

Oregon Parks and Recreation Commission

April 9, 2014

Agenda Item: 7a

Action

Subject: Bandon Exchange – Final Order

Presented by: Jim Morgan

In June 2013, Bandon Biota LLC submitted a proposal to the Oregon Parks and Recreation Department (OPRD) outlining acquisition of a portion of Bandon State Natural Area (SNA) in exchange for other property and in-kind services. On July 17, 2013, the proposed exchange was presented to the Commission. The Commission considered this proposal in the context of the department's land acquisition and exchange policy OAR 736-019-0070. This policy provides criteria for an exchange initiated by parties other than the department. In this instance, the Commission may approve an exchange if the Commission determines that the proposed exchange provides "an overwhelming public benefit to the park system, its visitors, and the citizens of Oregon."

Public input regarding the proposal was provided at two public meetings, and Commission meetings on September 24, 2013, November 20, 2013, and February 5, 2014, and through open solicitation. At the February 5, 2014 meeting, the Commission tabled action on the proposal pending its further review of the documents submitted at that meeting.

With the support of the Department of Justice, the department has updated the final proposed order regarding the Bandon Exchange presented at the February 5, 2015 meeting. The revised order is attached as Exhibit A for the Commission's consideration for approval. Exhibit B includes related wildlife and vegetation reports.

Prior Action by the Commission:

Feb. 20, 2014 - the Commission determined not to proceed with the Grouse Mountain Ranch acquisition for which the Bandon Biota funds were to be used.

Feb. 5, 2014 – Tabled Bandon Exchange action pending review of documents.

Nov. 20, 2013 – Finds that proposed Bandon Exchange meets OAR 736-019-0070 and instructs the department to prepare a final order for Commission consideration of approval.

Sept. 24, 2013 - Proposed Exchange with Bandon Biota - Public Comments

July 17, 2013 – Proposed exchange with Bandon Biota presented to Commission

July 20, 2011 – Bandon Biota provided public comments on proposal

Sept. 22, 2010 - Bandon Biota presented initial exchange proposal

Action Requested:

Staff recommends that the Commission adopt the revised final order in Exhibit A.

Attached Exhibits:

A – Proposed Final Order

B – Coastal Resource Value Reports

Prepared by: Jim Morgan

**BEFORE THE
PARKS AND RECREATION COMMISSION
OF THE STATE OF OREGON**

IN THE MATTER OF THE REVIEW OF)	APPROVAL
A REQUEST FOR AN EXCHANGE OF)	ORDER
REAL PROPERTY PROPOSED BY)	14-01
BANDON BIOTA, LLC)	

This matter came before the Oregon Parks and Recreation Commission (the “Commission”) on February 5 and April 9, 2014, as a request for an exchange of real property owned by the Oregon Parks and Recreation Department (the “Department”) initiated by Bandon Biota, LLC (“Bandon Biota”), pursuant to ORS 390.121 and OAR chapter 736, division 19. The request before the Commission involves: (1) the fee title transfer from the Department to Bandon Biota of a 280-acre non-oceanfront portion of the 878-acre Bandon State Natural Area encumbered with an easement for continued public use of a trail corridor in Coos County; (2) the fee title transfer from Bandon Biota to the Department of an 111-acre oceanfront parcel adjoining Bandon State Natural Area in Coos County; (3) the fee title transfer from Bandon Biota to the Department of a 97-acre riverfront parcel adjoining Bullards Beach State Park in Coos County; (4) a contribution from Bandon Biota worth \$450,000 to facilitate government acquisition of approximately 11-acres of oceanfront parcels at Whale Cove in the viewshed of Rocky Creek State Wayside in Lincoln County; (5) a contribution from Bandon Biota worth \$2,500,000 toward the Department’s acquisition of an addition to the state park system; (6) a contribution from Bandon Biota worth \$300,000 toward the Department’s control of gorse on Bullards Beach State Park and the reconfigured Bandon State Natural Area in Coos County, and Cape Blanco State Park and the Floras Lake State Natural Area in Curry County; and (7) an easement from Bandon Biota to the Department across the Sheep Ranch at Bandon Dunes in Coos County for purposes of relocating and aligning the Oregon Coast Trail in accordance with the Department’s trail standards. The Commission fully considered the proposed exchange request, the oral and written comments of the public, and the reports of the Department. The Commission makes the following findings of fact, interpretations of the Commission’s rules, conclusion of law, and decision:

I. Introduction and Background

The Commission has express statutory authority to both acquire real property and exchange real property acquired by the Department when in the Department’s opinion and judgment such action would further the mission of the Department. ORS 390.121(1) and (3). The Commission has adopted by rule a methodology for consideration and criteria to evaluate land exchanges that a party other than the Department initiates. OAR chapter 736, division 19. Under the applicable criteria, the Commission concludes in this order that this request is an acquisition by exchange of real property and other assets that provides overwhelming public benefit to the state park system.

A. Commission History

1. On September 2, 2004, the Commission adopted OAR chapter 736, division 19 to advance to rule its long-standing internal Land Acquisition and Exchange Policy.
2. On August 19, 2010, Bandon Biota submitted a “preliminary proposal for informal review, questions, comments and guidance” for the September 2010 Commission meeting.
3. On September 22, 2010, Bandon Biota presented their preliminary exchange proposal concept at the Commission’s meeting in South Beach State Park near Newport.
4. On January 26, 2011, the Commission continued the discussion and final consideration for adoption of amendments to OAR chapter 736, division 19; Acquisition Policy to the March 2011 meeting.
5. On March 16, 2011, the Commission adopted amendments to division 19. The amendment added the Criteria for Exchange rule, OAR 736-019-0070.
6. On July 20, 2011, Bandon Biota provided public comments on their exchange proposal at the Commission’s meeting in Bandon.
7. In June 2013, Bandon Biota presented an updated request for exchange proposal to the Department.
8. On July 3, 2013, the Department released the request for exchange proposal as part of the announcement for the July 17, 2013 Commission meeting in Bandon. The Commission solicited written and oral public comment on the request.
9. On July 17, 2013, Bandon Biota presented the proposed exchange at the Commission’s meeting in Coos Bay. The Commission took public comment on the Bandon Biota request.
10. On August 16, 2013, the Department held a public meeting in Bandon as part of the Commission’s effort to solicit further public comment on the Bandon Biota request.
11. On August 19, 2013, the Department held a public meeting in Mount Vernon as part of the Commission’s effort to solicit further public comment on the Bandon Biota request.
12. On September 24, 2013, the Department presented an informational update on the proposed exchange with Bandon Biota and the public provided comments at the Commission’s meeting in Condon.

13. On November 19, 2013, the Commission received a letter from Governor Kitzhaber stating his belief that the exchange and acquisition “will positively advance economic and conservation values” and the importance of considering the potential impacts of the acquisition on agricultural and other community values.
14. On November 20, 2013, the Commission passed four motions related to Bandon Biota exchange:
 - Motion 1: the Commission finds that the contemplated Bandon Biota exchange meets the “overwhelming public benefit” standard of OAR 736-019-0070(4) and instructs the Department to prepare a proposed final order for Commission approval.
 - Motion 2: the Commission finds that the acquisition of Grouse Mountain Ranch meets the acquisition standards in OAR 736-019-0060 and instructs the Department to prepare a proposed final order for Commission approval.
 - Motion 3: the Commission directs the Department to continue good faith efforts to address local community concerns as reflected in the Governor’s letter dated November 19, 2013.
 - Motion 4: the Department will accept additional written testimony until December 6, 2013, regarding the proposed exchange or the proposed Grouse Mountain Ranch acquisition to afford the department the opportunity to consider the comments in preparing the proposed final orders.
15. On November 20, 2013, Bandon Biota and the Department executed the Grouse Mountain Ranch Assistance Agreement.
16. On December 6, 2013, the public comment period closed on both the Bandon Biota exchange request as directed by the Commission’s Motion 4.
17. On January 23 and 30, 2014, the Department made the further reports requested by the Commission available to the public to allow comment on them and the draft orders at February 5, 2014 Commission meeting.
18. On January 31, 2014, the Department received new appraisals for the property elements involved in the exchange proposal.
19. On February 4, 2014, the Department received the final reviewed appraisals for the property elements involved in the exchange proposal.
20. On February 5, 2014, the Commission took public comment on the proposed orders and the additional information provided by the Department. The Commission continued its consideration of the matter to afford a reasonable time to review the final appraisals and additional information.

21. On February 20, 2014, the Commission decided not to proceed with the acquisition of Grouse Mountain Ranch and continued the consideration of the Bandon Biota exchange request to its April 9, 2014 meeting.

B. General Description of affected components of the state park system

The exchange request involves several components of the state park system. The Commission provides a brief description of the park system and the existing parks involved in the exchange. In discussing the exchange criteria below, the Commission details both how the exchange would affect these state park system components individually and how the exchange would benefit the state park system as a whole.

The Oregon State Park System is comprised of more than 220 parks spanning over 105,000 acres. The system serves an estimated 40 million daytime visitors (5th in the nation) and 2 million campers (8th in the nation) each year. More than 90 percent of all Oregonians participate in outdoor recreation at least once a year. 2013-2017 Statewide Comprehensive Outdoor Recreation Plan. As the Oregon population continues to grow faster than the national average at nearly one percent per year (US Census), the need to avoid future overcrowding in local, state and federal parks compels action now to configure the park system in way that preserves access to key features like the ocean shore, and adds new acreage to the state park portfolio.

The Bandon State Natural Area, formerly Bandon State Park, is a year round day use area located south of Bandon in Coos County. The Department designates a property a State Natural Area when the property is an outstanding natural resource that may offer opportunities to see important or unique natural features, plants, or wildlife. The primary natural features of Bandon State Natural Area identified in the Bullards Beach District Parks Master Plan are its four miles of ocean beach and its scenic coast line. OAR 736-018-0045(1)(r). Recreational activities include picnicking, sightseeing, beach activities, hiking, and horseback riding. The Bandon State Natural Area offers picnic facilities, restrooms, and a trail system. Annual day use attendance is 306,412, concentrated on the ocean shore. Natural features of the state natural area include beach, active littoral strand dunes, older forested dunes, interdunal swales and wetlands, rare plant communities, semi-stabilized interior dunes, views of the dune sheet, and rare plant occurrences (including a state listed threatened species). The Bullards Beach District Parks Master Plan establishes as an objective the control of gorse within the state natural area.

Bullards Beach State Park is located north of Bandon in Coos County at the mouth of the Coquille River across that river from the Bandon Marsh National Wildlife Refuge. The historic Coquille River Lighthouse is located at the end of the beach access road in the park. Recreational use of the park include picnicking, boating, fishing, horseback riding, hiking, beach activities, nature study, visiting the historic lighthouse, and camping. The campground includes approximately 100 full-hookup sites, more than 82 electrical sites with water, 13 yurts, a horse camp with eight primitive sites, and a hiker/biker camp. Average annual daily attendance for the park is 395,960; average

annual camper nights is 97,060. Natural features of the 1,289.32-acre park include four miles of ocean shore including the Coquille Spit; Coquille River, sand dunes, and forests. The ocean foredune, deflation plain and winter pond areas in stabilized dunes include snowy plover bird habitat, populations of the state-listed endangered plant silvery phacelia, and waterfowl resting areas. The Bullards Beach District Parks Master Plan establishes as an objective the control of gorse within the park.

Whale Cove is located to the north of Rocky Creek State Wayside in Lincoln County and includes a rocky coastal headland, forest, and grassy coastal prairie. The area provides critical habitat for coastal wildlife. The headland parcel also includes a Native American midden site more than 3000 years old. Rocky Creek State Wayside is a 59-acre ocean-front park on a forested bluff overlooking the ocean. Whale Cove is in the Rocky Creek State Wayside viewshed looking north.

The Oregon Coast Trail is a statewide significant trail under the Oregon Recreation Trails System Act that follows the coastline. *See Oregon Trails 2005-2014: A Statewide Action Plan* at 250, table 2. The majority of the route is on the beach. The rest of the 382-mile trail winds through state parks or other public lands, and on trail easements or permits from generous private landowners.

Cape Blanco State Park is a destination park located off the Oregon Coast Highway 101, nine miles east of the City of Port Orford in Curry County. The 1,895.4-acre park's recreational facilities include 54 electrical camp sites, four log cabins, eight horse camp sites, group RV and group tent, hiker biker camp, seven miles of equestrian trail, 150 acres open riding range, fishing access to the Sixes River and black sands beach, and natural areas. The Hughes House (c. 1896) and the Cape Blanco Lighthouse are listed on the National Register of Historic Places. The Curry County State Parks Master Plan (2003) at page 80 states, "The presence of gorse throughout the park is a very serious management threat." OAR 736-018-0045(1)(n).

Floras Lake State Natural Area is located about nine miles north of Port Orford in Curry County. Classified as a State Natural Area, Floras Lake is 1,371.45 acres of extensive scenery, forest, sandstone bluffs and ocean frontage with sea terraces and steep beaches. The Blacklock Point portion of this property is a registered State Natural Heritage Area to protect important ecosystem components and provide for public interpretation and education. Recreational facilities are limited to trails and an undeveloped trailhead at the airport. The Curry County State Parks Master Plan (2003) establishes the control of gorse and Scot's broom intrusions as a Natural, Scenic and Cultural Resource Management Guidelines for Floras Lake State Natural Area. OAR 736-018-0045(1)(n).

II. Discussion

In considering the exchange request of Bandon Biota, the Commission is called upon to make a determination under the criteria in OAR chapter 736, division 19 for the first time. Some of the comments received by the Commission are based on the

commenters' interpretations of one provision or another of division 19. The Commission, as the governing body that adopted division 19, provides the discussion that follows to reconcile instances where the text of division 19 may be capable of supporting more than one interpretation by clarifying the Commission's interpretation of its rules.

The Commission first describes the seven elements of the exchange request. Next, the Commission provides a description of the Department's methodology in undertaking consideration of the exchange request. The Commission then describes and applies the criteria applicable to the exchange request. Finally, the Commission makes its determination whether the proposed exchange provides an overwhelming public benefit to the Oregon State Parks System, its visitors, and the citizens of Oregon.

A. Elements of the Exchange

(1) The fee title transfer from the Department to Bandon Biota of a 280-acre non-oceanfront portion of the 878-acre Bandon State Natural Area encumbered with an easement for continued public use of a trail corridor in Coos County;

Bandon Biota requests in the exchange proposal a 280-acre non-oceanfront portion of the 878-acre Bandon State Natural Area. Bandon State Natural Area features four miles of beaches backed by stabilized and unstabilized sand dune ridges paralleling the ocean. While the overall size of the request has remained at 280-acres, the configuration of the 280-acres portion's final boundary changed, with a strip extended to the north and the western boundary moving east. The Department and Bandon Biota agreed to the change because it enabled the Department to retain lands with more important natural resource and cultural resource features than originally proposed, while furthering the objectives of Bandon Biota. Bandon Biota has stated that the acquired land would be involved in the effort to create Bandon Links, a walking-only championship links municipal golf course.

An existing trail from a parking and access point on a Bureau of Land Management owned property to the ocean shore north of Laurel Lake crosses the southernmost portion of the exchange property. The Department would retain an easement for continued public use of the trail.

Bandon Biota provided a biological assessment that included the 280-acre non-oceanfront portion of the Bandon State Natural Area in its study area. *See* Biological Assessment Twomile Creek Property and Southern Bandon State Natural Area, Coos County, Oregon (2007) at 5 (Figure 1). The report described the area as composed of stabilized and unstabilized sand dunes forming two ridges parallel to the beach, separated by seasonally-flooded wetlands in the trough between the dunes. Dunal plant communities are found in troughs between the dunes. Elevations range from 20 to 90 feet above sea level. Most use of the area is limited to infrequent recreational entry by the public and adjoining landowners. The report mentioned that much of the study area

was “overrun with gorse and serves as a center of dispersal for this invasive species.” *Id.* at 3.

The Department has prepared a vegetation inventory for the 280-acre portion of interest to Bandon Biota. *See* Vegetation Inventory and Botanical Resource Assessment for the Portion of Bandon State Natural Area under Potential Land Exchange Consideration (October 23, 2013). The Department assessed the area for plant communities, wetlands, state and federally-listed plant species, and habitat quality. The report summarizes:

“In the case of this particular property, both highly significant natural habitats and areas highly degraded by invasive species are widespread in the study area. One plant species listed as threatened under Oregon’s Endangered Species Act is present in a portion of the study area. Several rare and sensitive, but unlisted, species are also present. Deterioration of habitat condition and ecological function is due primarily to weed infestation and subsequent stabilization of formerly significant sparsely vegetated sand and dynamic dunal habitats that provide a vanishing habitat niche for a number of declining species of plants and wildlife.” *Id.* at 1.

The reconfiguration of the Bandon State Natural Area would confer some areas of occupied habitat for silvery phacelia out of state ownership. Areas of rare habitats including beach sagewort dunal habitat, shore pine/kinnikinnik woodland, shore pine/hairy manzanita woodland, Port Orford cedar forest, Pacific madrone-wavyleaf silktassel stabilized dune summits, and shore pine/bog blueberry wetland are conferred out of state ownership without replacement in the property being conferred into state ownership. Some of those habitats do and some may otherwise exist on the reconfigured Bandon State Natural Area. The Department developed concepts for natural resource management of the vegetation and habitat ecology for the area. *Id.* at 42-43. Those concepts may be applied regardless of future land uses.

The Department assessed the Bandon State Natural Area parcel for wildlife species using existing data sources. *See* Wildlife Assessment for the Bandon Land Exchange Proposal (January 28, 2014). The parcel contains significant natural habitats as well as highly degraded areas. *Id.* at 2. The assessment identifies at risk species that have the potential to occur or do occur in a study area that includes the Bandon State Natural Area parcel, the 111-acre oceanfront parcel, and the 97-acre riverfront parcel. *Id.* at Table 1. Assessing impacts to at-risk wildlife is necessarily a speculative task based on assumptions about wetland loss that could occur after leaving Department ownership and disturbance and predation that may occur from development of golf facilities. The assessment finds the potential for negative impacts to habitat for wetland obligate birds, the potential habitat for western toads, and the western pond turtle. *Id.* at 9, 12. Western snowy plover also may confront multiple negative indirect impacts, depending on whether human-related disturbance increases from development of golf facilities, particularly if it results in intensification of recreation activities on the ocean shore, which the assessment speculates is likely to occur. The assessment notes that the Bandon State

Natural Area parcel has approximately 16 acres that are designated as Snowy Plover Management Area (SPMA) in the Habitat Conservation Plan (HCP). Because the acreage is not suitable breeding habitat for plover, the Department will submit a minor modification to the HCP to redraw the boundaries of the SPMA (which will also expand to include roughly 59 acres of the 111-acre oceanfront parcel).

The land exchange area associated with Bandon State Natural Area is the ancestral homelands of the Coquille Indian Tribe and the Confederated Tribes of the Siletz Indians. The Department Archaeologist conducted background research using the State Historic Preservation Office (SHPO) database of archaeological sites and all information was obtained from confidential sites forms. Proposed Bandon Land Exchange Cultural Resources Overview (2014). Because archaeological site information can be exempt from disclosure under the public records law, ORS 192.501(11), the Commission describes these resources generally for purposes of this order.

The Department identified two sites that would leave state ownership in the exchange. The first, is a small portion of a pre-contact site that consists of a lithic scatter of chert, basalt and quartzite flakes, broken cobbles and fire cracked rock. The majority of the site will remain within the reconfigured Bandon State Natural Area. Archaeologists were unable to relocate this site in 1994 and 2004, possibly because of the migration of Twomile Creek and the site may be destroyed. The second, also is a precontact site that consists of a lithic scatter of chert, basalt and quartzite flakes, fire cracked rock and broken cobbles exposed on red subsoil. Archaeologists were unable to relocate the site in 2004 due to dense gorse.

(2) The fee title transfer from Bandon Biota to the Department of an 111-acre oceanfront parcel adjoining Bandon State Natural Area in Coos County;

The 111-acre oceanfront parcel is located on the shores of the Pacific Ocean and New River approximately six miles south of the city of Bandon. New River runs through the center of the property on a north-south alignment. Lower Fourmile Road enters the property from the south and terminates on the property. There is a parking area at the end of the road. A trail continues north through the property along the same alignment as Fourmile Road. The trail forks in the northern half of the property, with one fork leading northwest to New River, and two other forks leading north and east to enter Bandon State Natural Area.

The Department has prepared a vegetation inventory for the 111-acre oceanfront parcel. *See* Approximate and Assumed Vegetation of the Former County Park Property on Fourmile Lane, Bandon, Oregon (November 7, 2013). That report determines that significant natural habitats and areas highly degraded by invasive species are both present on the parcel.

In 1993, the Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*) was listed as a threatened species under the Endangered Species

Act (ESA). The Department prepared the HCP mentioned above as part of its application for an incidental take permit (ITP) authorized under Section 10(a)(1)(B) of the ESA. The Department's federally approved HCP includes the ocean shore area of the parcel as the northernmost extent of the New River Restricted Snowy Plover Management Area (New River RMA). *See* Habitat Conservation Plan for the Western Snowy Plover (2010) at Figure F-9. The New River RMA is identified as an area currently occupied by Western Snowy Plovers. *Id.* at Table 1-2. The parcel adjoins the southern end of the Bandon Snowy Plover Management Area. The wildlife assessment notes that the topography of the beach habitat on the oceanfront parcel may allow for easier restoration than other sections of the Bandon State Natural Area and that the incoming acreage has the potential for a positive impact on western snowy plover with implementation of coastal dune habitat restoration.

The land exchange parcel associated with the reconfigured Bandon State Natural Area is the ancestral homelands of the Coquille Indian Tribe and the Confederated Tribes of the Siletz Indians. The Department Archaeologist conducted background research using the SHPO database of archaeological sites and all information was obtained from confidential sites forms. Proposed Bandon Land Exchange Cultural Resources Overview (2014). Again, because archaeological site information can be exempt from disclosure under the public records law, ORS 192.501(11), the Commission describes these resources generally for purposes of this order.

The Department identified a site that would come under state ownership in the exchange. It is a precontact site that consists of two loci. Locus 1 appears to be the remains of a substantial village or long-term camp and includes artifacts such as fire cracked rock, cobble choppers, and cryptocrystalline (CCS), schist and quartzite flakes. At Locus 1, sediments of white clay were also observed, which is consistent with clay house floors found on the Oregon coast. Locus 2 consists of lithic debitage and small amounts of fire cracked rock, and is surrounded by dense gorse.

(3) The fee title transfer from Bandon Biota to the Department of a 97-acre riverfront parcel adjoining Bullards Beach State Park in Coos County;

The riverfront parcel on Coquille Spit is 97 acres of stabilized sand flats, low dunes, deflation plain, river beach, old dredge spoils, and tidelands. Most features are less than 15 feet above sea level. The Department's Bullards Beach State Park and restored tidal marsh owned by the Port of Bandon surround the parcel, which fronts on the Coquille River. Bandon Marsh National Wildlife Refuge is on the opposite shore of the river. Bandon Biota provided a 2007 biological assessment for the property that determined that the riverfront parcel has great value as a conservation site because it provides a significant opportunity for connecting lands already in conservation ownership.

The land exchange parcel adjoining Bullards Beach State Park is the ancestral homelands of the Coquille Indian Tribe and the Confederated Tribes of the Siletz Indians.

The Department Archaeologist conducted background research using the SHPO database of archaeological sites and all information was obtained from confidential sites forms. Proposed Bandon Land Exchange Cultural Resources Overview (2014). Again, because archaeological site information can be exempt from disclosure under the public records law, ORS 192.501(11), the Commission describes these resources generally for purposes of this order.

The Department identified three sites that would come under state ownership in the exchange. The first is a precontact lithic scatter consisting of chert flakes and fire cracked rock. Although inventoried, this site may have been significantly eroded and possibly destroyed. The second is a precontact site that consists of a wood stake fishing weir. The third is also a precontact site and consists of a shell midden, which is nearly 100 percent gaper clams and a small amount of large unidentifiable shell and charcoal.

(4) A contribution from Bandon Biota worth \$450,000 to facilitate government acquisition of approximately 11-acres of oceanfront parcels at Whale Cove near Rocky Creek State Wayside in Lincoln County;

By an Interagency Agreement with the Oregon Department of Transportation in 2012, the Department agreed to provide matching funds for this acquisition under a 2008 National Scenic Byway Program grant awarded for the Pacific Coast Scenic Byway Oregon: Whale Cove – Protecting a Pacific Coast Treasure project. Bandon Biota will contribute \$450,000 in matching funds required to leverage that federal grant and a landowner donation for acquisition of the Whale Cove property. Bandon Biota's contribution towards acquisition of the Whale Cove property is non-refundable and not contingent on completion of the rest of the exchange. The Whale Cove parcels are comprised of coastal forest, prairie, and rocky headland. Public acquisition of the Whale Cove property will protect the viewshed from the Rocky Creek State Scenic Viewpoint and other viewpoints.

(5) A contribution from Bandon Biota worth \$2,500,000 towards the Department's acquisition of an addition to the state park system;

At the Department's direction, Bandon Biota will provide \$2,500,000 into an escrow account established for the acquisition of an addition to the state park system. The Commission directed the Department to identify an addition to the state park system that could develop as a destination state park. The Department identified the Grouse Mountain Ranch in Grant County as that acquisition. The Commission rejected that acquisition on February 20, 2014. The Commission now directs the Department to pursue one or more appropriate acquisition opportunities for Commission approval as additions to the state park system.

(6) A contribution from Bandon Biota worth \$300,000 toward the Department's control of gorse on Bullards Beach State Park and the reconfigured Bandon State Natural Area in Coos County, and Cape

Blanco State Park and the Floras Lake State Natural Area in Curry County;

The Ocean Shore Management Plan describes gorse (*Ulex europaeus*) as an invasive plant species affecting the ocean shore:

“Gorse is a many-branched, rigid perennial species with thorns. A native to Europe, it was introduced to Oregon as an ornamental. This species, a relative of Scotch broom, is another invasive species that is expanding its range north along the coast and inland. Currently it covers many acres of land in Douglas, Coos and Curry counties. Infested areas soon become an impenetrable monoculture crowding out desirable native plant species.

“While goats and sheep feed on the young growth, other animals are not known to graze on the plant. Control for gorse is difficult due to its waxy cuticle, which inhibits herbicide penetration. Gorse also produces a large number of seeds that can remain viable in the soil for 30-plus years. At one park location, the removal of this species resulted in the discovery of a picnic table that had been overtaken by gorse. The plant is also prone to burning and poses a safety problem.” Ocean Shore Management Plan at 115.

That plan establishes Natural Resource Management Recommendations including “Continue to remove invasive species, such as * * * gorse and other invasive species on Oregon Parks and Recreation Department lands.” Ocean Shore Management Plan at 2.

The exchange request provides a contribution from Bandon Biota of \$300,000 to the Department dedicated to the control of gorse on Bullards Beach State Park, the reconfigured Bandon State Natural Area that is not adjacent to the areas being exchanged out of state ownership, Cape Blanco State Park, and the Floras Lake State Natural Area.

(7) An easement from Bandon Biota to the Department across the Sheep Ranch at Bandon Dunes in Coos County for purposes of relocating and aligning the Oregon Coast Trail in accordance with the Department’s trail standards.

The Oregon Coast Trail is a statewide significant trail under the Oregon Recreation Trails System Act that follows the coastline. *See* Oregon Trails 2005-2014: A Statewide Action Plan at 250, table 2. The exchange request would provide the Department an easement across the Bandon Dunes golf resort that provides an improved trail alignment in that vicinity.

B. Department Methodology

The purpose of division 19 is to establish a methodology for the consideration of, *inter alia*, a land exchange request received by the Department. OAR 736-019-0000. The Commission provided the methodology to allow the Department to acquire Oregon’s

best representative landscapes and most significant sites in order to protect the state's most valuable natural, scenic, cultural, historic, and recreational resources; provide general public access to such sites where consistent with resource protection, include historical themes in development master plans, and to foster the citizen's appreciation and enjoyment of outdoor recreation resources. OAR 736-019-0000(1)-(4). Although the Commission does not construe those objectives to establish approval criteria for the proposed land exchange under consideration, the OAR 736-019-0000(1)-(4) objectives provide context for the Commission's ultimate determination that the requested exchange provides overwhelming public benefit to the state park system.

The Commission has established in rule a policy for how the Department is to undertake an exchange of real property. OAR 736-019-0040. The Department is to "use sound principles of real estate acquisition when acquiring or exchanging real property." The Commission has enumerated such specific sound principles in OAR 736-019-0100. As discussed below, the Commission finds that the Department has complied with the applicable requirements of that rule. The Department is also to comply with all federal and state laws pertaining to real property acquisition. The Commission has identified ORS 390.121, ORS 390.630 and OAR chapter 736, division 19 as providing the authority and the applicable criteria for its consideration of the proposed exchange. Compliance with those provisions is discussed below. OAR 736-019-0040 also establishes that the Department is to ensure prudent use of public monies in its real property transactions. Because this exchange request does not involve the use of Department monies, the Commission finds that intent of the policy directive is subsumed into its analysis of whether the proposal provides an overwhelming public benefit to the Oregon State Park system, its visitors, and citizens, which is resounding, clear and obvious under OAR 736-019-0070(4).

Additionally, the Commission has enumerated four aspirations for the Department in acquiring or exchanging real property in OAR 736-019-0040(1) to (4). The Commission does not construe these aspirations to establish approval criterion. The aspirations provide guidance to the Department in conducting real property transactions. Similarly, OAR 736-019-0080(5) provides guidance as to when the Department will employ land exchanges. The Commission construes that provision to apply to land exchanges initiated by the Department. Evaluation of land exchanges initiated by a party other than the Department is pursuant to the more specific standards at OAR 736-019-0070(4).

The Commission has established acquisition practices for the Department. OAR 736-019-0100. The Commission finds that OAR 736-019-0100 applies to four of the seven elements of this exchange. The Department's conformance to the acquisition practices related to the acquisitions of Bandon Biota owned parcels adjoining Bullards Beach State Park and Bandon State Natural Area, and the acquisition of the right to realign a real property easement for the Oregon Coast Trail are discussed below.

OAR 736-019-0100(1)(f) requires that the Department only make acquisitions and exchanges with this Commission’s approval. This order establishes compliance with OAR 736-019-0100(1)(f).

The Department is neither engaging in land purchases nor land sales in this transaction; therefore, the Commission finds the requirement of OAR 736-019-0100(1)(a) to establish land value by appraisal is not applicable. However, because the Commission policy under OAR 736-019-0040 mandates that the Department will “use sound principles of real estate acquisition when acquiring or exchanging real property”, the Department ordered new appraisals of the properties it would receive from Bandon Biota and the 280-acre non-oceanfront portion of the Bandon State Natural Area. The Bandon Biota properties were previously appraised in 2010 and the Department property was appraised in 2011. The Department received new appraisals on January 31, 2014 that provide up-to-date appraisals consistent with the intent of OAR 736-019-0100(1)(a) and the requirement of OAR 736-019-0100(1)(i) that appraisals not be older than one year. The appraisals were subject to independent review in compliance with OAR 736-019-0100(1)(b), which the Department received on February 4, 2014 and resulted in a change to the final reviewed value for the Bandon State Natural Area component and a confirmation of the appraised value for the 111-acre oceanfront parcel and the 97-acre riverfront parcel. Additionally, the Department has used sound business principles to secure the appraisals as required by OAR 736-019-0100(1)(h) and required that the appraisal assumptions are consistent with the provisions of OAR 736-019-0100(1)(j) regarding the parcel to be received by Bandon Biota.

OAR 736-019-0100(1)(c) provides a requirement related to land purchases and does not apply to this exchange. However, the Commission notes that the exchange of the Coos County properties will result in an increase of private land ownership in that county; therefore, there is not a potential to cause significant loss of property tax revenue.

The Department is neither purchasing nor condemning property through the use of eminent domain. The Commission concludes that OAR 736-019-0100(1)(d) and (e) do not apply. The exchange does not involve paying of earnest money by the Department; the Commission concludes that OAR 736-019-0100(1)(g) does not apply.

The Department has prepared a Department of Administrative Services Agency Surplus Real Property Notification as required by OAR 736-019-0100(1)(k) and OAR 736-019-0070(3)(d). In adopting these provisions, the Commission intended that the Department provide the notice to ensure that state agencies and local governments were aware that the Department was considering a request that involved lands leaving Department ownership. In the circumstance of an exchange request under OAR 736-019-0070(3), the Commission construes its rules to serve a notice function only. Should the exchange not proceed, the Commission does not intend that the real property subject to the exchange be deemed surplus property.

Under OAR 736-019-0100(1)(l), the Department must undertake “a visual inspection and check the records for historical uses of any land considered for

acquisition. If either the visual inspection or historic records provide information the Department determines merits further investigation of environmental issues, the Department will engage in additional environmental review.” The Department has prepared environmental reports. For exchanges such as this, the proponent is required to provide the Department a written environmental review for lands the Department is to receive in the exchange. OAR 736-019-0070(3)(e). Bandon Biota provided Biological Assessments prepared in 2007 for the 97-acre riverfront property adjoining Bullards Beach State Park and for a study area that included the 111-acre oceanfront property and the Bandon State Natural Area.

Finally, for the acquisition of the 111-acre oceanfront parcel adjoining the Bandon State Natural Area, the Department considered ORS 390.630(1)-(4) as required by OAR 736-019-0100(2). The Commission’s consideration of ORS 390.630(1)-(4) is discussed below.

C. Criteria Applicable to the Exchange

Authority and Criteria

The Commission identifies ORS 390.121 and OAR chapter 736, division 19 as providing the authority and the applicable criteria for its consideration of the proposed exchange. In addition, for the acquisition of the land adjoining Bandon State Natural Area, ORS 390.630 provides both authority and applicable considerations. No other criteria, considerations, or authority apply to this decision. Although the Commission individually discusses the various components of the exchange and makes specific findings thereto, the Commission’s evaluation and decision is based on the proposed exchange in its entirety.

Statutory Authority

The Commission has express statutory authority to acquire real property. ORS 390.121(1) provides that the Commission may:

“Acquire by purchase, agreement, donation or by exercise of eminent domain, real property or any right or interest therein deemed necessary for the operation and development of state parks, roads, trails, campgrounds, picnic areas, boat ramps, nature study areas, waysides, relaxation areas, visitor and interpretive centers, department management facilities, such as shops, equipment sheds, office buildings, park ranger residences or other real property or any right or interest because of its natural, scenic, cultural, historic or recreational value, or any other places of attraction and scenic or historic value which in the judgment of the State Parks and Recreation Department will contribute to the general welfare, enjoyment and pleasure of the public.”

The broad acquisition authority of the Commission is based in part on the Department making a considered decision that the acquisition “will contribute to the general welfare,

enjoyment and pleasure of the public.” The Commission finds that implicit in recommending approval of the Bandon Biota request under the overwhelming public benefit to the state park system standard of OAR 736-019-0070(4), the Department considers these acquisitions to contribute to the general welfare, enjoyment and pleasure of the public. The Commission’s reasoning is that it construes the statutory phrase “contribute to the general welfare, enjoyment and pleasure of the public” to set a lower standard than the standard it has established in rule for approval of an exchange request.

Under provisions of the Beach Bill, the Commission also has express authority to acquire ownership of or interests in the ocean shore or lands adjacent to the ocean shore from private landowners for recreation areas or access purposes. ORS 390.630. The 111-acre oceanfront acquisition involves a transfer of land held in private ownership to the Department. In that situation, OAR 736-019-0100(2) requires the Department to consider the criteria provided in the Beach Bill. ORS 390.630 provides:

“The State Parks and Recreation Department, in accordance with ORS 390.121, may acquire ownership of or interests in the ocean shore or lands abutting, adjacent or contiguous to the ocean shore as may be appropriate for state recreation areas or access to such areas where such lands are held in private ownership. However, when acquiring ownership of or interests in lands abutting, adjacent or contiguous to the ocean shore for such recreation areas or access where such lands are held in private ownership, the department shall consider the following:

“(1) The availability of other public lands in the vicinity for such recreational use or access.

“(2) The land uses, improvements, and density of development in the vicinity.

“(3) Existing public recreation areas and accesses in the vicinity.

“(4) Any local zoning or use restrictions affecting the area in question.”

The acquisition, while not solely “for state recreation areas or access to such areas,” certainly does provide both public recreation areas and public access; therefore the Commission considers ORS 390.630(1) to (4). The first statutory consideration regards other public lands available for recreational use in the area. The Bullards Beach District Parks Master Plan identifies recreational uses as picnicking, sightseeing, beach activities, hiking, horseback riding. The Bandon State Natural Area, to which this parcel will be added, is public land that provides that recreational use. As to statutory considerations (2) and (3), the Ocean Shore Management Plan (2005) found an access gap in this area of undeveloped lands:

“China Creek access to Boice Cope/Floras Lake: There is no official public access site south of the China Creek access at Bandon State [Natural Area] until the Boice Cope county park access at Floras Lake. This is a gap of almost 12 miles, but includes about 8 miles of New River spit that is not officially

considered a gap. Adjacent state park, federal, county and private lands are all undeveloped.” Ocean Shore Management Plan at 63.

Finally, ORS 390.630(4) requires consideration of zoning or use restrictions. The property is located within the Coos County’s Recreational (REC) Zone and Minor Estuary and Shoreland (MES) zone. The Coos County Zoning and Land Development Ordinance of 1985, describes the purposes of the REC and MES zones. The purpose of the “MES” district is to regulate uses within the inventoried minor estuaries and adjacent shorelands within unincorporated Coos County. The purpose of the “REC” district is to accommodate recreational uses of areas with high recreational or open space value. The REC district applies solely to areas designated as “Recreation” in the Comprehensive Plan, which includes state parks. The zone requires new recreational developments to be oriented to the open space nature of the land. The Coos County Comprehensive Plan requires that the type and intensity of recreational developments in the REC district must be conditioned by environmental considerations set forth in the County’s Coastal Shoreland/Dune Lands Comprehensive Plan policies where such developments are allowed in these coastal resource areas.

The Commission’s consideration of ORS 390.630(1)-(4) leads it to conclude that this acquisition is appropriate under the Beach Bill. This acquisition reconfigures the Bandon State Natural Area to include another one-half mile of the ocean shore in public ownership. The acquisition adds publically-owned ocean shore access in an undeveloped area that is identified as a 12-mile gap in ocean shore access by the Ocean Shore Management Plan. Because the land was previously in county ownership, the county zoning is already consistent with the zoning for a state natural area.

Although this acquisition of Coquille Spit riverfront land adjoins Bullards Beach State Park which is “abutting, adjacent, or contiguous” to the ocean shore, all access to the ocean shore from this acquisition would be across the existing Bullards Beach State Park. Under that circumstance, the Commission concludes that the ORS 390.630 considerations do not apply to that acquisition.

The Commission also has express statutory authority to exchange real property. With exceptions that do not apply here, ORS 390.121 provides:

“In carrying out its responsibilities, the State Parks and Recreation Commission may:

“* * * * *

“(3) Sell, lease, *exchange* or otherwise dispose or permit use of *real* or personal *property*, including equipment and materials acquired by the department, *if in the opinion of the department it is no longer needed, required or useful for department purposes, * * **” (emphasis added).

Thus, ORS 390.121(3) authorizes this Commission to exchange real property if in the opinion of the Department the real property is no longer needed, is no longer required, or is no longer useful for department purposes.

In applying ORS 390.121(3), the Commission understands its authority to depend on the Department first arriving at an opinion regarding whether the real property “is no longer needed, required or useful for department purposes.” Because the phrase is expressed using the disjunctive conjunction “or” the Commission construes “needed”, “required”, and “useful” to be alternatives. Therefore, the Department need only be of the opinion that the real property is not any one of the three – needed, required, or useful – in order to exchange real property. While “needed” and “required” have very similar meanings that connote something that must be had, “useful” connotes a mere capability of being put to use. With that understanding of its authority under ORS 390.121(3) in mind, the Commission turns to consideration of the real property proposed for exchange, *i.e.* the 280-acre portion of the Bandon State Natural Area.

To begin, the Commission dismisses the notion that the subject property is no longer *useful* for Department purposes. As stated in the Department’s recent Botanical Resource Assessment, “In the case of this particular property, both highly significant natural habitats and areas highly degraded by invasive species are widespread in the study area.” The subject property is capable of being put to use as highly significant natural habitats. Nevertheless, the Commission construes its authority to exchange under ORS 390.121(3) to not be contingent on being of the opinion that the property is not useful. The Commission also has authority to exchange property if it is either not needed or not required in the opinion of the Department.

In bringing the exchange request to the Commission with an approval recommendation, the Department came to the opinion that the portion of the Bandon State Natural Area that is leaving state ownership in the exchange is no longer required or needed for Department purposes. The primary natural features of the Bandon State Natural Area identified in the Bullards Beach District Parks Master Plan are its four miles of ocean beach and its scenic coast line. OAR 736-018-0045(1)(r). The 280-acre portion Bandon Biota requests contains neither oceanfront nor ocean shore. The Commission understands the purpose of the Bandon State Natural Area to be primarily natural resource protection and secondarily to provide recreational hiking and wildlife viewing opportunities.

As reconfigured by this exchange, the Bandon State Natural Area is 80 percent of its size before the exchange; however, it retains the characteristics of and achieves the purposes of a state natural area. The Commission designates Department properties as a State Natural Area to denote properties that have an outstanding natural resource that may offer opportunities to see important or unique natural features, plants, or wildlife. The reconfigured Bandon State Natural Area adds roughly one-half of a mile of state-owned shoreline; the Bullards Beach District Parks Master Plan identifies the ocean shore areas as Primary Protection Areas. In terms of legally protected species, the addition of this littoral strand habitat to the reconfigured boundary of Bandon State Natural Area will

add areas of occupied western snowy plover, pink sand verbena, and silvery phacelia habitat to state ownership as well as provide potential habitat for the plants pink sand verbena, silvery phacelia, Wolf's evening primrose, and Point Reye's birdsbeak – all of which are listed under the state Endangered Species Act. Ocean Shore Management Plan at 101-104. Two rare examples of slough sedge-tufted hairgrass-sphagnum fen are conferred into state ownership that are not present in the property being conferred out of state ownership. The reconfiguration also confers to the state a roughly a one-half of a mile stretch of New River, which hosts coastal coho, fall chinook, and winter steelhead.

The Bullards Beach District Parks Master Plan identified and distinguished those areas that are Primary Protection Areas from those that are Secondary Protection Areas. Under the four land use designations used in that master plan, the Primary Protection Area designation is the most use-restrictive designation and is used “to protect essential park attractions or to prohibit development in potentially dangerous areas.” In Primary Protection Areas, the department limits activities to those with minimal impact on resources. The Secondary Protection Area designation is used to indicate common natural resource and recreational values. Such areas commonly provide protection and buffering for Primary Protection Areas and also serve to reserve land for future use if unforeseen development needs arise. In the areas designated as Secondary Protection Area, the department allows both resource management activities and low impact recreation. The area leaving state ownership is a portion of the area of the Bandon State Natural Area that is designated as Secondary Protection Areas. OAR 736-018-0045(1)(r).

Although the area leaving state ownership is entirely Secondary Protection Area, the Department's Wildlife Assessment identifies that an approximately 16-acre portion of the 280-acre parcel is designated as SPMA in the HCP. The assessment notes:

“This acreage is composed of a shore pine (*Pinus contorta*) dominated plant community (Bacheller 2013a), which is not suitable breeding habitat for plover. Since half the acreage is native vegetation relatively free of invasives (Bacheller 2013a), these 16 acres are a very low priority to receive any treatments to convert to plover breeding habitat.” Wildlife Assessment for the Bandon Land Exchange Proposal at 13-14.

Because the acreage is not suitable breeding habitat for plover, the Department will submit a minor modification to the HCP to redraw the boundaries of the SPMA, which will also expand to include roughly 59 acres of the 111-acre oceanfront parcel in the reconfigured Bandon State Natural Area. The Commission agrees with the assessment that the restoration of coastal dune habitat within the SPMA would “provide more benefit to the plover than retaining the 16 acres of shore pine.” *Id.* at 14. As such, the Department has engaged the US Fish & Wildlife Service to adjust the mapped boundaries of the SPMA to reflect the proposed changes and increased habitat protection opportunity.

The Department will retain an easement encompassing the public trail corridor within the southern portion of the BNSA to maintain public access to the ocean shore. ORS 390.620(1) prohibits the alienation of any portion of the “ocean shore” as defined in ORS 390.605(1) and described in ORS 390.610(1). The Commission finds that the portion of the Bandon State Natural Area leaving state ownership is not oceanfront and does not contain any ocean shore.

The Commission finds that the Department will retain existing public access and that lands leaving state ownership do not include either the primary protected areas of Bandon State Natural Area or any of the ocean shore. Further, the areas leaving state ownership is neither currently suitable western snowy plover habitat nor is it planned for enhancement for plover habitat given its distance inland from the ocean and the New River and the low chance that it could be used to support a breeding pair. In sum, because the reconfigured Bandon State Natural Area continues to achieve the purposes of that ownership and the HCP, the Commission concurs in the Department’s opinion that the 280-acre parcel is no longer needed or required for Department purposes.

Although the Commission concludes that the 280-acre non-oceanfront portion of the Bandon State Natural Area may be exchanged under the authority in ORS 390.121(3), to be clear, absent this request for exchange proposal that satisfies our overwhelming public benefit to the state park system standard, the Commission was not *sua sponte* considering selling or otherwise disposing of that property. The Commission did not solicit the request; however, when a request is presented, the Commission will evaluate it under its ORS 390.121(3) authority and the criteria in division 19.

The acquisitions in Bandon Biota’s request for exchange are consistent with the Commission’s authority to acquire real property under ORS 390.121(1) and ORS 390.630. The Commission also has established its authority to engage in the exchange under ORS 390.121(3). Having determined that the Commission is acting within its express statutory authority, we turn to an analysis of the exchange proposal under our applicable rules.

OAR chapter 736, division 19

Defined terms

Under OAR chapter 736, division 19, the Commission considers this request as an “acquisition” by “exchange” of real property and “other assets” that provides “overwhelming public benefit” to the state park system. OAR 736-019-0020. The Commission’s rules define “Acquisition” to mean “obtaining title to real property or any right or interest therein, * * * by * * * exchange, * * *.” OAR 736-019-0020(1). The department is obtaining title to real property adjoining Bullards Beach State Park and real property adjoining Bandon State Natural Area; and the right to realign a real property easement for the Oregon Coast Trail. The Commission considers each of the foregoing to be an “acquisition” under division 19. Regarding the contribution from Bandon Biota \$2,500,000 to the Department’s acquisition of an addition to the state park system, the Commission considers that element to be an “other asset” that will eventually lead to an

acquisition. An “exchange” is defined as “the simultaneous, mutual transfer between willing parties of one or more interests in land, * * * other assets of equal value, or any combination thereof.” OAR 736-019-0020(5). The Commission finds that the request is an “exchange” under division 19. The Commission has defined “other assets” as “cash or forms of consideration other than land * * *, including but not limited to access rights, mineral rights, and water rights.” OAR 736-019-0020(6). The Commission considers the Bandon Biota contributions of \$450,000 to facilitate government acquisition of oceanfront parcels at Whale Cove and \$300,000 to the Department dedicated to the control of gorse involved in this exchange request to be “other assets” under division 19. Finally, the Commission has defined “overwhelming public benefit” to mean a determination by the Commission “in the approval of a property exchange that accounts for the natural, scenic, cultural, historic, recreational, and operational benefits of a proposal that are likely to be above and beyond the monetary value of the exchange.” The Commission’s determination below applies that definition in applying OAR 736-019-0070(4).

Criteria For Exchange

The Commission has established by rule the criteria for exchange. OAR 736-019-0070. The rule first directs the Department to apply all of the elements of OAR 736-019-0060. OAR 736-019-0070(1)(a). The Commission construes that requirement to apply only to those elements of an exchange that are “acquisitions” under this division. In this request for exchange, the three elements that the Commission considers “acquisitions” are the Bandon Biota owned parcels adjoining Bullards Beach State Park and Bandon State Natural Area, and the acquisition of the right to realign a real property easement for the Oregon Coast Trail.

In section (1) of OAR 736-019-0060, the Commission established four things that the Department is to do in acquiring property. The first requirement is that the Department establish and maintain a list of properties of interest which upon Commission approval the Department is authorized to acquire as they become available. OAR 736-019-0060(1)(a). The Department prepared, and the Commission adopted on July 17, 2013, the 2013-15 Land Acquisition Priorities list. The property that is an element of this exchange that is on that list is Whale Cove.

The second requirement is that the Department consider park master plans adopted pursuant to ORS 195.120, the State Trails Plan, the Willamette Greenway Plan or other plans adopted by the Commission that identify certain land acquisitions as desired and needed. OAR 736-019-0060(1)(b). The Commission adopted a master plan for the Bullards Beach District Parks in 1987, by administrative rule. OAR 736-018-0045(1)(r). That plan identified the 97-acre riverfront adjoining Bullards Beach State Park as an area of concern. Subsequently, the Commission identified “South Coast Recreation Lands Opportunities” in the Ocean Shore Management Plan. The 97-acre riverfront acquisition is identified as the “Coquille River spit inholding” and the plan states “Along the river shore portion of the spit at Bullards Beach State Park is a privately owned inholding that could be consolidated into the park to provide consistent

management.” *Id.* at 181. That plan also addressed the 111-acre oceanfront acquisition as the Lower Fourmile Creek county site and states “Consolidating ownership with the state park could provide additional natural area for habitat and setting purposes.” The Commission finds that the acquisitions of the 97-riverfront acres and the 111-oceanfront acres are both identified in plans adopted by the Commission.

The third requirement is to acquire properties as specifically directed by Acts of the Oregon Legislature. OAR 736-019-0060(1)(c). The Commission finds that no specific act of the legislature is present in this exchange. *Cf.* ORS 390.112 (naming specific properties). However, the Commission notes that ORS 390.630 does authorize the acquisition of land in private ownership along the ocean shore as discussed above related to the 111-acre oceanfront parcel adjoining Bandon State Natural Area.

Finally, the Commission directed the Department to acquire other properties that contribute to the established goals of the Department but were not previously included on a list of properties of interest or identified in a Department plan. OAR 736-019-0060(1)(d). The Oregon Coast Trail relocation and alignment across Bandon Dunes element of this exchange has not previously been included on a list of properties of interest or identified in a Department plan. The Department developed the Oregon Coast Trail: Connection Strategy (2011) plan, but it focused exclusively on closing gaps in the trail, not identifying places for realignment. The Commission finds however that the Oregon Coast Trail acquisition contributes to an established goal and policies. The Commission has adopted OAR 736-009-0021(6)(a), an administrative rule that directs the Department to enter into agreements with landowners as necessary to ensure that location or relocation of a state trail meets the Department’s standards. From a policy standpoint, the acquisition is consistent with the division 19 purpose statement, because it allows the Department to ensure the general public’s access to and enjoyment of sites and it involves developing and maintaining trails for public enjoyment. OAR 736-019-0000(2) and (4).

Under section (2) of OAR 736-019-0060, the Commission has set forth a list of objectives and determined that an acquisition that satisfies one or more of the objectives serves the Department’s and the public’s interest. The objectives are:

- (a) Protects areas of outstanding natural, scenic, cultural, historic and recreational significance for the enjoyment and education of present and future generations.
- (b) Consolidates state park parcels, trail systems or greenways so that more efficient management and administration of the state park system is made possible.
- (c) Provides a buffer to adjacent or nearby development that may diminish the recreation or conservation values of a state park parcel.
- (d) Provides access to recreation areas for management or protection of state park parcels, and

(e) Addresses opportunities that may be lost to the Department if acquisition is delayed.

The Commission has provided descriptions of the seven elements of the exchange above. Utilizing, without repeating, those descriptions, the Commission finds that the exchange advances several of the objectives in OAR 736-019-0060(2).

In the exchange, the Department will acquire areas of outstanding natural, scenic, cultural, and recreational significance. The reconfigured Bandon State Natural Area will have an addition of approximately one-half mile of ocean shore and one-half mile of New River. The Commission also finds that the occupied western snowy plover habitat is of outstanding natural significance. The Department's recent vegetation inventory determined that "significant natural habitats" are present on the parcel. Outstanding scenic resources protected in the exchange include the ocean shore. The Bullards Beach District Parks Master Plan identifies the "scenic coastline" as a prominent natural feature of the Bandon State Natural Area. OAR 736-018-0045(1)(r). The exchange protects the view from Rocky Creek State Wayside looking north towards Whale Cove through public acquisition of the headland parcels. The Department Archaeologist report identifies a site of potential outstanding cultural significance for the education of present and future generations on the reconfigured Bandon State Natural Area. Finally, the addition of ocean shore constitutes an outstanding recreational area. ORS 390.610(3) declared that the ocean shore is a state recreation area. The Oregon Coast Trail is also an outstanding recreation area; it is designated a statewide significant trail under the Oregon Recreation Trails System Act.

The Commission finds that the exchange also achieves the objective of consolidating state park parcels and trail systems for more efficient management. OAR 736-019-0060(2)(b). The 97-acre riverfront parcel is bordered on the north and west by Bullards Beach State Park. The park master plan identified this parcel as an area of concern because of invasive gorse spreading from that property to the park. The Ocean Shore Management Plan identified the 97-acre riverfront acquisition as the "Coquille River spit inholding" and stated "Along the river shore portion of the spit at Bullards Beach State Park is a privately owned inholding that could be consolidated into the park to provide consistent management." *Id.* at 181.

The exchange would also make management of the trail systems on the reconfigured Bandon State Natural Area more efficient by bringing more of them under state ownership. OAR 736-019-0060(2)(b). The exchange maintain the public trails on the parcel leaving state ownership while bringing other portions of that trail system under Department ownership that are on the 111-acre oceanfront parcel.

Finally, the Commission finds that the exchange addresses an opportunity that may be lost to the Department if delayed. The Bandon Biota contribution of "other assets" provides matching funds for an acquisition under a 2008 National Scenic Byway Program grant awarded for the Pacific Coast Scenic Byway Oregon: Whale Cove – Protecting a Pacific Coast Treasure project. The matching funds are required to leverage

the federal grant and a landowner donation for acquisition of the Whale Cove property. The Commission finds that the exchange satisfies more than one of the objectives in OAR 736-019-0060(2).

OAR 736-019-0060(3) requires that the acquisition of real property be “consistent with the Department’s purpose and its long range planning goals”; and be prioritized through a rating system that evaluates an acquisition’s significance “as it relates to the Department’s mission, development and operational costs, geographic distribution, diversity of values, public demand, and other factors connected to its feasibility as a state park.” The rating system employs an Acquisition Evaluation Criteria form that considers the factors enumerated in OAR 736-019-0060(3) in the context of various provisions the Commission has adopted in division 19, including the scope and purpose in OAR 736-019-0000, the policy of OAR 736-019-0040, and the criteria for acquisition and exchange in OAR 736-019-0060 and 736-019-0070. All of the rating system factors derive from the provisions of division 19.

The Department’s purpose includes implementation of state policy with regard to outdoor recreation resources by, *inter alia*, protecting Oregon’s scenic landscape; supplying outdoor recreation areas, facilities, and opportunities needed to meet growing needs; and providing hiking trails. ORS 390.010. The Commission has adopted the overarching 2008 Centennial Horizon plan, which includes principles and long-term Department strategies. In considering whether the exchange, on the whole, is consistent with the identified policies of ORS 390.010 and the Centennial Horizon Plan, the Commission discusses the exchange elements coming to the Department one after another, and in doing so addresses some other approval criteria.

The 111-acre oceanfront parcel added to the reconfigured Bandon State Natural Area has been described above to include natural, scenic, cultural, and recreational resources that would be protected through acquisition. OAR 736-019-0000(1). Specifically, the significant natural features of the parcel include, an approximately one-half mile distance of the ocean shore and the New River, areas of occupied western snowy plover, pink sand verbena, and silvery phacelia habitat, and potential habitat for four plants listed under the state Endangered Species Act. Scenic resources primarily relate to the coastline, identified as a primary natural feature of the adjoining Bandon State Natural Area. Acquisition also brings identified cultural resources into state ownership. Recreation includes hiking, wildlife viewing, and beach activities. The Commission finds that this acquisition advances the Centennial Horizon strategies of securing outstanding habitats; protecting important scenery, expanding protection of beach habitat, and managing properties to restore rare, sensitive, threatened and endangered species. The Commission has rated the 111-acre oceanfront acquisition, then identified as the Lower Fourmile Creek county site, for acquisition stating the site:

“provides access into an area that will become a snowy plover management area, and will need reliable management assurances. The site is located adjacent to the south boundary of Bandon State [Natural Area]. Consolidating ownership with the state park could provide additional natural area for habitat and setting

purposes. However, it may not be a feasible site for providing beach access.”
Ocean Shore Management Plan at 181.

The Commission has similarly previously rated the 97-acre riverfront parcel as an acquisition that could be consolidated into Bullards Beach State Park to provide consistent management. Ocean Shore Management Plan at 181. This riverfront parcel is consistent with the state policy to provide public access to public lands and waters that have recreational values. ORS 390.010(3)(k).

The Oregon Coast Trail relocation and alignment across Bandon Dunes element of this exchange is not an apt fit for the Department’s rating system. However, the Commission finds that it is consistent with the Department purpose. Increasing outdoor recreation through the provision of trails for hiking is in the public interest. ORS 390.010(3)(h).

The Commission finds that the exchange of real property is complies with OAR 736-019-0060(3).

Under OAR 736-019-0060(4), the Department is to look favorably at exchanges that “enhance the overall management of existing park lands.” The Commission has previously made findings that the exchange would reconfigure the Bandon State Natural Area in a way that has management advantages related to public access and wildlife. The reconfigured Bullards Beach State Park would also address an area of concern identified in the Master Plan, specifically the objective to control gorse on the property. The adopted master plan calls for the Department to “make cooperative agreements with neighbors, especially Moore Mill [previous owner], to control gorse on their property also.”

The Bandon Biota contributions of \$300,000 to the Department dedicated to the control of gorse involved in this exchange is an “other assets” that enhances the overall management of existing park lands. Regarding Cape Blanco State Park, the Curry County State Parks Master Plan (2003) at page 80 states, “The presence of gorse throughout the park is a very serious management threat.” OAR 736-018-0045(1)(n). For Floras Lake State Natural Area, the Curry County State Parks Master Plan (2003) establishes the control gorse intrusions as a Natural, Scenic and Cultural Resource Management Guidelines for Floras Lake State Natural Area. OAR 736-018-0045(1)(n). Additionally, the Habitat Conservation Plan for the Western Snowy Plover identifies as a management action, restoring coastal dune habitat through the removal of invasive species (*e.g.*, European beachgrass and gorse) as well as lowering the foredune to allow storm wave overwash to occur. See 5.3.2. Goals and Actions Implementing the Conservation Measures, HCP at 5-20. The Commission finds the exchange is an opportunity to enhance the management of multiple state parks.

Having determined that the exchange has applied all elements of OAR 736-019-0060 as required by OAR 736-019-0070(1)(a), the Commission returns to the criteria for exchange in OAR 736-019-0070. Subsection (1)(b) of that rule directs the Department to apply the provisions of either section (2) or (3), determined by whom the exchange is

proposed. The Commission finds that section (3) is the applicable section of the rule because Bandon Biota initiated the exchange.

Section (3) provides the procedures the Department will follow when another party initiates an exchange. As such, the Commission does not construe the provisions of OAR 736-019-0070(3) to be criterion that the Commission must analyze to determine whether an exchange may proceed. The Commission generally finds that the Department, in its processing of the exchange request has followed the purpose of OAR 736-019-0070(3). The Department has provided the Commission with staff reports and oral presentations regarding whether the exchange aligns with parks' mission, strategies, objectives, and work plan; and will accommodate public use and access. The Department has held hearings in areas most affected by the exchange and the Commission has been provided much testimony regarding local community support. The Department prepared the required Surplus Real Property Notification. The Department has also required that the proposer provide environmental reviews and written proposals, starting with the initial August 19, 2010, Bandon Biota submittal. At the Commission's direction, the Department also conducted its own evaluations of natural and cultural resource impacts and protection. The Commission finds that the Department has employed the procedures provided in OAR 736-019-0070(3).

D. Overwhelming Public Benefit to the State Park System

The ultimate question before the Commission is a discretionary one. The foregoing discussion in this order has established to the Commission's satisfaction both that it has the authority to act on the request of Bandon Biota and that the Department has acted consistently with the applicable criteria in bringing the exchange forward for the Commission's consideration. Therefore, the Commission now turns to a determination, for the first time, as to whether the proposed exchange provides an overwhelming public benefit to the Oregon State Park system, its visitors, and citizens, which is resounding, clear and obvious.

The standard is provided in the Commission's rule. OAR 736-019-0070(4) provides in full:

“To approve an exchange that a party other than the Department initiates, the Commission shall determine that the proposed exchange provides an overwhelming public benefit to the Oregon State Park system, its visitors, and the citizens of Oregon. The Commission has sole discretion to determine whether a proposal provides an overwhelming public benefit to the Oregon State Park system, its visitors, and citizens, which is resounding, clear and obvious. An overwhelming public benefit to the Oregon State Park system, may include, but is not limited to, an exchange in which the Department receives:

“(a) One or more properties in areas of interest listed pursuant to OAR 736-019-0060(1)(a),

“(b) An endowment for long-term stewardship that provides significant and meaningful stewardship resources to the Department, or

“(c) Other contributions to the Oregon State Park system, beyond the property to be received, which the Commission determines when combined with the property to be received by the Department, and when weighed against the property to be transferred out of the Oregon State Park system, along with all of the Departments transaction costs, will result in an overwhelming public benefit to the Oregon State Park system.”

Additionally, the Commission has adopted a definition of “overwhelming public benefit.” OAR 736-019-0020(8) provides in full:

“Overwhelming public benefit” means a Commission determination in the approval of a property exchange that accounts for the natural, scenic, cultural, historic, recreational, and operational benefits of a proposal that are likely to be above and beyond the monetary value of the exchange.”

The Commission adopted OAR 736-019-0020(8) and OAR 736-019-0070(4) as an amendment to the Land Acquisition and Exchange rules in 2011.

The history of the adoption of OAR 736-019-0070(4) provides helpful context as the Commission undertakes its determination. The Commission developed the standard in response to its concern over an anticipated increase in the role that land exchanges, particularly those initiated from outside the Department, would play as the Department’s acquisition budget gets smaller. Minutes, January 26, 2011 meeting. To avoid the risk that local community interest might drive exchanges and to fulfill its responsibility to the state park system, the Commission crafted a standard to maintain its focus on its mission and to be able to evaluate exchanges to make sure that the Department received properties of interest and clearly of an equalized value. *Id.*

The Commission has been provided much comment regarding overwhelming public benefit in a general sense. However, as demonstrated by both the rulemaking history and the text of the OAR 736-019-0040, the Commission’s inquiry is not whether a proposal provides a generalized overwhelming public benefit, but, more specifically “an overwhelming public benefit to the Oregon State Park system, its visitors, and citizens.” To construe the standard otherwise would be to “omit what has been inserted” contrary to the general rules of statutory construction of statutes and administrative rules. ORS 174.010.

The Commission’s inquiry is not, however, without guidance. As mentioned, OAR 736-019-0020(8) defines “overwhelming public benefit” such that the Commission must account for the natural, scenic, cultural, historic, recreational, and operational benefits of a proposal that are likely to be above and beyond the monetary value of the exchange. Thus, the “monetary value of the exchange” must be identified in order to undertake the consideration of overwhelming public benefit. The 280-acre portion of the

Bandon State Natural Area proposed for exchange to Bandon Biota appraised in 2011 at \$1,960,000 and most recently, the final reviewed value is \$1,055,000. The 111-acre oceanfront parcel property coming into the state park system appraised at \$800,000 in 2010 and \$445,000 in 2014; the 97-acre riverfront parcel appraised at \$220,000 in 2010 and \$171,000 in 2014. The monetary value of the exchange includes the \$2,500,000 currently directed toward the Department's acquisition of an addition to the state park system. Additionally, Bandon Biota has contributed \$450,000 towards Whale Cove acquisition and the \$300,000 towards gorse control. The Commission finds that the monetary value of the Bandon Biota contribution to the exchange is \$3,866,000, without accounting for the coast trail contribution, and the Department contribution to the exchange is \$1,055,000. From a simple monetary standpoint, the Commission finds that monetary value of the exchange to the state park system is in excess of three to one.

The Commission did not, however, intend an exchange analysis to be a rote valuation exercise. Subsections (a) to (c) of OAR 736-019-0070(4) provide some guidance, but not a definitive list of what an overwhelming public benefit to the Oregon State Park system may include: one or more properties in areas of interest; an endowment for long-term stewardship that provides significant and meaningful stewardship resources to the Department, or other contributions to the Oregon State Park system, beyond the property to be received, which the Commission determines when combined with the property to be received by the Department, and when weighed against the property to be transferred out of the Oregon State Park system, along with all of the Departments transaction costs, will result in an overwhelming public benefit to the Oregon State Park system. The Commission also finds that the four criteria in OAR 736-019-0000 provide context for construing "overwhelming public benefit to the Oregon State Park system, its visitors, and citizens." In sum, those are to acquire the best and most significant sites to protect the state's most valuable natural, scenic, cultural, historic, and recreational resources; where consistent with resource protection provide general public access to such sites, include historical themes in development master plans, and to foster the citizen's appreciation and enjoyment of outdoor recreation resources. OAR 736-019-0000(1)-(4).

The Commission has thoroughly discussed and detailed the elements of the exchange proposal in this order. In considering the benefits to the state parks system, its visitors and Oregonians, the Commission has considered some of the natural, scenic, cultural, recreational, and operational benefits. The exchange makes changes on the ground to the Department's ownerships, particularly in Coos County, where there is a net decrease of roughly 72 acres of Department land, but a change of ownership for nearly 500 acres of land. The Commission has described herein the land that it would provide in exchange and those that it would receive. One consideration is that ocean shore is one of the state's most valuable natural and recreational resources. The Department's Snowy Plover HCP establishes New River as a significant site for protecting a threatened state natural resource. The Department's botanical, habitat and cultural reports unsurprisingly demonstrate that while the Department would gain some important habitat and cultural areas, they would come at a loss of others. For example, wetland acreage under Department management will increase, but may include less freshwater wetland types.

The Commission finds that such tradeoffs are to be expected when nearly 500 acres of land is changing ownership. The exchange offers operational benefits to the Department in that it adds adjacent lands to existing parks and provides resources to address the issue of gorse, an issue that comes up in the park master plans, the ocean shore management plan, and the western snowy plover HCP. The Commission also understands that an exchange of this proportion will make some alterations to recreation. However, the Commission finds that the exchange is structured, where possible to afford the continuation of existing recreation by retaining public trail access over exchanged lands. The exchange also includes perfecting the alignment of the Oregon Coast Trail over Bandon Dunes. The Commission hopes that this trail development will also foster the public's appreciation and enjoyment of that outdoor recreational trail resource.

The Commission finds that an element of the exchange is an area of interest on the Commission's 2013-15 Land Acquisition Priorities list. The funding of the Whale Cove acquisition is identified on the list. The Commission notes that ultimately the Department will not be the owner of those lands. Nevertheless, the visitors to the Rocky Creek State Wayside and the citizens of Oregon traveling the Highway 101 scenic byway will be beneficiaries of the natural view of the Whale Cove area.

Under the request for exchange, at the Department's direction Bandon Biota will provide \$2,500,000 into an escrow account established for the acquisition of real property as an addition to the state park system. Although not required by division 19, the Commission expressed to the Department that in instances where land is leaving the park system, the Commission's evaluation of the overwhelming public benefit of such a proposal would benefit from identifying specific land coming in to the park system. To that end, the Department secured a purchase and sale agreement for the Grouse Mountain Ranch property to provide the Commission assurance that if it approved the exchange, the terms of the exchange can be met. However, the Commission ultimately decided not to proceed with that acquisition. To be clear, Bandon Biota is providing \$2,500,000 as part of the exchange.

Bandon Biota and the Department entered into the Grouse Mountain Ranch Assistance Agreement, effective November 20, 2013. The Grouse Mountain Ranch assistance agreement expressly provides:

“4. Other Use of Payments. If OPRD determines in good faith that it is unable to close on its purchase of Grouse Mountain Ranch, or if OPRD has no further payment obligations to the Meredith's under the Grouse Mountain Purchase and Sale Agreement, then at OPRD's election it may use the payments made by Biota under this Agreement for its purchase of other real property, provided that the Oregon Parks and Recreation Commission has reasonably determined (whether or not such determination is made prior to Closing under the Exchange Agreement) that such other real property, in conjunction with the other consideration under the Exchange Agreement, provides an overwhelming public benefit to the Oregon State Park system, its visitors, and the citizens of Oregon.”

While provision 4 quoted above furthers the Department’s responsibility to structure agreements in furtherance of prudent use of public monies under OAR 736-019-0040, the Commission has determined not to proceed with the Grouse Mountain Ranch acquisition as the priority acquisition for which the Bandon Biota funds are to be used. The Commission hereby directs the Department to identify other real property that, in conjunction with the other consideration under the Exchange Agreement, provides an overwhelming public benefit to the Oregon State Park system, its visitors, and the citizens of Oregon.

The structure of that agreement between Bandon Biota and the Department has much to do with an aspect of the Commission’s review. The Commission is called on to further determine that the overwhelming public benefit to the Oregon State Park system, its visitors, and the citizens of Oregon is of a “resounding, clear, and obvious” nature. The three adjectives are permutations of a theme – we know it when we see it. “Resounding” means “unmistakable, emphatic”; “clear” means “easy to perceive, understand, or interpret” and “obvious” means “easily perceived or understood; clear, self-evident, or apparent.” The Commission established by rule that the determination is in its sole discretion, which is appropriate given the standard.

The Commission clarifies what “resounding, clear, and obvious” does not mean. It does not mean that an exchange must be without detractors or controversy. Nor does it mean that the Commission must be pleased to have the real property exchanged out of Department ownership gone. It is possible, as happened here, that the Commission is exchanging land that is “useful” to the Department, but either not “needed” or not “required” as authorized under ORS 390.121(3).

Although Bandon Biota is committing to a particular level of funding, the Commission is less able to evaluate monetary benefits to the state park system than it is an incoming asset. Money in and of itself is not precluded from achieve the overwhelming public benefit standard for this Commission. At the same time, the Commission is resolute that the Oregon State Park System is generally not for sale. Understanding that the Commission had set a high standard, Bandon Biota has now presented a request that includes six elements each of which provides a benefit to State Park System and meets needs identified by this Commission in various planning exercises over the years. The Commission directs the Department to identify other real property for its future consideration and approval under provision 4 of the assistance agreement. The Commission finds that the exchange proposal provides an overwhelming public benefit to the Oregon State Park system, its visitors, and citizens, which is resounding, clear and obvious.

In approving this exchange the Commission is cognizant that this precedent serves to set a high bar for future land exchanges initiated by outside party that must likewise satisfy the overwhelming public benefit to the state park system standard. The Commission finds that to be appropriate. A theme of the Commission’s recent conversation around the State Park System Plan was the need to be creative to allow the Department to do more with less. This exchange embodies that principle. In approving

this exchange, the Commission recognizes that there is now less of the Bandon State Natural Area, but viewed as a whole, there is more to the state park system.

III. Conclusion

The Commission concludes that the proposed exchange provides an overwhelming public benefit to the Oregon State Park system, its visitors, and citizens, which is resounding, clear and obvious. Therefore, the Commission approves the exchange request of Bandon Biota as provided in this order.

DATED THIS __ DAY OF APRIL, 2014.

FOR THE COMMISSION:

Jay Graves, Chair
Oregon Parks and Recreation Commission

NOTE: You may be entitled to judicial review of this order. Judicial review may be obtained pursuant to ORS 183.484 by filing a petition for review within 60 days from the service of this final order.

Copies of all documents referenced in this order are available for review at the Department's office in Salem (and are posted on the Department's website).

Vegetation Inventory and Botanical Resource Assessment for the Portion of Bandon State Natural Area under Potential Land Exchange Consideration

Noel Bacheller
Natural Resource Coordinator/Botanist
Oregon Parks and Recreation Department

October 23, 2013



Nature
HISTORY
Discovery



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Introduction

An inventory of the vegetation of a portion of Bandon State Natural Area was done to provide information on the habitats present within an area being considered for potential land exchange with Bandon Biota. The potential area of exchange (hereafter referred to as the “study area”) was assessed for plant communities, wetlands, state and federally-listed plant species, and habitat quality.

OPRD Vegetation inventories typically involve:

- 1) review of published or archived biological data for the site
- 2) field inventory and mapping of plant associations
- 3) identification and mapping of significant habitat
- 4) identification and mapping of any rare plant or animal species known or found
- 5) assessment of condition, successional status, and conservation ranking of plant communities present at the site.

In the case of this particular property, both highly significant natural habitats and areas highly degraded by invasive species are widespread in the study area. One plant species listed as threatened under Oregon’s Endangered Species Act is present in a portion of the study area. Several rare and sensitive, but unlisted, species are also present. Deterioration of habitat condition and ecological function is due primarily to weed infestation and subsequent stabilization of formerly significant sparsely vegetated sand and dynamic dunal habitats that provide a vanishing habitat niche for a number of declining species of plants and wildlife.

This report revises and supplements John Christy’s 2007 vegetation inventory described under the heading of “Past Work and Existing Data, below.

Past Work and Existing Data

The study area was previously assessed in 2007 by John Christy under contract with Michael Keizer. The study was done at a relatively coarse level, due in part to the difficulty of access through dense gorse and forest vegetation. The report is titled, “Biological Assessment: Twomile Creek property and southern Bandon State Natural Area, Coos County, Oregon”. Because of the coarseness and age of this previous work, OPRD undertook the current assessment as a supplement and revision.

Additional background on the property and its botanical environment was available from several sources. These sources include:

- 1954 aerial photography from the Bureau of Land Management (BLM).
- A 1964 pictorial monitoring document also from the BLM
- Oregon Biodiversity Information Center (ORBIC) rare species Geographic Information System (GIS) data.

Description of the Bandon State Natural Area Study Area

The general qualities and history of the study area are described in some detail in Christy, 2007. For further detail see that report. For general description purposes, some key passages are reproduced below:

“The target area is composed of stabilized and unstabilized sand dunes forming two ridges parallel to the beach, separated by seasonally-flooded wetlands in the trough between the dunes. The Twomile Creek floodplain, estuary, and old deflation plain just east of the creek were not included in the project area. Stabilized dunes and the old deflation plain are covered with either dense stands of conifers and shrubs of various ages or dense stands of European beachgrass and gorse. Less stabilized dunes are covered by native grasses, European beachgrass, or are nearly devoid of vegetation. Most of the trough between the dune ridges is covered by dense conifers or shrubs. Small to extensive seasonal wetlands occur throughout the target area, but the only permanent water is along Twomile Creek. The highest dunes have expansive views of the New River area to the south and the Pacific Ocean to the west, with limited views east to foothills of the Klamath Mountains.”

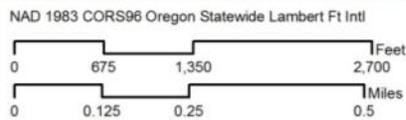
“Geomorphology. The target area is part of the Coos Bay dune sheet that extends 60 miles from Cape Blanco to Florence. The sand originated from sediments transported to the coast by major rivers draining the interior of the region, as well as ongoing erosion and deposition along the immediate coastline. Sand is transported along the coast by seasonal ocean currents and prevailing winds. Elevations in the target area range from about 20 to 90 feet above sea level. Twomile Creek is the only stream in the vicinity that cuts across the dune sheet to the beach. East of the dune sheet is an ancient marine terrace extending 4-6 miles inland and forming a level surface. The marine terrace is ideal for growing cranberries and the Bandon area is the epicenter of cranberry cultivation on the Pacific Coast of North America. The terrace is bounded on the east by the foothills of the Klamath Mountains.”

“Land Use. The target area in the dunes is remote and nearly surrounded by private land. The only public access to the south half of Bandon State Natural Area is through the New River ACEC or along the beach from the north or south. Consequently, most use of the area is limited to infrequent recreational entry by the public and adjoining landowners. Observed uses include off-road vehicle (ORV) riding, horseback riding, hunting, hiking, skeet shooting, and wildlife viewing. An old fence line on the Keiser property recently exposed by shifting dunes indicates that the area was once suitable for livestock grazing. Immediately east of the Kaiser property much of the marine terrace has been intensively developed for commercial cranberry production. The Bandon area is destined to change from agricultural, forestry, and rural residential use to suburban land use as the Oregon coast continues to attract settlement and development. Most of the area east of the target properties will infill with commercial cranberry bogs and residential development. Properties with views of the ocean will be in high demand.”

Figure 1. Vegetation Study Area



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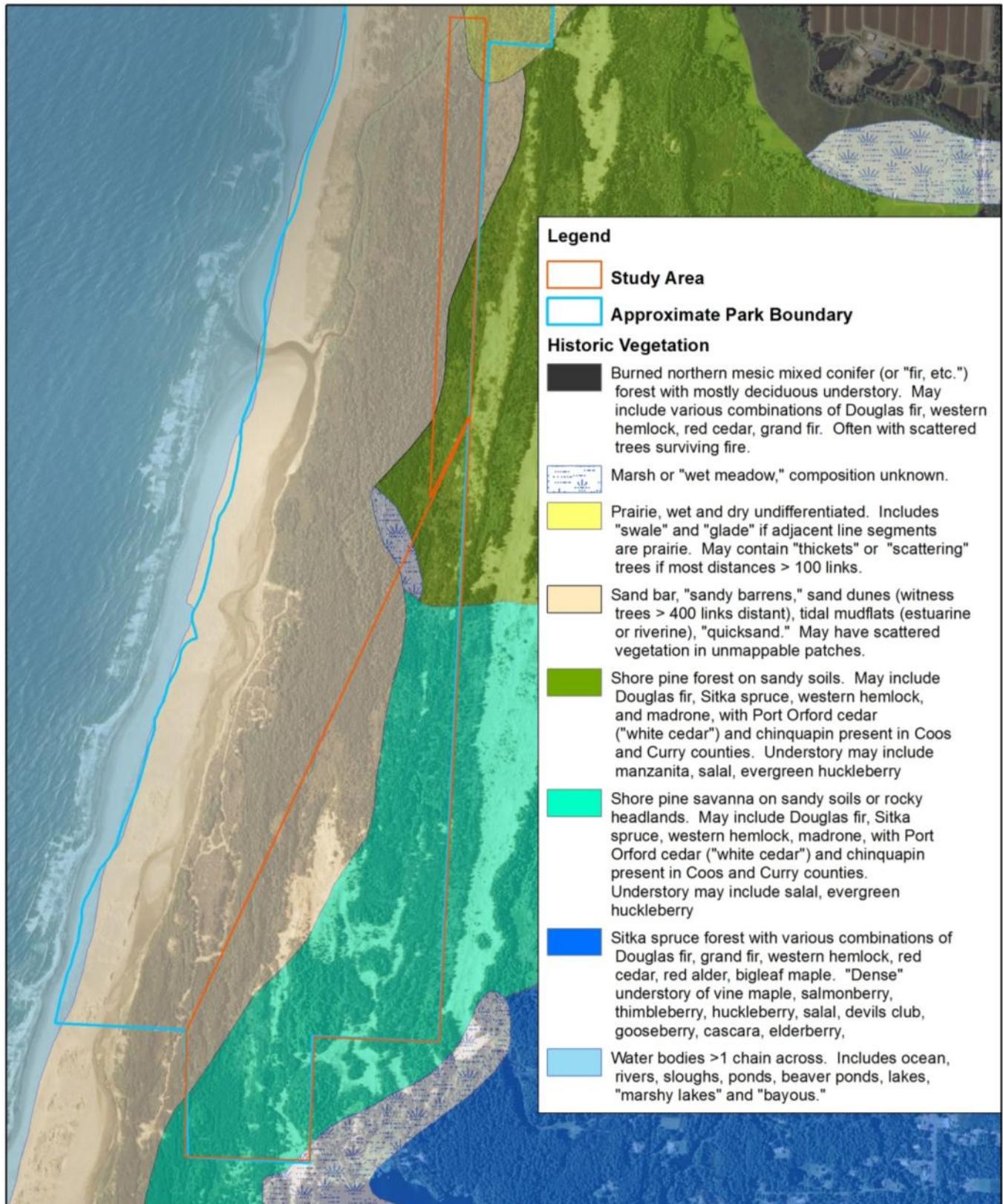
Historic Vegetation and Change

Historic vegetation was addressed in Christy, 2007. This text is reproduced below:

“Historical vegetation for the Twomile Creek area was mapped by Hawes et al. (2004) using the earliest land survey notes as a point of reference (Figure 2). The target area was surveyed by Daniel and Mathew Murphy in July 1857. In their general description of the township they described the target area as “poor sandy barrens...There is however a strip of good grass land bordering on the ocean in the southwest corner of the township and extending north for about 2 miles and about a half mile wide. The timber is scrubby pine and spruce.” Heading north along the survey line between sections 25 and 26, they surveyed through “pine openings” (savanna) and entered pine forest with spruce, huckleberry, and salal. Between sections 23 and 24 they left the pine and spruce forest and entered “sandy barrens.” Just south of Twomile Creek they entered “rolling prairie.” Today’s tall foredune and adjacent deflation plain are largely an artifact of European beachgrass and may not have existed in their present form when the area was first surveyed (Christy et al. 1998). The west half of Bandon State Natural Area is still sand dunes but part of the area mapped as open sand in 1857 is now dunes covered with trees. The pine savanna in the southeastern quarter of Bandon State Natural Area and a small part of the Keiser property would have contained pockets of dune grassland. The northeastern part of the target area was mapped as pine forest but the survey records indicate that Douglas fir, Sitka spruce, western hemlock, madrone, Port Orford cedar, and chinquapin were also present. These vegetation types would have developed on stabilized sand and probably looked very similar to types seen today in the area, except for the presence of gorse. The “rolling prairie” near Twomile Creek was probably stabilized sand dunes with a sod of beach fescue and possibly tufted hairgrass.

Review of aerial photography and ground photographs taken in the 1950’s and 1960’s indicates that radical change in vegetation has taken place since these photographs were taken. European beachgrass and gorse have spread dramatically across the landscape, and the stabilized sand has in many places become forested. Topography may also have been altered over time, especially in areas that were formerly characterized by open sand and sparse native grasses. These areas have likely built up vertically due to the sand-catching and stabilizing effect of both European beachgrass and gorse. The presence of a thick forested strip of vegetation between the beach/littoral strand areas outside the study area and the interior dunal habitat has likely changed the wind dynamics of the area, further accelerating the stabilization and succession to shrubland and forest types from historic, previously more open and dynamic shifting dunal types. The succession of the forested strip itself was likely accelerated by the deflation plain effect that accompanies foredune formation due to European beachgrass invasion. This deflation plain formation would have lowered the surface elevation of the sand to just above the water table and made it possible for vegetation to take over and rapidly transition to forest.

Figure 2. Historic Vegetation (from *Hawes et al. (2004)*)



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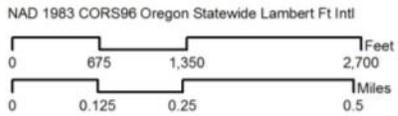
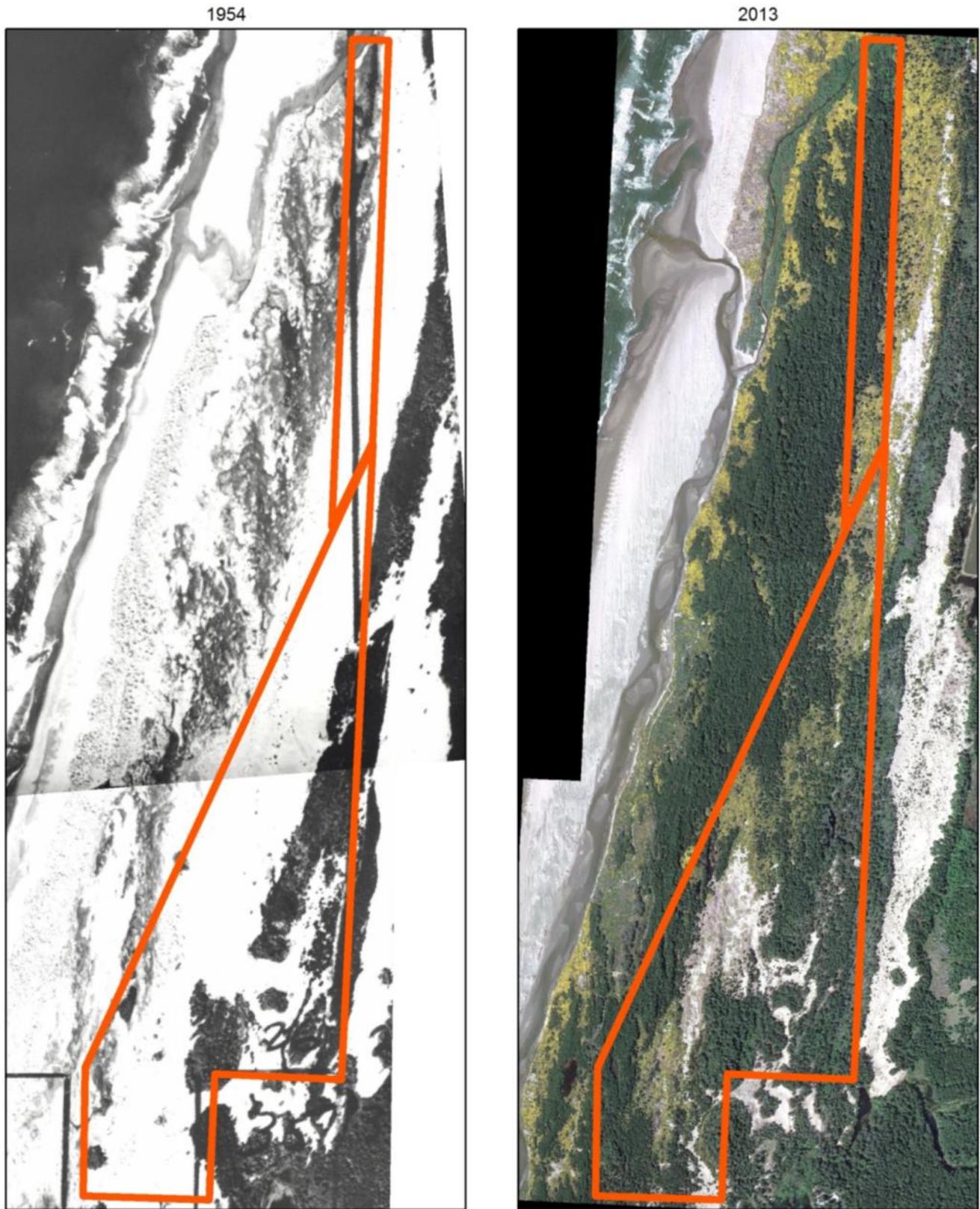
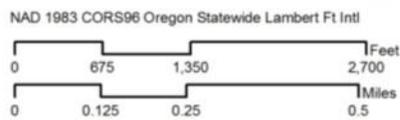


Figure 3. Vegetation Change Since 1954



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Methods

Plant community mapping and description was completed using a 2-phase process. The first phase was identification of rough plant community boundaries on an aerial photograph, and setting survey priorities. This work was very important given the impassability of much of the terrain due to gorse and forest vegetation density. The second phase consisted of ground-truthing and refining these boundaries while collecting plant community composition data. Visitation targets marked on field maps before starting fieldwork were guides to travel routes, but discoveries made in the course of fieldwork added additional targets and routes to the work plan.

Field data collection was conducted at a higher resolution than is generally useful or desirable for general habitat description. Data was described in sufficient detail to allow for later consolidation of similar polygons into the lower resolution polygons needed for coarser characterization. These lower resolution polygons are depicted in Figure 4. The more detailed resolution mapping is included in Appendix 1. The field data collection process involved 1) delineating and describing all distinct plant communities that were clearly discernible on the aerial photographs, and 2) approximately delineating all plant communities that were roughly feasible, but whose edges were not clearly visible on the aerials.

Due to the size and often impenetrable nature of some of the portions of the study area, some areas mapped in this inventory are mapped based on the characteristics of similar sites visited in person. Patterns of vegetation composition recur fairly predictably across the landscape, and the coarse-level mapping of areas not physically visited is believed to be reasonably accurate.

Using the field-delineated mapping and vegetation relevé plots collected at points across the study area, land cover was digitized in the office into a GIS shapefile using the following OPRD criteria:

1. Scientific name for each plant association.
2. Common name for each plant association.
3. Species code acronym for each native plant association;
4. Equivalent or closest plant association(s) in the published literature.
5. Habitat type for each native plant association. Abbreviated as “F”=forest, “S”=shrubland, “W”=woodland, “H”=herb/forb-land. In many cases these habitats were recorded as hybrid types – for example, “H/S” was used in areas that were predominantly herbaceous, but which contain scattered or sporadic groupings of shrubs.
6. Age class code for each forest or woodland association polygon: A = old, B = mature, C = mid-aged, D = young. Age class is recorded relative to the characteristic tree species for the polygon. This is important in that shore pine is often classed as mature at 40 years old according to its lifespan; but, Sitka spruce would be mid aged at the same number of years old because of the much longer lifespan of the species and the habitats associated with the species.
7. Conservation rank. This code is ascribed to a plant community based on the ORBIC “Classification of Native Vegetation of Oregon”. Where plant communities are

- represented exactly in the Classification, the conservation rank code is copied directly. Where a plant community is similar but not completely equal to a community in the Classification, it is preceded by a “~”. When a community is not represented at all in the Classification, but is deemed somewhat rare, it is given a rank based on best professional judgment. These cases are identifiable in the data by text format, being “~S?”, where “?” will be a particular number depending on the polygon. Note that they do not have the “G?” portion of the code that those communities that are represented in the Classification have. The numbers (1 through 5) following either G or S in the code represent conservation status of each native association, based on ORNHIC ranking criteria. The number “1” represents types that are endangered throughout their range, and “5” represents types that are demonstrably secure. A description of how this ranking system works is included online at: <http://www.natureserve.org/explorer/ranking.htm>.
8. OPRD condition rating representing the condition of each plant association delineated as a discrete polygon will be rated using the codes below:
 - *Condition “E” (excellent)*: Pristine or near pristine native plant community. Exotic plants typically have a significant presence in the species composition over less than 10 percent of the polygon.
 - *Condition “G” (good)*: Native plant community generally of good vigor and condition. Exotic plants typically have a significant presence in the species composition over 10 to 30 percent of the polygon. Condition may be downgraded by factors other than invasive species presence – i.e. trampling, fire, windthrow, erosion, etc.
 - *Condition “M” (marginal)*: Native plant community substantially degraded by intrusion of exotic plants or human disturbance. Exotic plants typically have a significant presence in the species composition over 30 to 70 percent of the polygon. Condition may also be downgraded by factors other than invasive species presence – i.e. trampling, fire, windthrow, erosion, etc.
 - *Condition “P” (poor)*: Native plant community highly degraded or replaced by exotic plants. Exotic plants typically have a significant presence in the species composition over more than 70 percent of the polygon. Condition may be downgraded by factors other than invasive species presence – i.e. trampling, fire, windthrow, erosion, etc.
 9. Wetland polygon indicator, representing wetland plant association types and other surface water features (“yes”/“possibly”/“partially” field). The “possibly” value is used in cases where formal determination plots would be necessary to accurately indicate whether the polygon is wetland or not. The “partially” value is used in cases where a polygon contains wetland and non-wetland that are not mappable without formal wetland delineation plots and methodology.
 10. Botanical Resource Value rating. These values quantify the conservation value of each plant community habitat polygon in the study area.

Ratings are numeric and range from 1 to 4, based on the value assignment decision matrices included below. Due to the importance of age class in determination of value of forested and woodland habitats, a matrix that factors in age is needed for forest and woodland. A separate matrix without age class parameter is used for herbaceous and shrubland habitats.

The value 1 denotes highest resource value and conservation priority – usually a legally protected allocation due to species presence, conservation easement, natural area registration, etc. A value of 2 denotes very high natural resource value and conservation priority – but without legal protection. A value of 3 denotes habitats that are either degraded, extremely common, or semi-artificial – but with some significant natural resource value remaining. A value of 4 denotes a habitat that is severely degraded and of low natural resource value.

Table 1. Botanical Resource Value Determination for Non-Forested Habitats

	Condition E	Condition G	Condition M		Condition P	
Special designation*	1	1	1		1	
Occupied listed plant species habitat	1	1	1		1	
High probability inconclusively surveyed listed species habitat	2	2	2		2	
Other at-risk plant species occupied or high probability habitat	2	2	2		2	
Priority Habitats ^A	2	2	Restoration Feasibility^B	Resource Value	Restoration Feasibility^B	Resource Value
			High	3(2)	High	3(2)
			Med	3(2)	Med	3(2)
			Low	3	Low	3
Conservation rank S1	2	2	Restoration Feasibility^B	Resource Value	Restoration Feasibility^B	Resource Value
			High	2	High	3(2)
			Med	2	Med	3(2)
			Low	3(2)	Low	3
Conservation rank S2	2	2	Restoration Feasibility^B	Resource Value	Restoration Feasibility^B	Resource Value
			High	2	High	3(2)
			Med	3(2)	Med	3
			Low	3	Low	3
Conservation rank S3	2	2	Restoration Feasibility^B	Resource Value	Restoration Feasibility^B	Resource Value
			High	3(2)	High	3(2)
			Med	3(2)	Med	3(2)
			Low	3	Low	3
Conservation rank NA or >S3	2	3	4		4	
Developed or agricultural	4	4	4		4	
Definite wetlands	2	2	2		2	
Possible wetlands	2 if <=S3 3 if >S3	2 if <=S3 3 if >S3	3		3	

Table 2. Botanical Resource Value Determination for Forested Habitats (including woodlands)

	Relative value index	Condition E	Condition G	Condition M	Condition P																																																
Special designation*	10	1	1	1	1																																																
Occupied listed plant species habitat	10	1	1	1	1																																																
High probability listed species habitat	9	2	2	2	2																																																
Other at-risk plant species populations or habitat with high probability of presence or necessary future dispersal	8	2	2	2	2																																																
Priority Habitats ^A	8	2	2	<table border="1"> <thead> <tr> <th rowspan="2">Restoration Feasibility^B</th> <th colspan="4">Age Class</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>high</td> <td>2</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>moderate</td> <td>2</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>low</td> <td>2</td> <td>3(2)</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Restoration Feasibility ^B	Age Class				A	B	C	D	high	2	2	3(2)	3(2)	moderate	2	2	3(2)	3(2)	low	2	3(2)	3	3	<table border="1"> <thead> <tr> <th rowspan="2">Restoration Feasibility^B</th> <th colspan="4">Age Class</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>high</td> <td>2</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>moderate</td> <td>2</td> <td>3</td> <td>3(2)</td> <td>3</td> </tr> <tr> <td>low</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Restoration Feasibility ^B	Age Class				A	B	C	D	high	2	2	3(2)	3(2)	moderate	2	3	3(2)	3	low	3	3	3	3
Restoration Feasibility ^B	Age Class																																																				
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high	2	2	3(2)	3(2)																																																	
moderate	2	3	3(2)	3																																																	
low	3	3	3	3																																																	
Conservation rank S1	7	2 if age class A,B,C 3(2) if age class D	2 if age class A,B,C 3(2) if age class D	<table border="1"> <thead> <tr> <th rowspan="2">Restoration Feasibility^B</th> <th colspan="4">Age Class</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>high</td> <td>2</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>moderate</td> <td>2</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>low</td> <td>2</td> <td>3(2)</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Restoration Feasibility ^B	Age Class				A	B	C	D	high	2	2	3(2)	3(2)	moderate	2	2	3(2)	3(2)	low	2	3(2)	3	3	<table border="1"> <thead> <tr> <th rowspan="2">Restoration Feasibility^B</th> <th colspan="4">Age Class</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>high</td> <td>2</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>moderate</td> <td>2</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>low</td> <td>2</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Restoration Feasibility ^B	Age Class				A	B	C	D	high	2	2	3(2)	3(2)	moderate	2	2	3(2)	3(2)	low	2	3	3	3
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moderate	2	2	3(2)	3(2)																																																	
low	2	3	3	3																																																	
Conservation rank S2	6	2 if age A,B,C 3(2) if age D	2 if age A,B,C 3(2) if age D	<table border="1"> <thead> <tr> <th rowspan="2">Restoration Feasibility^B</th> <th colspan="4">Age Class</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>high</td> <td>2</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>moderate</td> <td>2</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>low</td> <td>2</td> <td>2</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Restoration Feasibility ^B	Age Class				A	B	C	D	high	2	2	3(2)	3(2)	moderate	2	2	3(2)	3(2)	low	2	2	3	3	<table border="1"> <thead> <tr> <th rowspan="2">Restoration Feasibility^B</th> <th colspan="4">Age Class</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>high</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>moderate</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>low</td> <td>2</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Restoration Feasibility ^B	Age Class				A	B	C	D	high	2	3(2)	3(2)	3(2)	moderate	2	3(2)	3(2)	3(2)	low	2	3	3	3
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Restoration Feasibility ^B	Age Class																																																				
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high	2	3(2)	3(2)	3(2)																																																	
moderate	2	3(2)	3(2)	3(2)																																																	
low	2	3	3	3																																																	
Conservation rank S3	5	2 if age A,B 3(2) if age C,D	2 if age A,B 3(2) if age C, 3 if Age D	<table border="1"> <thead> <tr> <th rowspan="2">Restoration Feasibility^B</th> <th colspan="4">Age Class</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>high</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>moderate</td> <td>2</td> <td>3(2)</td> <td>3(2)</td> <td>3(2)</td> </tr> <tr> <td>low</td> <td>2</td> <td>3(2)</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Restoration Feasibility ^B	Age Class				A	B	C	D	high	2	3(2)	3(2)	3(2)	moderate	2	3(2)	3(2)	3(2)	low	2	3(2)	3	3	<table border="1"> <thead> <tr> <th rowspan="2">Restoration Feasibility^B</th> <th colspan="4">Age Class</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>high</td> <td>3(2)</td> <td>3(2)</td> <td>3</td> <td>3</td> </tr> <tr> <td>moderate</td> <td>3(2)</td> <td>3(2)</td> <td>3</td> <td>3</td> </tr> <tr> <td>low</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Restoration Feasibility ^B	Age Class				A	B	C	D	high	3(2)	3(2)	3	3	moderate	3(2)	3(2)	3	3	low	3	3	3	3
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low	3	3	3	3																																																	
Natural or semi-natural Communities with Conservation rank NA or >S3	4	2 if age A,B 3 if age C,D	2 if age A 3 if age B,C,D	3 if age A,B,C Otherwise 4	3 if age A,B Otherwise 4																																																
Definite wetlands	8	2	2	2	2																																																
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Developed or artificial	1	4	4	4	4																																																

* for the purposes of this matrix, “special designation” means that the polygon is part of a conservation area such as a State Natural Area Reserve, a Research Natural Area, an Area of Critical Environmental Concern, a designated Wilderness, a conservation easement, or a Habitat Conservation Plan.

11. Field for other comments that are pertinent to the purpose of this work scope.

12. Priority habitat identification field – either those habitats that are existing investments or commitments; or, those that are of local, regional, or statewide concern.
13. Field for feasibility of restoration. Rated as high, medium, or low.

Current Vegetation and Habitats

A variety of forest, woodland, herbaceous, and shrubland habitats ranging from wetland to upland are present in the study area. Relatively fine-scale habitat types are depicted in Figure 4. Fully detailed plant community information is presented in Appendix 1/Figure 8. The Broad habitat groupings of Forest, Woodland, Shrubland, and Herbaceous are described briefly below:

Forested communities

Forested communities are abundant and common in the study area and range from dry ridge top types dominated by madrone and douglas-fir to wet shore pine swamps. The vast majority of the forest within the study area is characterized by high abundance of shore pine. Sitka spruce is common in many of the forested areas as well, but reaches its highest abundance topographically low-lying areas. Douglas fir and madrone occur primarily on higher topography. Port Orford cedar types occur only in the south east of the study area – encompassing both wet and dry sub-types. White fir is a substantial component of forests in two relatively sheltered, inland locations, where it occurs with a mix of other conifers. Some of the forests have their stand origin prior to 1954, but the majorities have become established more recently as a result of dune stabilization and succession. Upland forest types typically have very dense shrub understories characterized by evergreen huckleberry, waxmyrtle, salal, gorse, hairy manzanita, and silktassel in varying amounts according to topographic position and canopy composition/density. Forb layers in upland forests within the study area are often sparse. Where forests are wetland, the understory shrub layer becomes sparser, and slough sedge is dominant.

Woodland communities

Woodland communities are primarily transitional in nature, particularly now that historic dynamic disturbance processes related to dune movement have essentially been halted. Most woodland within the study area is dominated by shore pine. Where gorse has not achieved dominance, kinnikinnik and hairy manzanita are common and abundant in the understory. Some areas of woodland are transitional between European beachgrass or red fescue/seashore bluegrass dunes and shore pine/waxmyrtle-evergreen huckleberry-salal – skipping over the normal shore pine/kinnikinnik and shore pine/ hairy manzanita intermediate steps in the successional pathway.

Shrubland Communities

Shrubland communities are of two main groupings: gorse dominated non-native associations, and native upland and wetlands types. Gorse dominated associations are usually characterized by very dense cover of gorse, with lesser amounts of European beachgrass, red fescue, seashore bluegrass, and bracken fern. Native wetland types usually center on hooker willow, evergreen huckleberry, cascara, crabapple, salmonberry, or black twinberry. Upland shrub fields are often dominated by silktassel, hairy manzanita, evergreen huckleberry, and waxmyrtle.

Herbaceous Communities

Herbaceous communities fall into both wetland and upland categories. Most of the herbaceous wetland communities are dominated by slough sedge, salt rush, or beaked sedge. Pacific silverweed is common in these associations. Upland herbaceous communities are dunal in nature and are composed of varying amounts of European beachgrass, red fescue, seashore bluegrass, salt rush, beach sagewort, hairgrasses, hairy cats-ear, lesser hawkbit, seashore lupine, spiny sandmat, and other less abundant sand-dwelling species.

Each of the broad habitat groups described above can be further subdivided into “plant associations”. Plant associations are communities of plants that occur together due to similarity of their individual habitat requirements. Habitat types are usually more easily described in terms of the species they contain than in terms of the underlying, causal environmental gradients (such as sun exposure, soil moisture, soil fertility, wind exposure, salt exposure, etc.) that determine which species occur where. Although these underlying causal gradients are useful as predictors of habitat species composition, they are nearly meaningless as habitat descriptors in-and-of themselves. Plant associations are the primary, intuitively-understandable descriptors of habitat and land cover, and they can in fact indicate aspects of past disturbance, ecological condition, wetland status, and future composition that the causal gradients often can't.

Ecological assessment of OPRD properties begins with documentation and inventory of habitat types present in the study area by means of mapping coherent, often recurrent, groups of species across the landscape. The mapping presented in this section of this report spatially catalogs the distribution of plant communities (as descriptors of habitat) across the study area. This plant community mapping, in turn, provides the ability to produce subsidiary analyses including the mapping of wetlands, weed infestations, changes over time, community rarity, species rarity, and threats. These subsidiary analyses are presented in other sections of this report.

Because the concept of plant associations is so important to understanding ecology and provides a common language for ecologists to be able to compare, contrast, and share information, ecologists have worked together to organize data on plant associations into databases that provide information on distribution and rarity. Using these data, it is possible to define areas of highest conservation priority based on rarity and distribution. In each of the descriptions of plant communities below, rarity and distribution data are presented in the field “conservation rank” by means of locating the published equivalent plant community in the “Classification of Native Vegetation of Oregon”(Kagan et al 2004) and assigning its conservation rank to the equivalent plant association mapped in the study area. These published equivalents are reported in the field “published equivalent(s)” in the descriptions below. Because of mapping scale and the complicated intermingling of habitats that often occur across the landscape, it is often possible to have multiple published equivalents for a mapped community. For example, hummocky ground often contains wetland associations in the troughs and upland vegetation on the higher ground. If these variations occur in patches less than 10-20 meters across, they: 1) do not show up on maps produced at a property-level scale; and 2) are often not feasible to map due to time limitations in situations where the intermixing is frequent and complicated. These habitats that contain multiple equivalents are usually referred to as plant community mosaics.

The information presented below corresponds to the map codes that label the polygons in Figure 4. The plant community structural notation is as follows: “/” denotes a change in canopy level, “-“ separates species co-occurring in a canopy level. Items in parentheses “()” are patchy or sparse. When more than one unmappable distinct plant community type occurs within the overall map polygon, the distinct communities or canopy layers that compose the mosaic community are denote by square brackets “[]”. Comments on the polygon follow plant community composition codes. Equivalent published and ranked plant communities that make up part of the polygon’s mosaic community are listed under “Published Equivalent(s)”. The conservation rankings of these communities are listed under “Conservation rank”. These ranks are defined as follows (from Kagan, 2004):

Rank is a code identifying the conservation status of the plant association. It is composed of a global rank ("G") followed by a state rank ("S"). 1 = Critically imperiled because of extreme rarity, with 5 or fewer occurrences or very few remaining acres. 2 = Imperiled because of rarity, with 6-20 occurrences or few remaining acres. 3 = Either very rare and local throughout its range or found locally in a restricted range; uncommon, with 21-100 occurrences. 4 = Apparently secure, though it may be quite rare in parts of its range, especially at the periphery; many occurrences. 5 = Demonstrably secure, though it may be quite rare in parts of its range, especially at the periphery; ineradicable under present conditions. These standardized ranks are used by all natural heritage programs and conservation data centers throughout North America. They are based on the best available information.

Mapping Units from Figure 4:

- 1 *Alnus rubra / Rubus spectabilis - Myrica californica / Carex obnupta - Athyrium filix-femina*

red alder / salmonberry - waxmyrtle / slough sedge - common ladyfern

Published equivalent(s): ALNRUB / RUBSPE / CAROBN - LYSAME

Conservation Rank: G4S4

This community occurs only at the northern end of the study area near Twomile Creek. It is wetland type. Overstory composition is dominated by red alder, but cascara is patchy as well. The shrub layer is dominated by salmonberry and waxmyrtle, with lesser quantities of evergreen huckleberry and salal. The forb layer is dominated by slough sedge and lady fern.

- 2 *Alnus rubra / Rubus spectabilis / Carex obnupta - Lysichiton americanus*

red alder / salmonberry / slough sedge - skunkcabbage

Published equivalent(s): ALNRUB / RUBSPE / CAROBN - LYSAME

Conservation Rank: G4S4

This community occurs only at the north end of the study area near Twomile Creek. It is characterized by an overstory dominated by red alder and lesser amounts of shore pine and sitka spruce, underlain by hooker willow, black twinberry, salmonberry, waxmyrtle, slough sedge, small-fruited bulrush, skunkcabbage, and lesser amounts of reed canarygrass, lady fern, and water parsley. The community is wetland and forms the transition zone between the herbaceous community to the west and the interior forest swamp to the east.

- 3 *Ammophila arenaria with possible remnant Festuca rubra or Poa macrantha community components*

European beachgrass with possible remnant red fescue or seashore

bluegrass community components

Published equivalent(s): AMMARE; Remnant FESRUB OR
POAMAC COMMUNITY COMPONENTS

Conservation Rank: NA;G1S1;G2S1

This community type is approximate and represents isolated patches of grassland in a gorse matrix. The isolated patches often contain some vestiges of previous native plant communities such as those dominated by red fescue or seashore bluegrass. European beachgrass is the current dominant.

4 *Ammophila arenaria* with remnant *Juncus lesueurii* community components**European beachgrass with remnant salt rush community components**

Published equivalent(s): AMMARE;JUNLES

Conservation Rank: NA;G3S3

This community type is transitional between invading European beachgrass community and the native salt rush community. Species present include European beachgrass, salt rush, beach knotweed, hairy cat's-ear and red fescue.

5 *Ammophila arenaria* with remnant *Poa macrantha* and / or *Festuca rubra* community components**European beachgrass with remnant seashore bluegrass and / or red fescue community components**

Published equivalent(s): AMMARE; FESRUB-PTEAQU

Conservation Rank: NA; G3S3

Plant communities falling under this aggregated grouping are dominated over most of their area by European beachgrass, but contain vestiges of the seashore bluegrass and/or red fescue dunal associations. Associated species include: European beachgrass, red, fescue, seashore bluegrass, beach knotweed, seashore lupine, beach sagewort, bracken fern, salt rush, spiny sandmat, beach evening primrose, beach silvertop, and hairy cat's ear in various quantities..

6 *Carex obnupta* - *Argentina egedii***slough sedge - Pacific silverweed**

Published equivalent(s): CAROBN-ARGEGE

Conservation Rank: G4S4

This wetland association is associated with topographic depressions that hold water well into the growing season. Slough sedge and Pacific silverweed dominate the interior of these associations, with lesser amounts of bentgrass, salrush, skullcap speedwell, falcate rush, and sometimes other sedges sometimes also being significant components. The edges of these wetlands often have hooker willow, gorse, and/or shore pine.

7 *Carex obnupta* - *Juncus lesueurii***slough sedge - salt rush**

Published equivalent(s): CAROBN; JUNLES

Conservation Rank: G4S4; G3S3

This degraded wetland community is characterized primarily by slough sedge and salt rush. It was formerly covered partially by gorse, but this was mulched down in recent years. Seedling and sapling

slough sedge and shore pine are present. Other associated herbs include lesser hawkbit, cudweed, European beachgrass, and silver hairgrass. The hydrology of this site is somewhat drier than most of the similar wetlands in the study area, and wetland status is not definite over the whole polygon.

8 *Chamaecyparis lawsoniana / Vaccinium ovatum*

Port Orford cedar / evergreen huckleberry

Published equivalent(s): CHALAW/VACOVA

Conservation Rank: G1S1

This community grouping is variable. Overstory species always include Port Orford cedar, but the other trees species present vary by stand. Other tree species occurring with Port Orford cedar in this grouping include: douglas-fir, shore pine, red alder, and madrone. Evergreen huckleberry is always present in the shrub layer, but the presence of salal, waxmyrtle, and hairy manzanita are less constant. Forb layer species include bracken fern, California sweet grass, rattlesnake plantain, kinnikinnik, training blackberry, yerba Buena, and honeysuckle.

9 *Chamaecyparis lawsoniana / Vaccinium ovatum wetland variant*

Port Orford cedar / evergreen huckleberry wetland variant

Published equivalent(s): NA; CHALAW-VAOV

Conservation Rank: G1S1

This forested wetland community occurs in a swale in the southeast corner of the study area. It is a variant on the classic Port Orford cedar/ Evergreen huckleberry association. Tree species present include shore pine, sitka spruce, Port Orford cedar, white fir, red alder, and cascara. The shrub layer usually contains waxmyrtle, evergreen huckleberry, salal, and salmonberry. Other shrubs that are patchily present include black twinberry, crabapple, and hooker willow. Herb layer species present include slough sedge, trailing blackberry, swordfern, and soft rush.

10 *Festuca rubra dune community with emerging Ammophila arenaria community characteristics*

red fescue dune community with emerging European beachgrass community characteristics

Published equivalent(s): FESRUB DUNE COMMUNITY WITH EMERGING AMMARE COMMUNITY CHARACTERISTICS

Conservation Rank: NA; G1S1

This community is a remnant of the important red fescue dunal community that is starting to be invaded by European beachgrass. Species present include European beachgrass, red fescue, beach knotweed, beach sagewort, seashore lupine, beach evening primrose, salt rush, and beach silvertop. This is the best remaining example of this community in the study area. It contains a single plant of the state-listed threatened plant species silvery phacelia, and hundreds of individuals of the rare species beach sagewort.

11 *mulched gorse: Ulex europaeus / weeds*

mulched gorse: gorse / weeds

Published equivalent(s): MULCHED GORSE: ULEU/WEEDS

Conservation Rank: NA

This association was either monoculture gorse or dense gorse with sparse European beachgrass and native grass remnants prior to recent mechanical mulching and spraying. The community still

contains some larger living gorse plants and millions of seedlings. The underlying soil is variably covered with a blanket of ground gorse. Weeds such as ragworts, groundsels, European beachgrass, hairy-cat's-ear, etc. are the primary colonizers of the disturbed ground.

12 *Phalaris arundinacea - Scirpus micranthus - Carex obnupta (- Typha latifolia) / water*

reed canarygrass - smallfruit bulrush - slough sedge (- cattail) / water

Published equivalent(s): CAROBN,SCIMIC

Conservation Rank: ~G4S4

This wetland community occurs along the banks of Twomile Creek at the extreme north of the study area. Reed canarygrass, small-fruited bulrush, slough sedge, and cattail dominate. Beaver activity is prolific and there are several beaver dams in the vicinity of this polygon.

13 *Picea sitchensis - Pinus contorta - Alnus rubra / Rubus spectabilis - Salix hookeriana - Myrica californica / Carex obnupta - Lysichiton americanus*

Sitka spruce - shore pine - red alder / salmonberry - hooker willow - waxmyrtle / slough sedge - skunkcabbage

Published equivalent(s): PINCON/CAROBN & PICSIT/CAROBN-LYSAME & PICSIT-PINCONC/GAUSHA-VAOV

Conservation Rank: G1S1,G3S1,G3S3

This forested swamp community occurs in the northern half of the study area at the edge of the transition from forest to the herblands adjacent to Twomile Creek. The tree layer is characterized by sitka spruce, shore pine, and red alder, with rare patches of western redcedar. The shrub layer is composed of salmonberry, hooker willow, and waxmyrtle. The herb layer is dominated by slough sedge, skunk cabbage, water parsley, and lady fern. There are areas of patchy or sparse swordfern. This community is a young example of what will probably develop into classic sitka spruce/ slough sedge-skunkcabbage swamp – a plant community with the highest conservation ranking.

14 *Picea sitchensis / Garrya elliptica - Vaccinium ovatum - Gaultheria shallon / Calamagrostis nutkaensis - Maianthemum dilatatum - Hierochloa occidentalis*

Sitka spruce / wavyleaf silktassel - evergreen huckleberry - salal / Pacific reedgrass - false lily of the valley - California sweetgrass

Published equivalent(s): ~PICSIT/VACOVA

Conservation Rank: ~S2

This very interesting plant community is found in the southwest corner of the study area on a forested mound (stabilized dune). The overstory is dominated by sitka spruce. Shrub layer associates include silktassel, evergreen huckleberry, and salal. The herb layer differentiates this community from other dune-top communities along with the absence of douglas-fir and madrone. Herb layer components are California sweetgrass, nootka reedgrass, and false lily of the valley. This community also hosts two rare lichen species: *Niebla cephalota* and *Heterodermia leucomelos*.

15 *Picea sitchensis / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex obnupta)*

Sitka spruce / waxmyrtle - evergreen huckleberry - salal / (slough sedge)

Published equivalent(s): PICSIT/VACOVA

Conservation Rank: G3S3

This forested community occurs in a single location near the center of the southern portion of the study area. It is centered on a depression to the north of a forested dune ridge, but it extends upslope on the south and west sides.. The overstory is dominated by sitka spruce. Shrub components are waxmyrtle, evergreen huckleberry, and salal. Slough sedge is patchy in the lowest-lying areas, which often wetlands.

- 16 *Picea sitchensis* (- *Pinus contorta* - *Pseudotsuga menziesii*) / *Ulex europaeus* - *Garrya elliptica* - *Vaccinium ovatum*

Sitka spruce (- shore pine - Douglas-fir) / gorse - wavyleaf silktassel - evergreen huckleberry

Published equivalent(s): NA

Conservation Rank: NA

This community occurs on the west flank of a forested dune ridge. It is severely degraded by gorse. Native shrubs present include silktassel and evergreen huckleberry. The tree layer is dominated by sitka spruce, but douglas-fir and shore pine are also present.

- 17 *Pinus contorta* - *Picea sitchensis* - *Alnus rubra* / *Myrica californica* - *Vaccinium ovatum* - *Gaultheria shallon* / *Carex obnupta* (- *Lysichiton americanus*)

shore pine - Sitka spruce - red alder / waxmyrtle - evergreen huckleberry - salal / slough sedge (- skunkcabbage)

Published equivalent(s): PINCONC / CAROBN

Conservation Rank: G1S1

This forested swamp community occurs in the northern half of the study area. The tree layer is characterized by sitka spruce, shore pine, and red alder, with rare patches of western redcedar. The shrub layer is composed of waxmyrtle, evergreen huckleberry, and salal. The herb layer is dominated by slough sedge, and patchy skunk cabbage. This community is a young example of what will probably develop into classic sitka spruce/ slough sedge-skunkcabbage swamp – a plant community with the highest conservation ranking.

- 18 *Pinus contorta* - *Picea sitchensis* / *mulched Ulex europaeus* / *Ammophila arenaria*

shore pine - Sitka spruce / mulched gorse / European beachgrass

Published equivalent(s): NA

Conservation Rank: NA

This association was previously characterized as scattered sitka spruce and shore pine underlain by dense gorse and European beachgrass prior to recent mechanical mulching and spraying. The community still contains some larger living gorse plants and millions of seedlings. The underlying soil is variably covered with a blanket of ground gorse. Weeds such as ragworts, groundsels, European beachgrass, coastal burnweed, hairy-cat's-ear, etc. are the primary colonizers of the disturbed ground.

- 19 *Pinus contorta* - *Picea sitchensis* / *Ulex europaeus*

shore pine - Sitka spruce / gorse

Published equivalent(s): PINCON-PICSIT/ULEEUR

Conservation Rank: NA

This association is essentially shore pine underlain by gorse. There are patches of remnant native species such as waxmyrtle, cascara, and evergreen huckleberry. Wetter topographic positions have sparse slough sedge and salmonberry holding out against the invading gorse.

20 *Pinus contorta - Picea sitchensis / Ulex europaeus (- Vaccinium ovatum) (- Myrica californica)*

shore pine - Sitka spruce / gorse (- evergreen huckleberry) (- waxmyrtle)

Published equivalent(s): SERIOUSLY DEGRADED PICSIT-PINCON/GAUSHA-VACOVA

Conservation Rank: NA;G3S3

This association is essentially shore pine and sitka spruce woodland underlain by gorse. There are some patches of remnant native species such as waxmyrtle, cascara, evergreen huckleberry, and salal. European beachgrass is sometimes present. Some areas were planted decades ago with either knobcone pine or Monterey pine which is now large and dominant.

21 *Pinus contorta - Pseudotsuga menziesii - Arbutus menziesii (- Picea sitchensis) / Garrya elliptica - Vaccinium ovatum (- Myrica californica)*

shore pine - Douglas-fir - madrone (- Sitka spruce) / wavyleaf silktassel - evergreen huckleberry (- waxmyrtle)

Published equivalent(s): NA; ~PINCON-PSEMEN/MYRCAL-VACOVA

Conservation Rank: NA; ~S1

This important plant community occurs on forested dunes, ridges, and higher/drier topography. This community has not previously been described in the ecological literature. Madrone and silktassel are the main indicators of the association. Dunal communities of this composition appear to be confined to inland dunes in the Bandon and Coos Bay dune sheets – roughly stretching between Floras Lake and the John Dellenback trailhead and day use area near Reedsport. Rare madrone-douglas fir/ salal and madrone-douglas fir/ evergreen huckleberry associations have been described in the San Juan islands of Washington, but these do not quite match. Vegetation composition: trees: madrone, douglas-fir, shore pine, sitka spruce; shrubs predominantly evergreen huckleberry, silktassel, and less constant waxmyrtle and hairy manzanita; herb layer variably populated by yerba Buena, hairy honeysuckle, bracken fern, rattlesnake plantain, California sweetgrass, and swordfern. Because of the apparent rarity of this association, it was given a conservation ranking of S1 – the highest ranking, on par with the shore pine/hairy manzanita association, with which it intergrades.

22 *Pinus contorta - Pseudotsuga menziesii - Picea sitchensis / Ulex europaeus*

shore pine - Douglas-fir - Sitka spruce / gorse

Published equivalent(s): NA

Conservation Rank: NA

This association is essentially shore pine, sitka spruce, and douglas-fir woodland underlain by gorse. There are some patches of remnant native species such as waxmyrtle, cascara, evergreen huckleberry, and salal. European beachgrass is sometimes present. Some areas were planted decades ago with either knobcone pine or Monterey pine which is now large and dominant.

23 *Pinus contorta - Pseudotsuga menziesii / Garrya elliptica - Vaccinium ovatum - Arctostaphylos columbiana / Pteridium aquilinum*

shore pine - Douglas-fir / wavyleaf silktassel - evergreen huckleberry -

hairy manzanita / bracken fern

Published equivalent(s): NA; ~PINCON-PSEMEN/MYRCAL-VACOVA

Conservation Rank: ~S1

This plant community is essentially the same as the shore pine - Douglas-fir - madrone (- Sitka spruce) / wavyleaf silktassel - evergreen huckleberry (- waxmyrtle) association, but without the madrone. The abundance of hairy manzanita suggests that it may be transitional with the shore pine/hairy manzanita association.

24 *Pinus contorta - Pseudotsuga menziesii / Myrica californica - Vaccinium ovatum*

shore pine - Douglas-fir / waxmyrtle - evergreen huckleberry

Published equivalent(s): PINCON-PSEMEN/MYRCAL-VACOVA

Conservation Rank: G3S3

This community occurs primarily along low ridges. The overstory composition is predominantly shore pine and douglas-fir, although madrone is occasionally present. Understory shrubs include waxmyrtle, evergreen huckleberry, and salal. Bracken fern is the primary herb, although European beachgrass is sometimes present, particularly along edges with more open associations.

25 *Pinus contorta / Ammophila arenaria - Juncus lesueurii - Polygonum paronychia - Hypochaeris radicata - Festuca rubra*

shore pine / European beachgrass - salt rush - beach knotweed - hairy cats ear - red fescue

Published equivalent(s): REMNANT FESRUB COMMUNITY SUCCEEDING TO PICO/AMAR

Conservation Rank: NA;G1S1

This community occurs in the south of the study area on the edge of a higher quality red fescue remnant dunal community. The tree layer is composed of shore pine. Herbaceous components are split between remnants and invaders. Species include: European beachgrass, salt rush, beach knotweed, hairy cat's ear, and red fescue. Intact red fescue communities have the highest conservation ranking.

26 *Pinus contorta / Arctostaphylos columbiana*

shore pine / hairy manzanita

Published equivalent(s): PINCON/ARCCOL -> PINCON-PSEMEN/MYRCAL-VACOVA

Conservation Rank: G1S1;G3S3

This plant community occurs mainly on relatively open woodland flats and toe slopes in the southern portion of the study area. The tree layers is predominantly shore pine. Douglas fir and madrone can be minor components in some areas, particularly at interfaces with communities in which they are dominants. Understory shrubs include hairy manzanita, waxmyrtle, evergreen huckleberry, gorse, and sometimes coyotebrush. Herb and subshrub layer components include kinnikinnik, bracken fern, European beachgrass, red fescue, and salt rush. The shore pine/hairy manzanita plant association has the highest conservation ranking, G1S1, and is considered a conservation priority habitat. Some examples of this community within the study area are significantly degraded by gorse, and many are transitioning to the more common and lower ranked communities shore pine/waxmyrtle-evergreen huckleberry-salal or shore pine-douglas fir/waxmyrtle-evergreen huckleberry.

27 *Pinus contorta / Arctostaphylos uva-ursi*

shore pine / kinnikinnik

Published equivalent(s): PINCON/ARCUVA

Conservation Rank: G1S1

This plant community occurs mainly on relatively open woodland flats and toe slopes in the southern portion of the study area. The tree layers is predominantly shore pine. Douglas fir and madrone can be minor components in some areas, particularly at interfaces with communities in which they are dominants. Understory shrubs include waxmyrtle, evergreen huckleberry, and gorse.. Herb and subshrub layer components include kinnikinnik, bracken fern, European beachgrass, red fescue, seashore lupine, beach knotweed, spiny sandmat, hairy cats ear, lesser hawkbit, seashore bluegrass, and salt rush. The shore pine/kinnikinnik plant association has the highest conservation ranking, G1S1, and is considered a conservation priority habitat. Some examples of this community within the study area are significantly degraded by gorse, and many are transitioning to the equally highly rated shore pine/hairy manzanita or more common and lower ranked communities shore pine/waxmyrtle-evergreen huckleberry-salal or shore pine-douglas fir/waxmyrtle-evergreen huckleberry.

28 Pinus contorta / Carex obnupta**shore pine / slough sedge**

Published equivalent(s): PINCON/CAROBN

Conservation Rank: G1S1

This forest swamp community occurs in depressions and low plains. The overstory is comprised of shore pine. Understory shrubs are general sparse in the centers of these units, and may include waxmyrtle, evergreen huckleberry, and salal. Edges with more upland communities generally have high cover of these shrub species. The herb layer is dominated by slough sedge. Bracken fern, rattlesnake plantain, bentgrass, rushes, skullcap speedwell, and /or swordfern are sometimes present. This community has the highest conservation ranking, G1S1.

29 Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon**shore pine / waxmyrtle - evergreen huckleberry - salal**

Published equivalent(s): NA; ~PICSIT-PINCON/GAUSHA-VACOVA

Conservation Rank: NA

This community is really widespread across the study area, but is usually mapped as a mosaic community with shore pine/slough sedge community – i.e., as shore pine/waxmyrtle-evergreen huckleberry, salal/(slough sedge). If the slough sedge pockets (which tend to be small and unamappable) were larger and more easily defined, much of the area mapped under the later name would actually be in this type. Much of the shore pine hairy manzanita and shore pine/kinnikinnik habitat is transitioning to this type as the canopy closes and the stands mature. The tree cover of this community is dominated by shore pine. The shrub cover is dominated by evergreen huckleberry, waxmyrtle, and salal. Rhododendron, crabapple, and hairy manzanita are occasional in some locations. The herb layer is non-existent to vestigial due to the density of the tree and shrub cover. Some of these stands are very difficult to move through. This plant community will likely become colonized by either Sitka spruce or douglas-fir, transitioning it to either the sitka spruce/evergreen huckleberry or the douglas-fir-shore pine/waxmyrtle-evergreen huckleberry communities.

30 Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon - Ulex europaeus / Carex obnupta**shore pine / waxmyrtle - evergreen huckleberry - salal - gorse / slough sedge**

Published equivalent(s): PICSIT-PINCON/GAUSHA-VACOVA

Conservation Rank: G3S3

This is degraded form of the shore pine / waxmyrtle - evergreen huckleberry - salal / (slough sedge) community. Degradation is due to gorse invasion. In a situation where this community might occur over a large area or where it is adjacent to closed canopy forest, the gorse might be expected to decrease in abundance as the tree and taller shrub canopy closes. In the case of this particular polygon, the community is narrow and flanked by dense gorse – a situation that will not likely allow sufficient canopy closure to cause gorse to drop due to competition for light.

31 *Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex obnupta)*

shore pine / waxmyrtle - evergreen huckleberry - salal / (slough sedge)

Published equivalent(s): PICSIT-PINCON/GAUSHA-VACOVA; PINCON/CAROBN

Conservation Rank: G3S3;G1S1

This community represents a mosaic habitat in which the shore pine/waxmyrtle-evergreen huckleberry-salal community and the shore pine/slough sedge community are unmappably intermixed or in which they intergrade in transitional areas. This is one of the most widespread and abundant mapping units in the southern portion of the study area. Tree layer composition is dominated by shore pine, but Sitka spruce is often present and douglas-fir is sometimes present. There are areas along the western boundary of the study area in which knobcone or Monterey pine are abundant due to dune stabilization plantings more than 40 years ago. Where the community is drier or topographically elevated, the shrub layer is dense with waxmyrtle, evergreen huckleberry, and often salal. The herb layer in these situations is usually very sparse due to shrub density, but bracken fern and kinnikinnik are sometime present. Wetter areas usually contain these shrubs at lower densities, and have an herb layer dominated by slough sedge. Gorse is sometimes significant, particularly along edges with more abundant sunlight penetration and in transition zones with polygons dominated by gorse. Some of these gorse-infested zone approach the shore pine/gorse(-waxmyrtle)(-evergreen huckleberry) association.

32 *Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / Carex obnupta*

shore pine / waxmyrtle - evergreen huckleberry - salal / slough sedge

Published equivalent(s): PINCON/CAOB WITH AREAS TRENDING TOWARD
PINCON-PICSIT/GAUSHA-VACOVA

Conservation Rank: G1S1;G3S3

This community represents a mosaic habitat in which the shore pine/waxmyrtle-evergreen huckleberry-salal community and the shore pine/slough sedge community are unmappably intermixed or in which they intergrade in transitional areas. Slough sedge is much more abundant in this mapping unit than in the shore pine / waxmyrtle - evergreen huckleberry - salal / (slough sedge) community and the community's affinities are much more allied with the published shore pine/slough sedge community than with the sitka spruce-shore pine/salal-evergreen huckleberry community.

33 *Pinus contorta / Ulex europaeus*

shore pine / gorse

Published equivalent(s): PINCON/ULEEUR

Conservation Rank: NA

This highly degraded community is characterized by an overstory tree layer dominated by shore pine, underlain by dense and nearly impenetrable gorse. Sitka spruce is sometimes present. Sometimes sparse waxmyrtle is present with the gorse in the shrub layer. When an herb layer is present it sometimes contains European beachgrass in drier locations. One location in the north of the study

area near Twomile Creek has vestigial hooker willow, salmonberry, and slough sedge. This shore pine gorse community has a broad range of possible habitat that it can over take: everything from bare sand to shore pine/slough sedge communities at the drier end of its hydrology range.

34 *Pinus contorta / Ulex europaeus / Ammophila arenaria*

shore pine / gorse / European beachgrass

Published equivalent(s): NA

Conservation Rank: NA

This highly degraded community is characterized by an overstory tree layer dominated by shore pine, underlain by the invasive species gorse and European beachgrass. Gorse may be patchy in tall and dense, nearly impenetrable patches interspersed with European beachgrass sandy habitat, or gorse may be more widely spread and smaller. European beachgrass areas may contain vestiges of native dunal communities containing red fescue, salt rush, or seashore blue grass, but these are infrequent and barely, if at all, present over most of the coverage of this mapping unit. Bracken fern, salt rush, pearly everlasting, rattlesnake plantain, lesser hawkbit, hair cat's-ear, and/or yellow hairgrass can occur with European beachgrass where gorse is not overly dense.

35 *Pinus contorta / Ulex europaeus / Ammophila arenaria - Festuca rubra - Juncus lesueurii*

shore pine / gorse / European beachgrass - red fescue - salt rush

Published equivalent(s): REMNANT FESRUB-JUNLES COMMUNITY

Conservation Rank: NA;G3S3

This highly degraded community is characterized by an overstory tree layer dominated by shore pine that is underlain by the invasive species gorse and European beachgrass. The community contains vestiges of the native red fescue-salt rush community. Other associated species include hair cat's-ear, silver hairgrass, and yellow hairgrass.

36 *Pinus contorta / Ulex europaeus / Ammophila arenaria with possible remnant Festuca rubra or Poa macrantha community components*

shore pine / gorse / European beachgrass with possible remnant red fescue or seashore bluegrass community components

Published equivalent(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS

Conservation Rank: NA; G1S1; G2S1

This highly degraded community is characterized by sparse scattered shore pine, underlain by the invasive species gorse and European beachgrass. Gorse is interspersed with European beachgrass sandy habitat. European beachgrass areas may contain vestiges of native dunal communities containing red fescue, salt rush, or seashore blue grass.

37 *Pinus contorta / Ulex europaeus / Ammophila arenaria with remnant Festuca rubra dune community components*

shore pine / gorse / European beachgrass with remnant red fescue dune community components

Published equivalent(s): AMMARE WITH REMNANT FESRUB DUNE COMMUNITY COMPONENTS

Conservation Rank: NA;G1S1

This degraded community is characterized by scattered shore pine, underlain by the European

beachgrass and some gorse. Gorse is sporadically interspersed with European beachgrass sandy habitat. European beachgrass areas contain vestiges of the native red fescue dunal community, which has the highest conservation ranking. Besides European beachgrass and red fescue, other herbs present include beach knotweed, seashore lupine, hairy cat's-ear, and seashore bluegrass.

38 *Pinus contorta* / *Ulex europaeus* / *Poa macrantha* - *Festuca rubra*

shore pine / gorse / seashore bluegrass - red fescue

Published equivalent(s): REMNANT FESRUB-PTEAQU COMMUNITY SUCCEEDING TO FOREST

Conservation Rank: (G3S3)

This community is transitional between the open, sandy red fescue-bracken fern community and a currently undifferentiable shore pine forest type. Gorse is the major shrub present. Herbs present include European beachgrass, seashore bluegrass, and red fescue. The standard successional pathway from sandy grassland, to shore pine/kinnikinnik to shore pine/waxmyrtle-evergreen huckleberry-salal has been interrupted in this case by invasion of gorse and European beachgrass. Without these species kinnikinnik would likely colonize.

39 *Pinus contorta* / *Ulex europaeus* (- *Myrica californica*) (- *Vaccinium ovatum*) / (*Carex obnupta*)

shore pine / gorse (- waxmyrtle) (- evergreen huckleberry) / (slough sedge)

Published equivalent(s): PINCON/CAROBN?

Conservation Rank: NA;G1S1

This association is essentially shore pine underlain by gorse. There are patches of the remnant native species waxmyrtle and evergreen huckleberry. Wetter topographic positions contain slough sedge.

40 *Pseudotsuga menziesii* - *Abies concolor* - *Picea sitchensis* / *Vaccinium ovatum* - *Garrya elliptica* - *Gaultheria shallon* / *Satureja douglasii* - *Polystichum munitum* - *Hierochloa occidentalis*

Douglas-fir - white fir - Sitka spruce / evergreen huckleberry - wavyleaf siltassel - salal / yerba buena - western swordfern - California sweetgrass

Published equivalent(s): NA; ~PICSIT/VACOVA TRANSITIONAL WITH UNDESCRIBED COMMUNITY ABOVE AND COMPLICATED BY UNUSUAL ABCO PRESENCE.

Conservation Rank: ~S1

This important plant community occurs on eastern side of a forested dune ridge in a single location in the southern portion of the study area. This community has not previously been described in the ecological literature. White fir and siltassel are the main indicators of the association. Vegetation composition: trees: douglas-fir, white fir, sitka spruce; shrubs predominantly evergreen huckleberry, siltassel, and salal and hairy manzanita; herb layer variably populated by yerba Buena, swordfern, California sweetgrass, hairy honeysuckle, bracken fern, rattlesnake plantain, sweet-scented bedstraw, poisonoak, and white flowered hawkweed. This is the only location in which poison oak was observed in the study area. The presence of white fir in Oregon dunal systems is significant, especially in that the species was not present at all in the inventory of the Oregon Dunes National Recreation Area. Because of the apparent rarity of this association, it was given a conservation ranking of S1 – the highest ranking, on par with the shore pine - Douglas-fir - madrone (- Sitka spruce) / wavyleaf siltassel - evergreen huckleberry (- waxmyrtle) association, with which it intergrades nearer the top of the dune ridge.

- 41** *Pseudotsuga menziesii - Pinus contorta - Arbutus menziesii - Picea sitchensis / Vaccinium ovatum - Myrica californica - Gaultheria shallon*
Douglas-fir - shore pine - madrone - Sitka spruce / evergreen huckleberry - waxmyrtle - salal
 Published equivalent(s): PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation Rank: G3S3
 This plant community occurs on eastern side of a forested dune ridge in a single location in the southern portion of the study area. It is essentially a variant on the shore pine-douglas fir/waxmyrtle-evergreen huckleberry association. Overstory trees are dominated by douglas-fir, shore pine, madrone, and lesser amounts of sitka spruce. The shrub layer is thick with waxmyrtle, evergreen huckleberry, and salal. Very little herbaceous vegetation is present due to the density of the shrub layer.
- 42** *Pseudotsuga menziesii - Pinus contorta - Picea sitchensis (- Arbutus menziesii) / Garrya elliptica - Myrica californica - Ulex europaeus - Vaccinium ovatum / Hierochloa occidentalis*
Douglas-fir - shore pine - Sitka spruce (- madrone) / wavyleaf silktassel - waxmyrtle - gorse - evergreen huckleberry / California sweetgrass
 Published equivalent(s): NA; UNDESCRIBED GARRYA VARIANT ON PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation Rank: ~S1
 This community was noted in a single location in the south of the study area on a forested dune ridge. The vegetation appears to be similar to the nearby ridge to the northwest, but moderately to highly degraded by gorse, at least on the western face. Access to the ridge top was not possible from OPRD property, but the tree and shrub composition could be observed from below to a large extent.
- 43** *Salix hookeriana / Carex obnupta - Argentina egedii*
hooker willow / slough sedge - Pacific silverweed
 Published equivalent(s): SALHOO / (ARGEGE) - CAROBN
 Conservation Rank: G4S4
 This wetland plant community is widespread in lower topographic positions and concavities within the study area. It is characterized by a shrub layer dominated by hooker willow and an herb layer dominated by slough sedge and pacific silverweed. Other shrubs that are sometime present include waxmyrtle, evergreen huckleberry, salal and gorse. These species tend to be around the edges rather than in the interior of this wet habitat. Shore pine is occasional in some locations. Other herbs sometimes present include skullcap speedwell, lesser hawkbit, and bentgrass.
- 44** *Salix hookeriana / Carex obnupta - Argentina egedii; Vaccinium uliginosum / Carex obnupta*
hooker willow / slough sedge - Pacific silverweed; bog blueberry / slough sedge
 Published equivalent(s): SALHOO / (ARGEGE) - CAROBN; VACULI/CAROBN
 Conservation Rank: G4S4; G2S2
 This very important wetland community occurs in a single location along the eastern edge of the study area. Portions of the mapping unit are identical to the hooker willow / slough sedge - Pacific silverweed associations, but there are also small, unmappable inclusions of the bog blueberry/slough sedge association. Deeper water portions of this mosaic habitat are captured under mapping unit 46:

hooker willow / beaked sedge - slough sedge - Pacific silverweed. This mosaic habitat was assigned the conservation rank of the rare bog blueberry/slough sedge association, G2S2. Other herbaceous species present in this mosaic include bentgrass, witchgrass, marsh violet, creeping spikerush, northern bugleweed, and skullcap speedwell.

45 *Salix hookeriana* / *Carex obnupta* – *Sphagnum* sp.

hooker willow / slough sedge - sphagnum

Published equivalent(s): PINCON/CAROBN; SALHOO / (ARGEGE) - CAROBN

Conservation Rank: G1S1

This wetland community occurs in one small and isolated location in the study area. Although partially degraded by gorse, it is important because of the present of Sphagnum. Sphagnum wetlands are increasingly rare and are of high conservation concern. The Sphagnum species was not identified. Shore pine trees are present within this mapping unit. The shrub layer contains hooker willow and gorse. The herb layer is almost completely dominated by slough sedge.

46 *Salix hookeriana* / *Carex utriculata* - *Carex obnupta* - *Argentina egedii*

hooker willow / beaked sedge - slough sedge - Pacific silverweed

Published equivalent(s): SALHOO / (ARGEGE) - CAROBN

Conservation Rank: G4S4; G5S4

This wetland community occurs in areas that are inundated more deeply and for a longer time than most of the wetlands in the study area. It occurs in the midst of the hooker willow / slough sedge - Pacific silverweed; bog blueberry / slough sedge association. Hooker willow is patchy within this mapping unit. When Douglas spiraea is present it mostly occurs in the understory of the hooker willow clumps. The herb layer is variable according to water depth, but beaked sedge, slough sedge, and Pacific silverweed are fairly constant. Muddier areas (which indicate longer and deeper inundation) contain the additional species of northern water starwort and creeping spikerush. A vegetative violet (believed to be Marsh violet in the absence of flowers, which are necessary for conclusive identification) is patchy, and very abundant in some portions of the mapping unit.

47 *Ulex europaeus*

gorse

Published equivalent(s): NA

Conservation Rank: NA

This community is essentially a gorse monoculture.

48 *Ulex europaeus* / *Ammophila arenaria*

gorse / European beachgrass

Published equivalent(s): AMMARE; JUNLES

Conservation Rank: NA;G3S3

This community is primarily composed of gorse and European beachgrass. There are some areas with significant saltrush, hairy cat's ear, and/or yellow hairgrass presence. Shore pine is around the edges or sparsely present in the interior of these mapping units. At least some of the area covered by this mapping unit was likely of the saltrush association prior to invasion by gorse and European beachgrass.

49 *Ulex europaeus* / *Ammophila arenaria* with possible remnant *Festuca rubra* or *Poa macrantha* community components

gorse / European beachgrass with possible remnant red fescue or seashore bluegrass community components

Published equivalent(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS

Conservation Rank: NA;G1S1;G2S1

This highly degraded community is characterized by the invasive species gorse and European beachgrass. Gorse is interspersed with European beachgrass sandy habitat. European beachgrass areas may contain vestiges of native dunal communities containing red fescue, salt rush, or seashore blue grass. Herbaceous species present include European beachgrass, red fescue, seashore bluegrass, beach knotweed, hairy cat's ear, yellow and silver hairgrasses, lesser hawkbit, beach evening primrose, cottonbatting plant, and cudweed.

50 *Ulex europaeus / Ammophila arenaria with remnant Festuca rubra dune community components*

gorse / European beachgrass with remnant red fescue dune community components

Published equivalent(s): AMMARE WITH REMNANT FESRUB DUNE COMMUNITY COMPONENTS

Conservation Rank: NA; G1S1

This degraded community is characterized by gorse sporadically interspersed with European beachgrass in sandy habitat. Areas with reduced cover of gorse and beachgrass areas contain vestiges of the native red fescue dunal community, which has the highest conservation ranking. Besides European beachgrass and red fescue, other herbs present include seashore bluegrass, beach knotweed, hairy cat's-ear, yellow hairgrass, silver hairgrass, beach evening primrose, and cottonbatting plant.

51 *Ulex europaeus / Ammophila arenaria with remnant Festuca rubra or Poa macrantha community components*

gorse / European beachgrass with remnant red fescue or seashore bluegrass community components

Published equivalent(s): AMMARE WITH REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS

Conservation Rank: NA;G1S1;G2S1

This degraded community is characterized by gorse sporadically interspersed with European beachgrass in sandy habitat. Shore pine is present around the edges of on instance of this mapping unit. Areas with reduced cover of gorse and beachgrass areas contain vestiges of the native red fescue dunal community or the seashore bluegrass community, which have the highest conservation ranking. Herbs present include European beachgrass, red fescue, seashore bluegrass, beach knotweed, and hairy cat's-ear.

52 *Salix hookeriana / Phalaris arundinacea –Cirsium arvense – Heracleum lanatum (-Carex obnupta)*

hooker willow / reed canarygrass - canada thistle - cow parsnip (- slough sedge)

Published equivalent(s): SALHOO / (ARGEGE) - CAROBN

Conservation Rank: G4S4

This wetland community occurs on both banks of Twomile Creek at the northern extreme of the study area. It is significantly degraded by both reed canarygrass and Canada thistle. Elk and beaver use are very high and contribute to the poor condition of this mapping unit. Much of the hooker willow is

removed by beaver along the shore and for up to 30 feet back from the bank. The ground is riddled over much of the area with channels hidden beneath the surface of the vegetation. Slough sedge was probably a historic dominant in this area, but the cover of reed canarygrass and thistle, and cow parsnip has largely swamped this species now. Tufted hairgrass may also have historically been present. Giant vetch is very abundant in this community as well. Small-fruited bulrush is patchy, and mostly present on the southern side of Twomile Creek.

53 *Salix hookeriana* / *Carex obnupta* - *Scirpus microcarpus* - *Phalaris arundinacea*

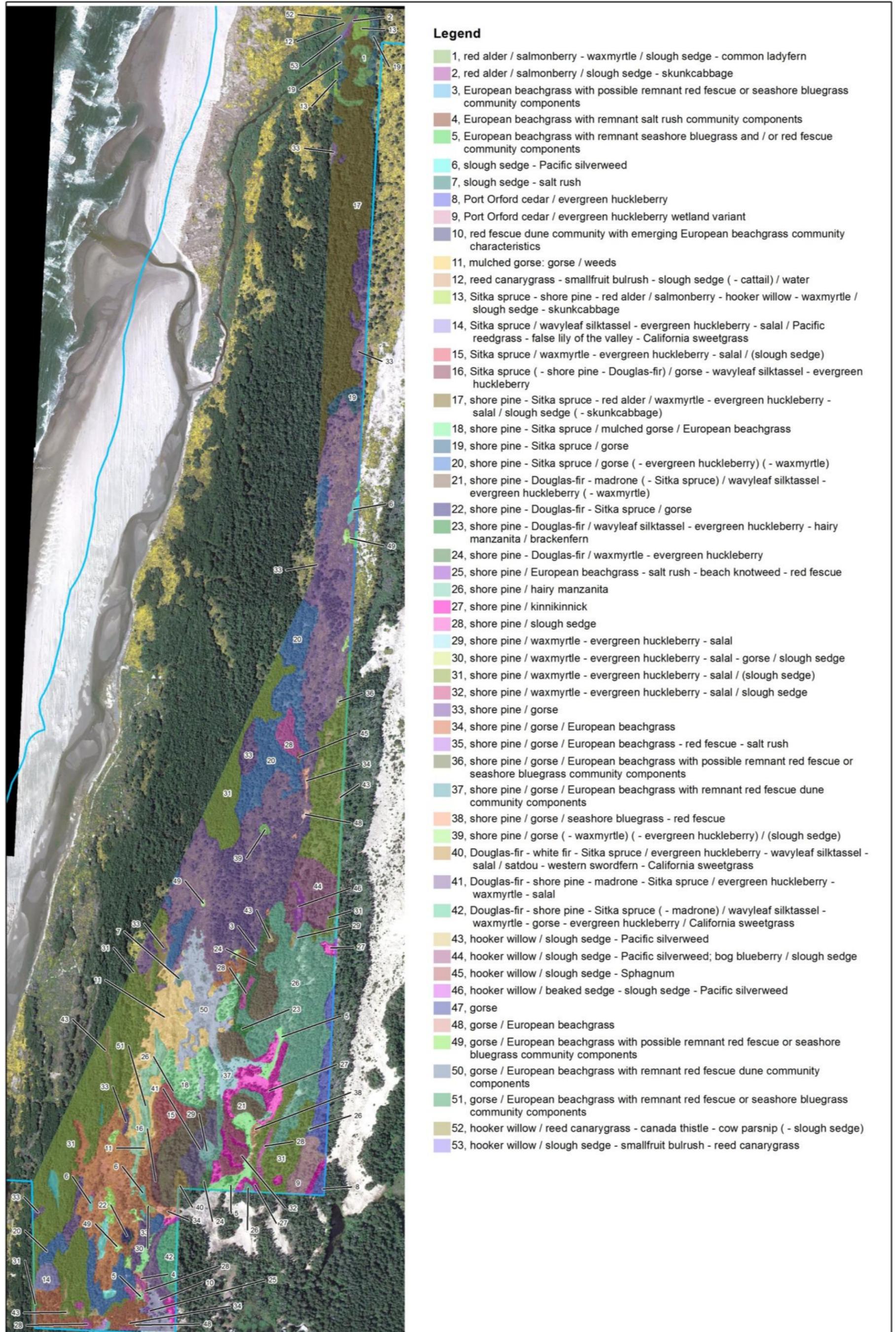
hooker willow / slough sedge - smallfruit bulrush - reed canarygrass

Published equivalent(s): SALHOO / (ARGEGE) - CAROBN

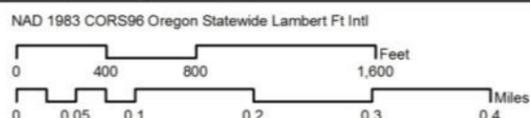
Conservation Rank: G4S4

This wetland community occurs in a deeper swale between the south bank of Twomile Creek and the shrubland and forested swamp areas adjacent to the south. Due to deposition of sediment during flood events, there is a low natural levy along the bank of Twomile Creek that is slightly higher than the swamp further away from the creek. This levy is within mapping unit 52, the hooker willow / reed canarygrass - canada thistle - cow parsnip (- slough sedge) community. The deeper swale south of this levy is characterized by a shrub layer of hooker willow, and an herb layer of slough sedge, small-fruited bulrush, reed canarygrass, and giant vetch.

Figure 4. Current Vegetation/Habitats



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Wetlands

A variety of wetland types occur across the study area. The distribution of wetlands is depicted in Figure 5, below.

Topographically low-lying or concave portions of the study area are usually at least partially wetland. No instances of perched wetlands were encountered in the study area, due primarily to the fact that the soils are essentially sand over all of the higher, rolling ground. Wetland habitat types include forested swamps, sedge meadows, and shrub swamps. The majority of the wetlands within the study area are characterized by abundance of slough sedge, hooker willow, and/or Pacific silverweed. There are, however, some prominent wetland types characterized by abundance of bog huckleberry, small-fruited bulrush, reed canarygrass, and beaked sedge.

No formal delineation was done in the course of this study. All assessment of potential wetlands was based on above ground indicators. True wetland and water feature extents are often smaller than those depicted in Figure 5, especially in areas mapped as “partially”, or “possibly” wetlands. These extent issues arise for three reasons:

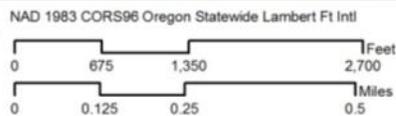
- 1) wetlands and non-wetlands often intermingle in unmappable mosaics of habitat. This patchwork is often made up of small patches of upland within an area predominantly wetland, or the converse – small wetlands in a matrix of upland. In many cases, hummocky ground is wet in the troughs and dry on the tops of the hummocks and minor ridges. *In this assessment, when true wetland extents are not mappable for reasons of habitat complications or “mosaicing”, the extent of the upland/wetland mosaics are mapped.*
- 2) Wetlands mapped on the subjective basis of surface indicators do not take all wetland indicators into consideration. Soil and subsurface hydrology characteristics must also be assessed in the process of formal wetland determination and delineation. In some cases, features mapped as wetlands based on surface vegetation are not actually wetlands when subjected to the full range of subsurface tests. In other cases, an area that is actually wetland might not be mapped as such based on vegetation alone because characteristic vegetation was absent due to deep shade under a forest canopy. This assessment intended to conservatively map potential wetlands – opting to err on the side of including rather than excluding potential wetlands. Potential wetlands and areas that include wetlands (but for which boundaries are imprecise) are mapped as “possible” and “partial” wetlands. Those features that are indubitably wet or that show a preponderance of obligate wetland vegetation are mapped as wetlands without these qualifying labels.

Because of the limited scope and detail of this assessment’s treatment of wetlands, any use of the wetland features mapped in this assessment should only be for general planning purposes. Specific construction designs that overlap with or closely approach these areas will need official wetland determination and delineation, leading up to Oregon Department of State Lands (DSL) and US Army Corps of Engineers (USACE) wetland permits.

Figure 5. Wetlands.



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Invasive Plants/Weeds

Invasive Plant Species (or weeds) are extremely pervasive in portions of the study area. The primary weeds of concern are gorse (*Ulex europaeus*) and European beachgrass (*Ammophila arenaria*). These species are very dense and competitive colonizers in this environment. Their biomass and density can reach levels high enough to completely displace all other species and radically change the structure, composition, and function of the habitats they invade. Invasive species that can take over to this extent are often referred to as “system-modifying weeds”. In the case of the proliferation of gorse and European beachgrass within the study area and in the larger Bandon State Natural Area as a whole, the effects of the species go beyond simply displacing vegetation. As sand stabilizers, these species have strongly contributed to the recently altered topography and hydrology of the study area – having replaced low, rolling, actively moving dunes with higher, stabilized dunes (see Historic Vegetation and Change, above).

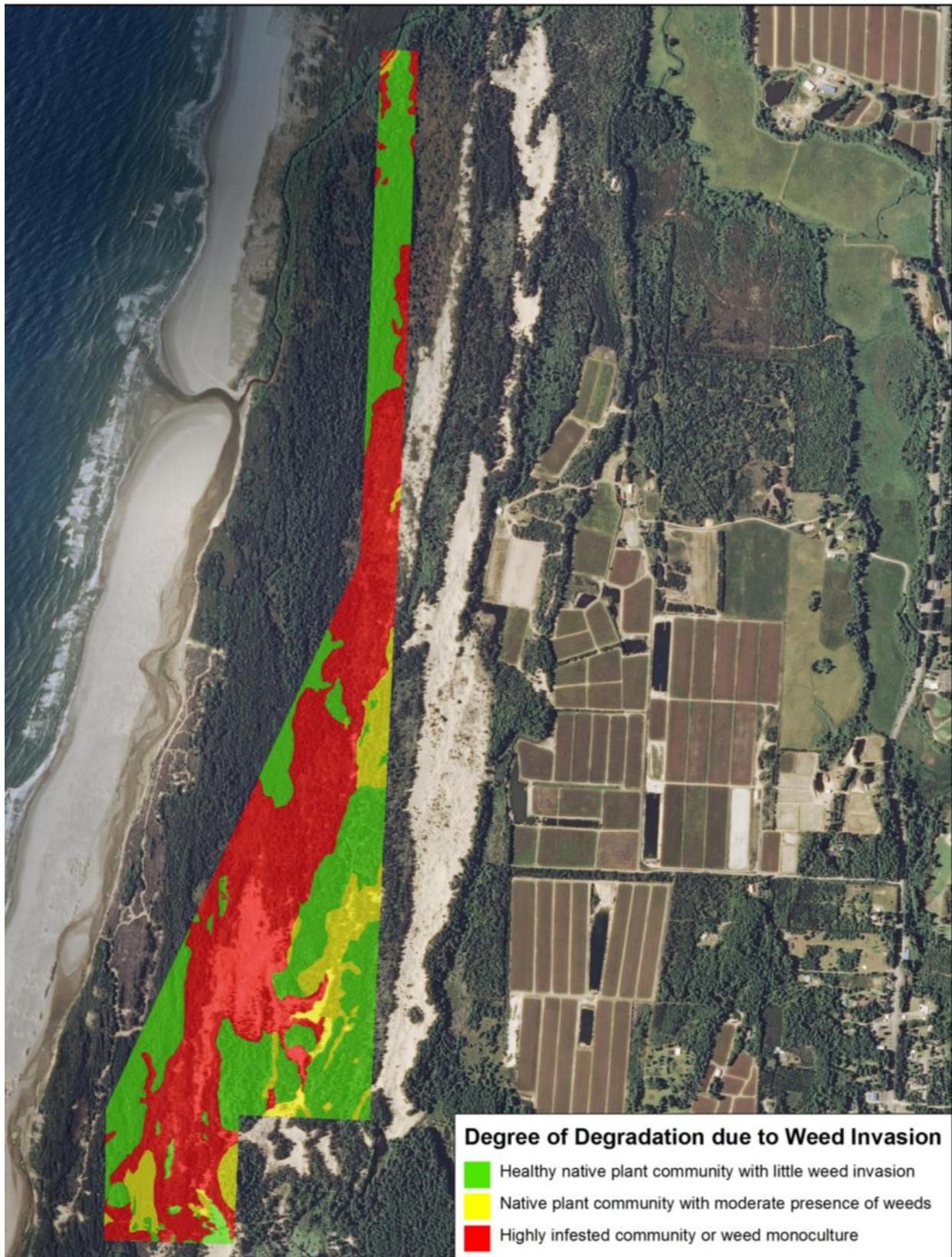
Several other species are very widespread and prominent in the study area, but do not generally cause significant risk of loss of native habitat types. These species are not system-modifying in the way that dense colonizers like gorse and European beachgrass are, and they usually occur sporadically and sparsely in open habitats in the study area. Species in this group include, hairy cat’s ear (*Hypochaeris radicata*), Lesser hawkbit (*Leontodon taraxacoides*), yellow hairgrass (*Aira praecox*), and silver hairgrass (*Aira caryophyllea*).

Gorse and European beachgrass are rapidly replacing rare native dunal habitats of high conservation priority in the southern portion of the study area. OPRD has mulched and sprayed large areas of gorse to reclaim dunal habitat in recent years. Biomass on the ground and germinating gorse seed are still abundant and many more years of control will be necessary to restore these habitats to native dunal conditions.

Under a relatively dense forest canopy, gorse and European beachgrass are not able to attain or maintain system-modifying densities. In these situations, the species are not as detrimental to habitat quality and function. This fact suggests the possibility of afforestation as a means of control in those areas that are either already completely lost and not feasible to restore, or in areas with no access by machine. Open, dunal habitat is a vanishing habitat of very high conservation priority, and afforestation should not be considered as a means of control where there is still some dunal function in place and where restoration is feasible.

At the extreme north end of the study area, the shores of Twomile Creek are densely colonized by reed canarygrass – another system-modifying weed. This degraded habitat extends well outside of the study area on adjacent Bandon State Natural Area lands flanking the creek. The habitat still contains substantial native plant abundance intermixed with the reed canarygrass. Restoration feasibility is low in this area.

Figure 6. Habitat Degradation Due To Weeds



Rare and Endangered Plant Species

Survey of the study area for rare plant species has resulted in documentation of a substantial number of sites of rare plant and lichen species. The rare species discovered are relatively localized. See Figure 7.

Systematic and focused rare plant surveys that have been completed up to the date of this report have been primarily for vascular plant species in dunal habitats. Lichen and bryophyte surveys of the area have not been exhaustive, and it is expected that further survey for lichen and bryophyte species would result in new sightings.

Focused rare plant surveys conducted in 2013 targeted all accessible potential habitat for plant species listed under the state or federal Endangered Species Acts (see Figure 8). These surveys were conducted by Sherri Laier (OPRD Southwest Oregon Natural Resource Specialist) and Noel Bacheller (OPRD Botanist) in October, 2013. Areas targeted for survey were informed by both aerial photo reconnaissance and past knowledge of rare species occurrence in the study area. All accessible habitat was surveyed completely by meandering the habitat.

Keith Saylor, a local amateur lichenologist and naturalist, independently found one location within the study area containing two rare lichen species and reported these sites to Sherri Laier and Noel Bacheller. The sites of each of the species were visited and verified *in situ* by Noel Bacheller in October 2013.

Four species of rare plants and lichens have been documented in the study area. These species are silvery phacelia (*Phacelia argentea*), beach sagewort (*Artemisia pycnocephala*), the lichen *Niebla cephalota*, and the lichen *Heterodermia leucomelos*. These species are briefly described below:

Silvery phacelia (*Phacelia argentea*)

Silvery phacelia occurs from California to the central Oregon Coast. It is listed as threatened under Oregon's Endangered Species Act and is protected by that law on state-owned land. It is protected as a sensitive species on federal lands in Oregon. The species occurs in unstabilized and semi-stabilized dunes and on bluffs and grasslands on the immediate coast. The species is threatened by development and habitat loss. The proliferation of invasive non-native plant species (especially European beachgrass, gorse, and broom species) is a major source of habitat loss not directly resulting from habitat conversion to developed uses. Two remaining populations of silvery phacelia are known to occur in the study area.

Beach sagewort (*Artemisia pycnocephala*)

This species occurs at between four and six sites along the Oregon coast. Although not listed under the State or Federal Endangered Species Acts, populations of this species occur much less frequently along the Oregon Coast than do the listed species silvery phacelia. Beach sagewort is protected as a sensitive species on federally owned lands in Oregon. The species is threatened by development and habitat loss. The proliferation of invasive non-native plant species (especially European beachgrass, gorse, and broom species) is a major source of habitat loss not

directly resulting from habitat conversion to developed uses. Beach sagewort occurs in the study area.

Heterodermia leucomelos

This species of lichen occurs sporadically in a restricted ecological niche of the coastal fog belt along the Pacific Ocean. It is known from a variety of locations around the world, but is rare in Oregon. It is protected as a sensitive species on federal lands in Oregon. The species is currently known only from the summit of one forested dune in the south of the study area. Threats include habitat loss, changes in oceanically influenced microclimate, and possibly air pollution.

Niebla Cephalota

Like *Heterodermia leucomelos*, this species of lichen occurs sporadically in a restricted ecological niche of the coastal fog belt along the Pacific Ocean from Mexico to Alaska. It is protected as a sensitive species on federal lands in Oregon. The species is currently known only from the summit of one forested dune in the south of the study area. Threats include habitat loss, changes in oceanically influenced microclimate, and possibly air pollution.

Potential Habitat for Other Rare Species

Potential habitat is present for a number of other rare species. This report will not address the wide range of potential sensitive species that could occur in the study area, but will instead focus on listed species that are protected by law on state lands. The full list of rare species known from the coast range ecoregion of Coos and Curry Counties, Oregon is presented in Appendix 2.

Table 3. State –listed species of the Coos and Curry County Coast

Scientific Name	Common Name	Heritage Global Rank	Heritage State Rank	Federal Status	State Status	Heritage List
<i>Abronia umbellata ssp. breviflora</i>	Pink sandverbena	G4G5T2	S1	SOC	LE	1
<i>Lilium occidentale</i>	Western lily	G1	S1	LE	LE	1
<i>Oenothera wolfii</i>	Wolf's evening-primrose	G1	S1	SOC	LT	1
<i>Phacelia argentea</i>	Silvery phacelia	G2	S2	SOC	LT	1

Abronia umbellata ssp. umbellata:

This species is known to occur along the shoreline of Bandon State Natural Area, but has not been found within the study area despite thorough survey of all open, sandy habitat suitable to the species in 2013. The open sandy habitats of the study area may be too far inland to be considered likely or suitable habitat. Figure 7b depicts broadly potential habitat that was surveyed for the species in 2013.

Lilium occidentale:

Possible, but not likely, habitat for this species occurs in shrub-dominated and open wetland areas within the study area. The Oregon Department of Agriculture characterizes western lily habitat as:

“..near the ocean in freshwater fens and on the edges of bogs, in coastal prairie and scrub, and in transition zones between these communities. The species also occurs in spruce forest, but plants in this habitat are stunted and do not produce flowers.”

The most likely potential habitat for the species is found along the south-eastern boundary in shrub and herbaceous wetlands characterized by either port Orford cedar and dense shrubs, or in the wetlands in and around the shore pine/bog blueberry-slough sedge community further north. This potential habitat is depicted in Figure 6b. No *Lilium* of any species was found in these habitats, but they cannot be definitively ruled out as potential due to season of survey and difficulty of access. Some of the species normally associated with *Lilium occidentale* are present in the mapped potential habitat, but the full suite is not present. Noticeably absent are *Ledum glandulosum* and fen and bog species such as *Tofieldia glutinosa*, *Trientalis arctica*, *Gentiana sceptrum*, and *Sisynchium californicum*. Species occurring in these wetlands are only an approximate indicator of suitable habitat, but they do not definitively indicate whether the species could be present. Western lily has been found in habitats without any of the common associates, especially in cases where weeds have replaced the original native plant community or where the lilies remain because of longevity and despite of habitat changes that have shifted the rest of the community toward another vegetative community. Apart from the apparently most suitable habitat mapped in Figure 7b, there are many other wetlands in the study area that are not thought to provide suitable habitat for western lily due to obviously well-drained soils (sand below highest winter water table) and monotonous *Carex obnupta*-*Potentilla anserina* habitat. Refinement of potential habitat through further study would be more difficult and cumbersome than thoroughly surveying the habitat for *Lilium occidentale* during the flowering period, and further illumination of the subject of lily presence should focus on the question of whether western lily does occur – not whether it could occur.

Oenothera wolffii, Wolf’s evening primrose:

The Oregon Department of Agriculture’s Plant Conservation Program describes wolf’s evening primrose habitat as:

“Well-drained sandy soil in coastal strands, roadsides and coastal bluffs. Native species associated with Wolf’s evening primrose include *Abronia latifolia*, *Abronia umbellata* ssp. *breviflora*, *Achillea millefolium*, *Anaphalis margaritacea*, *Baccharis pilularis*, *Elymus mollis*, *Equisetum arvense*, *Fragaria chiloensis*, *Garrya elliptica*, *Gaultheria shallon*, *Lonicera involucrata*, *Lupinus* sp., *Mimulus guttatus*, *Phacelia argentea*, *Picea sitchensis*, *Polygonum paronychia*, *Pteridium aquilinum*, *Rubus spectabilis*, and *Salix hookeriana*. Non-native species found in Wolf’s evening primrose habitat include *Ammophila arenaria*, *Cytisus scoparius*, *Daucus carota*, and *Lotus corniculatus*”.

This habitat is present within the study area, but no wolf’s evening primrose was discovered in the course of surveys. As for *Abronia umbellata* ssp. *umbellata*, the sandy and bluff-like habitat of the study area may be too far inland to be considered likely or suitable habitat. Figure 7b depicts broadly potential habitat that was surveyed for the species in 2013.

Figure 7. Known Rare Plant Species Distribution. 2011 NAIP aerial imagery.

(This figure redacted from web-published version of this report for the purposes of protection of the species)

Figure 7b. Potential Habitat for Listed Species. The habitat depicted here is perhaps overly generous. The areas shown as potential habitat for *Abronia*, *Oenothera*, and *Phacelia* were surveyed in 2013. Only sites of *Phacelia* were encountered (see Figure 6). Aerial imagery NAIP 2009 open sands before removal of gorse.

(This figure redacted from web-published version of this report for the purposes of protection of the species)

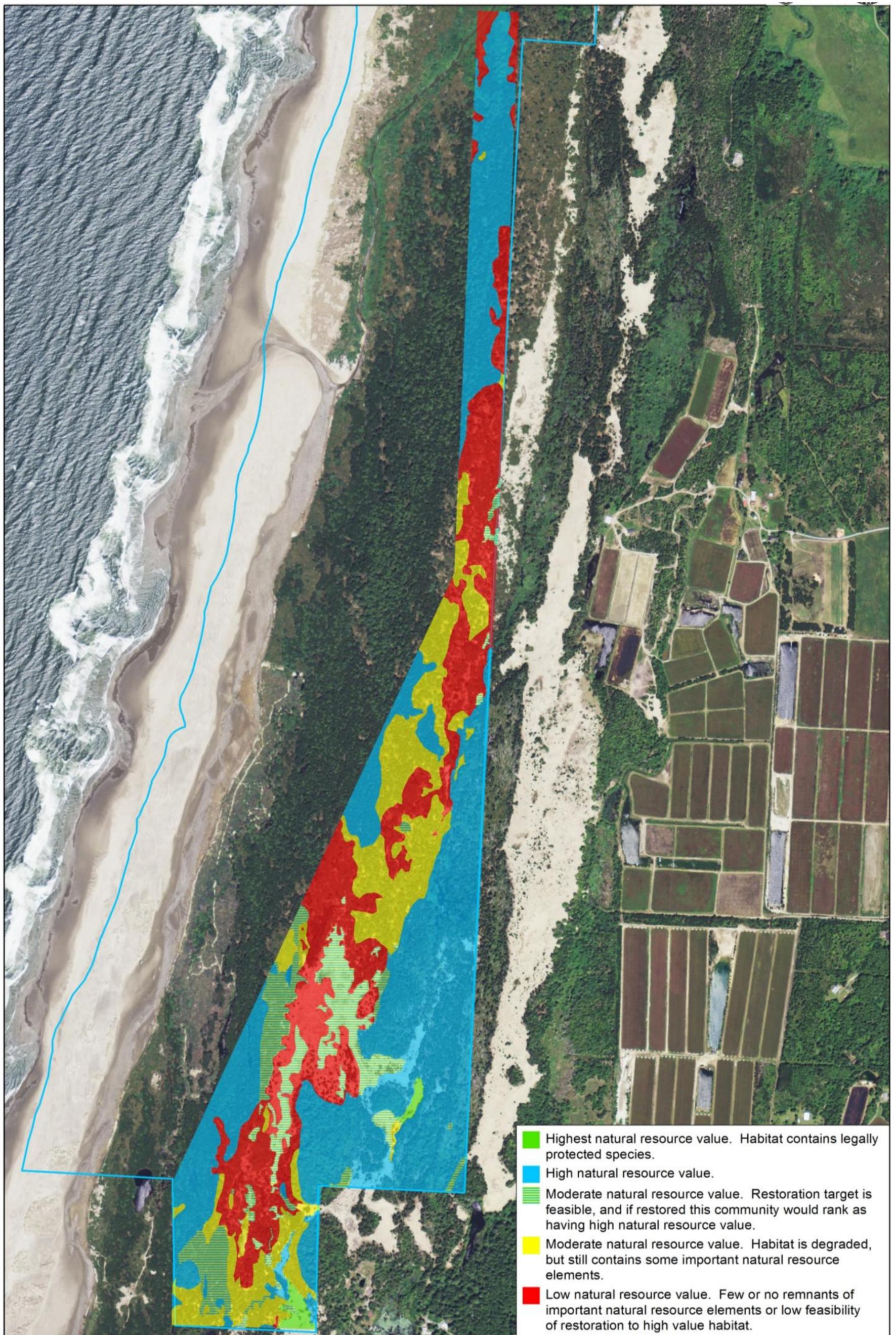
Botanical Resource Value Ratings

Botanical Resource Value is a ranking of ecological importance of a habitat in a landscape and global conservation context. It is assessed by jointly assessing seven environmental characteristics of each plant community/habitat type present in the study area. The ecological parameters used are: conservation ranking, condition, restoration priority, restoration feasibility, wetland status, age class (for forested communities), and rare species presence. The interaction of these parameters in assignment of a Botanical Resource Value rating is described in detail in the “Methods” section of this report. Botanical Resource Value captures information about plant communities, their ecological condition, and relative value for preservation. Generally speaking, the higher the Botanical Resource Value class number is, the lower value the site is *from a vegetative habitat and wetlands perspective*. In typical OPRD planning, Botanical Resource Value is just one factor in later determination of a composite suitability rating that factors in historical, cultural, wildlife, and other types of restrictions and opportunities. Composite suitability determinations are typically made in the course of Master Planning process, when all resource and land-use-related variables are assessed together.

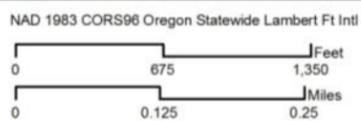
Botanical Resource Value ratings for the study area are depicted in Figure 8, below.

Calculation of Botanical Resource Value was accomplished using a computer program (VB Script) in an ArcGIS environment that performs the decision tree (matrix) described in the methods section. The parameters needed for performing these calculations are fields within the GIS polygon attribute table for vegetation cover.

Figure 8. Botanical Resource Value Ratings.



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Management Recommendations

Inventory and assessment of the composition and resource value of habitats within the study area makes it possible to develop concepts for natural resource management, allocation of preserves, ecological restoration, and enhancement from a natural resource perspective. The natural resource perspective is normally factored in with other resource perspectives and needs from areas of interest such as scenic values, recreation needs, cultural and historic resource preservation or enhancement needs, economic pressures, and political demands. The concepts represented in this section represent only the vegetation and habitat ecology aspect of this decision network.

Considering the property's natural resource values on their own merit and without consideration of other proposed land uses, several potential conservation and restoration actions are apparent. These potential natural resource trajectories are based on concepts of "desired future condition" and feasibility of restoration to natural habitat. Desired future conditions are commonly devised through consideration of historical vegetation, the habitat needs of at-risk species present, feasibility of attaining goals, and compromises between what is ideal and what is practical with limited resources. Once desired future condition goals are formulated, the actions necessary to begin work toward those goals can be prescribed.

The following desired future conditions and general concepts for natural area management appear to be reasonably practical, attainable, and beneficial for conservation of natural resource values within the study area.

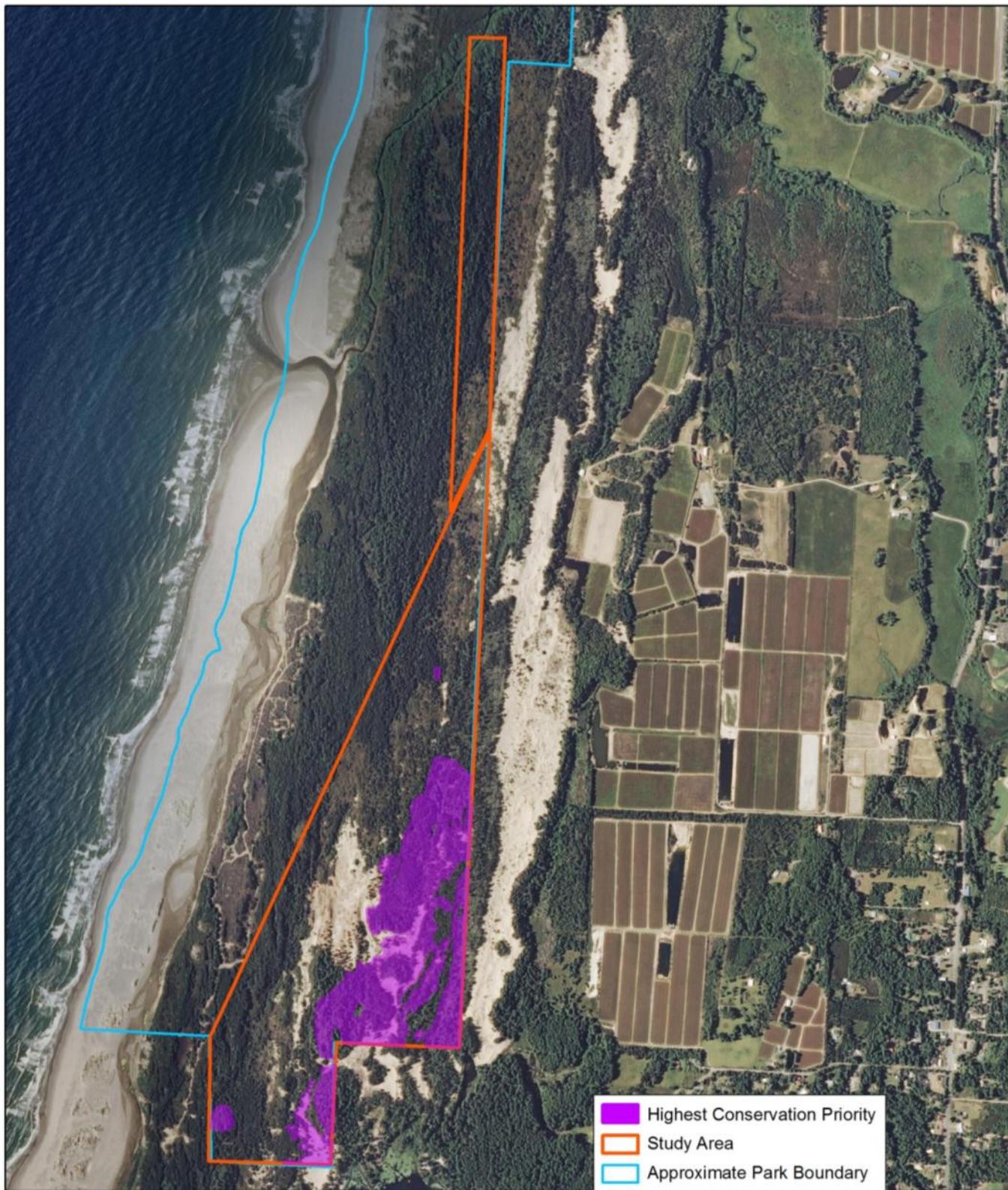
1. All existing forest should remain forest. Clearing recently established forest to restore open sand and dunal environments is not feasible given the intense invasion pressure from gorse and European beachgrass. Additionally, having been forested for so long, the soils in these areas have fundamentally changed by means of addition of organic matter. Areas containing only shore pine in mesic to wet locations could be underplanted with spruce where spruce is not significantly present, as these stands may start to die off from old age in 20 years. Having spruce in the understory prior to the unraveling of the pine will allow a seamless transition. Port Orford cedar forest should be managed for development of late seral structure.
2. Existing shore pine/kinnikinnik or shore pine/hairy manzanita habitat should remain as such. These are rare communities with very high conservation value. Gorse invasion into these areas should be prevented and gorse currently present should be removed. It will probably be necessary to thin these stands to maintain the habitat as woodland, as the tendency of these stands is to become forest. Thinning should generally favor the younger to mid aged trees. Shrub control will also be necessary. Perpetual maintenance of these early to mid seral communities is warranted due to the extremely rare type and the fact that it is vanishing from Oregon very rapidly due to absence of disturbance processes that maintained them in the past.
3. Existing dunal grasslands that are either dominated by native species or that retain significant native species composition should remain as such. Gorse and European beachgrass should be removed and kept from re-invading these very important remnant

- habitats. Beach sagewort and silvery phacelia populations should be monitored and managed for persistence.
4. Existing European beachgrass-dominated habitat with no native composition should be shelved for later action - time and funding allowing. Gorse should be removed and kept from reinvading. If resources allow, these areas could benefit from bulldozing and seeding with native dunal species after European beachgrass is controlled. This would be resource-intensive work and would be a lower priority action. Beachgrass should be prevented from spreading into relatively uninfested native environments.
 5. Existing forested dune summits and slopes with madrone and/or silktassel should remain as such. These are rare communities with very high conservation ranking. Very little action is needed to restore these associations, except where gorse is present. It is unclear at present how quickly these will transition to later seral types of lower conservation concern. They may be relatively stable due to excessively well drained sandy soils. If conifer density increases to the point of suppressing and killing madrone, thinning via dropping-and-leaving would preserve the rare dunal character. Extracting cut trees would probably be too damaging to soils and understory vegetation to be considered beneficial
 6. Existing forest that is partially-invaded by gorse should be restored by removal of gorse. If gorse cover is sporadic and controllable, this would be beneficial. If gorse is more than sporadic, restoration via active gorse control would be very difficult and resource-intensive.
 7. Existing heavily gorse-invaded forest or woodland should be managed for tree canopy development unless the forest or woodland is of one of the types described above under items 2 or 5. Gorse does poorly under a dense forest canopy. As the gorse begins to drop out of the understory composition it would be beneficial to establish native shrubs such as waxmyrtle and evergreen huckleberry to fill in.
 8. Existing monoculture gorse duneland should at a minimum be prevented from spreading. Ideally these areas could be mulched down and the resprouting and germinating gorse could be controlled. These mulched areas appear difficult to restore to the open sandy habitat that was present before infestation, but establishment of competitive vegetation such as trees or tall grass would be feasible. Bulldozing, piling, and burning gorse debris might allow for better restoration than mulching in-place, if other resource concerns such as cultural resources allow. Areas of gorse control will require many years of maintenance applications of herbicide or mowing to allow competitive vegetation to become dominant.
 9. Existing native herbaceous or shrub wetland should be allowed to develop naturally. The bog blueberry wetland is of high conservation ranking. Hydrologic modification to existing wetlands should be avoided.

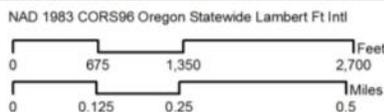
Natural Area Reserve Concepts

All areas mapped as shore pine/kinnikinnik, shore pine/hairy manzanita, dunal summits and ridge tops, Port Orford Cedar forest, bog blueberry/slough sedge wetland, and hooker willow/slough sedge-sphagnum are of very high conservation priority (Figure 9). These would be appropriately conserved in "Reserve" areas.

Figure 9. Highest Priority Conservation Areas based on community rarity and integrity. This figure does not factor in areas whose conservation is directed by wetland protection regulations.



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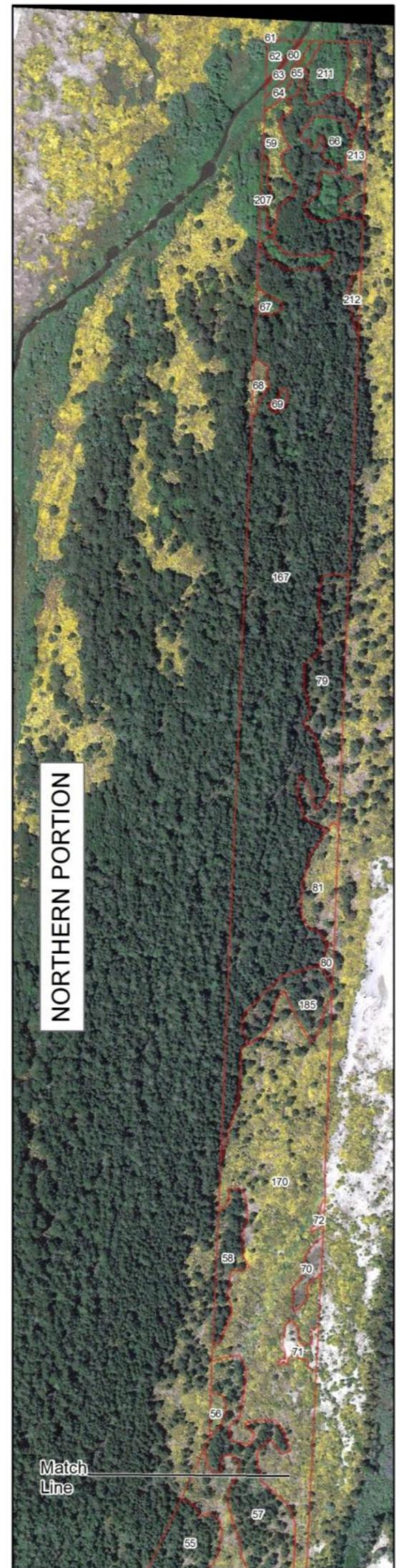
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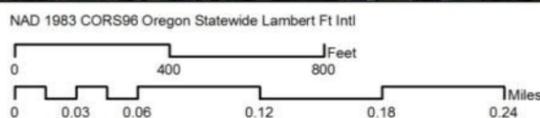
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Appendix 1A. Detailed Vegetation Mapping. The numbers associated with the polygons in this figure cross reference with numbered plant communities in the text of Appendix 1B in the report.



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.



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Appendix 1B. Detailed Vegetation Data.

The information presented below corresponds to the map codes that label the polygons in the figure shown in Appendix 1A. The plant community structural notation is as follows: “/” denotes a change in canopy level, “-“ separates species co-occurring in a canopy level. Items in parentheses “()” are patchy or sparse. When more than one unmappable distinct plant community type occurs within the overall map polygon, the distinct communities or canopy layers that compose the mosaic community are denote by square brackets “[]”. Comments on the polygon follow plant community composition codes. Equivalent published and ranked plant communities that make up part of the polygon’s mosaic community are listed under “Published Equivalent(s)”. The conservation rankings of these communities are listed under “Conservation rank”. These ranks are defined as follows:

Rank is a code identifying the conservation status of the plant association. It is composed of a global rank (“G”) followed by a state rank (“S”). 1 = Critically imperiled because of extreme rarity, with 5 or fewer occurrences or very few remaining acres. 2 = Imperiled because of rarity, with 6-20 occurrences or few remaining acres. 3 = Either very rare and local throughout its range or found locally in a restricted range; uncommon, with 21-100 occurrences. 4 = Apparently secure, though it may be quite rare in parts of its range, especially at the periphery; many occurrences. 5 = Demonstrably secure, though it may be quite rare in parts of its range, especially at the periphery; ineradicable under present conditions. These standardized ranks are used by all natural heritage programs and conservation data centers throughout North America. They are based on the best available information.

- 1 **Vegetation group:** hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / *Carex obnupta* - *Argentina egedii*
Mapping code from figure 4 : 43
Field data: *Salix hookeriana/Carex obnupta-Potentilla anserina-Agrostis sp/Veronica scutellata*
Condition: E
Age class:
Comments:
Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
Conservation rank: G4S4
Botanical Resource Value Rating: w/2 **Priority habitat?:**
Restoration feasibility: High
- 2 **Vegetation group:** shore pine / hairy manzanita
Pinus contorta / *Arctostaphylos columbiana*
Mapping code from figure 4 : 26
Field data: *Pinus contorta(-Pseudotsuga menziesii)(-Arbutus menziesii)/Arctostaphylos columbiana-Vaccinium ovatum-Gaultheria shallon(-Myrica californica)(-Baccharis pilularis)/Arctostaphylos uva-ursi-Pteridium aquilinum*
Condition: G
Age class: B
Comments:
Equivalent published habitat type(s): PINCON/ARCCOL
Conservation rank: G1S1
Botanical Resource Value Rating: 2 **Priority habitat?:** Y
Restoration feasibility: High
- 3 **Vegetation group:** shore pine / kinnikinnick
Pinus contorta / *Arctostaphylos uva-ursi*
Mapping code from figure 4 : 27

- Field data: *Pinus contorta*/*Arctostaphylos uva-ursi*-*Ammophila arenaria*-*Festuca rubra*-*Pteridium aquilinum*-*Hypochaeris radicata*-*Leontodon*
- Condition: M
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PINCON/ARCUVA
Conservation rank: G1S1
Botanical Resource Value Rating: 2 Priority habitat?:Y
Restoration feasibility: Med
- 4 Vegetation group: shore pine / kinnikinnick
Pinus contorta / Arctostaphylos uva-ursi
Mapping code from figure 4 : 27
- Field data: *Pinus contorta*/*Juncus lesueurii*-*Arctostaphylos uva-ursi*
- Condition: M
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PICO/ARCUVA
Conservation rank: G1S1
Botanical Resource Value Rating: 2 Priority habitat?:Y
Restoration feasibility: Med
- 5 Vegetation group: shore pine / kinnikinnick
Pinus contorta / Arctostaphylos uva-ursi
Mapping code from figure 4 : 27
- Field data: *Pinus contorta*/(*Myrica californica*)(*Vaccinium ovatum*)(*Gaultheria shallon*)/*Juncus lesueurii*-*Arctostaphylos uva-ursi*(-*Cardionema ramosissimum*-*Hypochaeris radicata*-*Leontodon taraxacoides*)
- Condition: G
Age class: B(pine)
Comments: TRANSITIONAL: JUNLES->PICO/ARUV -> PICO-PISI/GAUSHA-VAOV
- Equivalent published habitat type(s): PINCON/ARCUVA; JUNLES
Conservation rank: G1S1; G3S3
Botanical Resource Value Rating: 2 Priority habitat?:Y
Restoration feasibility: High
- 6 Vegetation group: shore pine / slough sedge
Pinus contorta / *Carex obnupta*
Mapping code from figure 4 : 28
- Field data: *Pinus contorta*/*Myrica californica*-*Vaccinium ovatum*-*Gaultheria shallon*-*Salix hookeriana*/*Carex obnupta*
- Condition: E
Age class: B(pine)
Comments: SUCCEEDING TO PICSIT/PINCON/GAUSHA-VACOVA AROUND EDGES.
- Equivalent published habitat type(s): PINCON/CAROBN
Conservation rank: G1S1
Botanical Resource Value Rating: w/2 Priority habitat?:
Restoration feasibility: High
- 7 Vegetation group: shore pine / kinnikinnick
Pinus contorta / Arctostaphylos uva-ursi
Mapping code from figure 4 : 27
- Field data: *Pinus contorta*/*Ulex europaeus*(-*Arctostaphylos columbiana*)(-*Myrica californica*)(-*Vaccinium ovatum*)/*Arctostaphylos uva-ursi*-*Ammophila arenaria*-*Juncus lesueurii*-*Pteridium aquilinum*(-*Festuca rubra*)(-*Hypochaeris radicata*)
- Condition: P

- Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PINCON/ARCUVA
Conservation rank: G1S1
Botanical Resource Value Rating: 2 Priority habitat?: Y
Restoration feasibility: Med
- 8 Vegetation group: shore pine / kinnikinnick
Pinus contorta / Arctostaphylos uva-ursi
Mapping code from figure 4 : 27
Field data: *Pinus contorta/Myrica californica-Vaccinium ovatum-Gaultheria shallon/Carex obnupta-Arctostaphylos uva-ursi*
Condition: G
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PICO/ARCUVA; PICO/CAROBN
Conservation rank: G1S1
Botanical Resource Value Rating: 2 Priority habitat?: Y
Restoration feasibility: High
- 9 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal
Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon
Mapping code from figure 4 : 29
Field data: (*Pinus contorta*)/*Vaccinium ovatum-Myrica californica-Gaultheria shallon(-Rhododendron macrophyllum)(-Malus fusca)*
Condition: E
Age class: B
Comments: INCOHERENT COMMUNITY OF SMALL SIZE IN AN ECOTONE
- Equivalent published habitat type(s): NA; ~PICSIT/PINCON/GAUSHA-VACOVA
Conservation rank: NA
Botanical Resource Value Rating: 2 Priority habitat?:
Restoration feasibility: High
- 10 Vegetation group: Douglas-fir - shore pine - madrone - Sitka spruce / evergreen
Pseudotsuga menziesii - Pinus contorta - Arbutus menziesii - Picea sitchensis /
Vaccinium ovatum - Myrica californica - Gaultheria shallon
Mapping code from figure 4 : 41
Field data: *Pseudotsuga menziesii-Pinus contorta-Arbutus menziesii-Picea sitchensis/Vaccinium ovatum-Myrica californica-Gaultheria shallon*
Condition: E
Age class: B
Comments: SOME TRANSITIONAL ASPECTS TOWARD THE UNDESCRIBED ARME/GARELL COMMUNITY PRESENT.
- Equivalent published habitat type(s): PINCON-PSEMEN/MYRCAL-VACOVA
Conservation rank: G3S3
Botanical Resource Value Rating: 2 Priority habitat?:
Restoration feasibility: High
- 11 Vegetation group: shore pine - Douglas-fir - madrone (- Sitka spruce) / wavyleaf
Pinus contorta - Pseudotsuga menziesii - Arbutus menziesii (- Picea sitchensis) /
Garrya elliptica - Vaccinium ovatum (- Myrica californica)
Mapping code from figure 4 : 21
Field data: *Pinus contorta-Pseudotsuga menziesii(-Arbutus menziesii)/Vaccinium ovatum-Garrya elliptica-Arctostaphylos columbiana/Satureja douglasii*
Condition: E
Age class: B
Comments: THIS PLANT COMMUNITY APPEARS TO BE UNDESCRIBED. THE INDICATORS

OF ARBUTUS AND GARRYA ARE SIGNIFICANT

- Equivalent published habitat type(s): NA; ~PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation rank: NA; ~S1
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: High
- 12 Vegetation group: shore pine / kinnikinnick
 Pinus contorta / Arctostaphylos uva-ursi
 Mapping code from figure 4 : 27
 Field data: *Pinus contorta/Ulex europaeus-Vaccinium ovatum/Arctostaphylos uva-ursi-Pteridium aquilinum-Ammophila arenaria-Festuca rubra*
 Condition: M TO P
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): PINCON/ARCUVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: High
- 13 Vegetation group: Port Orford cedar / evergreen huckleberry
 Chamaecyparis lawsoniana / Vaccinium ovatum
 Mapping code from figure 4 : 8
 Field data: *Arbutus menziesii-Pseudotsuga menziesii-Chamaecyparis lawsoniana/Vaccinium ovatum-Gaultheria shallon-Myrica californica/Pteridium aquilinum-Hierochloe occidentalis-Lonicera hispidula-Goodyera oblongifolia-Satureja douglasii(-Rubus ursinus)*
 Condition: E
 Age class: B
 Comments:
- Equivalent published habitat type(s): CHALAW/VACOVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: High
- 14 Vegetation group: Port Orford cedar / evergreen huckleberry
 Chamaecyparis lawsoniana / Vaccinium ovatum
 Mapping code from figure 4 : 8
 Field data: *Pinus contorta-Chamaecyparis lawsoniana-Pseudotsuga menziesii-Arbutus menziesii/Vaccinium ovatum(-Arctostaphylos columbiana)(-Gaultheria shallon)/Hierochloe occidentalis-Pteridium aquilinum(-Arctostaphylos uva-ursi)(-Rubus ursinus)(-Goodyera oblongifolia)*
 Condition: E
 Age class: B
 Comments:
- Equivalent published habitat type(s): CHALAW/VACOVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: High
- 15 Vegetation group: shore pine / kinnikinnick
 Pinus contorta / Arctostaphylos uva-ursi
 Mapping code from figure 4 : 27
 Field data: *Pinus contorta(-Pseudotsuga menziesii)(-Picea sitchensis)(-Chamaecyparis lawsoniana)/Vaccinium ovatum(-Gaultheria shallon)(-Myrica californica)(-Garrya elliptica)/Arctostaphylos uva-ursi-Pteridium aquilinum(-Juncus lesueurii)(-Anaphalis margaritacea)(-Hypochaeris radicata)(-Rubus ursinus)(-Goodyera oblongifolia)*
 Condition: M

- Age class: C
 Comments: VEGETATION TRANSITION ZONE BETWEEN MORE DISTINCTIVE TYPES.
 CONTAINS ELEMENTS OF SUCCESSION AND ECOTONE.
- Equivalent published habitat type(s): PICO/ARCUVA -> CHALAW/VACOVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 3(2) Priority habitat?: Y
 Restoration feasibility: Med
- 16 Vegetation group: shore pine / hairy manzanita
 Pinus contorta / Arctostaphylos columbiana
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta-Pseudotsuga menziesii-Picea sitchensis/Myrica californica-Vaccinium ovatum-Arctostaphylos columbiana(-Ulex europaeus)/Arctostaphylos uva-ursi-Juncus lesueurii-Carex obnupta*
 Condition: M
 Age class: C
 Comments:
- Equivalent published habitat type(s): PINCOIN/ARCUVA -> PINCON/ARCCOL
 Conservation rank: G1S1
 Botanical Resource Value Rating: (w)/3(2) Priority habitat?: Y
 Restoration feasibility: Med
- 17 Vegetation group: Port Orford cedar / evergreen huckleberry wetland variant
 Chamaecyparis lawsoniana / Vaccinium ovatum wetland variant
 Mapping code from figure 4 : 9
 Field data: *Pinus contorta-Picea sitchensis-Chamaecyparis lawsoniana-Abies concolor(-Alnus rubra)(-Rhamnus purshiana)/Myrica californica-Lonicera involucrata-Rubus spectabilis-Vaccinium ovatum-Gaultheria shallon(-Malus fusca)(-Salix hookeriana)/(Carex obnupta)(Polystichum munitum)(Rubus ursinus)*
 Condition: E
 Age class: B
 Comments: THIS IS A COMMUNITY NOT PREVIOUSLY DESCRIBED IN THE ECOLOGICAL LITERATURE. IT COULD BE CONSIDERED A WETLAND VARIANT OF THE THIS IS A WETLAND VARIANT OF THE CHALAW-VACOVA ASSOCIATION, BUT THIS IS SUBSTANTIALLY DIFFERENT.
- Equivalent published habitat type(s): NA; CHALAW-VAOV
 Conservation rank: G1S1
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 18 Vegetation group: Port Orford cedar / evergreen huckleberry wetland variant
 Chamaecyparis lawsoniana / Vaccinium ovatum wetland variant
 Mapping code from figure 4 : 9
 Field data: *Pinus contorta-Chamaecyparis lawsoniana-Abies concolor-Alnus rubra-Picea sitchensis/Myrica californica-Vaccinium ovatum-Gaultheria shallon-Rubus spectabilis-Lonicera involucrata(-Arctostaphylos columbiana)/Carex obnupta(-Juncus effusus)-Rubus ursinus-Polystichum munitum*
 Condition: E
 Age class: B
 Comments: THIS IS A COMMUNITY NOT PREVIOUSLY DESCRIBED IN THE ECOLOGICAL LITERATURE. IT COULD BE CONSIDERED A WETLAND VARIANT OF THE THIS IS A WETLAND VARIANT OF THE CHALAW-VACOVA ASSOCIATION, BUT THIS IS SUBSTANTIALLY DIFFERENT.
- Equivalent published habitat type(s): NA; CHALAW-VAOV
 Conservation rank: G1S1
 Botanical Resource Value Rating: w/2 Priority habitat?:

- Restoration feasibility: High
- 19 Vegetation group: Port Orford cedar / evergreen huckleberry
Chamaecyparis lawsoniana / *Vaccinium ovatum*
 Mapping code from figure 4 : 8
 Field data: *Pinus contorta-Chamaecyparis lawsoniana-Alnus rubra(-Picea sitchensis)/Myrica californica-Vaccinium ovatum-Gaultheria shallon*
 Condition: E
 Age class: B
 Comments:
 Equivalent published habitat type(s): CHALAW/VACOVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: High
- 20 Vegetation group: shore pine / hairy manzanita
Pinus contorta / *Arctostaphylos columbiana*
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta-Arbutus menziesii-Abies concolor-Picea sitchensis-Pseudotsuga menziesii/Myrica californica-Vaccinium ovatum-Arctostaphylos columbiana-Gaultheria shallon/Arctostaphylos uva-ursi*
 Condition: G
 Age class: B
 Comments:
 Equivalent published habitat type(s): PINCON/ARCCOL; PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation rank: G1S1;G3S3
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: High
- 21 Vegetation group: shore pine / hairy manzanita
Pinus contorta / *Arctostaphylos columbiana*
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta(-Arbutus menziesii)/Arctostaphylos columbiana-Myrica californica(-Vaccinium ovatum)(-Gaultheria shallon)(-Ulex europaeus)/Arctostaphylos uva-ursi-Hypochaeris radicata-Juncus lesueurii-Aira praecox-Hieracium albiflorum(-Festuca rubra)(-Carex obnupta)*
 Condition: M
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/ARCCOL; PINCON/ARCUVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: Med
- 22 Vegetation group: shore pine / hairy manzanita
Pinus contorta / *Arctostaphylos columbiana*
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta/Arctostaphylos columbiana-Myrica californica-Vaccinium ovatum(-Ulex europaeus)/Arctostaphylos uva-ursi-Juncus lesueurii(-Festuca rubra)*
 Condition: M TO G
 Age class: B
 Comments:
 Equivalent published habitat type(s): PINCON/ARCCOL
 Conservation rank: G1S1

- Botanical Resource Value Rating: 2 Priority habitat?: Y
 Restoration feasibility: High
- 23 Vegetation group: slough sedge - Pacific silverweed
Carex obnupta - *Argentina egedii*
 Mapping code from figure 4 : 6
 Field data: *Carex obnupta-Potentilla anserina-Veronica scutellata*
 Condition: E
 Age class:
 Comments:
 Equivalent published habitat type(s): CAROBN - ARGEGE
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 24 Vegetation group: slough sedge - Pacific silverweed
Carex obnupta - *Argentina egedii*
 Mapping code from figure 4 : 6
 Field data: *Carex obnupta-Potentilla anserina-Agrostis sp*
 Condition: G
 Age class:
 Comments:
 Equivalent published habitat type(s): CAROBN - ARGEGE
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 25 Vegetation group: gorse / European beachgrass with possible remnant red fescue or
Ulex europaeus / *Ammophila arenaria* with possible remnant *Festuca rubra* or *Poa macrantha* community components
 Mapping code from figure 4 : 49
 Field data: *Ulex europaeus/Ammophila arenaria(-Festuca rubra)(-Poa macrantha)(-WEEDS)*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
 Conservation rank: NA; G1S1;G2S1
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 26 Vegetation group: slough sedge - Pacific silverweed
Carex obnupta - *Argentina egedii*
 Mapping code from figure 4 : 6
 Field data: *Carex obnupta-Potentilla anserina-Agrostis sp-Veronica scutellata*
 Condition: G
 Age class:
 Comments:
 Equivalent published habitat type(s): CAROBN-ARGEGE
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 27 Vegetation group: slough sedge - Pacific silverweed
Carex obnupta - *Argentina egedii*
 Mapping code from figure 4 : 6

- Field data: *Carex obnupta-Potentilla anserina-Agrostis sp-Veronica scutellata*
 Condition: G
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): CAROBN-ARGEGE
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 28 Vegetation group: slough sedge - Pacific silverweed
Carex obnupta - Argentina egedii
 Mapping code from figure 4 : 6
 Field data: *Carex obnupta-Potentilla anserina-Agrostis sp-Veronica scutellata*
 Condition: E
 Age class:
 Comments:
 Equivalent published habitat type(s): CAROBN-ARGEGE
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 29 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / Carex obnupta - Argentina egedii
 Mapping code from figure 4 : 43
 Field data: *Salix hookeriana/Carex obnupta-Potentilla anserina-Agrostis sp*
 Condition: G
 Age class:
 Comments:
 Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 30 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / Carex obnupta - Argentina egedii
 Mapping code from figure 4 : 43
 Field data: *Salix hookeriana/Carex obnupta-Potentilla anserina-Agrostis sp*
 Condition: E
 Age class:
 Comments:
 Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 31 Vegetation group: slough sedge - Pacific silverweed
Carex obnupta - Argentina egedii
 Mapping code from figure 4 : 6
 Field data: *Carex obnupta-Potentilla anserina-Agrostis sp*
 Condition: G
 Age class:
 Comments:
 Equivalent published habitat type(s): CAROBN-ARGEGE
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High

- 32 Vegetation group: slough sedge - Pacific silverweed
Carex obnupta - *Argentina egedii*
 Mapping code from figure 4 : 6
 Field data: *Carex obnupta*-*Potentilla anserina*-*Agrostis sp*-*Veronica scutellata*
 Condition: E
 Age class:
 Comments:
 Equivalent published habitat type(s): CAROBN-ARGEGE
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 33 Vegetation group: shore pine / kinnikinnick
Pinus contorta / *Arctostaphylos uva-ursi*
 Mapping code from figure 4 : 27
 Field data: *Pinus contorta*/*Ulex europaeus*(-*Myrica californica*)(-*Vaccinium ovatum*)/*Ammophila arenaria*-*Juncus lesueurii*(-*Arctostaphylos uva-ursi*)
 Condition: P
 Age class: B(pine)
 Comments: CONDITION IS SO POOR THIS COMMUNITY IS ESSENTIALLY PINCON/ULEU/AMAR - BUT THERE IS A SPARK OF PINCON/ARCUVA REMAINING
 Equivalent published habitat type(s): PINCON/ARCUVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 3(2) Priority habitat?:Y
 Restoration feasibility: Med
- 34 Vegetation group: shore pine - Sitka spruce / mulched gorse / European beachgrass
Pinus contorta - *Picea sitchensis* / mulched *Ulex europaeus* / *Ammophila arenaria*
 Mapping code from figure 4 : 18
 Field data: *Picea sitchensis*-*Pinus contorta*/*Ulex europaeus*/*Ammophila arenaria*-
 WEEDS
 Condition: P
 Age class: C
 Comments:
 Equivalent published habitat type(s): NA
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 35 Vegetation group: shore pine / gorse / seashore bluegrass - red fescue
Pinus contorta / *Ulex europaeus* / *Poa macrantha* - *Festuca rubra*
 Mapping code from figure 4 : 38
 Field data: *Pinus contorta*/*Ammophila arenaria*-*Poa macrantha*-*Festuca rubra*
 Condition: P
 Age class: C
 Comments: DEGRADING TO PICO/ULEU/AMMARE
 Equivalent published habitat type(s): REMNANT FESRUB-PTEAQU COMMUNITY SUCCEEDING TO FOREST
 Conservation rank: (G3S3)
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: High
- 36 Vegetation group: European beachgrass with remnant seashore bluegrass and / or red
Ammophila arenaria with remnant *Poa macrantha* and / or *Festuca rubra*
 community components
 Mapping code from figure 4 : 5

- Field data: (*Pinus contorta*)/*Ammophila arenaria*-*Poa macrantha*(-*Festuca rubra*-*Artemisia pycnocephala*-*Juncus lesueurii*-*Cardionema ramosissimum*-*Pteridium aquilinum*-*Polygonum paronychia*-*Arctostaphylos uva-ursi*-*Lupinus littoralis*-*Hypochaeris radicata*-*Leontodon taraxacoides*)
- Condition: P
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): AMMARE WITH REMNANT POAMAC AND FESRUB COMMUNITY COMPONENTS
- Conservation rank: NA;G2S1
Botanical Resource Value Rating: 2 Priority habitat?:
Restoration feasibility: Med
- 37 Vegetation group: shore pine / hairy manzanita
Pinus contorta / *Arctostaphylos columbiana*
Mapping code from figure 4 : 26
- Field data: *Pinus contorta*/*Arctostaphylos columbiana*-*Myrica californica*(-*Vaccinium ovatum*)(-*Ulex europaeus*)/*Arctostaphylos uva-ursi*-*Ammophila arenaria*-*Pteridium aquilinum*(-*Festuca rubra*)
- Condition: M
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PINCON/ARCCOL
Conservation rank: G1S1
Botanical Resource Value Rating: 1 Priority habitat?:Y
Restoration feasibility: Med
- 38 Vegetation group: shore pine / kinnikinnick
Pinus contorta / *Arctostaphylos uva-ursi*
Mapping code from figure 4 : 27
- Field data: *Pinus contorta*/*Ulex europaeus*(-*Myrica californica*)(-*Vaccinium ovatum*)/*Arctostaphylos uva-ursi*-*Festuca rubra*-*Poa macrantha*-*Pteridium aquilinum*-*Polygonum paronychia*-*Lupinus littoralis*-*Cardionema ramosissimum*-*Hypochaeris radicata*-*Leontodon taraxacoides*(-*Juncus lesueurii*)(-*Ammophila arenaria*)
- Condition: M
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PINCON/ARCUVA; REMNANT FESRUB-PTEAQU COMMUNITY COMPONENTS
- Conservation rank: G1S1; G3S3
Botanical Resource Value Rating: 1 Priority habitat?:Y
Restoration feasibility: Med
- 39 Vegetation group: shore pine / slough sedge
Pinus contorta / *Carex obnupta*
Mapping code from figure 4 : 28
- Field data: *Pinus contorta*(-*Salix scouleriana*)/*Vaccinium ovatum*-*Myrica californica*(-*Salix hookeriana*)/*Carex obnupta*-*Pteridium aquilinum*
- Condition: E
Age class: B
Comments:
- Equivalent published habitat type(s): PINCON/CAROBN
Conservation rank: G1S1
Botanical Resource Value Rating: w/2 Priority habitat?:
Restoration feasibility: High
- 40 Vegetation group: shore pine / kinnikinnick

- Pinus contorta* / *Arctostaphylos uva-ursi*
 Mapping code from figure 4 : 27
 Field data: *Pinus contorta/Arctostaphylos columbiana/Arctostaphylos uva-ursi*
 Condition: M
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/ARCUVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?: Y
 Restoration feasibility: Med
- 41 Vegetation group: hooker willow / slough sedge - Pacific silverweed; bog blueberry /
Salix hookeriana / *Carex obnupta* - Argentina egedii; *Vaccinium uliginosum* / *Carex*
obnupta
 Mapping code from figure 4 : 44
 Field data: *Salix hookeriana-Spiraea douglasii/Carex obnupta-Potentilla anserina-*
Vaccinium uliginosum-Agrostis sp-Dichanthelium acuminatum var.
fasciculatum-Viola sp (palustris)-Eleocharis palustris(-Lycopus
uniflorus)(-Veronica scutellata)
 Condition: E
 Age class:
 Comments:
 Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN; VACULI/CAROBN
 Conservation rank: G4S4; G2S2
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 42 Vegetation group: shore pine / gorse (- waxmyrtle) (- evergreen huckleberry) / (slough
Pinus contorta / *Ulex europaeus* (- *Myrica californica*) (- *Vaccinium ovatum*) / (*Carex*
obnupta)
 Mapping code from figure 4 : 39
 Field data: *Pinus contorta/Ulex europaeus(-Vaccinium ovatum)/(Juncus lesueurii)(-*
Carex obnupta)
 Condition: P
 Age class: B(pine)
 Comments: TOPOGRAPHY SUGGEST POSSIBILITY OF PICO/CAOB, BUT SITE NOT
 PHYSICALLY VERIFIED.
 Equivalent published habitat type(s): PINCON/CAROBN?
 Conservation rank: NA;G1S1
 Botanical Resource Value Rating: (w)/3(2) Priority habitat?:
 Restoration feasibility: Med
- 43 Vegetation group: shore pine / gorse / European beachgrass
Pinus contorta / *Ulex europaeus* / *Ammophila arenaria*
 Mapping code from figure 4 : 34
 Field data: *Pinus contorta/Ulex europaeus/Ammophila arenaria-Hypochaeris*
radicata-Aira praecox
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): AMMARE
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 44 Vegetation group: hooker willow / slough sedge - SPHAGNUM

Salix hookeriana / *Carex obnupta* - SPHAGNUM

Mapping code from figure 4 : 45

Field data: *Pinus contorta*/*Salix hookeriana*-*Ulex europaeus*/*Carex obnupta*-*Sphagnum sp.*

Condition: M

Age class:

Comments: THE PRESENCE OF SPHAGNUM MAKES THIS COMMUNITY QUITE RARE

Equivalent published habitat type(s): PINCON/CAROBN; SALHOO / (ARGEGE) - CAROBN

Conservation rank: G1S1

Botanical Resource Value Rating: w/2 Priority habitat?: Y

Restoration feasibility: High

- 45 Vegetation group: gorse / European beachgrass with possible remnant red fescue or *Ulex europaeus* / *Ammophila arenaria* with possible remnant *Festuca rubra* or *Poa macrantha* community components

Mapping code from figure 4 : 49

Field data: (*Ulex europaeus*)/*Ammophila arenaria*-*Hypochaeris radicata*(-*Festuca rubra*)(-*Poa macrantha*)

Condition: P

Age class:

Comments:

Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS

Conservation rank: NA;G1S1;G2S1

Botanical Resource Value Rating: 3(2) Priority habitat?:

Restoration feasibility: Med

- 46 Vegetation group: shore pine / gorse
Pinus contorta / *Ulex europaeus*

Mapping code from figure 4 : 33

Field data: *Pinus contorta*/*Ulex europaeus*

Condition: P

Age class: C

Comments:

Equivalent published habitat type(s): PINCON/ULEEUR

Conservation rank: NA

Botanical Resource Value Rating: 4 Priority habitat?:

Restoration feasibility: Med

- 47 Vegetation group: shore pine / gorse
Pinus contorta / *Ulex europaeus*

Mapping code from figure 4 : 33

Field data: *Pinus contorta*/*Ulex europaeus*

Condition: P

Age class: C

Comments:

Equivalent published habitat type(s): PINCON/ULEEUR

Conservation rank: NA

Botanical Resource Value Rating: 4 Priority habitat?:

Restoration feasibility: Med

- 48 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / *Carex obnupta* - *Argentina egedii*

Mapping code from figure 4 : 43

Field data: *Salix hookeriana*/*Carex obnupta*-*Potentilla anserina*-*Agrostis sp.*

Veronica scutellata

- Condition: E
Age class:
Comments:
- Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
Conservation rank: G4S4
Botanical Resource Value Rating: w/2 Priority habitat?:
Restoration feasibility: High
- 49 Vegetation group: shore pine / gorse
Pinus contorta / Ulex europaeus
Mapping code from figure 4 : 33
Field data: (*Pinus contorta*)/*Ulex europaeus*
Condition: P
Age class:
Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR
Conservation rank: NA
Botanical Resource Value Rating: 4 Priority habitat?:
Restoration feasibility: Med
- 50 Vegetation group: shore pine - Sitka spruce / gorse (- evergreen huckleberry) (-
Pinus contorta - Picea sitchensis / Ulex europaeus (- Vaccinium ovatum) (- Myrica
californica)
Mapping code from figure 4 : 20
Field data: *Pinus contorta*-*Picea sitchensis*/*Ulex europaeus*(-*Vaccinium ovatum*)(-
Myrica californica)
Condition: P
Age class: C
Comments:
- Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA
Conservation rank: NA
Botanical Resource Value Rating: 4 Priority habitat?:
Restoration feasibility: Med
- 51 Vegetation group: shore pine / gorse
Pinus contorta / Ulex europaeus
Mapping code from figure 4 : 33
Field data: (*Pinus contorta*)/*Ulex europaeus*
Condition: P
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR
Conservation rank: NA
Botanical Resource Value Rating: 3 Priority habitat?:
Restoration feasibility: Med
- 52 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex
obnupta)
Mapping code from figure 4 : 31
Field data: *Pinus contorta*-*Picea sitchensis*/*Myrica californica*-*Vaccinium ovatum*-
Gaultheria shallon(-*Ulex europaeus*)/*Polystichum munitum*(-*Carex*
obnupta)
Condition: G TO E
Age class: C
Comments: MOSTLY PICSIT-PINCON/GAUSHA-VACOVA BUT WITH WETTER

CONCAVITIES GRADING TOWARD PINCON/CAROBN

- Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA WITH POCKETS OF PINCON/CAROBN
- Conservation rank: G3S3;G1S1
- Botanical Resource Value Rating: (w)/2 Priority habitat?:
- Restoration feasibility: High
- 53 Vegetation group: shore pine / gorse
- Pinus contorta / Ulex europaeus
- Mapping code from figure 4 : 33
- Field data: *Pinus contorta/Ulex europaeus*
- Condition: P
- Age class: B(pine)
- Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR
- Conservation rank: NA
- Botanical Resource Value Rating: 3 Priority habitat?:
- Restoration feasibility: Med
- 54 Vegetation group: shore pine / slough sedge
- Pinus contorta / Carex obnupta
- Mapping code from figure 4 : 28
- Field data: *Pinus contorta/(Myrica californica)(Vaccinium ovatum)/Carex obnupta*
- Condition: G
- Age class: B(pine)
- Comments:
- Equivalent published habitat type(s): PINCON/CAROBN
- Conservation rank: G1S1
- Botanical Resource Value Rating: w/2 Priority habitat?:
- Restoration feasibility: High
- 55 Vegetation group: shore pine - Sitka spruce / gorse (- evergreen huckleberry) (- Pinus contorta - Picea sitchensis / Ulex europaeus (- Vaccinium ovatum) (- Myrica californica)
- Mapping code from figure 4 : 20
- Field data: *Pinus contorta-Picea sitchensis/Ulex europaeus(-Vaccinium ovatum)(-Myrica californica)*
- Condition: P
- Age class: C
- Comments:
- Equivalent published habitat type(s): SERIOUSLY DEGRADED PICSIT-PINCON/GAUSHA-VACOVA
- Conservation rank: NA;G3S3
- Botanical Resource Value Rating: 3 Priority habitat?:
- Restoration feasibility: Med
- 56 Vegetation group: shore pine / gorse
- Pinus contorta / Ulex europaeus
- Mapping code from figure 4 : 33
- Field data: (*Pinus contorta/Ulex europaeus*)
- Condition: P
- Age class: B(pine)
- Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR
- Conservation rank: NA
- Botanical Resource Value Rating: 3 Priority habitat?:

- Restoration feasibility: Med
- 57 Vegetation group: shore pine / gorse
Pinus contorta / *Ulex europaeus*
 Mapping code from figure 4 : 33
 Field data: *Pinus contorta/Ulex europaeus*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 58 Vegetation group: shore pine - Sitka spruce / gorse (- evergreen huckleberry) (-
Pinus contorta - *Picea sitchensis* / *Ulex europaeus* (- *Vaccinium ovatum*) (- *Myrica californica*)
 Mapping code from figure 4 : 20
 Field data: *Pinus contorta/Ulex europaeus(-Vaccinium ovatum)(-Myrica californica)*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): NA
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 59 Vegetation group: shore pine - Sitka spruce / gorse
Pinus contorta - *Picea sitchensis* / *Ulex europaeus*
 Mapping code from figure 4 : 19
 Field data: *Pinus contorta-Picea sitchensis/Ulex europaeus*
 Condition: P
 Age class: C
 Comments:
 Equivalent published habitat type(s): PINCON-PICSIT/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Low
- 60 Vegetation group: reed canarygrass - smallfruit bulrush - slough sedge (- cattail) / water
Phalaris arundinacea - *Scirpus micranthus* - *Carex obnupta* (- *Typha latifolia*) / water
 Mapping code from figure 4 : 12
 Field data: *Phalaris arundinacea-Scirpus microcarpus-Carex obnupta(-Typha latifolia)/WATER*
 Condition: M
 Age class:
 Comments: PLANT COMMUNITY NARROW AND LINEAR ON BANKS. NOT A TRUE COMMUNITY PER SE... SHARP TRANSITION ZONE.
 Equivalent published habitat type(s): CAROBN,SCIMIC
 Conservation rank: ~G4S4
 Botanical Resource Value Rating: w/4 Priority habitat?:
 Restoration feasibility: Med
- 61 Vegetation group: gorse
Ulex europaeus
 Mapping code from figure 4 : 47
 Field data: *Ulex europaeus*

- Condition: P
Age class:
Comments:
Equivalent published habitat type(s): NA
Conservation rank: NA
Botanical Resource Value Rating: 4 Priority habitat?:
Restoration feasibility: Med
- 62 Vegetation group: hooker willow / reed canarygrass - canada thistle - cow parsnip (-
Salix hookeriana / Phalaris arundinacea - Cirsium arvense - Heracleum lanatum (-
Carex obnupta)
Mapping code from figure 4 : 52
Field data: (*Salix hookeriana*)/*Phalaris arundinacea*-*Vicia gigantea*-*Cirsium arvense*-*Heracleum lanatum*(-*Carex obnupta*)
Condition: P
Age class:
Comments: SALHOO KEPT MINOR BY EXTENSIVE BEAVER USE
Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
Conservation rank: G4S4
Botanical Resource Value Rating: w/4 Priority habitat?:
Restoration feasibility: Med
- 63 Vegetation group: hooker willow / reed canarygrass - canada thistle - cow parsnip (-
Salix hookeriana / Carex obnupta - Argentina egedii
Mapping code from figure 4 : 52
Field data: *Salix hookeriana*/*Phalaris arundinacea*-*Vicia gigantea*-*Cirsium arvense*(-
Heracleum lanatum)(-*Carex obnupta*)(-*Scirpus microcarpus*)
Condition: P
Age class:
Comments: SALHOO KEPT MINOR BY EXTENSIVE BEAVER USE
Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
Conservation rank: G4S4
Botanical Resource Value Rating: w/4 Priority habitat?:
Restoration feasibility: Med
- 64 Vegetation group: hooker willow / slough sedge - smallfruit bulrush - reed canarygrass
Salix hookeriana / Carex obnupta - Scirpus microcarpus - Phalaris arundinacea
Mapping code from figure 4 : 53
Field data: *Salix hookeriana*/*Carex obnupta*-*Scirpus microcarpus*-*Phalaris arundinacea*-*Vicia gigantea*
Condition: M
Age class:
Comments: DOESN'T MATCH THE PUBLISHED PLANT COMMUNITY PERFECTLY DUE TO ABUNDANCE OF SCMI.
Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
Conservation rank: G4S4
Botanical Resource Value Rating: w/4 Priority habitat?:
Restoration feasibility: Med
- 65 Vegetation group: red alder / salmonberry / slough sedge - skunkcabbage
Alnus rubra / Rubus spectabilis / Carex obnupta - Lysichiton americanus
Mapping code from figure 4 : 2
Field data: *Alnus rubra*(-*Pinus contorta*)(-*Picea sitchensis*)/*Salix hookeriana*-
Lonicera involucrata-*Rubus spectabilis*-*Myrica californica*(-*Ulex europaeus*)/*Carex obnupta*-*Scirpus microcarpus*-*Lysichiton americanum*(-*Phalaris arundinacea*)(-*Athyrium filix-femina*)(-*Oenanthe*
Condition: M

- Age class:
 Comments: A SALT SPRAY VERSION OF ALNRUB/RUBSPE/CAROBN-LYSAME. NOT A PERFECT MATCH.
- Equivalent published habitat type(s): ALNRUB / RUBSPE / CAROBN - LYSAME
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/4 Priority habitat?:
 Restoration feasibility: Med
- 66 Vegetation group: red alder / salmonberry - waxmyrtle / slough sedge - common ladyfern
 Alnus rubra / Rubus spectabilis - Myrica californica / Carex obnupta - Athyrium filix-femina
 Mapping code from figure 4 : 1
 Field data: *Alnus rubra(-Rhamnus purshiana)/Rubus spectabilis-Myrica californica(-Vaccinium ovatum)(-Gaultheria shallon)/Carex obnupta-Athyrium filix-femina*
 Condition: E
 Age class: B
 Comments:
- Equivalent published habitat type(s): ALNRUB / RUBSPE / CAROBN - LYSAME
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 67 Vegetation group: shore pine - Sitka spruce / gorse
 Pinus contorta - Picea sitchensis / Ulex europaeus
 Mapping code from figure 4 : 19
 Field data: *Pinus contorta-Picea sitchensis-Alnus rubra/Ulex europaeus-Rubus spectabilis-Salix hookeriana/Carex obnupta*
 Condition: P
 Age class: C
 Comments:
- Equivalent published habitat type(s): NA
 Conservation rank: NA
 Botanical Resource Value Rating: w/4 Priority habitat?:
 Restoration feasibility: Low
- 68 Vegetation group: shore pine / gorse
 Pinus contorta / Ulex europaeus
 Mapping code from figure 4 : 33
 Field data: *(Pinus contorta)/Ulex europaeus*
 Condition: P
 Age class:
 Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Low
- 69 Vegetation group: shore pine / gorse
 Pinus contorta / Ulex europaeus
 Mapping code from figure 4 : 33
 Field data: *Pinus contorta/Salix hookeriana-Rubus spectabilis-Ulex europaeus/Carex obnupta*
 Condition: P
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): NA

- Conservation rank: NA
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: Low
- 70 Vegetation group: slough sedge - Pacific silverweed
Carex obnupta - *Argentina egedii*
 Mapping code from figure 4 : 6
 Field data: *Ulex europaeus/Carex obnupta-Juncus lesueurii-Potentilla anserina-Agrostis sp*
 Condition: M
 Age class:
 Comments:
 Equivalent published habitat type(s): CAROBN; JUNLES; CAROBN - ARGEGE
 Conservation rank: G4S4;G3S3;G4S4
 Botanical Resource Value Rating: w/3(2) Priority habitat?:
 Restoration feasibility: Med
- 71 Vegetation group: gorse / European beachgrass with possible remnant red fescue or
Ulex europaeus / *Ammophila arenaria* with possible remnant *Festuca rubra* or *Poa macrantha* community components
 Mapping code from figure 4 : 49
 Field data: *Ulex europaeus/Ammophila arenaria(-Festuca rubra)(-Poa macrantha)*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
 Conservation rank: NA; G1S1; G2S1
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 72 Vegetation group: gorse / European beachgrass with possible remnant red fescue or
Ulex europaeus / *Ammophila arenaria* with possible remnant *Festuca rubra* or *Poa macrantha* community components
 Mapping code from figure 4 : 49
 Field data: *Ulex europaeus/Ammophila arenaria(-Festuca rubra)(-Poa macrantha)*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
 Conservation rank: NA; G1S1; G2S1
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 73 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / *Carex obnupta* - *Argentina egedii*
 Mapping code from figure 4 : 43
 Field data: *Pinus contorta/Salix hookeriana-Myrica californica-Vaccinium ovatum-Gaultheria shallon/Carex obnupta-Potentilla anserina*
 Condition: E
 Age class:
 Comments:
 Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High

- 74 **Vegetation group:** shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
Pinus contorta / *Myrica californica* - *Vaccinium ovatum* - *Gaultheria shallon* / (*Carex obnupta*)
Mapping code from figure 4 : 31
Field data: *Pinus contorta*-*Picea sitchensis*/*Myrica californica*-*Vaccinium ovatum*-*Ulex europaeus*/(*Carex obnupta*)
Condition: M
Age class: B
Comments: CONTAINS POCKETS OF HABITAT GRADING TO PINCON/CAROBN
Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA;
 PINCON/CAROBN
Conservation rank: G3S3;G1S1
Botanical Resource Value Rating: (w)/2 **Priority habitat?:**
Restoration feasibility: Med
- 75 **Vegetation group:** shore pine - Sitka spruce / gorse (- evergreen huckleberry) (-
Pinus contorta - *Picea sitchensis* / *Ulex europaeus* (- *Vaccinium ovatum*) (- *Myrica californica*)
Mapping code from figure 4 : 20
Field data: *Pinus contorta*(-*Picea sitchensis*)/*Ulex europaeus*(-*Vaccinium ovatum*)(-*Myrica californica*)/(*Ammophila arenaria*)
Condition: P
Age class: C
Comments:
Equivalent published habitat type(s): SERIOUSLY DEGRADED PICSIT-
 PINCON/GAUSHA-VACOVA
Conservation rank: NA;G3S3
Botanical Resource Value Rating: 3 **Priority habitat?:**
Restoration feasibility: Med
- 76 **Vegetation group:** shore pine / gorse
Pinus contorta / *Ulex europaeus*
Mapping code from figure 4 : 33
Field data: (*Pinus contorta*)/*Ulex europaeus*
Condition: P
Age class: B(pine)
Comments:
Equivalent published habitat type(s): PINCON/ULEEUR
Conservation rank: NA
Botanical Resource Value Rating: 3 **Priority habitat?:**
Restoration feasibility: Med
- 77 **Vegetation group:** European beachgrass with possible remnant red fescue or seashore
Ammophila arenaria with possible remnant *Festuca rubra* or *Poa macrantha*
 community components
Mapping code from figure 4 : 3
Field data: *Ammophila arenaria*-*Hypochaeris radicata*(-*Festuca rubra*)(-*Poa macrantha*)
Condition: P
Age class:
Comments:
Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR
 POAMAC COMMUNITY COMPONENTS
Conservation rank: NA;G1S1;G2S1
Botanical Resource Value Rating: 3(2) **Priority habitat?:**
Restoration feasibility: Med

- 78 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / *Carex obnupta* - *Argentina egedii*
 Mapping code from figure 4 : 43
 Field data: (*Salix hookeriana*)/*Carex obnupta*-*Potentilla anserina*-*Agrostis sp*
 Condition: E
 Age class:
 Comments:
 Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 79 Vegetation group: shore pine / gorse
Pinus contorta / *Ulex europaeus*
 Mapping code from figure 4 : 33
 Field data: *Pinus contorta*(-*Picea sitchensis*)/*Ulex europaeus*
 Condition: P
 Age class: C
 Comments:
 Equivalent published habitat type(s): NA
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Low
- 80 Vegetation group: shore pine / gorse
Pinus contorta / *Ulex europaeus*
 Mapping code from figure 4 : 33
 Field data: *Pinus contorta*/*Ulex europaeus*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 81 Vegetation group: shore pine / gorse
Pinus contorta / *Ulex europaeus*
 Mapping code from figure 4 : 33
 Field data: (*Pinus contorta*)/*Ulex europaeus*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Low
- 82 Vegetation group: shore pine / gorse
Pinus contorta / *Ulex europaeus*
 Mapping code from figure 4 : 33
 Field data: *Pinus contorta*/*Ulex europaeus*
 Condition: P
 Age class: B(pine)
 Comments:

- Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 83 Vegetation group: shore pine / gorse / European beachgrass
 Pinus contorta / Ulex europaeus / Ammophila arenaria
 Mapping code from figure 4 : 34
 Field data: *Pinus contorta/Ulex europaeus/Ammophila arenaria-Pteridium aquilinum-Hypochaeris radicata*
 Condition: P
 Age class: B
 Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR/AMMARE
 Conservation rank: NA
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: Med
- 84 Vegetation group: Sitka spruce (- shore pine - Douglas-fir) / gorse - wavyleaf silktassel -
 Picea sitchensis (- Pinus contorta - Pseudotsuga menziesii) / Ulex europaeus -
 Garrya elliptica - Vaccinium ovatum
 Mapping code from figure 4 : 16
 Field data: *Picea sitchensis(-Pinus contorta)(-Pseudotsuga menziesii)/Ulex europaeus-Garrya elliptica-Vaccinium ovatum*
 Condition: P
 Age class: B
 Comments: DEGRADED. PROBABLY FORMERLY TRANSITIONAL BETWEEN PICSIT-PINCON/GAUSHA-VACOVA AND THE UNDESCRIBED ADJAVENT TYPE UPSLOPE. THE REPLACEMENT OF MYRCAL WITH GARREL APPEARS TO BE SIGNIFICANT.
- Equivalent published habitat type(s): NA
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 85 Vegetation group: shore pine - Douglas-fir - madrone (- Sitka spruce) / wavyleaf
 Pinus contorta - Pseudotsuga menziesii - Arbutus menziesii (- Picea sitchensis) /
 Garrya elliptica - Vaccinium ovatum (- Myrica californica)
 Mapping code from figure 4 : 21
 Field data: *Pseudotsuga menziesii-Picea sitchensis-Arbutus menziesii/Garrya elliptica-Vaccinium ovatum-Myrica californica-Arctostaphylos columbiana(-Ulex europaeus)/Hierochloe occidentalis-Pteridium aquilinum(-Arctostaphylos uva-ursi)(-Goodyera oblongifolia)(-Satureja douglasii)(-Polystichum munitum)*
 Condition: G
 Age class: B
 Comments: THIS PLANT COMMUNITY APPEARS TO BE UNDESCRIBED. THE INDICATORS OF ARBUTUS AND GARRYA ARE SIGNIFICANT

- Equivalent published habitat type(s): NA; ~PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation rank: NA;~S1
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: High
- 86 Vegetation group: shore pine / hairy manzanita
 Pinus contorta / Arctostaphylos columbiana
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta/Arctostaphylos columbiana-Myrica californica(-Ulex europaeus)/Arctostaphylos uva-ursi-Pteridium aquilinum-Aira praecox(-Ammophila arenaria)(-Festuca rubra)*
 Condition: M
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): PINCON/ARCCOL
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: Med
- 87 Vegetation group: shore pine - Douglas-fir - madrone (- Sitka spruce) / wavyleaf
 Pinus contorta - Pseudotsuga menziesii - Arbutus menziesii (- Picea sitchensis) /
 Garrya elliptica - Vaccinium ovatum (- Myrica californica)
 Mapping code from figure 4 : 21
 Field data: *Pseudotsuga menziesii-Pinus contorta-Arbutus menziesii-Picea sitchensis/Vaccinium ovatum-Myrica californica(-Arctostaphylos columbiana)(-Garrya elliptica)*
 Condition: E
 Age class: B
 Comments: THIS PLANT COMMUNITY APPEARS TO BE UNDESCRIBED. THE INDICATORS OF ARBUTUS AND GARRYA ARE SIGNIFICANT
- Equivalent published habitat type(s): NA; ~PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation rank: ~S1
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: High
- 88 Vegetation group: Sitka spruce / waxmyrtle - evergreen huckleberry - salal / (slough
 Picea sitchensis / Myrica californica - Vaccinium ovatum - Gaultheria shallon /
 (Carex obnupta)
 Mapping code from figure 4 : 15
 Field data: *Picea sitchensis/Myrica californica-Vaccinium ovatum-Gaultheria shallon(Carex obnupta)*
 Condition: E
 Age class: B
 Comments:
- Equivalent published habitat type(s): PICSIT/VACOVA
 Conservation rank: G3S3
 Botanical Resource Value Rating: (w)/2 Priority habitat?:
 Restoration feasibility: High
- 89 Vegetation group: shore pine / kinnikinnick
 Pinus contorta / Arctostaphylos uva-ursi
 Mapping code from figure 4 : 27
 Field data: *Pinus contorta/(Ulex europaeus)/Ammophila arenaria-Arctostaphylos uva-ursi-Pteridium aquilinum-Lupinus littoralis-Festuca rubra-Poa macrantha-Juncus lesueurii-Hypochaeris radicata*
 Condition: M TO P
 Age class: B
 Comments:

- Equivalent published habitat type(s): PINCON/ARCUVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?: Y
 Restoration feasibility: High
- 90 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
 Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex
 obnupta)
 Mapping code from figure 4 : 31
 Field data: *Pinus contorta/Myrica californica-Vaccinium ovatum-Gaultheria
 shallon/(Carex obnupta)*
 Condition: G
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA;
 PINCON/CAROBN?
- Conservation rank: G3S3
 Botanical Resource Value Rating: (w)/2 Priority habitat?:
 Restoration feasibility: High
- 91 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
 Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex
 obnupta)
 Mapping code from figure 4 : 31
 Field data: *Pinus contorta/Ulex europaeus(-Vaccinium ovatum)(-Myrica
 californica)(-Ammophila arenaria)(-Carex obnupta)*
 Condition: P
 Age class: C
 Comments: THERE ARE POCKETS OF DEGRADED PINCON/MYCA-VAOV-GASH/(CAOB) IN
 MATRIX OF PINCON/ULEU
- Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA;
 PINCON/CAROBN
- Conservation rank: G3S3;G1S1
 Botanical Resource Value Rating: (w)/3(2) Priority habitat?:
 Restoration feasibility: Med
- 92 Vegetation group: shore pine / kinnikinnick
 Pinus contorta / Arctostaphylos uva-ursi
 Mapping code from figure 4 : 27
 Field data: *Pinus contorta/Ulex europaeus(-Vaccinium ovatum)(-Arctostaphylos
 columbiana)/Ammophila arenaria-Arctostaphylos uva-ursi(-Lupinus
 littoralis)(-Pteridium aquilinum)*
 Condition: P
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): PINCON/ARCUVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?: Y
 Restoration feasibility: Med
- 93 Vegetation group: shore pine / gorse
 Pinus contorta / Ulex europaeus
 Mapping code from figure 4 : 33
 Field data: *Pinus contorta/Ulex europaeus(-Myrica californica)/Ammophila arenaria*
 Condition: P
 Age class: B(pine)
 Comments:

- Equivalent published habitat type(s): NA
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 94 Vegetation group: European beachgrass with remnant seashore bluegrass and / or red
Ammophila arenaria with remnant *Poa macrantha* and / or *Festuca rubra*
 community components
- Mapping code from figure 4 : 5
 Field data: *Ammophila arenaria-Festuca rubra-Polygonum paronychia-Artemisia
 pycnocephala(-Lupinus littoralis)(-Camilsonia cheiranthifolia)(-Juncus
 lesueurii)(-Glehnia littoralis)*
- Condition: M
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): AMMARE WITH REMNANT FESRUB DUNE
 COMMUNITY COMPONENTS
- Conservation rank: NA; G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: Med
- 95 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / *Carex obnupta* - *Argentina egedii*
- Mapping code from figure 4 : 43
 Field data: *Salix hookeriana/Carex obnupta*
- Condition: G
 Age class:
 Comments:
- Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 96 Vegetation group: shore pine / slough sedge
Pinus contorta / *Carex obnupta*
- Mapping code from figure 4 : 28
 Field data: *Pinus contorta/Salix hookeriana-Ulex europaeus/Carex obnupta*
- Condition: M
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): PINCON/CAROBN
 Conservation rank: G1S1
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: Med
- 97 Vegetation group: shore pine / slough sedge
Pinus contorta / *Carex obnupta*
- Mapping code from figure 4 : 28
 Field data: *Pinus contorta/(Myrica californica)(Vaccinium ovatum)/Carex obnupta-
 Goodyera oblongifolia*
- Condition: G
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): PINCON/CAROBN
 Conservation rank: G1S1
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High

- 98 Vegetation group: slough sedge - Pacific silverweed
 Carex obnupta - Argentina egedii
 Mapping code from figure 4 : 6
 Field data: *Carex obnupta*-*Agrostis sp*-*Veronica scutellata*(-*Juncus lesueurii*)(-*Juncus falcatus*)(-*Carex sp.*)
 Condition: G
 Age class:
 Comments:
 Equivalent published habitat type(s): CAROBN-ARGEGE
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 99 Vegetation group: shore pine / slough sedge
 Pinus contorta / Carex obnupta
 Mapping code from figure 4 : 28
 Field data: *Pinus contorta*/*Vaccinium ovatum*/*Carex obnupta*
 Condition: E
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/CAROBN
 Conservation rank: G1S1
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 100 Vegetation group: hooker willow / slough sedge - Pacific silverweed
 Salix hookeriana / Carex obnupta - Argentina egedii
 Mapping code from figure 4 : 43
 Field data: *Salix hookeriana*/*Carex obnupta*-*Potentilla anserina*-*Agrostis sp*
 Condition: G
 Age class:
 Comments:
 Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 101 Vegetation group: shore pine / slough sedge
 Pinus contorta / Carex obnupta
 Mapping code from figure 4 : 28
 Field data: *Pinus contorta*/(*Myrica californica*)(*Vaccinium ovatum*)/*Carex obnupta*
 Condition: E
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/CAROBN
 Conservation rank: G1S1
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 102 Vegetation group: hooker willow / slough sedge - Pacific silverweed
 Salix hookeriana / Carex obnupta - Argentina egedii
 Mapping code from figure 4 : 43
 Field data: (*Salix hookeriana*)/*Carex obnupta*-*Potentilla anserina*-*Agrostis sp*
 Condition: G
 Age class:
 Comments:

- Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 103 Vegetation group: Sitka spruce / wavyleaf silktassel - evergreen huckleberry - salal /
 Picea sitchensis / Garrya elliptica - Vaccinium ovatum - Gaultheria shallon /
 Calamagrostis nutkaensis - Maianthemum dilatatum - Hierochloa occidentalis
- Mapping code from figure 4 : 14
- Field data: *Picea sitchensis/Garrya elliptica-Vaccinium ovatum-Gaultheria shallon/Calamagrostis nutkaensis-Maianthemum dilatatum-Hierochloa occidentalis*
- Condition: E
 Age class: B
 Comments: THE PRESENCE OF HIEOCC AND CALNUT DIFFERENTIATE THIS MICROSITE COMMUNITY FROM THE MORE COMMON RIDGETOP PHASE
- Equivalent published habitat type(s): ~PICSIT/VACOVA
 Conservation rank: ~S2
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: High
- 104 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
 Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex obnupta)
- Mapping code from figure 4 : 31
- Field data: *Pinus contorta/Myrica californica-Vaccinium ovatum-Gaultheria shallon-Ulex europaeus/Carex obnupta*
- Condition: M
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): PINCON/CAROBN; PICSIT-PINCON/GAUSHA-VACOVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: (w)/2 Priority habitat?:
 Restoration feasibility: Med
- 105 Vegetation group: shore pine / European beachgrass - salt rush - beach knotweed -
 Pinus contorta / Ammophila arenaria - Juncus lesueurii - Polygonum paronychia -
 Hypochaeris radicata - Festuca rubra
- Mapping code from figure 4 : 25
- Field data: *Pinus contorta/Ammophila arenaria-Juncus lesueurii-Polygonum paronychia-Hypochaeris radicata-Festuca rubra*
- Condition: P
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): REMNANT FESRUB COMMUNITY SUCCEEDING TO PICO/AMAR
 Conservation rank: NA;G1S1
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 106 Vegetation group: hooker willow / beaked sedge - slough sedge - Pacific silverweed
 Salix hookeriana / Carex utriculata - Carex obnupta - Argentina egedii
- Mapping code from figure 4 : 46
- Field data: *(Salix hookeriana)/Carex utriculata-Carex obnupta-Callitriche hermaphroditica-Eleocharis palustris-Potentilla anserina-Viola sp (palustris)*
- Condition: E

- Age class: B
Comments:
- Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
Conservation rank: G4S4; G5S4
Botanical Resource Value Rating: w/2 Priority habitat?:
Restoration feasibility: High
- 107 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex
obnupta)
- Mapping code from figure 4 : 31
Field data: *Pinus contorta/Myrica californica-Salix hookeriana-Vaccinium ovatum-
Gaultheria shallon-Spiraea douglasii/Carex obnupta*
- Condition: E
Age class: B
Comments:
- Equivalent published habitat type(s): PINCON/CAROBN; PICSIT-PINCON/GAUSHA-
VACOVA
- Conservation rank: G1S1;G3S3
Botanical Resource Value Rating: (w)/2 Priority habitat?:
Restoration feasibility: High
- 108 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex
obnupta)
- Mapping code from figure 4 : 31
Field data: *Pinus contorta-Picea sitchensis/Ulex europaeus-Vaccinium ovatum-
Myrica californica-Gaultheria shallon/(Carex obnupta)*
- Condition: P
Age class: C
Comments:
- Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA;
PINCON/CAROBN
- Conservation rank: G3S3;G1S1
Botanical Resource Value Rating: (w)/3(2) Priority habitat?:
Restoration feasibility: Med
- 109 Vegetation group: shore pine / slough sedge
Pinus contorta / Carex obnupta
- Mapping code from figure 4 : 28
Field data: *Pinus contorta/Ulex europaeus-Myrica californica-Salix
hookeriana/Carex obnupta*
- Condition: M
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PINCON/CAROBN
Conservation rank: G1S1
Botanical Resource Value Rating: w/2 Priority habitat?:
Restoration feasibility: Med
- 110 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / Carex obnupta - Argentina egedii
- Mapping code from figure 4 : 43
Field data: *Salix hookeriana/Carex obnupta-Potentilla anserina-Agrostis sp*
- Condition: G
Age class:
Comments:

- Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 111 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
Pinus contorta / *Myrica californica* - *Vaccinium ovatum* - *Gaultheria shallon* / (*Carex obnupta*)
 Mapping code from figure 4 : 31
 Field data: *Pinus contorta*/*Myrica californica*-*Vaccinium ovatum*/*Carex obnupta*
 Condition: P
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): PINCON/CAROBN;PICSIT-PINCON/GAUSHA-VACOVA
 Conservation rank: G1S1;G3S3
 Botanical Resource Value Rating: w/3(2) Priority habitat?:
 Restoration feasibility: Med
- 112 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
Pinus contorta / *Myrica californica* - *Vaccinium ovatum* - *Gaultheria shallon* / (*Carex obnupta*)
 Mapping code from figure 4 : 31
 Field data: *Pinus contorta*-*Picea sitchensis*/*Myrica californica*-*Vaccinium ovatum*/*Carex obnupta*
 Condition: P
 Age class: C
 Comments:
- Equivalent published habitat type(s): PINCON/CAROBN; PICSIT-PINCON/GAUSHA-VACOVA
 Conservation rank: G1S1;G3S3
 Botanical Resource Value Rating: (w)/3(2) Priority habitat?:
 Restoration feasibility: Med
- 113 Vegetation group: shore pine - Sitka spruce / gorse (- evergreen huckleberry) (-
Pinus contorta - *Picea sitchensis* / *Ulex europaeus* (- *Vaccinium ovatum*) (- *Myrica californica*)
 Mapping code from figure 4 : 20
 Field data: *Pinus contorta*-*Picea sitchensis*/*Ulex europaeus*-*Vaccinium ovatum*-*Myrica californica*
 Condition: P
 Age class: C
 Comments:
- Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA
 Conservation rank: G3S3
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 114 Vegetation group: gorse / European beachgrass
Ulex europaeus / *Ammophila arenaria*
 Mapping code from figure 4 : 48
 Field data: (*Pinus contorta*)/*Ulex europaeus*/*Ammophila arenaria*-*Juncus lesueurii*
 Condition: P
 Age class:
 Comments:
- Equivalent published habitat type(s): AMMARE
 Conservation rank: NA

- Mapping code from figure 4 : 33
 Field data: *Pinus contorta/Ulex europaeus*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 120 Vegetation group: shore pine - Sitka spruce / gorse (- evergreen huckleberry) (-
Pinus contorta - Picea sitchensis / Ulex europaeus (- Vaccinium ovatum) (- Myrica californica)
 Mapping code from figure 4 : 20
 Field data: *Pinus contorta-Pinus attenuata or radiata/Ulex europaeus-Vaccinium ovatum-Myrica californica-Gaultheria shallon*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): DEGRADED PICSIT-PINCON/GAUSHA-VACOVA
 Conservation rank: G3S3
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 121 Vegetation group: shore pine - Sitka spruce / gorse (- evergreen huckleberry) (-
Pinus contorta - Picea sitchensis / Ulex europaeus (- Vaccinium ovatum) (- Myrica californica)
 Mapping code from figure 4 : 20
 Field data: *Pinus contorta-Picea sitchensis/Ulex europaeus(-Vaccinium ovatum)(-Myrica californica)(-Gaultheria shallon)*
 Condition: P
 Age class: C
 Comments:
 Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA
 Conservation rank: G3S3
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 122 Vegetation group: slough sedge - salt rush
Carex obnupta - Juncus lesueurii
 Mapping code from figure 4 : 7
 Field data: *(Pinus contorta)/(Ulex europaeus)(Salix hookeriana)/Carex obnupta-Juncus lesueurii-Ammophila arenaria-Leontodon taraxacoides-Gnaphalium sp.-Aira caryophyllea*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): CAROBN; JUNLES
 Conservation rank: G4S4; G3S3
 Botanical Resource Value Rating: w/3(2) Priority habitat?:
 Restoration feasibility: Med
- 123 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / slough sedge
Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / Carex obnupta
 Mapping code from figure 4 : 32
 Field data: *Pinus contorta/(Myrica californica-Vaccinium ovatum-Gaultheria*

shallon)/Carex obnupta

Condition: G

Age class: B(pine)

Comments:

Equivalent published habitat type(s): PINCON/CAOB WITH AREAS TRENDING
TOWARD PINCON-PICSIT/GAUSHA-VACOVA

Conservation rank: G1S1;G3S3

Botanical Resource Value Rating: (w)/2 Priority habitat?:

Restoration feasibility: High

- 124 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / slough sedge
Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / Carex
obnupta

Mapping code from figure 4 : 32

Field data: *Pinus contorta/(Myrica californica-Vaccinium ovatum-Gaultheria
shallon)/Carex obnupta*

Condition: E

Age class: B(pine)

Comments:

Equivalent published habitat type(s): PINCON/CAOB WITH AREAS TRENDING
TOWARD PINCON-PICSIT/GAUSHA-VACOVA

Conservation rank: G1S1;G3S3

Botanical Resource Value Rating: (w)/2 Priority habitat?:

Restoration feasibility: High

- 125 Vegetation group: shore pine - Douglas-fir - madrone (- Sitka spruce) / wavyleaf
Pinus contorta - Pseudotsuga menziesii - Arbutus menziesii (- Picea sitchensis) /
Garrya elliptica - Vaccinium ovatum (- Myrica californica)

Mapping code from figure 4 : 21

Field data: *Pinus contorta-Pseudotsuga menziesii-Arbutus menziesii(-Picea
sitchensis)/Garrya elliptica-Vaccinium ovatum(-Myrica californica)*

Condition: E

Age class: B

Comments: THIS PLANT COMMUNITY APPEARS TO BE UNDESCRIBED. THE INDICATORS
OF ARBUTUS AND GARRYA ARE SIGNIFICANT

Equivalent published habitat type(s): NA; ~PINCON-PSEMEN/MYRCAL-VACOVA

Conservation rank: ~S1

Botanical Resource Value Rating: 2 Priority habitat?:

Restoration feasibility: High

- 126 Vegetation group: shore pine - Douglas-fir / wavyleaf silktassel - evergreen huckleberry
Pinus contorta - Pseudotsuga menziesii / Garrya elliptica - Vaccinium ovatum -
Arctostaphylos columbiana / Pteridium aquilinum

Mapping code from figure 4 : 23

Field data: *Pinus contorta(-Pseudotsuga menziesii)/Garrya elliptica-Vaccinium
ovatum-Arctostaphylos columbiana(-Gaultheria shallon)/Pteridium
aquilinum*

Condition: G

Age class: B

Comments: THIS PLANT COMMUNITY APPEARS TO BE BETWEEN ADJACENT
UNDESCRIBED COMMUNITY AND MORE TYPICAL PINCON-
PSEMEN/MYRCAL-VACOVA. THE REPLACEMENT OF MYRCAL WITH GARRYA
IS SIGNIFICANT.

Equivalent published habitat type(s): NA; ~PINCON-PSEMEN/MYRCAL-VACOVA

Conservation rank: ~S1

Botanical Resource Value Rating: 2 Priority habitat?:Y

Restoration feasibility: High

- 127 Vegetation group: shore pine / gorse / European beachgrass
Pinus contorta / *Ulex europaeus* / *Ammophila arenaria*
 Mapping code from figure 4 : 34
 Field data: *Pinus contorta-Picea sitchensis/Ulex europaeus/(Ammophila arenaria)*
 Condition: P
 Age class: C
 Comments:
 Equivalent published habitat type(s): NA
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 128 Vegetation group: shore pine / hairy manzanita
Pinus contorta / *Arctostaphylos columbiana*
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta-Pseudotsuga menziesii-Arbutus menziesii/Arctostaphylos columbiana-Vaccinium ovatum-Garrya elliptica(-Myrica californica)/Pteridium aquilinum*
 Condition: G
 Age class: B
 Comments: THIS PLANT COMMUNITY APPEARS TO TRANSITIONAL BETWEEN PINCON/ARCCOL AND THE ADJACENT UNDESCRIBED TYPE. THE INDICATORS OF ARBUTUS AND GARRYA ARE SIGNIFICANT
 Equivalent published habitat type(s): PICO/ARCCOL -> ADJACENT UNDESCRIBED COMMUNITY.
 Conservation rank: ~S1
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: High
- 129 Vegetation group: shore pine / hairy manzanita
Pinus contorta / *Arctostaphylos columbiana*
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta/Vaccinium ovatum-Arctostaphylos columbiana(-Ulex europaeus)(-Gaultheria shallon)(-Myrica californica)/Arctostaphylos uva-ursi-Pteridium aquilinum-Juncus lesueurii*
 Condition: M
 Age class: B
 Comments:
 Equivalent published habitat type(s): PINCON/ARCCOL
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: Med
- 130 Vegetation group: shore pine / hairy manzanita
Pinus contorta / *Arctostaphylos columbiana*
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta(-Arbutus menziesii)/Arctostaphylos columbiana-Vaccinium ovatum-Gaultheria shallon-Ulex europaeus(-Myrica californica)/Arctostaphylos uva-ursi*
 Condition: M
 Age class: B
 Comments:
 Equivalent published habitat type(s): PINCON/ARCCOL
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: Med

- 131 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal
Pinus contorta / *Myrica californica* - *Vaccinium ovatum* - *Gaultheria shallon*
 Mapping code from figure 4 : 29
 Field data: *Pinus contorta/Myrica californica-Vaccinium ovatum-Gaultheria shallon*
 Condition: G
 Age class: B
 Comments:
 Equivalent published habitat type(s): PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation rank: G3S3
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: High
- 132 Vegetation group: shore pine / gorse
Pinus contorta / *Ulex europaeus*
 Mapping code from figure 4 : 33
 Field data: *Pinus contorta/Ulex europaeus*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Low
- 133 Vegetation group: shore pine / gorse / European beachgrass
Pinus contorta / *Ulex europaeus* / *Ammophila arenaria*
 Mapping code from figure 4 : 34
 Field data: *Pinus contorta/Ulex europaeus/Ammophila arenaria*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PICO/ULEU/AMAR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 134 Vegetation group: shore pine / gorse
Pinus contorta / *Ulex europaeus*
 Mapping code from figure 4 : 33
 Field data: *Pinus contorta/Ulex europaeus*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 135 Vegetation group: shore pine - Douglas-fir - madrone (- Sitka spruce) / wavyleaf
Pinus contorta - *Pseudotsuga menziesii* - *Arbutus menziesii* (- *Picea sitchensis*) /
Garrya elliptica - *Vaccinium ovatum* (- *Myrica californica*)
 Mapping code from figure 4 : 21
 Field data: *Pseudotsuga menziesii-Pinus contorta(-Picea sitchensis)(-Arbutus menziesii)/Vaccinium ovatum-Garrya elliptica/Pteridium aquilinum(-Polystichum munitum-Lonicera hispidula-Goodyera oblongifolia)*
 Condition: E

- Age class: B
 Comments: THIS PLANT COMMUNITY APPEARS TO BE UNDESCRIBED. THE INDICATORS OF ARBUTUS AND GARRYA ARE SIGNIFICANT
 Equivalent published habitat type(s): NA; ~PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation rank: ~S1
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: High
- 136 Vegetation group: shore pine / hairy manzanita
 Pinus contorta / Arctostaphylos columbiana
 Mapping code from figure 4 : 26
 Field data: *Arbutus menziesii*-*Pinus contorta*(-*Chamaecyparis lawsoniana*)(-*Pseudotsuga menziesii*)/*Vaccinium ovatum*-*Gaultheria shallon*(-*Arctostaphylos columbiana*)(-*Myrica californica*)
 Condition: E
 Age class: B
 Comments: THIS COMMUNITY FALL WITHIN A POTENTIAL NEW PLANT COMMUNITY CONCEPT: MADRONE DUNAL
 Equivalent published habitat type(s): PINCON/ARCCOL -> PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation rank: G1S1;G3S3
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: High
- 137 Vegetation group: shore pine - Douglas-fir / waxmyrtle - evergreen huckleberry
 Pinus contorta - *Pseudotsuga menziesii* / *Myrica californica* - *Vaccinium ovatum*
 Mapping code from figure 4 : 24
 Field data: *Pinus contorta*/*Myrica californica*-*Vaccinium ovatum*-*Gaultheria shallon*/*Pteridium aquilinum*
 Condition: E
 Age class: B
 Comments:
 Equivalent published habitat type(s): PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation rank: G3S3
 Botanical Resource Value Rating: 2 Priority habitat?:
 Restoration feasibility: High
- 138 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
 Pinus contorta / *Myrica californica* - *Vaccinium ovatum* - *Gaultheria shallon* / (*Carex obnupta*)
 Mapping code from figure 4 : 31
 Field data: *Pinus contorta*/*Myrica californica*-*Vaccinium ovatum*-*Gaultheria shallon*(*Carex obnupta*)
 Condition: G
 Age class: B(pine)
 Comments: PINCON CAROBN IN WETTER MICROSITES
 Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA;
 PINCON/CAROBN
 Conservation rank: G3S3;G1S1
 Botanical Resource Value Rating: (w)/2 Priority habitat?:
 Restoration feasibility: High
- 139 Vegetation group: shore pine / hairy manzanita
 Pinus contorta / Arctostaphylos columbiana
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta*/*Arctostaphylos columbiana*(-*Vaccinium ovatum*)(-*Myrica californica*)(-*Gaultheria shallon*)/*Arctostaphylos uva-ursi*-*Juncus*

- Condition: G
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PINCON/ARCCOL
Conservation rank: G1S1
Botanical Resource Value Rating: 2 Priority habitat?: Y
Restoration feasibility: High
- 140 Vegetation group: shore pine / kinnikinnick
Pinus contorta / Arctostaphylos uva-ursi
Mapping code from figure 4 : 27
Field data: Pinus contorta/Ulex europaeus/Ammophila arenaria-Arctostaphylos uva-ursi-Pteridium aquilinum
- Condition: P
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PINCON/ARCUVA
Conservation rank: G1S1
Botanical Resource Value Rating: 2 Priority habitat?: Y
Restoration feasibility: Med
- 141 Vegetation group: shore pine / hairy manzanita
Pinus contorta / Arctostaphylos columbiana
Mapping code from figure 4 : 26
Field data: Arbutus menziesii-Pinus contorta-Pseudotsuga menziesii-Picea sitchensis/Arctostaphylos columbiana-Vaccinium ovatum-Gaultheria shallon/Ammophila arenaria-Pteridium aquilinum-Arctostaphylos uva-
- Condition: M
Age class: B
Comments:
- Equivalent published habitat type(s): PINCON/ARCCOL
Conservation rank: G1S1
Botanical Resource Value Rating: 2 Priority habitat?: Y
Restoration feasibility: Med
- 142 Vegetation group: shore pine - Douglas-fir / waxmyrtle - evergreen huckleberry
Pinus contorta - Pseudotsuga menziesii / Myrica californica - Vaccinium ovatum
Mapping code from figure 4 : 24
Field data: Pseudotsuga menziesii(-Picea sitchensis)(-Arbutus menziesii)/Vaccinium ovatum-Gaultheria shallon(-Myrica californica)/Pteridium aquilinum(-Ammophila arenaria)
- Condition: G
Age class: C
Comments:
- Equivalent published habitat type(s): ~PICO-PSEMEN/MYRCAL-VACOVA
Conservation rank: G3S3
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: High
- 143 Vegetation group: Douglas-fir - white fir - Sitka spruce / evergreen huckleberry -
Pseudotsuga menziesii - Abies concolor - Picea sitchensis / Vaccinium ovatum -
Garrya elliptica - Gaultheria shallon / Satureja douglasii - Polystichum munitum - Hierochloe
Mapping code from figure 4 : 40
Field data: Pseudotsuga menziesii-Abies concolor-Picea sitchensis/Vaccinium ovatum-Garrya elliptica-Gaultheria shallon/Satureja douglasii-Polystichum munitum-Hierochloe occidentalis-Pteridium aquilinum(-Lonicera hispidula)(-Hieracium albiflorum)(-Galium triflorum)(Goodyera oblongifolia)(-Rhus diversiloba)

- Condition: G
Age class: B
Comments: PICSIT/VACOVA TRANSITIONAL WITH UNDESCRIBED ARBMEN/GARELL COMMUNITY AND COMPLICATED BY UNUSUAL ABCO PRESENCE.
Equivalent published habitat type(s): NA; ~PICSIT/VACOVA TRANSITIONAL WITH UNDESCRIBED COMMUNITY ABOVE AND COMPLICATED BY UNUSUAL ABCO PRESENCE.
Conservation rank: ~S1
Botanical Resource Value Rating: 2 Priority habitat?:
Restoration feasibility: High
- 144 Vegetation group: shore pine / kinnikinnick
Pinus contorta / Arctostaphylos uva-ursi
Mapping code from figure 4 : 27
Field data: *Pinus contorta/Ammophila arenaria-Arctostaphylos uva-ursi-Pteridium aquilinum-Festuca rubra(-Lupinus littoralis-Polygonum paronychia-Cardionema ramosissimum-Poa macrantha)*
Condition: M
Age class:
Comments:
Equivalent published habitat type(s): PINCON/ARCUVA; REMNANT FESRUB-PTEAQU COMMUNITY COMPONENTS
Conservation rank: G1S1;G3S3
Botanical Resource Value Rating: 2 Priority habitat?:Y
Restoration feasibility: Med
- 145 Vegetation group: shore pine / gorse / European beachgrass with remnant red fescue
Pinus contorta / Ulex europaeus / Ammophila arenaria with remnant Festuca rubra dune community components
Mapping code from figure 4 : 37
Field data: *Pinus contorta/Ulex europaeus/Ammophila arenaria-Lupinus littoralis-Hypochaeris radicata-Polygonum paronychia-Poa macrantha-Festuca rubra*
Condition: P
Age class: B(pine)
Comments:
Equivalent published habitat type(s): AMMARE WITH REMNANT FESRUB DUNE COMMUNITY COMPONENTS
Conservation rank: NA;G1S1
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: Med
- 146 Vegetation group: European beachgrass with remnant seashore bluegrass and / or red Ammophila arenaria with remnant Poa macrantha and / or Festuca rubra community components
Mapping code from figure 4 : 5
Field data: *Ammophila arenaria-Lupinus littoralis-Festuca rubra-Polygonum paronychia(-Juncus lesueurii)(-Hypochaeris radicata)*
Condition: M
Age class: B(pine)
Comments:
Equivalent published habitat type(s): AMMARE WITH REMNANT FESRUB DUNE OR FESRUB-PTEAQU COMMUNITY COMPONENTS
Conservation rank: NA;G1S1
Botanical Resource Value Rating: 2 Priority habitat?:
Restoration feasibility: Med
- 147 Vegetation group: shore pine / slough sedge

- Pinus contorta / Carex obnupta
 Mapping code from figure 4 : 28
 Field data: *Pinus contorta*/(*Myrica californica*)(*Vaccinium ovatum*)/*Carex obnupta*
 Condition: E
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/CAROBN
 Conservation rank: G1S1
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 148 Vegetation group: mulched gorse: gorse / weeds
 mulched gorse: *Ulex europaeus* / weeds
 Mapping code from figure 4 : 11
 Field data: *MULCHED GORSE: Ulex europaeus/WEEDS*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 149 Vegetation group: mulched gorse: gorse / weeds
 mulched gorse: *Ulex europaeus* / weeds
 Mapping code from figure 4 : 11
 Field data: *MULCHED GORSE: Ulex europaeus/WEEDS*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 150 Vegetation group: gorse / European beachgrass with remnant red fescue or seashore
Ulex europaeus / *Ammophila arenaria* with remnant *Festuca rubra* or *Poa macrantha* community components
 Mapping code from figure 4 : 51
 Field data: (*Ulex europaeus*)/*Ammophila arenaria*-*Festuca rubra*-*Hypochaeris radicata*-*Polygonum paronychia*-*Poa macrantha*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): AMMARE WITH REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
 Conservation rank: NA;G1S1;G2S1
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 151 Vegetation group: gorse / European beachgrass with possible remnant red fescue or
Ulex europaeus / *Ammophila arenaria* with possible remnant *Festuca rubra* or *Poa macrantha* community components
 Mapping code from figure 4 : 49
 Field data: *Ulex europaeus/Ammophila arenaria*(-*Festuca rubra*)(-*Poa macrantha*)(-*WEEDS*)

- Condition: P
Age class:
Comments:
Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
- Conservation rank: NA; G1S1; G2S1
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: Med
- 152 Vegetation group: gorse / European beachgrass with possible remnant red fescue or Ulex europaeus / Ammophila arenaria with possible remnant Festuca rubra or Poa macrantha community components
Mapping code from figure 4 : 49
Field data: *Ulex europaeus/Ammophila arenaria-Festuca rubra-Hypochaeris radicata-Polygonum paronychia-Poa macrantha*
- Condition: P
Age class:
Comments:
Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
- Conservation rank: NA; G1S1; G2S1
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: Med
- 153 Vegetation group: gorse / European beachgrass with remnant red fescue or seashore Ulex europaeus / Ammophila arenaria with remnant Festuca rubra or Poa macrantha community components
Mapping code from figure 4 : 51
Field data: *Pinus contorta/Ammophila arenaria-Festuca rubra-Poa macrantha*
- Condition: P
Age class: B(pine)
Comments:
Equivalent published habitat type(s): AMMARE WITH REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
- Conservation rank: NA; G1S1; G2S1
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: Med
- 154 Vegetation group: shore pine - Sitka spruce / mulched gorse / European beachgrass Pinus contorta - Picea sitchensis / mulched Ulex europaeus / Ammophila arenaria
Mapping code from figure 4 : 18
Field data: *Pinus contorta/Ulex europaeus/Ammophila arenaria-Aira caryophyllea-Aira praecox-Hypochaeris radicata(-Erechtites minima)*
- Condition: P
Age class: C
Comments:
Equivalent published habitat type(s): NA
- Conservation rank: NA
Botanical Resource Value Rating: 4 Priority habitat?:
Restoration feasibility: Med
- 155 Vegetation group: gorse / European beachgrass with possible remnant red fescue or Ulex europaeus / Ammophila arenaria with possible remnant Festuca rubra or Poa macrantha community components
Mapping code from figure 4 : 49
Field data: (*Ulex europaeus/Ammophila arenaria-Festuca rubra-Hypochaeris radicata-Polygonum paronychia-Poa macrantha*)

- Condition: P
Age class:
Comments:
Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
- Conservation rank: NA;G1S1;G2S1
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: Med
- 156 Vegetation group: gorse / European beachgrass with possible remnant red fescue or Ulex europaeus / Ammophila arenaria with possible remnant Festuca rubra or Poa macrantha community components
Mapping code from figure 4 : 49
Field data: *Ulex europaeus/Ammophila arenaria(-Festuca rubra)(-Poa macrantha)(-WEEDS)*
- Condition: P
Age class:
Comments:
Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
- Conservation rank: NA; G1S1; G2S1
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: Med
- 157 Vegetation group: gorse / European beachgrass with possible remnant red fescue or Ulex europaeus / Ammophila arenaria with possible remnant Festuca rubra or Poa macrantha community components
Mapping code from figure 4 : 49
Field data: *Ulex europaeus/Ammophila arenaria-Festuca rubra-Hypochaeris radicata-Polygonum paronychia-Poa macrantha*
- Condition: P
Age class:
Comments:
Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
- Conservation rank: NA;G1S1;G2S1
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: Med
- 158 Vegetation group: gorse / European beachgrass with possible remnant red fescue or Ulex europaeus / Ammophila arenaria with possible remnant Festuca rubra or Poa macrantha community components
Mapping code from figure 4 : 49
Field data: *(Ulex europaeus)/Ammophila arenaria-Festuca rubra-Poa macrantha*
- Condition: P
Age class: B(pine)
Comments:
Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
- Conservation rank: NA; G1S1; G2S1
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: Med
- 159 Vegetation group: shore pine / gorse
Pinus contorta / Ulex europaeus
Mapping code from figure 4 : 33
Field data: *Pinus contorta/Ulex europaeus*

- Condition: P
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR
Conservation rank: NA
Botanical Resource Value Rating: 3 Priority habitat?:
Restoration feasibility: Med
- 160 Vegetation group: European beachgrass with remnant seashore bluegrass and / or red
Ammophila arenaria with remnant Poa macrantha and / or Festuca rubra
community components
- Mapping code from figure 4 : 5
- Field data: (*Pinus contorta*)/(*Ulex europaeus*)/*Ammophila arenaria*-*Festuca rubra*-
Polygonum paronychia-*Lupinus littoralis*-*Artemisia pycnocephala*(-
Pteridium aquilinum)
- Condition: P
Age class:
Comments:
- Equivalent published habitat type(s): AMMARE WITH REMNANT FESRUB-PTEAQU
COMMUNITY COMPONENTS
- Conservation rank: NA; G3S3
Botanical Resource Value Rating: 2 Priority habitat?:
Restoration feasibility: Med
- 161 Vegetation group: European beachgrass with remnant salt rush community components
Ammophila arenaria with remnant Juncus lesueurii community components
- Mapping code from figure 4 : 4
- Field data: *Ammophila arenaria*-*Juncus lesueurii*-*Polygonum paronychia*-
Hypochaeris radicata-*Festuca rubra*
- Condition: M
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): AMMARE WITH REMNANT JUNLES COMMUNITY
COMPONENTS
- Conservation rank: NA;G3S3
Botanical Resource Value Rating: 2 Priority habitat?:
Restoration feasibility: Med
- 162 Vegetation group: Douglas-fir - shore pine - Sitka spruce (- madrone) / wavyleaf
Pseudotsuga menziesii - Pinus contorta - Picea sitchensis (- Arbutus menziesii) /
Garrya elliptica - Myrica californica - Ulex europaeus - Vaccinium ovatum /
Hierochloa occidentalis
- Mapping code from figure 4 : 42
- Field data: *Pseudotsuga menziesii*-*Pinus contorta*-*Picea sitchensis*(-*Arbutus*
menziesii)/*Garrya elliptica*-*Myrica californica*-*Ulex europaeus*-
Vaccinium ovatum/*Hierochloa occidentalis*
- Condition: M TO G
Age class: B
Comments:
- Equivalent published habitat type(s): NA; UNDESCRIBED GARRYA VARIANT ON
PINCON-PSEMEN/MYRCAL-VACOVA
- Conservation rank: ~S1
Botanical Resource Value Rating: 2 Priority habitat?:
Restoration feasibility: High
- 163 Vegetation group: shore pine / gorse / European beachgrass
Pinus contorta / Ulex europaeus / Ammophila arenaria
- Mapping code from figure 4 : 34

- Field data: *Pinus contorta/Ulex europaeus/Ammophila arenaria*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PICO/ULEU/AMAR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 164 Vegetation group: shore pine / kinnikinnick
Pinus contorta / Arctostaphylos uva-ursi
 Mapping code from figure 4 : 27
 Field data: *Pinus contorta/Arctostaphylos uva-ursi-Festuca rubra-Artemisia pycnocephala-Hypochaeris radicata-Polygonum paronychia-Fragaria chiloensis-Lupinus littoralis-Poa macrantha-Rumex acetocella*
 Condition: G
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): FESRUB DUNE -> PINCON/ARCUVA
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: High
- 165 Vegetation group: shore pine / gorse / European beachgrass
Pinus contorta / Ulex europaeus / Ammophila arenaria
 Mapping code from figure 4 : 34
 Field data: (*Pinus contorta*)/*Ulex europaeus*(-*Ammophila arenaria*)(-WEEDS)
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): NA
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 166 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / Carex obnupta - Argentina egedii
 Mapping code from figure 4 : 43
 Field data: (*Salix hookeriana*)/*Carex obnupta-Potentilla anserina-Veronica scutellata-Agrostis sp-Leontodon taraxacoides*
 Condition: G
 Age class:
 Comments:
 Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 167 Vegetation group: shore pine - Sitka spruce - red alder / waxmyrtle - evergreen
Pinus contorta - Picea sitchensis - Alnus rubra / Myrica californica - Vaccinium ovatum - Gaultheria shallon / Carex obnupta (- Lysichiton americanus)
 Mapping code from figure 4 : 17
 Field data: *Pinus contorta-Picea sitchensis-Alnus rubra-Rhamnus purshiana(-Thuja plicata)/Myrica californica-Vaccinium ovatum-Gaultheria shallon/Carex obnupta(-Lysichiton americanum)*
 Condition: E
 Age class: B

- Comments:
 Equivalent published habitat type(s): PINCONC / CAROBN
 Conservation rank: G1S1
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 168 Vegetation group: shore pine / gorse
 Pinus contorta / Ulex europaeus
 Mapping code from figure 4 : 33
 Field data: *Pinus contorta/Ulex europaeus*
 Condition: P
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 169 Vegetation group: shore pine / gorse
 Pinus contorta / Ulex europaeus
 Mapping code from figure 4 : 33
 Field data: (*Pinus contorta*)/*Ulex europaeus*
 Condition: P
 Age class:
 Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 170 Vegetation group: shore pine / gorse
 Pinus contorta / Ulex europaeus
 Mapping code from figure 4 : 33
 Field data: (*Pinus contorta*)/*Ulex europaeus*
 Condition: P
 Age class:
 Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 171 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
 Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex
 obnupta)
 Mapping code from figure 4 : 31
 Field data: *Pinus contorta(-Picea sitchensis)/Myrica californica-Vaccinium
 ovatum(-Gaultheria shallon)(-Ulex europaeus)/(Carex obnupta)*
 Condition: M
 Age class: C
 Comments:
- Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA;
 PINCON/CAROBN
 Conservation rank: G3S3;G1S1
 Botanical Resource Value Rating: (w)/3(2) Priority habitat?:
 Restoration feasibility: Med

- 172 **Vegetation group:** red fescue dune community with emerging European beachgrass
Festuca rubra dune community with emerging *Ammophila arenaria* community characteristics
Mapping code from figure 4 : 10
Field data: *Ammophila arenaria-Festuca rubra-Polygonum paronychia-Artemisia pycnocephala(-Lupinus littoralis)(-Camissonia cheiranthifolia)(-Juncus lesueurii)(-Glehnia littoralis)*
Condition: G
Age class: B(pine)
Comments:
Equivalent published habitat type(s): FESRUB DUNE COMMUNITY WITH EMERGING AMMARE COMMUNITY CHARACTERISTICS
Conservation rank: NA; G1S1
Botanical Resource Value Rating: 1 **Priority habitat?:**
Restoration feasibility: High
- 173 **Vegetation group:** shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex obnupta)
Mapping code from figure 4 : 31
Field data: *Pinus contorta-Pinus attenuata or radiata-Picea sitchensis/Myrica californica-Vaccinium ovatum-Gaultheria shallon/(Carex obnupta)*
Condition: G
Age class: B
Comments: PINCON/CAROBN IN CONCAVITIES AND INTERGRADING WITH PICSIT-PINCON/GAUSHA-VACOVA.
Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA;
PINCON/CAROBN
Conservation rank: G3S3;G1S1
Botanical Resource Value Rating: (w)/2 **Priority habitat?:**
Restoration feasibility: High
- 174 **Vegetation group:** shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex obnupta)
Mapping code from figure 4 : 31
Field data: *Pinus contorta-Pseudotsuga menziesii-Picea sitchensis/Myrica californica-Vaccinium ovatum-Gaultheria shallon(-Salix hookeriana)(-Rhamnus purshiana)/Pteridium aquilinum(-Carex obnupta)(-Arctostaphylos uva-ursi)*
Condition: E
Age class: B
Comments: MINOR PINCON/CAROBN IN WETTER MICROSITES
Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA; PINCON-PSEMEN/MYRCAL-VACOVA; MINOR PINCON/CAROBN
Conservation rank: G3S3; G1S1
Botanical Resource Value Rating: (w)/2 **Priority habitat?:**
Restoration feasibility: High
- 175 **Vegetation group:** shore pine / gorse
Pinus contorta / Ulex europaeus
Mapping code from figure 4 : 33
Field data: *Pinus contorta/Ulex europaeus*
Condition: P
Age class: B(pine)

- Comments:
 Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 176 Vegetation group: shore pine / gorse
 Pinus contorta / Ulex europaeus
 Mapping code from figure 4 : 33
 Field data: *Pinus contorta/Ulex europaeus*
 Condition: P
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): PINCON/ULEEUR
 Conservation rank: NA
 Botanical Resource Value Rating: 3 Priority habitat?:
 Restoration feasibility: Med
- 177 Vegetation group: gorse / European beachgrass
 Ulex europaeus / Ammophila arenaria
 Mapping code from figure 4 : 48
 Field data: (*Pinus contorta*)/*Ulex europaeus/Ammophila arenaria-Juncus lesueurii*
 Condition: P
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): AMMARE; JUNLES
 Conservation rank: NA;G3S3
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 178 Vegetation group: shore pine / slough sedge
 Pinus contorta / Carex obnupta
 Mapping code from figure 4 : 28
 Field data: *Pinus contorta/Salix hookeriana-Ulex europaeus/Carex obnupta-Agrostis sp-Juncus ensifolius(AC)-Veronica scutellata*
 Condition: M
 Age class: B(pine)
 Comments:
- Equivalent published habitat type(s): CAROBN-ARGEGE
 Conservation rank: G4S4
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: Med
- 179 Vegetation group: shore pine - Douglas-fir - Sitka spruce / gorse
 Pinus contorta - Pseudotsuga menziesii - Picea sitchensis / Ulex europaeus
 Mapping code from figure 4 : 22
 Field data: *Pinus contorta-Pseudotsuga menziesii-Picea sitchensis/Ulex europaeus*
 Condition: P
 Age class: C
 Comments:
- Equivalent published habitat type(s): NA
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 180 Vegetation group: shore pine / slough sedge
 Pinus contorta / Carex obnupta

- Mapping code from figure 4 : 28
 Field data: *Pinus contorta/Carex obnupta*
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/CAROBN
 Conservation rank: G1S1
 Botanical Resource Value Rating: w/3(2) Priority habitat?:
 Restoration feasibility: Med
- 181 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal - gorse /
Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon - Ulex europaeus / Carex obnupta
- Mapping code from figure 4 : 30
 Field data: *Pinus contorta/Myrica californica-Vaccinium ovatum-Gaultheria shallon-Ulex europaeus/Carex obnupta*
 Condition: P
 Age class: B
 Comments:
 Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA
 Conservation rank: G3S3
 Botanical Resource Value Rating: (w)/3(2) Priority habitat?:
 Restoration feasibility: Med
- 182 Vegetation group: shore pine / hairy manzanita
Pinus contorta / Arctostaphylos columbiana
- Mapping code from figure 4 : 26
 Field data: *Pinus contorta/Myrica californica-Vaccinium ovatum(-Arctostaphylos columbiana)(-Gaultheria shallon)(Arctostaphylos uva-ursi)(-Juncus lesueurii)*
 Condition: E
 Age class: B
 Comments:
 Equivalent published habitat type(s): PINCON/ARCCOL -> PICSIT-PINCON/GAUSHA-VACOVA
 Conservation rank: G1S1;G3S3
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: High
- 183 Vegetation group: shore pine / kinnikinnick
Pinus contorta / Arctostaphylos uva-ursi
- Mapping code from figure 4 : 27
 Field data: *Pinus contorta/Myrica californica-Vaccinium ovatum(-Ulex europaeus)/Arctostaphylos uva-ursi(-Juncus lesueurii)(-Festuca rubra)*
 Condition: M
 Age class: B(pine)
 Comments: STRONGLY TRANSITIONAL
 Equivalent published habitat type(s): PINCON/ARCUVA -> PICSIT-PINCON/GAUSHA-VACOVA
 Conservation rank: G1S1;G3S3
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: Med
- 184 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / Carex obnupta - Argentina egedii
- Mapping code from figure 4 : 43
 Field data: *Salix hookeriana-Vaccinium ovatum-Myrica californica/Carex obnupta*

- Condition: E
Age class:
Comments:
- Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
Conservation rank: G4S4
Botanical Resource Value Rating: w/2 Priority habitat?:
Restoration feasibility: High
- 185 Vegetation group: shore pine - Sitka spruce / gorse
Pinus contorta - Picea sitchensis / Ulex europaeus
Mapping code from figure 4 : 19
Field data: *Pinus contorta-Picea sitchensis/Ulex europaeus*
Condition: P
Age class: C
Comments:
- Equivalent published habitat type(s): NA
Conservation rank: NA
Botanical Resource Value Rating: 4 Priority habitat?:
Restoration feasibility: Med
- 186 Vegetation group: mulched gorse: gorse / weeds
mulched gorse: Ulex europaeus / weeds
Mapping code from figure 4 : 11
Field data: *MULCHED GORSE: Ulex europaeus/WEEDS*
Condition: P
Age class:
Comments:
- Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
Conservation rank: NA
Botanical Resource Value Rating: 4 Priority habitat?:
Restoration feasibility: Med
- 187 Vegetation group: mulched gorse: gorse / weeds
mulched gorse: Ulex europaeus / weeds
Mapping code from figure 4 : 11
Field data: *MULCHED GORSE: Ulex europaeus/WEEDS*
Condition: P
Age class:
Comments:
- Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
Conservation rank: NA
Botanical Resource Value Rating: 4 Priority habitat?:
Restoration feasibility: Med
- 188 Vegetation group: gorse / European beachgrass with possible remnant red fescue or
Ulex europaeus / Ammophila arenaria with possible remnant Festuca rubra or Poa
macrantha community components
Mapping code from figure 4 : 49
Field data: *(Ulex europaeus)/Ammophila arenaria-Festuca rubra-Poa macrantha-
Hypochaeris radicata-AIRA spp.-Leontodon taraxacoides-Polygonum
paronychia-Camissonia cheiranthifolia-Pseudognaphalium stramineum?*
Condition: P
Age class:
Comments:
- Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR
POAMAC COMMUNITY COMPONENTS

- Conservation rank: NA;G1S1;G2S1
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 189 Vegetation group: mulched gorse: gorse / weeds
 mulched gorse: *Ulex europaeus* / weeds
 Mapping code from figure 4 : 11
 Field data: *MULCHED GORSE: Ulex europaeus/WEEDS*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 190 Vegetation group: mulched gorse: gorse / weeds
 mulched gorse: *Ulex europaeus* / weeds
 Mapping code from figure 4 : 11
 Field data: *MULCHED GORSE: Ulex europaeus/WEEDS*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 191 Vegetation group: mulched gorse: gorse / weeds
 mulched gorse: *Ulex europaeus* / weeds
 Mapping code from figure 4 : 11
 Field data: *MULCHED GORSE: Ulex europaeus/WEEDS*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 192 Vegetation group: mulched gorse: gorse / weeds
 mulched gorse: *Ulex europaeus* / weeds
 Mapping code from figure 4 : 11
 Field data: *MULCHED GORSE: Ulex europaeus/WEEDS*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 193 Vegetation group: mulched gorse: gorse / weeds
 mulched gorse: *Ulex europaeus* / weeds
 Mapping code from figure 4 : 11
 Field data: *MULCHED GORSE: Ulex europaeus/WEEDS*
 Condition: P

- Age class:
Comments:
- Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
Conservation rank: NA
Botanical Resource Value Rating: 4 Priority habitat?:
Restoration feasibility: Med
- 194 Vegetation group: gorse / European beachgrass with remnant red fescue dune
Ulex europaeus / Ammophila arenaria with remnant Festuca rubra dune
community components
- Mapping code from figure 4 : 50
Field data: (*Ulex europaeus*)/*Ammophila arenaria*-*Festuca rubra*-*Poa macrantha*-*Hypochaeris radicata*-*AIRA spp.*-*Leontodon taraxacoides*-*Polygonum paronychia*-*Camissonia cheiranthifolia*-*Pseudognaphalium stramineum*?
- Condition: P
Age class:
Comments:
- Equivalent published habitat type(s): AMMARE WITH REMNANT FESRUB DUNE
COMMUNITY COMPONENTS
- Conservation rank: NA;G1S1
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: Med
- 195 Vegetation group: mulched gorse: gorse / weeds
mulched gorse: Ulex europaeus / weeds
- Mapping code from figure 4 : 11
Field data: MULCHED GORSE: *Ulex europaeus*/WEEDS
- Condition: P
Age class:
Comments:
- Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
Conservation rank: NA
Botanical Resource Value Rating: 4 Priority habitat?:
Restoration feasibility: Med
- 196 Vegetation group: mulched gorse: gorse / weeds
mulched gorse: Ulex europaeus / weeds
- Mapping code from figure 4 : 11
Field data: MULCHED GORSE: *Ulex europaeus*/WEEDS
- Condition: P
Age class:
Comments:
- Equivalent published habitat type(s): MULCHED GORSE: ULEU/WEEDS
Conservation rank: NA
Botanical Resource Value Rating: 4 Priority habitat?:
Restoration feasibility: Med
- 197 Vegetation group: gorse / European beachgrass with remnant red fescue dune
Ulex europaeus / Ammophila arenaria with remnant Festuca rubra dune
community components
- Mapping code from figure 4 : 50
Field data: (*Ulex europaeus*)/*Ammophila arenaria*-*Festuca rubra*-*Poa macrantha*-*Hypochaeris radicata*-*AIRA spp.*-*Leontodon taraxacoides*-*Polygonum paronychia*-*Camissonia cheiranthifolia*-*Pseudognaphalium stramineum*?
- Condition: P
Age class: B(pine)
Comments:

- Equivalent published habitat type(s): AMMARE WITH REMNANT FESRUB DUNE
COMMUNITY COMPONENTS
- Conservation rank: NA; G1S1
Botanical Resource Value Rating: 3(2) Priority habitat?:
Restoration feasibility: Med
- 198 Vegetation group: shore pine / slough sedge
Pinus contorta / Carex obnupta
Mapping code from figure 4 : 28
Field data: *Pinus contorta/Salix hookeriana-Ulex europaeus/Carex obnupta-Polystichum munitum*
Condition: G
Age class: B(pine)
Comments:
- Equivalent published habitat type(s): PINCON/CAROBN
Conservation rank: G1S1
Botanical Resource Value Rating: w/2 Priority habitat?:
Restoration feasibility: High
- 199 Vegetation group: shore pine / waxmyrtle - evergreen huckleberry - salal / (slough
Pinus contorta / Myrica californica - Vaccinium ovatum - Gaultheria shallon / (Carex
obnupta)
Mapping code from figure 4 : 31
Field data: (*Pinus contorta*)/*Myrica californica-Vaccinium ovatum-Gaultheria shallon*/(*Carex obnupta*)
Condition: G
Age class: B
Comments:
- Equivalent published habitat type(s): PICSIT-PINCON/GAUSHA-VACOVA;
PINCON/CAROBN
Conservation rank: G3S3;G1S1
Botanical Resource Value Rating: (w)/2 Priority habitat?:
Restoration feasibility: High
- 200 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / Carex obnupta - Argentina egedii
Mapping code from figure 4 : 43
Field data: *Pinus contorta/Salix hookeriana-Myrica californica-Vaccinium ovatum-Gaultheria shallon/Carex obnupta-Potentilla anserina*
Condition: G
Age class:
Comments:
- Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
Conservation rank: G4S4
Botanical Resource Value Rating: w/3 Priority habitat?:
Restoration feasibility: High
- 201 Vegetation group: hooker willow / slough sedge - Pacific silverweed
Salix hookeriana / Carex obnupta - Argentina egedii
Mapping code from figure 4 : 43
Field data: *Pinus contorta/Salix hookeriana-Myrica californica-Vaccinium ovatum-Gaultheria shallon/Carex obnupta-Potentilla anserina*
Condition: G
Age class:
Comments:
- Equivalent published habitat type(s): SALHOO / (ARGEGE) - CAROBN
Conservation rank: G4S4

- Botanical Resource Value Rating: w/3 Priority habitat?:
 Restoration feasibility: High
- 202 Vegetation group: shore pine - Douglas-fir / waxmyrtle - evergreen huckleberry
Pinus contorta - *Pseudotsuga menziesii* / *Myrica californica* - *Vaccinium ovatum*
 Mapping code from figure 4 : 24
 Field data: *Pinus contorta*(-*Pseudotsuga menziesii*)(-*Arbutus menziesii*)/*Myrica californica*-*Vaccinium ovatum*(-*Ulex europaeus*)/*Pteridium aquilinum*(-*Ammophila arenaria*)
 Condition: M
 Age class: B
 Comments:
 Equivalent published habitat type(s): PINCON-PSEMEN/MYRCAL-VACOVA
 Conservation rank: G3S3
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 203 Vegetation group: shore pine / hairy manzanita
Pinus contorta / *Arctostaphylos columbiana*
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta*/*Arctostaphylos columbiana*-*Ulex europaeus*/*Ammophila arenaria*-WEEDS
 Condition: P
 Age class: B(pine)
 Comments:
 Equivalent published habitat type(s): PINCON/ARCCOL
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: Med
- 204 Vegetation group: shore pine / hairy manzanita
Pinus contorta / *Arctostaphylos columbiana*
 Mapping code from figure 4 : 26
 Field data: *Pinus contorta*/*Arctostaphylos columbiana*-*Vaccinium ovatum*-*Myrica californica*(-*Baccharis pilularis*)/*Arctostaphylos uva-ursi*
 Condition: G
 Age class: B
 Comments:
 Equivalent published habitat type(s): PINCON/ARCCOL
 Conservation rank: G1S1
 Botanical Resource Value Rating: 2 Priority habitat?:Y
 Restoration feasibility: High
- 205 Vegetation group: shore pine / gorse / European beachgrass
Pinus contorta / *Ulex europaeus* / *Ammophila arenaria*
 Mapping code from figure 4 : 34
 Field data: *Pinus contorta*/*Ulex europaeus*/*Ammophila arenaria*-*Hypochaeris radicata*-*Aira praecox*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): AMMARE
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 206 Vegetation group: gorse / European beachgrass
Ulex europaeus / *Ammophila arenaria*

- Mapping code from figure 4 : 48
 Field data: *Pinus contorta/Ulex europaeus/Ammophila arenaria-Hypochaeris radicata-Aira praecox*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): AMMARE
 Conservation rank: NA
 Botanical Resource Value Rating: 4 Priority habitat?:
 Restoration feasibility: Med
- 207 Vegetation group: Sitka spruce - shore pine - red alder / salmonberry - hooker willow -
Picea sitchensis - Pinus contorta - Alnus rubra / Rubus spectabilis - Salix hookeriana - Myrica californica / Carex obnupta - Lysichiton americanus
 Mapping code from figure 4 : 13
 Field data: *Picea sitchensis-Pinus contorta-Alnus rubra/Rubus spectabilis-Salix hookeriana-Myrica californica/Carex obnupta-Lysichiton americanum-Oenanthe sarmentosa-Athyrium filix-femina(-Polystichum munitum)*
 Condition: E
 Age class: C
 Comments: SERAL AMALGAM
 Equivalent published habitat type(s): PINCON/CAROBN & PICSIT/CAROBN-LYSAME & ALRU/RUSP/CAROBN-LYSAME
 Conservation rank: G1S1; G2S1; G4S4
 Botanical Resource Value Rating: w/2 Priority habitat?:
 Restoration feasibility: High
- 208 Vegetation group: shore pine / gorse / European beachgrass with possible remnant red
Pinus contorta / Ulex europaeus / Ammophila arenaria with possible remnant Festuca rubra or Poa macrantha community components
 Mapping code from figure 4 : 36
 Field data: *Pinus contorta/Ulex europaeus/Ammophila arenaria-Hypochaeris radicata-Aira praecox*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
 Conservation rank: NA; G1S1; G2S1
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 209 Vegetation group: gorse / European beachgrass with possible remnant red fescue or
Ulex europaeus / Ammophila arenaria with possible remnant Festuca rubra or Poa macrantha community components
 Mapping code from figure 4 : 49
 Field data: *Ulex europaeus/Ammophila arenaria(-Festuca rubra)(-Poa macrantha)*
 Condition: P
 Age class:
 Comments:
 Equivalent published habitat type(s): AMMARE WITH POSSIBLE REMNANT FESRUB OR POAMAC COMMUNITY COMPONENTS
 Conservation rank: NA; G1S1; G2S1
 Botanical Resource Value Rating: 3(2) Priority habitat?:
 Restoration feasibility: Med
- 210 Vegetation group: European beachgrass with remnant seashore bluegrass and / or red

- Ammophila arenaria* with remnant *Poa macrantha* and / or *Festuca rubra* community components
- Mapping code from figure 4 : 5
- Field data: *Ammophila arenaria-Hypochaeris radicata(-Lupinus littoralis)(-Pteridium aquilinum)(-Festuca rubra)(-Poa macrantha)*
- Condition: P
- Age class: B(pine)
- Comments:
- Equivalent published habitat type(s): AMMARE WITH REMNANT FESRUB-PTEAQU COMMUNITY COMPONENTS
- Conservation rank: NA; G3S3
- Botanical Resource Value Rating: 3(2) Priority habitat?:
- Restoration feasibility: Med
- 211 Vegetation group: Sitka spruce - shore pine - red alder / salmonberry - hooker willow - *Picea sitchensis* - *Pinus contorta* - *Alnus rubra* / *Rubus spectabilis* - *Salix hookeriana* - *Myrica californica* / *Carex obnupta* - *Lysichiton americanus*
- Mapping code from figure 4 : 13
- Field data: *Picea sitchensis-Pinus contorta-Alnus rubra/Rubus spectabilis-Salix hookeriana-Myrica californica/Carex obnupta-Lysichiton americanum-Oenanthe sarmentosa-Athyrium filix-femina(-Polystichum munitum)*
- Condition: E
- Age class: B
- Comments: AN AMALGAM OF PLANT COMMUNITIES DUE TO SERAL NATURE. PROBABLY TRANSITIONAL FROM STABILIZATION. INGROWTH OF SHRUB SPECIES ACN ACCUMULATION OF SAND MAY TURN THIS WETLAND TO UPLAND IN 50 OR MORE YEARS.
- Equivalent published habitat type(s): PINCON/CAROBN & PICSIT/CAROBN-LYSAME & PICSIT-PINCONC/GAUSHA-VAOV
- Conservation rank: G1S1,G3S1,G3S3
- Botanical Resource Value Rating: (w)/2 Priority habitat?:
- Restoration feasibility: High
- 212 Vegetation group: shore pine - Sitka spruce / gorse
Pinus contorta - *Picea sitchensis* / *Ulex europaeus*
- Mapping code from figure 4 : 19
- Field data: *Pinus contorta-Picea sitchensis/Ulex europaeus(-Myrica californica)(-Rhamnus purshiana)(-Rubus spectabilis)*
- Condition: P
- Age class: C
- Comments:
- Equivalent published habitat type(s): NA
- Conservation rank: NA
- Botanical Resource Value Rating: 4 Priority habitat?:
- Restoration feasibility: Low
- 213 Vegetation group: shore pine - Sitka spruce / gorse
Pinus contorta - *Picea sitchensis* / *Ulex europaeus*
- Mapping code from figure 4 : 19
- Field data: *Pinus contorta-Picea sitchensis/Ulex europaeus(-Myrica californica)(-Rhamnus purshiana)(-Rubus spectabilis)*
- Condition: P
- Age class: C
- Comments:
- Equivalent published habitat type(s): NA
- Conservation rank: NA

Botanical Resource Value Rating: 4
Restoration feasibility: Low

Priority habitat?:

Appendix 2. Rare Species Known or Suspected from the Coast Range Ecoregion of Coos and Curry Counties, OR

ORBIC list 1-4, State or Federally-listed, candidate, or SOC¹ species known to occur in the Coast Range Ecoregion of Lincoln, Lane, and Tillamook Counties, Oregon.

Scientific Name	Common Name	Heritage Global Rank	Heritage State Rank	Federal Status	State Status	Heritage List	Oregon County Distribution
<i>Encalypta brevicolla</i>	Moss	G4	S1			2	Coos, Curr
<i>Encalypta brevipes</i>	Moss	G3	S1			2	Clat, Coos, Curr
<i>Grimmia anomala</i>	Moss	G5	S2			3	Curr, Jack, Jose, Klam, Lane
<i>Limbella fryei</i>	Moss	G1	S1	SOC	C	1	Coos, Curr, Lane
<i>Orthodontium gracile</i>	Moss	G5	S1			2	Curr
<i>Orthodontium pellucens</i>	Moss	G5	S1			2	Curr
<i>Triquetrella californica</i>	Moss	G1	S1			1	Curr
<i>Anastrophyllum minutum</i>	Liverwort	G5	S1			2	Curr, Hood, Jack, Linn, Wall
<i>Calypogeia sphagnicola</i>	Liverwort	G4	S2			2	Clac, Coos, Curr, Doug, Jack, Lane, Linc, Linn, Till
<i>Diplophyllum plicatum</i>	Liverwort	G4	S3			3	Clat, Coos, Doug, Lane, Linc, Till
<i>Kurzia makinoana</i>	Liverwort	G2G4Q	S1			2	Coos
<i>Metzgeria violacea</i>	Liverwort	G4	S1			2	Coos, Lane, Linc, Till
<i>Phymatoceros phymatodes</i>	Hornwort	G2G3	S1			2	Coos, Curr, Doug
<i>Anaptychia crinalis</i>	Lichen	G5	S1			3	Clat, Coos, Curr
<i>Bryoria pseudocapillaris</i>	Lichen	G3	S3			4	Clat, Coos, Curr, Doug, Lane
<i>Bryoria spiralifera</i>	Lichen	G3	S2			2	Coos, Doug

Scientific Name	Common Name	Heritage Global Rank	Heritage State Rank	Federal Status	State Status	Heritage List	Oregon County Distribution
<i>Bryoria subcana</i>	Lichen	G3G4	S2			2	Bent, Clac, Clat, Coos, Lane, Linn, Mari, Till
<i>Buellia oidalea</i>	Lichen	G3?	S1			3	Curr, Doug
<i>Caloplaca stantonii</i>	Lichen	G2G3	S1			3	Coos
<i>Cladidium bolanderi</i>	Lichen	G4	S1			2	Bent, Curr, Desc, Linc
<i>Erioderma solediatum</i>	Lichen	G4	S2			2	Coos, Curr, Doug, Lane, Linc, Till
<i>Heterodermia leucomela</i>	Lichen	G4	S2S3			2	Coos, Curr, Doug, Lane, Linc, Till
<i>Hypotrachyna revoluta</i>	Lichen	G3G4	S1			2	Clat, Coos, Lane, Linc, Mari, Till
<i>Lecanora caesiorubella</i> ssp. <i>merrillii</i>	Lichen	G4G5T3T4	S1			3	Curr, Lane
<i>Leioderma solediatum</i>	Lichen	G4	S1			2	Coos, Doug, Lane, Linc
<i>Leptogium platynum</i>	Lichen	G3G4	S1S2			3	Coos, Lane, Linn
<i>Niebla cephalota</i>	Lichen	G3G4	S2			2	Coos, Curr, Lane, Linc, Till
<i>Pannaria rubiginella</i>	Lichen	G3G5	S1			3	Coos, Mari
<i>Pannaria rubiginosa</i>	Lichen	G4G5	S2			2	Coos, Lane, Linc
<i>Pseudocyphellaria perpetua</i>	Lichen	G4	S3			4	Bent, Coos, Doug, Lane, Linc, Linn, Till
<i>Pyrrhospora querneae</i>	Lichen	G4	S3			4	Clat, Coos, Curr, Doug, Lane, Linc, Till
<i>Ramalina pollinaria</i>	Lichen	G4	S1S2			2	Clat, Coos, Curr, Lane, Till
<i>Sigridea californica</i>	Lichen	G3	S1			3	Curr

Scientific Name	Common Name	Heritage Global Rank	Heritage State Rank	Federal Status	State Status	Heritage List	Oregon County Distribution
<i>Stenocybe clavata</i>	Lichen	G3	S3			4	Curr, Lane, Linc, Linn, Till, Wasc, Yamh
<i>Sulcaria badia</i>	Lichen	G3	S3			4	Bent, Coos, Doug, Jack, Jose, Lane
<i>Teloschistes flavicans</i>	Lichen	G4G5	S1			2	Coos, Curr, Till
<i>Usnea rubicunda</i>	Lichen	G4G5	S2			3	Clac, Coos, Lane, Linc, Till
<i>Usnea subgracilis</i>	Lichen	G4G5	S3			4	Bent, Clat, Coos, Curr, Doug, Jack, Lane, Linn, Till
<i>Albatrellus avellaneus</i>	Fungus	G2	S1?			1	Coos
<i>Amanita novinupta</i>	Fungus	G3	S1			3	Clac, Coos, Lane, Wash
<i>Arcangeliella camphorata</i>	Fungus	G2	S2			1	Bent, Coos, Curr, Doug, Jose, Lane, Polk
<i>Arcangeliella crassa</i>	Fungus	G2G4	S1			3	Coos, Doug, Wasc
<i>Boletus pulcherrimus</i>	Fungus	G3	S2			1	Curr, Jack, Klam, Lane
<i>Catathelasma ventricosum</i>	Fungus	G3G4	S2S4			3	Coos, Linn, Till
<i>Glomus pubescens</i>	Fungus	G2?	S1			3	Coos, Doug
<i>Gomphus kauffmanii</i>	Fungus	G3?	S3?			3	Bent, Clac, Coos, Doug, Jack, Lane, Linn, Mult, Wasc
<i>Leucogaster citrinus</i>	Fungus	G3G4	S3S4			3	Bent, Clac, Curr, Doug, Jack, Linn, Mari

Scientific Name	Common Name	Heritage Global Rank	Heritage State Rank	Federal Status	State Status	Heritage List	Oregon County Distribution
<i>Leucogaster microsporus</i>	Fungus	G3	S3			4	Bent, Clac, Curr, Lane, Linn, Mari, Wasc
<i>Macowanites chlorinosmus</i>	Fungus	G3?	S3			3	Curr, Lane, Till
<i>Phaeocollybia californica</i>	Fungus	G2?	S2?			1	Bent, Coos, Doug, Jose, Lane, Linc, Linn, Mult, Till, Yamh
<i>Phaeocollybia oregonensis</i>	Fungus	G2?	S2?			1	Clac, Coos, Mult
<i>Phaeocollybia pseudofestiva</i>	Fungus	G3	S3?			3	Bent, Clac, Colu, Coos, Doug, Jose, Lane, Linc, Linn, Mult, Till
<i>Phaeocollybia radicata</i>	Fungus	G2	S1			3	Bent, Coos, Lane
<i>Ramaria aurantiiscescens</i>	Fungus	G3	S3			4	Bent, Coos, Lane, Linc, Linn, Mari
<i>Ramaria concolor</i>	Fungus (forma tsugina)	GU	S2?			3	Coos
<i>Ramaria conjunctipes</i> var. <i>sparsiramosa</i>	Fungus	GUT3	S2?			3	Coos, Doug, Lane
<i>Ramaria rainierensis</i>	Fungus	G2	S2			3	Coos
<i>Ramaria rubribrunnescens</i>	Fungus	G2G3	S2?			3	Coos, Doug, Jose, Polk
<i>Rickenella swartzii</i>	Fungus	G4G5	S2			3	Bent, Coos, Doug, Lane, Linc, Polk, Till
<i>Stropharia albovelata</i>	Fungus	G3?	S3?			3	Clac, Coos, Lane
<i>Tuber pacificum</i>	Fungus	G2	S1			3	Coos, Lane, Polk

Scientific Name	Common Name	Heritage Global Rank	Heritage State Rank	Federal Status	State Status	Heritage List	Oregon County Distribution
<i>Abronia latifolia</i>	Yellow sandverbena	G5	S3			4	Clat, Coos, Curr, Doug, Lane, Linc, Till
<i>Abronia umbellata ssp. breviflora</i>	Pink sandverbena	G4G5T2	S1	SOC	LE	1	Clat, Coos, Curr, Doug, Lane, Linc, Till
<i>Adiantum jordanii</i>	California maiden-hair	G4G5	S2			2	Coos, Curr, Doug, Jose
<i>Arctostaphylos hispidula</i>	Gasquet manzanita	G3	S2	SOC		2	Curr, Doug, Jose
<i>Artemisia pycnocephala</i>	Coastal sagewort	G4G5	S1			2	Coos, Curr
<i>Astragalus umbraticus</i>	Woodland milk-vetch	G4	S3			4	Curr, Doug, Jose, Lane
<i>Atriplex leucophylla</i>	Beach saltbush	G4G5	SNR			3	Coos, Linc
<i>Baccharis douglasii</i>	Marsh baccharis	G5	S1?			2	Curr
<i>Bensoniella oregana</i>	Bensonia	G3	S3	SOC	C	1	Coos, Curr, Doug, Jose
<i>Brodiaea terrestris</i>	Dwarf brodiaea	G4G5	S2			2	Coos, Curr
<i>Cardamine nuttallii var. dissecta</i>	Dissected toothwort	G5T4T5	SNR			3	Coos, Jack, Jose, Klam
<i>Carex barbarae</i>	Santa Barbara sedge	G4G5Q	S3?			4	Curr, Doug, Jack, Jose
<i>Carex brevicaulis</i>	Short-stemmed sedge	G5	S2			2	Clat, Coos, Curr, Doug, Linc, Till
<i>Carex gynodynamis</i>	Hairy sedge	G4G5	S3			4	Coos, Curr, Doug, Lane
<i>Carex macrocephala</i>	Bighead sedge	G5	S2			2	Clat, Coos, Doug, Lane, Linc, Till
<i>Carex subbracteata</i>	Small-bract sedge	G5	SNR			3	Coos, Jose
<i>Castilleja mendocinensis</i>	Mendocino coast paintbrush	G2	S1	SOC		1	Curr
<i>Castilleja wightii</i>	Wight's paintbrush	G2G3Q	SH			3	Curr
<i>Cicendia quadrangularis</i>	Timwort	G4	S2			2	Coos, Curr, Doug, Lane, Linn
<i>Clintonia andrewsiana</i>	Andrew's bead-lily	G4	SH			2-ex	Curr
<i>Cochlearia officinalis</i>	Spoonwort	G5	S1			2	Coos, Curr
<i>Cryptantha leiocarpa</i>	Seaside cryptantha	G3G4	S1			2	Curr

Scientific Name	Common Name	Heritage Global Rank	Heritage State Rank	Federal Status	State Status	Heritage List	Oregon County Distribution
<i>Cyperus bipartitus</i>	Shining cyperus	G5	SNR			3	Curr, Doug, Jack, Jose, Lane, Malh, Umat, Wasc
<i>Cypripedium californicum</i>	California lady's-slipper	G3	S3			4	Coos, Curr, Doug, Jack, Jose
<i>Darlingtonia californica</i>	California pitcher-plant	G3G4	S3S4			4	Coos, Curr, Doug, Jose, Lane, Linc, Till
<i>Dichelostemma ida-maia</i>	Firecracker flower	G4	S4			4	Curr, Doug, Jack, Jose
<i>Elymus glaucus ssp. virescens</i>	Smooth wildrye	G5T4?	SNR			3	Coos, Curr, Linc
<i>Ericameria arborescens</i>	Golden fleece	G4	S1			2	Curr, Jose
<i>Eriogonum nudum var. paralinum</i>	Del Norte buckwheat	G5T2T4	SNR			3	Curr
<i>Eriophorum chamissonis</i>	Russet cotton-grass	G5	S1			2	Coos, Lane, Linc, Till
<i>Erysimum menziesii ssp. concinnum</i>	Pacific wallflower	G3?T3?	S1	SOC		2	Curr
<i>Erythronium revolutum</i>	Pink fawn-lily	G4	S4			4	Bent, Clat, Coos, Curr, Doug, Lane, Linc, Till
<i>Gilia millefoliata</i>	Seaside gilia	G2	S1	SOC		1	Curr, Linc
<i>Gnaphalium californicum</i>	California cudweed	G5	SNR			3	Clat, Curr, Doug, Lane, Linc, Till
<i>Hesperis matronalis var. brevifolia</i>	Short-leaved evax	G4T3	SNR			3	Coos, Curr, Jose
<i>Hierochloa odorata</i>	Holy grass	G5	S3			4	Bent, Clac, Colu?, Coos, Croo, Desc, Doug, Gran, Harn, Jack, Jose, Klam, Lane, Mult, Umat
<i>Hydrocotyle verticillata</i>	Whorled marsh pennywort	G5	S1			2	Bent, Coos, Curr, Doug

Scientific Name	Common Name	Heritage Global Rank	Heritage State Rank	Federal Status	State Status	Heritage List	Oregon County Distribution
<i>Iliamna latibracteata</i>	California globe-mallow	G3	S2			2	Coos, Curr, Doug, Jack, Jose, Linn
<i>Lasthenia ornduffii</i>	Large-flowered goldfields	G2	S2	SOC	C	1	Curr
<i>Lilium kelloggii</i>	Kellogg's lily	G3	SH	SOC		2-ex	Curr, Jose, Klam?
<i>Lilium occidentale</i>	Western lily	G1	S1	LE	LE	1	Coos, Curr
<i>Lycopodiella inundata</i>	Northern bog clubmoss	G5	S2			2	Clac, Coos, Doug, Klam, Lane, Linc, Linn, Mult
<i>Marsilea vestita</i>	Hairy water-fern	G5	SNR			3	Bake, Clac, Colu?, Curr?, Doug, Harn, Jack, Jeff, Klam, Lake, Lane, Malh, Morr, Mult, Sher, Umat, Unio, Wasc, Whee
<i>Microseris bigelovii</i>	Coast microseris	G4	S2			2	Coos, Curr, Lane, Linc
<i>Monardella purpurea</i>	Siskiyou monardella	G3Q	S3	SOC		2	Curr, Jose
<i>Myrica gale</i>	Sweet gale	G5	S1?			3	Clat, Curr, Linc, Mult
<i>Myriophyllum sibiricum</i>	Common water-milfoil	G5	S3			4	Croo, Curr, Desc, Harn, Jeff, Klam, Malh, Till, Wall, Whee
<i>Oenothera wolfii</i>	Wolf's evening-primrose	G1	S1	SOC	LT	1	Curr
<i>Ophioglossum pusillum</i>	Adder's-tongue	G5	S1			2	Bake, Clac, Coos, Doug, Lane, Linn
<i>Pellaea andromedifolia</i>	Coffee fern	G4	S2			2	Coos, Doug, Jack, Jose, Lane

Scientific Name	Common Name	Heritage Global Rank	Heritage State Rank	Federal Status	State Status	Heritage List	Oregon County Distribution
<i>Persicaria punctata</i>	Dotted smartweed	G5	SNR			3	Bake, Clac, Curr, Klam, Lane, Morr?, Mult, Till
<i>Phacelia argentea</i>	Silvery phacelia	G2	S2	SOC	LT	1	Coos, Curr
<i>Phacelia malvifolia</i>	Mallow-leaved phacelia	G4	SH			2-ex	Curr
<i>Phacelia verna</i>	Spring phacelia	G3	S3			4	Coos, Doug, Jose, Lane
<i>Piperia candida</i>	White piperia	G3G4	SNR			3	Coos, Jack, Jose, Lane
<i>Piperia elongata</i>	Dense-flower rein orchid	G3G5	SNR			3	Curr, Doug, Jack, Jeff, Jose, Klam, Lane
<i>Plantago eriopoda</i>	Hairy-foot plantain	G5	SNR			3	Coos, Malh
<i>Poa laxiflora</i>	Loose-flowered bluegrass	G3G4	S3			4	Bent, Clac, Coos, Lane, Linc, Linn, Mari, Mult, Polk, Till, Wash, Yamh
<i>Poa piperi</i>	Piper's bluegrass	G4	S3			4	Coos, Curr, Jose
<i>Poa stenantha</i>	Narrow-flower bluegrass	G5	SNR			3	Curr, Desc, Doug, Lane, Mari, Till
<i>Poa unilateralis</i>	San Francisco bluegrass	G3	S1?	SOC		2	Curr, Linc, Till
<i>Polystichum californicum</i>	California sword-fern	G4	S2			2	Coos, Curr, Doug, Lane, Linn
<i>Rhynchospora capitellata</i>	Brownish beakrush	G5	S1			2	Curr
<i>Ribes divaricatum var. pubiflorum</i>	Straggly gooseberry	G4T4?	S2			2	Curr, Jose, Lane
<i>Ribes laxiflorum</i>	Trailing blackberry	G5	SNR			3	Clat, Coos, Klam, Lake, Lane, Linc, Linn
<i>Samolus parviflorus</i>	Water-pimpernel	G5	SNR			3	Clat, Coos?, Doug

Scientific Name	Common Name	Heritage Global Rank	Heritage State Rank	Federal Status	State Status	Heritage List	Oregon County Distribution
<i>Schoenoplectus subterminalis</i>	Water clubrush	G4G5	S2			2	Coos, Curr, Doug, Jose, Klam, Lake, Lane, Linn, Wasc
<i>Scoliopus bigelovii</i>	California fetid adder's-tongue	G4?	S1			2	Curr
<i>Senecio triangularis</i> var. <i>angustifolius</i>	Bog groundsel	G5TNR	S1?			3	Coos, Curr
<i>Sidalcea malachroides</i>	Maple-leaved sidalcea	G3G4	SH	SOC		1-ex	Curr
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Coast checker bloom	G5T1	S1	SOC	C	1	Coos, Curr
<i>Triglochin striata</i>	Three-ribbed arrow-grass	G5	SNR			3	Clat?, Coos, Curr, Lane, Linc, Till
<i>Trillium kurabayashii</i>	Giant purple trillium	G4G5	S1			2	Curr
<i>Triteleia hendersonii</i> var. <i>leachiae</i>	Leach's brodiaea	G4G5T3	S3	SOC	C	4	Coos, Curr
<i>Triteleia laxa</i>	Ithurriel's spear	G4	S1			2	Curr, Jack
<i>Utricularia gibba</i>	Humped bladderwort	G5	S1			2	Bent, Coos, Doug, Lane, Linn
<i>Utricularia minor</i>	Lesser bladderwort	G5	S2			2	Bake?, Clac, Coos, Doug, Gran?, Harn, Jack, Klam, Lane, Linn, Mari, Wall?, Wasc
<i>Viola langsdorfii</i>	Aleutian viola	G4	SNR			3	Coos, Curr, Linc

1. LE = "Listed endangered"; LT = "Listed threatened"; C = "Candidate"; SOC = "species of concern"
2. The Coast Range ecoregion is an ecological zone mapped by the Oregon Biodiversity Information Center in cooperation with The United States Environmental Protection Agency, the US Forest Service, the US Natural Resources Conservation Service, and United States Geological Survey. Bandon State Natural Area is entirely within the Coast Range ecoregion.
3. ORBIC tracks rare species in lists ranging from 1 to 4. List 1 contains species that are endangered or threatened throughout their range. List 2 contains species which are endangered or threatened in Oregon, but that are more common elsewhere. List 3 contains species which may be endangered or threatened, but more information is needed to determine their true rarity. List 4 contains species that are rare or declining, but not currently endangered or threatened.

Rank Definitions

The ranking is a 1-5 scale, based primarily on the number of known occurrences, but also including threats, sensitivity, area occupied, and other biological factors. In this booklet, the ranks occupy two lines. The top line is the Global Rank and begins with a "G". If the taxon has a trinomial (a subspecies, variety or recognized race), this is followed by a "T" rank indicator. The second line is the State Rank and begins with the letter "S". The ranks are summarized below (see page 6 for migratory bird ranks):

1 = Critically imperiled because of extreme rarity or

because it is somehow especially vulnerable to extinction or extirpation, typically with 5 or fewer occurrences.

2 = Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (extirpation), typically with 6-20 occurrences.

3 = Rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences.

4 = Not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences.

5 = Demonstrably widespread, abundant, and secure.
H = Historical Occurrence, formerly part of the native biota with the implied expectation that it may be rediscovered.

X = Presumed extirpated or extinct.

U = Unknown rank.

NR = Not yet ranked.

Rank Qualifiers

Q = Questionable taxonomy. Global ranks sometimes have a "Q" at the end. This indicates that there are questions related to the taxonomic validity of the taxon.

? = Inexact Numeric Rank. Taxa that can be ranked, but for which the rank is not certain. Ranks with a "?" indicate that the rank is probably correct, but that either documentation is lacking or there is still some uncertainty. Such ranks are always provisional.

Range Ranks = Ranks with more than one value. These can be G1G2, G1G3, etc. These indicate that the predicted final rank would be within the range, but with no indication of preference among the possibilities.

More details on the Heritage Ranking system and more definitions can be found at the NatureServe web site: <http://www.natureserve.org/explorer/ranking.htm>

The information presented in the table above was gathered through tabular data query of the 2010 ORBIC publication, "Rare, Threatened, and Endangered Species of Oregon".

Oregon Parks and Recreation Commission

April 9, 2014

Agenda Item:	7 b	Action
Topic:	Land Acquisition Priorities Update	
Presented by:	Kammie Bunes and Jim Morgan	

Background:

On July 16, 2013, the Oregon Parks and Recreation Commission approved a list of acquisition priorities for the 2013-15 biennium. Priorities focused on previously approved initiatives, but the Commission retained the ability to pursue significant emerging opportunities.

The attached list is updated to reflect acquisition activity, Commission actions, and emerging opportunities. Staff seeks approval of the updated 2013 – 15 Land Acquisition Priorities list.

Summary of 2013-15 activity to date:

1. Property has been acquired for addition to existing park ownership at Kam Wah Chung State Heritage Site, Otter Crest State Scenic Viewpoint and the Banks-Vernonia State Trail .
2. A purchase-option agreement is in place for the Brian Booth State Park visitor center/Coast Region office.
3. Matching funds are in place for protection of Whale Cove.
4. Property adjacent to Beverly Beach State Park has been approved as suitable replacement land for converted Land and Water Conservation Fund sites. Acquisition by the converting party will be completed in Summer 2014.
5. Due diligence is underway on two potential donations.
6. The Grouse Mountain property has been removed.
7. One land acquisition grant has been submitted.
8. Some properties are now proposed for acquisition in a future biennium, due to grant timing or lack of willing seller.
9. One property was added, representing an emerging opportunity.

Action Requested: Staff requests approval of 2013-15 Land Acquisition Priorities Update

Prior Action by the Commission: July 2013: Approval of 2013-15 Land Acquisition Priorities

Attachment: OPRD 2013 – 15 Land Acquisition Priorities Update

Prepared by: Kammie Bunes



**Oregon Parks and Recreation Commission
 2013 – 15 Land Acquisition Priorities Update**

Estimated Lottery Funds: \$3,018,102

Park Property	County	Acres	Cost	Comments
Kam Wah Chung – Arnell	Grant	lot	40,400	Acquired
Banks-Vernonia Trail Manning Trailhead	Washington	lot	0	Acquired
Otter Crest Viewpoint Lookout Observatory	Lincoln	4	785,462	Acquired
Sand Lake – Beltz Farm	Tillamook	357	1,810,000	Option Pending
Brian Booth – Adjacent land	Lincoln	32	260,000	Willing Seller

Total expenditures, including incidental costs: \$3,018,102

Unfunded Priorities:

Property	County	Acres	Cost	Comments
Whale Cove	Lincoln	11	Donation	Exchange funds; OPRD will not hold title
Wallowa – adjacent lands	Wallowa	7.5	To be determined	Possible donation
Depoe Bay – Norstrom Trust	Lincoln	2	Donation	Pending due diligence
Beverly Beach – Hancock Timber	Lincoln	69	ODOT	For impacts to LWCF
Brian Booth - forest parcels	Lincoln	160	Grant	Application submitted
Cottonwood – Department of State Lands	Gilliam	342	Exchange	Juniper Wayside
Umpqua (Winchester Bay) – Department of State Lands	Douglas	To be determined	Exchange	Juniper Wayside
Oregon Coast Trail missing links	Curry	To be determined	To be determined	Humbug and Sisters
Willamette River Greenway Hayden Island	Polk	270	Donation	Pending TPL acquisition and transfer to OPRD

Oregon Parks and Recreation Commission

April 9, 2014

Agenda: 7 c Information
Topic: Sand Lake Initiative - Beltz Farm
Presented by: Kammie Bunes and Jim Morgan

Background:

Located on the north coast between Cape Lookout State Park and Cape Kiwanda State Natural Area (Pacific City), Sand Lake is one of Oregon's least developed estuaries, including approximately 1,250 acres of open water, tidal flat, emergent marsh, and forested wetlands. A dominant feature within the estuary is Whalen Island, primarily owned and managed by OPRD as the Clay Meyers State Natural Area. At the north end of Sand Lake is Bradley Bog, property being acquired by North Coast Land Conservancy in partnership with OPRD. The submersible land within the lakes is owned by Department of State Lands.

At the south end of Sand Lake is the 357-acre private land known as Beltz Farm. Approximately 244 acres lies west of Sand Lake Road, fronting the ocean and the Sand Lake estuary. This portion of the property consists of approximately 87 acres of marine and freshwater marsh and 157 acres of dunes and uplands. An unmaintained artificial dike that separates the freshwater marshland from the marine estuary runs east/west through the northern third of this. The remaining 113 acres of the property lying east of Sand Lake Road is predominately pasture and forest land and includes two older dwellings.

The complex of beaches, dunes, tidal and freshwater marshes on Beltz Farm is considered one of the best remaining unprotected coastal remnants. This portion of the property is in good ecological condition with low presence of non-native species other than European beach grass. The open, shrub-covered, and forested dunes are interspersed with seasonal wetlands. The northern terminus of the dunal system forms the south spit of Sand Lake, identified during the development of the Western snowy plover Habitat Conservation Plan as having potential for providing self-sustaining habitat for Western snowy plover nesting. There are at least two favorable options for providing safe public access to the marsh, dunal and ocean beach portions of the property. Existing and potential trails can provide ample access to the diverse habitat types and ample opportunities for wildlife observation.

The state's documented interest in acquiring this property dates to the 1960s. OPRD has the property appraised in 2004 followed by an unsuccessful attempt to acquire the property. Beltz Farm was identified as the top priority in OPRD's 2006 Acquisition Priorities Report which formed the basis for the 2007-13 Acquisition Plan, that was approved by the Commission. Ecotrust Forests Management LLC recently entered into a purchase and sale agreement with the landowner. They

intend to take title on or before May 1, 2014. That purchase is contingent upon satisfactory indication that OPRD intends to acquire the property from Ecotrust. OPRD is negotiating an option agreement with Ecotrust to purchase the property on or before August 30, 2014, contingent upon completion of an environmental inspection, appraisal, appraisal review and Commission approval in June.

Action Requested: None

Prior Action by the Commission:

Acquisition Priorities Report (Informational), Sept. 2005

2007-2013 Acquisition Plan approved Nov. 9, 2006

Acquisition Initiatives: Sand Lake (Informational) April 4, 2012

Attachment: Map

Prepared by: Kammie Bunes

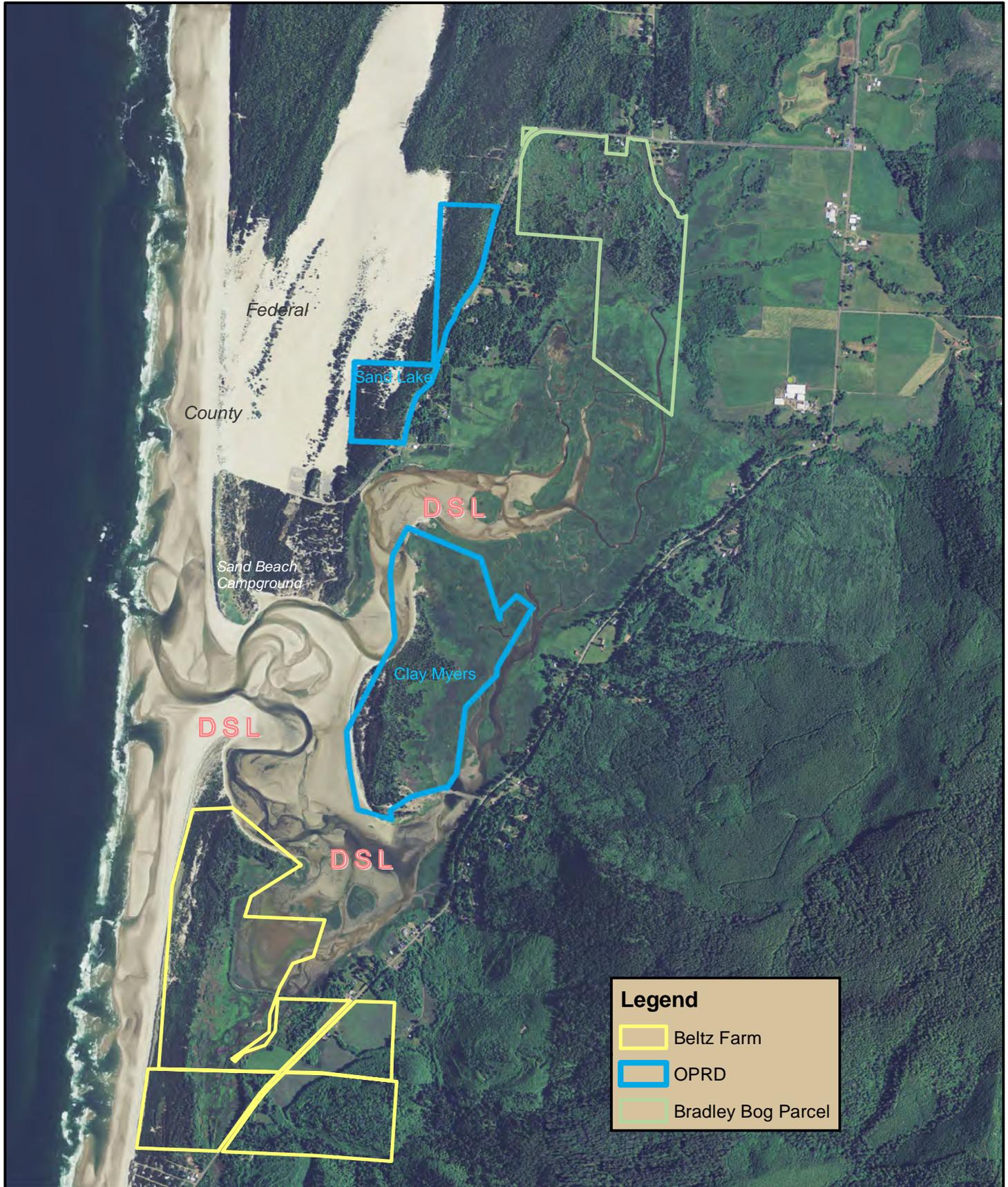
BELTZ FARM

Oregon Parks and Recreation Commission
April 9, 2014 Agenda Item 7c, Attachment

Oregon Parks & Recreation Dept.
725 Summer St. NE, Suite C
Salem OR, 97301



Nature
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0 1,100 2,200 Feet

NAD 1983 HARN Oregon Statewide Lambert Feet Intl



Beltz Farm 8-15-2011 Map 2