in very low abundance (for a given community type). Evidence of accelerated erosion and soil compaction may be present. Hydrologic alteration may also be present. Significant direct evidence of various stress factors is usually abundant. Rare plant and animal species generally do not occur in this condition class.

Condition Rank 2. This condition class represents areas that show a fairly broad range of stress ranging from high to moderately low impact from a variety of stressors. Areas characterized by Condition Class 2 usually have moderate levels of non-native plant cover. The structure of the natural community present in Condition Class 2 areas is often relatively intact when compared to baseline conditions. Usually all structural layers are present, but form and stature may be altered from baseline conditions. Soil surface conditions are often intermediate between those in Condition Class 1 and Condition Class 3. Species diversity of native plants is often moderate for that community. Non-native species are usually present, but not as common or abundant as in Condition Class 1. Native grass species are often present, but usually in low abundance for that community type. Diversity of native grass species is relatively low when compared to baseline conditions. Evidence of accelerated erosion and soil compaction may be present in isolated areas, but is not dramatic or widespread. Hydrologic alteration is absent. Direct signs of stressors may be present, but not widespread or abundant. Rare plant and animal species may be found in this condition class, but are not common. Rare species that are found in this condition class are relatively tolerant of the stressors that are present.

Condition Rank 3. This condition class represents areas that show the least stress in the project area and are the closest to representing baseline conditions. Areas characterized by Condition Class 3 have little evidence of non-native plant invasion. The composition and

structure of native vegetation in this condition class correspond to the natural ranges of variation characteristic to this habitat type. Old-growth conditions may exist. Species diversity of native plants is often high relative to the community under consideration. Native grass species are usually present and often fairly abundant for the community type. Species diversity of native grass species is also often high. Soil compaction, accelerated erosion and hydrologic alteration are absent. Direct signs of stressors are usually absent. Certain rare species may only exist within this condition class and rare species are generally more common than in the lower condition classes.

Appendix D – Vegetation Survey Data

Legend:

Site = name of locality of map project

Polygon = number you put on map

Name/Date = your name / day-month-year completed polygon survey

Photo roll/number = number of roll (on canister) and number of shot

Survey intensity

1 = walked or could see most of polygon (high confidence in survey data)

2 = walked or could see part of polygon interior (moderate confidence)

3 = walked perimeter or could see part of polygon interior (low confidence)

4 = photo interpretation or other remote survey

VEGETATION COVER

This is canopy cover, i.e. the <u>space between</u> leaves/branches is included in "cover". Each Life form category canopy cover must be 0-100%. Therefore, the sum of all life forms (layers) can exceed 100%. List most abundant species in each life form category; when trees are cored, note DBH, species, length of core, number of rings counted.

TOTAL VEGETATION COVER includes all vascular plants, mosses, lichens and foliose lichens (crustose lichens excluded they are considered rock); this <u>never</u> exceeds 100%.

SOIL SURFACE estimate to nearest **%** the following, the sum of the categories adds to 100%

Rock outcrop = exposed bedrock including detached boulders over 1m across

Gravel/cobble = large fragments between sand and boulder

Bareground = exposed mineral soil

Mosses/lichens = nonvascular plant cover on soil

Litter = includes logs, branches, and basal area of plants

Describe in comments if there is wide variation in any category; note % standing water if it is persistent or characteristic of site.

LAND USE - put 0 (zero) if not applicable to site.

Logging

1 = unlogged, no evidence of past logging or occasional cut stumps not part of systematic harvest of trees, no or very little impact on stand composition

2 = selectively logged: frequent cut stumps but origin of dominant or co-dominant cohort appears to be natural disturbance

3 = heavy logging disturbance with natural regeneration: many cut stumps that predate the dominant or co-dominant cohort with no tree planting

4 = tree plantation: dominant cohort appears to be planted after clearcutting

Stand Age

- 1 = very young 0-40 yr
- 2 = young 40-90 yr
- 3 = mature 90-200 yr
- 4 = old-growth 200 + yr
- 5 = young with scattered old trees (2-10 old trees per acre)
- 6 = mature with scattered old trees

Agriculture

- 1 = active annual cropping
- 2 = active perennial herbaceous cropping
- 3 = active woody plant cultivation
- 4 = fallow, plowed no crops this yr
- 5 = Federal CRP
- 6 = other

Livestock

- 1 = active heavy grazing (most forage used to ground soil compaction or churning)
- 2 = active moderate grazing (25-75% forage used)
- 3 = active light grazing (lots of last yr's litter left)
- 4 = no current, heavy past grazing
- 5 = no current, light past grazing
- 6 = no obvious sign of grazing

Development

- 1 = actively used facilities
- 2 = roads
- 3 = established trails
- 4 = abandoned facilities
- 5 = none obvious
- 6 = multiple types (detail in comments)

Wildlife

- 1 = heavy ungulate use
- 2 = moderate ungulate use
- 3 = light to no ungulate use
- 4 = burrowing animals
- 5 = active beaver
- 6 = active porcupine
- 7 = other, list animal

Recreation Use Severity

- 1 = heavy use, abundant soil and vegetation displacement off trail/road
- 2 = moderate use, frequent soil and vegetation displacement off trail/road
- 3 = light use, little sign of activity off trail/road

Recreation Use Primary Type

1 = wheeled 2 = hoofed 3 = pedestrian 4 = combination of above 5 = other

Hydrology

1 = unaltered 2 = altered; dams, dikes, ditches, culverts, etc 3 = not assessed

Plant Association (PA) = list all PAs encountered in polygon survey, in comments list source of name if not on provided key.

Condition Rank of PA in key or estimate

% of Polygon = your estimate

Pattern = how PA is distributed in polygon 1 = matrix (most of polygon) 2 = large patches 3 = small patches 4 = clumped, clustered, contiguous 5 = scattered, more or less evenly repeating 6 = linear 7 = other

Exotic = primary species observed; secondary species observed.

Plot Number = number of any plots established for EO (element occurrence), or other more detail sheets within polygon.

Vegetation Polygon Data

Polygon Number Survey Intensity Observer Date Specific Location	1 1 HS 8/1/2006
Total Vegetation Trees Total	0 0
emergent	0
subcanopy	0
Shrubs Total Dominant Shrubs	0
> 1.5' tall < 1.5' tall	0 0
Graminoids Total	0
Graminoids Perennial	0
Forbs Total	0
Dominant Forbs Forbs Perennial	0
Forbs Annual Ferns Total	0 0
Forns Evergreen	0
Ferns Deciduous	0
Exotics Perennial	0
Exotics Annual Water	0 0
Rock Outcrop Gravel	0 0
Bare Ground Moss Lichen	0
Litter	0
Stand Age	
Agriculture Livestock	
Development Wildlife	
Recreation Severity Recreation Type Hydrology	

Exotic	Species

Primary Exotic Secondary Exotic

Noxious Exotic

Plant Associations	Percent	Pattern	
			Rank
1. Water	100	Matrix	3
2.	0		0
3.	0		0
Notes:			

Polygon Number Survey Intensity Observer Date Specific Location	10 1 HS 8/1/2006 SE corner of park.		
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Forbs Annual	6 5 PSME, ACMA3, THPL 2 5 2 5 COCO6, RUUR, GASH 5 3 1 1 1 0 3 URDI 3 1 5		
	5	Exotic	Species
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	5 2 2 1 0 0 0 1 99 3 2 0 0 0 0 3 0 0 1	Primary E ILAQ80 Secondar Noxious I	Exotic Exotic Exotic
Plant Associations	Per	cent	Pattern
1. TSHE-PSME/POMU-DRE	X2 (CHAPPELL)	70	Matrix

Rank PSME-TSHE/GASH/POMU (CHAPPELL)
 Notes: Large 30 0

Polygon Number Survey Intensity Observer Date Specific Location	11 1 HS 4/27/2006 N side of park - N of b	ouildings,	
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual	6 5 TSHE,THPL, ACMA3 3 5 2 5 RUSP, VAPA, OECE 5 1 1 1 0 2 POMU 2 0	, PSME	
Ferns Total	4	Exotic	Snacias
Ferns Evergreen Ferns Deciduous Exotics Total Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	4 2 1 1 0 0 0 4 3 9 3 3 0 0 0 3 1 Pe	EXOTIC Primary E HEHE Secondar ILAQ80 Noxious E	Species xotic y Exotic xotic
Plant Associations	Pe	ercent	Pattern

	rereent	1 attern	
			Rank
1. TSHE-PSME/POMU-DREX2 (CHAPPELL)	92	Matrix	2
2. ALRU2/RUSP c.t. (KUNZE)	5	linear	2
3. PSME-TSHE/GASH/POMU (CHAPPELL)	3	Small	2
Notes:			

Polygon Number Survey Intensity Observer Date Specific Location	12 1 HS 8/1/2006 NE CORNER OF PARK.
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Forbs Annual Forbs Annual	6 5 ALRU2, THPL, ACMA3, PSME 2 5 3 5 RUSP, VAPA, COCO6 5 3 2 2 2 2 2 2 2 2
	Exotic Species
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	3 3 3 Primary Exotic ILAQ80 Secondary Exotic HEHE Noxious Exotic 0 0 0 3 2 0 0 0 3 3 4 1
Plant Associations	Percent Pattern

		1 ci cent	1 accel ii	
				Rank
1.	ALRU2/POMU (CHAPPELL)	70	Matrix	2
2.	TSHE-PSME/POMU-DREX2 (CHAPPELL)	20	Small	2
3.	ALRU2/RUSP c.t. (KUNZE)	10	Small	2
No	ites.			

Polygon Number Survey Intensity Observer Date Specific Location	13 1 SH 4/26/2006 NE boundary of park.			
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Ferns Total	6 5 PSME, TSHE, ACMA3 1 5 GASH, MANE2, VAPA 5 3 1 1 0 2 URDI, POMU 2 0 3	Exotic Primary E	Species ≣xotic	
ExoticsTotal	2	ILAQ80		
Exotics Perennial Exotics Annual	2	Seconda	ry Exotic	
Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	0 0 2 1 97 3 2 0 0 0 3 4 1	Noxious	Exotic	
Plant Associations	Per	rcent	Pattern	
 PSME-TSHE/GASH/POM 3. 	U (CHAPPELL)	100 0 0	Matrix	Kank

3. Notes:

Polygon Number Survey Intensity Observer Date Specific Location	14 1 HS 4/27/2006 SW section of park.		
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Forbs Annual Forbs Annual	6 6 9 PSME, TSHE, THPL 3 5 3 4 MANE2, ILAQ80 3 3 1 1 1 0 1 POMU 1 0 3 3	Fuction	Succion
	2	EXOUIC	Species
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	S 0 2 2 0 0 0 0 2 1 97 3 3 3 0 0 0 3 3 0 3 1	Primary E ILAQ80 Secondar Noxious E	xotic y Exotic Exotic
Plant Associations	Per	rcent	Pattern
1. PSME-TSHE/MANE2-POM	//U (CHAPPELL)	90	Matrix

PI	ant Associations	Percent	Pattern	
				Rank
1.	PSME-TSHE/MANE2-POMU (CHAPPELL)	90	Matrix	2
2.	TSHE-PSME/POMU-DREX2 (CHAPPELL)	10	Small	2
3.		0		0

Notes:

Polygon Number Survey Intensity Observer Date Specific Location	15 1 HS 4/27/2006 SW region of park.			
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial	6 6 7HPL, PSME, ACM 2 6 3 3 COCO6, MANE2, V 3 1 1 1 1 0 1 POMU 1	A3, TSHE 'APA		
Forbs Annual	0			
Ferns Total	5	F retta	0	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	5 2 2 0 0 0 0 0 1 99 3 3 3 0 0 3 3 1	Exotic Primary E ILAQ80 Secondau HEHE Noxious I	Exotic Try Exotic Exotic	
Plant Associations	5	Percent	Pattern	л ·
 TSHE-PSME/POMU-DRE . . Notes: 	X2 (CHAPPELL) MANE2/POMU alor	100 0 ng ridge.	Matrix	Rank

•		0
		0
otes:	MANE2/POMU along ridge.	

Polygon Number Survey Intensity Observer Date Specific Location	16 1 HS 4/27/2006 SW corner	r of park.	
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids	6 5 ACMA3, T 3 5 5 GASH, CC 5 2 1	HPL, TSHE, PSME, DCO6, MANE2	ARME
Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Ferns Total	1 0 2 2 0 0		
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual	0 0 2 2	Exot Primar HEHE Secon	t ic Species ry Exotic dary Exotic
Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter	0 0 0 1 99	Noxio	us Exotic
Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type	3 3 0 3 0 2 3		
Hydrology	1	D	D //

Plant Associations	Percent	Pattern	
			Rank
1. PSME-TSHE/GASH/POMU (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0
Notes:			

Polygon Number	17
Survey Intensity	1
Observer	HS
Date	8/1/2006
Specific Location	
Total Vegetation	0
Trees Total	0
Dominant Trees	
emergent	0
maincanopy	0
subcanopy	0
Shrubs Total	0
Dominant Shrubs	
> 1.5' tall	0
< 1.5' tall	0
Graminoids Total	0
Dominant Graminoids	C C
Graminoids Perennial	0
Graminoids Annual	0
Forbs Total	0
Dominant Forbs	0
Earbe Deronnial	0
Forbs Appual	0
Fords Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	0
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	0
Litter	0
Logging	
Stand Age	
Agriculture	
Livestock	
Development	
Wildlife	
Recreation Severity	
Recreation Type	
Hydrology	
Plant Associations	•

	Exoti	ic S	pec	ies
--	-------	------	-----	-----

Primary Exotic Secondary Exotic Noxious Exotic

Plant Associations	Percent	Pattern	
			Rank
1. developed	100	Matrix	1
2.	0		0
3.	0		0
Notes:			

Polygon Number Survey Intensity Observer Date Specific Location	18A 1 HS 8/1/2006 CENTER OF PARK.
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual	6 6 ACMA3, THPL, ALRU2, TSHE 1 6 3 4 OECE, BENE2 4 2 1 1
rems rotai	Exotic Species
Ferns Evergreen Ferns Deciduous Exotics Total Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	4 2 Primary Exotic 2 ILAQ80 2 Secondary Exotic 1 HEHE Noxious Exotic 0 0 0 0 1 99 3 2 4 1
Plant Associations	Percent Pattern

				Rank
1.	TSHE-PSME/POMU-DREX2 (CHAPPELL)	60	Matrix	2
2.	PSME-TSHE/MANE2/POMU (CHAPPELL)	40	Large	2
3.		0		0
NI -	4			

Notes:

Polygon Number Survey Intensity Observer	18C 1 SH			
Date Specific Location	NW portion of poly	/gon 18		
Total Vegetation	6			
Dominant Trees		гнрі		
emergent	1			
maincanopy	6			
subcanopy	1			
Shrubs Total	5			
Dominant Shrubs				
> 1.5' tall	5			
< 1.5' tall	1			
Graminoids Total	1			
Dominant Graminoids				
Graminoids Perennial	1			
Graminoids Annual	0			
Portos Total Dominant Forbo	2			
Forbs Perennial	2			
Forbs Annual	0			
Ferns Total	3			
		Exot	ic Snacias	1
Forns Evergroop	2			,
Ferns Deciduous	2	Primar	v Exotic	
ExoticsTotal	1		LACIO	
Exotics Perennial	1	Second	ary Exotic	
Exotics Annual	0			
Water		Noxiou	s Exotic	
Rock Outcrop	0			
Gravel	0			
Bare Ground	0			
Moss Licnen	1			
	3			
Stand Age	2			
Agriculture	0			
Livestock	0			
Development	3			
Wildlife	0			
Recreation Severity	3			
Recreation Type	3			
Hydrology	2			
Plant Associations	5	Percent	Pattern	
				Rank
1. ALRU2/POMU (CHAPPE	LL)	60	Matrix	2
2. ALRU2/RUSP c.t. (KUNZ	E)	40	Small	2
3.		0	1	0
Notes:	Hydrologyculvert	. Wetland co	nsumes middle p	portion of polygon.

Polygon Number Survey Intensity Observer Date Specific Location	19 1 HS 4/27/2006 SW of buildings				
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Forbs Annual Ferns Total	6 6 7 1 6 2 3 OECE 3 1 1 1 1 0 4 URDI, TEGR2, PON 4 0 4	HPL MU		Spacios	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	4 2 1 1 0 0 0 0 0 1 99 3 2 0 0 3 2 0 0 3 1 1 1 1 1 0 1 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	Prim HEHI Seco ILAQ Noxi	ary E E nndai 80 ous I	Exotic Exotic Exotic	
Plant Associations 1. ALRU2/POMU (CHAPPEL 2. ACMA3-ALRU2/POMU-TE 3. ALRU2/RUSP c.t. (KUNZE Note:	L) Egr2 (Chappell) E)	Percent	60 30 10	Pattern Matrix Large Small	Rank

Polygon Number	2
Survey Intensity	1
Observer	HS
Date	8/1/2006
Specific Location	
Total Vegetation	0
Trees Total	0
Dominant Trees	
emergent	0
maincanopy	0
subcanopy	0
Shrubs Total	0
Dominant Shrubs	
> 1.5' tall	0
< 1.5' tall	0
Graminoids Total	0
Dominant Graminoids	Ū.
Graminoids Perennial	0
Graminoids Annual	Õ
Forbs Total	Õ
Dominant Forbs	0
Forbe Perennial	0
Forbs Appual	0
Forbs Annual	0
Ferris Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	0
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	0
Litter	0
Logging	
Stand Age	
Agriculture	
Livestock	
Development	
Wildlife	
Recreation Severity	
Recreation Type	
Hydrology	
Dlant Accoriati	one

Exotic	Species
--------	---------

Primary Exotic Secondary Exotic Noxious Exotic

Plant Associations	Percent	Pattern	
			Rank
1. developed	100	Matrix	1
2.	0		0
3.	0		0
Notes:			

Polygon Number Survey Intensity Observer Date Specific Location	20 1 HS 4/27/2006 W side of park.			
Total Vegetation Trees Total Dominant Trees	6 5			
emergent	1			
maincanopy	5			
subcanopy	2			
Shrubs Total	6			
Dominant Shrubs	OECE, RUSP, CO	CO6		
> 1.5' tall	6			
< 1.5 tall Graminaida Tatal	1			
Dominant Graminoids	I			
Graminoids Perennial	1			
Graminoids Annual	0			
Forbs Total	3			
Dominant Forbs	URDI			
Forbs Perennial	3			
Forbs Annual	0			
Ferns Total	4		•	
		Exotic	: Species	5
F F	4			
Ferns Evergreen	4			
Ferns Evergreen Ferns Deciduous	4 2	Primary I	Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal	4 2 2	Primary I HEHE	Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial	4 2 2 2	Primary I HEHE Seconda	Exotic ry Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water	4 2 2 2 0	Primary I HEHE Seconda ILAQ80 Novious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop	4 2 2 0	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel	4 2 2 0 0	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground	4 2 2 0 0 0 0	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen	4 2 2 2 0 0 0 0 2	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter	4 2 2 0 0 0 0 0 2 98	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging	4 2 2 0 0 0 0 0 2 98 3	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age	4 2 2 0 0 0 0 0 2 98 3 2	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture	4 2 2 0 0 0 0 0 2 98 3 2 0 0	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development	4 2 2 0 0 0 0 0 2 98 3 2 0 0 0 3	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife	4 2 2 0 0 0 0 0 2 98 3 2 0 0 0 3 0	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity	4 2 2 0 0 0 0 0 2 98 3 2 0 0 0 3 0 3	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type	4 2 2 0 0 0 0 0 2 98 3 2 0 0 3 0 3 4	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	4 2 2 0 0 0 0 0 2 98 3 2 0 0 0 3 0 3 4 1	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Ferns Evergreen Ferns Deciduous Exotics Total Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	4 2 2 2 0 0 0 0 2 98 3 2 0 0 0 3 0 3 4 1	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic Pattern	
Ferns Evergreen Ferns Deciduous Exotics Total Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	4 2 2 2 0 0 0 0 2 98 3 2 0 0 0 3 0 3 4 1	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic Pattern	Rank
Ferns Evergreen Ferns Deciduous Exotics Total Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology Plant Associations 1. ALRU2/POMU (CHAPPE	4 2 2 0 0 0 0 2 98 3 2 0 0 0 3 0 3 4 1	Primary I HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic Pattern Matrix	Rank
Ferns Evergreen Ferns Deciduous Exotics Total Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology Plant Associations 1. ALRU2/POMU (CHAPPE 2. TSHE-PSME/POMU-DRE	4 2 2 0 0 0 0 2 98 3 2 0 0 0 3 4 1 5 1 2 2 0 0 3 4 1 5	Primary I HEHE Seconda ILAQ80 Noxious Percent 92 5	Exotic ry Exotic Exotic Pattern Matrix Small	Rank

 3. POTR15-ALRU2/RUSP (CHAPPELL)
 3

 Notes:
 Bad HEHE and development

Polygon Number Survey Intensity Observer Date Specific Location	21 1 HS 4/27/2006 NW side of park.			
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual	6 5 PSME, TSHE, THF 2 5 3 6 GASH, COCO6, M 6 2 1 1 0 1 0 1 POMU 1 0	L, ACMA3, AF ANE2	RME	
Ferns Total	3	Exotic	Snecies	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	3 2 1 1 0 0 0 0 0 1 99 3 2 0 0 0 3 0 3 4 1	Primary I SOAU Seconda ILAQ80 Noxious	Pattern	
Fiant Associations	•	Percent	Pattern	Rank
 PSME-TSHE/GASH/POM TSHE-PSME/POMU-DRE 	U (CHAPPELL) X2 (CHAPPELL)	88 10	Matrix Large	

3. POTR15-ALRU2/RUSP (CHAPPELL) Notes:

2 linear

2 2

Polygon Number Survey Intensity Observer Date Specific Location	22 1 SH 4/27/2006 N central section of p	oark.		
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual	6 6 ACMA3, ALRU2, PS 2 6 2 5 RUSP, SARA2 5 3 1 1 1 0 2 URDI, TEGR2, DIFC 2 0	ME		
Ferns Total	4	Evotio	Species	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	3 3 3 0 0 0 0 5 4 9 1 3 2 0 0 3 2 0 0 3 4 2 2	EXOTIC Primary E HEHE Secondar Noxious E	Species Exotic Exotic Exotic	
Fiant Associations	r	rercent	rattern	Rank
 ALRU2/POMU (CHAPPEL . . Notes: 	L) Oemlaria abundant u	100 0 understory shi	Matrix	2 0 0 hiking and biking.

Polygon Number Survey Intensity Observer Date Specific Location	23 1 HS 4/27/2006 W of Bastyr U. Ravine	е	
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Eorbe Annual	6 6 ACMA3, THPL, TSHE 1 5 3 4 OECE, RUSP, VAPA 4 2 1 1 1 0 2 TEGR2, POMU 2 0		
Forbs Annual Ferns Total	4		
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	4 2 1 1 0 0 0 1 3 96 3 2 0 0 0 3 3 1	Primary I ILAQ80 Seconda Noxious	Exotic ry Exotic Exotic Exotic
Plant Associations	Per Per	rcent	Pattern
 ALRU2/POMU (CHAPPEI TSHE-PSME/POMU-DRE 	_L) X2 (CHAPPELL)	80 15	Matrix Large

Plant Associations	Percent	Pattern	
			Rank
1. ALRU2/POMU (CHAPPELL)	80	Matrix	2
2. TSHE-PSME/POMU-DREX2 (CHAPPELL)	15	Large	2
3. ALRU2/RUSP c.t. (KUNZE) Notes:	5	linear	2

Polygon Number Survey Intensity Observer Date Specific Location	24A 1 HS 8/1/2006 SE corner of park.		
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual	6 5 PSME, ARME, ALRU2, 1 5 2 6 6 6 3 1 1 1 0 1	THPL	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development	2 2 2 1 0 0 0 0 100 3 2 0 0 3	Exotic Primary E ILAQ80 Secondar SOAU Noxious E	Species xotic y Exotic ixotic
Wildlife Recreation Severity Recreation Type Hydrology Plant Associations	0 2 3 1 Per	cent	Pattern

Plant Assoc	iations	Percent	Pattern	Rank
1. PSME-ARME/G		90 10	Matrix	Rank
3.	ASH/POMU (CHAPPELL)	0	Small	
Notes:	Old mine shaft.			

Polygon Number Survey Intensity Observer Date Specific Location	24B 1 HS 8/1/2006 SE corner of park.		
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Forbs Annual Forbs Annual	6 6 PSME, ALRU2, TSHE 1 6 2 5 GASH, COCO6, RUUR 5 2 1 1 1 0 2 2 2 1 3		
		Exotic	Species
Ferns Evergreen Ferns Deciduous Exotics Total Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	3 2 2 2 0 0 0 0 0 0 1 99 3 2 2 0 0 0 3 3 2 2 4 1	Primary E ILAQ80 Secondar SOAU Noxious E	xotic y Exotic Exotic
Plant Associations	Per	cent	Pattern
		90	Matrix

1.	PSME-TSHE/GASH/POMU (CHAPPELL)
2.	TSHE-PSME/POMU-DREX2 (CHAPPELL)
-	

Rank 90 Matrix 2 10 Small 2 0 0 0

3. Notes: Ferns: POMU.

Polygon Number Survey Intensity Observer Date Specific Location	3 1 HS 4/27/2006 S side of park.		
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Forbs Annual Forbs Total	6 6 7SHE, TSME, ACMA3 3 5 3 3 VAPA, SARA2, MANE 3 1 1 1 1 0 1 POMU 1 0 4	, THPL 2	Spacias
Forns Evergreen	Δ	EXOLIC	Species
Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	1 1 1 0 0 0 0 2 98 3 3 3 0 0 0 3 3 1	Primary E ILAQ80 Secondar Noxious E	xotic y Exotic Exotic
Plant Associations	Per	rcent	Pattern
1. TSHE-PSME/POMU-DRE	X2 (CHAPPELL)	100	Matrix

Plant Associations	Percent	Pattern	
			Rank
1. TSHE-PSME/POMU-DREX2 (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0
NI - 4			

Notes:

Polygon Number Survey Intensity Observer Date Specific Location	4 1 HS 4/27/2006		
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual	6 6 7HPL, PSME, TSHE, A 2 5 3 3 GASH, MANE2, VAPA 3 1 1 1 1 0 2	CMA3	
	-	Exotic	Species
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Pock Outgrop	4 1 2 2 0	Primary E ILAQ80 Secondar Noxious I	xotic y Exotic Exotic
Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	0 0 2 2 96 3 2 0 0 0 3 0 2 3 1		
Plant Associations	Per	cent	Pattern
1. TSHE-PSME/POMU-DRE	X2 (CHAPPELL)	70 30	Matrix Small

Plant Associations	Percent	Pattern	Rank
 TSHE-PSME/POMU-DREX2 (CHAPPELL) PSME-TSHE/GASH/POMU (CHAPPELL) Notes: 	70 30 0	Matrix Small	

Polygon Number Survey Intensity Observer Date Specific Location	5 1 HS 8/1/2006 SE CORNER OF PAR	RK.		
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Forbs Annual	6 5 PSME, TSHE, ALRU2 2 5 2 6 RUUR, GASH, RUSP 5 4 1 1 1 0 3 URDI 3 1 4	2, ACMA3		
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	4 2 2 1 0 0 0 2 98 3 2 0 0 0 3 3 2 4 1	Exotic Primary E ILAQ80 Secondar SOAU Noxious E	Species Exotic Ty Exotic Exotic	
Plant Associations	e Po	ercent	Pattern	Rank
 PSME-TSHE/GASH/POM 2. 	U (CHAPPELL)	100 0	Matrix	

2.	0
3.	0
Notes:	Ferns: POMU. HEHE climbing along road.

Polygon Number Survey Intensity Observer Date Specific Location	6 1 HS 8/1/2006 S boundary of par	ſk.		
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Forbs Annual	6 5 ALRU2, ACMA3, 1 5 3 5 RUSP, COCO6, F 4 3 1 1 1 0 2 2 2	THPL, PSME		
Ferns Total	4	Exotic	c Species	5
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	4 2 1 1 1 0 0 0 0 3 97 3 2 0 0 6 3 4 2 2	Primary SOAU Seconda HEHE Noxious	Exotic Iry Exotic Exotic	
FIGHT ASSOCIATIONS	>	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPE 2. TSHE-PSME/POMU-DRE 3. ALRU2/PUSP of (CLN)2	LL) EX2 (CHAPPELL)	80 15	Matrix Small	

 3.
 ALRU2/RUSP c.t. (KUNZE)
 5
 Small

 Notes:
 (STRUCTURE, ROAD, TRAILS, POWERLINES)

Polygon Number Survey Intensity Observer Date Specific Location	7 1 HS 8/1/2006 SE corner of park.		
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Forbs Annual Forbs Annual	6 5 PSME, ALRU2, THPL 5 2 6 GASH, VAPA, OECE 5 3 1 1 1 0 1		
Ferra Ferrara	2	Exotic	Species
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type Hydrology	2 3 3 1 0 0 0 1 1 1 98 3 2 0 0 0 3 3 2 4 1	Primary E HEHE Secondar ILAQ80 Noxious E	ixotic y Exotic Exotic
Plant Associations	Pe	ercent	Pattern
1. PSME-TSHE/GASH/POM	U (CHAPPELL)	100	Matrix

				Rank
1. PSME-TSHE/GASH/POMU (CHAPPELL)		100	Matrix	2
2.		0		0
3.		0		0
Notes:	HEHE Climbing throughout polygon.			

Polygon Number Survey Intensity Observer Date Specific Location	8 1 HS 8/1/2006 SE corner of park.			
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids Graminoids Perennial Graminoids Annual Forbs Total Dominant Forbs Forbs Perennial Forbs Annual Forbs Annual Forbs Annual	6 5 ALRU2, PSME, THF 1 5 3 5 RULA, GASH, OEC 5 3 1 1 1 0 2 2 2 1 3	PL, TSHE, AC	CMA3	
Ferns Evergreen Ferns Deciduous ExoticsTotal Exotics Perennial Exotics Annual Water Rock Outcrop Gravel Bare Ground Moss Lichen Litter Logging Stand Age Agriculture Livestock Development Wildlife Recreation Severity Recreation Type	3 2 3 3 1 0 0 0 1 99 3 2 0 0 0 3 3 3 3 3 4	Primary B HEHE Seconda ILAQ80 Noxious	Exotic ry Exotic Exotic	
Plant Associations 1. ALRU2/POMU (CHAPPEI 2. PSME-TSHE/GASH/POM 3.	L) U (CHAPPELL)	Percent 55 45 0	Pattern Matrix Large	Rank

3. Notes: Ferns: POMU.

Polygon Number Survey Intensity Observer Date Specific Location	9 1 HS 8/1/2006 SE CORNER OF PAR	ĸ
Total Vegetation Trees Total Dominant Trees emergent maincanopy subcanopy Shrubs Total Dominant Shrubs > 1.5' tall < 1.5' tall Graminoids Total Dominant Graminoids	6 5 ALRU2, THPL 1 5 3 6 RUSP, RUUR, ACCI, 0 6 3 2	ОРНО
Graminoids Perennial	2	
Forbs Total	2	
Dominant Forbs	<u> </u>	
Forbs Perennial	2	
Forbs Annual	1	
Ferns Total	4	Evotic Species
	4	
Ferns Deciduous	4	Drimony Exotio
Ferns Deciduous	2	
Exolics I oldi	1	RUDIZ
Exolics Pereinial	1	
EXOLICS ANNUAL	I	SUAU Nevieus Exetie
Water	0	NOXIOUS EXOLIC
Crowel	0	
Gravel	0	
Bare Ground	0	
MOSS LICNEN	15	
Litter	85	
Logging	3	
Stand Age	2	
Agriculture	0	
Livestock	0	
	U	
	3	
Recreation Severity	U	
Recreation Type	U	
Hydrology	2	

Plant Associations	Percent	Pattern	
			Rank
1. ALRU2/RUSP c.t. (KUNZE)	70	Matrix	2
2. ALRU2/POMU (CHAPPELL)	30	Large	2
3.	0		0
Notes:			

Notes: