Rare Plant and Vegetation Surveys of Fort Flagler, Kinney Point and Mystery Bay State Parks

Pacific Biodiversity Institute

Rare Plant and Vegetation Survey of Fort Flagler, Kinney Point, and Mystery Bay State Parks

Dana Visalli
dana@methow.com

Hans M. Smith IV
hans@pacificbio.org

Peter H. Morrison
peter@pacificbio.org

December 2006

Pacific Biodiversity Institute
P.O. Box 298
Winthrop, Washington 98862
509-996-2490

Recommended Citation

Visalli, J.D., H.M. Smith IV, and P.H. Morrison. 2006. Rare Plant and Vegetation Survey of Fort Flagler, Kinney Point, and Mystery Bay State Park. Pacific Biodiversity Institute, Winthrop, Washington. 113 p.

Acknowledgements

The photographs in this report are by Dana Visalli, and Hans Smith.

Project Funding

This project was conducted under a contract with the Washington State Parks and Recreation Commission.

Table of Contents

Introduction

Under contract with the Washington State Parks and Recreation Commission, Fort Flagler, Kinney Point, and Mystery Bay State Park properties, located in Jefferson County, were surveyed for rare plant occurrences and mapped according to vegetation communities by Pacific Biodiversity Institute (PBI). Figure 1 illustrates the location of these parks on Morrowstone Island near Port Townsend. Vegetation data was collected for all the mapped vegetation types. This report summarizes the activities and findings of the contracted work.

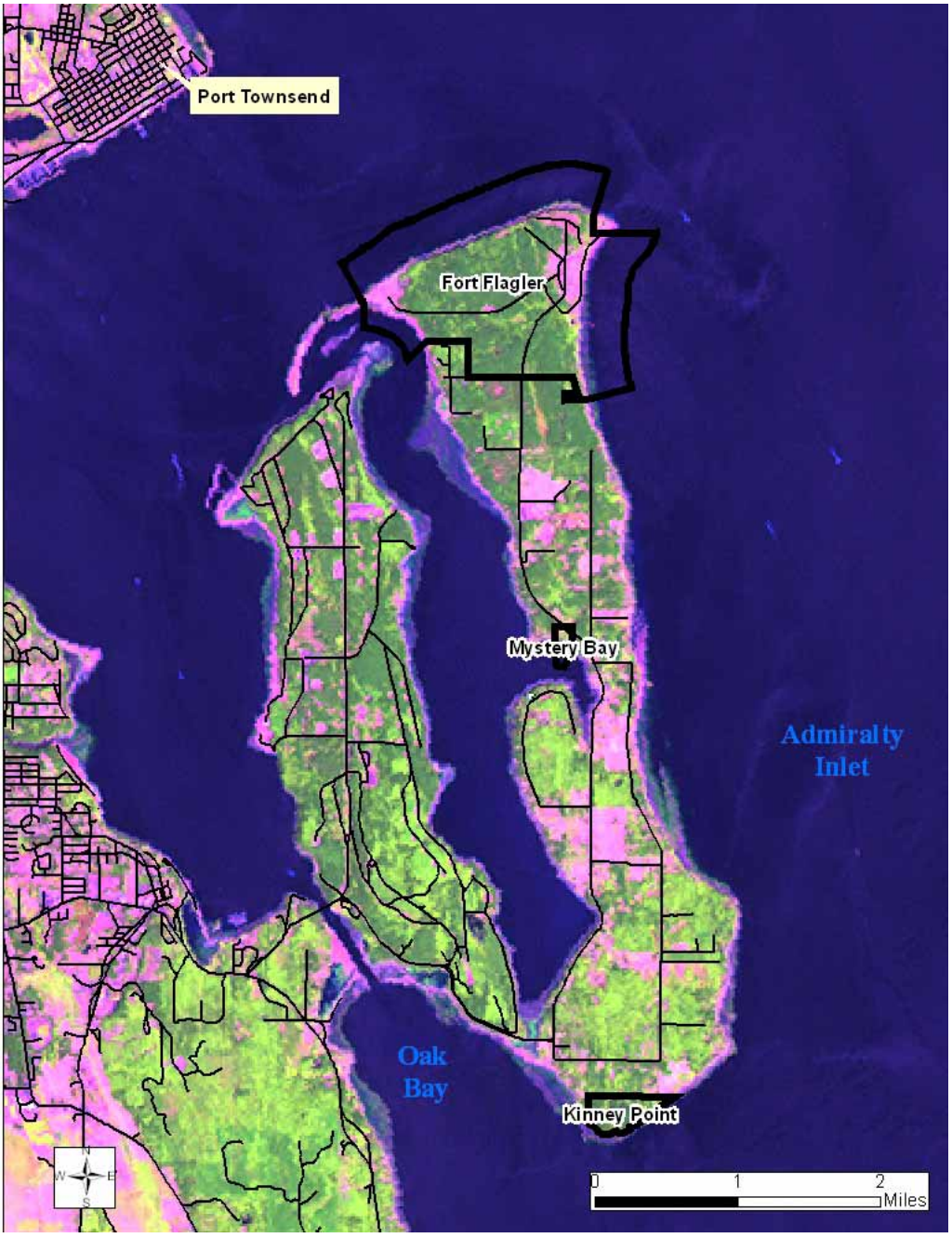


Figure 1. Overview of Fort Flagler, Kinney Point, and Mystery Bay State Park properties.

Survey Routes

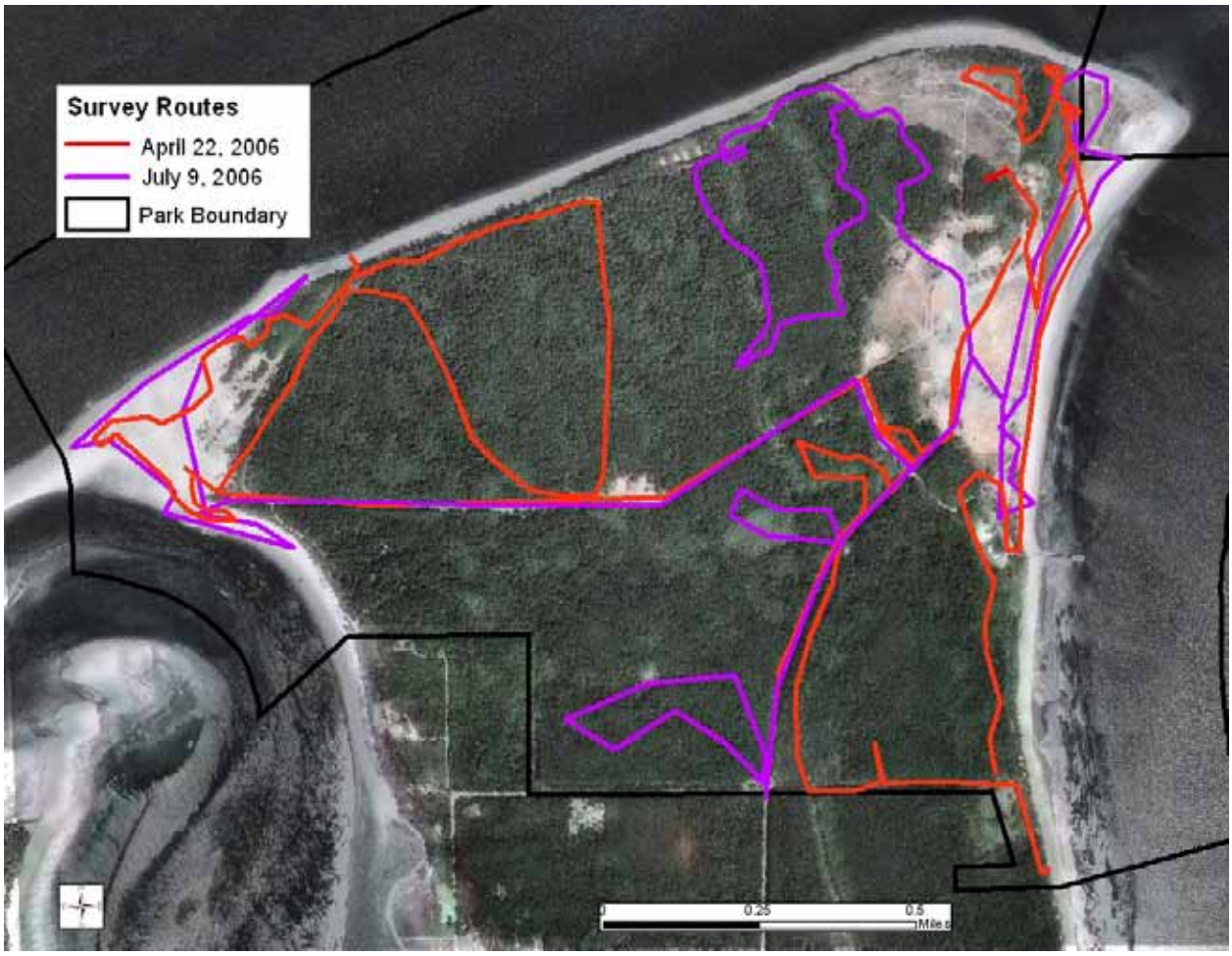


Figure 2. Survey routes for Fort Flagler State Park.

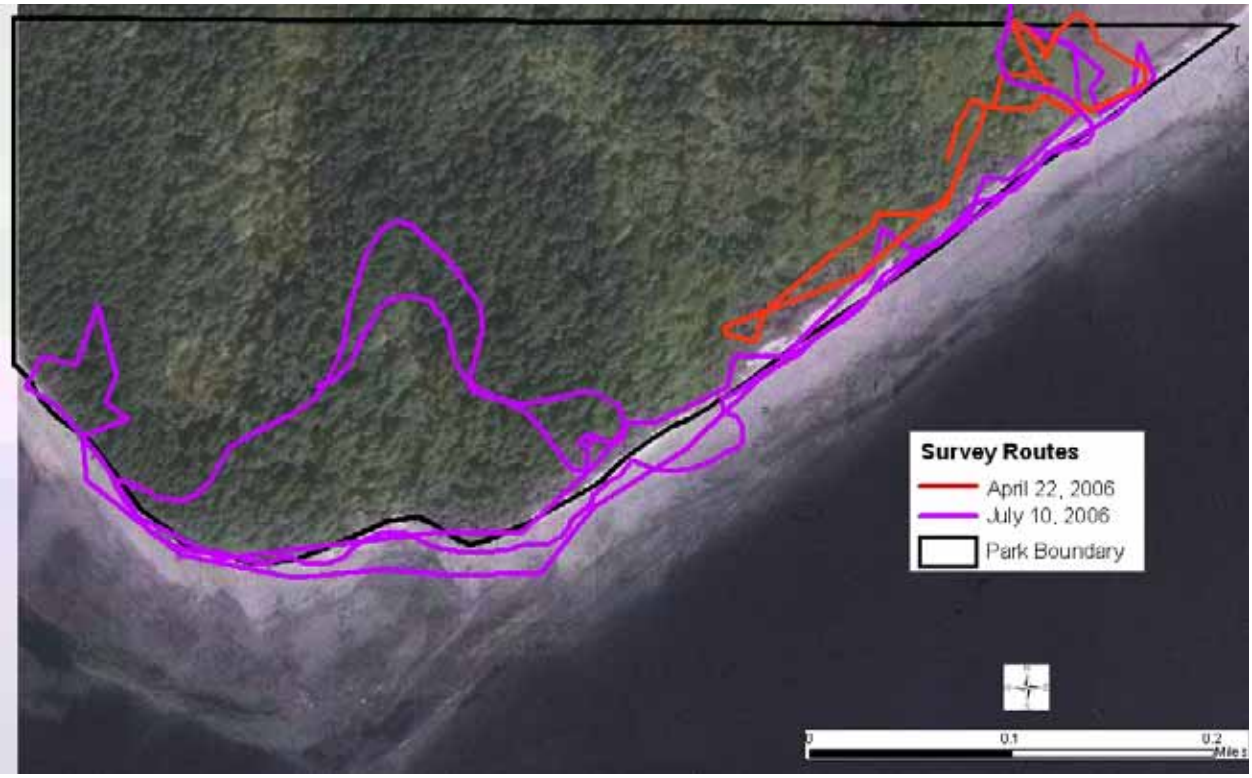


Figure 3. Survey routes for Kinney Point.

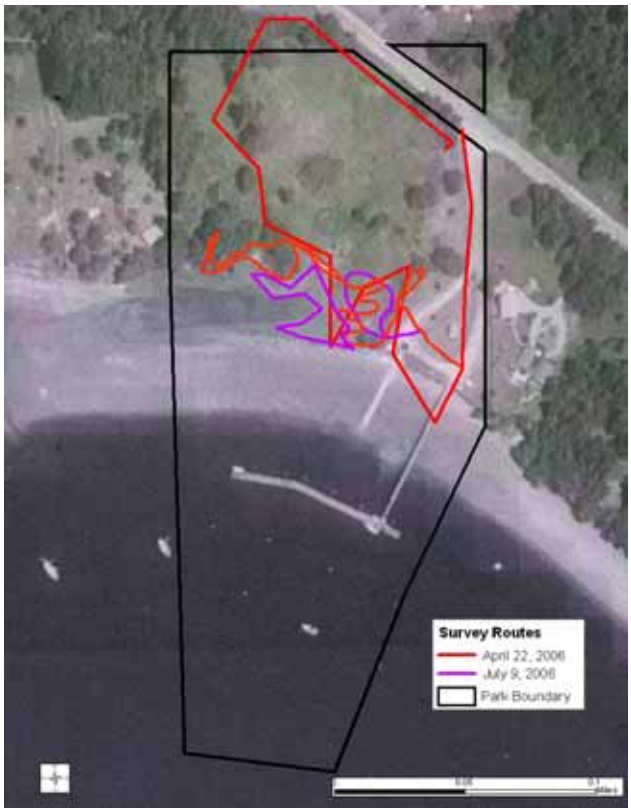


Figure 4. Survey routes for Mystery Bay State Park.

Vegetation Communities

Methods

Vegetation communities within Fort Flagler, Kinney Point, and Mystery Bay State Park properties 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), baseline inventory of rare, threatened and endangered plant species/communities along Washington's Pacific coast (Kunze 1882) and freshwater wetland vegetation (Kunze 1994). In some cases, the WADNR descriptions were not adequate in describing existing vegetation associations. In these cases, alternative vegetation communities or plant associations were created by PBI or found in alternative reference material.

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

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

Results

We mapped and surveyed 41 vegetation community polygons, comprised of 19 vegetation community types, within Fort Flagler State Park. We mapped and surveyed 9 vegetation community polygons within the Kinney Point State Park property, comprised of 11 vegetation community types. Within Mystery Bay State Park, we mapped and surveyed 11 vegetation community polygons, comprised of 10 vegetation community types. Vegetation community polygons are either stand-alone plant associations or mosaics of multiple plant associations. Tables 1 – 3 list the plant associations and/or cover types found within the Fort Flagler, Kinney Point, and Mystery Bay State Park properties. See Appendix B for interpretation of "Status" codes. Figures 5 – 10 illustrate the location of the vegetation community polygons. Note that Figures 6, 8, and 10 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 Fort Flagler State Park

Abbreviation	Association Name	English Name	Reference	Status	PA1 Occurrence
ACMA-ALRU/POMU-TEGR2	*Acer macrophyllum–Alnus rubra / Polystichum munitum - Tellima grandiflora*	bigleaf maple–red alder / swordfern – fringecup	Chappell 2004	G2G3S2	1
ALRU2/POMU	*Alnus rubra / Polystichum munitum*	red alder / swordfern	Chappell 2004	G4S4	2
CAOB3 c.t.	*Carex obnupta community type*	slough sedge community type	Kunze 1994	G4	0
ELMO9 community	*Elymus mollis community*	American dunegrass community	Kunze and Cornelius 1982	G2?	2
PSME/GASH-HODI	*Pseudotsuga menziesii / Gaultheria shallon - Holodiscus discolor*	Douglas-fir / salal - oceanspray	Chappell 2004	G2G3S2	1
PSME-THPL-(ABGR)/GASH	*Pseudotsuga menziesii - Thuja plicata (Abies grandis) / Gaultheria shallon*	Douglas-fir - red cedar (grand fir) / salal	Chappell 2004	G2S1	7
PSME-THPL/GASH-MANE2/POMU	*Pseudotsuga menziesii - Thuja plicata / Gaultheria shallon - Mahonia nervosa / Polystichum munitum*	Douglas-fir - red cedar / salal - Cascade oregongrape / swordfern	Chappell 2004	G1S1	0
PSME-TSHE/GASH/POMU	*Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon / Polystichum munitum*	Douglas-fir - western hemlock / salal / swordfern	Chappell 2004	G4G5S4	1
PYFU c.t.	*Pyrus fusca community type*	crabapple community type	Kunze 1994	G3	1
RONU/FERU2	*Rosa nutakana / Festuca rubra*	Nootka rose / red fescue	Kunze and Cornelius 1982	G1G2Q	2
Salix sp. c.t.	*Salix spp. community type*	willow community type	Kunze 1994		2
SCAM2 community	*Scirpus americanus Community*	American bulrush	Kunze and Cornelius 1982	G3	1
Shrubland Unclassified			Chappell 2004		1
THPL-ABGR/POMU	*Thuja plicata - Abies grandis / Polystichum munitum*	red cedar - grand fir / swordfern	Chappell 2004	G1S1	6
Eroding Sandy Cliff			PBI		2
abandoned field					1
Beach					2
Developed					5
Water					5

Table 2. Vegetation Community Types Encountered Kinney Point State Park

Abbreviation	Association Name	English Name	Reference	Status	PA1 Occurrence
ALRU2/POMU	*Alnus rubra / Polystichum munitum*	red alder / swordfern	Chappell 2004	G4S4	0
ALRU2/RUSP c.t.	*Alnus rubra / Rubus spectabilis* community type	red alder / salmonberry community type	Kunze 1994	G4G5	3
PSME-TSHE/GASH/POMU	*Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon / Polystichum munitum*	Douglas-fir - western hemlock / salal / swordfern	Chappell 2004	G4G5S4	1
PSME-ABGR/HODI/POMU	*Pseudotsuga menziesii - Abies grandis / Holodiscus discolor / Polystichum munitum*	Douglas-fir - grand fir / oceanspray / swordfern	Chappell 2004	G1?S1	1
PSME-ARME/GASH	*Pseudotsuga menziesii - Arbutus menziesii / Gaultheria shallon*	Douglas-fir - madrone / salal	Chappell 2004	G3S2	0
PSME-THPL-(ABGR)/GASH	*Pseudotsuga menziesii - Thuja plicata (Abies grandis) / Gaultheria shallon*	Douglas-fir - red cedar (grand fir) / salal	Chappell 2004	G2S1	1
PSME-THPL/GASH-MANE2/POMU	*Pseudotsuga menziesii - Thuja plicata / Gaultheria shallon - Mahonia nervosa / Polystichum munitum*	Douglas-fir - red cedar / salal - Cascade oregongrape / swordfern	Chappell 2004	G1S1	0
RONU/FERU2	*Rosa nutakana / Festuca rubra*	Nootka rose / red fescue	Kunze and Cornelius 1982	G1G2Q	1
Shrubland Unclassified			Chappell 2004		0
Eroding Sandy Cliff			PBI		1
Developed					1

Table 3. Vegetation Community Types Encountered at Mystery Bay State Park

Abbreviation	Association Name	English Name	Reference	Status	PA1 Occurrence
AGAL3-JUBA-POPA23 community	*Agrostis alba – Juncus balticus – Potentilla pacifica community*	redtop - Baltic rush - Pacific silverweed community	Kunze and Cornelius 1982	G3G4	1
PSME/GASH-HODI	*Pseudotsuga menziesii / Gaultheria shallon - Holodiscus discolor*	Douglas-fir / salal - oceanspray	Chappell 2004	G2G3S2	1
PSME-ARME/GASH	*Pseudotsuga menziesii - Arbutus menziesii / Gaultheria shallon*	Douglas-fir - madrone / salal	Chappell 2004	G3S2	1
PSME-ARME/HODI/LOHI2	*Pseudotsuga menziesii - Arbutus menziess / Holodiscus discolor / Lonicera hispidula*	Douglas-fir - madrone / oceanspray / pink honeysuckle	Chappell 2004	G2G3S2	0
RONU/FERU2	*Rosa nutakana / Festuca rubra*	Nootka rose / red fescue	Kunze and Cornelius 1982	G1G2Q	3
SAVI-JACA4-DISP-TRMA20 community	*Salicornia virginica - Jaumea carnosa - Distichlis spicata - Triglochin maritima community*	picklweed - marsh jaumea - saltgrass - seaside arrow grass community	Kunze and Cornelius 1982	G3	0
Shrubland Unclassified					1
Water					2
Beach					1
Developed					1

Figure 5. Layout of the vegetation community polygons at Fort Flagler State Park.

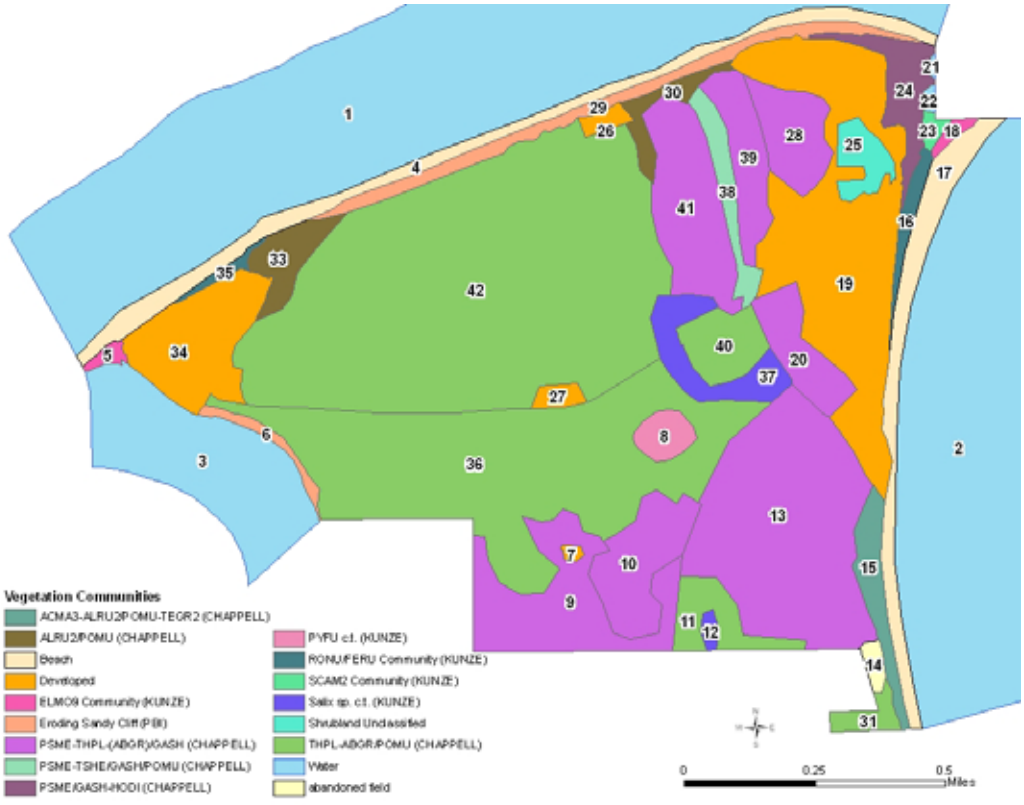


Figure 6. The primary vegetation community types at Fort Flagler State park.

Figure 7. Layout of the vegetation community polygons at the Kinney Point State Park property.

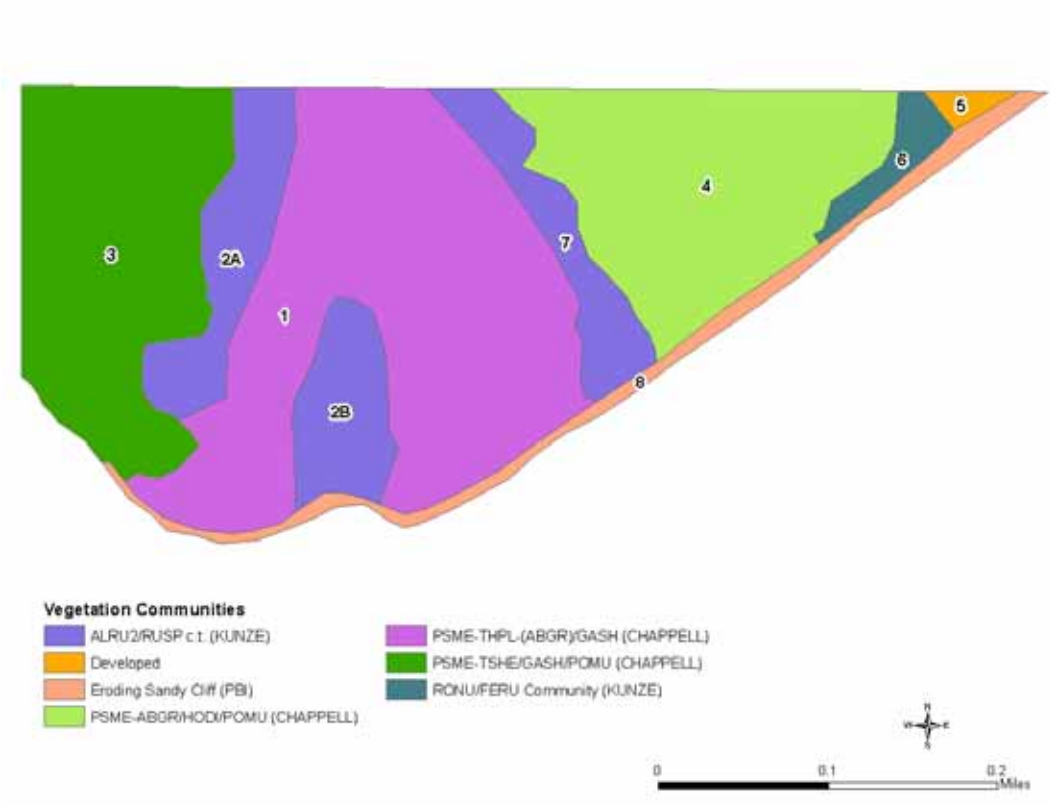


Figure 8. The primary vegetation community types at the Kinney Point State Park property.

Figure 9. Layout of the vegetation community polygons at Mystery Bay State Park.

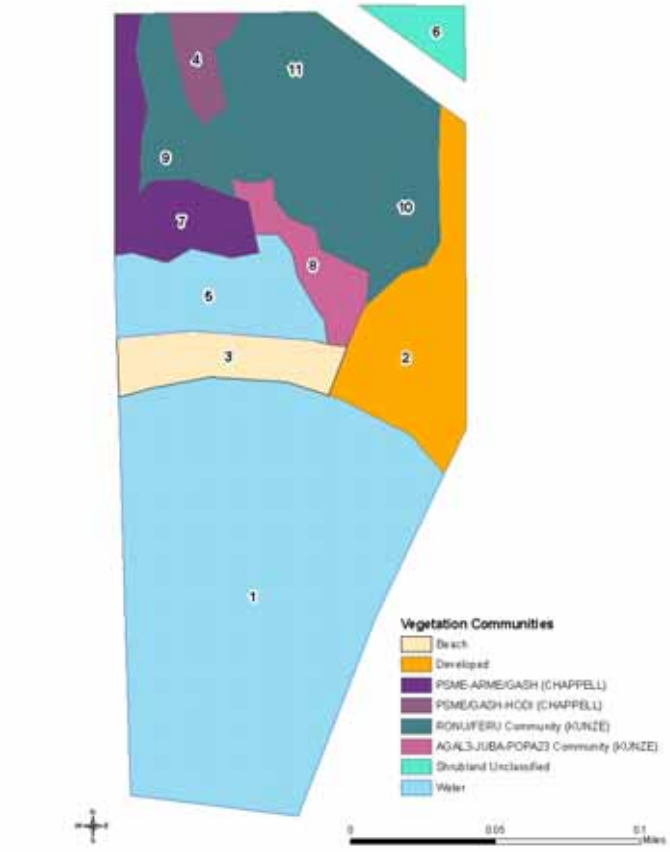


Figure 10. The primary vegetation community types at Mystery Bay State Park.

Examples of Vegetation Community Types

Acer macrophyllum – Alnus Rubra / Polystichum munitum – Tellima grandiflora forest (ACMA3-ALRU2/POMU-TEGR3)

This association is found primarily in the Puget Sound region, often on steep slopes, and typically not far from salt water. The steepness of the slope favors these broadleaf trees, bigleaf maple (*Acer macrophyllum*) and red alder (*Alnus rubra*) over coniferous species, in part because of soil creep and landslides down the slope. Bigleaf maple has the capacity to sprout from damaged stems after soil movement, and red alder is a nitrogen-fixing species, which gives it the ability to colonize disturbed soils where the nitrogen content of the soil is low. The frequently disturbed soil favors non-native, weedy colonizers as well, and such species are sometimes abundant in this association.

Agrostis alba – Juncus balticus – Potentilla pacifica (AGAL3-JUBA-POPA23 Community)

This plant community is a common high marsh community in the Puget Sound. It occurs on silt beds that have little dissection by tidal channels. This community mosaics with the SAVI-JACA4-DISP-TRMA20 marsh community, a common low-marsh community.

Alnus rubra / Polystichum munitum forest (ALRU2/POMU)

Because of its ability to fix nitrogen from the atmosphere, Red alder (*Alnus rubra*) is an early-seral, colonizer species of disturbed soil. Accordingly, this is an early- to mid-seral association that can regenerate after fire, windthrow, or timber harvest. Red alder is prolific after disturbance that exposes mineral soil, and it has therefore thrived on productive sites where conifer forest have been harvested and herbicides were not applied. Alder is short-lived (about 100 years). If conifers establish in the understory, then they are expected to dominate after the alder dies in the absence of further disturbance.

Alnus rubra / Rubus spectabilis community type (ALRU2/RUSP c.t.)

With red alder (*Alnus rubra*) as the lead species in the association, it would be safe to assume that this is another early seral, post disturbance association. The fact that it appears in the opening created by the trail (which is itself a former dirt road) in the picture above would seem to confirm this assumption. Salmonberry (*Rubus* spectabilis) easily reproduces from layering, ad basal sprouting from rhizomes, and readily resprouts after fire. Both species are facultative plants, capable of growing in wetland habitats or in drier upland situations.

Elymus mollis (ELMO9 community)

American dunegrass (Elymus mollis) is a critical member of a small community of plants that are adapted to grow in an environment of shifting sand and salt spray; the foredunes of the beach strand. In fact the nature of American dunegrass's physiology is such that it requires shifting sand to thrive, and will languish away from this environment. Continuous sand burial stimulates new root production, enabling vigorous growth to continue. European dunegrass (Ammophila arenaria), which is also present in the Fort Flagler area, is an introduced species that is capable of outcompeting American dunegrass and displacing it in the dune community.

Eroding Sandy Cliff

The eroding bluffs along portions of the seashore in the survey area provide a unique but temporal habitat for plant growth. Because of the frequent movement of soil, this environment strongly favors species that are adapted to disturbance. If trees are present they are most often red alder (*Alnus rubra*), a colonizer of disturbed soil. Native shrubs can include Nootka rose (*Rosa nutkana*) and Sitka willow (*Salix sitchensis*). Non-native species, which as invasives are by definition pre-adapted to disturbed soils, are common on these cliffs, with Scotch broom (*Cytisis scoparius*) being particularly common.

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

This is a mid-seral, often post-logging association in dry to moderately moist soils. Douglas-fir (*Pseudotsuga menziesii*) can displace colonizer broadleaf trees over time, but once a dense canopy is established it cannot germinate and grow in its own shade. In the absence of reoccurring disturbance it will eventually be replace by more shade-tolerant species. Salal (*Gaultheria shallon*) is a drought-tolerant, nitrogen-fixing species of acid soils and thus a common colonzier after logging. The light, wind-borne spores of swordfern (*Polystichum munitum*) enables this species to swiftly colonize new sites, however this capacity is limited by the specie's sensitivity to water stress. It is less drought tolerant than the other two species in this association and its presence indicates either deep soil or a site that accumulates sub-surface moisture.

Pseudotsuga menziesii / Gaultheria shallon - Holodiscus discolor forest (PSME/GASH-HODI)

All three of the species in this association grow in a wide variety of ecological conditions, from moist to fairly dry soils, and in full sun to deep shade. Taken together, they indicate a relatively dry site with gravelly soils that do not hold moisture well. All three species are moderately well adapted to fire, with salal (*Gaultheria shallon*) and oceanspray (*Holodiscus discolor*) readily resprouting from roots after a fire, and Douglas-fir (*Pseudotsuga menziesii*) developing a thick, fire-resistant bark with age.

Pseudotsuga menziesii - Abies grandis / Holodiscus discolor / Polystichum munitum forest (PSME-ABGR/HODI/POMU)

This is a rare plant association, with only one polygon in the survey area, and very few occurrences known in Puget Sound. Association sites are moderately dry and appear to be relatively nutrient-rich. They are all located in dry climates at low elevations and are most concentrated in areas with the lowest mean annual precipitation in the region. Grand fir (*Abies grandis*) prefers less rainfall than western hemlock (*Tsuga heterophylla*), and is only slightly less shade tolerant, and so replaces hemlock as a late-seral conifer in drier locations.

***Pseudotsuga menziesii - Arbutus menziesii / Gaultheria shallon* forest (PSME-ARME/GASH)**
***Pseudotsuga menziesii - Arbutus menziess / Holodiscus discolor / Lonicera hispidula* forest (PSME-ARME/HODI/LOHI2)**

Species in the genus *Arbutus* (Ericaceae) generally inhabit warm winter, dry summer (Mediterranean) climate areas in the Northern Hemisphere. Madrone is by far the most northerly broadleaf evergreen tree on the North American continent. For it to survive in the cool, wet climate of the Pacific Northwest, in only grows on sites with good soil drainage and bright sun. It is a fire-adapted species, resprouting after fires that will kill one of it's local competitors, Douglas fir (*Pseudotsuga menziesii*). Douglas-fir is likely to increase in abundance without disturbance, but does not appear to be excluding or out-competing madrone, even when madrone is overtopped, because the canopy of fir remains relatively open on these dry sites.

***Pseudotsuga menziesii - Thuja plicata - (Abies grandis) / Gaultheria shallon* forest PSME-THPL-(ABGR)/GASH**
***Pseudotsuga menziesii - Thuja plicata / Gaultheria shallon – Mahonia nervosa / Polystichum munitum* forest (PSME-THPL/GASH-MANE2/POMU)**

These two associations present a mild anomaly in their combination of two facultative upland plants (Douglas-fir and salal) that are relatively rarely found in wetland sites, with red cedar (*thuja plicata*), which prefers at least it's deep roots in mesic soils. These associations have a mean precipitation of 28" a year; on the west side of the Cascades such minimal precipitation can only be found in mountain rainshadows. Red cedar and grand fir (*Abies grandis*) are both more shade-tolerant than Douglas-fir (*Pseudotsuga menziesii*), and will slowly replace the latter species in the absence of disturbance.

Rosa nutakana / Festuca rubra (RONU/FERU2)

This is a relatively rare association, found only near saltwater shorelines on shallow soils over bedrock or on steep glacial bluffs. It is a dry-site association, with precipitation averaging 26” a year and soils that are incapable of retaining enough moisture to support coniferous trees. It is not unusual for Nootka rose (*Rosa nutkana*) to form a thicket impenetrable to humans, making it a refuge for various forms of wildlife.

Salix spp. community type (*Salix spp*. c.t.)

Salix is the genus name for the willows; three species of willow were encountered in the survey area, Sitka willow (*Salix sitchensis*), whiplash willow (*Salix lasiandra*), and Mackenzie willow (*Salix rigida*). All three of these willow species are facultative wetland plants, which means that while they can occasionally be found growing outside of wetlands, they generally require saturated soils to thrive. There are a number of aggressive non-native species that grow well in saturated soils, but they tend to be completely absent from wetland *Salix* associations because they cannot grow in the shade of taller species.

Salicornia virginica – Jaumea carnosa – Distichlis spicata – Triglochin maritimum **(SAVI-JACA4-DISP-TRMA20 Community)**

This tideland community is found in high salinity areas of the low marsh on silty sands. It experiences daily inundation by the tide. In Mystery Bay State Park, this community mosaics with the AGAL3-JUBA-POPA23 Community of the upper marshes.

Scirpus americanus (SCAM2 community)

A large wetland patch located on the sandy flats above the high tide line in the northeast corner of Fort Flagler State Park supports a homogenous cover of *Scirpus americanus*. This wetland plant can survive in polyhaline conditions enabling it to dominate the brackish marshes in that area.

Rare Plant Surveys

Methods

We visited Fort Flagler, Kinney Point and Mystery Bay 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. These forms are attached as Appendix E.

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 2 – 4).

Results

We located one vascular plant species within Mystery Bay State Park currently listed on the WA DNR NHP rare plant list. No listed plants were encountered in Fort Flager State Park nor within the Kinney Point State Park property. The location of the listed plants in Mystery Bay State Park and a photo of the specimens are provided in Figures 11 and 12. See Appendix E for a full printout of the DNR NHP field sighting forms. See Appendix B for definitions of Status codes.

Species	**Common Name**	**Status**
Puccinellia nutkaensis (J. Presl) Fern.	Alaska Alkaligrass	G4-S2-S

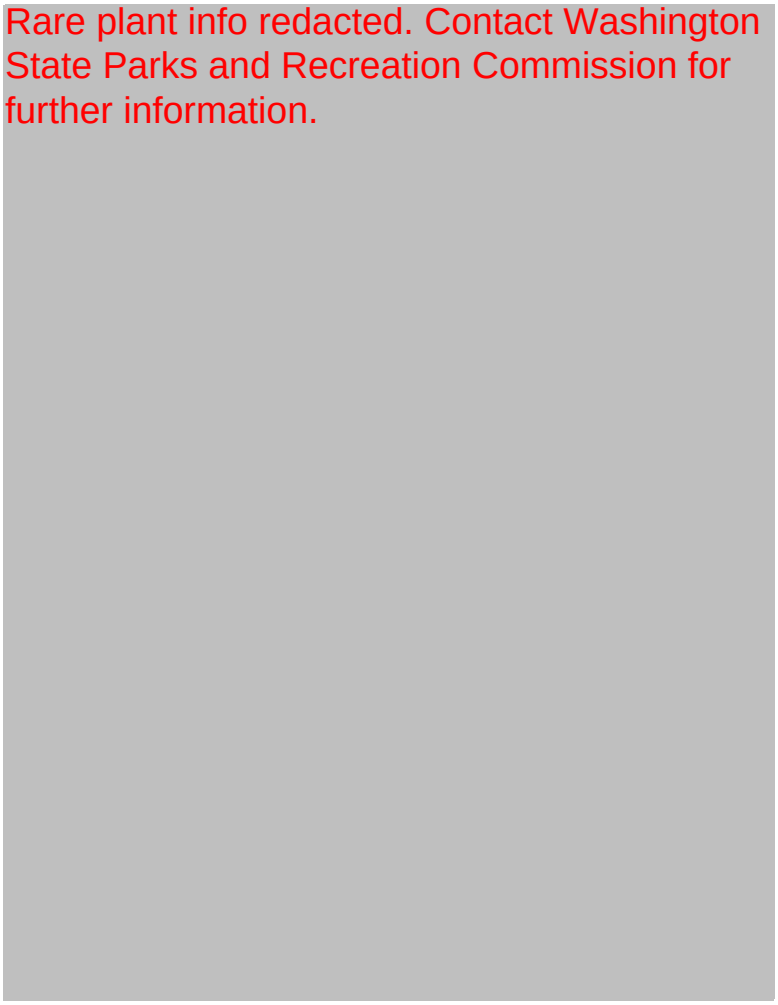


Figure 11. Location of *Puccinellia nutkaensis* within Mystery Bay State Park.

Figure 12. Photos of *Puccinellia nutkaensis*

Vascular Plant Lists for the Fort Flagler, Kinney Point and Mystery Bay State Park Properties

During the 2006 field surveys, a total of 122 vascular plant species were identified within Fort Flagler State Park. Of these, 33 of the plant species are non-native, accounting for 27% of the total. Within the Kinney Point State Park property 99 vascular plant species were identified, with 19 non-native species accounting for 19% of the total. Within Mystery Bay State Park, we identified 49 vascular plant species were identified, with 17 non-native species accounting for 35% 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"

"Status": Current status listings for WA DNR NHP tracked rare plants. See Appendix B for definitions of Status rankings.

"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.

Vascular Plant Species of Fort Flagler State Park

#	Code	Scientific Name	Common Name/Accepted Synonym	Family	Alien
1	ABGR	Abies grandis (Dougl. ex D. Don) Lindl.	grand fir	Pinaceae	
2	ABLA2	Abronia latifolia Eschsch.	coastal sand verbena	Nyctaginaceae	
3	ACMA3	Acer macrophyllum Pursh	bigleaf maple	Aceraceae	
4	ACMI2	Achillea millefolium L.	yarrow	Asteraceae	
5	AGAL3	Agrostis alba auct. non L. [misapplied]	>>Agrostis gigantea	Poaceae	a
6	ALRU2	Alnus rubra Bong.	red alder	Betulaceae	
7	AMCHB	Ambrosia chamissonis (Less.) Greene	>>Ambrosia chamissonis	Asteraceae	
8	AMAL2	Amelanchier alnifolia (Nutt.) Nutt. ex M. Roemer	Saskatoon serviceberry	Rosaceae	
9	AMAR4	Ammophila arenaria (L.) Link	European beachgrass	Poaceae	a
10	ANMA	Anaphalis margaritacea (L.) Benth.	western pearly everlasting	Asteraceae	
11	ARME	Arbutus menziesii Pursh	madrone	Ericaceae	
12	ARST6	Artemisia stelleriana Bess.	oldwoman	Asteraceae	a
13	ATFI	Athyrium filix-femina (L.) Roth	common ladyfern	Dryopteridaceae	
14	BEPE2	Bellis perennis L.	lawn daisy	Asteraceae	a
15	BEAQ	Berberis aquifolium Pursh	>>Mahonia aquifolium	Berberidaceae	
16	BENE2	Berberis nervosa Pursh	>>Mahonia nervosa	Berberidaceae	
17	BRCO3	Brodiaea coronaria (Salisb.) Engl.	crown brodiaea	Liliaceae	
18	BRCO4	Bromus commutatus Schrad.	>>Bromus racemosus	Poaceae	a
19	BRPA3	Bromus pacificus Shear	Pacific brome	Poaceae	
20	CAED	Cakile edentula (Bigelow) Hook.	American searocket	Brassicaceae	a
21	CAMA	Cakile maritima Scop.	European searocket	Brassicaceae	a
22	CABU2	Capsella bursa-pastoris (L.) Medik.	shepherd's purse	Brassicaceae	a
23	CAOL	Cardamine oligosperma Nutt.	little western bittercress	Brassicaceae	
24	CADE9	Carex deweyana Schwein.	Dewey sedge	Cyperaceae	
25	CAHE7	Carex hendersonii Bailey	Henderson's sedge	Cyperaceae	
26	CALY3	Carex lyngbyei Hornem.	Lyngbye's sedge	Cyperaceae	
27	CAMA10	Carex macrocephala Willd. ex Spreng.	largehead sedge	Cyperaceae	

28	CAOB3	Carex obnupta Bailey	slough sedge	Cyperaceae	
29	CAPA14	Carex pachystachya Cham. ex Steud.	chamisso sedge	Cyperaceae	
30	CEAR4	Cerastium arvense L.	field chickweed	Caryophyllaceae	
31	CIAR4	Cirsium arvense (L.) Scop.	Canada thistle	Asteraceae	a
32	COCA5	Conyza canadensis (L.) Cronq.	Canadian horseweed	Asteraceae	a
33	CRTI	Crassula tillaea Lester-Garland	pygmy-weed	Crassulaceae	a
34	CRMO3	Crataegus monogyna Jacq.	oneseed hawthorn	Rosaceae	a
35	CYSC4	Cytisus scoparius (L.) Link	scotchbroom	Fabaceae	a
36	DAGL	Dactylis glomerata L.	orchardgrass	Poaceae	a
37	DALA11	Daphne laureola L.	spurgelaurel	Thymelaeaceae	a
38	DISP	Distichlis spicata (L.) Greene	inland saltgrass	Poaceae	
39	DRVE2	Draba verna L.	spring draba	Brassicaceae	
40	DRAUS2	Dryopteris austriaca (Jacq.) Woynar	>>Dryopteris carthusiana	Dryopteridaceae	
41	ELMO9	Elymus mollis Trin.	>>Leymus mollis ssp. mollis	Poaceae	
42	EQAR	Equisetum arvense L.	field horsetail	Equisetaceae	
43	EQLA	Equisetum laevigatum A. Braun	smooth horsetail	Equisetaceae	
44	EQTE	Equisetum telmateia Ehrh.	giant horsetail	Equisetaceae	
45	ERCI6	Erodium cicutarium (L.) L'Hér. ex Ait.	crane'sbill	Geraniaceae	a
46	FRVI	Fragaria virginiana Duchesne	Virginia strawberry	Rosaceae	
47	GAAP2	Galium aparine L.	stickywilly	Rubiaceae	
48	GERO	Geranium robertianum L.	Robert geranium	Geraniaceae	a
49	GEMA4	Geum macrophyllum Willd.	largeleaf avens	Rosaceae	
50	GLHE2	Glechoma hederacea L.	ground ivy	Lamiaceae	a
51	GLLI	Glehnia littoralis F. Schmidt ex Miq.	American silvertop	Apiaceae	
52	GRIN	Grindelia integrifolia DC.	Puget Sound gumweed	Asteraceae	
53	HYRA3	Hypochaeris radicata L.	hairy cat's ear	Asteraceae	a
54	ILAQ80	Ilex aquifolium L.	English holly	Aquifoliaceae	a
55	JACA4	Jaumea carnosa (Less.) Gray	marsh jaumea	Asteraceae	
56	JUEF	Juncus effusus L.	common rush	Juncaceae	
57	LAPU2	Lamium purpureum L.	purple deadnettle	Lamiaceae	a
58	LAJA	Lathyrus japonicus Willd.	beach pea	Fabaceae	
59	LALI2	Lathyrus littoralis (Nutt.) Endl.	silky beach pea	Fabaceae	
60	LAPA4	Lathyrus palustris L.	marsh pea	Fabaceae	
61	LEVI3	Lepidium virginicum L.	Virginia pepperweed	Brassicaceae	
62	LONU2	Lomatium nudicaule (Pursh) Coult. & Rose	barestem biscuitroot	Apiaceae	
63	LOCI3	Lonicera ciliosa (Pursh) Poir. ex DC.	orange honeysuckle	Caprifoliaceae	
64	LUAR	Lupinus arboreus Sims	yellow bush lupine	Fabaceae	
65	LUCA*	Luzula campestris (L.) DC.	field woodrush	Juncaceae	
66	MADI	Maianthemum dilatatum (Wood) A. Nels. & J.F. Macbr.	false lily of the valley	Liliaceae	
67	MOSI2	Montia sibirica (L.) T.J. Howell	>>Claytonia sibirica var. sibirica	Portulacaceae	
68	OESA	Oenanthe sarmentosa K. Presl ex DC.	water parsely	Apiaceae	
69	ORPU3	Orthocarpus pusillus Benth.	>>Triphysaria pusilla	Scrophulariaceae	
70	OSCH	Osmorhiza chilensis Hook. & Arn.	>>Osmorhiza berteroi	Apiaceae	
71	PAVI3	Parentucellia viscosa (L.) Caruel	yellow glandweed	Scrophulariaceae	a
72	PEFRP2	Petasites frigidus (L.) Fries ssp. palmatus (Ait.) Cody	>>Petasites frigidus var. palmatus	Asteraceae	
73	PICO	Pinus contorta Dougl. ex Loud.	lodgepole pine	Pinaceae	
74	PLLA	Plantago lanceolata L.	narrowleaf plantain	Plantaginaceae	a
75	PLMA4	Plectritis macrocera Torr. & Gray	longhorn plectritis	Valerianaceae	

76	POAN	Poa annua L.	annual bluegrass	Poaceae	a
77	POBU	Poa bulbosa L.	bulbous bluegrass	Poaceae	a
78	POPA2	Poa palustris L.	fowl bluegrass	Poaceae	
79	POPR	Poa pratensis L.	Kentucky bluegrass	Poaceae	a
80	POMU	Polystichum munitum (Kaulfuss) K. Presl	swordfern	Polypodiaceae	
81	POPA23	Potentilla pacifica T.J. Howell	>>Argentina egedii ssp. egedii	Rosaceae	
82	PRVU	Prunella vulgaris L.	common selfheal	Lamiaceae	
83	PREM	Prunus emarginata (Dougl. ex Hook.) D. Dietr.	bitter cherry	Rosaceae	
84	PSME	Pseudotsuga menziesii (Mirbel) Franco	Douglas-fir	Pinaceae	
85	RARE3	Ranunculus repens L.	creeping buttercup	Ranunculaceae	a
86	RAUN	Ranunculus uncinatus D. Don ex G. Don	woodland buttercup	Ranunculaceae	
87	RHMA3	Rhododendron macrophyllum D. Don ex G. Don	Pacific rhododendron	Ericaceae	
88	RIDI	Ribes divaricatum Dougl.	spreading gooseberry	Grossulariaceae	
89	RILA	Ribes lacustre (Pers.) Poir.	prickly currant	Grossulariaceae	
90	RISA	Ribes sanguineum Pursh	redflower currant	Grossulariaceae	
91	ROGY	Rosa gymnocarpa Nutt.	dwarf rose	Rosaceae	
92	RUDI2	Rubus discolor Weihe & Nees	>>Rubus armeniacus	Rosaceae	
93	RUPA	Rubus parviflorus Nutt.	thimbleberry	Rosaceae	
94	RUSP	Rubus spectabilis Pursh	salmonberry	Rosaceae	
95	RUUR	Rubus ursinus Cham. & Schlecht.	California blackberry	Rosaceae	
96	RUAC3	Rumex acetosella L.	common sheep sorrel	Polygonaceae	a
97	RUOC3	Rumex occidentalis S. Wats.	>>Rumex aquaticus var. fenestratus	Polygonaceae	
98	SAVI	Salicornia virginica L.	>>Salicornia depressa	Chenopodiaceae	
99	SASI2	Salix sitchensis Sanson ex Bong.	Sitka willow	Salicaceae	
100	SARA2	Sambucus racemosa L.	red elderberry	Caprifoliaceae	
101	SACR2	Sanicula crassicaulis Poepp. ex DC.	>>Sagina maxima ssp. crassicaulis	Apiaceae	
102	SADO5	Satureja douglasii (Benth.) Briq.	>>Clinopodium douglasii	Lamiaceae	
103	SCAM2	Scirpus americanus Pers.	>>Schoenoplectus americanus	Equisetaceae	
104	SOAS	Sonchus asper (L.) Hill	spiny sowthistle	Asteraceae	a
105	SPDO	Spiraea douglasii Hook.	rose spirea	Rosaceae	
106	STCO14	Stachys cooleyae Heller	>>Stachys chamissonis var. cooleyae	Lamiaceae	
107	STME2	Stellaria media (L.) Vill.	common chickweed	Caryophyllaceae	
108	SYAL	Symphoricarpos albus (L.) Blake	common snowberry	Caprifoliaceae	
109	TAOF	Taraxacum officinale G.H. Weber ex Wiggers	dandelion	Asteraceae	a
110	TEGR2	Tellima grandiflora (Pursh) Dougl. ex Lindl.	bigflower tellima	Saxifragaceae	
111	THPL	Thuja plicata Donn ex D. Don	western red cedar	Cupressaceae	
112	TRLA6	Trientalis latifolia Hook.	>>Trientalis borealis ssp. latifolia	Primulaceae	
113	TRDU2	Trifolium dubium Sibthorp	suckling clover	Fabaceae	a
114	TRMI4	Trifolium microcephalum Pursh	smallhead clover	Fabaceae	
115	TRPR2	Trifolium pratense L.	red clover	Fabaceae	a
116	TRRE3	Trifolium repens L.	white clover	Fabaceae	a
117	TRMA20	Triglochin maritima L.	seaside arrowgrass	Juncaginaceae	
118	TYLA	Typha latifolia L.	broadleaf cattail	Typhaceae	
119	URDI	Urtica dioica L.	nettle	Urticaceae	
120	VAPA	Vaccinium parvifolium Sm.	red huckleberry	Ericaceae	
121	VESE	Veronica serpyllifolia L.	thymeleaf speedwell	Scrophulariaceae	
122	VIVI	Vicia villosa Roth	winter vetch	Fabaceae	

Non-native Vascular Plant Species of Fort Flagler State Park

#	Code	Scientific Name	Common Name/Accepted Synonym	Family	Alien
1	AGAL3	Agrostis alba auct. non L. [misapplied]	>>Agrostis gigantea	Poaceae	a
2	AMAR4	Ammophila arenaria (L.) Link	European beachgrass	Poaceae	a
3	ARST6	Artemisia stelleriana Bess.	oldwoman	Asteraceae	a
4	BEPE2	Bellis perennis L.	lawn daisy	Asteraceae	a
5	BRCO4	Bromus commutatus Schrad.	>>Bromus racemosus	Poaceae	a
6	CAED	Cakile edentula (Bigelow) Hook.	American searocket	Brassicaceae	a
7	CAMA	Cakile maritima Scop.	European searocket	Brassicaceae	a
8	CABU2	Capsella bursa-pastoris (L.) Medik.	shepherd's purse	Brassicaceae	a
9	CIAR4	Cirsium arvense (L.) Scop.	Canada thistle	Asteraceae	a
10	COCA5	Conyza canadensis (L.) Cronq.	Canadian horseweed	Asteraceae	a
11	CRTI	Crassula tillaea Lester-Garland	pygmy-weed	Crassulaceae	a
12	CRMO3	Crataegus monogyna Jacq.	oneseed hawthorn	Rosaceae	a
13	CYSC4	Cytisus scoparius (L.) Link	scotchbroom	Fabaceae	a
14	DAGL	Dactylis glomerata L.	orchardgrass	Poaceae	a
15	DALA11	Daphne laureola L.	spurgelaurel	Thymelaeaceae	a
16	ERCI6	Erodium cicutarium (L.) L'Hér. ex Ait.	crane'sbill	Geraniaceae	a
17	GERO	Geranium robertianum L.	Robert geranium	Geraniaceae	a
18	GLHE2	Glechoma hederacea L.	ground ivy	Lamiaceae	a
19	HYRA3	Hypochaeris radicata L.	hairy cat's ear	Asteraceae	a
20	ILAQ80	Ilex aquifolium L.	English holly	Aquifoliaceae	a
21	LAPU2	Lamium purpureum L.	purple deadnettle	Lamiaceae	a
22	PAVI3	Parentucellia viscosa (L.) Caruel	yellow glandweed	Scrophulariaceae	a
23	PLLA	Plantago lanceolata L.	narrowleaf plantain	Plantaginaceae	a
24	POAN	Poa annua L.	annual bluegrass	Poaceae	a
25	POBU	Poa bulbosa L.	bulbous bluegrass	Poaceae	a
26	POPR	Poa pratensis L.	Kentucky bluegrass	Poaceae	a
27	RARE3	Ranunculus repens L.	creeping buttercup	Ranunculaceae	a
28	RUAC3	Rumex acetosella L.	common sheep sorrel	Polygonaceae	a
29	SOAS	Sonchus asper (L.) Hill	spiny sowthistle	Asteraceae	a
30	TAOF	Taraxacum officinale G.H. Weber ex Wiggers	dandelion	Asteraceae	a
31	TRDU2	Trifolium dubium Sibthorp	suckling clover	Fabaceae	a
32	TRPR2	Trifolium pratense L.	red clover	Fabaceae	a
33	TRRE3	Trifolium repens L.	white clover	Fabaceae	a

Vascular Plant Species of the Kinney Point State Park property

#	Code	Scientific Name	Common Name/Accepted Synonym	Family	Alien
1	ABGR	Abies grandis (Dougl. ex D. Don) Lindl.	grand fir	Pinaceae	
2	ACMA3	Acer macrophyllum Pursh	bigleaf maple	Aceraceae	
3	ACMI2	Achillea millefolium L.	yarrow	Asteraceae	
4	ALRU2	Alnus rubra Bong.	red alder	Betulaceae	
5	AMCHB	Ambrosia chamissonis (Less.) Greene	>>Ambrosia chamissonis	Asteraceae	
6	ANMA	Anaphalis margaritacea (L.) Benth.	western pearly everlasting	Asteraceae	
7	ARME	Arbutus menziesii Pursh	madrone	Ericaceae	
8	ARCA12	Artemisia campestris L.	field sagewort	Asteraceae	
9	ARSU4	Artemisia suksdorfii Piper	coastal wormwood	Asteraceae	
10	ASSU4	Aster subspicatus Nees	>>Symphyotrichum subspicatum	Asteraceae	
11	ATFI	Athyrium filix-femina (L.) Roth	common ladyfern	Dryopteridaceae	
12	BEAQ	Berberis aquifolium Pursh	>>Mahonia aquifolium	Berberidaceae	
13	BENE2	Berberis nervosa Pursh	>>Mahonia nervosa	Berberidaceae	
14	BRPA3	Bromus pacificus Shear	Pacific brome	Poaceae	
15	CAED	Cakile edentula (Bigelow) Hook.	American searocket	Brassicaceae	a
16	CAMA	Cakile maritima Scop.	European searocket	Brassicaceae	a
17	CAOL	Cardamine oligosperma Nutt.	little western bittercress	Brassicaceae	
18	CAPE3	Cardamine pensylvanica Muhl. ex Willd.	Pennsylvania bittercress	Brassicaceae	
19	CADE9	Carex deweyana Schwein.	Dewey sedge	Cyperaceae	
20	CAHE7	Carex hendersonii Bailey	Henderson's sedge	Cyperaceae	
21	CAMI12	Castilleja miniata Dougl. ex Hook.	giant red Indian paintbrush	Scrophulariaceae	
22	CHLE80	Chrysanthemum leucanthemum L.	>>Leucanthemum vulgare	Asteraceae	a
23	CIAL	Circaea alpina L.	small enchanter's nightshade	Onagraceae	
24	CIAR4	Cirsium arvense (L.) Scop.	Canada thistle	Asteraceae	a
25	CIVU	Cirsium vulgare (Savi) Ten.	bull thistle	Asteraceae	a
26	COMA25	Corallorhiza maculata (Raf.) Raf.	summer coralroot	Orchidaceae	
27	COST19	Corallorhiza striata Lindl.	hooded coralroot	Orchidaceae	
28	DAGL	Dactylis glomerata L.	orchardgrass	Poaceae	a
29	ELGL	Elymus glaucus Buckl.	blue wildrye	Poaceae	
30	ELMO9	Elymus mollis Trin.	>>Leymus mollis ssp. mollis	Poaceae	
31	EPAN2	Epilobium angustifolium L.	>>Chamerion angustifolium	Onagraceae	
32	EPCI	Epilobium ciliatum Raf.	fringed willowherb	Onagraceae	
33	EQAR	Equisetum arvense L.	field horsetail	Equisetaceae	
34	EQTE	Equisetum telmateia Ehrh.	giant horsetail	Equisetaceae	
35	FRVI	Fragaria virginiana Duchesne	Virginia strawberry	Rosaceae	
36	GAAP2	Galium aparine L.	stickywilly	Rubiaceae	
37	GATR2	Galium trifidum L.	threepetal bedstraw	Rubiaceae	
38	GASH	Gaultheria shallon Pursh	salal	Ericaceae	
39	GRIN	Grindelia integrifolia DC.	Puget Sound gumweed	Asteraceae	
40	HAUN	Habenaria unalascensis S. Wats.	>>Piperia unalascensis	Orchidaceae	
41	HEHE	Hedera helix L.	English ivy	Araliaceae	a
42	HOLA	Holcus lanatus L.	common velvetgrass	Poaceae	a

43	HODI	Holodiscus discolor (Pursh) Maxim.	oceanspray	Rosaceae	
44	HOPE	Honkenya peploides (L.) Ehrh.	seaside sandplant	Caryophyllaceae	
45	HYRA3	Hypochaeris radicata L.	hairy cat's ear	Asteraceae	a
46	HYMO3	Hypopitys monotropa Crantz	>>Monotropa hypopithys	Monotropaceae	
47	ILAQ80	Ilex aquifolium L.	English holly	Aquifoliaceae	a
48	JUBA	Juncus balticus Willd.	Baltic rush	Juncaceae	
49	JUEF	Juncus effusus L.	common rush	Juncaceae	
50	LAMU	Lactuca muralis (L.) Fresen.	>>Mycelis muralis	Asteraceae	a
51	LAJA	Lathyrus japonicus Willd.	beach pea	Fabaceae	
52	LALI2	Lathyrus littoralis (Nutt.) Endl.	silky beach pea	Fabaceae	
53	LOCI3	Lonicera ciliosa (Pursh) Poir. ex DC.	orange honeysuckle	Caprifoliaceae	
54	MADI	Maianthemum dilatatum A. Nels.	false lily of the valley	Liliaceae	
55	MIGU	Mimulus guttatus DC.	seep monkeyflower	Scrophulariaceae	
56	MOPE3	Montia perfoliata T.J. Howell	>>Claytonia perfoliata ssp. perfoliata	Caryophyllaceae	
57	MOSI2	Montia sibirica (L.) T.J. Howell	>>Claytonia sibirica var. sibirica	Portulacaceae	
58	OECE	Oemleria cerasiformis Landon	Indian plum	Rosaceae	
59	OESA	Oenanthe sarmentosa K. Presl ex DC.	water parsely	Apiaceae	
60	OSCH	Osmorhiza chilensis Hook. & Arn.	>>Osmorhiza berteroi	Apiaceae	
61	PEFRP2	Petasites frigidus (L.) Fries	>>Petasites frigidus var. palmatus	Asteraceae	
62	POPR	Poa pratensis L.	Kentucky bluegrass	Poaceae	
63	POGL8	Polypodium glycyrrhiza D.C. Eat.	licorice fern	Polypodiaceae	a
64	POMU	Polystichum munitum (Kaulfuss) K. Presl	swordfern	Polypodiaceae	
65	PREM	Prunus emarginata C105D. Dietr.	bitter cherry	Rosaceae	
66	PSME	Pseudotsuga menziesii (Mirbel) Franco	Douglas-fir	Pinaceae	
67	PTAQ	Pteridium aquilinum (L.) Kuhn	bracken fern	Dennstaedtiaceae	
68	PYFU	Pyrus fusca Raf.	>>Malus fusca	Rosaceae	
69	RARE3	Ranunculus repens L.	creeping buttercup	Ranunculaceae	a
70	RAUN	Ranunculus uncinatus D. Don ex G. Don	woodland buttercup	Ranunculaceae	
71	RHPU	Rhamnus purshiana DC.	>>Frangula purshiana	Rhamnaceae	
72	RIDI	Ribes divaricatum Dougl.	spreading gooseberry	Grossulariaceae	
73	RILA	Ribes lacustre (Pers.) Poir.	prickly currant	Grossulariaceae	
74	ROEG	Rosa eglanteria L.	sweetbriar rose	Rosaceae	a
75	ROGY	Rosa gymnocarpa Nutt.	dwarf rose	Rosaceae	
76	RONU	Rosa nutkana K. Presl	Nootka rose	Asteraceae	
77	ROPI2	Rosa pisocarpa Gray	cluster rose	Rosaceae	
78	RUDI2	Rubus discolor Weihe & Nees	>>Rubus armeniacus	Rosaceae	
79	RUSP	Rubus spectabilis Pursh	salmonberry	Rosaceae	
80	RUUR	Rubus ursinus Cham. & Schlecht.	California blackberry	Rosaceae	
81	RUAC3	Rumex acetosella L.	common sheep sorrel	Polygonaceae	a
82	SALA5	Salix lasiandra Benth.	>>Salix lucida ssp. lasiandra	Salicaceae	
83	SARI*	Salix rigida Muhl.	>>Salix prolixa	Salicaceae	
84	SARA2	Sambucus racemosa L.	red elderberry	Caprifoliaceae	
85	SACR2	Sanicula crassicaulis Poepp. ex DC.	>>Sagina maxima ssp. crassicaulis	Apiaceae	
86	SADO5	Satureja douglasii (Benth.) Briq.	>>Clinopodium douglasii	Lamiaceae	
87	SEVU	Senecio vulgaris L.	old-man-in-the-Spring	Asteraceae	a

88	SMRA*	Smilacina racemosa (L) Desf.	>>Maianthemum racemosum	Liliaceae	
89	SOAS	Sonchus asper (L.) Hill	spiny sowthistle	Asteraceae	a
90	STCO14	Stachys cooleyae Heller	>>Stachys chamissonis var. cooleyae	Lamiaceae	
91	SYAL	Symphoricarpos albus (L.) Blake	common snowberry	Caprifoliaceae	
92	TAOF	Taraxacum officinale G.H. Weber	dandelion	Asteraceae	a
93	TABR2	Taxus brevifolia Nutt.	Pacific yew	Taxaceae	
94	TEGR2	Tellima grandiflora (Pursh) Dougl. ex Lindl.	bigflower tellima	Saxifragaceae	
95	THPL	Thuja plicata Donn ex D. Don	western red cedar	Cupressaceae	
96	TRLA6	Trientalis latifolia Hook.	>>Trientalis borealis ssp. latifolia	Primulaceae	
97	URDI	Urtica dioica L.	nettle	Urticaceae	
98	VAPA	Vaccinium parvifolium Sm.	red huckleberry	Ericaceae	
99	VISA	Vicia sativa L.	garden vetch	Fabaceae	a

Non-native Vascular Plant Species of the Kinney Point State Park property

#	Code	Scientific Name	Common Name/Accepted Synonym	Family	Alien
1	CAED	Cakile edentula (Bigelow) Hook.	American searocket	Brassicaceae	a
2	CAMA	Cakile maritima Scop.	European searocket	Brassicaceae	a
3	CHLE80	Chrysanthemum leucanthemum L.	>>Leucanthemum vulgare	Asteraceae	a
4	CIAR4	Cirsium arvense (L.) Scop.	Canada thistle	Asteraceae	a
5	CIVU	Cirsium vulgare (Savi) Ten.	bull thistle	Asteraceae	a
6	DAGL	Dactylis glomerata L.	orchardgrass	Poaceae	a
7	HEHE	Hedera helix L.	English ivy	Araliaceae	a
8	HOLA	Holcus lanatus L.	common velvetgrass	Poaceae	a
9	HYRA3	Hypochaeris radicata L.	hairy cat's ear	Asteraceae	a
10	ILAQ80	Ilex aquifolium L.	English holly	Aquifoliaceae	a
11	LAMU	Lactuca muralis (L.) Fresen.	>>Mycelis muralis	Asteraceae	a
12	POGL8	Polypodium glycyrrhiza D.C. Eat.	licorice fern	Polypodiaceae	a
13	RARE3	Ranunculus repens L.	creeping buttercup	Ranunculaceae	a
14	ROEG	Rosa eglanteria L.	sweetbriar rose	Rosaceae	a
15	RUAC3	Rumex acetosella L.	common sheep sorrel	Polygonaceae	a
16	SEVU	Senecio vulgaris L.	old-man-in-the-Spring	Asteraceae	a
17	SOAS	Sonchus asper (L.) Hill	spiny sowthistle	Asteraceae	a
18	TAOF	Taraxacum officinale G.H. Weber	dandelion	Asteraceae	a
19	VISA	Vicia sativa L.	garden vetch	Fabaceae	a

Vascular Plant Species of Mystery Bay State Park

#	Code	Scientific Name	Common Name/Accepted Synonym	Family	Alien	Status
1	ACMI2	Achillea millefolium L.	yarrow	Asteraceae		
2	AGAL3	Agrostis alba auct. non L. [misapplied]	>>Agrostis gigantea	Poaceae		
3	AMAL2	Amelanchier alnifolia (Nutt.) Nutt.	Saskatoon serviceberry	Rosaceae		
4	ANMA	Anaphalis margaritacea (L.) Benth.	western pearly everlasting	Asteraceae		
5	ARME	Arbutus menziesii Pursh	madrone	Ericaceae		
6	ARCA12	Artemisia campestris L.	field sagewort	Asteraceae		
7	ASOF	Asparagus officinalis L.	garden asparagus	Liliaceae	a	
8	ASSU4	Aster subspicatus Nees	>>Symphyotrichum subspicatum	Asteraceae		
9	BEPE2	Bellis perennis L.	lawn daisy	Asteraceae	a	
10	BEAQ	Berberis aquifolium Pursh	>>Mahonia aquifolium	Berberidaceae		
11	BRCO4	Bromus commutatus Schrad.	>>Bromus racemosus	Poaceae	a	
12	BRPA3	Bromus pacificus Shear	Pacific brome	Poaceae		
13	CAMA	Cakile maritima Scop.	European searocket	Brassicaceae	a	
14	CALY3	Carex lyngbyei Hornem.	Lyngbye's sedge	Cyperaceae		
15	CAMA10	Carex macrocephala Willd. ex Spreng.	largehead sedge	Cyperaceae		
16	CEAR4	Cerastium arvense L.	field chickweed	Caryophyllaceae	a	
17	CRTI	Crassula tillaea Lester-Garland	pygmy-weed	Crassulaceae	a	
18	CYSC4	Cytisus scoparius (L.) Link	scotchbroom	Fabaceae	a	
19	DAGL	Dactylis glomerata L.	orchardgrass	Poaceae	a	
20	DISP	Distichlis spicata (L.) Greene	inland saltgrass	Poaceae		
21	FRVE	Fragaria vesca L.	woodland strawberry	Rosaceae		
22	GAAP2	Galium aparine L.	stickywilly	Rubiaceae		
23	GASH	Gaultheria shallon Pursh	salal	Ericaceae		
24	GRIN	Grindelia integrifolia DC.	Puget Sound gumweed	Asteraceae		
25	HEHE	Hedera helix L.	English ivy	Araliaceae	a	
26	HYRA3	Hypochaeris radicata L.	hairy cat's ear	Asteraceae	a	
27	JUBA	Juncus balticus Willd.	Baltic rush	Juncaceae		
28	LEVI3	Lepidium virginicum L.	Virginia pepperweed	Brassicaceae		
29	LOCI3	Lonicera ciliosa (Pursh) Poir. ex DC.	orange honeysuckle	Caprifoliaceae		
30	PLLA	Plantago lanceolata L.	narrowleaf plantain	Plantaginaceae	a	
31	POAN	Poa annua L.	annual bluegrass	Poaceae	a	
32	POMU	Polystichum munitum (Kaulfuss) K. Presl	swordfern	Polypodiaceae		
33	POPA23	Potentilla pacifica T.J. Howell	>>Argentina egedii ssp. egedii	Rosaceae		
34	PSME	Pseudotsuga menziesii (Mirbel) Franco	Douglas-fir	Pinaceae		
35	PTAQ	Pteridium aquilinum (L.) Kuhn	bracken fern	Dennstaedtiaceae		
36	PUNU	Puccinellia nutkaensis (J. Presl) Fern.	Nootka alkaligrass	Poaceae		G4S2
37	PYFU	Pyrus fusca Raf.	>>Malus fusca	Rosaceae		
38	RHPU	Rhamnus purshiana DC.	>>Frangula purshiana	Rhamnaceae		
39	RONU	Rosa nutkana K. Presl	Nootka rose	Asteraceae		
40	RUDI2	Rubus discolor Weihe & Nees	>>Rubus armeniacus	Rosaceae		
41	SAVI	Salicornia virginica L.	>>Salicornia depressa	Chenopodiaceae		
42	SASI2	Salix sitchensis Sanson ex Bong.	Sitka willow	Salicaceae		

43	SOAS	Sonchus asper (L.) Hill	spiny sowthistle	Asteraceae	a	
44	SYAL	Symphoricarpos albus (L.) Blake	common snowberry	Caprifoliaceae		
45	TAOF	Taraxacum officinale G.H. Weber C6	dandelion	Asteraceae	a	
46	TRPR2	Trifolium pratense L.	red clover	Fabaceae	a	
47	TRRE3	Trifolium repens L.	white clover	Fabaceae	a	
48	TRMA20	Triglochin maritima L.	seaside arrowgrass	Juncaginaceae		
49	URDI	Urtica dioica L.	nettle	Urticaceae		

Non-native Vascular Plant Species of Mystery Bay State Park

#	Code	Scientific Name	Common Name/Accepted Synonym	Family	Alien
1	AGAL3	Agrostis alba auct. non L. [misapplied]	>>Agrostis gigantea	Poaceae	a
2	ASOF	Asparagus officinalis L.	garden asparagus	Liliaceae	a
3	BEPE2	Bellis perennis L.	lawn daisy	Asteraceae	a
4	BRCO4	Bromus commutatus Schrad.	>>Bromus racemosus	Poaceae	a
5	CAMA	Cakile maritima Scop.	European searocket	Brassicaceae	a
6	CEAR4	Cerastium arvense L.	field chickweed	Caryophyllaceae	a
7	CRTI	Crassula tillaea Lester-Garland	pygmy-weed	Crassulaceae	a
8	CYSC4	Cytisus scoparius (L.) Link	scotchbroom	Fabaceae	a
9	DAGL	Dactylis glomerata L.	orchardgrass	Poaceae	a
10	HEHE	Hedera helix L.	English ivy	Araliaceae	a
11	HYRA3	Hypochaeris radicata L.	hairy cat's ear	Asteraceae	a
12	PLLA	Plantago lanceolata L.	narrowleaf plantain	Plantaginaceae	a
13	POAN	Poa annua L.	annual bluegrass	Poaceae	a
14	SOAS	Sonchus asper (L.) Hill	spiny sowthistle	Asteraceae	a
15	TAOF	Taraxacum officinale G.H. Weber C6	dandelion	Asteraceae	a
16	TRPR2	Trifolium pratense L.	red clover	Fabaceae	a
17	TRRE3	Trifolium repens L.	white clover	Fabaceae	a

Ecological Condition of Fort Flagler, Kinney Point and Mystery Bay State Park Properties

Fort Flagler and Mystery Bay State Parks, and the Kinney Point State Park property have all absorbed considerable human-caused impacts over the past 150 years. Fort Flagler was established as a military base in 1897, and remained one until it was purchased as a state park in 1955. Many buildings and other accoutrements from the days when the site was a fort remain in the park. Mystery Bay is a small 10-acre park used primarily for pleasure boat moorage and picnics. Kinney Point is undeveloped state park land located at the southern tip of Marrowstone Island. The property is covered primarily in second growth mixed conifer forest, with a sheer cliff 25-100 feet tall demarking the forest/beach boundary.

All three parks have been extensively logged in the past, and now host second-growth forests, shrublands, and/or open fields. While a portion of Fort Flagler has experienced extensive development, first as a fort and then as a tourist destination, the forested interior now receives little attention or impact from humans. At Kinney Point, there is no legal access to the land and no trails, so the forested interior there is also rarely visited. Both Fort Flagler and Kinney Point have extensive bluff-line shorelines.

Of the 164 vascular plant species identified in these parks, 37 of them were non-natives, comprising 23% of the total flora of the area. Many of these species co-evolved with 10,000 years of human agriculture and animal husbandry in Europe and Asia, and were therefore pre-adapted to disturbed soils and habitats when they arrived in North America. Some species which co-evolved with human-caused disturbance are well-adapted to natural disturbance factors as well, such as fire or shifting soil. The unstable soils on the steep and eroding bluffs at Fort Flagler and Kinney Point host a number of non-native species, including Scotch broom (*Cytisus scoparius*), Canada thistle (*Cirsium arvense*) and orchard grass (*Dactylis glomerata*).

The one sensitive plant found in these parks, Alaska alkaligrass (*Puccinellia nutkaena*), can be found within about 15 feet of a popular picnic table at Mystery Bay State Park. The species has persisted at the site in spite of human impacts nearby because it grows at the upper edge of the intertidal zone, where saline soils discourage the growth of species (including non-natives) that are not specifically adapted to soils that are saturated twice daily from high tides with saltwater.

While from an ecological perspective the ecosystems of these parks have been compromised by past land uses, with the loss of all old growth forest, a high proportion of non-native species, and considerable human development, they retain a considerable percentage cover of natural vegetation, and the more intact plant communities can be expected to evolve back towards later successional stages as the human impact on them diminishes.

GIS Products Produced

Associated with this report are polygon layers created by PBI depicting the vegetation community types mapped in Fort Flagler, Kinney Point and Mystery Bay State Parks. The datasets have been converted into ESRI shapefile format and provided to the Washington State Parks and Recreation Commission. Shapefiles depicting rare plant locations have been provided as well. The spatial datasets are complete with metadata meeting FGDC standards. Refer to the associated metadata for descriptions and attribute definitions for each spatial dataset.

References

Chappell C.B. 2004. *Terrestrial plant associations of the Puget trough ecoregion*, Washington. Washington Natural Heritage Program. Washington Department of Natural Resources. Olympia WA.

Hitchcock, C.L., Cronquist, A. 1973. *Flora of the Pacific Northwest: An Illustrated Manual* University of Washington Press, Seattle.

Hitchcock, C.L., Cronquist, A., Ownbey, M., Thompson, J.W., 1955. *Vascular Plants of the Pacific Northwest* University of Washington Press, Seattle.

Kunze. L.M. 1994. *Preliminary classification of native, low elevation, freshwater wetland vegetation in western Washington*. Washington Natural Heritage Program. Washington Department of Natural Resources. Olympia WA.

Kunze L.M., Cornelius L.C. 1982. *Baseline inventory of rare, threatened and endangered plant species/communities along Washington's Pacific coast.* Washington Natural Heritage Program. Washington Department of Natural Resources. Olympia WA.

Western Ecology Working Group of NatureServe. No date. International Ecological Classification Standard: International Vegetation Classification. Terrestrial Vegetation. NatureServe, Boulder, CO.

Appendix A – Field Survey Schedule

April 22 – 23, 2006

Field Crew: Hans Smith, Dana Visalli, Scott Heller, Phyllis Murra

July 7, 9 and 10 2006

Field Crew: Dana Visalli, Scott Heller

Appendix B – Description of Rare Element Status Codes

Global Rank (GRank)

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

G1 = Critically imperiled globally (5 or fewer occurrences).
G2 = Imperiled globally (6 to 20 occurrences).
G3 = Either very rare and local throughout its range or found locally in a restricted range (21 to 100 occurrences).
G4 = Apparently secure globally.
G5 = Demonstrably secure globally.
GH = Of historical occurrence throughout its range.
GU = Possibly in peril range-wide but status uncertain.
GX = Believed to be extinct throughout former range.
GNR = Not yet ranked.
Tn = Rarity of an infraspecific taxon. Numbers and codes similar to those for Gn ranks above.
Q = Questionable.

State Rank (SRank)

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

S1 = Critically imperiled (5 or fewer occurrences).
S2 = Imperiled (6 to 20 occurrences), very vulnerable to extirpation.
S3 = Rare or uncommon (21 to 100 occurrences).
S4 = Apparently secure, with many occurrences.
S5 = Demonstrably secure in state.
SA = Accidental in state.
SE = An exotic established in state.
SH = Historical occurrences only but still expected to occur.
SN = Regularly occurring, usually migratory, nonbreeding animals.
SU = Unrankable; need more information.
SX = Apparently extirpated from the state.
SP = Likely to occur or to have occurred but without documentation.
SZ = Not of conservation concern (not SE or SA).
SNR = Not yet ranked.
"B" and "N" qualifiers are used to indicate breeding and nonbreeding status, respectively, of migrant species whose nonbreeding status (rank) may be quite different from their breeding status in the state (e.g. S1B,S4N for a very rare breeder that is a common winter resident).

State Status (StStat)

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

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

Federal Status

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

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

Appendix C – Ecological Condition Ranking System

Ecological Condition Ranks

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

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

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

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

Condition Rank 3. This condition class represents areas that show the least stress in the project area and are the closest to representing baseline conditions. Areas characterized by Condition Class 3 have little evidence of non-native plant invasion. The composition and structure of native vegetation in this condition class correspond to the natural ranges of variation characteristic to this habitat type. Old-growth conditions may exist. Species diversity of native plants is often high relative to the community under consideration. Native grass species are usually present and often fairly abundant for the community type. Species diversity of native grass species is also often

high. Soil compaction, accelerated erosion and hydrologic alteration are absent. Direct signs of stressors are usually absent. Certain rare species may only exist within this condition class and rare species are generally more common than in the lower condition classes.

Appendix D – Vegetation Survey Data

Legend:

Site = name of locality of map project

Polygon = number you put on map

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

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

Survey intensity
1 = walked or could see most of polygon (high confidence in survey data)
2 = walked or could see part of polygon interior (moderate confidence)
3 = walked perimeter or could see part of polygon interior (low confidence)
4 = photo interpretation or other remote survey

VEGETATION COVER
This is canopy cover, i.e. the 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 years 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 – Fort Flagler State Park

Polygon Number	**1**
Survey Intensity	2
Observer	HS
Date	11/1/2006
Specific Location	

Total Vegetation
Trees Total
Dominant Trees
emergent
maincanopy
subcanopy
Shrubs Total
Dominant Shrubs
> 1.5' tall
< 1.5' tall
Graminoids Total
Dominant Graminoids
Graminoids Perennial
Graminoids Annual
Forbs Total
Dominant Forbs
Forbs Perennial
Forbs Annual
Ferns Total
Ferns Evergreen
Ferns Deciduous
ExoticsTotal
Exotics Perennial
Exotics Annual
Water
Rock Outcrop
Gravel
Bare Ground
Moss Lichen
Litter
Logging
Stand Age
Agriculture
Livestock
Development
Wildlife
Recreation Severity
Recreation Type
Hydrology

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Water	100	Matrix	2
2.				
3.				

Notes:

Polygon Number	**10**
Survey Intensity	1
Observer	SH
Date	4/22/2006
Specific Location	W of entrance rd.
Total Vegetation	6
Trees Total	6
Dominant Trees	PSME, THPL
emergent	2
maincanopy	6
subcanopy	2
Shrubs Total	5
Dominant Shrubs	GASH, MANE2, VAPA
> 1.5' tall	5
< 1.5' tall	5
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
Ferns Evergreen	4
Ferns Deciduous	1
ExoticsTotal	1
Exotics Perennial	1
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	0
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
ILAQ80
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-THPL-(ABGR)/GASH (CHAPPELL)	90	Matrix	2
2. PSME-THPL/GASH-MANE2/POMU	10	Small	2
3.	0		0

Notes:

Polygon Number	**11**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	
Total Vegetation	5
Trees Total	5
Dominant Trees	PSME, THPL
emergent	1
maincanopy	5
subcanopy	2
Shrubs Total	3
Dominant Shrubs	HODI
> 1.5' tall	3
< 1.5' tall	1
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
Ferns Evergreen	3
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
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	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. THPL-ABGR/POMU (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0

Notes:

Polygon Number	**12**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	
Total Vegetation	6
Trees Total	4
Dominant Trees	ALRU2
emergent	0
maincanopy	4
subcanopy	2
Shrubs Total	5
Dominant Shrubs	SASI2, RONU, HODI
> 1.5' tall	5
< 1.5' tall	2
Graminoids Total	5
Dominant Graminoids	PHAR3
Graminoids Perennial	5
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	LYAM3
Forbs Perennial	2
Forbs Annual	2
Ferns Total	2
Ferns Evergreen	2
Ferns Deciduous	2
ExoticsTotal	1
Exotics Perennial	0
Exotics Annual	1
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	2
Litter	98
Logging	2
Stand Age	2
Agriculture	0
Livestock	0
Development	3
Wildlife	3
Recreation Severity	3
Recreation Type	3
Hydrology	2

Exotic Species

Primary Exotic
POAN (1%)
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. Salix sp. c.t. (KUNZE)	100	Matrix	2
2.	0		0
3.	0		0

Notes:

Polygon Number	**13**
Survey Intensity	1
Observer	SH
Date	4/22/2006
Specific Location	SE portion of park.
Total Vegetation	6
Trees Total	6
Dominant Trees	PSME, THPL
emergent	2
maincanopy	6
subcanopy	3
Shrubs Total	5
Dominant Shrubs	GASH, SARA2, Rosa sp, MANE2, HODI
> 1.5' tall	5
< 1.5' tall	5
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	5
Ferns Evergreen	5
Ferns Deciduous	0
ExoticsTotal	1
Exotics Perennial	1
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	3
Litter	97
Logging	3
Stand Age	3
Agriculture	0
Livestock	0
Development	3
Wildlife	0
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
ILAQ80
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-THPL-(ABGR)/GASH (CHAPPELL)	60	Matrix	2
2. THPL-ABGR/POMU (CHAPPELL)	40	Large	2
3.	0		0

Notes:

Polygon Number	**14**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	SE Corner.
Total Vegetation	6
Trees Total	3
Dominant Trees	PSME
emergent	0
maincanopy	3
subcanopy	0
Shrubs Total	3
Dominant Shrubs	SASI2, HODI
> 1.5' tall	2
< 1.5' tall	2
Graminoids Total	6
Dominant Graminoids	BRIN
Graminoids Perennial	6
Graminoids Annual	1
Forbs Total	2
Dominant Forbs	
Forbs Perennial	2
Forbs Annual	1
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	6
Exotics Perennial	6
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	0
Litter	100
Logging	3
Stand Age	1
Agriculture	0
Livestock	0
Development	3
Wildlife	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
Exotic grasses
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. abandoned field	100	Matrix	1
2.	0		0
3.	0		0

Notes: DISTURBED SITE

Polygon Number	**15**
Survey Intensity	1
Observer	SH
Date	4/22/2006
Specific Location	SE corner of park.
Total Vegetation	6
Trees Total	4
Dominant Trees	PSME, ACMA3, ALRU2, THPL
emergent	0
maincanopy	4
subcanopy	2
Shrubs Total	4
Dominant Shrubs	HODI, RONU, RUPA, RUSP
> 1.5' tall	4
< 1.5' tall	3
Graminoids Total	2
Dominant Graminoids	
Graminoids Perennial	2
Graminoids Annual	1
Forbs Total	3
Dominant Forbs	GAAP2, URDI, POMU, PTAQ
Forbs Perennial	3
Forbs Annual	2
Ferns Total	3
Ferns Evergreen	3
Ferns Deciduous	2
ExoticsTotal	3
Exotics Perennial	3
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	10
Bare Ground	30
Moss Lichen	0
Litter	60
Logging	5
Stand Age	2
Agriculture	0
Livestock	0
Development	0
Wildlife	0
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
RUDI2
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. ACMA3-ALRU2/POMU-TEGR2	70	Matrix	2
2. RONU/FERU Community (KUNZE)	15	Small	2
3. Eroding Sandy Cliff (PBI)	15	Small	2

Notes:

Polygon Number	**16**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	BLUFF
Total Vegetation	5
Trees Total	2
Dominant Trees	PSME
emergent	0
maincanopy	2
subcanopy	0
Shrubs Total	5
Dominant Shrubs	HODI, SYAL, MAAQ2, CYSC4
> 1.5' tall	4
< 1.5' tall	4
Graminoids Total	3
Dominant Graminoids	DAGL
Graminoids Perennial	3
Graminoids Annual	2
Forbs Total	2
Dominant Forbs	ACMI2
Forbs Perennial	2
Forbs Annual	1
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	2
Exotics Perennial	2
Exotics Annual	0
Water	
Rock Outcrop	25
Gravel	2
Bare Ground	8
Moss Lichen	0
Litter	65
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	0
Wildlife	3
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic
CYSC4 (2%)
Secondary Exotic
DAGL
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. RONU/FERU Community (KUNZE)	100	Matrix	1
2.	0		0
3.	0		0

Notes:

Polygon Number	**17**
Survey Intensity	1
Observer	SH
Date	7/9/2006
Specific Location	Along SE shore.
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	
Dominant Graminoids	
Graminoids Perennial	0
Graminoids Annual	0
Forbs Total	
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	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	0
Litter	0
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	0
Wildlife	7
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Beach	100	Matrix	1
2.		0		0
3.		0		0

Notes: HIGH TIDE HAS KILLED MANY CONIFERS ALONG SHORE (VERY YOUNG). STEEP INACCESSABLE CLIFFS PERSIST.

Polygon Number	**18**
Survey Intensity	2
Observer	DV
Date	7/9/2006
Specific Location	
Total Vegetation	5
Trees Total	1
Dominant Trees	
emergent	0
maincanopy	0
subcanopy	1
Shrubs Total	1
Dominant Shrubs	
> 1.5' tall	1
< 1.5' tall	0
Graminoids Total	5
Dominant Graminoids	ELMO9, BRPA3
Graminoids Perennial	5
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	ACMI2, GRIN, CIAR
Forbs Perennial	2
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	2
Exotics Perennial	2
Exotics Annual	1
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	10
Moss Lichen	0
Litter	90
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	3
Wildlife	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
CIAR
Secondary Exotic
POPR
Noxious Exotic

Plant Associations

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

Notes:

Polygon Number	**19**
Survey Intensity	1
Observer	HS
Date	11/1/2006
Specific Location	

Total Vegetation
Trees Total
Dominant Trees
emergent
maincanopy
subcanopy
Shrubs Total
Dominant Shrubs
> 1.5' tall
< 1.5' tall
Graminoids Total
Dominant Graminoids
Graminoids Perennial
Graminoids Annual
Forbs Total
Dominant Forbs
Forbs Perennial
Forbs Annual
Ferns Total
Ferns Evergreen
Ferns Deciduous
ExoticsTotal
Exotics Perennial
Exotics Annual
Water
Rock Outcrop
Gravel
Bare Ground
Moss Lichen
Litter
Logging
Stand Age
Agriculture
Livestock
Development
Wildlife
Recreation Severity
Recreation Type
Hydrology

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Developed	100	Matrix	1
2.				
3.				

Notes:

Polygon Number **2**
Survey Intensity 2
Observer HS
Date 11/1/2006
Specific Location

Total Vegetation
Trees Total
Dominant Trees
emergent
maincanopy
subcanopy
Shrubs Total
Dominant Shrubs
> 1.5' tall
< 1.5' tall
Graminoids Total
Dominant Graminoids
Graminoids Perennial
Graminoids Annual
Forbs Total
Dominant Forbs
Forbs Perennial
Forbs Annual
Ferns Total
Ferns Evergreen
Ferns Deciduous
ExoticsTotal
Exotics Perennial
Exotics Annual
Water
Rock Outcrop
Gravel
Bare Ground
Moss Lichen
Litter
Logging
Stand Age
Agriculture
Livestock
Development
Wildlife
Recreation Severity
Recreation Type
Hydrology

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Water	100	Matrix	2
2.				
3.				

Notes:

Polygon Number	**20**
Survey Intensity	1
Observer	SH
Date	4/22/2006
Specific Location	
Total Vegetation	6
Trees Total	6
Dominant Trees	PSME, THPL, ABGR
emergent	2
maincanopy	5
subcanopy	2
Shrubs Total	5
Dominant Shrubs	GASH, HODI
> 1.5' tall	5
< 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	4
Ferns Evergreen	4
Ferns Deciduous	1
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	2
Litter	98
Logging	3
Stand Age	3
Agriculture	0
Livestock	0
Development	3
Wildlife	0
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-THPL-(ABGR)/GASH (CHAPPELL)	85	Matrix	2
2. THPL-ABGR/POMU (CHAPPELL)	15	Small	2
3.	0		0

Notes:

Polygon Number	**21**
Survey Intensity	1
Observer	SH
Date	4/22/2006
Specific Location	NE Tip of park.
Total Vegetation	3
Trees Total	1
Dominant Trees	PSME
emergent	0
maincanopy	1
subcanopy	0
Shrubs Total	2
Dominant Shrubs	Rosa sp., RISA, GASH
> 1.5' tall	2
< 1.5' tall	1
Graminoids Total	2
Dominant Graminoids	Juncus sp.
Graminoids Perennial	2
Graminoids Annual	0
Forbs Total	1
Dominant Forbs	Vicia sp., POMU
Forbs Perennial	1
Forbs Annual	0
Ferns Total	1
Ferns Evergreen	1
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	80
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	0
Litter	20
Logging	1
Stand Age	2
Agriculture	0
Livestock	0
Development	6
Wildlife	7
Recreation Severity	3
Recreation Type	4
Hydrology	2

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Water	80	Matrix	2
2.	Shrubland Unclassified	20	Small	2
3.		0		0

Notes: Area is mostly underwater, lagoons. Wildlife is ducks

Polygon Number	**22**
Survey Intensity	1
Observer	SH
Date	4/22/2006
Specific Location	NE Tip of park.
Total Vegetation	3
Trees Total	1
Dominant Trees	PSME
emergent	0
maincanopy	1
subcanopy	0
Shrubs Total	2
Dominant Shrubs	Rosa sp., RISA, GASH
> 1.5' tall	2
< 1.5' tall	1
Graminoids Total	2
Dominant Graminoids	Juncus sp.
Graminoids Perennial	2
Graminoids Annual	0
Forbs Total	1
Dominant Forbs	Vicia sp., POMU
Forbs Perennial	1
Forbs Annual	0
Ferns Total	1
Ferns Evergreen	1
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	80
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	0
Litter	20
Logging	1
Stand Age	2
Agriculture	0
Livestock	0
Development	6
Wildlife	7
Recreation Severity	3
Recreation Type	4
Hydrology	2

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Water	80	Matrix	2
2.	Shrubland Unclassified	20	Small	2
3.		0		0

Notes: Area is mostly underwater, lagoons. Wildlife is ducks.

Polygon Number	**23**
Survey Intensity	1
Observer	DV
Date	4/22/2006
Specific Location	Near Lighthouse.
Total Vegetation	6
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	6
Dominant Graminoids	SCAM2
Graminoids Perennial	6
Graminoids Annual	0
Forbs Total	1
Dominant Forbs	
Forbs Perennial	1
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	20
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	0
Litter	80
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	2
Wildlife	7
Recreation Severity	3
Recreation Type	3
Hydrology	3

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. SCAM2 Community (KUNZE)	100	Matrix	2
2.	0		0
3.	0		0

Notes: Wildlife is waterfowl.

Polygon Number	**24**
Survey Intensity	1
Observer	SH
Date	4/22/2006
Specific Location	NE tip of park
Total Vegetation	5
Trees Total	5
Dominant Trees	PSME
emergent	1
maincanopy	5
subcanopy	0
Shrubs Total	4
Dominant Shrubs	GASH, HODI, AMAL2, Rosa sp., MAAQ2
> 1.5' tall	4
< 1.5' tall	4
Graminoids Total	3
Dominant Graminoids	Exotic grasses
Graminoids Perennial	3
Graminoids Annual	0
Forbs Total	1
Dominant Forbs	
Forbs Perennial	1
Forbs Annual	0
Ferns Total	3
Ferns Evergreen	3
Ferns Deciduous	1
ExoticsTotal	3
Exotics Perennial	3
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	1
Moss Lichen	1
Litter	98
Logging	3
Stand Age	2
Agriculture	0
Livestock	0
Development	6
Wildlife	0
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
CYSC4
Secondary Exotic
ILAQ80
Noxious Exotic

Plant Associations

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

Notes: Military abandoned site. Abandoned barracks, cement towers, toilet deemed "history". Heavy CYSC4 near developed side of polygon.

Polygon Number	**25**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	
Total Vegetation	6
Trees Total	2
Dominant Trees	PSME
emergent	0
maincanopy	2
subcanopy	0
Shrubs Total	6
Dominant Shrubs	SASI2
> 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	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	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	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
HEHE (1%)
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. Shrubland Unclassified	100	Matrix	1
2.	0		0
3.	0		0

Notes:

Polygon Number **26**
Survey Intensity 1
Observer HS
Date 11/1/2006
Specific Location

Total Vegetation
Trees Total
Dominant Trees
emergent
maincanopy
subcanopy
Shrubs Total
Dominant Shrubs
> 1.5' tall
< 1.5' tall
Graminoids Total
Dominant Graminoids
Graminoids Perennial
Graminoids Annual
Forbs Total
Dominant Forbs
Forbs Perennial
Forbs Annual
Ferns Total
Ferns Evergreen
Ferns Deciduous
ExoticsTotal
Exotics Perennial
Exotics Annual
Water
Rock Outcrop
Gravel
Bare Ground
Moss Lichen
Litter
Logging
Stand Age
Agriculture
Livestock
Development
Wildlife
Recreation Severity
Recreation Type
Hydrology

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Developed	100	Matrix	1
2.				
3.				

Notes:

Polygon Number	**27**
Survey Intensity	1
Observer	DV
Date	7/9/2006
Specific Location	Poly is a complete bunker "MORTAR BATTERY"

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	
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	**28**
Survey Intensity	1
Observer	SH
Date	7/9/2006
Specific Location	NE
Total Vegetation	6
Trees Total	6
Dominant Trees	PSME, THPL, ABGR
emergent	2
maincanopy	6
subcanopy	2
Shrubs Total	6
Dominant Shrubs	GASH, HODI, MANE2, VAPA, SYAL
> 1.5' tall	6
< 1.5' tall	3
Graminoids Total	2
Dominant Graminoids	
Graminoids Perennial	2
Graminoids Annual	0
Forbs Total	3
Dominant Forbs	GAAP2, TRLA6, POMU, PTAQ
Forbs Perennial	3
Forbs Annual	0
Ferns Total	5
Ferns Evergreen	5
Ferns Deciduous	2
ExoticsTotal	1
Exotics Perennial	1
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	2
Moss Lichen	3
Litter	95
Logging	2
Stand Age	6
Agriculture	0
Livestock	0
Development	3
Wildlife	7
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
ILAQ80
Secondary Exotic

Noxious Exotic

Plant Associations

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

Notes: GOOD STAND OF ABGR. SOME MATURE PSME, THPL, ABGR WITH OLD GROWTH. Wildlife is birds

Polygon Number	**29**
Survey Intensity	3
Observer	HS
Date	11/8/2006
Specific Location	N shore of park
Total Vegetation	3
Trees Total	2
Dominant Trees	PSME
emergent	0
maincanopy	2
subcanopy	0
Shrubs Total	3
Dominant Shrubs	CYSC4, RUPA
> 1.5' tall	3
< 1.5' tall	0
Graminoids Total	2
Dominant Graminoids	DAGL
Graminoids Perennial	2
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	ARSU4
Forbs Perennial	2
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	3
Exotics Perennial	3
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	50
Bare Ground	20
Moss Lichen	0
Litter	30
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	0
Wildlife	0
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic
CYSC4 (30%)
Secondary Exotic
DAGL (15%)
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. Eroding Sandy Cliff (PBI)	75	Matrix	2
2. Shrubland Unclassified	25	Small	2
3.	0		0

Notes:

Polygon Number	**3**
Survey Intensity	2
Observer	HS
Date	11/1/2006
Specific Location	

Total Vegetation
Trees Total
Dominant Trees
emergent
maincanopy
subcanopy
Shrubs Total
Dominant Shrubs
> 1.5' tall
< 1.5' tall
Graminoids Total
Dominant Graminoids
Graminoids Perennial
Graminoids Annual
Forbs Total
Dominant Forbs
Forbs Perennial
Forbs Annual
Ferns Total
Ferns Evergreen
Ferns Deciduous
ExoticsTotal
Exotics Perennial
Exotics Annual
Water
Rock Outcrop
Gravel
Bare Ground
Moss Lichen
Litter
Logging
Stand Age
Agriculture
Livestock
Development
Wildlife
Recreation Severity
Recreation Type
Hydrology

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Water	100	Matrix	2
2.				
3.				

Notes:

Polygon Number	**30**
Survey Intensity	2
Observer	SH
Date	7/9/2006
Specific Location	NE
Total Vegetation	6
Trees Total	6
Dominant Trees	THPL, ALRU2, ACMA3
emergent	0
maincanopy	6
subcanopy	0
Shrubs Total	4
Dominant Shrubs	RUSP, SARA2
> 1.5' tall	4
< 1.5' tall	1
Graminoids Total	2
Dominant Graminoids	
Graminoids Perennial	2
Graminoids Annual	0
Forbs Total	3
Dominant Forbs	URDI, STCO14, OESA, POMU, ATFI
Forbs Perennial	3
Forbs Annual	0
Ferns Total	6
Ferns Evergreen	6
Ferns Deciduous	3
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	6
Litter	94
Logging	2
Stand Age	3
Agriculture	0
Livestock	0
Development	0
Wildlife	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

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

Notes:

Polygon Number	**31**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	SE corner.
Total Vegetation	5
Trees Total	5
Dominant Trees	PSME, THPL
emergent	0
maincanopy	5
subcanopy	0
Shrubs Total	2
Dominant Shrubs	HODI
> 1.5' tall	2
< 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	3
Ferns Evergreen	3
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
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	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. THPL-ABGR/POMU (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0

Notes:

Polygon Number	**33**
Survey Intensity	1
Observer	Phyllis
Date	4/22/2006
Specific Location	Most westerly forested polygon.
Total Vegetation	5
Trees Total	5
Dominant Trees	ALRU2, PSME
emergent	2
maincanopy	5
subcanopy	2
Shrubs Total	3
Dominant Shrubs	HODI, SYAL
> 1.5' tall	3
< 1.5' tall	1
Graminoids Total	1
Dominant Graminoids	
Graminoids Perennial	1
Graminoids Annual	0
Forbs Total	3
Dominant Forbs	URDI, POMU
Forbs Perennial	3
Forbs Annual	0
Ferns Total	5
Ferns Evergreen	5
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	2
Moss Lichen	3
Litter	95
Logging	2
Stand Age	2
Agriculture	0
Livestock	0
Development	0
Wildlife	3
Recreation Severity	2
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

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

Notes: Southwest end near campground is heavily impacted by campers; many crisscrossing paths. Also other paths further up.

Polygon Number **34**
Survey Intensity 1
Observer HS
Date 11/1/2006
Specific Location

Total Vegetation
Trees Total
Dominant Trees
emergent
maincanopy
subcanopy
Shrubs Total
Dominant Shrubs
> 1.5' tall
< 1.5' tall
Graminoids Total
Dominant Graminoids
Graminoids Perennial
Graminoids Annual
Forbs Total
Dominant Forbs
Forbs Perennial
Forbs Annual
Ferns Total
Ferns Evergreen
Ferns Deciduous
ExoticsTotal
Exotics Perennial
Exotics Annual
Water
Rock Outcrop
Gravel
Bare Ground
Moss Lichen
Litter
Logging
Stand Age
Agriculture
Livestock
Development
Wildlife
Recreation Severity
Recreation Type
Hydrology

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Developed	100	Matrix	1
2.				
3.				

Notes:

Polygon Number	**35**
Survey Intensity	1
Observer	Phyllis
Date	4/22/2006
Specific Location	Just to the east along the coast from the western point.
Total Vegetation	4
Trees Total	0
Dominant Trees	
emergent	0
maincanopy	0
subcanopy	0
Shrubs Total	4
Dominant Shrubs	RONU, RUSP
> 1.5' tall	4
< 1.5' tall	0
Graminoids Total	4
Dominant Graminoids	ELMO9
Graminoids Perennial	4
Graminoids Annual	0
Forbs Total	3
Dominant Forbs	
Forbs Perennial	3
Forbs Annual	1
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	2
Moss Lichen	3
Litter	95
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	0
Wildlife	2
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. RONU/FERU Community (KUNZE)	100	Matrix	2
2.	0		0
3.	0		0

Notes:

Polygon Number	**36**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	E end of 36
Total Vegetation	5
Trees Total	5
Dominant Trees	PSME, THPL
emergent	2
maincanopy	5
subcanopy	3
Shrubs Total	2
Dominant Shrubs	
> 1.5' tall	2
< 1.5' tall	0
Graminoids Total	0
Dominant Graminoids	
Graminoids Perennial	0
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	
Forbs Perennial	2
Forbs Annual	0
Ferns Total	4
Ferns Evergreen	4
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	2
Litter	98
Logging	3
Stand Age	3
Agriculture	0
Livestock	0
Development	3
Wildlife	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. THPL-ABGR/POMU (CHAPPELL)	100	Matrix	3
2.	0		0
3.	0		0

Notes:

Polygon Number	**37**
Survey Intensity	2
Observer	DV, MH
Date	4/22/2006
Specific Location	Alter boundary line
Total Vegetation	6
Trees Total	2
Dominant Trees	ALRU2
emergent	0
maincanopy	2
subcanopy	0
Shrubs Total	5
Dominant Shrubs	SASI2, SPDO
> 1.5' tall	5
< 1.5' tall	0
Graminoids Total	0
Dominant Graminoids	
Graminoids Perennial	0
Graminoids Annual	0
Forbs Total	4
Dominant Forbs	
Forbs Perennial	4
Forbs Annual	0
Ferns Total	2
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	100
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	0
Wildlife	0
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. Salix sp. c.t. (KUNZE)	100	Matrix	3
2.	0		0
3.	0		0

Notes:

Polygon Number	**38**
Survey Intensity	1
Observer	SH
Date	7/9/2006
Specific Location	NE
Total Vegetation	5
Trees Total	5
Dominant Trees	ALRU2, PSME, THPL, ABGR
emergent	0
maincanopy	5
subcanopy	1
Shrubs Total	5
Dominant Shrubs	GASH, RUSP, SPDO, Salix sp.,
> 1.5' tall	5
< 1.5' tall	2
Graminoids Total	3
Dominant Graminoids	Carex sp.
Graminoids Perennial	3
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	GAAP2, URDI, POMU, PTAQ
Forbs Perennial	2
Forbs Annual	0
Ferns Total	3
Ferns Evergreen	2
Ferns Deciduous	2
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	3
Moss Lichen	10
Litter	87
Logging	0
Stand Age	2
Agriculture	0
Livestock	0
Development	0
Wildlife	0
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	PSME-TSHE/GASH/POMU (CHAPPELL)	80	Matrix	3
2.	CAOB3 c.t. (KUNZE)	20	Small	3
3.		0		0

Notes: SOGGY GROUND IN SPOTS. STANDING WATER, ABOUT 1.5m2 AREA.

Polygon Number	**39**
Survey Intensity	1
Observer	SH
Date	7/9/2006
Specific Location	NE
Total Vegetation	6
Trees Total	6
Dominant Trees	PSME, THPL, ABGR
emergent	2
maincanopy	6
subcanopy	2
Shrubs Total	6
Dominant Shrubs	GASH, HODI, ROGY
> 1.5' tall	6
< 1.5' tall	2
Graminoids Total	1
Dominant Graminoids	
Graminoids Perennial	1
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	GAAP2, POMU, PTAQ
Forbs Perennial	2
Forbs Annual	0
Ferns Total	4
Ferns Evergreen	4
Ferns Deciduous	2
ExoticsTotal	1
Exotics Perennial	1
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	3
Litter	97
Logging	2
Stand Age	6
Agriculture	0
Livestock	0
Development	3
Wildlife	7
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

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

Notes: THICK GASH UNDERSTORY. SOME OG TREES. BEAUTIFUL FOREST. Wildlife is birds

Polygon Number	**4**
Survey Intensity	1
Observer	DV
Date	7/9/2006
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	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	0
Litter	0
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	0
Wildlife	0
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. Beach	100	Matrix	2
2.	0		0
3.	0		0

Notes:

Polygon Number	**40**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	
Total Vegetation	5
Trees Total	5
Dominant Trees	PSME, THPL
emergent	2
maincanopy	5
subcanopy	3
Shrubs Total	2
Dominant Shrubs	VAPA
> 1.5' tall	2
< 1.5' tall	1
Graminoids Total	1
Dominant Graminoids	
Graminoids Perennial	1
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	
Forbs Perennial	2
Forbs Annual	0
Ferns Total	5
Ferns Evergreen	5
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	5
Moss Lichen	10
Litter	85
Logging	3
Stand Age	3
Agriculture	0
Livestock	0
Development	2
Wildlife	7
Recreation Severity	2
Recreation Type	1
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. THPL-ABGR/POMU (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0

Notes: Pileated WP in polygon.

Polygon Number	**41**
Survey Intensity	1
Observer	SH
Date	7/9/2006
Specific Location	NE
Total Vegetation	6
Trees Total	6
Dominant Trees	PSME, THPL, ABGR
emergent	2
maincanopy	6
subcanopy	2
Shrubs Total	5
Dominant Shrubs	GASH, HODI, VAPA
> 1.5' tall	5
< 1.5' tall	2
Graminoids Total	1
Dominant Graminoids	
Graminoids Perennial	1
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	GAAP2, TRLA6, POMU, PTAQ
Forbs Perennial	2
Forbs Annual	0
Ferns Total	6
Ferns Evergreen	6
Ferns Deciduous	2
ExoticsTotal	3
Exotics Perennial	3
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	8
Litter	92
Logging	3
Stand Age	2
Agriculture	0
Livestock	0
Development	3
Wildlife	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
ILAQ80
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-THPL-(ABGR)/GASH (CHAPPELL)	60	Matrix	2
2. THPL-ABGR/POMU (CHAPPELL)	40	Small	2
3.	0		0

Notes:

Polygon Number	**42**
Survey Intensity	2
Observer	Phyllis
Date	4/22/2006
Specific Location	NW QUARTER OF PARK
Total Vegetation	6
Trees Total	6
Dominant Trees	THPL, TSHE, ABGR
emergent	2
maincanopy	6
subcanopy	2
Shrubs Total	3
Dominant Shrubs	GASH
> 1.5' tall	3
< 1.5' tall	0
Graminoids Total	0
Dominant Graminoids	
Graminoids Perennial	0
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	POMU
Forbs Perennial	2
Forbs Annual	0
Ferns Total	6
Ferns Evergreen	6
Ferns Deciduous	1
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	3
Litter	97
Logging	3
Stand Age	3
Agriculture	0
Livestock	0
Development	0
Wildlife	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. THPL-ABGR/POMU (CHAPPELL)	100	Matrix	2
2.	0		0
3.	0		0

Notes:

Polygon Number	**5**
Survey Intensity	1
Observer	DV
Date	7/9/2006
Specific Location	
Total Vegetation	5
Trees Total	1
Dominant Trees	
emergent	0
maincanopy	0
subcanopy	1
Shrubs Total	1
Dominant Shrubs	
> 1.5' tall	1
< 1.5' tall	0
Graminoids Total	5
Dominant Graminoids	ELMO9, BRPA3
Graminoids Perennial	5
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	ACMI2, GRIN, CIAR
Forbs Perennial	2
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	2
Exotics Perennial	2
Exotics Annual	1
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	10
Moss Lichen	0
Litter	90
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	3
Wildlife	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
CIAR
Secondary Exotic
POPR
Noxious Exotic

Plant Associations

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

Notes:

Polygon Number	**6**
Survey Intensity	2
Observer	DV
Date	7/9/2006
Specific Location	Coastline south of parking area.
Total Vegetation	4
Trees Total	1
Dominant Trees	PSME
emergent	0
maincanopy	1
subcanopy	0
Shrubs Total	2
Dominant Shrubs	MAAQ2
> 1.5' tall	2
< 1.5' tall	2
Graminoids Total	4
Dominant Graminoids	BRPA3, DAGL
Graminoids Perennial	2
Graminoids Annual	4
Forbs Total	2
Dominant Forbs	GRIN
Forbs Perennial	2
Forbs Annual	2
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	4
Exotics Perennial	2
Exotics Annual	3
Water	
Rock Outcrop	10
Gravel	0
Bare Ground	40
Moss Lichen	0
Litter	50
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	3
Wildlife	3
Recreation Severity	1
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
DAGL
Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. Eroding Sandy Cliff (PBI)	100	Matrix	2
2.	0		0
3.	0		0

Notes: COASTAL CLIFF, WITH TRAILS TO CAMPGROUND AND INITIALS - NAMES CARVED INTO THE BLUFF.

Polygon Number	**7**
Survey Intensity	1
Observer	DV
Date	4/22/2006
Specific Location	water tower

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	
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	**8**
Survey Intensity	2
Observer	DV
Date	7/9/2006
Specific Location	Polygon 8 is a water storage tower.
Total Vegetation	6
Trees Total	2
Dominant Trees	THPL, ALRU2
emergent	0
maincanopy	2
subcanopy	0
Shrubs Total	5
Dominant Shrubs	Pyrus sp.
> 1.5' tall	5
< 1.5' tall	0
Graminoids Total	1
Dominant Graminoids	
Graminoids Perennial	1
Graminoids Annual	0
Forbs Total	3
Dominant Forbs	OESA, POMU
Forbs Perennial	3
Forbs Annual	0
Ferns Total	3
Ferns Evergreen	3
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	0
Litter	100
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	5
Wildlife	3
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PYFU c.t. (KUNZE)	100	Matrix	3
2.	0		0
3.	0		0

Notes:

Polygon Number	**9**
Survey Intensity	2
Observer	DV
Date	7/9/2006
Specific Location	
Total Vegetation	6
Trees Total	5
Dominant Trees	PSME, THPL
emergent	2
maincanopy	4
subcanopy	2
Shrubs Total	4
Dominant Shrubs	GASH
> 1.5' tall	4
< 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
Ferns Evergreen	2
Ferns Deciduous	0
ExoticsTotal	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	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
ILAQ80
Secondary Exotic
HEHE
Noxious Exotic

Plant Associations

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

Notes:

Vegetation Polygon Data – Kinney Point State Park Property

Polygon Number	**1**
Survey Intensity	2
Observer	SH
Date	7/10/2006
Specific Location	Center
Total Vegetation	6
Trees Total	6
Dominant Trees	PSME, THPL, ABGR
emergent	1
maincanopy	6
subcanopy	2
Shrubs Total	6
Dominant Shrubs	GASH, VAOV2, MANE2
> 1.5' tall	6
< 1.5' tall	2
Graminoids Total	1
Dominant Graminoids	
Graminoids Perennial	1
Graminoids Annual	0
Forbs Total	3
Dominant Forbs	TRLA6, GAAP2, MOUN3, POMU, PTAQ
Forbs Perennial	3
Forbs Annual	0
Ferns Total	4
Ferns Evergreen	4
Ferns Deciduous	3
ExoticsTotal	4
Exotics Perennial	4
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	10
Litter	90
Logging	2
Stand Age	6
Agriculture	0
Livestock	0
Development	3
Wildlife	7
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
HEHE
Secondary Exotic
ILAQ80
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-THPL-(ABGR)/GASH (CHAPPELL)	70	Matrix	2
2. PSME-THPL/GASH-MANE2/POMU	25	Small	2
3. PSME-ARME/GASH (CHAPPELL)	5	linear	2

Notes: HEHE THICK IN PLACES. A FEW ARME ALONG THE BLUFF EDGE. NICE MATURE FOREST. SOME OG. Wildlife is songbirds

Polygon Number	**2A**
Survey Intensity	4
Observer	SH
Date	7/10/2006
Specific Location	NW
Total Vegetation	5
Trees Total	5
Dominant Trees	ALRU2, THPL
emergent	1
maincanopy	5
subcanopy	2
Shrubs Total	4
Dominant Shrubs	RUSP, SARA2, Salix sp., HODI
> 1.5' tall	4
< 1.5' tall	2
Graminoids Total	3
Dominant Graminoids	CAOB3
Graminoids Perennial	3
Graminoids Annual	0
Forbs Total	3
Dominant Forbs	MADI, STCO14, POMU, PTAQ
Forbs Perennial	3
Forbs Annual	0
Ferns Total	3
Ferns Evergreen	3
Ferns Deciduous	2
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	5
Litter	95
Logging	0
Stand Age	2
Agriculture	0
Livestock	0
Development	0
Wildlife	2
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

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

Notes:

Polygon Number	**2B**
Survey Intensity	2
Observer	SH
Date	7/10/2006
Specific Location	
Total Vegetation	5
Trees Total	5
Dominant Trees	ALRU2, THPL, ACMA3
emergent	0
maincanopy	5
subcanopy	0
Shrubs Total	5
Dominant Shrubs	RUSP, SARA2, HODI
> 1.5' tall	5
< 1.5' tall	2
Graminoids Total	2
Dominant Graminoids	CAOB3
Graminoids Perennial	2
Graminoids Annual	0
Forbs Total	3
Dominant Forbs	MADI, STCO14, OECO5, POMU, ATFI
Forbs Perennial	3
Forbs Annual	0
Ferns Total	4
Ferns Evergreen	4
Ferns Deciduous	3
ExoticsTotal	3
Exotics Perennial	3
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	5
Moss Lichen	5
Litter	90
Logging	0
Stand Age	2
Agriculture	0
Livestock	0
Development	3
Wildlife	7
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
RARE3
Secondary Exotic
ILAQ80
Noxious Exotic
HEHE

Plant Associations

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

Notes: THPL THROUGHOUT POLYGON. Wildlife is songbirds

Polygon Number	**3**
Survey Intensity	2
Observer	DV
Date	7/10/2006
Specific Location	
Total Vegetation	6
Trees Total	4
Dominant Trees	PSME
emergent	2
maincanopy	4
subcanopy	2
Shrubs Total	5
Dominant Shrubs	HODI, SYAL, 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, PTAQ
Forbs Perennial	2
Forbs Annual	2
Ferns Total	2
Ferns Evergreen	2
Ferns Deciduous	2
ExoticsTotal	1
Exotics Perennial	1
Exotics Annual	1
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	5
Litter	95
Logging	2
Stand Age	3
Agriculture	0
Livestock	0
Development	0
Wildlife	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
ILAQ80
Secondary Exotic
HEHE
Noxious Exotic

Plant Associations

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

Notes:

Polygon Number	**4**
Survey Intensity	1
Observer	Phyllis
Date	4/22/2006
Specific Location	Upper east edge of provence
Total Vegetation	6
Trees Total	5
Dominant Trees	ABGR, PSME, ALRU2
emergent	5
maincanopy	2
subcanopy	5
Shrubs Total	5
Dominant Shrubs	SYAL, HODI, RUSP
> 1.5' tall	5
< 1.5' tall	0
Graminoids Total	2
Dominant Graminoids	
Graminoids Perennial	2
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	TEGR2
Forbs Perennial	2
Forbs Annual	0
Ferns Total	3
Ferns Evergreen	3
Ferns Deciduous	1
ExoticsTotal	1
Exotics Perennial	1
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	2
Litter	98
Logging	2
Stand Age	2
Agriculture	0
Livestock	0
Development	0
Wildlife	2
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
RUDI2
Secondary Exotic
ILAQ80
Noxious Exotic
HEHE

Plant Associations

	Percent	Pattern	Rank
1. PSME-ABGR/HODI/POMU (CHAPPELL)	60	Matrix	1
2. ALRU2/POMU (CHAPPELL)	40	Large	2
3.	0		0

Notes: Alder area could have been a landing. Some large >20" dBH ABGR trees in area.

Polygon Number	**5**
Survey Intensity	2
Observer	DV
Date	7/10/2006
Specific Location	
Total Vegetation	6
Trees Total	0
Dominant Trees	
emergent	0
maincanopy	0
subcanopy	0
Shrubs Total	2
Dominant Shrubs	ROEG
> 1.5' tall	2
< 1.5' tall	0
Graminoids Total	6
Dominant Graminoids	DAGL
Graminoids Perennial	2
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	HYRA3
Forbs Perennial	2
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	6
Exotics Perennial	6
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	0
Litter	100
Logging	3
Stand Age	0
Agriculture	0
Livestock	4
Development	2
Wildlife	3
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic
DAGL
Secondary Exotic
Exotic grasses
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. Developed	100	Matrix	1
2.	0		0
3.	0		0

Notes: THIS IS A PASTURE, UNGRAZED THIS YEAR.

Polygon Number	**6**
Survey Intensity	2
Observer	DV
Date	7/10/2006
Specific Location	
Total Vegetation	6
Trees Total	3
Dominant Trees	PSME
emergent	0
maincanopy	3
subcanopy	1
Shrubs Total	5
Dominant Shrubs	SYAL, RUUR, RONU
> 1.5' tall	5
< 1.5' tall	1
Graminoids Total	1
Dominant Graminoids	CADE9, Melica sp., HOLA
Graminoids Perennial	1
Graminoids Annual	1
Forbs Total	1
Dominant Forbs	TEGR2, POMU, PTAQ
Forbs Perennial	1
Forbs Annual	0
Ferns Total	2
Ferns Evergreen	2
Ferns Deciduous	2
ExoticsTotal	1
Exotics Perennial	1
Exotics Annual	1
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	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
HOLA (1%)
Secondary Exotic
ILHE (1%)
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. RONU/FERU Community (KUNZE)	100	Matrix	1
2.	0		0
3.	0		0

Notes:

Polygon Number	**7**
Survey Intensity	2
Observer	Phyllis
Date	4/22/2006
Specific Location	Wetland in polygon #4
Total Vegetation	5
Trees Total	4
Dominant Trees	ALRU2, THPL
emergent	1
maincanopy	4
subcanopy	2
Shrubs Total	4
Dominant Shrubs	RUSP, SALA5
> 1.5' tall	4
< 1.5' tall	0
Graminoids Total	4
Dominant Graminoids	CAOB3
Graminoids Perennial	4
Graminoids Annual	0
Forbs Total	3
Dominant Forbs	
Forbs Perennial	3
Forbs Annual	0
Ferns Total	2
Ferns Evergreen	2
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	0
Moss Lichen	5
Litter	95
Logging	1
Stand Age	2
Agriculture	0
Livestock	0
Development	0
Wildlife	2
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

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

Notes:

Polygon Number	**8**
Survey Intensity	1
Observer	DV
Date	7/10/2006
Specific Location	
Total Vegetation	4
Trees Total	1
Dominant Trees	ALRU2
emergent	0
maincanopy	1
subcanopy	0
Shrubs Total	2
Dominant Shrubs	Rosa sp.
> 1.5' tall	2
< 1.5' tall	2
Graminoids Total	3
Dominant Graminoids	ELMO9, HOLA
Graminoids Perennial	2
Graminoids Annual	3
Forbs Total	2
Dominant Forbs	ARSU4, MIGU, EQTE, ANMA, PEFR5
Forbs Perennial	2
Forbs Annual	1
Ferns Total	1
Ferns Evergreen	0
Ferns Deciduous	1
ExoticsTotal	2
Exotics Perennial	2
Exotics Annual	2
Water	
Rock Outcrop	50
Gravel	0
Bare Ground	20
Moss Lichen	0
Litter	30
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	0
Wildlife	7
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic
RUDI2
Secondary Exotic
CIAR
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. Eroding Sandy Cliff (PBI)	80	Matrix	2
2. Shrubland Unclassified	20	Small	2
3.	0		0

Notes: SEA BLUFF, SANDSTONE AND SAND. Wildlife is birds

Vegetation Polygon Data – Mystery Bay State Park

Polygon Number	**1**
Survey Intensity	2
Observer	HS
Date	11/1/2006
Specific Location	

Total Vegetation
Trees Total
Dominant Trees
emergent
maincanopy
subcanopy
Shrubs Total
Dominant Shrubs
> 1.5' tall
< 1.5' tall
Graminoids Total
Dominant Graminoids
Graminoids Perennial
Graminoids Annual
Forbs Total
Dominant Forbs
Forbs Perennial
Forbs Annual
Ferns Total
Ferns Evergreen
Ferns Deciduous
ExoticsTotal
Exotics Perennial
Exotics Annual
Water
Rock Outcrop
Gravel
Bare Ground
Moss Lichen
Litter
Logging
Stand Age
Agriculture
Livestock
Development
Wildlife
Recreation Severity
Recreation Type
Hydrology

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Water	100	Matrix	2
2.				
3.				

Notes:

Polygon Number	**10**
Survey Intensity	1
Observer	DV
Date	4/22/2006
Specific Location	
Total Vegetation	6
Trees Total	3
Dominant Trees	PSME, MAFU
emergent	0
maincanopy	3
subcanopy	0
Shrubs Total	5
Dominant Shrubs	RONU
> 1.5' tall	5
< 1.5' tall	0
Graminoids Total	5
Dominant Graminoids	
Graminoids Perennial	5
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	
Forbs Perennial	2
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	2
Exotics Perennial	2
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	6
Wildlife	7
Recreation Severity	2
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
MAPU (3%)
Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	RONU/FERU Community (KUNZE)	100	Matrix	2
2.		0		0
3.		0		0

Notes: LARGELY RONU, PSME ON N PERIMETER. Development is small auto park. Wildlife is birds

Polygon Number	**11**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	
Total Vegetation	6
Trees Total	1
Dominant Trees	
emergent	0
maincanopy	1
subcanopy	0
Shrubs Total	6
Dominant Shrubs	RONU
> 1.5' tall	6
< 1.5' tall	2
Graminoids Total	2
Dominant Graminoids	
Graminoids Perennial	2
Graminoids Annual	1
Forbs Total	2
Dominant Forbs	
Forbs Perennial	2
Forbs Annual	1
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	2
Exotics Perennial	2
Exotics Annual	1
Water	
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	3
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic
RUDI2
Secondary Exotic
MAPU
Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. RONU/FERU Community (KUNZE)	100	Matrix	1
2.	0		0
3.	0		0

Notes:

Polygon Number	**2**
Survey Intensity	1
Observer	HS
Date	11/1/2006
Specific Location	

Total Vegetation
Trees Total
Dominant Trees
emergent
maincanopy
subcanopy
Shrubs Total
Dominant Shrubs
> 1.5' tall
< 1.5' tall
Graminoids Total
Dominant Graminoids
Graminoids Perennial
Graminoids Annual
Forbs Total
Dominant Forbs
Forbs Perennial
Forbs Annual
Ferns Total
Ferns Evergreen
Ferns Deciduous
ExoticsTotal
Exotics Perennial
Exotics Annual
Water
Rock Outcrop
Gravel
Bare Ground
Moss Lichen
Litter
Logging
Stand Age
Agriculture
Livestock
Development
Wildlife
Recreation Severity
Recreation Type
Hydrology

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Developed	100	Matrix	1
2.				
3.				

Notes:

Polygon Number **3**
Survey Intensity 1
Observer HS
Date 11/1/2006
Specific Location

Total Vegetation
Trees Total
Dominant Trees
emergent
maincanopy
subcanopy
Shrubs Total
Dominant Shrubs
> 1.5' tall
< 1.5' tall
Graminoids Total
Dominant Graminoids
Graminoids Perennial
Graminoids Annual
Forbs Total
Dominant Forbs
Forbs Perennial
Forbs Annual
Ferns Total
Ferns Evergreen
Ferns Deciduous
ExoticsTotal
Exotics Perennial
Exotics Annual
Water
Rock Outcrop
Gravel
Bare Ground
Moss Lichen
Litter
Logging
Stand Age
Agriculture
Livestock
Development
Wildlife
Recreation Severity
Recreation Type
Hydrology

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Beach	100	Matrix	2
2.				
3.				

Notes:

Polygon Number	**4**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	
Total Vegetation	6
Trees Total	4
Dominant Trees	PSME, ARME
emergent	0
maincanopy	4
subcanopy	0
Shrubs Total	5
Dominant Shrubs	GASH, RONU
> 1.5' tall	5
< 1.5' tall	0
Graminoids Total	0
Dominant Graminoids	
Graminoids Perennial	0
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	
Forbs Perennial	2
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
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	2
Wildlife	7
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

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

Notes:

Polygon Number	**5**
Survey Intensity	1
Observer	SH
Date	4/22/2006
Specific Location	lagoon adjacent to parking loup
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	2
Dominant Graminoids	
Graminoids Perennial	2
Graminoids Annual	0
Forbs Total	3
Dominant Forbs	SAVI, JACA4, PLMA3
Forbs Perennial	3
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	85
Moss Lichen	0
Litter	15
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	0
Wildlife	7
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	Water	85	Matrix	3
2.	SAVI-JACA4-DISP-TRMA20 Community	15	Small	2
3.		0		0

Notes: wildlife is tideland animals

Polygon Number	**6**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	
Total Vegetation	6
Trees Total	2
Dominant Trees	PSME
emergent	0
maincanopy	2
subcanopy	0
Shrubs Total	5
Dominant Shrubs	RUDI2
> 1.5' tall	5
< 1.5' tall	0
Graminoids Total	2
Dominant Graminoids	DAGL
Graminoids Perennial	2
Graminoids Annual	0
Forbs Total	2
Dominant Forbs	
Forbs Perennial	0
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	5
Exotics Perennial	5
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	0
Bare Ground	5
Moss Lichen	0
Litter	95
Logging	3
Stand Age	1
Agriculture	0
Livestock	0
Development	0
Wildlife	3
Recreation Severity	3
Recreation Type	3
Hydrology	1

Exotic Species

Primary Exotic
RUDI2
Secondary Exotic

Noxious Exotic
RUDI2

Plant Associations

	Percent	Pattern	Rank
1. Shrubland Unclassified	100	Matrix	1
2.	0		0
3.	0		0

Notes:

Polygon Number	**7**
Survey Intensity	1
Observer	SH
Date	4/22/2006
Specific Location	
Total Vegetation	6
Trees Total	5
Dominant Trees	PSME, ARME
emergent	1
maincanopy	5
subcanopy	1
Shrubs Total	6
Dominant Shrubs	GASH, AMAL2, HODI, LOHI2, MAAQ2, Rosa sp.
> 1.5' tall	5
< 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	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
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	3
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

	Percent	Pattern	Rank
1. PSME-ARME/GASH (CHAPPELL)	95	Matrix	2
2. PSME-ARME/HODI/LOHI2 (CHAPPELL)	5	Small	2
3.	0		0

Notes:

Polygon Number	**8**
Survey Intensity	1
Observer	SH
Date	7/9/2006
Specific Location	
Total Vegetation	6
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	4
Dominant Graminoids	JUBA, DISP
Graminoids Perennial	4
Graminoids Annual	0
Forbs Total	6
Dominant Forbs	SAVI, JACA4, TRMA20, PLMA3, GRIN, ASSU4
Forbs Perennial	6
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
Exotics Annual	0
Water	
Rock Outcrop	0
Gravel	2
Bare Ground	1
Moss Lichen	0
Litter	97
Logging	0
Stand Age	0
Agriculture	0
Livestock	0
Development	6
Wildlife	7
Recreation Severity	3
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	AGAL3-JUBA-POPA23 Community	80	Matrix	2
2.	SAVI-JACA4-DISP-TRMA20 Community	20	Small	2
3.		0		0

Notes: OVERALL, NICE SPECIES RICH SALT MARSH COMMUNITY. Some old posts. Wildlife is crabs

Polygon Number	**9**
Survey Intensity	2
Observer	DV
Date	4/22/2006
Specific Location	
Total Vegetation	6
Trees Total	2
Dominant Trees	PSME
emergent	2
maincanopy	0
subcanopy	0
Shrubs Total	6
Dominant Shrubs	RONU
> 1.5' tall	6
< 1.5' tall	0
Graminoids Total	1
Dominant Graminoids	
Graminoids Perennial	1
Graminoids Annual	0
Forbs Total	1
Dominant Forbs	
Forbs Perennial	1
Forbs Annual	0
Ferns Total	0
Ferns Evergreen	0
Ferns Deciduous	0
ExoticsTotal	0
Exotics Perennial	0
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	0
Wildlife	7
Recreation Severity	0
Recreation Type	0
Hydrology	1

Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

Plant Associations

		Percent	Pattern	Rank
1.	RONU/FERU Community (KUNZE)	100	Matrix	1
2.		0		0
3.		0		0

Notes: Wildlife is songbirds

Appendix E – Rare Plant Sighting Forms

Washington Natural Heritage Program Rare Plant Sighting Form

Taxon Name: *Puccinellia nutkaensis*
EO #:
Are you confident of the identification? Yes No Explain:

Survey Site Name: Mystery Bay State Park
Surveyor's Name/Phone/Email: Dana Visalli 509 997-9011 dana@methow.com
Survey Date: July 9, 2006
County: Jefferson
Quad Name:
Quad Code:
Township: 30N Range: 1E Section(s): 9 1/4 of 1/4:

Directions to site: Go to Mystery Bay State Park. Park in the NW corner of the parking loop, and walk around the west end of the shrubs, then north on the spit. In 2006 there was a picnic table just north of the shrubs. From the picnic table, or from 30 feet beyond (north of) the line of shrubs, walking 15 feet east towards the low intertidal area. the PUNU is along the upper edge of the tidal zone.

Mapping (see instructions): Attach a copy of the USGS 7.5 minute quad with the location and extent of the rare plant population clearly drawn. Do not reduce or enlarge the photocopy or printout of the map. If your map is a different scale (not recommended) please write the scale on the map.

Please answer the following:
1. I used GPS to map the population: No (skip to #2) Yes (complete #1 & #3)
Coordinates are in electronic file on diskette (preferred) o Coordinates written below or attached.
Description of what coordinates represent:

GPS accuracy: Uncorrected Corrected to <5m
GPS datum: NAD 83 Zone 10
GPS coordinates:
2. I used a topographic map to map the population:
Yes (complete #2) No (provide detailed directions & description above, and skip to #3)
I am confident I have accurately located and mapped the population at map scale:
Yes (skip to #3) No, but I am confident the population is within the general area indicated on the map as follows:
On the same map, use a highlighter to identify the outer boundary of the area where the population could be, given the uncertainties about your exact location.
3. I used the following features on the map to identify my location (stream, shoreline, bridge, road, cliff, etc. Parking loop
To the best of my knowledge, I mapped the entire extent of this population
Yes No Unknown If no or unknown, explain:
Is a revisit needed? No Yes - if yes, why?:
Ownership (if known): Washington State Parks

Population Size (# of individuals or ramets) or estimate: Approximately 30 stems

Population (EO) Data (include population vigor, microhabitat, phenology, etc.): Vigorous, in bloom on sighting date.

Plant Association (include author, citation, or classification, e.g. Daubenmire): Salicornia virginica-Jaumea carnosa

Associated Species (include % cover by layer and by individual species for dominants in each layer):
Lichen/moss layer: 0

Herb layer: Salicornia virginica 50%, Jaumea carnosa 10%

Shrub layer(s): 0

Tree layer: 0

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc.): Very upper edge of intertidal zone

Minimum elevation (ft.): 5 Maximum elevation (ft.): 10
Size (acres): Strip around inundated tidal zone, 20' wide, 100' long Aspect: Varies Slope Minimal
Photo taken? Yes No

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc.):
Site is adjacent to a picnic table, but disturbance is minimized by wet soil.

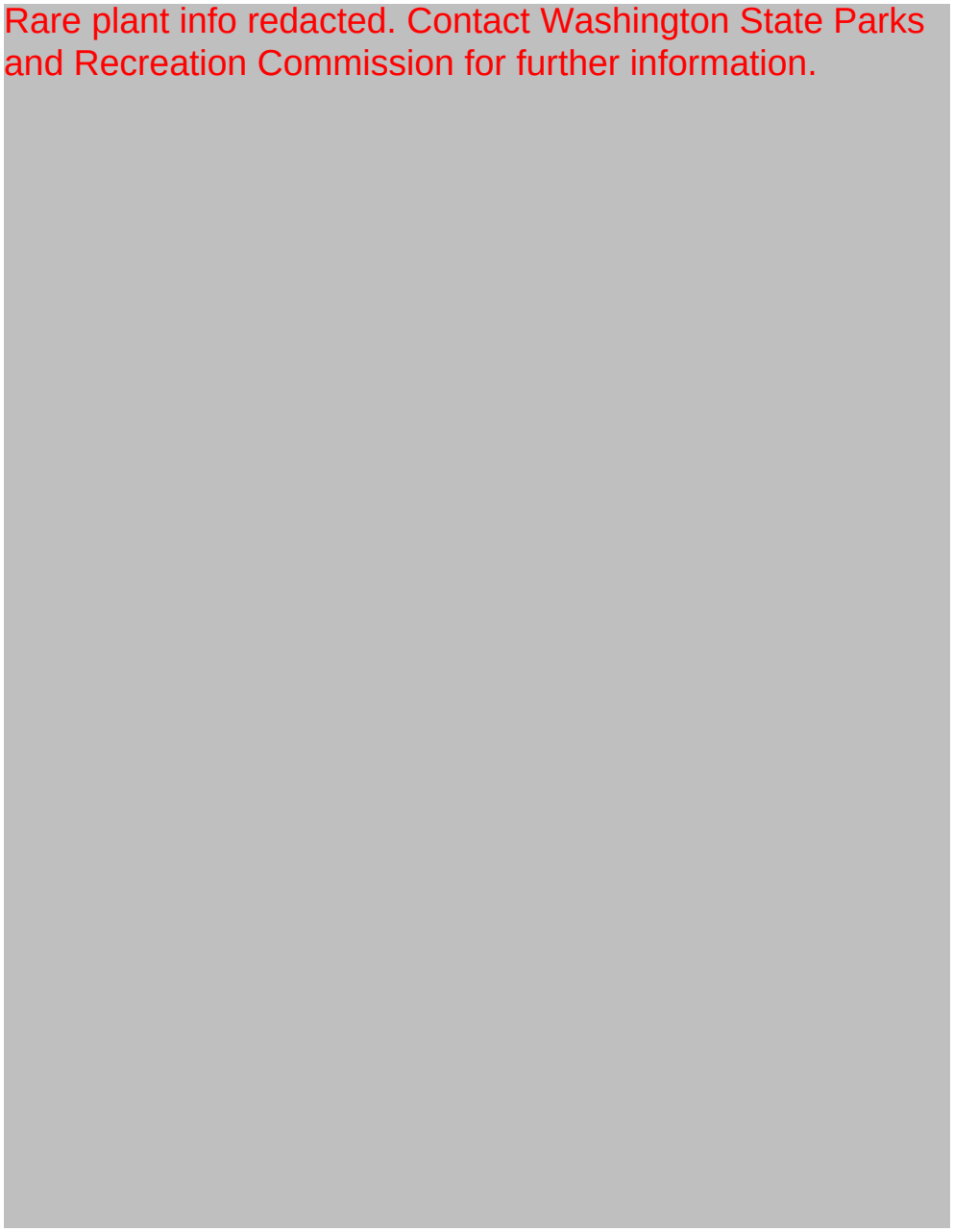
Protection Comments (legal actions/steps/strategies needed to secure protection for the site):
None

Additional Comments (discrepancies, general observations, etc.):

Please mail completed form with map:
WASHINGTON NATURAL HERITAGE PROGRAM
DEPARTMENT OF NATURAL RESOURCES
PO BOX 47014, OLYMPIA WA 98504-7014

Puccinellia nutkaensis: Alaska alkaligrass

Mystery Bay State Park
July 9, 2006 by Dana Visalli
UTM NAD 83 Zone 10
5322677E 5322875N



Location of PUNU marked with red circle.