

Rare Plant and Vegetation Surveys of Dash Point and Saltwater State Parks



Pacific Biodiversity Institute

Rare Plant and Vegetation Survey of Dash Point and Saltwater State Parks

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Introduction

Under contract with the Washington State Parks and Recreation Commission, Dash Point and Saltwater State Parks, located in King and Pierce Counties, were 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

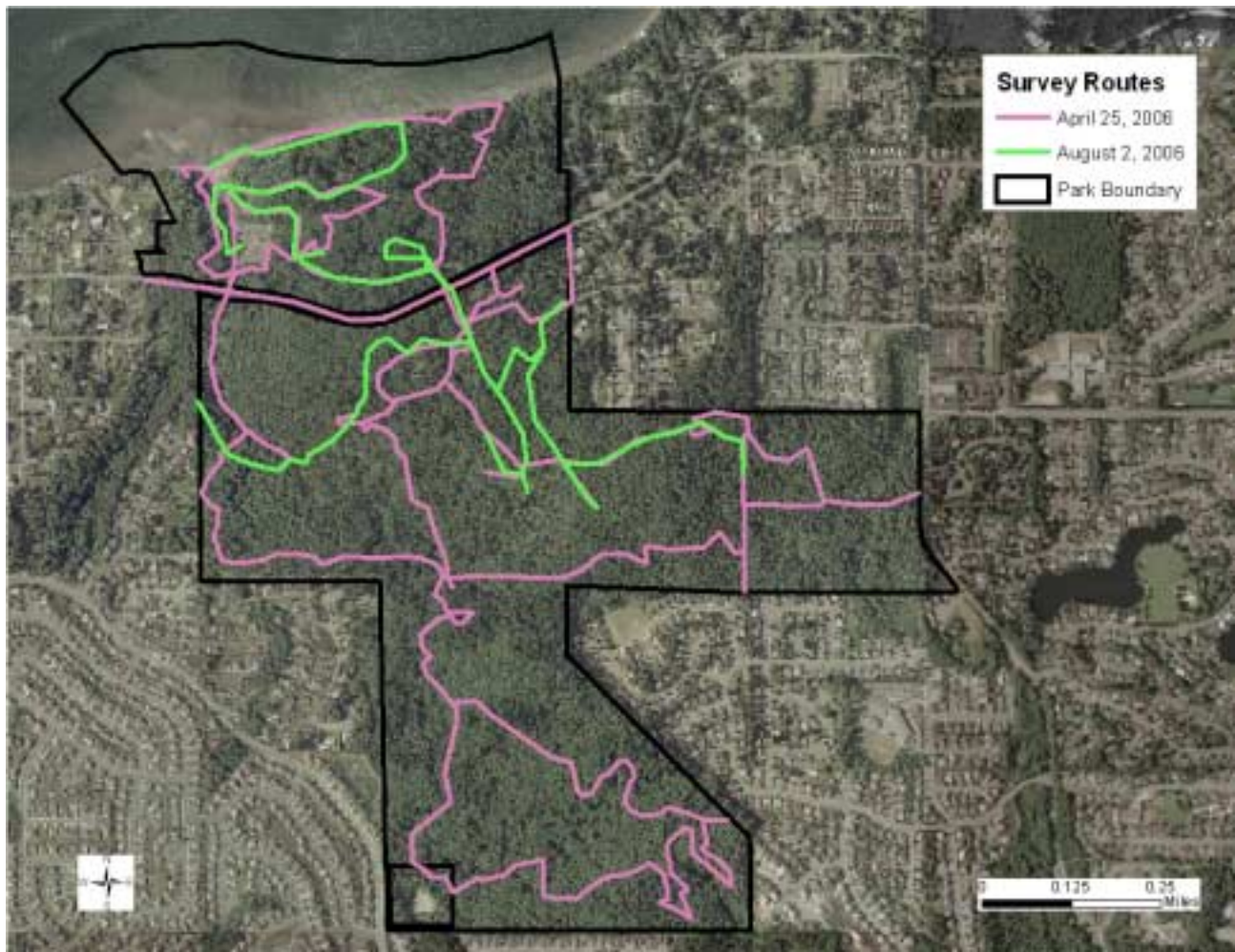


Figure 1. Survey routes for the vegetation community mapping and rare and endangered plant surveys conducted by PBI in 2006 for Dash Point State Park.



Figure 2. Survey routes for the vegetation community mapping and rare and endangered plant surveys conducted by PBI in 2006 for Saltwater State Park.

Vegetation Communities

Methods

Vegetation communities within Dash Point and Saltwater 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), freshwater wetland vegetation (Kunze 1994), and Baseline inventory of rare, threatened and endangered plant species/communities along Washington's Pacific coast (Kunze and Cornelius, 1982) to make final vegetation community assignments. 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 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 32 vegetation community polygons, comprised of 12 vegetation community types, within Dash Point State Park. We mapped and surveyed 19 vegetation community polygons, comprised of 10 vegetation community types, within Saltwater State Park. Vegetation community polygons are either stand-alone plant associations or mosaics of multiple plant associations. Table 1 list the plant associations and/or cover types found in Dash Point and Saltwater State Parks. See Appendix B for interpretation of "Status" codes. Figures 3 - 6 on the following pages illustrate the location of the vegetation community polygons. Note that Figures 4 and 6 only show 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 Dash Point State Park.

Abbreviation	Association Name	English Name	Reference	Status
ACMA3-ALRU2/POMU-TEGR2	<i>Acer macrophyllum</i> – <i>Alnus rubra</i> / <i>Polystichum munitum</i> - <i>Tellima grandiflora</i>	Bigleaf maple – red alder / sword fern – fringecup	Chappell 2004	G2G3
ALRU2/LYAM c.t.	<i>Alnus rubra</i> / <i>Lysichitum americanum</i>	red alder / skunk cabbage cover type	Kunze 1994	G3G4
ALRU2/POMU	<i>Alnus rubra</i> / <i>Polystichum munitum</i>	red alder / sword fern	Chappell 2004	G4S4
ALRU2/RUSP c.t.	<i>Alnus rubra</i> / <i>Rubus spectabilis</i> cover type	red alder / salmonberry cover type	Kunze 1994	G4G5
PSME-ARME/GASH	<i>Pseudotsuga menziesii</i> - <i>Arbutus menziesii</i> / <i>Gaultheria shallon</i>	Douglas-fir - pacific madrone / salal	Chappell 2004	G4S2
PSME-TSHE/GASH/POMU	<i>Pseudotsuga menziesii</i> - <i>Tsuga heterophylla</i> / <i>Gaultheria shallon</i> / <i>Polystichum munitum</i>	Douglas-fir - western hemlock / salal / sword fern	Chappell 2004	G4G5S4
PSME-TSHE/GASH-HODI	<i>Pseudotsuga menziesii</i> - <i>Tsuga heterophylla</i> / <i>Gaultheria shallon</i> / <i>Holodiscus discolor</i>	Douglas-fir - western hemlock / salal / oceanspray	Chappell 2004	G2G3S2S3
PSME-TSHE/GASH/MANE2	<i>Pseudotsuga menziesii</i> - <i>Tsuga heterophylla</i> / <i>Gaultheria shallon</i> / <i>Mahonia nervosa</i>	Douglas-fir - western hemlock / salal / dwarf Oregongrape	Chappell 2004	G4S4
PYFU c.t.	<i>Pyrus fusca</i> cover type	Pacific crabapple cover type	Kunze 1994	G3
TSHE-PSME/POMU-DREX2	<i>Tsuga heterophylla</i> - <i>Pseudotsuga menziesii</i> / <i>Polystichum munitum</i> - <i>Dryopteris expansa</i>	western hemlock - Douglas-fir / sword fern - spreading woodfern	Chappell 2004	G3S3
Water	Water	Water	PBI	
Developed area	Developed area	Developed area	PBI	

Vegetation Community Types Encountered in Saltwater State Park.

Abbreviation	Association Name	English Name	Reference	Status
ACMA3-ALRU2/POMU-TEGR2	<i>Acer macrophyllum</i> – <i>Alnus rubra</i> / <i>Polystichum munitum</i> - <i>Tellima grandiflora</i>	Bigleaf maple – red alder / sword fern – fringecup	Chappell 2004	G2G3
ALRU2/POMU	<i>Alnus rubra</i> / <i>Polystichum munitum</i>	red alder / sword fern	Chappell 2004	G4S4
ALRU2/RUSP c.t.	<i>Alnus rubra</i> / <i>Rubus spectabilis</i> cover type	red alder / salmonberry cover type	Kunze 1994	G4G5
ELMO9 Community	<i>Elymus mollis</i> community	American dunegrass community	Kunze and Cornelius 1982	G2
PSME-TSHE/GASH/POMU	<i>Pseudotsuga menziesii</i> - <i>Tsuga heterophylla</i> / <i>Gaultheria shallon</i> / <i>Polystichum munitum</i>	Douglas-fir - western hemlock / salal / sword fern	Chappell 2004	G4G5S4
PSME-TSHE/HODI/POMU	<i>Pseudotsuga menziesii</i> - <i>Tsuga heterophylla</i> / <i>Holodiscus discolor</i> / <i>Polystichum munitum</i>	Douglas-fir - western hemlock / oceanspray / sword fern	Chappell 2004	GNRS1
PSME-TSHE/MANE2/POMU	<i>Pseudotsuga menziesii</i> - <i>Tsuga heterophylla</i> / <i>Mahonia nervosa</i> / <i>Polystichum munitum</i>	Douglas-fir - western hemlock / dwarf Oregongrape / sword fern	Chappell 2004	G4S3
TSHE-PSME/POMU-DREX2	<i>Tsuga heterophylla</i> - <i>Pseudotsuga menziesii</i> / <i>Polystichum munitum</i> - <i>Dryopteris expansa</i>	western hemlock - Douglas-fir / sword fern - spreading woodfern	Chappell 2004	G3S3
Water	Water	Water	PBI	
Developed area	Developed area	Developed area	PBI	



Figure 3. Layout of the vegetation community polygons in Dash Point State Park, overlaying a 2000 color ortho-photo.

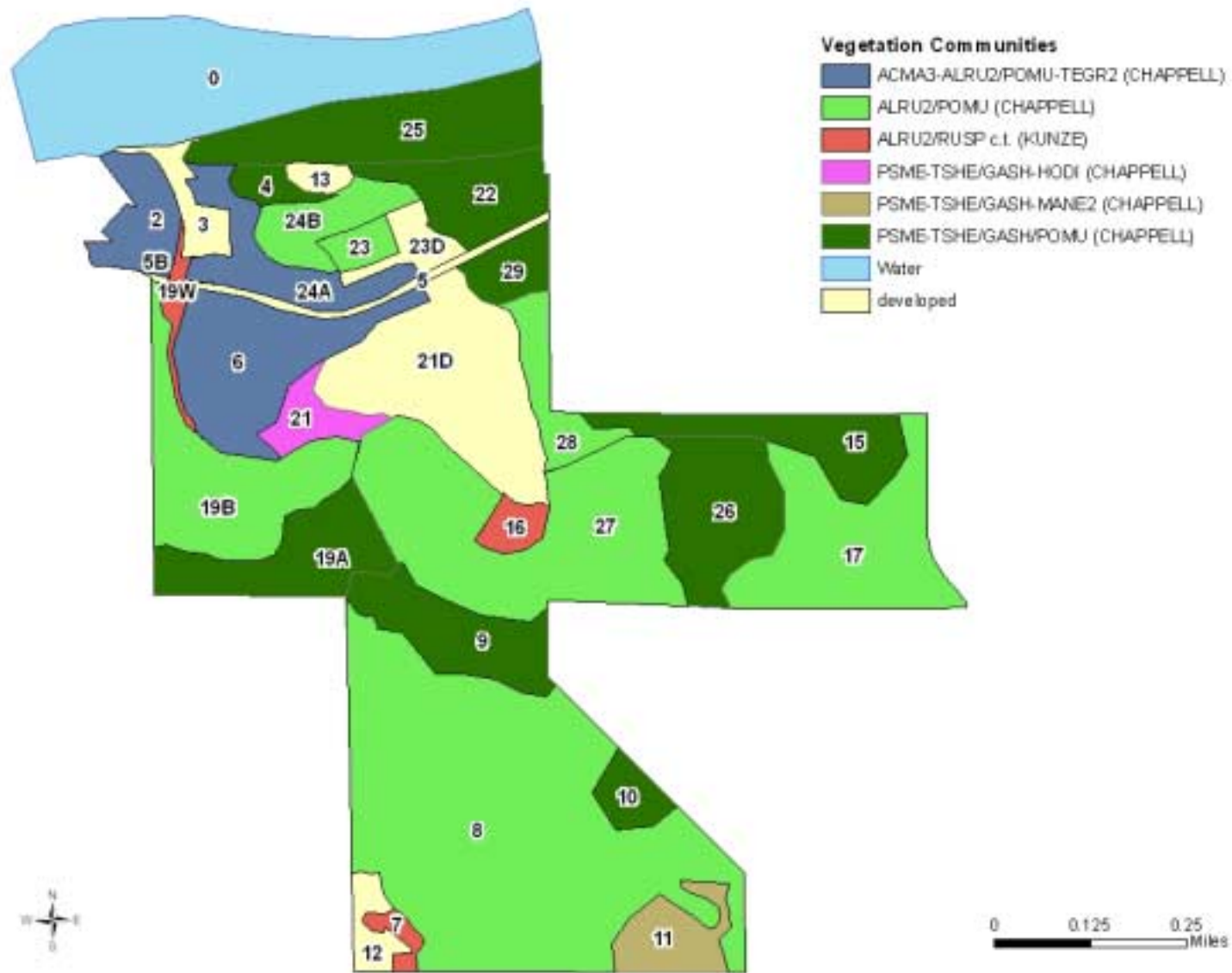


Figure 4. The primary vegetation community types within Dash Point State Park.



Figure 5. Layout of the vegetation community polygons in Saltwater State Park, overlaying a 2000 color ortho-photo.

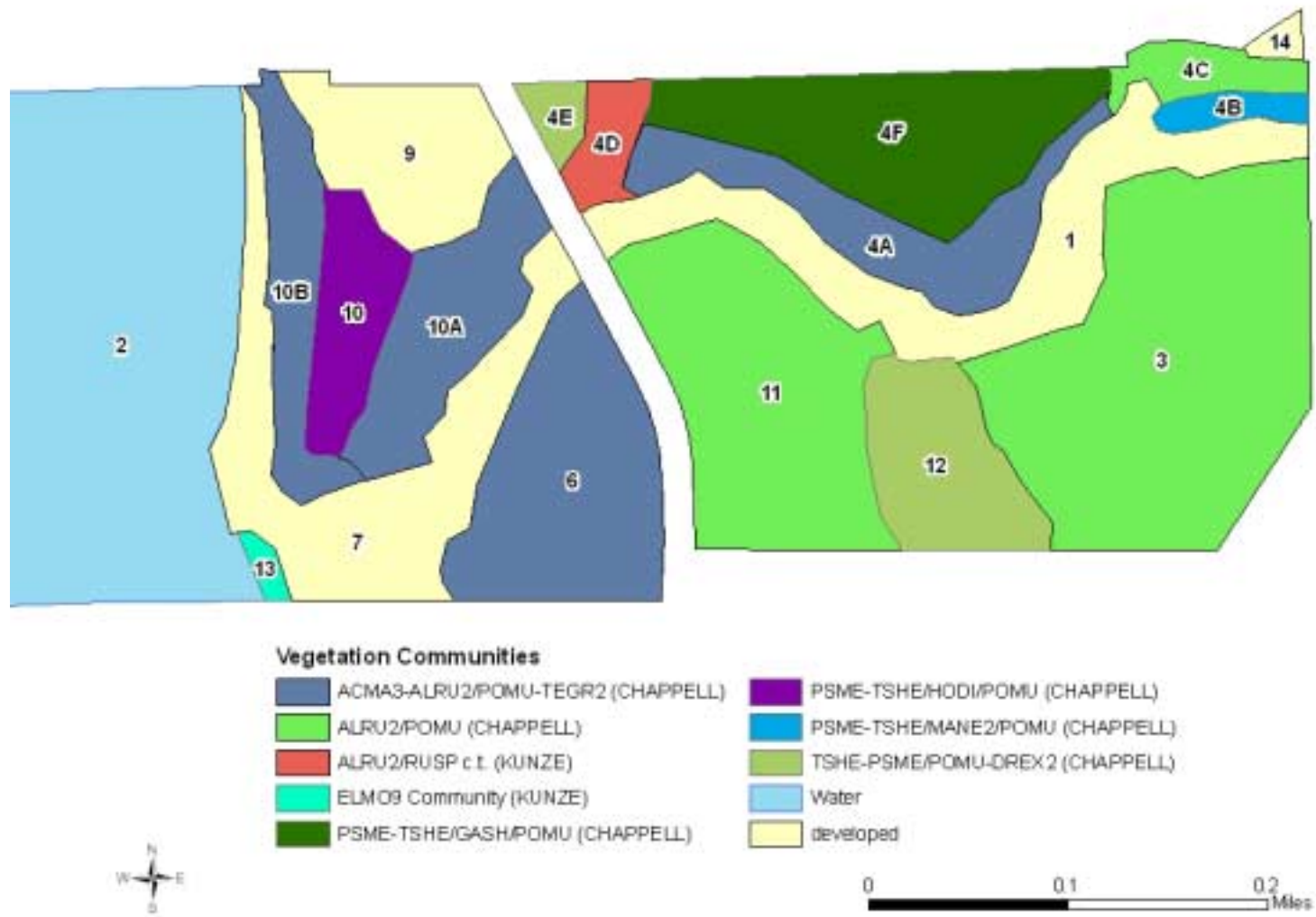


Figure 6. The primary vegetation community types within Saltwater State Park.

Examples of Vegetation Community Types

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



This plant association occurs in both parks, although it is a more dominant association in Saltwater State Park because of the abundance of steeper terrain in the park. In both parks, naturally occurring slope failure and off trail recreation-caused erosion (see picture below) are creating ideal conditions for exotic species infestations, especially near the water front areas of each park. Infestations of Himalayan blackberry (*Rubus discolor*) and English ivy (*Hedera helix*) are common within patches of this association.



***Alnus rubra* / *Lysichitum americanum* cover type (ALRU2/LYAM c.t)**



This is not a common association in either park. This wetland association typically occurs as a small patch inclusion in a more dominant matrix wetland community such as ALRU2/RUSP c.t. Within a wetland area it occurs on the wettest sites where the soils are most saturated and surface water tends to remain the longest.



***Alnus Rubra / Polystichum munitum* forest (ALRU2/POMU)**

ALRU2/POMU is a typical plant association in the Puget Trough lowlands, occurring where clear-cut logging has taken place within the last century. Both parks experienced high levels of logging prior to State Park's ownership, and hence both parks have this association as a dominant vegetative community. Dash Point State Park especially possesses a dominant cover of the ALRU2/POMU community, with vast areas of the southern section of the park consisting of a forest layer completely devoid of conifer composition, including conifer regeneration. Given the high prevalence of invasive species within and immediately surrounding the parks, the ALRU2/POMU areas are at high risk of acquiring further infestations because they lack the canopy shading characteristics typical of a more conifer dominated forest which can help prohibit exotic plant establishment.



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

Like ALRU2/POMU, the ALRU2/RUSP c.t. wetland association is common on wetland sites in the Puget Trough lowlands where significant logging has occurred in recent history. Most, if not all of the wetland sites within both parks are dominated by this wetland community type. In both parks, trails, roads, and hydrological alterations such as berms and culverts directly or indirectly impact this association. Creeping buttercup (*Ranunculus repens*) is a common exotic invader of ALRU2/RUSP c.t. wetlands, as well as Himalayan blackberry (*Rubus discolor*) in some areas.



***Elymus mollis* community (ELMO9 Community)**

Although highly impacted by recreation use, a small portion of the beach at Saltwater State Park, at the southern end of the park's shoreline, fits into the shoreline ELMO9 community. American dunegrass (*Elymus mollis*) is the dominant native grass, with some other coastal plants present such as silver burr ragweed (*Ambrosia chamissonis*) and beach pea (*Lathyrus japonicus*). A large amount of driftwood covers most of the area of this plant association. Exotic plants such as English ivy (*Hedera helix*) and quackgrass (*Agropyron repens*) are well established in this association and threaten to take over the native vegetation without control efforts.



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

This association only occurs within Dash Point State Park, where it exists in some small localized patches mixed in with the more dominant plant associations, typically on or near a ridgeline. The distribution of this forest type may have been greater within what is now the park's boundaries pre-logging. The presence of exotic species within patches of this association are reduced compared to the surrounding plant association types.



***Pseudotsuga menziesii* - *Tsuga heterophylla* / *Gaultheria shallon* - *Holodiscus discolor* forest (PSME-TSHE/GASH-HODI)**

This association only occurs within a small region of Dash Point State Park. The distribution of this forest type may have been greater within what is now the park's boundaries pre-logging. The presence of exotic species within patches of this association are reduced compared to the surrounding plant association types.



***Pseudotsuga menziesii* - *Tsuga heterophylla* / *Gaultheria shallon* - *Mahonia nervosa* forest (PSME-TSHE/GASH-MANE2)**

This association only occurs within a small hilly region in the southwest corner of Dash Point State Park. The distribution of this forest type may have been greater within what is now the park's boundaries pre-logging. The presence of exotic species within patches of this association are reduced compared to the surrounding plant association types.



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

This is a dominant association in Dash Point State Park. It also occurs in parts of Saltwater State Park on flatter areas above the ravine, which encompasses most of the park. The conditions of this plant association vary throughout each park. In some places it is relatively free of exotic plants, but in other places significant infestations of English ivy (*Hedera helix*) exist. English holly (*Ilex aquifolium*) is a common exotic shrub found throughout this plant association in each park as well.



***Pseudotsuga menziesii* - *Tsuga heterophylla* / *Holodiscus discolor* / *Polystichum munitum* forest (PSME-TSHE/HODI/POMU)**

This association occurs in one small patch near the waterfront of Saltwater State Park. It occurs on the north – south ridgeline beneath the ranger’s station. This patch is experiencing large infestations of exotic species, including English ivy, English holly, and scotchbroom (*Cytisus scoparius*).



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

This association occurs in Saltwater State Park. It occurs in patches interspersed with the PSME/TSHE/GASH/POMU association, which occurs only along the flatter areas above the large ravine encompassing most of the park. The same exotic plants found in PSME/TSHE/GASH/POMU are found in this association as well.



***Pyrus fusca* cover type (PYFU c.t.)**

PYFU c.t. is a wetland cover type found in Dash Point State Park. There is a nearly 100% shrub canopy cover of Pacific crabapple (*Pyrus fusca*) over highly saturated soils. There is a seasonal presence of standing water throughout the wetland.



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

This association occurs in both Dash Point and Saltwater State Parks. In most areas where this association occurs in both parks, TSHE-PSME/POMU-DREX2 is sporadically mixed in with the ALRU2/POMU association, and is generally in the earlier phases of forest succession where exotic plants have become successfully established. There is one location in Saltwater State Park, however, where a small patch of this association exists with some big old conifer trees and a mostly native plant understory. This is one of the most exotic species free sections of the entire park.



Rare Plant Surveys

Methods

We visited Dash Point and Saltwater State Parks multiple times during the 2006 field season to conduct rare plant surveys. 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 for each park (Figures 1 and 2).

Results

Rare Plants

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

Vascular Plant List for Dash Point State Park

A total of 131 vascular plant species were identified during the 2006 surveys at Dash Point State Park. Of these, 47 of the plant species are non-native, accounting for 36% of the total.

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	ACCI	<i>Acer circinatum</i> Pursh	vine maple	Aceraceae	
2	ACMA3	<i>Acer macrophyllum</i> Pursh	bigleaf maple	Aceraceae	
3	ACTR	<i>Achlys triphylla</i> (Sm.) DC.	sweet after death	Berberidaceae	
4	ADAL	<i>Adiantum aleuticum</i> (Rupr.) Paris	Aleutian maidenhair	Pteridaceae	
5	AEHI	<i>Aesculus hippocastanum</i>	horse chestnut	Hippocastanaceae	a
6	AGAL3	<i>Agrostis alba</i> auct. non L. [misapplied]	>> <i>Agrostis gigantea</i>	Poaceae	a
7	AICA	<i>Aira caryophylla</i> L.	silver hairgrass	Poaceae	a
8	ALRU2	<i>Alnus rubra</i> Bong.	red alder	Betulaceae	
9	ARME	<i>Arbutus menziesii</i> Pursh	madrone	Ericaceae	
10	ATFI	<i>Athyrium filix-femina</i> (L.) Roth	common ladyfern	Dryopteridaceae	
11	BEPE2	<i>Bellis perennis</i> L.	lawn daisy	Asteraceae	a
12	BRPA3	<i>Bromus pacificus</i> Shear	Pacific brome	Poaceae	
13	BRVU	<i>Bromus vulgaris</i> (Hook.) Shear	Columbia brome	Poaceae	
14	BUDA2	<i>Buddleja davidii</i> Franch.	orange eye butterflybush	Buddlejaceae	a
15	CAOC	<i>Cardamine occidentalis</i> (S. Wats. ex B.L. Robins.) T.J. Howell	big western bittercress	Brassicaceae	
16	CAOL	<i>Cardamine oligosperma</i> Nutt.	little western bittercress	Brassicaceae	
17	CADE9	<i>Carex deweyana</i> Schwein.	Dewey sedge	Cyperaceae	
18	CAOB3	<i>Carex obnupta</i> Bailey	slough sedge	Cyperaceae	
19	CEGL2	<i>Cerastium glomeratum</i> Thuill.	sticky chickweed	Caryophyllaceae	a
20	CHAL7	<i>Chenopodium album</i> L.	lambsquarters	Chenopodiaceae	
21	CIAL	<i>Circaea alpina</i> L.	small enchanter's nightshade	Onagraceae	
22	COAR4	<i>Convolvulus arvensis</i> L.	field bindweed	Convolvulaceae	a
23	COST4	<i>Cornus stolonifera</i> Michx.	>> <i>Cornus sericea</i> ssp. <i>sericea</i>	Cornaceae	
24	COCO6	<i>Corylus cornuta</i> Marsh.	California hazelnut	Betulaceae	
25	CRMO3	<i>Crataegus monogyna</i> Jacq.	oneseed hawthorn	Rosaceae	a
26	DIPU	<i>Digitalis purpurea</i> L.	purple foxglove	Scrophulariaceae	a
27	DREX2	<i>Dryopteris expansa</i> (K. Presl) Fraser-Jenkins & Jermy	spreading woodfern	Dryopteridaceae	
28	ELGL	<i>Elymus glaucus</i> Buckl.	blue wildrye	Poaceae	
29	ELMO9	<i>Elymus mollis</i> Trin.	>> <i>Leymus mollis</i> ssp. <i>mollis</i>	Poaceae	
30	EPAN2	<i>Epilobium angustifolium</i> L.	>> <i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	Onagraceae	
31	EPCIW	<i>Epilobium ciliatum</i> Raf. ssp. <i>watsonii</i> (Barbey) Hoch & Raven	fringed willowherb	Onagraceae	
32	EQAR	<i>Equisetum arvense</i> L.	field horsetail	Equisetaceae	
33	FEAR3	<i>Festuca arundinacea</i> Schreb.	>> <i>Schedonorus phoenix</i>	Poaceae	a
34	GAAP2	<i>Galium aparine</i> L.	stickywilly	Rubiaceae	a
35	GATR3	<i>Galium triflorum</i> Michx.	fragrant bedstraw	Rubiaceae	
36	GASH	<i>Gaultheria shallon</i> Pursh	salal	Ericaceae	
37	GEDI	<i>Geranium dissectum</i> L.	cutleaf geranium	Geraniaceae	a
38	GERO	<i>Geranium robertianum</i> L.	Robert geranium	Geraniaceae	a
39	GEMA4	<i>Geum macrophyllum</i> Willd.	largeleaf avens	Rosaceae	
40	GMPU2	<i>Gnaphalium purpureum</i> L.	>> <i>Gamochaeta purpurea</i>	Asteraceae	
41	HEHE	<i>Hedera helix</i> L.	English ivy	Araliaceae	a
42	HOLA	<i>Holcus lanatus</i> L.	common velvetgrass	Poaceae	a
43	HODI	<i>Holodiscus discolor</i> (Pursh) Maxim.	Indian plum	Rosaceae	
44	HYHI5	<i>Hyacinthoides hispanica</i> (P. Mill.) Rothm.	Hispanic hyacinthoides	Liliaceae	a
45	HYRA3	<i>Hypochaeris radicata</i> L.	hairy cat's ear	Asteraceae	a
46	ILAQ80	<i>Ilex aquifolium</i> L.	English holly	Aquifoliaceae	a
47	JUEF	<i>Juncus effusus</i> L.	common rush	Juncaceae	

48	JUTE	<i>Juncus tenuis</i> Willd.	poverty rush	Juncaceae	
49	LAMU	<i>Lactuca muralis</i> (L.) Fresen.	>>Mycelis muralis	Asteraceae	a
50	LAPU2	<i>Lamium purpureum</i> L.	purple deadnettle	Lamiaceae	
51	LACO3	<i>Lapsana communis</i> L.	common nipplewort	Asteraceae	a
52	LAJA	<i>Lathyrus japonicus</i> Willd.	beach pea	Fabaceae	
53	LEMI3	<i>Lemna minor</i> L.	common duckweed	Lemnaceae	
54	LOPE	<i>Lolium perenne</i> L.	perennial ryegrass	Poaceae	a
55	LOCI3	<i>Lonicera ciliosa</i> (Pursh) Poir. ex DC.	orange honeysuckle	Caprifoliaceae	
56	LOHI2	<i>Lonicera hispidula</i> (Lindl.) Dougl. ex Torr. & Gray	pink honeysuckle	Caprifoliaceae	
57	LUCA*	<i>Luzula campestris</i> (L.) DC.	field woodrush	Juncaceae	
58	LYAM3	<i>Lysichiton americanus</i> Hultén & St. John	American skunkcabbage	Araceae	
59	MANE2	<i>Mahonia nervosa</i> (Pursh) Nutt.	Cascade barberry	Berberidaceae	
60	MADI	<i>Maianthemum dilatatum</i> (Wood) A. Nels. & J.F. Macbr.	false lily of the valley	Liliaceae	
61	MALUS	<i>Malus</i> P. Mill.	apple	Rosaceae	a
62	MAMA11	<i>Matricaria matricarioides</i> auct. non (Less.) Porter [misapplied]	>>Matricaria discoidea	Asteraceae	a
63	MELU	<i>Medicago lupulina</i> L.	black medick	Fabaceae	a
64	MOSI2	<i>Montia sibirica</i> (L.) T.J. Howell	>>Claytonia sibirica var. sibirica	Portulacaceae	
65	NEPA	<i>Nemophila parviflora</i> Dougl. ex Benth.	smallflower nemophila	Hydrophyllaceae	
66	OECE	<i>Oemleria cerasiformis</i> (Torr. & Gray ex Hook. & Arn.) Landon	Indian plum	Rosaceae	
67	OESA	<i>Oenanthe sarmentosa</i> K. Presl ex DC.	water parsley	Apiaceae	
68	OPHO	<i>Oplopanax horridus</i> Miq.	devilsclub	Araliaceae	
69	OSCH	<i>Osmorhiza chilensis</i> Hook. & Arn.	>>Osmorhiza berteroi	Apiaceae	
70	PHAR3	<i>Phalaris arundinacea</i> L.	reed canarygrass	Poaceae	a
71	POAN	<i>Poa annua</i> L.	annual bluegrass	Poaceae	a
72	POPR	<i>Poa pratensis</i> L.	Kentucky bluegrass	Poaceae	a
73	POSA4	<i>Polygonum sachalinense</i> F. Schmidt ex Maxim.	giant knotweed	Polygonaceae	a
74	POGL8	<i>Polypodium glycyrrhiza</i> D.C. Eat.	licorice fern	Polypodiaceae	
75	POMU	<i>Polystichum munitum</i> (Kaulfuss) K. Presl	swordfern	Polypodiaceae	
76	POBAT	<i>Populus balsamifera</i> L. ssp. <i>trichocarpa</i> (Torr. & Gray ex Hook.) Brayshaw	black cottonwood	Salicaceae	
77	PREM	<i>Prunus emarginata</i> (Dougl. ex Hook.) D. Dietr.	bitter cherry	Rosaceae	
78	PRUNU	<i>Prunus</i> L.	plum	Rosaceae	a
79	PRLA5	<i>Prunus laurocerasus</i> L.	cherry laurel	Rosaceae	a
80	PSME	<i>Pseudotsuga menziesii</i> (Mirbel) Franco	Douglas-fir	Pinaceae	
81	PTAQ	<i>Pteridium aquilinum</i> (L.) Kuhn	bracken fern	Dennstaedtiaceae	
82	PUPA3	<i>Puccinellia pauciflora</i> (J. Presl) Munz	>>Torreyochloa pallida var. pauciflora	Poaceae	
83	PYFU	<i>Pyrus fusca</i> Raf.	>>Malus fusca	Rosaceae	
84	RARE3	<i>Ranunculus repens</i> L.	creeping buttercup	Ranunculaceae	a
85	RHPU	<i>Rhamnus purshiana</i> DC.	>>Frangula purshiana	Rhamnaceae	
86	RIBR	<i>Ribes bracteosum</i> Dougl. ex Hook.	stink currant	Grossulariaceae	
87	RIDI	<i>Ribes divaricatum</i> Dougl.	spreading gooseberry	Grossulariaceae	
88	RISA	<i>Ribes sanguineum</i> Pursh	redflower currant	Grossulariaceae	
89	ROGY	<i>Rosa gymnocarpa</i> Nutt.	dwarf rose	Rosaceae	
90	RONU	<i>Rosa nutkana</i> K. Presl	Nootka rose	Asteraceae	
91	RUDI2	<i>Rubus discolor</i> Weihe & Nees	>>Rubus armeniacus	Rosaceae	a
92	RULA	<i>Rubus laciniatus</i> Willd.	cutleaf blackberry	Rosaceae	a
93	RULE	<i>Rubus leucodermis</i> Dougl. ex Torr. & Gray	whitebark raspberry	Rosaceae	

94	RUPA	<i>Rubus parviflorus</i> Nutt.	thimbleberry	Rosaceae	
95	RUSP	<i>Rubus spectabilis</i> Pursh	salmonberry	Rosaceae	
96	RUUR	<i>Rubus ursinus</i> Cham. & Schlecht.	California blackberry	Rosaceae	
97	RUAC3	<i>Rumex acetosella</i> L.	common sheep sorrel	Polygonaceae	a
98	RUOB	<i>Rumex obtusifolius</i> L.	bitter dock	Polygonaceae	a
99	SALA5	<i>Salix lasiandra</i> Benth.	>> <i>Salix lucida</i> ssp. <i>lasiandra</i>	Salicaceae	
100	SASI2	<i>Salix sitchensis</i> Sanson ex Bong.	Sitka willow	Salicaceae	
101	SARA2	<i>Sambucus racemosa</i> L.	red elderberry	Caprifoliaceae	
102	SEAC	<i>Sedum acre</i> L.	goldmoss stonecrop	Crassulaceae	
103	SMRA*	<i>Smilacina racemosa</i> (L.) Desf.	>> <i>Maianthemum racemosum</i> ssp. <i>amplexicaule</i>	Liliaceae	
104	SODU	<i>Solanum dulcamara</i> L.	climbing nightshade	Solanaceae	a
105	SOOL	<i>Sonchus oleraceus</i> L.	common sowthistle	Asteraceae	a
106	SOAU	<i>Sorbus aucuparia</i> L.	European mountain ash	Rosaceae	a
107	SPDO	<i>Spiraea douglasii</i> Hook.	rose spirea	Rosaceae	
108	STCO14	<i>Stachys cooleyae</i> Heller	>> <i>Stachys chamissonis</i> var. <i>cooleyae</i>	Lamiaceae	
109	STME2	<i>Stellaria media</i> (L.) Vill.	common chickweed	Caryophyllaceae	a
110	STSI2	<i>Stellaria simcoei</i> (T.J. Howell) C.L. Hitchc.	>> <i>Stellaria calycantha</i>	Caryophyllaceae	
111	SYAL	<i>Symphoricarpos albus</i> (L.) Blake	common snowberry	Caprifoliaceae	
112	SYOF	<i>Symphytum officinale</i> L.	common comfrey	Boraginaceae	a
113	TAOF	<i>Taraxacum officinale</i> G.H. Weber ex Wiggers	dandelion	Asteraceae	a
114	TEGR2	<i>Tellima grandiflora</i> (Pursh) Dougl. ex Lindl.	bigflower tellima	Saxifragaceae	
115	THPL	<i>Thuja plicata</i> Donn ex D. Don	western red cedar	Cupressaceae	
116	TITR	<i>Tiarella trifoliata</i> L.	threeleaf foamflower	Saxifragaceae	
117	TOME	<i>Tolmiea menziesii</i> (Pursh) Torr. & Gray	youth on age	Saxifragaceae	
118	TRLA6	<i>Trientalis latifolia</i> Hook.	>> <i>Trientalis borealis</i> ssp. <i>latifolia</i>	Primulaceae	
119	TRFR2	<i>Trifolium fragiferum</i> L.	strawberry clover	Fabaceae	
120	TRPR2	<i>Trifolium pratense</i> L.	red clover	Fabaceae	a
121	TRRE3	<i>Trifolium repens</i> L.	white clover	Fabaceae	a
122	TROV2	<i>Trillium ovatum</i> Pursh	Pacific trillium	Liliaceae	
123	TSHE	<i>Tsuga heterophylla</i> (Raf.) Sarg.	western hemlock	Pinaceae	
124	URDI	<i>Urtica dioica</i> L.	nettle	Urticaceae	
125	VAOV2	<i>Vaccinium ovatum</i> Pursh	California huckleberry	Ericaceae	
126	VAPA	<i>Vaccinium parvifolium</i> Sm.	red huckleberry	Ericaceae	
127	VEAM2	<i>Veronica americana</i> Schwein. ex Benth.	American speedwell	Scrophulariaceae	
128	VEAR	<i>Veronica arvensis</i> L.	corn speedwell	Scrophulariaceae	a
129	VEHE2	<i>Veronica hederifolia</i> L.	ivy leaf speedwell	Scrophulariaceae	a
130	VIMA	<i>Vinca major</i> L.	bigleaf periwinkle	Apocynaceae	a
131	VUBR	<i>Vulpia bromoides</i> (L.) S.F. Gray	brome fescue	Poaceae	a

Vascular Plant List for Saltwater State Park

A total of 127 vascular plant species were identified during the 2006 surveys at Saltwater State Park. Of these, 52 of the plant species are non-native, accounting for 41% of the total.

Num	Code	Scientific Name	Common Name/Accepted Synonym	Family	Alien?
1	ABGR	<i>Abies grandis</i> (Dougl. ex D. Don) Lindl.	grand fir	Pinaceae	
2	ACCI	<i>Acer circinatum</i> Pursh	vine maple	Aceraceae	
3	ACMA3	<i>Acer macrophyllum</i> Pursh	bigleaf maple	Aceraceae	
4	ADBI	<i>Adenocaulon bicolor</i> Hook.	pathfinder	Asteraceae	
5	ADAL	<i>Adiantum aleuticum</i> (Rupr.) Paris	Aleutian maidenhair	Pteridaceae	
6	AEHI	<i>Aesculus hippocastanum</i>	horse chestnut	Hippocastanaceae	a
7	AGAL3	<i>Agrostis alba</i> auct. non L. [misapplied]	>> <i>Agrostis gigantea</i>	Poaceae	a
8	ALRU2	<i>Alnus rubra</i> Bong.	red alder	Betulaceae	
9	AMCH4	<i>Ambrosia chamissonis</i> (Less.) Greene	silver burr ragweed	Asteraceae	
10	ARME	<i>Arbutus menziesii</i> Pursh	madrone	Ericaceae	
11	ARSU4	<i>Artemisia suksdorfii</i> Piper	coastal wormwood	Asteraceae	
12	ARSY	<i>Aruncus sylvester</i> Kostel. ex Maxim.	>> <i>Aruncus dioicus</i>	Rosaceae	
13	ATFI	<i>Athyrium filix-femina</i> (L.) Roth	common ladyfern	Dryopteridaceae	
14	BEPE2	<i>Bellis perennis</i> L.	lawn daisy	Asteraceae	a
15	BRPA3	<i>Bromus pacificus</i> Shear	Pacific brome	Poaceae	
16	BRR18	<i>Bromus rigidus</i> Roth	>> <i>Bromus diandrus</i> ssp. <i>rigidus</i>	Poaceae	a
17	BRVU	<i>Bromus vulgaris</i> (Hook.) Shear	Columbia brome	Poaceae	
18	CAOC	<i>Cardamine occidentalis</i> (S. Wats. ex B.L. Robins.) T.J. Howell	big western bittercress	Brassicaceae	
19	CAHE7	<i>Carex hendersonii</i> Bailey	Henderson's sedge	Cyperaceae	
20	CHAL7	<i>Chenopodium album</i> L.	lambsquarters	Chenopodiaceae	
21	CILA2	<i>Cinna latifolia</i> (Trev. ex Goepp.) Griseb.	drooping woodreed	Poaceae	
22	CIAL	<i>Circaea alpina</i> L.	small enchanter's nightshade	Onagraceae	
23	CIAR4	<i>Cirsium arvense</i> (L.) Scop.	Canada thistle	Asteraceae	a
24	COAR4	<i>Convolvulus arvensis</i> L.	field bindweed	Convolvulaceae	a
25	COST4	<i>Cornus stolonifera</i> Michx.	>> <i>Cornus sericea</i> ssp. <i>sericea</i>	Cornaceae	
26	COCO6	<i>Corylus cornuta</i> Marsh.	California hazelnut	Betulaceae	
27	COTON	<i>Cotoneaster</i> Medik.	cotoneaster	Rosaceae	a
28	CRMO3	<i>Crataegus monogyna</i> Jacq.	oneseed hawthorn	Rosaceae	a
29	CYMU	<i>Cymbalaria muralis</i> P.G. Gaertn., B. Mey. & Scherb.	Kenilworth ivy	Scrophulariaceae	a
30	CYSC4	<i>Cytisus scoparius</i> (L.) Link	scotchbroom	Fabaceae	a
31	DAGL	<i>Dactylis glomerata</i> L.	orchardgrass	Poaceae	a
32	DRVE2	<i>Draba verna</i> L.	spring draba	Brassicaceae	a
33	DREX2	<i>Dryopteris expansa</i> (K. Presl) Fraser-Jenkins & Jermy	spreading woodfern	Dryopteridaceae	
34	ELGL	<i>Elymus glaucus</i> Buckl.	blue wildrye	Poaceae	
35	ELMO9	<i>Elymus mollis</i> Trin.	>> <i>Leymus mollis</i> ssp. <i>mollis</i>	Poaceae	
36	ELRE4	<i>Elymus repens</i> (L.) Gould	quackgrass	Poaceae	a
37	EPCIW	<i>Epilobium ciliatum</i> Raf. ssp. <i>watsonii</i> (Barbey) Hoch & Raven	fringed willowherb	Onagraceae	
38	EQAR	<i>Equisetum arvense</i> L.	field horsetail	Equisetaceae	
39	GAAP2	<i>Galium aparine</i> L.	stickywilly	Rubiaceae	a
40	GASH	<i>Gaultheria shallon</i> Pursh	salal	Ericaceae	
41	GERO	<i>Geranium robertianum</i> L.	Robert geranium	Geraniaceae	a
42	GEMA4	<i>Geum macrophyllum</i> Willd.	largeleaf avens	Rosaceae	

43	HEHE	<i>Hedera helix</i> L.	English ivy	Araliaceae	a
44	HOLA	<i>Holcus lanatus</i> L.	common velvetgrass	Poaceae	a
45	HODI	<i>Holodiscus discolor</i> (Pursh) Maxim.	Indian plum	Rosaceae	
46	HOLE	<i>Hordeum leporinum</i> Link	>> <i>Hordeum murinum</i> ssp. <i>leporinum</i>	Poaceae	a
47	HYHI5	<i>Hyacinthoides hispanica</i> (P. Mill.) Rothm.	Hispanic hyacinthoides	Liliaceae	a
48	HYTE	<i>Hydrophyllum tenuipes</i> Heller	Pacific waterleaf	Hydrophyllaceae	
49	HYRA3	<i>Hypochaeris radicata</i> L.	hairy cat's ear	Asteraceae	a
50	ILAQ80	<i>Ilex aquifolium</i> L.	English holly	Aquifoliaceae	a
51	JUEF	<i>Juncus effusus</i> L.	common rush	Juncaceae	
52	LABI	<i>Lactuca biennis</i> (Moench) Fern.	tall blue lettuce	Asteraceae	a
53	LAPU2	<i>Lamium purpureum</i> L.	purple deadnettle	Lamiaceae	
54	LACO3	<i>Lapsana communis</i> L.	common nipplewort	Asteraceae	a
55	LAJA	<i>Lathyrus japonicus</i> Willd.	beach pea	Fabaceae	
56	LELA2	<i>Lepidium latifolium</i> L.	broadleaved pepperweed	Brassicaceae	a
57	LOPE	<i>Lolium perenne</i> L.	perennial ryegrass	Poaceae	a
58	LOHI2	<i>Lonicera hispidula</i> (Lindl.) Dougl. ex Torr. & Gray	pink honeysuckle	Caprifoliaceae	
59	LUAN	<i>Lunaria annua</i> L.	annual honesty	Brassicaceae	a
60	LUCA*	<i>Luzula campestris</i> (L.) DC.	field woodrush	Juncaceae	
61	LYAM3	<i>Lysichiton americanus</i> Hultén & St. John	American skunkcabbage	Araceae	
62	MANE2	<i>Mahonia nervosa</i> (Pursh) Nutt.	Cascade barberry	Berberidaceae	
63	MADI	<i>Maianthemum dilatatum</i> (Wood) A. Nels. & J.F. Macbr.	false lily of the valley	Liliaceae	
64	MAPA5	<i>Malva parviflora</i> L.	cheeseweed mallow	Malvaceae	a
65	MAMA11	<i>Matricaria matricarioides</i> auct. non (Less.) Porter [misapplied]	>> <i>Matricaria discoidea</i>	Asteraceae	a
66	MEHI	<i>Medicago hispida</i> Gaertn.	>> <i>Medicago polymorpha</i>	Fabaceae	a
67	MELU	<i>Medicago lupulina</i> L.	black medick	Fabaceae	a
68	MOPE3	<i>Montia perfoliata</i> (Donn ex Willd.) T.J. Howell	>> <i>Claytonia perfoliata</i> ssp. <i>perfoliata</i>	Caryophyllaceae	
69	MOSI2	<i>Montia sibirica</i> (L.) T.J. Howell	>> <i>Claytonia sibirica</i> var. <i>sibirica</i>	Portulacaceae	
70	OECE	<i>Oemleria cerasiformis</i> (Torr. & Gray ex Hook. & Arn.) Landon	Indian plum	Rosaceae	
71	OESA	<i>Oenanthe sarmentosa</i> K. Presl ex DC.	water parsely	Apiaceae	
72	OPHO	<i>Oplopanax horridus</i> Miq.	devilsclub	Araliaceae	
73	OSCH	<i>Osmorhiza chilensis</i> Hook. & Arn.	>> <i>Osmorhiza berteroi</i>	Apiaceae	
74	PHAR3	<i>Phalaris arundinacea</i> L.	reed canarygrass	Poaceae	a
75	PLLA	<i>Plantago lanceolata</i> L.	narrowleaf plantain	Plantaginaceae	
76	PLMA2	<i>Plantago major</i> L.	common plantain	Plantaginaceae	
77	POAN	<i>Poa annua</i> L.	annual bluegrass	Poaceae	a
78	POPR	<i>Poa pratensis</i> L.	Kentucky bluegrass	Poaceae	a
79	POAV	<i>Polygonum aviculare</i> L.	prostrate knotweed	Polygonaceae	a
80	POGL8	<i>Polypodium glycyrrhiza</i> D.C. Eat.	licorice fern	Polypodiaceae	
81	POMU	<i>Polystichum munitum</i> (Kaulfuss) K. Presl	swordfern	Polypodiaceae	
82	POBAT	<i>Populus balsamifera</i> L. ssp. <i>trichocarpa</i> (Torr. & Gray ex Hook.) Brayshaw	black cottonwood	Salicaceae	
83	PRLA5	<i>Prunus laurocerasus</i> L.	cherry laurel	Rosaceae	a
84	PSME	<i>Pseudotsuga menziesii</i> (Mirbel) Franco	Douglas-fir	Pinaceae	
85	PTAQ	<i>Pteridium aquilinum</i> (L.) Kuhn	bracken fern	Dennstaedtiaceae	
86	PUPA3	<i>Puccinellia pauciflora</i> (J. Presl) Munz	>> <i>Torreyochloa pallida</i> var. <i>pauciflora</i>	Poaceae	
87	PYFU	<i>Pyrus fusca</i> Raf.	>> <i>Malus fusca</i>	Rosaceae	
88	RARE3	<i>Ranunculus repens</i> L.	creeping buttercup	Ranunculaceae	a
89	RHPU	<i>Rhamnus purshiana</i> DC.	>> <i>Frangula purshiana</i>	Rhamnaceae	
90	RIBR	<i>Ribes bracteosum</i> Dougl. ex Hook.	stink currant	Grossulariaceae	

91	RIDI	<i>Ribes divaricatum</i> Dougl.	spreading gooseberry	Grossulariaceae	
92	RISA	<i>Ribes sanguineum</i> Pursh	redflower currant	Grossulariaceae	
93	ROPS	<i>Robinia pseudoacacia</i> L.	black locust	Fabaceae	a
94	RUDI2	<i>Rubus discolor</i> Weihe & Nees	>> <i>Rubus armeniacus</i>	Rosaceae	a
95	RULA	<i>Rubus laciniatus</i> Willd.	cutleaf blackberry	Rosaceae	a
96	RUPA	<i>Rubus parviflorus</i> Nutt.	thimbleberry	Rosaceae	
97	RUSP	<i>Rubus spectabilis</i> Pursh	salmonberry	Rosaceae	
98	RUUR	<i>Rubus ursinus</i> Cham. & Schlecht.	California blackberry	Rosaceae	
99	RUOB	<i>Rumex obtusifolius</i> L.	bitter dock	Polygonaceae	a
100	SALA5	<i>Salix lasiandra</i> Benth.	>> <i>Salix lucida</i> ssp. <i>lasiandra</i>	Salicaceae	
101	SASI2	<i>Salix sitchensis</i> Sanson ex Bong.	Sitka willow	Salicaceae	
102	SARA2	<i>Sambucus racemosa</i> L.	red elderberry	Caprifoliaceae	
103	SEVU	<i>Senecio vulgaris</i> L.	old-man-in-the-Spring	Asteraceae	a
104	SMRA*	<i>Smilacina racemosa</i> (L.) Desf.	>> <i>Maianthemum racemosum</i> ssp. <i>amplexicaule</i>	Liliaceae	
105	SMST	<i>Smilacina stellata</i> (L.) Desf.	>> <i>Maianthemum stellatum</i>	Liliaceae	
106	SODU	<i>Solanum dulcamara</i> L.	climbing nightshade	Solanaceae	a
107	SOOL	<i>Sonchus oleraceus</i> L.	common sowthistle	Asteraceae	a
108	SOAU	<i>Sorbus aucuparia</i> L.	European mountain ash	Rosaceae	a
109	SPDO	<i>Spiraea douglasii</i> Hook.	rose spirea	Rosaceae	
110	SYAL	<i>Symphoricarpos albus</i> (L.) Blake	common snowberry	Caprifoliaceae	
111	TADO	<i>Tanacetum douglasii</i> DC.	>> <i>Tanacetum camphoratum</i>	Asteraceae	
112	TAOF	<i>Taraxacum officinale</i> G.H. Weber ex Wiggers	dandelion	Asteraceae	a
113	TEGR2	<i>Tellima grandiflora</i> (Pursh) Dougl. ex Lindl.	bigflower tellima	Saxifragaceae	
114	THPL	<i>Thuja plicata</i> Donn ex D. Don	western red cedar	Cupressaceae	
115	TRLA6	<i>Trientalis latifolia</i> Hook.	>> <i>Trientalis borealis</i> ssp. <i>latifolia</i>	Primulaceae	
116	TRPR2	<i>Trifolium pratense</i> L.	red clover	Fabaceae	a
117	TRRE3	<i>Trifolium repens</i> L.	white clover	Fabaceae	a
118	TROV2	<i>Trillium ovatum</i> Pursh	Pacific trillium	Liliaceae	
119	TSHE	<i>Tsuga heterophylla</i> (Raf.) Sarg.	western hemlock	Pinaceae	
120	URDI	<i>Urtica dioica</i> L.	nettle	Urticaceae	
121	VAPA	<i>Vaccinium parvifolium</i> Sm.	red huckleberry	Ericaceae	
122	VACA4	<i>Valerianella carinata</i> Loisel.	European cornsalad	Valerianaceae	a
123	VEAM2	<i>Veronica americana</i> Schwein. ex Benth.	American speedwell	Scrophulariaceae	
124	VEAR	<i>Veronica arvensis</i> L.	corn speedwell	Scrophulariaceae	a
125	VIHI	<i>Vicia hirsuta</i> (L.) S.F. Gray	tiny vetch	Fabaceae	a
126	VIMA	<i>Vinca major</i> L.	bigleaf periwinkle	Apocynaceae	a
127	VUBR	<i>Vulpia bromoides</i> (L.) S.F. Gray	brome fescue	Poaceae	a

Ecological Condition of Dash Point and Saltwater State Parks



Figure 7. English ivy climbing trees in the Dash Point park.

We encountered few sites within either Dash Point or Saltwater State Park that had not been disturbed or impacted by resource extraction or recreational activities. Roads and trails, either maintained, undesignated, or abandoned, permeate the diversity of habitats within the parks, indicating a high intensity of human influence on the parks' ecosystems. Invasive plant infestations are common occurrences throughout the parks, 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 parks (Figures 7 and 8). 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 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. Replanting of

controlled areas with native plants and possibly importation of exotic seed free soil will be necessary to prohibit re-infestations of treated areas. Without control efforts, the existing infestations may continue to expand into new areas of the park, threatening the native vegetation and plant communities. Natural successional process that move the existing plant communities toward closed canopy, late seral coniferous forests may also limit the invasive plants to some extent.



Figure 8. Himalayan blackberry infestation in Saltwater State Park.

GIS Products Produced

Associated with this report are polygon layers created by PBI depicting the vegetation community types mapped in Dash Point and Saltwater State Parks. The datasets have been converted into ESRI shapefile format and provided to the Washington State Parks and Recreation Commission. The spatial datasets are 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

Dash Point State Park

April 25, 2006

Field Staff: Hans Smith, Scott Heller

August 2, 2006

Field Staff: Hans Smith, Scott Heller

Saltwater State Park

April 26, 2006

Field Staff: Hans Smith, Scott Heller

August 2, 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 (USESAs) 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 following 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 space between 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 never 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 year'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 – Dash Point State Park

Polygon Number 0
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs Annual 0
 Ferns Total 0

Ferns Evergreen 0
 Ferns Deciduous 0
 Exotics Total 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

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 10
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location SE section of park.

Total Vegetation 6
Trees Total 5
Dominant Trees PSME, TSHE, ARME, ACMA3
emergent 2
maincanopy 5
subcanopy 2
Shrubs Total 5
Dominant Shrubs GASH, RUUR, RUSP
> 1.5' tall 4
< 1.5' tall 3
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 1
Dominant Forbs POMU
Forbs Perennial 1
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 1
Exotics Perennial 1
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 1
Litter 99
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-TSHE/GASH/POMU (CHAPPELL)	80	Matrix	2
2. TSHE-PSME/POMU-DREX2 (CHAPPELL)	20	Small	2
3.	0		0

Notes: Rec type=1 and 3.

Polygon Number 11
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location SE corner of park.

Total Vegetation 6
Trees Total 6
Dominant Trees PSME, ARME, THPL
emergent 3
maincanopy 5
subcanopy 3
Shrubs Total 5
Dominant Shrubs GASH, VAOV2, SARA2, ROGY, HODI
> 1.5' tall 5
< 1.5' tall 2
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 1
Dominant Forbs
Forbs Perennial 1
Forbs Annual 0
Ferns Total 1

Exotic Species

Ferns Evergreen 1
Ferns Deciduous 1
Exotics Total 1
Exotics Perennial 1
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 2
Litter 98
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 1

Primary Exotic
 RUDI2
Secondary Exotic
 SOAU
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-TSHE/GASH-MANE2 (CHAPPELL)	45	Large	2
2. PSME-ARME/GASH (CHAPPELL)	45	Large	2
3. PSME-TSHE/GASH/POMU (CHAPPELL)	10	Small	2

Notes: Rec type=1 and 3

Polygon Number 12
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs 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

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 13
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs 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

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 15
Survey Intensity 1
Observer SH
Date 4/25/2006
Specific Location N portion of eastern arm of park.

Total Vegetation 6
Trees Total 6
Dominant Trees PSME, TSHE
emergent 1
maincanopy 6
subcanopy 2
Shrubs Total 6
Dominant Shrubs GASH
> 1.5' tall 5
< 1.5' tall 3
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 1
Dominant Forbs
Forbs Perennial 1
Forbs Annual 0
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 2
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 2
Moss Lichen 2
Litter 96
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 1

Primary Exotic
 HEHE, ILAQ80
Secondary Exotic

Noxious Exotic

Plant Associations

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

Notes: Some ALRU2/POMU association near wetland. Waypoint 013.

Polygon Number 16
Survey Intensity 1
Observer HS
Date 8/2/2006
Specific Location Center of park.

Total Vegetation 6
Trees Total 5
Dominant Trees ALRU2, ACMA3
emergent 1
maincanopy 5
subcanopy 2
Shrubs Total 6
Dominant Shrubs RUSP, SARA2
> 1.5' tall 0
< 1.5' tall 0
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 3
Dominant Forbs URDI
Forbs Perennial 3
Forbs Annual 1
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 2
Exotics Total 1
Exotics Perennial 1
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 2
Litter 98
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 0
Wildlife 0
Recreation Severity 0
Recreation Type 0
Hydrology 1

Primary Exotic
 SOAU
Secondary Exotic
 PHAR3
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/RUSP c.t. (KUNZE)	90	Matrix	2
2. ALRU2/POMU (CHAPPELL)	10	Small	2
3.	0		0

Notes:

Polygon Number 17
Survey Intensity 1
Observer SH
Date 4/25/2006
Specific Location Far eastern arm of park.

Total Vegetation 6
Trees Total 5
Dominant Trees ALRU2, ACMA3, PSME, TSHE
emergent 2
maincanopy 5
subcanopy 2
Shrubs Total 5
Dominant Shrubs RUSP, SARA2
> 1.5' tall 5
< 1.5' tall 3
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 2
Dominant Forbs
Forbs Perennial 2
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 2
Moss Lichen 2
Litter 96
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 2

Primary Exotic

HEHE

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0

Notes:

Portion of polygon is a wetland with *Populus trichocarpa*, ACMA3, ALRU2, RUSP, SYAL, URDI, TEGR2, POMU. Waypoint 010. Wetland delineation flagging marking areas. (One on either side of

Polygon Number 19A
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location W side of park

Total Vegetation 6
Trees Total 5
Dominant Trees PSME, ACMA3, ALRU2, TSHE
emergent 2
maincanopy 5
subcanopy 3
Shrubs Total 6
Dominant Shrubs GASH, OECE, SARA2, RUSP, VAPA
> 1.5' tall 6
< 1.5' tall 2
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 2
Dominant Forbs POMU
Forbs Perennial 2
Forbs Annual 0
Ferns Total 2

Exotic Species

Ferns Evergreen 2
Ferns Deciduous 1
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 1
Litter 99
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 7
Recreation Severity 3
Recreation Type 4
Hydrology 2

Primary Exotic
 HEHE
Secondary Exotic
 ILAQ80
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-TSHE/GASH/POMU (CHAPPELL)	83	Matrix	2
2. ALRU2/POMU (CHAPPELL)	15	Small	2
3. ALRU2/RUSP c.t. (KUNZE)	2	linear	2

Notes: Wildlife; pileated woodpecker. Rec type; wheeled and pedestrian.

Polygon Number 19B
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location W side of park

Total Vegetation 6
Trees Total 5
Dominant Trees ACMA3, ALRU2, TSHE
emergent 1
maincanopy 5
subcanopy 2
Shrubs Total 4
Dominant Shrubs RUSP, VAPA, HODI, RUUR
> 1.5' tall 3
< 1.5' tall 3
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 3
Dominant Forbs TEGR2, CIAL, URDI
Forbs Perennial 3
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 4
Litter 96
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 2

Primary Exotic
 ILAQ80, DAGL
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPELL)	90	Matrix	2
2. PSME-TSHE/GASH/POMU (CHAPPELL)	7	Small	2
3. ALRU2/RUSP c.t. (KUNZE)	3	linear	2

Notes: Rec type=1 and 3.

Polygon Number 19W
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location NW corner of park.

Total Vegetation 6
Trees Total 5
Dominant Trees ALRU2, ACMA3
emergent 3
maincanopy 4
subcanopy 2
Shrubs Total 5
Dominant Shrubs Ribes sp. RUSP, COST4
> 1.5' tall 5
< 1.5' tall 2
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 3
Dominant Forbs LYAM3, TOME, TEGR2, ATFI
Forbs Perennial 3
Forbs Annual 0
Ferns Total 2

Exotic Species

Ferns Evergreen 1
Ferns Deciduous 2
Exotics Total 1
Exotics Perennial 1
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 3
Moss Lichen 12
Litter 85
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 2

Primary Exotic
 POPR
Secondary Exotic
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/RUSP c.t. (KUNZE)	100	Matrix	2
2.	0		0
3.	0		0

Notes: Rec. type; 1 and 3. Fire evident area.

Polygon Number 2
Survey Intensity 1
Observer SH
Date 4/24/2006
Specific Location NW portion of park (near water).

Total Vegetation 6
Trees Total 5
Dominant Trees ACMA3, ALRU2, PSME, TSHE
emergent 1
maincanopy 5
subcanopy 1
Shrubs Total 5
Dominant Shrubs OECE, RUSP, VAPA, MANE2
> 1.5' tall 5
< 1.5' tall 3
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 2
Dominant Forbs LYAM3, MADI
Forbs Perennial 2
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 3
Exotics Perennial 3
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 1
Moss Lichen 2
Litter 97
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 2
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0

Notes: Major infestation of HEHE on ACMA3.

Polygon Number 21
Survey Intensity 1
Observer SH
Date 4/25/2006
Specific Location Adjacent to campground. Near beginning of Outbound Trail.

Total Vegetation 6
Trees Total 5
Dominant Trees PSME, ALRU2, TSHE
emergent 2
maincanopy 5
subcanopy 2
Shrubs Total 5
Dominant Shrubs GASH, HODI, SARA2, MANE2
> 1.5' tall 5
< 1.5' tall 3
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 1
Dominant Forbs TEGR2
Forbs Perennial 1
Forbs Annual 0
Ferns Total 2

Exotic Species

Ferns Evergreen 2
Ferns Deciduous 1
Exotics Total 1
Exotics Perennial 1
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 3
Bare Ground 2
Moss Lichen 2
Litter 93
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 1

Primary Exotic
 ILAQ80
Secondary Exotic
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-TSHE/GASH-HODI (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0

Notes: Deep ravine in polygon, creek below. Additional photos: Cam #2 1265-66. Rec users--hiking, biking.

Polygon Number 21D
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs 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

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 22
Survey Intensity 1
Observer SH
Date 4/25/2006
Specific Location N side of Dash Point Rd. Near beach

Total Vegetation 6
Trees Total 6
Dominant Trees PSME, TSHE, ALRU2, ACMA3
emergent 2
maincanopy 6
subcanopy 1
Shrubs Total 6
Dominant Shrubs GASH, RUSP, HODI
> 1.5' tall 6
< 1.5' tall 3
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 2
Dominant Forbs URDI
Forbs Perennial 2
Forbs Annual 0
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 1
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 3
Litter 97
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 4
Recreation Severity 3
Recreation Type 3
Hydrology 1

Primary Exotic
 ILAQ80, HEHE
Secondary Exotic
Noxious Exotic

Plant Associations

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

Notes: Some large ACMA3 mixed in the PSME-TSHE/GASH/POMU.

Polygon Number 23
Survey Intensity 1
Observer SH
Date 8/2/2006
Specific Location Near group camp.

Total Vegetation 6
Trees Total 6
Dominant Trees PSME, ACMA3, ALRU2, POTR15
emergent 0
maincanopy 6
subcanopy 2
Shrubs Total 6
Dominant Shrubs OECE, MANE2, RUSP
> 1.5' tall 6
< 1.5' tall 2
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 2
Dominant Forbs GEMA4, URDI
Forbs Perennial 2
Forbs Annual 0
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 2
Exotics Total 5
Exotics Perennial 5
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 2
Moss Lichen 2
Litter 96
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 7
Recreation Severity 3
Recreation Type 4
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic
 ILAQ80
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPELL)	80	Matrix	1
2. TSHE-PSME/POMU-DREX2 (CHAPPELL)	20	Small	1
3.	0		0

Notes: Ferns: POMU, PTAQ. OECE almost exclusive in shrub layer.
 Wildlife is birds

Polygon Number 23D
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs 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

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 24A
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location Around beach, parking lot.

Total Vegetation 6
Trees Total 6
Dominant Trees ACMA3, ALRU2, PSME, TSHE
emergent 2
maincanopy 5
subcanopy 3
Shrubs Total 5
Dominant Shrubs MANE2, RUUR, SARA2
> 1.5' tall 5
< 1.5' tall 2
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 3
Dominant Forbs URDI, TEGR2, POMU
Forbs Perennial 3
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 1
Moss Lichen 2
Litter 97
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 6
Wildlife 0
Recreation Severity 2
Recreation Type 4
Hydrology 2

Primary Exotic
 HEHE
Secondary Exotic
 ILAQ80
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	90	Matrix	2
2. ALRU2/POMU (CHAPPELL)	9	Small	2
3. ALRU2/LYAM3 c.t. (KUNZE)	1	Small	2

Notes: Development=roads and trails. Rec type= 1 and 3.

Polygon Number 24B
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location N side of park

Total Vegetation 6
Trees Total 6
Dominant Trees ACMA3, ALRU2, PSME, ARME
emergent 2
maincanopy 5
subcanopy 2
Shrubs Total 5
Dominant Shrubs SARA2, GASH
> 1.5' tall 5
< 1.5' tall 2
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 2
Dominant Forbs POMU
Forbs Perennial 2
Forbs Annual 0
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 1
Exotics Total 3
Exotics Perennial 3
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 2
Moss Lichen 1
Litter 97
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 6
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 1

Primary Exotic
 HEHE ((BAD!!!))
Secondary Exotic
 ILAQ80
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPELL)	90	Matrix	2
2. PSME-ARME/GASH (CHAPPELL)	5	Small	1
3. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	5	Small	2

Notes: Development=roads and trails. Rec type= 1 and 3.

Polygon Number 25
Survey Intensity 1
Observer SH
Date 4/25/2006
Specific Location Along beach; upper slope and beyond.

Total Vegetation 6
Trees Total 6
Dominant Trees PSME, TSHE, ACMA3, ALRU2
emergent 2
maincanopy 6
subcanopy 3
Shrubs Total 5
Dominant Shrubs GASH, HODI, SARA2
> 1.5' tall 5
< 1.5' tall 3
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 2
Dominant Forbs SMRA, TEGR2
Forbs Perennial 2
Forbs Annual 0
Ferns Total 5

Exotic Species

Ferns Evergreen 5
Ferns Deciduous 2
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 2
Moss Lichen 2
Litter 96
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 1
Recreation Type 3
Hydrology 1

Primary Exotic
 ILAQ80, HEHE
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-TSHE/GASH/POMU (CHAPPELL)	70	Matrix	2
2. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	30	Small	2
3.	0		0

Notes: Hiker created trails up steep slope from beach; quickening erosion.

Polygon Number 26
Survey Intensity 1
Observer SH
Date 4/25/2006
Specific Location Eastern arm of park.

Total Vegetation 6
Trees Total 6
Dominant Trees PSME, TSHE, ARME, THPL, ALRU2
emergent 1
maincanopy 6
subcanopy 2
Shrubs Total 6
Dominant Shrubs GASH, SARA2, VAOV2, HODI, RHMA3
> 1.5' tall 6
< 1.5' tall 4
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 1
Dominant Forbs
Forbs Perennial 1
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 3
Moss Lichen 2
Litter 95
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 4
Recreation Severity 3
Recreation Type 4
Hydrology 1

Primary Exotic
 ILAQ80, HEHE
Secondary Exotic

Noxious Exotic

Plant Associations

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

Notes: Rec users--biking and hiking.

Polygon Number 27
Survey Intensity 1
Observer SH
Date 4/25/2006
Specific Location Eastern arm of park.

Total Vegetation 6
Trees Total 6
Dominant Trees ALRU2, PSME, TSHE
emergent 1
maincanopy 6
subcanopy 2
Shrubs Total 5
Dominant Shrubs RUSP, SARA2, MANE2, GASH
> 1.5' tall 5
< 1.5' tall 3
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 2
Dominant Forbs SMRA, TROV2, MADI, URDI
Forbs Perennial 2
Forbs Annual 0
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 2
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 2
Moss Lichen 1
Litter 97
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 4
Recreation Severity 3
Recreation Type 4
Hydrology 2

Primary Exotic
 ILAQ80, HEHE
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0

Notes: Several large ILAQ80 in polygon (tree size). HEHE climbing up to 20m high in ALRU2. Rec users include biking and hiking. Hydrology--culvert (currently a dry stream). Rec users--hiking,

Polygon Number 28
Survey Intensity 1
Observer HS
Date 8/2/2006
Specific Location E boundary of park.

Total Vegetation 6
Trees Total 5
Dominant Trees ACMA3, ALRU2, PSME
emergent 2
maincanopy 5
subcanopy 3
Shrubs Total 5
Dominant Shrubs OECE, HODI, COCO6, RUSP, RUUR
> 1.5' tall 5
< 1.5' tall 4
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 2
Dominant Forbs
Forbs Perennial 2
Forbs Annual 1
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 2
Exotics Total 3
Exotics Perennial 3
Exotics Annual 1
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 1
Litter 99
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 0
Wildlife 7
Recreation Severity 2
Recreation Type 3
Hydrology 1

Primary Exotic
 ILAQ80
Secondary Exotic
 HEHE
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPELL)	50	Matrix	1
2. TSHE-PSME/POMU-DREX2 (CHAPPELL)	30	Large	2
3. ALRU2/RUSP c.t. (KUNZE)	20	Large	2

Notes: Ferns: POMU. Wildlife is birds

Polygon Number 29
Survey Intensity 1
Observer SH
Date 4/25/2006
Specific Location Adjacent to Hwy 509/Dash Point Rd. NE portion of park and adjacent to park entrance.
Total Vegetation 5
Trees Total 5
Dominant Trees PSME, TSHE, ACMA3, ALRU2
emergent 1
maincanopy 5
subcanopy 2
Shrubs Total 5
Dominant Shrubs GASH, HODI, VAOV2, RUSP
> 1.5' tall 5
< 1.5' tall 3
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 2
Dominant Forbs
Forbs Perennial 2
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 3
Exotics Perennial 3
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 6
Bare Ground 0
Moss Lichen 2
Litter 92
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 6
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 1

Primary Exotic
 ILAQ80, HEHE
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-TSHE/GASH/POMU (CHAPPELL)	90	Matrix	2
2. ALRU2/POMU (CHAPPELL)	10	Small	2
3.	0		0

Notes: Portion of campground w/ roads, bathrooms, trash cans etc. in polygon. Abundance of Ilex. Gravel estimate includes pavement.

Polygon Number 3
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs 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

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 4
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location N side of park.

Total Vegetation 6
Trees Total 6
Dominant Trees PSME, TSHE, ACMA3, ARME
emergent 3
maincanopy 5
subcanopy 2
Shrubs Total 5
Dominant Shrubs GASH, HODI, COCO6, RUUR
> 1.5' tall 5
< 1.5' tall 3
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 1
Dominant Forbs POMU
Forbs Perennial 1
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 1
Litter 99
Logging 3
Stand Age 3
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic
 ILAQ80
Noxious Exotic

Plant Associations

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

Notes: Rec type=1 and 3.

Polygon Number 5
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs 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

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 5B
Survey Intensity 2
Observer HS
Date 8/2/2006
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
Graminoids Perennial 0
Graminoids Annual 0
Forbs Total 0
Dominant Forbs
Forbs Perennial 0
Forbs 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

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 6
Survey Intensity 1
Observer SH
Date 8/2/2006
Specific Location Near entrance road, campground

Total Vegetation 6
Trees Total 6
Dominant Trees PSME, ACMA3, ALRU2
emergent 2
maincanopy 6
subcanopy 2
Shrubs Total 6
Dominant Shrubs GASH, OECE, RUSP, SARA2, RUPA
> 1.5' tall 6
< 1.5' tall 1
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 2
Dominant Forbs GEMA4
Forbs Perennial 2
Forbs Annual 0
Ferns Total 5

Exotic Species

Ferns Evergreen 5
Ferns Deciduous 2
Exotics Total 5
Exotics Perennial 5
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 10
Moss Lichen 2
Litter 88
Logging 3
Stand Age 5
Agriculture 0
Livestock 0
Development 6
Wildlife 7
Recreation Severity 2
Recreation Type 4
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic
 ILAQ80
Noxious Exotic
 RUDI2

Plant Associations

	Percent	Pattern	Rank
1. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	80	Matrix	1
2. PSME-TSHE/GASH/POMU (CHAPPELL)	20	Small	1
3.	0		0

Notes: Ferns: POMU, PTAQ. Wildlife is birds. Roads, structures, trails

Polygon Number 7
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location SW of park corner

Total Vegetation 6
Trees Total 4
Dominant Trees ALRU2
emergent 0
maincanopy 4
subcanopy 1
Shrubs Total 6
Dominant Shrubs RUSP, OECE
> 1.5' tall 6
< 1.5' tall 1
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 3
Dominant Forbs OESA, ATFI
Forbs Perennial 3
Forbs Annual 0
Ferns Total 2

Exotic Species

Ferns Evergreen 1
Ferns Deciduous 2
Exotics Total 1
Exotics Perennial 1
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 20
Moss Lichen 30
Litter 50
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 2

Primary Exotic
 POPR
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/RUSP c.t. (KUNZE)	100	Matrix	2
2.	0		0
3.	0		0

Notes: Big alder, Road above wetland. Rec type=1 and 3.

Polygon Number 8
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location S side of park.

Total Vegetation 6
Trees Total 5
Dominant Trees ALRU2, ACMA3, TSHE
emergent 1
maincanopy 5
subcanopy 2
Shrubs Total 5
Dominant Shrubs RUSP, OECE
> 1.5' tall 5
< 1.5' tall 2
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 3
Dominant Forbs MOSI2, MADI, POMU
Forbs Perennial 3
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 0
Exotics Total 1
Exotics Perennial 1
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 0
Litter 100
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 2

Primary Exotic
 ILAQ80
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPELL)	80	Matrix	2
2. ALRU2/RUSP c.t. (KUNZE)	10	Large	2
3. PSME-TSHE/GASH/POMU (CHAPPELL)	10	Small	2

Notes: Fire evident area. Rec type=1 and 3. Tree frogs, owls.

Polygon Number 9
Survey Intensity 1
Observer HS
Date 4/25/2006
Specific Location S side of park.

Total Vegetation 6
Trees Total 6
Dominant Trees PSME, ALRU2, TSHE
emergent 3
maincanopy 5
subcanopy 3
Shrubs Total 6
Dominant Shrubs GASH, RUSP, COCO6
> 1.5' tall 6
< 1.5' tall 2
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 1
Dominant Forbs POMU
Forbs Perennial 1
Forbs Annual 0
Ferns Total 2

Exotic Species

Ferns Evergreen 2
Ferns Deciduous 1
Exotics Total 1
Exotics Perennial 1
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 1
Litter 99
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 4
Hydrology 1

Primary Exotic
 ILAQ80
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-TSHE/GASH/POMU (CHAPPELL)	95	Matrix	2
2. ALRU2/POMU (CHAPPELL)	5	Small	2
3.	0		0

Notes: Rec type; 1 and 3.

Vegetation Polygon Data – Saltwater State Park

Polygon Number 1
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs Annual 0
 Ferns Total 0

Ferns Evergreen 0
 Ferns Deciduous 0
 Exotics Total 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

Exotic Species

Primary Exotic
 Secondary Exotic
 Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. developed	0		0
2.	0		0
3.	0		0

Notes:

Polygon Number 10
Survey Intensity 1
Observer SH
Date 4/26/2006
Specific Location Bluff near beach

Total Vegetation 5
Trees Total 5
Dominant Trees PSME, TSHE, ACMA3, ABGR
emergent 2
maincanopy 5
subcanopy 3
Shrubs Total 4
Dominant Shrubs HODI, SYAL, GASH, VAOV2
> 1.5' tall 4
< 1.5' tall 2
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 2
Dominant Forbs
Forbs Perennial 2
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 4
Exotics Perennial 4
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 5
Moss Lichen 0
Litter 95
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 6
Wildlife 0
Recreation Severity 3
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE, ILAQ80
Secondary Exotic
 CYSC4
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-TSHE/HODI/POMU (CHAPPELL)	100	Matrix	1
2.	0		0
3.	0		0

Notes: Abundance of HEHE. Exotics increase in disturbed areas. A group camp, and old fireplace in polygon. The trails and developed areas are open and "parklike".

Polygon Number 10A
Survey Intensity 1
Observer SH
Date 4/26/2006
Specific Location E section of polygon 10

Total Vegetation 6
Trees Total 6
Dominant Trees ACMA3, ALRU2, PSME
emergent 1
maincanopy 6
subcanopy 1
Shrubs Total 5
Dominant Shrubs HODI, RUSP, SARA2
> 1.5' tall 5
< 1.5' tall 3
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 3
Dominant Forbs TEGR2, URDI
Forbs Perennial 3
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 2
Exotics Perennial 2
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 4
Bare Ground 3
Moss Lichen 1
Litter 92
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE, ILAQ80
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0

Notes: Polygon on steep slope. Stream runs along polygon.
 Hydrology--bridge, but no alteration os stream.

Polygon Number 10B
Survey Intensity 2
Observer SH
Date 4/26/2006
Specific Location Along beach; slope of polygon 10, W facing. W portion of polygon 10.
Total Vegetation 0
Trees Total 0
Dominant Trees ACMA3, ALRU2
emergent 0
maincanopy 0
subcanopy 0
Shrubs Total 0
Dominant Shrubs
> 1.5' tall 0
< 1.5' tall 0
Graminoids Total 0
Dominant Graminoids
Graminoids Perennial 0
Graminoids Annual 0
Forbs Total 0
Dominant Forbs
Forbs Perennial 0
Forbs Annual 0
Ferns Total 0

Exotic Species

Ferns Evergreen 0
Ferns Deciduous 0
Exotics Total 0
Exotics Perennial 0
Exotics Annual 0
Water
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

Primary Exotic

RUDI2

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	100	Matrix	1
2.	0		0
3.	0		0

Notes: Landslide area. Rubus discolor infestation along chain-link fence separating slope from beach/grassy area.

Polygon Number 11
Survey Intensity 1
Observer HS
Date 4/26/2006
Specific Location W side, S of bridge.

Total Vegetation 6
Trees Total 5
Dominant Trees ACMA3, ALRU2, TSHE
emergent 2
maincanopy 5
subcanopy 2
Shrubs Total 5
Dominant Shrubs
> 1.5' tall 5
< 1.5' tall 5
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 3
Dominant Forbs URDI, TEGR2
Forbs Perennial 3
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 5
Exotics Perennial 5
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 1
Litter 99
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic
 ILAQ80
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPELL)	70	Matrix	1
2. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	30	Matrix	1
3.	0		0

Notes:

Polygon Number 12
Survey Intensity 1
Observer HS
Date 4/26/2006
Specific Location Ravine on W side of bridge.

Total Vegetation 6
Trees Total 6
Dominant Trees TSHE, PSME, ACMA3, ABGR
emergent 3
maincanopy 5
subcanopy 3
Shrubs Total 4
Dominant Shrubs HEHE, SARA2, VAPA
> 1.5' tall 4
< 1.5' tall 4
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 2
Dominant Forbs POMU, ATFI
Forbs Perennial 2
Forbs Annual 0
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 2
Exotics Total 3
Exotics Perennial 3
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 1
Litter 99
Logging 2
Stand Age 3
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 2
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic
 ILAQ80
Noxious Exotic

Plant Associations

	Percent	Pattern	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: Evidence of fire.

Polygon Number 13
Survey Intensity 1
Observer HS
Date 8/2/2006
Specific Location SW corner of park.

Total Vegetation 4
Trees Total 0
Dominant Trees
emergent 0
maincanopy 0
subcanopy 0
Shrubs Total 1
Dominant Shrubs
> 1.5' tall 0
< 1.5' tall 1
Graminoids Total 3
Dominant Graminoids ELMO9, ARAL, HOLA
Graminoids Perennial 3
Graminoids Annual 2
Forbs Total 3
Dominant Forbs AMCH4, LAJA
Forbs Perennial 3
Forbs Annual 2
Ferns Total 1

Exotic Species

Ferns Evergreen 0
Ferns Deciduous 1
ExoticsTotal 3
Exotics Perennial 3
Exotics Annual 2
Water
Rock Outcrop 0
Gravel 0
Bare Ground 30
Moss Lichen 0
Litter 70
Logging 0
Stand Age 0
Agriculture 0
Livestock 0
Development 0
Wildlife 7
Recreation Severity 3
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic
 AGRE2
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ELMO9 Community (KUNZE)	100	Matrix	2
2.	0		0
3.	0		0

Notes: Wildlife is birds

Polygon Number 14
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs 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

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. developed	0		0
2.	0		0
3.	0		0

Notes:

Polygon Number 2
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs 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

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. Water	0		0
2.	0		0
3.	0		0

Notes:

Polygon Number 3
Survey Intensity 1
Observer HS
Date 4/26/2006
Specific Location Sw corner of park.

Total Vegetation 6
Trees Total 6
Dominant Trees ACMA3, ALRU2, TSHE
emergent 1
maincanopy 6
subcanopy 2
Shrubs Total 6
Dominant Shrubs HEHE, OECE, RUSP, RUDI2
> 1.5' tall 5
< 1.5' tall 5
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 1
Dominant Forbs POMU
Forbs Perennial 1
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 5
Exotics Perennial 5
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 1
Litter 99
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 6
Wildlife 0
Recreation Severity 2
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic
 RUDI2
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPELL)	89	Matrix	1
2. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	6	Large	2
3. TSHE-PSME/POMU-DREX2 (CHAPPELL)	5	Small	2

Notes: Development=2 and 3

Polygon Number 4A
Survey Intensity 1
Observer SH
Date 4/26/2006
Specific Location

Total Vegetation 6
Trees Total 6
Dominant Trees ACMA3, ALRU2, (PSME, ABGR, THPL, TSHE)
emergent 2
maincanopy 6
subcanopy 3
Shrubs Total 5
Dominant Shrubs RUSP, SARA2, MANE2
> 1.5' tall 5
< 1.5' tall 3
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 2
Dominant Forbs
Forbs Perennial 2
Forbs Annual 0
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 2
Exotics Total 4
Exotics Perennial 4
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 2
Bare Ground 2
Moss Lichen 2
Litter 94
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic
 ILAQ80
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	60	Matrix	1
2. ALRU2/POMU (CHAPPELL)	30	Large	1
3. PSME-TSHE/GASH/POMU (CHAPPELL)	10	Small	1

Notes:

Polygon Number 4B
Survey Intensity 1
Observer HS
Date 8/2/2006
Specific Location

Total Vegetation 6
Trees Total 5
Dominant Trees PSME, TSHE, THPL, ACMA3
emergent 1
maincanopy 5
subcanopy 2
Shrubs Total 4
Dominant Shrubs HODI, SARA2, MANE2, COCO6
> 1.5' tall 4
< 1.5' tall 3
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 2
Dominant Forbs TEGR2, HYTE
Forbs Perennial 2
Forbs Annual 1
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 2
Exotics Total 3
Exotics Perennial 3
Exotics Annual 0
Water 0
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 0
Litter 100
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 2
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic
 DIPU
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-TSHE/MANE2/POMU (CHAPPELL)	55	Matrix	1
2. TSHE-PSME/POMU-DREX2 (CHAPPELL)	30	Large	1
3. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	15	Small	1

Notes:

Polygon Number 4C
Survey Intensity 2
Observer HS
Date 8/2/2006
Specific Location

Total Vegetation 6
Trees Total 5
Dominant Trees ALRU2
emergent 0
maincanopy 5
subcanopy 0
Shrubs Total 4
Dominant Shrubs RUSP, RUDI2
> 1.5' tall 4
< 1.5' tall 2
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 3
Dominant Forbs TITR
Forbs Perennial 3
Forbs Annual 1
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 2
ExoticsTotal 3
Exotics Perennial 3
Exotics Annual 0
Water 0
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 0
Litter 100
Logging 3
Stand Age 1
Agriculture 0
Livestock 0
Development 0
Wildlife 0
Recreation Severity 0
Recreation Type 0
Hydrology 2

Primary Exotic
 RUDI2
Secondary Exotic
 RARE3
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ALRU2/POMU (CHAPPELL)	60	Matrix	1
2. ALRU2/RUSP c.t. (KUNZE)	40	Large	1
3.	0		0

Notes:

Polygon Number 4D
Survey Intensity 2
Observer HS
Date 8/2/2006
Specific Location

Total Vegetation 6
Trees Total 5
Dominant Trees ALRU2
emergent 0
maincanopy 5
subcanopy 0
Shrubs Total 5
Dominant Shrubs RUSP, RUDI2
> 1.5' tall 5
< 1.5' tall 2
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 4
Dominant Forbs TITR, ATFI,
Forbs Perennial 4
Forbs Annual 1
Ferns Total 4

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 3
Exotics Total 3
Exotics Perennial 3
Exotics Annual 0
Water 0
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 0
Litter 100
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 3
Hydrology 2

Primary Exotic
 RARE3
Secondary Exotic
 RUDI2
Noxious Exotic

Plant Associations

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

Notes:

Polygon Number 4E
Survey Intensity 1
Observer HS
Date 8/2/2006
Specific Location

Total Vegetation 6
Trees Total 5
Dominant Trees TSHE, PSME, THPL, ACMA3
emergent 1
maincanopy 5
subcanopy 2
Shrubs Total 4
Dominant Shrubs HEHE, SARA2, HODI
> 1.5' tall 2
< 1.5' tall 4
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 2
Dominant Forbs
Forbs Perennial 2
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 1
Exotics Total 4
Exotics Perennial 4
Exotics Annual 0
Water 0
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 0
Litter 100
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 3
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic

Noxious Exotic

Plant Associations

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

Notes:

Polygon Number 4F
Survey Intensity 1
Observer HS
Date 8/2/2006
Specific Location

Total Vegetation 6
Trees Total 5
Dominant Trees TSHE, PSME, THPL, ACMA3, ABGR, ALRU
emergent 2
maincanopy 5
subcanopy 2
Shrubs Total 4
Dominant Shrubs GASH, MANE2, SARA2, COCO6
> 1.5' tall 4
< 1.5' tall 3
Graminoids Total 2
Dominant Graminoids
Graminoids Perennial 2
Graminoids Annual 0
Forbs Total 2
Dominant Forbs
Forbs Perennial 2
Forbs Annual 1
Ferns Total 4

Exotic Species

Ferns Evergreen 4
Ferns Deciduous 2
Exotics Total 3
Exotics Perennial 3
Exotics Annual 0
Water 0
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 0
Litter 100
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 2
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-TSHE/GASH/POMU (CHAPPELL)	60	Matrix	1
2. TSHE-PSME/POMU-DREX2 (CHAPPELL)	30	Large	1
3. PSME-TSHE/MANE2/POMU (CHAPPELL)	10	Small	1

Notes:

Polygon Number 6
Survey Intensity 1
Observer HS
Date 4/26/2006
Specific Location NW polygon.

Total Vegetation 6
Trees Total 5
Dominant Trees ACMA3, ALRU2, PSME, TSHE
emergent 2
maincanopy 5
subcanopy 3
Shrubs Total 6
Dominant Shrubs HEHE, RUSP, OECE
> 1.5' tall 4
< 1.5' tall 5
Graminoids Total 1
Dominant Graminoids
Graminoids Perennial 1
Graminoids Annual 0
Forbs Total 3
Dominant Forbs TEGR2, HYTE, POMU
Forbs Perennial 3
Forbs Annual 0
Ferns Total 3

Exotic Species

Ferns Evergreen 3
Ferns Deciduous 2
Exotics Total 5
Exotics Perennial 5
Exotics Annual 0
Water
Rock Outcrop 0
Gravel 0
Bare Ground 0
Moss Lichen 2
Litter 98
Logging 3
Stand Age 2
Agriculture 0
Livestock 0
Development 3
Wildlife 0
Recreation Severity 2
Recreation Type 3
Hydrology 1

Primary Exotic
 HEHE
Secondary Exotic
 ILAQ80
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ACMA3-ALRU2/POMU-TEGR2 (CHAPPELL)	60	Matrix	1
2. ALRU2/POMU (CHAPPELL)	40	Large	1
3.	0		0

Notes:

Polygon Number 7
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs 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

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. developed	0		0
2.	0		0
3.	0		0

Notes:

Polygon Number 9
 Survey Intensity 2
 Observer HS
 Date 8/2/2006
 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
 Graminoids Perennial 0
 Graminoids Annual 0
 Forbs Total 0
 Dominant Forbs
 Forbs Perennial 0
 Forbs 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

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. developed	0		0
2.	0		0
3.	0		0

Notes: