



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

COOS BAY DISTRICT OFFICE

1300 AIRPORT LANE, NORTH BEND, OR 97459

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1792 (OR-120)  
EA OR 125-06-02

**July 6<sup>th</sup>, 2006**

Dear Concerned Citizen:

The USDI, Bureau of Land Management (BLM), Coos Bay District Office, has prepared an Environmental Assessment (EA OR 125-06-02) for a land disposal. The proposed action is to dispose of approximately 188 acres of public land.

The analysis area is the North Spit of Coos Bay. Alternative 2 is the proposed action and analyzes the disposal of 188 acres of BLM land. Alternative 3 analyzes the disposal of an 82 acre parcel. The No Action alternative would retain the land in federal ownership. The project areas analyzed in the Environmental Assessment are located in: T. 25 S., R. 13 W., Will. Mer., Sec. 7 and 18.

The EA concluded in a Finding of No Significant Impact (FONSI). Copies of the EA and FONSI may be obtained from the address/phone number listed below. Public comments on the appropriateness of the FONSI are being requested until August 10, 2006. Questions or requests for copies of EA OR125-06-02 should be directed to Linda Petterson at (541) 751-4207. Written comments may be sent to BLM at 1300 Airport Lane, North Bend, OR 97459 Attn: Linda Petterson, or e-mailed to us at [coos\\_bay@or.blm.gov](mailto:coos_bay@or.blm.gov) Attn: Linda Petterson.

The disposal of the land could be accomplished by sale in 2007 (estimated). A final decision document will be prepared after public comment.

Comments, including names and street addresses of respondents, will be available for public review at the above address during regular business hours (8:00 a.m. to 4:30 p.m.), Monday through Friday, except holidays, and may be published as part of the Environmental Assessment decision document or other related documents. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety. Please direct your responses or questions to Linda Petterson, 1300 Airport Lane, North Bend, OR 97459, call (541) 756-0100, FAX: (541) 751-4303, or e-mail to [coos\\_bay@or.blm.gov](mailto:coos_bay@or.blm.gov).

Sincerely,

**M. Elaine Raper**

M. Elaine Raper

Umpqua Field Manager



# United States Department of the Interior

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1792 (OR-120)  
EA OR125-06-02

### **Finding of No Significant Impact (FONSI) for North Spit Land Disposal Environmental Assessment EA# OR125-06-02**

#### **Introduction:**

The United States Department of Interior, Bureau of Land Management, Coos Bay District (BLM), has prepared an Environmental Assessment (EA) that analyzed three alternatives: a no action alternative and two action alternatives for potential impacts of a land disposal on the North Spit of Coos Bay. The subject parcels proposed for disposal are located in T. 25 S., R. 13 W., Will. Mer., Sec. 7 and Sec. 18. The land is in the jurisdiction of the Umpqua Field Office. The parcels are adjacent to Transpacific Lane, Oregon International Port of Coos Bay (the Port) land. The land is within Coos County Comprehensive Plan Zoning District and is zoned as Water-Dependent Development Shorelands.

#### **Background:**

The Coos Bay District of the BLM is under the direction of the Coos Bay District Resource Management Plan (RMP) and Environmental Impact Statement (EIS) and its Record of Decision (ROD) (BLM, 1995), as supplemented and amended. This EA was prepared to analyze the effects of a proposed land disposal on the North Spit.

#### **Finding of No Significant Impact:**

A careful review of the EA, which I herein adopt, indicates that there will not be a significant impact on the quality of the human environment from the implementation of the Proposed Action. I agree with this conclusion and determined that an Environmental Impact Statement (EIS) will not be prepared. This determination is based on consideration of the following factors:

1. The proposed action will occur in localized areas within the boundaries of the Coos Bay District. The proposed action is not national or regional in scope.
2. The proposed action will not significantly affect public health and safety. Any development on the parcel that may occur after the land is disposed of would be required to comply with federal, state and local health and safety regulations.

3. The proposed action will not have an impact on unique characteristics of the geographic area such as energy development, air quality, prime unique farmlands, environmental justice/native American trust resources, wild & scenic rivers/wilderness, or Areas of Critical Environmental Concern.
4. The effects on the quality of the human environment of the proposed action are not highly controversial. The local community has shown support of the transfer of this parcel to an entity that will develop it for industrial use.
5. The possible effects of the proposed action on the quality of the human environment are not highly uncertain and do not involve unique or unknown risk.
6. The proposed action does not establish a precedent for actions with future significant effects or represent a decision in principle about a future consideration. All land disposals must go through a clearance process and require analysis on the specific disposal. Future land disposals will need to meet the criteria for disposal in the RMP.
7. There are no significant cumulative effects identified by this assessment.
8. The proposed action will not affect districts, sites, highways, structures, or objects listed in, or eligible for listing in, the National Register of Historic Places. Nor will it cause a loss or destruction of significant scientific, cultural, or historical resources.
9. The proposed action will fully comply with the Endangered Species Act (ESA) of 1973, as amended.
10. There are no irreversible or irretrievable resource commitments identified by this assessment.
11. The proposed activities will not violate Federal, State, or local laws imposed for the protection of the environment.

**M. Elaine Raper**

**July 5<sup>th</sup>, 2006**

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M. Elaine Raper  
Umpqua Field Manager  
Coos Bay District  
Bureau of Land Management

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Date

# **North Spit Land Disposal**

## **Environmental Assessment**

**EA OR 125-06-02  
Coos Bay District  
Bureau of Land Management  
July 24, 2006**

Chapter 1 - Purpose and Need for Action .....	1
1.1 Background .....	1
1.2 Conformance with Existing Land Use Plans .....	1
1.3 Location of Proposed Action .....	2
1.4 Need for the Proposed Action.....	2
1.5 Purpose for the Proposed Action .....	2
1.6 Decision to Be Made.....	3
1.7 Public Involvement.....	4
1.8 Resources Determined To Not Be Impacted .....	5
Chapter 2 Alternatives Including the Proposed Action .....	6
2.1 Introduction.....	6
2.2 Alternatives .....	6
Alternative 1 No Action.....	6
Alternative 2 Proposed Action – Land Disposal/188 Acres .....	6
Alternative 3 – Land Disposal/82 acres.....	6
Actions Common to Alternatives 2 and 3 .....	6
2.3 Alternatives Considered but Eliminated From Further Analysis.....	10
Chapter 3 Affected Environment and Environmental Consequences.....	11
3.1 Introduction.....	11
3.2 Physical Characteristics.....	11
3.2.1 Adjacent Uses .....	12
3.3 Cultural .....	12
3.3.1 Affected Environment.....	12
3.3.2 Environmental Consequences .....	15
Alternative 1 – No Action .....	15
Alternative 2 – Proposed Action – Land Disposal/188Acres.....	15
Alternative 3 – Land Disposal/82 Acres.....	16
3.4 Fisheries .....	16
3.5 Geology and Soils.....	19
3.5.1 Affected Environment.....	19
Geology .....	19
Soil .....	20
3.5.2 Environmental Consequences .....	20
Alternative 1 – No Action .....	20
Alternative 2 – Proposed Action – Land Disposal/188Acres.....	20
Alternative 3 – Land Disposal/82 Acres.....	21
3.6 Hazmat .....	21
3.7 Hydrology .....	21
3.7.1 Affected Environment.....	21
3.7.2 Environmental Consequences .....	28
Alternative 1 – No Action .....	28
Alternative 2 – Proposed Action – Land Disposal/188Acres.....	28
Alternative 3 – Land Disposal/82 Acres.....	29
3.8 Noxious Weeds.....	30
3.8.1 Affected Environment.....	30

3.8.2 Environmental Consequences .....	31
Alternative 1 – No Action .....	31
Alternative 2 – Proposed Action – Land Disposal/188Acres.....	31
Alternative 3 – Land Disposal/82 Acres.....	31
3.9 Recreation .....	32
3.9.1 Affected Environment.....	32
3.9.2 Environmental Consequences .....	34
Alternative 1 – No Action .....	34
Alternative 2 – Proposed Action – Land Disposal/188Acres.....	34
Alternative 3 – Land Disposal/82 Acres.....	35
3.10 Special Status Species and Survey & Manage Species.....	35
3.10.1 Affected Environment.....	35
Botany .....	36
Wildlife.....	42
3.10.2 Environmental Consequences .....	44
Alternative 1 – No Action .....	44
Alternative 2 – Proposed Action – Land Disposal/188Acres.....	44
Cumulative Impact – Wildlife .....	46
Alternative 3 – Land Disposal/82 Acres.....	46
3.11 Vegetation .....	47
3.11.1 Affected Environment.....	47
3.11.2 Environmental Consequences .....	49
Alternative 1 – No Action .....	49
Alternative 2 – Proposed Action – Land Disposal/188Acres.....	49
Alternative 3 – Land Disposal/82 Acres.....	49
3.12 Wildlife .....	50
3.12.1 Affected Environment.....	50
3.12.2 Environmental Consequences .....	51
Alternative 1 – No Action .....	51
Alternative 2 – Proposed Action – Land Disposal/188Acres.....	51
Alternative 3 – Land Disposal/82 Acres.....	52
Chapter 4 List of Preparers .....	53
Appendix 1 Coos County Comprehensive Plan Zoning.....	54
Appendix 2 Project Location.....	55
Appendix 3 Hazardous Materials .....	56
Appendix 4 Special Status Species and Survey and Manage Species .....	58
Appendix 5 Known Collections.....	61
Appendix 6 Populations.....	62
Appendix 7 2001 ROD Compliance Review:.....	63
Appendix 8 References.....	67

# **Chapter 1 - Purpose and Need for Action**

## **1.1 Background**

The Oregon International Port of Coos Bay (the Port) has requested a sale of Bureau of Land Management (BLM) land within the Coos County Comprehensive Plan zoning districts 3E-WD, 4CS, and 6WD on the North Spit of Coos Bay for economic development. The Port is a municipal corporation of the state of Oregon. The economy of Coos County has suffered since the decline of timber harvesting. The area has one of the highest unemployment rates in the state. The location of the subject parcel and the availability of infrastructure make it desirable for industrial use. The Port plans to prepare and market the site for industrial development to bring in jobs to the area and has had clients serious about accomplishing this.

The Port proposed a land exchange involving a different federal parcel in 1998. The local community supported the Port's acquisition of the federal land, but objected to what was perceived as a loss of potential industrial land by conveying the Port's parcel to BLM. The proposal was dropped and they requested to purchase the property. Prior to completion of that sale, they began negotiations with another client who required a larger parcel to locate on. Because of the decreasing amount of undeveloped industrial land available for development, the Port has requested that BLM sell to them all land within Coos County Comprehensive Plan industrial zoning districts so that they are better prepared when opportunities arise to attract developers.

This action is consistent with Section 203 and Section 209 of the Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1713 and 43 U. S. C. 1719).

The subject parcel is being considered for direct sale at no less than the appraised market value, based on an appraisal to be conducted under authority of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (URA) (42 U.S.C. 4601, et seq.). In accordance with 43 CFR 2711.3-3, public lands may be offered for direct sale when the tract is identified for transfer to a State or local government.

Receipts from the sale of this parcel will be deposited in a fund which is available for acquisition of lands containing unique and important natural and cultural resources, under authority of the Federal Land Transaction Facilitation Act of 2000 (FTLFA).

## **1.2 Conformance with Existing Land Use Plans**

This environmental assessment (EA) is tiered to the *Coos Bay District Resource Management Plan* (RMP) and its Record of Decision (ROD), as supplemented an amended, (USDI BLM 1995a); which is in conformance with the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and*

*Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (Northwest Forest Plan)* and its Record of Decision (USDA-USDI 1994a).

The District RMP designated the entire North Spit lands managed by BLM as a Special Recreation Management Area (SRMA). The RMP also states that BLM-administered lands on the North Spit of Coos Bay within Coos County Comprehensive Plan zoning districts 3E-WD, 4CS, and 6WD could be offered for exchange, sale, or lease to accommodate local economic expansion and industrial development. The subject parcel is located in zone 3E-WD (Water Dependent Development Shorelands) (Appendix 1).

These documents are available for review at the Coos Bay District Office of the Bureau of Land Management, during regular business hours. Some of the documents are available at the Coos Bay and North Bend Public Libraries and the Oregon State Office of the Bureau of Land Management in Portland, Oregon.

### ***1.3 Location of Proposed Action***

This analysis concerns the proposed disposal of approximately 188 acres of public land on the North Spit of Coos Bay, located in T. 25 S., R. 13 W., Will. Mer., Sec. 7 Lot 6, 8, 13, 14, T. 25 S., R. 13 W., Will. Mer., Sec. 18 Lot 7, E $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$  (Figure 1, Appendix 2). The land is in the jurisdiction of the Umpqua Field Office.

### ***1.4 Need for the Proposed Action***

The Coos Bay District RMP provides for land tenure adjustments to benefit a variety of uses. BLM's position in the local communities and the responsibility to cooperate with and support the communities is recognized by the allocation of some public lands to accommodate economic expansion. Coos County has been crippled economically by the reduction of timber harvesting, commercial ground fishing cutbacks, commercial salmon fishing closures and commercial crab fishing reduction.

Available land for industrial development is declining. Previously developed industrial zoned lands have changed uses to such businesses as a casino and recreational vehicle (RV) parks. The Port is working to attract companies to the area, but needs to be able to offer options for location. The proposed action will provide a location for development of industries that will diversify the predominantly resource-dependent economy.

### ***1.5 Purpose for the Proposed Action***

The following purposes are found in the RMP and the choice to be made in the selection among the alternatives to meet the needs for the project will be based on which one best accomplishes these purposes. These purposes may be given different weight, depending on the objectives for the lands on which the action will take place

under the RMP's land allocation decision. For example, economic development purposes may be given greater emphasis on lands identified for lease, exchange, or disposal and ecosystem management purposes may have greater emphasis on lands identified as Late-Successional Reserves (LSR). Purposes are:

- BLM-administered land on the North Spit of Coos Bay within Coos County Comprehensive Plan Zoning districts 3E-WD, 4CS and 6WD could be offered for exchange, sale or lease to accommodate local economic expansion and industrial development.
- Consider conveying the subsurface mineral interest owned by the United States to the existing or proposed owner of the surface estate consistent with FLPMA Section 209(b).
- There is no specific land use allocations related to socioeconomic conditions. However, allocations such as General Forest Management Area can assist in meeting socioeconomic objectives.
- Manage for the conservation of federal candidate and Bureau sensitive species and their habitats so as not to contribute to the need to list and to recover the species.
- Protect and manage assessment species where possible so as not to elevate their status to any higher level of concern.
- Conserve migratory birds in furtherance of the United States obligations under the migratory bird conventions and the Migratory Bird Treaty Act in accordance with Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds (66 FR 3853), of January 17, 2001.
- Protect floodplains and wetlands in accordance with Executive Orders 11988 and 11990 and BLM's *Riparian-Wetlands Initiative for the 1990's*.
- Acquire access by obtaining easements, entering into new reciprocal right-of-way agreements, or amending existing reciprocal right-of-way agreements. Condemnation for access will be pursued when necessary.
- Continue to provide non-motorized recreation opportunities and create additional opportunities where consistent with other management objectives.
- Conserve and protect designated cultural resources for future generations.
- Support and assist the State of Oregon Economic Development Departments efforts to help rural, resource-based communities develop and implement alternative economic strategies as a partial substitute for declining timber-based economies.

## **1.6 Decision to Be Made**

- Not to implement the proposed actions (i.e. No Action), or
- Implement the proposed action as described in this EA, or
- Implement a portion of the proposed action, or
- Implement the proposed action with specific additional management constraints/mitigation measures.
- Implement an alternative to the proposed action

## 1.7 Public Involvement

Through recent public input for the North Spit Management Plan and the North Spit Land Disposal EA OR126-93-07 Revision 1, the following were identified as potential concerns for the North Spit. It is presumed these could also be potential concerns for this proposed action:

- Accommodation of local economic expansion and industrial development.
- Impacts to special status species.
- Impacts to wetlands.
- Public access to public lands.

A Legal notice was posted in The World, a local newspaper covering the proposed project area. Legal notices inviting public participation in the development of the EA were published on November 21, 2005. More than 80 letters describing the proposal and inviting public comment were sent to the public on November 17, 2005. A three-week comment period was provided for initial public input.

In response to the request for comments, two phone calls, 28 e-mails and five letters were received. Following is a summary of the comments received:

<b>Comment</b>	<b>Response to Comment</b>
Loss of recreation land/value.	This is discussed in Chapter 3.9.
Bidding process.	This does not involve an effect on the human environment. Bidding will be conducted in accordance with regulations.
Jordan Cove Liquefied Natural Gas (LNG) facility.	This is outside of the scope of this EA. The LNG facility is not a part of the proposed action.
Economic impact.	Requires speculation. Outside the scope of the EA.
Impacts on Western snowy plover.	This is discussed in chapter 3.12.
Impacts on rare plants.	This is discussed in Chapter 3.10.
Impacts on wetlands.	This is discussed in Chapter 3.7.
Safety concerns for type of development.	Requires speculation. Outside of the scope of this EA.
Use of sale receipts.	Does not involve an effect on the human environment.
Scoping information is scarce.	Does not involve an effect on the human environment.
Fragmented land pattern.	Does not involve an effect on the human environment.
Industrialization.	Requires speculation. Outside of the scope of this EA.
Do a land exchange.	Does not involve an effect on the human environment.
Impact on scenic values.	This is discussed in Chapter 3.9.

Comment	Response to Comment
Fair appraisal of the property	Does not involve an effect on the human environment. Appraisals are contracted in accordance with regulations.
Air quality.	Requires speculation. Outside of the scope of this EA.
Earthquake/tsunami zone.	Outside of the scope of this EA.
Increase in pollution.	Requires speculation. Outside of the scope of this EA.
An environmental impact statement (EIS) is needed.	This action will not have a significant effect on the human environment; therefore, an EIS is not required.

### ***1.8 Resources Determined To Not Be Impacted***

Analysis of the No-Action Alternative, the Proposed Action Alternative, and Alternative No. 3 has shown no impacts on the following critical elements of the human environment:

1. Areas of Critical Environmental Concern (ACEC)
2. Farm lands, prime or unique
3. Flood Plains
4. Wild and Scenic Rivers
5. Wilderness values

## **Chapter 2 Alternatives Including the Proposed Action**

### **2.1 Introduction**

This chapter describes the alternatives. Three alternatives are proposed including No Action.

### **2.2 Alternatives**

#### **Alternative 1 No Action**

This alternative describes the current management situation on the North spit.

No change in management practices is expected if the land is retained in federal ownership. No development would take place. The land is currently used for recreational activities such as horseback riding, hiking, target shooting and hunting. Motorized access by off-highway vehicles (OHV) and all terrain vehicles (ATVs) is limited to designated roads and trails. These activities would likely continue if the land stays in federal ownership.

The expected outcomes of this alternative are summarized by resource in Chapter 3, Environmental Consequences.

#### **Alternative 2 Proposed Action – Land Disposal/188 Acres**

Under this alternative BLM would convey the entire 188 acre parcel to the Port (Figure1).

The conveyance would include approximately 67 to 87 acres of wetlands and approximately ½ mile of an equestrian trail. A partial loss of a population of each of five special status lichens would occur.

#### **Alternative 3 – Land Disposal/82 acres**

Under this alternative BLM would convey two parcels containing 82 acres to the Port (Figure 2).

The BLM parcels to be conveyed contain approximately five to 12 acres of wetlands and approximately one-quarter mile of an equestrian trail. A partial loss of a population of each of two special status lichens would occur.

#### **Actions Common to Alternatives 2 and 3**

The following existing authorizations would be maintained:

- OR 36509 right-of-way (R/W) reservation to the U. S. Army Corps of Engineers (ACOE) for road access over the South Dike Road
- OR 49196 R/W reservation to BLM for public road access over the South Dike Road
- OR 38912 R/W reservation to Federal Aviation Administration (FAA) for a powerline over the South Dike Road
- OR 37075 R/W to Coos County for Trans Pacific Lane
- OR 44459 R/W to PP&L for a powerline adjacent to Trans Pacific Lane
- OR 44460 R/W to the Coos Bay North Bend Water Board for a waterline adjacent to Trans Pacific Lane

A cultural assessment of the ACOE railroad will be reviewed by the State Historic Preservation Officer (SHPO) in accordance with BLM Manual 8140.21. The report will be available for review upon completion at the Coos Bay District Office of the Bureau of Land Management

It is expected that some, or the entire parcel would be developed if it is sold. Any development would need to comply with state regulations and local zoning (Water-Dependent Development Shorelands). Typical examples of water-dependent uses include the following that may occur on this parcel:

- commercial: e.g., commercial fishing marinas support; fish processing and sales; boat sales, rentals, and supplies
- industrial: e.g., manufacturing to include boat building and repair; terminals, and support; energy production

Disposal would be of the surface and mineral estates with the United States retaining the mineral leasing estate. The withdrawal from mineral location and entry would be revoked on this parcel.

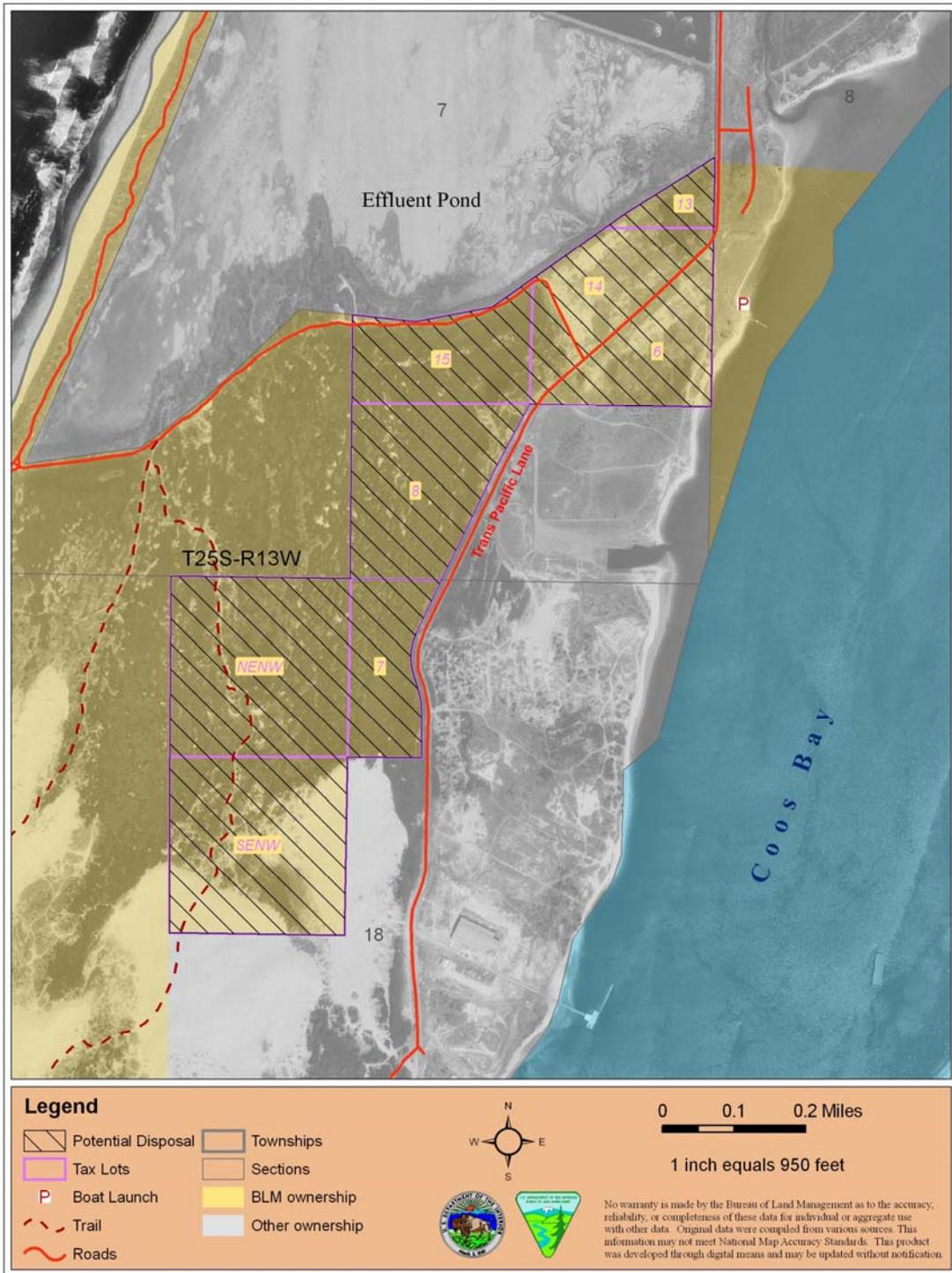


Figure 1: Project Map Alternative 2 – Proposed Action

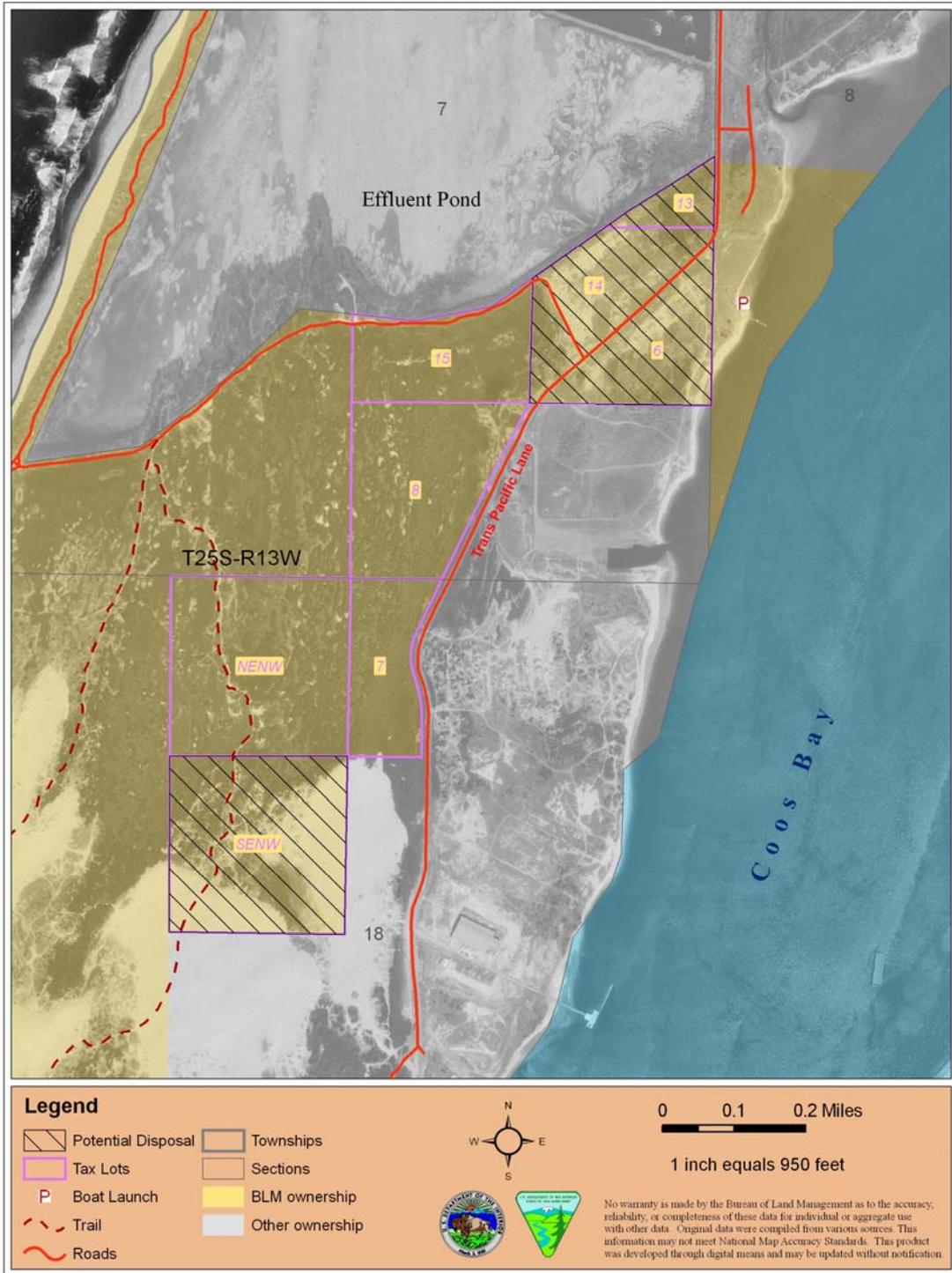


Figure 2: Project Map Alternative 3

## ***2.3 Alternatives Considered but Eliminated From Further Analysis***

A land exchange is another method to transfer title of the federal land to the Port. A land exchange would allow BLM to acquire land with comparable resources, habitats and characteristics in a Conservation Shorelands Zone. This alternative was not analyzed because the acquisition of Port land was sufficiently analyzed in EA OR126-93-07; the Port is not a willing proponent at this time and there were objections to a land exchange by the local community as stated in the background section on page 1.

## **Chapter 3 Affected Environment and Environmental Consequences**

### ***3.1 Introduction***

This chapter identifies the affected environment as well as the direct, indirect, and cumulative environmental impacts of each alternative described in Chapter 2. Direct effects are caused by the action and occur in the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. A cumulative effect is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

The following list includes the reasonably foreseeable actions that are likely to occur within the North Spit area.

- Ongoing operations of the Southport sawmill facility and associated railroad access.
- Construction and operation of the proposed Jordan Cove liquefied natural gas terminal facility (including on-site electric generation facility).
- Ongoing operations at the Roseburg Lumber Co. Jordan Cove chip terminal.
- Ongoing operations of the D. B. Western Inc. facility adjacent to the T-dock.
- Ongoing closure and dismantling of the Weyerhaeuser Jordan Cove paper plant.
- Maintenance of the BLM boat dock southwest of Jordan Cove.
- Maintenance of snowy plover habitat at the south end of the North Spit
- Recreational activities including motorized OHV access.

The environmental impacts to critical elements of the human environment are also described below.

### ***3.2 Physical Characteristics***

The North Spit is a sandy projection of land approximately six miles long and up to one mile wide with the Pacific ocean on the west and the waters of Coos Bay bordering the east side. The lands managed by BLM on the North Spit are a varied landscape of sand dunes, vegetated sand hills, wetlands and marshes.

Man-made structures on the subject parcels include a fence parallel to the South Dike Road. There is a high voltage power line along the south side of the sand road that terminates at the FAA tower adjacent to the Foredune Road. Informational signs are posted near the intersection of the sand road and the paved road. Approximately five acres are fenced with wooden posts and wire fencing on the north side of the South

Dike Road in Lot 14. Approximately one acre of this parcel was flattened and graveled by the ACOE in December, 2002, for loading rip rap to repair the north jetty.

### **3.2.1 Adjacent Uses**

The land ownership on North Spit varies between Federal, State and private. The subject parcel is adjacent to Port owned land. Of the approximate 3060 acres within Township 25 South on the North Spit, BLM administers 1,864 acres or 61 % of the lands.

The industrial zoned properties on the North Spit have seen major changes in the last ten years. Weyerhaeuser closed its container board facility and D.B. Western, Inc. constructed a large building on the southern portion of the industrial zone. Southport Forest Products constructed a saw mill which included the construction of a railroad line to the facility, which crosses the entryway to the BLM boat launch facility. A natural gas line has been installed going under the bay from Empire to the spit just south of the D.B. Western building. The number of people traveling to the developed portion of the North Spit has increased due to these projects. The Port and various economic development entities in the Bay Area and the southern Oregon region are working to draw more industry to develop on the spit. In addition, Weyerhaeuser recently closed its North Spit lands to public access. The public has traditionally used these lands to access both the bay and the ocean side of the spit.

## **3.3 Cultural**

### **3.3.1 Affected Environment**

The North Spit of Coos Bay has seen substantial change in landforms during the last several thousand years and this is reflected in changing human uses. While the entire spit was traversed, prehistoric settlements were focused on terraces adjacent to the beach along the Coos Bay side.

Prior to the introduction of stabilizing vegetation (European beach grass) as part of North Jetty construction, which began in 1892, the surface of the spit was composed of a greater area of unstabilized sand dune fields (Beckham, 2000). On the map accompanying his 1856 survey, Harvey Gordon reported that soil in the area was “sandy” and vegetation was “Timber, Pine & Spruce” but the land was considered “3<sup>rd</sup> Rate”. Ongoing research indicates that there were no prehistoric settlements along the bay side shoreline in the vicinity of the project area (Scott Byram, personal communication).

Byram reports that in 1861, John Henderson was living at Jarvis Landing which was located ¼ mile north of Jarvis Creek (northeast of the subject parcel). This was the southern terminus of the beach stage route north to the Umpqua River. Henderson obtained title to three parcels which encompass the bay side shoreline in Section 8 south of Henderson Marsh. The composite 1939 aerial photograph (Figure 3) does not show evidence that any structures remained from those years. The aerial photographs do show that the extent of unconsolidated dunes in the project area was considerably

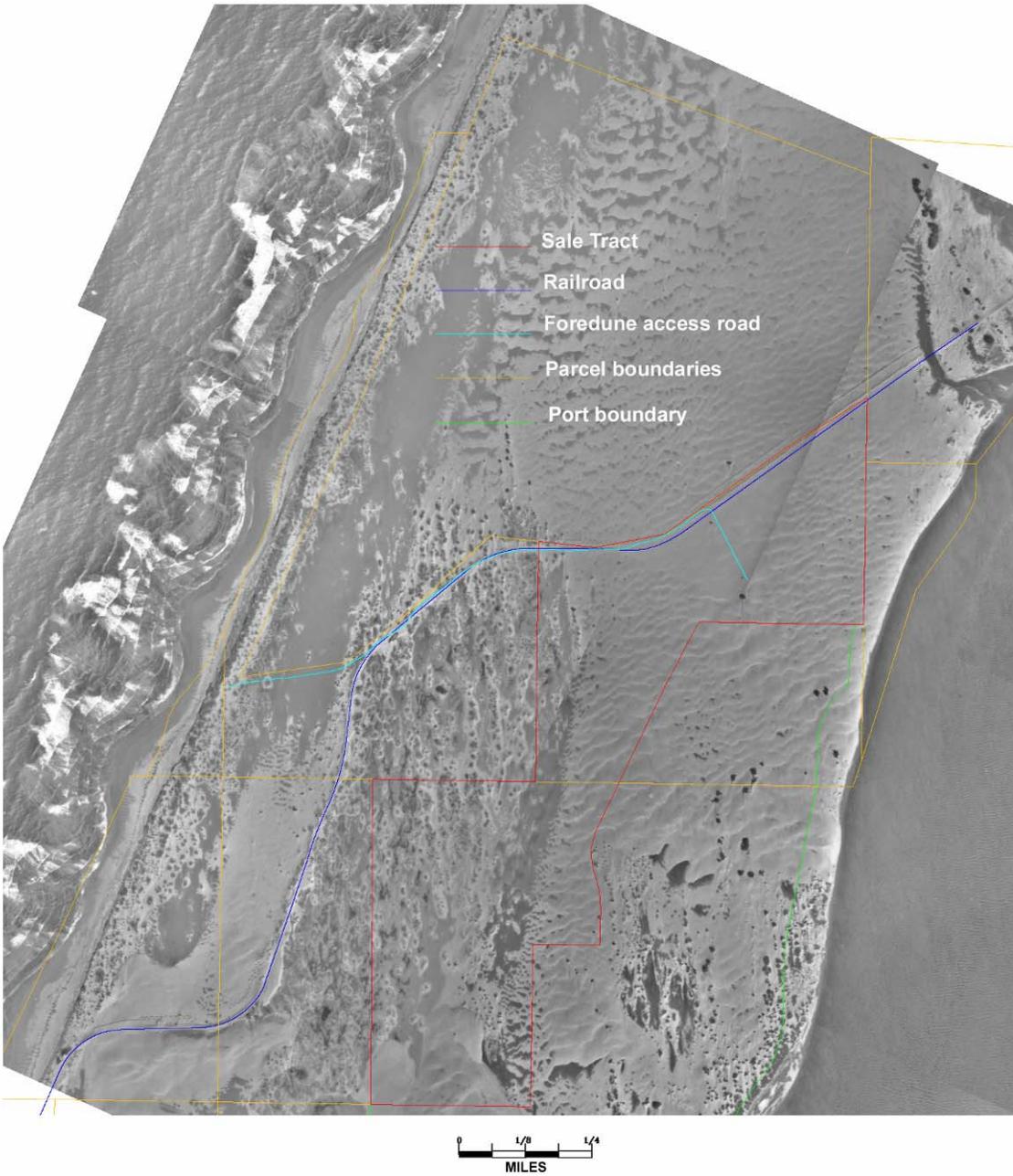
more extensive in 1939 than it is today. There are no reports or evidence of Indian or pioneer settlements south of Jarvis Creek (Harrington, 1942).

Jetty construction and repair initially utilized barges to transport rock to the spit, but once a rail connection was established into the Coos Bay area the ACOE built a rail line along the spit to transport the replacement rock. The 1939 aerial photographs show the location of this railroad and associated facilities (Figure 3). The railroad was actually in use when the aerial photographs were taken. A locomotive and rail cars are visible on the tracks at the south end of the spit. A portion of this railroad grade also forms the berm which today is part of the South Dike Road. This berm generally conforms to the northern boundary of the sale parcel (Figure 4).

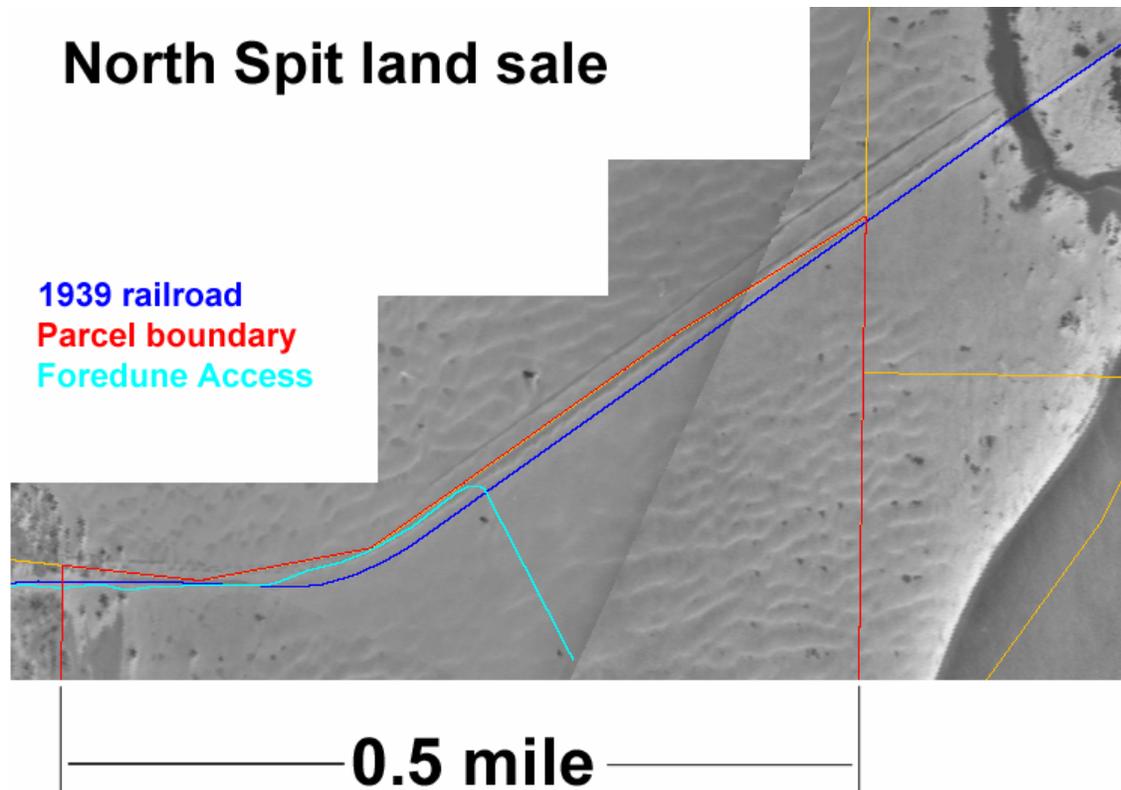
For many years the ACOE's maintenance activities in Coos Bay included dredging the shipping channel to maintain adequate water depth. Spoil material from the dredging have been dumped along the bay side shoreline and spread throughout the lower, level areas of the spit, including portions of this parcel. These deposits can be many feet thick and have obscured evidence of previous cultural activities, including prehistoric settlement, both because of the depth and nature of the fill material. Dredge spoils appear as fragmented shell in a loose sand matrix, superficially similar to prehistoric cultural deposits.

Prehistoric cultural material was not observed during field surveys conducted in 2006. This was expected, as the history of these parcels does not suggest substantial prehistoric use of the land included in the proposed action. Historic resources are limited to the northern boundary of the parcel, which extends along the ACOE railroad berm.

## 1939 Army Corps Photographs



**Figure 3:** Project area superimposed upon 1939 Aerial photograph.



**Figure 4:** Relationship among the north parcel boundary (red), current South Dike Road (cyan), and the route of the 1939 U.S. Army Corps of Engineers railroad berm.

### 3.3.2 Environmental Consequences

#### ***Alternative 1 – No Action***

The project area will remain in federal ownership and control. Ground disturbance associated with development will not occur in the project area. Although none are known, should there be any buried cultural resources in the project area, they will not be disturbed. Above-ground cultural resources will continue to be preserved from human disturbance, although natural weathering processes will slowly erode features associated with the ACOE work on North Jetty.

#### ***Alternative 2 – Proposed Action – Land Disposal/188Acres***

##### ***Direct/Indirect Effects***

An archaeological survey of a 42-acre parcel adjacent to the project area was recently completed for the Port (Darby, 2005). Prehistoric cultural material was not located either in higher dune areas or on the lower-lying areas (largely covered by dredge spoils). Darby did locate wood and shell eroding from below a dune toe next to a wetland pond, although no cultural materials were found. Darby concludes that "...there is potential for buried cultural materials to be present under the dunes and dredge spoils."

The route of the ACOE railroad line on North Spit traverses the proposed sale area. The raised railroad roadbed (berm) is the last remaining substantial structure associated with this railroad line. Sale of this parcel would remove control of this land from federal jurisdiction. Development of this parcel could result in destruction of approximately 2,800 feet of the remaining approximately 4,600 feet (about 60%) of the berm. As discussed in subchapter 2.2, a cultural assessment of the ACOE railroad line is forthcoming. It will evaluate the potential significance of this cultural resource and the impact of Alternative 2 on this resource.

### ***Cumulative Impacts***

Cultural resources are, by nature, nonrenewable and irreplaceable. Once a cultural resource is destroyed further disturbance will not produce any additional (cumulative) effect. Since they can not “grow back”, the concept of cumulative effects is not applicable to individual cultural resources. Historic cultural resources in this project area relate to federal North Jetty projects. Destruction of individual sites associated with this effort could cumulatively result in loss of the entire physical record of these activities over time.

### ***Alternative 3 – Land Disposal/82 Acres***

#### ***Direct/Indirect Effects***

The route of the ACOE railroad line on North Spit traverses the proposed sale area. The raised railroad roadbed (berm) is the last remaining substantial structure associated with this railroad line. Sale of this parcel would remove control of this land from federal jurisdiction. Development of this parcel could result in destruction approximately 1,560 feet of the remaining approximately 4,600 feet (about 34%) of the berm. As discussed in subchapter 2.2, a cultural assessment of the ACOE railroad line is forthcoming. It will evaluate the potential significance of this cultural resource and the impact of Alternative 3 on this resource.

### ***Cumulative Impacts***

Cultural resources are, by nature, nonrenewable and irreplaceable. Once a cultural resource is destroyed further disturbance will not produce any additional (cumulative) effect. Since they can not “grow back”, the concept of cumulative effects is not applicable to individual cultural resources. Historic cultural resources in this project area relate to federal North Jetty projects. Destruction of individual sites associated with this effort could cumulatively result in loss of the entire physical record of these activities over time.

## ***3.4 Fisheries***

There are no fish-bearing water bodies located on BLM lands on the North Spit proposed for disposal. Because the existing ponds/wetland areas in the dunes lack surface water connections either to Coos Bay to the east, or the Pacific Ocean to the west, there is no potential for the aquatic habitats to be populated by marine or freshwater fish species other than through intentional stocking. Therefore, there are no

Federally listed, special status fish species or Essential Fish Habitat<sup>1</sup> (EFH) in the project area.

A biological evaluation for aquatic special status species (SSS) completed for the proposed project is included at the end of the Environmental Consequences chapter below. Table 1 lists the aquatic SSS present on Coos Bay District lands, the species or their habitat that are present in the action area, and an assessment of whether or not implementing the proposed action would affect them.

Because there are no fish-bearing water bodies on the BLM-administered lands proposed for disposal, there would be no effects to fisheries under the no action or action alternative(s), including federally listed fish species, critical habitat, EFH or special status species. For more information, see the Aquatic Special Status Species biological evaluation (table 1) located at the end of this subchapter.

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<sup>1</sup> Essential Fish Habitat is defined under section 305 of the Magnuson-Stevens Fishery Conservation and Management Act to include those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity.

Table 1

**Aquatic Special Status Species**

**Biological evaluation process for Aquatic SSSP which may occur on the Coos Bay District**

Common Name	Scientific Name	Status	Species Documented or Suspected on District lands?	Habitat Present in Action Area?	Species Documented or Suspected in Action Area?	Will the proposed project affect this species?	What will the effects be in scope and intensity?
<b>Fish</b>							
Chum salmon	<i>Onchorhynchus keta</i>	BS	Yes	No	No	No	None
Coho salmon (OC)	<i>Onchorhynchus kisutch</i>	FP	Yes	No	No	No	None
Coho salmon (SO/NC)	<i>Onchorhynchus kisutch</i>	FC	Yes	No	No	No	None
Fall Chinook salmon (SO/NC)	<i>Onchorhynchus tshawytscha</i>	BS	Yes	No	No	No	None
Spring Chinook salmon (SO coast/CA coast)	<i>Onchorhynchus tshawytscha</i>	BA	Yes	No	No	No	None
Steelhead – (KMP) summer run	<i>Onchorhynchus mykiss</i> ssp.	BA	Yes	No	No	No	None
Steelhead (KMP) winter run	<i>Onchorhynchus mykiss</i> ssp.	BA	Yes	No	No	No	None
Steelhead (OC) summer run	<i>Onchorhynchus mykiss</i> ssp.	FC	Yes	No	No	No	None
Steelhead (OC) winter run	<i>Onchorhynchus mykiss</i> ssp.	FC	Yes	No	No	No	None
Millicoma dace	<i>Rhinichthys cataractae</i> ssp.	BS	Yes	No	No	No	None
<b>Snails</b>							
Rotund Lanx	<i>Lanx subrotundata</i>	BS	Suspected	No	No	No	None
Robust walker	<i>Pomatiopsis binneyi</i>	BS	Suspected	No	No	No	None
Pacific walker	<i>Pomatiopsis californica</i>	BS	Suspected	No	No	No	None

FC = Federal Candidate, BS = Bureau Sensitive, BA = Bureau Assessment, BT = Bureau Tracking

## **3.5 Geology and Soils**

### **3.5.1 Affected Environment**

#### **Geology**

The project area is located within the Coos Basin. The subject parcel is located on Quaternary sand deposits (Holocene) of a stabilizing spit. The sands of the spit are delivered by aeolian and oceanic processes. Unstabilized spits are temporal structures. Since the advent of European beachgrass, spits have begun to stabilize. The North Spit has shown steady aggregation with the advancement of stabilizing European beachgrass and shore pine. This spit overlies a syncline/anticline structure. By projection of the South Slough syncline (which trends north), the parcel overlays the eastern limb of the syncline. The underlying stratigraphy is interpreted to consist of the Empire Formation (upper Miocene), underlain by the Bastendorff Shale (upper Eocene), underlain by the Upper Member of the Coaledo Formation (upper to middle Eocene) (Madin *et al*, 1995). It could be further extrapolated, by the nature of a syncline and the association of the Coaledo Formation that the Upper Member of the Coaledo Formation would then be underlain by the Middle Member and Lower Member (respectively) of the Coaledo Formation, both dated at the upper to middle Eocene.

The parcel is located in an east-west compression zone (Madin *et al*, 1995; Newton, 1980, p. 5), creating a syncline/anticline complex (Madin *et al*, 1995). The structure within the Coos Basin is related to the Klamath Mountains which border the basin on the south. The Coaledo-Flournoy contact generally outlines the north- to northwesterly-trending Coos Basin (Newton, 1980, p. 5).

As a compression zone, the geology around the parcel contains numerous faults. As described by Madin et al (1995), three types of faults are recognized. These are:

1. Generally north-trending reverse or thrust faults on the east limb of the South Slough syncline;
2. Bedding-plane reverse faults on the west limb of the South Slough syncline; and
3. West-northwest-trending, north-dipping reverse faults.

As interpreted by previous Mineral Potential Reports completed for neighboring properties and similarities of geology, a potential for economic minerals exists within the project boundaries. These minerals could include silica (glass feed stock, foundry sand, other industrial silica sands, and construction aggregate), coal, oil and gas, and coal bed methane.

According to Oregon Department of Geology and Mineral Industries mapping, the parcels are located within the tsunami run-up zone.

## **Soil**

The “soils” identified by the U.S. Department of Agriculture Natural Resource Conservation Service within the project are aeolian manipulated stable and unstable sands. They include:

- Dune Lands
- Heceta Fine Sand
- Waldport-Dune Land Complex, 12%-30% Slopes
- Waldport-Heceta Fine Sands, 0%-30% Slopes

Associated hazard of these sands is blowing sand and, in deflation basins, water saturation.

### **3.5.2 Environmental Consequences**

Because the soils are identified as sands as opposed to a true soil taxonomy, these two resources are partnered together.

#### ***Alternative 1 – No Action***

This alternative would have minimal direct and indirect impacts on existing geologic conditions. Continued development of the natural system would not impact the underlying stratigraphy except in the aspects of geologic time. Geomorphology of the area would continue to have the present influences, including aeolian and oceanic processes associated with dune field dynamics. The Federal Government would maintain all mineral rights associated with the property. Continued development of the natural system would not impact the underlying stratigraphy except in the aspects of geologic time. Geomorphology of the area would continue to have the present influences, including aeolian and oceanic processes associated with dune field dynamics.

#### ***Alternative 2 – Proposed Action – Land Disposal/188Acres***

##### ***Direct and Indirect Effects***

The action is for disposal of the land, a change of surface management. The proposed action assumes development of the parcel. Underlying geology and soil would not be impacted except for that removed by excavation. Upon disposal, such actions will be regulated by local and State authorities with appropriate engineering and geologic oversight.

The disposal of the property, as proposed in this alternative, will result in the retention of leasable minerals. A Mineral Potential Report will be required prior to the disposal.

##### ***Cumulative Impacts***

The action is for disposal of the land, a change of surface management. The project assumes development of the parcel. Underlying geology and soil would not be impacted except for that removed by excavation. Upon disposal, such actions will be regulated by local and State authorities with appropriate engineering and geologic oversight. Cumulative impacts of potential development scenarios could include

alterations of oceanic and aeolian processes currently shaping the North Spit. Removal of vegetation without stabilization could result in mobilization of wind blown sands. Likewise, stabilization of currently mobile sands may result in depletion of sands in other areas. Destabilization of banks may allow for the mobilization of sand through oceanic and fluvial process, causing disturbance in other localities. Likewise, the stabilization of shoreline sands could result in the starving of the oceanic and fluvial systems, causing loss in other localities. These issues will be addressed by local and State regulators.

### ***Alternative 3 – Land Disposal/82 Acres***

#### ***Direct and Indirect Effects***

The action is for disposal of the land, a change of surface management. The proposed action assumes development of the parcel. Underlying geology and soil would not be impacted except for that removed by excavation. Upon disposal, such actions will be regulated by local and State authorities with appropriate engineering and geologic oversight.

The disposal of the property, as proposed in this alternative, will result in the retention of leasable minerals. A Mineral Potential Report will be required prior to the disposal.

#### ***Cumulative Impacts***

The action is for disposal of the land, a change of surface management. The project assumes development of the parcel. Underlying geology and soil would not be impacted except for that removed by excavation. Upon disposal, such actions will be regulated by local and State authorities with appropriate engineering and geologic oversight. Cumulative impacts of potential development scenarios could include alterations of oceanic and aeolian processes currently shaping the North Spit. Removal of vegetation without stabilization could result in mobilization of wind blown sands. Likewise, stabilization of currently mobile sands may result in depletion of sands in other areas. Destabilization of banks may allow for the mobilization of sand through oceanic and fluvial process, causing disturbance in other localities. Likewise, the stabilization of shoreline sands could result in the starving of the oceanic and fluvial systems, causing loss in other localities. These issues will be addressed by local and State regulators.

## ***3.6 Hazmat***

See Appendix 3 for Hazardous Materials & Resource Restoration Project Review.

## ***3.7 Hydrology***

### ***3.7.1 Affected Environment***

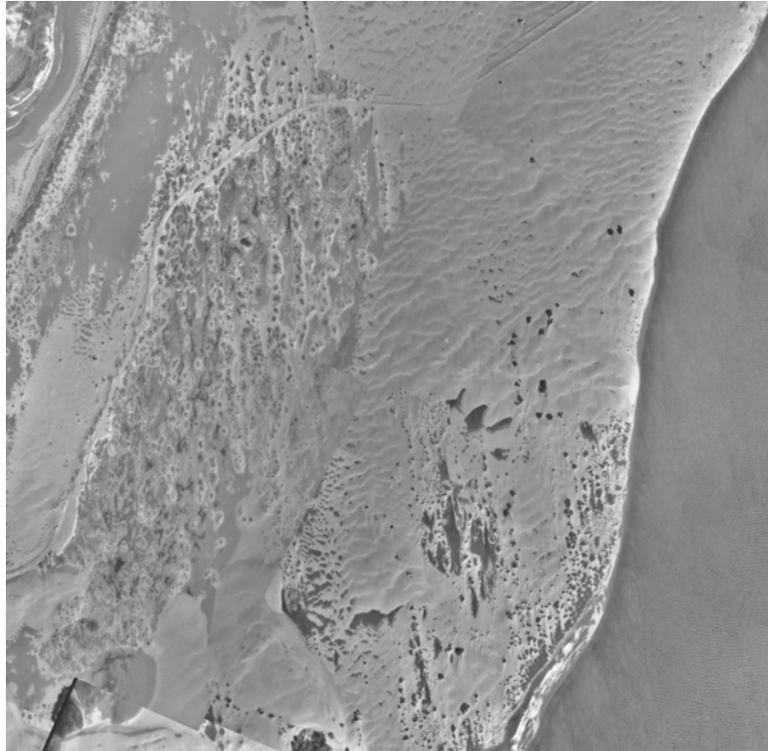
A brief summary of foredune and deflation plain development and construction on the North Spit sets the stage for discussion of wetland resources.

The introduction of European beachgrass and the subsequent development of the foredune have led to pronounced changes on the North Spit over the last several

decades. Open dunes visible in the center portion of the 1939 photo (Figure 5) have largely been replaced by vegetated, inactive sand dunes and wetland areas with emergent and shrub vegetation and trees. The foredune, visible in the upper left hand corners of Figures 5 and 6, is a long, essentially continuous ridge of grass-covered sand paralleling the beach just above the high tide line. The foredune has developed since the 1930s due to the earlier introduction of European beachgrass to control sand movement along harbors and roads (USDA 1994). The beachgrass effectively traps sand blowing inland from the beach and grows through the sand deposits slowly raising the elevation of the area. Over the decades, the foredune has grown tall enough to essentially cut off the supply of wind-blown sand necessary for the replenishment of the inland open sand dunes. Prior to foredune formation, native vegetation and natural debris stopped enough sand to create a low beach ridge, but much of the sand was able to move past the ridge and enter the dune-building activity behind the shore (Lund 1973).

Deflation plain wetlands are a direct result of foredune establishment. Onshore winds strip away the sand east of the foredune, deflating the area down to the water table (note the darker areas of standing water east of the foredune in Figure 5). This creates a deflation plain where water-loving vegetation thrives. As the dunes move eastward, the plants of the deflation plain also spread eastward. Deflation also results in the formation of interdunal marshes (note the standing water in the lower right corner of Figure 5). Interdunal marshes, sustained almost entirely by ground water, are prone to filling by windblown sand and typically succeed to shrub swamp or upland habitat (Kjelstrom and Williams 2000).

Other manmade changes this past century have also contributed to the vegetation encroachment evident in Figure 6. Placement of the railroad berm in the 1930s, operation of the effluent lagoon beginning in the 70s, and construction of the Trans Pacific Lane in the 80s further restricted sand movement and influenced water storage/wetland development on the North Spit. The railroad berm, used as a road today, caused deflation similar to the foredune. Holding water to a higher level in the unlined, earthen evaporation and seepage wastewater treatment lagoon likely affected the quantity and movement of near-surface ground water.



**Figure 5:** May 1939 photo of subject parcel area



**Figure 6:** July 2002 photo of subject parcel area. Note railroad berm/road grade near top of both photos.

The entire 188-acre parcel contains roughly 67 to 87 acres of wetlands based on National Wetlands Inventory (NWI) data and BLM field reconnaissance and aerial photo interpretation.

United States Fish and Wildlife Service NWI maps identify three classes of non-tidal (palustrine) wetlands on the subject parcel. Forty-seven acres of seasonally flooded scrub/shrub wetlands are found primarily along the western edges of Lots 8 and 15 of Section 7, and the western edges of Lot 7, the NE $\frac{1}{4}$ NW $\frac{1}{4}$ , and the SE $\frac{1}{4}$ NW $\frac{1}{4}$  of Section 18 (Figure1). Twenty acres of seasonally flooded emergent wetlands are centrally located in Lots 8 and 15 of Section 7, and Lot 7 of Section 18. A minor amount (0.1 acre) of artificial diked/impounded wetland is identified along the northern boundary of Lot 14.

The Cowardin et al. (1979) classification used on NWI maps defines emergent wetlands as areas with upright, rooted, herbaceous plants adapted to living in soil conditions lacking oxygen. Scrub/shrub wetlands are dominated by woody vegetation less than 6 meters (20 feet) tall. Seasonally flooded areas have surface water present for extended periods, especially early in the growing season, but the surface water is absent by the end of the growing season in most years. The length of the growing season on the North Spit is approximately 335 days (USDA 1983, p. 183).

The National Wetlands Inventory is not designed to be a map of jurisdictional (regulated) wetlands. Jurisdictional wetlands are determined by on-the-ground identification of a minimum of one positive wetland indicator from each of the three diagnostic environmental characteristics: vegetation, soils, and hydrology (USACE 1987). The goal of the NWI is to classify and map the nation's wetlands to evaluate status and trends. National Wetlands maps covering the North Spit, published in 1989, are based upon interpretation of visible hydrology and/or wetland vegetation in high altitude aerial photographs (1:58,000) taken in August and September 1982. At the time of the survey, NWI wetlands occupied approximately 19% of the entire North Spit.

The NWI wetland types identified within the subject parcel are also found on other Federal and private lands on the North Spit. According to the NWI, there are roughly 677 acres of wetlands (439 acres Federal and 238 acres private) on the Spit between the North Jetty and the southern boundary of T.24S., R.13W. On Federal, 44% or 195 acres of the 439 acres are seasonally flooded scrub/shrub, and 32% or 142 acres are seasonally flooded emergent. Scrub/shrub wetlands account for 70% or 167 acres of the 238 acres on private and emergent wetlands occupy approximately 20% or 49 acres.

The NWI wetland types identified within the subject parcel are also found in the 30,000-acre Oregon Dunes National Recreation Area (ODNRA) on the central Oregon coast between the North Spit and Florence. Nearly 65% of the 4,017 acres of NWI wetlands identified within the ODNRA are seasonally flooded scrub/shrub. Twenty-eight percent of the wetlands are typed as seasonally flooded emergent. Similar to the North Spit, the 1989 NWI maps covering the ODNRA are based upon interpretation of visible hydrology

and/or wetland vegetation in high altitude aerial photographs (1:58,000) taken in September 1982.

More recent interpretation of low altitude aerial photographs (1:12,000) taken in June 1999 coupled with on-the-ground mapping of plant associations according to Christy et al. (1998) indicate that approximately 87 acres of the subject parcel support vegetation characteristic of seasonally flooded<sup>2</sup> freshwater wetlands. The plant associations and their corresponding acreages are displayed in Figure 7.

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<sup>2</sup> Seasonally flooded as defined in Cowardin et al. (1979).

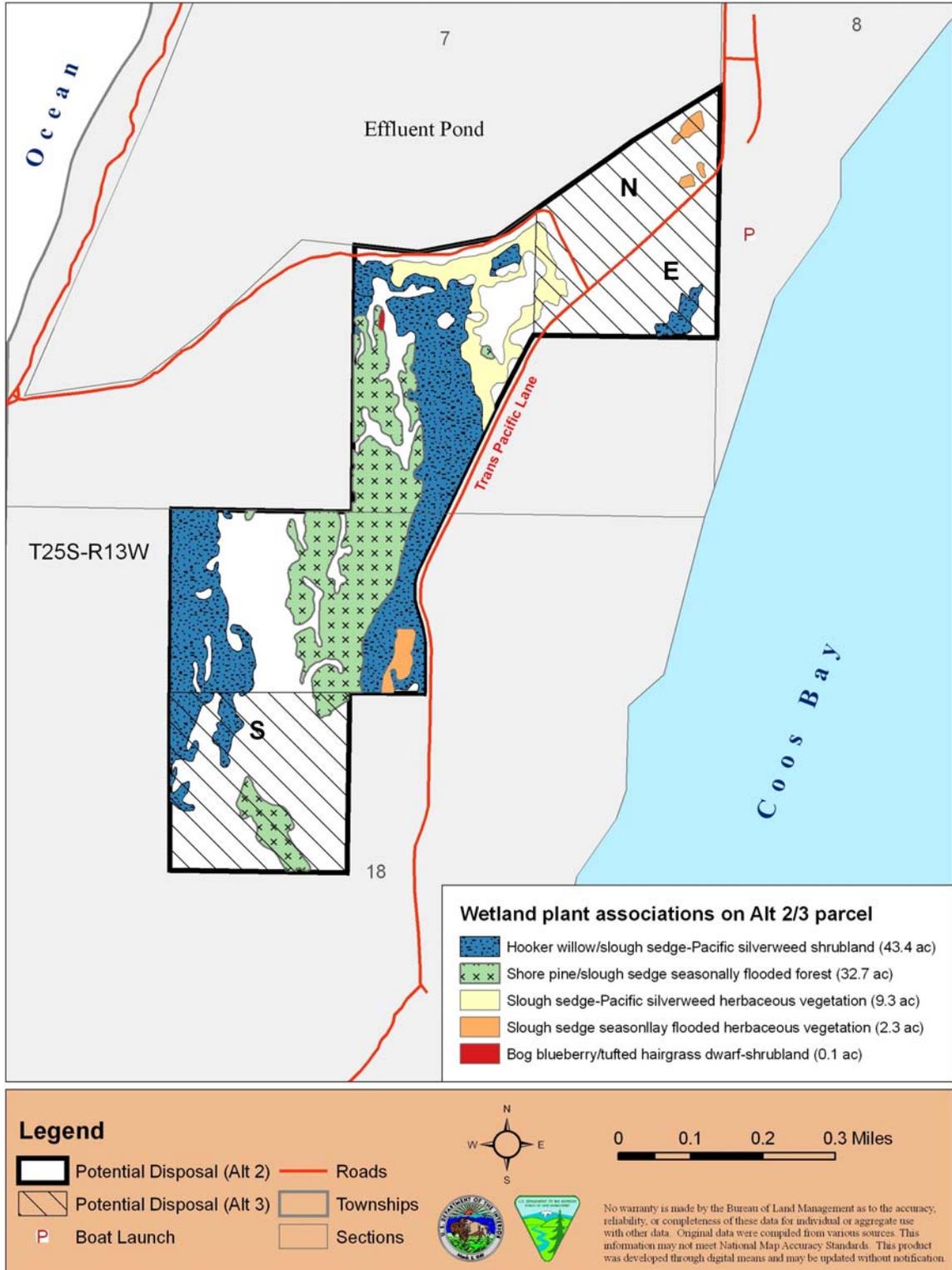


Figure 7: Wetland plant associations within subject parcels

Freshwater wetland associations are distributed along an elevational gradient (Christy et al. 1998). The slough sedge-Pacific silverweed association is a younger, lower elevation association. Slightly higher surfaces are invaded by shrubs to form the Hooker willow/slough sedge-Pacific silverweed association and bog blueberry. The Hooker willow sites are wetter than the blueberry sites and they are colonized by shore pine, which after 20 to 50 years excludes the willow to form the seasonally flooded shore pine/slough sedge forest that may persist for more than 100 years. Christy et al. (1998) note that the rise in water table during the winter causes temporary pools to form in forested sites, most notably in the shore pine/slough sedge association.

Bureau of Land Management on-the-ground vegetation mapping and aerial photo interpretation indicates that roughly 669 acres of the private and Federal lands on the North Spit are open water or support vegetation indicative of semi-permanently flooded, seasonally flooded, and saturated areas.

The 82-acre parcel in Alternative 3 contains roughly 5 to 12 acres of wetlands based on NWI data and BLM field reconnaissance and aerial photo interpretation. National Wetlands Inventory maps identify the same three classes of non-tidal wetlands found on the larger parcel: seasonally flooded scrub/shrub (nearly 3 acres), seasonally flooded emergent wetland (2 acres), and a minor amount (0.1 acre) of artificial diked/impounded wetland. The more recent interpretation of aerial photographs and on-the-ground mapping of plant associations mentioned above identified four plant associations indicative of seasonally flooded freshwater wetlands (Table 2).

Table 2. Wetland plant associations found within the 82 acre parcel

Plant Associations	Acres
Hooker willow/slough sedge-Pacific silverweed shrubland	5.6
Shore pine/slough sedge seasonally flooded forest	4.0
Slough sedge-Pacific silverweed herbaceous vegetation	1.8
Slough sedge seasonally flooded herbaceous vegetation	0.9
Total	12.3

***Streams and Floodplains***

Because sands are so permeable, no named or unnamed streams originate in or cross the subject parcel. The property is not located in a flood hazard zone based on the Federal Emergency Management Agency Flood Insurance Rate Map No. 410042 0070 B, effective date November 15, 1984.

***Ground Water Supply***

The ground water supply in the vicinity of the North Spit is relatively large. The 188-acre parcel is on the southern end of a 19.5 square mile dune and marine sand aquifer that extends from the area south of the abandoned effluent lagoon in T.25S., R.13W.,

Section 7, north to Tenmile Creek. According to Jones (1992), model simulations indicate that 10 million gallons per day (Mgal/d) could be pumped with little risk of seawater intrusion into the dune aquifer. The model also indicates that a maximum of 17 Mgal/d could be pumped without causing intrusion, but the risk associated with pumping this quantity over time is uncertain.

Although there are no ground, surface, or storage water rights attached to the 188-acre parcel, several wells are located to the north. The Oregon Water Resources Department Water Rights Information System shows that three entities hold ground water rights in the dunes aquifer for industrial, municipal, and recreational uses. Actual consumptive use is thought to be nowhere near the permitted maximum, not to exceed, rate of 48.9 cubic feet per second for four reasons. First, closure of Weyerhaeuser's containerboard mill has reduced industrial demand for water from the Coos Bay-North Bend Water Board's 18 freshwater production wells in T.24S., R.13W. Although these 90 to 120 foot deep wells can produce up to 4 Mgal/d of untreated water, they are currently only supplying 300,000 to 600,000 gallons per day (Schab 2005). Second, completion of the new Upper Pony Creek dam has likely reduced municipal demand on the Water Board's well system. Third, Water Board withdrawals for the maintenance of recreational water levels in Sand Point Lake, Spirit Lake, and Horsfall Lake are likely done on an as needed basis and not year-round. Finally, even if the Bonneville Power Administration and Roseburg Lumber Company were pumping at their permitted maximum allowable rates, their combined volume would only amount to 594,612 gallons per day.

### ***Ground Water Monitoring***

Both the Water Board and Weyerhaeuser monitor ground water levels and ground water quality (Souza 2004). The Water Board maintains 55 monitoring wells in the dunes between the North Spit and Tenmile Creek. Eight of the wells are sampled for chlorides and the remainder of the wells are used to measure static water levels. The production wells mentioned previously are monitored monthly for 7 water quality parameters.

## **3.7.2 Environmental Consequences**

### ***Alternative 1 – No Action***

The Coos Bay District BLM will continue to manage the area according to the Final North Spit Plan (2005).

The water table within the subject parcel will continue to fluctuate seasonally and annually according to precipitation, evapotranspiration, geology, topography, and possibly consumptive withdrawals from the dunes aquifer for industrial, municipal, and/or recreational uses. Plant communities in and around wetlands will continue to develop in response to available water and differences in ground elevation.

### ***Alternative 2 – Proposed Action – Land Disposal/188Acres Direct and Indirect Effects***

The sale itself will not generate any direct effects to wetlands; however, it will transfer ownership of jurisdictional and potential jurisdictional wetlands.

The sale will conceivably lead to development of some or all of the property. Activities in jurisdictional wetlands that are transferred out of Federal ownership will be regulated by applicable Federal, State, and local laws and land use ordinances.

Although the extent of development is not known at this time, recontouring the parcel to facilitate development and constructing impervious surfaces and storm sewers could alter water levels and affect the size, type, and distribution of adjacent wetlands. Development would, to some extent, change the routing of local, near-surface ground water flow systems, reduce infiltration, and concentrate runoff.

Contaminants from point sources such as storm water drains might affect surface and ground water quality in and around remaining wetlands. The extent of development and proximity to the wetlands, laterally and vertically, together with the presence of mobile contaminants would determine the level of risk. Overland flow and direct discharge of storm drains into wetlands would be unlikely, provided that there is proper storm water management and the wetlands are buffered.

### ***Cumulative Impacts***

Reasonably foreseeable actions that are likely to occur on the North Spit might impact roughly 5 acres or 1% of all wetlands. Development of the entire 188-acre parcel might affect an additional 67 to 87 acres or up to another 13%<sup>3</sup> of all wetlands. Developers, however, are required by law to mitigate for impacting jurisdictional wetlands. Compensatory mitigation could take the form of creating, restoring, or enhancing wetlands locally and/or making a payment to the Department of State Lands in lieu of implementing a local mitigation project.

The water table within the subject parcel will continue to fluctuate seasonally and annually according to precipitation, evapotranspiration, geology, topography, and possibly consumptive withdrawals<sup>4</sup> from the dunes aquifer for industrial, municipal, and/or recreational uses. Plant communities in and around wetlands not directly affected by development will continue to change in response to available water and differences in ground elevation.

### ***Alternative 3 – Land Disposal/82 Acres***

#### ***Direct and Indirect Effects***

The sale itself will not generate any direct effects to wetlands; it will transfer ownership of jurisdictional and potential jurisdictional wetlands.

The sale will conceivably lead to development of some or all of the property. Activities in jurisdictional wetlands that are transferred out of Federal ownership will be regulated by applicable Federal, State, and local laws and land use ordinances.

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<sup>3</sup> This assumes that all of the wetland areas previously identified by the BLM qualify as jurisdictional wetlands and are lost to development.

<sup>4</sup> It is not known to what extent deeper, intermediate and regional ground water flow systems that are subject to pumping interact with near-surface ground water flow systems in the 188-acre parcel.

Although the extent of development is not known at this time, recontouring the parcel to facilitate development and constructing impervious surfaces and storm sewers could alter water levels and affect the size, type, and distribution of adjacent wetlands. Development would, to some extent, change the routing of local, near-surface ground water flow systems, reduce infiltration, and concentrate runoff.

Contaminants from point sources such as storm water drains might affect surface and ground water quality in and around remaining wetlands. The extent of development and proximity to the wetlands, laterally and vertically, together with the presence of mobile contaminants would determine the level of risk. Overland flow and direct discharge of storm drains into wetlands would be unlikely provided that there is proper storm water management and the wetlands are buffered.

### ***Cumulative Impacts***

Reasonably foreseeable actions that are likely to occur on the North Spit might impact roughly 5 acres or 1% of all wetlands. Development of the entire 82 acre parcel might affect an additional 5 to 12 acres or up to another 2%<sup>5</sup> of all wetlands. Developers, however, are required by law to mitigate for impacting jurisdictional wetlands. Compensatory mitigation could take the form of creating, restoring, or enhancing wetlands locally and/or making a payment to the Department of State Lands in lieu of implementing a local mitigation project.

The water table within the subject parcel will continue to fluctuate seasonally and annually according to precipitation, evapotranspiration, geology, topography, and possibly consumptive withdrawals from the dunes aquifer for industrial, municipal, and/or recreational uses. Plant communities in and around wetlands not directly affected by development will continue to change in response to available water and differences in ground elevation.

## ***3.8 Noxious Weeds***

### **3.8.1 Affected Environment**

One known gorse site exists at the old Coast Guard station on the North Spit in T. 25 S., R. 14 W., Section 24, which is being monitored for future treatments. This site has been treated in the past for chemical and manual treatments. Annual inventories are performed and treatment occurs in the spring when plants are in bloom. From road inventories adjacent to the subject parcel, numerous populations of Scotch broom occur in various degrees of densities. Vectors of infestation beyond the BLM control may include wind-borne or animal transported seeds.

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<sup>5</sup> This assumes that all of the wetland areas previously identified by the BLM qualify as jurisdictional wetlands and are lost to development.

### **3.8.2 Environmental Consequences**

#### ***Alternative 1 – No Action***

If proposed lands stay in federal ownership, BLM would continue to implement the *Coos Bay District Record of Decision and Resource Management Plan, May, 1995* and *Invasive Plant Species Strategy for Coos Bay District BLM, May 2001*. The BLM would continue to inventory all Scotch broom populations on the agency's North Spit land ownership as well as the known gorse site at the old Coast Guard Station as in past, present and future activities. BLM would continue to monitor and treat known weed sites and new noxious weed sites.

#### ***Alternative 2 – Proposed Action – Land Disposal/188Acres Direct and Indirect Effects (Noxious Weeds)***

The land disposal itself would remove the 188 acres from BLM jurisdiction and noxious weed sites would not receive treatment in accordance with existing policy; however the new landowner could treat the weeds as aggressively or more so. Subsequent ground disturbance as a result of development could cause exposed ground to be conducive to colonization by noxious weeds. Noxious weeds have the ability to overtake and eliminate native vegetation by competing for water, sunlight, nutrients, and physical space. The broom species (Scotch broom, French broom) and gorse have the ability to fix nitrogen and are able to establish on nutrient-poor sites. This adaptation gives these species an ecological advantage over most native species. Noxious weeds will continue to spread along roads on the North Spit, but at a lower rate than in disturbed sites. If rotations of activity are short enough, weed species will re-invade areas with increased density following natural or human caused surface disturbance events. However, if the land developed with buildings and pavement, then there will be less area available for weed colonization, therefore impacts may not come to pass.

It is possible that noxious weeds not adjacent to roads on private lands would be undetected and untreated, although some private land owners are taking a more active role in treatment of noxious weed species. Recently the state of Oregon has developed a strategic plan to address noxious weed spread on non-federal lands (ODA 2001).

#### **Cumulative Impacts**

It is not known what of type of industrial land development and factory might occur on the proposed BLM lands for sale. Companies such as South Port Lumber, Weyerhaeuser Company have built mill sites on the North Spit. Varying degrees of population densities of Scotch broom occur at both sites outside and on the perimeter of the mill sites. The subject parcel is small in scale and any cumulative impact to noxious weeds from development would be considered incrementally minimal.

#### ***Alternative 3 – Land Disposal/82 Acres Direct and Indirect Effects***

The land disposal itself would remove the 82 acres from BLM jurisdiction and noxious weed sites would not receive treatment in accordance with existing policy; however the new landowner could treat the weeds as aggressively or more so. Subsequent ground disturbance as a result of development could cause exposed ground to be conducive to

colonization by noxious weeds. Noxious weeds have the ability to overtake and eliminate native vegetation by competing for water, sunlight, nutrients, and physical space. The broom species (Scotch broom, French broom) and gorse have the ability to fix nitrogen and are able to establish on nutrient-poor sites. This adaptation gives these species an ecological advantage over most native species. Noxious weeds will continue to spread along roads on the North Spit, but at a lower rate than in disturbed sites. If rotations of activity are short enough, weed species will re-invade areas with increased density following natural or human caused surface disturbance events. However, if the land is developed with buildings and pavement, then there will be less area available for weed colonization, therefore impacts may not come to pass.

It is possible that noxious weeds not adjacent to roads on private industrial lands would be undetected and untreated, although some private land owners are taking a more active role in treatment of noxious weed species. Recently the state of Oregon has developed a strategic plan to address noxious weed spread on non-federal lands (ODA 2001).

### **Cumulative Impacts**

It is not known what of type of industrial land development and factory might occur on the proposed BLM lands for sale. Companies such as South Port Lumber, Weyerhaeuser Company have built mill sites on the North Spit. Varying degrees of population densities of Scotch broom occur at both sites outside and on the perimeter of the mill sites. The subject parcel is small in scale and any cumulative impact to noxious weeds from development would be considered incrementally minimal.

## **3.9 Recreation**

### **3.9.1 Affected Environment**

The spit is close to the largest population base on the Southern Oregon Coast. The unique opportunities include free access to 1,864 acres of undeveloped public land for recreation, enjoying the bay on one side and the ocean on the other side. The jetty and the New Carissa are an attraction as well. Motorized access is permitted on designated roads only.

The primary access to the lands on the spit is via Trans Pacific Lane, a paved county road. Access to BLM public lands is by South Dike Road, a 4 wheel-drive (4WD) sand road which intersects with the Trans Pacific Lane. The South Dike Road is currently the only authorized motorized, public access route to BLM lands on the spit. The BLM has a 100-foot wide R/W reservation over the South Dike Road which ensures public access to the public lands. Portions of the South Dike Road are within the subject parcel, Lot 14, identified in Alternatives 2 & 3.

Access to the bay side of the spit and adjacent BLM lands is currently through Port land at the end of the paved road. A portion of those lands are zoned for industrial use.

These un-maintained, 4WD sand roads form a loop around the perimeter of the spit and provide motorized access to the ocean beach, the north jetty and bay. BLM traffic counters indicate that on average, each year from 2002 through 2004, more than 8000 people visited the interior lands of the spit, in an estimated 3,565 vehicles per year with an average of 2.5 people per vehicle.

The BLM maintains one three-acre developed site on the spit, the North Spit boat launch facility. The facility offers a free boat ramp, parking, flush restrooms, drinking fountain, public pay phone and information kiosk. A volunteer host lives on site. The boat launch facility is within view of the subject land parcels and is also visible from across the bay. BLM traffic counters indicate nearly 7,000 people visited the boat launch annually from 2000 through 2004. Over this five year period, 454 boats were launched on average annually.

A wide variety of recreational activities occur on the North Spit, including but not limited to clamming, crabbing, horseback riding, hiking, wildlife viewing, New Carissa (ship grounding) viewing, camping, birding, surfing, fishing, hunting and target shooting. The BLM estimates the number of people engaging in these activities through traffic counters and observation.

Recent US Department of Agriculture (2005) research studied the amount of money people spent while engaging in certain specific recreational activities in the Pacific Northwest. Boating, horseback riding, camping, etc. were analyzed. The study suggests the average estimate of consumer spending is \$43.64 per person per day across all recreational activities studied, in 2004 dollars. Using that estimate, it is reasonable to calculate 7,000 (boat launch visitors) + 8,000 interior visitors = 15,000 x \$43.64 = \$654,600, annually spent in the North Spit area by people recreating. There would be some double counting, because some of the people who go to the jetty may stop at the boat ramp restrooms, but also some missed counts, for those who do not travel where the traffic counter is located. This estimate does not include the more popular Dunes National Recreation Area to the north or the State and County Parks to the south.

There has been a rise in equestrian use the past several years on the spit. The BLM has a Group Volunteer Agreement with Oregon Equestrian Trails to assist in identifying, marking and maintaining approximately 12-mile foot and horse trail system. A small equestrian staging area has been proposed adjacent to South Dike Road in Lot 14, in the North Spit Plan (USDI BLM December 2005). The proposed staging area is currently used by equestrians and campers.

For many years this sand road has served as access to the jetty, the ocean beach and the interior lands of the spit. Most of the land remains in a natural setting with no other developments. To the north is the Weyerhaeuser effluent pond and to the south are wetlands and sand dunes with native and non-native vegetation consisting of grasses, shrubs and trees.

### **3.9.2 Environmental Consequences**

#### ***Alternative 1 – No Action***

The No-Action Alternative would allow BLM to implement the recently completed North Spit Plan signed in December, 2005, as intended. The Plan was completed through a public planning process and would provide long term access to the public lands via the South Dike Road. The proposed trailhead would be constructed as planned, and the trail locations would remain as currently defined. A small horse staging area is also identified in the North Spit Plan as a potential project within the subject parcel. All legal recreational activities on BLM lands would continue to be allowed. It is reasonable to assume that, since there are more employees of industrial facilities on the North Spit, the number of people exploring the undeveloped lands on the spit will increase.

#### ***Alternative 2 – Proposed Action – Land Disposal/188Acres***

##### ***Direct and Indirect Effects***

The 188 acres of the subject parcel represent 10% of the BLM-managed lands on the North Spit. It is expected that some, or the entire parcel would be developed if it is sold. The industrial areas would likely be closed to the public. The public access along the South Dike Road would potentially be adjacent to an industrial complex. The R/W may also be re-located if both parties agree it is beneficial to do so. An alternate location has not been determined.

Approximately one-half mile (5%) of the 12-mile identified trail system would need to be relocated, as well as the proposed equestrian staging area.

Removing 10% of the public land base will increase pressure for use of the remaining land. More people in less space often lead to conflicts.

##### ***Cumulative Impacts***

It is unknown what type of development would occur in the future; however, citizens have expressed concern about the loss of public land, noise, odors, chemicals, artificial lights, public health and safety and the potential degradation of the adjacent and surrounding public lands. The inherent value of undeveloped, quiet, open space close to town would be lost.

The Port owns lands that provide access to the bay and adjacent BLM lands. The Bay Side Road access point from the paved road is zoned industrial. The Port has stated publicly they are actively seeking development of this industrially zoned property. Therefore, it is possible the Bay Side Road may one day be sold to a private company and closed to the public. This raises the importance of the South Dike Road access to the public lands to the south.

Weyerhaeuser Company has changed their policy of allowing some public access to a “No Trespassing” policy, in association with their property negotiations with the Port. Their lands are now posted “No Trespassing. Violators will be prosecuted.” Although these are not BLM lands, the effect of closing off lands previously open to the public will place more pressure on the adjacent BLM lands to accommodate the displaced visitors.

### **Alternative 3 – Land Disposal/82 Acres**

#### **Direct and Indirect Effects**

The public would lose access to 82 acres, or 4% of the public lands available for recreation on the spit. Approximately one-quarter mile of the 12-mile trail would need to be relocated, as well as the identified trail head and potential staging area may have to be relocated.

It is expected that some, or the entire parcel would be developed if it is sold. The industrial areas would likely be closed to the public. The public access along the South Dike Road would potentially be adjacent to an industrial complex. The R/W may also be re-located if both parties agree it is beneficial to do so. An alternate location has not been determined.

Removing 4% of the public land base will increase pressure for use of the remaining land, but it would be less of an effect than Alternative 2.

#### **Cumulative Impacts**

Cumulative impacts for this alternative are the same for Alternative 2, with the difference being 106 acres would be retained as public lands.

## **3.10 Special Status Species and Survey & Manage Species**

### **3.10.1 Affected Environment**

#### Special Status Species

Special Status Species, or SSS, are limited in abundance and distribution and are at risk due to identifiable threats (USDI 1995). The objectives of Bureau Manual 6840 and Oregon-Washington Special Status Species Policy OR-91-57 are to conserve listed species and the ecosystems on which they depend; to ensure that actions requiring authorization or approval by the Bureau are consistent with the conservation needs of SSS; and to ensure that those actions do not contribute to the need to list SSS under the provisions of the Endangered Species Act (ESA) or BLM Manual. Per BLM OR/WA 6840 policy, only those SSS ranked as Federally Endangered (FE); Federally Threatened (FT); Federal Candidate (FC); Bureau Sensitive (BS); or Bureau Assessment (BA) necessitate analysis for management purposes. Bureau Tracking (BT) species are therefore not included in this EA.<sup>6</sup>

#### Survey and Manage Species

As directed by the 2001 Record of Decision for *Amendment to the Survey and Manage, Protection Buffer, and other Mitigating Measures Standards and Guidelines* (USDA Forest Service and USDI Bureau of Land Management 2001), an Annual Species Review was conducted and published in 2001, 2002, and 2003. The Species Reviews resulted in the removal of all of the known terrestrial wildlife Survey and Manage species that occur, or potentially occur, within the range of the Coos Bay District BLM. Therefore, this EA complies with the provisions of the 2001 *Record of Decision and*

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<sup>6</sup> The BT designation was established to collect information on species for which concern may arise in the future.

*Standard and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines* (as the 2001 ROD was amended or modified as of March 21, 2004). Survey and Manage botany species are discussed below.

### **Botany**

Mature and old growth spruce forest and coastal wetland bogs provide ideal habitat for many special status lichens such as *Bryoria* sp., *Heterodermia* sp., and bryophytes, such as *Limbella fryei*, a moss. While there is minimal amount of mature trees throughout the subject parcel, there is an abundance of both cyanolichens and bryophytes reflective of a mature forest. It is likely that nearby mature trees contributed to inoculation of the current existing dune forest and which grow in the moist coastal environment.

The lands under BLM jurisdiction on the North Spit contain approximately 348 acres of suitable habitat, e.g. substrate like mature shore pine, and Sitka spruce available for colonization for *Bryoria pseudocapillaris* and *B. spiralifera*. The Forest Service administered lands contain 716 acres of suitable habitat.

Following are the terms used below to describe quantities of the species discussed:

- Collection: consists of 1-3 individual thallus of the target species usually found in one to two trees. (See Appendix 5 for known collections totals).
- Population: is defined as a collection that is located one mile or more apart.
- Site: is defined as a location of a target species or where the population of target species are located or presumed to exist.
- Subpopulation: a site within one mile of a population

There are two populations of *Bryoria pseudocapillaris* and *B. spiralifera* located on the North Spit (Table 3). Not all of the acres containing the populations are considered suitable habitat.

One is the northern population which covers about 317 acres. This population extends north of BLM managed lands into the southernmost area of ODNRA (Forest Service) lands.

The southern population is approximately 361 acres, of which 70 acres are owned by the Port. Of the 291 acres managed by BLM, 91 acres are located within the 188-acre subject parcel in Alternative 2. Approximately 15 acres of the 82-acre parcel under Alternative 3 contain suitable habitat.

Table3. Subpopulations of *Bryoria pseudocapillaris* and *B. spiralifera* on the North Spit.

Survey & Manage/Special Status Species	Alt. 2 188 acres. Species collected.	Alt. 3 82 acres Species collected	<u>Southern</u> population: Species collected	<u>Northern</u> population: Species collected	Total North Spit populations
<i>Bryoria pseudocapillaris</i>	5	1	13	32	2
<i>Bryoria spiralifera</i>	3	1	8	7	2

Five special status nonvascular (lichens) species were found as a result of botanical surveys conducted on the subject parcel (Table 4, Figure 8). Three of the lichens are S&M category A lichens and two are Bureau Assessment (BA) special status species list two.

Table 4. Bureau sensitive (BS) and Bureau assessment (BA) nonvascular species, Survey and Manage species Category A (Cat.) documented in the subject parcel.

Lichen Species (group)	BLM Status	Habitat Description	Subpopulations within the 188 acre parcel
<i>Bryoria pseudocapillaris</i>	BS List 1 Cat. A	Rock, conifer bark, and Sitka spruce in exposed coastal headlands	5
<i>Bryoria spiralifera</i>	BS List 1 Cat. A	Shore pine and Sitka spruce in coastal habitats	3
<i>Heteroderma leucomelos</i>	BA List 2	Spruce and shore pine branches on forested headlands in the coastal fog zone.	2
<i>Niebla cephalota</i>	BA List 2 Cat. A	Coastal habitats but may extend up to 15 miles inland where influenced by the coastal fog belt, occurs on exposed trees, shrubs, and less often on rocks, rock or bark;	1
<i>Ramalina pollinaria</i>	BA List 2	Bark of various trees (esp. older trees) on shaded rocks.	1



**Figure 8**  
Codes are the first three letters of the genus and species BRYPSE (Green) = *Bryoria pseudocapillaris*, BRYSPI (Yellow) = *B. spiralifera*, HETLEU (Blue) = *Heterodermia leucomelos*, NIECEP (Orange) = *Niebla cephalota*, RAMPOL (Pink) = *Ramalina pollinaria*.

The ecology and distribution information for five lichen species is given below from the Rare Coastal Lichen Study (RCLS, Glavich et al. 2005), and the Forest Service study (FSS)

1. *Bryoria spiralifera* is a coastal Pacific Northwest endemic with narrow ecological amplitude. The species is located within the coastal fog belt on exposed or moderately exposed trees and shrubs (Leshner et al. 2003). The occurrences of *B. spiralifera* are all restricted to within two miles of the Pacific coast in the northwest United States and it has a global range of California and Oregon. *B. spiralifera* is known from several collections on federal land (Table 5) while only four populations are located on federally protected lands (Glavich et al. 2005 and USDA and USDI 2005), including the one found in the subject land parcel. According to Glavich (2005), *B. spiralifera* is believed to have more limited dispersal and be more susceptible than *B. pseudocapillaris* to slight coastal climate changes (e.g., maritime air and coastal fog belt).
2. *Bryoria pseudocapillaris* has narrow ecological amplitude and is only known to occur within the coastal fog belt on exposed or moderately exposed coastal trees and shrubs (Leshner et al. 2003, McCune and Geiser 1997, Glavich et al. 2005). It has a global range from Washington through California. While *B. pseudocapillaris* is known from several collections on federal land, only five of all known collections are located on federally protected lands (Table 5)
3. *Heterodermia leucomelos* is distributed along the Pacific coast of North America. It is typically found on Sitka spruce (*Picea sitchensis*) branches in the coastal dune forests interspersed with willow and wax myrtle or within the thickets composed of species of the Heath Family, Ericaceae (McCune and Geiser; 1997) yet, it may also be located in riparian areas, moist valleys, and fog-intercepted ridges inland (USDA and USDI, 2005). It has an incomplete circumpolar distribution ranging from Americas, England, Europe, Africa, and Asia, and is widespread in the tropics and subtropics (USDA and USDI, 2005).
4. *Niebla cephalota* has a North America endemic Pacific coastal distribution (USDA and USDI, 2005). It is found along the coastal fog belt on exposed Sitka spruce branches. Collections are located in Washington, Oregon and California.
5. *Ramalina pollinaria* is a hypermaritime lichen of coastal dunes (Glavich et al. 2005). It occurs within 2 km of the ocean and at low elevation along the coastal fog belt. It tends to thrive primarily in Sitka Spruce forests but also in shore pine, Douglas-fir and grand fir forests which include hardwood and shrub dominated habitat (Glavich et al. 2005). The range extends from Washington to California In the random grid survey in Oregon, one detection located on the North Spit (VanNorman, pers comm. 2005).

Trees in a mature dune forest appear to support a higher number of special status coastal lichen species on the North Spit than trees in a younger dune forest. Previous surveys of the northern *Bryoria* population (Figure 9) found the old growth Port Orford cedar stand and mature tree islands stand supported several individual thallus of *Bryoria* species per mature tree in the lower branches. Although the upper branches of the trees were covered with multiple clusters of lichens, the exact species could not be verified for safety concerns. By comparison, the amount of *Bryoria* species located in younger dune forest trees was much lower. For example, only one to three individuals would be collected from the branches of 60 year old shore pine or spruce. The upper branches of the younger trees would be somewhat lichen sparse when compared to mature trees. Aging of trees came from aerial photo interpretation.

Table 5. Population by ownership and state<sup>7</sup>. P and U indicate federally protected<sup>8</sup> and unprotected<sup>9</sup> lands. Other includes county, Indian, and private lands (Glavich et al. 2005).

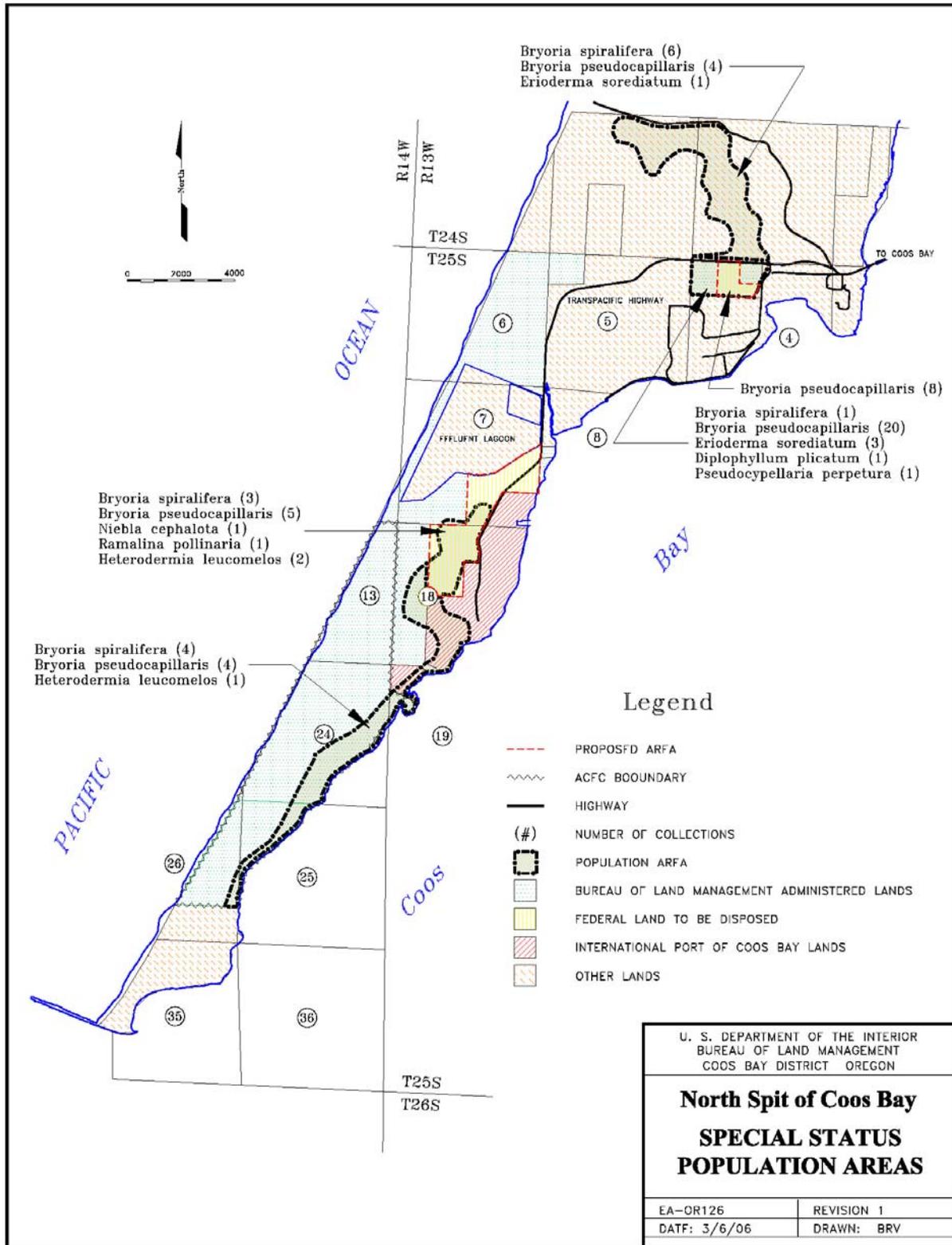
Target Lichen	California				Oregon				Washington			
	Federal		State	Other	Federal		State	Other	Federal		State	Other
	P	U			P	U			P	U		
<i>B.pseudocapillaris</i>	2	2	5	0	2	7	5	1	1	0	1	2
<i>B. spiralifera</i>	1	5	1	1	3	4	1	1	0	0	0	0
<i>H. leucomela</i>	8	5	8	11	1	5	7	9	1	0	1	0
<i>N. cephalota</i>	1	5	10	2	1	5	2	3	1	2	3	4
<i>R. pollinaria</i>	0	3	14	1	1	3	3	1	0	2	2	1

The number of all known collections for each state is given in Appendix 5.

<sup>7</sup> Based on the Rare Coastal Lichen Study (RCLS, Glavich et al. 2005a), Forest Service surveys, random grid surveys, regional herbaria and literature reports. Additional information includes randomly selected surveys, conservation assessments, historic locations, purposive strategic surveys of likely habitat, about 300 Forest Service air quality plots (USDA 1998), new published records, and Geographic Biotic Observations (GeoBOB) database for Special Status Species.

<sup>8</sup> Protected indicates that the collection is located in a land allocation that is federally protected (e.g. national parks, wilderness, areas of critical environmental concern). In such an allocation, lichens and other organisms are protected from human-caused disturbances, such as construction, logging, recreational development or harvest.

<sup>9</sup> Unprotected indicates the collection is located on federal land and may be subject to activities that can detrimentally affect habitat suitability for lichens.



**Figure 9**  
Two populations of *Bryoria pseudocapillaris* and *B. spiralifera* located on the North Spit. The northern population is 317 acres and the southern population is 361 acres.

## **Wildlife**

An updated list of wildlife SSS was compiled for the Umpqua Resource Area. Based on range and habitat requirements it was refined to contain only those species likely to be found on or in the vicinity of the subject parcel (Table 6). In general, species were excluded from analysis because their range is outside of the project area or because suitable habitat is not present.

### ***Habitat for Special Status Wildlife Species Associated With Forested Habitats***

The following species are primarily dependent upon snags and large trees, components associated with late-seral forests. These habitat elements occur elsewhere on the North Spit but are scarce in the subject parcel. However, some of these species may use the younger stands for foraging, roosting, or during migration.

#### Bald Eagle

Bald eagles (*Haliaeetus leucocephalus*) may use the area for roosting as eagles are occasionally seen foraging on North Spit beaches. Trees suitable for nesting are not present on the subject parcel.

#### Peregrine Falcons

The American peregrine falcon (*Falco peregrinus anatum*) and the Arctic peregrine falcon (*Falco peregrinus tundrius*) require cliffs for nesting but may be found perching in trees while hunting or migrating. Whereas the Arctic peregrine is an occasional winter migrant, the American peregrine nests on the Coos Bay District and may occasionally be seen on the North Spit. It is possible that these falcons may at times perch in the subject parcel while passing over the North Spit to hunt or migrate.

### ***Habitat for Species Associated with Coastal Dunes and Grasslands***

Open sand dunes and sandy swales with patches of European beachgrass and other low lying vegetation occur in the southern portion of the subject parcel (see Vegetation). This open area provides potential habitat for Special Status Species associated with coastal grasslands and dunes (i.e., white-tailed kite [*Elanus leucurus*], Aleutian Canada goose [*Branta Canadensis leucopareia*], dusky Canada goose [*Branta canadensis occidentalis*], Oregon vesper sparrow [*Pooecetes gramineus affinis*], streaked horned lark [*Eremophila alpestris strigata*], upland sandpiper [*Bartramia longicauda*] and western snowy plover [*Charadrius alexandrinus nivosus*]). With the exception of the white-tailed kite and the western snowy plover, these species are rare or occasional migrants, with the streaked horn lark sporadically over-wintering on the North Spit in some years (Contreras 1998). White-tailed kites nest on the District and are fairly common during the winter on the North Spit. The southern portion of the North Spit and the ocean beach provides habitat for the majority of western snowy plovers that nest on the Oregon coast. Although it is possible that individual plovers may use the subject parcel for roosting or in the winter, no sightings have been documented.

Table 6. Wildlife Special Status Species<sup>10</sup> That May Occur on the North Spit Subject Parcel, Umpqua Resource Area, Coos Bay District BLM.

COMMON NAME	SCIENTIFIC NAME	BLM STATUS <sup>11</sup>	RANGE	HABITAT
<b>BIRDS</b>				
Arctic Peregrine Falcon	<i>Falco peregrinus tundrius</i>	BS	Occasional winter migrant	Cliffs, may perch in trees
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	BS	North Spit during shorebird migration	Cliffs, may perch in trees
Aleutian Cackling Goose	<i>Branta canadensis leucopareia</i>	BS	Coastal OR, occasionally stops at North Spit	Coastal grasslands
Dusky Canada Goose	<i>Branta canadensis occidentalis</i>	BSO	Throughout District	Open grasslands, wet meadows
Bald Eagle	<i>Haliaeetus leucocephalus</i>	FT	Year-round, uncommon on N. Spit	Large trees for nesting/perching, near water
Oregon Vesper Sparrow	<i>Poocetes gramineus affinis</i>	BSO	Rare migrant or winter species	Grassland
Streaked Horned Lark	<i>Eremophila alpestris strigata</i>	FC	Rare migrant or winter species	Coastal dunes; open ground with short grass or scattered bushes
Upland Sandpiper	<i>Bartramia longicauda</i>	BSO	Vagrant, very rare	Coast; open grasslands
Western Snowy Plover	<i>Charadrius alexandrinus nivosus</i>	FT	Coastal OR, largest population in OR on North Spit	Beaches and inland areas of open sand
White-tailed Kite	<i>Elanus leucurus</i>	BAO	Fairly common wintering species on North Spit.	Pastures, open grasslands; typically low elevations

<sup>10</sup> Tracking species excluded

<sup>11</sup> BAO: Bureau Assessment Oregon only, BS: Bureau Sensitive, BSO: Bureau Sensitive Oregon only, FT: Federally Threatened, FE: Federally Endangered

### ***Habitat for Species Associated With Aquatic Habitats***

Ephemeral ponds and low lying areas of sedge and willow are found throughout the subject parcel. These areas are not suitable habitat for any of the SSS described in this EA (see Wildlife).

## **3.10.2 Environmental Consequences**

### ***Alternative 1 – No Action***

#### ***Botany***

The dune forest and wetlands will continue to provide adequate habitat for the lush and diverse composition of the epiphytic community currently present on the subject parcel. Lichen growth is dependent on both a high degree of environmental stability and adequate microclimatic conditions. The younger shore pine and spruce will eventually develop into dune forest that should become ideal habitat for the proliferation of the coastal epiphytic population.

It could be surmised that the *Bryoria* species located in the subject parcel is still a fairly young population by abundance comparison. The no action alternative would enable the dune forest to continue providing for further colonization of the special status lichens and continue to increase potential habitat for special status coastal lichens already present in the subject parcel.

#### ***Wildlife***

The subject parcel, in the absence of management or transfer out of the public domain, would continue to be representative of other natural environments in the coastal dune sheet. Successional pathways would continue on their present course interrupted periodically by storms or other disturbance events. The conifers on the subject parcel would persist and grow in diameter in height, thus increasing their value for Special Status Species associated with older forest conditions. Stabilization of open sand areas by European beachgrass would continue, with subsequent establishment of shrubs and trees leading to an increase in habitat for species dependent upon this type of vegetative cover. Infilling by sand may eventually lead to the replacement of wetland plant associations with those more typical of upland dune associations, including the establishment of woody vegetation and exotic species (Christy et al. 1998). Overall, the effects to wildlife would be within the realm of natural variation and species composition and distribution would shift according to the plant community's trajectory.

The importance of the area for wildlife populations in the future will depend upon recreational use of the area (particularly motorized use) and on actions taken on adjacent lands that may affect habitat suitability including recreation management, development activities, and conservation practices.

### ***Alternative 2 – Proposed Action – Land Disposal/188Acres***

#### ***Direct and Indirect Effects – Botany***

The effect of disposal of the subject parcel would be the transfer of several known sites of special status plant species out of federal ownership. Eight percent of the habitat or

potential suitable habitat on the North Spit for five special status lichens would be lost upon development of the subject parcel.

### ***Direct and Indirect Effects – Wildlife***

Whether the effects to wildlife are direct depends upon the time frame to development and the specific activities that may occur. Effects are more likely to be indirect, and strictly associated with actions that occur on the sold parcel, not with the transfer of ownership per se.

Several of the Special Status Species that may occur on the subject parcel are migrants or occasional winter residents (Table 6). Development of the subject parcel would likely result in the loss or limitation of these opportunities. Habitat suitability on adjacent lands may be diminished due to an increase in human activity and noise associated with development thus precluding wildlife use. Potentially, the presence of a new industry and its associated workforce may lead to an increase in recreational use of the North Spit and its beaches. Increased use may result in disturbance effects to snowy plovers and other species.

### ***Cumulative Impact – Botany***

The land adjacent to the subject parcel contains both habitat and potential habitat for continued colonization of the existing special status lichen population. If the subject parcel is lost through development, the surrounding trees would likely continue to provide the environmental conditions necessary for persistence of Survey and Manage (Category A) lichens. Cumulatively, the effect of this action is the loss of habitat available for the two *Bryoria* species (see below for further information on each species). Recent collections of *Bryoria* species in the 60 year old trees indicate that establishment does occur in young forests, rather than in only old growth forests.

The available habitat for the *Bryoria pseudocapillaris* and *B. spiralifera* is diminishing due to habitat loss and alteration of habitat from recreational activities and industrial development (USDA and USDI 2005). In a pending sale of BLM administered lands on the North Spit (Environmental Analysis OR126-93-07, Revision 1), 34 acres are proposed for sale, of which 2 acres contain suitable habitat for the two *Bryorias*. If the 188-acre parcel is sold, approximately 91 acres of suitable habitat would be lost. The combined BLM land sales on the North Spit would result in a 93-acre reduction of suitable habitat for the two coastal lichens.

*Bryoria pseudocapillaris* – The disposal of the 188-acre parcel will result in the partial loss of one of the 28 populations (Table 5, Glavich et al. 2005). Due to the specialized habitat requirements and the limited number of known sites in older forests, it is likely that few new collections will be located (Glavich et al. 2005).

*Bryoria spiralifera* - The disposal of the 188-acre parcel will result in the partial loss of one of the 17 populations (Table 5, Glavich et al. 2005). Due to the specialized habitat requirements and known sites in older forests of *B. spiralifera*, it is expected that few new collections would be located (Glavich et al. 2005).

*Heterodermia leucomelos* - The disposal of the 188-acre parcel will result in the partial loss of one of the 54 populations (Table 5, Glavich et al. 2005).

*Niebla cephalota* - The disposal of the 188-acre parcel will result in the partial loss of one of the 39 populations protected land (Table 5, Glavich et al. 2005).

*Ramalina pollinaria* - The disposal of the 188-acre parcel in Alternative 2 will result in the loss of one of the 31 populations (Table 5, Glavich et al. 2005).

### **Cumulative Impact – Wildlife**

The development of 188 acres (10% of BLM's ownership on the North Spit) would be additive to other development occurring on the North Spit (see above list of reasonably foreseeable actions). Loss of wildlife habitat to industrial use would be permanent. Whether the loss of these habitats would affect the viability of special status species addressed in this EA is unknown.

### **Alternative 3 – Land Disposal/82 Acres**

#### **Direct and Indirect Effects – Botany**

Under this alternative, one percent of the habitat containing two special status coastal *Bryorias* would transfer out of federal ownership.

A portion of the southern population *Bryoria pseudocapillaris* and *B. spiralifera* habitat located on the North Spit (Figure 9) would be lost upon development of the subject parcel.

#### **Direct and Indirect Effects – Wildlife**

Alternative 3 retains 106 acres in the public domain as compared to Alternative 2, including approximately 43 acres of forested habitat as well as the majority of willow shrubland. The greatest loss would occur in the coastal dunes and grasslands habitat which comprises approximately 46% of Alternative 3's acreage. Special Status Species associated with this type of habitat are rare and suitable habitat is relatively abundant elsewhere on the Spit. However, as with Alternative 2, increased human activity and noise associated with development may preclude certain wildlife species from using adjacent habitats, and a potential increase in use of the North Spit and its beaches due to the presence of a new industry and its associated workforce may result in disturbance effects to snowy plovers and other species during the nesting season.

#### **Cumulative Impact – Botany**

The available habitat for the *Bryoria pseudocapillaris* and *B. spiralifera* is diminishing due to habitat loss and alteration of habitat from recreational activities and industrial development (USDA and USDI 2005). In a pending sale of BLM administered lands (Environmental Analysis OR126-93-07, Revision 1) on the North Spit, 34 acres are proposed for sale, of which 2 acres contain suitable habitat for the two *Bryorias*. If the 82 acre parcel is sold, approximately 15 acres of suitable habitat would be lost. The

combined BLM land sales on the North Spit would result in a 17-acre reduction of suitable habitat for the two coastal lichens.

*Bryoria pseudocapillaris* – The disposal of the 82-acre parcel will likely result in the partial loss of one of the 28 populations of (Table 5, Glavich et al. 2005).

*Bryoria spiralifera* - The disposal of the 82-acre parcel in will likely result in the partial loss of one of the 17 populations (Table 5, Glavich et al. 2005). Due to the specialized habitat requirements and limited number of known sites in older forests of *B. spiralifera*, it is likely that few new collections would be located (Glavich et al. 2005).

The cumulative affect of the loss of a small portion of the two coastal special status *Bryoria* species habitat would have a minimally negligible affect to the southern population on the North Spit. Currently, much of BLM managed lands of this area is either sufficient habitat (substrate available for colonization, e.g., mature shore pine and Sitka spruce) or is potential habitat with minimal land use impacts. With current rate of plant community succession and the amount of habitat still retained in BLM management on the North Spit, it is putative that the current lichen population would continue to persist without any concerns for revisions to its present listing.

### **Cumulative Impact – Wildlife**

The cumulative effects of implementing Alternative 3 are less than those associated with Alternative 2 due to the reduced acreage. Loss of wildlife habitat to industrial use would be permanent, but whether it would affect the viability of special status species addressed in this EA is unknown.

## **3.11 Vegetation**

### **3.11.1 Affected Environment**

The North Spit is characterized by about 42% herbaceous habitat, 32% forested land, 23% of shrub land, and 3% woodland along with open sand areas (USDI 1995c).

The subject parcel has four features that contain botanical species; sandy swales, mature forests, shrublands and wetland community below host species. These are discussed below.

1. Open sandy swales. The open swales are located on the southern portion of the parcel (Figure 8). The sand dunes are a dynamic environment reflective of both seasonal and vegetative changes that occur on the coastal region. Some of the dominant species include European beach grass (*Ammophila arenaria*), red fescue (*Festuca rubra*) and other vegetation such as aster (*Aster chilensis*).
2. Mature forests. There are three forest associations (Christy et al. 1998): (1) Shore pine-Douglas-fir/wax myrtle-evergreen Huckleberry forest, (2) Shore pine/slough sedge seasonally flooded forest, and (3) Sitka Spruce/Evergreen Huckleberry forest. Mature spruce and shorepine forests provide open habitat in

this moist coastal environment for alectorioid lichens, cyanolichens, and bryophytes.

3. Shrublands/Wetlands There are four shrubland/wetland associations that dominate the proposed land sale parcel (Christy et al. 1998): (1) Hooker willow/slough-sedge-Pacific silverweed shrubland, (2) Bog blueberry seasonally flooded dwarf-shrubland alliance. (3) Slough sedge-Pacific silverweed herbaceous wetland. (4) Slough sedge seasonally flooded herbaceous alliance provide open habitat with intermittent tree layer, which, when present, are composed of both young shorepine (*Pinus contorta*) and Hooker willow (*Salix sp.*).

4. Wetland areas are conducive to primary plant succession with species such as spike rush (*Eleocharis sp.*), rushes (*Juncus sp.*), sedges (*Carex sp.*) and pacific silverweed (*Potentialla sp.*). Wetland edges are lined predominantly with Hooker willow which provides substrate for a variety of cyanolichens and alectorioid lichens including some bryophytes. The wetlands provide habitat for a variety of species primarily found in medium to high moist environments.

The successional stage of the dune forest begins with open sands, then grass/shrublands and finally shore pine trees. Some wetlands tend to stay similar vegetative-wise given the type, depth and availability of water while other wetlands progress towards upland plant associations (Christy et al. 1998). Grasslands/shrub lands typically progress towards a mature forest given the right environmental and climatic conditions. At times, progression of plant communities can be suddenly stopped through either partial or complete burial of wind shifting sands. In which case, the primary stage of succession would start with European beach grass, and then progress towards upland vegetation given the right environmental and climatic conditions.

Many of the plant associations on the North Spit were not present before the 1930s including many currently found on the subject parcel. Extensive planting of European beach grass, scots broom and tree lupine from 1910 through to 1930s helped the current plant communities to become established on the subject parcel (Christy et al. 1998). The planting of these exotic species changed the soil chemistry to enable several plant species to thrive on the North spit that otherwise would not have been able to exist in such a poor nutrient environment (Christy et al. 1998). The 1939 aerial photographs showed only a small amount of young trees located sporadically across on the subject parcel. Most of the vegetation depicted in the photos consisted of grasses and shrubs with areas of open sand surrounding the hills and swales of the landscape. The majority of the current plant associations (i.e. wetlands/shrub land/woodlands plant associations) on the subject parcel have been generated in approximately 60 years.

### **3.11.2 Environmental Consequences**

#### ***Alternative 1 – No Action***

In the absence of disturbance, stabilization of open sand areas by European beach grass would continue on the North Spit, followed by subsequent establishment of shrubs and trees (Christy et al 1998). Given the fairly rapid successional vegetation growth on the North Spit as evidenced by aerial photographs, some wetlands would continue transitions into the young upland shrubby plant association. The wetlands; however, may potentially become invaded by exotic species (Christy et al. 1998). The shrub lands have areas that are seasonally flooded that will continue plant succession depending on the availability of fresh water. The elevated sites on the North Spit tend to be colonized by shore pine as they become surrounded by dense patches of willow. The forested areas would continue to mature to mid seral stage that would eventually create an environment conducive to other species of conifers beside shore pine and spruce. If the land remains in an undeveloped state, then the effects would be within the realm of natural variation; therefore, species composition and distribution would shift according to the plant community's trajectory.

#### ***Alternative 2 – Proposed Action – Land Disposal/188Acres***

##### ***Direct/Indirect Effects***

Under this alternative, 188 acres would transfer out of Federal ownership. All or some of the land could be developed. All plant associations that are currently located on the subject parcel would be eliminated if the parcel is developed as a result of the land disposal.

##### ***Cumulative Impact***

Where development occurs on the subject parcel, the successional stage growth will be stopped. The adjacent dune forested habitat which is similar to the subject parcel habitat, would continue to naturally progress towards pine/slough sedge association that may be present for the next 100 years (Christy et al. 1998). Areas that have relatively little sand movement provide for ideal environment for primary succession of both shrubs and trees (Christy et al. 1998). Shore pine plant associations can become well established and create ideal conditions for the invasion of other conifers such as Douglas-fir, Sitka spruce, western hemlock and Port Orford cedar trees (Christy et al. 1998).

#### ***Alternative 3 – Land Disposal/82 Acres***

##### ***Direct/Indirect Effects***

Under this alternative 82 acres would transfer out of Federal ownership and all or some of the land could be developed. All plant associations that are currently located on the subject parcel would be eliminated if the parcel is developed as a result of the land disposal.

##### ***Cumulative Impact***

Where development occurs on the subject parcel, the successional stage growth will be stopped. The adjacent dune forested habitat which is similar to the subject parcel habitat, would continue to naturally progress towards pine/slough sedge association that

may be present for the next 100 years (Christy et al. 1998). Areas that have relatively little sand movement provide for ideal environment for primary succession of both shrubs and trees (Christy et al. 1998). Shore pine plant associations can become well established and create ideal conditions for the invasion of other conifers such as Douglas-fir, Sitka spruce, western hemlock and Port Orford cedar trees (Christy et al. 1998).

## **3.12 Wildlife**

### **3.12.1 Affected Environment**

The distribution and abundance of many wildlife species on the District is poorly documented; consequently most of the information related to wildlife distribution and abundance within the subject parcel is theoretical and based on current literature pertaining to wildlife-habitat associations. For the sake of analysis, species are assumed present given the availability of suitable habitat.

#### Neo-tropical Migrants

Neo-tropical migrants include a large group of species with diverse habitat needs spanning nearly all successional stages of most plant community types (Niles 1992), including those found within the subject parcel. In the Pacific Northwest, migrants typically arrive from late April to early May, are breeding by late May, fledging young in July and August and have departed for their wintering grounds sometime in late August/early September (Rodenkirk, Pers. Comm). These birds are important to ecosystem health in that the majority of them feed on a wide variety of insects and many are important seed dispersers. During the summer months, many species of neo-tropical migrants occur throughout the subject parcel in a variety of habitats, including those described below. For a complete species list please contact the BLM.

#### Other Species

Several other species were included in this assessment because special management provisions are in place for their conservation. Collectively termed Species Buffer species (USDI Bureau of Land Management 1995, page 28), the BLM is directed to enhance habitat for these species and to establish protective buffers around the nests of great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), and certain raptor species. On the North Spit, these raptors include osprey (*Oxyura jamaicensis*), red-tailed hawk (*Buteo jamaicensis*), sharp-shinned hawk (*Circus cyaneus*), and Cooper's hawk (*Accipiter cooperii*). On the subject parcel, suitable nesting habitat for these species is limited to the latter two species. No Species Buffer species nests are documented on the subject parcel.<sup>12</sup>

### **Description of Wildlife Habitats on the Subject Parcel**

The subject parcel consists primarily of young and mid-seral shore pine and Sitka spruce juxtaposed with willow and sedge wetlands and areas of open sand (see Special Status Species and Hydrology). The forested areas contain few snags, large diameter

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<sup>12</sup> No surveys have been conducted.

trees, or down wood. A scattering of larger Sitka spruce occur throughout the parcel, some of which have branches growing perpendicular to the boles. Wetland areas generally have little standing water during the summer months. Large sand dunes occur on the on the southern portion of the site and contain stabilized areas invaded by pine and spruce.

***Habitat for Species Associated With Forested Habitats***

The lack of large trees and snags precludes nesting by ospreys and red-tailed hawks, whereas Cooper's and sharp-shinned hawks nest in predominantly unthinned stands with moderate to high canopy closures (O'Neil et al. 2001). The subject parcel contains less than 25 acres of this habitat.

***Habitat for Species Associated with Coastal Dunes and Grasslands***

See Special Status Species.

***Habitat for Species Associated With Aquatic Habitats***

Ephemeral ponds and low lying areas of sedge and willow are found throughout the subject parcel. Great blue herons and great egrets may forage in these areas but nesting habitat is not present.

**3.12.2 Environmental Consequences**

***Alternative 1 – No Action***

The subject parcel, in the absence of management or transfer out of the public domain, would continue to be representative of other natural environments in the coastal dune sheet. Successional pathways would continue on their present course interrupted periodically by storms or other disturbance events. The conifers on the subject parcel would persist and grow in diameter in height, thus increasing their value for wildlife associated with older forest conditions. Stabilization of open sand areas by European beachgrass would continue, with subsequent establishment of shrubs and trees leading to an increase in habitat for species dependent upon this type of vegetative cover. Infilling by sand may eventually lead to the replacement of wetland plant associations with those more typical of upland dune associations, including the establishment of woody vegetation and exotic species (Christy et al. 1998). Overall, the effects to wildlife would be within the realm of natural variation and species composition and distribution would shift according to the plant community's trajectory.

The importance of the area for wildlife populations in the future will depend upon recreational use of the area (particularly motorized use) and on actions taken on adjacent lands that may affect habitat suitability including recreation management, development activities, and conservation practices.

***Alternative 2 – Proposed Action – Land Disposal/188Acres***

***Direct and Indirect Effects***

Whether the effects to wildlife are direct depends upon the time frame to development and the specific activities that may occur. Effects are more likely to be indirect, and

strictly associated with actions that occur on the sold parcel, not with the transfer of ownership per se.

Neo-tropical migrants nest on the parcel and migrate south of the United States during the nonbreeding season. Other species may use the subject parcel primarily for foraging, or may roost or perch in the forested areas. Development of the subject parcel would likely result in the loss or limitation of these opportunities. Coopers' and sharp-shinned hawks may lose nesting habitat but other forested areas suitable for these species occur on the Spit and may be available for displaced individuals. Likewise, foraging habitat for egrets and herons is abundant on the North Spit. Habitat suitability on adjacent lands may be diminished due to an increase in human activity and noise associated with development thus precluding wildlife use. Potentially, the presence of a new industry and its associated workforce may lead to an increase in recreational use of the North Spit and its beaches.

### ***Cumulative Effects***

The development of 188 acres (10% of BLM's ownership on the North Spit) would be additive to other development occurring on the North Spit (see above list of reasonably foreseeable actions). Loss of wildlife habitat to industrial use would be permanent. However, given the availability of adjacent suitable habitat for neo-tropical migrants, hawks, egrets, and herons, it is unlikely that implementation of Alternative 2 would affect their persistence on the North Spit.

### ***Alternative 3 – Land Disposal/82 Acres***

#### ***Direct and Indirect Effects***

Alternative 3 retains 106 acres in the public domain as compared to Alternative 2, including approximately 43 acres of forested habitat as well as the majority of willow shrubland. The greatest loss would occur in the coastal dunes and grasslands habitat which comprises approximately 46% of Alternative 3's acreage. .

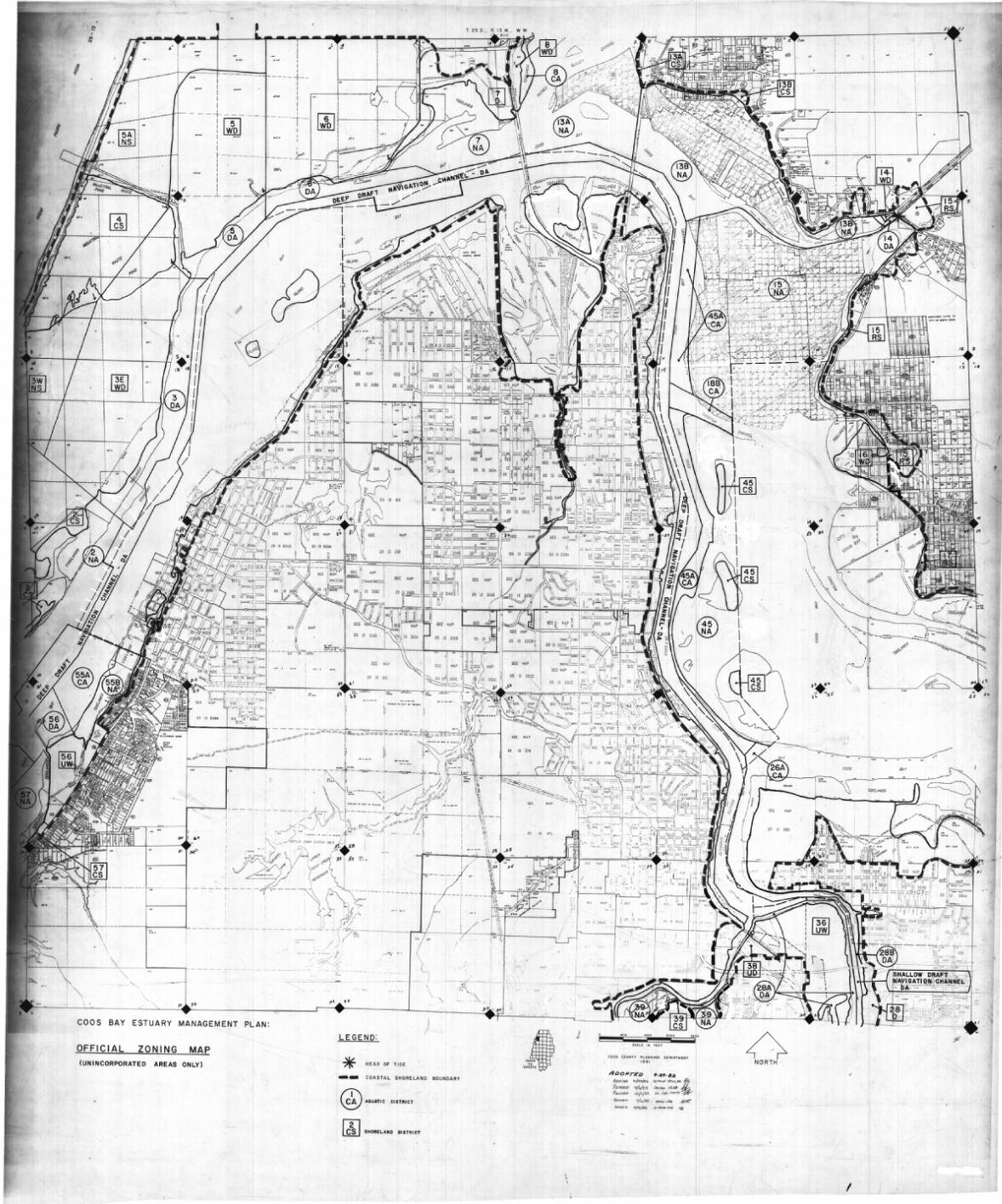
### ***Cumulative Effects***

The cumulative effects of implementing Alternative 3 are less than those associated with Alternative 2 due to the reduced acreage. Loss of wildlife habitat to industrial use would be permanent, but whether it would affect the persistence of the species discussed above is unlikely.

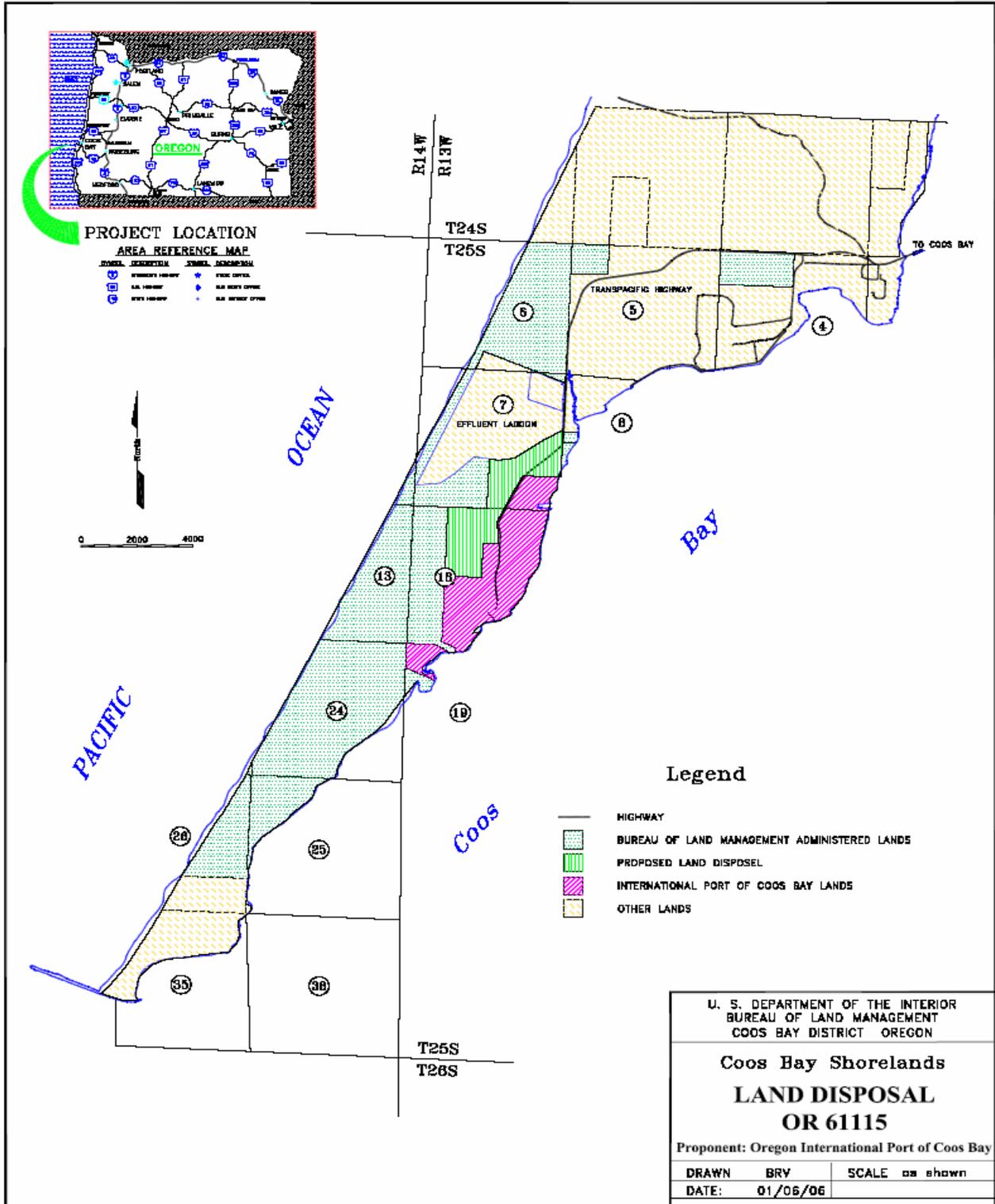
## Chapter 4 List of Preparers

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Madeleine Vander Heyden	Wildlife
Jon Menten	Editor
Linda Petterson	Lands/Team Lead

# Appendix 1 Coos County Comprehensive Plan Zoning



# Appendix 2 Project Location



## Appendix 3 Hazardous Materials

BUREAU OF LAND MANAGEMENT  
COOS BAY DISTRICT

HAZARDOUS MATERIALS & RESOURCE RESTORATION  
PROJECT REVIEW

PROJECT TITLE: NORTH SPIT LAND DISPOSAL  
REFERENCE: EA No. OR 125-06-02

LOCATION: The North Spit of Coos Bay. (See EA document for specific locations.)

PROJECT DESCRIPTION: Proposal to lease contingent to sell or outright sale of approximately 188 acres of Public Land located on the North Spit of Coos Bay. The Proponent of the sale is the Port of Coos Bay. The land is proposed for industrial use by a potential third party or parties.

PRELIMINARY REVIEW: Environmental Assessment (EA) draft review, ID team meetings, discussions with ID team members, and research of historical documents.

FIELD REVIEW: A number of field evaluations and inspections have been done as part of the review.

Historical records of past use document a rail line passing across the North Spit to Government Works at the southern portion of the spit. The path of the line is documented in a number of records, including a 1939 aerial photograph. (Reference: Coos Bay District Archaeologist Dr. Stephan Samuels' Cultural Resources report which contains the subject map and another map of more recent vintage.)

Among those inspections, a team was asked to inspect a past site of reported activity associated with the rail operation, conducted in January 2006. While this inspection area was southwest of the subject sale parcel(s), it was considered to be of value in assessing the rail line component which does lie along the boundary of the parcel. The team employed a Schonstedt metal detection instrument, looking for sub-surface evidence of any metal remnants such as rail track, tanks or vessels of the type used to fuel or cool engines enroute along the rail line. Nothing of substance was discovered with the limited parameters of the inspection due to heavy ground saturation and standing water.

Dr. Samuels conducted a site inspection of the parcel(s) during the latter part of January, 2006, preparatory to his report for this EA. He and I conferred about the existence of the rail line and any potential indicators he might observe that could signal the existence of recognized environmental conditions, e.g. fueling stops where old tanks or contamination might be present. Due to the physical landscape along the rail



## Appendix 4 Special Status Species and Survey and Manage Species

Suspected, but not found in the subject parcel. Status: BS = Bureau sensitive, BA = Bureau assessment, SOC = Species of Concern and S&M Cat. = Survey & Manage Category.

Scientific Name (Common Name or Group)	SSS and S&M Status	Habitat
<b>VASCULAR PLANTS</b>		
<i>Abronia umbellata</i> ssp. <i>breviflora</i> (pink sandverbena)	BS	Annual herb, coastal beaches and dunes, <100 ft, known from New River and North Spit ACECs.
<i>Oenothera wolfii</i> Wolf's evening-primrose	BS	Biennial herb, base of coastal bluffs, experimental population at New River ACEC.
<i>Brodiaea terrestris</i> (dwarf brodiaea)	BA	Perennial forb or herb, stabilized dunes and meadows, known from New River ACEC.
<i>Carex brevicaulis</i> (short-stemmed sedge)	BA	Perennial, stabilized sand dunes and meadows, known from New River ACEC
<i>Cicendia quadrangularis</i> (timort)	BA	Coastal wetlands, valley grasslands, northern oak woodlands, foothills, and woodlands.
<i>Cochlearia officinalis</i> (spoonwort)	BA	Annual, biennial, and perennial forb or herb, coastal headlands, seabird nesting areas on offshore rocks, <50 m, known from Cape Sebastian.
<i>Hydrocotyle verticillata</i> (Whorled marsh pennywort)	BA	Perennial vine, forb or herb, swampy ground, lake margins, wetlands, primarily coastal, known from Croft Lake, <100 m.
<i>Lycopodiella inundata</i> (Northern bog clubmoss)	BA	Perennial subshrub or shrub: rhizomatous fern, coastal wetlands, moist conditions in lake and pond margins, muddy depressions, peat bogs, fens, edge and coastal habitats, known from New River ACEC.
<i>Ophioglossum pusillum</i> (Adder's-tongue)	BA	Perennial forb or herb, marsh edges, low pastures, grassy roadside ditches, coastal wetlands, 1,000-2,000 m, known from Oregon Dunes NRA.

Scientific Name (Common Name or Group)	SSS and S&M Status	Habitat
NONVASCULAR PLANTS		
<i>Bryoria subcana</i> (Lichen)	BA S&M Cat. B	Bark and wood of Sitka spruce, <i>Western</i> hemlock, Douglas-fir, and hardwood forests along coastal bays, streams, and dune forests within 30 miles of ocean, known from Big Creek.
<i>Fuscopannaria rubiginosa</i> (Lichen)	BA S&M Cat. E	Wetlands and riparian areas on the immediate coast; mainly on hardwoods, Douglas-fir, western hemlock, Sitka spruce, western red cedar, and shrub thickets of Hooker's willow and ericaceous shrubs in dunes and deflation plain habitats, 50 to 1,600 ft, Northern CA, OR, and WA; CR Ecoregion.
<i>Hypotrachyna revoluta</i> (Lichen)	BA S&M Cat. E	Usually on bark and rarely on rock, Coast Range and immediate coast in OR, at Cape Arago, also from Rocky and Appalachian Mountains, east coast of Canada, Great Lakes area, and southwest border of US with Mexico.
<i>Hypogymnia pulverata</i> (Lichen)	BA	Shore pine forest on Oregon coast is only known location for western North America.
<i>Hypogymnia subphysodes</i> (Lichen)	BA	One known location for western North America, from shore pine forest on Oregon coast.
<i>Leioderma solediatum</i> (Lichen)	BA	Immediate coast in OR and CA, old dunes, pine trees, ericaceous shrubs, and conifers, documented at Eel Creek (Oregon Dunes NRA), CR Ecoregion.
<i>Leptogium brebissonii</i> (Lichen)	BA	Immediate coast in OR and WA, conifers and hardwoods, known from Eel Creek and Goose Pasture (Oregon Dunes NRA) and Heceta Dunes ACEC in Lane Co.
<i>Leptogium cyanescens</i> (Lichen)	S&M Cat. A	Tree bark of deciduous trees, but also occurs on juniper and western red cedar, decaying logs, and mossy rocks in cool, moist micro sites, widely scattered.

Scientific Name (Common Name or Group)	SSS and S&M Status	Habitat
<i>Limbella fryei</i> (Moss)	BS SOC	Wet rotting logs, lower trunks, and leaf litter in dense coastal swamps, known from in or near Shore Acres State Park.
<i>Metzgeria temperata</i> (Lichen)	BA	Hyper-maritime, on tree trunks, usually shaded, near coast; growing in dense mats or mixed among other bryophytes.
<i>Phaeocollybia californica</i> (Fungus)	BS S&M Cat. B	Associated with the roots of Pacific silver fir, Sitka spruce, Douglas-fir, western hemlock. Three known collections from Coos Bay BLM, in mature and old-growth Douglas-fir forests.
<i>Phaeocollybia gregaria</i> (Fungus)	BS S&M Cat. B	Associated with the roots of Sitka spruce and Douglas-fir, known from Siuslaw National Forest at Cascade Head.
<i>Rhizopogon exiguus</i> (Fungi)	BS S&M Cat. B	Coastal, known collection at Mapleton, hypogenous fungi in coniferous forests
<i>Sulcaria badia</i> (Lichen)	BS	Hardwood, conifer bark, and spruce branches in lowlands, valley fringes, and coast, 300-600 m.
<i>Teloschistes flavican</i> (Lichen)	BA S&M Cat. A	Coastal headlands and peninsulas on oak, pine, shrubs, moss, and soils; known from shore pine and Sitka spruce at New River ACEC and Cape Blanco, sporadic distribution from northern CA, Oregon Coast, and Ecuador; CR Ecoregion.
<i>Thaxterogaster pavelekii</i> (Fungi)	BS S&M Cat. B	Coastal forests in Washington, Oregon, and California.
<i>Triquetrella californica</i> (Moss)	BA	Exposed to shaded soil, rocks, or sand in coastal shore pine and Sitka spruce.

## Appendix 5 Known Collections

Collections by ownership and state<sup>13</sup>. P' and 'U' indicate federally protected and unprotected lands. 'Other' includes county, Indian, and private lands (Glavich et al. 2005).

Location	California				Oregon				Washington			
Target	Federal				Federal				Federal			
Lichen	P	U	State	Other	P	U	State	Other	P	U	State	Other
<i>B.pseudocapillaris</i>	2	5	10	4	2	36	5	2	1	0	1	2
<i>B. spiralifera</i>	1	25	1	23	3	18	2	1	0	0	0	0
<i>H. leucomela</i>	8	19	12	9	1	9	15	11	1	1	1	2
<i>N. cephalota</i>	1	8	12	2	1	4	2	4	1	3	2	7
<i>R. pollinaria</i>	0	6	21	3	1	4	6	3	0	2	2	1

<sup>13</sup> From the Rare Coastal Lichen Study (RCLS, Glavich et al. 2005a), Forest Service surveys, Random grid surveys, regional herbaria and literature reports. Additional information includes randomly selected surveys, Conservation Assessments, historic locations, purposive strategic surveys of likely habitat, about 300 Forest Service air quality plots (USDA 1998), new published records, and Geographic Biotic Observations (GeoBOB) database for Special Status Species. '

## Appendix 6 Populations

Populations of the five special status botanical species found on the subject parcel<sup>14</sup>.

Target Lichen	California		Oregon		Washington		Total	
	Population density <sup>15</sup>	Occurrence <sup>16</sup>	Population density	Occurrence	Population density	Occurrence	Population density	Occurrence
<i>B. pseudocapillaris</i>	9	21	15	45	4	4	28	70
<i>B. spiralifera</i>	8	50	9	24	0	0	17	74
<i>H. leucomela</i>	30	48	22	36	2	5	54	89
<i>N. cephalota</i>	18	23	11	11	10	13	39	47
<i>R. pollinaria</i>	18	30	8	14	5	5	31	49

<sup>14</sup> Includes the North Spit locations (USDA and USDI, 2005a and Glavich et al. 2005a).

<sup>15</sup> Population density is defined as the number of collections that are located more one mile of each another.

<sup>16</sup> Occurrences, derived from geospatial data (GeoBob) are collections of species ranging from one to several specimens within 100 yards.

## Appendix 7 2001 ROD Compliance Review: Survey & Manage Botany Species

Environmental Analysis File : OR125-06-02  
BLM Coos Bay District –Umpqua Resource Area

**Project Name:** North Spit Land Disposal #2                      **Prepared By:** Jennifer Sperling  
**Project Type:** Land Disposal    **Date:** 5-15-06  
**Location:** T 25S, R 13W, Section 7, 18, Lots 6,7,8,14,15, E ½ NW ¼  
**S&M List Date:** December 2003

**Table A. Survey & Manage Botany Species.** Species listed below were compiled from the 2003 Annual Species Review (IM-OR-2004-034) and include those species whose known or suspected range includes the Coos Bay District according to:

- Conservation Assessments
- Oregon Natural Heritage Information Center's 2004 Heritage Update
- U.S. Forest Service General Technical Reports
- GeoBOB data base
- Survey Protocols for Survey and Manage Component 2 Bryophytes, Version 2.0(BLM-Information Bulletin No. OR-98-051)
- Survey Protocols for Seven Protection Buffer Fungi, Version 1.3 (BLM-Instruction Memorandum Number OR-2000-018).
- Survey Protocols for Survey & Manage Category A&C Lichens in the Northwest Forest Plan Area.

Species	S&M Category	Survey Triggers			Survey Results			Site Management
		Within Range of the Species?	Project Contains Suitable habitat?	Project may negatively affect species/habitat?	Surveys Required?	Survey Date (month/year)	Sites Known or Found?	
<b>Fungi</b>								
<i>Bridgeoporus nobilissimus</i>	A	No <sup>2</sup>	No <sup>2</sup>	No	No	No	0	N/A
<b>Lichens</b>								
<i>Bryoria pseudocapillaris</i>	A	Yes	Yes	Yes	Yes	(Sept,Oct 2005)	5 <sup>a</sup>	No
<i>Bryoria spiralifera</i>	A	Yes	Yes	Yes	Yes	(Sept,Oct 2005)	3 <sup>a</sup>	No
<i>Hypogymnia duplicata</i>	C	No <sup>4</sup>	No	No	No	No	0	N/A
<i>Leptogium cyanescens</i>	A	No <sup>5</sup>	No <sup>5</sup>	No	No	N/A	0	N/A
<i>Lobaria linita</i>	A	No <sup>2</sup>	No <sup>2</sup>	No	No	N/A	0	N/A
<i>Nephroma occultum</i>	A	No <sup>9</sup>	No <sup>9</sup>	No	No	N/A	0	N/A
<i>Niebla cephalota</i>	A	Yes	Yes	Yes	Yes	(Sept,Oct 2005)	1 <sup>a</sup>	No
<i>Pseudocyphellaria perpetua</i> <sup>6</sup>	B	No <sup>2</sup>	No <sup>2</sup>	No	No	No	0	N/A
<i>Pseudocyphellaria rainierensis</i>	A	No <sup>2</sup>	No <sup>2</sup>	No	No	No	0	N/A
<i>Teloschistes flavicans</i>	A	Yes	Yes	Yes	Yes	(Sept,Oct 2005)	0	N/A
<b>Bryophytes</b>								

<i>Schistostega pennata</i>	A	No <sup>5</sup>	No	No	No	No	0	N/A
<i>Tetraphis geniculata</i>	A	No <sup>2</sup>	No <sup>2</sup>	No	No	No	0	N/A
<b>Vascular Plants</b>								
<i>Botrychium minganense</i>	A	No <sup>5</sup>	No <sup>5</sup>	No	No	No	0	N/A
<i>Botrychium montanum</i>	A	No <sup>5</sup>	No <sup>5</sup>	No	No	No	0	N/A
<i>Coptis asplenifolia</i>	A	No <sup>9</sup>	No	No	No	No	0	N/A
<i>Coptis trifolia</i>	A	No <sup>9</sup>	No	No	No	No	0	N/A
<i>Corydalis aquae-gelidae</i>	A	No <sup>9</sup>	No	No	No	No	0	N/A
<i>Cypripedium fasciculatum</i>	C	No <sup>9</sup>	No	No	No	No	0	N/A
<i>Cypripedium montanum</i>	C	No <sup>9</sup>	No	No	No	No	0	N/A
<i>Eucephalis vialis</i>	A	No <sup>9</sup>	No	No	No	No	0	N/A
<i>Galium kamtschaticum</i>	A	No <sup>9</sup>	No	No	No	No	0	N/A
<i>Plantanthera orbiculata</i> var. <i>orbiculata</i>	C	No <sup>9</sup>	No	No	No	No	0	N/A

<sup>a</sup> Indicates the number of individual species collectively identified as a one known site. Known site definition is equivalent to population or occurrence and can encompass many individuals located within 100 meters of each other. ORNHIC definition of a population is defined as a collection that is located one mile or more apart. Sites are defined in the 2001 ROD as a location of a target species or where the population of target species are located or presumed to exist. Sites closer than one mile are considered as subpopulations of a population

<sup>1</sup> N/A = Not applicable

<sup>2</sup> Surveys are not required since suitable habitat is not available on this project. This species is found on a host species which is absent from this project.

<sup>3</sup> Species range outside of the project area. The species only inhabits the immediate coast.

<sup>4</sup> Surveys are not required since it is outside of the range of the species. This species is found in the Oregon Coast Range and near Mt. Hood.

<sup>5</sup> Surveys are not required since there is no suitable habitat within the project area. This species is only found in high elevation areas.

<sup>6</sup> No survey protocol currently available. Survey protocol is due to be completed September 30, 2005, and fully effective September 30, 2006.

<sup>7</sup> Surveys are not required since suitable habitat is not available on this project. This species is found on extremely large woody debris that is decay class 3 or greater.

<sup>8</sup> Surveys are not required since there is no suitable habitat within the project area. The species is found in wet meadows.

<sup>9</sup> Coos County is outside of the known range for this species.

<sup>10</sup> Site was within the original project boundary, but the project boundary was subsequently adjusted to protect this species and other resources (see below for more information).

**Statement of Compliance:** Pre-disturbance surveys and management of known sites required by protocol standards to comply with the *2001 Record of Decision and Standard and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines* (as the 2001 ROD was amended or modified as of March 21, 2004) were completed for North Spit land disposal #2. There are no known Category B, D, E, and F species within the North Spit land disposal # 2 area.”)

Project surveys resulted in the discovery of three category A lichens (*Bryoria pseudocapillaris*, *B. spiralifera* and *Niebla cephalota*) species from the December 2003 Survey and Manage species list.

*Bryoria pseudocapillaris* was located at five different sites within the subject parcel of 188 acres.

In Alternative one, the absence of any ground disturbing activities eliminates the need for buffering the existing five locations in the subject parcel of 188 acres.

In Alternative two, 59% of suitable habitat and all five locations of individual species of the adjoining *Bryoria pseudocapillaris* population would be lost with the sale of the subject parcel of 188 acres.

In Alternative three, four of the five locations of individual thallus would continue to be kept in federal ownership as an integral part of the existing population. Only 25% of suitable habitat and one location of individual thallus of the adjoining *B. pseudocapillaris* population would be lost with the proposed subject parcel sale of 82 acres.

*Bryoria spiralifera* was located at three different sites within the subject parcel of 188 acres.

In Alternative one, the absence of any ground disturbing activities eliminates any need for buffering the existing three locations in the subject parcel of 188 acres.

In Alternative two, 59% of suitable habitat and all three locations of individual thallus of the adjoining *Bryoria spiralifera* population would be lost with the sale of the subject parcel of 188 acres.

In Alternative three, two of the three *B. spiralifera* locations of individuals would be kept in federal ownership as an integral part of the existing population. Only 25% of suitable habitat and one location of individual thallus of the adjoining *B. spiralifera* population would be lost with the proposed subject parcel sale of 82 acres.

*Niebla cephalota* was located at one site within the subject parcel of 188 acres.

In Alternative one, the absence of any ground disturbing activities eliminates the need for buffering the existing location in the subject parcel of 188 acres.

In Alternative two, 59% of suitable habitat and the location of *Niebla cephalota* of the adjoining population would be lost with the sale of the subject parcel of 188 acres.

In Alternative three, the one location of *N. cephalota* would be kept in federal ownership as an integral part of the existing population.

There would be approximately 41% in the second alternative and 75% in the third alternative of suitable habitat remaining in federal ownership on the North Spit south of the effluent pond to support the existing three S&M rare lichen population.

The federally managed lands on the North Spit are in a no-action area therefore, no buffer is necessary to maintain the known sites of the S&M lichen species at this time.

The following information on the three rare S&M lichen species is based on professional judgment and conservation assessments concerning the limited amount of suitable habitat on federal land, the rarity of the species and the small number of known populations (USDA and USDI 2005). The level of confidence regarding the persistence of each of the three rare lichen species in the reasonably foreseeable future on the North Spit would be extremely low with the second alternative. The third alternative generates a much higher degree of probability concerning the persistence of the lichen species.

Therefore, based on the preceding information (refer to Table A above) regarding the status of surveys and known site management for Survey & Manage species, it is my determination that the North Spit land disposal complies with the provisions of the 2001

*Record of Decision and Standard and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines* (as the 2001 ROD was amended or modified as of March 21, 2004).

For the foregoing reasons, this contract is in compliance with the 2001 ROD as stated in Point (3) on page 14 of the January 9, 2006, Court order in Northwest Ecosystem Alliance et al. v. Rey et al.

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