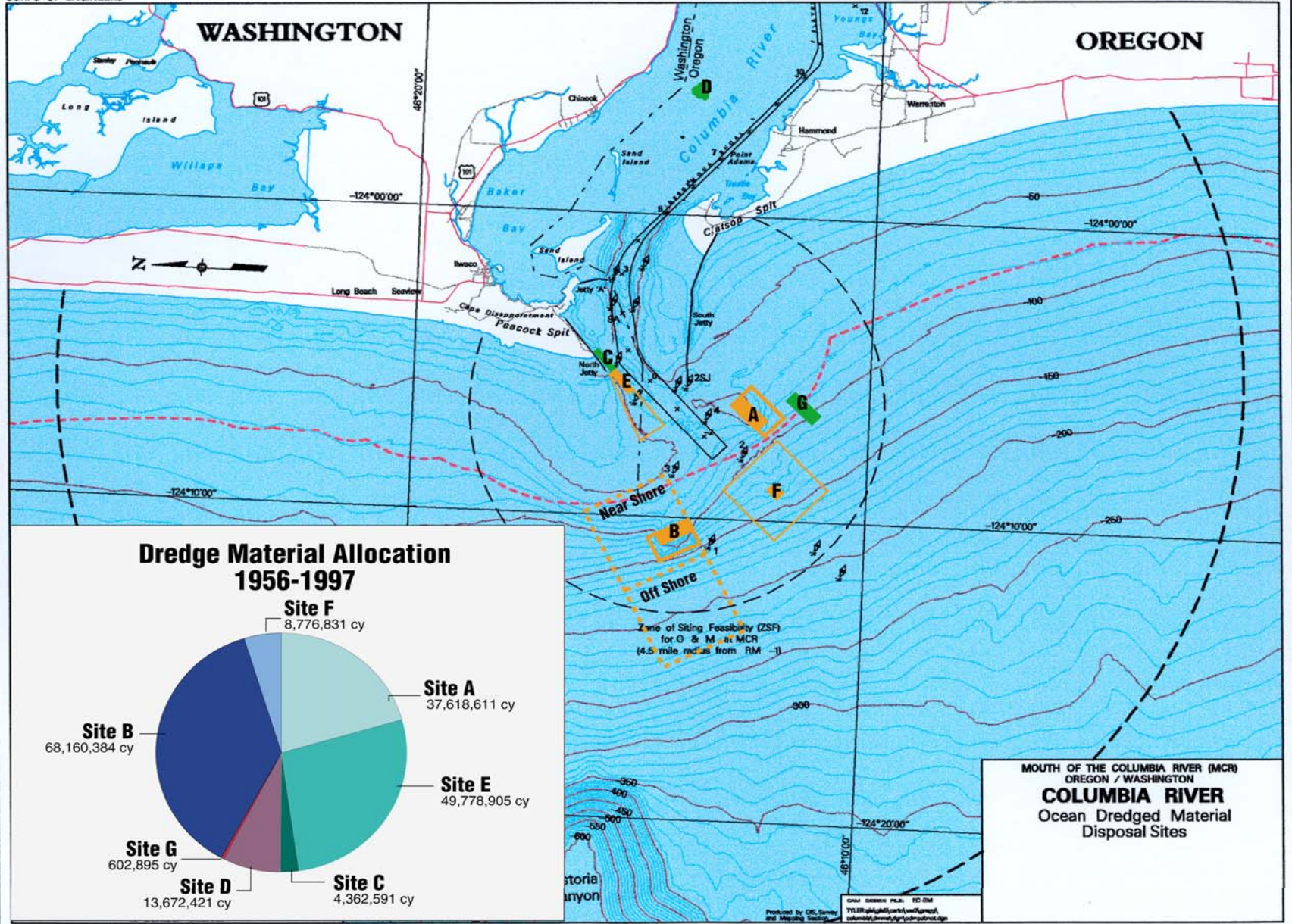


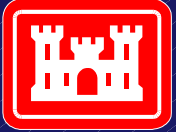
**US Army Corps  
of Engineers**  
Portland District

# Mouth of the Columbia River

WASHINGTON

OREGON



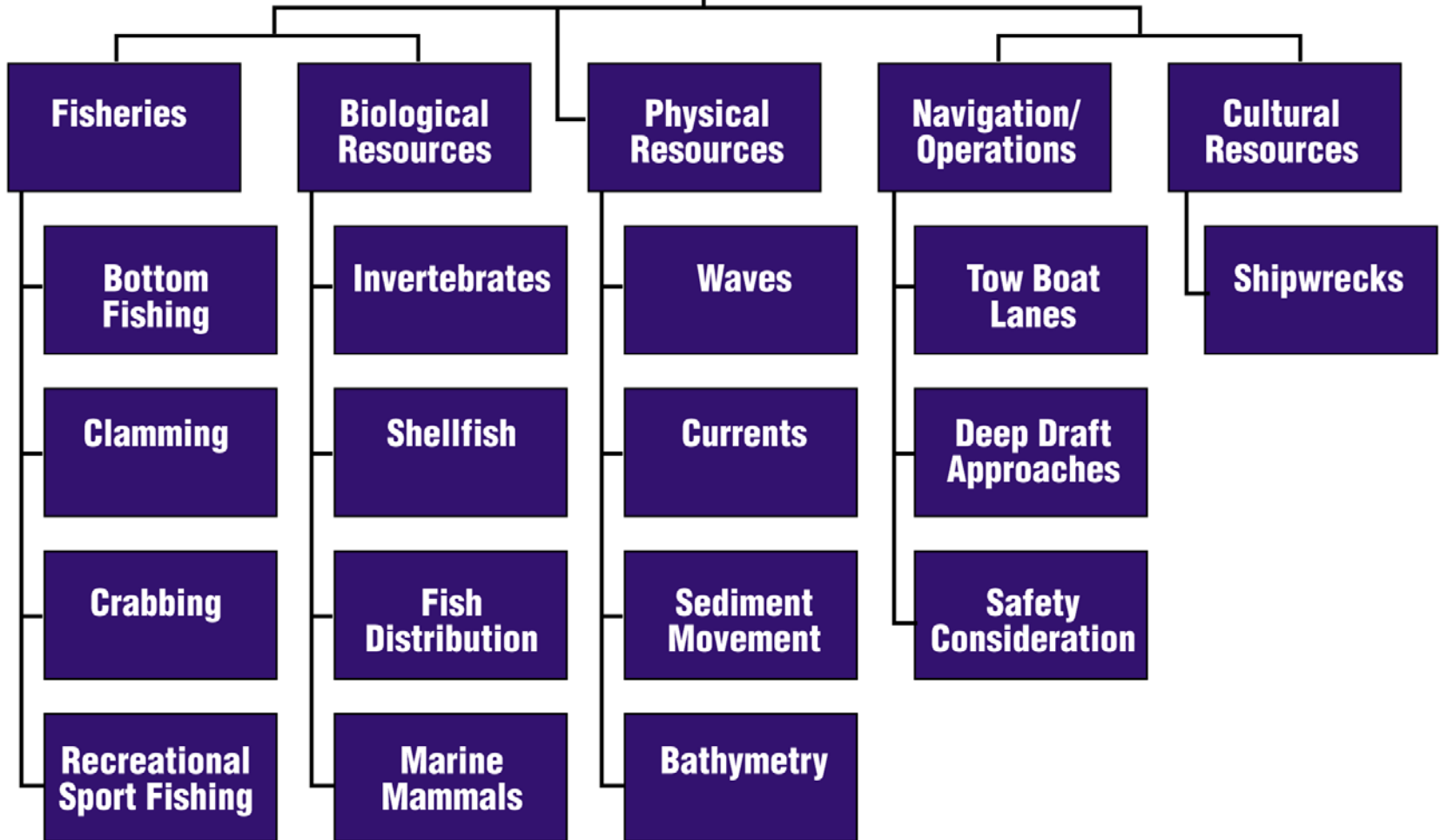


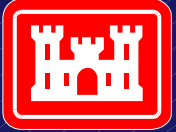
**US Army Corps  
of Engineers**  
Portland District

# Ocean Disposal Working Group

- **Washington Department of Ecology**
- **Washington Department of Fish and Wildlife**
- **Columbia River Crab Fisherman's Association**
- **Columbia River Estuary Study Taskforce**
- **National Marine Fisheries Service**
- **Oregon Dungeness Crab Commission**
- **Oregon Department of Fish and Wildlife**
- **Oregon Department of Land Conservation and Development**
- **US Army Corps of Engineers**
- **US Environmental Protection Agency, Region 10**
- **US Fish and Wildlife Service**

# Ocean Dumping Coordinator





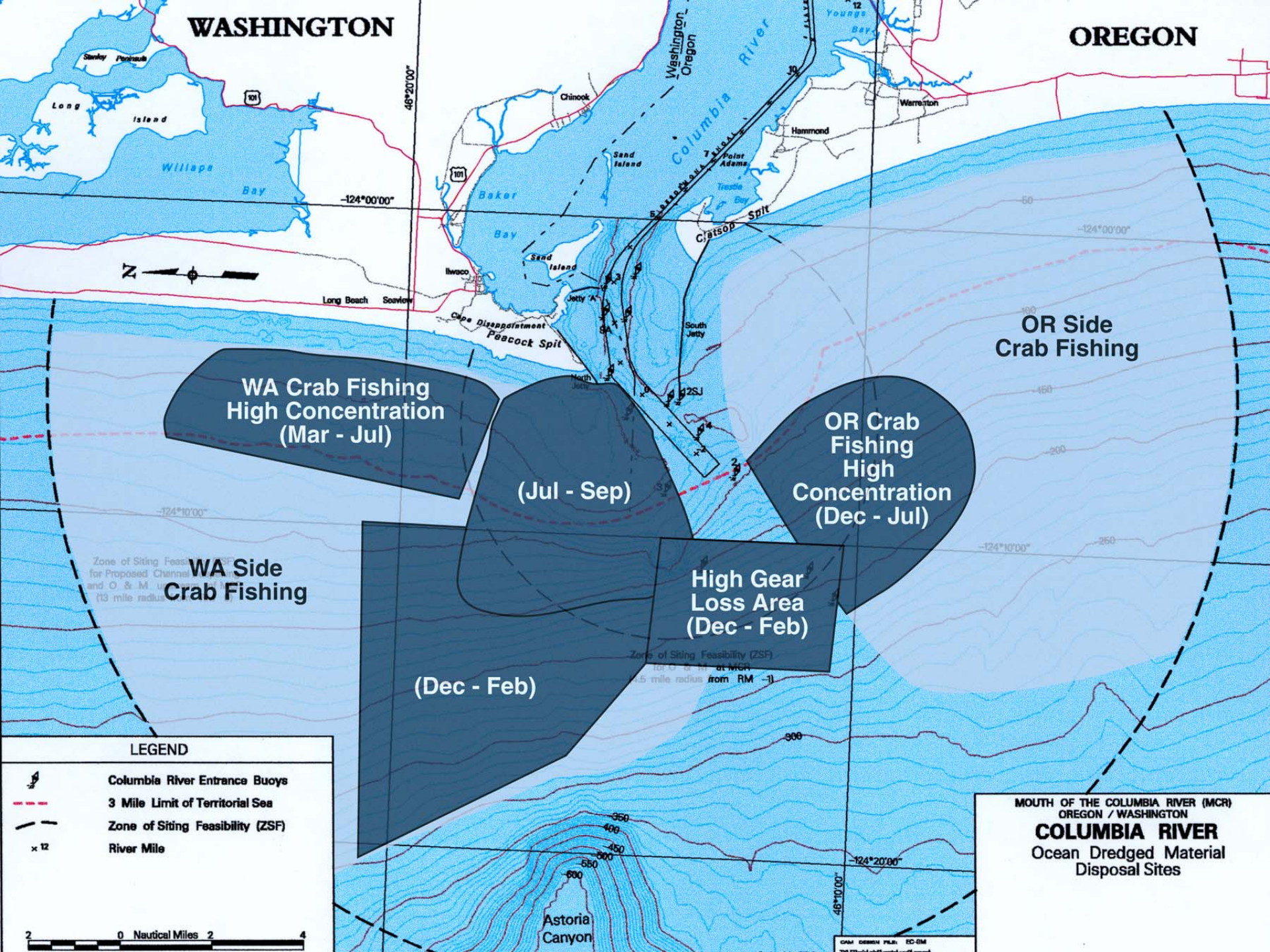
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# Overlays

- 1) Ground Fish Trawls**
- 2) Shipwrecks**
- 3) Razor Clams**
- 4) Juvenile Flatfish**
- 5) Sediment Characteristics**
- 6) Recreational Fishing**
- 7) Fishing Navigation Routes**
- 8) Benthic Sampling 1996**
- 9) Benthic Sampling 1993 &  
1994**
- 10) Benthic Sampling 1992**
- 11) Benthic Infauna/sq meter**
- 12) Commercial Crab Fishing**
- 13) Towboat Lanes**
- 14) Sediment Contours**
- 15) Percent Crab Fishing by  
Income**
- 16) Black Cod/Red Rock Fish**
- 17) Soft-shell Crab**

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**WA Crab Fishing  
High Concentration  
(Mar - Jul)**

**(Jul - Sep)**

**OR Crab Fishing  
High Concentration  
(Dec - Jul)**





**WA Side  
Crab Fishing**

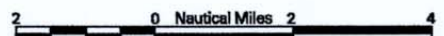
**High Gear  
Loss Area  
(Dec - Feb)**

**(Dec - Feb)**

**OR Side  
Crab Fishing**

**LEGEND**

-  Columbia River Entrance Buoys
-  3 Mile Limit of Territorial Sea
-  Zone of Siting Feasibility (ZSF)
-  River Mile

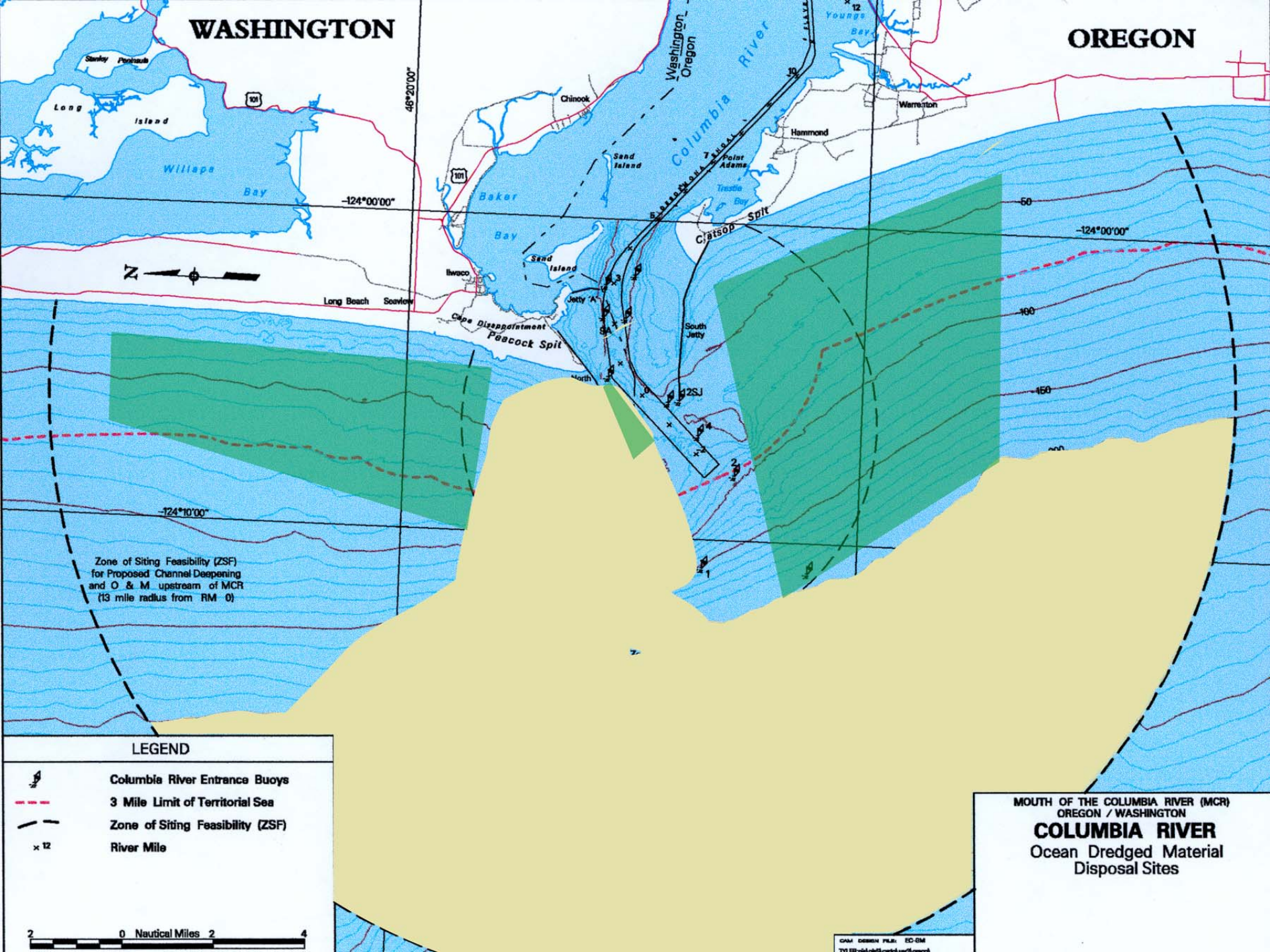


**MOUTH OF THE COLUMBIA RIVER (MCR)  
OREGON / WASHINGTON  
COLUMBIA RIVER  
Ocean Dredged Material  
Disposal Sites**

DATA SOURCE: NOAA, EC-DM  
2017 update of 2014 data





WASHINGTON

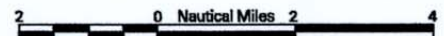
OREGON



Zone of Siting Feasibility (ZSF)  
for Proposed Channel Deepening  
and O & M upstream of MCR  
(13 mile radius from RM 0)

**LEGEND**

-  Columbia River Entrance Buoys
-  3 Mile Limit of Territorial Sea
-  Zone of Siting Feasibility (ZSF)
-  River Mile

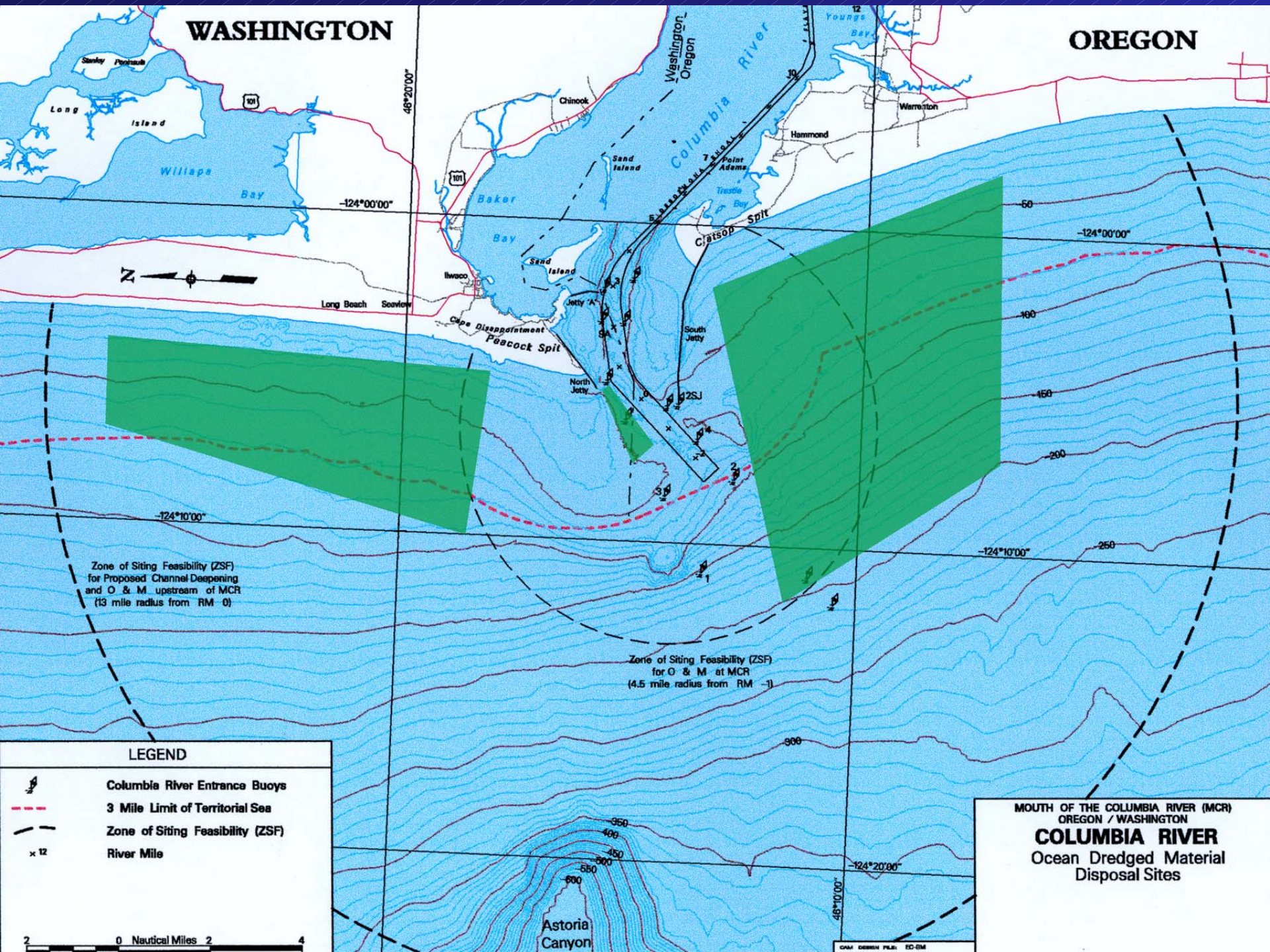


MOUTH OF THE COLUMBIA RIVER (MCR)  
OREGON / WASHINGTON  
**COLUMBIA RIVER**  
Ocean Dredged Material  
Disposal Sites

DATA SOURCE: FLS, ED-DM  
DATE: 01/01/01

WASHINGTON




OREGON



Zone of Siting Feasibility (ZSF)  
for Proposed Channel Deepening  
and O & M upstream of MCR  
(13 mile radius from RM -0)

Zone of Siting Feasibility (ZSF)  
for O & M at MCR  
(4.5 mile radius from RM -1)

**LEGEND**

-  Columbia River Entrance Buoys
-  3 Mile Limit of Territorial Sea
-  Zone of Siting Feasibility (ZSF)
-  River Mile

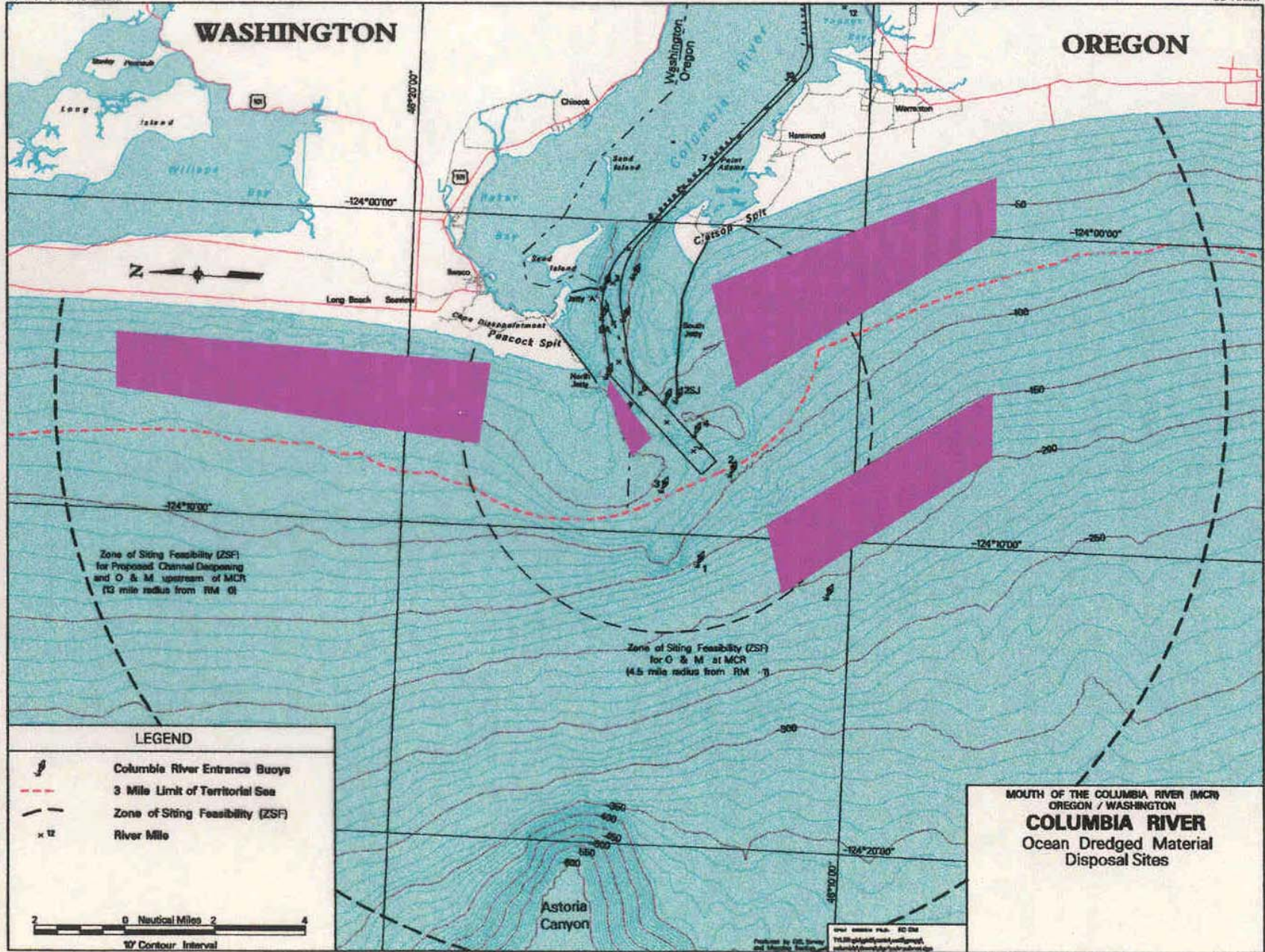
2 0 Nautical Miles 2 4

MOUTH OF THE COLUMBIA RIVER (MCR)  
OREGON / WASHINGTON  
**COLUMBIA RIVER**  
Ocean Dredged Material  
Disposal Sites



WASHINGTON





OREGON

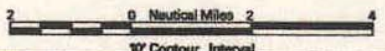


Zone of Stinging Feasibility (ZSF)  
for Proposed Channel Deepening  
and O & M upstream of MCR  
(13 mile radius from RM 0)

Zone of Stinging Feasibility (ZSF)  
for O & M at MCR  
(4.5 mile radius from RM 0)

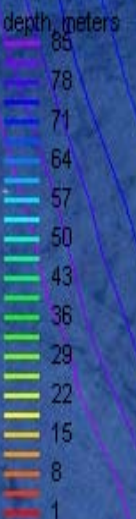
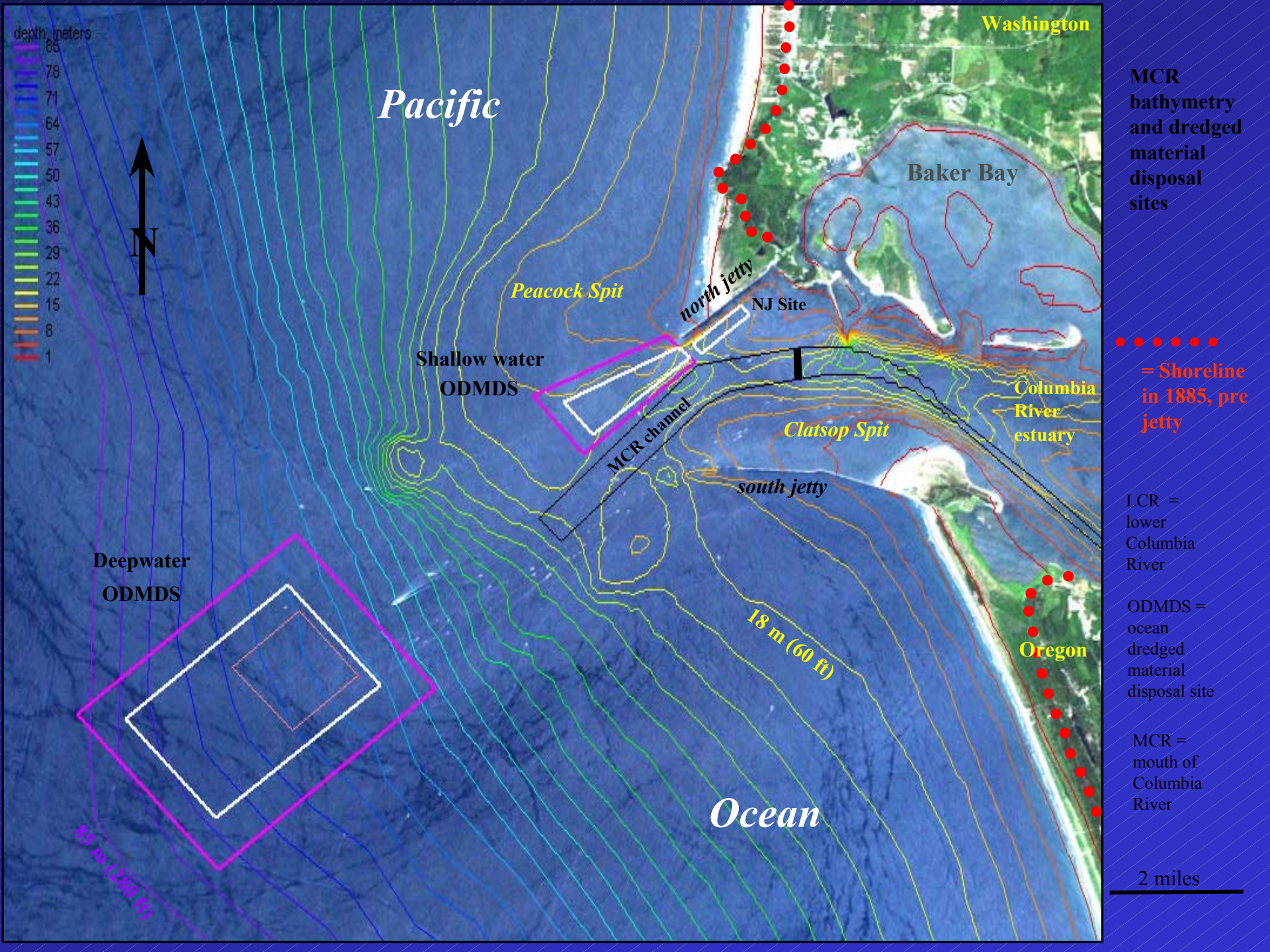
LEGEND

-  Columbia River Entrance Buoys
-  3 Mile Limit of Territorial Sea
-  Zone of Stinging Feasibility (ZSF)
-  River Mile



MOUTH OF THE COLUMBIA RIVER (MCR)  
OREGON / WASHINGTON  
**COLUMBIA RIVER**  
Ocean Dredged Material  
Disposal Sites

Produced by CES, Survey and Mapping Branch  
Contract Number: W-59-01-001  
Contract Task Order: 001-001-001-001



**MCR bathymetry and dredged material disposal sites**

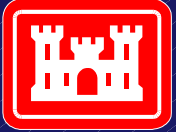
●●●●●●●●●●  
= Shoreline in 1885, pre-jetty

LCR = lower Columbia River

ODMDS = ocean dredged material disposal site

MCR = mouth of Columbia River

2 miles



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Portland District

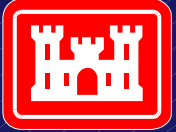
# Site Designation Contract Costs

	<b>CRCIP</b>	<b>MCR</b>
■ Biological Studies	\$125k	\$125k
■ Sediment Char and Transport	\$115k	\$115k
■ Side Scan Sonar	\$ 23k	\$ 23k
■ Benthic Analysis	\$ 14k	\$ 14k
■ Biological Data	\$125k	\$125k
■ Trawl Data		\$ 38k
Sub-Total	\$402k	\$440k



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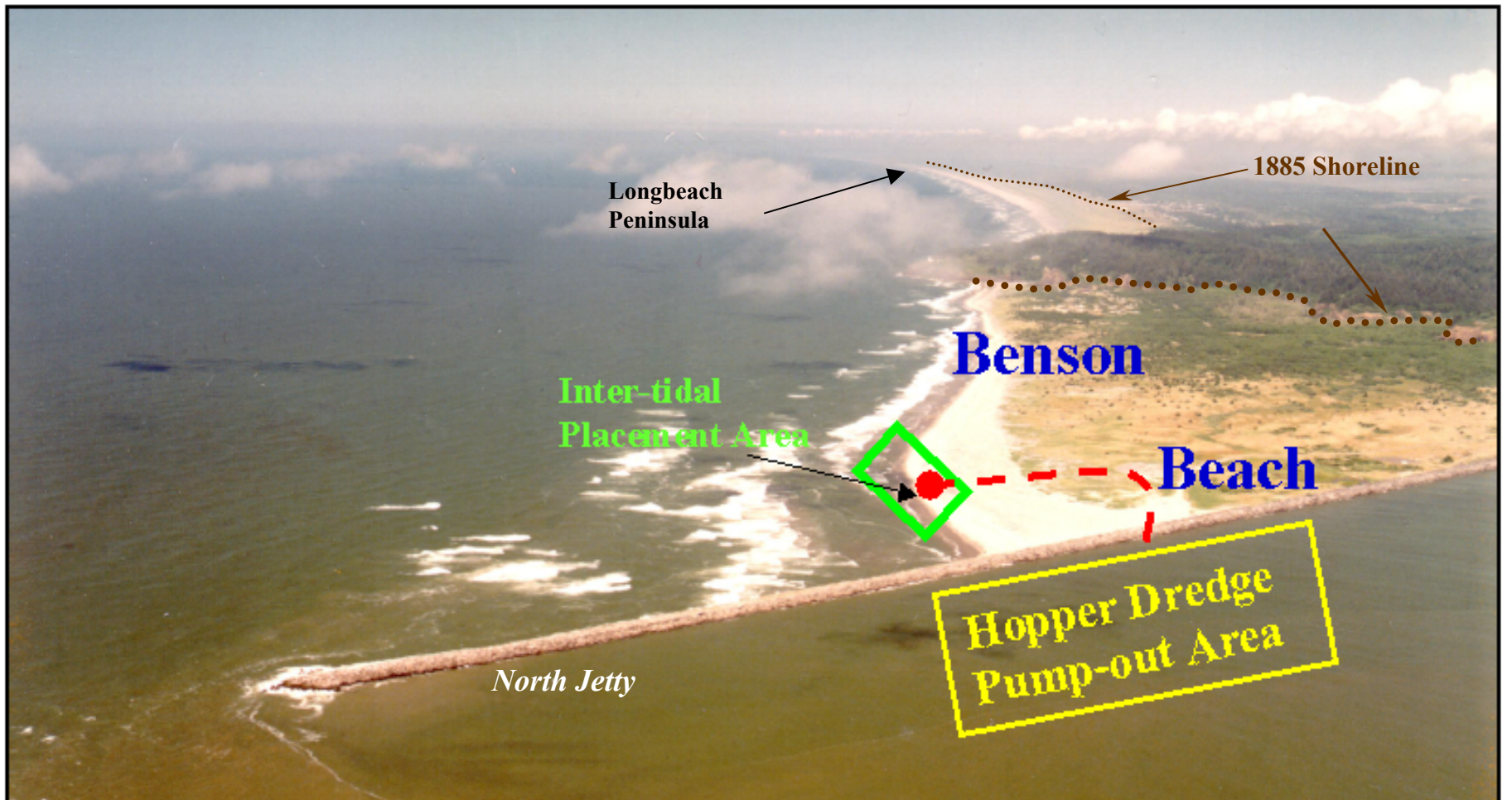
# BENSON BEACH



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# Benson Beach 2002

- FY 02 Energy and Water Development Appropriation Bill included \$200,000 to study impacts of Benson Beach placement
- Contributed Funds to MCR Maintenance Contract - State of Washington, Lower Columbia River Ports and Pacific County of \$575,000 allowed placement to occur



Longbeach Peninsula

1885 Shoreline

Benson

Inter-tidal Placement Area

Beach

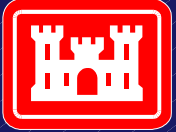
Hopper Dredge Pump-out Area

North Jetty

# 2002 "Onshore Placement" at Benson Beach

Total Volume Placed – 43,730 yd<sup>3</sup>

Total Cost = \$750,000--- \$17/cy



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# BENSON BEACH FY 03 OMNIBUS BILL

- \$9.2 M for routine operation and maintenance of the project, additional dredging, jetty evaluation, studies of alternative dredged material disposal, and a dredged material disposal demonstration project at Benson Beach



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# BENSON BEACH

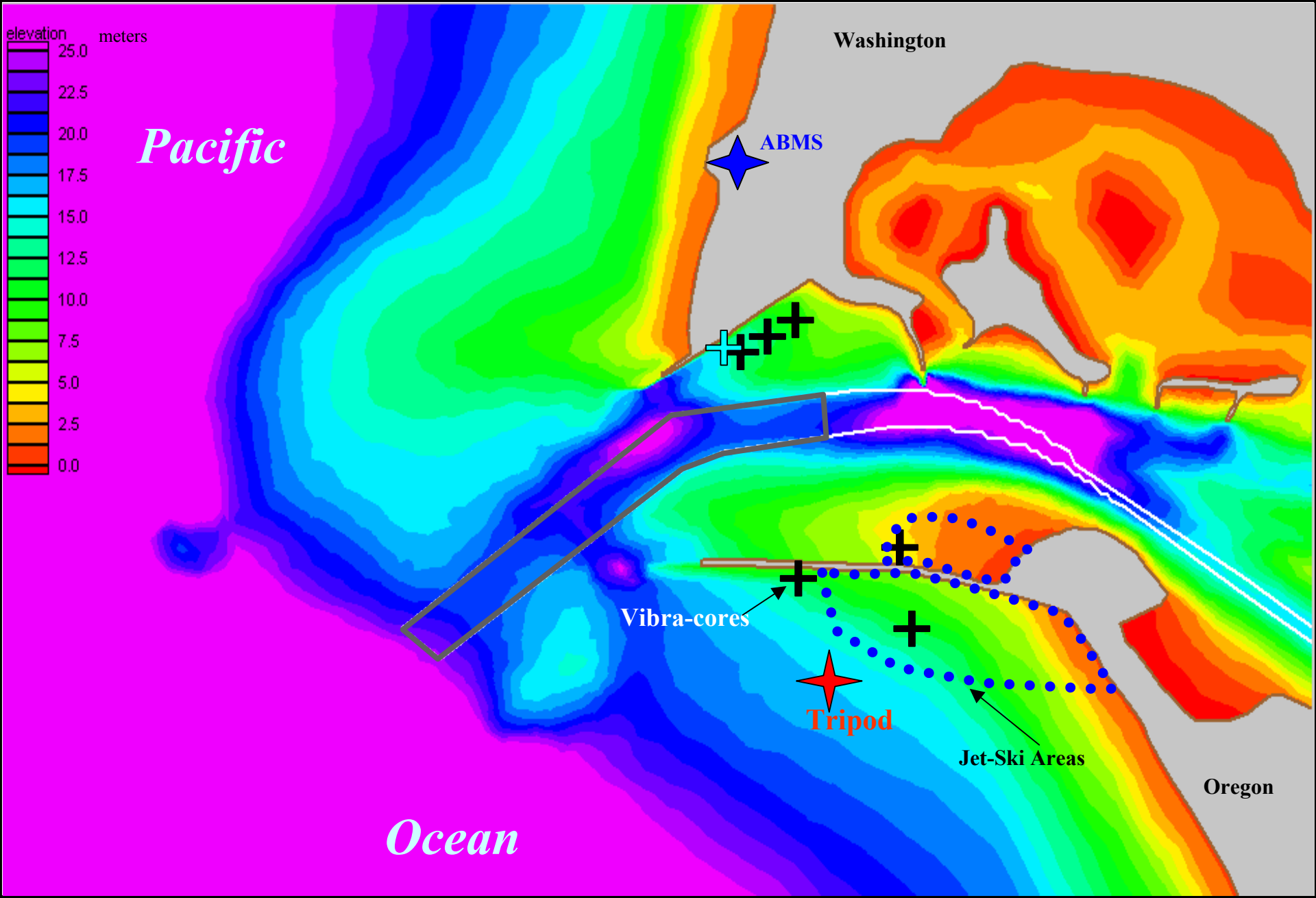
FY 03

## ANALYSIS OF IMPACTS OF PIPELINE/HOPPER COMBINATION



- Crab and Fish Evaluation - Batelle
- Geophysical Investigation – David Evans and Associates
- Vibracore – WDOE
- Pacific County Funded additional study of wave climate.





*Pacific*

**WA**

Baker Bay

Peacock Spit

North Jetty

Jetty "A"

Sand Island

# Jetty Deterioration at MCR

*Columbia River Estuary*



Clatsop Spit

South Jetty

Potential breach



*Ocean*

-  = head loss
-  = trunk/root damage



**OR**  
**13**



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of Engineers**  
Portland District

# REGIONAL SEDIMENT MANAGEMENT



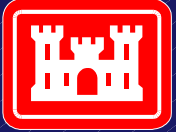
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of Engineers  
Portland District

# Regional Sediment Management MCR – FY03

- RSM initiated for the MCR littoral cell in 2003
- Collaborative Learning Initiative
- Technical Data Gathering
- Future – Funding for FY 04, 05, 06
  - Collaborative Learning Workshops
  - Technical Data Collection
  - Process Clarification

# Mouth of the Columbia River Regional Sediment Management – Collaborative Learning Workshops





US Army Corps  
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# Regional Sediment Management FY 04

- MCR - RSM funded for \$200,000
- Congressional Add of \$250,000 under RSM for Benson Beach
  - ARGUS CAMERA INSTALLATION AND DATA ANALYSIS
  - VIBRACORE DATA INTERPRETATION
  - CRAB RISK ASSESSMENT
  - COST ESTIMATE FOR PIPELINE SUMP AND HOPPER DREDGED PUMPOUT ALTERNATIVES

*Proposed  
ARGUS location*

North Head  
Light house



**ARGUS  
field of  
view**

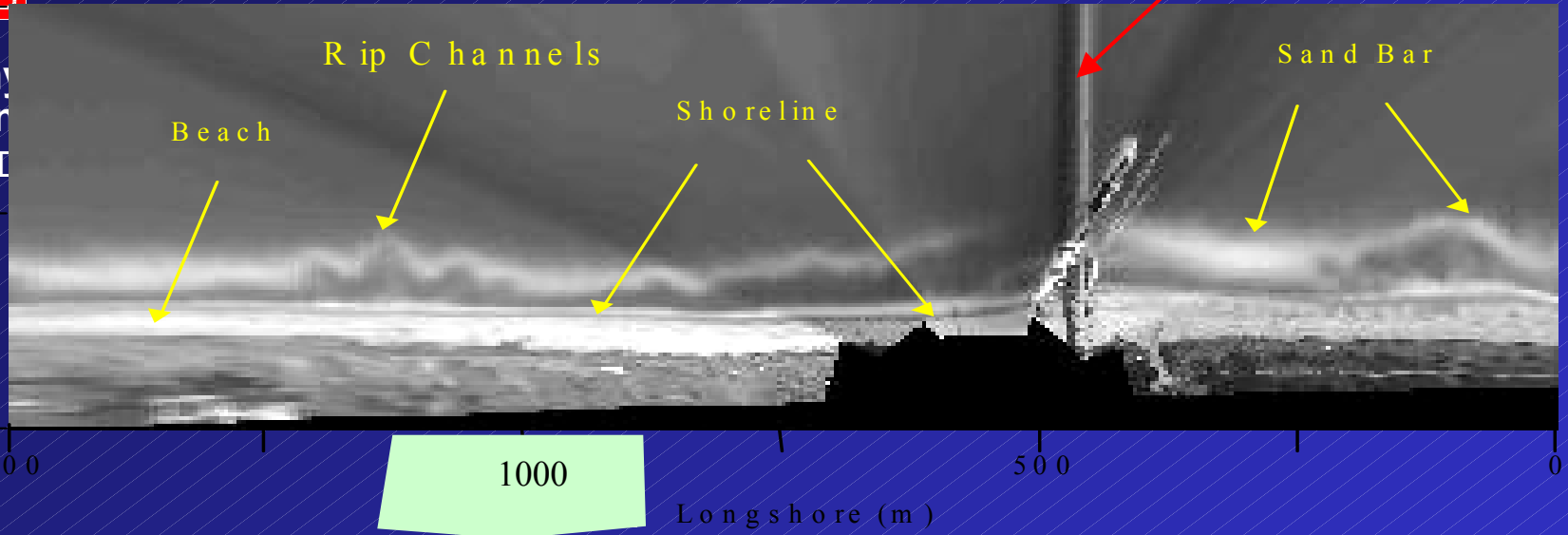




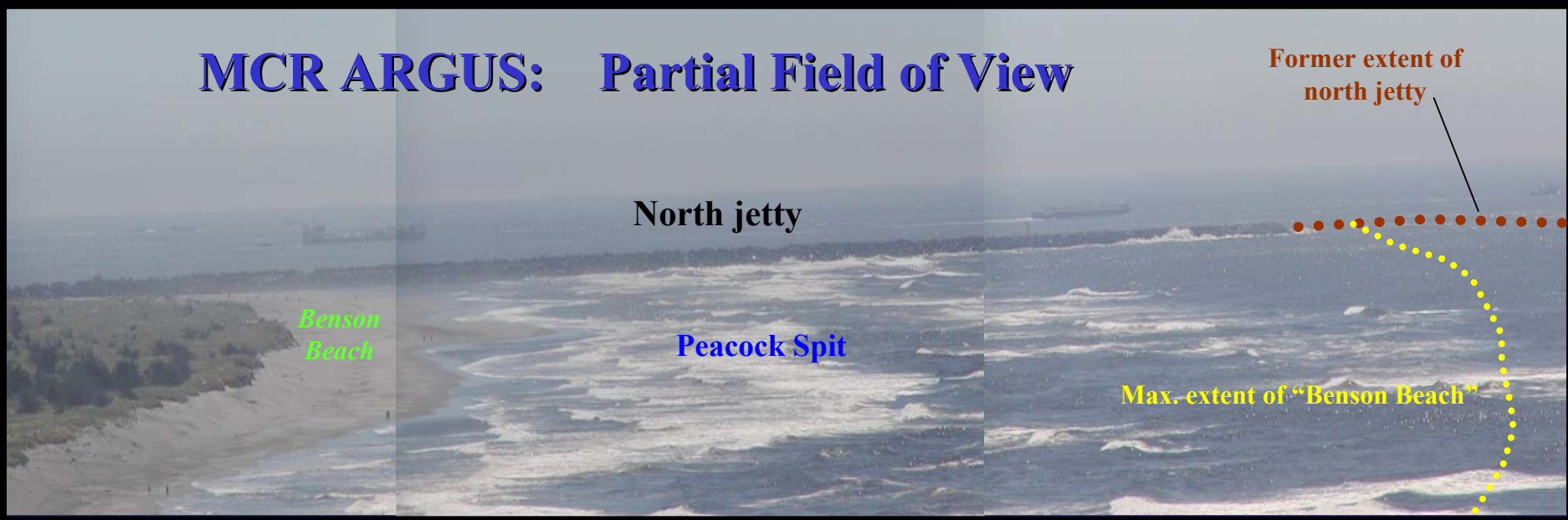
# ARGUS: Example from DUCK, NC: FRF

US Army  
of Engin  
Portland D

Cross-shore (m)



## MCR ARGUS: Partial Field of View





Possible RSM sites

