

ESTUARINE MITIGATION
THE
OREGON PROCESS

Use Figures only -- Rules are Outdated

See 141-085-0240 - 0257 for curent rules.

PRINCIPAL AUTHOR

Stanley F. Hamilton, Assistant Director

GRAPHICS

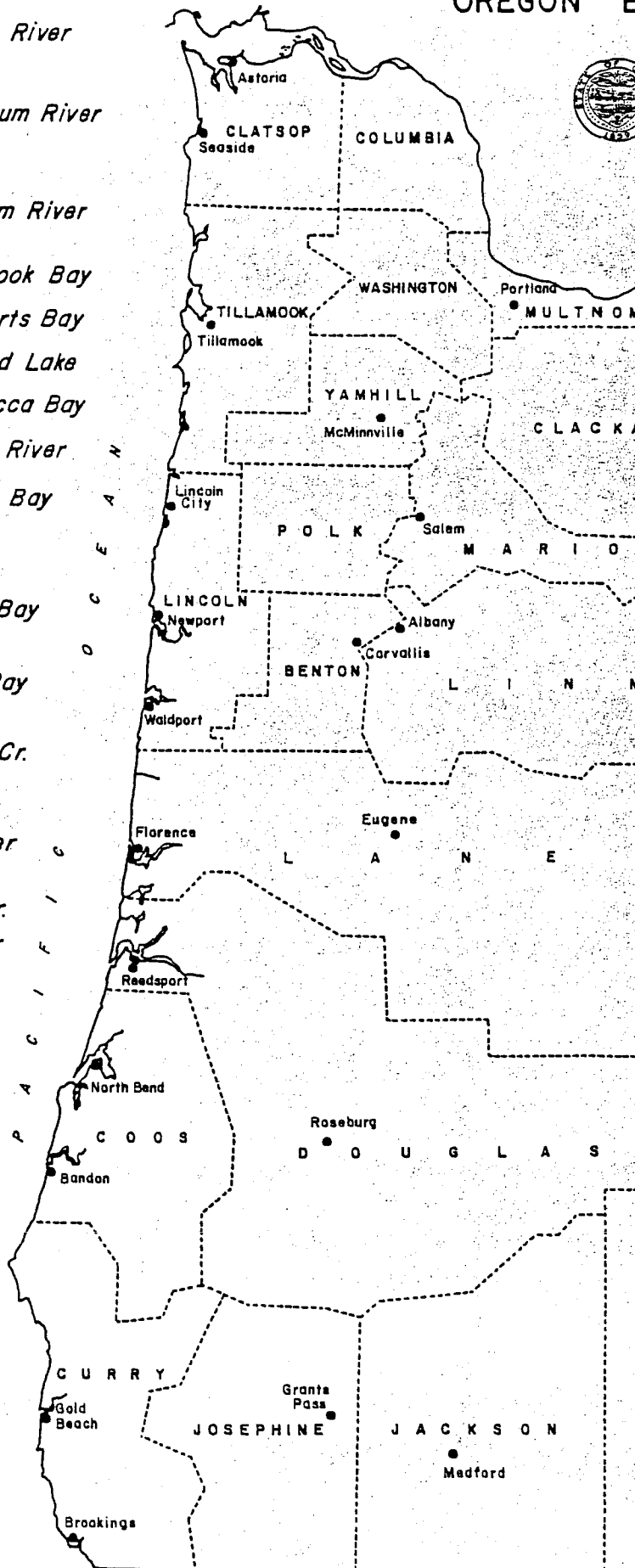
Joyce E. Erickson, Engineering Technician

STATE OF OREGON
Division of State Lands

OREGON ESTUARIES



- Columbia River*
- Necanicum River*
- Nehalem River*
- Tillamook Bay*
- Netarts Bay*
- Sand Lake*
- Nestucca Bay*
- Salmon River*
- Siletz Bay*
- Yaquina Bay*
- Alsea Bay*
- Tenmile Cr.*
- Siuslaw River*
- Siltcoos Cr.*
- Tahkenitch Cr.*
- Umpqua River*
- Coos Bay*
- Coquille River*
- Rogue River*
- Chetco River*



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***ESTUARINE MITIGATION
THE
OREGON PROCESS***



DIVISION OF STATE LANDS

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Director

APRIL 1984

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OREGON MITIGATION LAW

541.626 Mitigation as condition for fill or removal from estuary; considerations; other permit conditions. (1) As used in this section, "mitigation" means 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 and species diversity, unique features and water quality.

(2) Except as provided in subsection (4) of this section, the director shall require mitigation as a condition of any permit for filling or removal of material from an intertidal or tidal marsh area of an estuary.

(3) If the director requires mitigation, the director shall consider:

(a) The identified adverse impacts of the proposed activity;

(b) The availability of areas in which mitigating activities could be performed;

(c) The provisions of land use plans for the area adjacent to or surrounding the area of the proposed activity;

(d) The recommendations of any interested or affected state or local agencies; and

(e) The extent of compensating activity inherent in the proposed activity.

(4) Notwithstanding any provisions of ORS 197.005 to 197.430 and 197.605 to 197.650 or the state-wide planning goals adopted thereunder to the contrary, the director may:

(a) Waive mitigation in part for an activity for which mitigation would otherwise be required if, after consultation with appropriate state and local agencies the director determines that:

(A) There is no alternative manner in which to accomplish the purpose of the project;

(B) There is no feasible manner in which mitigation could be accomplished;

(C) The economic and public need for the project and the economic and public benefits resulting from the project clearly outweigh the potential degradation of the estuary;

(D) The project is for a public use; and

(E) The project is water dependent or the project is publicly owned and water related; or

(b) Waive mitigation wholly or in part for an activity for which mitigation would otherwise be required if the activity is:

(A) Filling for repair and maintenance of existing functional dikes and negligible physical or biological damage to the tidal marsh or intertidal areas of the estuary will result;

(B) Riprap to allow protection of an existing bankline with clean, durable erosion resistant material when a need for riprap protection is demonstrated that cannot be met with natural vegetation and no appreciable increase in existing upland will occur;

(C) Filling for repair and maintenance of existing roads and negligible physical or biological damage to the tidal marsh or intertidal areas of the estuary will result;

(D) Dredging for authorized navigation channels, jetty or navigational aid installation, repair or maintenance conducted by or under contract with the Army Corps of Engineers;

(E) Dredging or filling required as part of an estuarine resource restoration or enhancement project agreed to by local, state and federal agencies; or

(F) A proposed alteration that would have negligible adverse physical or biological impact on estuarine resources.

(5) Nothing in this section is intended to limit the authority of the director to impose conditions on a permit under ORS 541.625(4).

ADMINISTRATIVE RULES
FOR
ESTUARINE MITIGATION
IN
OREGON ESTUARIES

PURPOSE

141-85-240 Purpose. The purpose of these rules is to set out the policy of the Director of the Division of State Lands relating to estuarine mitigation. Mitigation is required as a condition of any permit for filling or removal of material from an intertidal or tidal marsh area of an estuary.

The purpose of mitigation is to maintain the functional characteristics and processes of an estuary -- such as its natural biological productivity, habitats and species diversity, unique features and water quality -- when intertidal or tidal marsh resources are destroyed by removal or fill activities.

DEFINITIONS

141-85-242 Definitions for estuarine mitigation. The following definitions apply specifically to implementation of estuarine mitigation. Additionally, the definitions set out in OAR 141-85-100, relating generally to administration of the Oregon Removal-Fill Law, shall apply to estuarine mitigation. In the event of conflict between definitions, the definitions contained in these sections shall control the implementation of estuarine mitigation.

- (1) "Mitigation" means 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 and species diversity, unique features, and water quality (ORS 541.626).
- (2) "Estuary" means a body of water semi-enclosed by land and connected with the open ocean within which salt water is usually diluted by fresh water derived from the land. "Estuary" includes all estuarine waters, tidelands, tidal marshes and submerged lands extending upstream to the head of tidewater. However, the Columbia River Estuary extends to the western edge of Puget Island (ORS 541.605).
- (3) "Intertidal or tidal marsh area of an estuary" means those lands lying between extreme low tide and the line of non-aquatic vegetation. (See Figures 1, OAR 141-85-252.)
- (4) "Extreme Low Tide" means the lowest estimated tide that can occur. The elevation of Extreme Low Tide under these rules

is established at -3.5 feet MLLW. (See OAR 414-85-266, Tidal Elevation on the Oregon Coast.)

- (5) "Line of nonaquatic vegetation" means the upper limit of wetland vegetation, or, the point at which characteristic upland species become established in the vegetation, or, if not discernible, the line of Highest Measured Tide which is a projection from the highest tide actually observed on a tide staff within the estuary. (See OAR 141-85-266 for "HIGHEST WATER".)
 - (6) "Creation of an estuarine area" means to convert an upland area into a shallow subtidal or an intertidal or tidal marsh area by land surface alteration. The area to be converted must be an upland area lying above the line of nonaquatic vegetation when alteration work begins.
 - (7) "Restoration of an estuarine area" means to revitalize or reestablish functional characteristics and processes of the estuary diminished or lost by past alterations, activities, or catastrophic events. A restored area must be a shallow subtidal or an intertidal or tidal marsh area after alteration work is performed, and may not have been a functioning part of the estuarine system when alteration work begins.
- NOTE: Mitigation credit may be given for enhancement of areas that are already a functioning part of the estuarine system (See paragraph (8) below.)
- (8) "Enhancement of an estuarine area" means a long-term improvement of existing estuarine functional characteristics and processes that is not the result of a creation or restoration action.
 - (9) "Natural biological productivity" means the sum of all biomass production in an estuary including biological production at all trophic levels under, on, and above the land surface.
 - (10) "Habitats and species diversity" means habitat diversity and species diversity. Habitat diversity means the number of different "general" habitats found in an estuary such as high salt marsh, tidal sand flat, and low fresh marsh. Species diversity is the number of plant and animal species found in an estuary.
 - (11) "Unique features" means those physical, biological, chemical, and esthetic characteristics and attributes of an estuary that are uncommon, extraordinary, rare, threatened, or endangered.
 - (12) "Water quality" means the measure of physical, chemical, and biological characteristics of water as compared to Oregon's statewide water quality standards set out in OAR Chapter 468.

- (13) "Compensating activity" means enhancement of one or more habitats or resources due to adjacent or nearby removal-fill activity.

141-85-244 Application and review procedure.

- (1) Whenever any person submits an application for permit for filling or removal of material from an intertidal or tidal marsh area, the Director shall advise the applicant that mitigation will be required as a condition of any permit for such activity as may be issued.
- (2) The Director shall notify the applicant that the application for permit is not complete until a written proposal for mitigation has been received. The Director shall also advise the applicant that the 45 or 90 day review period required by ORS 541.625(7) will not begin until receipt of the written mitigation proposal. The Director shall, however, circulate the incomplete application to interested parties so that they may be apprised of the proposed removal-fill project.
- (3) The Director shall review any application for intertidal removal or fill permit in conjunction with a written mitigation proposal. The Director's review shall consider the statutory criteria set out in ORS 541.625 to determine whether a permit shall be issued. When a permit is to be issued, the Director shall consider the mitigation proposal and determine its adequacy in accordance with law and these rules.
- (4) The Director may accept, reject, or amend the mitigation proposal submitted by the applicant.
- If the proposal is rejected, processing of the permit is suspended pending receipt of a revised or amended mitigation proposal. If a revised or amended mitigation proposal is not received within 120 days of the date the prior mitigation proposal was rejected, the application shall be denied. The application fee shall be retained by the Director.
- If the Director accepts or amends the applicant's mitigation proposal, the proposal -- as accepted or amended -- shall be imposed as a condition of the issued permit.
- (5) Each application for a removal or fill permit involving mitigation shall provide the following information relating to mitigation in addition to such other information as may be required.
- (a) A location map and site plan of the area that will be affected by intertidal removal and fill. The development site plan must show water depths and land surface elevations relative to Mean Lower Low Water datum.

The development site plan shall also show the boundaries and area of each estuarine habitat type present at the site. (See OAR 141-85-246 through 254 for a description of estuarine habitats found in Oregon estuaries.)

- (b) A written mitigation proposal for the intertidal removal or fill activity described in the application. The mitigation proposal shall include a location map and site plan. The mitigation site plan must show water depths and land surface elevations relative to Mean Lower Low Water datum. The mitigation site plan shall also show the boundaries and area of each estuarine habitat type present at the site.
 - (c) Any provisions of the comprehensive land use plan for the area as those provisions relate to the proposed intertidal removal-fill site and the proposed mitigation site. The requirements of this subsection are best fulfilled by a letter to the Director from the appropriate planning jurisdiction.
- (6) In reviewing an application for a removal-fill permit involving mitigation, the Director shall determine:
- (a) The adverse impacts of the proposed activity, i.e., the type and areal extent of habitats destroyed or adversely affected; the nature and magnitude of associated water quality degradation; unique features destroyed or adversely affected.
 - (b) The extent of compensating activity inherent in the proposed activity, e.g., uplands converted to intertidal or shallow subtidal areas; water quality enhancement caused by improved circulation or flushing. Creation of a subtidal area by removing material from an intertidal area is not a compensating activity under these rules.
 - (c) The availability of areas in which mitigation activities could be performed. The Director may rely on local comprehensive land use plans and local, state, and federal planning and resource agency staff to develop this information.
 - (d) How and to what extent an estuarine area will be created, restored or enhanced.
 - (e) How the proposed mitigation will maintain the functional characteristics and processes of an estuary such as its natural biological productivity, habitats and species diversity, unique features and water quality.

ESTUARINE SYSTEMS DESCRIBED

414-85-246 Estuarine Systems Described. Oregon estuaries have three general aquatic subsystems -- marine, brackish, and fresh -- which are generally described in terms of the salinity range produced by the interaction between sea water and fresh water runoff. OAR 141-85-264 shows each major Oregon estuary and the location of various salinity subsystems.

The marine subsystem is frequently a high energy zone located near the estuary mouth. The bottom is influenced by strong currents, and the substrate is primarily coarse marine sand, cobble and rock. Salinities are generally high (15 o/oo - 35 o/oo) due to the dominance of ocean water, but may be greatly reduced during high river flows in winter. Kelp and other algal species often cover the rock substrates and form micro-habitats for many species. Benthic invertebrates in this zone may include marine and estuarine species. Most fish utilizing this subsystem are marine species.

The brackish subsystem is a relatively protected environment, often characterized by a broad embayment between the estuary mouth and narrow, upriver reaches of tidewater. Normally the bay subsystem has a large percentage of intertidal land. Because it is a transition zone between marine and fresh-water environments, sediments of the subsystem are primarily a mixture of coarse marine sand and fine river-borne silts and clays. Salinities (0.5 o/oo - 15 o/oo) during summer are moderate to high depending on the size of the drainage, but may vary considerably with tidal state and fresh-water flow. Most bays have a wide diversity of habitats with extensive intertidal flats, eelgrass beds, algal beds, and marshes.

Sloughs are narrow, isolated arms of an estuary. Fresh-water drainage into the slough subsystem is usually low and may be from a number of small creeks. The current flowing through a slough channel is usually slow. The salinity is frequently in the brackish range and is influenced by the proximity of the slough to the estuary mouth. Sloughs usually have fine organic sediments and high percentages of intertidal land, consisting of extensive flats, eelgrass beds and marshes.

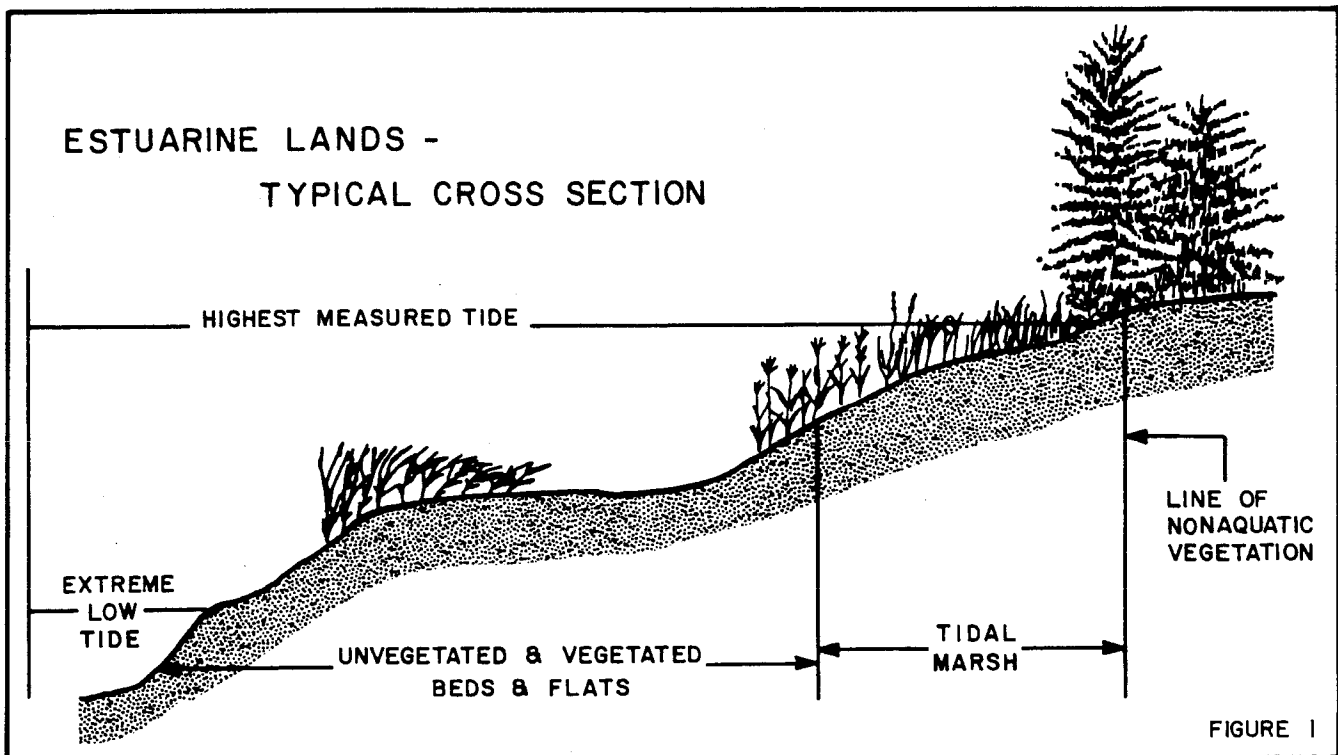
The fresh-water subsystem includes the upper tidewater portions of the larger tributaries which enter the estuary. A large percentage of the subsystem is narrow, subtidal river channel. Current velocities exhibit dramatic seasonal changes which influence benthic communities. Salinities are low most of the year (0.0 o/oo - 0.5 o/oo) and portions of the subsystems may be entirely fresh water. Sediments range from fine silts and clays to cobble and gravel. Small fringing marshes occur on the narrow, intertidal portions of the river bank.

ESTUARINE LANDS DESCRIBED

141-85-248 Estuarine Land Described. Intertidal and tidal marsh areas of an estuary can be described in terms of substrate material, vegetative cover and salinity regime.

Lower elevation intertidal landforms having a gradual slope and normally occurring in areas sheltered from strong currents are called BEDS and FLATS (see Figure 1). Beds and flats may be vegetated or unvegetated depending on current and wave conditions. Locations of beds and flats vary, but most occur in the bay and slough subsystems. Beds and flats are broader, more gradual in slope, and subject to slower current than adjacent shores.

Community structure is influenced by sediment characteristics, currents, wave action, temperature, and salinity. Regularly flooded beds and flats support diverse populations of tube-dwelling and burrowing invertebrates including worms, clams, and crustaceans. These invertebrates are primarily detritus feeders. Beds and flats also are commonly colonized by macroalgae, diatoms, and seagrasses. Animals and plants have adapted to the wide ranges of temperature and salinity characteristics of flats. A flat may be relatively stable, or may increase in total area, elevation, or percentage of vegetative cover. Beds and flats seldom decrease in elevation or size under normal conditions.



Higher intertidal landforms that are more than 30 percent covered by erect, rooted herbaceous hydrophytes are called TIDAL MARSHES. The tidal marsh generally occurs from slightly below mean high water (MHW) inland to the line of nonaquatic vegetation. Community composition varies primarily with tidal elevation but is also influenced by sediment type and salinity.

Plant producers in salt marshes include not only marsh grasses but also macroalgae entwined among the vascular plant stems, microalgae on the mud surface, and phytoplankton in the water column. Organic material and nutrients stored by marsh producers are consumed directly or transported to other portions of the estuary as detritus. Marshes provide habitat for fish, invertebrates, waterfowl, and small terrestrial mammals. A diversity of insects live among and graze on marsh plants.

ESTUARINE SUBSTRATES DESCRIBED

141-85-250 Substrate types described. Substrate material, i.e., grain size, organic content, are very important descriptors for flats because they reflect current and wave conditions as well as the nature of plant and animal productivity in the area.

- (1) Rocky-Bedrock Subclass. The rocky-boulder substrate consists primarily of rock fragments larger than 256 mm in diameter (about one foot). Often finer material is mixed with the larger fragments. The bed-rock substrate consists primarily of bedrock surfaces. Unconsolidated sediments may seasonally cover portions of the rock surfaces.
- (2) Cobble/Gravel Subclass. This substrate consists primarily of cobble or gravel (fragments less than 256 mm but greater than 1 mm in diameter), often with shell fragments or finer sediments intermixed.
- (3) Sand Subclass. The substrate is composed primarily of sand (75% or more of the sediment is 0.0625 mm to 1 mm in diameter) often with particles of other sizes intermixed.
- (4) Sand-Mud Mixed Subclass. The substrate is a mixture of sand and mud. Sand-mud flats are typically higher in organic content than sand flats and are firmer and more aerated than mud flats.
- (5) Mud Subclass. This substrate is primarily silt and clay (75% or more of the sediment is less than 0.0625 mm in diameter) and is often anaerobic below the surface. Organic content is generally higher than in the other subclasses of flats (except wood debris/organic).

ESTUARINE VEGETATION DESCRIBED

141-85-252 Vegetative covers described. Estuarine lands typically have different types of vegetative cover depending on substrate, salinity, elevation, and exposure to currents and waves.

- (1) Unvegetated. These areas are typically found in high energy zones where heavy wave and current action prevent growth of significant vegetation.
- (2) Algal. Intertidal algal beds consist of macroalgae attached to rock and unconsolidated substrates. Genera common in Oregon estuaries include Enteromorpha, Ulva, and Fucus spp.
- (3) Seagrass Subclass. Intertidal seagrass beds are composed primarily of aquatic vascular plants and algae, such as eelgrass (Zostera marina, Z. nana), growing on lower intertidal habitats with at least a 30 percent vegetative cover during the majority of the growing season.
- (4) Low Salt Marsh Subclass. Low salt marshes are entirely flooded by most high tides, and, therefore, contribute to the estuarine food supply on a daily basis. Tidal runoff is generally diffuse rather than contained by deep ditches. The marsh surface is generally flat but slopes slightly upward toward land. Depending on the substrate a colonizing marsh community near mean high water is comprised of pickleweed (Salicornia virginica), seaside arrow grass (Triglochin maritima), Seacoast bullrush (Scirpus maritimus), or Lyngbyei's sedge (Carex lyngbyei) (Frenkel and Eilers 1976). This lower intertidal marsh frequently shows high species dominance and low diversity (Eilers 1975).
- (5) Low Fresh Marsh Subclass. Fresh marshes occur inland of salt marshes where soil salinity is low or in the upstream portion of the estuary where fresh water under tidal influence periodically inundates the marsh. Vegetation is herbaceous with sedge (Carex sp.), Bullrush (Scirpus sp.), and cattails (Typha sp.) usually dominant (Akins and Jefferson 1973).
- (6) High Salt Marsh Subclass. High salt marshes usually rise abruptly 0.3 to 1.0 m above the adjacent flat, shore, or low marsh (Jefferson 1975). The marsh surface is irregular with generally continuous plant cover interspersed with pot holes, salt pans, and channels. The marsh surface is covered by most higher high tides and tidal runoff follows well-defined channels with natural levees. Diversity is usually greater in high marsh and transition zone species are described by Frenkel, et al (1978).

- (7) Scrub/Shrub Subclass. Shrub wetlands may occur at the inland boundary of the estuary. In Oregon, willow (*Salix* sp.) is the primary semi-aquatic woody plant that is likely to occur. Willow, however, has a low salinity tolerance and, therefore, is more often found in fresh-water subsystems and the Columbia River Estuary.
- (8) Forested Wetland Subclass. Forested wetlands define the inland boundary of the estuarine zone. In Oregon, Sitka spruce and red alder are typical plants that are likely to occur. This subclass is essentially a fresh water community. Forested wetlands are not a part of the estuarine system for mitigation unless the land surface is inundated at the Highest Measured Tide.

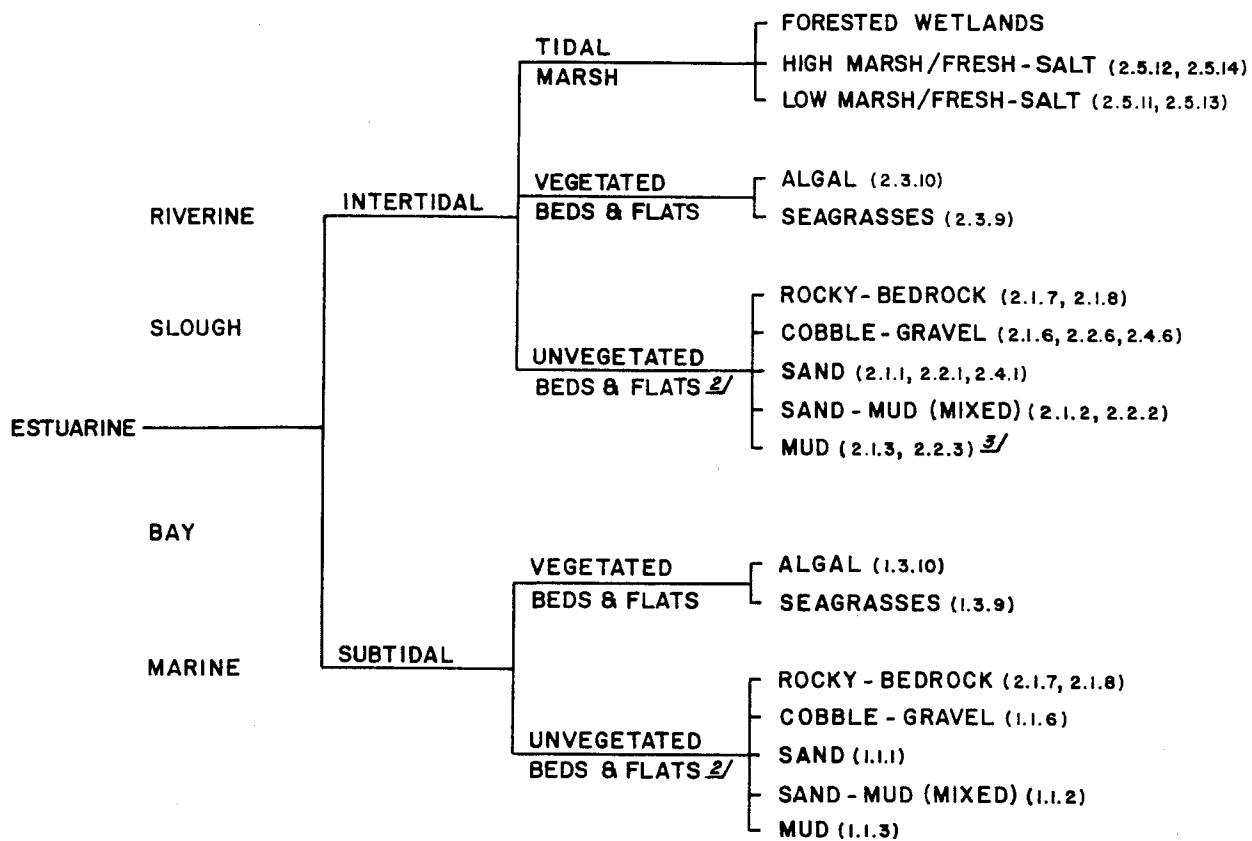
HABITAT CLASSIFICATION

141-85-254 Habitat Classification. The Oregon Department of Fish and Wildlife (ODFW) under contract to the Department of Land Conservation and Development (DLCD) has developed an estuarine habitat classification system 1/ based on an existing U. S. Fish and Wildlife Service habitat classification system 2/. In addition, ODFW has mapped habitat types in all major Oregon estuaries except the Columbia River and prepared resource inventories for selected inventories for selected estuaries. These reports provide the information base for implementation of mitigation policy. Figure 2 shows the Estuarine Mitigation Intertidal Habitat Classification System.

1/Bottom et al., 1979, Habitat Classification and Inventory Methods Management of Oregon Estuaries.

2/Cowardin et al., 1979, Classification of Wetlands and Deep Water Habitats of the United States, Fish and Wildlife Service, U. S. Department of the Interior.

OREGON ESTUARINE HABITAT CLASSIFICATION SYSTEM ^{1/}



<u>SYSTEM</u>	<u>SUBSYSTEM</u>	<u>TIDAL REGIME</u>	<u>CLASS</u>	<u>SUBCLASS</u>
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^{1/} Adapted from Bottom, et al., 1979, *Habitat Classification and Inventory Methods for Management of Oregon Estuaries* Vol. 1. Oregon Department of Fish and Wildlife, Portland, Oregon.

^{2/} Unvegetated Beds & Flats have less than 30% vegetative cover (macro or microalgae). There are no submergent vascular plants present.

^{3/} Numbers beside each habitat refer to codes on O.D.F.&W. habitat maps.

Figure 2

MITIGATION POLICY

141-85-256 Mitigation policy generally. Mitigation means 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 and species diversity, unique features, and water quality.

- (1) No mitigation proposal may be inconsistent with an acknowledged comprehensive land use plan and implementing ordinances for the area where the removal-fill activity will occur or where the mitigative action is located.
- (2) Mitigation must occur in the same estuary as the intertidal removal or fill activity except when the alternative is a partial waiver of mitigation under ORS 541.626(4)(a).
- (3) Mitigation shall restore or enhance estuarine lands and resources in an area proportionate to the area affected by the intertidal removal or fill activity. The area affected shall include the actual area where material is removed or filled and any surrounding intertidal or tidal marsh area adversely affected by the activity. At minimum, the mitigation action shall offset the adverse impacts of the intertidal or tidal marsh removal-fill activity.
- (4) Mitigation shall "maintain" (replace) the natural biological productivity and species diversity of the intertidal removal-fill site by creation, restoration or enhancement of an appropriate area of another estuarine habitat. Any shallow subtidal or intertidal or tidal marsh estuarine habitat may be used to "replace" the habitat lost to intertidal removal-fill, but the area will be proportionate to the RELATIVE VALUE of the habitats involved. The surface area of a mitigation site may not be smaller than the surface area of the development site.

NOTE: The purpose of this policy statement is to ensure conservation of estuarine surface area. However, a mitigation proposal shall not fail because the mitigation surface area is slightly less than the intertidal removal-fill area and no other mitigation area is available or the next alternative would be far more expensive.

- (5) Habitat types found in Oregon estuaries have been evaluated and compared in terms of natural biological productivity and species diversity by trained scientists and natural resource managers knowledgeable and familiar with the physical, biological, and chemical processes of estuaries. The result of this evaluation is a set of RELATIVE VALUES which can be

used to determine how much area of one habitat is needed to mitigate each acre of another habitat lost to intertidal removal-fill. Figure 3 and 3A are a matrix of habitat characteristics and RELATIVE VALUES for habitats found in Oregon estuaries.

- (a) The base RELATIVE VALUES for estuarine habitats shall range from 1.0 to 6.0.
 - (b) The Director may adjust the RELATIVE VALUE of any habitat type (except for relative values already established in a mitigation bank agreement) if site conditions and characteristics such as very low or exceptionally high resource values warrant such adjustment to carry out the provisions of the Removal-Fill Law. Such adjustment may not exceed 25 percent of base RELATIVE VALUE in either direction.
- (6) The equation for determining how much intertidal or tidal marsh area is required for mitigation shall be...

$$AM = (RVd/RVm)(AD) \text{ where...}$$

AM = Area of mitigation site

RVd = Adjusted RELATIVE VALUE of the development site

RVm = Adjusted RELATIVE VALUE of the mitigation site

AD = Area of development site

The equation for determining how much shallow subtidal area is required for mitigation shall be ...

$$AM = 2.0(RVd/RVm)(AD)$$

Note that if shallow subtidal habitats are offered as mitigation, the required surface area is twice the size of the surface area required if an intertidal or tidal marsh area of equal RELATIVE VALUE is offered. The surface area of the mitigation site (AM) may not be smaller than the surface area of the development site (AD).

- (7) Figure 4 shows the relationship between the adjusted RELATIVE VALUES of the development and mitigation sites and the ratio of the Mitigation Area to the Development Area (AM/AD) when the habitat replacement occurs under paragraph (4) of this section.
- (8) The MITIGATION CREDITS attributable to any created or restored habitat may be obtained by multiplying the adjusted RELATIVE VALUE of the created or restored habitat by the number of acres affected.

- (9) The MITIGATION CREDITS attributable to any enhanced habitat may be obtained as follows:
- (a) Obtain the base RELATIVE VALUE of the existing habitat from Figure 3 or 3A and adjust appropriately.
 - (b) Estimate or otherwise determine what the adjusted RELATIVE VALUE of the affected habitat will be after mitigation occurs.
 - (c) Subtract (a) from (b) to obtain enhancement RELATIVE VALUE.
 - (d) Multiply the enhancement RELATIVE VALUE (c) times the number of acres enhanced.
- (10) Mitigation shall "maintain" the unique features of estuaries that may be affected by intertidal removal-fill projects. The term "unique features" is defined in OAR 141-85-242(11).

The Director intends to rely upon acknowledged comprehensive land use plans for guidance in identifying "unique features" for mitigation purposes. Proposed intertidal removal-fill activities involving unique features shall be scrutinized carefully to determine whether or not a permit should be issued. If a permit is issued, mitigation shall be in-kind to the maximum extent possible and shall include the habitat replacement required under paragraph (4) of this section.

The objective of mitigation involving unique features shall be to replace lost habitat by substitution and, additionally, to replace or relocate as much of the unique feature as possible.

- (11) Mitigation shall "maintain" habitats and species diversity. The law does not mandate that every habitat and species affected by intertidal removal and fill be replicated in the mitigation proposal. However, the law does require consideration of whether or not habitat or species diversity of an estuary generally will be adversely affected by an intertidal removal or fill, and if so, what mitigation will offset the impact. The Director will maintain habitats and species diversity through habitat replacement required under paragraph (4) of this section.

"In-kind" or "like-kind" mitigation will be encouraged whenever possible by approving mitigation proposals and mitigation banks that involve a diversity of resource-habitat types. The Division will maintain a record, by estuary, of the amounts and types of habitats involved in intertidal removal-fill sites and mitigation sites. No additional mitigation is required under this paragraph unless the Director determines that a mitigation proposal under paragraph (4) of this section would reduce or impair habitats and species diversity.

RELATIVE VALUES ^{1/} OF SELECTED ESTUARINE HABITAT TYPES

OREGON ESTUARIES (EXCEPT THE COLUMBIA RIVER)

GENERALIZED SUBSTRATE CHARACTERISTICS	GENERALIZED PRODUCTIVITY CHARACTERISTICS									SALINITY REGIME ^{2/}
	SUBTIDAL HABITATS			INTERTIDAL HABITATS						
	UNVEGETATED	ALGAE	SEAGRASSES	UNVEGETATED	ALGAE	SEAGRASSES	LOW MARSH	HIGH MARSH	FORESTED WETLAND	
ROCKY - BEDROCK (Max. Grain Size > 256 mm)	1.0	2.0	■	1.0	2.0	■	■	■	■	FRESH
	2.0	3.0	■	2.0	3.0	■	■	■	■	BRACKISH
	2.0	3.0	■	2.0	3.0	■	■	■	■	MARINE
COBBLE - GRAVEL (Grain Sizes From 1.0mm to 256 mm)	1.0	2.0	4.0	1.0	2.0	4.0	4.0	3.0	3.0	FRESH
	2.0	3.0	6.0	2.0	3.0	6.0	5.0	4.0	■	BRACKISH
	2.0	3.0	6.0	2.0	3.0	6.0	5.0	4.0	■	MARINE
SAND (75% Grain Sizes From 0.0625mm to 1.0mm)	2.0	3.0	4.0	2.0	3.0	4.0	4.0	3.0	3.0	FRESH
	3.0	4.0	6.0	3.0	4.0	6.0	5.0	4.0	■	BRACKISH
	3.0	4.0	6.0	3.0	4.0	6.0	5.0	4.0	■	MARINE
SANDY - MUD	2.0	3.0	4.0	2.0	3.0	4.0	4.0	3.0	2.0	FRESH
	3.0	4.0	6.0	3.0	4.0	6.0	5.0	4.0	■	BRACKISH
	3.0	4.0	6.0	3.0	4.0	6.0	5.0	4.0	■	MARINE
MUD (75% Grain Sizes < 0.0625 mm)	2.0	3.0	4.0	2.0	3.0	4.0	4.0	3.0	3.0	FRESH
	3.0	4.0	6.0	3.0	4.0	6.0	5.0	4.0	■	BRACKISH
	3.0	4.0	6.0	3.0	4.0	6.0	5.0	4.0	■	MARINE

COLUMBIA RIVER ESTUARY

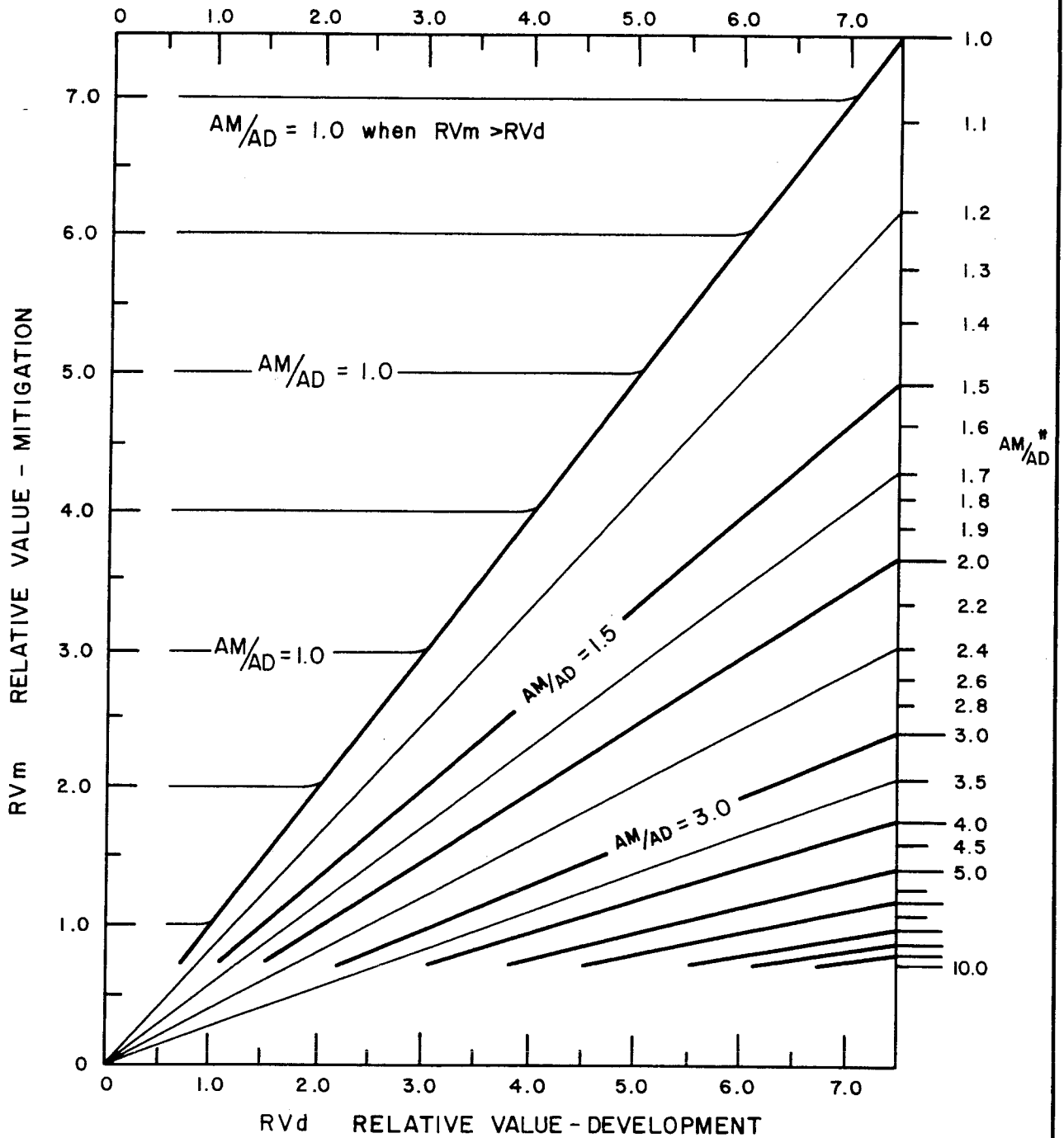
GENERALIZED SUBSTRATE CHARACTERISTICS	GENERALIZED PRODUCTIVITY CHARACTERISTICS					SALINITY REGIME ^{2/}
	SUBTIDAL HABITATS		INTERTIDAL HABITATS			
	FLATS	FLATS	LOW MARSH	HIGH MARSH	SHRUB-FORESTED SWAMP	
SAND 0.0625mm to 1.0mm	3.0	3.0	3.0	1.0	3.0	FRESH
	3.0	4.0	5.0	3.0	3.0	BRACKISH
	3.0	3.0	1.0	■	■	MARINE
SANDY - MUD	3.0	3.0	3.0	1.0	3.0	FRESH
	3.0	4.0	5.0	3.0	3.0	BRACKISH
	3.0	6.0	1.0	■	■	MARINE
MUD < 0.0625 mm	3.0	3.0	3.0	1.0	3.0	FRESH
	3.0	4.0	5.0	3.0	3.0	BRACKISH
	3.0	6.0	1.0	■	■	MARINE

^{1/} RELATIVE VALUES ARE BASED ON NATURAL BIOLOGICAL PRODUCTIVITY AND SPECIES DIVERSITY OF SPECIFIC HABITAT TYPES. A "■" MEANS THE HABITAT TYPE PROBABLY DOES NOT EXIST.

^{2/} FRESH WATER SALINITY RANGE IS 0‰ TO 0.5‰. BRACKISH WATER SALINITY RANGE IS 0.5‰ TO 25‰. MARINE WATER SALINITY RANGE IS 20‰ TO 35‰.

Figure 3

MITIGATION MODEL



* Values of AM/AD when Intertidal Mitigation is offered. Double these values if Subtidal Mitigation is offered.

Figure 4

- (12) Mitigation shall maintain "water quality" through enhancement of physical, chemical, and biological characteristics of the waters at and near the site.

Oregon has stringent water quality standards that the Director routinely incorporates into removal-fill permits. The Director will not approve a development activity that reduces water quality to a persistent level below state water quality standards, nor will the Director approve a mitigation proposal that would degrade water quality. The Director will rely on state and federal resource agencies, primarily DEQ for guidance on water quality issues.

A mitigation proposal that produces an identifiable enhancement in estuarine water quality may be used to offset a portion of the resource losses of an intertidal removal-fill activity provided that the mitigation proposal also includes habitat replacement under paragraph (4) of this section in an amount at least equal to the area affected by the intertidal removal and fill.

A mitigation proposal claiming water quality enhancement as a mitigative action shall describe the action in detail and explain why and how the project will enhance water quality. The proposal shall identify the nature and areal extent of habitats affected by the water quality enhancements. A water quality enhancement activity mandated by a state or federal agency to raise water quality to state or federal standards is not mitigation under this section.

If the Director determines that the water quality enhancement proposal will significantly enhance water quality, mitigation credits may be determined as provided in paragraph (9) of this section.

NOTE An acceptable mitigation project must include creation, restoration, or enhancement of an estuarine area approximately equal to the intertidal removal-fill area. A project that enhances water quality may serve as mitigation once sufficient estuarine area has been created, restored, or enhanced to meet the conservation of surface area requirement

- (13) Activities which do not require mitigation even though they may involve intertidal removal include:

(a) Maintenance dredging -- provided that the applicant can show that the site has been dredged before and is part of a regularly used project. First time dredging activities that remove intertidal lands to obtain water depth will require mitigation.

(b) Aggregate mining -- provided that the site has been used historically for aggregate removal on a periodic basis.

- (14) Examples of activities which are not considered mitigation within the meaning of ORS 541.626 except when mitigation would otherwise be waived in part under ORS 541-626(4)(a).
- (a) The transfer of private intertidal estuarine lands to public ownership (Att. Gen. Op. 3774, 1976);
 - (b) The dedication of intertidal estuarine lands for natural uses;
 - (c) Cash payment;
 - (d) Large scale piling and dolphin removal unless associated habitats would be enhanced by the removal through increased circulation.
 - (e) Creation of subtidal lands except when the area was originally upland. In general, creation, restoration, and enhancement of subtidal lands produce less mitigation credit than similar actions relating to intertidal lands. Less credit is given because habitat replacement is not "in-kind", i.e., not intertidal as are the lands affected by the removal-fill activity. For purposes of these rules, the creation, restoration, or enhancement of a subtidal habitat will produce one-half the mitigation credits produced by an intertidal area of the RELATIVE VALUE.

NOTE: The RELATIVE VALUES for subtidal habitats may be adjusted up to 25% up or down in the same manner as intertidal habitats.

- (15) Examples of areas and activities considered suitable for restoration and enhancement activities include:
- (a) Areas where poor water quality, or similar degradation, limits fish and shellfish production and harvest or human recreation.
 - (b) "Dredge spoil islands" which could be lowered to create or restore intertidal surface area.
 - (c) Tide flat or tidal marsh areas suitable for restoration.
 - (d) Areas where circulation or flushing can be restored or enhanced by breaching dikes or roadfills or removing pile groups or structures.
- (16) Mitigation sites and activities need not be fully developed biologically at the time of acceptance, but there must be a high probability of success associated with the proposed action. There is no penalty assessed for a mitigative action that takes time to produce the anticipated resources and habitats.

The Director may require bonding in an amount sufficient to cover the costs of site acquisition and any necessary physical alterations. The need for bonding will be considered especially carefully in cases where mitigation actions will be taken after the development project, or in cases where the results of the mitigation action will not occur for several years.

NOTE: Late-maturing projects are not as acceptable as those where good results may be anticipated in one or two years.

- (17) The Director may require monitoring of a mitigative action to determine performance over time, especially when results are not anticipated immediately. Ordinarily, monitoring will consist of annual site inspections over a five-year period to determine whether predicted ecosystem changes have occurred as anticipated. Site inspections would be of a survey nature, conducted by state and federal resource agency personnel or by an independent consultant. Levels and details of monitoring shall be specified in the permit, or in the case of mitigation banks, in the written agreement establishing the bank.
- (18) The Director may require funding for research in cases where the ramifications of a given mitigation action are uncertain. Such requirement shall be set out in detail in the permit.
- (19) The procedures described in this section are suitable for estimating the mitigation liabilities and credits of a proposed intertidal or tidal marsh removal-fill project and the attendant mitigative action. In most cases, these guidelines will produce a mitigation proposal acceptable to the Director and interested parties.

However, estuarine habitats are diverse and dynamic, and the circumstances of any given application may require the Director to amend or adjust mitigation proposals to carry out the provisions of the Removal-Fill Law. Such right is reserved to the Director.

WAIVER OF MITIGATION

141-85-258 Waiver of Mitigation. ORS 541-626(4)(a) provides for partial waiver of mitigation as follows:

"...(a) Waive mitigation in part for an activity for which mitigation would otherwise be required if, after consultation with appropriate state and local agencies the director determines that:

(A) There is no alternative manner in which to accomplish the purpose of the project;

(B) There is no feasible manner in which mitigation could be accomplished;

(C) The economic and public need for the project and the economic and public benefits resulting from the project clearly outweigh the potential degradation of the estuary;

(D) The project is for a public use; and

(E) The project is water dependent or the project is publicly owned and water related; or..."

NOTE: "Public Use" means a publicly owned project that is available for use by the public.

ORS 541.605(9)

- (1) Requests for a partial waiver of mitigation shall be in writing and shall address each of the criteria set out in sufficient detail to inform the Director as to the basis for waiver. The Director's written waiver and decision criteria shall be appended to the permit when issued.
- (2) ORS 541.626(4)(b) provides for waiver of mitigation, wholly or in part, as follows:

"...(b) Waive mitigation wholly or in part for an activity for which mitigation would otherwise be required if the activity is:

(A) Filling for repair and maintenance of existing functional dikes and negligible physical or biological damage to the tidal marsh or intertidal areas of the estuary will result;

(B) Riprap to allow protection of an existing bankline with clean, durable erosion resistant material when a need for riprap protection is demonstrated that cannot be met with natural vegetation and no appreciable increase in existing upland will occur;

(C) Filling for repair and maintenance of existing roads and negligible physical or biological damage to the tidal marsh or intertidal areas of the estuary will result;

(D) Dredging for authorized navigation channels, jetty or navigational aid installation, repair or maintenance conducted by or under contract with the Army Corps of Engineers;

(E) Dredging or filling required as part of an estuarine resources restoration or enhancement project agreed to by local, state, and federal agencies; or

(F) A proposed alteration that would have negligible adverse physical or biological impact on estuarine resources."

The Director may waive mitigation under ORS 541.626(4)(b) upon Division staff recommendation or written request of the applicant. The Director's written waiver and decision criteria shall be appended to the permit when issued.

MITIGATION BANKS

141-85-260 Mitigation Banks. The mitigation needs of an intertidal removal-fill activity can be met using mitigation "credits" stored in a "mitigation bank". Mitigation credits result from a mitigative action accomplished under agreement with the Division. Such credits can be used to offset the mitigation needs of small projects that occur at some time after the mitigation bank is created.

A "MITIGATION CREDIT", the currency of a mitigation bank, is the product of the adjusted or enhancement RELATIVE VALUE of a habitat type and the number of acres affected by the mitigation action(s). For example, a mitigation action might involve a large diked former brackish marsh that could be restored to the estuarine system by breaching dikes. The site might yield acreages of high brackish marsh (Relative Value 4.0), low brackish marsh (Relative Value 5.0), and unvegetated brackish sand flats (Relative Value 3.0) that could be used for mitigation. Based on five acres of each habitat type, the bank would have some 60 mitigation credits available to offset mitigation liabilities of future projects.

The following rules are established for the creation and use of mitigation banks.

- (1) A mitigation bank may be created in any estuary to provide mitigation for one or more development projects in that estuary. More than one bank may be created in any estuary. Any legal entity may create a bank.

- (2) Mitigation banks shall be created by written agreement with the Director and may be administered by the Director. Such agreements shall provide the basis for creation and operation of the bank and shall specifically provide for the following:
- (a) The exact location of affected real property.
 - (b) Proof of ownership or control, i.e., deed, title report.
 - (c) The nature and extent of the mitigative action. This analysis will require information about site salinity, elevation, wave and current actions, substrate, and other physical and biological characteristics.
 - (d) How and when the mitigative action will be performed.
 - (e) A statement of informed opinion as to what habitat types will result from the action and a statement as to RELATIVE VALUE of each anticipated type.
 - (f) How the resulting habitat changes will be monitored and evaluated (see OAR 141-85-254(12, 14)).
 - (g) How the mitigation site will be protected, i.e., dedication, conservation easement, deed.
 - (h) How funding for necessary construction or alteration work will be guaranteed, i.e., bonding.
 - (i) The maximum price that may be charged for credits from the bank.
- (3) The Director may authorize creation of mitigation banks making use of 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.

Such mitigation banks shall be created under the procedures set out in 141-85-260(2).

- (4) Applicants for removal and fill permits requiring mitigation are not obligated, or automatically entitled, to use an existing mitigation bank to meet the mitigation needs of any project. Permit applicants must negotiate directly with the owner of a bank to secure the right to use the bank. Agreements between the owner of a bank and a permit applicant are subject to the Director's approval as to the number of mitigation credits charged against the bank.

MITIGATION TRUST FUND

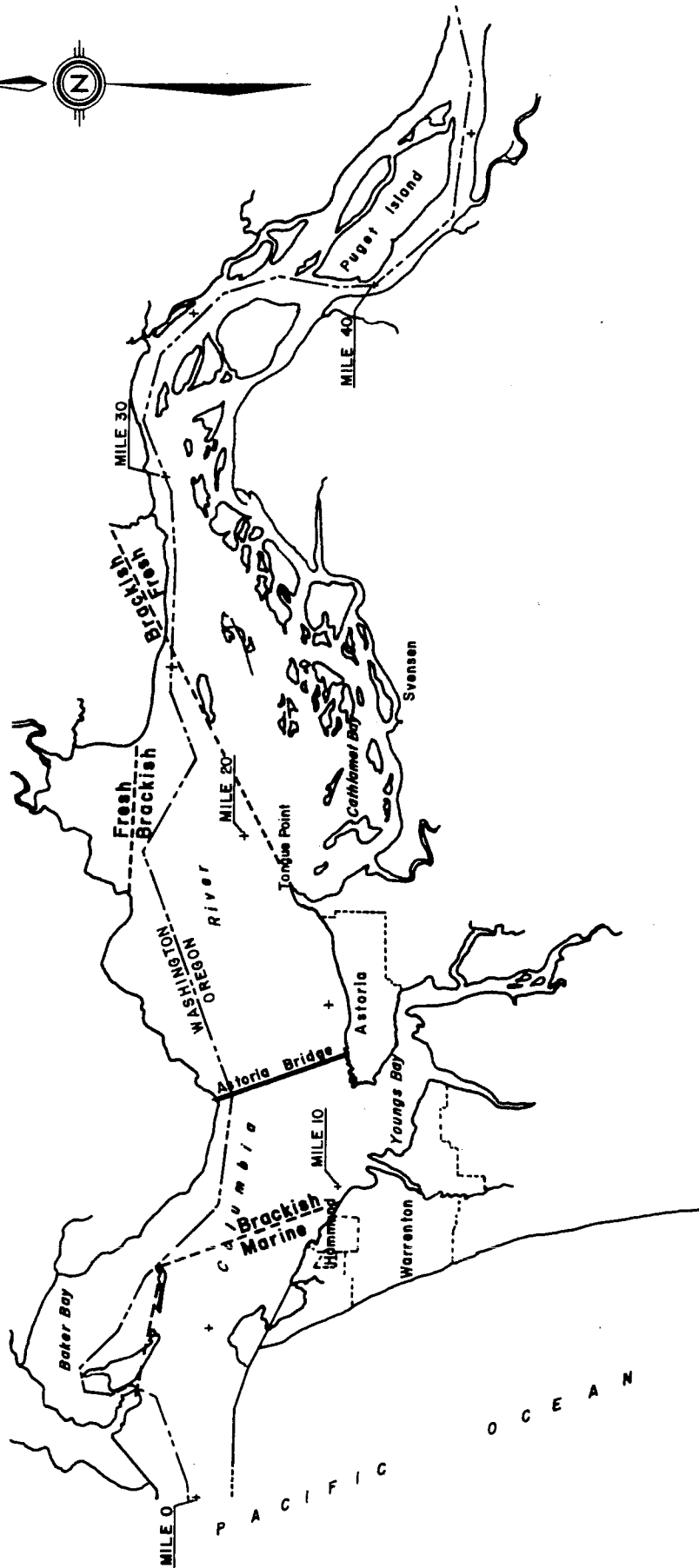
141-85-262 Mitigation Trust Fund.

- (1) The Director may establish an Oregon Mitigation Trust Fund to provide loans for approved mitigation banks. Because the principal value of a mitigation bank is to provide mitigation for small intertidal fill and removal projects, mitigation banks funded wholly or in part from this trust fund may not be used to mitigate more than five (5) acres of any intertidal removal and fill activity.
- (2) Funds for the Oregon Mitigation Trust Fund may be provided by gift, bequest, donation, grant, or other similar source.
- (3) Funds shall be loaned for a period not to exceed 10 years. Repayment of the principal shall require no more than ten annual installments.
- (4) Funds shall be loaned at not more than the prime rate with interest on the unpaid balance payable annually on the anniversary of the loan.
- (5) The highest priority for loans will be given to mitigation banks in deep draft development estuaries. The next highest priority shall be given to mitigation banks in shallow draft estuaries.

NOTE: Implementation of Rule 141-85-262 requires legislative authority to create a revolving trust fund for this purpose.

SALINITY DATA AND MAPS

OAR 141-85-264



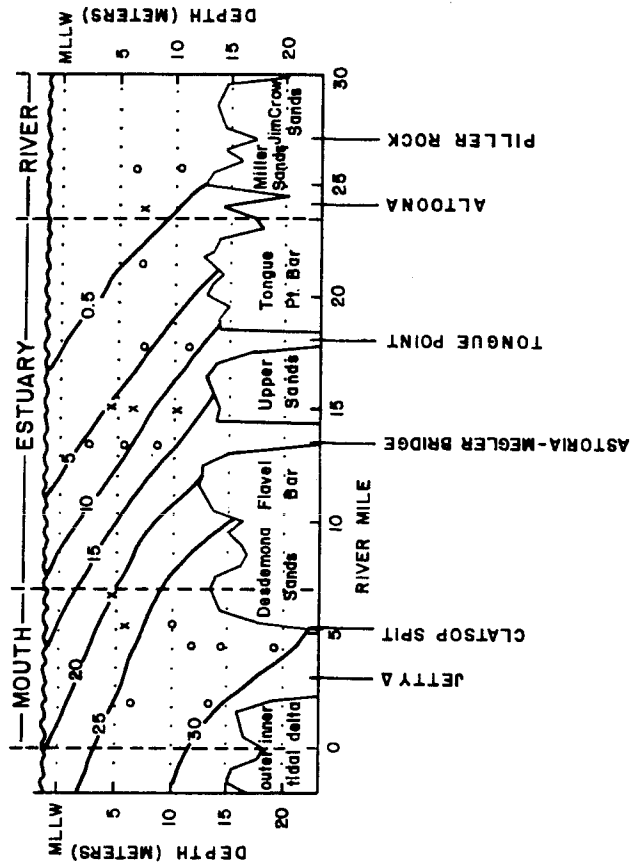
Columbia River

O.A.R. 141 - 85 - 264

MEAN SALINITY - ALL DATA 1980-81
 LOW FLOW SEASON (~155,000 cfs)
 NAVIGATIONAL CHANNEL

SOURCE: GEOPHYSICS PROGRAM, AK - 80 UNIVERSITY OF WASHINGTON
 FINAL REPORT - CIRCULATORY PROCESSES IN THE COLUMBIA RIVER

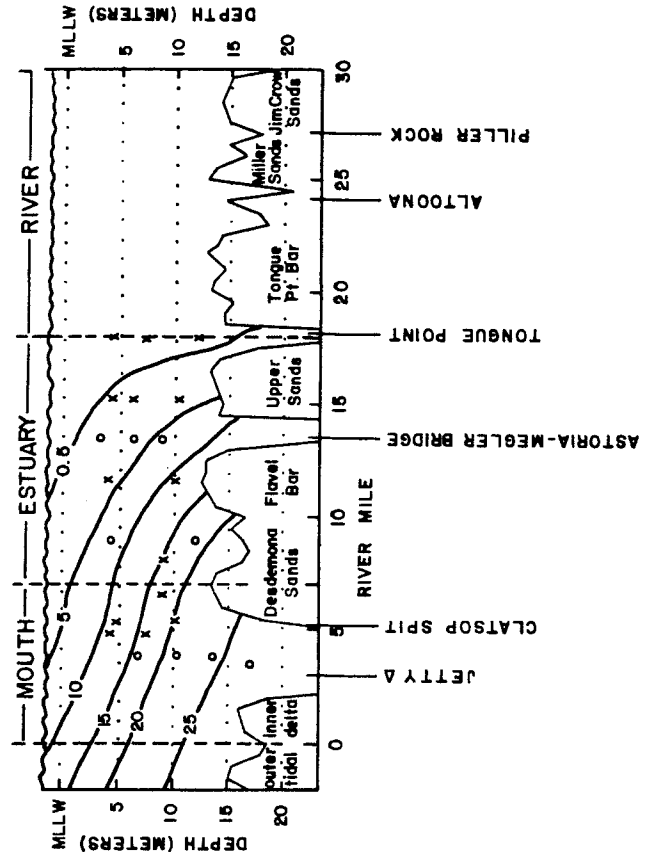
x 1981 NOS
 o 1980 CREDDP



MEAN SALINITY - ALL DATA 1980-81
 HIGH FLOW SEASON (~310,000 cfs)
 NAVIGATIONAL CHANNEL

SOURCE: GEOPHYSICS PROGRAM, AK - 80 UNIVERSITY OF WASHINGTON
 FINAL REPORT - CIRCULATORY PROCESSES IN THE COLUMBIA RIVER

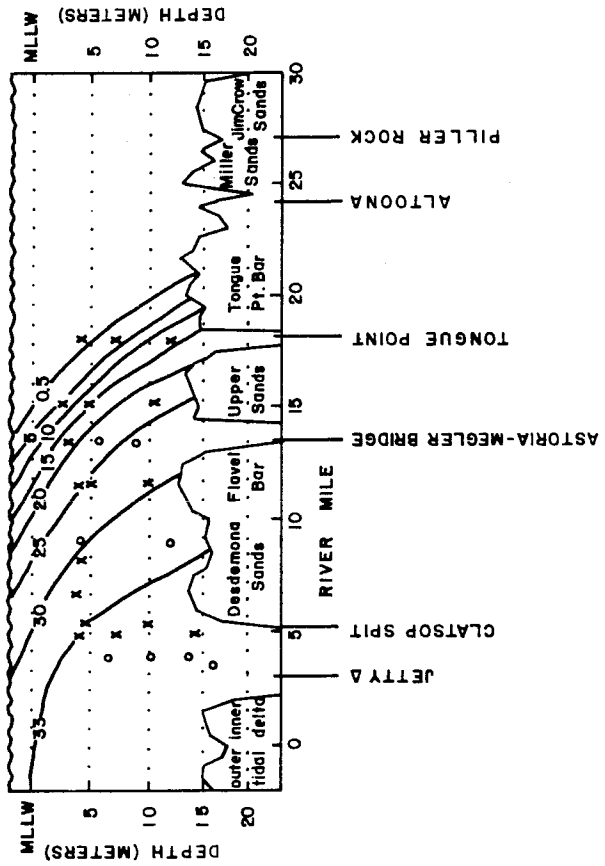
x 1981 NOS
 o 1980 CREDDP



MAXIMUM SALINITY - ALL DATA 1980-81
 HIGH FLOW SEASON (~310,000cfs)
 NAVIGATIONAL CHANNEL

SOURCE: GEOPHYSICS PROGRAM, AK - 50 UNIVERSITY OF WASHINGTON
 FINAL REPORT - CIRCULATORY PROCESSES IN THE COLUMBIA RIVER

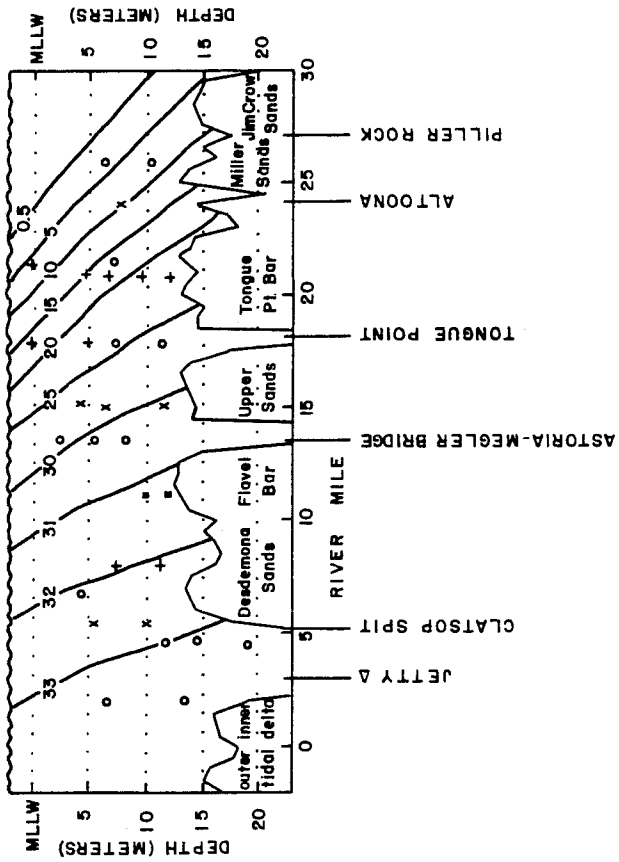
- x NOS 1981 Aanderaa Current Meter
- o CREDDP 1980



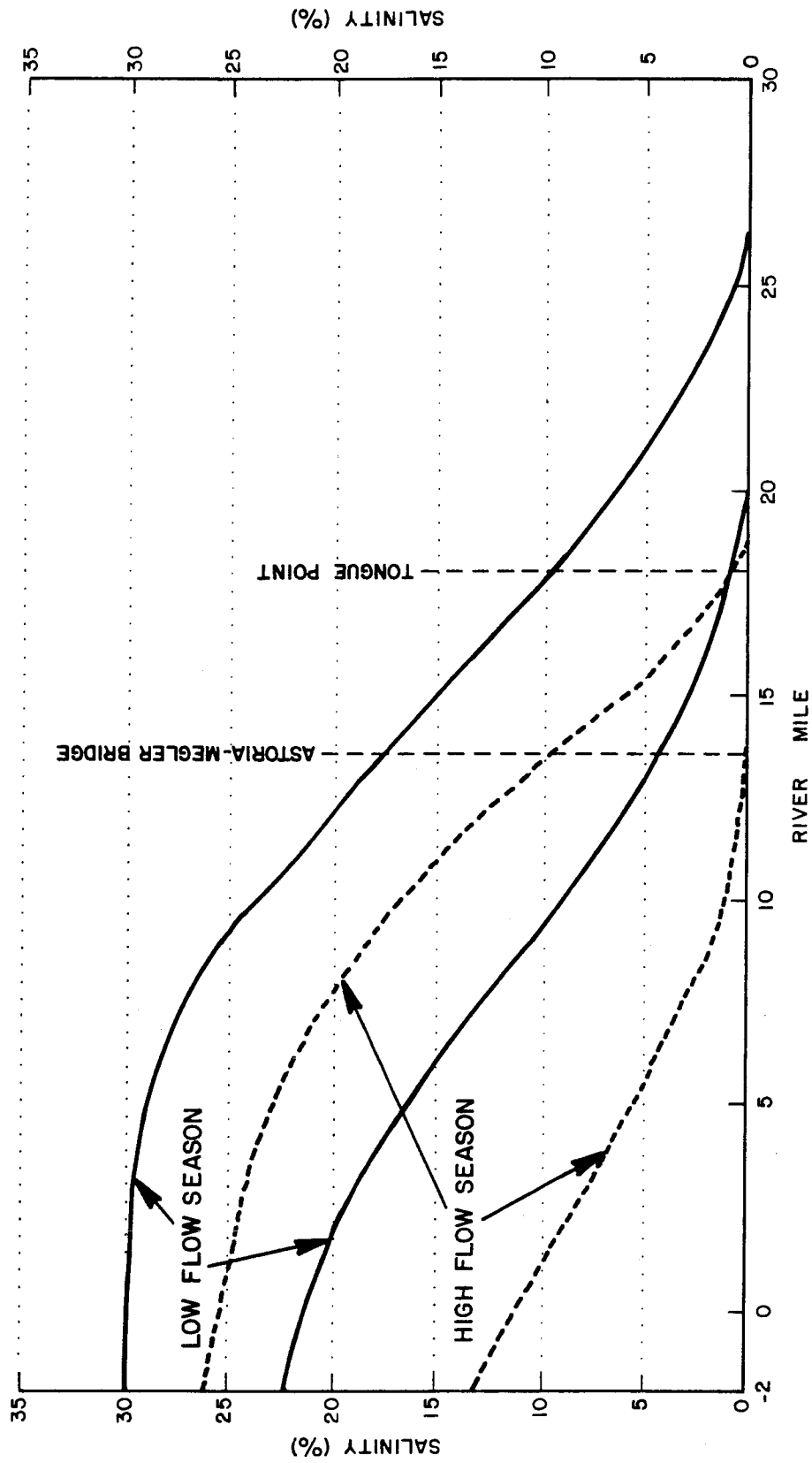
MAXIMUM SALINITY - ALL DATA 1980-81
 LOW FLOW SEASON (~155,000cfs)
 NAVIGATIONAL CHANNEL

SOURCE: GEOPHYSICS PROGRAM, AK - 50 UNIVERSITY OF WASHINGTON
 FINAL REPORT - CIRCULATORY PROCESSES IN THE COLUMBIA RIVER

- x NOS 1981 Aanderaa Current Meter Data
- o CREDDP 1980 Aanderaa Current Meter Data
- NOS 1981 CTD Data
- + CREDDP 1980 CTD Data

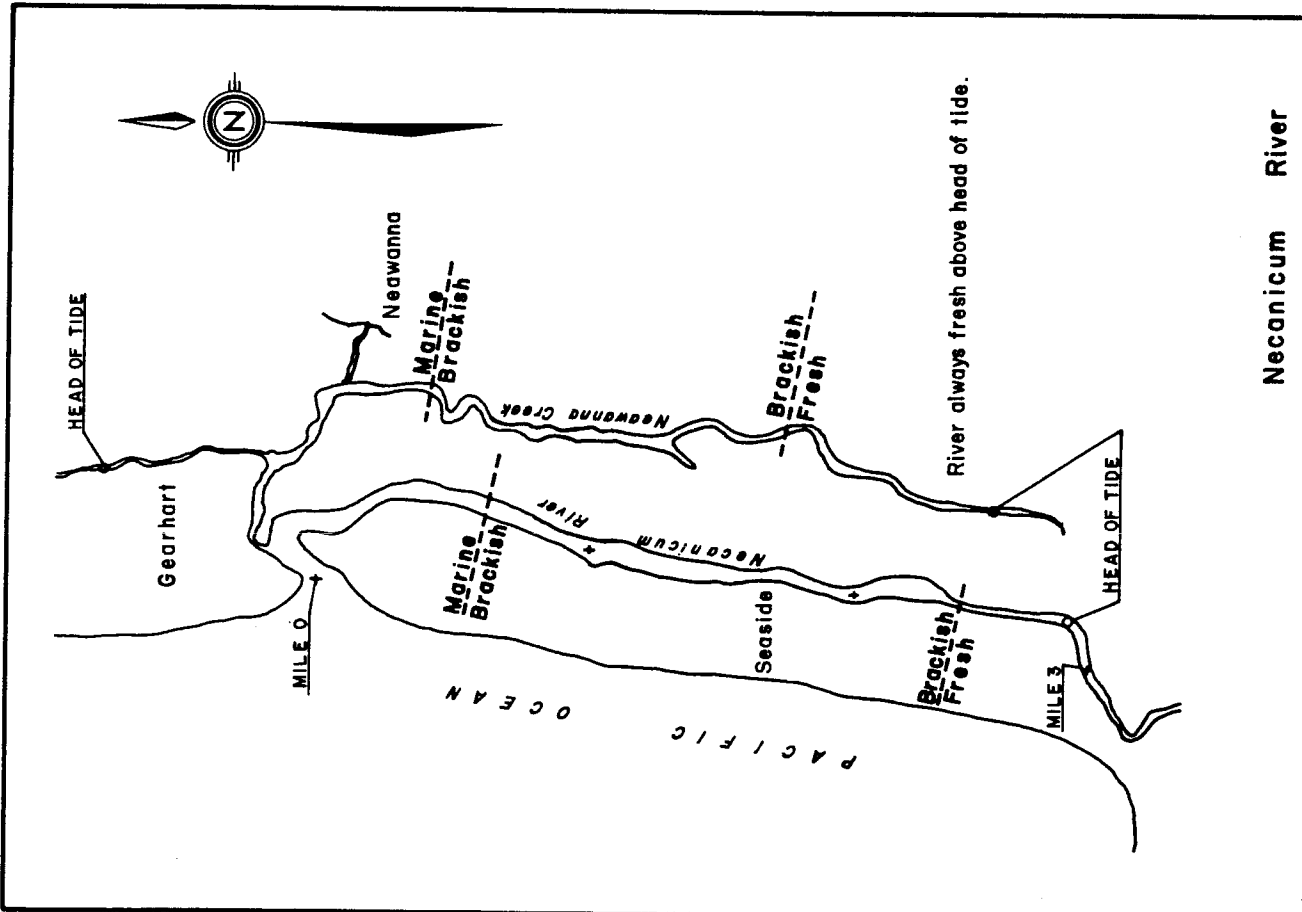


SEASONAL MEAN SALINITIES at MLLW & 12 METERS
LOW FLOW SEASON (~155,000cfs) & HIGH FLOW SEASON (~310,000 cfs)
1980 - 1981
NAVIGATIONAL CHANNEL



Source : Geophysics Program , AK - 50 University of Washington
 Final Report - Circulatory Processes in The Columbia River Estuary

SALINITY DATA
NOT AVAILABLE



Necanicum River

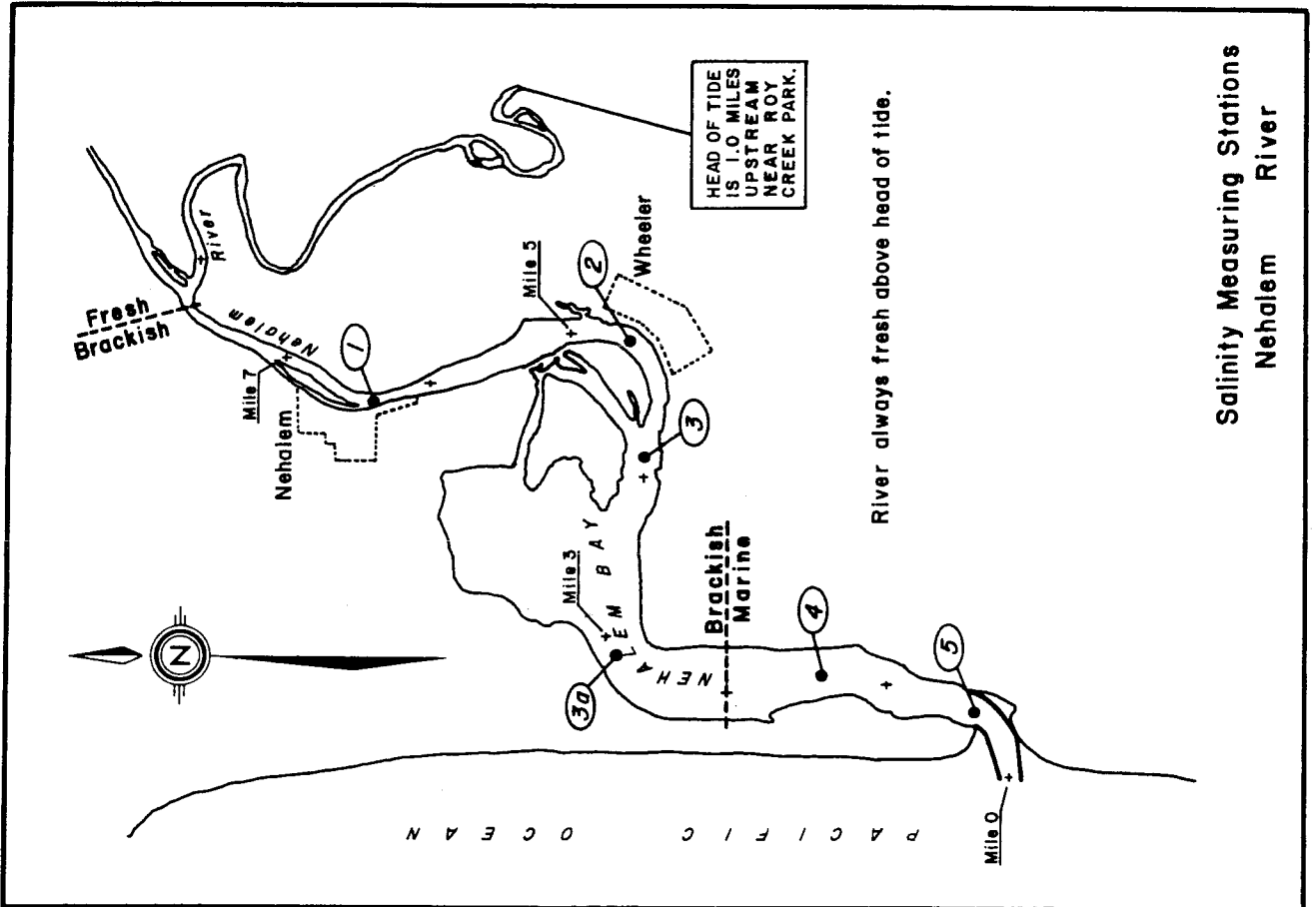
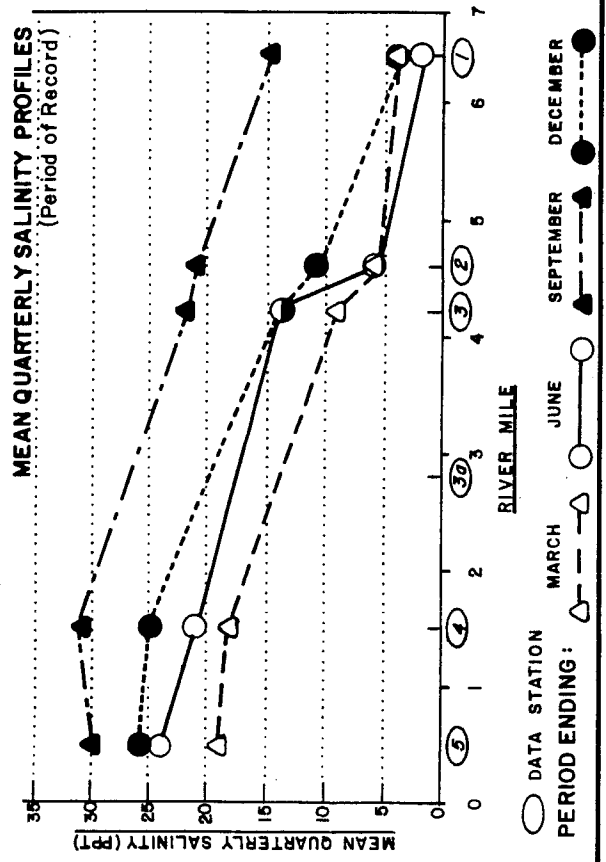
O.A.R. 141-85-264

MEAN QUARTERLY SALINITIES' NEHALEM BAY ESTUARY

PERIOD ENDING	DATA STATION [#]					
	1	2	3	3a	4	5
MARCH	4	6	9		18	19
JUNE	2	6	14		21	24
SEPTEMBER	15	21	22		31	30
DECEMBER	4	11	14		25	26

† SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

SEE MAP FOR LOCATION.



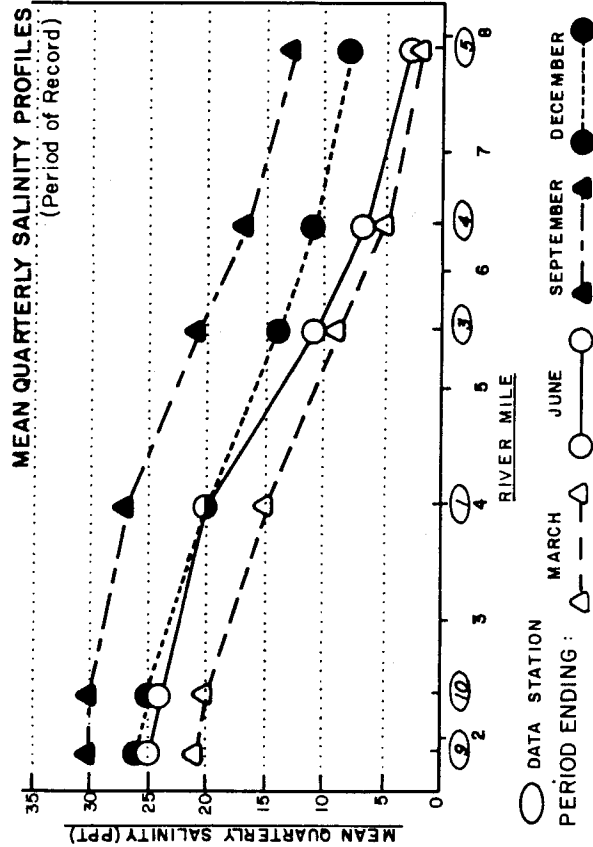
Salinity Measuring Stations
Nehalem River

MEAN QUARTERLY SALINITIES' TILLAMOOK BAY ESTUARY 1 OF 2

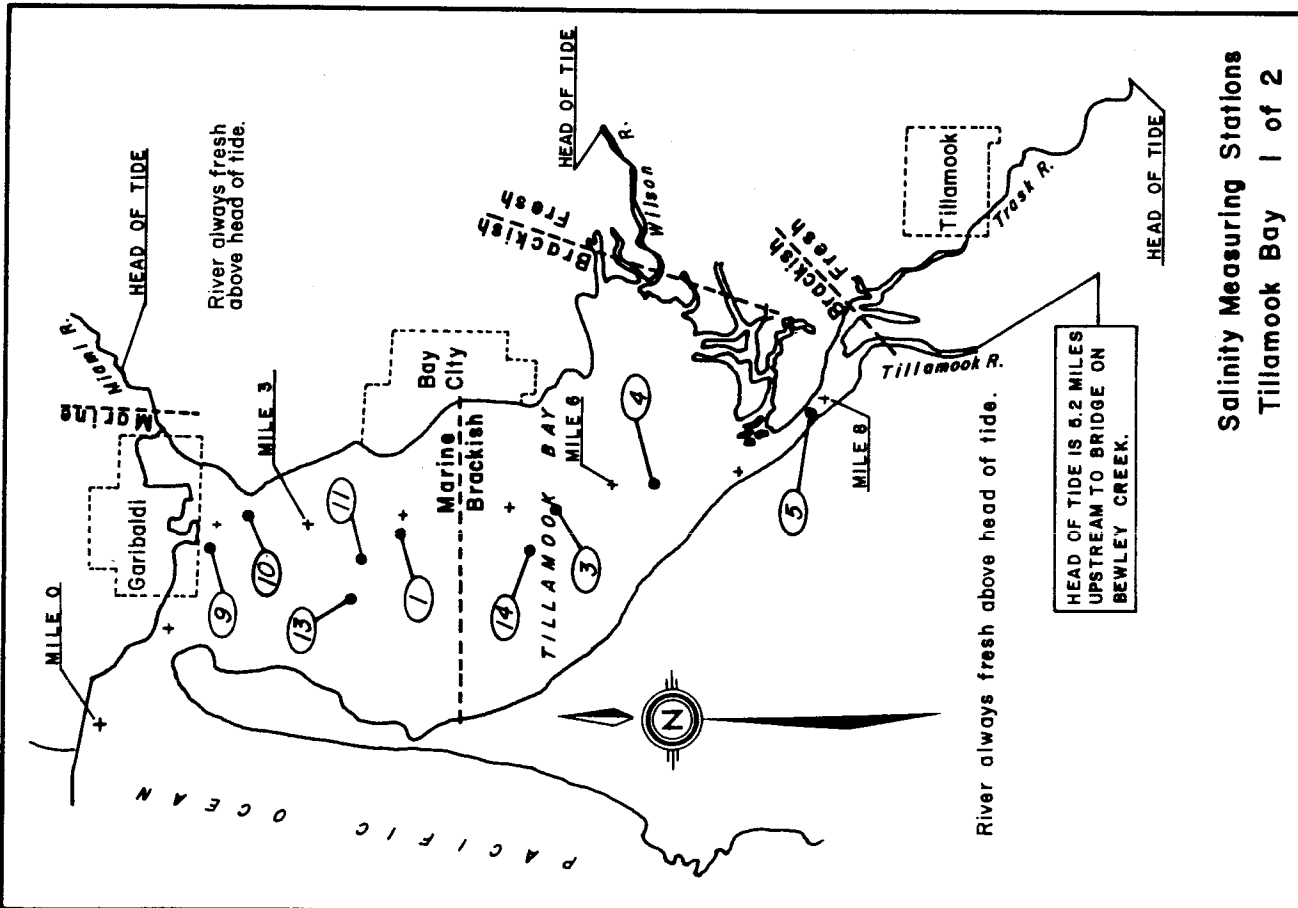
PERIOD ENDING	DATA STATION ¹¹														
	1	2	3	4	5	9	10	12	15	12	9	5	2	21	20
MARCH	20	15	12	9	5	2	21	20	1						
JUNE	27	23	21	17	13	30	30	15							
SEPTEMBER	20	18	14	11	8	26	25	7							
DECEMBER															

¹ SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

¹¹ SEE MAP FOR LOCATION



O.A.R. 141-85-264



O.A.R. 141-85-264

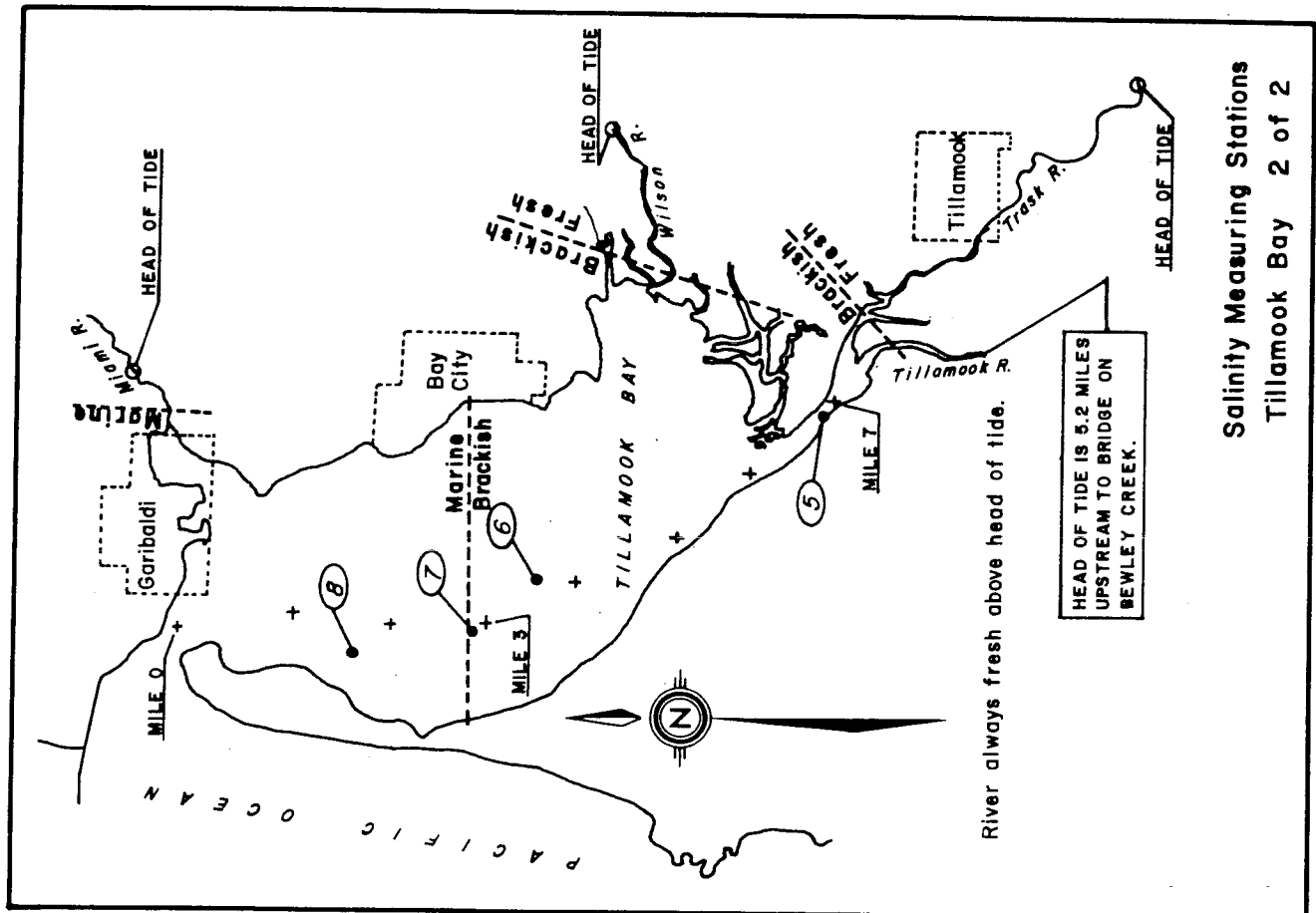
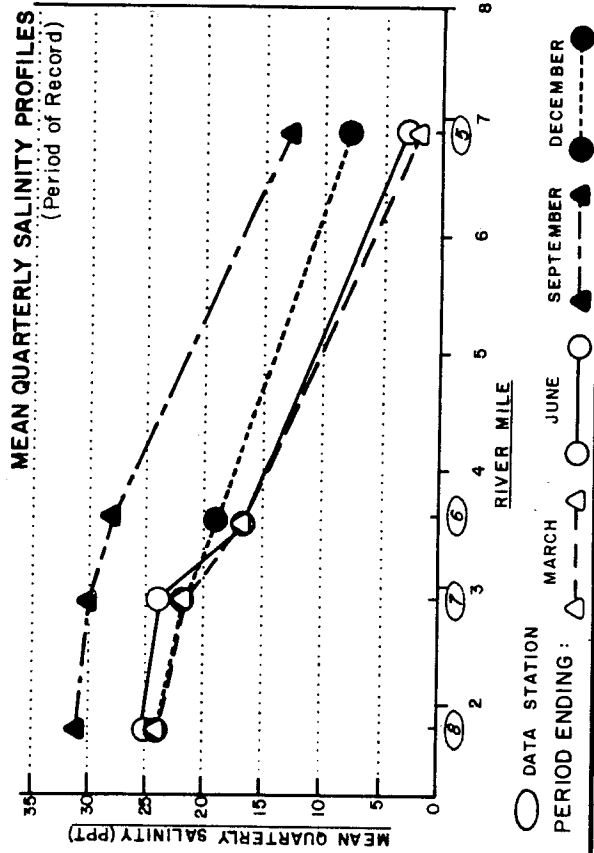
MEAN QUARTERLY SALINITIES' TILLAMOOK BAY 2 OF 2

PERIOD ENDING	DATA STATION#			
	6	7	8	11 / 13 / 14
MARCH	17	22	24	22 27 17
JUNE	17	24	25	20 17 13
SEPTEMBER	28	30	31	29 29 25
DECEMBER	19	22	24	20 21 15

Data Station 5, see "Tillamook Bay 1 of 2"

SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

SEE MAP FOR LOCATION.



Salinity Measuring Stations
Tillamook Bay 2 of 2

River always fresh above head of tide.

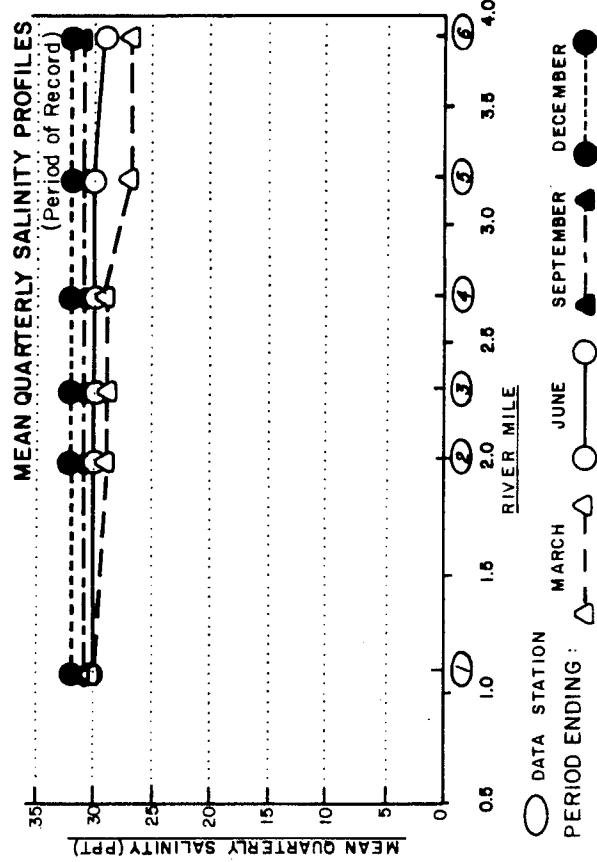
HEAD OF TIDE IS 5.2 MILES UPSTREAM TO BRIDGE ON BEWLEY CREEK.

MEAN QUARTERLY SALINITIES' NETARTS BAY ESTUARY

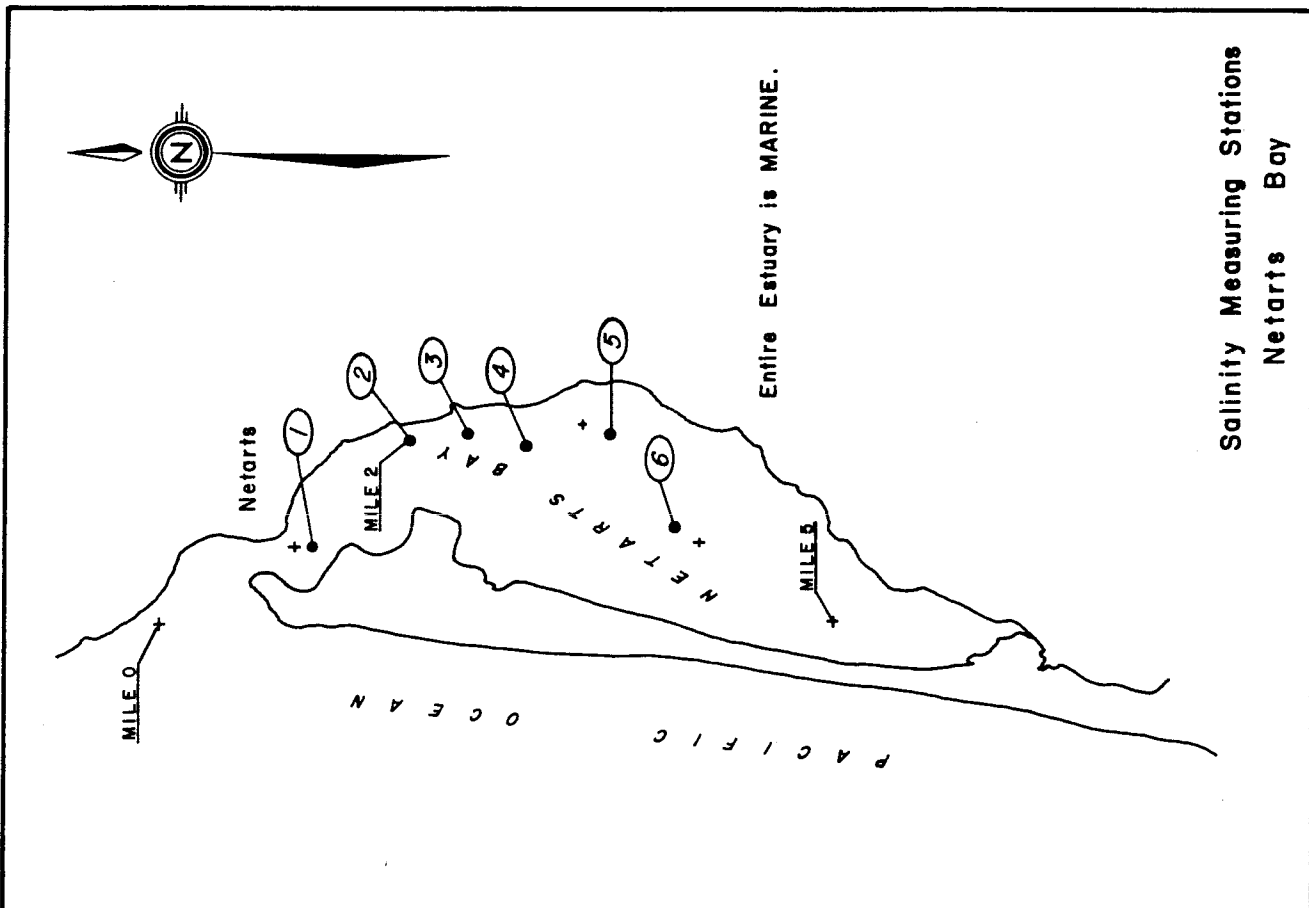
PERIOD ENDING	DATA STATION**					
	1	2	3	4	5	6
MARCH	30	29	29	29	27	27
JUNE	30	30	30	30	30	29
SEPTEMBER	31	31	31	31	31	31
DECEMBER	32	32	32	32	32	32

SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

** SEE MAP FOR LOCATION



O.A.R. 141-85-264



O.A.R. 141-85-264

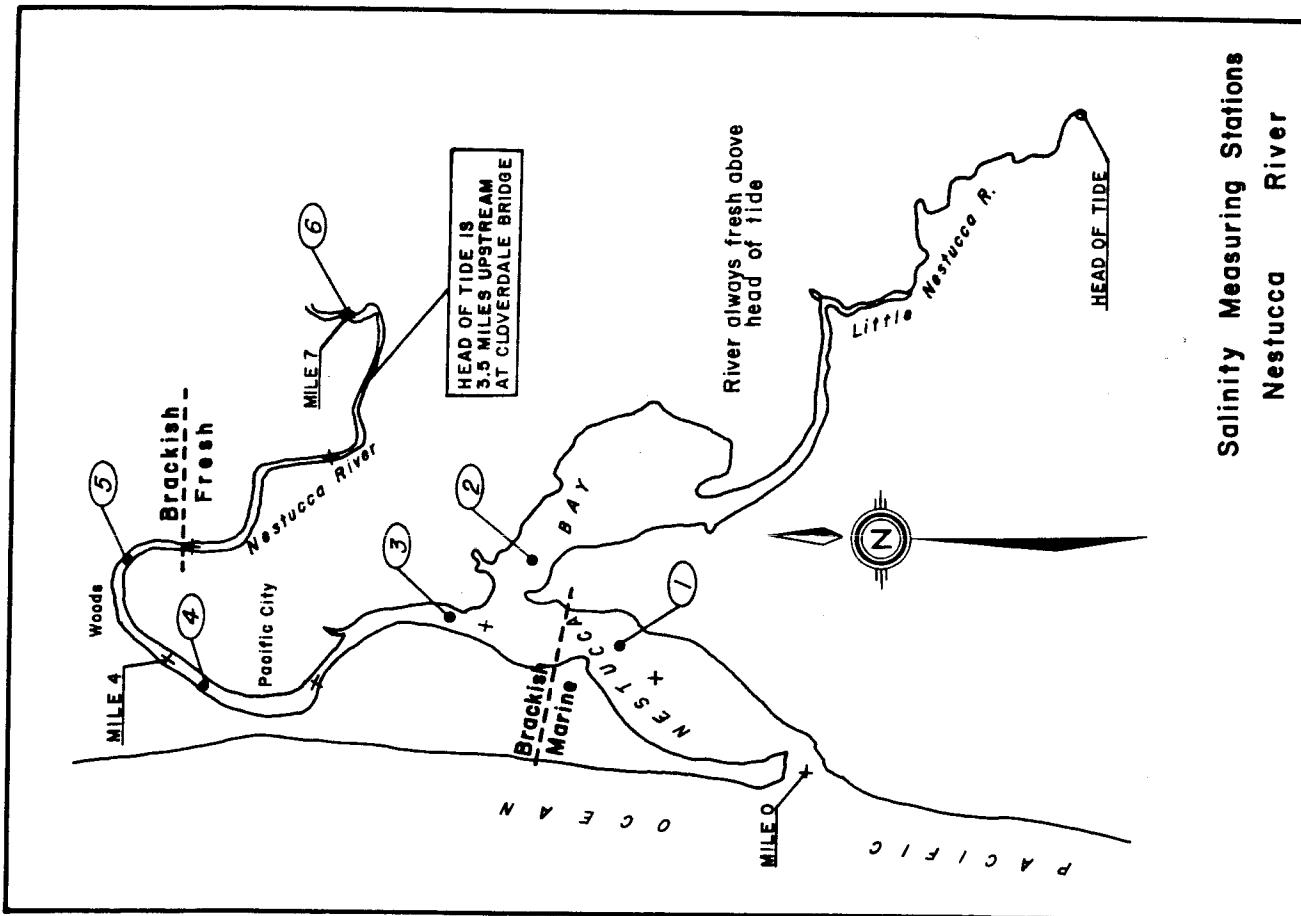
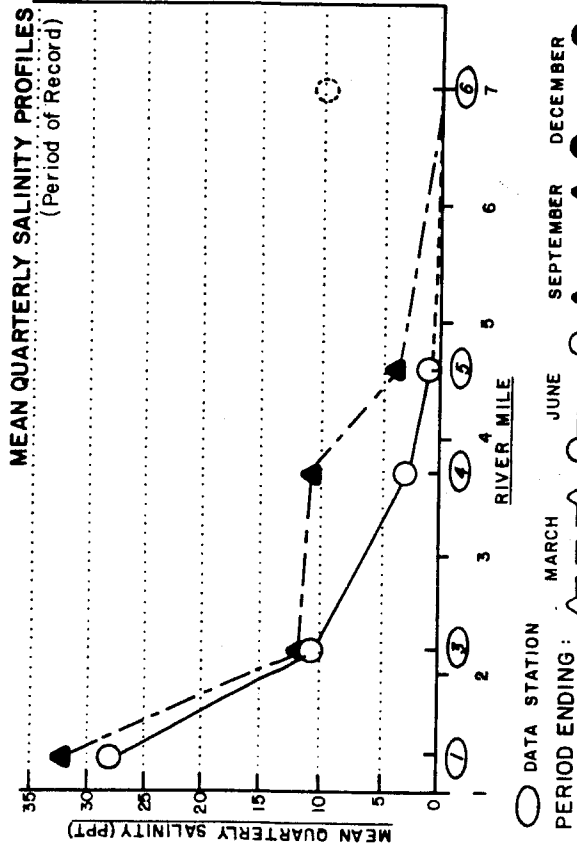
MEAN QUARTERLY SALINITIES' NESTUCCA RIVER ESTUARY

PERIOD ENDING	DATA STATION [#]					
	1	2	3	4	5	6
MARCH	N/A	N/A	N/A	N/A	N/A	N/A
JUNE	28	19	11	3	1	0
SEPTEMBER	32	32	12	11	4	0
DECEMBER	N/A	N/A	N/A	N/A	N/A	N/A

SPECIAL NOTE: Salinity data from D.E.Q. shows data station 6 being 10 parts per thousand for the quarter ending June (see above). There is reason to believe that the normal salinity is much lower (see below).

SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

[#] SEE MAP FOR LOCATION.

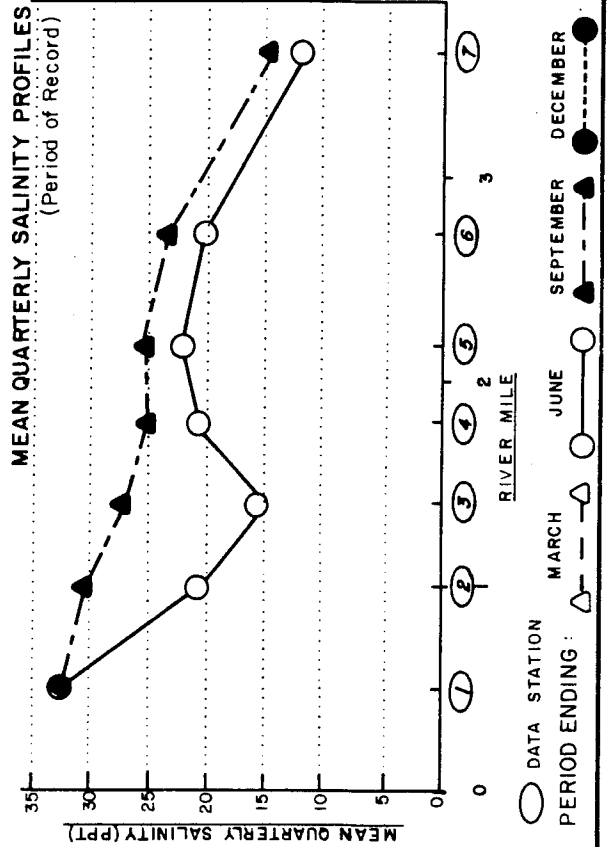


MEAN QUARTERLY SALINITIES' SALMON RIVER ESTUARY

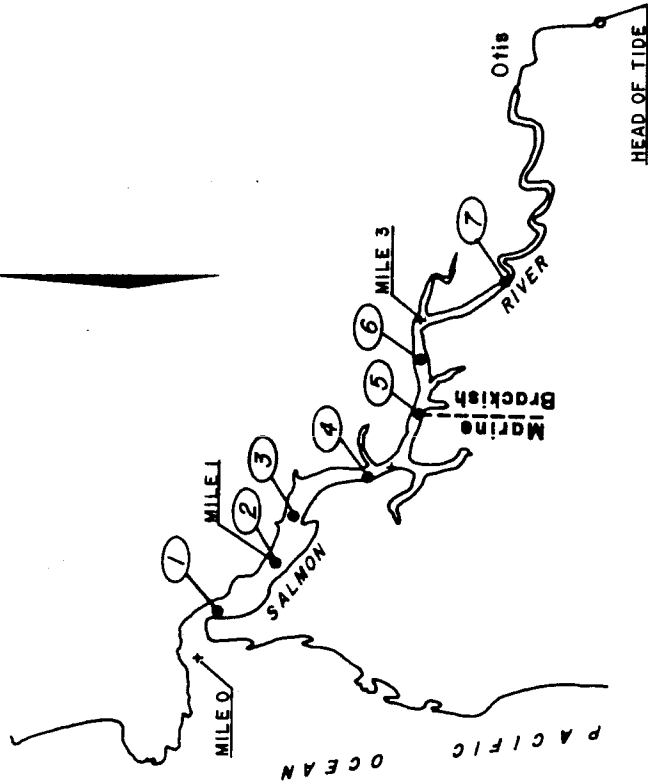
PERIOD ENDING	DATA STATION"						
	1	2	3	4	5	6	7
MARCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A
JUNE	32	21	16	21	22	20	12
SEPTEMBER	32	30	27	25	25	23	14
DECEMBER	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SOURCE Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

" SEE MAP FOR LOCATION



O.A.R. 141-85-264



River always fresh above head of tide.

Salinity Measuring Stations Salmon River

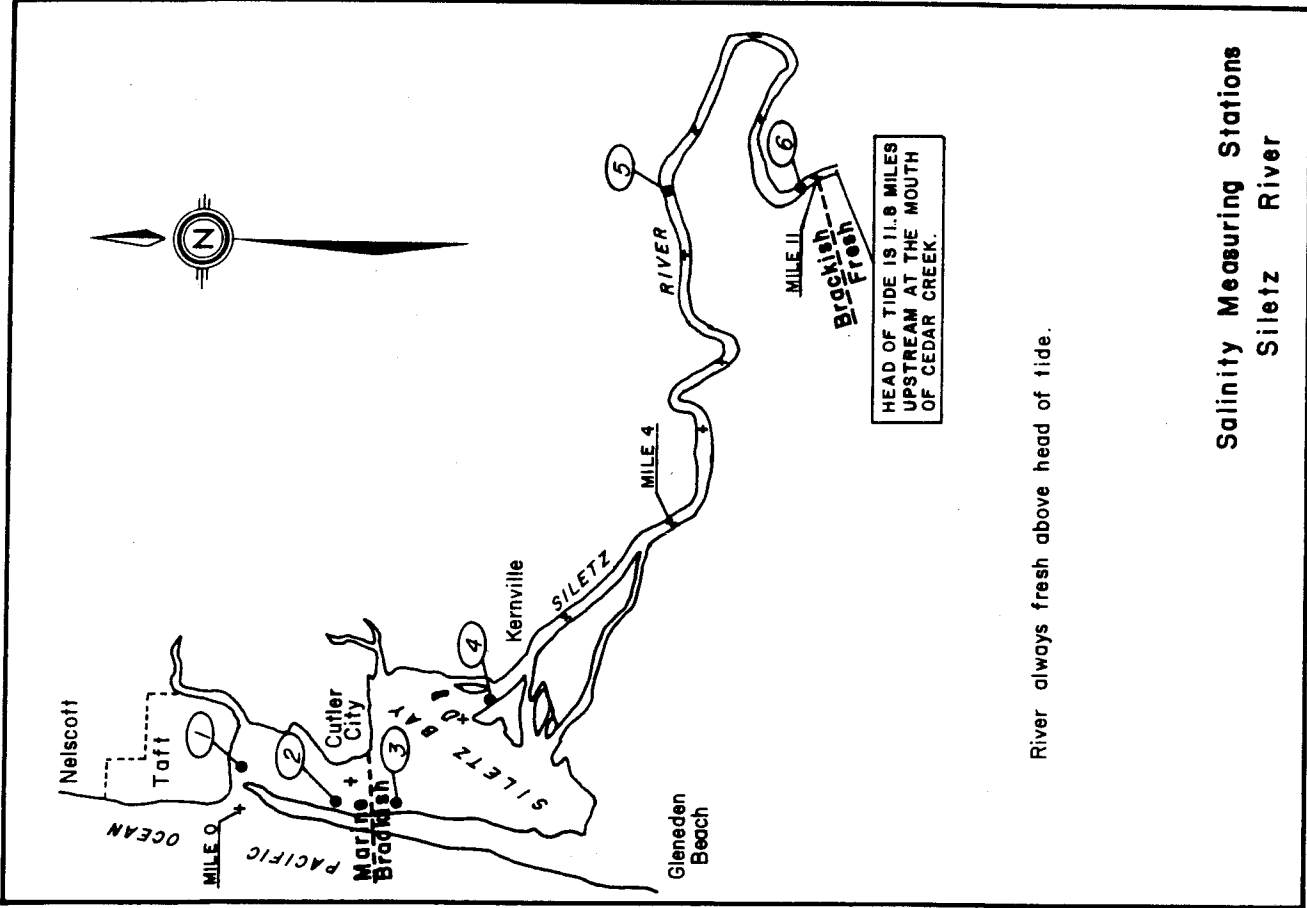
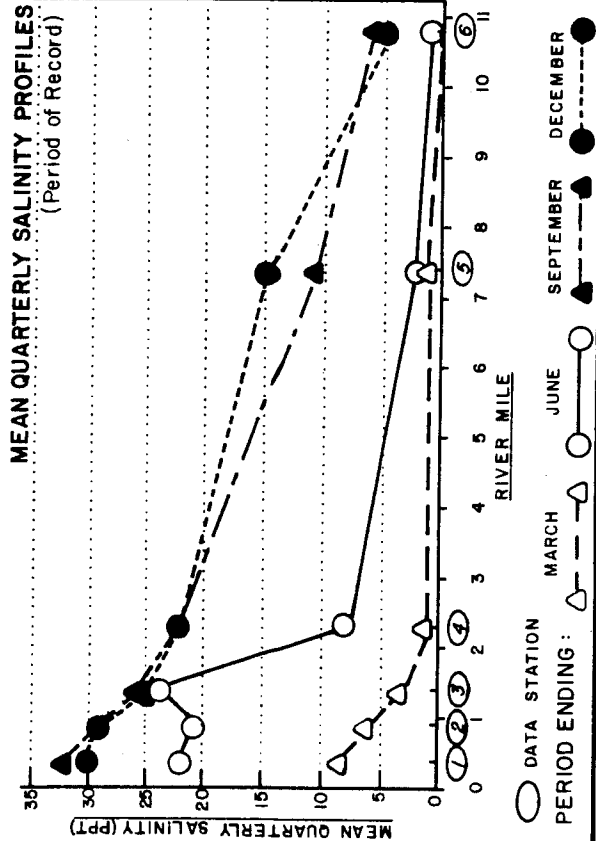
O.A.R. 141-85-264

MEAN QUARTERLY SALINITIES[†] SILETZ BAY ESTUARY

PERIOD ENDING	DATA STATION [‡]					
	1	2	3	4	5	6
MARCH	8	6	3	1	1	0
JUNE	22	21	24	8	2	1
SEPTEMBER	32	29	26	22	11	6
DECEMBER	30	29	25	22	15	5

[†] SOURCE : Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

[‡] SEE MAP FOR LOCATION.

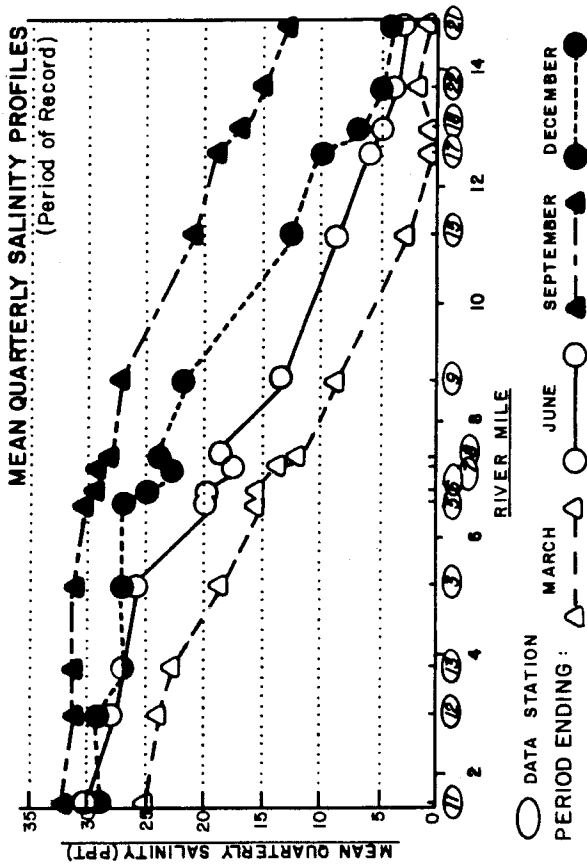


MEAN QUARTERLY SALINITIES' YAQUINA BAY ESTUARY

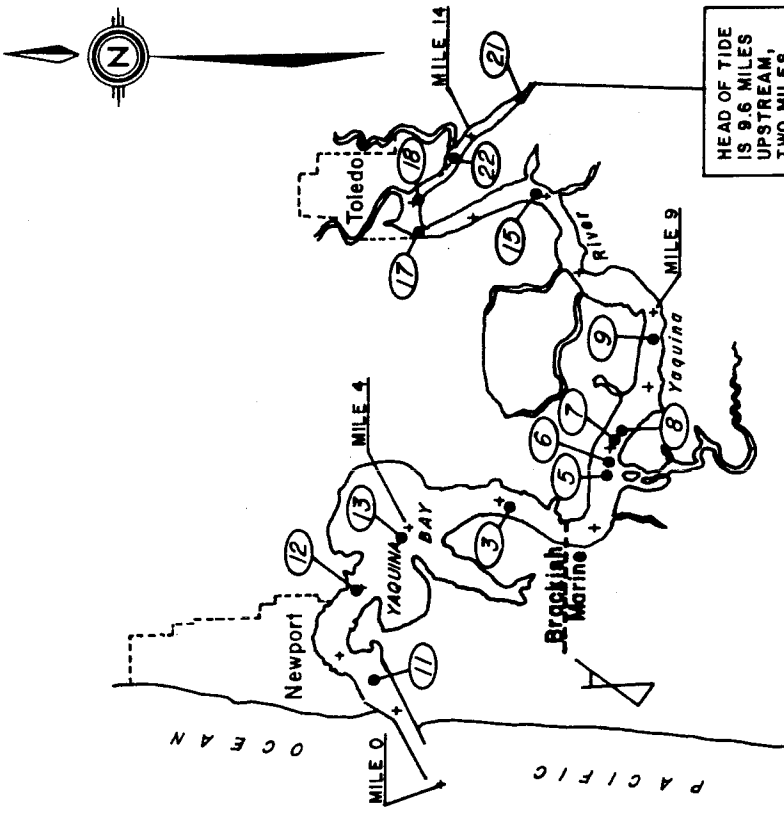
PERIOD ENDING	DATA STATION**													
	3	5	6	7	8	9	11	12	13	15	17	18	21	22
MARCH	19	16	16	14	12	9	25	24	23	3	1	1	1	2
JUNE	26	20	20	18	19	14	30	28	27	9	6	5	3	4
SEPT.	31	30	29	29	28	27	32	31	31	21	19	17	13	15
DEC.	27	27	25	23	24	22	29	29	27	13	10	7	4	5

* SOURCE : Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

** SEE MAP FOR LOCATION



O.A.R. 141 - 85 - 264



HEAD OF TIDE IS 9.6 MILES UPSTREAM, TWO MILES ABOVE ELK CITY.

River always fresh above head of tide.

Salinity Measuring Stations Yaquina River

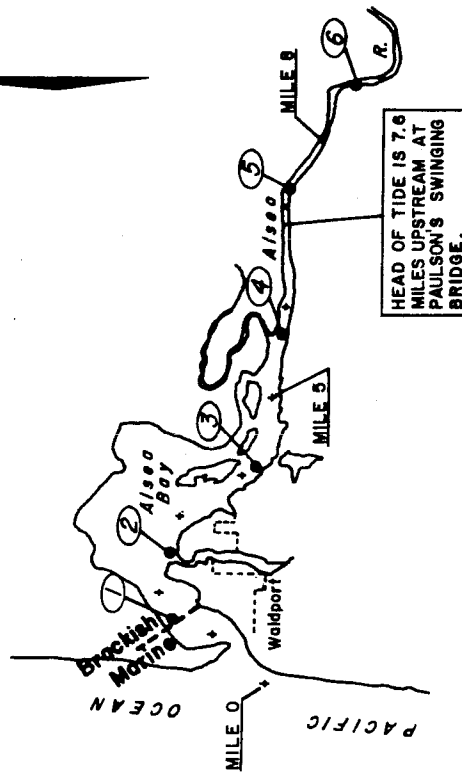
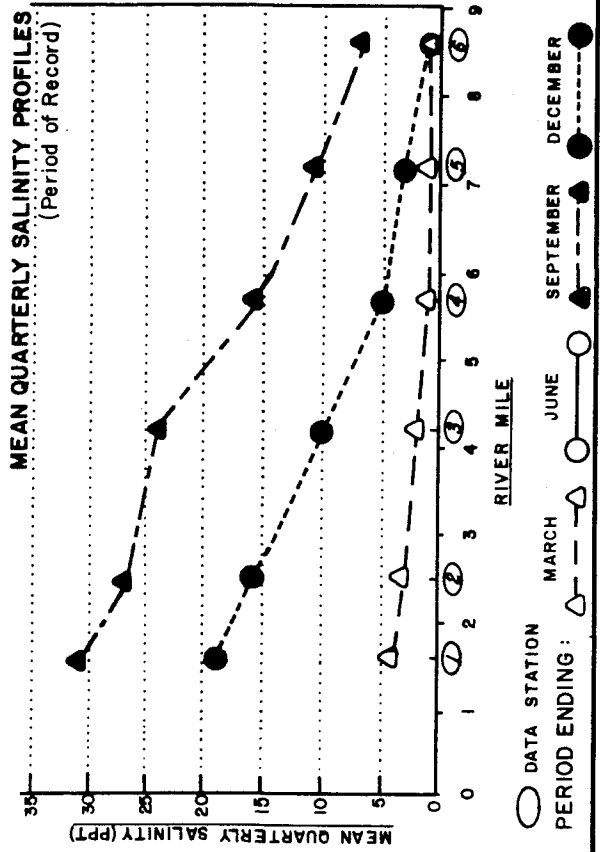
O.A.R. 141-85-264

MEAN QUARTERLY SALINITIES' ALSEA BAY ESTUARY

PERIOD ENDING	DATA STATION"					
	1	2	3	4	5	6
MARCH	4	3	2	1	1	1
JUNE	N/A	N/A	N/A	N/A	N/A	N/A
SEPTEMBER	31	27	24	16	11	7
DECEMBER	19	16	10	5	3	1

† SOURCE : Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

" SEE MAP FOR LOCATION.



River always fresh above head of tide.

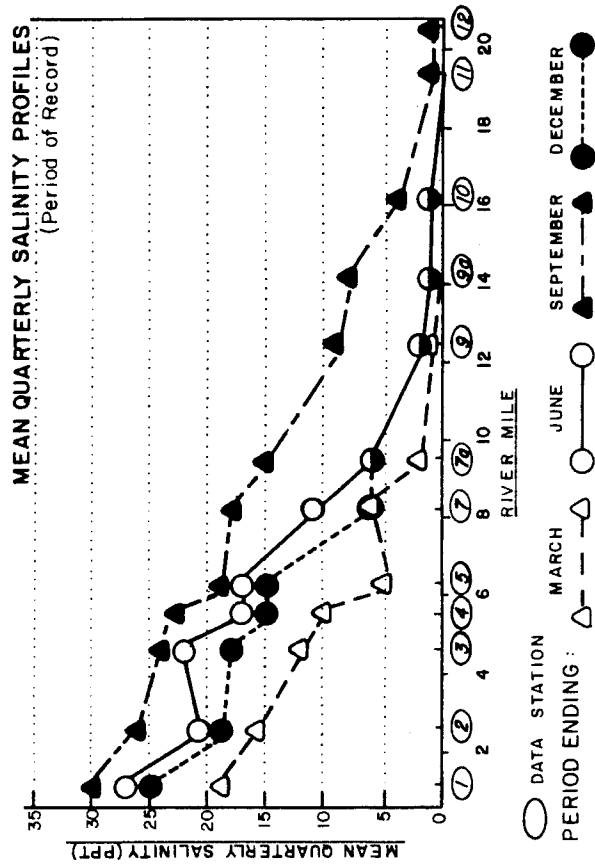
Salinity Measuring Stations Alsea Bay

MEAN QUARTERLY SALINITIES' SIUSLAW RIVER ESTUARY

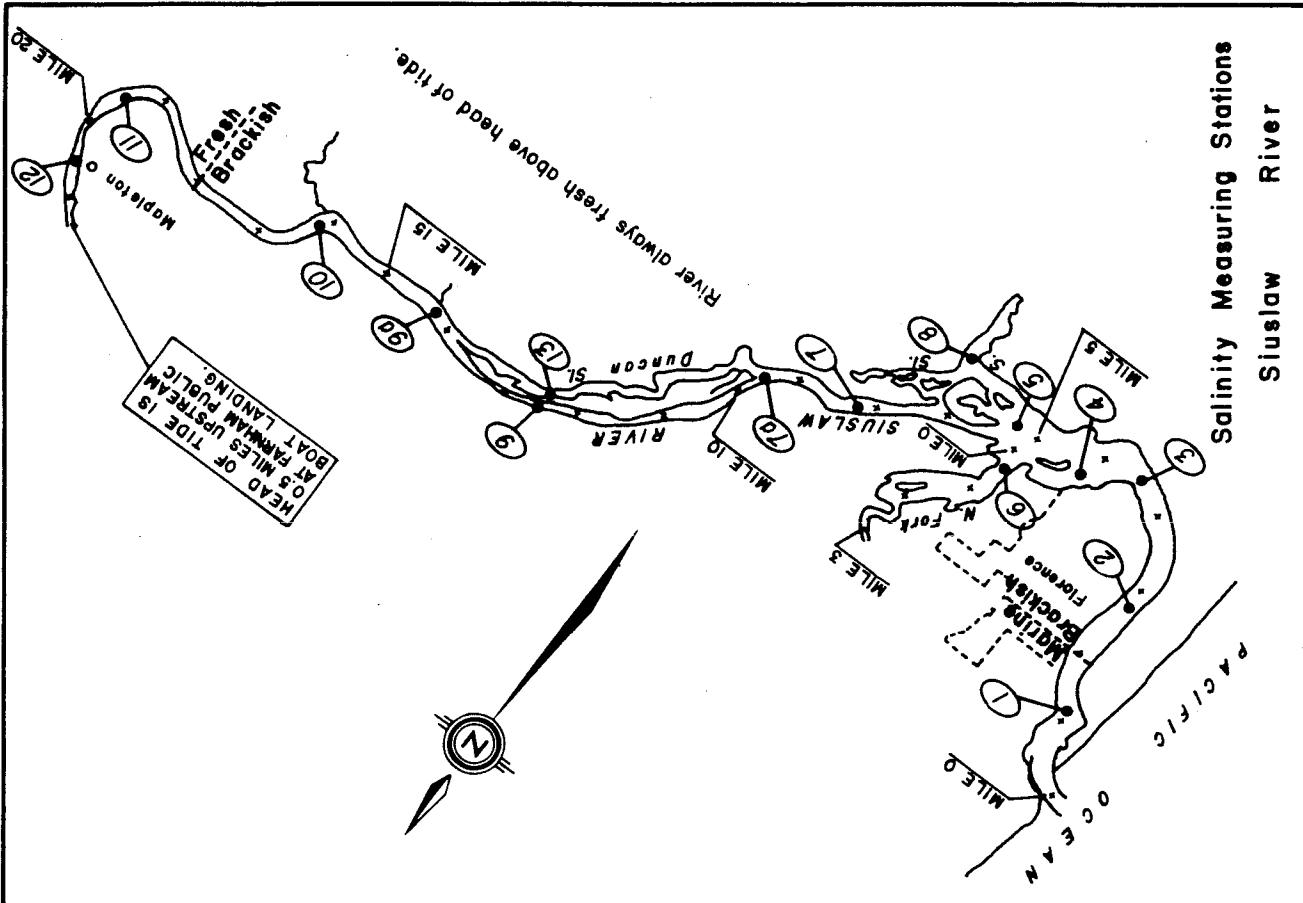
PERIOD ENDING	DATA STATION ¹¹														
	1	2	3	4	5	6	7	7a	8	9	9a	10	11	12	13
MARCH	19	16	12	10	5	7	6	2	14	1	0	0	0	0	
JUNE	27	21	22	17	16	11	6	12	2	1	1	0	0	1	
SEPT.	30	26	24	23	19	16	18	15	18	9	8	4	1	1	8
DEC.	25	19	18	15	15	10	6	6	8	2	1	1	0	0	

¹ SOURCE Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

¹¹ SEE MAP FOR LOCATION



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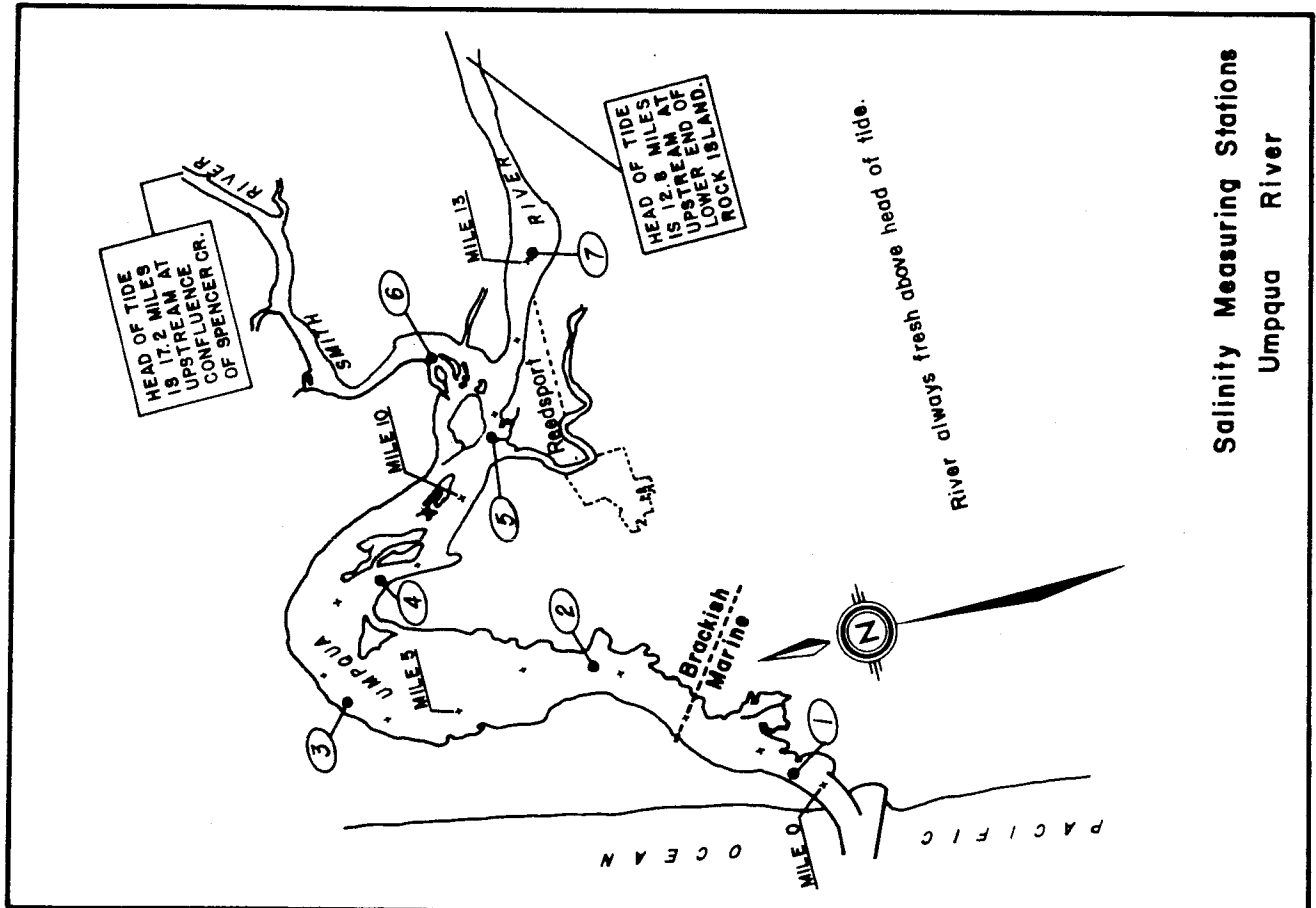
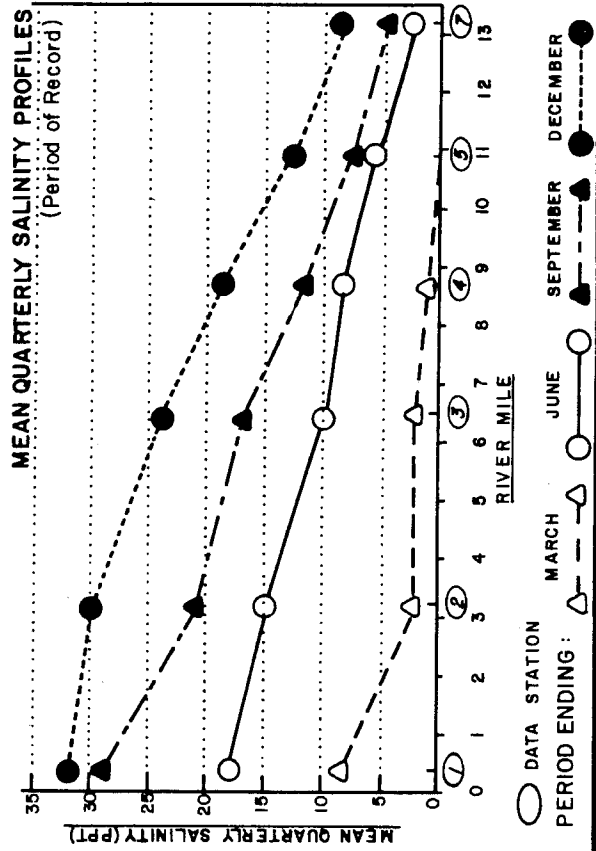
O.A.R. 141 - 85 - 264

MEAN QUARTERLY SALINITIES' UMPQUA RIVER ESTUARY

PERIOD ENDING	DATA STATION ¹¹						
	1	2	3	4	5	6	7
MARCH	8	2	2	1	0	0	0
JUNE	18	15	10	9	6	5	3
SEPTEMBER	29	21	17	12	8	7	5
DECEMBER	32	30	24	19	13	11	9

¹ SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

¹¹ SEE MAP FOR LOCATION

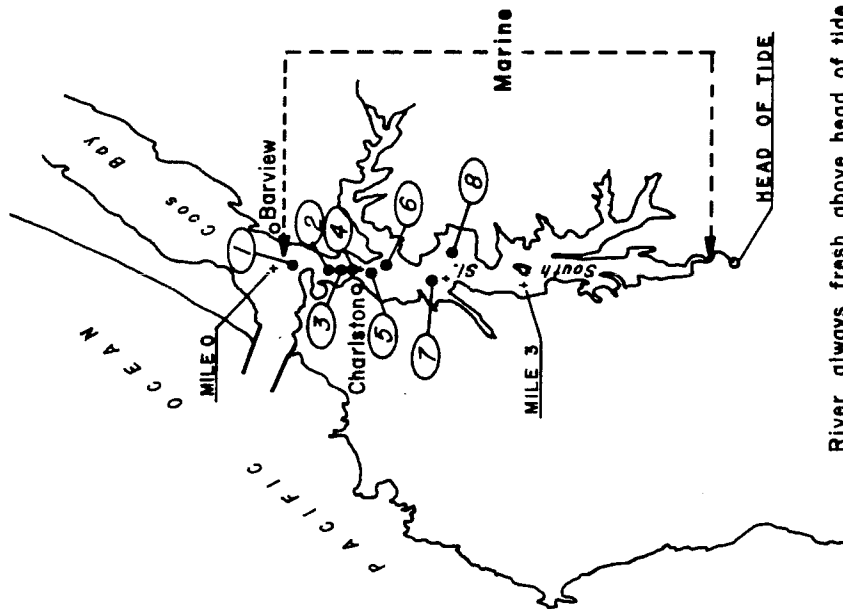
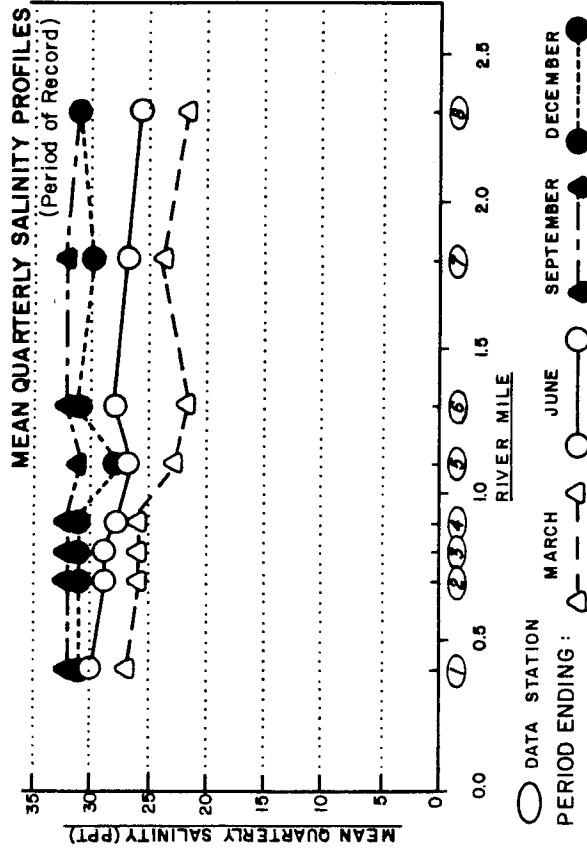


MEAN QUARTERLY SALINITIES' COOS BAY (SOUTH SLOUGH) ESTUARY

PERIOD ENDING	DATA STATION**							
	1	2	3	4	5	6	7	8
MARCH	27	26	26	26	23	22	24	22
JUNE	30	29	29	28	27	28	27	26
SEPTEMBER	32	32	32	32	31	32	32	31
DECEMBER	31	31	31	31	28	31	30	31

* SOURCE: Oregon Department of Environmental Quality.
 Mean Values for period of record ending 1982
 rounded to nearest whole number (parts per
 thousand).

** SEE MAP FOR LOCATION



River always fresh above head of tide.

Salinity Measuring Stations
Coos Bay (South Slough)

O.A.R. 141-85-264

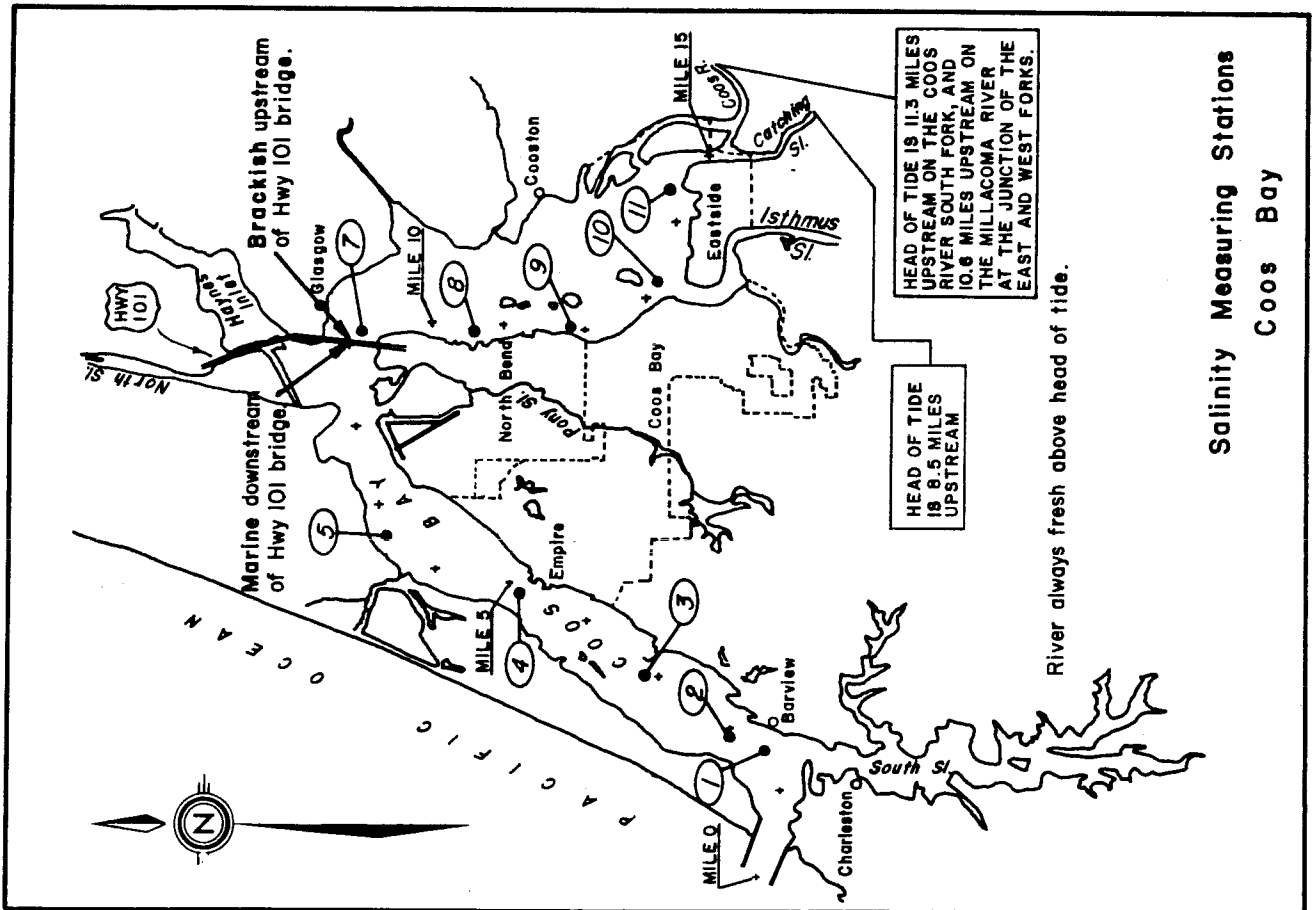
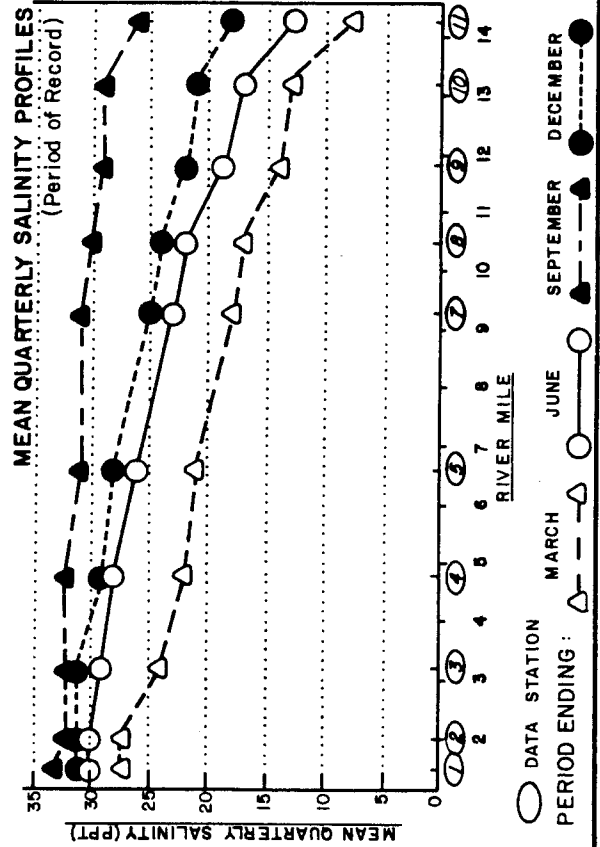
O.A.R. 141-85-264

MEAN QUARTERLY SALINITIES' COOS BAY ESTUARY

PERIOD ENDING	DATA STATION**										
	1	2	3	4	5	7	8	9	10	11	
MARCH	27	27	24	22	21	18	17	14	13	8	
JUNE	30	30	29	28	26	23	22	19	17	13	
SEPTEMBER	33	32	32	31	31	30	29	29	29	26	
DECEMBER	31	31	31	29	28	25	24	22	21	18	

† SOURCE : Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

** SEE MAP FOR LOCATION

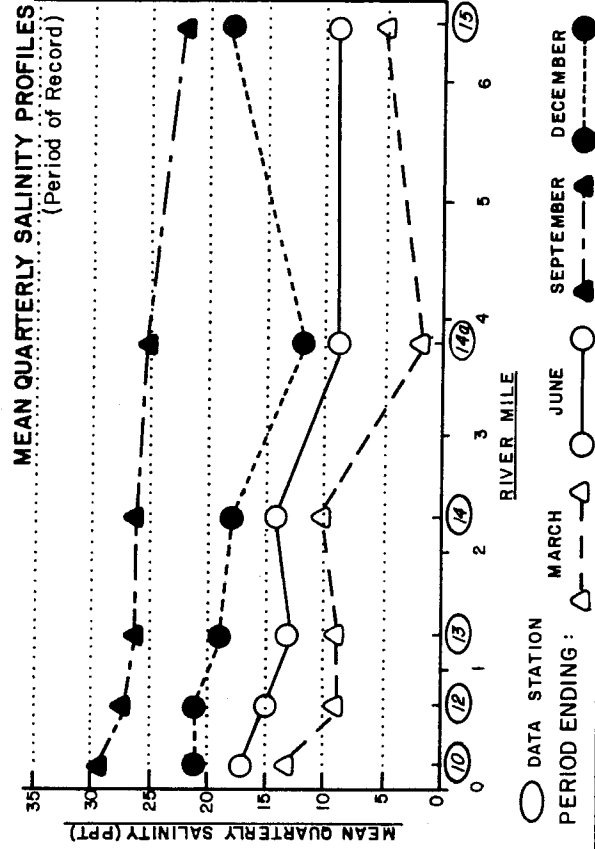


MEAN QUARTERLY SALINITIES' COOS BAY (ISTHMUS SLOUGH) ESTUARY

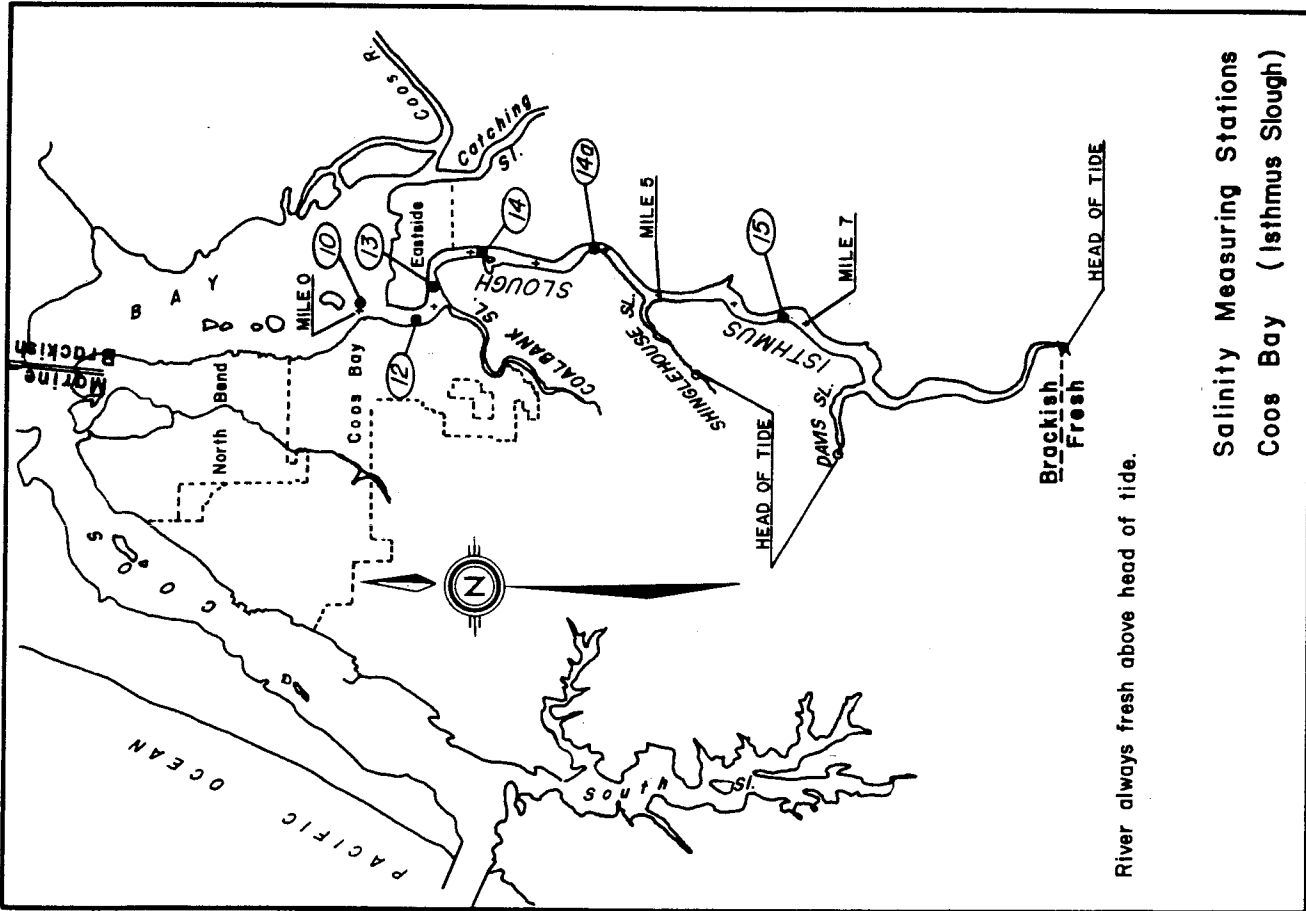
PERIOD ENDING	DATA STATION**				
	10	12	13	14	15
MARCH	13	9	9	10	2
JUNE	17	15	13	14	9
SEPTEMBER	29	27	26	26	25
DECEMBER	21	21	19	18	18

† SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

** SEE MAP FOR LOCATION



O.A.R. 141-85-264



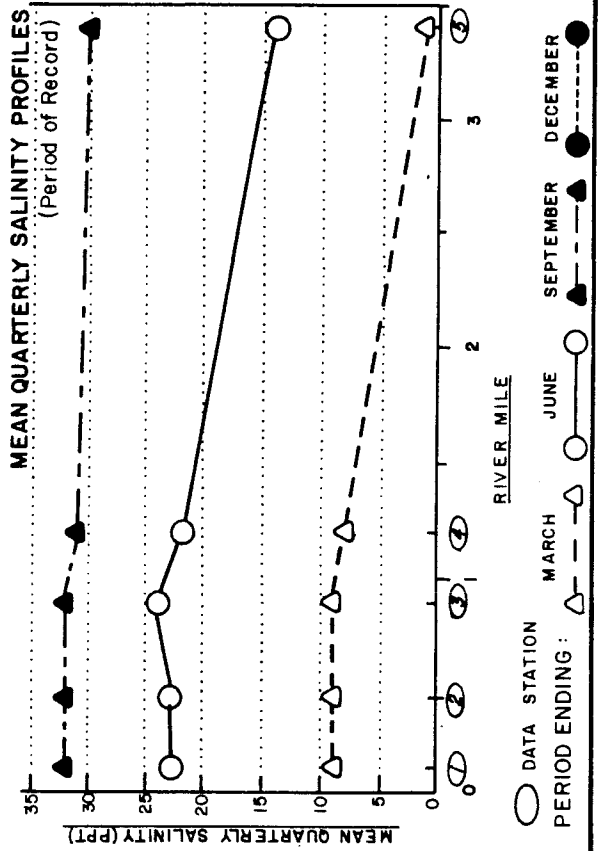
O.A.R. 141-85-264

MEAN QUARTERLY SALINITIES' COQUILLE RIVER ESTUARY

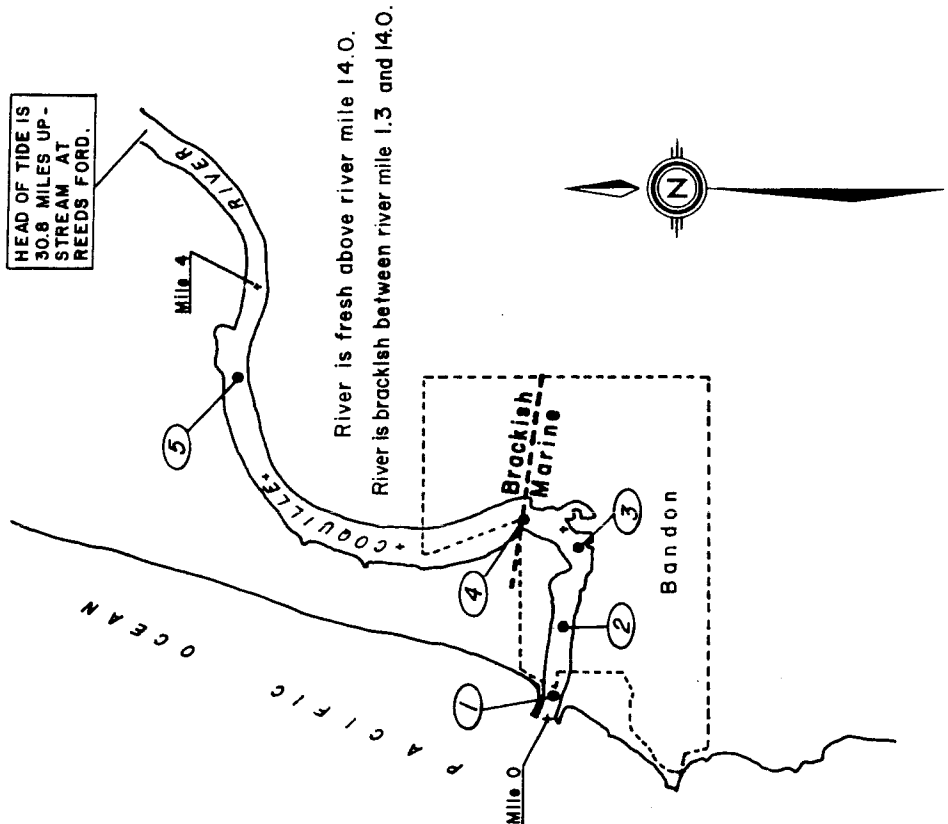
PERIOD ENDING	DATA STATION**				
	1	2	3	4	5
MARCH	9	9	9	8	1
JUNE	23	23	24	22	14
SEPTEMBER	32	32	32	31	30
DECEMBER	N/A	N/A	N/A	N/A	N/A

† SOURCE: Oregon Department of Environmental Quality.
 Mean Values for period of record ending 1982
 rounded to nearest whole number (parts per
 thousand).

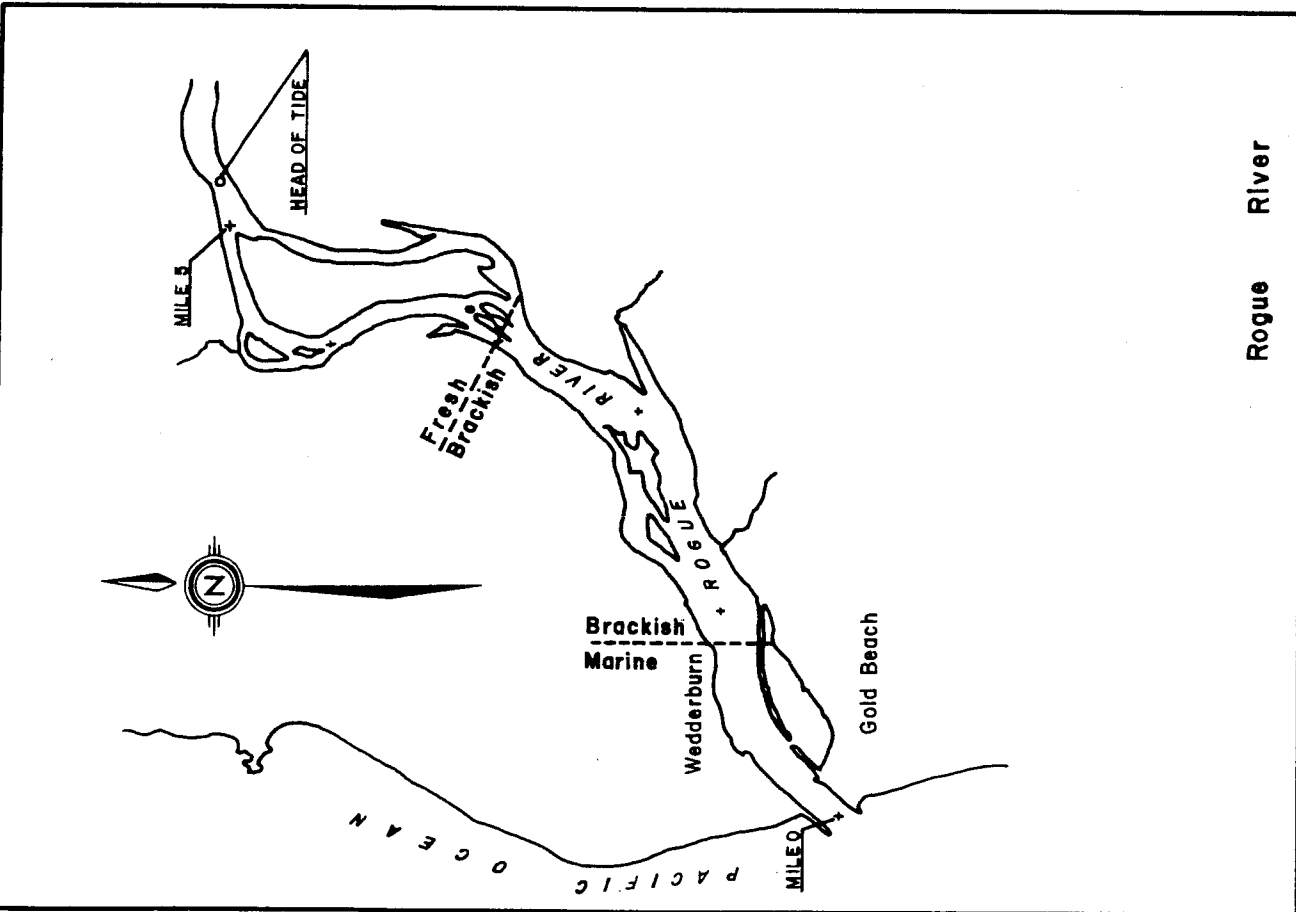
** SEE MAP FOR LOCATION



HEAD OF TIDE IS
 30.8 MILES UP -
 STREAM AT
 REEDS FORD.

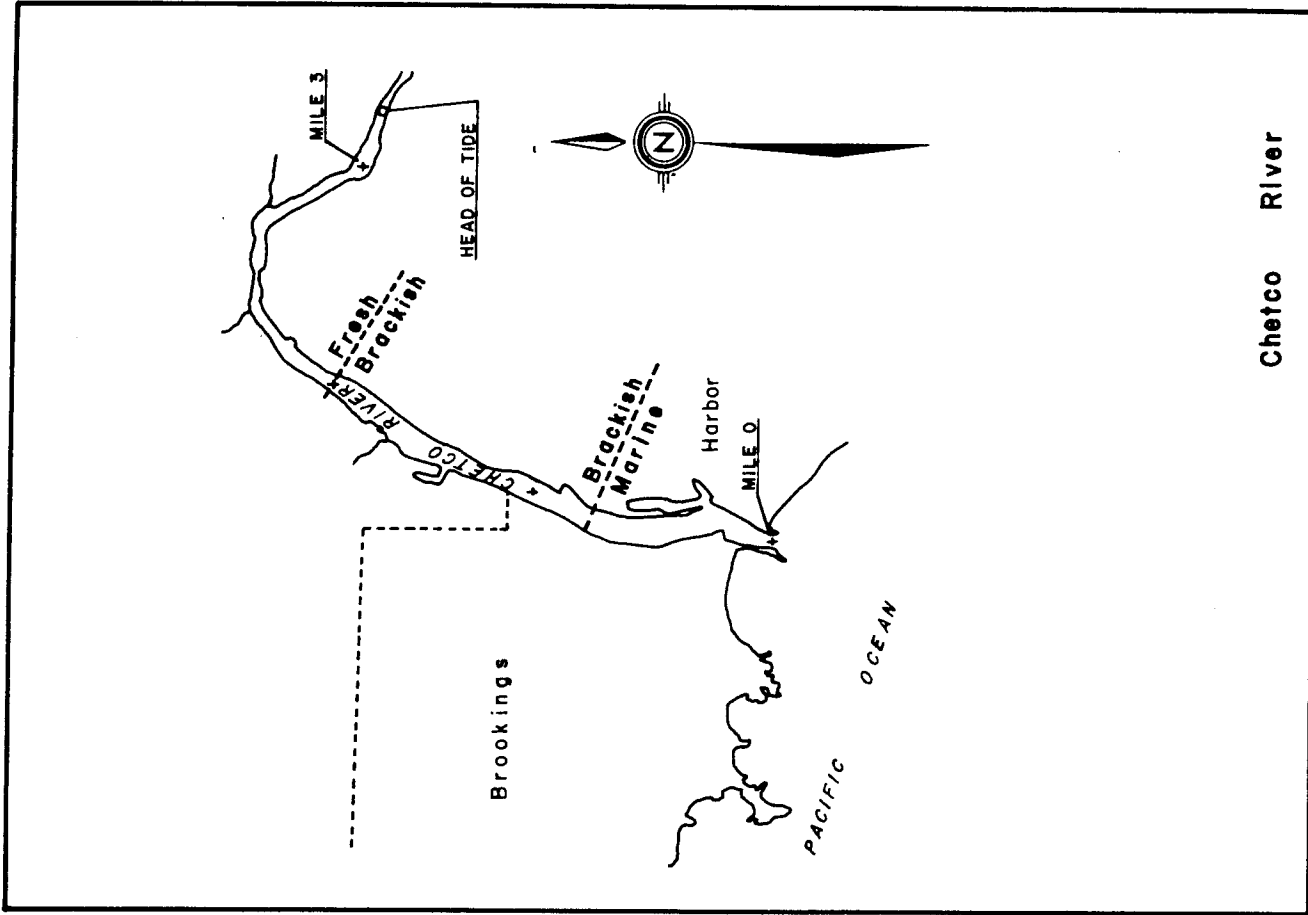


Salinity Measuring Stations
 Coquille River



Rogue River

O.A.R. 141-85-264



Chetco River

O.A.R. 141-85-264

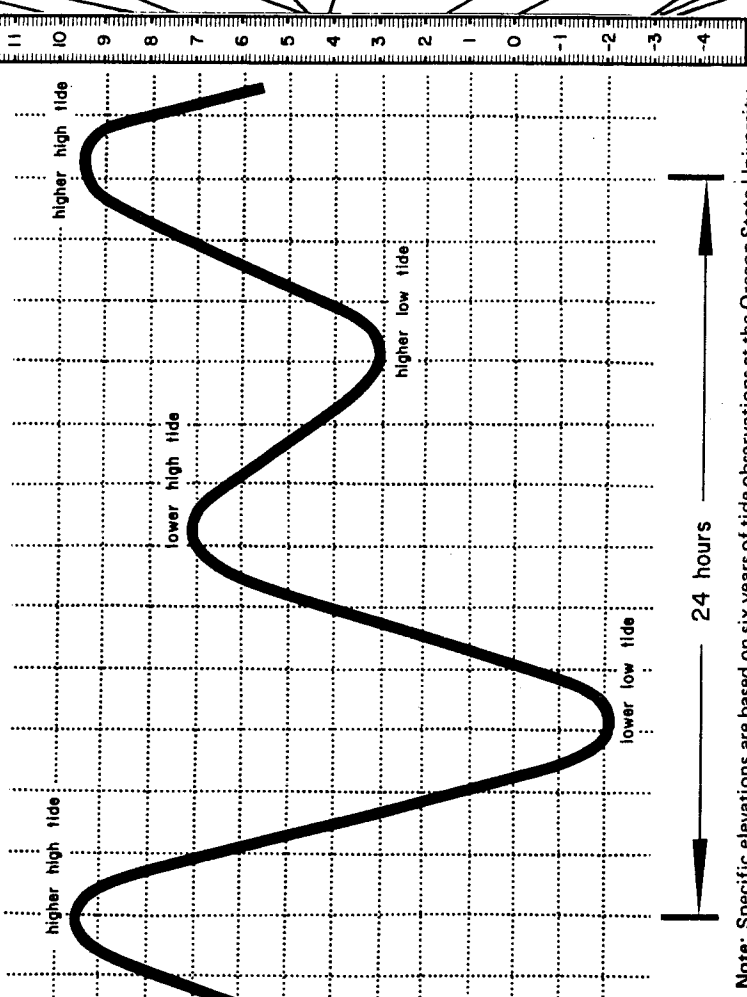
TIDAL ELEVATIONS IN OREGON ESTUARIES

OAR 141 - 85 - 266

TIDAL ELEVATIONS ON THE OREGON COAST

STATE OF OREGON
DIVISION OF STATE LANDS

Typical Days Tide



Note: Specific elevations are based on six years of tide observations at the Oregon State University Marine Science Center Dock on Yaquina Bay. Values have been reduced by the National Ocean Survey (formerly the Coast and Geodetic Survey). The elevations differ from estuary to estuary and from different points within an estuary. The exception is MLLW which is zero by definition.

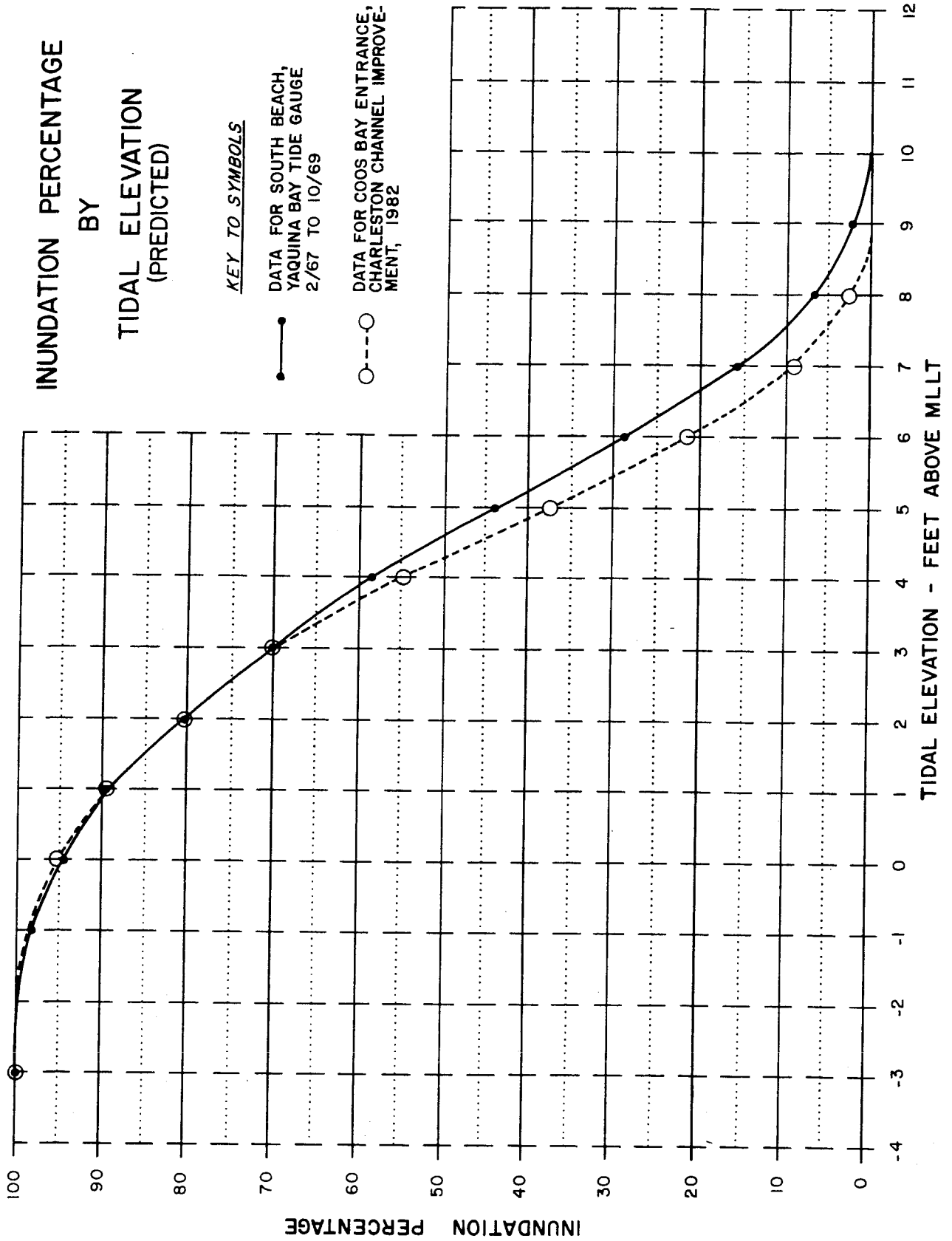
- 14.5 **Extreme High Tide** — The highest projected tide that can occur. It is the sum of the highest predicted tide and the highest recorded storm surge. Such an event would be expected to have a very long recurrence interval. In some locations, the effect of a rain induced freshet must also be taken under consideration. The extreme high tide level is used by engineers for the design of harbor structures.
- 12.63 **Highest Measured Tide** — The highest tide actually observed on the tide staff.
- 10.3 **Highest Predicted Tide** — Highest tide predicted by the Tide Tables.
- 8.38 **Mean Higher High Water** — The average height of the higher high tides observed over a specific time interval. The intervals are related to the moon's many cycles which range from 28 days to 18.6 years. The time length chosen depends upon the refinement required. The datum plane of MHHW is used on National Ocean Survey charts to reference rocks awash and navigational clearances.
- 7.62 **Mean High Water** — The average of all observed high tides. The average is of both the higher high and of the lower high tide recorded each day over a specific time period. The datum of MHW is the boundary between upland and tideland. It is used on navigational charts to reference topographical features.
- 4.58 **Mean Tide Level** — Also called half-tide level. A level midway between mean high water and mean low water. The difference between mean tide level and local mean sea level reflects the asymmetry between local high and low tides.
- 4.51 **Local Mean Sea Level** — The average height of the water surface for all stages of the tide at a particular observation point. The level is usually determined from hourly height readings.
- 4.11 **Mean Sea Level** — A datum based upon observations taken over a number of years at various tide stations along the west coast of the United States and Canada. It is officially known as the **Sea Level Datum of 1929, 1947 adj.** and is the most common datum used by engineers. MSL is the reference for elevations on U.S. Geological Survey Quadrangles. The difference between MSL and Local MSL reflects numerous factors ranging from the location of the tide staff within an estuary to global weather patterns.
- 1.54 **Mean Low Water** — The average of all observed low tides. The average is of both the lower low and of the higher low tides recorded each day over a specific time period. The datum of MLW is the boundary between tideland and submerged land.
- 0.00 **Mean Lower Low Water** — The average height of the lower low tides observed over a specific time interval. The datum plane is used on Pacific coast nautical charts to reference soundings.
- 2.9 **Lowest Predicted Tide** — The lowest tide predicted by the Tide Tables.
- 3.14 **Lowest Measured Tide** — The lowest tide actually observed on the tide staff.
- 3.5 **Extreme Low Tide** — The lowest estimated tide that can occur. Used by navigational and harbor interests.

INUNDATION PERCENTAGE
BY
TIDAL ELEVATION
(PREDICTED)

KEY TO SYMBOLS

—●— DATA FOR SOUTH BEACH,
YAQUINA BAY TIDE GAUGE
2/67 TO 10/69

○---○ DATA FOR COOS BAY ENTRANCE,
CHARLESTON CHANNEL IMPROVE-
MENT, 1982



TIDAL ELEVATIONS IN OREGON ESTUARIES

STATION	Elevation of MLLW on NGVD Datum ^{2/}	ELEVATIONS ^{1/}						Non-Aquatic Veg. ^{3/}
		Extreme Low Tide	MLLW ^{3/}	MLW	MHW	MHHW	Highest Water ^{4/}	
BROOKINGS - Chetco River	- 3.48	- 3	0.00	1.20	6.30	7.00	10	N/E
WEDDERBURN - Rogue River	- 3.34	- 3	0.00	1.10	6.00	6.70	10	N/E
PORT ORFORD	- 3.92	- 3	0.00	1.30	6.60	7.30	11	N/E
BANDON - Coquille River	- 3.57	- 3	0.00	1.10	6.30	7.00	10.5	N/E
COOS BAY - Entrance	- 3.78	- 3	0.00	1.20	6.40	7.00	10.5	N/E
CHARLESTON - Coos Bay Entrance	- 4.18	- 3.2	0.00	1.20	6.90	7.50	10.9	N/E
EMPIRE - Coos Bay	- 3.38	- 3	0.00	1.10	6.00	6.70	10	N/E
COOS BAY - Coos Bay	N/E	- 3	0.00	1.10	6.70	7.30	10.5	N/E
WINCHESTER BAY - Umpqua River	- 3.40	- 3	0.00	1.20	6.30	6.90	10	N/E
REEDSPORT - Umpqua River	- 3.05	- 3	0.00	1.00	6.10	6.70	10.5	N/E
SIUSLAW RIVER - Entrance	N/E	- 3	0.00	1.20	6.70	7.30	10.5	N/E
FLORENCE - Siuslaw River	- 3.56	- 3	0.00	1.10	6.50	7.20	10.5	N/E
CUSHMAN - Siuslaw River	- 3.52	- 3	0.00	1.10	6.60	7.30	10.5	N/E
TIERNAN - Siuslaw River	- 3.70	- 3	0.00	1.10	7.00	7.70	10.5	N/E
MAPLETON - Siuslaw River	N/E	- 3	0.00	1.10	7.30	8.00	11	N/E
WALDPORT - Alsea Bay	- 3.39	- 3	0.00	1.20	7.00	7.70	12	N/E
DRIFT CREEK - Alsea Bay	N/E	- 3	0.00	0.62	5.59	6.26	10.5	N/E
SOUTH BEACH - Yaquina Bay	- 3.90	- 3	0.00	1.30	7.60	8.30	12.3	N/E
YAQUINA - Yaquina Bay		- 3	0.00	1.30	7.50	8.20	11.5	N/E

^{1/} National Ocean Administration Data (NOA) MLLW Datum
^{2/} NOA Data - 1976 - NGVD Datum (1947) *NGVD Datum (1929)
^{3/} 0.00 by definition

^{4/} Estimated - Does not include effects of storm surge. May be used to estimate location of Highest Measured Tide.

^{5/} Varies by location - not established

TIDAL ELEVATIONS IN OREGON ESTUARIES

STATION	ELEVATIONS ^{1/}							Non-Aquatic Veg. ^{3/}
	Elevation of MLLW on NGVD Datum ^{2/}	Extreme Low Tide	MLLW ^{3/}	MLW	MHW	MHHW	Highest Water ^{4/}	
TAFT - Siletz Bay	- 2.42	- 3	0.00	0.90	5.90	6.60	10.5	N/E
KERNVILLE - Siletz Bay	-	- 3	0.00	0.80	5.40	6.10	10	N/E
BARVIEW - Tillamook Bay	- 3.34	- 3	0.00	1.30	7.50	8.20	12	N/E
GARIBALDI - Tillamook Bay	- 3.35	- 3	0.00	1.20	7.10	7.80	11.5	N/E
BAY CITY - Tillamook Bay	- 2.92	- 3	0.00	1.00	6.40	7.10	11	N/E
TILLAMOOK - Tillamook Bay (Hoquarten Slough)	- 1.97	- 3	0.00	0.70	5.90	6.60	10.5	N/E
BRIGHTON - Nehalem River	- 3.49	- 3	0.00	1.20	7.10	7.80	12.5	N/E
WHEELER - Nehalem River	- 3.46	- 3	0.00	1.00	6.90	7.60	11.5	N/E
NEHALEM - Nehalem River	- 2.52	- 3	0.00	0.90	6.50	7.20	11	N/E
SEASIDE - Necanicum River	- 0.79	- 3	0.00	0.40	5.10	5.80	10	N/E
FORT STEVENS - Columbia River	- 3.51	- 3	0.00	1.20	7.60	8.30	12	N/E
ASTORIA - Columbia River (Youngs Bay)	- 3.60	- 2.8	0.00	1.20	7.90	8.60	12	N/E
ASTORIA - Columbia River (Port Docks)	- 3.02	- 3	0.00	1.10	7.30	8.00	12	N/E
ASTORIA - Columbia River (Tongue Point)	- 3.05	- 2.8	0.00	1.10	7.60	8.30	12.1	N/E
SETTLER POINT - Columbia River	- 2.69	- 3	0.00	1.00	7.30	8.00	12	N/E
KNAPPA - Columbia River	- 2.58*		0.00					
ALDRICH POINT - Columbia River	- 2.33*		0.00					
CLIFTON - Columbia River	- 2.10*		0.00					
WAUNA - Columbia River	- 1.76*		0.00					
WESTPORT - Columbia River	- 1.65*		0.00					

^{1/} National Ocean Administration Data (NOA) MLLW Datum
^{2/} NOA Data - 1976 - NGVD Datum (1947) *NGVD Datum (1929)
^{3/} 0.00 by definition
^{4/} Estimated - Does not include effects of storm surge. May be used to estimate location of Highest Measured Tide.
^{5/} Varies by location - not established

*THE AUTHOR GRATEFULLY ACKNOWLEDGES
ALL OF THE PEOPLE WHO GAVE THEIR
ASSISTANCE, ADVICE AND GUIDANCE
DURING THE DEVELOPMENT OF THESE
MITIGATION RULES, WITH SPECIAL THANKS
TO THE FACULTY OF OREGON STATE UNIVERSITY.*

REGULATIONS
FOR REMOVAL OR FILLING OF
MATERIALS IN WATERWAYS

ORS 541.605 - 541.695

REMOVAL OF MATERIAL; FILLING

541.605 Definitions for ORS 541.605 to 541.665. As used in ORS 541.605 to 541.665, unless the context requires otherwise:

(1) "Channel relocation" means a change in location of a channel in which a new channel is dug and the flow is diverted from the old channel into the new channel if more than 50 cubic yards of material is removed in constructing the new channel or if it would require more than 50 cubic yards of material to completely fill the old channel.

(2) "Director" means the Director of the Division of State Lands.

(3) "Division" means the Division of State Lands.

(4) "Estuary" means a body of water semi-enclosed by land and connected with the open ocean within which salt water is usually diluted by fresh water derived from the land. "Estuary" includes all estuarine waters, tidelands, tidal marshes and submerged lands extending upstream to the head of tidewater. However, the Columbia River Estuary extends to the western edge of Puget Island.

(5) "Fill" means the total of deposits by artificial means equal to or exceeding 50 cubic yards or more of material at one location in any waters of this state.

(6) "Governmental body" includes the Federal Government when operating in any capacity other than navigational servitude, the State of Oregon and every political subdivision therein.

(7) "Intermittent stream" means any stream which flows during a portion of every year and which provides spawning, rearing or food-producing areas for food and game fish.

(8) "Material" means rock, gravel, sand, silt and other inorganic substances removed from waters of this state and any materials, organic or inorganic, used to fill waters of this state.

(9) "Public use" means a publicly owned project or a privately owned project that is available for use by the public.

(10) "Removal" means the taking of more than 50 cubic yards or the equivalent weight in tons of material in any waters of this state in any calendar year; or the movement by artificial means of an equivalent amount of material on or within the bed of such waters, including channel relocation.

(11) "Water resources" includes not only water itself but also aquatic life and habitats

therein and all other natural resources in and under the waters of this state.

(12) "Waters of this state" means natural waterways including all tidal and nontidal bays, intermittent streams, constantly flowing streams, lakes and other bodies of water in this state, navigable and nonnavigable, including that portion of the Pacific Ocean which is in the boundaries of this state. [1967 c.567 §2; 1971 c.509 §4; 1971 c.754 §1; 1973 c.330 §1; 1973 c.674 §1; 1977 c.417 §2; 1977 c.418 §1; 1979 c.564 §1]

541.610 Policy. (1) The protection, conservation and best use of the water resources of this state are matters of the utmost public concern. Streams, lakes, bays, estuaries and other bodies of water in this state, including not only water and materials for domestic, agricultural and industrial use but also habitats and spawning areas for fish, avenues for transportation and sites for commerce and public recreation, are vital to the economy and well-being of this state and its people. Unregulated removal of material from the beds and banks of the waters of this state may create hazards to the health, safety and welfare of the people of this state. Unregulated filling in the waters of this state for any purpose, may result in interfering with or injuring public navigation, fishery and recreational uses of the waters. In order to provide for the best possible use of the water resources of this state, it is desirable to centralize authority in the Director of the Division of State Lands, and implement control of the removal of material from the beds and banks or filling of the waters of this state.

(2) The Director of the Division of State Lands shall take into consideration all beneficial uses of water including streambank protection when administering fill and removal statutes.

(3) There shall be no condemnation, inverse condemnation, other taking, or confiscating of property under ORS 541.605 to 541.665 without due process of law. [1967 c.567 §1; 1971 c.754 §2; 1973 c.330 §2; 1973 c.674 §2; 1977 c.418 §2; 1979 c.564 §2]

541.615 Permit required to remove material from bed or banks of waters; exceptions. (1) Except as otherwise specifically permitted under ORS 541.605 to 541.665, no person or governmental body shall remove any material from the beds or banks or fill any waters of this state without a permit issued under authority of the Director of the Division of State Lands, or in a manner contrary to the conditions set out in the permit.

(2) No governmental body shall issue a lease or permit contrary or in opposition to the condi-

tions set out in the permit issued under ORS 541.605 to 541.665.

(3) Subsection (1) of this section does not apply to removal of material under a contract, permit or lease with any governmental body entered into before September 13, 1967. However, no such contract, permit or lease may be renewed or extended on or after September 13, 1967, unless the person removing the material has obtained a permit under ORS 541.605 to 541.665.

(4) Subsection (1) of this section does not apply to removal of material from the beds or banks or filling of any waters of this state in an emergency, for the purpose of making repairs or for the purpose of preventing irreparable harm, injury or damage to persons or property, when notice of such emergency removal or filling is given to the Division of State Lands within 24 hours following the start of such activity. The division, not later than 24 hours following notice, shall inspect the emergency activity, and deny or approve; provided, however, that in emergency actions involving highways, the appropriate highway authority having jurisdiction over the highway in which the work is being performed, shall notify the division within 72 hours following the start of such activity. [1967 c.567 §3; 1971 c.754 §3]

541.620 Application for permit; fee; disposition of fees. (1) Each applicant for a permit to remove material from the bed or banks or fill any waters of this state first shall file a written application with the Director of the Division of State Lands, specifying the nature and amount of material to be removed or the amount of fill, the waters and the specific location from which it is to be removed or where the fill will be placed, the method of removal or filling and the times during which removal or filling is to be conducted. The director may require additional information as is necessary to enable him to determine whether the granting of the permit applied for is consistent with the protection, conservation and best use of the water resources of this state. For the purposes of this subsection, fills or removals of material at locations not more than one mile apart may be combined in one application.

(2) The Director of the Division of State Lands shall furnish to any member of the public upon his written request and at his expense a copy of any application for a permit pursuant to subsection (1) of this section.

(3)(a) Each application under subsection (1) of this section must be accompanied by a fee in accordance with the following schedule:

(A) For a removal by a private operator or public body, or a person contracting to perform services for such persons, \$50;

(B) For a removal by a commercial operator, \$100;

(C) For a fill by a private operator or public body, or a person contracting to perform services for such persons, \$100;

(D) For a fill by a commercial operator, \$250;

(E) For erosion-flood repair or channel relocation work by a private landowner or public body, or a person contracting to perform services for such persons, no fee;

(F) For erosion-flood repair by multiproject, no fee;

(G) Riprap, no fee.

(b) For the purposes of paragraph (a) of this subsection, the following terms shall have the following meanings:

(A) "Private operator" means any person undertaking a project for exclusively a nonincome-producing and nonprofit purpose;

(B) "Public body" means federal, state, and local governmental bodies, unless specifically exempted by law, engaged in projects for the purpose of providing free public services;

(C) "Commercial operator" means any person undertaking a project having financial profit as a goal;

(D) "Multiproject" means projects where storm or flood damage has necessitated multiple projects to maintain and repair existing facilities or land in natural waterways, in which case a single permit with multiple attachments may be issued;

(E) "Riprap" means the facing of a stream-bank with rock or similar substance to control erosion in accordance with regulations promulgated by the division; and

(F) "Erosion-flood repair" means any work necessary to preserve existing facilities and land from flood and high stream flows, in accordance with regulations promulgated by the division.

(4) Annually on the anniversary date of the permit, each holder of a material removal permit shall pay a fee during the term of the permit in accordance with the schedule set forth in subsection (3) of this section. The permit shall be suspended during any period of delinquency of payment as though no permit was applied for. Notwithstanding this subsection the director may, before granting any extension of the permit, require the permittee to show that the continued exercise of the permit is consistent

with the protection, conservation and best use of the water resources of this state.

(5) Fees received under subsections (3) and (4) of this section shall be credited to the Common School Fund for use by the division in administration of ORS 541.605 to 541.665 and 541.990 and as otherwise required by law. [1967 c.567 §4; 1969 c.338 §4; 1971 c.754 §4; 1973 c.674 §3, 1977 c.418 §3; 1977 c.564 §6]

541.622 Prohibition against issuance of permits to fill Smith Lake or Bybee Lake. Notwithstanding any provision of ORS 541.605 to 541.665 to the contrary, after October 4, 1977, the Director of the Division of State Lands shall not issue any permit to fill Smith Lake or Bybee Lake, located in Multnomah County, below the contour line which lies 11 feet above mean sea level as determined by the 1947 adjusted United States Coastal Geodetic Survey Datum. [1977 c.120 §2]

541.625 Conditions of permit; consultation with other agencies; hearing; appeal. (1) The director shall issue a permit to remove material from the beds or banks of any waters of this state applied for under ORS 541.620 if the director determines that the removal described in the application will not be inconsistent with the protection, conservation and best use of the water resources of this state as specified in ORS 541.610.

(2) The director shall issue a permit applied for under ORS 541.620 for filling waters of this state if the director determines that the proposed fill would not unreasonably interfere with the paramount policy of this state to preserve the use of its waters for navigation, fishing and public recreation.

(3) In determining whether or not a permit shall be issued, the director shall consider the following:

(a) The public need for the proposed fill and the social, economic or other public benefits likely to result from the proposed fill. When the applicant for a fill permit is a public body, the director may accept and rely upon the public body's findings as to local public need and local public benefit.

(b) The economic cost to the public if the proposed fill is not accomplished.

(c) The availability of alternatives to the project for which the fill is proposed.

(d) The availability of alternative sites for the proposed fill.

(e) Whether the proposed fill conforms to sound policies of conservation and would not interfere with public health and safety.

(f) Whether the proposed fill is in conformance with existing public uses of the waters or uses of adjacent land.

(g) Whether the proposed fill is consistent with a duly enacted zoning or land use plan for the area where the proposed fill is to take place.

(h) Whether the proposed fill is for stream-bank protection.

(4) The director may issue a permit for a substantial fill in an estuary for a nonwater dependent use only if the fill is for a public use and would satisfy a public need that outweighs harm to navigation, fishery and recreation and if the proposed fill meets all other criteria contained in ORS 541.605 to 541.665.

(5) If the director issues a permit, the director may impose such conditions as the director considers necessary to carry out the purposes of ORS 541.610, 541.626 and subsections (1) and (2) of this section. In formulating such conditions the director may consult with the State Geologist, the State Fish and Wildlife Director, the State Forester, the Director of the Department of Environmental Quality, the administrative officer of the State Soil and Water Conservation Commission, the Director of Agriculture, the Administrator of the Parks and Recreation Division, the State Marine Director, the State Highway Engineer, the Director of the Economic Development Department, the Water Resources Director and affected local governmental units. Each permit is valid only for the time specified therein. Obtaining a lease from the Division of State Lands shall not be one of the conditions to be considered in granting a permit under ORS 541.620.

(6) Any applicant whose application for a permit has been denied, or who objects to any of the conditions imposed under subsections (1), (2) and (5) of this section by the director, may, within 10 days of the denial of the permit or the imposition of any condition, request a hearing from the director. Thereupon the director shall set the matter down for hearing, which shall be conducted as a contested case in accordance with ORS 183.415 to 183.430, 183.440 to 183.460 and 183.470. After such hearing, the director shall enter an order containing findings of fact and conclusions of law. The order shall rescind, affirm or modify the director's initial order. Appeals from the director's final order may be taken to the Court of Appeals in the manner provided by ORS 183.482.

(7) In the event that a decision on issuance of a permit by the Director of the Division of State Lands is delayed for a period exceeding 45 days from the date of application in the case of a removal, or 90 days from the date of application in the case of a fill, a temporary permit shall be issued pending such final decision.

(8) Permits issued under this section shall be in lieu of any permit that might be required for the same operation under ORS 164.775, 164.785, 468.010, 468.030 to 468.045, 468.055, 468.060, 468.075, 468.110, 468.120, 468.700 to 468.725 and 468.735 to 468.775, so long as:

(a) The operation is that for which the permit is issued; and

(b) The standards for granting such permits are substantially the same as those established pursuant to ORS 164.775, 164.785, 468.010, 468.035, 468.040, 468.055, 468.110, 468.120, 468.700 to 468.725 and 468.735 to 468.775 to the extent they affect water quality.

(9) Any agency or other unit of government requested by the director to comment on an application for a permit under this section must submit its comments to the director within 45 days after receiving the request for comment. If an agency or other unit of government fails to comment on the application within 45 days, the director shall assume the agency or other unit of government has no objection and shall approve or deny the application. [1967 c.567 §5; 1969 c.593 §49; 1971 c.754 §5; 1973 c.330 §3; 1973 c.674 §6; 1977 c.417 §1; 1979 c.200 §1; 1979 c.564 §3a; 1981 c.796 §1]

541.626 Mitigation as condition for fill or removal from estuary; considerations; other permit conditions. (1) As used in this section, "mitigation" means 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 and species diversity, unique features and water quality.

(2) Except as provided in subsection (4) of this section, the director shall require mitigation as a condition of any permit for filling or removal of material from an intertidal or tidal marsh area of an estuary.

(3) If the director requires mitigation, the director shall consider:

(a) The identified adverse impacts of the proposed activity;

(b) The availability of areas in which mitigating activities could be performed;

(c) The provisions of land use plans for the area adjacent to or surrounding the area of the proposed activity;

(d) The recommendations of any interested or affected state or local agencies; and

(e) The extent of compensating activity inherent in the proposed activity.

(4) Notwithstanding any provisions of ORS 197.005 to 197.430 and 197.610 to 197.850 or the state-wide planning goals adopted thereunder to the contrary, the director may:

(a) Waive mitigation in part for an activity for which mitigation would otherwise be required if, after consultation with appropriate state and local agencies the director determines that:

(A) There is no alternative manner in which to accomplish the purpose of the project;

(B) There is no feasible manner in which mitigation could be accomplished;

(C) The economic and public need for the project and the economic and public benefits resulting from the project clearly outweigh the potential degradation of the estuary;

(D) The project is for a public use; and

(E) The project is water dependent or the project is publicly owned and water related; or

(b) Waive mitigation wholly or in part for an activity for which mitigation would otherwise be required if the activity is:

(A) Filling for repair and maintenance of existing functional dikes and negligible physical or biological damage to the tidal marsh or intertidal areas of the estuary will result;

(B) Riprap to allow protection of an existing bankline with clean, durable erosion resistant material when a need for riprap protection is demonstrated that cannot be met with natural vegetation and no appreciable increase in existing upland will occur;

(C) Filling for repair and maintenance of existing roads and negligible physical or biological damage to the tidal marsh or intertidal areas of the estuary will result;

(D) Dredging for authorized navigation channels, jetty or navigational aid installation, repair or maintenance conducted by or under contract with the Army Corps of Engineers;

(E) Dredging or filling required as part of an estuarine resource restoration or enhancement project agreed to by local, state and federal agencies; or

(F) A proposed alteration that would have negligible adverse physical or biological impact on estuarine resources.

(5) Nothing in this section is intended to limit the authority of the director to impose conditions on a permit under ORS 541.625 (4). [1979 c.564 §5; 1981 c.796 §2; 1983 c.827 §56]

541.627 Hearing regarding issuance of permit; procedure; appeals; suspension of permit pending appeal. Any person aggrieved or adversely affected by the director's grant of a permit may file a written request for hearing with the director within 60 days after the date the permit was granted. If the director finds that the person making the written request has a legally protected interest which is adversely affected by the grant of the permit, the director shall set the matter down for hearing within 30 days after receipt of the request. The hearing shall be conducted as a contested case in accordance with ORS 183.415 to 183.430, 183.440 to 183.460 and 183.470. The permittee shall be a party to the proceeding. Within 45 days of the hearing the director shall enter an order containing findings of fact and conclusions of law. The order shall rescind, affirm or modify the director's original order. Appeals from the director's final order may be taken to the Court of Appeals in the manner provided by ORS 183.482. A permit to fill granted by the director may be suspended by the director during the pendency of the proceedings before the director and any appeal. The director shall not suspend the permit unless the person aggrieved or adversely affected by the grant of permit makes a showing before the director by clear and convincing evidence that commencement or continuation of the fill would cause irreparable damage and would be inconsistent with ORS 541.605 to 541.665. [1973 c.674 §5; 1979 c.564 §6]

541.630 Closure of specified waters to removal or filling. Any agency listed in ORS 541.625 (5) may request the Water Policy Review Board by rule to close one or more specified waters of this state to the issuance of permits. After a public hearing held in conformity with ORS 183.310 to 183.550, if the Water Policy Review Board finds that issuance of permits with respect to such water resources would be inconsistent with the protection, conservation and best use of the water resources of this state as specified in ORS 541.610, the Water Policy Review Board may by rule close such waters to the issuance of permits and to any other removals or fills under ORS 541.640 for an indefinite period or during such other times as are stated in

the rule. [1967 c.567 §6; 1971 c.754 §6; 1973 c.330 §4; 1973 c.674 §7; 1981 c.796 §3]

541.635 Investigations and surveys. In considering applications for permits, the Director of the Division of State Lands may cause investigations or surveys to be made of the location of the work contemplated to determine whether such removal or filling is consistent with ORS 541.610 and 541.625. [1967 c.567 §7; 1971 c.754 §7]

541.640 Waiving permit requirement in certain cases. Notwithstanding any other provision of ORS 541.605 to 541.665, the Director of the Division of State Lands by rule may make exceptions from the application of ORS 541.605 to 541.665 with respect to removals or fills of a limited nature if no substantial harm could result to the water resources of this state as specified in ORS 541.610. However, the director shall notify each agency listed in ORS 541.625 (5) of any exceptions made under this section. [1967 c.567 §8; 1971 c.754 §8; 1973 c.330 §5; 1973 c.674 §8; 1981 c.796 §4]

541.645 Noncomplying removal of material or filling constitutes public nuisance. The removal of material from the beds or banks or filling any of the waters of this state without a permit issued under ORS 541.625, or in a manner contrary to the conditions set out in the permit, is a public nuisance. [1967 c.567 §9; 1971 c.754 §9]

541.650 Enforcement powers of director. If the director determines that material is being removed from or filling is occurring in any of the waters of this state without a permit issued under ORS 541.625, or in a manner contrary to the conditions set out in the permit, he may:

(1) Investigate, hold hearings, make orders and take action, as provided in ORS 541.605 to 541.665, as soon as possible.

(2) For the purpose of investigating conditions relating to such removal or filling, through the employes or the duly authorized representatives of the division, enter at reasonable times upon any private or public property.

(3) Conduct public hearings in accordance with ORS 183.310 to 183.550.

(4) Publish his findings and recommendations as they are developed relative to public policies and procedures necessary for the correction of conditions or violations of ORS 541.605 to 541.665.

(5) Give notice of any order relating to a particular violation of his rules or orders, or

relating to a particular violation of any condition of a permit, by mailing notice of such order to the person or governmental body affected and by filing a duplicate original of such order in the manner required by ORS chapter 183. Any person aggrieved by an order of the director may appeal from such order to the circuit court of the county in which the property or any part thereof affected by such order is situated.

(6) Take appropriate action for the enforcement of his rules or orders promulgated as a result of any hearing. Any violation of ORS 541.605 to 541.665 or of any rule or order of the director under ORS 541.605 to 541.665 may be enjoined in civil abatement proceedings brought in the name of the State of Oregon; and in any such proceedings the director may seek and the court may award a sum of money sufficient to compensate the public for any destruction or infringement of any public right of navigation, fishery or recreation resulting from such violation. Proceedings thus brought by the director shall set forth the dates of notice and hearing and the specific rule or order of the director, together with the facts of noncompliance, the facts giving rise to the public nuisance, and a statement of the damages to any public right of navigation, fishery or recreation, if any, resulting from such violation. [1967 c.567 §10; 1971 c.754 §10; 1973 c.330 §6; 1973 c.674 §9]

541.655 Revocation of permit. If the director finds that a person or governmental body holding a permit issued under ORS 541.625 is removing material from the bed or banks or filling any of the waters of this state contrary to the conditions set out in the permit, he may revoke such permit after notice and hearing as provided in ORS 183.415 to 183.430, 183.440 to 183.460 and 183.470. [1967 c.567 §11; 1971 c.754 §11; 1973 c.330 §7; 1973 c.674 §10]

541.660 Abatement proceedings. (1) In lieu of penal enforcement proceedings, proceedings to abate alleged public nuisances under ORS 541.645 may be instituted at law or in equity, in the name of the State of Oregon, upon relation of the Director of the Division of State Lands.

(2) However, notwithstanding any other provisions of law, the director, without the necessity of prior administration procedures or hearing and entry of an order or at any time during such administrative proceedings if such proceedings have been commenced, may institute an action for legal or equitable remedies in the name of the State of Oregon to abate or restrain threatened or existing nuisances under ORS 541.645, whenever such nuisances or threatened nuisances create an emergency that

requires immediate action to protect the public health, safety or welfare. In any action brought under this section, the director may seek and the court may award a sum of money sufficient to compensate the public for any destruction or infringement of any public right of navigation, fishery or recreation resulting from an existing public nuisance under ORS 541.645. No temporary restraining order or temporary injunction or abatement order shall be granted unless the defendant is accorded an opportunity to be heard thereon at a time and place set by the court in an order directing the defendant to appear at such time and place, and to then and there show cause, if the defendant has any, why a temporary restraining order or temporary injunction or abatement order should not be granted. The order to show cause, together with affidavits supporting the application for such temporary restraining order, temporary injunction or abatement order, shall be served on the defendant as a summons. The defendant may submit counteraffidavits at such time and place. The director shall not be required to furnish any bond in such proceeding. Neither the State Land Board nor the Director of the Division of State Lands or the employes or duly authorized representatives of the division, shall be liable for any damages defendant may sustain by reason of an injunction or restraining order or abatement order issued after such hearing.

(3) Cases filed under this section shall be given preference on the docket over all other civil cases except those given an equal preference by statute. [1967 c.567 §12; 1973 c.330 §8; 1973 c.674 §11; 1979 c.284 §166]

541.662 Double damages for destruction of public right of navigation, fishery or recreation; treble damages for intentional violations; damages in addition to criminal penalties. (1) If any person or governmental body, through his or its negligence, violates ORS 541.615, the director, in a proceeding brought pursuant to ORS 541.660, may seek and the court may award double a sum of money sufficient to compensate the public for any destruction or infringement of any public right of navigation, fishery or recreation resulting from such violation.

(2) If any person or governmental body intentionally violates ORS 541.615, the director, in a proceeding brought pursuant to ORS 541.660, may seek and the court may award treble a sum of money sufficient to compensate the public for any destruction or infringement of any public right of navigation, fishery or recreation resulting from such violation.

(3) An award made pursuant to this section shall be in addition to and not in lieu of any criminal penalties imposed for a violation of ORS 541.615. [Enacted by 1973 c.330 §10 and 1973 c.674 §13]

Note: 541.662 was enacted by two identical provisions, section 10 of chapter 330 and section 13 of chapter 674, Oregon Laws 1973. Both are compiled as a single section.

541.665 Fill under permit presumed not to affect public rights; public rights extinguished. If the director issues a permit to fill pursuant to ORS 541.605 to 541.665, it shall be presumed that such fill does not infringe upon the public rights of navigation, fishery or recreation, and the public rights to lands created by the fill shall be considered extinguished. [1971 c.754 §14]

541.695 Application of ORS 541.605 to 541.665. (1) Nothing in ORS 541.605 to 541.665 applies to filling the beds of the waters of this state for the purpose of constructing, operating and maintaining dams or other diversions for which permits or certificates have been or shall be issued under ORS chapter 537 or 539 and for which preliminary permits or licenses have been or shall be issued under ORS 543.010 to 543.620.

(2) Nothing in ORS 541.605 to 541.665 applies to removal of materials from the beds or banks or filling of the waters of a nonnavigable natural waterway, or any portion thereof, in this state, if:

(a) Such waterway or portion is situated within forest land; and

(b) Such removal or filling is directly connected with a forest management practice conducted in accordance with ORS 527.610 to 527.730 and 527.990. [1971 c.754 §12; 1977 c.417 §3]

PENALTIES

541.990 Penalties.

(4) Violation of ORS 541.615 is a misdemeanor. [1957 c.163 §4; subsection (2) enacted as 1959 c.624 §2; subsection (3) enacted as 1961 c.379 §9; subsection (4) enacted as 1967 c.567 §13]

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