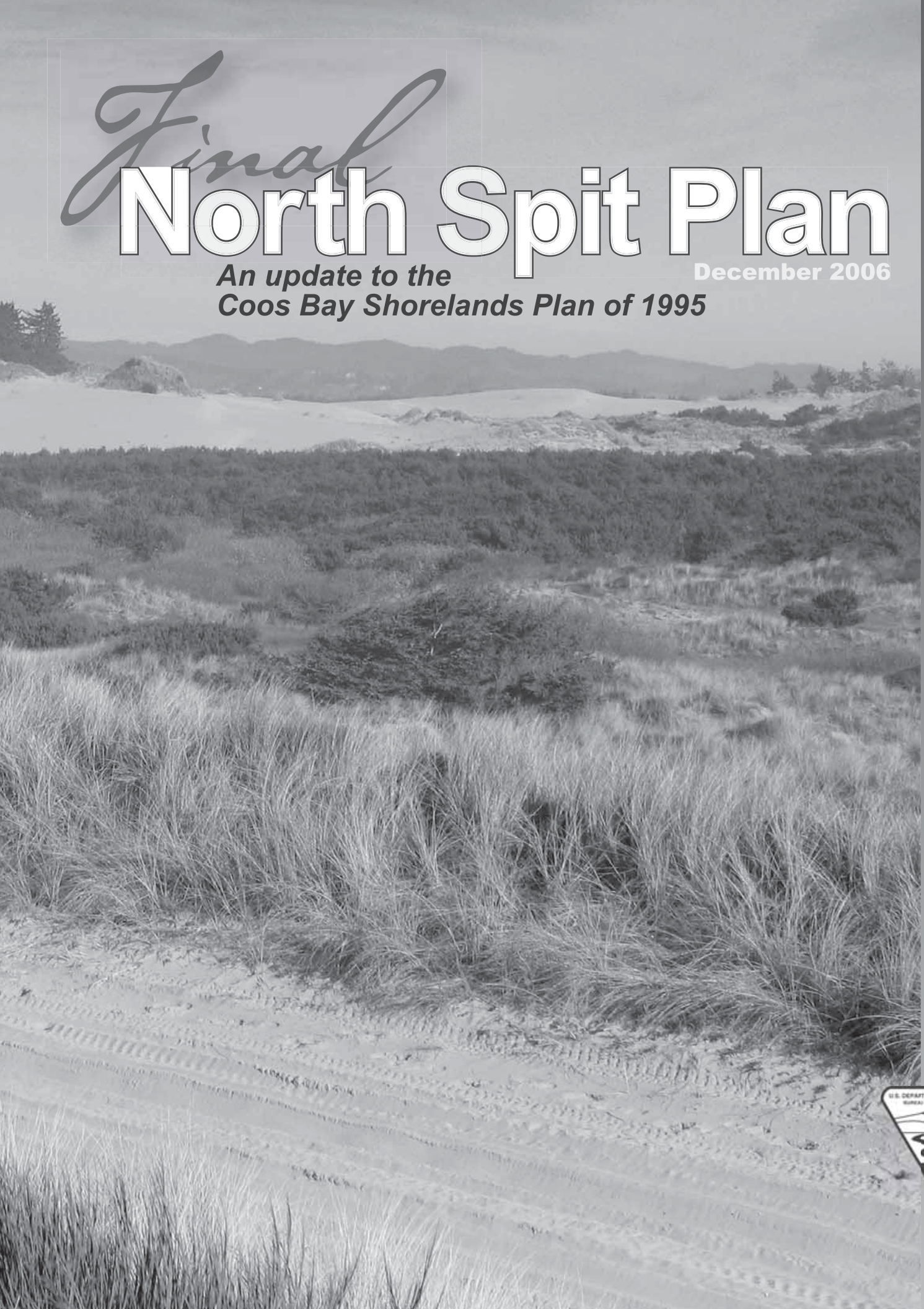
Final North Spit Plan

December 2006

An update to the Coos Bay Shorelands Plan of 1995



BLM

Coos Bay District

Umpqua Field Office

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

FINAL NORTH SPIT PLAN

December 2005

An update to the Coos Bay Shorelands Plan of 1995

Umpqua Field Office
Coos Bay District
Bureau of Land Management
US Department of the Interior

Approved by:

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December 8, 2005
Date

Table of Contents

Executive Summary . . . 3
Table S-1 Summary of Management Objectives and Actions . . . 6
Acronyms and Abbreviations . . . 11

Introduction . . . 13
Purpose and Scope . . . 13
Vision and Goals . . . 14
Plan Development and Public Scoping . . . 14

Part 1 – Planning Framework . . . 21
National and State Level . . . 21
District Level . . . 22
The North Spit Area of Critical Environmental Concern . . . 22
Special Recreation Management Area . . . 22
Motorized Access – Limited to Designated Roads and Trails . . . 24
Field Office Level . . . 24

Part 2 – The Coos Bay Shorelands Final Management Plan, 1995 . . . 27
Text Changes . . . 27
Management Actions . . . 29

Part 3 – North Spit Resources . . . 33
Introduction . . . 33
Physical: Water Resources . . . 33
Physical: Geology and Soils . . . 36
Physical: Minerals . . . 38
Physical: Coal Bed Methane, Oil and Gas . . . 38
Biological: Vegetation . . . 39
Biological: Wildlife . . . 43
Biological: Fisheries . . . 50
Cultural and Historical Resources . . . 50
Recreational Resources . . . 52
Visual Resources . . . 59

Part 4 - North Spit Management, 2005 . . . 61
Introduction . . . 61
Management Objectives . . . 61
Management Objective 1 – Cultural Resources . . . 61
Management Objective 2 – Environmental Education . . . 62
Management Objective 3 – Land Tenure . . . 64
Management Objective 4 – Recreational Resources . . . 64
Management Objective 5 – Site Protection and Administration . . . 66
Management Objective 6 – Vegetation and Wildlife Resources . . . 67
Management Objective 7 – Water Resources . . . 70
Management Objective 8 – Monitoring and Research . . . 71

Appendices

Appendix 1. North Spit Plant Species List 79
Appendix 2. North Spit Wildlife Species List 87
Appendix 3. Plan Conformance / NEPA Compliance Record 99
Appendix 4. History of Land Tenure on the North Spit 101
Appendix 5. Glossary 103

Bibliography

. 73

List of Maps

Map 1. Regional. 12
Map 2. Area of Critical Environmental Concern. 23
Map 3. Land Ownership and Landmarks. 25
Map 4. Visual Resource Management 60

List of Tables

Table 1. Summary of public comments received during 2003 Scoping for the North Spit Plan and BLM response 15
Table 2. Additional Public Input 16
Table 3. Management actions as described in the Coos Bay Shorelands Final Management Plan (USDI 1995) and their current status 29
Table 4. Bureau sensitive and assessment plant species documented and suspected on the North Spit by scientific name, common name or group, presence, status, and habitat. 41
Table 5. Special status wildlife species documented, suspected, and potentially on the North Spit by name, presence, status, and habitat 45

Executive Summary

Introduction

In 1995, the Bureau of Land Management completed the Coos Bay Shorelands Final Management Plan to guide the use of BLM lands on the North Spit of Coos Bay. Under that plan and its associated Environmental Assessment (EA), the BLM established specific management objectives to provide for public use and natural resource conservation. Since then, changes in land ownership, environmental conditions and the passage of time necessitated a plan update. The North Spit Plan (the Plan) was prepared to reflect the current situation. Any proposed actions outside the scope of the previous Environmental Assessment will require a new EA. This summary provides a brief outline of the Plan and describes management objectives and actions. The Plan focuses exclusively on comprehensive management of the 1,864 acres of BLM land on the North Spit (the Spit). The remainder of the Spit is managed by other federal agencies, state agencies, and private interests.

Prepared by an interdisciplinary team of specialists, the North Spit Plan:

- describes the resources on the North Spit;
- addresses changes that have occurred since the 1995 Shorelands Plan was completed;
- clarifies management direction for BLM lands on the Spit;
- reports accomplishments; and
- describes ongoing management actions.

Overarching goals are to:

- provide a broad range of recreational opportunities on the Spit while managing for the protection, maintenance, and rehabilitation of the area's natural systems;
- protect and interpret the Spit's biological, cultural and natural resources; and to
- involve and foster open communication among all interested parties during the development and implementation of the North Spit Plan.

Background

The North Spit of Coos Bay is a large, isolated peninsula northwest of the communities of Coos Bay, North Bend, and Charleston in Coos County, Oregon. The Spit supports a unique assemblage of habitats in a relatively confined area including estuarine, fresh water wetlands, mudflats, and forested uplands. The importance of this natural area is amplified by its proximity to one of the largest urban areas on the Coast. Consequently, the Spit experiences considerably high recreational use and pressure for industrial development.

In 1995, in recognition of the Spit's high ecological and recreational values, portions of it were given special designations by BLM to guide management and use. Approximately 725 acres of the Spit are classified as an Area of Critical Environmental Concern (ACEC). Areas of Critical Environmental Concern are public lands where special management attention is required to protect important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes. The Spit is also a BLM Special Recreation Management Area (SRMA). SRMAs are defined as areas where specific recreational activities and experience opportunities will be provided on a sustained yield basis. The North Spit Plan provides for the preservation of ACEC and SRMA values through specific and compatible management actions related to recreational access, cultural and historic preservation, wildlife and plant conservation and management, and educational and interpretive opportunities.

Public Scoping

Prior to drafting the North Spit Plan, public comments on North Spit management were solicited via letters, presentations, public service announcements, and newspaper notices. Thirty-six people responded and provided 56 specific comments. BLM determined from the comments the following general areas of concern:

Public access to the jetty and beaches
Western snowy plover management
Development of lands
All-terrain vehicle use
User fees
Protection of resources
Land exchanges
Flexibility of management
Boat dock use
Firearm use

Responses to these concerns are presented in the Plan's introduction and relevant issues are further discussed elsewhere in the document.

Plan Format

Part One describes BLM's planning framework. In the BLM planning system there are three levels or tiers:

1. National and State Level: Laws, regulations, directives, and policies
2. District Level: Coos Bay District Resource Management Plan (May 1995)
3. Field Office Level: Activity Plans (site-specific plans such as the North Spit Plan)

Each of these levels is discussed in terms of its relevancy to the North Spit Plan.

Part Two reviews the original 1995 Shorelands Plan and outlines the status of its management actions. The 1995 Coos Bay Shorelands Plan identified issues, concerns, and opportunities on the Spit, and included specific management actions pertaining to each of the following subjects:

- Education and Interpretation
- Land Tenure and Cooperative Agreements
- Law Enforcement
- Recreation
- Vegetation
- Wildlife Habitat

Management actions listed in the 1995 Shorelands Plan were reviewed and updated (Table 2 of the Plan). The actions fall into four categories: accomplished, accomplished in part, not accomplished, and ongoing. Actions in the the Shorelands Plan that were not accomplished include those where land exchanges have removed or precluded lands from BLM jurisdiction and therefore are no longer applicable to BLM management of the Spit.

Other changes to note include those pertaining to the threatened Western snowy plover. The 1995 Shorelands Plan proposed several actions pertaining to snowy plovers and ocean beach access that were never implemented (Table 2, Management Action 5). Changes to management actions are a result of a revised public access strategy implemented subsequent to the grounding of the New Carissa in 1999. The strategy pertains to the management of public lands on the Spit and allows for public use while protecting plovers and promoting their recovery (USDI FWS 2000).

Strategy details are described in Part Three under Species of Special Management Concern and are summarized in Table S-1.

The Shorelands Plan made some recommendations that were not listed as actions. Errors are noted and additions or changes to these recommendations are listed and explained.

Part Three describes the cultural, natural, and recreational resources on the Spit. Resources are grouped into five categories:

- Physical, including Water, Geology, Soils, Minerals, Coal Bed Methane, Oil and Gas
- Biological, including Vegetation, Wildlife, and Fisheries
- Cultural and Historical
- Recreational
- Visual

Part Four presents management actions on BLM-administered lands for the next ten years. The remainder of this summary focuses on Part Four as it brings the reader up to date on management objectives, accomplishments, and ongoing and proposed activities.

North Spit Management, 2005

Table S-1 summarizes management objectives and actions for BLM lands on the North Spit. The objectives and actions reflect the goal of the North Spit Plan to conserve the natural, cultural, and recreational values of the Spit. Due to the interrelationship of the various resources at the Spit, many actions apply to more than one objective. Objectives and actions in the North Spit Plan are consistent with BLM policies, state and federal regulations, ACEC planning documents, and the 1995 Shorelands Plan. For the North Spit Plan, objectives and proposed actions were reviewed and revised based on current conditions and needs, and will be implemented as funding allows. Objectives correspond to the resources described in Part 3 as well as to other BLM programs such as land tenure, environmental education and interpretation, site protection and administration, and monitoring and research. With the exception of the latter, the objective and actions for each resource or program are presented in alphabetical order, starting with Cultural Resources. The objective for Monitoring and Research is placed at the end because several of the resources and programs have actions under this heading.

Monitoring is used to: 1) ensure that the management goals, objectives, and actions are being followed (implementation monitoring); 2) verify if the actions are achieving the desired results (effectiveness monitoring); and 3) determine if the underlying assumptions of the Plan's goals and objectives are sound (validation monitoring). Ongoing or proposed monitoring actions are included for Cultural Resources, Environmental Education and Interpretation, Geology, Recreation, and Vegetation and Wildlife Resources.

Updated maps, tables, and appendices are presented to clarify information presented in the Plan. They include detailed descriptions, lists, and chronologies of key interest including site names, ownership boundaries, an update of 1995 management actions, wildlife and plant lists, and land tenure history. A glossary and a list of acronyms are presented to assist the reader with unfamiliar terms.

Table S-1. Summary of Management Objectives and Actions Accomplished, Ongoing, and Proposed for the North Spit. The North Spit Plan provides more detailed explanations and supporting references. See Part 4 for a complete description of the actions.

Management Objectives	Actions Accomplished	Actions Ongoing	Actions Proposed
CULTURAL RESOURCES **1:** Preserve important cultural resources on the Spit.	• A report was completed by noted historian Stephen Dow Beckham detailing the history of federal activities on the North Spit.	• Continue to preserve remaining historic cultural resources.	• Work with the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians and the Coquille Indian Tribe to assure continued protection and preservation of prehistoric resources. • Remove damaged chain link fence from the perimeter of the World War II Quonset huts.
ENVIRONMENTAL EDUCATION and INTERPRETATION **2:** Promote awareness and appreciation for the Spit's many resource values and recreational opportunities, and support a minimum impact land use ethic through educational programs such as *Leave No Trace* and *Tread Lightly*.	• A brochure was developed to provide visitors with a map of the Spit and inform them of regulations and opportunities. • Interpretive signs and a kiosk were developed and installed. Seasonal interpreters were hired to educate the public about seasonal closures and recreational opportunities.	• Continue to host field trips for schools at the Spit for students to learn about the area. • Continue to work cooperatively with the interagency snowy plover working team on issues pertaining to public education and outreach.	• Develop an environmental education prospectus for the District and implement its recommendations on the North Spit. • Utilize seasonal or volunteers to contact visitors and disseminate information. • Conduct special educational opportunities and events that involve the public. • Interpret cultural or paleo-environmental history of the Spit in coordination with interested Indian tribes and the Coos Bay District Archaeologist. • Rotate or replace interpretive displays as needed. • Use the draft Western Snowy Plover Outreach Plan when planning plover outreach on the Spit. • Raise public awareness about the environmental and recreational values of riparian and wetland areas on the Spit.
LAND TENURE ADJUSTMENTS **3:** Prioritize land tenure adjustments based on natural resource values and recreational opportunities on non-BLM parcels, consolidate BLM properties, and safeguard public investments.	• The 1995 Shorelands Plan identified four potential land acquisitions and one disposal. Three acquisitions were accomplished.	• In accordance with the RMP, some BLM lands on the Spit within zoning districts 3-EWD, 4CS, and 6WD as delineated by the Coos County Comprehensive Plan could be offered for exchange, sale, or lease. A land disposal is currently in progress for an 80 acre BLM parcel north of the Roseburg Chip Facility along the Trans Pacific Lane. • Several utility and access rights-of-way were issued and are currently in use. Future applications for leases, permits, and right-of-ways will be reviewed and authorizations issued on a case-by-case basis.	• Consider land tenure adjustments to ensure access to public lands as appropriate to meet objectives. Appendix 3 contains a chronological history of the land tenure adjustments affecting public lands on the Spit.

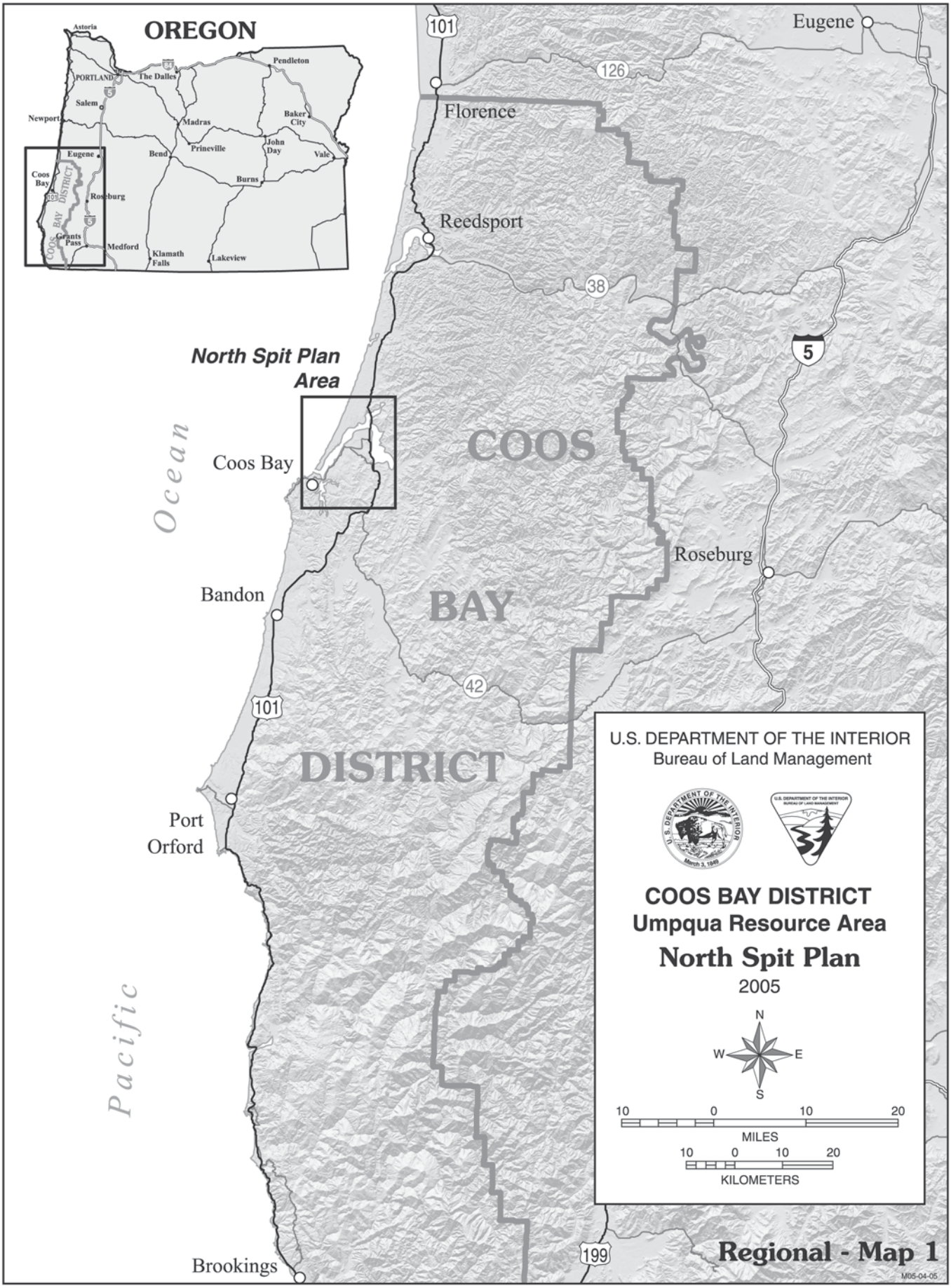
Management Objectives	Actions Accomplished	Actions Ongoing	Actions Proposed
RECREATION **4:** Manage the North Spit SRMA to provide for a range of recreation opportunities that contribute to meeting traditional as well as projected recreation demand within the region while protecting the area's natural, cultural, and scenic resources.	• Signs were placed at the ocean beach access points along the Foredune Road; other signs and maps were placed at various locations to inform visitors of regulations and recreational opportunities. • Roads and trails that were not designated as open were closed using logs, root wads, and signs. Many of these closed routes are disappearing through natural revegetation. • A sign strategy was developed to assist BLM in providing information to the public on regulations, recreational opportunities, and natural resources on the Spit.	• Continue to provide motorized access on the Spit to support the area's long-standing traditional recreation uses while protecting natural, cultural and scenic resources. • Retain a recreation setting compatible with the area's Rural and Semi-Primitive Motorized ROS classification. • Provide press releases related to seasonal access restrictions. • Clear sand and debris from the boat ramp each spring prior to reinstalling the docks for the summer season. • Continue to maintain the docks. • Continue to allow primitive camping on BLM lands on the Spit except where signed to protect sensitive plants and wildlife. • Continue to permit hunting and shooting on BLM lands on the Spit in conformance with applicable state and federal laws and regulations. These regulations prohibit shooting adjacent to and across public roadways and within developed recreation sites.	• Place improved signs along the sand roads and at ocean beach access points. Advise visitors the beach access points may be blocked and to look before driving over the foredune. • Remove dilapidated fences and fence posts from the intersection of the Foredune Road and Trans Pacific Lane, the WWII bunker fence, and from the southern interior. • Establish trails for pedestrian and equestrian use within the North Spit interior. Develop and support local partnerships to assist in maintaining and managing this trail system. • Create and maintain connections between trails on BLM, the Forest Service, OPRD and Weyerhaeuser lands. • Construct a small equestrian and hiking staging area to provide parking and visitor information at the portal to the trail system. • Implement completed sign strategy developed to improve communication with Spit visitors. Include information about wildlife viewing opportunities at the kiosk proposed for the boat ramp.
SITE PROTECTION and ADMINISTRATION **5:** Provide and maintain adequate visitor facilities, services, signing, and programs that are appropriate for the area's recreation opportunity setting and that serve to protect the Spit's sensitive resources.	**Fire Management** See Actions Ongoing. **Hazardous Materials Management** See Actions Proposed. **Law Enforcement** See Actions Ongoing. **Facility Management** See Actions Ongoing. **Road Maintenance and Improvement** None at this time.	**Fire Management** • BLM contracts with the Coos Forest Protection Association for fire response, including the lands on the Spit. **Hazardous Materials Management** See Actions Proposed. **Law Enforcement** • BLM Law Enforcement Officers enforce federal regulations on BLM lands. BLM may continue to contract with the Coos County Sheriff's Department and contribute funds to OPRD for seasonal assistance with beach patrol. • BLM Law Enforcement Officers enforce Federal and State firearm regulations and encourage shooter safety on the Spit. **Facility Management** • Maintain existing facilities at the boat launch recreation area. **Road Maintenance and Improvement** None at this time.	**Fire Management** None at this time. **Hazardous Materials Management** • Finish the Spit Life Guard Station Environmental Site Characterization. **Law Enforcement** None at this time. **Facility Management** • Consider placing alternative toilet facilities at high use areas. **Road Maintenance and Improvement** • Consider raising and widening the Re-route Road to minimize the risk of vehicular collisions.

Management Objectives	Actions Accomplished	Actions Ongoing	Actions Proposed
VEGETATION and WILDLIFE RESOURCES **6:** Conserve, enhance, or restore natural habitats, with an emphasis on habitats that support special status plant and wildlife species.	**Vegetation** • Plant communities were mapped and digitized. **Special Status Plant Species and Communities** • Pink sandverbena was reintroduced. • A permanent vehicle re-route was constructed to protect the Point Reyes bird's-beak population on the bay side. **Exotic Plants and Noxious Weeds** • Gorse was removed from the Coast Guard Lifesaving station. • Scotch broom was cleared from HRAs. **Wildlife** None at this time. **Special Status Wildlife Species** Nest boxes were installed for purple martins.	**Vegetation** • Coordinate with other agencies and institutions to restore degraded and disturbed plant communities. **Special Status Plant Species and Communities** • Facilitate the recovery of the pink sandverbena by collecting seeds for dispersal to other sites along the coast. • In cooperation with the Port and the DSL maintain protective barriers around the Point Reyes bird's-beak population. • Continue inventory and management for SSS. **Exotic Plants and Noxious Weeds** • European beach grass is removed annually from plover areas. **Wildlife** None at this time. **Special Status Wildlife Species** • Continue to implement snowy plover conservation actions: 1. Closing the upper, dry sand portion of the ocean beach to all public access from the FAA Tower south to the BLM boundary during the Western snowy plover nesting season (March 15- September 15 annually). The lower, wet sand beach is restricted to motorized use as authorized by OPRD. Inland snowy plover nesting areas on BLM land are also signed closed to all use during the nesting season, and are open to nonmotorized use the remainder of the year. 2. Removing beachgrass from the inland snowy plover areas to maintain open, sandy habitat suitable for nesting plovers. 3. Implement predator control to protect the plover population from further declines caused by predation. 4. Monitor plover nesting to gauge the success of management actions and progress toward plover recovery. • Continue to implement recovery plans for other species as necessary.	**Vegetation** • Refine the classification of plant associations on the Spit. • Conduct a complete inventory of all plant species. **Special Status Plant Species and Communities** On the North Spit Area of Critical Environmental Concern: • Implement beach and dune ecosystem restoration. • Establish additional special status plant populations. • Develop opportunities to increase the amount of habitat suitable for rare species and to link isolated populations. • Collect special status plant seeds for future use. • Identify opportunities to restore rare plant communities. **Exotic Plants and Noxious Weeds** • Continue treatments to remove noxious and exotic species. Restore treated areas with native seeds and plants. • Use best management practices to prevent the further spread of exotic plants and noxious weeds. **Wildlife** • Survey for great blue herons and great egret rookeries. • Conduct wildlife inventories at selected wetlands. • Survey for nesting raptor species. **Special Status Wildlife Species** • Develop and implement survey protocols to locate special status species. • Actively manage habitats to promote the conservation of special status species and raptors.
WATER RESOURCES **7:** Maintain wetland areas in a condition supportive of a healthy aquatic ecosystem.	• BLM participated in the creation of wetlands on BLM adjacent to Weyerhaeuser's Overlook wetlands site.	None at this time.	• Support wetland mitigation projects consistent with the Henderson Marsh Mitigation Plan.

Management Objectives	Actions Accomplished	Actions Ongoing	Actions Proposed
MONITORING and RESEARCH **8:** Facilitate improved management of the Spit through monitoring to learn more about the natural and cultural resources of the area and to assess the effects of management actions.	**Cultural Resources** None at this time. **Environmental Education and Interpretation** See Actions Ongoing. **Geology** None at this time. **Recreation** See Actions Ongoing. **Vegetation and Wildlife Resources** See Actions Ongoing.	**Cultural Resources** None at this time. **Environmental Education and Interpretation** • Evaluate the effectiveness of educational brochures and signs. **Geology** None at this time. **Recreation** • Continue to use traffic and trail counters and field staff observations to monitor visitor use and to report findings in the Recreation Management Information System. • Continue to monitor camping on BLM lands on the Spit. **Vegetation and Wildlife Resources** • Monitor noxious weed species to document existing population areas, effectiveness of management actions for removal, and the spread of these species to new sites. • Evaluate and explore effective management strategies to meet recovery goals for the Western snowy plover. Monitor human and natural disturbance effects on breeding plovers. • Continue to support the Oregon Natural Heritage Information Center in its efforts to monitor Western snowy plover reproductive success. • Continue to monitor great blue heron and great egret rookeries. • Continue to monitor selected special status species on the Spit. • Continue to monitor the condition of riparian-wetland vegetation. If signs of excessive disturbance caused by unauthorized motorized recreation become evident, adjust patrols, signing and barriers to reduce or prevent impacts	**Cultural Resources** • Monitor stability of important cultural resources and propose actions to continue their preservation. **Environmental Education and Interpretation** • Evaluate the effectiveness of environmental education programs and interpretive materials on a regular basis, and make modifications as necessary. **Geology** • Track elevation changes on the ocean foredune and monitor the effects of weather and beach grass removal on foredune erosion. **Recreation** • Monitor the condition of beach access routes. **Vegetation and Wildlife Resources** • Monitor special status species' population status and trends. Pursue collaborative efforts to study SSS reproductive ecology, threats, habitats, and effects of management treatments and practices. • Monitor the status and trends of globally ranked plant communities within the North Spit ACEC. • Seek collaborative opportunities to survey migratory shorebirds and waterfowl to establish population status and trends.

Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
APHIS	Animal and Plant Health Inspection Service
ATV	All Terrain Vehicle
BA	Bureau Assessment, Biological Assessment
BLM	Bureau of Land Management
BO	Biological Opinion
BS	Bureau Sensitive
BT	Bureau Tracking
DEQ	Department of Environmental Quality (Oregon)
DSL	Division of State Lands (Oregon)
CFR	Code of Federal Regulations
COE	United States Army Corps of Engineers
CSU	Controlled Surface Use
EA	Environmental Assessment
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FC	Federal Candidate
FLPMA	Federal Lands Policy and Management Act
FS	United States Forest Service
FWS	United States Fish and Wildlife Service
HMMP	Henderson Marsh Mitigation Plan
HRA	Habitat Restoration Area
Mgal/d	Millions of gallons per day
NEPA	National Environmental Policy Act
NSO	No Surface Occupancy
NWI	National Wetlands Inventory
OAR	Oregon Administrative Rule
ODA	Oregon Department of Agriculture
ODFW	Oregon Department of Fish and Wildlife
ODNRA	Oregon Dunes National Recreation Area
OHV	Off-highway vehicle
ONHP	Oregon Natural Heritage Program
ORNHIC	Oregon Natural Heritage Information Center
OSMB	Oregon State Marine Board
OPRD	Oregon Parks and Recreation Department
RMP	Resource Management Plan
ROS	Recreation Opportunity Spectrum
SRMA	Special Recreation Management Area
SSS	Special Status Species
SSSP	Special Status Species Program
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USDOD	United States Department of Defense
UST	Underground Surface Tank
VRM	Visual Resource Management
The 1995 Shorelands Plan	The 1995 Coos Bay Shorelands Plan
The Jetty	The North Jetty of Coos Bay
The Port	The Oregon International Port of Coos Bay
The Spit	The North Spit of Coos Bay


OREGON
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Salem
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John Day
Vale
Coos Bay
Roseburg
Burns
Grants Pass
Medford
Klamath Falls
Lakeview
COOS BAY DISTRICT
Eugene
Florence
Reedsport
North Spit Plan Area
Coos Bay
Ocean
COOS
BAY
DISTRICT
Roseburg
Bandon
Port Orford
Pacific
Brookings
101
126
38
5
42
199
U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
COOS BAY DISTRICT
Umpqua Resource Area
North Spit Plan
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Regional - Map 1
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INTRODUCTION

The North Spit of Coos Bay (the Spit) is a sandy, vegetated point of land separating the waters of Coos Bay from the Pacific Ocean (Map 1). It is northwest of the communities of Coos Bay, North Bend, and Charleston in Coos County, Oregon. The Bureau of Land Management (BLM) administers 1,864 acres of public domain lands on the Spit, primarily acquired from the Army Corps of Engineers (COE) in 1984. It is comprised of narrow, sandy beaches on the Pacific Ocean side and a combination of sand beaches, mudflats, and salt marshes on the bay side. The interior of the Spit is characterized by stabilized and shifting sand dunes, fresh water wetlands, and upland stands of shore pine and Sitka spruce. Non-native European beach grass and Scotch broom dominate much of the deflation plain.

The diverse natural resources and recreational opportunities found on the Spit attract a variety of people and present unique management challenges for state and federal agencies. The North Spit Plan combines background and current information on the Spit's major resources and recreational values, defines management objectives for those resources, and outlines BLM's planned actions to meet those objectives.

Purpose and Scope

The North Spit Plan provides updated direction for comprehensive management of the North Spit. Prior planning efforts by BLM for the Spit include the Coos Bay Shorelands Draft Management Plan (USDI BLM 1989) and the Coos Bay Shorelands Draft Management Plan and Environmental Assessment (USDI BLM 1994). 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 and its Record of Decision (i.e. the Northwest Forest Plan; Interagency 1994) and the Coos Bay District's Resource Management Plan and Environmental Impact Statement and its Record of Decision (RMP; USDI BLM 1995) were incorporated into the Coos Bay 1995 Shorelands Final Management Plan (1995 Shorelands Plan; USDI BLM 1995). The purposes of the North Spit Plan are to address changes that have occurred since the 1995 Shorelands Plan was completed; clarify management direction for BLM lands on the Spit; report accomplishments; and describe ongoing management actions described in the 1989 plan. The 1994 Environmental Assessment (EA) associated with the 1995 Shorelands Plan remains valid. In the future, site specific EAs will be prepared when necessary to evaluate the effects of any new ground disturbing activities.

Lands on the Spit are owned and managed by several public agencies and private interests. BLM has no authority over lands not under its jurisdiction; hence management actions proposed in the North Spit Plan pertain only to the BLM-administered lands on the Spit. When necessary, BLM works with adjacent landowners per written agreements to accomplish joint management goals. The COE administers 245 acres on the Spit and their primary mission is to maintain the North Jetty (the Jetty) at the entrance to Coos Bay. The COE allows public access on their lands; however the Jetty itself was not designed for public use. The US Forest Service (FS) manages the Oregon Dunes National Recreation Area (ODNRA) to the north of the Spit. Many developed and undeveloped recreational opportunities are available in that area. The Oregon Parks and Recreation Department (OPRD) manages the Pacific Ocean beaches below the high tide line. The OPRD management guidelines for the Spit are described in the Draft Ocean Shore Management Plan and Habitat Conservation Plan for the Western snowy plover (Oregon Natural Heritage Information Center [ORNHIC] and OPRD 2004). The Division of State Lands (DSL) manages lands below the mean low tide, including submersed lands. The primary access to the bay side of the Spit is currently through lands owned by the Oregon International Port of Coos Bay (the Port). Coos County's zoning designations for the Spit are Conservation Shorelands, Natural Shorelands, Water-dependent Development Shorelands, and Development Shorelands (Coos County 1986). Privately owned lands include: a Roseburg Forest Resources chip facility and a Weyerhaeuser Company cardboard plant that is currently closed. In the past, BLM and Weyerhaeuser worked

together on wetland mitigation plans and actions, including wetlands creation. State (the Oregon Department of Fish and Wildlife [ODFW]) and federal (the US Fish and Wildlife Service [FWS]) agencies provide regulatory oversight for the fish and wildlife resources found on the Spit.

Vision and Goals

BLM's vision is to manage the public lands on the Spit as a predominately natural landscape by conserving botanical, cultural, and wildlife resources while providing recreational, educational, and interpretive opportunities for the benefit of local and regional visitors and economies. The two overarching goals of the North Spit Plan are:

- To provide a broad range of recreational opportunities on the Spit while managing for the protection, maintenance, and rehabilitation of the area's natural systems and cultural resources.

- To involve and foster open communication among local, regional, and national publics, and with other agencies and units of the government during the development of the North Spit Plan and as management of the Spit continues into the future.

Plan Development and Public Involvement

Scoping

As required under BLM's planning regulations (43 FR 1600), an interdisciplinary team of BLM specialists brought their professional expertise and experience to bear on the issues and concerns of managing the Spit (see below). Regulations also require public involvement and comment through the planning process. To this end, in 2003, BLM conducted public scoping to better understand the concerns regarding management of BLM-administered lands on the Spit. Public input was solicited via letters, presentations, public service announcements, and newspaper notices. Thirty-six people responded and provided 56 specific comments (Table 1).

Additional Public Involvement

The BLM conducted a formal comment period on the DRAFT North Spit Plan from August 1 through August 31, 2005. Public input was solicited via letters, newspaper notices, and through fliers handed out in the field. Comments are listed by categiry in Table 2. Some of the comments BLM received during and after the official comment period for the DRAFT Plan made it clear there was misinformation circulating concerning restrictions to assecc activities on the North Spit. BLM held a public forum on October 20, 2005, to clarify information and to listen to the public's interests and recommendations related to recreation and natural resources. Three new action items are presented in this Final North Spit Plan as a result of the public forum. The items are improving information available about the North Spit, possibly placing picnic tables at the boat launch facility and investigating the possible opening of the Foredune Road to motorized use from the South Dike Road intersection to the USFS boundary to the north.

Table 1. Summary of public comments received during 2003 scoping for the North Spit Plan and BLM response.

2003 Public Comment	BLM Response
Availability of Jetty access for COE	The COE's right-of-way over BLM lands for Jetty work is not affected by the North Spit Plan.
Concern about plover decisions including road and beach closures	BLM will cooperate with OPRD, ODFW, and the FWS regarding plover habitat and nesting season restrictions.
Develop commercial ocean front property	BLM does not have the authority to develop commercial property.
Opposes all-terrain vehicle use	Motorized travel off of designated routes on BLM lands on the Spit is prohibited. Route designation occurred in the 1995 Shorelands Plan, page 11.
Opposes development	No development by BLM is planned at this time.
Opposes fees	No fees are planned.
Opposes land exchange/wants free land	BLM does not have authority to give away the public lands. Land tenure adjustments will be assessed as necessary under NEPA.
Protect natural and cultural resources	BLM will continue with ongoing protection efforts.
Remain flexible with land use; work with the Port	BLM promotes good working relations with the Port and other partners.
Replace boat docks	Docks will be repaired and replaced as necessary.
Restrict target shooting	BLM, county, and state law enforcement will enforce safe use of firearms.
Retain bay and ocean beach access	Pedestrian and equestrian access to BLM lands will remain except for beach access in designated areas during the plover nesting season. Motorized access will remain available on the three designated open routes.
Storm water drainage issues	BLM will investigate these issues with the Port.
Supports day use fees	No fees are planned.
Supports off-road vehicle (ORV) use	ORVs are permitted on the designated open routes on BLM lands.

Table 2. Additional Public Input.

Comments on the DRAFT North Spit Plan	No. of Comments during Comment Period for Draft Plan	No. of Comments from Public Forum	BLM Response
Bicycle trails - supports	1		Bicycles are permitted on the Spit, however the loose sand makes bicycling difficult without paved trails. There are no plans to pave any trails at this time.
Bicycle trails - against	1		BLM will continue to support multiple use activities.
Build a boat ramp	1		This was completed in 1993. See Map 3 for location.
BLM should re-do the 2000 Biological Opinion for the western snowy plover	2		BLM is planning to reinitiate consultation to update the 2000 Biological Opinion, based on additional information on visitor use and to clarify areas and activities under BLM's jurisdiction.
Build a retaining wall at Half Moon Bay	1		This is on COE property and this Plan only addresses BLM-administered lands.
Cannot ride from Saunders Lake to the north jetty		1	BLM will investigate the possible opening of the Foredune Road north to the USFS boundary, as a Recreation Action item.
Concern about losing hunting grounds		1	BLM proposes no changes to legal hunting on the spit.
Equestrian trails - supports	59	3	BLM will continue to work with local volunteer groups to identify and maintain trails.
Equestrian and pedestrian trails - against	1		BLM will continue to support multiple use activities.
Grade area by paved road and South Dike Road intersection; add a sani-can		2	This parcel is being considered for sale at this time. The COE has a right-of-way for the area. It is possible BLM may create a small trailhead staging area there, pending current negotiations.
Improve information available about the North Spit		10	BLM staff is working on this now and it was added into the action items.
Keep it the way it is	2	10	No additional development or access restrictions by BLM are planned at this time.
Keep access to bay regardless of land sales		1	BLM only has jurisdiction on BLM lands.
Keep access to bay side open		1	This is Port land, not BLM

Table 2. Additional Public Input. (continued)

Comments on the DRAFT North Spit Plan	No. of Comments during Comment Period for Draft Plan	No. of Comments from Public Forum	BLM Response
Bicycle trails - supports	1		Bicycles are permitted on the Spit, however the loose sand makes bicycling difficult without paved trails. There are no plans to pave any trails at this time.
Bicycle trails - against	1		BLM will continue to support multiple use activities.
Build a boat ramp	1		This was completed in 1993. See Map 3 for location.
BLM should re-do the 2000 Biological Opinion for the western snowy plover	2		BLM is planning to reinitiate consultation to update the 2000 Biological Opinion, based on additional information on visitor use and to clarify areas and activities under BLM's jurisdiction.
Minimize signs, gates, fences and maps		1	BLM plans to remove some fences and possibly one gate. Signs are needed for safety and to inform those not familiar with the area.
Mitigation plan concerns (Henderson Marsh)		1	The wording in the draft was changed to clarify the issue.
Monitor effectiveness of signs and information; coordinate with USFS; use volunteers		3	This is standard procedure for BLM and it will continue for the North Spit.
Picnic tables should be installed at the boat ramp	1	5	This will be considered and was added as an Action item.
Plan departs from its underlying EA	1		There are no additional ground disturbing actions in the Plan, or additional environmental impacts, thus NEPA is not required.
Planning – Evidence suggests its preparation could be in violation of NEPA, FLPMA, and the Federal Advisory Committee Act	1		There are no ground disturbing actions in the Plan, thus additional NEPA is not required. The trail work was conducted under a volunteer agreement and it implemented MA13 in the 1995 Shorelands Plan, thus it would not be a FACA violation.
Plan proposals cultivate conflict. They erode traditional uses, further segregate uses, and elevate some uses above others.	2	1	The Plan makes no changes to the existing motorized and non-motorized (segregated use) access designations that have been in effect since 1985 when BLM amended the Master Framework Plan for the Coos Bay District and in 1995 with the Coos Bay District RMP and the Coos Bay Shorelands Plan. Traditional uses are not restricted and BLM welcomes volunteer groups to help us maintain trails.
Plan relies on irrelevant and inaccurate data (SCORP, Oregon State Parks Surveys)	1		The SCORP is the best available survey resource for recreational activities and is used to assess current uses, trends and demand at the state level and subregional level. The Ocean Shore Plan survey is also relevant as it included a subsurvey from Ten Mile Creek to Coos Bay, including the North Spit. BLM also utilizes three traffic counters on the spit.

Table 2. Additional Public Input. (continued)

Comments on the DRAFT North Spit Plan	No. of Comments during Comment Period for Draft Plan	No. of Comments from Public Forum	BLM Response
Bicycle trails - supports	1		Bicycles are permitted on the Spit, however the loose sand makes bicycling difficult without paved trails. There are no plans to pave any trails at this time.
Bicycle trails - against	1		BLM will continue to support multiple use activities.
Build a boat ramp	1		This was completed in 1993. See Map 3 for location.
BLM should re-do the 2000 Biological Opinion for the western snowy plover	2		BLM is planning to reinitiate consultation to update the 2000 Biological Opinion, based on additional information on visitor use and to clarify areas and activities under BLM's jurisdiction.
Plan will cost BLM money and work the agency cannot afford	1		The Coos Bay District BLM receives funding to support outdoor recreation on the public lands from a variety of appropriated funding sources. The minimal improvements proposed in the Update are well within the fiscal constraints of the Coos Bay District recreation and maintenance budget. In addition, group volunteer agreements assist in long term maintenance of trails and other projects.
Shooting - concerned you cannot shoot a firearm across a trail	1		BLM trails and the unmaintained sand roads are not considered public roads, thus shooting is not restricted.
Shooting - restrict firearms	1		BLM staff will track this as an issue identified by the public.
Shooting (firearms) safety concerns	5		BLM will track this as an issue identified by the public. BLM will also include firearm safety messages in North Spit information.
Supports crab dock construction	2	4	This popular suggestion is hampered by funding constraints. Estimates to construct a crab dock are several hundred thousand dollars. The location is questionable with known sand and wood debris deposition, and so there are no plans for construction.
Supports OHV trails	2	2	This triggered a new action item in the Recreation section that will investigate the possibility of opening the Foredune Road north to the USFS boundary.
Weeds Program – use "Casoron" herbicide; Policy questions		1	BLM is not authorized to use certain chemicals on public lands. Beach grass is not listed as "noxious," therefore, BLM cannot use "Caroson." BLM weed policy is set at the national level and cannot be changed at the field level.

Comments received which are outside the scope of this planning document:

- It could lead to prolonging the Coos Bay District RMP revision process
- Its ties to the New Carissa DARP are obvious and the DARP is itself a NEPA/FLPMA concern
- The ACEC designation on the North Spit should be eliminated
- BLM is over emphasizing Policy 6840
- The Draft should note that the ocean beach was declared a road in 1913 and the Coos County Board of Commissioners declared a county road across the north spit at the old ferry crossing and up the beach to Tenmile Creek in 1856.

BLM Interdisciplinary Team Members

Tim Barnes	Geologist
Nancy Brian	Botanist
John Colby	Hydrologist
Linda Petterson	Realty Specialist
Sharon Morse	Interpretive Specialist
Steve Samuels	Archaeologist
Madeleine Vander Heyden	Wildlife Biologist, ACEC Manager
Dan VanSlyke	Fisheries Biologist
Tim Votaw	Hazardous Materials Coordinator
Dave Wash	Outdoor Recreation Planner
Nancy Zepf	Outdoor Recreation Planner

This plan consists of four parts: Part One describes BLM's planning framework; Part Two reviews the original 1995 Shorelands Plan and outlines the status of its management actions; Part Three provides current information on the cultural, natural, and recreational resources on the Spit; and Part Four presents management actions on BLM-administered lands for the next ten years.

PART 1 – PLANNING FRAMEWORK

Part One describes BLM's planning framework. In the BLM planning system there are three levels or tiers which are described below:

1. National and State Level: Laws, Regulations, and Policy
2. District Level: Coos Bay District Resource Management Plan (May 1995)
3. Field Office Level: Activity Plans (site-specific plans such as this one)

These levels are described in detail below.

National and State Level

The management actions put forth in the North Spit Plan are guided by public laws, Executive Orders, regulations, and directives of the Secretary of the Interior. BLM policy must be consistent with these higher authorities as they provide a framework to ensure that management actions will maintain, enhance, or rehabilitate the natural resources present on the Spit while providing for public access. Pertinent federal laws, regulations and policies are summarized below.

- *Federal Land Policy and Management Act (FLPMA)* — Directs the BLM to plan for and manage the public lands in a manner that "protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use by encouraging collaboration and public participation throughout the planning process. In addition, the public lands must be managed in a manner that recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands."

- *National Environmental Policy Act (NEPA)* — Requires environmental analysis prior to surface disturbing activity on federal lands.

- *National Historic Preservation Act (NHPA)* — Protects important historic properties.

- *Endangered Species Act (ESA)* — Protects flora and fauna listed as threatened or endangered and at risk of extinction.

- *Code of Federal Regulations, Title 43, 8300 — Recreation Management*
  Recreation regulations guiding the inventory, planning, and management of recreational resources, including off-highway vehicle management on the public lands.

- *Executive Orders 11644 and 11988, Use of Off-Road Vehicles on Public Lands* —
  Provides a uniform federal policy for the management of off-highway vehicles on lands administered by the Departments of Interior, Agriculture, Defense and Tennesee Valley Authority.

- *Executive Order 11990, Protection of Wetlands, and BLM Manual 1737, Riparian-Wetland Area Management* — Describes the policies, responsibilities, and guidance for the identification, protection, restoration, and maintenance of fresh, brackish, and saline wetlands.

- *Special Status Species Policy (SSSP)* — Directs the BLM to conserve special status species (SSS) and the ecosystems upon which they depend so as not to contribute to the need to list these species under the ESA (USDI BLM 2001a).

District Level

The Coos Bay District operates under its Resource Management Plan (RMP) and its Record of Decision as supplemented and amended (USDI BLM 1995a., 1995), 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 and its Record of Decision as supplemented and amended (i.e., the Northwest Forest Plan; Interagency 1994). The RMP addresses the designation and management of special areas such as the Spit to protect their unique natural, cultural, and recreational values.

The RMP made four specific designations for lands on the Spit:

- Area of Critical Environmental Concern (ACEC)
- Special Recreation Management Area (SRMA)
- Motorized Access Limited to Designated Roads and Trails
- Visual Resource Management Classes II, III and IV

The North Spit Area of Critical Environmental Concern

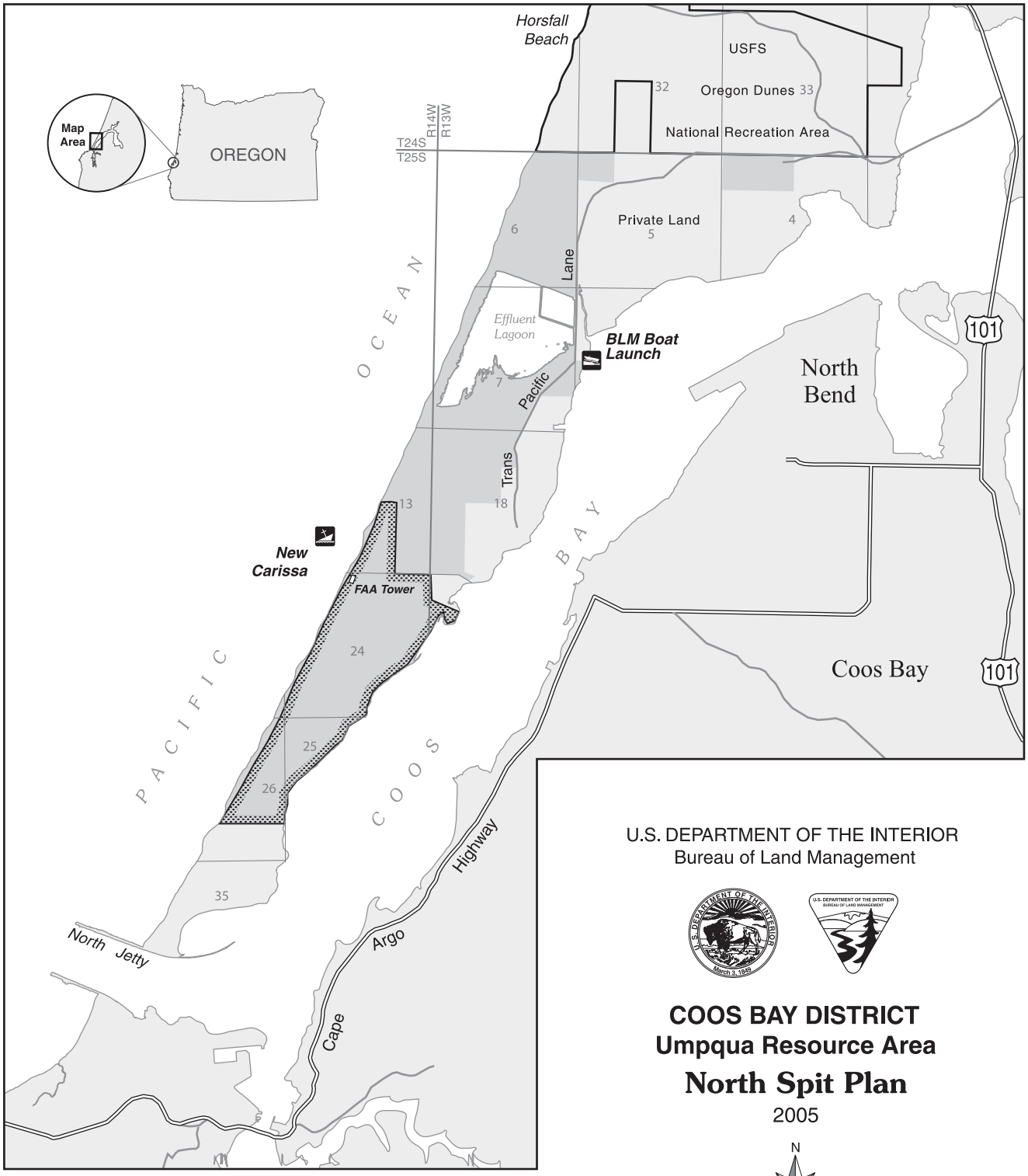
Areas of Critical Environmental Concern (ACECs) are public lands where special management attention is required to protect important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes (43 CFR 1601.0-5). The District RMP designated 580 acres of the Spit as an ACEC primarily for the conservation of its outstanding biological values (USDI BLM 1995; Map 2). An additional 145 acres were obtained from private ownership, raising the ACEC's total to 725 acres.

Prior to 1995, the Audubon Society, FWS, ODFW, The Nature Conservancy, and the COE (USDI FWS 1980) recognized the Spit's high value for wildlife and expressed concern for its conservation. As one of the largest undeveloped spits on the Oregon Coast, its close proximity to a populated urban area was creating a high demand for resources and recreational use (Wilson-Jacobs 1983; USDI BLM 1980). Although adjacent private lands provided important natural areas they were under development pressure, and management objectives for the adjacent ODNRA focused primarily on motorized recreation. Consequently, protecting and preserving natural resources under BLM management was determined imperative to the conservation of the Spit's rich biological community (USDI BLM 1994). The Spit was also designated as an ACEC for its cultural and historic resources, and its scenic value to the communities of North Bend and Coos Bay (USDI BLM 1994).

In 1992, three broad objectives were identified by an interdisciplinary team tasked with developing a management strategy for the North Spit ACEC: 1) no net loss of wetlands; 2) maintain and enhance threatened and endangered species habitat; and 3) maintain and enhance a diversity of habitats for animals and plants (USDI BLM 1992). In addition, cultural and historic values would be preserved, and educational and interpretive information provided to the public. In accordance with BLM policy, recreational and other uses would be managed to provide for visitor access and enjoyment while leaving all other ACEC values unimpaired (USDI BLM 1988). The North Spit Plan incorporates these objectives and goals by providing for the preservation of ACEC values through specific and compatible management actions related to recreational access, cultural and historic preservation, wildlife and plant conservation and management, and educational and interpretive opportunities.

Special Recreation Management Area

The designation of the North Spit as a Special Recreation Management Area (SRMA) in the District RMP formally recognized the high recreational value of the Spit's public lands. SRMAs are defined as areas "…where a commitment has been made to provide specific recreation activity and experience opportunities on a sustained yield basis." Through the SRMA designation in the



U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

COOS BAY DISTRICT
Umpqua Resource Area

North Spit Plan

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Legend

- Area of Critical Environmental Concern
- Highway
- Paved Road
- Bureau of Land Management (BLM) Administered Land

Area of Critical Environmental Conern - Map 2

M05-12-05

RMP, the BLM has made a long-term commitment to manage the physical, social, and managerial settings on the North Spit to sustain recreational activities and experience opportunities.

In addition to SRMA designations, the RMP identified recreation management objectives for the entire Coos Bay District. Specific objectives from the RMP that direct recreation management are:

- Manage scenic, natural, and cultural resources to enhance visitor experience expectations and to satisfy public land users.
- Support locally-sponsored tourism initiatives and community economic strategies by providing recreation projects and programs that benefit both short- and long-term implementation.
- Manage off-highway vehicle use on BLM-administered land to protect natural resources, provide visitor safety, and minimize conflicts among various users.
- Continue to provide non-motorized recreation opportunities and create additional opportunities where consistent with other management objectives.

The BLM planning process defers the specific details on how these resources are to be managed to the activity planning stage, in this case through the Coos Bay Shorelands Management Plan and subsequent updates such as this document.

Motorized Access – Limited to Designated Roads and Trails

In 1972, Executive Order 11644 established a unified federal policy for motorized vehicle management on public lands administered by the Departments of the Interior and Agriculture, the Secretary of the Defense and the Tennessee Valley Authority. This Executive Order required each respective agency to develop and issue regulations and administrative procedures to provide for the designation of specific areas and trails where motorized use would be permitted and where it would be prohibited. As directed, each of these agencies developed regulations through the Code of Federal Regulations to govern the designation and management of off-highway vehicles.

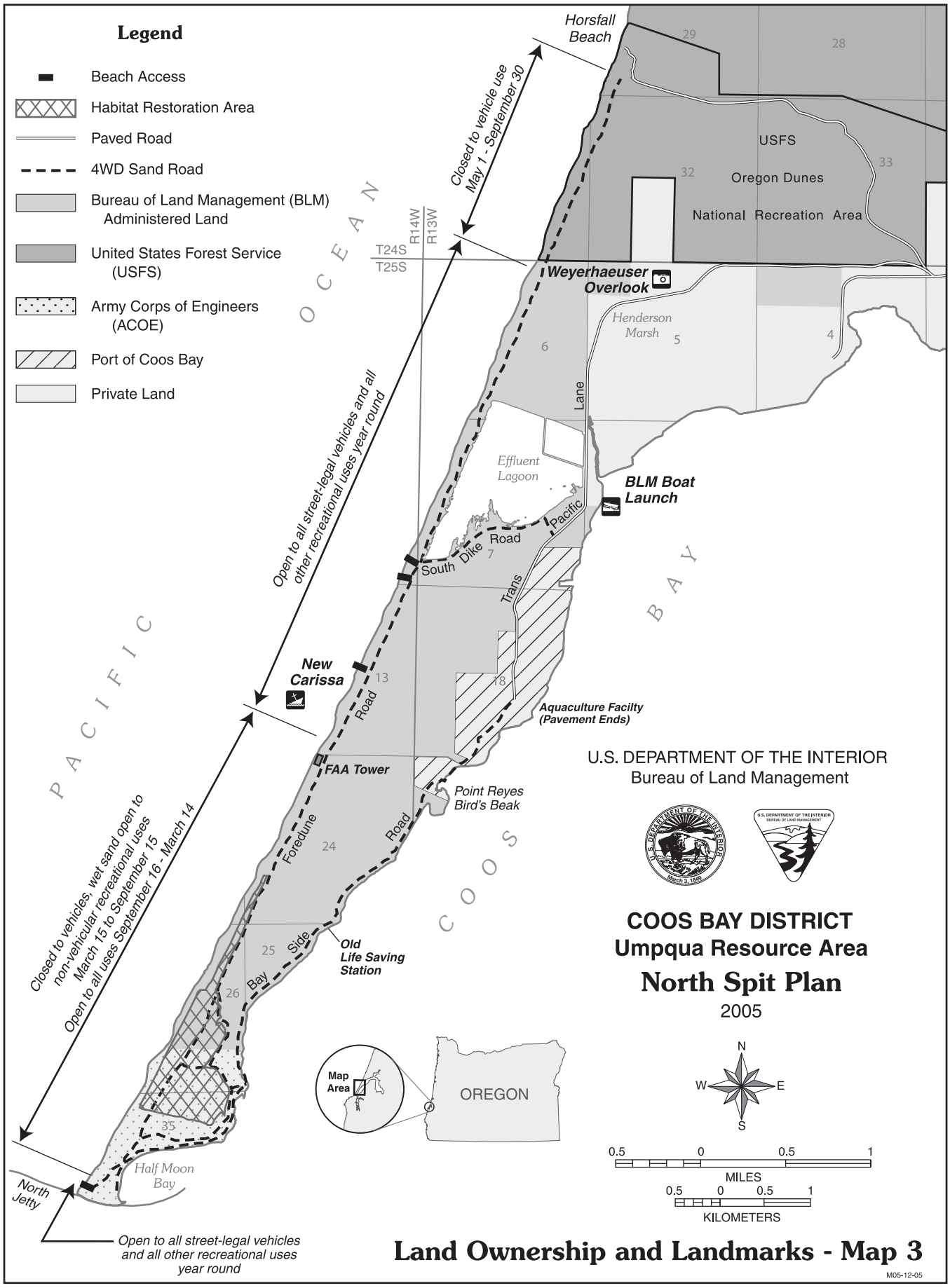
On the public lands of the North Spit, administered by the Secretary of the Defense through the US Army Corps of Engineers, off highway vehicle management has been directed by the Rules and Regulations Governing Public Use of Water Resource Development Projects Administered by the Chief of Engineers (36 CFR Part 327). Through these regulations, the operation of a vehicle off authorized roadways is prohibited except at locations and times designated by the District Commander. Since no designation had been made by the Corps of Engineers on the North Spit, these parcels were effectively closed to off-highway vehicle use prior to these lands being transferred to the BLM.

The BLM's management of off-highway vehicles is directed through the Federal Land Policy and Management Act and the Code of Federal Regulations in 43 CFR to designate areas and trails as open, limited, or closed to motorized access through the resource management planning process. The public lands on the Spit were designated through the Coos Bay District RMP as Limited to Designated Roads and Trails. The individual roads and trails were then inventoried and designated as open or closed through the Coos Bay Shorelands Plan of 1995. The four roads/trails designated as open by this plan were the South Dike Road, the Foredune Road, the Re-route Road, and the Bay Side Road (Map 3). The remaining trails were designated as closed to motorized use.

Field Office Level

The North Spit is managed by the Umpqua Field Office of the Coos Bay District. At the field office level, site specific plans are developed to guide management activities. A chronology of planning efforts for the Spit includes:

- The Coos Bay Shorelands Draft Management Plan (USDI BLM 1989);
- The Coos Bay Shorelands Draft Management Plan and Environmental Assessment (USDI BLM 1994; EA No. OR120-93-07);
- The Coos Bay 1995 Shorelands Final Management Plan (USDI BLM 1995b), and lastly;
- The North Spit Plan, 2005.


Legend
Beach Access
Habitat Restoration Area
Paved Road
4WD Sand Road
Bureau of Land Management (BLM) Administered Land
United States Forest Service (USFS)
Army Corps of Engineers (ACOE)
Port of Coos Bay
Private Land
Horsfall Beach
Closed to vehicle use May 1 - September 30
USFS
Oregon Dunes
National Recreation Area
Weyerhaeuser Overlook
Henderson Marsh
Lane
Effluent Lagoon
BLM Boat Launch
Pacific
Road
South Dike
Trans
Open to all street-legal vehicles and all other recreational uses year round
New Carissa
Road
Aquaculture Facilty (Pavement Ends)
FAA Tower
Point Reyes Bird's Beak
Foredune
Road
Side
Bay
Old Life Saving Station
Closed to vehicles, wet sand open to non-vehicular recreational uses March 15 to September 15
Open to all uses September 16 - March 14
Half Moon Bay
North Jetty
Open to all street-legal vehicles and all other recreational uses year round
OCEAN
PACIFIC
COOS BAY
T24S
T25S
R14W
R13W
Map Area
OREGON
U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
COOS BAY DISTRICT
Umpqua Resource Area
North Spit Plan
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KILOMETERS
Land Ownership and Landmarks - Map 3
M05-12-05

PART 2 – THE COOS BAY SHORELANDS FINAL MANAGEMENT PLAN, 1995

Part Two reviews the original 1995 Shorelands Plan and outlines the status of its management actions. In 1995, the Coos Bay Shorelands Plan was approved to guide management of lands on the Spit. It identified issues, concerns, and opportunities on the Spit, and included specific management actions pertaining to each of the following subjects:

- Education and Interpretation
- Land Tenure and Cooperative Agreements
- Law Enforcement
- Recreation
- Vegetation
- Wildlife Habitat

Management actions listed in the 1995 Shorelands Plan were reviewed and updated (Table 3). The actions fall into four categories: accomplished, accomplished in part, not accomplished, and ongoing. Actions in the plan that were not accomplished include those where land exchanges have removed or precluded lands from BLM jurisdiction, consequently these actions are no longer applicable to BLM management of the Spit. All ongoing and planned actions are listed in Part Four of the North Spit Plan.

In the case of Western snowy plover management, actions have evolved through a multi-agency process. The 1995 Shorelands Plan proposed several actions pertaining to snowy plovers and ocean beach access that were never implemented (Table 3, Management Action 5). Changes to management actions are a result of a revised public access strategy implemented subsequent to the grounding of the New Carissa in 1999. The strategy pertains to the management of public lands on the Spit and allows for public use while protecting plovers and promoting their recovery (USDI FWS 2000). Strategy details are described in Part Three under Species of Special Management Concern.

The following actions described in the text of the 1995 Shorelands Plan (Actions 4, 7, 11, 12, 13, 16, and 20) were not incorporated into the original Management Action Chart. Action 4 – Bay Beach Access is not BLM land; Action 7 –Campground Construction - No construction will be developed; Action 11RV Dump Station – no RV dump station will be installed; Action 12 – Equestrian Staging Area – No area to be developed at this time; Action 13 – Non-motorized trails – trails will be available but not maintained; Action 16 – Barrier-free interpretive loop – No loop will be developed; Action 20 – Coos Head – no day use site will be developed.

Text Changes

The 1995 Shorelands Plan made some recommendations that were not listed as actions. Errors, additions, or changes to these recommendations are as follows:

1. Page 10, first paragraph – "The BLM will petition to Oregon State Parks to prohibit the following activities on the CBS (Coos Bay Shorelands) ocean beaches: removing surfcast kelp and driftwood, allowing dogs to run free, and falcon flying." This action is no longer under consideration as the ocean beaches are under the OPRD's jurisdiction.

2. Page 10, second paragraph related to the potential discovery of a plover nest on the Foredune Road – Delete: "In addition, the road will be seasonally closed for 200 feet from the nest site until chicks have left the nesting area, or rerouted temporarily to avoid active nests." The road

is currently re-routed every six months. Other actions that may occur to protect nesting plovers will be done in cooperation with the FWS and other agencies as required.

3. Pages 11, OHV Access – There are seven bullets describing allowable motorized access.The three items below are no longer applicable.

   - Remove – "Wet sand along the ocean beaches year round." Wet sand is under the jurisdiction of OPRD.
   - Remove – "260-acre open sand area (by permit only…)". This management action was inconsistent with the regulations and policies that were in effect in 1995 and was inconsistent with the land use allocations identified in the Coos Bay District RMP of 1995. An activity level plan, such as the Shorelands Plan, was not sufficient for changing the OHV designation status of this 260 acre parcel from Limited to Open. This statement was removed through a plan maintenance action in 2000. This area remains a Limited Area as per the Record of Decision in the RMP.
   - Remove – "80-acre parcel near the Roseburg Chip Facility (by permit only…)." This management action was inconsistent with the regulations and policies that were in effect at that time and was inconsistent with the land use allocations identified in the Coos Bay District RMP of 1995. An activity level plan, such as the Shorelands Plan, was not sufficient for changing the OHV designation status of this 80 acre parcel from Limited to Open. This statement was removed through a plan maintenance action in 2000. This area remains a Limited Area as per the Record of Decision in the RMP.

4. Pages 13, 14 – Management Action 5 – Ocean Beach Access:BLM was to petition OPRD to enact restrictions on the ocean beach. There are 14 action items, including rationale. Remove all actions as the wet sand beach is under the jurisdiction of OPRD.

5. Page 16 – Management Action 12 – Equestrian Staging Areas.Equestrian use in the Central Coast Region of the Oregon Coast has increased by 39% since the last Shorelands Plan was written. The Spit has become one of the more popular equestrian riding areas in the region and a need has been identified to provide an adequate staging area for the off-loading/loading of horses.

6. Page 16 – Management Action 13 - Non-Motorized Trails.The BLM proposed the designation of approximately 12 miles of hiking/equestrian trails in the 1995 Shorelands Plan. The BLM will implement this action and will identify a trailhead/staging area. The agency may develop new trail segments and will establish local partners to assist in the management and maintenance of the trail system (see Recreation, Part Three).

Table 3. Management actions as described in the Coos Bay Shorelands Final Management Plan (USDI 1995) and their current status.

Management Action	Status	Comments
Biological mapping of plant communities and wildlife habitats.	Accomplished.	Plant communities were mapped and preliminary information reported for plant alliances and vegetation classes based on the Oregon Dunes NRA assessment (Christy et al. 1998). Information on wildlife habitats may be obtained from the mapped plant alliances.
Cadastral survey (to determine mean high tide on the bay side).	Not accomplished.	This action was originally proposed in relation to the Point Reyes bird's-beak. The plant has been protected by re-routing vehicles around it and placing root wads to protect the area as authorized by the management agency (Port and DSL). Additional maintenance actions on state lands will be conducted per written agreements from the appropriate agency.
Land tenure adjustments (Page 10 in 1995 Shorelands Plan).	Accomplished, in part.	Priorities 2, 3, and 4 have been accomplished. If Priority 1 is accomplished, the bay side access road will come under BLM jurisdiction and will be designated as open for motorized access.
MA-1. North Dike road improvement and turnaround construction.	Not accomplished.	This road is owned by Weyerhaeuser.
MA-2. Extension of Trans Pacific Parkway (now called Trans Pacific Lane) for 1/3 mile to day-use facility.	Not accomplished.	The area proposed for the road extension belongs to the Port. If the lands are acquired by BLM, the extension would not be paved, nor would a day use area be built. The road would be designated as open for motorized access.
MA-2. Bay Side road construction, includes post and cable installation.	Accomplished, in part.	This area is under the Port's jurisdiction. Post and cable installation and a road reroute to protect the Point Reyes bird's-beak was completed and will be maintained.
MA-3. Petition DSL to prohibit motor vehicles on 1/2 - 3/4 mile section of bay beach around salt marshes.	Not accomplished.	BLM's re-route has been effective thus precluding the need for the prohibition (see above).
MA-5. Petition to OPRD to close dry sand portion of ocean beaches, south of effluent pond between March 15 and Sept 15 (Western snowy plover nesting season).	Not accomplished.	Because much of the dry sand portion of the ocean beach is under BLM jurisdiction, the annual closure request to OPRD is not necessary. However, changes in plover management are reflected in a different closure area: BLM closes the dry sand from the FAA (Federal Aviation Administration) tower (not the effluent pond) south to within one mile of the Jetty.
MA-5. Petition OPRD to close ocean beaches from south end of effluent pond to Forest Service boundary.	Not accomplished.	This did not occur and is not necessary for the protection of snowy plovers. BLM will cooperate with OPRD when the final Ocean Shores Management Plan is completed (OPRD 2004).

Management Action	Status	Comments
MA-5. Petition OPRD to close ocean beaches from 30 minutes after sunset to 30 minutes prior to sunrise.	Not accomplished.	BLM will cooperate with OPRD's final Ocean Shores Management Plan when it is completed (OPRD 2004).
MA-5. Signs indicating designated access routes to ocean beaches, south of effluent pond.	Ongoing.	Signs are maintained as necessary.
MA-5. Signs indicating non-authorized access points to ocean beaches south of effluent pond.	Not accomplished.	Non-authorized access points to the ocean beach were not signed. Signs indicating authorized access points were placed.
MA-5. Informational signs explaining beach access.	Ongoing.	Signs are in place. New OPRD signs will be used in the future.
MA-5. News releases and updates on ocean beach access.	Ongoing.	Information is provided to the media as needed.
MA-5. Public meetings discussing beach access.	Ongoing.	Meetings primarily occur through OPRD'S planning effort and North Spit Plan public scoping. BLM accepts public comments and suggestions at any time.
MA-6. 260-acre and 80-acre open sand areas open to OHVs by permit only.	Not accomplished.	No permits were requested. Motorized access is permitted on sand roads designated as open. This policy was inconsistent with the OHV designations created in the RMP.
MA-6. Signs marking perimeter of open sand areas.	Not accomplished.	Motorized access remains open on designated sand roads. This action was inconsistent with the OHV designations created in the RMP.
MA-8. Pack-in camping permitted throughout the CBS with length of stay not to exceed 14 days.	Ongoing.	Allowed except in designated snowy plover areas during the nesting season.
MA-8. Vehicles remain within 100 feet of designated roads.	Ongoing.	Allowed except where signed to protect natural resources.
MA-10. MA-10. Placement of garbage cans and vault toilets at day-use facility (near anadromous facility).	Not accomplished.	The area is not under BLM jurisdiction. No new developments are planned on BLM lands. The correct name of the anadromous plant is the North Bay Aquaculture Facility and it is owned by the Port.

Management Action	Status	Comments
MA-10. Maintenance of vault toilets and garbage cans at day-use facility.	Not accomplished.	The area is not under BLM jurisdiction.
MA-14. Firearms policy.	Not accomplished.	Federal and state regulations cover the discharge of firearms in developed and undeveloped areas. Enforcement occurs through federal, state, and county patrols.
MA-15. Development and installation of Watchable Wildlife signs along bay and at north dike day-use facility.	Not accomplished.	These areas are not under BLM jurisdiction. Wildlife information may be provided at the proposed boat launch information kiosk. The potential remains for a "Watchable Wildlife" site to be developed.
MA-17. Closing of non-designated roads and trails using logs or root wads.	Ongoing.	BLM will maintain vehicle barriers to the interior of the Spit as necessary to deter resource damage from unauthorized motor vehicle use.
MA-18. Management of European beach grass.	Ongoing.	Occurs within the snowy plover Habitat Restoration Areas.
MA-19. Noxious weed control.	Ongoing.	Occurs under BLM's weed management program.
MA-21. Timber, standing or down, cutting prohibited.	Ongoing.	Dependent upon standard Bureau procedures including NEPA compliance and Small Sales Permits.
MA-22. Development of interagency, inter-tidal agreement to manage salt marshes within the Coos Bay estuary.	Not accomplished.	These areas are not under BLM jurisdiction. Any work done in the salt marshes necessitates permits from the appropriate agencies prior to the start of the project. No new projects are proposed.
MA-23. Salt marsh restoration (depends on rate of natural re-vegetation of salt marsh).	Not accomplished.	See above.
MA-24. Introduction of pink sand verbena.	Accomplished.	Pink sand verbena seeds are collected for dispersal at other coastal sites.
Monitoring of dry sand closure during Western snowy plover nesting season.	Ongoing.	Occurs in compliance with FWS' Biological Opinion.

Management Action	Status	Comments
Monitor permanent traffic counters.	Ongoing.	Traffic counters are maintained and data collected. Counters may be moved to different locations as warranted.
Monitor salt marsh bird's-beak population.	Ongoing.	The correct name is Point Reyes bird's beak. No additional protections are required, however BLM will maintain the existing vehicle re-route and root wad barrier on the bay side of the Spit, as permitted by DSL.
Monitor Western snowy plover nesting exclosure and brood success.	Ongoing.	Cooperative effort with ORNHIC, OPRD, ODFW, FWS, and COE.
Monitor great blue heron and great egret rookery.	Ongoing.	The rookery was abandoned in 2000. Surveys will be conducted to locate additional rookeries on BLM lands. A new rookery was discovered in 2002 on ODNRA lands and in 2004 on the northeast side of the Spit on BLM.

Part 3 –North Spit Resources

Introduction

Part Three describes the cultural, natural, and recreational resources on the Spit. Management actions are listed in Part Four. Resources are grouped into five categories:

- Physical, including Water, Geology, Soils, Minerals, Coal Bed Methane, Oil and Gas
- Biological, including Vegetation, Wildlife, and Fisheries
- Cultural and Historical
- Recreational
- Visual

Physical: Water Resources

Climate

The Central Oregon Coast has a temperate maritime climate characterized by cool, dry summers and mild, wet winters. Rainfall occurs primarily from November through March and averages 63 inches per year at the North Bend Municipal Airport near the Spit. The average annual maximum and minimum temperatures at the North Bend Municipal Airport for the period January 1931 to December 2004 are 60ºF and 45ºF respectively. Temperatures above 90ºF or below 20ºF are rare (Western Regional Climate Center 2004).

Prevailing winds are from the north-northwest in the summer and from the south-southeast in the winter (Oregon Climate Service 2004). Summer days are characterized by foggy mornings, sunny afternoons, and cool evenings. Afternoon northwesterly winds are quite cool. Precipitation is light and spotty; however, fog or low overcast clouds may persist all day, and fog drip may contribute to available moisture. Winter weather is characterized by frequent rains with intermittent clearing periods. Snow may fall on the beach every few years when Arctic air meets an onshore flow of moist air.

Groundwater

The groundwater supply in the Coos Dune Sheet aquifer is large. The Coos Bay – North Bend Water Board has 18 freshwater production wells just north of the BLM-administered lands on the Spit. Although these 90 to 120 foot deep wells can produce up to 4 million gallons per day (Mgal/d), they are currently not being used (Schab 2004). According to Jones (1992), model simulations indicate that 10 Mgal/d could be pumped with minimal 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.

Both the Water Board and the Weyerhaeuser Company monitor groundwater levels and groundwater quality (Souza 2004). The Water Board maintains 55 monitoring wells in the dunes between the 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 seven water quality parameters.

Between 1982 and 1997, several groundwater monitoring wells were installed near the Weyerhaeuser containerboard mill and the former effluent lagoon, and on adjacent property managed by the Bureau of Land Management. The wells were installed for environmental assessment, and permit-required characterization and water quality monitoring related to wastewater discharge an solid waste disposal.

Weyerhaeuser currently has 9 serviceable groundwater monitoring wells in or adjacent to the former effluent lagoon. Twenty-five other wells in the same area were decommissioned between October 2004 and January 2005 to reduce maintenance and eliminate potential risks related to the integrity of wellheads and surface seals.

Weyerhaeuser also has 13 serviceable groundwater monitoring wells in the vicinity of the former containerboard mill on the Spit. Seven additional wells in the same area were decommissioned in October 2004 (Souza 2005)

Wetlands

Vegetation mapping using 1999 aerial photographs and ground-truthing indicates that roughly 27% (669 acres) of the North Spit is open water or supports vegetation indicative of semipermanently flooded, seasonally flooded, and saturated areas. The US Fish and Wildlife Service's National Wetlands Inventory (NWI) identifies several wetland types on the Spit. Marine, intertidal habitats of high salinity are found along the Pacific Ocean shore, and intertidal and subtidal estuarine wetlands of moderate salinity are located on the bay side of the Spit. Freshwater, nontidal (palustrine) wetlands are scattered in low lying portions of the deflation plain east of the ocean and foredune.

The goals of the NWI is to classify and map the nation's wetlands and evaluate wetland status and trends. National Wetlands Inventory maps covering the Spit were published in 1989 and contain information on the location and classification of wetlands. This information is overlaid on the Charleston and Empire 7.5 minute (1:24,000) US Geological Survey topographic maps. The NWI maps were based on interpretation of visible hydrologic features and wetland vegetation using high-altitude aerial photographs (1:58,000) taken in August and September 1982. Because dynamic systems like the Spit wetlands vary seasonally and annually, these maps likely differ from current conditions.

Wetlands mapped by the NWI must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (plants adapted to live in anaerobic (oxygen free) soil conditions; (2) the substrate is predominantly undrained hydric soil (soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part); and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year (Cowardin et al. 1979).

The NWI maps were not intended to delineate regulated wetlands. Delineation is defined as a determination of wetland presence that includes marking the wetland boundaries on the ground and/or on a detailed map prepared by a professional land surveyor or similar accurate methods (Oregon Administrative Rules 141-090-0020). Delineation of jurisdictional (regulated) wetlands is determined by on-the-ground examination of hydrology, vegetation, and soils (USDOD 1987). It requires that specific vegetation, soils, and hydrology attributes be found to make a positive wetland determination.

Palustrine Wetlands. Seasonal precipitation that infiltrates into the relatively porous dune sheet recharges groundwater and sometimes appears as standing water in relatively small, freshwater deflation plain wetlands east of the foredune. The 1989 NWI maps covering the Spit show roughly 300 acres of unconsolidated shore, emergent, scrub-shrub, and forested wetlands scattered throughout BLM-administered land. Unconsolidated shore habitats include beaches, bars, and flats with less than 30% areal vegetative cover other than pioneering plants. Emergent wetlands (marshes) are characterized by erect, rooted, herbaceous hydrophytes. This vegetation is present for most of the 335 day growing season (USDA FS 1993) and these wetlands are usually

dominated by perennial plants. Scrub-shrub wetlands are dominated by woody vegetation less than 6 meters (20 feet) tall, and forested wetlands have woody vegetation that is 6 meters tall or taller. Swamps are wetlands dominated by trees or shrubs. A shrub swamp often occurs as a transitional phase between habitats evolving from a marsh to a swamp.

Temporarily and seasonally flooded unconsolidated shore, emergent, and scrub-shrub habitats were mapped on the Spit. Temporarily flooded areas occur where the surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface. Seasonally flooded wetlands have surface water present for extended periods, especially early in the growing season. Surface water is absent by the end of the growing season in most years.

Deflation plain wetlands are a direct result of foredune establishment (USDA FS 1993). Over the past several decades, the foredune has essentially cut off the supply of wind blown sand to the inland open sand dunes. Winds continue to move the remaining inland dune sands toward the bay, stripping sand from the eastern edge of the deflation plain and further exposing the water table. This deflation also occurs further inland in troughs among dunes. Rapid plant succession follows exposure of the water table and early seral stage wetlands (e.g.: grass, sedge, rush, low shrub) progress toward later seral stages (tall shrub, shore pine). Because the surface of the deflation plain is at the summer ground water level, only plants tolerant of perennially wet soils can survive.

Estuarine Wetlands. Based on the 1989 NWI maps, roughly 300 acres of intertidal, estuarine wetlands are located on the bay side of the Spit south of the North Bay Aquaculture Facility. A majority of these habitats (nearly 265 acres) are classified as aquatic bed and unconsolidated shore wetlands that are regularly flooded (tidal water floods and exposes the land surface at least once daily) and irregularly flooded (tidal water floods the land surface less than daily). Aquatic bed habitats are dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Approximately 35 acres of regularly and irregularly flooded, emergent wetlands (marshes) border the beach on both sides of the dredge disposal lobe. Vegetated marshes develop on deposits of fine sediment in low velocity areas of the estuary. Additional deposition in areas of established vegetation alters site characteristics and suitability of the habitat for different plant species (Coats 1995).

Marine Wetlands. Marine, intertidal habitats are found along the high energy Pacific Ocean shore. Two habitats are recognized by the NWI: unconsolidated shore (beach) that is regularly flooded (inundated daily), and unconsolidated shore that is irregularly flooded (inundated less than daily).

Henderson Marsh Mitigation Plan. Although not a signatory party, BLM has been involved with the Henderson Marsh Mitigation Plan (HMMP) because the original plan identified sites on federal lands to be used for wetland mitigation.

Historically the lands known as Henderson Marsh were owned by private individuals and used for grazing. Menasha Woodenware Corporation acquired the land and, in 1959, developed plans for a paper mill which required the construction of a waste water treatment lagoon. The original plan was to place the lagoon in Henderson Marsh. Through the intervention of state and federal wildlife management agencies, the lagoon was sited on federal land in the deflation plain southwest of Henderson Marsh (Map 3). Menasha agreed to hold the lands in Henderson Marsh available for waterfowl management, including public hunting, and to construct and maintain dikes, spillways, and tidegates to improve waterfowl habitat.

In 1978, plans were developed to fill a significant portion of the Henderson Marsh. Because filling required compensation for wetland losses, a task force was formed in 1979 to create a mitigation plan. In 1981, Weyerhaeuser purchased the Menasha holdings on the Spit including Henderson Marsh. The HMMP was finalized in 1984 and signed by Weyerhaeuser, the Oregon Department of Fish and Wildlife, and the US Fish and Wildlife Service. The HMMP allows for the filling of 160

acres of freshwater and saltwater wetlands and identifies mitigation actions on public and private lands to compensate for the loss of these wetlands.

BLM has provided technical advice to Weyerhaeuser on mitigation projects, and participated in the development of a wetlands monitoring protocol. In addition, a limited amount of open water pond and wetland habitat was constructed on federal land for mitigation. A weir and reverse tidegate system was installed in upper Jarvis Creek when the Trans Pacific Lane was built to create a brackish water regime west of the road corridor and hold open water to a larger surface area. This area immediately north of the effluent lagoon is permanently flooded and classified as a subtidal, estuarine wetland on the Empire NWI map. Approximately 5 acres of estuarine and 24 acres of freshwater habitat were created or enhanced by installing the water control structure. Another 6 acres of ponds were created further north on BLM-administered land.

Physical: Geology and Soils

Eolian and Oceanic Processes

Two separate, but interrelated, geomorphologic forces on the earth's surface occur to form and shape a sediment dominated beach and its associated dunes. These processes are oceanic and eolian (wind). The oceanic process is the mechanism that delivers eroded sediment to the beach front. The eolian process is the mechanism that mobilizes unincorporated beach sediment inland. The oceanic process creates, molds, and removes beaches, spits, and headlands. The eolian process creates and mobilizes the ridges, dunes, dune fields, and deflation plains.

Eolian Process. Numerous dune fields exist along the Oregon Coast, including the Coos Bay Dune Sheet, located north of Coos Bay. Components needed for dune formation are abundant loose sand, wind, and a favorable terrain. Other ingredients that play important roles in dune-

North Spit deflation plain.

forming include water and vegetation. Human alteration of these components influence the sand migration process (Lund 1973). The coastal dune fields are within two miles of the ocean shore with most immediately adjacent to sand beaches.

Three episodes of dune advance in the Coos Bay dune sheet and other dune fields are documented (Cooper 1958). The earliest is represented today by a strip of thoroughly vegetated dunes that in most places achieved the greatest landward advance. The second advance generally fell short of the first, and its present condition ranges from complete stabilization to still vigorous activity. The third episode is represented by the large areas of active dunes that until recently had open access to the ocean beaches that supplied them with sand. The landward edges of these dune fields are well defined by the presence of precipitation ridges with steep slip faces that slowly invade and bury adjacent vegetation, including forested areas. The precipitation ridge often blocks stream drainage, creating ponds and lakes (Komar 2000).

The eastern face of the migrating dune, called the precipitation ridge (Cooper 1958) will migrate several feet a year by the accumulation of sand along a slope on the inner boundary of the active dune belt. Because both winter and summer wind patterns are landward, sand supply is provided year-round (Lund 1973). This migration of sand is sufficient to cover existing forests as well as other vegetation (Lund 1973; Komar 2000). Along the dune field north of Coos Bay, dune advancement has been measured at 6 to 18 feet per year (Alt and Hyndman 2001).

Water and vegetation reduce the rate at which sand shifts (Lund 1973). In many areas dunes are being actively molded by winds while in other areas vegetation now covers formerly mobile dunes (Komar 2000). Where eolian sand moving across a smooth surface meets an obstruction, the carrying velocity is lost behind the obstruction. This causes the sand to be deposited. Such evidence can be seen in summer at many places along the dry sand part of the beach where sand is accumulating on the lee side of a log or some other object. Native vegetation and natural debris have naturally 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).

However, as described by Lund (1973):

> *"... with the introduction of European beach grass on the West Coast, the conditions along the shore underwent a pronounced and rapid change, and in the past 25 or 30 years a foredune has built up along the shore that has effectively shut off movement of sand from the beach at all but a few places along the Oregon coast..."*

The newly created foredune is a ridge of coalesced (grown together) hillocks superimposed on an earlier, low beach ridge. The hillocks nearest the beach stop most of the sand and continue to grow while the ones farther from the beach stay about the same size or grow slowly. During winter storms, waves reach the base of the foredune ridge and erode it back to an abrupt edge. Thus in places, banks several feet high are formed which block the inland migration of sand, increasing the effectiveness of the foredune as a barrier (Lund 1973). The Spit foredune is representative of the stabilizing affects of European beach grass (Beckham 2000).

With the foredune stopping the supply of sand to the dunes along most of the Oregon coast, the interior dunes are now consuming themselves. As the dune field narrows at the expense of the western sand supply, a deflation plain forms and expands. The deflation plain is caused by the vertical removal of loose sand to the point that the summer groundwater table is reached. The saturation of the sand makes it harder for wind to move it, increasing its stability in wind velocities. As erosion stops, vegetation propagates in the deflation plain. This zone at the western edge of the active dune belt or field thereby demarks the end of dune activity (Lund 1973). However, when stabilizing vegetation is removed from the dunes, the mobilization of sand can be reinitiated (Komar 2000).

Oceanic Process. Oceanic processes supply material to the beach front, circulate the sediment within the littoral (situated near a shore) cell, and are the cause of beach and dune alteration.

Along the Oregon Coast, waves tend to arrive from the southwest during the winter and from the northwest during the summer, corresponding to prevailing wind directions. As a result, there is a seasonal reversal in the direction of littoral drift (migration of sand within the oceanic process); north during the winter, south during the summer. The net littoral drift is the difference between these northward and southward sand movements (Komar 2000).

In general and with few exceptions, net littoral drift is zero due to the large rocky headlands that extend sufficiently into deep water to prevent sand and coarse sediment migration. On many coasts, sand spits grow in the direction of littoral drift. However, sand spits are documented in both north and south directions within zero net drift littoral cells (Komar 2000). Human made features such as jetties impact this sand migration, causing deposition behind the jetties, with accompanying erosion from other areas of the beach front. The Spit grew as sand accumulated southward (Beckham 2000).

The erosion mechanism of the oceanic process is aided by a number of systems, individually or in combination, such as raising ocean levels, storm energies, upland landslides, and rip current embayments (landward erosion of the beach, forming steeper sloped scallops in the beach front). It is estimated that currently the Oregon Coast is retreating by two feet per year (Orr and Orr 2000). The oceanic processes that supply sediment to create beaches, spits, ridges and dunes (foredunes) also supplies the energies needed to destroy and reshape these features.

Breaching and overwashes are common on spits and barrier islands along the East and Gulf Coasts of the United States, where the sea level is rising with respect to the land. Natural breaching of well established spits along the Oregon Coast is not common. The Northwest Coast is rising tectonically, and this probably accounts for the rarity of spit breaching (Komar 2000). However, northwest spit erosion was documented on the Siletz Spit where the foredune retreated a hundred feet within three weeks during winter storms in 1973 (Komar 2000).

Other events may deliver a series of waves related or unrelated to plate subsidence. These tsunamis, whether from a Cascadia Event, other distant plate movements, or submarine landslides, may deliver waves with sufficient height and energy to overtop the spit, relocating sand and dunes and creating breaches. Such effects were witnessed on the New River Spit from tsunamis delivered by the 1964 Good Friday Earthquake in Alaska (Komar et al. 1999). Large portions of the North Spit are within the tsunami runup boundary (Priest 1995a and 1995b).

European beach grass trapped the migrating sand causing the creation and elevation of the foredune thus greatly increasing the Spit's stability (Beckham 2000). The Spit's existence, alterations, and dynamics were created and are maintained by the manipulation of oceanic and eolian processes common to the Northwest Coast, and actions that alter these processes may potentially impact Spit dynamics. Grass removal may compromise the stability of the Spit, exasperating erosional conditions and potentially leading to overwash where dune elevations are sufficiently lowered.

Physical: Minerals

Silica

Historical investigations have been made as to the silica value of Spit sands. Production of silica sands from the Spit, used in glass manufacturing, was documented at 25,000 tons per year (Geitgey 1990). Preliminary studies indicate that the Spit may have mineral potentials for glass and foundry sands, (and other minerals), however current economics may not be sufficient for their development.

Physical: Coal Bed Methane, Oil and Gas

Coal Bed Methane (CBM) is a relatively recent resource, with development occurring within the last 20 years. Although considered an unconventional resource, it currently reflects 8% of the country's reserves. Potential economic reserves lie between 1,000 and 4,000 feet below

the ground. Surface coals have lost the CBM to atmospheric escape. Coal extraction can be developed after methane extraction; however, the depth, with current economics and technology, is usually beyond resource development. Removal of CBM does not reduce the energy capability of the coal bed.

The coal bed methane is held within the molecular structure of the coal, kept below vapor pressure by water confinement. This is different than natural gases and oils, which are formed from mature organics, separated from the source rock, and migrate to a trapping structure. In CBM extraction, the drilling first encounters water within the coal seam. As this water is removed, the pressure is reduced, releasing the methane from the coal seam. This is then collected from a wellhead system (Pappajohn 2002).

Geologic mapping indicates that the Spit is located within the Coos Basin, which includes numerous coal and organic bearing formations. It is inferred that the Spit is underlain by the Coaledo Formation, consisting of coal bearing sediment beds (Madin et al. 1995). Currently, mineral leases have been granted by DSL for the exploration and mineral extraction of submerged lands adjacent to the Spit. While speculative, the potential for oil and gas development does exist under the Spit. Historically, oil and gas leases were issued on the Spit (Fritz 1992).

The BLM has a well developed mineral leasing program, and the Spit lands maintain a "No Surface Occupancy" (NSO) and "Controlled Surface Use" (CSU) for leaseable minerals. The lands have been withdrawn from location and entry for locatable and salable minerals. Leaseable, locatable, and salable minerals are difficult to list because the history of the law has resulted in a definition of minerals that includes economics of minerals. As an example, sand can be considered as a "salable" material, sold by competitive and noncompetitive sales by the unit for construction. Sand can also be claimed under the locatable laws because of the economically valuable silica component of sand, provided the silica content is sufficient to meet an "uncommon" mineral definition.

Biological: Vegetation

Botanical Surveys

Inventory of the flora of the Spit is incomplete (Appendix 1). Only four botanical surveys were conducted on the Spit. In 1989, an informal vascular plant survey was conducted for a small portion of the western shore of the Spit between the North Bay Aquaculture Facility and the site of the 1892 US life-saving station (Stansell 1989). In 1998, a sedge (Carex spp.) survey was conducted as part of a Challenge Cost Share project (Zika et al.1998). In 2003, BLM staff prepared a preliminary map of the vegetation alliances (see below). A vegetation alliance is a plant association based on the National Vegetation Classification System, a hierarchical classification designed to standardize vegetation classification in the United States. In 2004, BLM staff conducted a survey of the 80 acre BLM parcel located south of the Trans Pacific Lane (Sperling 2004).

The vegetation alliances of the Spit were mapped using June 1999 aerial photography and ground-truthing. Alliance polygons were digitized and represent vegetation classes as defined by the National Vegetation Classification Standard (The Nature Conservancy 1994). They are similar to the plant associations found in the ODNRA (Christy, Kagan, and Wiedemann 1998). The five vegetation classes on the Spit and their overall percentage are as follows: forest (25%), woodland (2%), shrubland (17%), dwarf-shrubland (trace %), and herbaceous (32%). Approximately 24% of the Spit is not vegetated, but is characterized by open sand, disturbed areas, blacktop, and open water.

Further refinement of the vegetation map is needed, however some characteristics can be described. The Spit forest and woodland areas commonly include shore pine (*Pinus contorta* ssp. *contorta*) and Sitka spruce (*Picea sitchensis*). The shrubland is characterized by salal (*Gaultheria shallon*), evergreen huckleberry (*Vaccinium ovatum*), willow (*Salix* spp.), wax myrtle (*Morella californica*), sword fern (*Polystichum munitum*), European beach grass (*Ammophila arenaria*),

rhododendron (*Rhododendron macrophyllum*), coyote brush (*Baccharis pilularis*), and Scotch broom (*Cytisus scoparius*). The dwarf-shrubland is composed of bog blueberry (*Vaccinium uliginosum*) and tufted hairgrass (*Deschampsia caespitosa*). The herbaceous community includes salt rush (*Juncus lesueurii*), slough sedge (*Carex obnupta*), Pacific silverweed (*Argentina egedii*), seashore lupine (*Lupinus littoralis*), beach morning-glory (*Calystegia soldanella*), beach silver-top (*Glehnia littoralis*), American bluegrass (*Poa macrantha*), American dunegrass (*Leymus mollis*), floating-leaved pondweed (*Potamogeton natans*), and European beach grass (*Ammophila arenaria*). The salt water marsh is a type of herbaceous community and is characterized by pickleweed (*Salicornia virginica*), fleshy jaumea (*Jaumea carnosa*), and salt grass (*Distichlis spicata*).

Botanical Resources

The Spit marks the southern limit of the subarctic beach flora and the northern limit of the dry Mediterranean beach flora (USDI BLM 1994). It has approximately 75 nonvascular and over 140 vascular plant species (Appendix 1). Additional species will undoubtedly be discovered as the area is botanically explored and a systematic survey is conducted. As a comparison, about 260 vascular plant species are reported from the adjacent ODNRA (Christy, Kagan, and Wiedemann 1998).

Four sites within the ODNRA (South Horsfall Campground, Tenmile Creek Research Natural Area, Umpqua Lighthouse State Park, and Eel Creek) located directly north of the Spit have been identified as having ecological cells and special species unique to the Coast Range Ecoregion (Natural Heritage Advisory Council 2003). Similar cells and species are present at the Spit.

One globally significant community on the Spit is the unstabilized coastal dune wildrye and beach pea vine (*Leymus mollis* ssp. *mollis – Lathyrus japonicus*) community. The Natural Heritage Program uses a prioritization system for determining global significance of plant communities (Kagan et al. 2004). Globally, species are ranked from 1-5 based on the number, quality, and condition of the occurrences; the narrowness of range; the trends in populations and habitats; and the threats to and the fragility of the element being assessed. The wildrye and beach pea vine community is a G1 plant community that is considered critically imperiled globally with typically five or fewer occurrences (Kagan et al. 2004). This community type was likely much larger on the Spit prior to the 1930s. Currently, only isolated patches remain and are threatened by invasion of European beach grass. The occurrence of this unique plant community on the federally managed lands on the North Spit is important to the conservation of the community. The District's RMP calls for recognition, protection, and restoration of unique special habitats (USDI BLM 1995).

Special Status Species

Twenty-two special status plant species within the Bureau sensitive and assessment categories are located on BLM lands on the Spit. These include nine vascular plant species and thirteen nonvascular plant species (Table 4). Populations of the two vascular Bureau sensitive species, the pink sand verbena (*Abronia umbellata* ssp. *breviflora*) and the Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*), are discussed below.

Pink sand verbena is a federal species of concern, is listed as endangered by the State of Oregon, and is a Bureau Sensitive species. This annual herb historically occurred from British Columbia, Canada, to Marin County, California. It is believed to be extirpated from Washington; two plants were observed in 2000 on Vancouver Island. Habitat for pink sand verbena includes sandy beaches above the high tide line and possibly dunes further inland. The primary threats to pink sand verbena are loss of habitat from the encroachment of European beach grass and disturbance from OHVs. In 1993, a population of this species was established on the Spit on COE land within a Western snowy plover Habitat Restoration Area (HRA). The practice of removing European beach grass each year to promote open sand habitat for nesting plovers has benefited the pink sand verbena. The population has gradually increased in number and aerial extent. In 2003, over 111,500 reproductive plants were documented within the COE lands. The population now extends onto neighboring lands outside of the HRA enclosure.

Pink sand verbena.

Point Reyes bird's-beak is a federal species of concern, is listed endangered by the State of Oregon, and is a Bureau Sensitive species. Historically, this annual, hemi-parasitic herb occurred along a 900 mile section of coastline, from Netarts Bay, Oregon, south to Morrow Bay, California. Today, it is known only from Netarts Bay, Yaquina Bay, and Coos Bay. The primary threat to the Point Reyes bird's-beak is habitat loss from development, OHVs, and water pollution from petroleum spills. A population of the species is located on the bay side on lands managed by the Port and BLM (Map 3). The 2001 population at Spit was estimated at about 20,000 plants.

Table 4. Bureau sensitive and assessment plant species documented (D) and suspected (S) on the North Spit by scientific name, common name or group, presence, status, and habitat. Bureau tracking species are noted in Appendix 1. Note: BA = Bureau assessment, BS = Bureau sensitive, SE = State Endangered, and SoC = Federal Species of Concern.

Scientific Name (Common Name or Group)	Presence	Status	Habitat
Vascular Plants			
Abronia umbellata ssp. *breviflora* (pink sandverbena)	D	BS, SoC, SE	Coastal beaches and dunes
Brodiaea terrestris (dwarf brodiaea)	S	BA	Stabilized dunes
Carex brevicaulis (short-stemmed sedge)	S	BA	Stabilized dunes and meadows
Cicendia quadrangularis (timort)	S	BA	Coastal wetlands, valley grasslands, northern oak woodlands, foothills, and woodlands
Cochlearia officinalis (spoonwort)	S	BA	Coastal headlands
Cordylanthus maritimus ssp. *palustris* (Point Reyes bird's-beak)	D	BS, SoC, SE	Salt marshes
Hydrocotyle verticillata (whorled marsh pennywort)	S	BA	Swampy ground, lake margins, and wetlands
Limonium californicum (western marsh-rosemary)	D	BA	Salt marshes
Ophioglossum pusillum (adder's-tongue)	S	BA	Marsh edges, low pastures, grassy roadside ditches, and coastal wetlands

Scientific Name (Common Name or Group)	Presence	Status	Habitat
Nonvascular Plants			
Bryoria pseudocapillaris (Lichen)	D	BS	Rock, conifer bark, and Sitka spruce in exposed coastal headlands
Bryoria spiralifera (Lichen)	D	BS	Shore pine and Sitka spruce in coastal habitats, often with *Ramalina menziesii*
Bryoria subcana (Lichen)	S	BA	Bark and wood of Sitka spruce, Western hemlock, Douglas-fir, and hardwood forests along coastal bays, streams, and dune forests within 30 miles of ocean
Diplophyllum plicatum (Liverwort)	D	BA	Tree boles of old-growth western hemlock, western red cedar, and Douglas-fir
Erioderma sorediatum (Lichen)	D	BA	Ericaceous shrubs in coastal forests, documented at North Spit and Eel Creek Campgrounds (ODNRA)
Heterodermia leucomelos (Lichen)	D	BA	Spruce and shore pine branches on forested headlands in the coastal fog zone
Leioderma sorediatum (Lichen)	D	BA	Thin moss mats on rhododendron and huckleberry branches near coast, documented at North Spit and Eel Creek Campground (ODNRA)
Ramalina pollinaria (Lichen)	S	BA	Coastal, reported from New River ACEC
Rhizopogon exiguous (Fungi)	S	BS	Coastal, known site at Mapleton, hypogenous fungi in coniferous forests
Sulcaria badia (Lichen)	S	BA	Hardwood, conifer bark, and spruce branches in lowlands, valley fringes, and coast, 300-600 m
Teloschistes flavicans (Lichen)	S	BA	Coastal forests, shore pine and Sitka spruce
Thaxterogaster pavelekii (Fungi)	S	BS	Coastal forests in Washington, Oregon, and California
Triquetrella californica (Moss)	S	BA	Exposed to shaded soil, rocks, or sand in coastal shore pine and Sitka spruce

Exotic and Noxious Weed Species

Approximately 24 exotic or non-native plant species occur on the Spit (Appendix 1). Additional exotic species are expected as the area is botanically explored and a systematic survey is conducted. Exotic plants are those that did not occur before the arrival of European culture, are not indigenous to a given area, occur as a result of introduction, or have escaped from gardens and become naturalized. Some exotic species are pioneer plants that are normally limited to a single generation before a dense cover of other native plants develop. Others, like European beach grass, colonize or invade a habitat by vegetative reproduction and exclude native species. Invasive plants displace native vegetation and consequently may diminish habitat quality for wildlife. Invasive weedy species at the Spit are found primarily in terrestrial habitats.

The history of European beach grass exemplifies the impact of an exotic species. During 1891-93, rooted plants were hand planted by the COE in an effort to reclaim the Spit (Beckham 2000). Between 1910 and 1934, additional plantings were also made along the southwestern Oregon coast (McLaughlin and Brown 1942). European beach grass now covers approximately 19% of the Spit. It is found in pure stands, intermixed with other herbaceous species, and as an understory associate

within forest and woodland communities. European beach grass reduces the native plant richness (the number of species) by as much as half (Barbour and Johnson 1988). It has the ability to out compete native foredune plant species (Barbour, Dejong, and Paulik 1985) by altering the habitat (Pickart, Brown, and Avery 1990). Blowing sand is trapped, burying other species and precluding resource competition. European beach grass can withstand sand burial of up to one meter per year. In fact, sand burial promotes leaf elongation and underground stem development (Ranwell et al. 1959). Runners in the root system are the primary means of beach grass reproduction. Despite high seed production of up to 20,000 seeds per plant per year, most beach grass seedlings die within a few weeks of germination (Huiskes 1979). Significant differences are seen when comparing areas dominated by European beach grass with those covered by native dune species, such as American dunegrass. Foredunes dominated by European beach grass are steep and give way to a series of dunes and swales parallel to the coast. In contrast, dunes dominated by American dunegrass rise gradually and lead to dunes and swales perpendicular to the coast (Barbour and Johnson 1988).

Some exotic plant species are designated as noxious weeds by the state's Noxious Weed Control Program. Noxious weeds are considered injurious to public health, agriculture, recreation, and wildlife on any public or private property by the (Oregon Department of Agriculture 2003). The seven noxious weeds present or suspected at Spit include: Scotch broom (*Cytisus scoparius*), French broom (*Genista monospessulana*), common gorse (*Ulex europaeas*), Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), Canadian thistle (*Cirsium arvense*), and bull thistle (*C. vulgare*). Methods to remove noxious weeds on the Spit may include herbicides, mechanical means, hand cutting and pulling, and the application of fire.

Timber and Special Forest Products

The Spit was designated as a non-commercial forest in the RMP. Consequently, no commercial timber management occurs on the Spit. No commercial harvest of Special Forest Products is permitted within the North Spit ACEC unless the harvest benefits the ACEC or clearly does not impact any special status plants or animals (USDI BLM 2003b).

Biological: Wildlife

The BLM is responsible for managing habitats of all existing native vegetation and wildlife species on BLM land. Therefore, wildlife management on the Spit focuses on the management of habitats for native wildlife species (Appendix 2), with special emphasis on the protection of rare habitats and sites important to special status species (Table 5; see below).

Wildlife Habitats

A mosaic of habitats supports an abundant and diverse array of wildlife on the Spit. The interspersion of coastal environments and upland late-seral forest combined with the relative isolation of the Spit creates a very rich and productive wildlife area heavily used by shorebirds, waterfowl, raptors, and many other species (Northwest Biological Consulting; Appendix 2). Although not all the habitats described below are under BLM administration, wildlife species cross jurisdictional boundaries as they travel among habitats to forage or nest. Additionally, species using the Coos Bay estuary may be directly affected by adjacent uplands management, including recreational use of the Spit.

The Coos Bay Estuary. Including saltmarshes, open water, mudflats, and sandflats, estuaries are among the most productive environments in the world due to the dynamic interaction of riverine and marine systems (Buchanan et al. 2001). As interfaces between salt and freshwater and between terrestrial and aquatic habitats, they receive large influxes of nutrients from watersheds, marshes, and tidal action. Consequently, the habitats found in this environment support a rich wildlife community. The estuary supports some of the highest numbers of dabbling ducks using Coos Bay (Varoujean 1985) and a March 1992 aerial survey placed Coos Bay with the third highest waterfowl count on the Oregon coast (Oregon Wetlands Joint Venture 1994).

Salt marshes are an important component of estuarine ecosystems, providing roosting areas for shorebirds and gulls, and haul-out areas for harbor seals. Raptors, including bald eagles,

falcons, and hawks, hunt over the salt marsh, and use logs as resting or hunting perches (USDI BLM 1994). Approximately 90% of the salt marshes associated with the Coos Bay estuary were eliminated following European settlement (Buchanan et al. 2001), thus accentuating the value of the remaining marshes.

The open water habitats of the Coos Bay estuary include both shallow and deep water habitats used by many species of wildlife (USDI FWS 1980). Waterfowl and seabirds forage on fish and invertebrates, their numbers and species diversity varying throughout the year but highest during the spring and fall migrations. Bald eagles and osprey feed on fish and waterfowl using the Bay, and peregrine falcons hunt waterfowl and shorebirds during their spring and fall migration.

Harbor seals and California sea lions forage within the bay throughout the year and use the dredge material islands as haul-out sites. Occasionally they may be found resting on the Spit's beaches. Although foraging seals do not appear to be affected by activities on the Spit, they are very sensitive to disturbance on their haul-out sites.

Snowy Plover with chick.

Table 5. Special status wildlife species documented (D), suspected (S) and potentially (P) on the North Spit by name, presence, status, and habitat. Note: BA = Bureau assessment, BAO = Bureau assessment Oregon only, BS = Bureau sensitive, BSO = Bureau sensitive Oregon only, FE = Federally Endangered, FT = Federally Threatened, and FC = Federal Candidate.

NAME	Presence	Status	Habitat
AMPHIBIANS			
California Slender Salamander *Batrachoseps attenuatus*	S	BAO	Late seral forests, large down logs
REPTILES			
Northwestern Pond Turtle *Clemmys marmorata*	D	BSO	Lentic water (ponds, slow sections of rivers) Nests in open areas adjacent to water, can overwinter in forest
BIRDS			
Arctic Peregrine Falcon *Falco peregrinus tundrius*	D	BS	Cliffs, may perch in trees
American Peregrine Falcon *Falco peregrinus anatum*	D	BS	Cliffs, may perch in trees
Cacklin Goose *Branta canadensis leucopareia*	D	BS	Coastal grasslands
Dusky Canada Goose *Branta canadensis occidentalis*	D	BSO	Open grasslands, wet meadows
Bald Eagle *Haliaeetus leucocephalus*	D	FT	Large trees for nesting/perching, near water
Bobolink *Dolichonyx oryzivorus*	D	BAO	Grasslands, open areas
Brown Pelican *Pelecanus occidentalis*	D	FE	Forages off shore, uses jetties and beaches to roost
Marbled Murrelet *Brachyramphus marmoratus*	D	FT	Late-seral forest, remnant large trees
Oregon Vesper Sparrow *Pooecetes gramineus affinis*	D	BSO	Grassland
Purple Martin *Progne subis*	D	BSO	Large remnant trees and snags, near water, edges
Streaked Horned Lark *Eremophila alpestris strigata*	D	FC	Coastal dunes; open ground with short grass or scattered bushes
Trumpeter Swan *Cygnus buccinator*	P	BAO	Marsh, wet meadows, bogs, ponds
Upland Sandpiper *Bartramia longicauda*	D	BSO	Coast; open grasslands
Western Snowy Plover *Charadrius alexandrinus nivosus*	D	FT	Beaches and inland areas of open sand
White-tailed Kite *Elanus leucurus*	D	BAO	Pastures, open grasslands; typically low elevations
MAMMALS			
Fisher *Martes pennanti*	P	FC	Closed or multi-canopy forest, snags, dead parts of live trees, large live branches
Townsend's Big-eared Bat *Corynorhinus townsendii*	P	BSO	Breed in caves and mines, bridges for night roosts
INVERTEBRATES			
Salamander Slug *Gliabates oregonius*	P	BSO	Moist coniferous forest with leaf litter
Spotted Tail-dropper *Prophysaon vanattae pardalis*	P	BSO	Moist, mature forests
Newcombs Littorine Snail *Algamorda newcombiana*	*P*	BSO	Saltwater at edge of bays and estuaries

Mudflats and sandflats are found on the Spit's bay side. These areas are tidally-inundated, and support an abundance of marine invertebrate species, including many of the most productive shellfish beds on Oregon's south coast (Northwest Biological Consulting 1980). These sandflats and mudflats also provide foraging habitat for a variety of birds and mammals. Resident and migrant shorebirds congregate there, especially during low tides, to forage on the invertebrates in the shallow waters and exposed mudflats (Varoujean 1985). Coos Bay is one of the six most important areas for shorebirds between San Francisco Bay and British Columbia (Oregon Wetlands Joint Venture 1993) and the Spit's mudflats consistently support the greatest number of wading birds in the Coos Bay estuary (Varoujean 1985). The concentration of shorebirds and wading birds in these habitats provide prey for bald eagles, northern harriers, and peregrine falcons, and ravens, gulls, raccoons, mink and skunks forage in the shallow waters and exposed flats for shellfish, invertebrates and carrion.

Jetties. The Jetty and the training jetty on the southern tip of the Spit provide roosting habitat for gulls and cormorants, and shorebirds (e.g., turnstones and surfbirds) forage on invertebrates inhabiting the rocks (Map 3). Flocks of California brown pelicans, a federally-listed endangered species, use the jetties for roosting and feeding (Northwest Biological Consulting 1980).

Beaches and Sand Dunes. Aquatic and terrestrial invertebrates, fish, and carrion found on the beach provide a rich food source which attracts a variety of wildlife species. Shorebirds are among the most abundant groups using the beach habitats, and are an important food source for raptors, particularly peregrine falcons during their fall and spring migration along the Oregon coast (Wilson-Jacobs 1983). Shorebirds forage primarily on the beaches and mudflats and eat insects, shellfish, and other marine invertebrates. The threatened Western snowy plover also nests on the upper beach, laying its eggs in small hollows (scrapes) above the high tide line and behind the foredune. After hatching, the flightless chicks forage in the vicinity of the nest sites until they fledge. In combination with the inland sandy sites east of the foredune, the Spit provides nesting habitat for the largest breeding population of coastal snowy plovers in Oregon (USDI FWS 1993). Larger birds such as gulls, terns, ravens, and crows feed opportunistically along the shoreline on a variety of shellfish, carrion, insects, eggs, and chicks, and often rest in large flocks at the ocean's edge. In addition to peregrine falcons, several other raptors occur on the Spit, including bald eagle, osprey, northern harrier, and turkey vulture. Most raptor species forage opportunistically on both live animals and carrion found on the beach. Terrestrial mammals that forage along the beach for shellfish, carrion, and invertebrates include raccoons, mink, skunks, gray foxes, opossums, and various small rodents. Although less frequently than other animals, black bears, bobcats, Roosevelt elk, and black-tailed deer feed on the beach too, and drift logs washed up onto the beach are used as foraging and resting perches for falcons and as windbreaks by roosting shorebirds (Buchanan et al. 2001).

Inland sand dunes with little or no vegetation are used extensively by certain species of terrestrial insects, primarily beetles, centipedes, and millipedes. Flying insects found just off the surface of the sand are common and fed upon heavily by barn swallows. The small amount of hiding cover in the open sand renders prey species vulnerable, thus making these areas valuable foraging habitat for many predators, including raptors (e.g., northern harriers and kestrels), gray foxes, coyotes, and other species that eat insects, rodents and reptiles. Crows, ravens, turkey vultures, and other birds use the dunes for resting and foraging, and burrowing owls have been documented foraging and roosting in the open sand during the winter (USDI BLM 1994).

In contrast to the homogeneity of the open sand dunes, stabilized sand communities are quite variable, ranging from sparsely vegetated areas with scattered beach grass hummocks, to habitats with more developed plant communities dominated by dense beach grass containing scattered clumps of shrubs and conifers (see Botanical Resources). The amount of cover and available prey or plant foods determine which species occur in these habitats. Black-tailed deer and rabbits occur throughout these communities, and passerine bird species feeding on plant seeds and insects take cover in the dense shrubbery. Mammalian predators such as skunks, foxes, coyotes, raccoons, mink, and bobcats prey on small mammals, birds, eggs, reptiles, and insects in and under logs deposited by winter storms.

Sparsely-vegetated hummock areas are used for foraging throughout the year by northern harriers, red-tailed hawks and bald eagles (USDI BLM 1994) and shrubs and logs are used as perch sites. Raptors use all of the stabilized sand habitats, but the sparsely-vegetated areas are believed to provide better hunting because small mammals and reptiles are more vulnerable to attack by aerial predators.

Freshwater Wetlands and Ponds. The freshwater wetlands of the deflation plain support a diverse wildlife community and are some of the most productive habitats on the Spit (Wilson-Jacobs 1983). Ranging from areas dominated by grasses and sedges to tall shrub thickets, the wetlands are used by many wildlife species to fulfill all or a portion of their habitat requirements. Wetlands provide critical breeding and rearing habitat for amphibians, including red-legged frogs and numerous invertebrates provide prey for various species of wildlife.

The structurally diverse low shrub and thicket habitats contain the highest number of species in the wetland environment (USDA FS 1972). Muskrats, voles, rabbits, and other small mammals find food and shelter in the diverse vegetation and vertical structure of these areas. Predatory mammals (including shrews, mink, skunks, bobcats, foxes, and coyotes) forage on invertebrates, amphibians, birds, and small mammals, and during the spring and summer, bats forage extensively on flying insects.

A combination of structurally complex habitat features and an abundant variety of available food sources support a variety of bird species. Waterfowl, shorebirds, passerines and raptors nest or forage in the freshwater wetlands, and migratory birds rest and feed there while traveling. Approximately one-third of all North American bird species depend upon wetlands during some part of their life, and approximately three-quarters of these species are non-game birds whose ecological significance is poorly understood (USDI FWS 1984).

Ponds provide areas of open water adjacent to the more heavily vegetated freshwater shrublands and thickets, and support a community of aquatic invertebrates, fish and amphibians. Many of the species inhabiting the ponds are important food sources for other animals. Although the inland open water sites of the Spit are not considered high quality nesting habitat for most species of waterfowl, they are used for foraging by a variety of migrating waterfowl during the spring, fall, and winter (Thornburgh 1991).

Forests. The shorepine and Sitka spruce forests found on the eastern edge of the deflation plain constitute the habitat with the greatest structural complexity on the Spit; on the adjacent ODNRA, this type of habitat supported the greatest diversity of wildlife species (USDA FS 1972). The trees, snags and down logs not found in other plant communities on the Spit provide important breeding, foraging, and cover habitat for a variety of wildlife species. Upland amphibians (e.g., the western redback salamander and ensatina) seek cover in down logs, and many bird species (including raptors, woodpeckers, and passerines) nest and forage in these habitats. In past years, the stand of late-seral Sitka spruce on BLM land contained the largest mixed heronry of great blue herons and great egrets on Coos Bay (Northwest Biological Consulting 1980). That heronry was abandoned in 2000 for unknown reasons. Two new rookeries were subsequently discovered: one on the ODNRA in 2002 and one on BLM in 2004. It is possible that these heronries may contain birds from the abandoned site. Coos Bay is the most northerly nesting site for great egrets.

Wildlife Species of Special Management Concern

The interface of the marine, freshwater, and terrestrial environments described above provides habitat for many special status wildlife species (SSS Table 5). Several are dependent upon snags, large trees, and coarse woody debris: habitat elements characteristic of older forests that have become limited in availability and distribution throughout Western Oregon. Others are associated with wetlands, or habitats uniquely identified with areas of open sand and coastal grasslands. In addition to SSS, special management provisions are in place for the conservation of other species collectively termed Buffer Species. Specifically, BLM is directed to establish protective buffers around the nests of great blue herons, great egrets, and certain raptor species such as ospreys, red-tailed hawks, sharp-shinned hawks, and Cooper's hawks (USDI BLM 1995a). Depending upon

the species, up to 15 acres may be delineated near nest sites to minimize human disturbance, and nest platforms, boxes and other structures may be constructed where natural availability is low. Management for great blue herons and great egrets includes monitoring known rookeries and surveying appropriate habitat for new ones.

Little is known about the distribution and abundance of most of these species on the District; consequently much of the information related to wildlife on the Spit is based on literature pertaining to wildlife-habitat associations and incidental observations. As discussed above, in the absence of site-specific information, recreational and other activities are managed to minimize effects to wildlife habitats thus minimizing potential impacts to species. When assessing the effects of a proposed project, species are assumed present given the availability of suitable habitat. Special status species that are designated as "potentially" present on the Spit are those for which suitable habitat is present but no individuals have been documented (Table 5). One such species is the Pacific fisher, a Federal Candidate for listing under the ESA. Consequently, there is heightened concern for their population status and conservation needs.

In Oregon, fishers appear to have been extirpated from their historical range with the exception of two small disjunct populations in the Siskiyou Mountains and in the southern Cascade Range (Aubry and Lewis 2003). Although possible, the presence of fisher on the Spit is unlikely given the rarity of the species and the lack of large, well-connected tracts of mature forest with continuous canopies. Most forested areas on the Spit are interspersed with areas of open sand and research indicates that fishers are reluctant to cross openings greater than 25 meters (Powell and Zielinski 1994). Furthermore, fishers on the Spit would be separated from Coast Range populations by Highway 101, human developments, and fragmentation of mature forest. It is uncertain the extent to which fishers can recover from extirpation given that their populations are isolated and their apparent inability to colonize unoccupied areas (Aubry and Lewis 2003).

The Coos Bay District wildlife sightings database contains several fisher observations in Coos County; none of these sightings were in the vicinity of the Spit. Remote camera surveys for fisher in other parts of the District between 1994 and 1997 failed to detect fishers. Efforts are underway to further refine the species' distribution in Oregon.

Several other species of interest are discussed below.

Marbled Murrelet and Bald Eagle. The occurrence of large diameter trees with large branches in close proximity to the ocean renders the Spit suitable for marbled murrelets and bald eagles. Limited surveys for murrelets were initiated in 2005, and surveys for bald eagles conducted in the area by the Oregon Cooperative Wildlife Research Unit have not documented nesting eagles on BLM land. The area is suitable for roosting and hunting, and eagles are occasionally seen foraging on Spit beaches.

Purple Martin. Purple martins are the largest members of the swallow family in North America. They forage above many types of open habitats, particularly near water and nest in snags with cavities. They were once much more common in Oregon prior to the removal of snags by logging and competitive exclusion from the remaining snags by introduced European starlings (Sharp 1996). Oregon nest sites include snags in forest clearcuts and burns and snags in coastal dunes (Rodenkirk 2003). Suitable nest trees occur on the Spit, many located near ponds and wetlands in close proximity to the bay and ocean beaches. In addition to natural structures, purple martins readily nest in bird houses. Currently, there are 24 nest boxes on pilings in the bay near the boat launch facility (Map 3). Twenty-one of these boxes were used by purple martins in 2004. The boxes are maintained and monitored yearly.

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 Spit while hunting or migrating.

Northwestern Pond Turtle. One of two freshwater turtles of the Pacific Northwest, the northwestern pond turtle is in decline in Oregon because mortality exceeds reproduction for a number of reasons. Threats include habitat loss and degradation, which in conjunction with predation and disease, has led to small disjunct populations with low recruitment rates (Marshall et al. 1996). Western pond turtles may inhabit a variety of aquatic habitats providing that suitable sites are available for basking (e.g., logs, rocks, and islands) and there is sufficient aquatic and emergent vegetation. Mud substrates and leaf litter are important components for breeding and hibernating, as are shallow bank margins for traveling between the water and the adjacent upland (O'Neil et al. 2001). A western pond turtle was documented on the adjacent ODNRA. Wetlands on BLM land likely contain western pond turtles.

Western Snowy Plover. The coastal population of the Western snowy plover uses sandy beaches along the Pacific Coast from southern Washington to Baja California for breeding and wintering. It receives the highest priority for management on the Spit due to its low population numbers and the significance of the Spit as nesting habitat. In 1993, the coastal population of the Western snowy plover was listed as a Federally threatened species due to declining population numbers and loss of nesting habitat (USDI FWS 1993).

In February 1999, the ocean freighter New Carissa grounded on the Spit and began leaking oil. To ensure public safety, the Spit was closed through an emergency order to public access. At the end of 1999, two portions of the New Carissa wreck remained mired, releasing oil and depositing tar balls (Map 3). To address concerns related to impacts on snowy plovers, BLM, FWS, ODFW, and COE collaborated on a Biological Assessment to allow public use of the Spit while protecting plovers and promoting their recovery (USDI BLM 2000). The following ongoing actions are a result of the subsequent Biological Opinion for management of federal lands on the North Spit of Coos Bay (USDI FWS 2000).

Public Access and Snowy Plovers. From the FAA Tower south to the BLM boundary, the upper, dry sand portion of the beach is closed to all public access during the Western snowy plover nesting season (March 15- September 15 annually; Map 3). The area is clearly marked with ropes and signs. Restrictions on motorized use of the adjacent lower, wet sand area are authorized by OPRD. Inland snowy plover nesting areas on BLM land are also signed closed to all use during the nesting season, and are open to nonmotorized use the remainder of the year.

Habitat Restoration Areas. Approximately 170 acres of the inland Spit area are managed for snowy plovers; 100 acres by COE and 70 acres by BLM. The Habitat Restoration Areas (HRAs) were largely unsuitable for plovers prior to restoration due primarily to the presence of European beach grass. BLM annually removes beach grass to create suitable open, sandy habitat for snowy plovers. No new HRAs are currently planned.

Predator Control. In 2000, the BLM led a multi-agency effort to produce an EA on predator control throughout the range of the coastal population of snowy plovers (USDA FS and USDI BLM 2002). The selected action consists of an integrated predator damage management program to protect the plover population from further decline. Actions were initiated in 2003 and include an expanded assessment to determine and reduce the predator species responsible for nest, chick, and adult predation. The Animal Plant and Health Inspection Service (APHIS) conducts these activities. Targeted species include American crows, common ravens, and small mammalian predators. Most traps are located in areas closed to the public (e.g., the HRAs and the upper beach), clearly signed, and unlikely to cause injury to domestic animals and humans.

Population Monitoring. The Oregon Natural Heritage Information Center monitors plover nesting. Intensive surveys are conducted throughout the six month nesting season to determine population size and reproductive success. All chicks are banded for identification and an attempt is made each year to locate them to assess survivorship and track their productivity. From this information, it was determined that the Spit contains the most productive snowy plover population segment on the Oregon Coast. Since 1990, the Spit has produced over 40% of all plovers

fledged each year in Oregon (Lauten et al. 2003). Through intensive monitoring, the success of management actions can be assessed and progress toward plover recovery determined.

Designated Snowy Plover Critical Habitat. On December 7, 1999 the FWS published a Final Rule designating critical habitat for the Pacific coast population of the Western snowy plover (USDI FWS 1999). Critical habitat on the Spit includes the ocean beach from Horsfall to the Jetty and all of the federal lands at the south end of the Spit.

Other Planning Efforts for the Snowy Plover. The FWS is preparing a final recovery plan for the Pacific Coast population of the western snowy plover in Washington, Oregon, and California. OPRD has a leading role in managing plover habitat in Oregon. To guide beach management, it is preparing management and conservation plans (ORNIC and OPRD 2004; OPRD 2004). BLM will implement the final plans on BLM lands.

Biological: Fisheries

No fish surveys have been conducted on BLM lands on the Spit. Potential fish-bearing waters on BLM lands occur above the mean high tide. They include natural ponds and a created mitigation pond and wetland to the north of the effluent lagoon (see Water Resources). These areas are likely to contain introduced largemouth bass, other sunfish species, such as bluegill, and threespine stickleback. There are no SSS fish species on BLM land on the Spit due to lack of suitable habitat.

Cultural and Historical Resources

Social and Historical Setting

Before the introduction of European beach grass, the North Spit of the Coos River was highly unstable and subject to major changes during the heavy winds of summer and winter (Beckham 2000). At least two river channels cut through the Spit, turning a portion of the area into an island during much of the year (Pullen 2004). Despite these changes, historical records indicate the area was heavily utilized prehistorically.

The North Spit of Coos Bay was an ideal place for a wide variety of food procurement for native peoples. The Coos Indians built fish weirs along the shore to catch salmon, gathered clams and crabs at low tide, hunted for deer, elk, and waterfowl in the Spit's marshes, and gathered various types of berries that grew abundantly along the edges of the marshes (Peterson and Powers 1977; Zenk 1990).

In the 1940s, John Harrington was able to obtain information about villages on the Spit while interviewing elders of the Coos Indian tribe. Prior to the changes introduced by American exploration and settlement, there were at least half a dozen villages along the inner shoreline of the Spit, although their locations are not precisely known (Zenk 1990). There are also undoubtedly native burial sites or cemeteries on the Spit, as the Coos people usually buried their dead within or adjacent to their villages (Zenk 1990).

Between 1820 and 1850, British and American trappers camped up and down the coast. Documented parties camped on the Spit in 1826 and again in 1828 (Beckham 1986, 2000; Peterson and Powers 1977). Between this time and the beginning of Euro-American settlement in 1851, the Native population of the area was decimated by the spread of infectious diseases (Boyd 1999). In 1855, violence between settlers and Native Americans flared to the south along the Rogue River, resulting in a response by the US Army. Along with other southwest Oregon coastal groups, the Coos people were forcibly removed from their homes and relocated, first to Fort Umpqua near Reedsport, and then to a new reservation at Yachats in 1860 (Zenk 1990). In 1875, some of the survivors of this relocation were moved to the Coast reservation at Siletz, while others, refusing to be moved again, returned to their ancestral homelands around Coos Bay (Zenk 1990).

Located adjacent to the largest estuary between the Columbia River and San Francisco, the Spit served as an important transportation link between Coos Bay and settlements on the Lower Umpqua during the late 1800s. Wagons and stagecoaches traveled down the beach during low tide from Winchester Bay to a point across from Empire, where, weather permitting, scows carried the passengers across the bay (Beckham 1986, 2000). In the 1880s, Fred Jarvis took over the Coos-Umpqua stage route and established what is known as the Jarvis Landing Beach Road on the Spit.

As the industrial capacity of the fledgling coastal towns increased, so did the need to improve the harbor and the bar at the mouth of the bay. Roads were almost non-existent, and the only markets for fish, lumber, farm produce, and coal lay far to the south in San Francisco. However, traversing the Coos Bay bar was often a dangerous enterprise, and when the weather closed in, it could be months before safe passage was assured. This was an untenable situation for a community focused on water transportation for its goods. In 1880, the COE was awarded a contract to construct a jetty near Barview. By the fall of 1881, the jetty cribs extended 1,384 feet into the bay (Beckham 2000). Throughout the rest of the 1880s, the COE monitored the jetty and realized that further work was needed before the harbor mouth could be stabilized.

In 1890, at the southern tip of the North Spit the COE began construction of the North Jetty, a rock sea wall nearly two miles long (Beckham 2000). Government Works, a village of laborers and engineers, was built on pilings along the inner shoreline near the North Jetty construction site. An aggressive program of sand stabilization was begun by the COE along with jetty construction. Nearly 1,000 acres of European beach grass eventually was hand-planted to stabilize the dunes (Beckham 2000).

In 1892, a US life-saving station was built on the Spit to rescue sailors stranded by adverse weather conditions (Map 3). It was located on the bay side about two miles north of the harbor entrance. Between 12 and 16 families lived at the station during its peak use. The facility included a dock, workshops, and two crew buildings (Beckham 2000).

The ocean took a heavy toll on the Jetty. During the 1920s, Congress funded the construction of a South Jetty and the reconstruction of the North Jetty (Beckham 2000). Major reconstruction work was again completed on the North Jetty during 1939 and 1940, when a railroad was used to transport materials (Beckham 2000). The railroad route came around Jordan Cove and down the bay side, cut across the Spit at the dike road (along the south edge of the effluent pond), turned south through an unstabilized dune field and followed the foredune south around the southern tip of the Spit and ended at Government Works.

Concrete bunkers were erected along the Spit during World War II, in hopes of slowing the anticipated Japanese invasion of the West Coast. There were no recorded conflicts during WWII in the Coos Bay area.

Prehistoric Sites

Although considerable documentation supports the presence of numerous Native American sites on the Spit, only two sites are officially on record with the Oregon State Historic Preservation Office. Site 35CS26 was located between Jordan Cove and the North Slough. Site 35CS27 was reportedly along the inner shoreline on the southern end of the spit, but was never specifically located. A recent intensive survey of this shoreline failed to reveal any evidence of this site (Pullen 2004).

The Coos Indians unquestionably used the Spit for various activities. However, this area is very unstable and any remaining evidence could have been destroyed either by erosion or shifts in the river channel, or could have been covered by sand movement. Continued dumping of dredge spoils along the shoreline has further clouded the identification of prehistoric middens, as both types of deposits are largely composed of shells. Although there is little evidence of extant prehistoric archaeological deposits on BLM-administered land, the instability of the sand dunes on the Spit may uncover cultural sites in the future.

Historic Sites

Preservation and identification of historic sites is constrained by the potential for dynamic changes to the Spit landforms. Campsites used by trapping expeditions during the 1820s probably left little evidence, long since removed. However, the four month-long camp (Camp Castaway) created by the US Army survivors of the beached vessel *Captain Lincoln* in 1852 (Beckham 2000; Dodge 1898; Peterson and Powers 1977) may have left more substantial evidence.

The sand road across the Spit used by the Coos-Umpqua stage route isn't likely to have any remnants as the effluent ponds and South Dike Road have substantially altered the land surface on that part of the Spit. Initial Jetty construction transported jetty materials (piling and rock) via barge from Empire to Government Works. Subsequent reconstruction efforts involved creation of a railroad. Evidence of this railroad line has been found both under the present day Foredune Road and in open dunes near the intersection of the South Dike and Foredune Roads.

Other remnants of construction and reconstruction of the Jetty are likely to be concentrated in the area occupied by Government Works (Beckham 2000). Today, this area has largely been reclaimed by the Coos River, and is known as Half Moon Bay (Map 3).

The life-saving station retains historic interest, although most structures have been removed. Remnants of the dock remain, as do building foundations, walkways and other landscape improvements. Because there were numerous fatal shipwrecks during the station's operation there exists a possibility that a cemetery exists on the "tree island" just west of the station. This is a likely location for the cemetery because prior to sand stabilization by introduced European beach grass, this area was the only portion of the Spit with sufficient elevation to withstand winter storm wave action (Beckham 2000). Today, this "tree island" is densely vegetated and cultural site locations are unknown.

Nearby, three World War II vintage Quonset huts remain open to the public. These structures are over 50 years old, and therefore may be considered for inclusion onto the National Register of Historic Places.

Recreational Resources

The diversity of environments and landforms (dunes, wetlands, seasonal ponds, extensive ocean and bay beaches, forests, and meadows) that make the Spit valuable for wildlife also place these lands in demand for outdoor recreation. The value to these public lands for outdoor recreation is further amplified by its close proximity to one of the largest population centers on the Oregon Coast, Coos Bay/North Bend. Most of the private and Port of Coos Bay property on the Spit is zoned for development. It is reasonably foreseeable that these private and Port of Coos Bay parcels will eventually become closed to public access and recreation as further development occurs on the bay front. The public lands managed by the BLM on the Spit are destined to become the largest and most accessible tract of public green space available for the Coos Bay area communities.

In 1992, the BLM developed a boat launch facility and courtesy dock to provide access to the Coos Bay estuary on the Spit. This recreation complex includes a paved parking lot, flush restrooms, interpretive wayside exhibits, and facilities for a volunteer host. The boat launch facility was developed with funding from the Oregon State Marine Board (OSMB), Oregon Department of Fish and Wildlife, Coos County, and the Northwest Steelheaders.

In recognition of the site's value for outdoor recreation, the Spit was designated as a Special Recreation Management Area (SRMA) in the Coos Bay District Resource Management Plan in May 1995. Through the SRMA designation, the BLM made a long-term commitment to manage the Spit to sustain outdoor recreation and the experience opportunities these activities depend upon in a manner that is compatible with the conservation of the areas' wildlife and cultural resources. Recreation management projects completed by the BLM on the Spit include:

- Designation of routes and trails as open, limited, and closed for off-highway vehicle use through the 1995 Coos Bay District RMP and Coos Bay Shorelands Plan of 1995.
- Installation of visitor management signs within the Spit interior to manage OHV recreation and to protect wetland and snowy plover nesting habitat.
- Providing BLM law enforcement and Coos County contract law enforcement support as well as funding a visitor assistance/biological technician position to implement visitor services and resource protection patrols throughout the year.
- Inventory and preliminary planning for a 12-14 mile hiking and equestrian trail system.

Visitor Use

In the BLM's national recreation tracking data base, the Recreation Management Information System (RMIS), the North Spit reported 27,100 visits and 9,774 visitor days for the period of October 1, 2003 to September 31, 2004. These estimates were developed using electronic, seismic and laser counters at key locations. The counter numbers are recorded weekly in summer and monthly in winter. While counters may not be 100% accurate, they are a standard, valid method to collect visitor use data. There are counters at the boat ramp, one nearer to the jetty, and one on the South Dike Road. Visitor numbers from the counters show that in FY 2003, about 7,250 people used the restrooms at the boat launch, 13,100 vehicles entered the boat ramp, and about 420 boats were launched. Data from the counter near the Jetty shows the average number of vehicles per month at 200, or about 2, 460 vehicles per year. Using a visitor/vehicle estimate of 2.5 (based on a visitor survey in the summer of 2000), approximately 6,150 people travel the sand road out to the Jetty each year by 4-wheel drive or ATV.

Recreation Demand and Trend. Every five years, state park and recreation departments around the United States are required to conduct a statewide assessment of outdoor recreation demand, needs and trends to qualify for Federal Land and Water Conservation Fund Act grants. The Oregon Statewide Comprehensive Outdoor Recreation Plan for 2003-2007 (SCORP) offers the best view into outdoor recreation demand within the state on a region by region basis. BLM Manual 8332.08 – Recreation Area Management Plans encourages the use of SCORP data to obtain statewide and regional trends. The SCORP is the product of extensive phone and mail-in surveys of Oregon households as well as out-of-state residents from Washington, Idaho and California. Based on this statistically valid study, a number of observations can be made about the recreation potential on the North Spit:

- The North Spit offers good opportunities for six of the top ten highest demand recreation activities in the state. In ranking order these are: 1. Running/Walking for Exercise; 2. Walking for Pleasure; 3. Bird Watching; 4. Nature/Wildlife Observation; 5. Sightseeing; and 10. Ocean Beach Activities.
- Statewide, ocean beach-related activities rose significantly from 4.45 million user occasions in 1987 to 7.6 million user occasions in 2001. For the North and Central coastal regions, "beach activities" were the #1 growth activity from 1987 to 2002 (an increase of 2.7 million user occasions). On the South Coast, "beach activities" were the #2 growth activity during this same time period (an increase of 0.4 million user occasions).
- The #1 growth activity in the South Coast region was ATV recreation – up 144% (185,181 annual user occasions) from the 1987 survey estimates. This growth reflects the sharp increase in ATV sales over the last decade and the corresponding growth in off-highway vehicle recreation in the Oregon Dunes National Recreation Area – the premier dune riding location in the Pacific Northwest.
- The SCORP also identified the highest recreation priorities for the state on a region by region basis. Within the South Coast Region, residents responded that one of their top three recreation management priorities was to "Conserve Coastal Areas and Preserve Coastal Access for Recreation."

Ocean shore related recreational use was further studied by the Oregon Department of Parks and Recreation in 2001 as part of the Ocean Shore Management Plan. The Ocean Shore Recreational Use Study conducted by Oregon State University examined activities and management preferences of actual beach users during the summer of 2000. While the BLM does not directly manage the

thin strip of land that comprises the Ocean Shore Management Area, it does manage the dry sand and foredune adjacent to this area. Therefore, the data provides a good perspective into actual user behavior, values and activities within the ocean shore areas managed by both the BLM and OPRD.

- Within the South Coast Region, from the Umpqua River to the California border, the top 10 recreational activities among those surveyed were: Walking 93.2%, Scenic Enjoyment 81.9%, Picnicking 56.7%, Exercise 51.2%, Beachcombing 38%, Recreation Activities Involving Dogs 35.2% (highest rate on the coast), Driftwood Collection 26.4%, Birding 24.3 %, Kite Use 22.4% and Camping 16.8%.
- On a much more localized level, within Segment 5 of the South Coast Region- the 15 mile section from Ten Mile Creek to Coos Bay, the top activities were: Vehicle Use 54% (highest rate in the study), Relaxing 21%, Walking 16%, and Recreation Activities Involving Dogs 4%. The high rate of OHV use in this study is partially due to the fact that nearly 2/3 of this survey unit is within the popular riding areas offered in the ODNRA.

The Spit directly supports or provides immediate access to a wide variety of outdoor recreation activities, including most of the high demand activities identified in the SCORP and Ocean Shore studies. These activities include: hiking, walking/running, horseback riding, motorized boating, primitive dispersed camping, motor-vehicle touring/sightseeing, 4-wheel drive and ATV trail riding, picnicking and social gatherings, waterfowl and deer hunting, backpacking, berry and mushroom picking, outdoor photography, dog exercise and training, recreational shooting, ocean and bay shore fishing, crabbing, clamming, birding and wildlife viewing, surfing, sea kayaking, canoeing, and wind surfing.

The Spit has been an important local recreation resource for generations, supporting traditional uses such as beach combing, fishing, crabbing, clamming and surfing. Motorized use is a key element in supporting these activities on the spit.

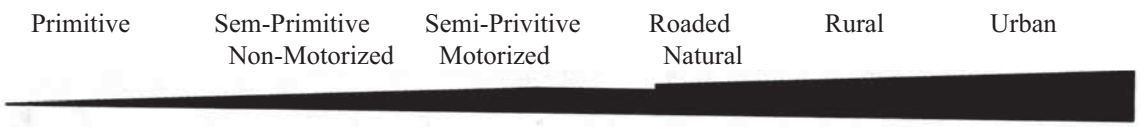
Since the 1995 Shorelands Plan was written, a number of new outdoor recreation activities have made an appearance in the region and are likely to find a place on the Spit. These include kite sailing, paint ball, geo-caching, sand boarding, and long distance hiking on the Oregon Coast Trail, to name a few. The public lands are generally open to any and all new recreation activities, unless and until adverse resource impacts occur or serious visitor conflicts develop.

Recreation Opportunity Spectrum

The concept of managing recreation opportunities and visitor experiences is a dominant theme throughout the objectives presented in the Coos Bay RMP. However, the actual details of which opportunities would be provided for and where they would occur are not well defined. The classification and management of recreation opportunities is typically accomplished through a planning process known as the Recreation Opportunity Spectrum or ROS.

The ROS provides a conceptual framework for the inventory, planning and management of the

Recreational Opportunity Spectrum



recreation resource setting and recognizes that people differ in their needs and in the outdoor experiences they desire. The ROS is used to classify lands into a range of recreation opportunity classes based on the physical, social, and managerial setting inherent in the landscape. Six opportunity classes are identified in this planning framework and range from the Primitive at one end of the spectrum to Urban at the other.

Applying this recreation planning framework to the current physical, social and managerial setting that exists on the Spit provides for two distinct recreation opportunity settings – Rural and Semi-Primitive Motorized. A strong theme heard from the public during the scoping process for this plan update was for the Spit to remain essentially unchanged from its current condition. The ROS is an excellent tool to ensure that landscapes and recreation settings do not undergo incremental changes that degrade the quality of the recreation opportunity that the place provides.

Rural Setting. The immediate area surrounding the developed North Sit Boat Ramp and the public lands within 100 feet of the paved section of the Trans Pacific Parkway fit well within the setting descriptions and management parameters common to a Rural ROS setting. The characteristics that comprise this setting include:

- The natural environment is culturally modified. The setting backdrop may range from locations where cultural alterations are not obvious to the casual observer to places where alterations are a dominant aspect of the landscape.
- For the visitor, self reliance on outdoor skills is of little importance in this setting and there is an expectation that recreation activities will involve very little challenge or risk.
- The opportunity to observe and affiliate with other users may be important to visitors in this setting. Interactions between users and evidence of other visitors may be high at times.
- The convenience of facilities to support outdoor recreation is expected by visitors.
- There are obvious and prevalent on-site controls (i.e., gated roads, barriers, fences, and regulatory signs).
- Access and travel facilities are designed to accommodate conventional motorized vehicle access.

Management objectives in this setting are intended to provide an environment that is natural appearing while providing easy access to recreation opportunities. Objectives for recreation management within a Rural ROS setting include the following:

- Access to recreation opportunities for people with disabilities is “easy” and meets Americans with Disabilities Act (ADAAG) standards.
- Some facilities are designed primarily for user comfort and convenience. Synthetic materials may be used in fabricating facilities, but more harmonious materials may also be incorporated. Facility designs can be more complex and refined than in more primitive settings.
- Moderate to heavy site modifications are allowed in order to provide for outdoor recreation facilities.
- Interpretation may be accomplished through the use of complex wayside exhibits and some personalized services.

Semi-Primitive Motorized Setting. The majority of the North Spit, except for the developed recreation complex at the boat ramp and the areas immediately adjacent to the Trans Pacific Lane, would best be characterized by a physical and social setting comparable to a Semi-Primitive Motorized ROS classification. The characteristics common to this ROS setting includes the following:

- The overall setting is characterized by a predominantly natural appearing environment.
- Visitors have a moderate probability of experiencing solitude, closeness to nature, and tranquility.
- The concentration of users is low, but there is often evidence of other visitors on trails.
- Motorized access may require the use of 4-wheel drive vehicles and may impose a high degree of self-reliance, challenge and risk
- Visitors encounter a minimum of subtle on-site controls and restrictions.

In addition to these general characteristics, the North Spit possesses several other factors that further support this more primitive recreation setting classification. These are:

- The necessity to use 4-wheel drive to access the sandy interior roads, ocean shore and bay beaches combined with the dynamic nature of traveling in an environment that frequently changes due to the effects of tide, storms and wind.
- The dense coastal vegetation and rolling topography provide effective screening between the interior trails and the motorized network. In addition, the vegetation and pounding surf tends to absorb many of the sounds generated by human activity on the Spit. These physical factors make for a recreation setting that provides an experience of isolation within a relatively small area.
- The inherent challenges common to a semi-primitive setting impose limitations that help to keep visitor use numbers relatively low. Due to this factor, this management setting is more compatible with the BLM's wildlife management goals for the North Spit by protecting sensitive species habitat from over use and excessive impact.

In keeping with this ROS classification, recreation development and management would be constrained within the following parameters:

- Recreation facilities, when developed, are primarily for the purpose of resource protection.
- Facilities are rustic and rudimentary and make use of undimensioned native materials rather than synthetic materials.
- Access for people with disabilities is "difficult" and challenging.
- Interpretation, when it occurs, is accomplished through very limited on-site facilities, maps, brochures and guidebooks.

The Oregon Statewide Trail Plan showed that users who engaged in trail-based outdoor recreation activities, both motorized and non-motorized, strongly preferred to participate in these activities in settings at the more primitive end of the opportunity spectrum (e.g., semi-primitive motorized to primitive). This quality was also brought out in the public scoping that was done for this plan update by the large number of comments stating that people wanted the North Spit to "stay the same."

Adjacent Recreation Resources

The BLM public lands on the Spit are surrounded by regionally and nationally significant outdoor recreation resources. The most notable of these is the Oregon Dunes National Recreation Area managed by the US Forest Service. This vast recreation area extends for 40 miles along the Oregon Coast and supports a wide variety of human-powered as well as off-highway vehicle recreation opportunities. The segment of the ODNRA, north of the Spit, supports extensive opportunities for OHV recreation and attracts over 400,000 visitors per year. In the area immediately between the Horsefall Beach OHV staging area and BLM public lands, the Forest Service offers a non-motorized setting favoring hiking and equestrian opportunities.

In 2001, Weyerhaeuser created a wetland adjacent to the Trans Pacific Lane as a mitigation measure under the Henderson Marsh Mitigation Plan (see Water Resources). A hiking trail and parking lot was created at the site along with interpretive signs, a picnic area and an overlook (Map 3).

On the ocean side of the Spit, the Oregon Parks and Recreation Department administers the Ocean Shore Management Unit and the Oregon Coast Trail. One of the more popular sightseeing destinations on the North Spit, the wreckage of the New Carissa, is located within the Ocean Shore Management Unit and can be seen from a viewpoint along the Foredune Road.

Motorized Access

The public lands on the North Spit were never legally open to cross country off-highway vehicle travel. Under the management of the US Army Corps of Engineers, these lands were officially closed, except for access via established roadways, by the Code of Federal Regulations 36 CFR.

Bay side camping.

After the BLM acquired these lands in 1984, the agency prepared the North Spit Plan Amendment to the Master Framework Plan (MFP) and placed these lands under an interim designation of Limited to Designated Existing Roads and made limited OHV use legal on the North Spit for the first time. The December 1985 MFP makes reference to the off highway vehicle opportunity presented by the dunes, but defers this decision until a full analysis of the impacts could be conducted. The full analysis of impacts and final motorized vehicle designations for the Coos Bay District, including the North Spit, did not take place until the Coos Bay District RMP was completed ten years later in 1995.

During the RMP planning process, a range of alternatives for motorized vehicle access were analyzed after extensive public participation through the Final Coos Bay District Proposed Resource Management Plan/Environmental Impact Statement. Through the Record of Decision and Resource Management Plan that followed the EIS, all of the 1,660 acres in the Coos Bay Shorelands SRMA were formally designated as Limited to Designated Roads and Trails in May 1995. This more controlled alternative was chosen over a Limited to Existing Roads and Trails designation to make this activity more manageable, control route proliferation and to ensure the conservation of sensitive resources on the Spit.

The decision on which roads and trails would be open for use was later resolved through the Coos Bay Shorelands Plan of 1995 when the individual roads and trails were inventoried and then designated as open or closed. The four roads/trails designated as open by this plan were the South Dike Road, the Foredune Road, the Re-Route Road, and the Bay Side Road (Map 3). The remaining trails were then designated as closed to motorized use.

The Coos Bay Shorelands Plan included two management actions that stated OHV use in the sand dune areas on the Spit would be allowed to occur under a permit. Implementation of this permit concept would have made these areas defacto open areas and would have been in conflict with the

land use allocation handed down by the Coos Bay District Resource Management Plan. Because this management action was inconsistent with the BLM's own policy and regulations and the Record of Decision for the RMP, these management actions were removed from the Coos Bay Shorelands Plan through a plan maintenance action in 2000.

On the lands immediately adjacent to the BLM parcels on the Spit, OHV recreation is prohibited on the beach between the northern BLM boundary and the Bull Run Sand Road north of Horsfall Beach from May 1 to September 30 to provide for a non-motorized recreation setting. The foredune and forest lands in the ODNRA south of the Horsfall Beach Road to the BLM boundary are closed year-round to OHV use to provide for non-motorized recreation and to protect sensitive resources. The COE lands on the North Jetty are still closed to OHV use, except for motorized use on established roadways. The Oregon Department of Parks and Recreation Department has closed the ocean beach adjacent to BLM to all ATV use and closes the ocean shore to motorized use from March 15 to September 15. On the private parcels and on Port of Coos Bay lands, use is controlled and limited to established roadways where access is allowed.

While OHV cross country use on the North Spit has been officially controlled by federal and state regulations for a long time, actual enforcement of these restrictions is relatively recent. The listing of the snowy plover in 1993 and the grounding of the New Carissa and the subsequent emergency closure in 1999 promoted the agency to place more resources and management focus toward controlling this use on the Spit.

The BLM has placed most of its enforcement efforts in those areas on the Spit with the highest resource values (e.g. snowy plover nesting habitat and interior wetlands). Compliance with OHV designations in these areas has been goodin the interior of the Spit. Compliance varies on the beach and in plover areas. This is not the case in the 80 acre dune area located next to the Roseburg chip facility. This area is used as a defacto "open area" by people who choose not to use the legal and managed OHV open areas, located 1.5 miles away, in the ODNRA.

New Carissa 2002.

Visual Resources

The public lands on the south shore of the North Spit are a dominant visual resource element in the overall scenic backdrop of the Coos Bay estuary. The quality of visual resources directly influences a community's potential for tourism, high-end real estate development, and the area's desirability for business and residential relocation.

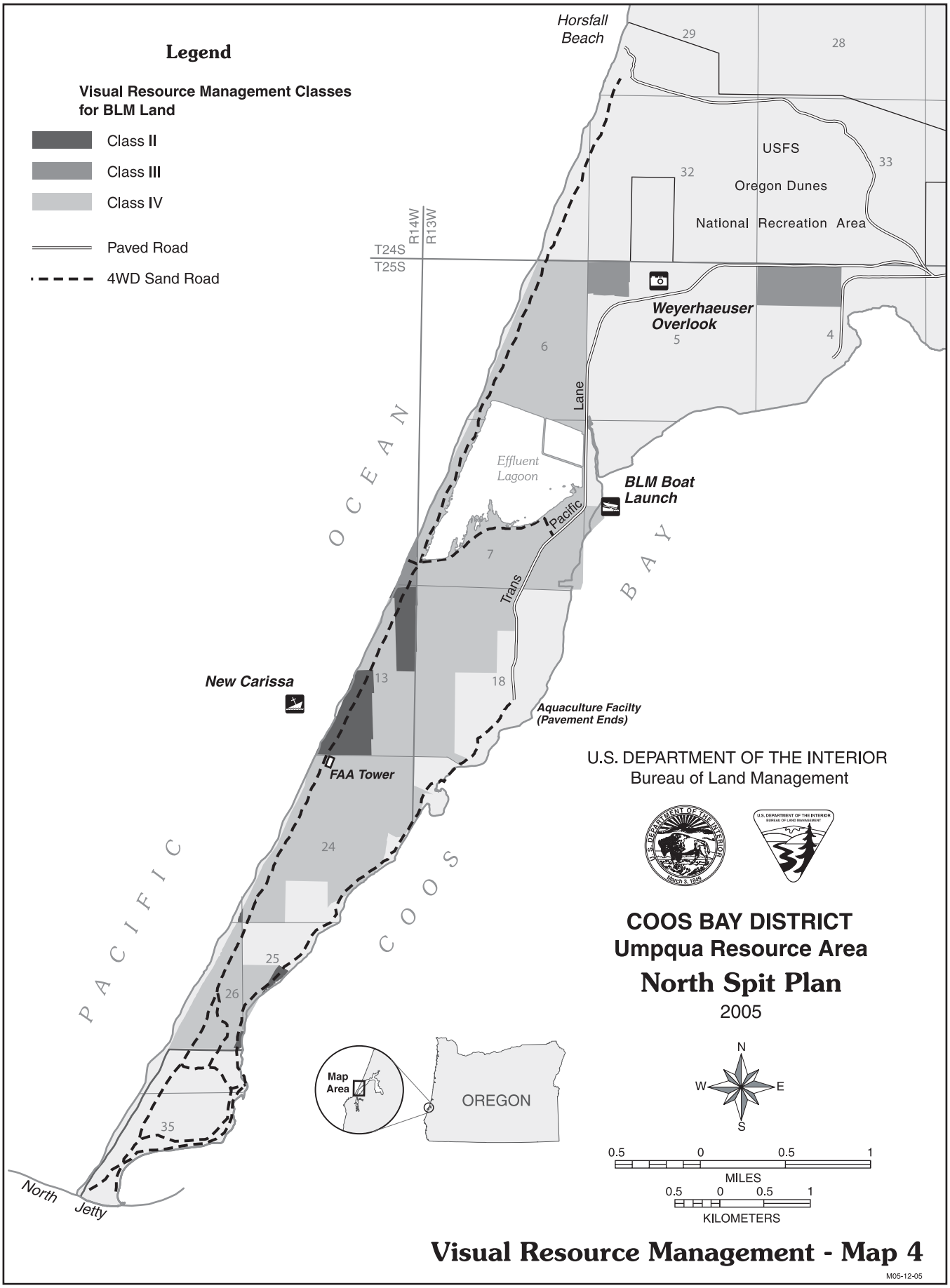
Visual resources on the public lands are managed through the BLM's land use planning process. Through this inventory and classification process, public lands are placed in one of four visual resource management classes. These management classes range from the total preservation of the existing landscape in Class I, to allowing major modifications of the landscape character in Class IV (Map 4). The lands on the North Spit were classified in the Coos Bay District RMP as follows:

- Class II. The public lands in the northwest corner of the ACEC and within the SRMA in T25S, R14W, Section 13 and T25S, R13W Section 18 were given this fairly protective classification to preserve the quality of the recreation setting. Objectives for Visual Resource Management in this area are to retain the existing character of landscape. Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape. Contrasts are seen, but must not attract attention.

- Class III. Within two parcels adjacent to the Trans Pacific Lane in T25S, R13W in Sections 5 and 4, public lands were classified as Class III. Objectives for VRM management in these parcels would be to partially retain the existing character of landscape. Contrasts to the basic elements caused by a management activity are evident, but should remain subordinate to the existing landscape.

- Class IV. The majority of the public lands on the North Spit are VRM Class IV. VRM objectives in these areas allow for major modifications of the existing character of the landscape. Contrasts that are created by management activities may attract attention and be a dominant feature of the landscape in terms of scale, but should repeat the form, line, color, and texture of the characteristic landscape.

Driving the sand roads on the North Spit.


Legend
Visual Resource Management Classes for BLM Land
Class II
Class III
Class IV
Paved Road
4WD Sand Road
Horsfall Beach
29
28
USFS
Oregon Dunes
National Recreation Area
32
33
R14W
R13W
T24S
T25S
Weyerhaeuser Overlook
5
4
6
Lane
Effluent Lagoon
BLM Boat Launch
Pacific
Trans
7
OCEAN
BAY
COOS
PACIFIC
New Carissa
13
18
Aquaculture Facilty (Pavement Ends)
FAA Tower
24
25
26
35
North Jetty
Map Area
OREGON
U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
COOS BAY DISTRICT
Umpqua Resource Area
North Spit Plan
2005
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KILOMETERS
Visual Resource Management - Map 4
M05-12-05

PART 4 –NORTH SPIT MANAGEMENT, 2005

Introduction

Part Four presents management actions on BLM-administered lands for the next ten years. Management actions are described in alphabetical order except for Monitoring and Research which is found at the end of the section. There are no management actions for fish on BLM lands on the Spit. Geology management actions are located under Monitoring and Research.

The aim of the North Spit Plan is to conserve the natural, cultural, and recreational values of the Spit. Management objectives reflect that aim and are consistent with BLM policies and state and federal regulations. These objectives were described in detail in the Draft Shorelands Plan (USDI BLM 1989), incorporated in the Final Shorelands Plan (USDI BLM 1995), and included in North Spit ACEC planning documents (USDI BLM 1999). For the North Spit Plan, these objectives were reviewed and revised based on current conditions and needs, and will be implemented as funding allows. They are listed below, followed by the reasons for action, planned actions, and actions accomplished or ongoing since the 1995 Shorelands Plan. Due to the interrelationship of the various resources at the Spit, many actions apply to more than one objective.

Management Objectives

Objective 1 – Preserve important cultural resources on the Spit.

Objective 2 – Promote awareness and appreciation for the Spit's many resource values and recreational opportunities, and support a minimum impact land use ethic through educational programs such as *Leave No Trace* and *Tread Lightly*.

Objective 3 – Prioritize land tenure adjustments based on natural resource values and recreational opportunities on non-BLM parcels, consolidation of BLM properties, and the safeguarding of public investments.

Objective 4 – Manage the North Spit SRMA to provide for a range of recreational opportunities that contribute to meeting traditional as well as projected recreation demand within the region while protecting the area's natural, cultural, and scenic resources.

Objective 5 – Provide and maintain adequate visitor facilities, services, signing, and programs that are appropriate for the area's recreation opportunity setting and that serve to protect the Spit's sensitive resources.

Objective 6 – Conserve, enhance, or restore natural habitats, with an emphasis on habitats that support special status plant and wildlife species.

Objective 7 – Maintain wetland areas in a condition supportive of a healthy aquatic ecosystem.

Objective 8 – Facilitate improved management of the Spit through monitoring to learn more about the natural and cultural resources of the area and to assess the effects of management actions.

Cultural Resources

Objective 1. Preserve important cultural resources on the Spit.

Reasons for Action

- By law, BLM is required to protect cultural resources. These laws include the Archaeological Resources Protection Act, American Indian Religious Freedoms Act, National Historic Preservation Act, and the Native American Graves and Repatriations Act.

- The Coquille Indian Tribe (CIT) and Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians (CTCLUSI), both federally-recognized tribes, have expressed concern about protection of cultural sites along the Southern Oregon Coast. The Spit is within the ancestral territory of the CTCLUSI.

Actions Accomplished or Ongoing

- In 2000, a report was completed by noted historian Stephen Dow Beckham detailing the history of federal activities on the North Spit (Beckham 2000). The majority of this report concerns the construction and maintenance of the North Jetty, beginning in 1890. The history of the U.S. Lifesaving Service station is also described in detail.

- Continue to preserve remaining historic cultural resources.

Proposed Actions

- Work with the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians as well as the Coquille Indian Tribe to assure continued protection and preservation of prehistoric resources.

- Remove damaged chain link fence from the perimeter of the World War II Quonset huts.

Environmental Education and Interpretation

Objective 2. Promote awareness and appreciation for the Spit's many resource values and recreational opportunities, and support a minimum impact land use ethic through educational programs such as *Leave No Trace* and *Tread Lightly*.

Reasons for Action

- Environmental education and interpretation can encourage responsible use of the Spit area, thereby reducing resource degradation, violations, and vandalism. Education and interpretation can enhance the visitors' experience.

- Education and interpretation may be used to communicate the BLM's management goals to visitors.

Environmental Education and Interpretive Themes

The environmental education and interpretation conducted at the Spit should be planned and implemented according to the following themes:

Theme #1: The Spit landscape is an intricate web of related parts that is constantly changing due to natural and human actions.

> **Topics:** natural history · system dynamics · interrelationships · ecosystem concepts · plants and animals found at the Spit · dune systems · introduced species · hydrology · biodiversity · threatened and endangered species · habitats

Theme #2: Due to its close proximity to both the ocean and Coos Bay, people have used the Spit for a variety of purposes, including recreation, industry, military installations, commerce, transportation, etc.; all of these actions have shaped the land in some way.

> **Topics:** human history · human impacts · land use planning · introduced species · weeds · management goals · New Carissa · recreation opportunities

Theme #3: Good stewardship is essential in maintaining the health and integrity of the Spit.

> **Topics:** appropriate behavior · Watchable Wildlife methods · Leave No Trace / Tread Lightly outdoor ethic · management support and challenges · involving visitors

Actions Accomplished

- A brochure was developed to provide visitors with a map of the Spit and inform them of regulations and opportunities.

- A variety of interpretive signs and a kiosk have been developed and installed at the boat launch ramp, the overlook to the New Carissa, and various access points. Seasonal interpreters have been hired in past summers to educate the public about seasonal closures and recreational opportunities.

Ongoing Actions

- Continue to host field trips for schools at the Spit for students to learn about the area.

- BLM will continue to work cooperatively with the interagency snowy plover working team on issues pertaining to public education and outreach.

Proposed Actions

- When a prospectus for environmental education and interpretation is developed for the District, include a section concerning the Spit. Use its recommendations when developing and conducting programs and interpretive materials.

- Utilize seasonal or volunteer interpreter(s) when feasible to contact visitors and disseminate information about the Spit on areas suited for recreation, seasonally closed areas, compliance issues, etc.

- Special educational opportunities may include: National Public Lands Day events, Elderhostel tours, beach clean ups, Christmas bird counts, or similar activities that involve the public.

- Ensure that any interpretation which deals with cultural or paleo-environmental history is coordinated with interested Indian tribes and the Coos Bay District Archaeologist.

- Rotate or replace interpretive displays as needed. Where applicable develop supplemental materials to support interpretation and environmental education, such as informational kiosks, trail guides, brochures, and educational kits.

- Use the draft Western Snowy Plover Outreach Plan (Western Snowy Plover Working Team 2004) when considering any outreach that deals with plovers on the Spit.

- Raise public awareness about the environmental and recreational values of riparian-wetland areas on the Spit.

Land Tenure Adjustments

Objective 3. Prioritize land tenure adjustments based on natural resource values and recreational opportunities on non-BLM parcels, consolidation of BLM properties, and the safeguarding of public investments.

Reasons for Action

- Adjacent landowner management objectives may not be consistent with BLM's objectives. For example, land ownership patterns on the Spit could limit or stop access to much of the public land.

Actions Accomplished

- The 1995 Shorelands Plan identified four potential land acquisitions and one disposal. Three acquisitions were accomplished.

Ongoing Actions

- In accordance with the RMP, BLM-administered lands on the Spit within zoning districts 3-EWD, 4CS, and 6WD as delineated by the Coos County Comprehensive Plan could be offered for exchange, sale, or lease to accommodate local economic expansion and industrial development. A land disposal is currently in progress for an 80 acre BLM parcel north of the Roseburg Chip Facility along the Trans Pacific Lane.

- All of the lands on the Spit administered by the BLM are public domain lands and therefore subject to public land laws. Under these laws, BLM manages for specific uses such as permits, rights-of-way, leases, special use permits, etc. Several utility and access rights-of-way were issued and are currently in use. Future applications for leases, permits, and right-of-ways will be reviewed and authorizations issued on a case-by-case basis.

Proposed Actions

- Consider land tenure adjustments to ensure access to public lands as appropriate to meet objectives.

Recreation

Objective 4. Manage the North Spit SRMA to provide for a range of recreation opportunities that contribute to meeting traditional as well as projected recreation demand within the region while protecting the area's natural, cultural, and scenic resources.

Reasons for Action

- The BLM designated the North Spit as an SRMA to preserve opportunities for outdoor recreation and to manage this activity in a manner that is compatible with protecting the natural and cultural resource values of the ACEC.

- Visitors differ widely in their preferences for recreation activities, settings and facilities. Balancing these needs within the limited space available on the North Spit is necessary to provide for a quality resource-based experience, reduce conflicts between users and protect natural resource values.

- The Oregon Parks and Recreation Department Statewide Trail Plan identified trail connectivity between agency management jurisdictions as a key statewide trail management goal. Creating and maintaining connectivity between trail opportunities on BLM lands

on the North Spit and the adjacent trail systems managed by the USFS, OPRD, and Weyerhaeuser would enhance overall trail opportunities in the region.

Actions Accomplished

- Signs were placed at the ocean beach access points along the Foredune Road; other signs and maps were placed at various locations to inform visitors of regulations and recreational opportunities.
- Roads and trails that were not designated open were closed using logs, root wads, and signs. Many of these closed routes are disappearing through natural revegetation.
- A sign strategy was developed to assist BLM in providing information to the public on regulations, recreational opportunities, and natural resources on the Spit.

Ongoing Actions

- Continue to provide and manage motorized access on the Spit to support the area's long-standing traditional recreation uses while protecting natrual, cultural and scenic resources.
- Manage the North Spit to retain a recreation setting compatible with the area's Rural and Semi-Primitive Motorized ROS classification.
- Provide timely press releases for public service announcements and newspaper notices prior to any seasonal access restrictions as needed.
- Clear sand and debris from the boat ramp each spring prior to reinstalling the docks for the summer season.
- Continue to allow primitive camping on BLM lands on the Spit, except in areas where signed to protect sensitive plants and wildlife.
- Continue to maintain the docks at the boat launch as funding allows.
- Continue to permit hunting and shooting on BLM lands on the Spit in conformance with applicable state and federal laws and regulations. These regulations prohibit shooting adjacent to and across public roadways and within developed recreation sites.

Proposed Actions

- Increase information available about theNorth Spit,
- Place improved regulatory and information signs along the sand roads and at ocean beach access points. Advise visitors to inspect the three existing access points before they commit to driving onto the beach – the passability of these access points can change on a daily basis due to waves, high tides and winter storms.
- Remove dilapidated fences and fence posts from three locations on the Spit: the fence at the intersection of the Foredune Road and Trans Pacific Lane, the WWII bunker fence, and fencing material from the southern interior.
- Establish trails for pedestrian and equestrian use within the North Spit interior. Develop and support local partnerships to assist in maintaining and managing this trail system.
- Create and maintain connections between trail opportunities on BLM lands and the adjacent trail systems on Forest Service, OPRD and Weyerhaeuser lands.
- Determine feasibility of designating the Foredune Road open to motorized access from the South Dike Road north to the USFS boundary
- Construct a small equestrian and hiking staging area to provide parking and visitor information at the portal to the trail system.

- Implement the completed sign strategy developed to improve communication with Spit visitors.
- Explore the potential for placing picnic tables at the boat launch facility.
- Include information about wildlife viewing opportunities into the educational kiosk proposed for the boat ramp area.

Site Protection and Administration

Objective 5. Provide and maintain adequate visitor facilities, services, signing, and programs that are appropriate for the area's recreation opportunity setting and that serve to protect the Spit's sensitive resources.

Reasons for Action

- Visitation to the Spit is expected to grow as more people become aware of the area, and as tourism along the southern Oregon Coast increases.
- Facilities, designated roads and trails, signs, and other management tools (e.g., on-site hosts) reduce and prevent resource damage.
- Contracted services with Coos County agencies enhance fire response and law enforcement support for the area.

Fire Management

Accomplished and Ongoing Actions

- BLM contracts with the Coos Forest Protection Association for fire response, including the lands on the Spit. Contracted duties might include: specific action and preparedness plans; prevention, detection, initial attack, and suppression services; resource protection; fire notification services; fire investigation; debriefings and contract reviews; and reports.

Proposed Actions

None at this time.

Hazardous Materials Management

Accomplished and Ongoing Actions

See below.

Proposed Actions

- Finish the sampling and report for the Spit Life Guard Station Environmental Site Characterization.

The structures at the Spit Life Guard Station were serviced by a variety of fueled devices such as generators and power plants. In 1991, the Bureau of Land Management initiated a demolition and removal of the structures, and contracted for the location, assessment and removal of four known underground petroleum storage tanks (USTs) from the site. In late 2002, Oregon Department of Environmental Quality (DEQ) informed the Coos Bay District Hazardous Materials Coordinator that the removal of the USTs had not been finalized and documented under the UST program closure rules. A subsequent records search by BLM concurred. In consultation with DEQ, it was determined that a site assessment was necessary to comply with the state rules and to receive a No Further Action Required determination and closure of the case file. A draft plan for this site assessment and a report to DEQ was prepared, and implementation is planned pending funding. This project is known as the Spit Life Guard

Station Environmental Site Characterization, OR DEQ Log Number 06-91-0030; UST Facility ID # 10718. This is the only hazardous materials project on public lands on the Spit.

Law Enforcement

Accomplished and Ongoing Actions

- BLM Law Enforcement Officers are trained and authorized to enforce federal regulations on BLM lands. The BLM also continues to contract with the Coos County Sheriff's Department, and contribute funds to OPRD for seasonal assistance with beach patrol.

- Continue to have law enforcement officers enforce Federal and Oregon State firearm regulations and encourage shooter safety while on patrol on the Spit.

Proposed Actions

None at this time.

Facility Management

Accomplished Actions

None at this time.

Ongoing Actions

- Maintain existing facilities at the boat launch recreation area.

Proposed Actions

- Consider placing alternative toilet facilities at high use areas.

Road Maintenance and Improvement

Accomplished and Ongoing Actions

None at this time.

Proposed Actions

- Consider raising and widening the Re-route Road to minimize the risk of vehicular collisions.

Vegetation and Wildlife Resources

Objective 6. Conserve, enhance, or restore natural habitats, with an emphasis on habitats that support special status plant and wildlife species.

Reasons for Action

- The BLM is required to follow federal laws and regulations and has established a policy to prevent the need to list fish, wildlife, and plants under the Endangered Species Act. Furthermore, the BLM is directed to encourage management which will lead to the successful recovery and eventual delisting of federally recognized Endangered Species.

- Over the years, alterations to the habitat have interfered with natural community succession. For example, fires were suppressed, groundwater was pumped, and open sandy areas were vegetated by exotic plants.

- Exotic (non-native) vegetation species, such as European beach grass, and noxious weeds, such as Scotch broom, are replacing native vegetation and opportunistically becoming established on sites otherwise unoccupied by grass or shrub species. This spread of exotic and noxious vegetation is altering habitats and interfering with natural succession.

- Resource and vegetative management is necessary to maintain the natural communities, successional processes, and ecosystem health.

- Historic nesting areas of the Western snowy plover were altered by the introduction of European beach grass, increased predation, and accelerated human access and activity on beaches.

- Balanced management actions ensure protection and limit disturbance to plants and wildlife.

Vegetation

Actions Accomplished

- Plant communities were mapped and digitized for use with a Geographic Information System (GIS).

Ongoing Actions

- Coordinate with other agencies and institutions to restore degraded and disturbed plant communities.

Proposed Actions

- Complete the study of vegetation alliances to determine the plant associations of the Spit.

- Conduct a complete inventory of the vascular and non-vascular flora of the Spit to document all the present plant species.

Special Status Plant Species and Communities

Actions Accomplished

- Pink sandverbena was reintroduced under a cooperative agreement with the Institute of Applied Ecology.

- A permanent vehicle re-route was constructed along the bay side and barriers were installed to protect the Point Reyes bird's-beak population in the saltmarsh.

Ongoing Actions

- Facilitate the recovery of the pink sandverbena by collecting seeds for dispersal to other sites along the coast. Coordinate conservation activities with management of Western snowy plover.

- In cooperation with the Port and the DSL, maintain protective barriers around the Point Reyes bird's-beak population on the bay side of the Spit.

- Continue inventory and management for SSS.

Proposed Actions

The following actions only pertain to the North Spit Area of Critical Environmental Concern:

- Implement beach and dune ecosystem restoration for multiple species.
- Establish additional special status plant populations as warranted.
- Develop opportunities for collaborative habitat management to increase the amount of habitat suitable for rare species and to link isolated populations with one another.
- Collect special status plant seeds as necessary for storage at the Berry Botanic Garden's Cryogenic Seed Bank.
- Identify opportunities for restoration of globally ranked plant communities.

Exotic Plants and Noxious Weeds

Actions Accomplished

- Gorse was removed from the Coast Guard Lifesaving station.
- Scotch broom was cleared from HRAs.

Ongoing Actions

- European beach grass is removed annually from HRAs.

Proposed Actions

- Continue weed treatments on the Spit to remove exotic and noxious species. Use integrated pest management practices, such as fire, mechanical or manual removal, and herbicide application. Restore treated areas by spreading native seed and planting native plants.
- Use best management practices to prevent the further spread of exotic plants and noxious weeds.

Wildlife

Actions Accomplished or Ongoing

None at this time.

Proposed Actions

- Survey suitable habitat for great blue herons and great egret rookeries.
- Conduct wildlife inventories at selected wetlands.
- Survey to locate the nests of protection buffer species raptors: osprey, red-tailed hawk, sharp-shinned hawk and Cooper's hawk.

Special Status Wildlife Species

Actions Accomplished or Ongoing

- Continue to implement Western snowy plover conservation actions as directed by the Biological Opinion (USDI FWS 2000). BLM will implement the Western snowy plover Pacific Coast Recovery Plan when finalized. Ongoing actions include the following:

  1. Closing the upper, dry sand portion of the ocean beach to all public access from the FAA Tower south to the BLM boundary during the Western snowy plover nesting season (March 15- September 15 annually; Map 3). The area is clearly marked with ropes and signs. Restrictions on motorized use of the adjacent lower, wet sand area are authorized by OPRD. Inland snowy plover nesting areas on BLM land are also signed closed to all use during the nesting season, and are open to nonmotorized use the remainder of the year.

  2. Removing beachgrass from the inland snowy plover Habitat Restoration Areas (HRAs) to maintain suitable open, sandy habitat suitable for nesting plovers (Map 3).

  3. Administering a contract with the Animal Plant and Health Inspection Service (APHIS) that implements an integrated predator damage management program to protect the plover population from further declines caused by predation. Targeted species include American crows, common ravens, and small mammalian predators. Most traps are located in areas closed to the public (e.g., the HRAs and the upper beach), clearly signed, and are designed to prevent injury to domestic animals and humans.

  4. Administering a contract with the Oregon Natural Heritage Information Center to intensively monitor plover nesting efforts and thereby gauge the success of management actions and determine progress toward plover recovery.

- Continue to coordinate with the FWS to implement recovery plans to protect other threatened and endangered species, as necessary.

- Nest boxes were installed for purple martins.

Proposed Actions

- Develop and implement survey protocols to locate special status species.

- Actively manage habitats to promote the conservation of special status species and protection buffer species.

Water Resources

Management Objective 7. Maintain wetland areas in a condition supportive of a healthy aquatic ecosystem.

Reasons for Action

- The BLM has a responsibility to conserve native wildlife and plant species and the ecosystems upon which they depend. Many of these species are associated with wetlands.

Actions Accomplished

- BLM participated in the creation of wetlands on BLM adjacent to Weyerhaeuser's Overlook wetlands site as part of the Henderson Marsh Mitigation Plan.

Ongoing Actions

- Consider wetland project proposals consistent with the 1984 Henderson March Mitigation Plan. Proposal will require environmental review.

Proposed Actions

None at this time.

Monitoring and Research

Objective 8. Facilitate improved management of the Spit through monitoring to learn more about the natural and cultural resources of the area and to assess the effects of management actions.

Reasons for Action

- Ensure compliance with federal and state laws and regulations.
- Fill existing information gaps to enable the BLM to better manage the area in the future.
- Evaluate existing management strategies to provide feedback on meeting established objectives.
- Broaden human understanding of the area.
- Identify recovery and conservation needs for special status species.
- Identify the nature and extent of human-caused impacts to sensitive resources early enough to take effective action to minimize adverse affects.
- Understand the dynamics of coastal ecosystems.

Cultural Resources

Actions Accomplished or Ongoing

None at this time.

Proposed Actions

- Monitor stability of important cultural resources and propose actions to continue their preservation.

Environmental Education and Interpretation

Actions Accomplished or Ongoing

- Evaluate the effectiveness of educational brochures and signs.

Proposed Actions

- Evaluate the effectiveness of environmental education programs and interpretive materials on a regular basis, and make modifications as necessary.

Geology

Actions Accomplished or Ongoing

None at this time.

Proposed Actions

- Track elevation changes on the ocean foredune and monitor the effects of weather and beach grass removal on foredune erosion.

Recreation

Actions Accomplished or Ongoing

- Continue to use traffic and trail counters and field staff observations to monitor visitor use and to report findings in the Recreation Management Information System.
- Continue to monitor camping on BLM lands on the Spit.

Proposed Actions

- Monitor the condition of beach access routes.

Vegetation and Wildlife Resources

Actions Accomplished or Ongoing

- Monitor noxious weed species to document existing population areas, effectiveness of management actions for removal, and the spread of these species to new sites.
- Evaluate and explore effective management strategies to meet recovery goals for the Western snowy plover. Monitor human and natural disturbance effects on breeding plovers.
- Continue to support the Oregon Natural Heritage Information Center in its efforts to monitor Western snowy plover reproductive success.
- Continue to monitor great blue heron and great egret rookeries.
- Continue to monitor selected special status species on the Spit.
- Continue to monitor the condition of riparian-wetland vegetation. If signs of excessive disturbance caused by unauthorized motorized recreation become evident, adjust patrols, signing and barriers to reduce or prevent impacts.

Proposed Actions

- Monitor special status species' population status and trends. Pursue collaborative efforts to study SSS reproductive ecology, threats, habitats, and effects of management treatments and practices.
- Monitor the status and trends of globally ranked plant communities within the North Spit ACEC.
- Seek collaborative opportunities to survey migratory shorebirds and waterfowl to establish population status and trends.

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Appendix 1. North Spit Plant List.

Preliminary nonvascular and vascular plant species list for the North Spit. Information drawn from Coos Bay District herbarium, staff survey lists, Stansell (1989), Wagner (2000), and Zika et al. (1998). Common names in parentheses, taxonomy as per USDA, NRC (2004), E = exotic or non-native, * = special status species, and # = Bureau tracking species.

NONVASCULAR PLANTS
(lichens, sac fungi, club fungi, liverworts, hornworts, and mosses)

KINGDOM FUNGI

CLASS ASCOMYCETES & DISCOMYCETES (Lichens)
**Bryoria pseudocapillaris* Brodo & D.Hawksw. (brown beard lichen)
**Bryoria spiralifera* Brodo & D.Hawksw. (horsehair)
Cavernularia hultenii Degel. (Hulten's pitted lichen)
**Erioderma sorediatum* D.J. Galloway & P.M. Jorg. (ncn)
**Heterodermia leucomelos* (L.) Poelt (shield lichen)
Hypogymnia enteromorpha (Aceh.) Nyl. (beaded bone lichen)
Hypogymnia physodes (L.) Nyl. (hooded bone lichen)
Hypotrachyna sinuosa (Sm.) Hale (ncn)
**Leioderma soridiatum* D.J. Galloway & P.M. Jorg. (ncn)
Nephroma laevigatum Ach. (seaside kidney lichen)
Nephroma resupinatum (L.) Ach. (kidney lichen)
Parmelia hygrophila Goward & Ahti (shield lichen)
Parmelia sulcata Hale (waxpaper lichen)
Parmeliopsis hyperopta (Ach.) Arnold (ncn)
Parmotrema arnoldii (Du Rietz) Hale (eyelash lichen)
Peltigera membranacea (Ach.) Nyl. (membranous felt lichen)
Plastismatia glauca (L.) Culb. & C.Culb. (ragbag)
Platismatia herrei (Imshaug) Culb.& C.Culb. (Herre's ragged lichen)
Pseudocyphellaria anomala Brodo & Ahti (specklebelly)
**#Pseudocyphellaria perpetua* McCune & Miadlikowska (ncn)
Ramalina farinacea (L.) Ach. (farinose cartilage lichen)
Ramalina menziesii Taylor (fishnet lichen)
Ramalina roesleri (Hochst. *ex* Schaerer) Hue (ncn)
Ramalina thraustai (Ach.) Nyl. (ncn)
Sphaerophorus globosus (Hudson) (globe ball lichen)
Tuckermannopsis chlorophylla (Willd.) Vainio (ncn) [=*Cetraria chlorophylla*]
Tuckermannopsis orbata (Nyl.) Fink (ncn) [=*Cetraria orbata*]

CLASS ASCOMYCOTINA (Sac Fungi)
None known at this time

CLASS HYMENOMYCETES & GASTEROMYCETES (Club Fungi)
Boletus edulis Bull. ex Fr. (king bolete, cep, steinpilz, porcini)
Clavaria purpurea (purple fairy club)
Cortinarius allutus (Secr.) Fr. (ncn)
Cortinarius brunneus (ncn)
Cortinarius californicus (ncn)

DIVISION BRYOPHYTA

CLASS HEPATICOPSIDE (Liverworts)
Calypogeia azurea Stotler & Crotz (blue pouchwort)
Cephalozia bicuspidata (L.) Dum. (two-horned pincerwort)

Cephalozia lunulifolia (Dum.) Dum. (ncn)
Cephaloziella divaricata (Sm.) Schiffn. (ncn)
**Diplophyllum plicatum* Lindb. (giant folded leaf liverwort)
Frullania nisquallensis Sull. (hanging millipede liverwort)
Geocalyx graveolens (Schrad.) Nees (ncn)
Lepidozia reptans (L.) Dum. (little hands liverwort)
Lophocolea cuspidata (Nees) Limpr. (ncn)
Lophocolea heterophylla (Schrad.)Dum. (ncn)
Porella navicularis (Lehm. & Lindenb.) Pfieff. (tree ruffle liverwort)
Radula complanata (L.) Dum. (flat-leaved liverwort)
Riccardia latifrons (Lindb.) Lindb. (ncn)
Scapania bolanderi Aust. (yellow-ladle liverwort)

CLASS ANTHOCEROTOPSIDA (Hornworts)
None known at this time.

CLASS MUSCOPSIDA (Mosses)
Aulacomnium androgynum (Hedw.) Schwaegr. (lover's moss)
Aulacomnium palustre (Hedw.) Schwaegr. (ribbed bog moss or glow moss)
Brachythecium rivulare Schimp. in B.S.G. (ncn)
Bryum capillare Hedw. (ncn)
Campylium polygamum (Schimp. in B.S.G.) C. Jens. (ncn)
Campylopus introflexus (Hedw.) Brid. (ncn)
Ceratodon purpureus (Hedw.) Brid. (red roof moss)
Claopodium crispifolium (Hook.) Ren. &Card. (rough moss)
Dichelyma falcatum (Hedw.) Myr. (ncn)
Dicranoweisia cirrata (Hedw.) Lindb. ex Milde (curly thatch moss)
Dicranum fuscescens Turn. (curly Heron's-bill moss)
Dicranum scoparium Hedw. (broom moss
Dicranum tauricum Sapeh. (broken-leaf moss)
Drepanocladus aduncus (Hedw.)Warnst. (ncn)
Drepanocladus sendtner (Schimp.)Warnst. (ncn)
Eurhynchium oreganum (Sull.) Jaeg. (Oregon beaked moss)
Eurhynchium praelongum (Hedw.) Schimp. in B.S.G. (slender beaked moss)
Homalothecium fulgescens (Mitt. ex C. Muell.) Lawt. (yellow moss)
Homalothecium pinnatifidum (Sull. & Lesq.) Lawt. (ncn)
Hylocomium splendens (Hedw.) Schimp. in B.S.G. (stair step moss)
Hypnum circinale Hook. (coiled-leaf moss)
Isothecium stoloniferum Brid. (cat-tail moss)
Neckera douglasii Hook. (Douglas' neckera)
Orthotrichum consimile Mitt. (ncn)
Orthotrichum lyellii Hook. & Tayl. (Lyell's bristle moss)
Plagiothecium undulatum (Hedw.) Schimp. in B.S.G. (wavy-leaved cotton moss)
Pohlia wahlenbergii (Web. &Mohr)Andrews (ncn)
Polytrichum juniperinum Hedw. (juniper haircap moss)
Polytrichum piliferum Hedw. (awned haircap moss)
Pseudotaxiphyllum elegans (Brid.) Iwats. (small flat moss)
Racomitrium elongatum Ehrh. ex Frisv. (roadside rock moss)
Rhizomnium glabrescens (Kindb.)T. Kop. (fan moss)
Tortula princes De Not. (ncn)
Trachybryum megaptilum (Sull.) Schof. (ncn)
Ulota phyllantha Brid. (ncn)

VASCULAR PLANTS

FERNS AND FERN ALLIES

DENNSTAEDTIACEAE — BRACKEN FERN FAMILY
Pteridium aquilinum (L.) Kuhn var. *pubescens* Underwood (northern bracken fern)

DRYOPTERIDACEAE — WOOD FERN FAMILY
Polystichum munitum (Kaulfuss) K. Presl (pineland sword fern)

POLYPODIACEAE — POLYPODY FAMILY
Polypodium scouleri Hook. & Grev. (leathery polypody)

GYMNOSPERMS

CUPRESSACEAE — CYPRESS FAMILY
Chamaecyparis lawsoniana (A. Murray) Parl (Port-Orford-cedar)

PINACEAE — PINE FAMILY
Pinus contorta Dougl. ex Loud. var. *contorta* (shore pine)
Pinus attenuata Lemmon (knob-cone pine)
Picea sitchensis (Bong.) Carr. (Sitka spruce)
Pseudotsuga menziesii (Mirbel.) Franco var. *menziesii* (Douglas-fir)

DICOTYLEDONS

APIACEAE — CARROT FAMILY
Angelica lucida L. (seacoast angelica)
Glehnia littoralis F. Schmidt ex Miq. (American silvertop)
Lilaeopsis occidentalis Coult. & Rose (western grasswort)

ARALIACEAE — GINSENG FAMILY
Hedera helix L. (English-ivy) E

ASTERACEAE — ASTER FAMILY
Achillea millefolium L. (common yarrow)
Ambrosia chamissonis (Less.) Greene (silver burr-ragweed) E
Anaphalis margaritacea (L.) Benth. (pearly-everlasting)
Artemisia pycnocephala (Less.) DC. (beach wormwood)
Baccharis pilularis DC. (coyotebrush)
Cirsium arvense (L.) Scop. (Canadian thistle) E
Corethrogyne californica var. *obovata* DC. var. *obovata* (Benth.) Kuntze (California sandaster)
Erechtites glomerata (Desf. ex Poir.) DC. (cut-leaf burnweed) [=*E. arguta*]
Erechtites minima (Poir.) DC. (coastal burnweed) E
Gamochaeta purpurea (L.) Cabrera (spoon-leaf purple everlasting) [=*Gnaphalium chilense*]
Grindelia stricta DC. (Oregon gumweed)
Hieracium albiflorum Hook. (white-flower hawkweed)
Hypochaeris radicata L. (hairy cat's-ear) E
Jaumea carnosa (Less.) Gray (marsh jaumea)
Leontodon taraxacoides (Vill.) Mérat ssp. *taraxacoides* (lesser hawkbit) [=*L. leysseri*] E
Pseudognaphalium stramineum (Kunth) A. Anderb. (cotton-batting-plant) [=*Gnaphalium purpureum*]
Sonchus L. (sow-thistle) E
Symphyotrichum chilense (Nees) Nesom (Pacific American-aster) [=*Aster chilense*]
Tanacetum camphoratum Less. (camphor tansy) E

BETULACEAE — BIRCH FAMILY
Alnus rubra Bong. (red alder)

BRASSICACEAE — MUSTARD FAMILY
Brassica rapa L. var. *rapa* (rape) E
Cakile edentula (Bigelow) Hook. (American searocket)
Cakile maritima Scop. (European searocket) E
Cardamine nuttallii Greene var. *nuttallii* (Nuttall's toothwort)
Draba verna L. (spring whitlow-grass)
Raphanus sativus L. (radish) E

CAPRIFOLIACEAE — HONEYSUCKLE FAMILY
Lonicera involucrata (Richards.) Banks ex Spreng. (four-line honeysuckle)
Sambucus nigra L. ssp. *caerulea* (Raf.) R. Bolli (black elder)

CARYOPHYLLACEAE — PINK FAMILY
Cardionema ramosissimum (Weinm.) A. Nels. & J.F. Macbr. (sandcarpet)
Cerastium arvense L. (field mouse-ear chickweed) E
Honckenya peploides (L.) Ehrh. (seaside sandplant)
Spergularia canadensis (Pers.) G. Don (Canadian sandspurry)
Spergularia macrotheca (Hornem.) Heynh. (sticky sandspurry)
Spergularia salina J. & K. Presl (saltmarsh sandspurry) [=*S. marina*]

CHENOPODIACEAE — GOOSEFOOT FAMILY
Atriplex patula L. (halberd-leaf orache)
Atriplex prostrata Bouchér ex DC. (hastate orache) [=*A. hastata*]
Salicornia depressa Standl. (woody saltwort) [=*S. virginica*]

CONVOLVULACEAE — MORNING-GLORY FAMILY
Calystegia soldanella (L.) R. Br. (seashore false bindweed)

CUSCUTACEAE — DODDER FAMILY
Cuscuta salina Engelm. var. *major* (Yuncker goldenthread)

ERICACEAE — HEATH FAMILY
Arbutus menziesii Pursh (Pacific madrone)
Arctostaphylos columbiana Piper (bristly manzanita) [includes *A. tracyi*]
Arctostaphylos uva-ursi (L.) Spreng. (red bearberry)
Gaultheria shallon Pursh (salal)
Vaccinium ovatum Pursh (evergreen blueberry)
Vaccinium oxycoccos L. (small cranberry)
Vaccinium uliginosum L. (alpine blueberry)

FABACEAE — PEA FAMILY
Cytisus scoparius (L.) Link (Scotch broom) E
Genista monspessulana (L.) L. Johnson (French broom) E
Lathyrus japonicus Willd. (sea vetchling)
Lotus corniculatus L. (garden bird's-foot-trefoil)
Lotus unifoliolatus (Hook.) Benth. (American bird's-foot-trefoil)
Lupinus littoralis Dougl. (Chinook lupine)
Medicago lupulina L. (black medick)
Melilotus officinalis (L.) Lam. (yellow sweet-clover) [=*M. alba*]
Trifolium arvense L. (rabbit-foot clover)
Trifolium pratense L. (red clover)
Trifolium repens L. (white clover) E
Trifolium wormskioldii Lehm. (cow clover)
Ulex europaeus L. (common gorse) E

Veronica scutellata L. (grass-leaf speedwell)
Vicia americana Muhl. ex Willd. (American purple vetch)
Vicia hirsuta (L.) S.F. Gray (tiny vetch)

GENTIANACEAE — GENTIAN FAMILY
Centaurium erythraea Rafn (European centaury) E
Gentiana sceptrum Griseb. (king's-scepter gentian)

GERANIACEAE — GERANIUM FAMILY
Geranium sp. L. (crane's-bill) E

GROSSULARIACEAE — CURRANT FAMILY
Ribes sanguineum Pursh (blood currant)

MYRICACEAE — BAYBERRY FAMILY
Morella californica (Cham.) Wilbur (Pacific bayberry) [=*Myrica californica*]

NYCTAGINACEAE — FOUR-O'CLOCK FAMILY
**Abronia latifolia* Eschsch. (yellow sandverbena)
**#Abronia umbellata* Lam. ssp. *breviflora* (Standl.) Munz (pink sandverbena)

ONAGRACEAE — EVENING-PRIMROSE FAMILY
Camissonia cheiranthifolia (Hornem. ex Spreng.) Raimann (beach suncup)
Epilobium ciliatum Raf. (fringed willowherb) [=*E. franciscanum*]
Ludwigia peploides (Kunth) Raven (floating primrose-willow)

PLANTAGINACEAE — PLANTAIN FAMILY
Plantago maritima L. var. *juncoides* (Lam.) Gray (goosetongue)

PLUMBAGINACEAE — LEADWORT FAMILY
**Limonium californicum* (Boiss.) Heller (western marsh-rosemary)

POLYGONACEAE — BUCKWHEAT FAMILY
Polygonum paronychia Cham. & Schlecht. (beach knotweed)
Rumex acetosella L. (common sheep sorrel) E
Rumex sp. L. (dock, sorrel)

PORTULACACEAE — PURSLANE FAMILY
Claytonia perfoliata Donn ex Willd. ssp. *perfoliata* (miner's-lettuce) [=*Montia perfoliata*]

PRIMULACEAE — PRIMROSE FAMILY
Anagallis minima (L.) Krause (chaffweed)
Glaux maritima L. (sea-milkwort)

RANUNCULACEAE — BUTTERCUP FAMILY
Ranunculus flammula L. var. *flammula* (greater creeping spearwort)

ROSACEAE — ROSE FAMILY
Argentina egedii (Wormsk.) Rydb. (Pacific silverweed) [=*Potentilla pacifica*]
Fragaria chiloensis (L.) P. Mill. (beach strawberry)
Galium aparine L. (sticky-willy)
Malus fusca (Raf.) Schneid. (Oregon crabapple)
Rubus armeniacus Focke (Himalayan blackberry) [=*R. procerus, R. discolor*] E
Rubus spectabilis Pursh (salmon raspberry)
Rubus ursinus Cham. & Schlecht. (California dewberry)

SALICACEAE — WILLOW FAMILY
Salix hookeriana Barratt ex Hook. (coastal willow)

VIOLACEAE — Violet Family
Viola spp. (ndentification pending)

SCROPHULARIACEAE — FIGWORT FAMILY
Castilleja ambigua Hook. & Arn. ssp. *ambigua* (johnnynip) [=*Orthocarpus castillejoides*]
**Cordylanthus maritimus* ssp. *palustris* (Behr) Chuang & Heckard (Point Reyes bird's-beak)
Nuttallanthus texanus (Scheele) D.A. Sutton (Texas toadflax)
Parentucellia viscosa (L.) Caruel (yellow glandweed) E

MONOCOTYLEDONS

CYPERACEAE — SEDGE FAMILY
Carex lenticularis Michx. var. *limnophila* (Holm) Cronq. (lakeshore sedge)
Carex lyngbyei Hornem. (Lyngbye's sedge)
Carex obnupta Bailey (slough sedge)
Carex pansa Bailey (sand-dune sedge)
Carex unilateralis Mackenzie (one-sided sedge)
Carex viridula Michx. ssp. *viridula* (little green sedge)
Eleocharis macrostachya Britt. (pale spike-rush)
Eleocharis obtusa (Willd.) J.A. Schultes (blunt spike-rush)
Eleocharis palustris (L.) Roemer & J.A. Schultes (common spike-rush)
Schoenoplectus americanus (Pers.) Volk. ex Schinz & R. Keller (chairmaker's club-rush) [=*Scirpus americanus*]
Schoenoplectus maritimus (L.) Lye (saltmarsh club-rush)

IRIDACEAE — IRIS FAMILY
Sisyrinchium californicum (Ker-Gawl.) Ait. (golden blue-eyed-grass)

JUNCACEAE RUSH FAMILY
Juncus effusus L. (lamp rush)
Juncus falcatus E. Mey. (sickle-leaf rush)
Juncus gerardii Loisel. (saltmarsh rush)
Juncus lesueurii Boland. (salt rush)

JUNCAGINACEAE — ARROW-GRASS FAMILY
Triglochin concinna Burtt-Davy (slender arrow-grass)
Triglochin maritima L. (seaside arrow-grass)
Triglochin striata Ruiz & Pavón (three-rib arrow-grass)

LILIACEAE -- LILY FAMILY
Lilium columbianum hort. ex Baker (Columbian lily)

ORCHIDACEAE — Orchid Family
Goodyera oblongifolia Raf. (green-leaf rattlesnake-plantain)
Listera sp. R. Br. ex Ait. f. (twayblade)
Spiranthes romanzoffiana Cham. (hooded ladies'-tresses)

POACEAE — GRASS FAMILY
Agrostis stolonifera L. (spreading bent) E
Aira praecox L. (early silver-hair grass)
Ammophila arenaria (L.) Link (European beach grass) E
Bromus hordeaceus L. (soft brome) E
Bromus tectorum L. (cheat grass) E
Cynosurus echinatus L. (bristly dog's-tail grass) E

Dactylis glomerata L. (orchard grass) E
Distichlis spicata (L.) Greene (coastal salt grass)
Festuca idahoensis Elmer (bluebunch fescue)
Festuca rubra L. (red fescue)
Holcus lanatus L. (common velvet grass) E
Hordeum brachyantherum Nevski (meadow barley)
Hordeum jubatum L. (fox-tail barley)
Leymus mollis (Trin.) Pilger (American lyme grass)
Parapholis incurva (L.) C.E. Hubbard (curved sickle grass)
Poa confinis Vasey (coastline blue crass)
Puccinellia nuttalliana (J.A. Schultes) A.S. Hitchc. (Nuttall's alkali grass)
*#*Puccinellia pumila* (Vasey) A.S. Hitchc. (dwarf alkali grass)

Appendix 2. North Spit Wildlife List.

Wildlife inventories are incomplete for the North Spit. Information on birds was drawn from staff observations and detailed data on the birds of Coos County (Contreras 1998). Information on other wildlife species is based on habitat associations, BLM files, and documented observations. Questions marks refer to information that is speculative.

BIRDS
Legend

Status:

B- breeding species
M- migrant (usually May/June and August-October)
MS- spring migrant only (usually May-June)
MF- fall migrant only (usually August-October)
PB- post breeding migrant (typically appearing in summer/fall)
W- wintering species (normally Oct/Nov- April/May)
Y- Year-round resident
O- offshore species occasionally seen from land
S- over-summering nonbreeder (typically, a few birds seen most years into summer)

Abundance:

C- common to abundant, easily observed in appropriate habitat.
FC- fairly common, usually observed in appropriate habitat.
U- uncommon, not always observed in appropriate habitat.
R- rare, not seen every year.
V- vagrant, very rare species with few records.
I- irregular, numbers fluctuate year-to-year.
D- dead specimen found on beach.

Bolded species are probable breeders.

SWANS/GEESE/DUCKS (Family Anatidae)

Tundra Swan (*Cygnus columbianus)* **W-U**
Greater White-fronted Goose (*Anser albifrons)* **MF-U, MS-R**
Snow Goose (*Chen caerulescens*) **M-R**
Canada Goose (*Branta Canadensis)* **Y-C**
Canada Goose (Aleutian subspecies, *Branta canadensis ssp. leucopareia)* **M-U**
Emperor Goose (*Chen canagica*) **V**
Brant *(Branta bernicula*) **MS-C, W-U, MF-U, OS-R**
Wood Duck *(Aix sponsa)* **Y-U**
American Wigeon *(Anas americana)* **W-C**
Eurasian Wigeon (*Anas penelope)* **W-U**
Green-winged Teal *(Anas crecca)* **W-C, OS-R**
Mallard *(Anas platyrhynchos*) **Y-C**
Gadwall *(Anas strepera*) **W-U, OS-R**
Northern Shoveler (*Anas clypeata)* **W-FC, B-R**
Northern Pintail *(Anas acuta*) **W-C, OS-R**
Cinnamon Teal *(Anas cyanoptera)* **M-U**
Blue-winged Teal (*Anas discors)* **MS-U, MF-R**
Canvasback (*Aythya valisineria)* **W-C, OS-R**
Redhead *(Aythya Americana)* **M-U, W-I**
Ring-necked Duck (*Aythya collaris)* **Y-C, B-R**

Greater Scaup *(Aythya marila)* **W-C, OS-U**
Lesser Scaup *(Aythya affinis*) **W-U, OS-R**
Steller's Eider (*Polysticta stelleri*) **V**
Harlequin Duck (*Histrionicus histrionicus*) **W-U**
Long-tailed Duck (*Clangula hyemalis)* **W-U**
Black Scoter *(Melanitta nigra)* **W-U**
Surf Scoter *(Melanitta perspicillata)* **W-C**
White-winged Scoter *(Melanitta fusca)* **W-U**
Common Goldeneye (*Bucephala clangula*) **W-C**
Barrow's Goldeneye (*Bucephala islandica*) **W-R**
Bufflehead *(Bucephala albeola)* **W-C, OS-R**
Red-breasted Merganser *(Mergus serrator)* **W-C**
Hooded Merganser (*Lophodytes cucullatus)* **W-U**
Ruddy Duck (*Oxyura jamaicensis)* **W-C, B-R**

PHEASANT (Family Phasianidae)

Ring-necked Pheasant *(Phasianus colchicus*) **Y-U**

QUAIL (Family Odontophoridae)

California Quail *(Callipepla californica*) **Y-R?**

LOONS (Family Gaviidae)

Common Loon *(Gavia immer*) **W-C, OS-U**
Pacific Loon *(Gavia pacifica*) **W-FC**
Red-throated Loon *(Gavia stellata*) **W-FC**
Yellow-billed Loon (*Gavia adamsii)* **V**

GREBES (Family Podicipedidae)

Pied-billed Grebe (*Podilymbus podiceps)* **Y-U**
Red-necked Grebe (*Podiceps grisegena)* **W-FC**
Horned Grebe (*Podiceps auritus)***W-C**
Eared Grebe (*Podiceps nigricollis)* **W-U**
Western Grebe (*Aechmophorus occidentalis)* **W-C, OS-R**
Clark's Grebe (*Aechmophorus clarkii)* **W-U**

SHEARWATERS (Family Procellariidae)

Northern Fulmar (*Fulmarus glacialis)* **O: MF-U, W-U**
Murphy's Petrel (*Pterodroma ultima*) **D**
Sooty Shearwater (*Puffinus griseus)* **O: MF-C, W-R**

STORM-PETRELS (Family Hydrobatidae)

Fork-tailed Storm-Petrel (*Oceanodroma furcata*) **O: M-R, W-R**
Leach's Storm-Petrel (*Oceanodroma leucorhoa*) **V**

PELICANS (Family Pelecanidae)

Brown Pelican (*Pelecanus occidentalis)* **PB-C**
American White Pelican (*Pelecanus erythrorhynchos)* **V**

CORMORANTS (Family Phalacrocoracidae)

Double-crested Cormorant (*Phalacrocorax auritus)* **Y-C**
Pelagic Cormorant (*Phalacrocorax pelagicus)* **Y-C**
Brandt's Cormorant (*Phalacrocorax penicillatus)* **Y-U**

HERONS (Family Ardeidae)

American Bittern (*Botaurus lentiginosus)* **B-U, W-R**
Great Blue Heron *(Ardea herodias)* **Y-C**
Great Egret *(Casmerodius albus)* **Y-C**
Snowy Egret (*Egretta thula*) **W-R**
Cattle Egret (*Bubulcus ibis*) **V**
Green Heron (*Butorides virescens*) **B-U**
Black-crowned Night-Heron (*Nycticorax nycticorax*) **M-R**

IBIS (Family Threskiornithidae)

White-faced Ibis (*Plegadis chihi*) **V**

VULTURES (Family Cathartidae)

Turkey Vulture *(Cathartes aura)* **B-C**

KITES/HAWKS/EAGLES (Family Accipitridae)

Osprey *(Pandion haliaetus*) **B-C, W-R**
White-tailed Kite *(Elanus caeruleus)* **W-C, B-R?**
Bald Eagle *(Haliaeetus leucocephalus*) **Y-U**
Northern Harrier *(Circus cyaneus*) **W-C, B-R**
Sharp-shinned Hawk *(Accipiter striatus*) **Y-U, B-R?**
Cooper's Hawk *(Accipiter cooperii*) **Y-U, B-R?**
Red-tailed Hawk *(Buteo jamaicensis*) **Y-FC**
Rough-legged Hawk (*Buteo lagopus*) **MF-R, W-I**
Red-shouldered Hawk (*Buteo lineatus*) **W-FC, B-R?**

FALCONS (Family Falconidae)

American Kestrel (*Falco sparverius*) **M-U**
Merlin *(Falco columbarius*) **W-U**
Peregrine Falcon *(Falco peregrinus*) **Y-U**
Prairie Falcon (*Falco mexicanus*) **V**
Gyrfalcon (*Falco rusticolus*) **V**

RAILS/COOTS (Family Rallidae)

Virginia Rail *(Rallus limicola*) **Y-U**
Sora *(Porzana carolina*) **B-U, W-R**
American Coot *(Fulica americana*) **W-FC**

PLOVERS (Family Charadriidae)

Black-bellied Plover *(Pluvialis squatarola*) **W-U, M-FC**
Pacific Golden-plover (*Pluvialis fulva)* **MF-U, MS-R**
American Golden-plover (*Pluvialis dominica)* **MF-U, MS-R**
Semipalmated Plover *(Charadrius semipalmatus*) **Y-FC, B-R**
Snowy Plover (*Charadrius alexandrinus)* **Y-U**
Killdeer *(Charadrius vociferus*) **Y-C**

OYSTERCATCHER (Family Haematopodidae)

Black Oystercatcher (*Haematopus bachmani)* **W-U**

STILTS/AVOCETS (Family Recurvirostridae)

Black-necked Stilt (*Himantopus mexicanus)* **V**
American Avocet (*Recurvirostra americana)* **M-R**

SANDPIPERS (Family Scolopacidae)

Greater Yellowlegs *(Tringa melanoleuca*) **M-C, W-U**
Lesser Yellowlegs *(Tringa flavipes*) **M-U**
Wandering Tattler (*Heteroscelus incanus*) **M-U**
Spotted Sandpiper *(Actitus macularia*) **B-U, W-R**
Solitary Sandpiper (*Tringa solitaria*) **M-R**
Willet (*Catoptrophorus semipalmatus)* **M-U**
Whimbrel *(Numenius phaeopus*) **M-C**
Long-billed Curlew (*Numenius americanus)* **M-U**
Marbled Godwit (*Limosa fedoa)* **M-U, W-R**
Ruddy Turnstone (*Arenaria inter)* **M-U**
Black Turnstone *(Arenaria interpres*) **M-FC**, **W-FC**
Sanderling (*Calidris alba)* **W-C, OS-R**
Surfbird **(***Aphriza virgata***)** **W-U**
Red Knot (*Calidris canutus)* **M-U**
Semipalmated Sandpiper (*Calidris pusilla)* **MF-U, MS-R**
Red-necked Stint (*Calidris ruficollis*) **V**
Little Stint (*Calidris minuta*) **V**
Western Sandpiper *(Calidris mauri*) **M-C, W-U, OS-R**
Least Sandpiper *(Calidris minutilla*) **M-C, W-U, OS-R**
Baird's Sandpiper (*Calidris bairdii)* **MF-U, MS-R**
Pectoral Sandpiper (*Calidris melanotos)* **M-FC, MS-R**
Rock Sandpiper (*Calidris ptilocnemis*) **W-U**
Dunlin *(Calidris alpina*) **M-C, W-U**
Curlew Sandpiper (*Calidris ferruginea*) **V**
Stilt Sandpiper (*Calidris himantopus)* **MF-R**
Buff-breasted Sandpiper (*Tryngites subruficollis)* **MF-U**
Ruff (*Philomachus pugnax)* **MF-R**
Upland Sandpiper (*Bartramia longicauda)* **V**
Short-billed Dowitcher *(Limnodromus griseus*) **M-C, OS-R**
Long-billed Dowitcher *(Limnodromus scolopaceus*) **M-C, W-U, OS-R**
Wilson's Snipe *(Gallinago delicata*) **W-FC**
Wilson's Phalarope (*Phalaropus tricolor*) **M-R, B-R**
Red-necked Phalarope *(Phalaropus lobatus*) **M-U**
Red Phalarope (*Phalaropus fulicaria)* **O: M-U, W-I**

GULLS/TERNS (Family Laridae)

Pomarine Jaeger (*Stercorarius pomarinus*) **O: M-R**
Parasitic Jaeger (*Stercorarius parasiticus*) **O: M-R**
Franklin's Gull (*Larus pipixcan*) **M-R**
Bonaparte's Gull *(Larus philadelphia*) **M-U, W-I**
Little Gull (*Larus minutus*) **V**
Heermann's Gull (*Larus heermanni*) **PB-FC**
California Gull *(Larus californicus*) **W-C, PB-C, OS-U**
Western Gull *(Larus occidentalis*) **Y-C**
Glaucous-winged Gull *(Larus glaucescens*) **W-C**

Glaucous Gull (*Larus hyperboreus)* **W-R**
Herring Gull (*Larus argentatus*) **W-U**
Thayer's Gull (*Larus thayeri)* **W-U**
Mew Gull (*Larus canus)* **W-C**
Ring-billed Gull (*Larus delawarensis)* **W-C, OS-U**
Black-legged Kittiwake (*Rissa tridactyla)* **O: W-FC**
Red-legged Kittiwake (*Rissa brevirostris*) **V, D**
Sabine's Gull (*Xema sabini*) **O: M-R**
Elegant Tern (*Sterna elegans)* **PB-I**
Caspian Tern *(Sterna caspia)* **M-C, OS-U**
Common Tern (*Sterna hirundo*) **M-R**

AUKS (Family Alcidae)

Common Murre *(Uria aalge*) **Y-C**
Pigeon Guillemot (*Cepphus columba)* **B-C, W-R**
Marbled Murrelet *(Brachyramphus marmoratus*) **O: Y-U**
Rhinoceros Auklet (*Cerorhinca monocerata)* **Y-R**
Cassin's Auklet (*Ptychoramphus aleuticus*) **O: M-R**
Xantus' Murrelet (*Synthliboramphus hypoleucus*) **D**
Ancient Murrelet (*Synthliboramphus antiquus*) **O: W-R**
Tufted Puffin (*Fratercula cirrhata*) **O: M-R**
Horned Puffin (*Fratercula corniculata*) **D**

PIGEONS/DOVES (Family Columbidae)

Rock Pigeon (*Columba livia*) **Y-C**
Band-tailed Pigeon *(Columba fasciata*) **M-U, B-R?**
Mourning Dove *(Zenaida macroura*) **B-C, W-R**

OWLS (Family Strigidae)

Great-horned Owl *(Bubo virginianus*) **Y-U, B-U**
Snowy Owl (*Bubo scandiaca*) **V**
Short-eared Owl (*Asio flammeus*) **MF-R, W-R**
Western Screech-Owl (*Otus kennicottii)* **Y-R?**
Burrowing Owl (*Athene cunicularia*) **M-R**, **W-R**

NIGHTJARS (Family Caprimulgidae)

Common Nighthawk *(Chordeiles minor*) **M-U, B-R?**

SWIFTS (Family Apodidae)

Black Swift (*Cypseloides niger*) **MS-U**
Vaux's Swift (*Chaetura vauxi*) **M-FC, B-R?**

HUMMINGBIRDS (Family Trochilidae)

Anna's Hummingbird *(Calypte anna*) **Y-U**
Rufous Hummingbird *(Selasphorus rufus*) **B-C**

KINGFISHER (Family Alcedinidae)

Belted Kingfisher *(Ceryle alcyon)* **Y-C**

WOODPECKERS (Family Picidae)

Northern Flicker *(Colaptes auratus)* **Y-C**
Downy Woodpecker *(Picoides pubescens*) **Y-U**
Hairy Woodpecker *(Picoides villosus*) **Y-U**
Pileated Woodpecker *(Dryocopus pileatus)* **Y-U**
Red-breasted Sapsucker (Sphyrapicus ruber) **Y-R, B?**

FLYCATCHERS (Family Trannidae)

Olive-sided Flycatcher *(Contopus borealis*) **B-U**
Western Wood-Pewee *(Contopus sordidulus*) **M-FC**, **B-U**
Willow Flycatcher (*Empidonax traillii*) **M-U**
Hammond's Flycatcher (*Empidonax hammondii*) **M-R**
Dusky Flycatcher (*Empidonax oberholseri*) **M-R**
Pacific Slope Flycatcher *(Empidonax difficilis*) **B-C**
Black Phoebe *(Sayornis nigricans*) **W-C, B-U**
Say's Phoebe (*Sayornis saya*) **M-R**
Ash-throated Flycatcher (*Myiarchus cinerascens*) **M-R**
Tropical Kingbird (*Tyrannus melancholicus*) **PB-R**
Western Kingbird (*Tyrannus verti*) **M-R**
Scissor-tailed Flycatcher (*Tyrannus forficatus*) **V**

SHRIKES (Family Lannidae)

Northern Shrike (*Lanius excubitor)* **W-U**
Loggerhead Shrike (*Lanius ludovicianus*) **V**

VIREOS (Family Vireonidae)

Hutton's Vireo *(Vireo huttoni*) **Y-U**
Warbling Vireo *(Vireo gilvus*) **M, B-R**
Cassin's Vireo (*Vireo cassinii)* **M-R**

JAYS/CROWS/RAVENS (Family Corvidae)

Steller's Jay *(Cyanocitta stelleri*) **Y-C**
Western Scrub-Jay (*Aphelocoma californica*) **M-R**
American Crow *(Corvus brachyrhynchos*) **Y-C**
Common Raven *(Corvus corax)* **Y-C**

HORNED LARKS (Family Alaudidae)

Streaked Horned Lark (*Eremophila alpestris strigata)* **M-U, W-R**

SWALLOWS (Family Hirundinidae)

Tree Swallow *(Tachycineta bicolor*) **B-C, W-R**
Violet-green Swallow *(Tachycineta thalassina*) **B-U**
Purple Martin *(Progne subis*) **B-U**
Northern Rough-winged Swallow *(Stelgidopteryx serripennis*) **B-U**
Barn Swallow *(Hirundo rustica*) **B-FC**
Cliff Swallow *(Hirundo pyrrhonota)* **B-C**
Bank Swallow *(Riparia riparia)* **M-R**

CHICKADEES (Family Paridae)

Black-capped Chickadee *(Parus atricapillus*) **Y-C**
Chestnut-backed Chickadee *(Parus rufescens*) **Y-C**

BUSHTITS (Family Aegithalidae)

Bushtit *(Psaltriparus minimus*) **Y-U**

NUTHATCHES (Family Sittidae)

Red-breasted Nuthatch *(Sitta canadensis*) **B-U, W-I**
White-breasted Nuthatch (*Sitta carolinensis*) **V**

CREEPERS (Family Certhiidae)

Brown Creeper *(Certhia americana*) **W-U, B-R**

WRENS (Family Troglodytidae)

Marsh Wren *(Cistothorus palustris*) **Y-C**
Bewick's Wren *(Thryomanes bewickii)* **Y-FC**
Winter Wren (*Troglodytes troglodytes*) **W-C, B-U**
House Wren *(Troglodytes aedon*) **M-R**
Rock Wren (*Salpinctes obsoletus*) **V**
Sedge Wren (Cistothorus platensis) **V**

KINGLETS (Family Regulidae)

Ruby-crowned Kinglet *(Regulus calendula)* **W-C**
Golden-crowned Kinglet *(Regulus satrapa*) **Y-C**

GNATCATCHERS (Family Sylviidae)

Blue-gray Gnatcatcher (*Polioptila caerulea*) **V**

THRUSHES (Family Turdidae)

Western Bluebird (Sialia mexicana) **M-R, W-R**
Mountain Bluebird (*Sialia currucoides*) **V**
Varied Thrush *(Ixoreus naevius*) **W-C**
Swainson's Thrush (*Catharus ustulatus*) **B-C**
Hermit Thrush *(Catharus guttatus*) **W-FC**
American Robin *(Turdus migratorius*) **Y-C**

WRENTIT (Family Timaliidae)

Wrentit *(Chamaea fasciata*) **Y-C**

MIMIC THRUSHES (Family Mimidae)

Northern Mockingbird *(Mimus polyglottus*) **Y-R**
Sage Thrasher (*Oreoscoptes montanus*) **V**

STARLINGS (Family Sturnidae)

European Starling (*Sturnus vulgaris*) **Y-C**

PIPITS (Family Motacillidae)
American Pipit *(Anthus rubescens*) **M-C, W-U**

WAXWINGS (Family Bombycillidae)

Cedar Waxwing *(Bombycilla cedrorum*) **B-U**

WARBLERS (Family Parulidae)

Orange-crowned Warbler *(Vermivora celata*) **B-C, W-R**
Nashville Warbler *(Vermivora ruficapilla*) **M-R**
Virginia's Warbler (*Vermivora virginiae*) **V**
Yellow Warbler *(Dendroica petechia*) **M-C**
Yellow-rumped Warbler *(Dendroica coronata)* **Y-C**
Black-throated Gray Warbler *(Dendroica nigrescens*) **B-FC**
Black-and-white Warbler (*Mniotilta varia*) **V**
MacGillivray's Warbler *(Oporornis tolmiei*) **M-R**
Common Yellowthroat *(Geothlypis trichas*) **M-C, B-FC, W-R**
Wilson's Warbler *(Wilsonia pusilla)* **B-R**
Hermit Warbler (*Dendroica occidentalis)* **M-R**
Townsend's Warbler *(Dendroica occidentalis*) **W-U**
Palm Warbler (*Dendroica palmarum)* **M-FC, W-R**

TANAGERS (Family Thraupidae)

Western Tanager *(Piranga ludoviciana*) **B-U**

SPARROWS (Family Emberizidae)

Song Sparrow *(Melospiza melodia*) **Y-C**
Lincoln's Sparrow (*Melospiza lincolnii)* **W-U**
White-crowned Sparrow *(Zonotrichia leucophrys*) **Y-C**
Golden-crowned Sparrow *(Zonotrichia atricapilla*) **W-FC**
White-throated Sparrow (*Zonotrichia albicollis*) **W-U**
Harris's Sparrow (*Zonotrichia querula*) **V**
Fox Sparrow (*Passerella iliaca*) **W-C**
Dark-eyed Junco (*Junco hyemalis*) **Y-C**
Savannah Sparrow *(Passerculus sandwichensis*) **B-C, W-U**
Chipping Sparrow *(Spizella passerina*) **M-R**
Clay-colored Sparrow (*Spizella pallida*) **M-R, W-R**
American Tree Sparrow (*Spizella arborea*) **V**
Spotted Towhee *(Pipilo maculatus*) **B-C, W-U**
Oregon Vesper Sparrow *(Pooecetes gramineus affinis*) **M-R, W-R**
Lapland Longspur (*Calcarius lapponicus)* **MF-U, MS-R, W-R**
Chestnut-collared Longspur (*Calcarius ornatus*) **V**
Snow Bunting (*Plectrophenax nivalis*) **V**

GROSBEAKS/BUNTINGS (Family Cardinalidae)

Black-headed Grosbeak *(Pheucticus melanocephalus*) **B-U?**
Lazuli Bunting *(Passerina amoena*) **M-R**

BLACKBIRDS (Family Icteridae)

Bobolink (*Dolichonyx oryzivorus*) **V**
Red-winged Blackbird *(Agelaius phoeniceus*) **Y-C**
Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) **M-R**
Brewer's Blackbird (*Euphagus cyanocephalus*) **Y-R, B-R?**

Brown-headed Cowbird *(Molothrus ater*) **B-FC**
Western Meadowlark (Sturnella neglecta) **W-C, B-R?**

FINCHES (Family Fringillidae)

Pine Siskin *(Carduelis pinus*) **M-I, B-U?**
American Goldfinch *(Carduelis tristis*) **B-FC, W-R**
Purple Finch *(Carpodacus purpureus*) **B-C, W-R**
House Finch *(Carpodacus mexicanus*) **Y-C**
Red Crossbill (*Loxia curvirostra)* **Y-FC**
Evening Grosbeak *(Coccothraustes vespertinus)* **M-U?**

WEAVERS (Family Passeridae)

House Sparrow *(Passer domesticus*) **Y-R**

Mammals[1]

OPOSSUMS (Family Didelphiidae)

Virginia Opossum (*Didelphis virginianus)*

SHREWS (Family Soricidae)

Vagrant Shrew (*Sorex vagrans)*
Trowbridge Shrew (*Sorex trowbridgii)*
Pacific Shrew (*Sorex pacificus*)
Pacific Water Shrew *(Sorex bendirii*)

MOLES (Talpidae)

Shrew Mole (*Neurotrichus gibbsii*)
Townsend's Mole (*Scapanus townsendii*)
Coast Mole (*Scapanus orarius*)

EVENING BATS (Family Vespertilionidae)

Little Brown Bat (*Myotis lucifugus*)
Long-eared Myotis (*Myotis evotis*)
Hoart Bay (*Lasiurus cinereus*)
Townsend's Big-eared Bat (*Corynorhinus townsendii*)
Long-legged Myotis (*Myotis volans*)
California Myotis (*Myotis californicus*)
Big Brown Bat (*Eptesicus fuscus*)
Yuma Myotis (*Myotis yumanensis*)
Silver-haired Bat (*Lasionycteris noctivagans*)

RABBITS (Family Leporidae)

Brush Rabbit (*Sylvilagus bachmani*)

SQUIRRELS (Family Sciuridae)

California Ground Squirrel (*Spermophilus beecheyi*)
Northern Flying Squirrel (*Glaucomys sabrinus*)

[1]Potential or documented occurences.

Townsend's Chipmunk (*Eutamias townsendi*)
Douglas' Squirrel (*Tamiasciurus douglasii*)

POCKET GOPHERS (Family Geomyidae)

Western Pocket Gopher (*Thomomys mazama*)

BEAVERS (Family Castoridae)

American Beaver (*Castor Canadensis*)

MICE/VOLES/MUSKRATS/RATS (Family Muridae)

Deer Mouse (*Peromyscus maniculatus*)
Long-tailed Vole (*Microtus longicaudus*)
Townsend's Vole (*Microtus townsendii*)
Creeping Vole (*Microtus oregoni*)
Western Red-backed Vole (*Clethrionomys californicus*)
Red Tree Vole (*Phenacomys longicaudus*)
Oregon or Creeping Vole (*Microtus oregoni*)
White-footed Vole (*Arborimus albipes*)
Bushy-tailed Woodrat (*Neotoma cinerea*)
Muskrat (*Ondatra zibethicus*)
Norway Rat (*Rattus norvegicus*)
Black Rat (*Rattus rattus*)
House Mouse (*Mus musculus*)

JUMPING MICE (Family Zapodidae)

Pacific Jumping Mouse (*Zapus trinotatus*)

PORCUPINES (Family Erethizontidae)

Porcupine (*Erethizon dorsatum*)

FOXES (Family Canidae)

Coyote (*Canis latrans*)
Gray Fox (*Vulpes velox*)

BEARS (Family Ursidae)

Black Bear (*Ursus americanus*)

RACCOONS (Family Procyonidae)

Raccoon (*Procyon lotor*)

WEASELS/SKUNKS/OTTER/MINK/MARTENS (Family Mustelidae)

Long-tailed Weasel (*Mustela frenata*)
Ermine (*Mustela erminea*)
Striped Skunk (*Mephitis mephitis*)
Spotted Skunk (*Spilogale gracilis*)
River Otter (*Lutra canadensis*)
Mink (*Mustela vison*)

American Marten (*Martes Americana*)
Fisher *(Martes pennanti)*

CATS (Family Felidae)

Mountain Lion (*Felis concolor*)
Bobcat (*Lynx rufus*)

DEER (Family Cervidae)

Black-tailed Deer (*Odocoileus hemionus columbians*)
Roosevelt Elk (*Cervise elaphus roosevelti*)

HAIR SEALS (Family Phocidae)

Harbor Seal (*Phoca vitulina*)

EARED SEALS (Family Otariidae)

Steller Sea Lion (*Eumetopias jubatus*)
California Sea lion (*Zalophus californianus*)

Amphibians[1]

MOLE SALAMANDERS (Family Ambystomatidae)

Northwestern Salamander (*Ambystoma gracile*)
Pacific Giant Salamander (*Dicamptodon ensatus*)

LUNGLESS SALAMANDERS (Family Plethodontidae)

Clouded Salamander (*Aneides ferreus*)
Ensatina (*Ensatina eschscholtzi*)
Dunn's Salamander (*Plethodon dunni*)
Western Redback Salamander (*Plethodon vehiculum*)
California Slender Salamander (*Batrachoseps attenuatus*)

NEWTS (Family Salamandridae)

Roughskin Newt (*Taricha granulosa*)

TREE FROGS (Family Hylidae)

Pacific Treefrog (*Ascaphus regilla*)

TRUE FROGS (Family Ranidae)

Northern Red-legged Frog (*Rana aurora*)
Bullfrog (*Rana catesbeiana*)

Reptiles[1]

SEA TURTLES (Family Dermochelyidae)

Leather-back Sea Turtle (*Dermochelys coriacea*)

[1]Potential or documented occurences.

WATER AND BOX TURTLES (Family Emydidae)

Northwestern Pond Turtle (*Clemmys marmorata*)

ALLIGATOR LIZARDS (Family Anguidae)

Northern Alligator Lizard (*Elgaria coerulea*)

IGUANIDS (Family Iguanidae)

Western Fence Lizard (*Sceloporus occidentalis*)
Northern Alligator Lizard (*Elgaria coerulea*)

BOAS (Family Bioidae)

Rubber Boa (*Charina bottae*)

COLUBRID SNAKES (Family Colubridae)

Northwestern Garter Snake (*Thamnophis ordinoides*)
Common Garter Snake (Thamnophis sirtalis)
Western Terrestrial Garter Snake (*Thamnophis elegans*)

Appendix 3. Plan Conformance

PLAN CONFORMANCE / NEPA COMPLIANCE RECORD
North Spit Management Plan

Coos Bay District Office
Development of the North Spit Plan

The North Spit Management Plan is the ten year update to the 1995 Coos Bay Shorelands Management Plan (Shorelands Plan) and addresses the lands on the North Spit of Coos Bay under Buerau of Land Management jurisdiction. The North Spit of Coos Bay is a sandy, vegetated point of land separating the waters of Coos Bay from the Pacific Ocean. It is northwest of the communities of Coos Bay, North Bend, and Charleston in Coos County in southwestern Oregon. The BLM lands on the North Spit are all public domain lands, and provide habitat for several Special Status Species (SSS). BLM intends to conserve and improve when feasible, habitat for SSS on the North Spit, while preserving the recreational opportunities available.

Plan Conformance Review

The North Spit Plan incorporated the 1989 Draft Coos Bay Shorelands Management Plan, the 1994 Coos Bay Shorelands Draft Plan and Environmental Assessment, and the Final Coos Bay Shorelands Management Plan, signed September, 1995.

The North Spit is in compliance with the Coos Bay District Resource Management Plan (RMP) which was completed and signed in 1995.

Nancy Zepf 4-19-05
Nancy Zepf, ID Team Reviewer

NEPA Review

Existing Environmental Impact Statement (EIS) Review:
This plan is in conformance with the Coos Bay District Resource Management Plan and Environmental Impact Statement /Record of Decision, 1995.

The Draft Coos Bay Shorelands Plan Environmental Assessment No. EA120-93-07* is in conformance with the following existing decisions from the Coos Bay District Resource Management Plan (RMP)/ EIS Record of Decision (ROD).

1. The District RMP designated nearly half of the BLM lands on the Spit as an ACEC for outstanding values for wildlife, scenery, wetlands, SSS and recreation.
2. The District RMP designated motorized access on the Spit as "Motorized Access is Limited to designated roads and trails." The designated roads and trails have not changed.

3. The District RMP designated all the lands on the Spit as a Special Recreation Management Area due to the known popularity of the area and the challenges of managing for both recreation and SSS habitat.
4. The direct and indirect impacts of the North Spit Plan are less than those identified in the Shorelands Plan, due to land tenure adjustments (see * below).
5. There would be no additional cumulative impacts from the implementation of the North Spit Plan.
6. Public involvement that occurred during the development of the North Spit Plan occurred the same way as if a NEPA document was produced. No new issues were identified.

*The EA number was changed from EA No. OR126-93-07 (which is in the official draft plan booklet, to EA No. OR120-93-07. The change occurred due to the re-organization of the district in the early 1990's. OR126 referred to the Tioga Resource Area, which did not exist after the re-organization. OR 120 refers to the Coos Bay District. Many of the management actions proposed in the previous planning documents for the Spit included actions on lands the BLM identified as desirable to acquire through exchange. Three of the four proposed land exchanges have occurred, however, a key parcel used by the public for access, has not been acquired. Therefore, many of the management actions proposed for that parcel have been dropped in the updated North Spit Plan because they are not on BLM lands.

The North Spit Plan was written by an interdisciplinary team of BLM staff. Natural resource information was reviewed and updated. BLM management requirements for SSS and the designations in the RMP were further explained. There are no new public restrictions proposed, nor is there any surface-distrubing activity proposed. No new issues were identified. If BLM proposes surface disturbing projects, a new Environmental Analysis will be done. The basic goals and objectives from the District RMP, through the Shorelands drafts and final documents remain virtually the same: Allow recreational activities while conserving habitat for all species, with special attention on the SSS.

Steve Morris 4-19-05
Steve Morris, NEPA Reviewer

Decision

I have reviewed this Plan Conformance and NEPA Compliance Record and have determined that the North Spit Management Plan is in conformance with the approved land use plan and that no further environmental analysis is required. It is my decision to implement the plan as described.

M. Elaine Raper
M. Elaine Raper
Umpqua Area Manager

4/21/05
Date

Appendix 4. History of Land Tenure on the North Spit.

1857 First survey of the North Spit.

1878 Beginning of numerous attempts to build a jetty on the east shore of the estuary.

1882 Cash entry patent to Sec. 24 Lot 4.

1884 Cash entry patent to Sec. 25 Lot 1.

1887 Sec. 25 Lot 2 Withdrawn to the Treasury Department for lifesaving purposes. The Life Saving Station was constructed and fully staffed by August 1891. The US later also acquired Sec. 24 Lot 4 and Sec. 25 Lot 1.

1889 The east shore was abandoned as a location of the jetty and planning began for construction on the North Spit.

1889 (June) Cash entry patent to Sec. 26 Lot 3.

1889 (November) All public domain land in T.25S., R13 & 14 W., withdrawn to the War Department for the Coos Bay Harbor.

1890 Congress appropriated money for the jetty construction. The Corps of Engineers began reclamation of the North Spit and jetty construction.

1891 The US acquired Section 26 Lot 3.

1915 Life Saving Station relocated to Coos Head because the location made it difficult to monitor the bar and quickly respond to accidents. US Navy assumed use of the old station on the North Spit. The Navy used the site as Radio Compass Station (on-shore facility for determining the direction of received radio signals)

1947 The Navy closed the Radio Compass Station on the North Spit and relocated to Coos Head.

1950 The Navy declared the old Radio Compass Station surplus. The withdrawn land (Sec. 25 Lot 2) was transferred to the Corps of Engineers. The parcels purchased in fee were disposed of by sale.

1984 The Corps of Engineers relinquished a portion of their withdrawal on the North Spit. BLM determined that it was suitable for return to the public domain and accepted jurisdiction. By accepting jurisdiction, BLM inherited numerous permits and leases issued by the COE. As these authorizations expired, they were replaced by FLPMA right of ways.

1989 A resurvey by BLM established that none of the buildings were on the land (sec. 24 Lot 4) purchased by Edward Altoffer in 1950. BLM demolished the buildings and removed the underground tanks. Attempts to purchase the land from Altoffer failed due to appraisal issues. Altoffer later sold the land to another party.

1992 BLM acquired a parcel in T.25S., R13 W., Sec. 8 for a boat ramp.

1997 BLM acquired Sec. 25 Lot 1 and a 5-acre parcel located next to the BLM Boat Ramp in a land exchange with Weyerhaeuser. In the exchange, the Weyerhaeuser Company picked up the land encumbered by their effluent pond in T.25S., R13 W. The pond had been authorized under a lease by the COE.

2000 BLM acquired Sec. 24 Lot 4 by fee purchase.

2001 The Corps of Engineers relinquished the lands remaining under their withdrawal on the North Spit. BLM determined that it was suitable for return to the public domain and accepted jurisdiction.

Appendix 5. Glossary

Area of Critical Environmental Concern: an area of BLM-administered lands where special management attention is needed to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes; or to protect life and provide safety from natural hazards (as defined in BLM Manual 8300).
Biodiversity: the full range of variety and variability within and among living organisms and the ecological complexes in which they occur.
Breach: term used in this plan to explain an opening in the foredune between Coos Bay and the Pacific Ocean, caused by floodwaters, ocean surf run-up, or by planned mechanical intervention.
Cascadia seismic event: a rupture of the interlocked North American Plate and the Juan de Fuca Plate along the subduction planes. The energy released is expected to generate an 8.8 magnitude earthquake.
Cascadia subduction zone: the generally north-south zone along the Northwest coast where the Juan de Fuca Plate is being over-ridden by the North American Plate.
Community: a group of plants and animals that occupy a given locale.
Coniferous: cone-bearing trees or shrubs; mostly evergreens such as pine, cedar, spruce, etc.
Cubic foot per second (cfs): a unit of measurement of the rate of water flow past a given point equal to one cubic foot in one second.
Deflation plain: area behind the foredune where wind has eroded the sand to the water table, forming a wet surface resistant to further erosion.
Dune: a hill of drifting sand formed by wind action.
Ecosystem: an assemblage of integrated organisms plus the local environment.
Eolian: (Aeolian) pertaining to the action or the effect of the wind, as in eolian sand dune deposits.
Estuary: the zone between the fresh water of a stream and the salt water of an ocean. An estuarine system extends upstream until ocean derived salt measures less than 0.5% during average annual flow. Estuaries are low energy systems and may include subtidal and intertidal areas with aquatic beds.
Estuarine: of, relating to, or found in an estuary.
Exotic: introduced species; not indigenous to a given area.
Globally ranked plant community: a prioritization system for determining global significance of plant communities. G1 communities are the most imperiled whereas G5 communities are widespread and secure.
Good Friday Earthquake, 1964: a tectonic event that originated in Alaska. The earthquake occurred on March 27, 1964, Good Friday and was a 9.2 magnitude, the second largest earthquake ever recorded. The earthquake triggered a tsunami that impacted Pacific coastlines including Oregon, California, Washington, and Alaska.
Herbicide: a chemical substance capable of killing or inhibiting plants.
Interpretation: a communication process that forges emotional and intellectual connections between the interests of the audience and the inherent meanings in the resource.
Introduced species: also referred to as exotic species, these are plants or animals occurring as a result of introduction or unnatural range expansion. These are species that did not occur before the arrival of European culture.
Littoral cell: segment of the shore or beach that is bound by headlands which extend sufficiently seaward to prevent along-shore transport of beach sediment, creating a relatively closed sediment system.
Native: a species indigenous to a given area; any species known to occur before the arrival of European culture or which has moved in through natural range extension.
Non-vascular: refers to the lichens, fungi, liverworts, hornworts, and mosses.
Noxious weeds: any plant designated by the Oregon State Weed Board that is injurious to public health, agriculture, recreation, wildlife, or any public or private property.
Plant community: a general term for an assemblage of plants growing together at a site which show a definite association or affinity to each other
Precipitation ridge: the leading landward edge of a dune field at the point of advancement of the dune.

Riparian: living on or adjacent to a water supply such as a riverbank, lake, or pond.
Riverine: relating to or resembling a river, in this case a coastal freshwater system.
Special Recreation Management Area: an area where a commitment has been made to provide specific recreation activity and experience opportunities. These areas usually require a high level of investment and/or management. They include recreation sites, but recreation sites alone do not constitute SRMAs (as defined in BLM Manual 8300).
Special status species: animals and plants considered being of conservation interest because of their rarity or vulnerability to extirpation or extinction, or they are under-represented in protected areas. BLM SSS are those designated by the BLM State Director, usually in cooperation with the Oregon Department of Agriculture and the Oregon Natural Heritage Information Center. The Oregon and Washington SSS policy identifies three tiers: Bureau Sensitive (BS), Bureau Assessment (BA), and Bureau Tracking (BT). BA species are those which are not presently eligible for official federal or state status but are of concern in Oregon or Washington and may at a minimum, need protection or mitigation in BLM activities. BT species are those which may become threatened or endangered in the future and are not considered SSS for management purposes. Surveys for SSS may be conducted prior to implementing proposed actions that may adversely affect special status species and their habitats.
Succession: the transition of plant species of a given area through a definite ecological stage (e.g., through succession of species composition, grasslands become tree-bearing forests).
Threatened species: plants and animals listed as threatened on the Endangered Species List that are in danger of becoming extinct.
Vascular plants: refers to vessels or ducts that conduct fluids in plants; includes the fern and fern allies, gymnosperms, dicotyledons, and monocotyledons.
Wetland: an area subjected to periodic inundation, usually with soil and vegetative characteristics that separates it from non-inundated area.

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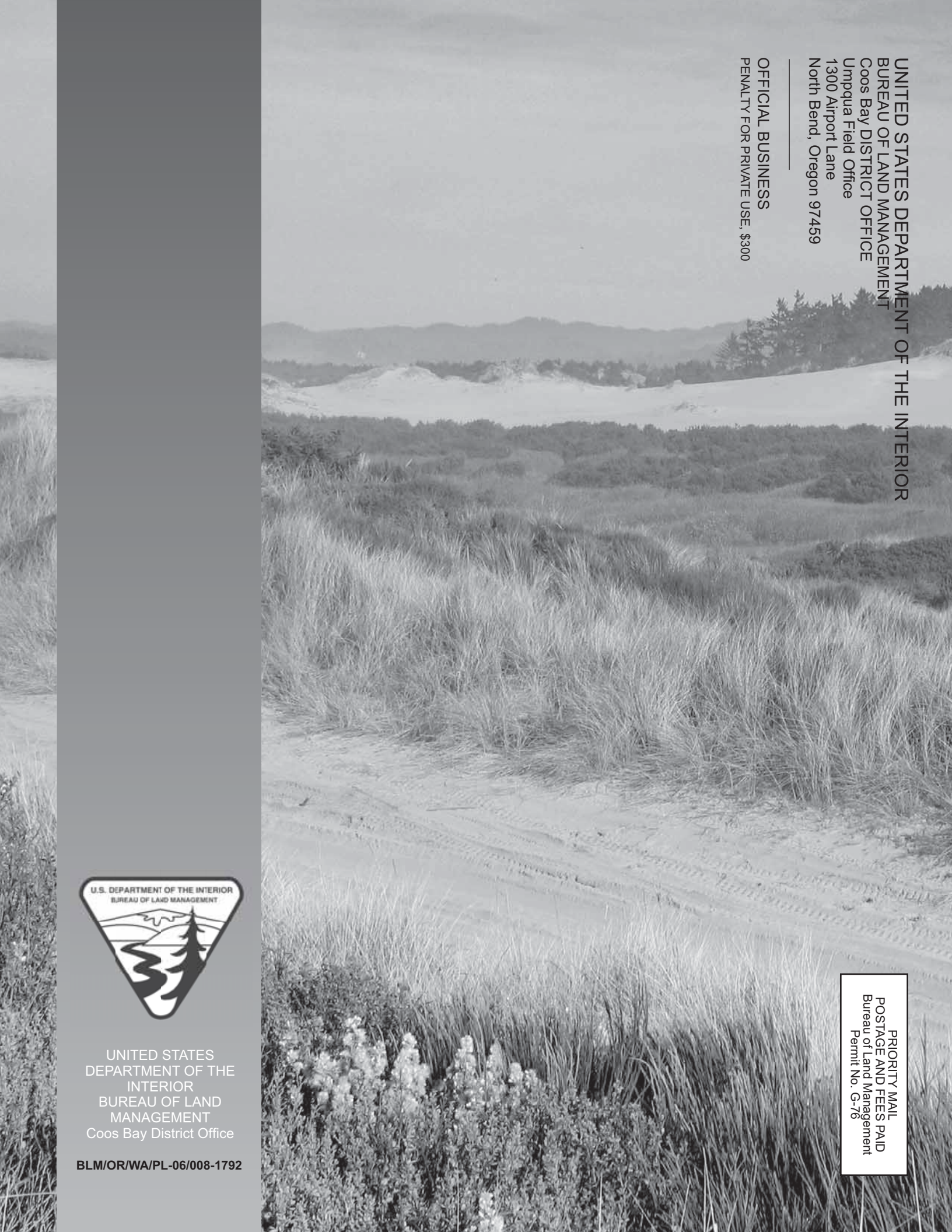

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