



**Biodiversity Significance of BLM
on Patos and Little Patos Islands
Carter Point, Lummi Rocks and
South end of Eliza Island**

Prepared for Bureau of Land Management,
Spokane District

Prepared by
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October 2006



**Biodiversity Significance of BLM properties on
Patos and Little Patos Islands, Carter Point, Lummi Rocks and
south end Eliza Island, Washington**

Prepared for
U. S. Bureau of Land Management,
Spokane District

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Introduction

The Spokane District, Bureau of Land Management manages over 800 acres of island land in San Juan and Whatcom Counties, Washington. The primary management objective of all these BLM lands is to preserve their natural value. Two areas on Lopez Island are Areas of Critical Environmental Concern and Patos Island has been considered for its wilderness values. BLM in 2005 had plant community maps and plant species lists for the Lopez ACECs, but only cursory information on the other areas. The objective of this report is to summarize the statewide biodiversity significance of Patos and Little Patos Islands, Lummi Rocks, Carter Point of Lummi Island, and southern Eliza Island BLM sites based on a previously provided GIS layer of vegetation communities on those areas.

This report summarizes the results of site inventories and evaluations of western Washington BLM properties on Patos and Little Patos Islands, Carter Point, Lummi Rocks and the southern end of Eliza Island. Washington Natural Heritage Program (WNHP) ecologist Chris Chappell conducted and coordinated inventories in 2004-2005 and summarized the results into the WNH Information System. WNHP ecologist Rex Crawford synthesized that information for this report.

Methods

For each area, polygons were first delineated based on the most current available aerial photography and any information previously collected for an area. Polygons at each site were then visited in the field and characterized by four overall dominant vegetation categories, three land use or site descriptive categories, and estimated percent of polygon occupied by very plant association. Four additional variables for plant association in a polygon were assigned. A total of 13 variables were addressed per polygon including intensity of survey and are provided as attributes of a GIS layer.

Plant associations at each area are classified or linked to the National Vegetation Classification maintained by NatureServe (<http://www.natureserve.org/explorer>). This classification meets the current (1997) Federal Geographic Data standards. These “plant associations” differ from “plant associations” as described on National Forests in that they refer to existing vegetation rather than potential vegetation. Where more recent classifications have been developed than those on NatureServe, correlation with and relationships among classifications are presented in the discussion of each type.

Plant associations tracked by the Washington Natural Heritage Program are mapped as “occurrences” based on specifications of area occupied and ecological condition. Often plant associations occur as landscape mosaics or patterns with other associations at a scale too fine to accurately or practically delineate. As a result, occurrence maps of plant associations may overlap with other plant associations or represent the distribution of more than one association.

Conservation status of the plant associations referred to in the fact sheets as **global/state status** follows NatureServe terminology. The primary factors for assessing status are: total number of occurrences of the association and total acreage occupied by the association. Secondary factors include geographic range over which the community occurs, threats, long term trends, degree of environmental specificity, and ecological integrity of the occurrences. The conservation status ranks are as follows (G ranks refer to global ranks, S ranks refer to state ranks):

G1 Critically Imperiled

G2 Imperiled.

G3 Vulnerable

G4 Apparently Secure

G5 Demonstrably Secure

G#G# Range Rank—A numeric range rank (e.g., G2G3) is used to indicate the range of uncertainty in the status of a species or community.

GNR Unranked—Global rank not yet assessed.

Within the text, plant associations names may be shortened to acronyms of nominal species composed of the first two letters of the genus and species, for example, POBA/COSE = *Populus balsamifera* var. *trichocarpa* / *Cornus serotina*. A full list of associations by acronym name, common name and scientific name appears in the appendix at the end of the report.

BLM area Descriptions

Patos and Little Patos Islands, San Juan Island County

The 2005 survey of Patos and Little Patos Islands verified and expanded upon a 1986 Natural Heritage inventory. The islands are largely forest-dominated and undeveloped except for campgrounds and an old lighthouse near the western end of Patos Island. A foot trail passes through the forest near the western end of Patos Island. Both islands support high-quality forest occurrences and small, poor-quality native grasslands. Non-forested areas on both islands total less than 10 acres and exotic grasses and forbs dominate the vast majority of those areas. The Washington Natural Heritage Advisory Council in 1987 recommended the forested portions of both islands for Natural Area Preserve designation. The current inventory supports that recommendation and that BLM consider Research Natural Area or a similar designation for portions of Patos and Little Patos Islands.

Management Comments: Recreational use of the trail corridor and possible impacts such as non-native species introductions along this corridor should be monitored. Possible threats to forested habitats, if they become established on the islands, are the non-native English ivy (*Hedera helix*) and herb Robert (*Geranium robertianum*).

Four forest association occurrences are present on the Patos Islands:

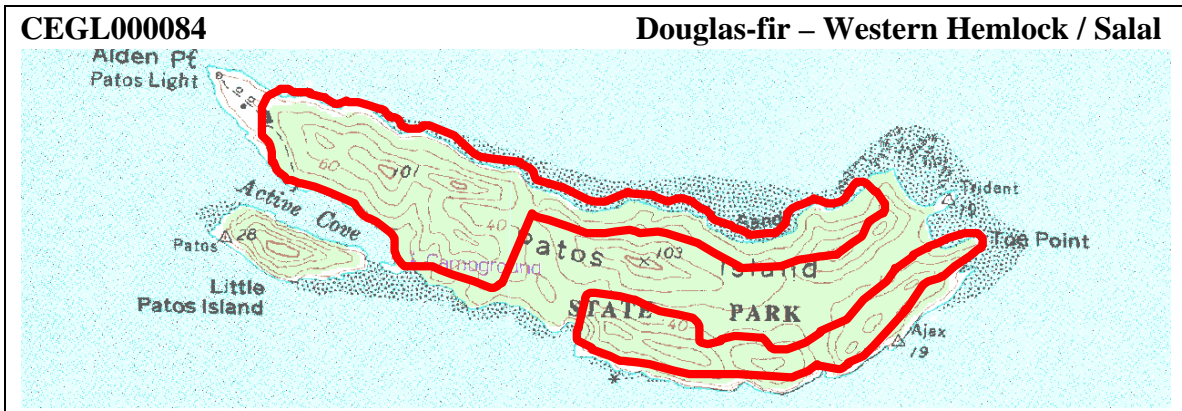
Western Redcedar - Grand Fir / Swordfern (*Thuja plicata* - *Abies grandis* / *Polystichum munitum*) Forest association. Global Rank: G1G2 State Rank: S1.

This association has a very limited global range. There are fewer than five high-quality occurrences known in Washington. Threats to the type include non-native species and further development associated with urbanization. The occurrence on Patos Island is the **best example of its type known in the state**. This old-growth and mature forest (145 year old) has never been logged. The entire area appears to have burned since establishment of the old-growth cohort, though pockets on its eastern third may support older trees. This type occupies approximately 85 acres on a gently sloping to rolling plateau-like landform in the center of the island. This occurrence includes a small transition association, mapped as THPL-ACMA-ABGR/(OECE)/POMU (see appendix), which is more common in on Vancouver Island. Its eastern third feeds into a depression, much of which is occupied by a different community types with cottonwood and wetter soils (ALRU/POMU, POBA/RUSP/POMU and POBA/COSE map units). A small wetland dominated by Pacific willow (*Salix lucida*) is included in the mapped association.



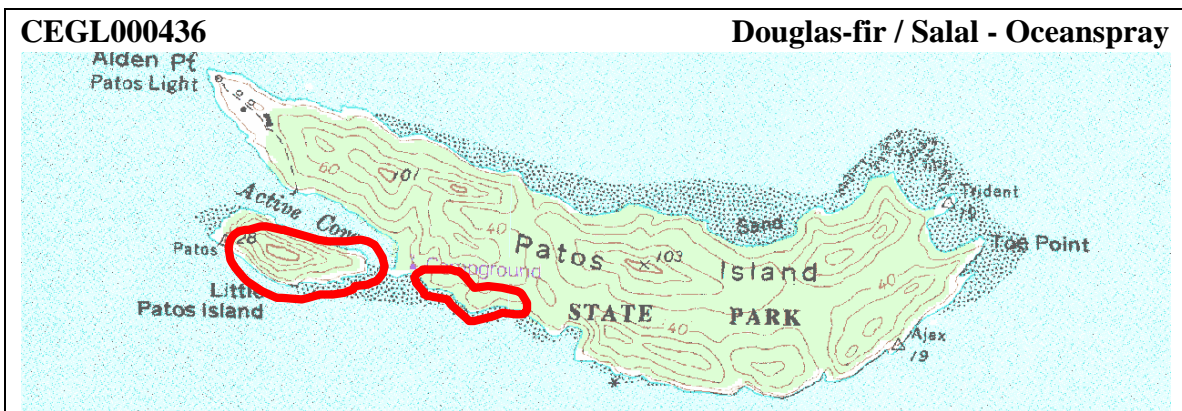
Douglas-fir – Western Hemlock / Salal (*Pseudotsuga menziesii* - *Tsuga heterophylla* / *Gaultheria shallon*) Forest association Global Rank: G3 State Rank: S2. (This classifies as *Pseudotsuga menziesii* - *Tsuga heterophylla* / *Gaultheria shallon* – *Mahonia nervosa* / *Polystichum munitum* in the newer classification of Chappell 2006).

Natural-origin occurrences of this association are rare in the Puget Trough due to historic logging. In adjacent ecoregions, it has been less impacted by development and logging. The Patos Island occurrence is old-growth and mature forest with scattered old trees that initiated following a fire. Although this stand on Patos Island lacks western hemlock, it is included in the variation of the type and is primarily mapped as PSME-THPL/GASH-MANE/POMU and PSME-THPL/MANE-GASH/POMU. The association is found in a mosaic with western redcedar - grand fir / swordfern and western redcedar/salal associations. This type occupies approximately 70 acres on the gentle slopes and rolling topography on Patos Island.



Douglas-fir / Salal - Oceanspray (*Pseudotsuga menziesii* / *Gaultheria shallon* - *Holodiscus discolor*) Forest association Global Rank: G2G3 State Rank: S2.

Few occurrences of relatively good quality remain of this association: 17 are known in Washington. This mature post-fire Douglas-fir stand with scattered old trees (approximately 125 years old) appears on Patos and Little Patos Islands. Smaller Pacific madrone (*Arbutus menziesii*) trees appear in the subcanopy. This small four acre occurrence is in good condition. Very few to no exotics are present on Little Patos, and few velvetgrass (*Holcus lanatus*) plants appear in the occurrence on Patos Island. This forest appears on the gentle to moderate southeast to southwest aspect slope and broad flat ridgetop on Little Patos and Patos Islands. It appears in transition to forest communities with grand fir in the overstory and overlap with map units PSME-ABGR/HODI/POMU on Little Patos and PSME-ABGR/GASH on Patos Island.



Western Redcedar / Salal (*Thuja plicata* / *Gaultheria shallon*) Forest association Global Rank: G1G2 State Rank: S2. (This is *Pseudotsuga menziesii* - *Thuja plicata* (*Abies grandis*) / *Gaultheria shallon* and *Pseudotsuga menziesii* - *Abies grandis* / *Gaultheria shallon* in the newer classification of Chappell 2006).

There are only eight high-quality occurrences of this association known in Washington and it has an equally limited geographic range on Vancouver Island. The occurrence on

Patos Island is a mix of mature stands with scattered old trees and old-growth stands. The mature cohort of trees established following a mixed severity fire that burned the whole occurrence. This 30 acre occurrence is located on flat to rolling plateau-like landform and forms a mosaic with a Douglas-fir – Western Hemlock / Salal association. Douglas-fir is an important component of this occurrence and appears as map unit PSME-THPL-ABGR/GASH. This occurrence is adjacent to the campground on the west end of the Patos Island and has a trail passing through it.



Other map units that appear on Patos islands are:

- 1) cover types that represent variation with an association (PICO-PSME, PSME Savanna map units),
- 2) areas too small to be fully representative of an association (PICO-PSME/GASH, PSME-THPL/HODI-SYAL, PSME/HODI-SYAL, PSME/HODI-SYAL, PSME-ARME/GASH, and PSME-ARME/GASH map units),
- 3) areas too degraded and/or small to represent an association (FERU-GRST-CALE map unit),
- 4) poorly classified vegetation (GAUSHA, PICO-PSME, PSME/RONU-QUGA-SYAL, ROCK OUTCROP, RONU-GASH, ROSNUT, RUBSPE, SYAL-RONU map units) or
- 5) disturbance vegetation (AGCA-FEAR, BRORIG, LOLPER, VUBR-BRRI map units).

Carter Point, Skagit County

Carter Point is the south end of Lummi Island. The 2005 survey of Carter Point expanded upon 1999 Natural Heritage inventories of Lummi Island on land adjacent to and north of the BLM property. This portion of Lummi Island supports a large forested landscape with abundant mature natural-origin forest. The Washington Department of Natural Resources Lummi Island Natural Resources Conservation Area (NRCA) is less than one-half mile north of Carter Point. Several of the forest association occurrences appear on both BLM and NRCA areas. The current inventory supports management of both areas as conservation areas. Acquisition of private land between BLM and NRCA could improve management of shared forest types.

Management Comments: Experimentation with prescribed fire may be warranted, especially where fungal diseases are resulting in Pacific madrone decline (Elliott, M, R.L Edmonds and S. Mayer. 2002. Role of fungal diseases in decline of Pacific madrone. Northwest Science 76:44, 293-303). Monitoring of recreational use of the trail corridor and possible impacts is recommended. Of particular concern are the non-natives English ivy (*Hedera helix*) and herb Robert (*Geranium robertianum*). These are most likely in the more mesic forest types.

Four forest association occurrences appear on BLM property and extend on to adjacent land ownership:

Douglas-fir / Common Snowberry - Oceanspray (*Pseudotsuga menziesii* / *Symphoricarpos albus* - *Holodiscus discolor*) Forest association Global Rank: G1 State Rank: S1. This association has a small global range and very few good quality occurrences (four of seven known are on protected sites). Most poorer condition examples have been altered by past timber harvest or fragmentation. This Lummi Island occurrence is part of a large undeveloped, partially natural-origin, forest landscape. It borders an undeveloped shoreline to the east. It is a mature forest (about 125 years old) that has never been logged with scattered old residual trees. Evidence of fire prior to establishment of the mature cohort exists throughout the stand. Douglas-fir completely dominates the main canopy with some Rocky Mountain maple (*Acer glabrum*) in subcanopy. Dense tall shrubs dominate the understory. All of this 10 acre occurrence is on BLM land and appears on a steep east-facing slope, and to a lesser degree, on the moderate upper slope and ridgetop. This occurrence is found in mosaic with Douglas-fir – Pacific Madrone / Hairy Honeysuckle, Douglas-fir / Salal – Oceanspray and Douglas-fir - Western Redcedar / Salal – Oregongrape / swordfern associations.

CEGL000460 Douglas-fir / Common Snowberry - Oceanspray

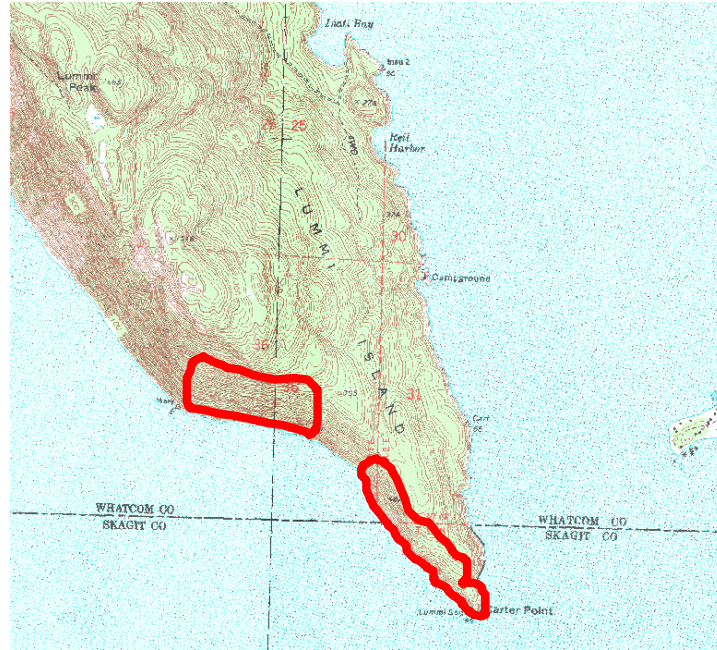


Douglas-fir – Pacific Madrone / American Vetch (*Pseudotsuga menziesii* - *Arbutus menziesii* / *Vicia americana* Forest association: Global Rank: G1G2Q State Rank: S1? (This is *Pseudotsuga menziesii* - *Arbutus menziesii* / *Holodiscus discolor* – *Lonicera hispidula* in the newer classification of Chappell 2006).

This association occurs primarily in the Olympic rain shadow with outliers in the southern Puget Lowland. No more than 25 relatively high quality occurrences are likely. Most of the 13 currently known examples are small, or degraded by development, logging, or non-native plant species. The southern Lummi Island occurrence is part of a large undeveloped, partially natural-origin area of mature forest dominated by Douglas-fir with some western redcedar. No roads or trails are located in or nearby this occurrence. No past logging activity is evident. It is a mature post-fire forest and woodland (125 year old estimated) with frequent old-growth residual Douglas-fir trees. The canopy is dominated by a mix of Douglas-fir and madrone. Significant portions of the area may have been savanna maintained by frequent fires (char on bark of old trees) prior to Euro-American settlement. The occurrence appears more diverse in the northern patch than the southern patch, which has more exotics. Over half of this 65 acre occurrence is located on BLM land on steep south to west-southwest aspect slopes near saltwater, and to a lesser degree on the moderate upper slope and ridgetop. Soils are shallow to bedrock with frequent small outcrops. It forms a mosaic on the upper slope and ridgetop with other an occurrence smaller Pacific madrone type (PSME-ARME/GASH map unit). Herbaceous balds and savanna habitat appear in this association along some portions of slope. Experimentation with prescribed fire may be warranted, especially where fungal diseases are resulting in Pacific madrone decline

(Elliott, 2002). The fruit of Pacific madrone is highly sought-after by birds in the fall and early winter and may represent a special management focus.

CEGL000422 Douglas-fir – Pacific Madrone / Hairy Honeysuckle



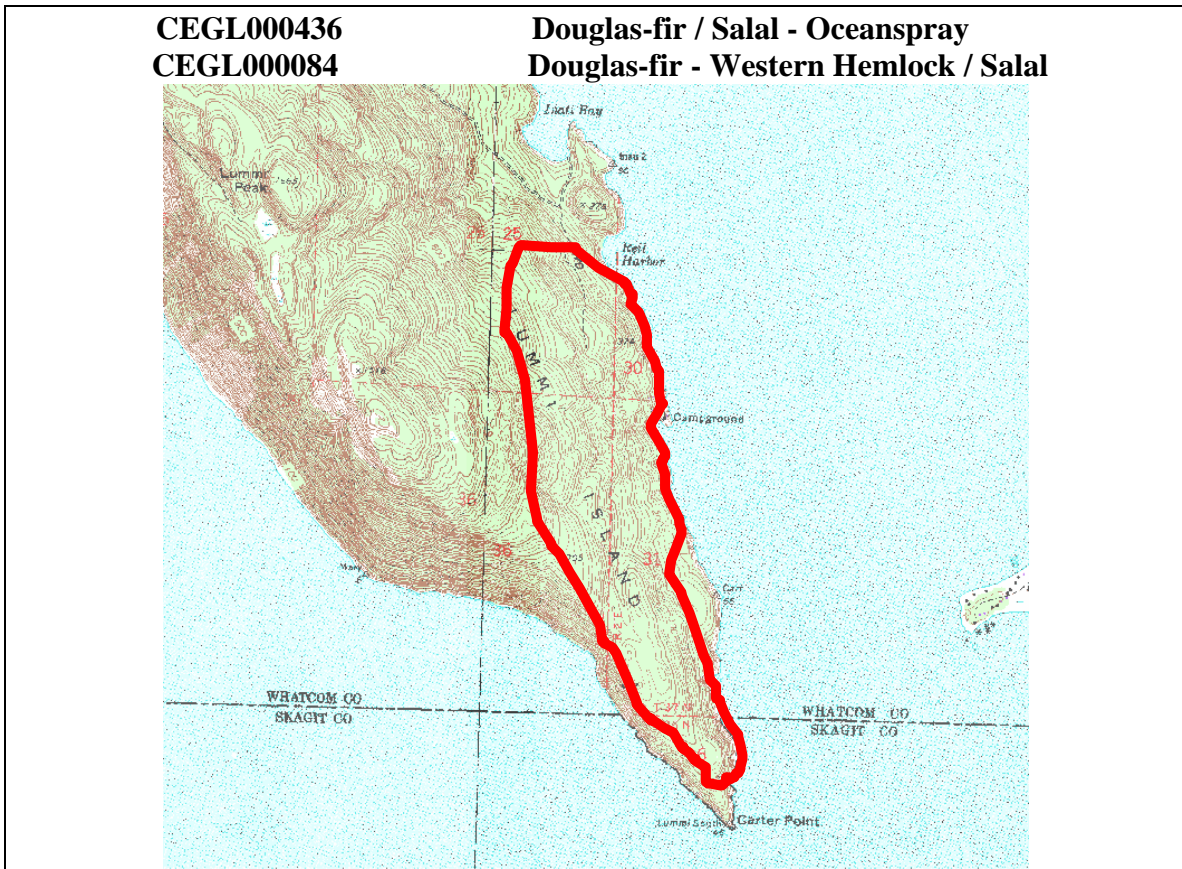
Douglas-fir / Salal - Oceanspray (*Pseudotsuga menziesii* / *Gaultheria shallon* - *Holodiscus discolor*) Forest association Global Rank: G2G3 State Rank: S2.

Few occurrences of relatively good quality remain; 17 are known in Washington. The occurrence on southwest Lummi Island is part of a large forested landscape with abundant mature natural-origin forest. The portion of this occurrence on BLM has never been logged. It is a multi-aged stand of mature (125 years) and young forests with scattered old residual trees. It is dominated by Douglas-fir with a few Pacific madrone trees. The 200 acre occurrence is located on steep rocky northeast to east facing slopes fronting undeveloped saltwater shoreline. It also appears on rounded ridgetops with gentle to moderate slope in a mosaic primarily with the Douglas-fir - Western Redcedar / Salal – Oregongrape / swordfern association. The WA DNR portion (most of the occurrence) has some selective logging along an abandoned road.

Douglas-fir -Western Hemlock / Salal (*Pseudotsuga menziesii* – *Tsuga heterophylla* / *Gaultheria shallon*) Forest association Global Rank: G3 State Rank: S2. (This is *Pseudotsuga menziesii* – *Thuja plicata* / *Gaultheria shallon* – *Mahonia nervosa* / *Polystichum munitum* in the newer classification of Chappell 2006).

This association has a very limited global range with only about five high-quality occurrences known in Washington, all of which are relatively small. Part of a large undeveloped forest landscape on Lummi Island, this occurrence is composed of both mature (125 years) and young forests with scattered old residual trees. The BLM portion

has never been logged. DNR portion has had some selective logging along an abandoned road paralleling the slope. Douglas-fir dominates or co-dominates the stand with western redcedar. Western hemlock is absent. Western redcedar is a major understory and subcanopy tree, though taller Rocky Mountain maple plants are locally abundant. This 130 acre occurrence appears on the northeast to east aspect of a steep slope fronting undeveloped shoreline, as well as on the broad rounded ridgetop. It extends north onto the NRCA and often occurs in a mosaic with Douglas-fir / Common Snowberry - Oceanspray.



Other map units that appear at Carter Point are grass or shrub dominated areas that are too small to be fully representative of an association (ROSNUT, SYAL-RONU, ARTSUK, BRHO-ALCE-BRTE, and FERU-GRST-CALE map units).

Lummi Rocks, Whatcom County

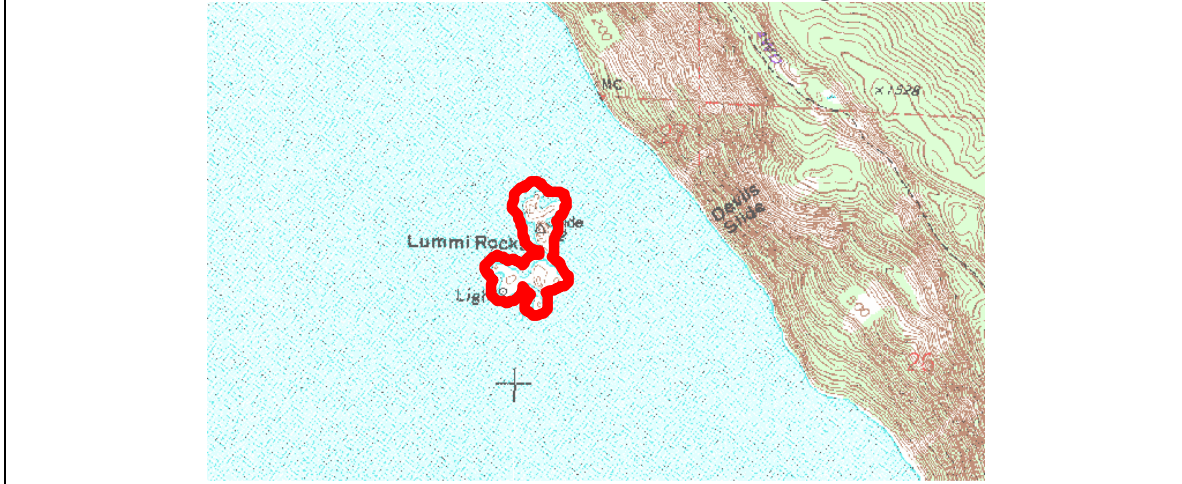
This is the first Natural Heritage inventory of Lummi Rocks. This cluster of small islands off the west shore of Lummi Island is undeveloped. Shallow soils subject to salt spray typify this cluster of islands. The islands are topography uneven, rounded, with gentle to moderate slopes although some slopes are steep. Overall species diversity is moderate. Shrubs are locally present in small amounts over most of the islands although they do form small, isolated shrub patches. Only a few small Douglas-fir sapling trees grow on these islands. The islands support grasslands and rocky sites in good condition. The most abundant grassland (discussed below) is found in similar or better condition at three other sites that receive some conservation focus. Management of Lummi Rocks for its habitat qualities would be appropriate for the site. Monitoring the site is recommended for changes in existing pasture grass abundance and for possible invasion of new exotic plant species.

One grassland occurrence appears on Lummi Rocks:

Red Fescue - Great Camas - Oregon Gumweed (*Festuca rubra* - *Camassia leichtlinii*, *Grindelia stricta* var. *stricta*) Herbaceous Vegetation Global Rank: G1 State Rank: S1

Nine occurrences of this grassland association are known in Washington with fair to good ecological integrity. This more historically extensive grassland association has been reduced by development, recreational impacts, and the invasion and increase of non-native species, native trees and shrubs resulting from fire suppression. The patchy, three acre grassland occurrence on Lummi Rocks occurs in a mosaic mostly with rock outcrops and, to a lesser degree, shrublands (map unit HODI-RONU), American dunegrass (*Leymus mollis*) community (map unit LEMO-LAJA) and Kinnikinnick – broadpetal strawberry – (Roemer’s fescue) (*Arctostaphylos uva-ursi* – *Fragaria virginiana* – (*Festuca roemerii*)) dwarf-shrubland (ACRUV map unit and see Chappell 2006). Good to fair condition patches of largely native grass dominate the community. Bare-stem lomatium (*Lomatium nudicaule*) is occasionally prominent (map unit LONU-GRST). Red fescue (*Festuca rubra* var. *littoralis*) is dominant or co-dominant consistently with several other herbaceous species (map unit FERU-AMCH). Although these other associations are too small to be tracked by NHP as occurrences, they add significantly to the biodiversity of Lummi Rocks. Exotic plants are represented only by isolated velvetgrass (*Holcus lanatus*) and soft brome (*Bromus hordeaceus*).

CEGL003347 Red Fescue - Great Camas - Oregon Gumweed



South end of Eliza Island, Skagit County

The Eliza Island tract was inventoried remotely. Most of the island appears to be developed supporting houses, lawns, airstrip, and roads. A Douglas-fir dominated forest blankets much of the island including the BLM tract on its most southern tip. The tract consists of steep forested headland slopes and a portion of the flatter top of the island. Extrapolating from similar environments on Carter Point on Lummi Island, this portion of Eliza Island likely supports modified occurrences of **Douglas-fir – Pacific Madrone / Hairy Honeysuckle** (*Pseudotsuga menziesii* - *Arbutus menziesii* / *Vicia americana* **forest association**: Global Rank: G1G2Q State Rank: S1? and **Douglas-fir / Common Snowberry - Oceanspray** (*Pseudotsuga menziesii* / *Symphoricarpos albus* - *Holodiscus discolor*) **Forest association**: Global Rank: G1 State Rank: S1. Both occurrences would be small and most likely be, at best, in fair condition judging from adjacent roading, apparent tree size, and likely presence of livestock and residential activities. No management recommendation can be made without a site visit to verify condition and possible rare species presence.

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Washington Department of Natural Resources
2006

Appendix A:

Map unit labels and scientific and common names for inventory of BLM islands. Map units are described associations (**in bold**) or existing vegetation.

Island	Map Unit	Full name	Common name
Patos	AGCA-FEAR	<i>Agrostis capillaris</i> - <i>Festuca arundinacea</i>	colonial bent grass - tall fescue
Patos	ALRU/POMU	<i>Alnus rubra</i> / <i>Polystichium munitum</i>	red alder / swordfern
Lummi	ARCUVA	<i>Arctostaphylos uva-ursi</i>	kinnikinnick
Carter	ARTSUK	<i>Artemisia suksdorfii</i>	coastal wormwood
Carter	BRHO-ALCE-BRTE	<i>Bromus hordeaceus</i> - <i>Allium cernuum</i> - <i>Bromus tectorum</i>	soft brome-nodding onion-cheatgrass
Patos	BRORIG	<i>Bromus rigidus</i>	rip-gut brome
Lummi	FERU-AMCH	<i>Festuca rubra</i> - <i>Ambrosia chamissonis</i>	red fescue - silver burr ragweed
Patos Lummi		<i>Festuca rubra</i> - (<i>Camassia leichtlinii</i>, <i>Grindelia stricta</i> var. <i>stricta</i>)	red fescue - great camas - Oregon gumweed
Carter	FERU-GRST-CALE	<i>stricta</i>	gumweed
Patos	GAUSHA	<i>Gaultheria shallon</i>	salal
Lummi	HODI-RONU	<i>Holodiscus discolor</i> - <i>Rosa nutkana</i>	oceanspray - Nootka rose
Lummi	LEMO-LAJA	<i>Leymus mollis</i> - <i>Lathyrus japonicus</i>	American dunegrass- beach pea
Patos	LOLPER	<i>Lolium perenne</i>	perennial rye
Lummi	LONU-GRST	<i>Lomatium nudicaule</i> - <i>Grindelia stricta</i> var. <i>stricta</i>	bare-stem lomatium - Oregon gumweed
Patos	PICO-PSME	<i>Pinus contorta</i> - <i>Pseudotsuga menziesii</i>	lodgepole pine - Douglas-fir
Patos	PICO-PSME/GASH	<i>Pinus contorta</i> - <i>Pseudotsuga menziesii</i> / <i>Gaultheria shallon</i>	lodgepole pine - Douglas-fir / salal
Patos	POBA/COSE	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i> / <i>Cornus sericea</i>	black cottonwood / red-osier dogwood
Patos	POBA/RUSP/POMU	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i> / <i>Rubus spectabilis</i> / <i>Polystichium munitum</i>	black cottonwood /salmonberry/swordfern
Patos	PSME Savanna	<i>Pseudotsuga menziesii</i> savanna	Douglas-fir savanna
Patos Carter	PSME/GASH-HODI	<i>Pseudotsuga menziesii</i> / <i>Gaultheria shallon</i> - <i>Holodiscus discolor</i>	Douglas-fir / salal - oceanspray
Patos Carter	PSME/HODI-SYAL	<i>Pseudotsuga menziesii</i> / <i>Holodiscus discolor</i> - <i>Symphoricarpos albus</i>	Douglas-fir / oceanspray - common snowberry
Patos	PSME/RONU- QUGA-SYAL	<i>Pseudotsuga menziesii</i> / <i>Rosa nutkana</i> - <i>Quercus garryana</i>- <i>Symphoricarpos albus</i>	Douglas-fir / Nootka rose -Garry oak - common snowberry
Patos	PSME-ABGR/GASH	<i>Pseudotsuga menziesii</i> - <i>Abies grandis</i> / <i>Gaultheria shallon</i>	Douglas-fir - grand fir / salal
Patos	PSME-ABGR / HODI /POMU	<i>Pseudotsuga menziesii</i> - <i>Abies grandis</i> / <i>Holodiscus discolor</i> / <i>Polystichium munitum</i>	Douglas-fir - grand fir / oceanspray / swordfern
Patos Carter	PSME-ARME/GASH	<i>Pseudotsuga menziesii</i> - <i>Arbutus menziesii</i> / <i>Gaultheria shallon</i>	Douglas-fir - Pacific madrone / salal
Carter	PSME-ARME/ HODI/ LOHI	<i>Pseudotsuga menziesii</i> - <i>Arbutus menziesii</i> / <i>Holodiscus discolor</i> - <i>Lonicera hispidula</i>	Douglas-fir - Pacific madrone / oceanspray - hairy honeysuckle
Patos	PSME-THPL/GASH- MANE/POMU	<i>Pseudotsuga menziesii</i> - <i>Thuja plicata</i> / <i>Gaultheria shallon</i> - <i>Mahonia nervosa</i> / <i>Polystichium munitum</i>	Douglas-fir - western redcedar / salal - dwarf Oregongrape / sword fern
Patos	PSME-THPL/HODI- SYAL	<i>Pseudotsuga menziesii</i> - <i>Thuja plicata</i> / <i>Holodiscus discolor</i> - <i>Symphoricarpos albus</i>	Douglas-fir - western redcedar / oceanspray - common snowberry

Patos Carter	PSME- THPL/MANE- GASH/POMU	<i>Pseudotsuga menziesii</i> – <i>Thuja plicata</i> / <i>Mahonia nervosa</i> - <i>Gaultheria shallon</i> / <i>Polystichum munitum</i>	Douglas-fir – western redcedar / dwarf Oregongrape - salal / sword fern
Patos	PSME-THPL-ABGR/ GASH	<i>Pseudotsuga menziesii</i> - <i>Thuja plicata</i> - <i>Abies grandis</i> / <i>Gaultheria shallon</i>	Douglas-fir - western redcedar- grand fir / salal
Patos Lummi	ROCK OUTCROP		rock and barren
Patos	RONU-GASH	<i>Rosa nutkana</i> - <i>Gaultheria shallon</i>	Nootka rose
Patos Carter	ROSNU	<i>Rosa nutkana</i>	Nootka rose - salal
Patos	RUBSPE	<i>Rubus spectabilis</i>	salmonberry
Patos	SALLUC	<i>Salix lucida</i>	Pacific willow
Patos Carter	SYAL-RONU	<i>Symphoricarpos albus</i> - <i>Rosa nutkana</i>	common snowberry - Nootka rose
Patos	THPL-ABGR/POMU	<i>Thuja plicata</i> - <i>Abies grandis</i> / <i>Polystichum munitum</i>	western redcedar - grand fir / sword fern
Patos	THPL-ACMA-ABGR / (OECE)/ POMU	<i>Thuja plicata</i> - <i>Acer macrophyllum</i> - <i>Abies grandis</i> / <i>(Oemleria cerasiformis)</i> - <i>Polystichum munitum</i>	western redcedar - bigleaf maple grand fir / (Indianplum) -sword fern
Patos	VUBR-BRRI	<i>Vulpia bromoides</i> - <i>Bromus rigidus</i>	six-weeks fescue - rip-gut brome