

## **COASTAL RESOURCES PLAN FOR DOUGLAS COUNTY**

The Coastal Resources Plan was prepared for the Douglas County Board of Commissioners by the Douglas County Planning Department under the guidance of the Planning Commission. The Coastal Planning Advisory Committee (PAC), agencies and interested citizens participated in the planning process through provision of data, review, and comments. The Plan was originally adopted December 14, 1983. Minor updates to portions of the document have occurred since that time. In 2013, a grant was awarded to the County from the Department of Land Conservation and Development to update the entirety of the document and to digitize the maps contained in each element of the plan into the county's GIS database. The current version of the plan is a result of this work.

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## INTRODUCTION

This document contains plan elements for that portion of the Douglas County Comprehensive Plan dealing with the resources of the Coastal Zone. The original Coastal Resources Plan was adopted by the Douglas County Board of Commissioners on December 14, 1983. The Coastal Planning Advisory Committee (PAC) was instrumental in developing the document.

The Coastal Resources Plan includes an identification of planning issues and requirements, findings regarding coastal resources, management policies, and programs for the coastal planning area.

There are five major elements:

1. Estuarine Resources
2. Coastal Shorelands
3. Dredged Material Disposal
4. Restoration/Mitigation
5. Beaches and Dunes

These five elements were placed in a separate document because of the unique relationships among each of the resources. The State's Coastal Goals require coordination of the planning for estuaries with planning for adjacent shorelands.

The "critical relationships" receiving particular emphasis in the goals involve water quality, fish and wildlife habitats, mitigation/restoration, disposal of dredged material, water-dependent uses and aesthetics and scenic quality. In preparing this plan for uses of shorelands and estuarine areas, these factors were taken into account. The County recognizes the value of shorelands for protection and maintenance of water quality and proposes actions which will reduce the adverse effects on water quality and fish and wildlife habitats resulting from use of shorelands. Particular attention is given to minimizing the amount of man-induced sedimentation in estuaries and to retaining riparian vegetation.

Shoreland areas which have potential for being restored or added to the estuarine ecosystem or which are suitable for disposal of dredged material are identified and policies suggested for their protection. Such areas are important in that they can help meet the requirements for mitigation and material disposal inherent in carrying out development activities in the estuary.

Providing for water-dependent uses requires identification and protection of suitable shoreland areas which lie adjacent to navigable portions of the estuary. This shoreland-estuary relationship is critical in preparing the County's comprehensive plans to provide for future economic growth.

Public access, recreation, aesthetics and scenic quality related to the association of shorelands with estuarine water areas and other factors were considered when developing these planning elements for both the estuary and its shorelands.

In preparing individual plan elements, consideration was given to the information and recommendations contained within the Land and Water Use Plan for the Umpqua Estuary. This document is considered to be an update of that plan and replaces it as the County's statement of policies concerning its estuarine and shorelands areas.





**ESTUARINE  
RESOURCES**

**ELEMENT 1**

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## **PURPOSE AND CONTENT**

This plan element is intended to satisfy the statewide planning requirements for the Umpqua Estuary as well as provide for local needs and planning objectives related to Douglas County's estuarine resources. The involvement of the Coastal Planning Advisory Committee in the preparation of this plan element has helped ensure that local needs and objectives were addressed.

The overall goals of the state are "to recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands and to protect, maintain, where appropriate develop, and where appropriate restore the long term environmental, economic and social values, diversity and benefits of Oregon's estuaries." To accomplish these goals, the state requires each local government to collect and analyze information about estuaries within its jurisdiction and to prepare a comprehensive plan which classifies the estuarine area into management units and which establishes policies and use priorities for each management unit.

Consistent with these requirements, this proposed plan element includes a description of the Umpqua estuarine planning area, findings covering the estuary, as well as references to extensive inventory data collected and used to arrive at management units and policies. The element identifies the classification given the Umpqua Estuary by the state and describes the various management units proposed within the estuary. Also, management policies and uses consistent with those policies are presented and the cumulative effects of the management proposals are discussed. Finally, an exception to the State's Estuarine Resources Goal is described.

## **THE ESTUARINE PLANNING AREA**

Douglas County's estuarine area consists of those portions of the Umpqua River, Smith River and various creeks and sloughs which are influenced by the tide. Tidal influence extends to Spencer Creek on the Smith River and to the lower end of Rock Island (just above Scottsburg) on the Umpqua River.

The estuarine planning area also includes the bed and water column of those water bodies to a point on the shoreline up to and including Mean Higher High Water (MHHW) and to the extent of tidal marshes and the line of nonaquatic vegetation. The area amounts to approximately 11,000 acres.

## **FINDINGS/INVENTORY**

Much information exists concerning the nature, location and extent of the physical, biological, social and economic characteristics and resources of the Umpqua Estuary. The information is not complete. However, there is sufficient data to establish a sound basis for management of the resources and to identify areas for preservation and for development.

The inventory information collected and used to develop these proposed plan elements is listed in the Bibliography of this document. Some of the information is summarized in the following list of findings.

1. The Umpqua Estuary is the fourth largest estuary in Oregon's coastal zone with over 6,830 acres of surface area. It covers as much as 11,000 acres when tidal marshes and the riverine portions of the estuary to the heads of tide are included.
2. The estuary (including the Umpqua and Smith Rivers) drains a watershed area of 4,900 square miles. Only the Columbia and Rogue rivers have larger drainages. Stream sediments transported into the estuary from the drainage basin average 564,000 tons annually.
3. The Umpqua Estuary has been described as a freshwater channel affected by tidal action. It has a freshwater flow averaging 6,700,000 acre feet per year with considerable variation in currents.

4. Marshes, tidelands and eelgrass beds are among the most biologically productive areas within an estuary. It is estimated that there is 1,531 acres of tidelands, 344 acres of tidal marsh and 100 acres of eelgrass in the Umpqua Estuary.
5. Extensive acres of former tidal marsh have been filled for shoreland development or diked for pasture.
6. The amount of recorded fills below Mean High Water (MHW) as of 1971 was 106 acres. Eighty acres of that area were filled to construct Salmon Harbor.
7. The estuary provides some of the State's largest fisheries for shad, striped bass, herring and softshell clams. Large numbers of salmon and trout migrate through and feed in the estuary and rivers.
8. The Umpqua is the only estuary that offers sport and commercial fishermen year-round activity. Fall chinook and coho are taken by a summer rush of sportsmen. Steelhead, spring chinook, shad, striped bass, cutthroat and sturgeon are caught at other times of the year.
9. The estuary is of importance to the scaup duck (bluebill). Thousands of these birds winter in the estuary. Band-tailed pigeons also use some portions of the estuary.
10. The estuary is also important for economic reasons. Commercial fishing, wood products operations, sand and gravel operations and recreation/ tourism depend on the estuary. Historically, logs have been transported and stored on the estuary and gravel has been extracted from the river. Fishing, boating and scenic views attract people seeking recreation.
11. Three jetties are located at the mouth of the estuary to make the entrance more navigable. Several navigation channels in the estuary are authorized and maintained by the U.S. Army Corps of Engineers. These consist of a 26-foot deep entrance channel and a 22-foot deep, 200-foot wide channel from the entrance to Reedsport. Also, there is a turning basin at Reedsport, a 12-foot deep, 100-foot wide channel at Winchester Bay and a side channel, 22 feet deep, 200 feet wide extending from the main channel to Gardiner. Finally, there is a 6-foot deep, 100-foot wide channel in the Smith River extending to the North Fork.

## CLASSIFICATION AND MANAGEMENT UNITS

### ***Classification System***

OAR 660-17-015 classifies the entirety of the Umpqua River as a shallow-draft development estuary. Shallow draft development estuaries are designed to provide navigational improvements and other identified needs for public, commercial, and industrial water-dependent uses consistent with Statewide Planning Goal 16, Estuarine Resources.

In addition to the overarching shallow-draft development classification, Goal 16 requires that the estuary be divided into individual segments referred to as management units, based upon specific environmental, economic and social features in order to identify the estuary's diverse values and resources.

A management unit is a discrete geographic area defined by physical, biological and cultural characteristics within which certain management objectives and priorities are promoted or encouraged.

Each individual management unit is assigned a classification which defines a management objective and provides a general policy framework for the unit. The management unit classification system consists of three management classifications: Natural, Conservation and Development. The purpose of each classification is defined below in terms of the general attributes and characteristics of geographic area falling into each category.

1. **Natural Management Units.** Natural management units are those areas which are needed to assure the protection of significant fish and wildlife habitats, of continued biological productivity within the estuary, and of scientific, research and educational needs. These shall be managed to preserve the natural resources in recognition of dynamic, natural, geological and evolutionary processes. Such areas shall include, at a minimum, all major tracts of salt marsh, tidflats and seagrass and algae beds.

Permissible uses in natural areas shall be undeveloped low-intensity water-dependent recreation; research and educational observation, navigational aides, such as beacons and buoys; protection of habitat, nutrient, fish, wildlife and aesthetic resources, and passive restoration measures; and where consistent with the resource capabilities of the area and the purpose of this management unit, aquaculture; communication facilities; and active restoration measures.

2. **Conservation Management Units.** Conservation management units shall be designated for long-term uses of renewable resources that do not require major alteration of the estuary except for the purpose of restoration. These areas shall be managed to conserve the natural resources and benefits. These shall include areas needed for maintenance and enhancement of biological productivity, recreational and aesthetic uses, and aquaculture. They shall include tracts of significant habitat smaller or of less biological importance than those in (1) above, and oyster and clam beds. Partially altered areas or estuarine areas adjacent to existing development of moderate intensity shall also be included in this classification unless otherwise needed for preservation or development consistent with the overall Oregon Estuary Classification.

While the general purpose and intent of the conservation classification is as described above, the application of this classification to specific areas may be adjusted by special policies applicable to individual management units in order to accommodate needs for natural preservation.

Permissible uses in conservation areas shall be those allowed in (1) above; active restoration measures; aquaculture; and communication facilities. Where consistent with resource capabilities of the area and the purposes of this management unit, high-intensity water-dependent recreation; maintenance dredging of existing facilities; minor navigational improvement; mining and mineral extraction; water dependent uses requiring occupation of water surface area by means other than fill; and bridge crossings, shall be appropriate.

3. **Development Management Units.** Development management units shall be designated to provide for navigation and other identified needs for public, commercial, industrial water dependent uses, consistent with the level of development or alteration allowed by the overall Oregon Estuary Classification. Such areas shall include deep-water areas adjacent or in proximity to the shoreline, navigation channels, subtidal areas for in-water disposal of dredged material and areas of minimal biological significance needed for uses requiring alteration of the estuary.

While the general purpose and intent of the development classification is as described above, the application of this classification to specific areas may be adjusted by special policies applicable to individual management units in order to accommodate needs for natural resource preservation.

Permissible uses in areas managed for water-dependent activities shall be navigation and water-dependent commercial and industrial uses. Where consistent with the resource capabilities and the purposes of this management unit, water-related and non-dependent, non-related uses not requiring fill; mining and mineral extraction; and activities identified in (1) and (2) above, shall also be appropriate.

General policies for managing uses that have more than one type of application to all three management unit classifications, as well as specific policies for each type of management unit classification are located at the end of this chapter. The implementation of these policies occurs when applying the standards contained within the corresponding Estuarine Natural (EN), Estuarine Conservation (EC), and Estuarine Development (ED) zones within the Land Use Development Ordinance.

## Management Units

The estuarine area is divided into 16 management units for detailed examination. In some cases subareas have also been identified within a specific management unit. A description of each management unit is presented along with a list of facts about the area, the management classification and a map detailing the area. Where discrepancies between mapping and management unit or subarea descriptions exist, the management or subarea descriptions shall prevail.

## SUMMARY OF MANAGEMENT UNIT DESIGNATIONS

<u>Management Unit &amp; Subarea</u>	<u>Name</u>	<u>Management Unit Designation</u>
1	The Mouth of the Umpqua	Development
1a	Cove at Mouth of the Umpqua	Conservation
1b	Cove Fronting Social Security Beach	Conservation
2	Half-Moon Bay	Conservation
3	Navigation Channel	Development
4	Jerden Cove to Steamboat Island	Natural
5	Gardiner	Development
6	Steamboat Island	Natural
7	Bolon Island - Reedsport	Conservation & Development
8	Goose Island - Black Island	Natural
9	Estuary between US Highway 101 and Smith River Highway	Conservation
10	Estuary between US Highway 101 and Southern Pacific Railroad	Natural, Conservation
11	Smith River	Conservation, Development
11a	Franz Creek	Natural
11b	Hudson Slough	Natural
11c	Joyce Creek	Natural
11d	Otter Slough	Natural
12	Butler Creek	Natural
13	Umpqua River	Natural & Conservation
14	Middle to Upper Scholfield Creek	Natural
15	Winchester Creek	Conservation
16	Tahkenitch Creek	Natural

**(INSERT MAP)**

## Management Unit No. 1: The Mouth of the Umpqua

**Description:** Map a line from Cornwall Point to the upriver union of the Winchester Bay entrance channel and the Reedsport and Gardiner authorized channels. Continue this line along the northern edge of the authorized channel southwest to a point opposite the north jetty. Connecting the authorized channel and north jetty completes an upriver boundary for estuarine management unit I. This management unit includes the estuarine area from the described boundary downriver to River Mile (RM) 1.

### Facts About the Area:

1. The U.S. Army Corps of Engineers (USACE) has responsibility to provide a navigable channel through the estuarine bar. To accomplish this mission, the Corps has constructed and maintains jetties and navigational aids in the area of the mouth. Based on available funding, the USACE typically conducts annual maintenance dredging at the entrance channel and along the designated upriver shipping lanes to approximately river mile 1. The frequency and magnitude of the dredging is based upon funding and an identified need for the dredging within a specific location. The maximum dredging dimensions authorized within Management Unit No. 1 provide for an entrance channel 26 feet deep and of suitable width across the outer bar; thence a channel 22 feet deep and 200 feet wide to the upriver turning basins at Reedsport and Gardiner.

The jetty system typically receives an annual inspection to determine if and when necessary maintenance and rehabilitation will occur on the jetty. In the past, jetty maintenance and rehabilitation has included extensions, new construction and realignments. Jetty maintenance and rehabilitation work is dependent upon available funding and the severity of the work necessary to restore the jetty.

2. The two major boat basins at Winchester Bay require periodic maintenance dredging for continued access. The U.S. Army Corps of Engineers (USACE) maintains a side channel 12 feet deep and 100 feet wide from the main channel to the boat basins within Winchester Bay with a mooring and turning basin 12 feet deep, 175 feet wide and 300 feet long at the inner end. Salmon Harbor, a department of Douglas County, is responsible for all other dredging activity within the two boat basins to provide dock access for boat users. Dredging occurs based upon a prioritized need and access to available funding.
3. Shoreland areas within Winchester Bay are zoned for marine industrial and marine commercial uses. Public services are present in these shorelands.
4. The west basin of Winchester Bay is a herring spawning and harvest area which is protected through County management of the basin. There are no conflicts with the boating activities.

**Management Classification:** Development

**(INSERT MAP)**

## Management Unit No. 1, Subarea A: Cove at Mouth of Umpqua River

Description: Estuary between south jetty and training jetty.

### Facts About the Area:

1. In 1980, the training jetty was extended seaward 2600 feet connecting with the south jetty at the terminal end. The extension created a triangular water body between the Pacific Ocean and the Umpqua River.
2. The area is not accessible by powered watercraft.
3. The cove is leased to an aquaculture business for the commercial farming and harvesting of oysters and clams.

Management Classification: Conservation

**(INSERT MAP)**

## Management Unit No. 1, Subarea B: Cove Fronting Social Security Beach

**Description:** This subarea includes the waterbody of the cove fronting Social Security Beach inside a line projecting from the northeast end of the training jetty to the tip of the breakwater located near the crab dock pier. The landward extent of this subarea is Mean Higher High Water (MHHW) or the line of nonaquatic vegetation, whichever is greater.

### **Facts about the Area:**

1. This area is undeveloped and devoted primarily to recreational activities.
2. Historically, the southwest part of the cove has been periodically dredged to allow temporary moorage of barges.
3. No significant resources have been identified east of the training jetty within the cove. The cove consists of an intertidal beach bar consisting primarily of cobble gravel and sand.
4. The Cove fronting Social Security Beach shall be reserved for future water-dependent development. At such time a need is shown for development within this area a Quasi-Judicial Plan Amendment and Zone Change will be necessary in order to change the plan designation and zone from Estuarine Conservation to Estuarine Development. The Plan Amendment should follow the procedure as outlined for Industrial Reserve areas in the non-coastal portion of Douglas County's Comprehensive Plan.

**Management Classification:** Conservation

**(INSERT MAP)**

## Management Unit No. 2: Half-Moon Bay

Description: A breakwater and the crab dock pier extend into the Umpqua at the west end of Half-Moon Bay. A straight line drawn between the tip of the breakwater described above and the northern tip of Winchester Point and the MHHW mark on Half-Moon Bay circumscribe Estuarine Management Unit No. 2.

### Facts About the Area:

1. Douglas County owns the crab dock pier located within the bay and maintains it as part of a small park facility at the west end of Half-Moon Bay.
2. The area serves as a major point of non-boating recreation access to the Umpqua River. This cove and Social Security Beach are the only beaches of any size on the Umpqua River which provide vehicle parking as part of the Douglas County parks facility and has immediate accessibility to the beach.
3. The Winchester Bay Sanitary District's outfall is located in Half Moon Bay.

Management Classification: Conservation.

**(INSERT MAP)**

### **Management Unit No. 3: Navigation Channel**

**Description:** This management unit consists of the authorized navigation channel stretching to Reedsport and Gardiner. Included are turning basins at Reedsport (22 feet deep, 600 feet wide and 1,000 feet long) and Gardiner (22 feet deep, 500 feet wide and 800 feet long). Also included are three dredge disposal sites (sites 11, 12 and 13).

#### **Facts About the Area:**

1. Congressionally authorized channel maintenance projects may occur which involve dredging and in-water disposal. Dredging within the designated channel is subject to an identified need and available funding.

**Management Classification:** Development.

**(INSERT MAP)**

## **Management Unit No. 4: Jerden Cove to Steamboat Island**

**Description:** This management unit contains the estuarine area between the upriver extent of Management Unit No. 1 and the down river tip of Steamboat Island. It excludes the authorized channel, identified as Management Unit No. 3.

### **Facts About the Area:**

1. The area contains many acres of seagrass beds and mudflats.
2. The shorelands are undeveloped with no public services provided or planned.
3. A number of wing-dams have been established in this management unit. These wing-dams guide the flow of the rivers current to prevent erosion and to scour the navigation channel.

**Management Classification:** Natural.

**(INSERT MAP)**

## Management Unit No. 5: Gardiner

**Description:** A line drawn true north from the downriver tip of Steamboat Island forms the western boundary of the Gardiner management unit. This management unit is confined to the estuarine area east of the Gardiner channel to MHHW on Gardiner's shore. A straight line drawn between the middle of the Gardiner turning basin and the western tip of Steamboat Island completes the western boundary. The southern boundary is formed by a line drawn from the southern tip of Steamboat Island to the point where the Gardiner railroad causeway meets Bolon Island. The railroad causeway which connects Gardiner and Bolon Island forms the eastern boundary.

### Facts About the Area:

1. The public boat ramp in south Gardiner is an important point of access to the estuarine waters.
2. The existence of an authorized deep water channel adjacent to a shoreland which has major highway (U.S. 101) and rail access suggests the area's potential for water-dependent development.
3. The community of Gardiner has a range of public services including sewer, water and fire protection.

Management Classification: Development

**(INSERT MAP)**

## **Management Unit No. 6: Steamboat Island**

Description: This management unit includes the estuarine area on and around Steamboat Island. The management unit extends from the western boundary of the Gardiner channel to the eastern boundary of the Reedsport channel.

### Facts About the Area:

1. The area contains large tracts of seagrass beds, salt marsh and productive mudflats.
2. The northern tip and northwestern fringes of Steamboat Island have received dredged materials bringing these areas out of the intertidal range.

Management Classification: Natural.

**(INSERT MAP)**

## Management Unit No. 7: Bolon Island - Reedsport

**Description:** This management unit includes the estuarine area south of Bolon Island to the Reedsport waterfront. The area runs from the edge of management units 5 & 6 to the east end of Bolon Island where the railroad bridge crosses the Umpqua into Reedsport.

### Facts About the Area:

1. There has been a significant alteration of the shoreline with a proliferation of piling, docks, ramps, fill, rip-rap, bridge crossings, etc.
2. Existing shoreland uses are primarily water-dependent industrial and decidedly urban in character.
3. There is an extensive commitment of public services to the shoreland and estuarine area:
  - a. rail and highway transportation;
  - b. adjacent to authorized deep water channel/docking facilities;
  - c. city sewer and water;
  - d. fire and police protection.
4. ODFW has identified clam beds on the tidelands west of Bolon Island.
5. The estuarine area between Bolon Island and the authorized channel from the old dry dock facility to the western down river boundary of Bolon State Park is presently undeveloped and used only for recreational purposes.

**Management Classification:** Development, except for Conservation in those areas described in facts 4 and 5.

**(INSERT MAP)**

## **Management Unit No. 8: Goose Island - Blacks Island**

Description: This management unit includes all the estuarine area east of Bolon Island and the Smith River Highway.

### Facts About the Area:

1. The extensive mudflats adjacent to the high salt marshes of Goose and Blacks Island form choice intertidal habitat.

Management Classification: Natural.

**(INSERT MAP)**

## **Management Unit No. 9: Estuary between U.S. Highway 101 and Lower Smith River Rd.**

Description: This management unit includes that portion of the estuary north of Bolon Island between U.S. Highway 101 and Lower Smith River Rd. The landward extent of this management unit is the line of nonaquatic vegetation.

### Facts About the Area:

1. Surrounding physical development precludes this management unit from being designated natural. At the present time, this area is completely surrounded and accessible by three transportation networks (Stables Rd., Lower Smith River Rd. to the east, and U.S. Highway 101 to the west).
2. Physical development within the estuary includes houseboats along the northern fringe and a boat ramp located at the southern fringe.
3. Aquatic vegetation in this management unit is virtually nonexistent. Where it is found, it is limited to a narrow strip along the shoreline.
4. This management unit is predominantly shallow in nature, consisting of silt deposits from the Smith River.
5. This management unit is identified as a mud flat.
6. Adjacent shorelands to the south have previously been used for dredge disposal. The County has identified this area as a dredge disposal site.

Management Classification: Conservation.

**(INSERT MAP)**

## **Management Unit No. 10: Estuary between U.S. Highway 101 and the Gardiner Railroad Causeway**

**Description:** This management unit includes that portion of the estuary north of Bolon Island between U.S. Highway 101 and the Gardiner railroad causeway. The landward extent of this management unit is the line of nonaquatic vegetation.

### **Facts About the Area:**

1. This management unit is surrounded by physical development (U.S. Highway 101 located to the north and east, the Gardiner railroad causeway to the west, and industrial zoned property on Bolon Island to the south).
2. Natural aquatic vegetation is limited to a small area adjacent to the Gardiner railroad causeway. This limited area is identified as a high salt marsh.
3. Other adjacent shorelands to the southeast were once used for disposal of dredged material.
4. Previous shoreland development has permanently altered the natural characteristics of this area. Excluding that area of high salt marsh (see Fact No. 2), aquatic vegetation is limited.

**Management Classification:** Natural for that portion identified as high salt marsh in Fact No. 2 and Conservation elsewhere.

**(INSERT MAP)**

## Management Unit No. 11: Smith River

**Description:** This management unit extends from the confluence of the Smith and Umpqua Rivers to the head of tide on the Smith River. Excluding Subarea 11a, this management unit includes all the estuarine waters, submerged and submersible lands influenced by the MHHW tidal datum.

### **Facts About the Area:**

1. The Smith River has an authorized channel 6 feet deep and 100 feet wide stretching from the confluence of the Smith and Umpqua Rivers to the mouth of the North Fork, then 4 feet deep and 75 feet wide to Sulpher Springs Landing. Dredging within the designated channel is subject to an identified need and available funding.
2. In the past, commerce in the channel included barging gravel upstream for logging road construction and towing log rafts downstream for processing in Gardiner. Potential for this type of use still exists based on environmental and economic standards.
3. The adjacent shorelands are rural (no public services) with grazing and forestry being the principal land uses.
4. The habitat in the Smith River is almost entirely riverine. Through most of its estuarine reach, the river is diked on both sides and as a result little riparian vegetation exists along the banks. A number of creeks feeding into the river support extensive fresh water marshes. Otter Slough, Hudson Slough and Joyce Creek are good examples.
5. The Smith River Marina serves as a major point of boating access on the upper river.

**Management Classification:** Development in the authorized channel, Conservation outside the channel.

**(INSERT MAP)**

## **Management Unit No. 11, Subarea A: Frantz Creek**

**Description:** Excluding that portion of the estuary within the Committed Lands Inventory, Coastal PAC, Site No. 4, this management unit includes all estuarine waters between the Smith River and the head of tide on Frantz Creek.

### **Facts About the Area:**

1. This management unit is identified as freshwater marsh.
2. Excluding adjacent development, estuarine waters in this area are predominantly undeveloped.
3. Predominant vegetation includes cattails and bullrushes.

**Management Classification:** Natural.

**(INSERT MAP)**

## **Management Unit No. 11, Subarea B: Hudson Slough**

**Description:** This subarea includes all waters of Hudson Slough from the confluence of the Smith River to the head of tide. The landward extent of this subarea is the line of nonaquatic vegetation.

### **Facts About the Area:**

1. This subarea is identified as a freshwater tidal marsh.
2. Estuarine waters in this area are undeveloped.
3. Predominant vegetation consists of cattails and bullrushes.
4. Although adjacent shorelands are developed in the lower part of the subarea (See Committed Lands Inventory, Coastal PAC, Site No. 17), these shorelands are designated as rural conservation and are therefore consistent with the natural qualities of the subarea.

**Management Classification:** Natural.

**(INSERT MAP)**

## **Management Unit No. 11, Subarea C: Joyce Creek**

**Description:** This subarea includes the estuary of Joyce Creek between the head of tide and the Lower Smith River Rd.

### **Facts About the Area:**

1. This area is undeveloped and identified as a freshwater marsh.
2. Predominant vegetation types consist of bullrushes and cattails.
3. Waterfowl use this area for nesting and breeding.
4. Adjacent shoreland development is sparse and is primarily located out of the estuary to the north of this area.

**Management Classification:** Natural.

**(INSERT MAP)**

## **Management Unit No. 11, Subarea D: Otter Slough**

**Description:** This subarea includes the upriver portion of Otter Slough from the Otter Slough Bridge to the head of tide.

### **Facts about the Area:**

1. This area supports a large freshwater marsh.
2. The vegetation in this area is primarily natural consisting of tall grass, cattails and other vegetation types common to freshwater marshes.

**Management Classification:** Natural.

**(INSERT MAP)**

## **Management Unit No. 12: Butler Creek**

Description: The estuarine portion of the Butler Creek drainage including a large salt marsh fronting upon the confluence of the Smith and Umpqua Rivers.

### Facts About the Area:

1. The area is dominated by high salt marsh.
2. The marsh is used seasonally for grazing.

Management Classification: Natural.

**(INSERT MAP)**

## Management Unit No. 13: Umpqua River

**Description:** The management unit consists of the Umpqua River from the upriver extent of the authorized channel to the head of tide on the Umpqua and its tributaries.

### Facts About the Area:

1. The habitat is predominantly riverine, with some fringing marsh in the lower stretch.
2. Shoreland development is limited by steep canyon walls, Highway 38 and lack of public services.
3. Two major salt marshes exist roughly opposite each other one to two miles up the Umpqua River from its confluence with the Smith River.
4. In the past there has been commercial runs of aggregate from the river near RM 22 which is then transported up and downriver by barge.

**Management Classification:** Natural in the two salt marshes identified roughly opposite each other one to two miles up the Umpqua River, Conservation elsewhere.

**(INSERT MAP)**

## Management Unit No. 14: Middle to Upper Scholfield Creek

**Description:** This management unit consists of the estuarine area within the south half of Scholfield Creek upriver from the Reedsport Urban Growth Boundary (at the point of intersection of the east line of Section 3, T22S, R12W, with the center line of Scholfield Creek) to the head of tide on Scholfield Creek and Oar Creek. Beyond the established Reedsport Urban Growth Boundary this subarea includes the north half of Scholfield Creek.

### Facts About the Area:

1. This area is choice marine habitat, predominantly salt marsh and eelgrass beds.
2. The upriver extent of salt marsh is approximately where Scholfield Creek bends sharply to the southwest and begins running parallel to Scholfield Road.
3. The Oregon Estuarine Habitat Classification Map identifies the area above the salt water marsh to be primarily fresh marsh and shrub.
4. Except for sparse development located near the head of tide (on both Scholfield and Oar Creeks) adjacent shorelands are predominantly undeveloped.
5. Part of this management unit is identified as Estuarine Subarea No. 4 in the Coastal Resources Element of the Reedsport Comprehensive Plan.
6. The City of Reedsport has jurisdiction over the estuarine area located within the Reedsport Urban Growth Boundary.

Management Classification: Natural.

**(INSERT MAP)**

## **Management Unit No. 15: Winchester Creek**

**Description:** Winchester Creek upriver from Winchester Bay to the heads of tide.

### **Facts About the Area:**

1. Winchester Creek is located both in and adjacent to the urban area of Winchester Bay.
2. Shoreland development between Winchester Bay and Highway 101 is limited to riprap and steep terrain with mixed vegetation.
3. Two large culverts under Highway 101 allow passage of water between upper Winchester Creek and Winchester Bay.
4. A study completed by the Corps of Engineers (see Shoreland Subarea No. 5, Finding No. 7) has allowed Douglas County to establish a tidal modifier line which separates tidelands from uplands in the Winchester Creek basin. All lands outside the designated tidal modifier line have been designated as shorelands, whereas all lands within the tidal modifier line have been designated estuarine.
5. Winchester Creek has been significantly altered due to past dredging activities. Although altered, the deepened stream channel now provides improved habitat to the estuary.

**Management Classification:** Conservation.

**(INSERT MAP)**

## Management Unit No. 16: Tahkenitch Creek

**Description:** That portion of Tahkenitch Creek subject to tidal influence. (For the approximate location of the head of tide, see Heads of Tide for Coastal Streams, 1989, by Division of State Lands.)

### Facts About the Area:

1. This management unit is located within the Dunes National Recreation Area.
2. The Snowy Plover, a federally registered endangered bird species inhabits adjacent shorelands in the area.
3. This area is identified as a salt marsh.
4. The 1994, Oregon Dunes National Recreational Area Management Plan identifies the potential for Tahkenitch Creek to be recommended for classification as a Wild and Scenic River. The plan indicates that within the river corridor, a 1/4 mile on each side of the stream, that the scenery, recreation, geology/soils and wildlife for which the river is recommended be maintained until final decision is made as to its status.

**Management Classification:** Natural

**(INSERT MAP)**

## MANAGEMENT POLICIES

The policies within the Estuarine Resources Element are organized into five categories.

1. General Policies
2. Policies for Natural Management Units
3. Policies for Conservation Management Units
4. Policies for Development Management Units
5. Area-Specific Policies

The general policy section has application to each management unit identified in the estuary. The following three policy sections correspond to the three management units (Natural, Conservation and Development) and contain policy suggestions for managing uses within each type of unit. The last policy section contains policies which are specific to a certain area within the estuary. The policies are derived from state goal requirements, LCDC policy papers, the Estuary Classification Rule, the Land and Water Use Plan for the Umpqua Estuary and the Final Report of the Oregon Coastal Conservation and Development Commission.

### General Policies

1. Uses and activities in estuary areas which provide the greatest long-term social, economic, and environmental benefits shall be preferred over other uses and activities.
2. The amount of estuarine surface area consumed by any one development shall be limited to the parts of the development that must locate in the estuary as opposed to shorelands and uplands.
3. Resource protection and compatible water-dependent recreation shall have the highest water use priority in those locations not affected by aggregate removal or projects authorized by the Army Corps of Engineers.
4. Water surface area and volume shall be maintained wherever possible.
5. Water quality, including newly created waterways, shall be maintained at levels which will support recognized beneficial uses and meet state and federal standards.
6. The Umpqua Estuary shall be developed and managed both as an important fish production and harvest area and as a critical link in the migratory fish resources.
7. No action or set of actions shall be permitted in the estuary which would result in total destruction of a type of natural habitat or biological function which currently exists there.
8. No actions shall be permitted which diminish the productive capacity of spawning sites for fish species having significant value to humans.
9. Dredge, fill (including disposal of dredged material), or other reduction or degradation of the estuarine natural values (natural biological productivity, habitat diversity, unique features and water quality) by man may be allowed only if:
  - a. required for navigation or other water-dependent uses that require an estuarine location; or if specifically allowed by applicable management requirements of the estuarine goal;
  - b. a need (significant public benefit) is demonstrated and the use or alteration does not unreasonably interfere with public trust rights;
  - c. no feasible alternative upland locations exist;
  - d. adverse impacts are minimized; and
  - e. the activity is consistent with the objectives of the State's Estuarine Resources Goal and with state and federal law and in conformance with Douglas County's Comprehensive Plan.

- 9A. Other alterations in the estuary shall only be allowed if the requirements of (b), (c), (d), and (e) in Policy 9 are met.
10. Fill or structures, when permitted, shall be of minimum size required for the operations of that use or business.
  11. Filling shall be authorized only to accommodate development which has been determined to be in accord with a design approved by the appropriate governing bodies.
  12. Piling or floating device construction shall be preferred over solid foundation devices.
  13. Dredging shall be permitted to create and maintain authorized channels, maintain recognized channels, provide access to water-dependent facilities, remove aggregate, and maintain and repair functional dikes.<sup>1</sup>
  14. No action will be permitted within any estuarine management unit if it is inconsistent with the purpose of the unit's classification.
  15. Adverse impacts on estuarine resources resulting from dredge or fill activities permitted in intertidal or tidal marsh areas shall be mitigated by creation, restoration or enhancement of an estuarine area(s). The objective shall be to improve or maintain the functional characteristics and processes of the estuary, such as its natural biological productivity, habitats and species diversity, unique features and water quality. Priority shall be given to restoration of sites designated in the Coastal Resources Plan under Element 4, Restoration and Mitigation Program.
  16. Potential mitigation sites identified in the Coastal Resources Plan under Element 4, Restoration and Mitigation Program, shall be protected from activities or uses which would interfere with the restoration or addition of the site to the estuarine ecosystem.
  17. Restoration of estuarine resources will be encouraged where and when appropriate to offset past and anticipated adverse effects of development.
  18. Through public purchase or easement acquisition, restoration of unused low-lying diked areas to estuarine areas shall be encouraged.
  19. Disposal of dredged material shall not be permitted in sub-tidal or inter-tidal areas of the estuary unless it is part of an approved fill project and disposal of the material in approved upland and ocean water sites is not feasible.
  20. Dredged material shall be suitable for the uses intended for each respective disposal site, consistent with Coastal Resources Plan under Element 3, Dredged Material Management Program.
  21. Stockpiling of dredged material for public sale, recreation or other uses shall be considered for each disposal program in order to maximize public benefits derived from such disposition.
  22. Alternatives to individual, single-purpose docks and piers such as community facilities common to several uses and interests, dryland storage and launching ramps shall be encouraged and preferred.
  23. The size and shape of a dock or pier shall be limited to that required for the intended use.
  24. The management techniques and controls of the following programs shall be supported as existing methods for maintaining water quality and minimizing man-induced sedimentation:

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<sup>1</sup> Allowing dredging for dike maintenance and repair is considered to be a deviation from Statewide Planning Goal requirements. Consequently, this plan element includes justification for an exception to the Estuarine Resources Goal for the Smith River and Scholfield Creek estuarine areas.

- a. Oregon Forest Practices Act and Administrative Rules;
  - b. The non-point source discharge water quality program administered by Department of Environmental Quality under Section 208 of the Federal Water Quality Act as amended in 1972.
  - c. The Removal/Fill Program administered by the Department of State Lands;
  - d. The Soil and Water Conservation District Program.
25. Future water storage for logs may be approved only if such storage is an integral part of the operation of an existing wood products facility or new water-dependent facility if there are no feasible upland alternatives; if the area is within a development or conservation management unit; if storage is limited to deep water where logs will not go aground at the lowest tide (except as provided in the following policy); if storage time for specific logs will not exceed one year and if water storage will not interfere with navigation.
26. In-water storage of logs shall not be permitted in areas where logs go aground at the lowest tide unless it is demonstrated that no other reasonable alternatives exist.
27. Historical log storage sites that are not used for log storage for a five year period shall be removed from further use for log storage.
28. At the time the Department of State Lands considers new leases or lease renewals for log storage areas or permits to place or replace piling for log raft mooring, it shall require that such action be consistent with the policies contained herein.
29. Additional dredge and fill policies are contained in the Coastal Resources Plan under Element 3, Dredged Material Management Program. Relevant policies shall be considered of equal importance with policies in this section when evaluating dredge and fill activities.
30. In order to streamline review processes and avoid unnecessary duplication of regulations, Douglas County will rely on state and federal agency programs to provide findings for implementation of the Technical Review (Resource Capability Test) for regulated activities in the estuarine environment. The permit-granting agency shall not approve a permit for a proposed estuarine use unless the use is consistent with the resource capabilities of the area as defined in the Definitions Section of this Plan and Section 1.090 (Resource Capability Test) of the Douglas County Land Use and Development Ordinance.
31. Additional mitigation and restoration policies are contained in the Coastal Resources Plan under Element 4, Restoration and Mitigation Program and relevant policies shall be considered of equal importance with policies in this section when evaluating mitigation and restoration activities.
32. Uses or activities which could potentially alter the estuary shall be preceded by a clear presentation of impacts of the proposed alteration. The impact assessment need not be lengthy or complex, but should include information on the following:
- a. The type and extent of alterations expected;
  - b. The type of resource(s) affected;
  - c. The expected extent of impacts of the proposed alteration on water quality and other physical characteristics of the estuary, living resources, recreation and aesthetic use, navigation and other existing and potential uses of the estuary; and,
  - d. The methods which could be employed to avoid or minimize adverse impacts.

## **Policies for Natural Management Units**

1. Major tracts of salt marsh, tidflats, seagrass beds, algae beds, other significant fish and wildlife habitats and other estuarine areas needed for preservation shall be included in natural management unit designations and shall be managed to protect the significant habitats, biological productivity and scientific, research and educational values.

2. Aquaculture, communication facilities such as communication tower support structures, active restoration measures, boat ramps for public use where no dredging or fill for navigational access is needed, pipelines, cables and utility crossings, installation of tidegates in existing functional dikes, temporary alterations, and bridge crossing support structures shall be permitted in natural management units if found to be consistent with the resource capabilities of the estuarine area and with the objective of preserving the area's natural resources.
3. Grazing of livestock that does not require establishment of dikes, tidegates or other permanent structures, and limited to the extent that excessive damage to natural resources does not occur, shall be permitted.
4. Rehabilitation of existing wing dams, sanitary waste outfalls and bridges shall be permitted in natural management units on the conditions that such activity is consistent with the resource capabilities of the areas and does not conflict with permitted uses in those units.
5. Riprap and other bank protective measures shall be permitted in natural management units to the extent necessary to protect uses existing as of October 7, 1977, and to protect unique natural resources and historical and archaeological values or public facilities only if land use management practices and non-structural solutions are inadequate and adverse impacts on water currents, erosion and accretion patterns are minimized.
6. Fills shall be prohibited in natural management units except when a necessary part of action to retain, maintain and protect man-made features existing as of October 7, 1977.
7. Aquaculture and commercial harvest of benthic organisms (clams, oysters, shrimp, etc.) which does not involve dredge or fill or other estuarine alteration other than incidental dredging for harvest of benthic species or removeable in-water structures such as stakes or racks may be permitted providing it is consistent with state agency statutory requirements and the natural classification of the management unit and does not require the use of permanent structures.
8. Bridge crossings, not including support structures or fill, located in the waterway or adjacent wetlands shall be allowed in natural management units.

## **Policies for Conservation Management Units**

1. Estuarine areas included within conservation classified management units shall be protected and managed to provide for and maintain long-term uses of renewable resources that do not require major alteration of the estuary.
2. High intensity water-dependent recreation, maintenance dredging of existing facilities, minor navigational improvements, mining and mineral extraction, utilities, sanitary waste outfalls, water-dependent uses requiring occupation of water surface area by means other than fill, bridge crossings, aquaculture requiring dredge or fill and temporary alterations, shall be permitted in conservation management units if found to be consistent with the resource capabilities of the area and with the objective to provide for and maintain long-term uses of renewable resources that do not require major alteration of the estuary.
3. Riprap and other bank protective measures shall be permitted in conservation management units to protect uses existing as of October 7, 1977, or allowed uses, if land use management practices and non-structural solutions are inadequate and adverse impacts on water currents, erosion and accretion patterns are minimized, and it is consistent with the resource capabilities and purpose of the conservation management unit classification.
4. Fills may be allowed in conservation management units only when consistent with the purpose of the conservation management unit classification and the requirements for dredge and fill as tested in Policy 9 of General Policies for estuarine management units.

5. Bridge Crossings not including supporting structures or fill in the waterway or adjacent waterway shall be permitted in conservation classified management units.
6. Active restoration of fish and wildlife habitat or water quality and estuarine enhancement shall be permitted in conservation management units when determined to be consistent with the purpose of the conservation management unit classification.
7. Aquaculture and commercial harvest of benthic organisms (clams, oysters, shrimp, etc.) which does not involve dredge or fill or other estuarine alteration other than incidental dredging for harvest of benthic species or removable in-water structures such as stakes or racks shall be permitted in conservation classified management units when determined to be consistent with the purpose of the conservation management unit classification.
8. With the exception of temporary alterations and other alterations, all uses and activities permitted outright, permitted with standards, or conditionally permitted in natural classified management units, shall be permitted in the conservation classified management units.

### **Policies for Development Management Units**

1. Estuarine areas included within development management units shall be protected for development and shall be managed to provide for and maintain navigational and other needed public, commercial and industrial water-dependent uses.
2. Navigation, channel maintenance, and other authorized projects shall have the highest water use priority in channel and turning basin locations, and adjacent to water depended use areas.
3. Where consistent with the purpose of the development classification and adjacent designated shorelands especially suited for water-dependent uses or designated for waterfront redevelopment, water-related and nonwater-dependent uses not requiring dredge or fill, mineral extraction, and uses permitted in natural and conservation management units shall also be allowed in development management units.
4. Interim uses which will not substantially interfere with the future development of water-dependent uses shall be permitted in development management units.
5. Uses not listed as water dependent in the plan or zoning ordinance may be allowed in a development management unit if the applicant demonstrates that the uses meet the criteria for water-dependency contained within the definition.
6. In-water disposal of dredged material shall be permitted in authorized, designated sub-tidal areas of development management units if found to be consistent with the state requirements for dredge and fill.
7. Riprap and other bank protective measures shall be permitted in development management units to protect uses existing as of October 7, 1977, or allowed uses, if land use management practices and non-structural solutions are inadequate and adverse impacts on water currents, erosion and accretion patterns are minimized.
8. Water storage of materials or products shall be permitted in development management units if found to be directly associated with water transportation and an integral part of the operation of a proposed or existing facility; if there are no feasible upland alternatives; if adverse impacts are minimized as much as possible and if consistent with the purposes of the development management unit classification.
9. Dry land storage of materials and commodities shall be encouraged over water storage.
10. Water-related, nondependent and nonrelated uses are allowed in the estuary only if:
  - a. The site has minimum biological or recreational significance;
  - b. The site and adjacent shorelands are not suitable or needed for water-dependent uses;

- c. The use is consistent with and does not pre-empt or interfere with the objective of providing for and maintaining navigational and other needed public, commercial and industrial water-dependent uses;
- d. The use will not result in dredging, filling or other similar reduction/degradation of estuarine natural values; and
- e. The use is consistent with the purposes of the development management unit classification.

11. In-water disposal (flowlane disposal) of dredged material in development management units shall be permitted when determined through monitoring that estuarine sedimentation is consistent with the resource capabilities and purpose of affected natural and conservation management units.

## Area-Specific Policies

1. Log storage may be permitted in the Steamboat Island Management Unit (No. 6) if it is needed to either expand or replace storage required by an existing wood products facility, if it is established in deep water where logs will not go aground at the lowest tide and if it will not interfere with navigation and if it is consistent with the resource capabilities of the area and preservation of the area's natural resources.
2. Encourage dike maintenance by means other than dredging of areas adjacent to dikes as a source of material; however, dredging for material for dike repair/maintenance may be allowed in sub-tidal areas of the Smith River and Scholfield Creek if no alternative source of suitable material is available or the cost of obtaining and placing the material is prohibitive (cost of using alternative sources is 200% or more of the cost of dredging for material).
3. An application for a permit to dredge for dike repair/maintenance shall include an evaluation of the availability and suitability of alternative sources of material including specific upland and dredged material stockpile sites and a cost comparison of using alternative sources.
4. Dredging for dike repair/maintenance shall be carried out in such a manner that the impact on aquatic life and disruption of tide flats and marshes is minimized.

## POLICY IMPLEMENTATION/PERMITTED USES

Specific uses within the Umpqua Estuary considered to be permitted, permitted with standards or conditionally permitted in any of the three management unit classifications; Natural, Conservation or Development are listed within the corresponding Estuarine Natural (EN), Estuarine Conservation (EC) or Estuarine Development (ED) zones as contained in the Douglas County Land Use and Development Ordinance. The listed uses and activities of the EN, EC and ED zones are consistent with the corresponding classification of each type of management unit and with the policies stated in the plan. The ordinances specify allowed uses and the criteria and standards to be applied when considering development permits.

## Cumulative Effects

The State's Estuarine Resources Goal requires that local governments, in preparing the estuarine elements of their comprehensive plans, consider the cumulative effects of all the uses, activities and alternatives permitted in development management units. The purpose of this requirement is to determine whether or not the total impact of all permitted development would exceed the capability of estuarine resources or violate the statewide planning goal. If a local jurisdiction were to find that the cumulative effects of all permitted development would exceed resource capability or violate goal requirements, it would have to adjust its comprehensive plan to correct the situation.

The County has evaluated the cumulative effects of the development which the Coastal Resources Plan permits within the Umpqua Estuary and has concluded that those effects will not exceed the resource capability of the estuary nor violate statewide planning requirements. Through implementation of the overall development strategy called for in the Coastal Resources Plan, the impact of allowed development will be minimized. The amount of area designated for development, the location of development areas, the type of

uses, activities and alterations permitted, and the restoration and mitigation program combine to form a strategy that limits the effects of development on the estuary.

The amount of area set aside for development in the Umpqua Estuary (Development classified management units) constitutes a small portion of the approximate 11,000 acres of estuarine area. Only 1,134 acres (or 10%) of the estuary are classified as Development management units, whereas, 4,260 acres are included in the Natural management unit classification and 5,606 acres are included in Conservation management units.

One-third of the 1,134 acres of development area consists of authorized navigation channels and most of the remainder lies adjacent to existing developments. Nearly one-half of the development area is at the entrance to the estuary, adjacent to the three jetties and to Salmon Harbor, the major recreational and commercial boat moorage. Another one-quarter of the area designated for development includes the designated channels, turning basins and adjacent surface area serving industrial zoned property at Gardiner, Bolon Island and Reedsport. The development management unit areas, with exception of the navigation channels, lie within the Reedsport Urban Growth Boundary, Bolon Island or the urban unincorporated areas of Gardiner and Winchester Bay. The amount of surface area committed to development is limited within the development areas by plan policies (Estuarine Resources Element, General Policies 2, 9, 10).

The Douglas County Industrial Lands Inventory has identified a significant number of coastal industrial sites that are considered suitable for industrial water-dependent/related development. These sites provide the potential for available water access to the Umpqua Estuary and in some cases are adjacent to navigational channels. Each site has been identified as part of a specific management unit with a development classification.

The restoration and mitigation program included as Element 5, within the Coastal Resources Plan identifies opportunities for restoring and enhancing the estuarine area. The program also identifies those uses that will require mitigation and presents policies to guide mitigation efforts. Implementation of this program has two potential benefits. One is that permitted development having a major impact on estuarine resources will be balanced or offset by mitigation actions. Second, the program provides for actions to generally restore and enhance estuarine resources regardless of additional development.

The implementation of these coastal elements of Douglas County's Comprehensive Plan likely will result in a reduction of the current negative effects on estuarine resources. Most areas of the estuary designated for development have been used for industrial purposes historically. New or continued uses in those areas will be subject to current regulations through application of the Coastal Resources Plan policies.

## **EXCEPTIONS TO THE STATE'S PLANNING REQUIREMENTS - Goal 16**

An exceptions process was included in the Statewide Planning Goals (Goal #2) to permit necessary flexibility in the application of the goals at the local level. It was anticipated that in some situations the specific requirements of certain goals might conflict with a local jurisdiction's specific land use needs. The exceptions process was developed to deal with those kinds of conflicts.

The "exception" itself is the documentation of a city or county's conclusion that it is not possible to apply a particular goal to certain land areas. LCDC requires that the conclusion be based on a justified need to locate a use, not otherwise allowed by a goal, in a specific area. The conclusion must be well-supported by compelling reasons and specific findings of fact that address four issues: need, alternatives, consequences and compatibility.

In justifying the exception the following four questions must be answered:

1. Why is it necessary to provide for the use(s)? (need)
2. What alternative locations within the area could be used for the proposed use(s)? (alternatives)
3. What are the long-term environmental, economic, social and energy consequences to the locality, region or state of not applying the goal or permitting the use(s)? (consequences)
4. Is the proposed use(s) compatible with other adjacent use(s) (compatibility)

The specific findings which are used to answer these questions must be included in the comprehensive plan so that they are part of the public planning process.

The resource management proposals contained within this estuarine resources element of Douglas County's Comprehensive Plan appear to generate the need for only one exception to the goal requirements. That exception concerns the provision that dredging be allowed for the purpose of repairing and maintaining functional dikes. The Estuarine Resources Goal specifies that dredging is allowed only if required for navigation or other water-dependent uses that require an estuarine location. The Department of Land Conservation and Development does not consider dikes to be a water-dependent activity. Also, the "permissible uses" requirements of the Estuarine Resources Goal do not allow dredging for dike maintenance in conservation management units. Therefore, to allow dredging for that purpose, the County must seek an exception to the goal.

As specified in the plan policies, the County wants to allow dredging for material to repair/maintain functional dikes when alternative sources of suitable material are not available or when the cost of obtaining and placing the material is prohibitive.

An exception to goal 3 has been taken on Bolon island to allow for industrial uses (See Coastal Exception Site 5 of the Exceptions and Non-Exceptions to resource goals of the Douglas County Comprehensive Plan)

The following information is provided as justification for the exception:

### **Need: Why is it Necessary to Allow Dredging for Dike Repair/ Maintenance?**

Much of the viable agricultural land in coastal Douglas County lies behind dikes along the Smith River. Approximately 1,400 acres of farmland in this estuarine area would be flooded periodically by tidal and river waters if not protected by dikes. The flooding, if allowed to continue, would destroy the farmland. Consequently, it is imperative that these functional dikes be maintained and repaired when necessary.

The frequency of maintenance and repair is unpredictable. It depends on the weather, river flows, and other factors. Generally, maintenance is postponed until it is absolutely necessary in order to minimize costs of moving equipment to and from the dikes. When dikes are breached, repair must be done immediately to avoid further erosion of the dike, the farmland, and restore pasturage for livestock.

There are approximately 19-1/2 miles of dike from the mouth of the Smith River to head-of-tide and 1/2 mile of dike on Scholfield Creek. The average dike has a 30 foot base and 10 foot height and is 10 feet wide across the top. Based on the experience of several farm owners, an average of 350 cu. yds. of material is needed to maintain/repair one mile of dike for one year. Therefore the total amount of material needed is

approximately 7,000 cu. yds. per year. However, depending on the weather, river flows and other factors more or less material may be required. After the 1964 flood, one property owner used over 2,000 cu. yds. to repair 1-1/4 mile of dike.

The need to allow dredging to obtain material for repairing and maintaining the dikes is related to the availability of suitable material and the cost of obtaining and placing that material. To be suitable for dike repair and maintenance, material should have clay and fine silt characteristics so that it compacts and sticks together, resisting erosion from tidal waters and rain. Sandy material is seldom suitable due to its susceptibility to erosion and its permeability.

Upland sources of suitable material are scarce and often forested. Some properties protected by dikes have upland/higher elevation areas where material can be obtained. However, in most cases, the property owners would have to go off their own property and find private or public sources of material. There are no identified, reliable sources at this time. Material availability would depend upon local construction activity which involves excavation. The City of Reedsport has a borrow pit which has provided a sandy clay material used in the construction/repair of dikes protecting the City. However, that borrow pit has not been used for ten years and the quantity of suitable material is unknown. Also, first priority for use of the material are city dikes or other public uses.

In-water sources of material from authorized dredging projects also are limited. Dredging to maintain the authorized navigation channel in the Smith River last occurred 8 years ago. It is scheduled to occur every 10 years. Consequently, that material could be used only at those intervals unless it was stockpiled and retained for dike maintenance/repair purposes. The dredging in 1972 amounted to 170,000 cubic yards. If it had been stockpiled for dike maintenance/repair it could have been adequate for the following ten year period.

Material dredged from the Umpqua River normally is deposited in sub-tidal areas adjacent to the channel and moved by the flow of the river. Thus this material is not available. If upland disposal alternatives are used in the future, that material may be available for dike maintenance/repair. Material dredged from Salmon Harbor is stockpiled as discussed in the Dredged Material Disposal Program. That material amounting to 30,000 to 40,000 cubic yards per year is available for use in dike maintenance/repair. However, its suitability is questionable due to a high sand and silt content. Approximately 60 percent of the material dredged may be suitable for the interior of the dikes, however, salinity may be a problem. On the river side of the dike, a different kind over material that is impervious and less susceptible to erosion would be needed.

With respect to use of alternative sources of material, a major concern is one of access to the dikes. The lands protected by dikes lack support strength even in the driest summer months. In winter, after rainfall and certainly after flooding due to a breach in a dike the fields are impassable by trucks. Only where roads exist to the dikes, which is seldom the case, could material be brought to the dike by truck. Construction of a road to use in moving material to the dike would be prohibitive in cost as well as result in loss of farm land. Moving a crawler/dragline or crawler/clamshell across the pasture to dredge material from in front of the dike is often difficult. In one instance it took 4 days to accomplish such a move using mats (log raft bridge) to travel from one high point to another.

Moving material to the dikes by barge may be a less costly alternative if there is sufficient demand to match barge capacity. However, at \$70/hour transport cost and a loading and unloading cost at \$175.00/hour this is not an inexpensive choice. Also, there are limitations due to boom reach and depth of water which might require operation only at high tides.

Dredging for material to repair/maintain functional dikes is necessary when other sources of suitable material are not available or the cost of obtaining and placing the material is prohibitive (the cost of using alternative sources is 200% or more of the cost of dredging for material). The farming operations along the Smith River do not generate large incomes and profit. Excessive costs to repair and maintain dikes would likely force many farms out of operation and possibly lead to a permanent loss of the farm land. That outcome is certainly inconsistent with the State's interest in preserving agricultural land.

The policies in the plan provide control and direction for dredging for dike repair/maintenance. First, dredging is allowed only when alternative sources of suitable material are not available or obtaining and placing the material is cost prohibitive. Second, an application for a permit to dredge for material must include an evaluation of the availability and suitability of material from alternative sources and a cost comparison. Third, future dredging for navigation channels and water-dependent uses, particularly in the Smith River, will be coordinated with the need for material for dike maintenance. Coordination will include the possible establishment of a stockpile of material in the area at time of channel maintenance. And finally, dredging operations will be mindful of the need to protect aquatic life and inter-tidal habitats.

### **Alternatives: What are the Alternatives to Dredging for Material to Repair/Maintain Functional Dikes?**

The alternatives are briefly described in the "need" section above. They consist of:

- a. **Not repairing or maintaining the dikes** -- Under this alternative, the farmland presently protected by the dikes would flood and erode and rapidly become unusable for farm purposes. It would return to an intertidal estuarine character. Obviously, this would have a devastating impact on the income earning ability of the farmer-land owner. Also, unless such action was part of the mitigation/ restoration program of the County's Comprehensive Plan and an exception was taken to the State's agricultural planning goal,

it would constitute a violation of the State's planning requirements.

- b. **Using upland sources of material** -- As stated above, upland sources of suitable material for dike repair/maintenance are scarce in the coastal Douglas County area. Some farms protected by dikes have upland portions which provide suitable material. However, most of the farms do not have their own upland sources. Other private and public sources in the area are those resulting from construction projects that involve excavation. The type and availability of materials from this source are unpredictable. Also, the City of Reedsport owns a borrow pit which contains sandy-clay materials used in the past to construct/repair dikes protecting the City. However, the amount of remaining material is unknown and available to private property owners only if not needed by the City or other public bodies.

A major problem associated with using upland sources of material is transporting those materials to the dikes. In most cases there are no roads across the farmlands to the dikes. The diked land itself is incapable of supporting heavy trucks filled with material even in dry summer months. In wet winter months or when fields are flooded due to a breached dike, it is impossible to travel across the fields in trucks. Moving a crawler/dragline or crawler/clamshell which have wider wheel bases and greater surface area contact with the ground than trucks is even difficult and time consuming. It requires that mats (log raft/bridges) be placed in front of the equipment to serve as a bridge. Building roads to move material to the dikes would be cost prohibitive and also would result in loss of usable farm land.

Transporting the material to the dikes by water on barges is possible with some limitations. Barge services are available within the estuary. However, the depth of water adjacent to a dike and the reach of the boom on the barge may be insufficient particularly at low tides. A repair/maintenance operation may be restricted to periods of high tide. Also the cost of repairing/maintaining dikes in this manner is considerable. The per-cubic-yard cost of transporting material on a barge is lower than the cost of transporting by truck if the barge is filled to its capacity. The available barge carries in excess of 2,000 cubic yards. This means that on an average the barge would have to serve five to six property owners at one time to realize savings in transportation costs. However, even with savings in transportation of the material, the cost could exceed that for trucking because of the additional loading/unloading required. Instead of loading onto a truck and unloading at a dike, the material would be loaded on a truck, unloaded onto the barge, transported and unloaded onto the dike. At \$175.00 per hour, this additional loading/unloading operation would increase costs significantly.

When upland sources of suitable material are available and roads exist across the farm land, use of those sources is preferred over dredging for material. When suitable upland materials can be transported and placed on dikes by barge equipment at a cost which is not prohibitive, that also will be preferred to dredging for the material.

- c. **Using material from dredged material stockpile sites** -- At present there exists only one active dredged material stockpile site. Over 70,000 cubic yards of material is currently stored at this Salmon Harbor site. The dredging of the harbor generates 30,000 to 40,000 cubic yards each year. The material is available at no charge to public bodies. Property owners along the Smith River could obtain the material through the Port of Umpqua or possibly through the Smith River improvement Association. However, it is estimated that only 60% of the material is suitable for dike repair/maintenance and that portion has a high sand content. Due to the sand content it could be used only on the interior portions of the dikes. The portion on the river side would need material less susceptible to erosion and with less permeability or the sandy material would require rip-rap or additional protection.

Material dredged from other parts of the Umpqua River for navigation and other water-dependent uses is not stockpiled at present. It instead is discharged at certain sub-tidal locations where river currents will carry it. If and when alternative upland sites are used for this material, it could become available for dike repair/maintenance.

Dredging of the Smith River Navigation channel took place approximately 8 years ago. At that time 170,000 cubic yards of material was removed but not stockpiled. Dredging is scheduled to occur every 10 years. If stockpiles are established along the Smith River during the next dredging operation, the material should be of sufficient quantity and character to be used for 10 years of dike repair/maintenance.

Efforts will be made to coordinate the future dredging of the Smith River navigation channel with the need for material for dike repair/maintenance. When that material is made available, it will be preferred to conducting separate dredging operations for dike repair material.

**Consequences: What are the Long-Term Environmental, Economic, Social and Energy Consequences to the Locality, Region or State of Allowing Dredging for Material for Dike Repair/Maintenance?**

Dredging of shallow areas adjacent to dikes may have adverse environmental impacts on aquatic life. Organisms living on or beneath the bottom may be temporarily destroyed affecting the food chain for small fish. Temporary lowering of water quality will occur due to turbidity resulting from the dredging activities. However, the turbidity from such activities in the area has been found, in the past, to be much less than that due to erosion during a freshet from a heavy rain. Plan policies provide direction to minimize these negative impacts and allowed dredging would be limited to sub-tidal areas whenever practical.

Removing materials from the estuary may have environmental benefits by reducing sedimentation levels and maintaining water surface area.

Positive economic and social consequences will result from dredging in that flood control will be maintained and the investment in agriculture in coastal Douglas County will be protected. The farming life-style, the pastoral environment and the agricultural contribution to the economy will be preserved in the coastal area in a manner which is economically possible.

The adverse economic and social impact on recreational and commercial fishing is expected to be less than the social and economic benefits described above.

There would be savings in energy costs through dredging for material rather than transporting it from other areas. These savings would come from fuel costs of trucks or barges/boats. Therefore, energy consequences are positive.

**Compatibility: Is the Dredging for Material Compatible with Adjacent Uses and Activities?**

Dredging for dike maintenance is compatible with and essential for protection of agricultural land. It will not interfere with navigation and may in fact improve navigability in some close-to-shore areas. No conflict is anticipated with log storage allowed along the Smith River.

Dredging will be incompatible with the aquatic resource areas affected by it and the general "conservation" classification of the Smith River and the area of Scholfield Creek. However, the periodic nature of the dredging and the relatively small volume of material required per acre of dike will not create a serious impact in most resource areas. Also, the limitation to subtidal areas whenever possible will serve to minimize conflicts.



**COASTAL  
SHORELANDS**

**ELEMENT 2**

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## PURPOSE AND CONTENT

This element of the Comprehensive Plan is intended to satisfy the State's planning requirements and provide for local needs and objectives concerning the shoreland areas of coastal Douglas County.

The overall goals of the state with respect to planning for coastal shorelands are "to conserve, protect, where appropriate develop and where appropriate restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics" and "to reduce the hazard to human life and property, and the adverse effects upon water quality and fish and wildlife habitat resulting from the use and enjoyment of Oregon's coastal shorelands." To accomplish these goals, the State requires each local government to collect and analyze information about the coastal shorelands within its jurisdiction and to prepare a comprehensive plan for those shorelands. The plan must identify the location, extent and type of shorelands and establish policies and permitted uses consistent with standards set forth in the goal requirements.

In compliance with those requirements, this plan element includes seven sub-elements:

1. A description of the shoreland planning area prescribed by the state and the criteria used in identifying the location, extent and type of coastal shorelands in Douglas County.
2. Shoreland inventory and findings.
3. Shoreland boundaries and classifications.
4. Shoreland area descriptions and designations.
5. Shoreland management policies and implementation.
6. Significant coastal wetlands.
7. Exceptions areas.

## THE SHORELANDS PLANNING AREA BOUNDARY

The overall shorelands planning area includes all land west of Highway 101, lands within 1,000 feet from the shoreline of estuaries and, finally, lands within 500 feet from the shoreline of coastal lakes. The land use planning process prescribed by the state requires that the County identify the portion of this planning area that is to be managed as coastal shorelands. All lands within the planning area need not be designated as shorelands. However, State criteria require that land contiguous with the ocean, estuary and coastal lakes must be identified as coastal shorelands and the extent of the shorelands must include at least:

1. Areas subject to ocean flooding and lands within 100 feet of the ocean shore or within 50 feet of an estuary or a coastal lake. (Within Douglas County shorelands around coastal lakes extend to 50 feet from the shoreline everywhere except along Ada Road and at the Ada Fishing Resort on Siltcoos Lake and in areas where Highway 101 passes closer than 50 feet to a lake).
2. Adjacent area of geologic instability where the geologic instability is related to or will impact a coastal water body.
3. Natural or man-made riparian resources, especially vegetation necessary to stabilize the shoreline and to maintain water quality and temperature necessary for the maintenance of fish habitat and spawning areas.
4. Areas of significant shoreland and wetland biological habitats whose habitat quality is primarily derived from or related to the association with coastal water areas.
5. Areas necessary for water-dependent and water-related uses including areas of recreational importance which utilize coastal water or riparian resources, areas appropriate for navigation and port facilities, dredge material disposal and mitigation sites, and areas have characteristics suitable for aquaculture.
6. Areas of exceptional aesthetic or scenic quality associated with the coastal water body; and
7. Coastal headlands.

## FINDINGS/INVENTORY

Early in the planning process, the County assembled inventory information concerning the nature, location and extent of geologic and hydrologic hazards and shoreland values within the prescribed shorelands planning area. This information was used to identify shoreland boundaries and to develop land and water use management policies. The inventory information that was collected is listed in the Bibliography of this document. In recommending the shoreland boundaries for coastal Douglas County, consideration was given to State criteria and the inventory information summarized below.

1. Except for the lands owned by Douglas County and private owners in the vicinity of Umpqua Lighthouse State Park, nearly all the shorelands planning area contiguous with the ocean lies within the Dunes National Recreation Area. This area is managed by the U.S. Forest Service to protect its natural, aesthetic and recreational values.
2. All lakes within coastal Douglas County except Loon Lake are considered to be "coastal lakes," which are lakes created by a dune formation or that have a hydrologic surface or subsurface connection with salt water.
3. Clear Lake is a municipal water supply for Winchester Bay and The City of Reedsport. All coastal lake shorelands in the County remain undeveloped with the exception of the following three areas: Ada Road along the Fiddle Creek Arm of Siltcoos Lake; development immediately adjacent to U.S. Highway 101 on Tahkenitch Lake; and William M. Tugman State Park on Eel Lake.
4. Most of the shoreland/upland area south of the estuary between Winchester Bay and Leeds Island and north of the estuary between the confluence with the Smith River and Scottsburg is undeveloped and in forest or pasture use and is considered to have significant scenic values.
5. Portions of the shoreland along the Smith River border a diked area.
6. Developed shorelands are concentrated in Reedsport, Bolon Island, Gardiner and Winchester Bay. These areas also provide the most suitable and available sites for future water-dependent developments.
7. Natural hazards consist of potential flooding in many shoreland areas adjacent to the estuary and steep slopes of over 25% in other areas.
8. No coastal headlands exist within the County.
9. Areas of recreational use and public access include the Dunes NRA, Salmon Harbor Marina, Private Marinas, and public parks along the south side of the Umpqua River between Scottsburg and Reedsport, the north side of the Smith River, Bolon Island and west of Salmon Harbor and The Umpqua Lighthouse State Park.
10. Various historical sites and significant habitat areas (e.g., osprey nests, heron rookeries, elk wintering range, band-tailed pigeon mineral area) exist within the coastal shorelands planning area.
11. The County finds Winchester Bay, Gardiner and Reedsport to have urban characteristics. Urban Shorelands classifications appropriate to present and future land uses shall be established for these areas.
12. Although Oregon Revised Statute (ORS) 541.615(1) does not allow the removal of any material from the bed or banks or fill any waters of this state without a permit issued under authority of the Director of the Division of State Lands (DSL), under Subsection 4 of ORS 541.615 this requirement is waived during an emergency. The Land Conservation and Development Commission finds the requirements of ORS 541.615 consistent with the statewide planning goals as long as additional shoreland is not created.
13. Coastal Douglas County provides a variety of opportunities for public access to the waterway. There are several public facilities that provide direct access to the Umpqua River estuary. Other major access points include the Dunes National Recreation Area, the Salmon Harbor Marina, the Umpqua River Jetty System, Smith River Highway and State Highway 38.
14. The availability of public access to coastal water in Douglas County is sufficient enough to satisfy that portion of the Goal 17 requirement which calls for the development of a detailed public access program.

15. The various publicly owned access points to coastal waters are maintained by the U.S. Forest Service, Bureau of Land Management, State of Oregon and Douglas County. These agencies have a long term commitment to own and operate the identified facilities for future public use.

## SHORELAND CLASSIFICATION SYSTEM

Statewide Planning Goal 17 (Coastal Shorelands) identifies four general categories of shorelands:

1. Those containing major freshwater marshes, significant wildlife habitat, coastal headlands, exceptional aesthetic resources, and historic and archaeological sites are grouped together.
2. Those especially suited for water-dependent uses.
3. Those committed and developed but not especially suited for water-dependent uses.
4. Those shorelands in rural areas not having the natural cultural values listed above.

The County considered these categories when it developed the following classification system for the Coastal Shorelands Element.

Shorelands are divided into three major classifications with eight additional subclasses identified within the Urban and Rural Shorelands Classifications.

1. Resource Conservation Shorelands
2. Urban Shorelands
  - a. Water-Dependent Industrial
  - b. Water-Related Commercial
  - c. Water-Oriented
  - d. Urban-Conservation
  - e. Urban-Other
3. Rural Shorelands
  - a. Rural-Water-Dependent
  - b. Rural-Conservation
  - c. Rural-Other

The criteria used to identify these classes and sub-classes of shorelands are listed below. Each shoreland area will have a designated classification. Some areas will be designated with multiple classifications. In all cases, the classification of each shoreland area is consistent with the adjacent estuarine management unit.

1. Resource Conservation Shorelands are those shorelands containing major freshwater marshes, significant wildlife habitats, and coastal headlands or having exceptional scenic or aesthetic quality due to their association with coastal waters. Also, shoreland areas identified as suitable for restoration or addition to the estuarine ecosystem are included in this classification.
2. Shorelands are those shorelands lying within the Reedsport Urban Growth Boundary and within the urban areas of Gardiner and Winchester Bay including area built upon or irrevocably committed to nonresource use.
  - a. Water-Dependent Industrial Shorelands are those shorelands especially suited for water-dependent uses because deep water comes close to shore and there are suitable land transport facilities for ship and barge facilities; they have high potential for recreational use of the water or riparian resources; or they would require little dredging for marina use due to natural scour. In addition these shorelands include:
    - areas with existing water-dependent public, commercial, recreational and industrial uses;
    - areas identified as needed for industrial use and suited for water-dependent use; and,
    - areas identified as suitable and needed for disposal of dredged material.

In general, the landward extent of these shorelands will be limited to property having frontage on the water or adequate access to the water.

- b. Water-Related Commercial Shorelands are those shorelands that do not have adequate access to the water but are in close proximity to water-dependent shorelands and are well served by rail and highway transportation facilities.
  - c. Water-Oriented Shorelands are those shorelands which provide for uses whose attraction to the public is enhanced by a view of or access to coastal waters.
  - d. Urban - Conservation Shorelands are those shorelands in the urban areas that have significant natural or cultural resources, aesthetic or open space values or are suitable for aquaculture.
  - e. Urban - Other Shorelands are those shorelands in urban areas that do not meet the criteria for the other sub-classes. They generally include areas presently used or available for non water-dependent and non water-related uses.
3. Rural Shorelands are those shorelands lying outside the Reedsport Urban Growth Boundary and the urban/urbanizing areas of Gardiner and Winchester Bay and not meeting the criteria for Resource Conservation Shorelands.
- a. Rural - Water-Dependent Shorelands are those shorelands having a high potential for water-dependent recreational uses, aquaculture and areas suitable and needed for disposal of dredged material. Shorelands in this category also may be suitable for water-dependent industrial and commercial uses. The landward extent of these shorelands generally is limited to properties having frontage on the water or having adequate access to it.
  - b. Rural - Conservation Shorelands are those lands having significant natural resource values including narrow strips of riparian vegetation but not to the extent needed to be designated a Resource Conservation Shoreland. Also, this category includes areas presently being used or suitable for forest and agricultural uses.
  - c. Rural - Other Shorelands are those shorelands that do not satisfy the criteria listed for the other rural subclasses. They generally include lands presently used or available for non-urban, non-water-dependent uses.

## SUMMARY OF SHORELAND CLASSIFICATIONS

Area No.	Shoreland Name	Shoreland Classification	
		Primary Class	Sub-Class
1	Dunes NRA	Resource Conservation Rural	Rural Conservation
2	Coastal Lakes East of Highway 101	Resource Conservation Rural	Rural Other & Rural Water-Dependent
3	Lake Marie	Rural	Rural Other
4	Salmon Harbor	See Winchester Bay Comp. Plan	
5	Winchester Creek (North)	Urban (Exception Area)	Urban Conservation & Urban Tourist Commercial
5a	Winchester Creek (South)	Resource Conservation	
6	Cornwall Point to Leeds Island	Resource Conservation	
7	North Shore across from the Point	Rural	Rural Conservation
8	Gardiner Waterfront	Urban	Water Dependant Industrial
9	Bolon Island	Urban	Urban Other
10	East Gardiner	Rural	Rural Other
11	Scholfield Creek	Resource Conservation	
12	Upper Scholfield Creek	Rural	Rural Other
13	Umpqua River - South Shore	Rural	Rural Conservation
13a	Echo Island (River Mile 18.5)	Rural	Rural Other
13b	Brandy Bar (River Mile 20)	Rural	Rural Other
13c	Hail's Harbor (River Mile 22)	Rural	Rural Water-Dependant & Rural Other
13d	River Mile 24.5	Rural	Rural Water-Dependant
13e	Mill Creek	Rural	Rural Conservation
14	Umpqua River - Northern Shore	Rural	Rural Conservation
15a	Scottsburg	Rural	Rural Other
15b	Scottsburg	Rural	Rural Other
15c	Scottsburg	Rural	Rural Conservation
15d	Scottsburg	Rural	Rural Conservation
16	Smith River	Rural	Rural Conservation
16a	Frantz Creek	Rural	Rural Other
16b	Otter Slough	Resource Conservation	
16c	Smith River Marina	Rural	Rural Water-Dependant
16d	Former International Paper Log Dump	Rural	Rural Water-Dependant & Rural Conservation
16e	Noel Creek	Rural	Rural Conservation
16f	Smith River Public Boat Ramp	Rural	Rural Water-Dependant
17a	Steamboat Island (West)	Rural	Rural Conservation
17b	Steamboat Island (South)	Resource Conservation	

**(INSERT MAP)**

## SHORELAND AREA DESCRIPTIONS AND CLASSIFICATION

The results of applying these criteria to the Douglas County coastal shorelands are shown in the following maps and descriptions. Where discrepancies between mapping and descriptions exist, the descriptions shall prevail.

### Shoreland Area No. 1: Dunes NRA

**Description:** This area includes those lands which are both in the Dunes National Recreation Area and west of U.S. Highway 101.

#### **Facts About the Area:**

1. The Dunes NRA is a nationally recognized and protected area of aesthetic and scenic importance administered by the U.S. Forest Service.
2. Some areas within the inland sector of the Dunes NRA are owned by private interests. In most cases, these private owners are firms which specialize in the growing and processing of wood products. The existing management plan for the Dunes NRA allows silvicultural practices on private lands in the inland sector.

**Classification:** Resource Conservation in those lands administered by the U.S. Forest Service; Rural Conservation in the private lands of the inland sector.

**Management Objectives:** The Oregon Dunes National Recreational Area Management Plan has established the pattern of development for the Dunes NRA. In this plan, the Resource Conservation Shorelands designation shall not be interpreted as being in conflict with projects accepted under the Oregon Dunes National Recreational Area Management Plan for this area which provide access or protect the health, safety and welfare of users of the Dunes NRA.

**(INSERT MAP)**

## Shoreland Area No. 2: Coastal Lakes East of Highway 101

**Description:** This area includes all lands within the established 50 foot Riparian Vegetation Corridor and significant wetlands within 500 feet of designated coastal lakes (Siltcoos, Tahkenitch, Clear, Edna, Teal, Eel and North Tenmile).

### Facts About the Area:

1. In Douglas County, much of the shoreline of these lakes is undeveloped and accessible only by watercraft (see Transportation Element).
2. Conversely, a stretch of shoreland on Siltcoos Lake (between Ada Road and Fiddle Creek) and on Tahkenitch Lake (adjacent to Highway 101) is committed to residential and recreational development (see Committed Lands Inventory).
3. A rail line operated by the Coos Bay Rail Link which connects Reedsport and the Coos Bay area with the Willamette Valley runs parallel with and crosses the shoreline in both the developed and undeveloped reaches of Siltcoos, Tahkenitch and North Tenmile Lakes.
4. Recreational use of Siltcoos, Tahkenitch and Eel Lakes is substantial. Siltcoos Lake is one of the prime largemouth bass lakes in the Pacific Northwest and also supports trout, sea-run cutthroat, black bass, coho salmon and pan fish (Coastal Lane County Environmental Assessment, Lane County Planning Division). Tahkenitch Lake is one of the most visible and accessible of the coastal lakes in Douglas County.
5. In addition to recreational uses, several of these lakes serve as a source of water for human activities: Siltcoos Lake -- domestic and industrial; Clear Lake -- municipal; Eel Lake -- public campground.
6. The U.S. Department of Fish & Wildlife Service has identified Siltcoos Lake as valuable habitat for migratory waterfowl, especially diving ducks such as the canvasback, redhead, scaup, ring-necked and ruddy. In addition, the Oregon Department of Fish and Wildlife has identified bald eagle and osprey nesting sites adjacent to Siltcoos, Tahkenitch, Clear and Eel lakes (see Habitats of Special Concern, Natural Features Element).
7. Lands within 50 feet of the coastal lakes fall within Douglas County's Riparian Vegetation Corridor Program. See general policies #4, #5 and #6, identified within the Shoreland Management policies contained within this plan.

**Classification:** Resource Conservation. Exceptions to this designation include:

1. The shorelands between the Douglas County line on the eastern shore of Siltcoos Lake and Fiddle Creek shall be managed as Rural Other Shorelands; and,
2. Except for Tax Lot 500, which is designated Rural Water-Dependent, the shorelands of Tahkenitch Lake between Highway 101 and the lake in Sections 29 and 32 shall be managed as Rural Other Shorelands. Section 29 includes Tax Lots 800, 1300 and part of Tax Lots 100, 600, 700 and 900. Section 32 includes that part of Tax Lot 100 east of Highway 101 which is physically developed.

**Management Objectives:** The maintenance and rehabilitation of the rail line which parallels and crosses these shorelands is consistent with the intent of this designation. Also consistent with this designation are land and water treatments (herbicides, blasting and additions to existing impoundments) necessary to restore water quality in lakes adversely affected by infestations of water weeds.

**(INSERT MAP)**

### Shoreland Area No. 3: Lake Marie

**Description:** This area includes shorelands between Winchester Bay and the south half of the Dunes NRA. The waters of the Umpqua River Estuary (MHHW) and the Pacific Ocean (MSL) form the northern and western boundary of this unit. The southern boundary is the common line between sections 14 and 23 and between sections 13 and 24 in Township 22S, R13W. Beginning at the intersection of U.S. Highway 101 and the common line between sections 13 and 24 (T22S, R13W), the eastern boundary is Highway 101 north to County Road 87 (Lighthouse Road), thence west and north along 87 the Winchester Bay Urban Unincorporated Area Boundary, thence west and north and east following the western limits of this Urban Service Boundary to the south west corner of the western spit of Salmon Harbor Marina.

#### Facts About the Area:

1. The developments in and adjacent to these shorelands facilitate public access to the estuary, beach, Dunes National Recreation area and Umpqua Lighthouse State Park, which includes Lake Marie. These developments include:
  - a. County Roads 87 (Lighthouse Road) and 251 (Salmon Harbor Road);
  - b. Three parking lots, providing beach access, maintained by the Oregon Parks and Recreation Department; and,
  - c. Overnight camping and picnic facilities at Umpqua Lighthouse State Park.
  - d. Overnight camping facilities at Half Moon Bay RV Park and Campground;
  - e. Overnight camping and lodging at Discovery Point Resort
  
2. The U.S. Army Corps of Engineers and the U.S. Coast Guard maintain structures in this subarea essential to navigation of the Umpqua entrance. These structures include:
  - a. South jetty and training jetty (Corps)
  - b. Navigation aids (Coast Guard)
  - c. Lookout station (Coast Guard)

**Classification:** Rural Other

**Management Objectives:** The intent of the classification within this area is to encourage the full utilization of the resources of this subarea by promoting developments which enhance access and use.

**(INSERT MAP)**

## Shoreland Area No. 4: Salmon Harbor

**Description:** Included in the area are both keys of the Winchester Bay development and the waterfront area of Salmon Harbor. A southerly prolongation of the western shoreline of Winchester Point forms the downriver boundary of this unit. County Road 251 (Salmon Harbor Road) serves as the southern boundary and Beach Street marks the upland extent of these shorelands along the waterfront in Salmon Harbor. The eastern boundary then follows the upland extent of the property owned by Douglas County and managed by the Salmon Harbor Management Board. The northern and western boundaries of this unit are formed by the waters of the Umpqua River Estuary (MHHW).

### Facts About the Area:

1. These shorelands are located in the Winchester Bay Urban Unincorporated Area Boundary.
2. These shorelands are decidedly urban in character. In addition, present land uses are predominately water-dependent and water-related. Previous Marine Industrial uses include boat building and repair, boat lift and repair, two fish processing plants and two fish buying stations. Each of the current uses is serviced with public water, sewer and utilities.

The convention center is located within the third phase of the Salmon Harbor Master Plan. A majority of the phased development approved on the western spit of Salmon Harbor has been built out. The northern most portion of the spit has been set aside as a public access point for the potential future site of a convention center or motel.

3. The west boat basin of Salmon Harbor was modified, in June, 1983, to improve boating conditions within the harbor. As part of this modification, 2.25 acres of developed harbor land, located on three breakwaters near the western boundary of the boat basin, was returned to the estuary. With this modification which includes the creation and addition of subtidal lands, it appears that the Umpqua River Estuary has been enhanced.

**Classification:** Several classifications apply to this area. For details on specific boundaries, see the Winchester Bay Comprehensive Plan.

**(INSERT MAP)**

## Shoreland Area No. 5: Winchester Creek

**Description:** This area includes the shorelands north of Winchester Creek and west of Highway 101. The western extent of this area is defined as U.S. Highway 101. The eastern extent of this area is defined as the eastern boundary of tax lot 300 in section 08 of T22S, R12W. The shoreland begins at the upland boundary of the estuary management unit 15 and extends upland to the upland boundary of the significant wetlands. Areas that have no designated significant wetland sites will follow the upland boundary of the 100 year floodplain. Where areas of the 100 year floodplain and significant wetland sites cross over to the north side of U.S. Highway 101, the upland boundary of this shoreland will not cross U.S. Highway 101 but follow the south boundary of U.S. Highway 101 until the boundary of the 100 year floodplain of significant wetlands cross back to the south side of U.S. Highway 101.

### Facts About the Area:

1. The Douglas County Industrial Site Inventory (Economic Element) recommends that the shorelands north of Winchester Creek be planned for light industrial development. A portion of the Winchester Creek Shorelands is zoned for medium and heavy industrial uses and has been identified within the Douglas County Industrial Site Inventory.
2. Urban land uses (which fringe the northern boundary of the Winchester Creek shorelands) have expanded over the years toward Winchester Creek. Because of the area's poor drainage, these expansions must take place on fill.
3. All lands within this subarea are located in the Winchester Bay Comprehensive Plan.
4. The Winchester Bay Comprehensive Plan shows a need for Commercial and Industrial development in the Winchester Creek area.
5. The Shorelands Boundary was derived by the establishment of a tidal modifier line which separates tidelands and areas influenced by saltwater from uplands. The tidal modifier line was established through a study performed by the Army Corps of Engineers. All lands outside the designated tidal modifier line have been designated as shorelands, whereas all lands within the tidal modifier line have been designated estuarine.
6. Four heads of tide exist in the Winchester Creek basin. Three of these designated areas (Silver Creek, the main stem of Winchester Creek and a southern tributary of Winchester Creek) are located above the Surfwood R.V. park. The fourth designated head of tide is located on a small tributary south of Winchester Creek near U.S. Highway 101.
7. Douglas County concludes that all lands previously filled and located out of tidal influence qualify for a shoreland designation.
8. Shorelands in the Winchester Creek area have been designated Tourist Commercial. See Winchester Creek Coastal Exception Site 3A within the exceptions and Non-exceptions to resource goals in the Douglas County Comprehensive Plan.
9. Given the high water table in the Winchester Creek designated shoreland area, proposed development may be required to locate on fill.

**Designation:** Urban Conservation west of Highway 101 to Winchester Bay and Tourist Commercial in designated exception area.

**Management Objectives:** The intent of this plan designation is to promote urban development adjacent to Highway 101. To insure that development will be able to locate in the area, Douglas County has taken an Exception to Goal 17 to allow freshwater wetlands within the identified boundary to be filled and used as Tourist Commercial.

**(INSERT MAP)**

## **Shoreland Subarea No. 5a: Winchester Creek**

**Classification:** This subarea includes all shorelands south of Winchester Creek between tidally influenced areas and the upland boundary of the 100 year floodplain in the Winchester Creek basin.

### **Facts About the Area:**

1. According to the Corps of Engineers, study of the Winchester Creek basin lands within this subarea are located above tidal influence.
2. The area has been identified as a significant wetland.
3. Vegetation in this area is abundant and supports a variety of wildlife species.

**Designation:** Resource Conservation

**(INSERT MAP)**

## Shoreland Area No. 6: Cornwall Point to Leeds Island

**Description:** This area includes the shorelands from Cornwall Point to the tidegate on Leeds Island. With one exception, these shorelands extend landward from the line of nonaquatic vegetation to the limit of the 100 year flood. The exception are those shorelands between the western most tip of Cornwall Point and Jerden cove upriver from Cornwall Point. In this area, the shorelands are defined to be those lands between the line of nonaquatic vegetation and the 100 foot contour.

### Facts About the Area:

1. These shorelands are undeveloped and heavily forested. Public services are unavailable and access is limited.
2. These shorelands include a nesting site used by northern bald eagles (Natural Features Element T21S R12W Section 21 Center).
3. Included in this subarea is Umpqua Eden, an archaeological site containing cultural artifacts of Native Americans who camped along the Umpqua River.

### Designation: Resource Conservation

**Management Objectives:** The proximity of this area to the resource values present in Estuarine Management Unit 4 and the Dunes NRA suggest that land uses in this area should be limited to forest production and other uses identified as consistent with a Resource Conservation area.

**(INSERT MAP)**

## **Shoreland Area No. 7: North Shore across from The Point**

**Description:** This area includes the shorelands in T21S, R12W, Sections 16 and 17 on the north side of the Umpqua River from the Dunes NRA boundary east to the north-south 16th line in the east half of Section 16. These shorelands extend landward from the line of nonaquatic vegetation to the limit of the 100 year flood.

### **Facts About the Area:**

1. An ocean outfall pipeline used to transport treated waste water from what was once the International Paper Mill site in Gardiner still exists within this Shoreland area. An existing access road follows the pipeline in order to monitor and provide maintenance to the pipeline.

**Designation:** Rural Conservation

**Management Objectives:** The intent of this classification is to protect the riparian vegetation within the floodplain and acknowledge the need to maintain the existing pipeline for possible future uses.

**(INSERT MAP)**

## **Shoreland Area No. 8: Gardiner Waterfront**

**Description:** This area includes the shorelands extending upriver from the north-south 16th line in the east half of Section 16, (T21S, R12W) to the Highway 101 causeway which connects Bolon Island and Gardiner. These shorelands extend landward 50 feet from the line of nonaquatic vegetation or to Highway 101, whichever is less.

### **Facts About the Area:**

1. The shorelands in this subarea are committed to urban water-dependent uses and uses in direct support of water-dependent activities. Past examples of urban water-dependent uses have included: water feed of logs to a sawmill, dock facilities to handle bulk oil transported by barge and a boat ramp).
2. The shoreline has been modified significantly to protect these activities through the use of diking, filling and rip-rap.

**Designation:** Urban Water-Dependent Industrial

**(INSERT MAP)**

## Shoreland Area No. 9: Bolon Island

**Description:** This area includes all land on Bolon Island 50 feet from the line of nonaquatic vegetation.

### Facts About the Area:

1. The island is serviced by U.S. Highway 101, County Road No. 48 (Lower Smith River Road), Coos Bay Rail Link, Reedsport water and sewer and Central Lincoln Public Utility District and telephone systems.
2. Land on Bolon Island is devoted to industrial water-dependent uses: a planer mill which ships dressed lumber by barge, rail and highway; and a drydock facility for barge repair and maintenance have occurred on the island.
3. The northern half of the island has in the past been used as a dredge spoils site.
4. On the south side of the island, industrial access to the authorized navigation channel is effectively limited by topography and public owner-ship (Bolon Island Tideway State Scenic Corridor), except for two locations which have been historically used for industrial purposes. Navigation to the shipping lanes from the island's northern shoreline is impractical due to height and width restrictions imposed by the two highway and two railroad causeways. To the west and east, areas of mud flat and salt marsh restrict access.
5. The Bolon Island Tideways State Scenic Corridor is located on the southwest corner of Bolon Island. Facilities include:
  - a) Hiking trails
  - b) Jedediah Smith Monument
6. The City of Reedsport supplies sewer and water service to Bolon Island.
7. An exception to goal 3 has been taken on Bolon island to allow for industrial uses (See Coastal Exception Site 5 of the Exceptions and Non-Exceptions to resource goals of the Douglas County Comprehensive Plan)

**Classification:** Urban Water-Dependent Industrial for the drydock facility and Urban Other for remaining lands.

**Management Objectives:** The intent of this designation is to encourage the use of these lands for industrial purposes in order to capitalize upon the diversity of public services already in place.

**(INSERT MAP)**

## **Shorelands Area No. 10: East Gardiner**

**Description:** The area includes that portion of T21S, R12W, Section 25 between MHHW and County Road No. 48 (excluding Goose and Black Islands), and the portion of area within T21S, R12W, Section 26, bounded by MHHW, the 100 year flood plain, and Highway 101.

### **Facts About the Area:**

- 1.** The East Gardiner site is partitioned by the Coos Bay Rail Link right-of-way. Current land use on the balance of the site is residential and open space. The topography, present land use and flood hazard make this site impractical for forestry, farming or grazing.
- 2.** Historically, this property along Stables Road (Douglas County #49B) was used as a disposal site for mill residues and debris.

**Designation:** Rural Other

**(INSERT MAP)**

## **Shoreland Area No. 11: Scholfield Creek**

**Description:** These shorelands include lands upriver from the Reedsport Urban Growth Boundary (at the point of intersection of the east line of S3, T22S, R12W, with the center line of Scholfield Creek) to the head of tide on Scholfield Creek and Oar Creek. This shoreland subarea also includes lands found between the line of nonaquatic vegetation and the upland extent of the 100 year flood.

### **Facts About the Area:**

1. Road access and public services are limited in this area.
2. The adjacent uplands are heavily forested.
3. Waterfowl use portions of the area for resting and breeding.
4. Portions of the floodplain located in this shoreland are primarily used for grazing.
5. Rural development is limited in this area and primarily located above the 100 year floodplain.
6. This area is identified as a Significant Coastal Wetland.

**Classification:** Resource Conservation

**(INSERT MAP)**

## **Shoreland Area No. 12: Upper Scholfield Creek**

**Description:** This area includes those lands above Scholfield Creek 50 feet from the line of nonaquatic vegetation in Committed Land Site 8 of the Coastal PAC.

### **Facts About the Area:**

1. This area is committed to non-resource use.
2. Each of the identified parcels, within the committed land site, are under three acres in size and physically developed.
3. The Coos Bay Rail Link and Scholfield Creek border the northern part of this area.

**Designation:** Rural Other

**(INSERT MAP)**

## Shoreland Area No. 13: Umpqua River - South Shore

**Description:** This area includes the shorelands along the south shore of the Umpqua River from the eastern city limits of Reedsport upriver to the Scottsburg bridge (State Highway 38). These shorelands include all lands 50 feet from the line of nonaquatic vegetation.

### Facts About the Area:

1. The majority of Subarea 13 has been designated Rural Conservation
2. Major land uses within the Rural Conservation designation of this area include agriculture, forestry and recreation. Existing recreational developments include:
  - a. Umpqua Wayside (State of Oregon) - picnic facilities and boat ramp;
  - b. Umpqua River Rest Area (State of Oregon) - off-road parking and toilet facilities; and,
  - c. Scottsburg Park - boat ramp and picnic facilities.
3. Slopes within this Subarea are steep in nature, limiting transportation facilities (State Highway 38) to a narrow access adjacent to the Umpqua River.

**Designation:** Rural Conservation everywhere except those special areas designated Rural Other and Rural Water-Dependent within Subareas A-E of the Umpqua River (South Shore) Shoreland area.

**(INSERT MAP)**

## Shoreland Subarea No. 13a: Echo Island (river mile 18.5)

**Description:** This subarea includes those lands 50 feet from the line of nonaquatic vegetation including Tax Lot 600 located at the western boundary and Tax Lot 800 located at the eastern boundary in section 01 of T22S R11W.

### **Facts About the Area:**

1. Excluding Tax Lot 800 located at the eastern boundary, this area has been committed to non-resource use (see Committed Land Inventory Site 18, Coastal PAC).
2. The land use in this area, identified as Echo Resort, is devoted to a marina, camping, commercial activities, residential activities. Historically, there has been a gas station, RV parks and cabins.
3. Tax Lots 800, although not identified as part of the committed area, can be classified as non-resource land due to their physical nature and location. These parcels are below ten acres in size and covered with a thick vegetation that prohibits consideration as viable resource land. In addition, the rock hillside across the road with a north-facing slope severely limits the growing season and resource potential of the identified parcels.

**Designation:** Rural Other

**(INSERT MAP)**

### **Shorelands Subarea No. 13b: Brandy Bar (river mile 20)**

**Description:** This subarea includes those lands 50 feet from the line of nonaquatic vegetation between the eastern boundary of Tax Lot 90000 to the western boundary of Tax Lot 700 (Section 6, Township 22 South, Range 10 West) located in Committed Land Site Inventory 19, Coastal PAC.

#### **Facts About the Area:**

1. This area is committed to non-resource use (see Coastal Committed Land Site 19).
2. This area is the location of the Brandy Bar Landing. The development was approved as a 60 unit planned unit development.
3. A private shared water system and sewage treatment plant have also been constructed.
4. Docks and boat moorage are constructed which provide accessibility to the Umpqua River.

**Designation:** Rural Other

**(INSERT MAP)**

### **Shoreland Subarea No. 13c: Hail's Harbor (river mile 22)**

**Description:** This subarea includes the shorelands along the south shore of the Umpqua River between and including Tax Lot 1200 in section 17D and Tax Lot 100 in Section 17B, Township 22 South, Range 10 West. The landward extent of this area is 50 feet from the line of nonaquatic vegetation and Highway 38.

#### **Facts About the Area:**

1. In the past, this area has been used for gravel removal and storage.
2. Historically gravel dredged from the river was unloaded and stored at this location, to eventually be trucked upriver.
3. The river channel adjacent to the area is deep in nature which is conducive to river traffic and moorage.

**Designation:** Rural Water-Dependent on Tax Lot 1000 of section 17D. Rural Other elsewhere.

**(INSERT MAP)**

### **Shoreland Subarea No. 13d: river mile 24.5**

**Description:** This subarea includes those lands located in Tax Lot 800, Section 14, Township 22 South, Range 10 West, between the line of nonaquatic vegetation and Highway 38.

#### **Facts About the Area:**

1. This area was once owned by the State of Oregon and used primarily as a gravel storage station.

**Designation:** Rural Water-Dependent

**Management Objectives:** Although this area is now privately owned, this plan recognizes the historical use of the property and promotes the possibility of future recreational facilities and/or gravel storage as was once conducted within this subarea.

**(INSERT MAP)**

## **Shoreland Subarea No. 13e: Mill Creek**

**Description:** This subarea includes shorelands adjacent to Mill Creek 50 feet from the line of nonaquatic vegetation. These shorelands extend from the Umpqua River to the head of tide.

### **Facts About the Area:**

1. Shorelands in this area are primarily state owned and partially developed.
2. Vegetation types are primarily riparian in nature.

**Designation:** Rural Conservation

**(INSERT MAP)**

## Shoreland Area No. 14: Umpqua River - Northern Shore

**Description:** This area includes those lands located along the northern shore of the Umpqua River between the Smith River and the westerly boundary of Committed Lands Inventory Site 23A (Scottsburg West), Coastal PAC. The landward extent of these shorelands is 50 feet from the line of nonaquatic vegetation.

### Facts About the Area:

1. Between Butler Creek and the end of Committed Lands Inventory Site 23A, (Scottsburg West), Coastal PAC. Access is limited to watercraft.
2. The principal land use of the floodplain is agriculture.
3. Steep slopes, the Umpqua River and adjacent resource designations preclude other areas from being physically developed.
4. Rural homesites occupy the shoreland portion of this area.
5. Shoreland vegetation in this area is predominantly riparian.

**Classification:** Rural Conservation

**(INSERT MAP)**

**Shoreland Area 15: Scottsburg**

**Scottsburg Subarea No. 15a:**

**Description:** This subarea includes those lands from the westerly boundary of Committed Land Site 23A in the Coastal PAC to head of tide upriver, located between 50 feet from the line of nonaquatic vegetation.

**Facts About the Area:**

1. Douglas County's Committed Land study has identified Subarea as an area committed to non-resource use. (See Committed Lands Inventory Sites 23 and 22 (Scottsburg West), Coastal PAC.
2. Committed land findings indicate that Sites 23 and 22 have a diversified ownership, are physically developed and have a small median parcel size which help to preclude contiguous parcels from being developed into viable resource units.
3. This Subarea has been designated as lot of record in the County's Comprehensive Plan. Under the lot of record designation, a 5 acre density has been assigned.
4. This Subarea represents one of the largest physically developed areas adjacent to the Umpqua River in the Shoreland Study Area.

**Classification:** Rural Other

**(INSERT MAP)**

## Shoreland Area 15: Scottsburg

### Scottsburg Subarea No. 15b:

Description: The subarea includes those lands located 50 feet from the line of nonaquatic vegetation between Highway 38 to the easternmost boundary of the former International Paper truck shop and parking area 1,400± feet from Highway 38, Section 18, Township 22 South, Range 9 West.

#### Facts About the Area:

1. This area was once developed as a truck shop refueling station and parking area for International Paper Company. The area has been physically modified and committed to non-resource development.
2. The property is currently vacant but has not been classified as resource land because of the previous development that existed on the property.

Classification: Rural Other

**(INSERT MAP)**

## Shoreland Area 15: Scottsburg

### Subarea No. 15c:

Classification: This subarea includes those lands located 50 feet from the line of nonaquatic vegetation from the eastern boundary of the former International Paper truck shop to the southwestern boundary of Tax Lot 200, in Section 18A, Township 22 South, Range 9 West.

#### Facts About the Area:

1. This area is located immediately adjacent to the Umpqua River.
2. Riparian vegetation dominates the riverbank.
3. This area is located between and in close proximity to two physically developed areas.
4. Lands south of this area are predominantly timber and steep in nature.

Classification: Rural Conservation

**(INSERT MAP)**

## Shoreland Area 15: Scottsburg

### Subarea No. 15d:

Description: This subarea includes those lands located 50 feet from the line of nonaquatic vegetation between the northern boundary of Tax Lot 900 in Section 18, Township 22 South, Range 9 West, upriver to the head of tide on the Umpqua River.

#### Facts About the Area:

1. The primary land use designation in this area is Farm Forest Transitional.
2. The majority of this area is located on moderate to steep slopes.
3. The predominant vegetation type is riparian, which is found adjacent to the Umpqua River.
4. This area is not physically developed.

Classification: Rural Conservation

**(INSERT MAP)**

## Shoreland Area No. 16: Smith River

**Description:** This area includes those lands located adjacent to the Smith River 50 feet from the line of nonaquatic vegetation between the Rural Conservation designation north of Butler Creek to the head of tide.

### Facts About the Area:

1. The majority of shorelands in this area have been designated Rural Conservation Shorelands.
2. Major land uses within the Rural Conservation Shoreland designation include agriculture (grazing), forestry and recreation.
3. Portions of this area, although not mapped, are diked and similarly devoted to agricultural activities.
4. Rural homesites occupy the fringes of farmland.
5. Two dredge disposal sites are located in this subarea adjacent to the confluence of the Smith River and Brainard Creek (Section 17, T21S, R11W).
6. A breach in the Smith River Dike has returned Tax Account Numbers R26799 and R24967 to the Smith River Estuary. This land has recently been purchased by the Oregon Department of Fish and Wildlife and will be used as a wildlife refuge. This area is designated Estuarine Conservation and will become part of Estuarine Management Unit 4.

**Classification:** Rural Conservation everywhere except those special areas designated Resource Conservation, Rural Other and Rural Water-Dependent within Subareas A - F of the Smith River Shoreland Area.

**(INSERT MAP)**

## **Shoreland Subarea No. 16a: Frantz Creek**

**Description:** This subarea includes all lands 50 feet from the line of nonaquatic vegetation located Committed Lands Inventory Site 4, Coastal PAC.

### **Facts About the Area:**

1. This area is committed to nonresource use.
2. Historically, the land was devoted to a log pond, storage area, and sawmill for the production of hardwood. Although physical improvements still exist, the sawmill is no longer in operation.

**Classification:** Rural Other

**(INSERT MAP)**

## **Shoreland Subarea 16b: Otter Slough**

**Description:** Except for the diked portion of Tax Lot 3 in Section 20, T21S, R11W, this subarea includes those lands between the line of nonaquatic vegetation and the limit of the 100 year flood upriver from Otter Slough bridge to the head of tide.

### **Facts About the Area:**

1. This area is a large freshwater marsh.
2. Waterfowl use this area for resting and breeding.
3. Striped bass have been known to feed and spawn in this area during the spring months.
4. The vegetation in this area is primarily natural consisting of tall grass, cattails and other vegetation types common to freshwater marshes.

**Classification:** Resource Conservation

**(INSERT MAP)**

## **Shoreland Subarea No. 16c: Smith River Marina**

**Classification:** This subarea includes those lands developed as the Smith River Marina in Tax Lot 701 of Section 3, T21S, R11W located between County Road 48 (Lower Smith River Road) and the Smith River.

### **Facts About the Area:**

1. This area is committed to nonresource use.
2. Existing developments in the area include:
  - a. RV parking;
  - b. Campgrounds;
  - c. Boat ramp; and,
  - d. Boat moorage

**Designation:** Rural Water-Dependent

**(INSERT MAP)**

## Shoreland Subarea No. 16d: Former International Paper Log Dump and Exception Area

**Description:** This subarea is located adjacent to the Smith River in Tax Lot 700 and part of 800 in section 36, T20S, R11W and 301 and 400 in Section 31, T20S, R10W.

### Facts About the Area:

1. Tax lots 700 in section 36 of T20S, R11W and 400 in section 31 of T20S, R10W were once developed as a log dump and gravel storage station for the former International Paper Mill.
2. Tax Lots are devoted to future industrial uses. See Coastal Exception Site 1, within the Exceptions and Non-Exceptions to Resource Goals in the Douglas County Comprehensive Plan for additional information concerning Tax Lots 800 in section 36 of T20S, R10W.

**Designation:** Rural Water-Dependent for Tax Lots 700 in section 36 T20S, R11W and 400 in section 31 T20S, 10W. Rural Conservation for that portion of Tax Lot 800 in section 36 T20S, R11W located 50 feet from the line of nonaquatic vegetation.

**(INSERT MAP)**

## **Shoreland Subarea 16e: Noel Creek**

**Description:** This subarea includes those lands 50 feet from the line of nonaquatic vegetation located upriver from the Noel Creek Bridge (Smith River Highway) to the head of tide.

### **Facts About the Area:**

1. This area is subject to tidal influence.
2. The primary land use in this area is mixed forest and grazing.
3. A few rural residential homesites occupy the north and eastern fringe of this area.

**Classification:** Rural Conservation

**(INSERT MAP)**

## **Shoreland Subarea 16f: Smith River Public Boat Ramp**

Description: Smith River Boat Ramp located adjacent to the Smith River in T20S, R11W, Section 34.

Facts About the Area:

1. This area is physically developed as a boat ramp and parking area.

Classification: Rural Water-Dependent

**(INSERT MAP)**

## Shoreland Area No. 17: Steamboat Island

### Subarea No. 17a: Steamboat Island (west)

**Description:** This subarea includes that portion of Steamboat Island created by the placement of dredged material, located in three areas on the western fringe of Steamboat Island. Lands within this subarea are located above Mean Higher High Water and the line of nonaquatic vegetation.

#### **Facts About the Area:**

1. In the past these three areas were used for dredged material disposal.
2. A study completed by Oregon State University (OSU) identifies the upland boundary (line of nonaquatic vegetation) for this area. (See appendix A.) According to this study, most of the designated areas are located above Mean Higher High Water (MHHW).
3. The County defines the estuary to include the bed and water column of those water bodies to a point on the shoreland up to and including Mean Higher High Water (MHHW) and to the extent of tidal marshes and the line of nonaquatic vegetation. Based on the study completed by OSU, the County determined that all lands within this subarea located above the designated upland boundary MHHW line and the (line of nonaquatic vegetation) qualify for a shoreland classification.
4. Livestock use this area or grazing.
5. Predominant vegetation types include scotch broom, evergreen blackberry, tansy ragwort, and salmonberry.
6. This area includes several sites having restoration and mitigation potential as well as potential for dredge spoils disposal. Portions of upland sites having appropriate resource capabilities could be used for additional dredge spoils disposal while other historical spoil areas could have material relocated to create estuarine areas and enhance tidal circulation.

**Classification:** Rural Conservation

**Management Objectives:** The intent of this plan designation is to recognize existing shoreland areas and encourage types of development compatible with surrounding resources.

**(INSERT MAP)**

### **Subarea No. 17b: Steamboat Island (south)**

**Description:** Located on the southeastern fringe of Steamboat Island, this area represents upland created by the deposition of sand. Lands within this subarea are located above Mean Higher High Water and the line of nonaquatic vegetation.

#### **Facts About the Area:**

1. Surrounding vegetation types include sedges, bullrush and saltgrass.
2. This area was created through the natural deposition of sand.
3. Small tidal creeks pass through this area, sometimes influencing adjacent vegetation types.
4. It has been determined that Findings 2 and 3 of Subarea 17a (Steamboat West) also apply to this subarea.

#### **Designation: Resource Conservation**

**Management Objective:** To protect the natural values of the shoreland created through natural deposition and promote uses which are consistent with these values and adjacent estuarine areas. The Shoreland designations identified on Steamboat Island have been designed to reflect the existing shoreland and to promote a multiplicity of use(s) that are compatible with the natural resource values on and adjacent to the Island.

**(Insert Map)**

# SHORELAND MANAGEMENT POLICIES

The following policies are intended to provide the criteria upon which future land and water use decisions pertaining to coastal shorelands are to be made. The policies are organized into five groups:

- 1) Policies which have general application to all coastal shorelands are suggested.
- 2) Resource Conservation
- 3) Urban
- 4) Rural
- 5) The fourth group includes policies for specific shoreland areas. The policies are derived from State goal requirements, LCDC policy papers, the Land and Water Use Plan for the Umpqua Estuary and the Final Report of the Oregon Coastal Conservation and Development Commission

## General Policies

1. Douglas County, within the limits of its authority, shall maintain the diverse environmental, economic and social values of its coastal shorelands and the water quality of its coastal waters and shall minimize man-induced sedimentation in estuaries, nearshore ocean waters, and coastal lakes.
2. In considering future uses of coastal shorelands, the values of these shorelands for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources, recreation and aesthetics shall be recognized.
3. All uses on coastal shorelands shall be compatible with the characteristics and resources of adjacent estuarine areas, lakes and ocean and any geologic or hydrologic hazards.
4. In all shoreland areas, riparian vegetation shall be maintained to the maximum extent possible.
5. Riparian vegetation moved or damaged as a result of permissible development shall be restored and enhanced when appropriate and be consistent with the water-dependent use.
6. In all shorelands except those classified for water-dependent uses, development other than flood and erosion control structures and private docks shall be set back 50 feet from the line of non-aquatic vegetation or Mean Higher High Water, unless the County finds, after consultation with the Oregon Department of Fish & Wildlife, that such setback is unnecessary as a mitigation measure for the protection of wildlife.
7. Nonstructural solutions to problems of shoreline erosion and flooding shall be preferred over structural methods.
8. Fill activities on shorelands or in adjacent waters and flood and erosion control structures such as jetties, bulkheads, seawalls, riprap and log storage shall be permitted only upon a demonstration of need and only if designed and sited to minimize erosion and man-induced sedimentation in adjacent areas as well as impacts on water currents, water quality and fish and wildlife.
9. Public access to coastal shorelands and waters shall be provided as part of future shoreland developments when such access will not conflict with the type of development, create a significant hardship or exceed the resource capabilities of the shoreland area.
10. The size (height and length) of structures permitted in coastal shorelands shall be consistent with the need to protect scenic access to the water body.
11. Agriculture, forestry, recreation and open space (as defined in State goals) and water-dependent uses shall be given highest priority for floodplain areas consistent with the hazards to life and property.
12. Coastal shoreland areas identified as suitable for fulfilling the mitigation requirements of the State's Estuarine Resources Goal shall be protected from new uses and activities which would prevent their ultimate restoration or addition to the estuarine ecosystem.

13. Coastal shorelands identified as suitable and necessary for disposal of dredged material shall be protected from new uses and activities which would prevent their ultimate use for dredged material disposal.
14. When disposal of dredged material will create opportunity for development and associated improvements, access and services shall be available or planned.
15. Disposal of dredged material shall be permitted on shorelands if the eventual use of the disposal site is consistent with the uses permitted in that class of shoreland and with the Dredged Material Disposal Program.
16. Shorelands shall be managed as a limited resource recognizing the value and limited available sites for water-dependent uses.
17. Non water-dependent uses may be allowed in water-dependent areas of shorelands only if these uses are temporary in nature and do not preclude timely use of the site for water-dependent uses.
18. Non water-dependent and non water-related uses may be allowed in other than water-dependent shorelands with adequate safeguards from natural hazards and compatibility with the resources of the shoreland area.
19. Bridges, roads and railroads shall be permitted on shorelands if found to be consistent with the resource capabilities of the area, with the objectives of the shoreland classification and with the Douglas County transportation plan and if essential to serve permitted or conditional uses.
20. Utilities and public communication facilities shall be permitted on shorelands only if such uses are consistent with the resource capabilities of the area and do not conflict with permitted uses of the particular shoreland classification.
21. Additional dredge and fill policies are contained in the Dredged Material Management Program and relevant policies shall be considered of equal importance with policies in this section when evaluating dredge and fill activities.
22. Emergency repairs involving roads, dikes and bridges subject to floodplain, estuarine, or shoreland requirements of the Douglas County Land Use and Development Ordinance shall be allowed providing the repairs do not extend beyond the original bank line. Such emergency repairs shall be subject to the requirements outlined in Oregon Administrative Rule 141-85-676. Upon receipt of an approved emergency permit by DSL, the County shall notify the local Planning Advisory Committee of the action undertaken.
23. Where major marshes and significant wildlife habitat or riparian vegetation are identified in the Comprehensive Plan, propagation and harvesting of forest products shall be allowed when shown to be consistent with the Oregon Forest Practices Act and Forest Practices Rules administered by the Oregon Department of Forestry. The Act and Rules will be used to protect the natural values of these resources and to maintain riparian vegetation.
24. In accordance with the specifications of the Salmon Harbor Management Committee, Douglas County has developed a public access point within the lease area for future private development on the northwest spit of Salmon Harbor. The public access point includes parking and access to the Umpqua River.
25. All County owned developed access points, and undeveloped County ownerships which allow the public to walk, see, or reach the shoreline of coastal waters, shall be retained by Douglas County.
26. Existing State and Federal ownerships that provide access to or along coastal waters shall be retained to the maximum extent practicable.

## **Policies For Resource Conservation Shorelands**

1. Uses allowed in shorelands classified as Resource Conservation shall be consistent with protection of the natural values of major marshes, significant wildlife habitat and exceptional aesthetic resources on those shorelands.
2. Areas identified as potential "Natural Areas" shall be protected and efforts made to acquire them for preservation.

3. Allow one single-family dwelling on a lot of record.
4. Promote the development of facilities that will be consistent with the protection of natural shoreland values.

## **Policies for Urban Shorelands**

1. Shorelands identified with an Urban classification and a subclassification of Water-Dependent shall be protected for water-dependent, commercial, industrial, public and recreational uses.
2. Uses not listed as permissible in water-dependent industrial and water-related commercial subclasses of urban shorelands may be allowed in these shorelands upon demonstration by the applicant that the uses are in fact water-dependent industrial or water-related commercial consistent with the criteria set forth in the definitions.
3. Shorelands classified as Urban with a Water-Related commercial subclass shall be protected for uses which provide goods or services that are directly associated with water-dependent land or waterway uses and which, if not located adjacent to water, would result in a public loss of quality in the goods or services offered.
4. Storage of materials or products shall be permitted in urban water-dependent industrial and water-related commercial shorelands if found to be directly associated with water transportation and an integral part of the operation of a proposed or existing facility.
5. Dwellings for caretakers and attached single-family dwellings may be allowed in urban water-related shorelands if such uses are an integral part of a water-related use and do not interfere with the location and operation of other water-related uses.
6. Marine oriented public offices, grocery stores, restaurants, motels and other non water-related uses may be permitted in urban water-related commercial shorelands if shown that the goods and services provided by these uses are directly associated with water-related or water-dependent uses and the quality of these products or services is dependent on being located adjacent to those uses or the water.

## **Policies for Rural Shorelands**

1. Shorelands as identified with a Rural classification and subclassification of Water-Dependent shall be protected for water-dependent recreational uses, aquaculture, and other water-dependent uses which require a rural location.
2. Shorelands classified as Rural with a Conservation subclassification shall be protected and managed to provide for farm uses consistent with ORS 215, for propagation and harvesting of forest products consistent with Forest Practices Act and aquaculture.
3. Water-dependent commercial and industrial uses and water-related uses may be permitted in shorelands classified as Rural with a Water-Dependent and Other subclass only when it is found that such uses satisfy a need which cannot be accommodated on shorelands in urban and urbanizable areas.
4. Travel trailer and camping facilities may be permitted in rural shorelands designated for water-dependent or water-related uses when they are owned and operated as an integral part of a moorage facility.
5. Individual private docks may be allowed in shorelands classified as Rural Conservation and Rural Other when the size of the dock is the minimum required and the dock will not interfere with navigation.
6. Single family residences may be permitted on existing lots, parcels or units of land in all rural shorelands if found to be compatible with the allowed uses in each type of rural shoreland implementing zone .
7. In shorelands designated Rural with a Conservation subclass, a major or minor partition creating only farm or forest units, may be allowed when consistent with the forest or agriculture use of the land, the requirements for division of land set forth in the Timberlands Resource and Exclusive Farm Use zones, and the protection of riparian vegetation and wildlife habitat.

8. Subdivisions and major or minor partitions may be allowed in shorelands designated "Rural-Other" if located in a designated "Committed" or "Exception" area and conforms to the requirements of the Land Use and Development Ordinance.

## **Policies for Specific Areas**

1. A larger scale hotel/convention center development shall be permitted in the Salmon Harbor shorelands subarea if found to be consistent with the Winchester Bay Comprehensive Plan and architectural guidelines, undated but published at the same time as the Salmon Harbor Master Plan of 1981, and if it will not interfere with the water-dependent uses of the Harbor.
2. Fills and other structures that might have adverse effects on fish runs or reduce floodplain capacity shall not be permitted in the shoreland area along Winchester Creek.
3. Designated Shorelands on Steamboat Island shall be developed in a manner consistent with the area's natural resources.
4. Future development within the designated Winchester Creek floodplain shall be consistent with the floodplain overlay requirements of Douglas County's Land Use and Development Ordinance.
5. Prior to issuance of any permit which would allow the filling of the area adjacent to Highway 101 and Winchester Creek, the approving State or Federal agency shall consult with the Department of Fish and Wildlife to determine any appropriate conditions which should be applied to such a permit. The approving agency shall consider, in addition to standard permit requirements, the impact of filling on:
  - a. existing drainage patterns, to insure that existing draining patterns from adjacent wetlands into Winchester Creek are maintained; and
  - b. adjacent wetlands, when a hydraulic pipeline is used to transport fill material originating from an area with a high degree of salinity.
6. If future economic growth occurs with the area, Douglas County shall place an emphasis on the study of Steamboat Island, as promoted by the Port of Umpqua, for consideration as a site for water-dependent uses. If future needs prove Steamboat Island the best suited location for water-dependent uses and demonstrate that other sites are not available or are less suited for such designation, then the designation of the Island may be re-evaluated in a plan amendment process.

## **Policy Implementation/Permitted Uses**

Specific uses which may be permitted outright or with conditions in each class of coastal shorelands in Douglas County are listed in Douglas County's Land Use and Development Ordinance. The list of uses is based in part on an interpretation of the provisions of Statewide Planning Goal 17 on Coastal Shorelands and policy papers adopted by the Department of Land Conservation and Development. The List of Uses also takes into consideration existing uses and uses identified as suitable in the Land and Water Use Plan and the Marine Commercial and Marine Industrial zones in effect in the County at the time this plan was initially adopted, December 14, 1983. The listed uses and activities are consistent with the class of shoreland and management policies stated above.

## SIGNIFICANT COASTAL WETLANDS

Significant wetlands located within the shorelands study area were not inventoried or identified in Douglas County's non-coastal goals Comprehensive Plan. During the completion of the Coastal Resources Plan (subject to Goal 16 and 17) the Coastal Wetlands Inventory was completed. This Coastal Resources Plan therefore includes the County Inventory of Significant Coastal Wetlands.

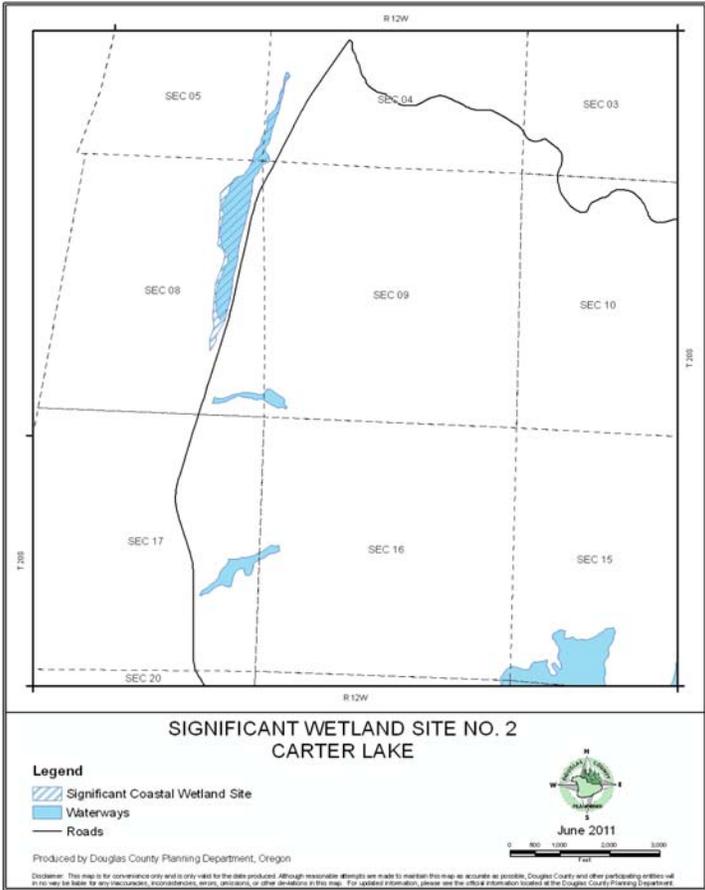
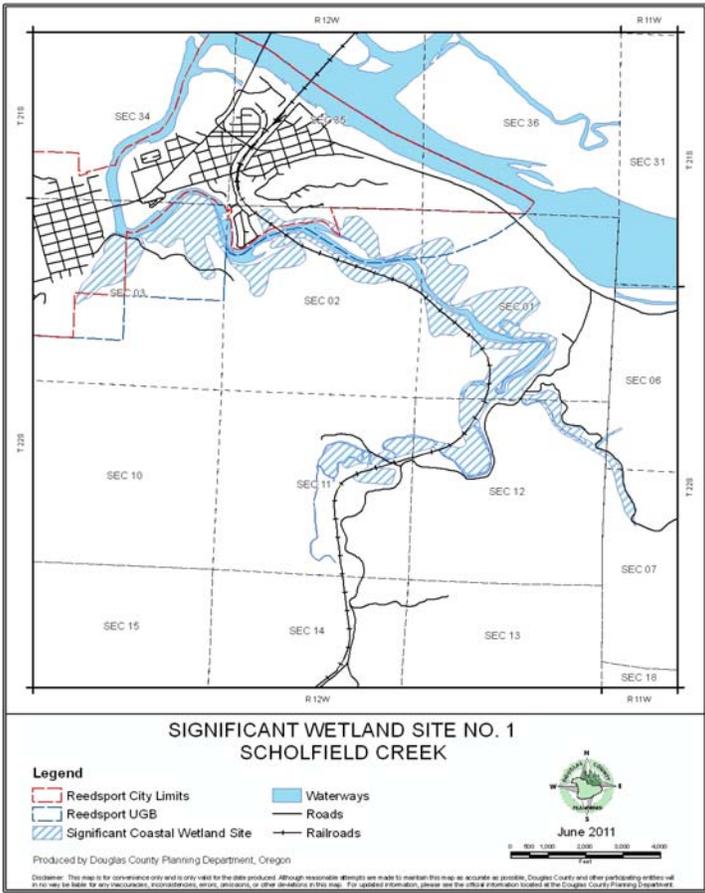
This inventory was conducted by the Oregon Department of Fish and Wildlife. The inventory satisfies Goal 17 inventory requirements for Coastal Shorelands, located adjacent to perennial water courses and coastal lakes. This inventory includes only those wetlands with designated estuarine and shoreland areas.

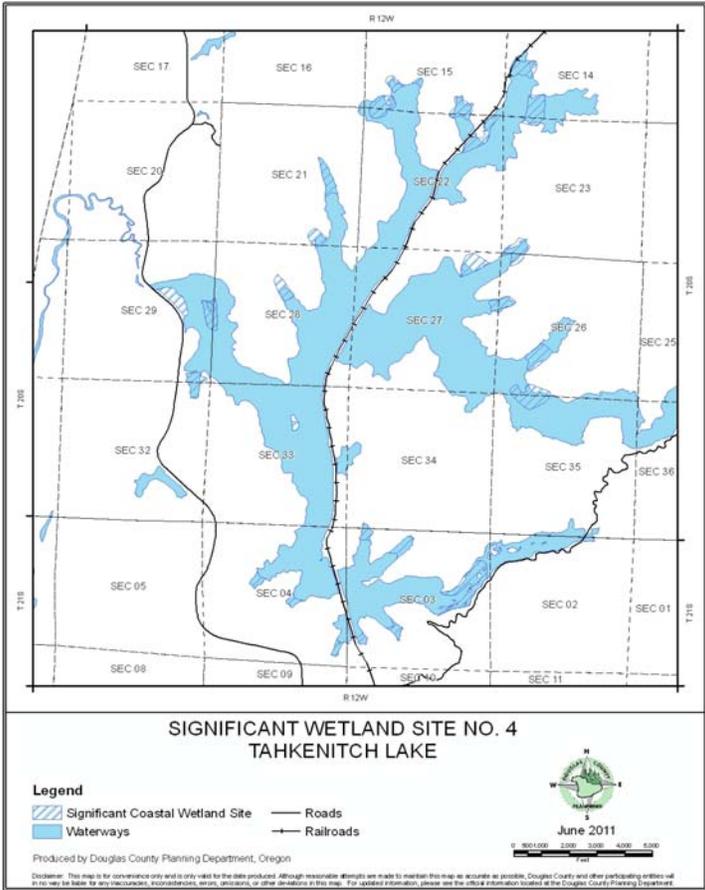
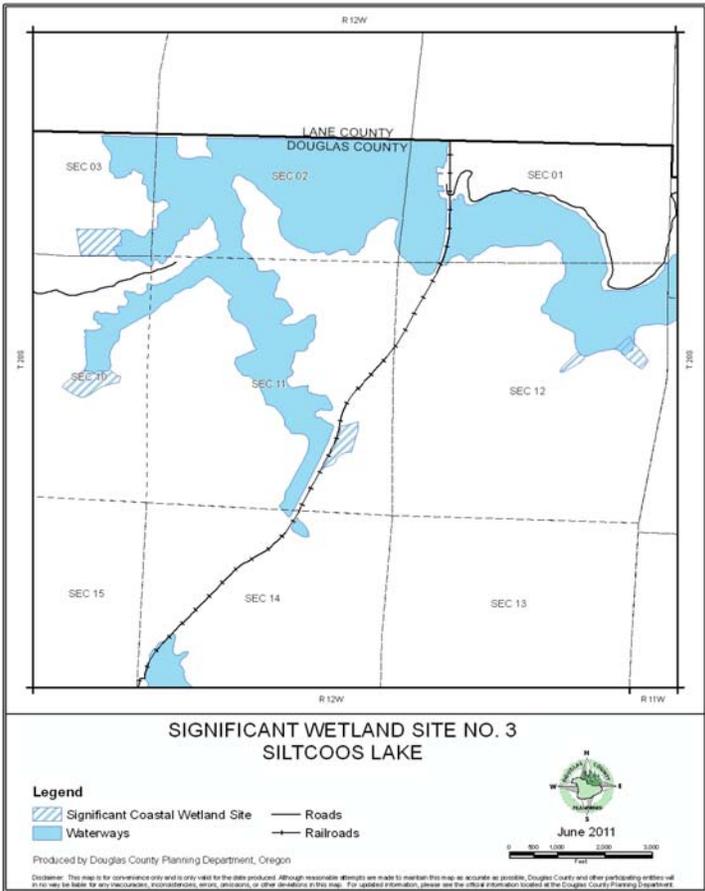
The accompanying chart and maps summarize the number, name and location of Significant Coastal Wetlands in Douglas County. The darkened area of each map shows the extent of each wetland.

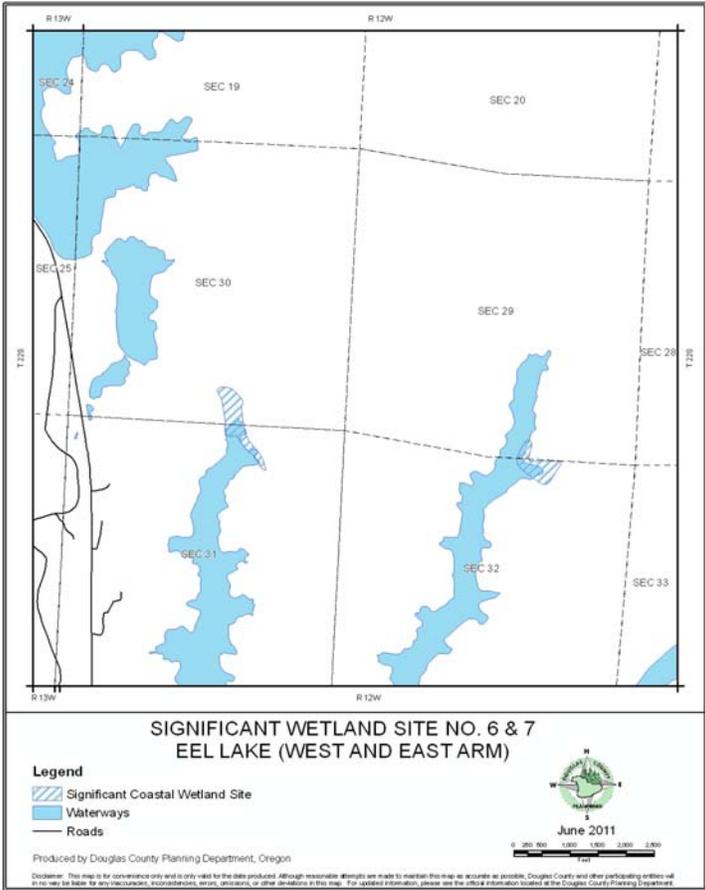
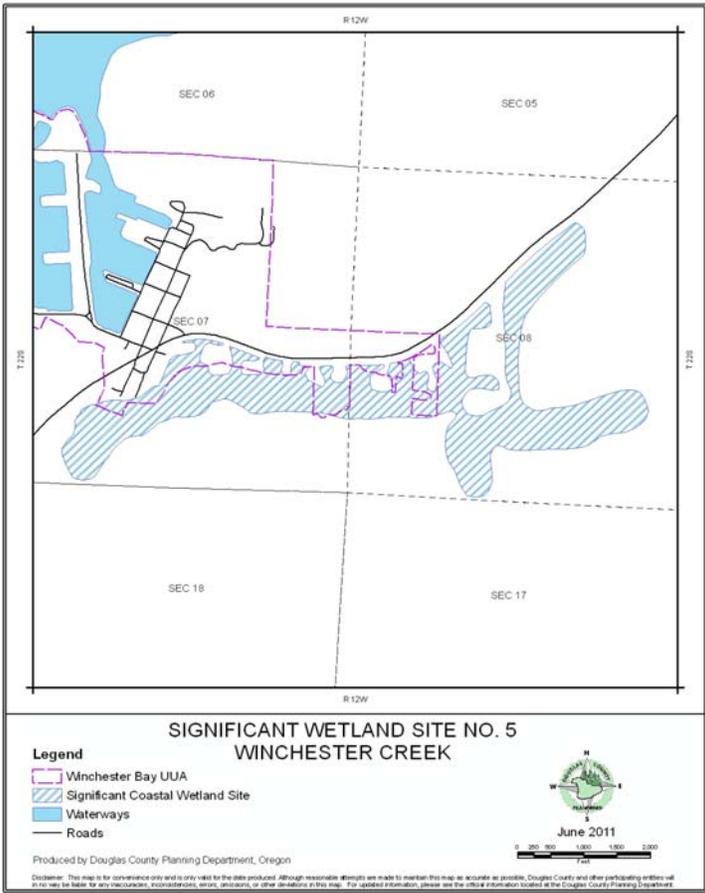
To insure that these significant wetlands are adequately protected, the County will apply a 50 foot setback standard as established to conserve other riparian vegetation corridors and significant wetlands to these wetlands. The policies and standards of the Natural Features Element of the Comprehensive Plan (acknowledged December 21, 1982) shall be applied to these wetlands. Those standards are Implemented by Sections 3.32.200 (Riparian Vegetation Overlay) and 3.32.700 (Significant Wetland Overlay) in Article 32 of Douglas County's Land Use and Development Ordinance.

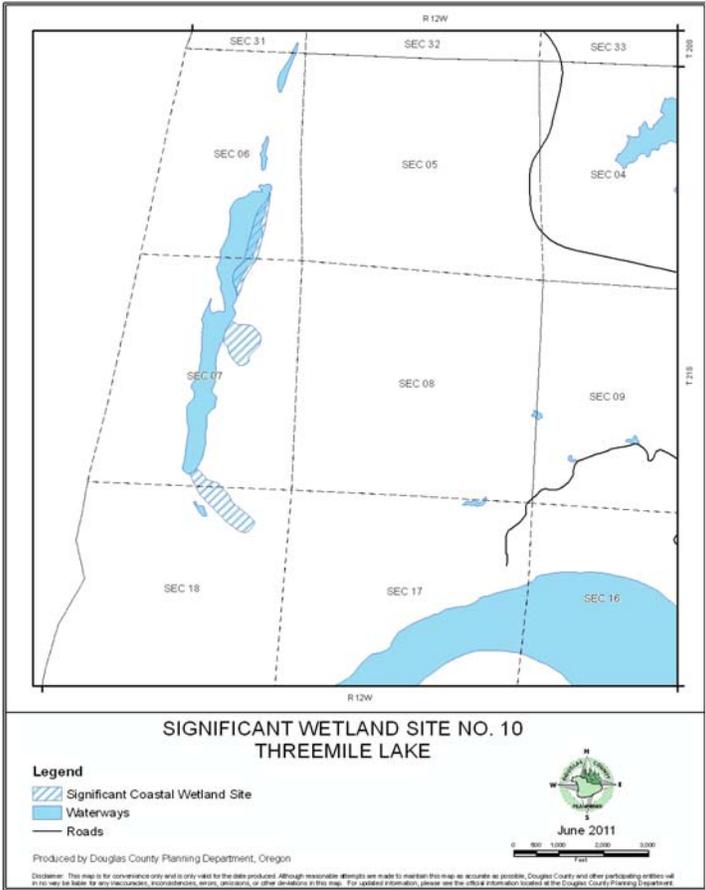
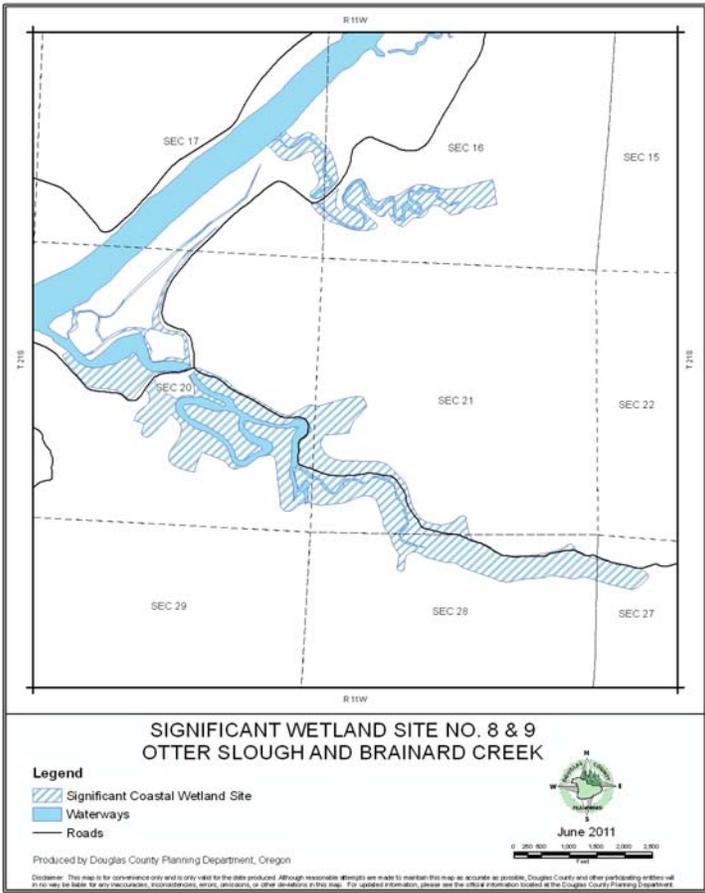
**Table of Significant Coastal Wetlands**

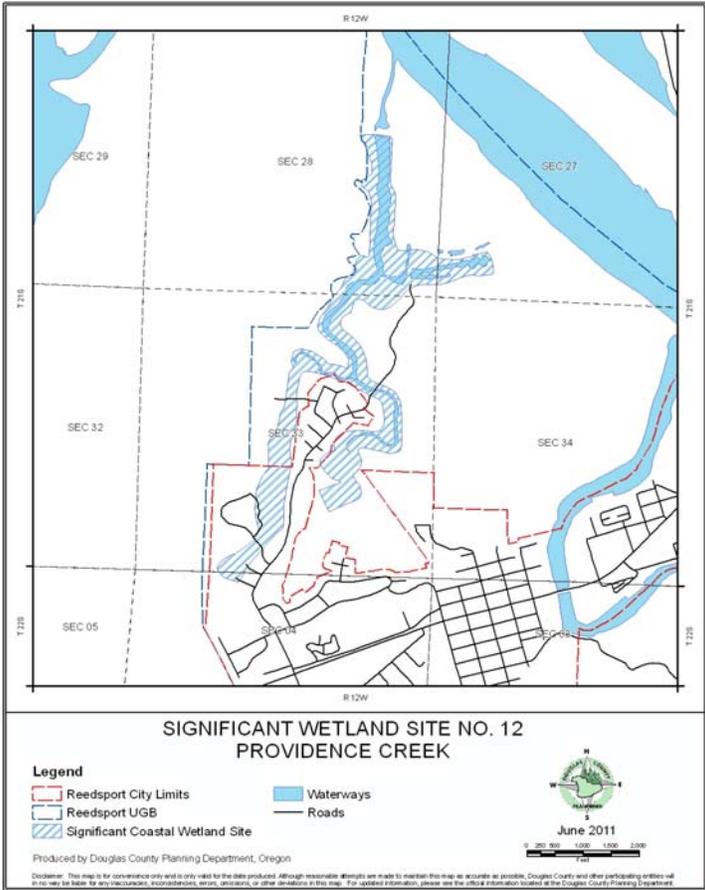
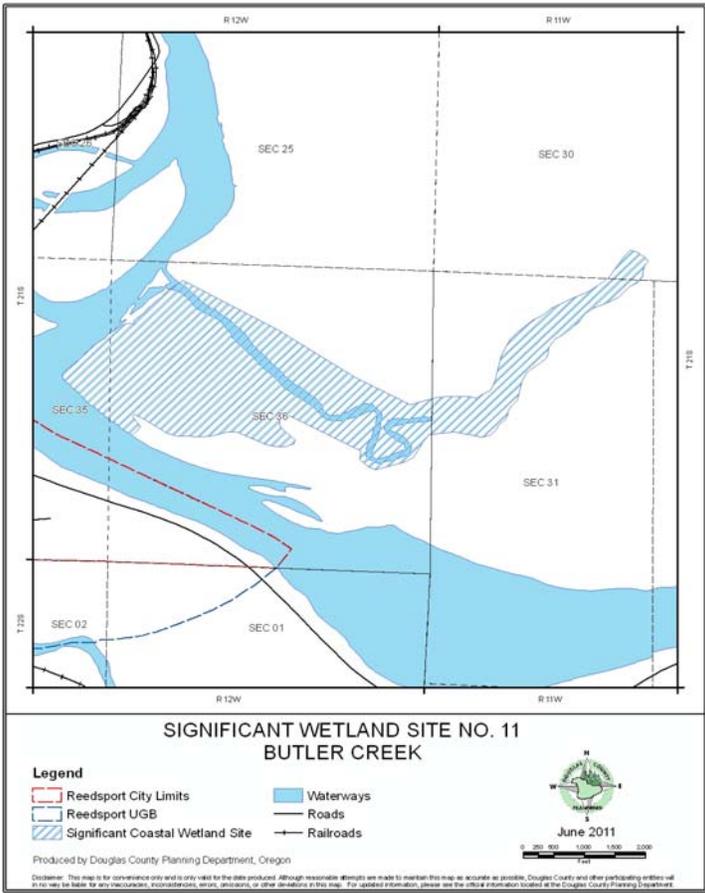
<b>Site No.</b>	<b>Name</b>	<b>Location</b>
1	Scholfield	T21S, R12W, S34; T22S, R11W, S6, 7; T22S, R12W, S1, 2, 3, 11, 12
2	Carter Lake	T20S, R12W, S4, 5, 8
3	Siltcoos Lake	T20S, R12W, S3, 10, 11, 12
4	Tahkenitch Lake	T20S, R12W
5	Winchester Creek	T22S, R12W, S7, 8
6	Eel Lake (West Arm)	T22S, R12W, S30, 31
7	Eel Lake (East Arm)	T22S, R12W, S32
8	Otter Slough	T21S, R11W
9	Braynard Creek	T21S, R11W, S16, 17
10	Threemile Lake	T21S, R12W, S5, 6, 7, 18
11	Butler Creek	T21S, R12W, S36; T21S, R11W, S30, 31
12	Providence Creek	T21S, R12W, S27, 28, 33
13	Franz Creek	T21S, R12W, S13, 14, 23, 24
14	Hudson Slough	T21S, R12W, S13, 24; T21S, R11W, S18, 19
15	Deans Creek	T21S, R11W, S34; T22S, R11W, S3, 5
16	Hinsdale Ranch	T21S, R11W, S31, 33; T22S, R11W, S5, 6

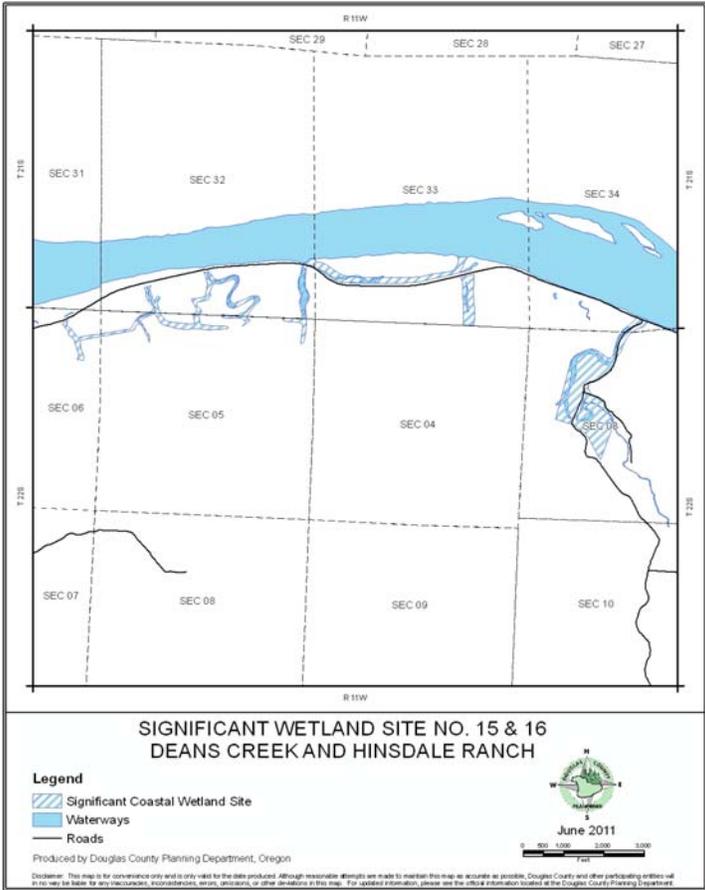
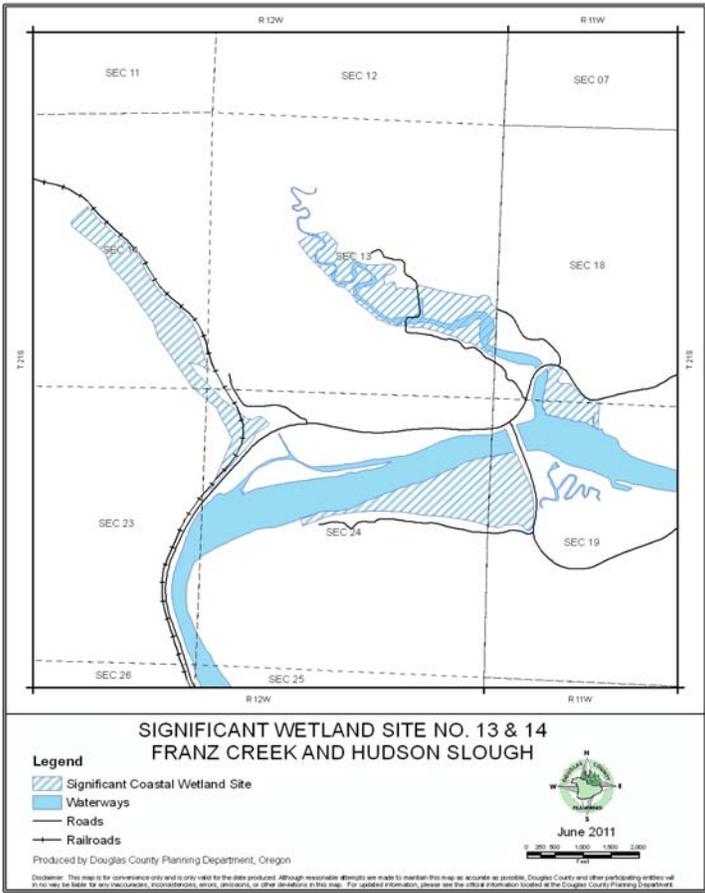












# SHORELAND EXCEPTION AREAS

## Exception to Goal 17 for Winchester Creek Area

### Introduction

This Exception Statement contains the findings of fact and conclusions in support of an exception to the provisions of Goal 17 of the Statewide Planning Goals which require the preservation of significant wetlands areas. The purpose of this Exception Statement is to allow for designation of certain identified wetlands within the Winchester Bay Urban Service Boundary for tourist commercial uses. Map 1 (Wetland Area), Map 2 (Plan Designation), and Map 3 (Alternative Sites) contained at the end of this chapter are used to illustrate the exceptions to Goal 17 for the Winchester Creek Area.

The Oregon Department of Fish and Wildlife (ODFW) in a letter to the Douglas County Board of Commissioners dated October 14, 1981, identified the area between State Highway 101 and Winchester Creek as a significant wetland. With respect to this area, ODFW indicated that, "it makes a good nutrient contribution to the Umpqua Estuary . . . and contributes to the diversity of wildlife habitat." The limits of this wetland area were refined by the LCDC Continuance Order 83-Cont-13 regarding the Douglas County Comprehensive Plan and the accompanying In Order to Comply Statements. Compliance Statement 3 of Goal 17 indicates that "Goal 17 will continue to apply (except for previously filled sites) (emphasis added) until the County completes its reexamination of the shorelands boundary". The area defined as a significant wetland by ODFW and the area for which this exception is being taken are shown on Map 1. The previously filled sites in this area have been addressed as part of Coastal Committed Land Site 29.

Goal 17 of the Statewide Planning Goals requires that, among other things, all lands adjacent to estuaries which have been identified as significant wetland biological habitats shall be preserved for coastal shoreland uses. Coastal Shoreland uses, by definition, provide for the establishment of uses which are not resource uses, water-dependent or water-related uses only upon finding of: 1) public need, 2) the inability of upland locations or urban or urbanizable areas to accommodate the proposed uses, and 3) the compatibility of the proposed uses with the Goal 17 objectives to protect riparian vegetation and wildlife habitat.

It is the County's intent to designate the subject area as Tourist Commercial on the Douglas County Comprehensive Plan Map and to implement this Plan designation with Tourist Commercial zoning. This designation is shown on Map 2. The designation of this area for such urban uses is considered necessary to provide land to accommodate projected commercial development in this area to the year 2000.

Goal 2 of the Statewide Planning Goals indicates that when, during the course of development of a Comprehensive Plan, it appears that it is not possible to apply appropriate provisions of the Statewide Planning Goals to specific areas, the compelling reasons and facts supporting an exception to those goal provisions be set out in the Comprehensive Plan. These findings must include:

- a. Why these other uses should be provided for;
- b. What alternative locations within the area could be used for the proposed uses;
- c. What are the long term environmental, economic, social and energy consequences to the locality, the region or the state from not applying the goal or permitting the alternative use; and,
- d. A finding that the proposed uses will be compatible with other adjacent uses.

Requirement (a) above is addressed in Section 2 of this Statement entitled "Need for Tourist Commercial Uses." This section explains why such uses should be provided for in the Winchester Bay area, including what purposes of the Statewide Planning goals and Douglas County Comprehensive Plan are served by providing areas for them.

Requirements (b), (c) and (d) above are addressed in Section 3 of this Statement entitled "Alternative Sites Identification and Evaluation." This section describes the characteristics required of any site intended to accommodate tourist commercial uses and identifies and assesses the viability of alternate sites to accommodate them. This section also describes, for each alternative site, the environmental, economic, social and energy consequences of allowing its development for tourist commercial purposes. And finally this section describes the existing and anticipated uses on land adjacent to the subject area how the proposed uses will be compatible with these adjacent uses.

## Need for Tourist Commercial Uses

### Tourism<sup>1</sup>

Western Douglas County is a popular recreation area in Oregon providing opportunities for fishing, camping, picnicking, beachcombing, boating, and sightseeing. The combination of these and other activities draw visitors to the area. Their expenditures have significant impact on the local economy. It has been estimated that for 1972, total visitor expenditures were \$6.7 million.

In 1973, approximately 82 percent of the visitor-days in this area were spent in fishing-related activities. The remaining 18 percent of the visitor-days were expended in nonfishing activities such as camping, sightseeing, picnicking, etc. Out-of-state visitors accounted for about 36 percent of the visitor-days expended in both fishing and nonfishing activity. Visitors who engaged in fishing activity remained in the area about 3.72 days per trip; whereas, visitors who were nonfishermen averaged only 1.11 days per visit. About 38 percent of the nonfishing visitors spent less than 24 hours in the area; only 14 percent of the fishing visitors spent less than 24 hours in the area.

By multiplying fishermen and nonfishermen visitor-day estimates attributed to these investments by their respective average per-visitor-day expenditure in the area, it can be estimated that the direct economic impact of expenditures associated with development of recreational facilities in the area in 1972 was about \$1.9 million (see Table 1). After this direct impact is multiplied throughout the local economy, the total economic impact of the public investments mentioned above amounts to \$5.4 million annually.

### Direct Economic Impact of Visitors, 1972

Type of Visitor	Visitor Days in the Area	Average Per Visitor-Day Expenditures	Direct Economic Impact (\$)	Percent of \$
Fishermen using public fishing, launching, and moorage facilities	178,560	\$7.94	\$1,417,766	73
Nonfishermen using public camping facilities	27,360	\$4.57	\$125,035	6
Nonfishermen using public day use areas	87,486	\$4.59	\$399,811	21
<b>Total Annual Use</b>	<b>293,406</b>			
<b>Total Direct Impact</b>			<b>\$1,942,612</b>	

As can be seen from the table above, a significant portion of the visitor-days and expenditures in this area are spent using public fishing, launching and moorage facilities. The primary facility on the coast for these activities is Salmon Harbor at Winchester Bay. This harbor is a partially completed marina located at the mouth of the Umpqua River. It is jointly managed by Douglas County and the Port of Umpqua with its planning and development being the County's responsibility. Although development of the breakwaters for the entire harbor has been complete for some time, less than half of the docks in the west basin have been installed. The harbor presently has moorage capacity for 1,000 boats. At completion, the facility will accommodate approximately 1,800 boats. Construction of the docks has been an incremental process with the addition of one or two docks each year since 1972. Occupancy of the moorage spaces varies through the year from 100% of the summer months to approximately 50% in the winter.

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<sup>1</sup> Most of the data contained in this section has been taken from the following document: State Water Resources Board, Oregon Coastal Area, Including Southwestern Oregon Counties: Economic Survey and Analysis, 1975.

Increases in recreational fishing are based on completion of the training jetty at the mouth of the river by the Corps of Engineers and completion of Salmon Harbor. The recent extension of the training jetty is intended to improve the hazardous bar conditions which endanger boat traffic entering and leaving the estuary. This project is intended to improve boating safety by modifying shoaling patterns, eliminating cross currents at the entrance and decreasing the hazardous wave conditions at the inner bar area.<sup>2</sup> This improvement, in turn, should have beneficial effects on off-shore recreational fishing. Although there is no specific date for completion of the Harbor, it is anticipated that this will occur by the year 2000.<sup>3</sup> Completion of Harbor (with the 80% increase in moorage capacity) should increase its usage by 80%.

In the past 10 years, State and County Parks usage have increased approximately 75%. Both the State and County project usage of their parks to increase through the planning period. The rate of increase in usage is expected to, at least, keep pace with population growth in the area. This would result in an increase of 47% over the next 20 years.

This growth in Salmon Harbor and the tourist industry in general will have obvious effects on the economy of the area. Using the visitor-day expenditures discussed previously and the projected increases in the fishing and nonfishing components of this industry, it is projected that tourism-related expenditures will increase between 47% and 71% over the next 20 years.<sup>4</sup>

### Commercial Land Use

In 1980 there existed 25 tourist commercial uses located on 22.4 acres in the Winchester Bay Urban Service Boundary. This represents 51% of all commercial uses in Winchester Bay. These tourist related uses occupied 90% of all commercially developed land. The location of these uses is shown on Maps 3 and 4. The composition and acreages associated with these uses are shown on the following table.

### **Winchester Bay Existing Tourist Commercial Uses**

Type of Use	# of Uses	Acreage
Motels	4	3.5
RV Parks	4	17.0
Other	17	1.9

As can be seen from this Table, the large acreage devoted to tourist commercial uses results from the four relatively land-extensive recreational vehicle parks and four motels in the area. The four recreational vehicle parks are located on 17 acres of land and provide 238 camping spaces. These facilities are often fully occupied during the summer months. Winter occupancy varied between 20% and 30%. In addition to these four parks, the County's Salmon Harbor presently provides 383 designated overnight parking spaces. The occupancy of these spaces averages 70±% in the summer and less than 10% in the winter. These harbor spaces are located in areas planned for future commercial development. As these areas develop, the existing overnight spaces will be displaced.

The area's four motels offer 113 rooms to accommodate visitors to the area. As with the recreational vehicle

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<sup>2</sup>U.S. Army Engineering District, Umpqua River Jetty Extension, May, 1976.

<sup>3</sup>Conversations with Ron Hjort, Assistant Director, Douglas County Parks Department, and Bill Bradshaw, Manager, Salmon Harbor.

<sup>4</sup>The 47% increase assumes no change in the level of expenditures and an increase in the number of visitors consistent with projected population increases for the area. The 71% increase assumes no change in the level of expenditures and 1) an increase in the number of nonfishing visitors consistent with projected population growth (47%) and 2) an increase in the number of fishermen consistent with the expansion of Salmon Harbor (80%). These increases were averaged utilizing a factor reflecting the relative level of expenditures of each component.

parks, occupancy of the motels varies between 29% and 30% during the winter months and 90+% during the summer tourist season.

The projection of future land needed in the Winchester Bay area for tourist commercial development is based upon the 47% to 71% growth projected for tourism discussed previously. Assuming a direct relationship between the growth in tourism and amount of land consumed for such purposes, between 10.5 and 15.9 additional acres of available land should be designated for future tourist commercial uses. To ensure that an adequate amount of land is available, the high range of the projection of 15.9 acres has been used in designating lands intended for these uses.

In the assignment of land use designations to properties covered by the Winchester Bay Plan, primary consideration was given to the existing land use pattern. Areas in which most of the properties were developed residentially were designated to allow continuation of these uses. The same consideration was given to commercial and industrial uses as well.

The areas where most of the existing Tourist Commercial uses were located and where future use of this type are planned are along Beach Boulevard, 3rd Street, Salmon Harbor Drive at the Umpqua Beach Resort and on Highway 101. The 3rd Street and Salmon Harbor Drive Tourist Commercial areas are presently fully developed. Approximately 2.4 acres of land in the platted portion of Winchester Bay along Beach Boulevard and Highway 101 have been designated to accommodate future tourist commercial uses. These areas are considered appropriate for additional uses of this type due to their adjacency to Salmon Harbor and the Coast Highway, respectively.

It is intended that the remaining 13.5 acres of land needed for future Tourist Commercial development be accommodated on the south side of Highway 101 east of the platted portion of Winchester Bay, the area for which this exception is being taken. Alternative locations to satisfy this need are discussed in the following section of this exception.

## **Alternative Sites Identification and Evaluations**

### Identification of Sites

The Winchester Bay Plan, page 40, identifies motels and RV Parks as the most land extensive tourist commercial uses in the area. In 1980 these uses consumed over 90% of the land developed with tourist commercial uses. Although this percentage may decline through the planning period, it is likely that uses of these types will consume the majority of the land intended for future tourist commercial development. With these uses in mind, an effort was made to identify alternative sites in the area which could accommodate these as well as other tourist commercial uses allowed within this plan designation.

To evaluate land in the area with regard to its feasibility for tourist commercial development to serve the Winchester Bay area, 6 criteria were used. These criteria are considered to be minimum standards which any property must meet in order to be reasonably capable of being developed for the subject uses. Descriptions of these criteria follow.

**Salmon Harbor:** All areas within a 5 mile radius of Salmon Harbor were surveyed for potential sites. This radius extends to the southern County limits on the south and to the Umpqua River crossing of Highway 101 on the northeast. It is unlikely that tourist commercial uses located further away from Winchester Bay would serve that community. Also, given the terrain, existing land uses and ownership pattern in coastal Douglas County, it is unlikely that more appropriate sites could be located beyond this 5 mile radius.

**Ownership:** Only properties under private ownership were considered as having a potential for tourist commercial use. Much of the land south of Winchester Bay is under the ownership of the State and City of Reedsport. The State's holdings make up the Dunes NRA and Umpqua Lighthouse State Park. The City's property consists of Clear Lake, its water source, and a portion of the watershed which surrounds it.

**Slope of the property:** Using USGS Quad Sheets, the topography of the area was divided into generalized categories of 0-12% slope, 13-24% slope and 25%+ slope. Only those areas with slopes of 12% or less are considered suitable for tourist commercial uses, particularly RV parks. Land consisting of steeper slopes would require extensive grading for commercial use. The cost of this extensive grading would likely make development of such properties economically infeasible.

**Proximity to Public Roads:** Much of the land within 5 miles of Winchester Bay is inaccessible by public roads. With the exception of the platted portion of Winchester Bay, no roads extend east from Highway 101 into the area between the southern County limits and the City of Reedsport. Only areas which are currently adjacent to public roads or within one-quarter mile of public roads were surveyed. Provision of access to sites further

distant from public roads were not considered practical to develop due to the additional off site costs associated with providing this access.

Planned Future Uses: Lands within the Reedsport urban growth boundary and Winchester Bay urban service boundary were not surveyed for their suitability for tourist commercial uses. All land within these boundaries has been substantiated as being needed for some urban use. To utilize any of this land to satisfy the Winchester Bay need for tourist commercial uses (except for the area for which this exception is being taken) would ultimately result in resource land being converted to urban use. This exception recognizes the appropriateness of the adopted land use patterns for both Reedsport and Winchester Bay. And, as a result, only land outside these boundaries is being evaluated for suitability for the subject tourist commercial uses.

Development status: Only properties which are vacant or contain minor noncommercial improvements are considered to be available for the anticipated tourist commercial uses. Acquisition costs for land with major improvements which cannot be used as part of a tourist commercial development could make that development economically infeasible.

By applying these criteria to the Winchester Bay area, five alternative sites, in addition to the proposed site, have been identified as having the potential to be used for the subject development. These sites include Silver Creek #1, North Winchester Creek #2, Menasha #3, Lake Edna #4, and Committed Lands Site #5. These sites, together with the proposed Winchester Bay site #6 are shown on Map 3 and described and evaluated in the following section. Most of the identified sites are larger than the 13.5 acres required for the identified need. These sites were identified on the basis of topography rather than size. It is recognized that only 13.5 acres of any of these sites would be utilized if selected for the identified need.

## Evaluation of Sites

The long term environmental, economic, social and energy consequences of allowing tourist commercial development on each of the 6 alternative sites have been evaluated using a consistent set of criteria for each site. The criteria used to evaluate each of these four consequences are described as follows.

The environmental consequences of allowing development of each site were evaluated in terms of the effect of development on the loss of any potential for agricultural or forest use, and the loss of or effect on any wetland area. None of the 6 sites has been inventoried by the Douglas County Comprehensive Plan as being needed for open space, as an aggregate or mineral site, as an energy source, as a natural area, as an outstanding scenic site, as a wilderness area, as a historic or cultural site, as habitats of special concern, or as being affected by any natural hazard.

The economic consequences of development of each site were evaluated in terms of 1) the relative cost of site development, 2) the availability of public facilities and roads to serve the site and, 3) the visibility of the site to large numbers of travelers in the area.

Social consequences were evaluated in terms of the proximity of the site to other commercial development, existing or planned. In other words, would development of the site result in a type of spot zoning, strip commercial development or infilling of a partially developed area.

Energy consequences were evaluated in terms of the proximity of the site to the attractions of the area, primarily Salmon Harbor.

A description of each of the 6 sites and an evaluation of the consequences of its development, with respect to the criteria identified above, follows:

### Site #1, Silver Creek

This site consists of approximately 60 acres which extend along the southeast side of Highway 101 for a distance of approximately 3/4 mile upstream from the head of tide on Silver Creek (approximately 600± feet east of the Winchester Bay urban service boundary). The depth of the site perpendicular to Highway 101 averages approximately 700 feet on the southeast side of the highway. The site is generally vegetated with red alder and other riparian vegetation. The site has an agricultural classification of IVw and has no cubic foot site index for forest uses. The site is planned and zoned for timberland uses.

There is more than adequate land in this site to accommodate all of the projected need. However, Silver Creek runs parallel to Highway 101 75-100 feet distant from the right-of-way. Thus development of this portion of the site would require culverting the creek and building over it or designing development to be contained within the narrow band between the Highway and Creek. Also, development in this area would require

removal of riparian vegetation.

Provision of water service to the site would require 1000± foot extension of the lines located in Highway. Sewer lines are approximately 3/4 mile from the site. The septic suitability of the site is rated by the Soil Conservation Service ORI Sheets as severe due to its wetness. On site development costs would require fill and clearing. As the site fronts Highway 101, good access is available.

The visibility of this site from Highway 101 is excellent. Development in this area would result in the extension of the strip commercial uses which extend east on this highway from Winchester Bay. The site is reasonably close to Salmon Harbor and other attractions which it would serve.

## Site #2, North Winchester Creek

This site consists of approximately 65 acres north of and adjacent to the Winchester Bay urban service boundary and Highway 101. A north fork of Winchester Creek bisects the site. The site has been identified as a freshwater wetland area. It has not, however, been classified as a significant wetland by the ODFW. The site is vegetated with flora typical of freshwater wetlands. The soils on the site have an agricultural capability rating of IVw. The site is planned and zoned for timberland uses. Development of the site would require filling of the wetlands.

The cost of development of this site would be no greater than for the other identified sites. The provision of access to the site as well as water service would require dedication and improvement of approximately 500 feet of roadway and water lines of similar length. Sewer service would require annexation to the local sewer district and a ½ mile sewer line extension.

Visibility of the site would be very poor. It is unlikely development on this site could be seen by travelers on Highway 101. This is considered a major drawback to this site. Also, although it is near the existing commercial development on Highway 101, it is not adjacent to other commercial areas. The site is within a reasonable distance of Salmon Harbor and other attractions in the area.

Development of the site could conflict with adjacent resource uses to the east, north and west. Also, commercial use could be a nuisance to residential uses to the south.

## Site #3, Menasha

This site includes approximately 15 acres of land which is north of and adjacent to the northern limits of the Winchester Bay urban service boundary. The topography of the site is generally flat. The site is vegetated with native grasses and has an agricultural capability rating of VIII. This is due to the existing fill on the site. This site is not a designated wetland area.

Development of this site would likely be the least costly of any of the sites. No fill and minimal grading would be required. Off site development costs, however, would require dedication and improvement of approximately 1000 feet of roadway and installation of similar lengths of both sewer and water lines. Access to the site would be through an RV park and area planned for high density residential use.

Visibility of the site would be poor. No through traffic would pass by the site. The site would, however, offer convenient access to Salmon Harbor. The site is near existing tourist commercial uses.

As with Site #2, urban use of this site would pose some conflicts with resource uses to the west, north and east. Also the adjacent high density residential area on the south would be impacted somewhat by the traffic, lights, noise and other nuisances typical of commercial development.

## Site #4, Lake Edna

This site is located approximately 4 miles south of Winchester Bay. It is comprised of 50± acres of land situated between Highway 101 on the west and a 50 foot buffer around Lake Edna on the east. The site is vegetated primarily with Douglas fir. The site is planned and zoned for timberland uses and has a cubic foot site classification of 3. As such, an exception to Goal 4 would be a prerequisite to development of this site. The site has not been designated as a wetland area.

Development of this site would require clearing and considerable grading. The adjacency of the site to Highway 101 eliminates the need for off site improvements. However, the distance of the site from Winchester Bay makes the provision of sewer and water service impractical.

Visibility of this site from the Highway is very good. However, no other commercial uses are located within several miles of the site. Establishment of commercial uses at this location would thus be comparable to a spot zoning. Also, commercial use at this location would be potentially incompatible with resource use of the remainder of the property. A residential committed land site which is substantially developed is adjacent to the south. The site is well located to serve visitors to Wm. Tugman State Park to the south but poorly located to serve the more significant attractions at Winchester Bay.

### Site #5, Committed Lands

This site, which totals 20 acres, is located within Committed Lands Site 1 of the County Coastal PAC area. This property is located adjacent to and west of Highway 101. As with Site 4, this site would require clearing and grading for development. The property is generally forested with Douglas fir. In that the property is located within an area for which an exception to the provisions of Goals 3 and 4 has been previously taken, no further exceptions would be required. No wetland has been identified on or near the property.

Cost of development of this site should be comparable to that of Site 4. No off site improvements would be required. The distance of this Site from Winchester Bay makes the provision of sewer and water service impractical.

Visibility of this Site from Highway 101 would be very good. As with Site 4, no other commercial uses are located in the area. Thus, development of this property for commercial use would be comparable to a spot zoning. This site is well located to serve the visitors to Wm. Tugman State Park and poorly located to serve the more heavily used Salmon Harbor. In that this property is totally surrounded by other properties which are committed to nonresource use, no conflicts with adjacent resource uses would result from its commercial development. However, conflicts typical of the adjacency of commercial and residential uses could arise.

### Site #6, Winchester Bay

This is the site for which this exception is being taken. It is located adjacent to and south of Highway 101 just east of the platted portion of Winchester Bay. The property is located within the Winchester Bay urban service boundary. The site totals 9 acres which is interspersed between small filled areas which extend south from the Highway (see Map 1). The site, in addition to other adjacent lands to the south, has been designated as a significant wetland area by the Oregon Department of Fish and Wildlife. Development of the site would require filling to eliminate its wetland characteristics. This requires, as a prerequisite, an exception to Goal 17. The western portion of the site has a cubic foot site index of 2 for forest uses and an agricultural soils classification of IIIe. The eastern portion of the site has no forest site index and has a IVw agricultural classification. An exception to Goals 3 and 4 has previously been taken for this site (see Coastal Committed Lands Site 29).

Development of this site would likely be the least costly of any of the alternative sites. Fill is available for the site from dredging which occurs at Salmon Harbor. Water service is available at the site. The site is in the local sanitary district and lines are within 200 feet of it. Each parcel in the site has frontage on Highway 101. Thus no off site improvements would be required.

Visibility of the site from Highway 101 is good. Development of the site would result in infilling of a partially developed area. Also development would allow for proper amortization of the public investment in the water line which passes by the site. The site is located close to Salmon Harbor and other attractions in the area.

Development of this site would not interfere with the resource objective to conserve the estuarine resources of the area. The adjacency of residential lands to the west may create conflicts typical of this juxtaposition.

## Conclusions

On the basis of the findings included in the previous sections, it is evident that a need exists to provide for additional tourist commercial uses in the Winchester Bay area. Furthermore, the Winchester Bay site is the site best suited to accommodate this need.

Of the six sites under consideration, the Winchester Bay site would likely be the least expensive to develop. Fill material is readily available. No off site improvements would be required and utilities are available at or near the site. The site has good visibility and access from Highway 101 and is close to Salmon Harbor, the primary attraction of the area. Development of the site would not create a new commercial intrusion into a resource area as the site is interspersed with existing commercial development. With respect to the loss of resource value, the site area has already been impacted by five existing fills. The limits of the site would allow, primarily, for the infilling between these existing filled areas. All of these factors make this site the most appropriate for the anticipated uses than the other five sites.

**(Insert Map)**

**(Insert Map)**

**(Insert Map)**



**CHANNEL DEVELOPMENT AND DREDGED  
MATERIAL DISPOSAL  
FOR THE UMPQUA RIVER ESTUARY**

**ELEMENT 3**

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# INTRODUCTION

## The Need for Dredging

Oregon's coastal waterways have provided important transportation linkages since the first human habitation of the Pacific Northwest. In almost all cases, the use of the waterways has expanded in direct proportion to the increased economic activity in the towns along the coastal bays and rivers. This growth in navigational demand has resulted in the use of larger barges and ships which often require deeper water depths than can be accommodated by the natural river and bay channels. In order to allow access for these vessels, dredging (the removal of bottom materials from below the water surface) has occurred in many of Oregon's waterways. By removing bottom sediments and deepening the river channel, both commercial and recreational vessels can gain access to the ocean, upriver ports and riverside docks, moorages and marinas, thus enhancing the usability of both the waterway and the adjacent land areas.

The stream transport of sediments from the upland areas to the ocean is part of the natural geologic processes that are occurring along Oregon's coast. As these sediments are transported downstream, a significant portion of them are deposited within river shoals, slow moving bars, and ocean entrance channels. Therefore, depths of many of the navigation routes are constantly lessened as a result of natural deposition, and dredging must occur at periodic intervals in order to maintain these navigational depths.

Dredging and dredged materials management can have significant positive and negative impacts upon other land uses and resource values in the lower Umpqua Basin. In order to enhance the benefits and reduce the costs of dredging and dredged materials management, the Umpqua River Estuary Channel Development and Dredged Materials Management Program:

1. Establishes policies and procedures for dredging, materials management and disposal site selection which protects other land uses and resource values;
2. Identifies channel development projects necessary to provide safe and adequate navigation for water-dependent uses described in the County's Comprehensive Land Use Plan, and specifies sites which are environmentally, technically and economically acceptable for materials management or disposal; and
3. Coordinates dredged materials management with other shoreland and estuarine uses, including restoration and mitigation, identified in the County's Comprehensive Lane Use Plan.

## POLICIES AND PROCEDURES

This section establishes policies and procedures for dredging, materials management and disposal site selection.

### Dredging

1. Dredging shall be for maintaining, improving and establishing navigation channels, providing access to water-dependent facilities, aggregate removal and in specially defined circumstances for dike repair, if no alternative source is available and environmental damage is minimized.
2. Dredging shall disturb the minimum area necessary for the project and shall be constructed so as to protect or enhance wetlands and other estuarine resources. Loss of productive habitat and other environmental damage shall be minimized by the location, design and construction of the facilities requiring dredging.

3. Adverse hydraulic effects from dredging such as over-channelization, destabilization of fine-textured sediments, erosion, siltation, increased flood hazard, and undesirable circulation changes shall be avoided.
4. Dredging projects to establish new uses shall occur only in estuarine management units identified for development. Maintenance dredging of existing facilities and minor navigational improvements are allowed in estuarine areas identified as conservation management units.
5. Dredging in aquatic areas shall be permitted in conjunction with a permitted or conditionally permitted water dependent use of waters or adjacent shorelands or in conjunction with a permitted or conditionally permitted bridge, for which there is a public need and no other feasible sites or routes exist.

## Dredged Materials Management

1. This plan allows the following methods for the management of dredged materials from the Umpqua River Estuary:
  - a. Flow-lane disposal: The deposition of dredged material in or adjacent to the waters of the maintained navigation channel, within the waters of the natural channel or on the subtidal slopes adjacent to the natural channel. The purpose is to avoid permanent deposition and allow the material to continue downstream.
  - b. Ocean disposal: The deposition of dredged material in the ocean.
  - c. Land disposal: The deposition of dredged material on land. The purpose of this method is to establish developable land free from flood hazard.
  - d. Land management: The deposition of dredged material on land. The purpose of this method is to establish a supply of material useful for upland and shoreland development uses such as fill or dike maintenance.
2. For projects other than the maintenance of the federally authorized channel in the Umpqua River, Ocean disposal, land management, or land disposal shall be preferred over flow-lane disposal.
3. Dredged materials may be deposited in intertidal or tidal marsh estuarine areas only in conjunction with an approved fill project and when all of the following conditions are met:
  - a. The use of approved land, ocean water flow-lane disposal sites is not feasible;
  - b. The necessary mitigation (as established by the guidelines in this plan) is complete;
  - c. The project meets the intent of Oregon's estuarine resources planning goal;
  - d. The project is consistent with state and federal law; and
  - e. The project is in conformance with other elements of the Douglas County's Comprehensive Plan and Coastal Resources Plan.
4. In-water disposal sites shall be chosen on the basis of low benthic productivity and low degree of adverse hydraulic effects from the use.
5. Shoreland disposal sites should be selected for the conformity of the final use, after deposition of dredged materials, to the comprehensive plan or shoreline management plan. Sites with significant agricultural, habitat, scenic, recreational, archaeological or historical values and sites where the present intensity or type of use is inconsistent with dredged material disposal should be avoided. Engineering factors to be considered in site selection should include: size and capacity of the site; dredging method; distance from dredging operations; elevation; and the cost of site acquisition, preparation and revegetation.

6. Flow-lane disposal sites must be able to transport sediment downstream without excessive shoaling, interference with commercial or sports fishing, undesirable hydraulic effects, or adverse effects on benthic productivity.
7. The effects of both initial and subsequent maintenance dredging shall be considered prior to approval of new dredging projects. New projects shall not be approved unless adequate disposal sites are available for both the initial and any future maintenance dredging.
8. Shoreland and estuarine sites identified as suitable and necessary for disposal of dredged materials shall be protected from new uses and activities which would prevent their ultimate time for dredged material disposal.
9. The chemical and physical characteristics of the dredged material placed at a designated disposal site must be consistent with the uses for that site identified in the Douglas County Comprehensive Plan. Furthermore, when dredged material disposal will create demand for development and associated improvements, access and services shall be planned or made available.
10. Navigational and other water-dependent dredging and related disposal actions in and near the Smith River shall be coordinated with the need for material for dike repair/maintenance. Coordination shall include the possible establishment of stockpiles of suitable materials for future use in dike repair/maintenance.
11. Identified dredge material disposal sites shall be protected by the application of an overlay zone which prohibits pre-emptive uses. The County shall develop a dredge material overlay zone to prevent uses that conflict with the use as a dredged material disposal site.
12. Dredge, fill (including disposal of dredged material), or other reduction or degradation of the estuarine natural values (natural biological productivity, habitat diversity, unique features and water quality) by man may be allowed only if:
  - a. The activity is required for navigation or other water-dependent uses that require estuarine location;
  - b. The development has significant public benefit;
  - c. No alternative upland location exists for the portion of a use requiring fill;
  - d. Adverse impacts are minimized as much as feasible; and
  - e. The activity is consistent with the objectives of the State's Estuarine Resources Goal and with the State and Federal law in conformance with Douglas County's Comprehensive Plan.

## **CHANNEL DEVELOPMENT PROJECTS NECESSARY TO MEET THE LOWER UMPQUA BASIN'S NEEDS FOR NAVIGATION AND WATER-DEPENDENT DEVELOPMENT**

### ***Corps of Engineers Channel Maintenance Project***

#### **Description of Project**

The United States Army Corps of Engineers is charged with maintaining adequate channels for navigation on the Umpqua and Smith Rivers. Channel maintenance consists of constructing a combination of jetties and channels necessary to divert and remove sediments that create navigational obstacles. The following list of projects comprise authorized operations necessary to maintain channels for area's navigation needs. Jetty and channel maintenance are based upon available funding and an identified need for maintenance and dredging within a specific location. Some maintenance projects have received authorization but have not been constructed and are so noted.

## **Umpqua River**

1. A north jetty about 8,000 feet long.
2. A south jetty 4,200 feet long extending to a point 1,800 feet south of the outer end of the north jetty and entrance channel 26 feet deep.
3. A protective 6,500 foot long training jetty which connects to the sea end of the south jetty.
4. A channel 22 feet deep and 200 feet wide extending from the river mouth to Reedsport (about 12 miles) with a turning basin at Reedsport 22 feet deep, 600 feet wide, and 1,000 feet long. A side channel 12 feet deep and 100 feet wide from the main channel to docks in Winchester Bay with a mooring and turning basin 12 feet deep, 175 feet wide, and 300 feet long at the inner end.
5. A side channel 22 feet deep and 200 feet wide from the main channel near Mile 8 to Gardiner and a turning basin of the same depth 500 feet wide and 800 feet long opposite Gardiner.
6. A side channel 12 feet deep and 100 feet wide extending from the confluence of Scholfield Creek and the Umpqua River to a point 2 miles upstream in Scholfield Creek. This project has not been constructed and is presently inactive.

## **Smith River**

A channel 6 feet deep and 100 feet wide from the mouth of the Smith River to the mouth of the North Fork, then 4 feet deep and 75 feet wide to Sulphur Springs Landing.

## **Historical Background - Umpqua and Smith Rivers**

There has been no pipeline dredging within the Umpqua River in recent times. Pricipal maintenance is accomplished by hopper dredging both in the bay and on the bar. Historically, the average annual maintenance dredgings on the bar has been about 106,000 cubic yards. Approximately 144,000 cubic yards per year were removed in the inner-channel by hopper dredge and placed in any of the four specific in-bay hopper dredge disposal sites.

## **Management and Disposal Options**

There are currently 4 active hopper dredge disposal areas within the Umpqua Bay and one EPA approved ocean disposal site. There are five in-bay dredge disposal sites which are mapped and evaluated as part of the dredge material disposal site inventory.

The ocean disposal site has the approximate dimensions of 3600' x 1400' (115 acres) and is located at the latitude of 43°40'00" N. longitude 124°14'00" W. at a distance of 7,000 feet offshore in 80' or deeper water.

The ocean disposal site is used when the hopper dredge Pacific operates on the bar and nearby channel areas. Ocean disposal is preferred when weather permits the vessel to cross the bar. When the bar is too rough to cross, it operates on inside channel projects and uses the in-bay sites. Deposition of dredged materials in the in-bay sites is envisioned as part of the maintenance activity at the Umpqua. Without continued use of these in-water sites, alternate upland disposal areas would be required to accommodate the required maintenance in the bay.

Several alternative disposal sites have been identified for the permanent disposal of dredged materials from the channel maintenance of the Umpqua River (Reedsport and Gardiner channels):

1. Lands immediately north of the former International Paper mill which are behind the dike protecting the former mill site identified as Sites 2 and 3;

2. Lands behind the dike on Leeds Island and adjacent to the navigation channel identified as Site 4;
3. The northern half of Bolon Island above the line of mean higher high water identified as Site 5.

## ***Maintenance of the Winchester Bay Boat Basin by Douglas County***

### **Description of the Project**

In Winchester Bay-Salmon Harbor, the Corps of Engineers maintains a channel and turning basin into the first basin ending near Intertidal Seafoods. Douglas County is responsible for maintaining the boat basin waterways because they are for commercial and sport fishing boats. Corps of Engineers maintains channels used primarily for commerce. At Winchester Bay, Douglas County is responsible for dredging the boat basins for boat user dock access.

### **Historic Background**

A variety of dredging methods have been employed in Winchester Bay projects. Hydraulic pipeline dredging was employed in 1956. A clam shell dredge was used in 1960. In 1969 a pipeline dredge was used to create the second boat basin. Between 1960 and 1976, maintenance dredging has been performed by both private and public individuals for various dredging maintenance operations. These were done on a contractual basis. Currently, Salmon Harbor Marina is responsible for any future dredging.

### **Management and Disposal Options**

The project's permit identifies an inbay site directly west of the new basin and a small upland area located on the west spit of Salmon Harbor for dredged materials management. Although the capacity of these two sites has not been determined, it is expected that this project will produce approximately 30,000 cubic yards of dredged material per year. The various affected state and federal agencies will be responsible for determining how future dredge spoils will be disposed of.

### **Recommended Management and Disposal**

This plan recommends that the dredged materials from the Winchester Bay project be disposed of in the County's inbay site (Site XI) located north of Salmon Harbor. Although dredge spoils may at some time be placed on uplands in Salmon Harbor, such disposal will be on a short term basis subject to Douglas County's future development plans.

## ***Mouth of Scholfield Creek***

### **Description of the Proposed Project**

Shoaling at the mouth of Scholfield Creek has caused access issues for recreational boaters seeking to use the launch facilities upstream from the mouth of the creek. The citizen committees who originally formulated this land use plan have identified the opening of Scholfield Creek as a pressing construction and maintenance need. In order to have the U.S. Army Corps of Engineers construct and maintain the Scholfield channel at the authorized specifications, funds must be programmed through Congress for that assigned purpose. To accomplish this, four tasks must be performed:

1. The City must request the Port of Umpqua to act as project sponsor; then
2. The Port Commission, acting as project sponsor, must request the District Engineer to request funds from Congress;
3. In the request the project sponsor must document the need for this work, i.e., boats grounded, damaged hulls, lives lost, etc.; and then
4. The Port Authority must provide suitable disposal sites including dikes and outfall structures.

## **Management and Disposal Options**

Both upland and flow-lane disposal appear to be viable options for this project. The type of materials management chosen will be dependent upon the dredging method employed by the Corps or the Port of Umpqua. If the project is maintained with the Corps' hopper dredge, then flow-lane disposal will be the most expedient. Conversely, if the project is contracted to a pipeline dredge (such as that operated by Douglas County), then shoreland management sites will be necessary. The most suitable site for shoreland disposal is Leeds Island.

Most likely, dredged material will be consistent with the planned uses for this area. This site is programmed for both water and non-water dependent industrial activities. As long as the dredged materials (once dewatered) are at least as stable as the underlying substrate, then disposal should not cause any development hazards. It is anticipated that disposal site 13 would serve this area.

**(Insert Map)**

# **DREDGING AUTHORIZATION PROCEDURE**

## **Sediment Removal and Disposal Permits**

The removal and disposal of sediments from waterways, with the exception of maintenance of the federal channel, requires a permit ensuring that the operation is in the best interests of all who might be affected. Permits are required for both private and government projects with a similar application procedure.

Permission for dredging and the disposal of dredged materials requires permits from both the U. S. Army Corps of Engineers and the Oregon Department of State Lands (DSL).

A project application is first submitted to the Corps for project review. The Corps circulates applications among other federal agencies in an effort to coordinate programs and assess any anticipated impacts. This circulation includes such agencies as the Environmental Protection Agency (EPA), United States Coast Guard, National Marine Fisheries and the National Oceanographic and Atmospheric Administration (NOAA). If significant negative comments are received, a public hearing is conducted to air and resolve any conflicts.

The Department of State Lands is responsible for coordinating affected state agencies and also circulates project information for review. State agencies have the ability to require that certain conditions be met for project operations, such as specifying the time of year a dredging operation can occur.

All of the project information is submitted to both agencies in a single application and both must sign off on a permit.

Provisions for adequate disposal sites are presently submitted as part of the application, and permission cannot be secured unless the sites are found to be sufficient. A number of sites have been suggested locally for consideration but have not sought authorized approval. At present, sites must receive both DSL and Corps permits to be "authorized." In the future the comprehensive planning process will allow an additional avenue for site approval. Disposal sites designated in the County's comprehensive land use plan will be "authorized" once the Oregon Land Conservation and Development Commission acknowledges the plan. Nevertheless, the party doing the dredging will still need a disposal permit to use any of the sites designated in the plan.

The Corps of Engineers also must advise the public of their proposed projects and circulate a notice for comment and review.

Once a Corps of Engineers project has received congressional authorization and approval, it retains this status regardless of whether or not it is immediately constructed. Reactivation of a project is accomplished through a petition from local residents requesting construction. This must be accompanied by the provision of easements, approved disposal sites and a statement exempting the government from liability.

Each year, prior to the dredging season, the Corps of Engineers conducts local public hearings on all previously authorized projects scheduled for that year. This is to ensure that any new knowledge about an area can be considered prior to the operation commencing. This also ensures that area residents are made aware of scheduled dredging activities.

## **DREDGING PROCESS AND METHODS**

The appropriate method of dredging and equipment utilized for sediment removal depends on a variety of factors specific to each situation and the desired results. Each type of removal process has constraints and comparative advantages based on the physical characteristics of each dredging site. The following general description of methods and equipment outlines both the different processes and their limitations.

### **Hopper Dredging**

A hopper dredge is an ocean-going vessel with a self-contained hydraulic pump and material holding area

(hoppers). It is designed to hydraulically pick up sediment material and transport this dredged materials to open-water where the load is emptied through hopper valves on the bottom of the ship.

Its primary purpose is to maintain harbors and channels where rough water would prohibit other methods of dredging.

Hopper dredges operate by moving onto the dredging site, starting the pumps and lowering the suction pipes to the bottom. As the suction heads pass through the site, bottom sediments are drawn into the heads and pass into the hopper. Some of the material around the suction head is distributed and thrown into suspension. Heavier particles settle out after the dredge passes while lighter particles remain in suspension and may be transported from the original site by local currents. The material which passes into the hopper is initially in liquid suspension, but the heavier particles settle to the hopper bottom. The lighter particles remain in suspension and are discharged to the estuarine waters with the hopper overflow. When the hoppers are full, the dredge moves to the disposal site. Large valves in the bottom of the hoppers are opened and the material is discharged out from the bottom of the dredge over the disposal site. The entire hopper load of material may be dumped in a few minutes. The area of bottom which is covered with dredged material depends upon the type of the material, the speed of the dredge, and the current and depth of the water in the disposal area. The emptying of hopper dredges usually causes very little visible effect at the surface although during the dredging operation itself, the overflow from the hoppers is generally turbid and results in a plume of turbid water trailing out from the dredge.

The primary advantage of a hopper dredge is its ability to operate in rough or open waters without anchors and with little interference to navigation. Another advantage of this technique over conventional hydraulic pipeline dredging methods is that the disposal areas are not limited by the length of the pipeline discharge pipe. Its chief limitation is that it cannot dredge continuously because much of its time is spent traveling between the disposal area and the dredging site. In addition, hopper dredge operations characteristically cause suspension and deposition of bottom sediments at the dredging site, disposal area and other areas where local currents have taken them.

## **Hydraulic Pipeline Dredges**

An hydraulic pipeline dredge consists of a large centrifugal pump mounted on a specially designed barge. Sediment is brought up from the bottom by way of a large suction pipe and is then pumped from the dredge to the disposal area through a pipeline. Unlike hopper dredges, the suction pipe of a pipeline dredge is usually equipped with a cutter-head that breaks up the bottom materials so that they can be drawn into the suction pipe. The cutter-head is turned by a shaft from the power source on the dredge. On some dredges, the cutter-head is replaced by a water jet that breaks up or loosens the bottom sediments.

The suction pipe is lowered to the bottom from the bow of the dredge. The dredging depth is controlled by cables which raise and lower the suction pipe. The pipeline, extending from the dredge to shore or to a water disposal site, normally floats on pontoons.

During operations, pipeline dredges are held in position by anchors, swing lines and spuds. Spuds are long, heavy steel tubes or beams that are hung from gantries near each corner of the stern of the dredge. They pass through openings in the dredge and can be raised or lowered to the bottom independently. When positioned alternately, they serve as pivots for the dredge.

Pipeline dredges, as a rule, are towed to the dredging site. The pipeline is then assembled and survey markers are set out to guide the dredge operator. When in the proper location, the spuds are put in position and swing lines and anchors are put out. The bow of the dredge can be swung back and forth in a small arc by tightening and loosening the swing lines which run to anchors on each side of the dredge. During the dredging operation, only one spud is in place at a time. This allows the dredge to move forward as it swings back and forth by moving from one spud to the next. When in position, the pump and cutter-head are started and the suction pipe is lowered to the proper depth. Sediments and water are pumped through the pipeline to the disposal area. Except for occasional changes in anchor positions or the addition of more sections of pipeline, dredging can be an almost continuous operation. It is usual practice, however, to disconnect the pipeline or to move the dredge from a navigation channel to permit passage of a vessel.

A pipeline can reach several thousand feet from the dredge and can be extended for greater distances by using booster pumps to overcome friction losses. Pipeline dredges are measured by the inside diameter of the discharge pipe. They range from small 4-inch sand pumpers to large 36-inch dredges.

Pipeline dredges may discharge sediments on either land or in water. In water disposal, the dredged material can be discharged above the surface or it can be discharged below the surface by using an elbow attached to the end of the pipe. The greatest visible water quality effect from pipeline dredges occurs at the disposal end of the operation. A plume of turbid water usually radiates from the end of the pipe. On some river projects, the plume of turbid water can extend many miles downstream depending on the amount of fine sediments. There is little or no apparent effect at the dredging end of the operation because most of the loosened material is sucked into the dredge.

In land disposal from a pipeline dredge, the dredged material, if silts and clay, is usually discharged into a diked area where it is ponded before the wastewater is discharged to the receiving water. As the diked area becomes filled with sediment, the retention time is reduced and the concentration of suspended material in the wastewater becomes greater. If the dredged material is sand, it is usually discharged behind a berm which offers flow control but no ponding takes place.

The overflow from land disposal sites creates plumes of turbid water in the receiving river or estuary. The discharge of wastewater from land disposal operations may extend over a long period of time, depending on the size of the project and the equipment which is employed.

The dikes around disposal areas are usually constructed with materials excavated from inside the enclosure. A large drop structure with a horizontal pipe through the dike serves as a spillway to release the wastewater and prevent erosion of the dike from overflow. In order to prevent short-circuiting, the discharge pipe is located in the opposite side of the fill area from the spillway pipe.

The dredged material generally builds an alluvial fan sloping away from the discharge pipe. Compaction of sandy materials is very rapid. If the material is clay or silt, a long time maybe required for dewatering and compaction. Some dredge fills with highly organic sediments are often unusable for long periods of time. The primary advantage of a pipeline dredge is the large volume of material that can be moved in a relatively short period of time. Other advantages include the ease of on-shore disposal, simultaneous dredging and disposal operations and the flexibility to perform dredging operations at a variety of locations.

The major limitation of pipeline dredges is that disposal areas must be relatively close to the dredging operation. They also are unable to operate in rough or open seas. Pipeline dredges are hindered by buried logs, large boulders, and man-discarded wastes, such as cables, which become entwined on the cutter-head and pump impeller. An additional limitation is that the cables and pipeline can present a temporary obstruction to navigation in confined channels.

## **DREDGE DISPOSAL OPTIONS**

Twelve dredged material disposal (DMD) sites are identified in this plan. The shoreland sites are most valuable because materials may be stockpiled for re-use, sites can be improved for protected development, and toxic or polluted materials can be safely isolated from the environment. However, these sites are limited and their capacity may be exhausted during the next 20 years, and increased reliance will be placed on other alternatives.

Fine clay-like material is excellent for use in repairing and maintaining dikes. However, use of dike sites is dependent on proximity to dredging projects or water access for transfer from barges. Certain sediments can be dispersed by tidal, river and ocean currents. Flow-lane disposal is used by the Corps for nearly all of the navigational channel dredging. These estuary disposal sites need monitoring to ensure their use does not lead to other shoaling problems.

Each type of DMD has its own advantages and disadvantages. Economics generally favor sites close to the dredging. Shoreland sites are generally superior if the material must be isolated from the environment. Flow-lane sites are often most convenient, while ocean disposal has the advantage of removing the material from

the estuary altogether. However, shoreland sites have a finite capacity, flow-lane can contribute to shoaling in other areas, and ocean disposal may be too expensive for certain projects or impractical due to weather and bar conditions.

The dredging and disposal policies call for minimal disturbance of the DMD site and region consistent with minimizing adverse environmental and hydraulic impacts. The disposal policies specifically protect tidal marshes, tidal flats, wetlands, and other valuable habitat which, in the context of using an approved DMD site, means that the biological productivity of areas adjacent to the DMD site should not be affected.

## **Shoreland Sites**

The major factors controlling choice of a shoreland site are cost, land use and availability. Increased distance from the dredging operation and extensive site preparation both increase costs. The sediment to be deposited must be suitable for the future use of the site: for example, fine sediments will not produce stable land for industrial development while coarse sands will not enhance productive farmland or be useful for dike maintenance. A brief discussion of environmental and engineering consideration accompanies each shoreland site description in the DMD inventory.

## **Dike Disposal**

DMD on dikes may prove cost-effective for the combined goals of dike maintenance and disposal of otherwise unused, fine-sediment dredged materials.

The major environmental consideration is that the material be disposed in such a way that it not slough into productive aquatic areas. The major engineering issues would be effective dewatering of the sediments and careful dike stabilization, preferably through revegetation, after DMD use. Given the locations of the existing dikes, it is not expected that this will become a major disposal option.

## **In Bay Disposal**

In the river, flow-lane disposal assumes that material will be transported downstream. In the estuary or ocean, more complex hydraulics exist and site specific and model studies are needed to determine the fate of dredged materials which are deposited.

In-water sites are not contained by dikes or berms. They are selected because of the suspended and bottom sediment transport characteristics of the waterway and the water and sediment quality of the dredged material. The difference between a questionable and an acceptable in-water site is dependent on both physical and biological factors.

In-water disposal poses controversial environmental issues, many of which center around water quality, turbidity, and the tolerance of benthic organisms to rapid sedimentation. These issues must be dealt with on a site specific basis during the permit process, and the burden of proof is on the project applicant to show that adverse effects will be minimized.

Clean sediments pose minimal water quality problems and even sediments with heavy metals or other toxins may not release contaminants to the water. However, the release of organics and nutrients from sediments may cause local toxic effects and the depletion of available oxygen.

Turbidity is a concern in that it diminishes recreational values. Turbidity may also be a sign of water quality problems because the swirling sediments offer a greater opportunity for release of toxins. Finally, turbidity can be a sign that the sediments will not settle properly and may dispose as a fluid-mud layer that may be very detrimental to benthic organisms. While some studies indicate that turbidity does little environmental harm to adult organisms, the impacts on juveniles is detrimental and impacts associated with turbidity have led resource agencies to regulate it carefully. Dredge operators are able to comply with these regulations without excessive cost.

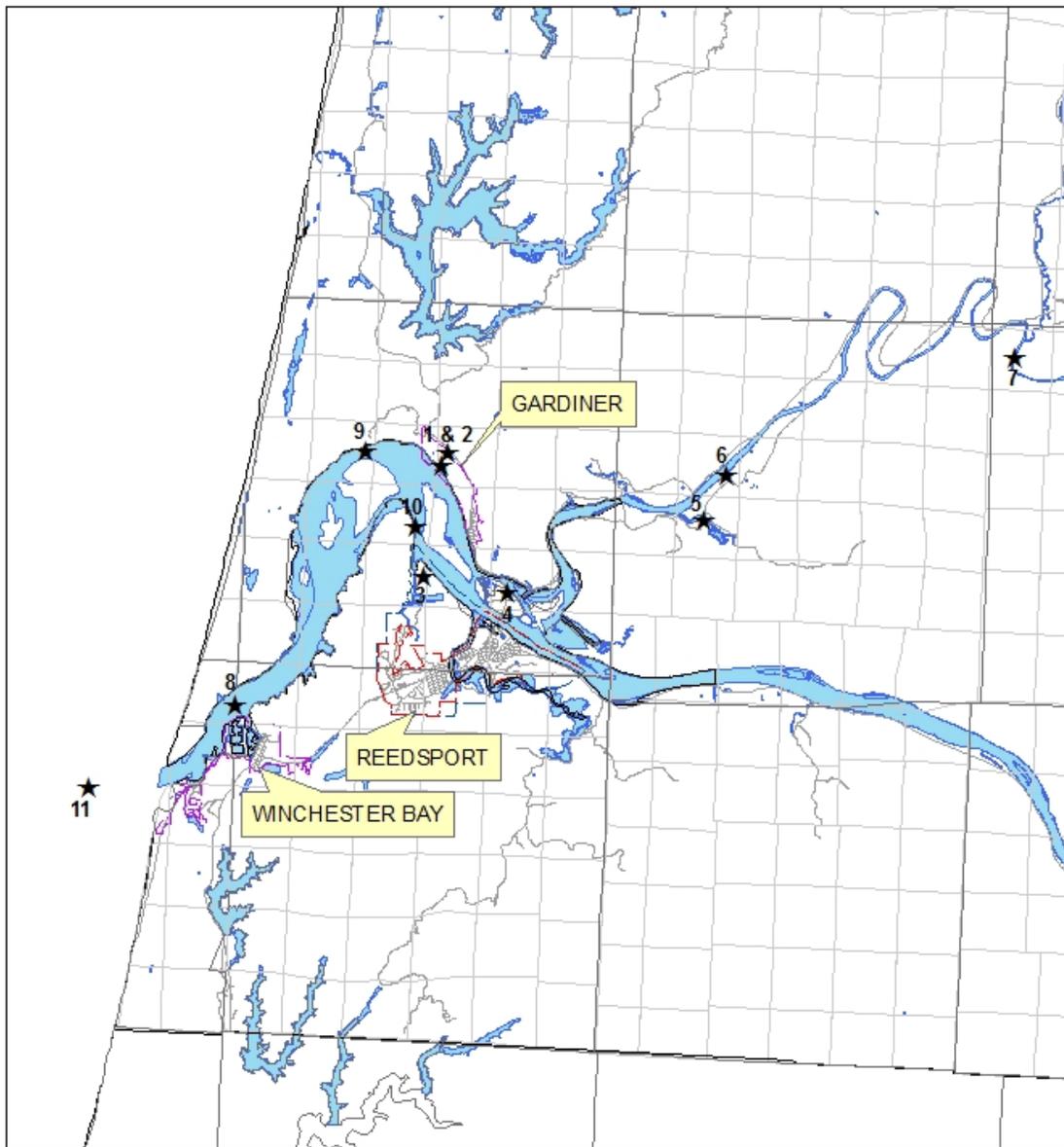
The smothering effect upon benthic organisms depends upon the animal species, the depth of burial and the type of sediment. At approved sites, where benthic productivity is low and organisms are adapted to a sandy bottom environment, deposition sandy sediments does little long term damage to populations beyond the larval stage. The larval stage of most organisms is seasonal and proper timing should minimize this effect.

The other major effect on benthic populations is the degree to which the populations can absorb contaminants, leading either to poisoning of the species or directing the contaminants into the food chain. Unfortunately there are no clear trends and bioassays are often necessary for case by case evaluation.

The acceptable sites should be in water depths of approximately 25 feet minimum. Shallower depths have greater fisheries use, less sediment transport and related biological stress in general. The slope of both bed and disposed sediment must be sufficiently gradual to prevent excessive transport. The sites must also be in or near the main river flow, having predominant downstream movement, thus avoiding back channel deposition.

Materials should be placed in a site downstream from the dredging location. Controlled placement by pipeline, hopper dredge or hopper barge, or by barge and clamshell could be acceptable.

Sediments that have less than 10% fines (silts and clays) are usually acceptable for in-water disposal. Smaller grain sizes will cause increased turbidity, generally have higher organics, will not move by bedload transport, and will tend not to settle.



### DREDGE MATERIAL SITE INDEX

- Townships
- Ranges
- Winchester Bay and Gardiner UUA's
- Reedsport City Limits
- Reedsport UGB
- Waterways



November 2014



Produced by Douglas County Planning Department, Oregon

Disclaimer: This map is for convenience only and is only valid for the date produced. Although reasonable attempts are made to maintain this map as accurate as possible, Douglas County and other participating entities will in no way be liable for any inaccuracies, inconsistencies, errors, omissions, or other deviations in this map. For updated information, please see the official information located at the Douglas County Planning Department.

## SITE 1 (Former International Paper Mill Site)

### Site Description

Location: T22S, R12W, Section 15. Adjacent to the Umpqua River on the former International Paper mill site located between the oil storage tanks and the solid waste site behind the dike.

Size: 150' X 750' (average)

Capacity: 41,500 c.y. at 10 ft. depth

**Physical Characteristics:** The area is an elongated lowland area located behind the dike adjacent to the Umpqua River. The area slopes gently away from the railroad area and is annually inundated by runoff due to poor drainage.

**Biological Characteristics:** The area consists of considerable brush and trees, mostly willows. Areas adjacent to the dike have a dense growth of Blackberries. Various annual and perennial grasses are located on the parcel.

Comprehensive Plan: Urban Other Shorelands, Industrial

### Engineering Considerations

Method of Dredging and Filling: Hydraulic pipeline

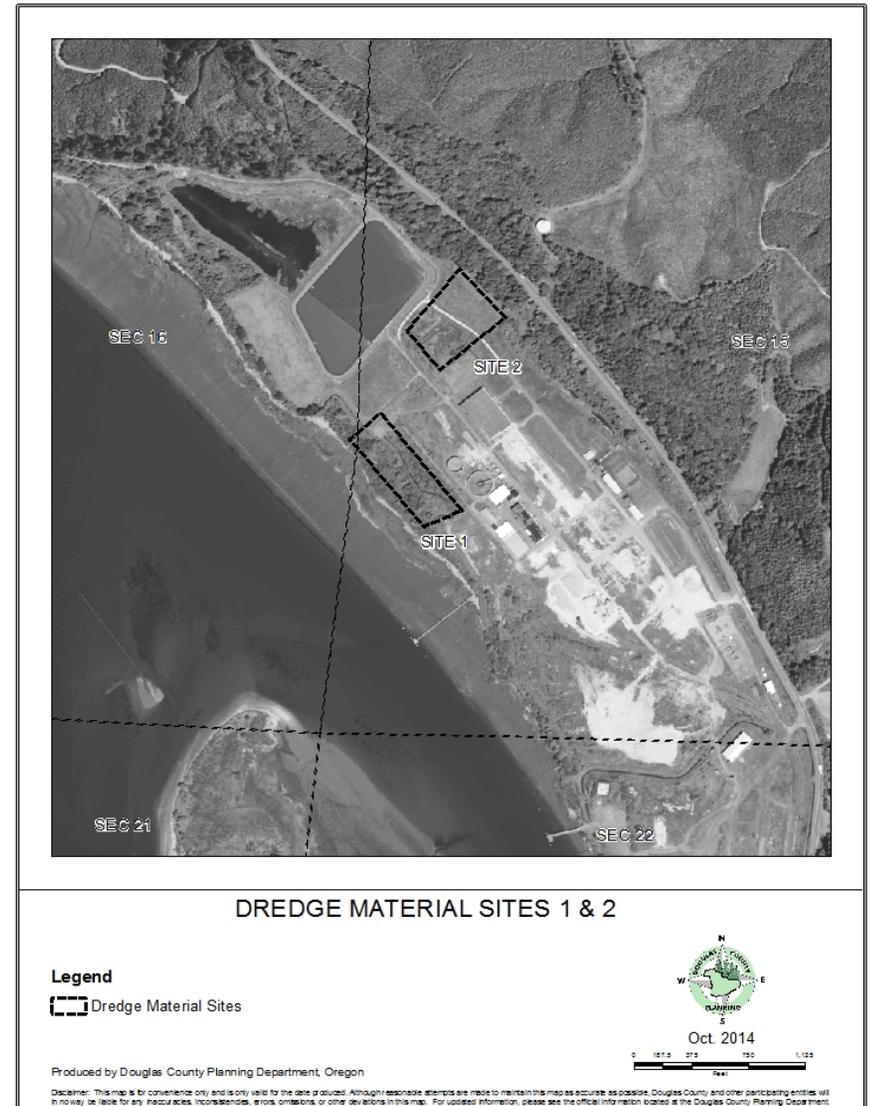
Design Criteria: Temporary dikes constructed from dredged materials, sloped to prevent slumping.

Site Preparation: Must be cleared and proper drainage provided and dewatering facilities constructed. Control slurry to prevent flow onto adjacent land and railroad tracks. Leveling to ensure uniform applications, clearing to remove existing vegetation.

Future Use: Site development to remain compatible with adjacent industrial development.

### Environmental Considerations

Effects of Disposal: Dredged material disposal would raise the land above the seasonal water inundation changing the existing vegetation and habitat area. There would be a loss of willows and alders along with other fauna. The area could be re-vegetated within a short span of time.



**SITE 2 (Former International Paper Mill Site)**

**Site Description**

**Location:** T21S, R12W, Section 15; immediately north of the International Paper plant adjacent to U.S. Highway 101 between warehouse and effluent holding pond.

**Size:** 370' X 480' (average)

**Capacity:** 39,000 c.y. (6' depth)

**Physical Characteristics:** The area includes about 4 acres of relatively level pasture area. It is bordered by a railroad spur on the west, effluent holding pond to the north and U.S. Highway 101 to the east.

**Biological Characteristics:** Existing vegetation includes various annual and perennial grasses. A drainage area located along the eastern boundary includes some willows and alders.

**Comprehensive Plan:** Urban Other Shorelands - Industrial; inside Gardner UGB.

**Engineering Considerations**

**Method of Dredging and Filling:** Hydraulic pipeline

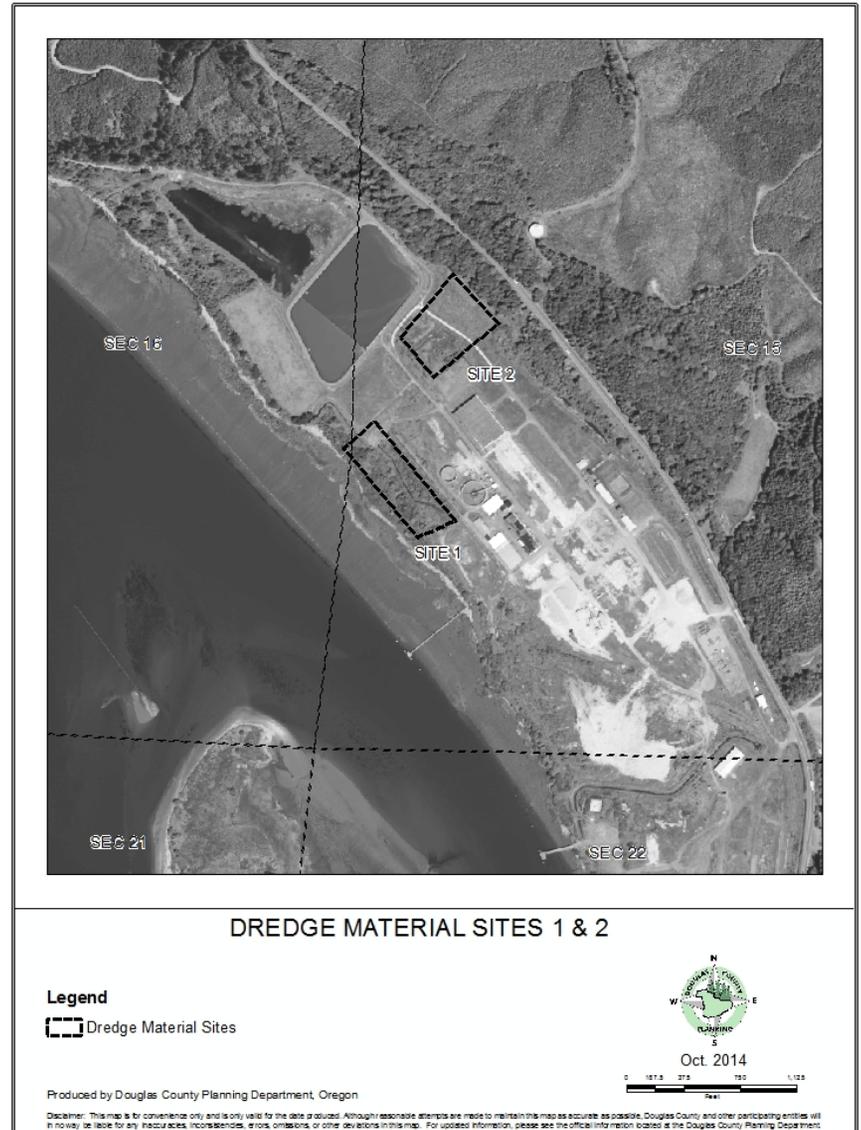
**Design Criteria:** Temporary dikes should be constructed, using dredged materials.

**Site Preparation:** Drainage must be relocated and considered as filling could impound drainage from adjacent hillside.

**Future Use:** None

**Environmental Considerations**

**Effects of Disposal:** Existing vegetation would be temporarily lost, but could be replaced. Diking along east border would require care to prevent the adjoining drainage. This area would eventually be converted to industrial use.



## SITE 3 (Leeds Island)

### Site Description

**Location:** T21S, R12W, Section 28 and 27. The parcel is located adjacent to the Umpqua River northwest of Reedsport and is bounded on the west by Providence Creek.

**Size:** 70 acres, approximately

**Capacity:** 1,130,000 c.y. at 10' average depth

**Physical Characteristics:** The area was once an island and has been basically used for a spoil site. The perimeter is diked and a tide gate has been constructed on Providence Creek. The area behind the dike is generally level and used for grazing cattle.

**Biological Characteristics:** The biological characteristics are predominantly pasture land as the area has been converted by the diking and tide gate. The area surrounding the site has a high biological productivity, but that area is not being considered for dredge disposal.

**Comprehensive Plan:** Urban Water-Dependent Shorelands/Industrial Reserve Inside Reedsport UGB.

### Engineering Considerations

**Method of Dredging and Filling:** Hydraulic pipeline, clamshell

**Design Criteria:** Temporary dikes using dredged materials constructed to prevent slumping onto adjacent lands.

**Site Preparation:** Minimal - clearing of area for brush and control of slurry to prevent flow onto adjacent lands and wetlands. Dike construction to confine dredged material, installation of weirs.

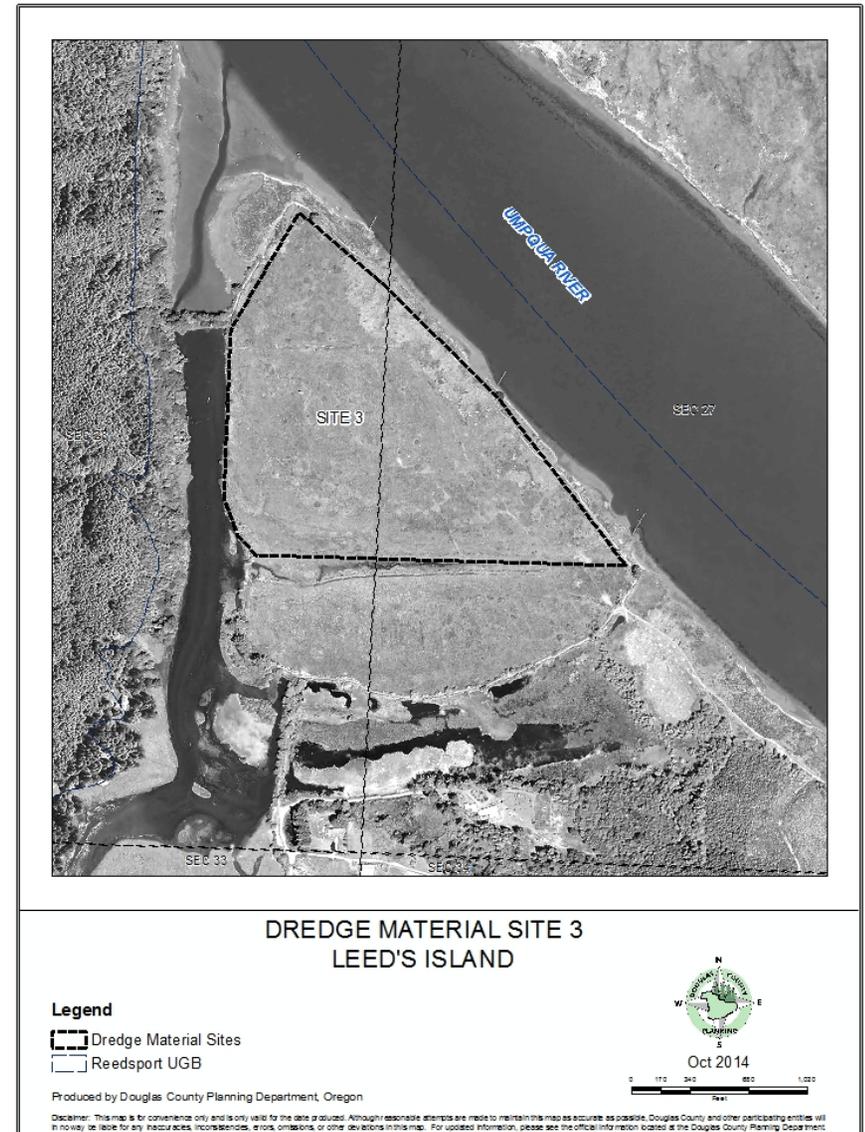
**Future Use Constraints:** Because of the large capacity of the area, the disposal should be designed so that the industrial uses can be developed in states as site is filled and stabilized.

### Environmental Considerations

**Effects of Disposal:** The disposal will dispose of existing pastoral vegetation. This will have minimal impact and the pastureland can be re-established when fill is dewatered and stabilized.

### Other Considerations

The area must be filled and developed in a manner which will not interfere with maximum utilization of the site.



## SITE 4 (Bolon Island)

### Site Description

Location: T21S, R12W, Section 26. Bolon Island north of Smith River Road and east of Highway 101 adjacent to the Umpqua River.

Size: Triangular shape 850' X 750' X 1200'

Capacity: 141,000 c.y. at 12' depth

**Physical Characteristics:** The area includes roughly 8 acres of level area. There is a portable log scaling station located on the parcel. The area is graveled and was originally used as a marina and recreational vehicle park. The area has also been used as a dredged spoils site in the past.

**Biological Characteristics:** The area has some grasses, scotch broom and alder, brush and blackberries. However, biological values are minimal, as the area had been graveled. Vegetation has been reverting since the area was abandoned as a marina.

**Comprehensive Plan:** Urban Other Shorelands - Industrial

### Engineering Considerations

**Method of Dredging and Filling:** Hydraulic pipeline, trucking

**Design Criteria:** Construct temporary dikes using dredged materials. Construct dikes with slopes designed to prevent slumping into adjacent river.

**Site Preparation:** Minimal - clearing of brush and control slurry to prevent flow onto adjacent land, drainage and river.

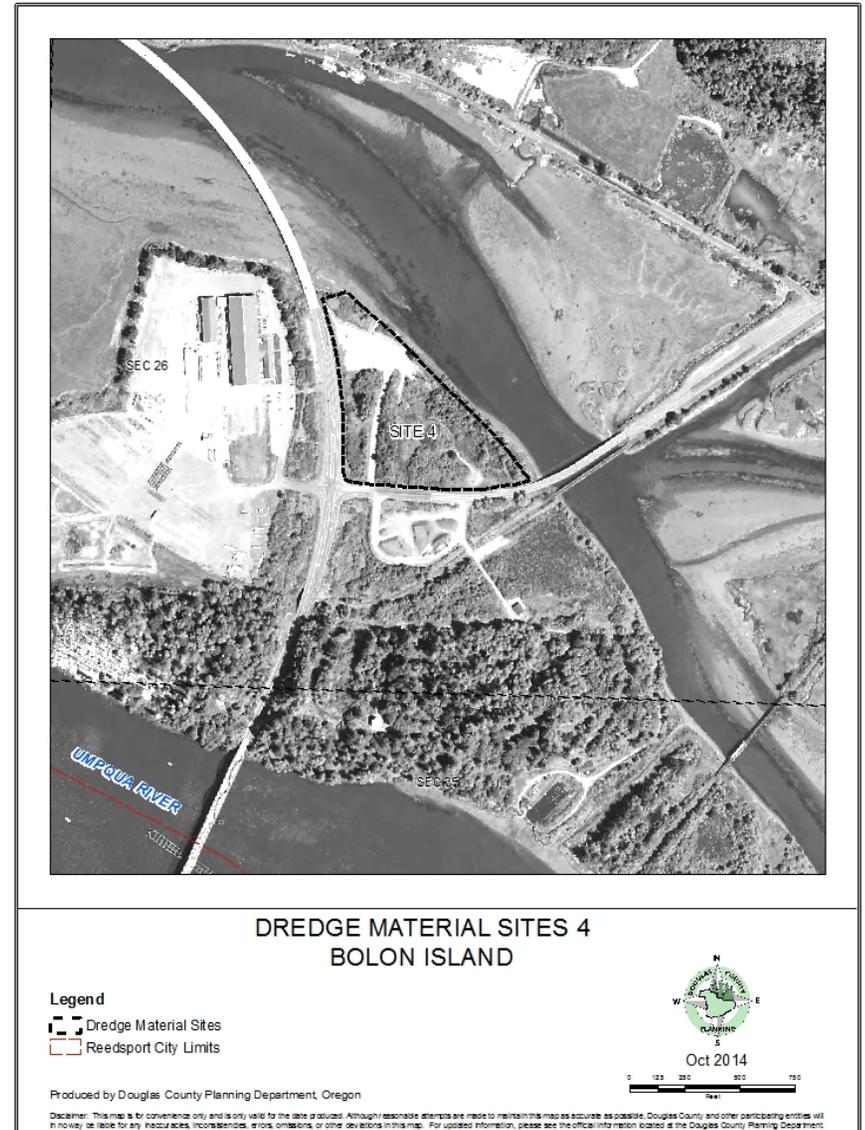
**Future Use Constraints:** None

### Environmental Considerations

**Effects of Disposal:** Would be minimal - vegetation and habitat could be reestablished. No effect to adjacent area if slumping is avoided.

### Other Considerations

The area is difficult to access - possible use of drawbridge on Highway 101, and is located a distance from the channel. This area could be filled by hauling material with truck.



## SITE 5 (Otter Slough)

### Site Description

Location: T21S, R11w, Section 20. The area is located near the confluence of Otter Slough and Smith River

Size: 5 acre, approximately

Capacity: 80,666 c.y. at 10' average depth

Physical Characteristics: Large, relatively flat floodplain area which has been used for grazing and as a hayfield. The area is diked and fronts the county road.

Biological Characteristics: Pasture. Brush and the natural habitat is similar to other pastoral sites within the area. Soils are acid with relatively low productivity as pasture land.

Comprehensive Plan: Rural Conservation - Agriculture

### Engineering Considerations

Method of Dredging or Filling: Hydraulic pipeline

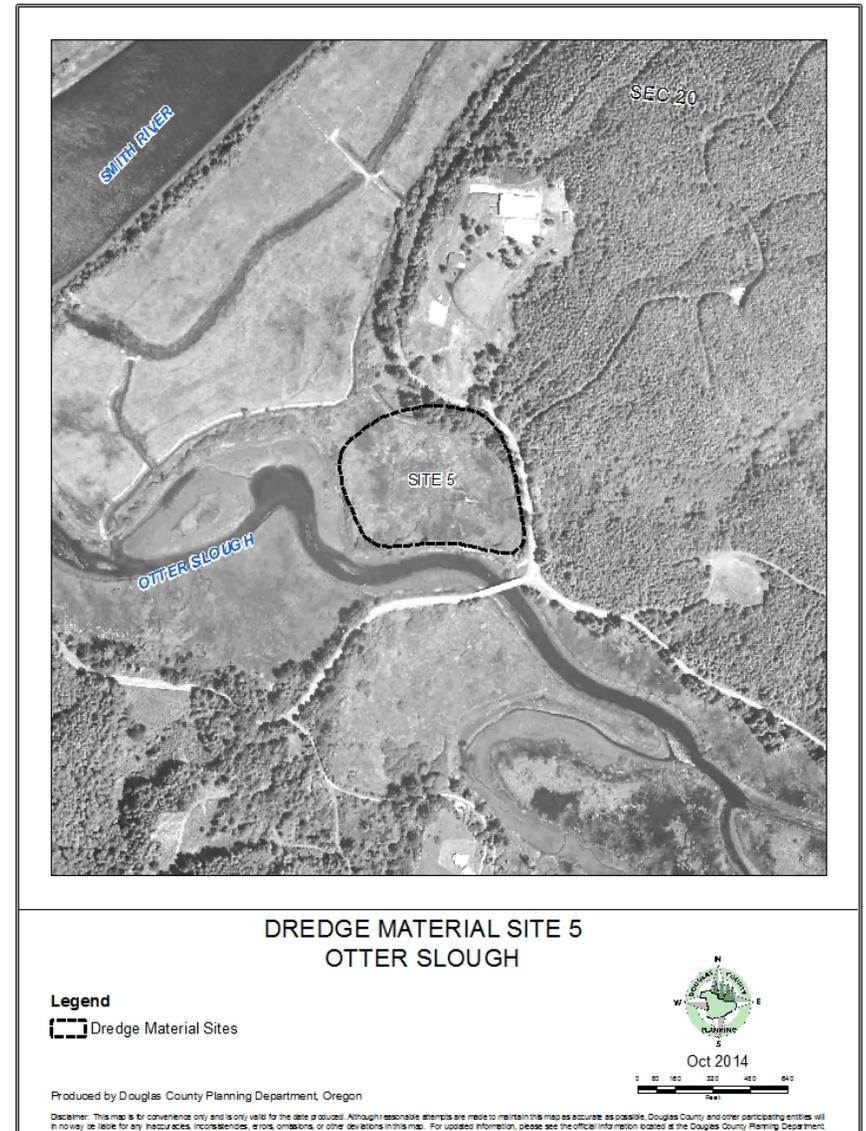
Design Criteria: Slope into channel must be built to prevent slumping into slough and adjacent wetlands.

Site Preparation: Land clearing, outfall construction, installation of weirs and dike construction to confine dredge materials. The site would need culverts or other means to divert surface water.

Future Use: Agriculture

### Environmental Considerations

Effects of Disposal: Minimal - existing vegetation can be restored.



## SITE 6 (Brainard Creek)

### Site Description

**Location:** Adjacent to Brainard Creek and Smith River in Section 17, T21S, R11W, W.M., on old spoils site used in 1972.

**Size:** 14 acres

**Capacity:** 60,000 c.y. at average depth of 3'.

**Physical Characteristics:** This area is an old disposal site used during the previous dredging of Smith River. The area is diked along Smith River and Brainard Creek flows through the site.

**Biological Characteristics:** The area is a re-vegetated spoils area, with pasture, and is presently used for grazing. Biological productivity is limited. The sites have been diked and alder and shrubs are growing on the dikes.

**Comprehensive Plan:** Rural Conservation Shorelands - Agriculture

### Engineering Considerations

**Method of Dredging and Filling:** Hydraulic dredge, clamshell

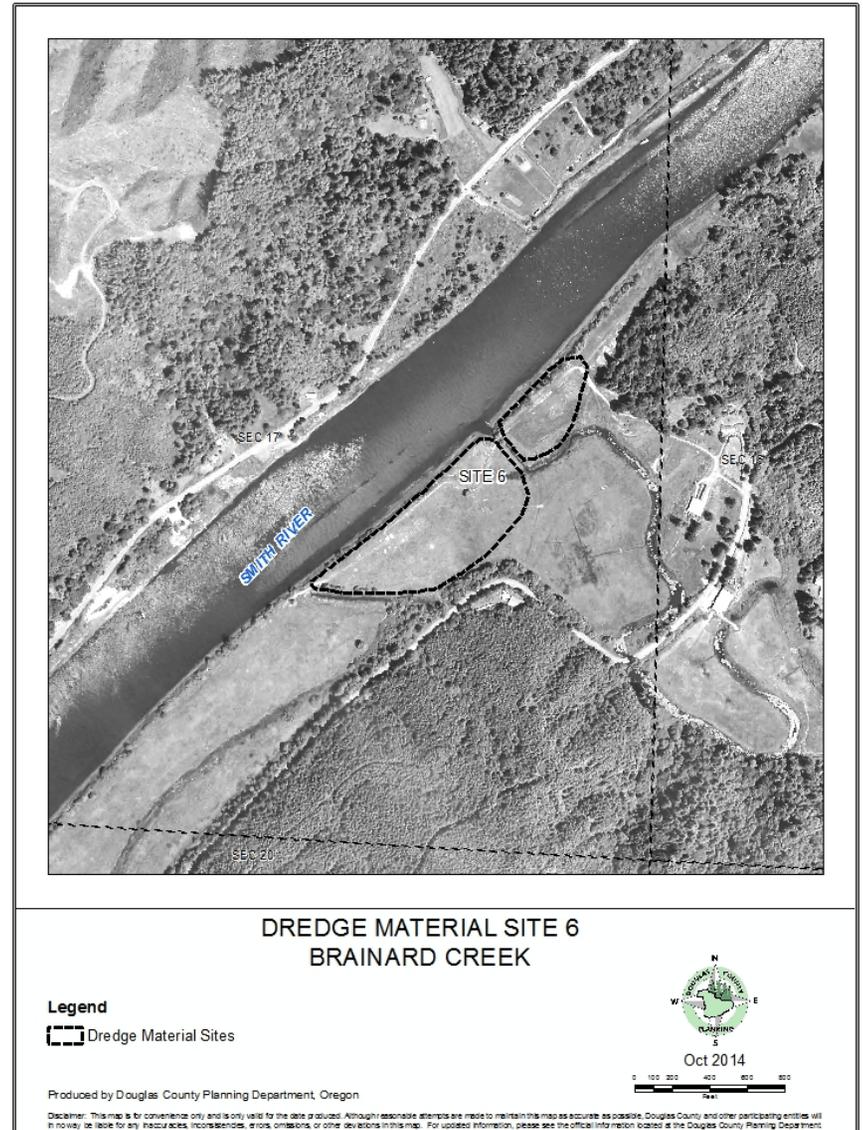
**Design Criteria:** Property diking to prevent slumping into river, avoid drainage of adjacent lands.

**Site Preparation:** Minimal clearing and construction, dewatering facilities, installation of weirs and dike construction to confine dredge materials.

**Future Use:** Agricultural uses

### Environmental Considerations

**Effects of Disposal:** Minimal; existing vegetation could be re-established in a short amount of time.



## SITE 7 (North Fork)

### Site Description

Location: T21S, R10W, Section 6 - adjacent to Smith River just south of the confluence with North Fork Smith River near river mile 16.

Size: 9 acres, approximately

Capacity: 45,000 c.y. at 3' average depth

Physical Characteristics: Large floodplain area, relatively flat and was previously used for dredge spoils. The area is diked and currently in agricultural use.

Biological Characteristics: Pasture. Brush and the natural habitat is similar to other pastoral sites along the river.

Comprehensive Plan: Rural Conservation - Agriculture

### Engineering Considerations

Method of Dredging and Filling: Hydraulic pipeline, clamshell

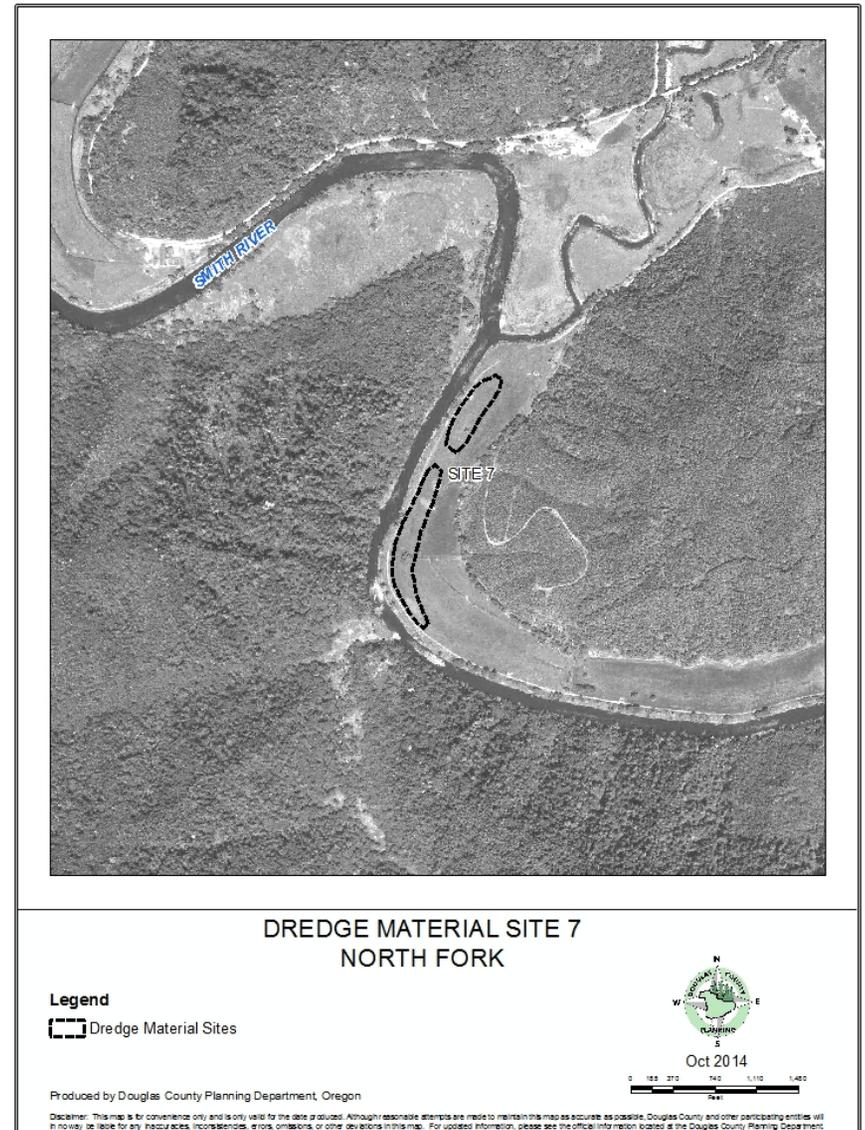
Design Criteria: Slope into channel must be built to prevent slumping into river.

Site Preparation: Minimal - brush clearing, outfall construction, installation of weirs and dike construction to confine dredge materials.

Future Use: Agricultural

### Environmental Considerations

Effects of Disposal: Minimal - existing vegetation can be restored.



## SITE 8 (In Bay)

### Site Description

**Location:** Section 12, T22S, R13W. Site XI is located west of Salmon Harbor near river mile 1 on the northern edge of the authorized channel.

### Size:

**Capacity:** Undetermined as the material is moved by river currents. The site can be used annually as the material is moved downstream.

### Physical Characteristics:

**Biological Characteristics:** The biological importance of the area has not been specifically evaluated. Area most likely contains various fish, crustaceans and other zoological elements.

**Comprehensive Plan:** Estuarine Development Management Unit

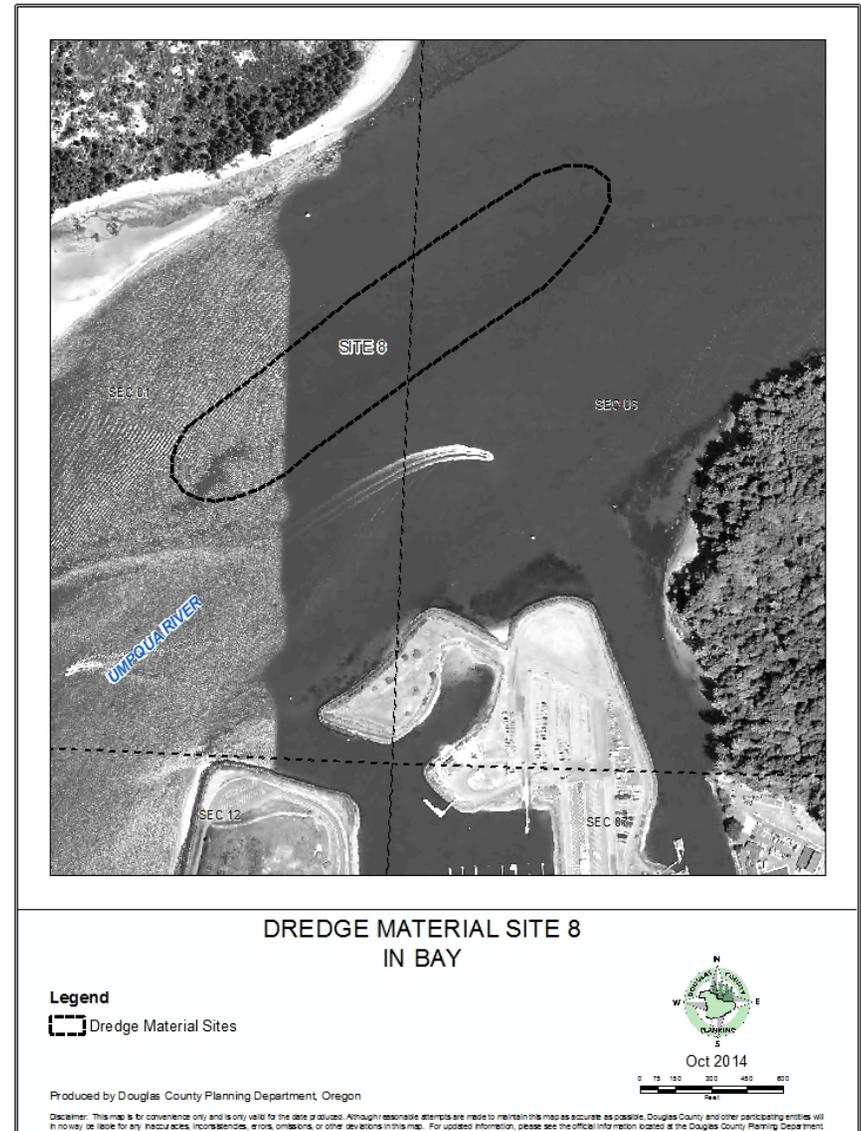
### Engineering Considerations

**Method of Dredging and Filling:** Hopper dredge

**Design Criteria:** Care must be taken to use hopper dredge when turbidity and dredging activity will have the least adverse impact.

### Environmental Considerations

**Effects of Disposal:** Turbidity produced can have adverse effects upon benthic organisms and free-swimming organisms. Any benthic animals would be covered by extensive amounts of dredged materials.



## SITE 9 (In Bay)

### Site Description

**Location:** River mile 6.8, Sections 16 and 17, north of the authorized channel. The area is west of the International Paper mill site.

**Size:** 10 acres, approximately

**Capacity:** Undetermined because there is no permanent deposition as the material is transported downstream by currents.

**Physical Characteristics:** The area is about 10 acres in size and ranges in depth from 26 to 52 feet. This deep hole was produced by the natural scouring action of the river.

**Biological Characteristics:** The biological activity of the area has not been evaluated.. It is assumed that the area has minimal biological importance as the depth limits the amount of benthic organisms.

**Comprehensive Plan:** Estuarine Development Management Unit

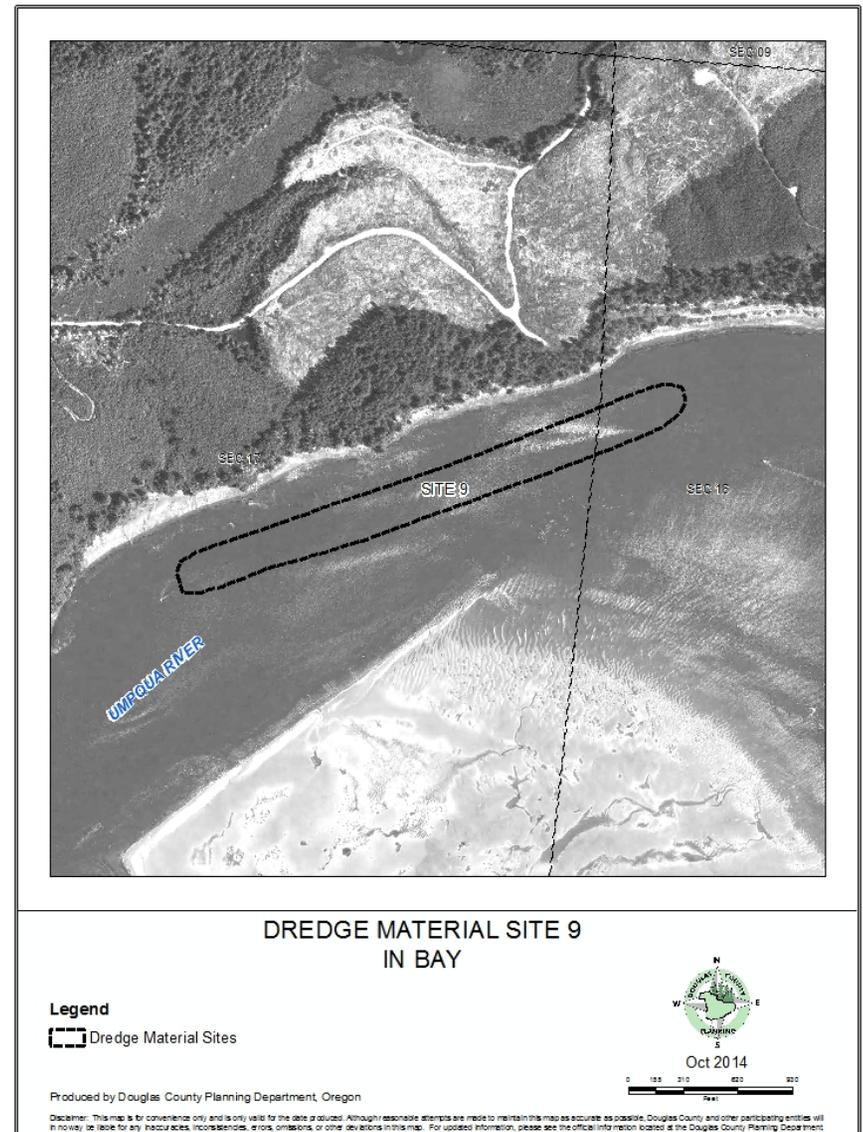
### Engineering Considerations

**Method of Dredging and Filling:** Hopper dredge

**Design Criteria:** The area must have sufficient hydraulic action to transport the dredged material downstream. Care must be taken to minimize adverse impacts to water quality and benthic organisms.

### Environmental Considerations

**Effects of Disposal:** Turbidity produced can have adverse effects upon benthic organisms and free-swimming organisms. Any benthic animals would be covered by extensive amounts of dredged materials.



## SITE 10 (In Bay)

### Site Description

Location: Section 21, T21S, R12W, eastern edge of maintained channel, river mile 9 between Steamboat and mainland, north of Leeds Island.

Size: 5 acres, approximately

Capacity: Undetermined because there is no permanent deposition as the material is transported downstream by currents.

Physical Characteristics: The area contains about 5 acres and ranges in depth from 22 to 51 feet. This deep hole was produced by the natural scouring action of the river.

Biological Characteristics: The biological activity of the area has not been evaluated.. It is assumed that the area has minimal biological importance as the depth limits the amount of benthic organisms.

Comprehensive Plan: Estuarine Development Management Unit

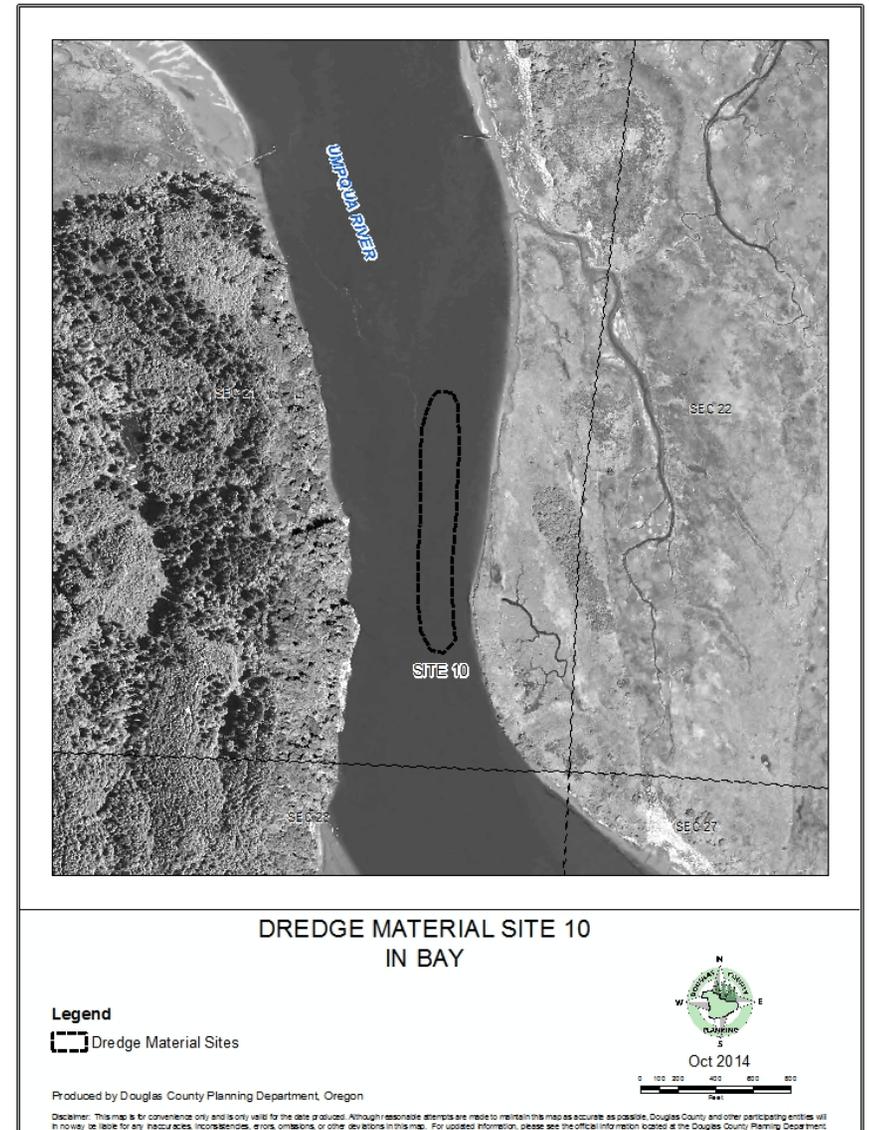
### Engineering Considerations

Method of Dredging and Filling: Hopper dredge

Design Criteria: The area must have sufficient hydraulic action to transport the dredged material downstream. Care must be taken to minimize adverse impacts to water quality and benthic organisms.

### Environmental Considerations

Effects of Disposal: Turbidity produced can have adverse effects upon benthic organisms and free-swimming organisms. Any benthic animals would be covered by extensive amounts of dredged materials.



**SITE 11 (Pacific Ocean)**

**Site Description:**

**Location:** The site is located at latitude 43°40'00"N, longitude 142°14'00"W a distance of 7000' offshore in 80' or deeper water.

**Size:** 3600' X 1400', approximately 115 acres

**Capacity:** Undetermined as ocean currents transport materials. The area can be reused yearly.

**Physical Characteristics:** The area contains 115 acres and is in 80' or deeper water.

**Biological Characteristics:** The area has been approved by the EPA for dredge material disposal.







**RESTORATION  
AND  
MITIGATION**

**ELEMENT 4**

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## **INTRODUCTION**

The purpose of the Restoration and Mitigation Program is to identify opportunities and establish land and water use policies which will encourage citizens and agencies to restore estuarine habitat which has been lost through the cumulative effects of past land use decisions or to mitigate the adverse impacts of new development in estuarine areas. Furthermore, this program outlines the process of mitigation required under the Estuarine Resources Planning Goal and subsequent administrative rules. Intertidal areas designated for development have been inventoried and mitigation requirements estimated. The program also inventories Shoreland areas which may be used to fulfill the mitigation requirement of Goal 17.

In order to accomplish these objectives systematically, the Restoration and Mitigation Program is divided into three sections:

1. The Need for Restoration and Mitigation;
2. Analysis of Development Areas, Mitigation Sites and Restoration Sites;
3. Restoration and Mitigation and Technical Considerations for Mitigation.

## **THE NEED FOR RESTORATION AND MITIGATION**

### **Relationship of Restoration and Mitigation**

Restoration is defined here to be actions which re-establish prior or original attributes of the estuary that were lost as a result of past alterations or catastrophic events. Examples of restoration projects include: removing fills; lowering islands created through dredged materials disposal; planting of marsh grasses or shoreland vegetation for erosion control or reestablishment of a buffer area; installing water treatment facilities; removing dikes which surround areas which no longer have uses needing protection; removing unused piling or structures; dredging and construction measures to re-establish former depths or shoreline configurations, circulation and flushing patterns of an area of the estuary; and rebuilding urban waterfronts.

Mitigation is defined here to be actions which lessen the adverse impacts of dredge or fill activities proposed in intertidal or tidal marsh areas by creation, restoration or enhancement of an estuarine area to maintain the functions, characteristics and processes of the estuary. Both a restoration program and a mitigation program as components of this plan must recognize the historical transformations of estuarine lands to non-aquatic uses and identify how these transformations have affected the ecology and functional characteristics of the estuary. A restoration program addresses first and foremost the needs of the estuary as an ecological system. Conversely, the mitigation program is tied first to replicating affected environments. The programs are linked in this plan in that restoration opportunities identified here may serve as mitigation for project proposals which have not yet materialized.

### **Historical Background**

The lower Umpqua basin has experienced considerable change since the late 1800's. The settlements of Scottsburg, Gardiner, Reedsport and Winchester Bay have been constructed. Roads, railroads, electrical power and telephone lines connect these communities with the rest of the state and nation. Farms and industry line the rivers and shore of the bay. During this transformation, the Umpqua River Estuary has been molded to meet the needs of the area's

citizens. Jetties, navigational aids and dredged channels have been constructed to allow ocean-going craft to service Reedsport and Gardiner. The bridges and causeways of State Highway 38, U.S. Highway 101 and the Coos Bay Rail link the area with Florence, Coos Bay, Roseburg and the Willamette Valley. Marshlands along the Smith and Umpqua Rivers have been reclaimed to provide pasture to produce milk and beef.

While the impact of any one development on the estuarine resource is not measurable, the cumulative effect of all is most likely notable but not quantifiable. Significant changes in fisheries or wildlife production may have occurred but no baseline data exists which will allow a meaningful comparison with today's production levels. Perhaps the changes in resource values can best be described by noting the changes in habitat which have taken place over this period. A detailed discussion of these changes and their possible impacts on resource production is found in Natural Resources of Umpqua Estuary (Oregon Department of Fish and Wildlife). That work and other resource inventories which serve as a basis for this plan suggest these findings:

1. Among the major estuaries in Oregon (> 3500 acres), the Umpqua has the lowest ratio of tidelands to total area (22%). In the past, this is because the lower Umpqua Basin is more riverine like the Columbia System (26% tidelands) than estuarine like Coos Bay or Tillamook Bay (each has 50% of its area in tidelands).
2. The natural scarcity of tideland habitat has been exacerbated by the reclamation of hundreds of acres of marsh and mudflat for human activities. Significant reclamations include:
  - a. Diking of marshes to create pastureland along Umpqua and Smith Rivers, Leeds Island, Scholfield and Dean Creeks; and
  - b. Filling and diking to establish fastland upon which sections of Gardiner, Reedsport and Winchester Bay are built; and
  - c. Dredging and filling to secure land for industrial development on Bolon Island and provide land for recreational and industrial use in Winchester Bay.
3. Although some land use actions have reduced the amount of intertidal habitat, other land uses are causing the marshes and tideflats to increase in size. This results, in part, from agriculture, logging, road building and other land uses which increase sediment yield in the drainage and, in part, from structures or impediments constructed in the bay which reduce circulation and result in increased deposition of sediment. The most notable example of the latter is the concentration of fills and bridge-crossings radiating from Bolon Island. At the same time the overall increase in sediment load and deposition in the estuary has increased the need for dredging to maintain an open ship channel. The net effect of these two forces is an increasing channelization of the estuary and reduction in diversity and production.

### **Restoration and Mitigation Requirements Under the Statewide Planning Goals**

The findings listed above identify losses in productive estuarine habitat through channelization. Reversal of this trend becomes the key theme of the restoration program. The Estuarine Resources Goal provides guidelines and establishes planning requirements for needed restoration. In addition, it suggests the types of sites which local government should evaluate for their restoration potential. The relevant section of that goal is:

"State and federal agencies shall assist local government in identifying areas for restoration. Restoration is appropriate in areas where activities have adversely

affected some aspect of the achievement of the objective of this goal. Appropriate sites include areas of heavy erosion or sedimentation, degraded fish and wildlife habitat, anadromous fish spawning areas, abandoned diked estuarine marsh areas, and areas where water quality restricts the use of estuarine waters for fish and shellfish harvest and production, or for human recreation."

Furthermore, the implementation requirements under the Estuarine Resources Goal require a procedure for mitigation in order to prevent further reductions in estuarine productivity:

"Adverse impacts to estuarine resources resulting from dredge or fill activities permitted in intertidal or tidal marsh areas shall be mitigated by creation, restoration or enhancement of an estuarine area(s). The objective shall be to improve or maintain the functional characteristics and processes of the estuary, such as its natural biological productivity, habitat and species diversity, unique features and water quality."

Finally, the Coastal Shorelands Goal establishes a planning requirement to safeguard identified mitigation sites:

"Local government, with the assistance from state and federal agencies, shall identify coastal shoreland areas which may be used to fulfill the mitigation requirement of the Estuarine Resources Goal. These areas shall be protected from new uses and activities which would prevent their ultimate restoration or addition to the estuarine ecosystems."

To meet these goal requirements, this program first identifies mitigation needs based on designation of intertidal areas for development and identifies possible mitigation sites and restoration sites then establishes policies to guide both restoration and mitigation, describes the technical basis for mitigation and, finally, identifies possible mitigation actions which might accompany dredge and fill projects in intertidal areas which are proposed in this plan.

## **ANALYSIS OF DEVELOPMENT AREAS, MITIGATION SITES AND RESTORATION SITES**

### **Estimated Mitigation Needs**

The mitigation needs for the Umpqua estuary were estimated by calculating the development designation acreages as subtidal and intertidal. Intertidal areas were further characterized as developed or undeveloped depending on the amount of physical alteration which has occurred. Planimetric measurements of various maps were used to determine the acreage. The data used for such measurements included U.S. Army Corps of Engineers aerial photographs, assessor plat maps, and aerial floodplain photographs. Habitat classifications were based on the Oregon Department of Fish & Wildlife habitat maps for the Umpqua Estuary.

Assumptions concerning the amount of intertidal lands needed within each development unit are detailed within each *Estuary Management Unit (EMU)* narrative. If no information was available for specific proposals it was assumed that 100% of the area would be utilized for development. By using the assumption of 100% development, the estimated needs are probably greater than will actually occur as state and federal laws and mitigation requirements tends to minimize dredge and fill activities.

The acreages for the development designations within the City of Reedsport are based on their plan. The narrative for the development area and management unit descriptions are found in the Reedsport

## Comprehensive Plan.

Estuary Management Unit 1 includes the channel entrance and Salmon Harbor. The area is within the marine subsystem which is defined as the area of greatest marine influence, including salinity and the extent of marine sands into the estuary. The development area contains 436.8 acres and is predominantly subtidal, including only 41.7 acres of indicated intertidal area. The area has been greatly altered by the construction of jetties and a navigation channel. The extension of the training jetty required development of the staging area which includes the deep channel adjacent to the area. The first southernmost cove is designated as development to enable the continuance of the staging for future maintenance of the jetties.

The other major modification is the development of Salmon Harbor which created several acres of subtidal habitat from intertidal and shoreland areas. This subsystem is the only one which receives marine sediment with summer shoals at the mouth often causing rough bar conditions. Although several intertidal acres are included within the designation, the intertidal area's size and shape fluctuate seasonally due to wave and high energy environment. The development classification was placed within the area to provide for channel maintenance and no development is currently contemplated for the narrow intertidal areas adjacent to the shores. Therefore no acreage has been estimated for development or mitigation. There are two dredge spoil islands created from channel maintenance located in the Middleground flat. Discussed as a restoration site which could be considered for mitigation if needed within the marine subsystem.

Estuary Management Unit 3 includes the authorized channel and identified "in bay" dredged material disposal sites. This development area includes both marine and bay subsystem characteristics. It is entirely subtidal and has been regularly maintained by the U.S. Army Corps of Engineers. It includes a 26-foot deep entrance channel and a 22-foot deep, 200 foot wide channel from the entrance to Reedsport. A turning basin at Reedsport, a 12-foot deep, 100-foot wide channel at Winchester Bay, and a 22-foot deep, 200 foot wide channel extending from the main channel to Gardiner. No intertidal areas are identified within the area and ODFW has not identified major adverse impacts from the DMD sites.

Estuary Management Unit 5 (Gardiner) is adjacent to the former International Paper Mill and includes the area between the diked shoreland and the authorized channel and turning basin. The shoreland area is developed for industrial uses and future expansion of existing facilities is proposed. Additional findings concerning the existing use of the area are found in the Estuary Management Unit 5 description of the estuary classification section.

The former International Paper Mill site included historical wetlands which were diked and filled to create an industrial complex. It is located within the bay subsystem, with salinities and temperatures varying greatly during the year. In addition to the dike, several developed areas remain along the waterfront, which were part of the International Paper Mill operation including barge loading facilities, log removal facilities, erosion control measures and log storage. An intertidal mudflat extends from the dike hampering direct water access; this mudflat area is located in the northern portion of the estuary management unit. Development of this area will be limited to pier and dock facilities. Extensive dredge and fill is severely limited by mitigation requirements. However, existing facilities makes this area especially suited for water-dependent and related industrial uses.

The majority of the waterfront upstream from the former log storage area and log removal facility is substantially altered, including erosion protection measures such as riprap. The Gardiner boat ramp

is located at the southern tip of the industrial complex and is dredged to maintain access for recreational boaters. Due to the fully developed shoreland and altered estuarine area, no mitigation requirements have been estimated for this area.

The estuarine area adjacent to the railroad tracks is developed as the area has been filled to provide for the causeway. The slope is riprapped for erosion control and very little intertidal area is located along this area. No further dredging or filling is anticipated for the area.

Estuary Management Unit 7 (Bolon Island) development area is limited to those estuarine areas adjacent to Bolon Island which are already developed. The entire shoreland, excepting public owned lands, is designated for industrial uses. The shoreline has been altered by placing riprap for erosion control, barge loading facility and dry-dock facilities. Very little intertidal area is identified as the shore is steep, providing deep water near the shore. Since the estuarine areas designated for development have already been altered and no further dredging or filling is anticipated for the area, no mitigation needs were estimated for the area. Additional findings for Estuary Management Unit 9 are found in the Management Unit section of the Estuarine Resources Element.

The area west of Estuary Management Unit 7 (Leed's Island) is limited to the shoreline adjacent to the authorized channel. The entire development area includes 16.8 acres, of which 6.1 acres is classified as intertidal. The shoreland area is diked and identified as a dredged materials disposal site with the ultimate use being industrial. The area adjacent to the channel is being encouraged for water-dependent and water-related uses. The estuarine area nearest shore contains riprap as an erosional control measure. Several wing dams have also been constructed for erosional control. There is a narrow intertidal area consisting mostly of mud substrate with marsh-type grasses. A deep channel parallels the shoreline which can provide water access to adjacent shoreland uses. This development area is also part of the bay subsystem having wide-ranging salinities and temperatures. No particular development proposal has been discussed for the area, which would provide a basis to estimate mitigation needs. Therefore, a maximum development option was assumed and the entire 6.1 acres was estimated as being required for mitigation. Several in-kind mitigation possibilities are available including Providence Creek, Steamboat and Mouth of Scholfield Creek.

Estuarine Sub-areas III and V (City of Reedsport) are identified as development management units in the Reedsport Comprehensive Plan. Detailed description and additional findings are found in the City plan concerning these estuarine sub-areas.

The McIntosh Slough and Scholfield Creek areas contain about 42.8 acres, of which 14.6 acres are identified as intertidal. The 14.6 acres of tidelands are about equally split between mudflat habitat and high salt marsh habitat. There is existing development within the area; however, most of it is in disrepair. The development includes pilings, docks, and bridge access. This development accounts for approximately 1 acre of intertidal area. The Champion site along with the estuarine area comprises an area which is especially suited for water-dependent development. The site has highway, rail and water access including an authorized channel. It is serviced with water and sewer, and is adjacent to existing water-dependent and -related industries. Based on site characteristics, it may be possible that the entire McIntosh Slough area would require dredging or filling. The estuarine area upstream in Scholfield Creek would probably not be altered. Based on these assumptions, mitigation needs for this area was estimated to be 10 acres.

The upper portion of the McIntosh Slough is currently being proposed for fill with mitigation to be provided on Steamboat Island. McIntosh is within the bay subsystem and several mitigation sites may be feasible for future development, these sites include Purdy Island, Steamboat, and an area across Scholfield Creek.

The other development management unit is basically the Reedsport Waterfront upstream from the Highway 101 bridge. This entire area is developed with several industrial uses, the shore has been altered considerably and very little intertidal area is located in the vicinity. No mitigation needs were identified for the area. (See Reedsport Plan for additional findings and description.)

## ANALYSIS OF ESTUARY DEVELOPMENT MANAGEMENT UNITS

<u>MANAGEMENT UNIT</u>	<u>DESCRIPTION</u>	<u>TOTAL ACRES INCLUDED</u>	<u>INTERTIDAL ACRES</u>			<u>ESTIMATED INTERTIDAL ACRES TO BE DEVELOPED</u>	<u>TYPE</u>
			<u>TOTAL</u>	<u>DEV</u>	<u>UNDEV</u>		
1	Salmon Harbor & Channel Entrance	436.8	41.7	--	41.7	--	Sand beach Sand bar
3	Authorized Channel In Bay Disposal	432	--	--	--	--	--
5	Gardiner	147.2	42.5	13.8	28.7	8	High salt marsh Intertidal mudflat Seagrasses
7	Bolon Island	24.9	1.8	1.8	--	--	Bedrock
INSIDE UGB							
County 7 Reedsport IB	Leeds Island	16.8	6.1	--	6.1	6.1	Intertidal mudflat
Reedsport III	McIntosh Slough & Scholfield Creek	42.8	14.6	.9	13.7	10	High salt marsh Intertidal mudflat
Reedsport VII	Reedsport waterfront	15.5	3.2	3.2	--	--	--
Total		1134.3	109.9	19.7	90.2	24.1	

\*Authorized Channel Calculated in Estuarine Management Unit 3

## Mitigation Site Inventory

While a range of actions may be taken to satisfy mitigation requirements, the inventory of mitigation sites concentrated on restoration option and providing "in-kind" mitigation. Technical considerations for individual proposals are presented separately within the program. Mitigation will be provided within existing local, state and federal permit processes for dredging and filling. Implementation of mitigation will require an agreement between the Corps of Engineers and the Oregon Department of State Lands.

In addition to the agencies which administer state and federal permit programs, the following agencies play important advisory roles in the mitigation process:

Federal: U.S. Fish and Wildlife Service  
National Marine Fisheries Service  
U.S. Environmental Protection Agency  
State: Oregon Department of Land Conservation and Development  
Oregon Department of Fish and Wildlife  
Oregon Department of Environmental Quality

Identified mitigation sites are designated as such in the Plan and an overlay zone applied to protect the site for mitigation purposes. These sites are based on the expected mitigation needs within the estuary. Several possible sites were inventoried, including those which have restoration potential but did not meet specific needs are discussed under Restoration Options.

### Providence Creek

**Location -** The Providence Creek site is located adjacent to Leeds Island  
**Size -** The entire area comprises 87 acres, of which 55 acres is pasture.  
**Comments -** The mitigation would require the removal of existing tide gate and new tide gates and diking for protection of shoreland areas not considered for mitigation.  
**Description -** Providence Slough is diked and tidegated and thereby removed from tidal confluence. The slough has little circulation and the subtidal environment may resemble a freshwater pond, containing a variety of insects and freshwater fish. However, the pastureland surrounding the slough may contribute enough organic material and bacteria to consume the available oxygen, thus making the habitat unsuitable for most fish. Eighty-one percent of Providence Slough contains freshwater marsh and pasture plant communities. Several patches of ungrazed freshwater marsh occur in the pond environment of Providence Slough. The entire area once contained high marsh, bulrush and sedge until it was diked, and if returned to tidal influence would most likely revert to original state.  
**Land Use -** Agricultural and Significant Wetlands Habitat

### W. Mouth of Scholfield Creek

**Location -** The area is between the Mouth of Scholfield Creek and Leeds Island adjacent to the Umpqua River.  
**Size -** 6.3 acres  
**Comments -** The existing elevation would need to be lowered and artificial tidal channels created. Material could be placed on adjacent upland area.  
**Description -** The area consists of an old dredge spoils site which has been overgrown with scotch broom. Some native grasses have also grown and the area is used for grazing. The perimeter is vegetated with alder. There is an extensive high salt marsh located to the east. If the elevation were lowered and tidal channels created,

habitat would revert to habitat similar to that which exists on adjacent areas. This site could provide in-kind mitigation for Leeds Island or McIntosh Slough.

Land Use - Inside Reedsport UGB, Urban Conservation

### **Purdy Island**

Location - Purdy Island is adjacent to Bolon Island directly across the Umpqua River from Reedsport waterfront.

Size - 3.1 acres

Comments - The land area would need to be lowered and artificial tidal channels created. The excavated material could be placed on shoreland located at Bolon Island.

Description - The area consists of dredge spoils which were deposited over existing mud substrate. The adjacent area is high salt marsh and with the removal of material it would be expected that the area would revert to salt marsh also. Existing vegetation consists of scotch broom, willow and alder with sparse concentration of native grasses. The restoration of the area would add 3.1 acres to existing adjacent marsh land. The location within the bay subsystem and proximity to McIntosh Slough and Leeds Island, as well as Gardiner, establishes this area as possible in-kind mitigation for future development.

Land Use - Estuarine Natural

### **Scotts Swamp**

Location - Scotts Swamp is located southwest from Coho Marina on the south side of Scholfield Creek.

Size - 14.2 acres

Comments - A single culvert connects this marshland with Scholfield Creek. The road needs to be restructured and additional culverts placed or replacing dike with a causeway. Tidal flow and fish habitat is being severely restricted by the single culvert.

Description - The area is classified as tidal marsh providing some fish and waterfowl habitat. However, the productivity of the area could be greatly increased by providing additional tidal flushing. It could contribute further to the estuary by adding additional fish habitat and more detritus production to the aquatic system.

Land Use - Inside UGB - Reedsport Plan

### **Steamboat Island**

Location - The northern portion of Steamboat Island is opposite the former International Paper Mill site.

Size - 14.5 acres

Comments - The Steamboat Island mitigation site will return upland to intertidal status by removing dredge spoils to adjacent uplands. The Port of Umpqua is developing a mitigation proposal for the area.

Description - The northern tip of Steamboat Island has historically been utilized for disposal of dredged materials. These spoils have been revegetated with scotch broom and native grasses. A portion of the shoreland area is proposed to be used as mitigation for the development of part of McIntosh Slough. Steamboat Island is located in the bay subsystem and could possibly be used to mitigate for development in Gardiner, McIntosh Slough or Leeds Island.

Land Use - Rural Conservation Shorelands

## **SUMMARY OF MITIGATION SITES**

Site	Acreage		Land Use
1 Providence Creek	55.0		Agricultural - UGB
2 W. M. Scholfield	6.3		Urban Cons. - UGB
3 Purdy Island	3.1		Estuarine Natural
4 Scotts Swamp	14.2		Reedsport City
5 Steamboat	14.5		Rural Conservation

(See Map of Restoration Sites)

**(Insert Map)**

**Restoration Site Inventory**

As noted in Element 2, the Estuarine Resources Goal suggests the types of sites to be examined for restoration potential. In the preparation of this plan, the County evaluated three categories of sites for opportunities for restoration in the Umpqua River Estuary: degraded estuarine habitat; fill sites and diked marshes; and finally, the areas where water quality restricts the use of estuarine waters for fish and shellfish production or for human recreation.

The analytical method used was to identify the change in habitat, contrast current production or use levels with potential yields, discuss land use options to achieve potential yields and finally, determine whether or not the viable land use options represented an opportunity for restoration.

## Degraded Estuarine Habitat

### Winchester Bay - Salmon Harbor

#### Findings:

The shape and width of the entrance to Winchester Bay and to Salmon Harbor restrict tidal circulation in each of these bodies of water. As a result, pollutants tend to accumulate in the sediments within the harbor rather than being flushed out with the tide (Slotta and Noble, 1977). In spite of the accumulations and poor circulation, the area is used by many fish and is a herring spawning area (Gaumer, et al., 1973). Contradictory evidence makes it impossible to determine whether or not increased flushing would result in a demonstrable benefit to fisheries production. Slackwater habitat is scarce in the lower bay and the herring production present in these areas is compatible with current land and water uses in the area.

#### Determination:

Changes in the shape and width of the entrance to Winchester Bay and to Salmon Harbor do not represent restoration opportunities.

### The Estuary Immediately North and West of Bolon Island

#### Findings:

Bolon Island represents a natural impediment in the flow of the river. As a result, sediments carried by the river have been deposited and formed Steamboat Island in the lee of Bolon's resistant geology. The fills and causeways which connect the Island with the marshland to the north have noticeably reduced circulation in the area causing increased deposition. An expansion of intertidal habitat has come at the expense of a reduction in the tidal prism and in subtidal habitat. The productivity of the new intertidal area is mixed. The young intertidal region between the Highway 101 causeway and the Coos Bay Rail Link spur connecting Bolon Island and Gardiner has both the most recreational tideflats use and the largest number of softshell clams taken of any area in the bay (Gaumer, et al., 1973). Conversely, the mudflat just west of the intersection of Lower Smith River Rd. (Douglas County #48 and East Gardiner Rd. (Douglas County #48B) is very oxygen deficient and unproductive due to rapid sediment deposition. This area has and could support much larger and more diverse populations of invertebrates (Booth, et al., 1978).

#### Determination:

An opportunity for estuarine restoration exists in this area north of Bolon Island -- the mudflat near

the union of Lower Smith River Road (Douglas County #48) and East Gardiner Road (Douglas County #48B). The intertidal habitat is degraded and could benefit from actions which would increase circulation and flushing. One approach would be to restructure Smith River Road and the LPN railroad crossing so that they rested atop causeways instead of fill (as they do now) in the area just east of the mudflat. This action would increase circulation and invertebrate production. An alternative may be to dredge the area to an elevation approximately two feet below mean low water. This action would increase flushing and provide habitat suitable for eelgrass production.

## **Scott's Swamp**

### **Findings:**

The Scott's Swamp area is defined in this plan as the tidal marsh in T22S, R12W, W.M., Sec. 3, which is southwest from Coho Marina on the south side of Scholfield Creek. The ability of this large marsh to contribute to estuarine productivity is limited because only a single culvert connects it with Scholfield Creek. The culvert passes beneath a road (constructed atop a dike) which connects Decker Point with Reedsport. This area, which already provides a resting stop for migrating waterfowl, could contribute further to the estuary by adding habitat for fish and contributing more of its detritus production to the aquatic system. A relatively simple restructuring of the road (adding culverts or replacing part of the dike with a causeway) would result in an effective restoration action.

### **Determination:**

An opportunity for estuarine restoration exists in the Scott's Swamp area. A restructuring of the road connecting Decker Point with Reedsport would add fish habitat and nutrient production to the estuary.

## **Winchester Creek**

### **Findings:**

Winchester Creek once supported anadromous salmonids. Changes in stream structure have resulted from logging in the watershed and riparian zones and from an embayment near the mouth caused by highway construction. Local citizens have suggested that active restoration measures -- culvert adjustment and stream clearance -- in the tidal zone may be instrumental in rehabilitating anadromous fish runs. Conversely, based on on-site investigations, representatives of the Oregon Department of Fish and Wildlife indicate that a lack of spawning gravel in the fresh water zone is the more serious constraint on production. Furthermore, they state that active restoration measures, such as placing gravel in the stream bed, is unlikely to prove successful in the long run. Oregon Department of Fish and Wildlife proposes an alternative non-structural solution. They feel that the annual release of juvenile salmonids into the fresh water stretch of Winchester Creek is more likely to increase production.

### **Determination:**

Culvert adjustment and stream clearance in the tidal zone of Winchester Creek is not an opportunity for restoration.

## **Fill Sites and Diked Marshes**

### **Middleground Flat**

### Findings:

Two islands have been created on Middleground Flat through the disposal of dredged materials from the channel maintenance project. The flat is a major clam bed, and the dredged materials probably covered other clam beds on the flat (Ratti, 1979). On the other hand, these islands provide a sheltered haul-out for a resident population of 600-700 harbor seals. This species is protected by the Federal Marine Mammal Act.

### Determination:

While removal of the fills on Middleground Flat would add productive intertidal habitat, it would come at the expense of an important habitat for another species protected by Federal Law. As a result, this action represents an opportunity for restoration conditional upon a finding that the protected species could adapt successfully to similar habitat found nearby.

## Providence Creek

### Findings:

A dike and tidegate at the mouth separates the Providence Creek drainage from the Umpqua River Estuary. Removal of the tidegate and dikes would add roughly 25 acres to the estuary on a flood tide (> 8 feet above MLLW). This addition would in fact be a reclamation as these lands and waterways were formerly tidal. A breach of the dike would add salt marsh at the expense of fresh water marsh.

### Determination:

Removal of a tidegate and dike at the mouth of Providence Creek represents an opportunity for estuarine restoration.

## Smith River

### Findings:

Today approximately 19.5 miles of dike along Smith River separate 1,400 acres of former tidelands from tidal flooding. This channelization of the estuary has increased beef and milk production at the expense of aquatic production. Breaching any of the diked pasturelands along Smith River would be restoring estuarine production in part. However, due to private ownership and regulations, most of the diked land cannot and will not be breached at present. If any opportunities arise in the future such as an ownership change, the diked land should be considered for restoration.

A present breach in the dike, unrepaired for some years, is allowing roughly 30 acres of pastureland just west of the union of the Smith River Bridge and Dawson Section Rd. (Douglas County #195B) to become native marsh.

A widening of the breach in the dike at this site would enhance the tidal flushing, thereby promoting production of invertebrates and plants tolerant of brackish water. This increased flushing would allow some use of the area by fish and would enhance the exchange of nutrients between the river and marsh. This action would help to reverse the trend toward increasing channelization of the estuary. It would increase aquatic production at the expense of potential gains in beef and milk

production.

Determination:

Widening the breach in the dike at this site represents a present opportunity for estuarine restoration.

## **Water Quality, Estuarine Production and Recreational Use**

### **Shellfish Production**

Findings:

Water quality measurements in the Umpqua Basin have generally been within the standards set for marine and estuarine waters by the Oregon Department of Environmental Quality; however, the estuary is closed to commercial shellfish harvest upstream of a line drawn from the mouth of Providence Creek north to the three-mile directional light and downriver from Cornwall Point. Constraining factors on the production and harvest of shellfish are sewage and industrial outfalls, marinas, high water temperatures and low or negligible salinity. In general, these constraints are related to health standards, discharge permits or natural features and are not related to particular land uses affecting water quality. In short, there are no land use actions the County could take to simultaneously improve water quality and increase shellfish harvest.

Determination:

There are no clear opportunities to increase shellfish harvest through land use measures.

### **Unused Piling in the Smith River**

Findings:

The presence of unused piling in the middle of the Smith River in T21S, R12W, S24 has caused a large sand bar to form in the north half of the river. This obstruction occurs just upstream of a ninety degree bend in the river. Typically, the deep water channels in coastal estuaries tend to be found on the outside of such a bend. As a result, boaters new to the area, when faced by a row of piling in the middle of the stream, navigate to the outside of the bend and onto the sand bar. Residents of the area note that some removal of this piling in the past has shifted the location of the bar and helped to contain its expansion. They speculate that removal of this piling would eliminate this hazard to recreation by dispersing these sediments downstream.

Determination:

Removal of unused piling in the Middle of Smith River in T21S, R12W, Section 24 represents an opportunity for restoration.

## **POLICIES TO GUIDE RESTORATION AND MITIGATION**

This section establishes policies which define the types of projects which qualify as restoration and spell out the requirements for mitigation.

## Restoration Policies

1. All restoration projects should serve to revitalize, return, replace or otherwise improve the estuarine ecosystem or highly-valued cultural characteristics. Examples include restoration of natural biological productivity, fish or wildlife habitat, or aesthetic, cultural and historic resources which have been diminished or lost by past alterations, activities or catastrophic events.
2. In selecting projects, priority should be given to those projects which provide substantial public benefits and which restore the habitat types, resources or amenities which are in shortest supply as compared to past abundance. All projects should be evaluated to ensure that potential ecological economic and social benefits outweigh potential losses.
3. Disposal of dredged material in water and wetland areas for the specific purpose of creating shallow water, intertidal or island areas is strongly discouraged because this practice contributes to the downward trend of available aquatic habitat.
4. Through public purchase or easement acquisition, restoration of unused low-lying diked areas to estuarine wetland is encouraged.
5. Estuarine areas that have shoaled or filled at an unnaturally high rate, resulting in loss of a particular type of habitat or loss of traditionally navigable areas, should be restored to historic conditions as practical. Passive measures are preferred but active measures or a combination may be required.
6. Unused piling, navigational structures and buildings, which are a hazard to navigation or contribute to excessive shoaling, should be removed.

## Mitigation Policies

1. Adverse impacts to estuarine resources resulting from dredge, fill or dredged material disposal activities (public or private) permitted in intertidal or tidal marsh areas shall be mitigated by creation, restoration or enhancement of estuarine areas in accordance with state and federal law. Such mitigation shall improve or maintain the functional characteristics and processes of the estuary, such as its natural biological productivity, habitats and species diversity, unique features and water quality.
2. Actions exempted from the mitigation requirement above include:
  - a. Removal or filling of less than 50 cubic yards of material or when an Oregon State removal and Fill Permit is not otherwise required;
  - b. Filling for repair and maintenance of existing functional dikes when there is negligible physical or biological damage to tidal marsh or intertidal areas;
  - c. Riprap to allow protection of an existing bank line with clean, durable erosion resistant material provided that the need for riprap protection is demonstrated and that this need cannot be met with natural vegetation, and no appreciable increase in existing upland occurs;
  - d. Filling for repair and maintenance of existing roads when there is negligible physical or biological damage to tidal marsh or intertidal areas;
  - e. Dredging or filling required as part of an estuarine resource creation, restoration or enhancement project agreed by local, state and federal agencies; and,
  - f. Other proposed projects or activities where, upon determination of the Oregon

Department of State Lands, the proposed alteration would have negligible physical, biological and water quality impacts.

Actions not considered as mitigation include the transfer of ownership of estuarine lands, including wetlands and submersible lands, to public ownership; the dedication of estuarine lands for certain natural uses; and the provision of funds for research.

3. While a range of actions may be taken to satisfy mitigation requirements, mitigation sites or projects should be preferentially evaluated as follows:
  - a. Areas in close proximity to the development site with physical characteristics such that when restored, the area will develop a similar quality and quantity of plant and animal life and perform similar ecological functions;
  - b. Areas in other parts of the estuary that meet the above physical and biological criteria; and,
  - c. Areas or resources in shortest supply as compared to past abundance, particularly tidal marshes and the salmon resource.

Because estuarine tidal marshes and flats are ecologically diverse, it may be impossible to create or restore a single site with the same mixture of ecosystem components as are present at the site to be altered. In such cases, more than one mitigation site may be required. All important ecological features of the development site should be created or restored elsewhere within the estuary, whether separately or together.

4. Designated mitigation sites will be zoned to protect them from pre-emptory uses, such as uses that require substantial structural or capital improvements, or other uses that would prevent the site from being used for mitigation. Such designation will not effect present use of the land such as grazing, crop harvesting and other agricultural activities.
5. Douglas County supports the creation of mitigation banks involving restoration of estuarine lands, caused by a naturally occurring or human activity that occurred after July 21, 1979, even though mitigation through restoration was not the intent of the action.

## **PRIORITIES FOR RESTORATION**

The inventory of Restoration Sites Section identifies six opportunities for restoration:

1. Actions which would increase circulation over the mudflat near the union of Smith River Road (Douglas County #48) and East Gardiner Road (Douglas County #48B);
2. Actions which would increase tidal flushing in Scott's Swamp;
3. Removal of dredged material disposal islands in Middleground Flat;
4. Removal of a tidegate and dike at the mouth of Providence Creek;
5. Actions which would increase tidal exchange at the site near the Smith River Bridge where a dike has remained breached for some time; and,
6. Removal of unused piling in the Smith River.

This section ranks these restoration proposals. The ranking is based on a number of factors including the biophysical needs of the estuary, magnitude of the proposed action, apparent benefits and costs and private versus public ownership. The ranking is offered only to provide general direction and should not be viewed as a hard and fast rule. The ranking can be useful in identifying mitigation projects if opportunities to duplicate the affected habitats cannot be found (see Mitigation Policy #3).

The restoration opportunities are ranked as follows:

1. Actions which would increase tidal flushing in Scott's Swamp;
2. Actions which would increase circulation over the mudflat near the union of County Road Numbers 48 and 48B;
3. Actions to increase tidal exchange at the site near the Smith River Bridge where a dike has remained breached for some time;
4. Removal of dredged material disposal islands in Middleground Flat;
5. Removal of unused piling in the Smith River; and,
6. Removal of a tidegate and dike at the mouth of Providence Creek.

## **TECHNICAL CONSIDERATIONS FOR MITIGATION <sup>1</sup>**

The policies for mitigation described above require applicants for dredge and fill projects in intertidal areas to take actions which will restore or enhance elsewhere in the estuary the natural processes lost at the development site. These policies and the Estuarine Resources Goal insist that major functional characteristics of the estuary be maintained. These characteristics include: natural biological productivity; habitat and species diversity; unique features; and water quality. This section elaborates on those requirements by providing a scientific basis for the mitigation concept and a description of the fundamental characteristics to be preserved. In addition, this section defines the major physical and biological parameters used in evaluating mitigation proposals.

### **Scientific Basis for Mitigation**

The requirement that environmental damage in one area may be mitigated by environmentally constructive acts in another area is a resource management tool based on the scientific concept of an ecosystem. An ecosystem is an interacting system of organisms and their physical environment within a definable area. The most important set of interactions between the parts of an ecosystem is the flow of energy and materials -- the food chain. In an ecosystem, organisms have functional roles as groups of ecologically similar species, the exchange of matter and energy is flexible, and the whole system has some capacity for self-adjustment and dynamic stability.

The idea of an ecosystem is not a testable scientific law; it is a descriptive concept about how the natural world is organized into integrated units. As such, it provides a framework for fitting human activities into the natural order. In the past, areas were often managed for the benefit of one species that had particular value to people. For example, certain game preserves raised a large number of deer in nearly domestic conditions to provide for the hunting season, the habitat was modified for the convenience of people, and other species were either accidentally diminished through the loss of habitat or were destroyed because they were predators. However, experience has shown that the natural order is far too complex for this approach; the managed species may exceed the carrying capacity of the land, and the loss of other species from the ecosystem may lead to unexpected loss of the managed species and other undesirable changes. For this reason, an ecosystem approach has replaced the single species approach in natural resources management ranging from fisheries to forests.

The Estuarine Resources Goal emphasizes ecosystem features with the statement that the objective of mitigation is to improve or maintain the functional characteristics and processes of the estuary, such as its natural biological productivity, habitat and species diversity, unique features, and water quality.

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<sup>1</sup> Much of this section was adapted for use in the Douglas County Comprehensive Plan from similar narrative reported for the Columbia River Estuary in CREST, Columbia River Estuary Regional Management Plan, June, 1979.

In estuaries, the biotic components of the ecosystem are grouped into such functional categories as primary producers, decomposers, epifaunal or infaunal herbivores, detritivores, and predators. The physical components of the system are identified as fixed and dissolved plant nutrients, organic detritus supply, surface area available for light reception, tidal flow features, bottom sediment types, annual salinity and temperature regimes, and other factors. The ecological viewpoint has the advantages of identifying major processes and components of the system and simplifying the enormous natural complexity. This view has some disadvantages; the identity of individual species is downplayed, as are some minor processes which may be considered important to man by other criteria.

The ideal estuarine management tool would have all relevant data on component species and functional categories, as well as restoration and management unit plans incorporated into an accurate estuarine ecosystem model. Simulations of proposed alterations would then predict their adverse effects on the system and prescribe mitigation actions to compensate for them while fulfilling comprehensive plan objectives. However, we lack detailed quantitative knowledge of the ecosystem components in the Umpqua River Estuary and their interactions. An alternative is to prevent adverse, unpredictable, and irreversible trends or changes in estuarine natural systems by maintaining as much of the existing systems as possible even if the function, relative importance or even existence of the component parts are not fully known.

As a result, the guidelines in the Estuarine Resource Goal suggest that mitigation sites be evaluated on the basis of both physical parameters and capacity to contribute to biological productivity and habitat and species diversity. Discussed below are the physical parameters identified in the Statewide Planning guidelines, their significance, measures of biological productivity, and finally, habitat and species considerations in evaluating potential mitigation sites.

## **Ecological Significance of Physical Properties**

### **Salinity and Temperature Regime**

Salinity is the measure of dissolved salts in seawater. Most organisms are limited in their upstream distribution in the estuary by their tolerance to lowered salinity. A few fish can range from seawater salinities near the estuary mouth to fresh river water conditions far into the upper reaches of the system, but most animals and plants cannot. Consequently, the annual range of salinity conditions determines the areas which a species can occupy in the estuary when other habitat requirements are met. The seasonal salinity and temperature ranges for a site describe major habitat features. The variable freshwater flow of the Umpqua River plays a significant role in determining both. Similarity of temperature and salinity regimes at two sites indicate that similar biota will be present, if other conditions such as sediment types do not differ.

### **Substrate Type**

The physical nature of the bottom materials has little meaning unless it is considerably qualified. Solid versus unconsolidated substrate is the major dichotomy. Little solid intertidal substrate exists in the Umpqua River estuary and much of it is artificial, such as jetties, groins, bank riprap and pilings. These tend to increase with development. Most estuarine substrates are sedimentary types varying in composition of particle types and sizes, nonliving organic matter content, and chemical features. Sediment types have distinctive patterns of distribution; tidelands in the shallow bays, sloughs, and tidal marshes are mostly composed of fine silt and clays, while sandy sediment

types tend to predominate in the channel and slope areas and lower estuary flats.

Most estuarine organisms of sedimentary habitats are relatively substrate specific, requiring limited range of sediments. Each of these has a characteristic biotic community associated with it, depending where it is located in the salinity gradient of the estuary. Substrate characteristics are of similar importance to temperature and salinity in defining similar ecological conditions.

### **Tidal Exposure**

Tidal exposure refers to the frequency and duration of exposure to the air of a given tidal level. The higher tidal levels of the marsh community are flooded for relatively short and infrequent times, periodically undergoing many days without tidal flooding. Mid-tide levels are covered and exposed by tides daily, in complex rhythms of frequency and duration while the lowest tide levels are infrequently exposed for short durations, and go long periods without exposure. Intertidal organisms respond to the resulting varied conditions by occupying limited portions of the tidal range, often with distinct upper and lower boundaries. Even on a fairly uniform substrate, the intertidal community is distinctly zoned. Only sites which extend through the same tidal range, and consequently have a similar tidal exposure regime, have similar communities, even if other habitat features of salinity and substrate are the same. In both individual mitigation actions and in overall planning, consideration must be given to providing areas of comparable tidal elevations, at one or several mitigation sites, to those lost at development sites.

### **Slope and Area**

The angle of slope of tidelands determines the total area available at different tidal heights, consequently the quantities of different ecological components present in a defined area. This characteristic must be considered with tidal elevation. Because the slope establishes the area of tideland between tidal elevations, it could be discarded as a separate consideration in favor of a real distribution at different tidal elevations. The slight slope of estuarine tidelands results in relatively large areas of land at different tidal heights from mid-tidal to highest tidal levels. At lower tide levels, slope often changes and drops more steeply to subtidal channel depths. Different tidal levels have different ecological characteristics. The differing amounts of area at different tidal levels of a development site require separate consideration in qualifying mitigation actions. It may be more practical to consider the major ecological values of different tidal levels separately, and seek a compensation method for each among the available options of creation and restoration in different areas, when no one site provides all the required features.

### **Current Velocity and Pattern**

The major estuarine currents over tidelands are of tidal origin and consequently have changing characteristics of speed, duration and direction. Tidal current patterns over tidelands are strongly influenced by topographic and other features, both within and outside tidelands, and it is very difficult to identify details of critical ecological significance. Tidelands bordering channels have distinct flow patterns and velocities. The ecological significance of tidal currents derives from their transport of materials to and from tidelands, linking them physically to the rest of the system. Currents transport sediment particles, and the maximum current velocity over a tidal area will influence sediment characteristics, thus indirectly influencing community composition. Those ecological features directly affected by currents can be measured in other ways, and it is unlikely that the details of current flow over one site can be found at another and still less likely that they could be adequately predicted before a mitigation site was created or restored.

## Orientation to Solar Radiation

The slope of estuarine tidelands is so slight over large areas that they may be considered virtually flat with respect to their orientation to the sun, and thus show no differences from place to place in this property. Only when intertidal areas have appreciably steep slopes do their orientations to the sun affect light penetration, heating or drying.

## Annual Submergence Time

The "Annual Submergence Method" was developed as a mitigation tool by Dr. J. J. Gonor of Oregon State University. It was accepted and used as an important criterion by the Oregon Department of State Lands (DSL) in the case of the proposed North Bend Airport fill in Coos Bay. This method, when strictly applied, would equate areas by equalizing their surface area - time submerged relations. It is a simple method to integrate several important ecological concepts into a simple figure. For the Umpqua River estuary, it probably has more validity and usefulness for tidal marsh mitigation than sand-mud flats. Dr. Gonor's assumptions in using the method are:

- a. The ecological value of primary and secondary productivity of tidal waters over intertidal lands at high tide is sufficiently high to rank it among the high priority features sought in mitigation compensation;
- b. The major features to be equalized between two intertidal areas to secure the above priority benefit are provided in equal times and water surface area for heat and light reception and heat exchange with the atmosphere;
- c. Intertidal heat and light reception is important to the estuary ecosystem as a whole because tidal exchange spreads its effects; and,
- d. The present form of the method assumes the values above are achieved by any equivalent area of tidal water over a wide range of depth and, therefore volume differences. This method emphasizes different features from a related tidal prism concept. It does not entirely provide an equal volume over an equal area for an equal time.

Additional assumptions that increase the Annual Submergence Time method's acceptability for marsh lands include:

- a. Zonation of marsh vegetative communities is directly tied to land elevation; and
- b. Detrital export of marsh primary production increases as submergence time increases.

The formula for calculating annual submergence time is: Tidal Inundation frequency x area x 365 days = annual submergence time in acre days.

## Biological Productivity

Natural biological productivity can be estimated and used in comparing the biological potential of sites. It also could be used as one measure in determining the area required at a mitigation site for it to be ecologically equivalent to a development site. Biological productivity is the rate at which organic matter is produced in a system or some component of it. Of paramount importance for maintaining ecosystem functions is net primary production, the photosynthetic production by plants of organic substances in excess of their maintenance needs. Primary production is expressed as the rate at which energy or carbon is fixed by plants into organic material, per unit area. Since net

primary production by plants fixes the amount of energy flowing through the rest of the biotic community, conserving or increasing this base is important for maintaining estuarine systems.

Secondary productivity is also an important ecosystem feature; it refers to the rate at which consumers, at higher levels in estuarine food webs, store energy. Because a great deal of data and analysis are required to estimate secondary productivity, it is not a useful tool in determining mitigation needs.

Standing crop, which is the number of weight of organisms present at any one given time, can be a useful measure in mitigation. Standing crop is not the same as productivity, but is a measure of the production held in reserve. This storage is a key factor in stabilizing the estuarine ecosystem in that it provides a food and energy reserve for times of the year when productivity is low. Maintenance of major storage components, such as tidal marshes and mud-flats, is an important mitigation objective.

### **Habitat and Species Diversity Considerations**

Maintaining diversity, which is the number of different habitats or species in a given area, is an important objective in ecosystem maintenance. Habitat refers to the place occupied by a distinct community, such as a tidal marsh. Habitat also can refer to the place where one would go to look for a particular organism. Habitats may thus be quite specific or general. For mitigation purposes, habitats should be considered in the more general sense, though specific species, such as those which play key food chain roles or are rare or endangered, may be very important. In mitigation actions, attention should be given to maintaining the mixture of habitats and species.



## **BEACHES AND DUNES**

### **ELEMENT 5**

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## **PURPOSE AND CONTENT**

This element of the Comprehensive Plan satisfies Oregon's planning requirements for the beaches and dunes of coastal Douglas County. The Coastal Planning Advisory Committee was instrumental in the preparation of this element. By identifying opportunities for and constraints on development, the Coastal PAC insured that local needs and objectives were addressed.

The Statewide Planning Goal requirements for beaches and dunes are outlined in the following paragraph:

The overall goals of the State in planning for beaches and dunes are to "conserve, protect, where appropriate develop, and where appropriate restore the resources and benefits of coastal beach and dune areas" and "to reduce the hazard to human life and property from natural or man-induced action associated with these areas." To accomplish these goals, Oregon requires each local government to collect and analyze information about the beaches and dunes within its jurisdiction and to prepare a comprehensive plan for these areas. Consistent with the standards set forth in the Goal requirements, this Plan Element identifies a beach and dune planning area and establishes policies and permitted uses.

## **BEACHES AND DUNES PLANNING AREA**

Coastal areas subject to this planning goal's requirements include beaches, active dune forms, recently stabilized dune forms, older stabilized dune forms and interdune forms. The extent of these landforms in Douglas County is shown on the Beaches and Dunes study area maps located within this element.

## **Findings/Inventory**

Major reports on beach and dune landforms prepared by the Forest Service, the Soil Conservation Service, DLCD, the Oregon Coastal Zone Management Association, the Oregon Department of Geology and Mineral Industries and the U.S. Geological Survey identify and describe:

1. Land ownership and land use.
2. Existing and projected use, development and economic activity on the beach and dune landforms.
3. The geologic nature and stability of the beach and dune landforms.
4. Patterns of erosion, accretion and migration.
5. Storm and ocean flood hazards.
6. Areas of significant biological importance.
7. Groundwater potential of the dune aquifer.

Information pertinent to this plan is summarized in the following list of findings.

1. The major portion of the beaches and dunes planning area lies inside the Dune National Recreation Area (NRA). The portions outside the NRA are the Wildwood Drive Vicinity, Umpqua Lighthouse State Park, the area between the two south jetties (U.S. Army Corp of Engineers), Ziolkouski Beach (Douglas County Parks Department) and a small amount of private land contiguous to the Discovery Point Resort.
2. The Dunes NRA is managed by the Siuslaw National Forest to protect its natural, aesthetic, recreational and wildlife values. Consistent with Congressional intent and the management plan now in effect (1994, Oregon Dunes National Recreational Area Management Plan),

Douglas County has designated the land administered by the Siuslaw National Forest as Resource Conservation Shorelands and the private lands of the Inland sector as Rural Conservation Shorelands.

3. Umpqua Lighthouse State Park, and Ziolkouski Beach are managed for public access and recreation.
4. The vicinity of Wildwood Drive, Discovery Point Resort and a single parcel between State Highway 101 and Tahkenitch Lake are identified as irrevocably committed to non-forest and non-agricultural uses in the Douglas County Committed Lands Inventory.

The private lands around and including the Discovery Point Resort are predominately commercial providing lodging and other services too recreationists using the lower Umpqua Basin. This area is served by public sewer and water and all lots of record are contiguous to a County road.

Wildwood Drive provides access to a number of rural residences and lots of record. These homes are on private water and on-site sewage disposal systems.

The parcel between State Highway 101 and Tahkenitch Lake includes a boat moorage and launching facilities.

5. It is expected that future residential and commercial development which takes place in the dune areas will be in the vicinity of Wildwood Drive, the Discovery Point Resort and the committed site between State Highway 101 and Tahkenitch Lake.

The carrying capacity for residential development in the Wildwood Drive area is largely determined by the restrictions on private on-site sewage systems established by the Oregon Department of Environmental Quality. The Douglas County Committed Lands Study indicates that sand dune encroachment is a possible hazard to further development. The majority of parcels within the Discovery Point Resort area have been physically developed, however, this area may experience additional future development due to the area's proximity to the beach, Winchester Bay, the Umpqua Lighthouse and to the presence of public water, sewer and roads.

6. Storm and ocean flood hazards are described in the Element of this Plan addressing "Air, Noise and Land Resources Quality and Areas Subject to Natural Disasters and Hazards". Since Douglas County has no beach front development, ocean flood hazards are greatest to structures on the shorelands of the estuary. This is because, on occasion, high incoming tides in combination with storm surge will restrict large winter flows of the Smith and Umpqua Rivers causing both tidelands and low lands behind protective dikes to flood. The areas in coastal Douglas County subject to this danger have been mapped by the Oregon Department of Geology and Mineral Industries in Bulletin 87: Environmental Geology of Western Coos and Douglas Counties, Oregon (1975).
7. The beaches and dunes in Douglas County are inhabited with a large variety of wildlife and fish. Birds are the most numerous. Although less conspicuous, a large number of mammals inhabit the area; also, game and food fish are abundant.

These areas are used by several species of wildlife considered or suggested as being endangered or peripheral in Oregon or the Nation. Five of these species, bald eagle, osprey, snowy plover, common egret and the whitefooted vole, are of special concern

because mans activities within the area could have a detrimental effect on them. However, since most of the area in the Dunes NRA is programmed to remain undeveloped this conflict will be held to a minimum.

Critical wildlife habitats on the beaches and dunes in Douglas County are identified in the Beaches and Dunes Handbook for the Oregon Coast prepared by the Oregon Coastal Zone Management Association, Inc. (1979). The areas identified are Tahkenitch Spit and the North Spit of the Umpqua River from Three Mile Creek to the North Jetty. Tahkenitch Spit is identified as one of the four most important nesting areas for the snowy plover on the Oregon Coast (the status of the species is reported in the Natural Features Element). The North Spit of the Umpqua River has been identified as habitat for the Snowy Plover and as potential habitat for two species of rare dune plants: silvery phacelea (*Phacelia argentea*) and pink sand-verbena (*abronia umbellata*).

8. The U.S. Geological Survey in Evaluation of Water Resources in the Reedsport Area, Oregon have estimated the quantity and quality of groundwater present in the dune aquifer west of Clear Lake. They indicate that the dune sand-marine terrace aquifer is the only geologic unit in the Reedsport area with the potential to supply large quantities of ground water. The total recharge to the dune aquifer in the four square mile area between the Umpqua River and the Coos County line is conservatively estimated to be more than 10 million gallons per day. Actual yield would depend on the rate at which individual wells could be pumped and on well spacing. The only identified ground-water quality problem is excessive iron reported in water from several privately owned wells south of Clear Lake. More information is needed to identify the depth zone where excessive iron occurs and also its lateral extent.

Information on the groundwater resource in the beach and dunes area north of the Umpqua River but south of the Douglas County line was not found. This inventory shortfall is not viewed as serious, given the legal restrictions on tapping the dune aquifer within the Dunes NRA and the lack of potential users in that part of the County.

9. With the exception of the north and south jetties which protect the entrance to the Umpqua River; the former International Paper ocean outfall that once served the International Paper Mill located along the Gardiner waterfront (both which have been hardened) and the access road and three public parking facilities south of the Umpqua River (which qualify for beachfront protective structures), there were no beach front structures in Douglas County on January 1, 1977. (See map of Beachfront Development existing on January 1, 1977).

10. The Lane County Coastal Goals Compliance Report describes the geologic nature and stability of beach and dune landforms. Since the beach and dune landforms in Lane County, south of the Siuslaw entrance, are nearly identical to those in Douglas County, the Lane County descriptions are adopted here:

The Oregon Natural Heritage Information Center describes the stability of beach and dune landforms. The "An Inventory and Natural Areas Assessment of the Umpqua Lighthouse Study Area" are also adopted here. This site specific inventory and map was used to update the existing beach and dune landform classifications within the Beaches and Dune Element.

- a. Beaches are gently sloping areas of unconsolidated material (e.g., sand, gravel and cobbles) that extend landward from the low-water line to the uppermost line of

effective wave or tidal action. (Mapped as Beaches, BT)

- (1) Characteristics, size, shape and slope are subject to change due to influences such as storms, sand supply, littoral drift (or the interruption of it), landward occurrences, and other natural or man-induced occurrences;
- (2) Subject to seasonal profile changes, instability, ocean flooding, tsunamis and erosion;
- (3) Critical habitat for some species;
- (4) Often highly aesthetic;
- (5) The beach budget (loss or gain) in Douglas County is essentially zero at the present time. Because beaches are in the coastline's primary line of defense against storm wave impact, any sand removal results in an increased threat to shoreline development.
- (6) Highly tolerant of most transient activities.
- (7) The accumulation of drift logs on the upper beach plays a major role in the development of foredunes and absorbs much of the impact of storm waves.

b. The Foredune is the first prominent ridge of sand situated immediately above and parallel to the beach. (Mapped as FD, H1-4)

- (1) May be active (sparsely vegetated) or conditionally stable (sufficient vegetative cover to eliminate wind erosion).
- (2) All foredunes are subject to wave overtopping and ocean undercutting.
- (3) Conditionally stable foredunes are wind-stable. They may also reduce storm wind and, to a limited degree, debris impact to immediately adjacent inland sites.
- (4) Conditionally stable foredunes do not provide a serious defense against storm waves. They are highly erodible by storm waves.
- (5) All foredunes are impermanent landforms. Their existence and location are determined and may be changed by offshore and nearshore current and topographic changes, ocean storms and vegetative destruction.
- (6) European beach grass, the primary vegetative stabilizer of foredunes in Douglas County, is easily damaged and destroyed by concentrated pedestrian and vehicle traffic. Resultant blowouts can threaten inland sites with sand inundation and serious ocean flooding.

c. Active Dune Forms migrate, grow and diminish primarily according to the force of wind and supply of sand. Active dunes include all open sand (free of vegetation) areas and active (sparsely vegetated) hummocks and foredunes. (Mapped as 0A, TW, TDA, HW, HA, PA, PRA, PRX or UD-3).

- (1) These landforms are significantly free of vegetative cover. Because they are formed almost wholly of sand, changes in the strength, duration and direction of the coastal winds cause significant modifications to the topography of these landforms. Many natural or man-induced changes, such as fire, excavation or trail cutting can result in highly mobile sand dunes and create hazards to developments such as inundation of structures, settling and cracking of foundations and changes in the water table. Conversely, active dunes can become conditionally stabilized due to either natural or human action;
  - (2) The lee (downwind) slope of an active dune is commonly characterized by being at or near the maximum stable angle of repose, although over steepening and consequent slumping is not unknown, particularly in the larger dune forms.
- d. Recently Stabilized Dune Forms have sufficient vegetation to be impervious to the erosive forces of wind but exhibit little, if any, soil development or cohesion of underlying sand. This category includes soilless dunes recently stabilized with beach grass and younger stabilized dunes which possess forest communities and some soil development but lack consolidation of underlying sands. Conditionally Stable Dunes are safe from wind erosion if the vegetative cover is maintained. (Mapped as HWS, DS/TF, DSA/TF, DSA/TFS, DSA/SFR, PRS/TF, PRS/SFR, SC, RS, or H2-3, S4-3 or S4-4 )
- (1) Dunes conditionally stabilized with beach grass are sensitive to fire because this grass is very dry and flammable when mature.
  - (2) Intense and concentrated pedestrian and ORV traffic can destroy the stabilizing vegetative cover.
  - (3) "Blowouts" or dune reactivation can occur where vegetation is destroyed or excavation sites are not properly stabilized.
  - (4) Major disturbances of ground cover can lead to large-scale property damage from large marauding sand dunes.
  - (5) The lee slopes of recently stabilized dunes are commonly at or near their maximum angle of repose. These slopes are extremely susceptible to slumping and failure if disturbed.
  - (6) Exaggerated shaking can result during earthquakes.
- e. Older Stabilized Dune Forms exhibit a poor to moderately well developed soil, semi-cemented underlying sand and often a diverse forest cover. (Mapped as DS/TFO, DS/TFC, DS/TFS, DS/SFR, DG-4, F1-2(A), F2-1(A), F2-2(B), F2-3(C), F3-1(A), F5-2(B), F5-3(B), F6-3(B), F8-3(B), F9-3(B), F10-3(B), F11-2(B), F12-3(C), F14-1(B), F14-2(B), F15-1(B), F16-3(C) or S6-4)
- (1) These landforms have extensive vegetative cover, moderate soil development and semi-consolidated underlying sands (compression strength commonly greater than 1-1/2 tons/square foot).

- (2) This formation is commonly underlain by buried soils, peat deposits, iron bands and clay lenses which can prove a serious detriment to the downward percolation of groundwater often resulting in a perched water table and surface ponding.
  - (3) Although it will commonly hold a cliff when cut, this dune is subject to slumping, particularly when wet.
  - (4) The older stabilized dune may be overlain by and interspersed with layers of loose sand. It is commonly underlain by such unconsolidated sands as well. When exposed, this sand will be activated and could migrate into developed areas.
  - (5) Unpredictable earthquake response.
  - (6) Older, stabilized dunes suffer more severe impacts from vegetation disturbance (due to damage to the extensive network of root systems) than the younger stabilized dunes. Furthermore, they are significantly more difficult and expensive to revegetate. The preexisting vegetation community cannot be replanted but must return successionaly.
  - (7) Although vegetated, the lee (downwind) slopes of stabilized dunes can be considered to be in critical equilibrium in many cases. Slope slumping may occur if developed.
  - (8) Some older stabilized dunes have previously advanced over swamps, tidal flats and peat bog deposits, all of which are extremely compressible even if they are several feet below the surface. Development may result in uneven settlement.
  - (9) In many cases, this dune is in the path of advancing dunes.
- f. Interdune Forms include: (1) the broad near shore deflation plain; (2) upland interdunal plain areas which commonly exhibit a high water table; and (3) occasionally wet interdunal swales. (Mapped as DG, DGL, DT, DST, or H4-2)
- (1) The near shore deflation plain:
    - (a) Low, flat strip just inland from and adjacent to the foredune, and at an elevation just over mean sea level;
    - (b) Created by wind scouring of sand particles down to the level of the summer water table. The return of the higher winter water table will create standing water in this zone for a few weeks or possibly several months of the year;
    - (c) Depending on the length of time the area is submerged in the winter, the vegetation community may consist of grasses, marsh communities or shrubs;
    - (d) May experience ocean flooding;
  - (2) Upland interdunal plain:
    - (a) Broad, flat areas which may occur a mile or more inland from the shore and may exist at elevations of up to 80 feet or greater. The ground water table is typically high.

- (b) Formed in the wake of successive easterly advancing dune ridges where the deflation surface (the upper surface of the groundwater) is relatively high and probably increases in height with the passage of each successive dune ridge.
  - (c) Commonly exhibits a forest community which may belie the locally high water table.
- (3) Occasionally wet interdune:
- (a) Occur in swale areas between dune crests or ridges;
  - (b) Are considerably less extensive than most deflation or upland interdune plain areas.
  - (c) May contain standing water in intermittent years or intermittently throughout the year.
  - (d) Commonly exhibit marshy or low shrubby vegetation.
- (4) Surface and groundwater movement in these areas is relatively unobstructed and such movement is necessary for the normal functioning of these areas.
- (5) Liquification and severely exaggerated shaking can create hazardous conditions during earthquakes.

## BOUNDARIES AND CLASSIFICATIONS

Beach and dune landforms in Douglas County have been classified and mapped by the U.S. Forest Services and the U.S. Soil Conservation Service (Maps 1 - 4). In 2003, a special study was completed by Oregon Natural Heritage Information Center for the Umpqua Lighthouse Study Area (Map 5). Unfortunately, each has used a different nomenclature for dune forms. The Statewide Planning Goal for beaches and dunes establishes planning criteria using still another classification system. Finally, the Oregon Coastal Zone Management Association, commissioned to formulate management criteria for beach and dune forms, developed a format which differs again from those advanced earlier. Given that the U.S. Forest Service and the Oregon Natural Heritage Information Center have prepared detailed maps of the beach and dune forms in Douglas County, the County will use those maps to determine dune boundaries and dune forms. The Beach and Dune Classification Conversion Table facilitates conversions among the classification systems that follow on Maps 1 - 5.

**(Insert Map)**

**(Insert Map)**

**(Insert Table)**

**(Insert Map)**

**(Insert Map)**

**(Insert Map)**

**(Insert Map)**

**BEACH AND DUNE CLASSIFICATION CONVERSION TABLE**

	<b>LCDC Dune Form Goal</b>	<b>NRA Classification</b>	<b>SCS CLASSIFICATION</b>	<b>NATIONAL HERITAGE</b>
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OCZMA System	Designations	Systems	Symbols	Symbols
Beach	Beach	Beach	B	BT
Foredune	Active/recently stabilized	Forward	FD, FDA	H1-4
Interdune Forms				
Deflation Plain Occasionally Wet Interdune	Interdune Forms Interdune Forms	"D" Series "D" Series	WDP	H4-2
Vegetated Interior Dunes				
Hummock Surface Stabilized Older Stable Dunes Parallel Ridge	Active/recently stabilized Recently stabilized Older stabilized Recently stabilized	"H" Series "DS" Series "DS" Series HWS	IFD	H2 & S4 Series F#'s, S6 & DG Series
Open Sand Interior Dune				
Transverse-ridge Oblique-ridge	Active Active	"T" Series OA	OS OS	
Recently reactivated:				
Blow Out Parabola	Active Active	-- PA	-- OS	

# MANAGEMENT POLICIES

The following policies provide criteria upon which land use decisions concerning the areas mapped as beaches and dunes are to be made. Both general policies and policies specific to each type of beach and dune landform are established. These policies are derived from State Goal requirements, the Final Report of the Oregon Coastal Conservation and Development Commission, the Beaches and Dunes Handbook for the Oregon Coast and Lane County's Coastal Goals Compliance Report.

## General Policies

1. The County shall base decisions on plan amendments, ordinances and land use actions in beach and dune areas, other than older stabilized dunes, on specific findings that shall include:
  - a. The type of use proposed and the effects it might have on the site and adjacent areas;
  - b. Temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;
  - c. Methods for protecting the surrounding area from any adverse effects of the development; and
  - d. Hazards to life, public and private property, and the natural environment which may be caused by the proposed use.
2. Residential, commercial and industrial structures are prohibited on beaches, active foredunes, on other foredunes which are conditionally stable and that are subject to ocean undercutting or wave overtopping, and on interdune areas (deflation plains) that are subject to ocean flooding. Other development in these areas shall be permitted only if the findings required in general policy 1 are presented and it is demonstrated that the proposed development:
  - a. Is adequately protected from any geologic hazards, wind erosion, undercutting, ocean flooding and storm waves; or is of minimal value; and,
  - b. Is designed to minimize adverse environmental effects.
3. The County shall require that all proposed developments in beach and dune areas are constructed in a manner which prevents erosion. Erosive actions include, but are not limited to, the loss of desirable vegetation (including inadvertent loss by moisture loss or root damage), the exposure of stable and conditionally stable areas to erosion, and construction of shore structures which modify current or wave patterns leading to beach erosion.
4. Developments in the beaches and dunes area must protect the groundwater from drawdown which would lead to loss of stabilizing vegetation, loss of water quality, or intrusion of salt water into water supplies. Building permits for single-family dwellings are exempt from this requirement if appropriate findings are provided in the Comprehensive Plan

or at the time of subdivision approval.

5. As necessary, permits for beachfront protective structures in conjunction with the access road and three public parking facilities south of the Umpqua River existing prior to January 1, 1977, shall be issued.

### **Policies for Beaches (Mapped as Beaches, BT)**

1. Development on the beach is not allowed, with the exception of certain features such as necessary jetties or beachfront protective structures.
2. Permits for beachfront protective structures shall be issued only for those developments that existed on January 1, 1977. Criteria for the issuance of such permits shall include, at least, that:
  - a. Visual impacts are minimized;
  - b. Necessary public access to the beach is maintained;
  - c. Negative impacts on adjacent property are minimized as much as possible;
  - d. Long-term or recurring costs to the public are avoided; and
  - e. Riprap materials must meet Army Corps of Engineers strength and design standards.
3. Mining of sand from the beach for commercial uses shall not be allowed.
4. Certain access points to beaches shall be closed to off-road vehicle traffic, seasonally or temporarily, upon findings by the appropriate agency that such closure is necessary.

### **Policies for Foredunes (Mapped as FD, H1-4)**

1. Because the foredune is a highly impermanent landform and subject to a number of extreme hazards, no permanent development will be allowed here.
2. Breaching of foredunes shall be allowed only to replenish sand supply in interdune areas or on a temporary basis in an emergency, and only if the breaching and restoration after breaching is consistent with sound principles of conservation.
3. Public access across the foredune shall be permitted at locations designated in the Final Environment Statement, Oregon Dunes National Recreation Area Management Plan and between the training and south jetties.

### **Policies for Active Dune Forms (Mapped as 0A, TW, TDA, HW, HA, PA, PRA, PRX or UD-3)**

1. Because of the highly unstable nature of these landforms, development will be prohibited where they occur.

### **Policies for Recently Stabilized Dune Forms**

**(Mapped as HWS, DS/TF, DSA/TF, DSA/TFS, DSA/SFR, PRS/TF, PRS/SFR, SC, RS, H2-3, S4-3 or S4-4)**

1. Development shall result in the least topographic modification of the site that is reasonable and possible.
2. Development shall not result in the clearance of natural vegetation in excess of that which is necessary for the actual structures, required access, fire safety requirements and the required septic or sewage disposal system. Parcels which exhibit vegetation-free areas suitable for development should utilize such areas for the building site where feasible. Areas which exhibit excessive vegetation removal shall be replanted as soon as possible.
3. Sand stabilization is required of the developer or owner: (1) using temporary stabilization techniques during all construction phases; and (2) through an ongoing maintenance program, including preliminary revegetation with beachgrass (or other species recommended by a recognized expert), fertilization and later plantings of appropriate secondary successional species at the appropriate time. Successional species reduce the extreme fire hazard associated with mature beachgrass.
4. In assessing new development, the cumulative effect of the combination of existing development, along with that proposed, must be considered in assessing the feasibility of the new development.

**Policies for Older Stabilized Dune Forms**

**(Mapped as DS/TFO, DS/TFC, DS/TFS, DS/SFR DG-4, F1-2(A), F2-1(A), F2-2(B), F2-3(C), F3-1(A), F5-2(B), F5-3(B), F6-3(B), F8-3(B), F9-3(B), F10-3(B), F11-2(B), F12-3(C), F14-1(B), F14-2(B), F15-1(B), F16-3(C) or S6-4 )**

1. Although relatively stabilized, great care must be exercised with any human activity in the older stabilized dune areas. The variability and inconsistency of substrate characteristics can lead to a wide variety of hazards if developed, including slumping, reactivation, septic tank failure, subsequent danger of groundwater pollution and uneven settling.
2. Slope is an important factor in respect to septic drainfields, roads, excavations and especially landslides. This factor should be specifically addressed by both the developer and the reviewing body.
3. Significant structural loads or structural fills to be placed on dune areas where compressible subsurface areas are suspected should be allowed only after a thorough foundation check and positive findings are reported.
4. Development shall result in the least topographic modification of the site as is reasonable and possible and shall avoid the steeper slopes.
5. Development shall not result in the clearance of natural vegetation in excess of that which is necessary for the actual structure(s), required access, fire safety requirements and the required septic or sewage disposal system. Parcels which exhibit vegetation-free areas suitable for

development should utilize such areas for building site where feasible. Areas which experience excessive vegetation removal shall be replanted as soon as possible.

6. Due to the extreme porosity of the sand leaks in buried fuel oil or gasoline tanks could present a serious threat to the quality of the groundwater in the dunal aquifer. No new buried fuel tanks shall be permitted without a County inspection to determine proper placement and design standards so that water resources are protected.

## **Policies for Interdune Forms (Mapped as DG, DGL, DT, DST, or H4-2)**

1. Due to the severe limitations of the near shore deflation plain, and in order to protect the quality of the groundwater and the dunal aquifer, development, except for development of minimal value designed to minimize adverse environmental impacts, shall be prohibited.
2. Due to the extreme porosity of the sand, leaks in buried fuel oil or gasoline tanks could present a serious threat to the quality of the groundwater in the dunal aquifer. Buried fuel tanks in the near shore deflation plain shall be prohibited. No new buried fuel tanks shall be permitted without a County inspection to determine proper placement and design standards so that water resources are protected.
3. To assure protection of groundwater and the dunal aquifer, non-sewered residential and other development proposed for the interdune areas other than the near shore deflation plain:
  - a. May require a specially designed waste treatment and disposal device;
  - b. Shall not result in the clearance of existing vegetation in excess of that which is necessary for the dwelling unit, required access, fire safety requirements and the required septic or sewage disposal system. If possible, septic drain lines should be placed among existing vegetation to avoid unnecessary vegetation removal. Parcels which exhibit vegetation-free areas should utilize such areas for the building site where feasible. Sites which experience extensive vegetation removal shall be replanted as soon as possible.

## **POLICY IMPLEMENTATION/PERMITTED USES**

Specific uses which may be permitted outright or with conditions on each type of coastal beach and dune landform are listed in Douglas County's Land Use and Development Ordinance. The list of uses is based in part on an interpretation of the provisions of Statewide Planning Goal 18 on Beaches and Dunes. The listing also takes into consideration existing uses and uses evaluated in the Beaches and Dunes Handbook for the Oregon Coast (OCZMA, 1979) and the 1994, Oregon Dunes National Recreational Area Management Plan. The listed uses and activities are consistent with the management policies for each landform stated above. The listing is intended to provide direction for the preparation and revision of the County's zoning ordinance. The ordinance will specify permitted and conditionally permitted uses and identify the criteria and standards to be applied when considering development permits. Notice that permitted and conditionally

permitted uses in the Beaches and Dunes area delineated in the maps within this element must meet general policies for shorelands, as well as general policies for beaches and dunes. In addition, these uses must meet policies specific to the relevant land form.

# APPENDIX A

## PRELIMINARY WETLAND-UPLAND BOUNDARY MAPPING FOR STEAMBOAT ISLAND, DOUGLAS COUNTY, OREGON

James W. Good  
Extension Coastal Resources Specialist  
Oregon State University Extension Sea Grant Marine Advisory Program

In March 1983, Douglas County Planning Department requested Extension Oceanography assistance in determining the boundary between wetlands and uplands on Steamboat Island. Anticipating a need to develop a statewide training program for wetlands boundary determination, Extension agreed to analyze aerial photography and collect field data to establish an approximate boundary. The field work was done on May 14 and 15, 1983, by Dr. Ted Boss and Jim Good (Oregon State University) along with planners Jeff Vander Kley and Keith L. Cubic (Douglas County). This brief report explains the methods, use and limitations of the attached maps.

### Methods

Color infrared photographs (1:12,000) were ordered from the Corps of Engineers and compared with Douglas County topographic maps of Steamboat Island. Two days of field work helped determine general plant communities and boundaries. Typical vegetation gradients were established in the field using vegetation cover by species along transects. The transects started in low marsh and proceeded through transition marsh to upland. A modified multiple occurrence method (Frenkel et al., 1978) was used to determine boundaries, using the attached indicator species list from Eilers, et al. (undated). Using field maps and photo interpretation, an approximate upper limit of marsh (ULM) was mapped. The lower limit of transition marshes is not shown. Transition marshes were extensive in some areas, very narrow in others.

### Results and Interpretation

Map 1 shows the approximate ULM as determined in this study (green line). Upland areas are labeled with the symbol U. Map 1 also shows the approximate Mean Higher High Water line (MHHW) (blue line) at 3.65' above National Geodetic Vertical Datum (NVGD). NVGD is the map topography reference datum; MHHW relative to Mean Lower Low Water (MLLW) is 6.7'.

Map 2 shows the ULM on a copy of the 1:12,000 aerial photograph used for interpretation on this project. Both maps are suitable for long-range planning only. The ULM represents an approximate boundary between estuarine wetlands and coastal shorelands as defined by the LCDC coastal planning goals. Site-specific analyses are needed prior to individual development actions on the island.

Vegetation on Steamboat Island (see attached list) is indicative of a highly disturbed environment. This is due to cattle grazing and disposal of dredged material there. There are many introduced species and cropping by cattle is heaving in some areas. The low sedge marsh is one of the largest in Oregon. Much of the area classified as upland in this survey was previously classified as immature high marsh (Akins and Jefferson, 1972). This was probably due to *Festuca* spp. (an upland grass species) being misidentified as *Deschampsia cespitosa* (tufted hairgrass--a high marsh indicator).

### Literature cited

Akins, G.J. and C.A. Jefferson, 1973. Coastal wetlands of Oregon. Oregon Coastal Conservation and Development Commission.

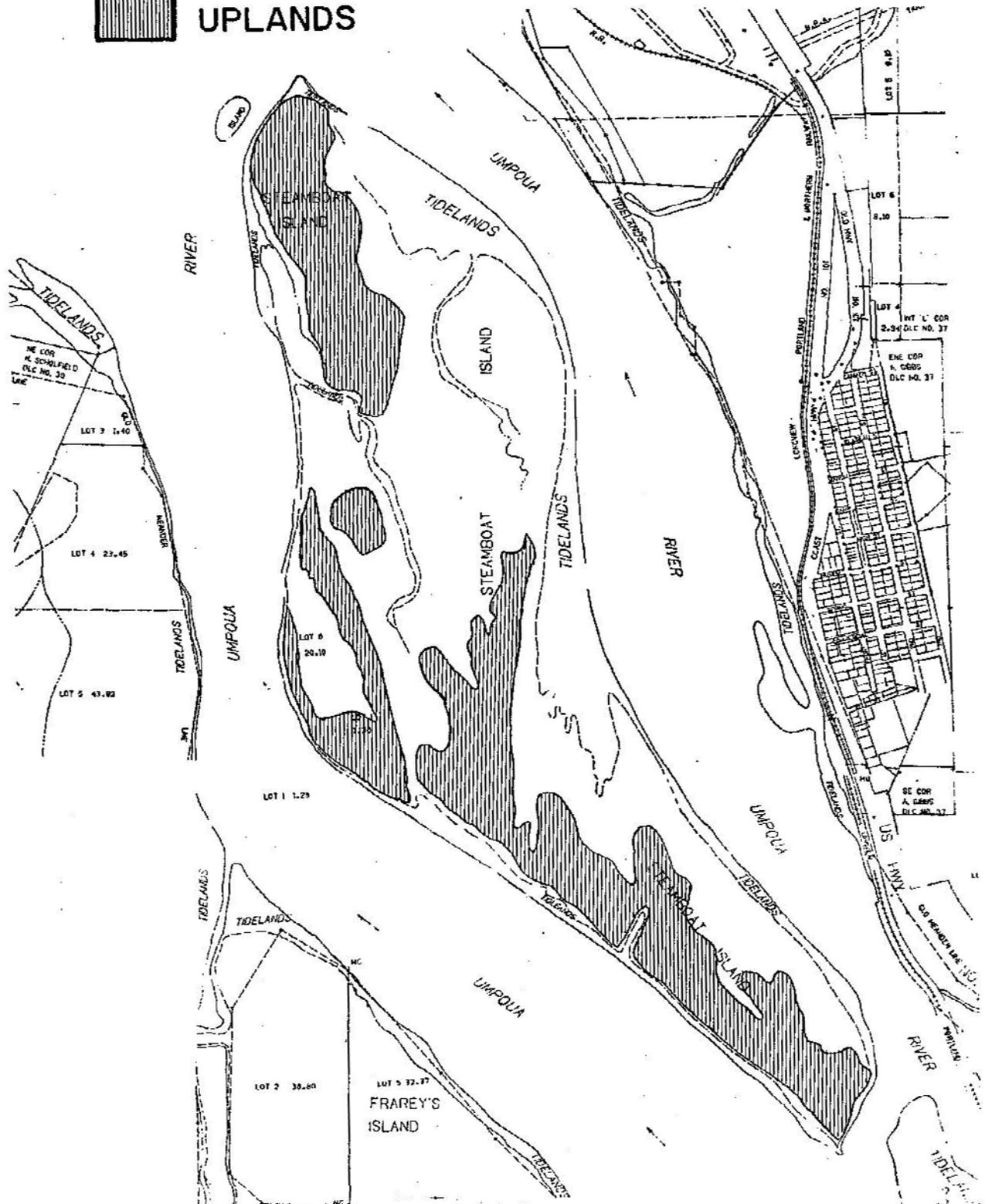
Eilers, H.P., A. Taylor and W. Sanville. Undated. Vegetative delineation of coastal salt marsh boundaries: An evaluation of methodology. Environmental Research Laboratory, U.S. Environmental Protection Agency, Corvallis, Oregon.

Frenkel, R.E., T. Boss and S.R. Schuller, 1978. Transition zone vegetation between intertidal marsh and upland in Oregon and Washington. Department of Geography, Oregon State University, Corvallis, Oregon.

Preliminary Wetland - Upland Boundary Mapping for Steamboat Island



**UPLANDS**



Tentative plant species list of Steamboat Island, Umpqua River, Oregon.

Compiled by Theodore R. Boss 5/14/83

\*species with significant cover

## WETLAND PLANT SPECIES

<u>Scientific Name</u> <sup>1</sup>	<u>Acronym</u>	<u>Common Name</u> <sup>1</sup>
<i>Atriplex patula</i>	Atpa	spear orache
<i>Carex lyngbyei</i> *	Caly	Lyngby's sedge
<i>Carex obnupta</i>	Caob	slough sedge
<i>Cotula coronopifolia</i>	Coco	brass buttons
<i>Distichlis spicata</i> *	Disp	salt grass
<i>Eleocharis palustris</i> *	Elpa	common spike-rush
<i>Lilaeopsis occidentalis</i> *	Lioc	lilaeopsis
<i>Oenanthe sarmentosa</i>	Oesa	water parsley
<i>Scirpus americanus</i> *	Scam	three-square bullrush
<i>Scirpus validus</i> *	Scva	soft-stem bullrush
<i>Typha</i> spp	--	cattail

## NON-INDICATOR PLANT SPECIES<sup>2</sup>

<i>Agrostis alba</i> *	Agal	redtop
<i>Juncus balticus</i> *	Juba	Baltic rush
<i>Juncus effusus</i>	Juef	soft rush
<i>Potentilla pacifica</i> *	Popa	Pacific silverweed
<i>Salix</i> spp	--	willow
<i>Trifolium wormskjoldii</i> * <sup>3</sup>	Trwo	springbank clover

## UPLAND PLANT SPECIES<sup>4</sup>

<i>Alnus rubra</i> <sup>5</sup>	Alru	red alder
<i>Angelica lucida</i>	Anlu	sea-watch
<i>Cirsium</i> spp*	--	thistle
<i>Cytisus scoparius</i> *	Cysc	Scotch broom
<i>Festuca</i> spp*	--	fescue
<i>Holcus lanatus</i>	Hola	velvet grass
<i>Lonicera involucrata</i>	Loin	black twinberry
<i>Picea sitchensis</i> <sup>5</sup>	Pisi	Sitka spruce
<i>Plantago lanceolata</i>	Plla	ribgrass

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<sup>1</sup>Nomenclature of scientific and common names follows Hitchcock, 1973

<sup>2</sup>Non-indicator refers to plant species that may be found in both wetlands and uplands, and is indicative of intertidal salt marshes. Such species may be dominant or sub-dominant in freshwater wetlands (Boss, 1983).

<sup>3</sup>Some species list refer to this species as an upland plant, but at best it is an intertidal salt marsh non-indicator species, and in some cases is subdominant in freshwater wetlands in the coastal zone (Boss, 1983).

<sup>4</sup>Not all upland plants identified on 5/14/83 are listed - only those that had significant cover and/or had high visibility on the island.

<sup>5</sup>Alru and Pisi, in some cases are found in freshwater wetlands within the coastal zone (Boss, 1983).

Rubus discolor*	Rudi	Himalayan blackberry
Rubus laciniatus	Rula	evergreen blackberry
Rumex acetosella*	Ruac	sheep sorrel
Rumex occidentalis	Ruoc	western dock
Senecio jacobaea*	Seja	tansy ragwort

Sources Cited

Boss, T.R. 1983. The vegetation ecology and net primary productivity of selected freshwater wetlands in Oregon. Ph. D. thesis, Oregon State University, Corvallis, Oregon.

Hitchcock, C.L. 1973. The Flora of the Pacific Northwest. University of Washington Press, Seattle, Washington.

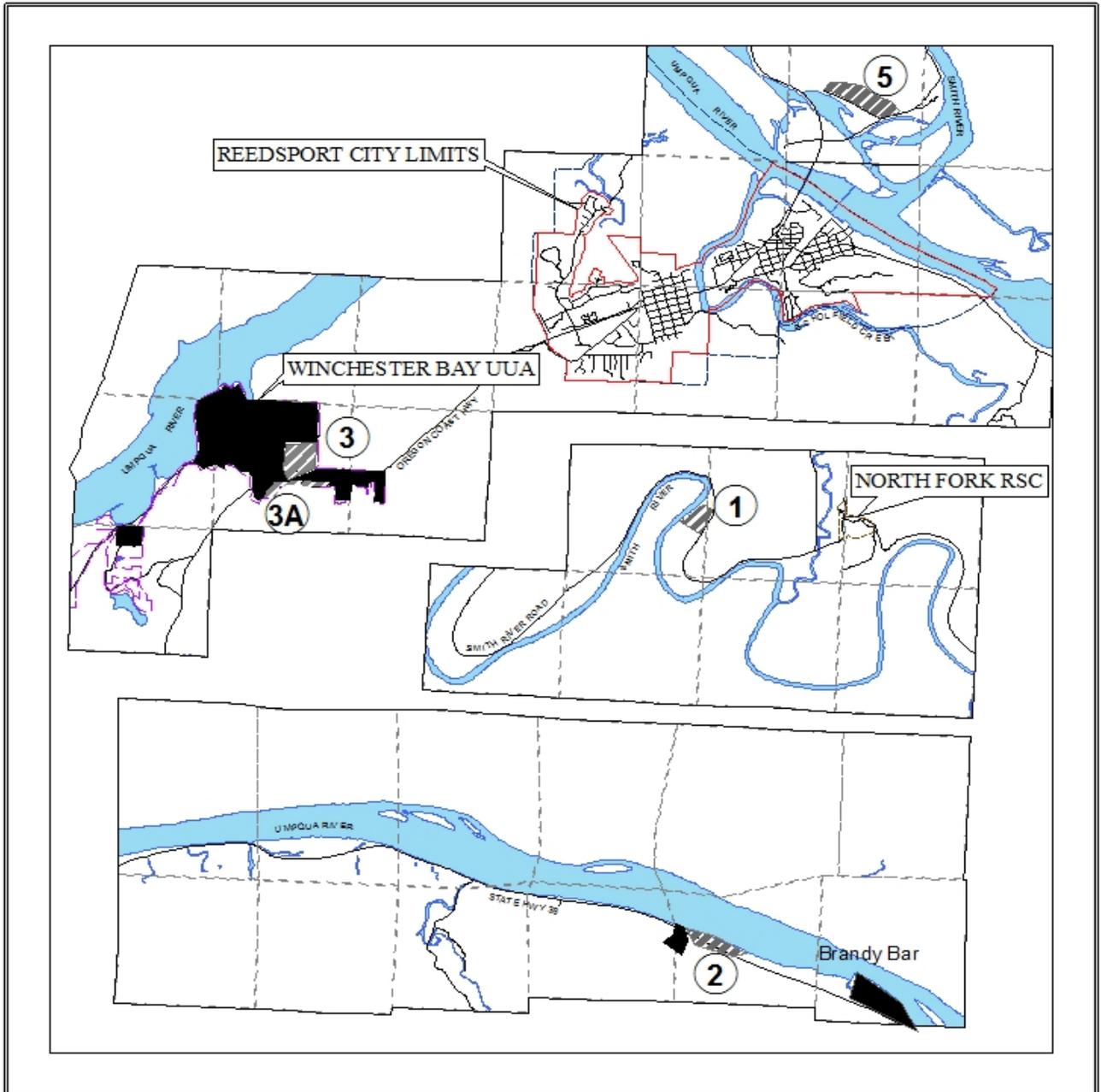
## APPENDIX B

### ACKNOWLEDGED COASTAL EXCEPTIONS

Prior to completion of this document, the Board of Commissioners adopted separate Goal 2 exceptions for five sites located in the coastal area of Douglas County. Those exceptions, identified as Coastal Sites 1 through 5 in the Douglas County Exceptions and Non-Exceptions document, were acknowledged by the Land Conservation and Development Commission (LCDC) on December 21, 1982. As with other acknowledged exceptions, the five coastal sites are an integral part of the Douglas County Comprehensive Plan. Coastal exception site 4 was removed per Ordinance 88-11-4. The following table and map identifies the land use designation, acres involved and location for each coastal exception site. For additional information, refer to the Douglas County Exceptions and Non-Exceptions Document as revised October 6, 1982.

### COASTAL PLANNING AREA EXCEPTIONS

<u>SITE NO.</u>	<u>DESIGNATION</u>	<u>ACRES</u>
1	Industrial	15
2	Tourist Commercial	9
3/3A	Medium to Low Density Residential	32
5	Industrial with Rural Other Shorelands Overlay	26



- Reedsport City Limits
- Reedsport UGB
- Winchester Bay UUA
- North Fork RSC
- Roads
- Waterways
- Exception Areas
- Committed Areas

### COASTAL EXCEPTIONS

Note: Coastal Exception Site 4 was removed per Ordinance 88-11-4



July 2014



Produced by Douglas County Planning Department, Oregon

Disclaimer: This map is for convenience only and is only valid for the date produced. Although reasonable attempts are made to maintain this map as accurate as possible, Douglas County and other participating entities will in no way be liable for any inaccuracies, inconsistencies, errors, omissions, or other deviations in this map. For updated information, please see the official information located at the Douglas County Planning Department.

## **APPENDIX C**

### **DEFINITIONS**

**ACCRETION:** The build-up of land along a beach or shore by the deposition of waterborne or airborne sand, sediment, or other material.

**ANADROMOUS:** Referring to fish, such as salmon, which hatch in fresh water, migrate to ocean waters to grow and mature, and return to fresh waters to spawn.

**AVULSION:** A tearing away or separation by the force of water. Land which is separated from uplands or adjacent properties by the action of a stream or river cutting through the land to form a new stream bed.

**BEACH:** Gently sloping areas of loose material (e.g., sand, gravel, and cobbles) that extend landward from the low-water line to a point where there is a definite change in the material type or landform, or to the line of vegetation.

**BEACHES AND DUNES USES:** Uses shall be based on the capabilities and limitations of beaches and dune areas to sustain different levels of use or development, and the need to protect areas of critical environmental concern, areas having scenic, scientific, or geological importance, and significant wildlife habitat.

**BENTHIC:** Living on or within the bottom sediments in water bodies.

**BRIDGE CROSSINGS:** The portion of a bridge spanning a waterway not including supporting structures or fill located in the waterway or adjacent wetlands.

**BRIDGE CROSSING SUPPORT STRUCTURES:** Piers, piling, and similar structures necessary to support a bridge span but not including fill for causeways or approaches.

**COASTAL LAKES:** Lakes in the coastal zone that are bordered by a dune formation of that have a direct hydrologic surface or subsurface connection with saltwater.

**COASTAL SHORELANDS:** Those areas immediately adjacent to the ocean, all estuaries and associated wetlands, and all coastal lakes.

**COASTAL STREAM:** Any stream within the coastal zone.

**COASTAL WATERS:** Territorial ocean waters of the continental shelf, estuaries and coastal lakes.

**COASTAL ZONE:** The area lying between the Washington border on the north to the California border on the

south, bounded on the west by the extent of the State's jurisdiction and the east by the crest of the coastal mountain range, with the exception of: a) the Umpqua River basin, where the coastal zone shall extend to Scottsburg; b) the Rogue River basin, where the coastal zone shall extend to Agness; and 3) the Columbia River basin, where the coastal zone shall extend to the downstream end of Puget Island.

**CONTINENTAL SHELF:** The area seaward from the ocean shore to the distance when the ocean depth is 200 meters, or where the ocean floor slopes more steeply to the deep ocean floor. The area beyond the State's jurisdiction is the OUTER Continental Shelf.

**DEFLATION PLAIN:** The broad interdune area which is wind scoured to the level of the summer water table.

**DIVERSITY:** The variety of natural, environmental, economic, and social resources, values, benefits and activities.

**DUNE:** A hill or ridge of sand built up by the wind along sandy coasts.

**DUNE, ACTIVE** - a dune that migrates, grows and diminishes from the face of wind and supply of sand, active dunes include all open sand dunes, active hummocks and active foredunes.

**DUNE, CONDITIONALLY STABLE** - a dune presently in a stable condition, but vulnerable to becoming active dune to fragile vegetative cover.

**DUNE, OLDER STABILIZED** - a dune that is a stable from wind erosion, and that has significant soil development and that may include diverse forest cover. They include older foredunes.

**DUNE, OPEN SAND** - a collective term for active, unvegetated landforms.

**DUNE, RECENTLY STABILIZED** - a dune with sufficient vegetation to be stabilized from wind erosion, but with little, if any, development of soil or cohesion of the sand under the vegetation. Recently stabilized dunes include conditionally stable foredunes, conditionally stable dunes, dune complexes and younger stabilized dunes.

**DUNES, YOUNGER STABILIZED** - a wind stable dune with weakly developed soils and vegetation.

**DUNE COMPLEX:** Various patterns of small dunes with partially stabilized intervening areas.

**ECOSYSTEM:** The living and non-living components of the environment which interact or function together, including plant and animal organisms, the physical environment and the energy systems in which they exist. All the components of an ecosystem are interrelated.

**ESTUARY:** A body of water semi-enclosed by land, connected with the open ocean, and within which salt water is usually diluted by freshwater derived from the land. The estuary includes: (a) estuarine water; (b) tidelands; (c) tidal marshes; and (d) submerged lands. Estuaries extend upstream to the head of tidewater, except for the Columbia River Estuary, which by definition is considered to extend to the western edge of Puget Island.

**ESTUARINE ENHANCEMENT:** An action which results in a long-term improvement of existing estuarine functional characteristics and processes that is not the result of a creation or restoration action.

**FILL:** The placement by man of sand, sediment, or other material, usually in submerged lands or wetlands, to create new uplands or raise the elevation of land.

**FLOODPLAIN:** The area adjoining a stream, tidal estuary or coast that is subject to regional flooding.

**FOREDUNE, ACTIVE:** An unstable barrier ridge of sand paralleling the beach and subject to wind erosion, water erosion and growth from new sand deposits. Active foredunes may include areas with beach grass and occur in sand spits and at river mouths as well as elsewhere.

**FOREDUNE, CONDITIONALLY STABLE:** An active foredune that has ceased growing in height and that has become conditionally stable with regard to wind erosion.

**FOREDUNE, OLDER:** A conditionally stable foredune that has become wind stabilized by diverse vegetation and soil development.

**GEOLOGIC:** Relating to the occurrence and properties of earth. Geologic hazards include faults, land and mudslides, and earthquakes.

**HEADLANDS:** Bluffs, promontories or points of high shore land jutting out into the ocean, generally sloping abruptly into the water. Oregon headlands are generally identified in the report on Visual Resource Analysis of the Oregon Coastal Zone, OCCDC, 1974.

**HISTORICAL RESOURCES:** Those districts, sites, buildings, structures and artifacts which have a relationship to events or conditions of the human past.

**HUMMOCK, ACTIVE:** Partially vegetated (usually with beach grass), circular and elevated mounds of sand which are actively growing in size.

**HYDRAULIC:** Related to the movement or pressure of water. Hydraulic hazards are those associated with erosion or sedimentation caused by the action of water flowing in a river or streambed, or oceanic currents and waves.

**HYDRAULIC PROCESSES:** Actions resulting from the effect of moving water or water pressure on the bed, banks and shorelands of water bodies (ocean, estuaries, streams, lakes and rivers).

**HYDROLOGIC:** Relating to the occurrence and properties of water. Hydrologic hazards include flooding (the rise of water) as well as hydraulic hazards associated with the movement of water.

**IMPACT:** The consequences of a course of action; the effect of a goal, guideline, plan or decision.

**INTEGRITY:** The quality or state of being complete and functionally unimpaired; the wholeness or entirety of a body or system, including its parts, materials and processes. The integrity of an ecosystem emphasizes the interrelatedness of all parts and the unit of its whole.

**INTERDUNE AREA:** Low-lying areas between higher sand landforms which are generally under water during part of the year. (See also Deflation Plain.)

**INTERTIDAL:** Between the levels of mean lower low tide (MLLT) and mean higher high tide (MHHT).

**LITTORAL DRIFT:** The material moved, such as sand or gravel, in the littoral (shallow water near shore) zone under the influence of waves and currents.

**MAINTENANCE:** Routine upkeep of existing structures or facilities which are in current use or operation.

**MANAGEMENT UNIT:** A discrete geographic area, defined by biophysical characteristics and features within which particular uses and activities are promoted, encouraged, protected, or enhanced and others are discouraged, restricted or prohibited.

**MEAN HIGHER HIGH WATER:** The average height of the higher high tides observed over a specific time interval.

**MINOR NAVIGATIONAL IMPROVEMENTS:** Alterations necessary to provide water access to existing or permitted uses in conservation management units, including dredging for access channels and for maintaining existing navigation, but excluding fill and in-water navigational structures other than floating breakwaters or similar permeable wave barriers.

**MITIGATION:** The creation, restoration or enhancement of an estuarine area to maintain the functional characteristics and processes of the estuary, such as its natural biological productivity, habitats, species diversity, unique features and water quality (ORS 541.626).

**NATURAL AREAS:** Includes land and water that has substantially retained its natural character, which is an important habitat for plant, animal or marine life. Such areas are not necessarily completely natural or

undisturbed, but can be significant for the study of natural, historical, scientific or paleontological features, or for the appreciation of natural features.

OCCD: Oregon Coastal Conservation and Development Commission, created by ORS 191; existed from 1971 to 1975. Its work is continued by LCDC.

OCEAN FLOODING: The flooding of lowland areas by salt water owing to tidal action, storm surge, or tsunami (Seismic sea waves). Land forms subject to ocean flooding include beaches, marshes, coastal lowlands and low-lying interdune areas. Areas of ocean flooding are mapped by the Federal Emergency Management Agency (FEMA). Ocean flooding includes areas of velocity flooding and associated shallow marine flooding.

PUBLIC GAIN: The net gain from combined economic, social and environmental effects which accrue to the public because of a use or activity and its subsequent resulting effects.

RECOGNIZED CHANNEL: A waterway having a history of commercial navigation but not authorized for maintenance by the U.S. Army Corps of Engineers. In particular, the Umpqua River between Scottsburg and the confluence with the Smith River.

RECREATION: Any experience voluntarily engaged in largely during leisure (discretionary time) from which the individual derives satisfaction.

COASTAL RECREATION - occurs in offshore ocean waters, estuaries and streams along beaches and bluffs and in adjacent shorelands. It includes a variety of activities from swimming, scuba diving, boating, fishing, hunting, use of dune buggies, shell collecting, painting, wildlife observation, and sightseeing, to coastal resorts and water-oriented restaurants.

LOW INTENSITY RECREATION - does not require developed facilities and can be accommodated without change to the area or resource; e.g., boating, hunting, hiking, wildlife photography, and beach or shore activities can be low intensity recreation.

HIGH INTENSITY RECREATION - uses specially built facilities, or occurs in such density or form that it requires or results in a modification of the area or resource. Campgrounds, golf courses, public beaches and marinas are examples of high intensity recreation.

REHABILITATION: Infrequent, extensive repair of more than routine nature to existing structures or facilities which are in current use or operation, not including emergencies.

RESOURCE CAPABILITIES TEST:

*Natural Management Unit:* A use or activity is consistent with the resource capabilities of the area when either the impacts of the use on estuarine species, habitats, biological productivity and water-quality are not significant or that the resources of the area are able to assimilate the use and activity and their effects and continue to function in a manner to protect significant wildlife habitats, natural biological productivity, and values for scientific research and education.

*Conservation Management Unit:* A use or activity is consistent with the resources capabilities of the area when either the impacts of the use on estuarine species, habitats, biological productivity, and water quality are not significant or that the resources of the area are able to assimilate the use and activity and their effects and continue to function in a manner which conserves long-term renewable resources, natural biologic productivity, recreational and aesthetic values and aquaculture.

**RESTORE:** Revitalizing, returning, or replacing original attributes and amenities, such as natural biological productivity, aesthetic and cultural resources, which have been diminished or lost by past alteration, activities or catastrophic events. For the purposes of Goal 16, estuarine restoration means to revitalize or reestablish functional characteristics and processes of the estuary diminished or lost by past alteration, activities or catastrophic events. A restored area must be a shallow subtidal, or an intertidal or tidal marsh area after restoration work is performed, and may not have been a functioning part of the estuarine system when restoration work began.

**ACTIVE RESTORATION** - involves the use of specific positive remedial actions, such as removing fills, installing water treatment facilities or rebuilding deteriorated urban waterfront areas.

**PASSIVE RESTORATION** - is the use of natural processes, sequences, and timing or which occurs after the removal or reduction of adverse stresses without other specific positive remedial action.

**RIPRAP:** A layer, facing or protective mound of stones randomly placed to prevent erosion, scour or sloughing of a structure or embankment; also, the stone so used. In local usage, the similar use of other hard material, such as concrete rubble, is also frequently included as riprap.

**SHORELINE:** The boundary line between a body of water and the land, measured on tidal waters at mean higher high water, and on non-tidal waterways at the ordinary high water mark.

**SIGNIFICANT HABITAT AREAS:** A land or water area where sustaining the natural resource characteristics is important or essential to the production and maintenance of aquatic life or wildlife population.

**SUBTIDAL:** Below the level of mean lower low tide (MLLT).

**TEMPORARY ALTERATION:** Dredging, filling or another estuarine alteration occurring over a specified short

period of time which is needed to facilitate a use allowed by an acknowledged plan. Temporary alterations may not be for more than three years and the affected area must be restored to its previous condition. Temporary alterations include: (1) alterations necessary for federally authorized navigation projects (e.g., access to dredged material disposal sites by barge or pipeline and staging areas or dredging for jetty maintenance); (2) alterations to establish mitigation sites, alterations for bridge construction or repair and for drilling or other exploratory operation; and (3) minor structures (such as blinds) necessary for research and educational observation.

**TERRITORIAL SEA:** The ocean and seafloor area from mean lower water seaward three nautical miles.

**TIDAL MARSH:** Wetlands from lower high water (LHW) inland to the line of non-aquatic vegetation.

**WATER-DEPENDENT:** A use or activity which can be carried out only on, in or adjacent to water areas because the use requires access to the water body for water-borne transportation, recreation, energy production or source of water.

**WATER ORIENTED:** A use whose attraction to the public is enhanced by a view of or access to coastal waters.

**WATER-RELATED:** Uses which are not directly dependent upon access to a water body, but which provide goods or services that are directly associated with water-dependent land or waterway use, and which, if not located adjacent to water, would result in a public loss of quality in the goods or services offered. Except as necessary for water-dependent or water-related uses or facilities, residence, parking lots, spoil and dump sites, roads and highways, restaurants, business factories and trailer parks are not generally considered dependent on or related to water location needs.

**WETLANDS:** Land areas where excess water is the dominant factor determining the nature of soil development and the types of plant and animal communities living at the soil surface. Wetland soils retain sufficient moisture to support aquatic or semi-aquatic plant life. In marine and estuarine areas, wetlands are bounded at the lower extreme by extreme low water, in freshwater areas, by a depth of six feet. The area below wetlands are submerged lands.

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## **Map Consistency Disclaimer**

**\*\*Disclaimer\*\*** All maps within this document are for convenience only and are only valid for the purpose of representation. Although reasonable attempts are made to maintain this map as accurate as possible, Douglas County and other participating entities will in no way be liable for any inaccuracies, inconsistencies, errors, omissions, or other deviations in this map. For updated information, please see the official information located at the Douglas County Planning Department.

## **Map Sources**

### Estuarine Resources:

- Douglas County Planning Department
- Douglas County Assessor's Office
- US Department of Agriculture

### Coastal Shorelands:

- Douglas County Planning Department
- Douglas County Assessor's Office
- US Department of Agriculture

### Dredged Material Disposal Sites & Restoration and Mitigation Sites:

- Douglas County Planning Department
- Douglas County Assessor's Office
- US Department of Agriculture

### Beaches & Dunes:

- Douglas County Planning Department
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