

*Science, Service, Stewardship*



# Essential Fish Habitat

## OCNMS Advisory Council – July 13, 2013

John Stadler  
Habitat Conservation Division  
NMFS Northwest Region

**NOAA  
FISHERIES  
SERVICE**

# Essential Fish Habitat (EFH)

- What is it, where did it come from, and what does it mean?
- Ongoing review of EFH for Pacific Coast groundfishes



# Magnuson-Stevens Fishery Conservation and Management Act (MSA)

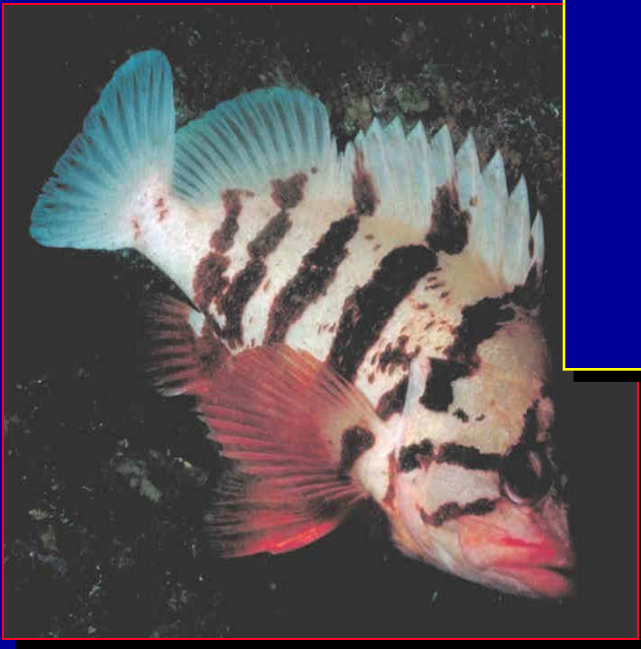
- *Loss of habitat* = decline in many important fisheries
- Amended in 1996 to include EFH
- Requires that:
  - Fishery Management Councils (FMCs) designate EFH for all managed species
    - Pacific Fishery Management Council (PFMC)
  - FMCs minimize adverse effects on EFH from fishing
  - Federal Action Agencies consult with NMFS
    - Only for actions that “may adversely affect” EFH
- Final Implementing Rule: 50 CFR part 600



# What is EFH?

## Definition (MSA §3(10))

“Essential fish habitat means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.”

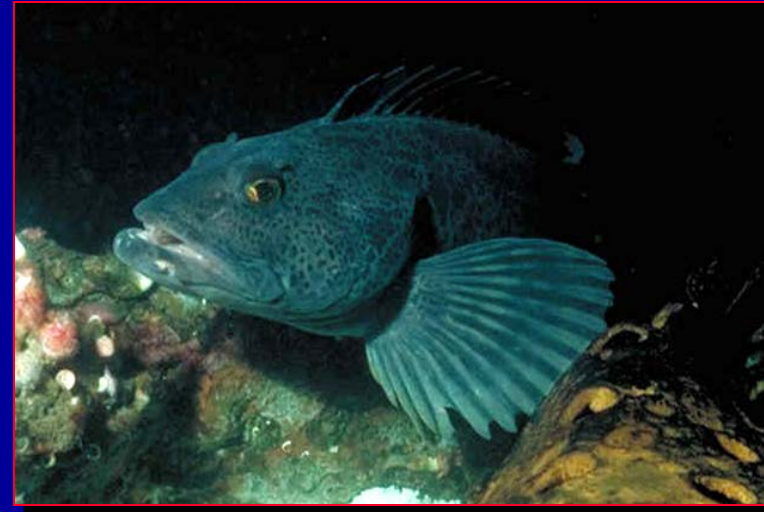




# What does this mean?

“those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.”  
(50 CFR 600.10)

waters = “include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate”



substrate = “includes sediment, hard bottom, structures underlying the waters, and associated biological communities”

# What does this mean?

“those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.”  
(50 CFR 600.10)

necessary = “the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem”

spawning, breeding, feeding, or growth to maturity: covers the entire life history

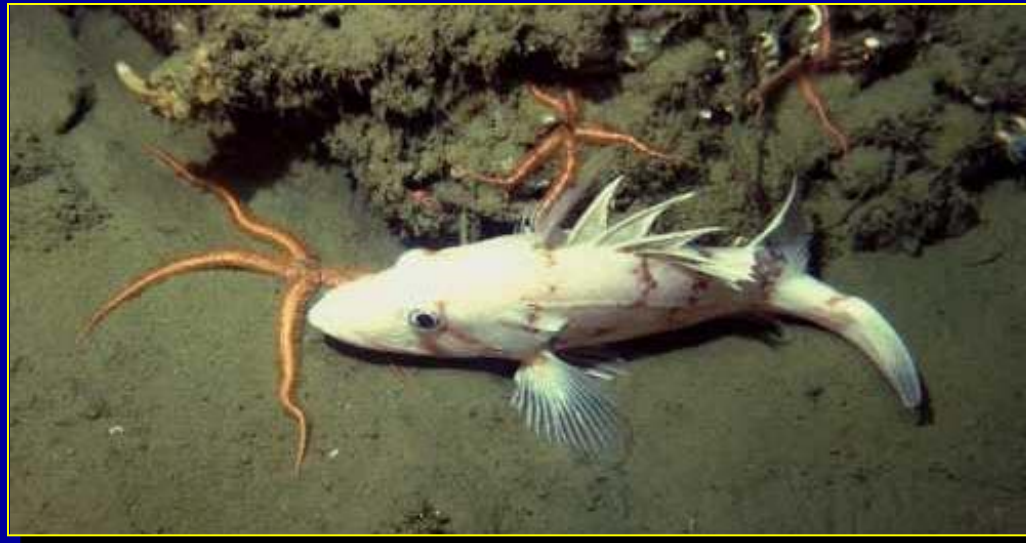


# Which Species Have EFH?

Managed under a Federal fishery management plan (FMP)

Designated by Fishery Management Councils  
Pacific Fishery Management Council (PFMC)

Descriptions of EFH contained in FMP





# PFMC Fishery Management Plans



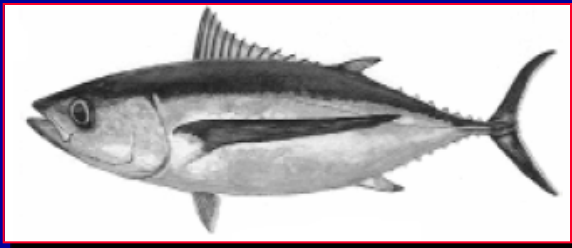
**Pacific Coast Groundfish**  
83 species of sharks, cods,  
rockfishes, flatfishes, etc.



**Coastal Pelagic Species**  
krill, squid, anchovies, sardines,  
mackerels



**Pacific Coast Salmon**  
Chinook salmon  
coho salmon,  
Puget Sound pink salmon



**Highly Migratory Species**  
Tunas, sharks, billfish, etc.





# Habitat Areas of Particular Concern (HAPCs)

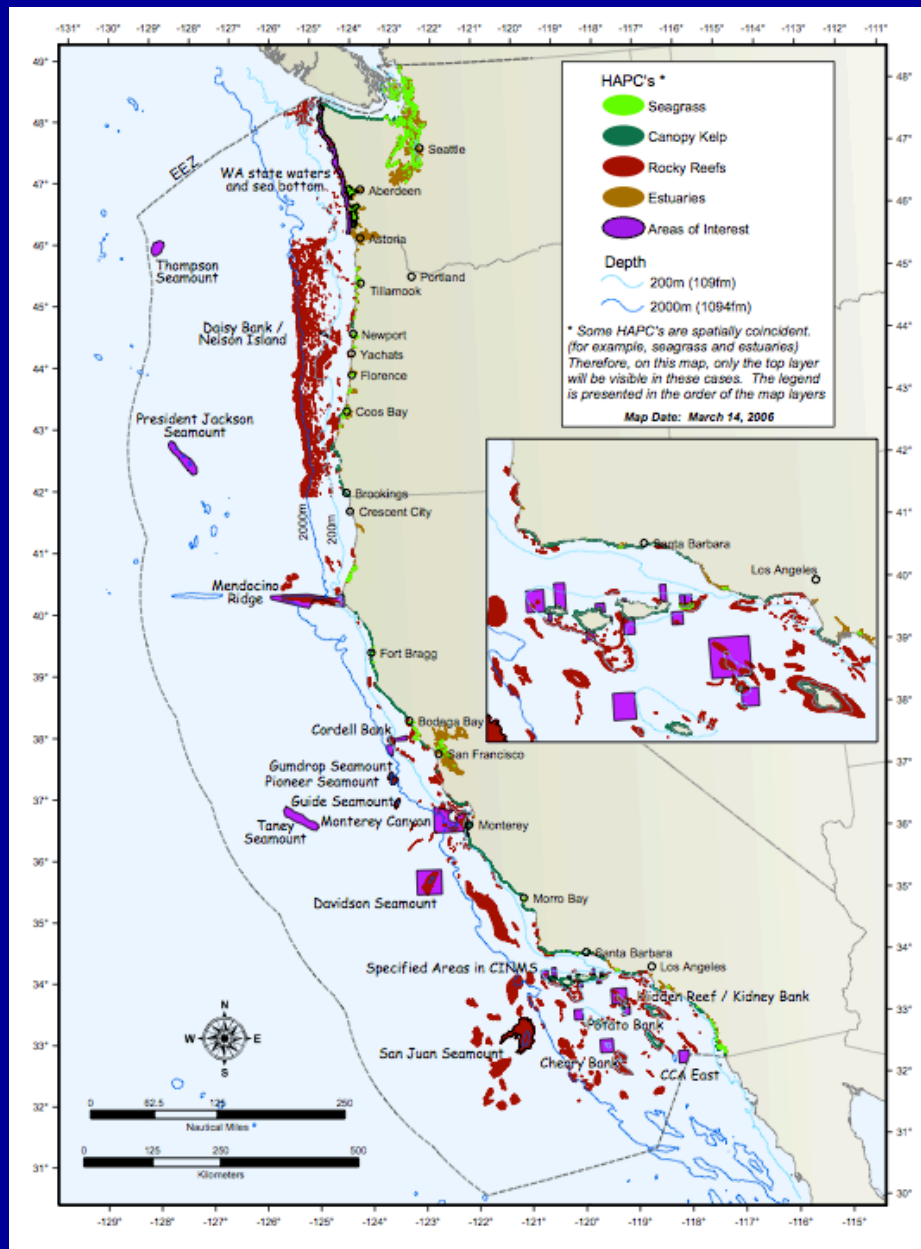
A subset of EFH

No additional regulatory burden

Specific types or areas of habitat, based on one or more of the following considerations:

- (i) The importance of the ecological function
- (ii) Sensitivity to human-induced environmental degradation.
- (iii) Stressors from development activities
- (iv) The rarity of the habitat type.





# Groundfish HAPCs

- Estuaries
- Rocky reef
- Canopy kelp
- Seagrass
- Areas of Interest
- Seamounts
- Canyons
- Banks
- WA Territorial Sea
- Others



# EFH-Consultation Trigger

## MSA, Section 305(b)(2)

“Each Federal Agency shall consult with the Secretary with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency, that may adversely affect\* any essential fish habitat identified under this Act.”

\* Differs from ESA determination of “may affect, not likely to adversely affect”



# An Adverse Effect Reduces the Quality and/or Quantity of EFH *50 CFR 600.910 (a)*

- **Effects to habitat only**
  - Does not include capture or directed killing of fish unless habitat is affected (e.g., reductions in prey)
- **Direct or indirect effects**
- **Long- and short-term effects**
- **Cumulative effects**





# Adverse Effects to EFH (cont'd)

**Physical, chemical, or biological alterations of the waters or substrate**

- Sound from pile driving
- Turbidity or sediment delivery
- Release of toxic materials
- Loss of prey species and/or their habitat

**May result from actions occurring within EFH or outside of EFH**

- e.g., delivery of sediment to a stream from upslope construction activities that smothers spawning beds



# EFH Consultation Process

1. Federal agency determines that their action “may adversely affect EFH
2. Federal agency submits EFH assessment and requests consultation
3. NMFS provides EFH Conservation Recommendations to avoid, minimize, mitigate, or otherwise offset the adverse effects
4. Federal agency responds in writing to the recommendations



Source: University of Washington Freshwater and Marine Image Bank



# Periodic Review of EFH Designations

50 CFR 600.815(a)(10)

Review the EFH provisions of FMPs and revise or amend as warranted based on available information.

EFH provisions include:

- Description and Identification of EFH
- MSA and non-MSA fishing activities that adversely affect EFH
- Non-fishing related activities that adversely affect EFH
- Cumulative impacts
- Conservation and enhancement measures
- Identifying major prey species
- HAPCs (optional)
- Research and information needs



# **Review of EFH Designations**

**50 CFR 600.815(a)(10)**

**Pacific Coast Salmon – 2011**

**Coastal Pelagic Species – 2011**

**Highly Migratory Species – 2004**

**Pacific Coast Groundfishes – Ongoing**







# Essential Fish Habitat Review Committee

## Committee Members

E. Bowlby

M. Mackey

J. Stadler

R. Eder

D. Matthews

C. Tracy

C. Goldfinger

B. Pettinger

W. Wakefield

G. Greene

J. Schumacker

M. Yoklavich

K. Griffin

G. Shester

## With support from:

C. Romsos - OSU College of Earth, Ocean & Atmospheric Science

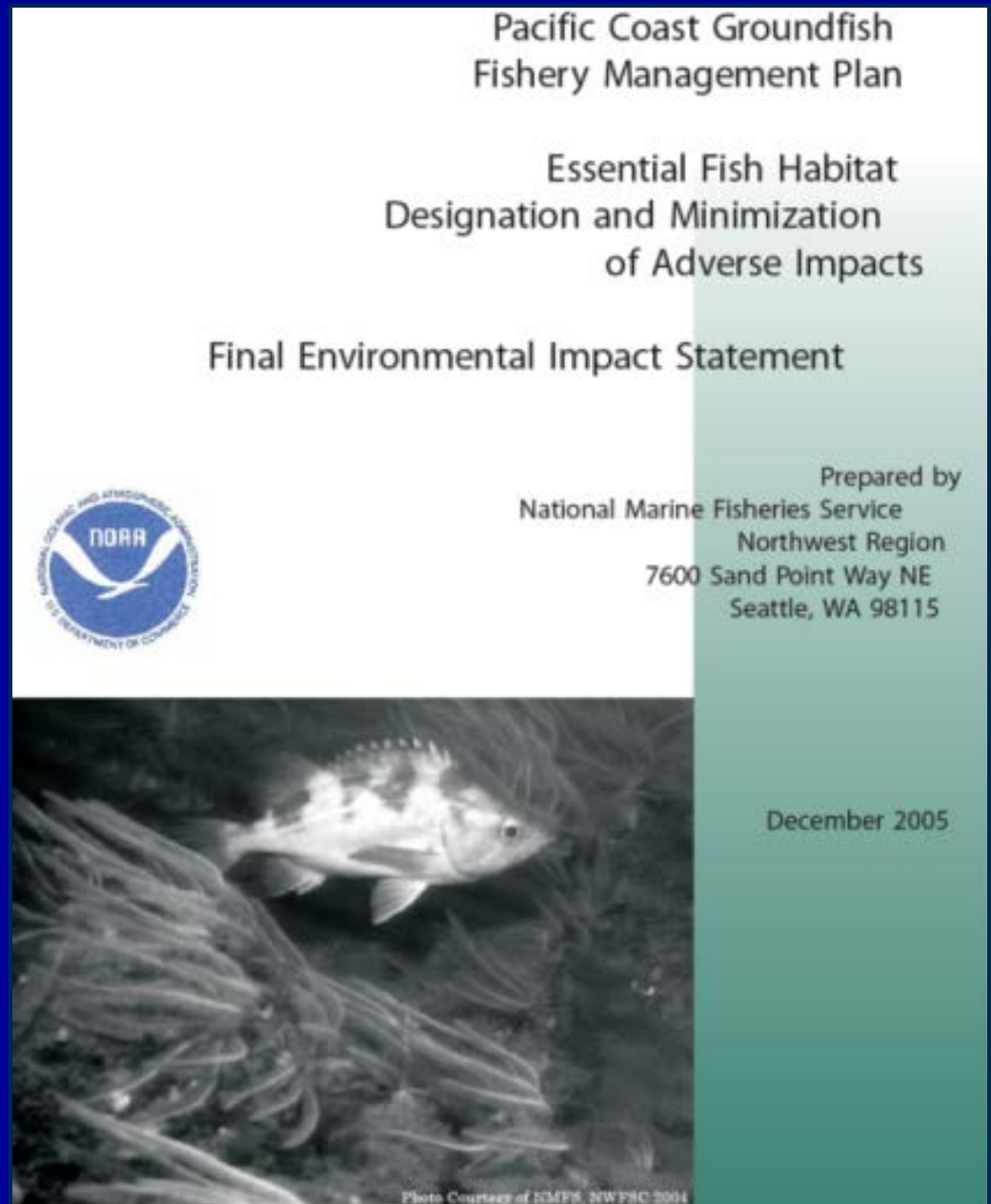
J. Bizzarro - UW School of Aquatic and Fishery Sciences

C. Whitmire - NOAA NMFS NW Fisheries Science Center

M. Bellman - NOAA NMFS NW Fisheries Science Center

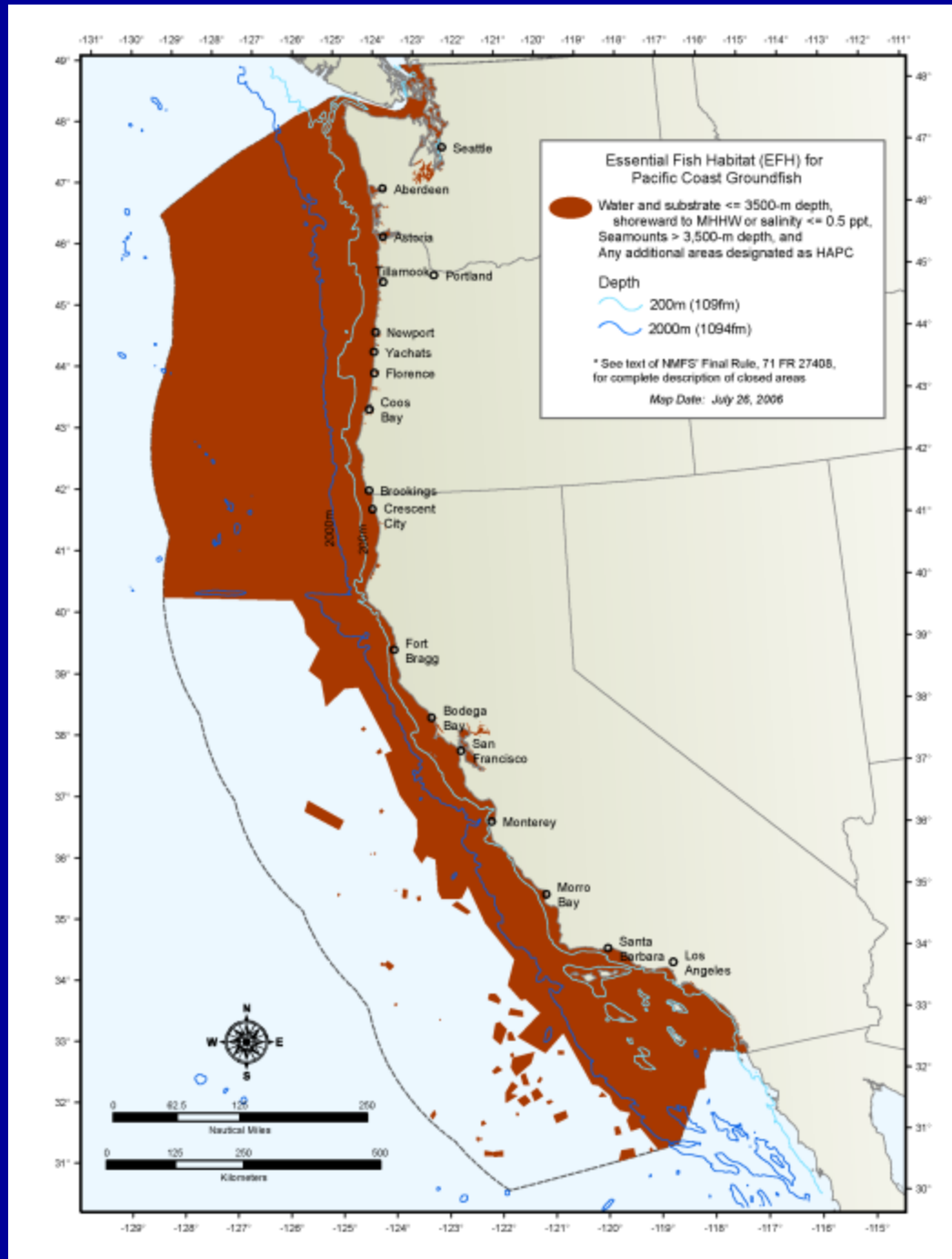


**Reviewed in 2005,  
and EFH  
designations were  
approved by NMFS  
in 2006  
(Amendment 19)**

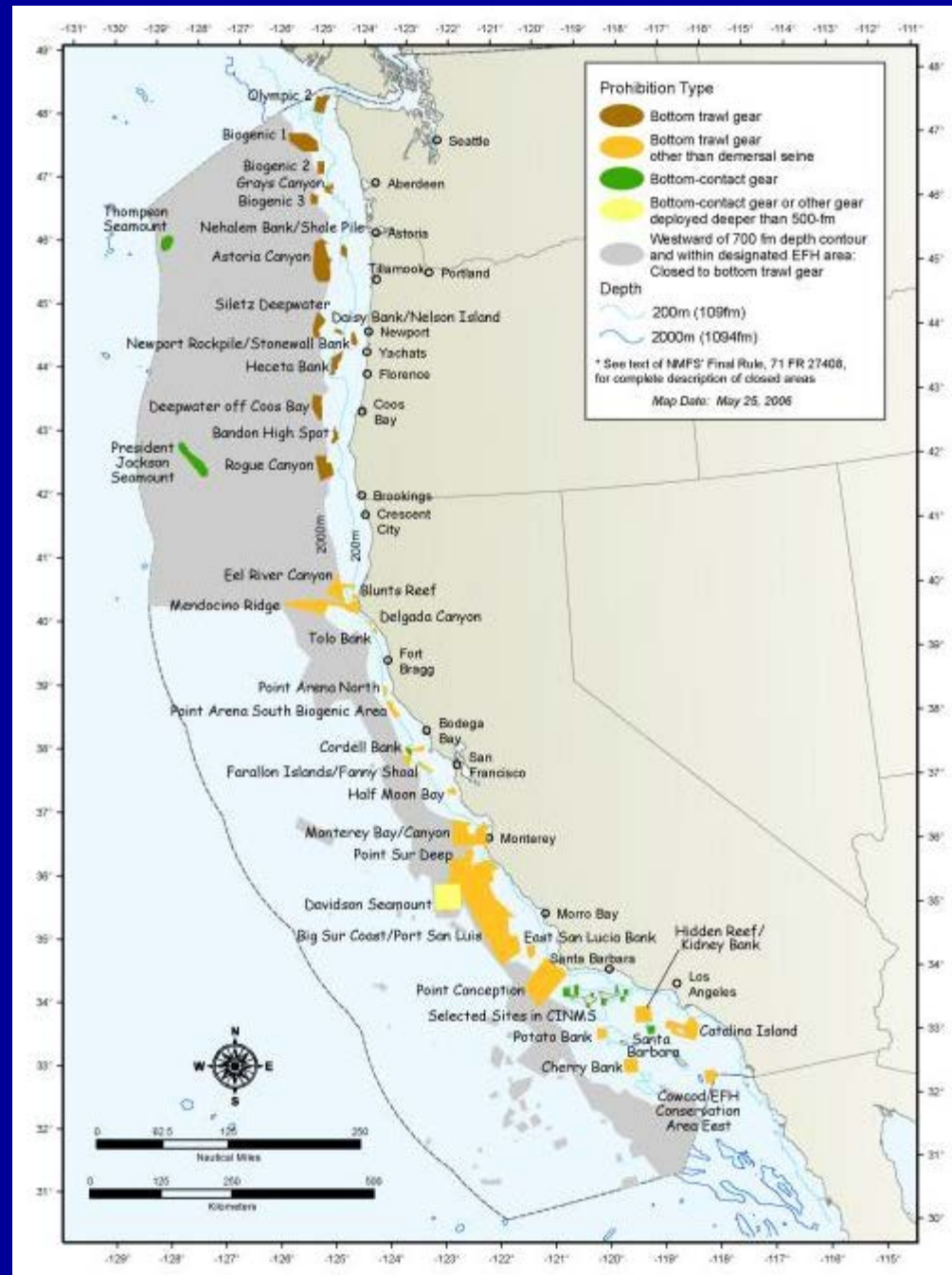




# Amendment 19 to Groundfish FMP 2005 (approved 2006) EFH for 82 species of Pacific Coast groundfish



# Amendment 19 EFH closures to protect Pacific Coast groundfish EFH





# 3-Phase Approach

## ➤ Phase 1

Information and data gathering, report to the PFMC in September 2012

## ➤ Phase 2

- Sept 2012-April 2013: NWFSC synthesizes and interprets data and information in the Phase 1 report.
- April 2013 : NWFSC presents synthesis to Council and Council issues 90-day RFP
- July-Nov 2013: EFHRC reviews proposals and submits Phase II Report to Council. Council determines whether or not to revise EFH

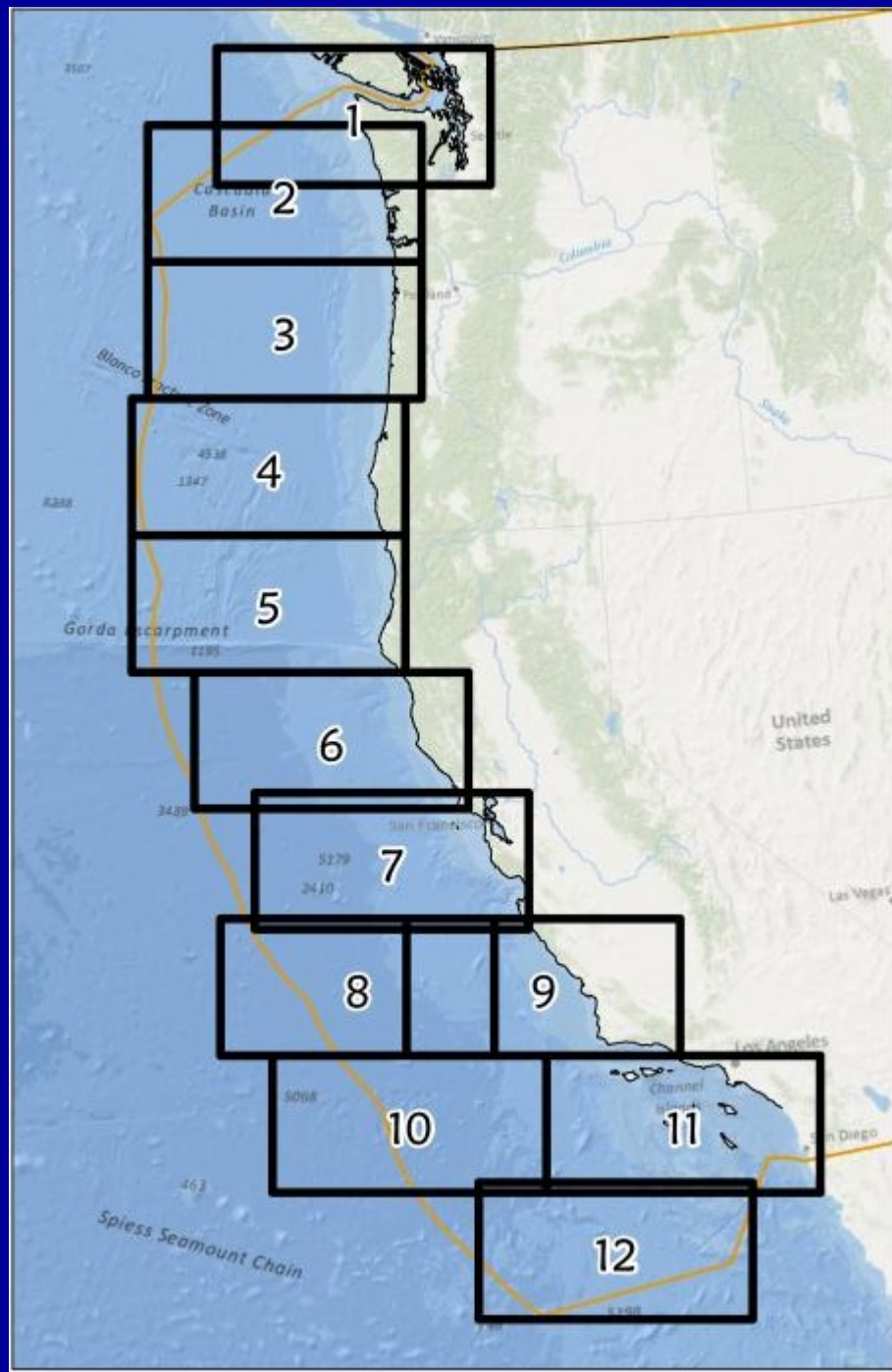
## ➤ Phase 3 (if warranted)

FMP amendment process begins



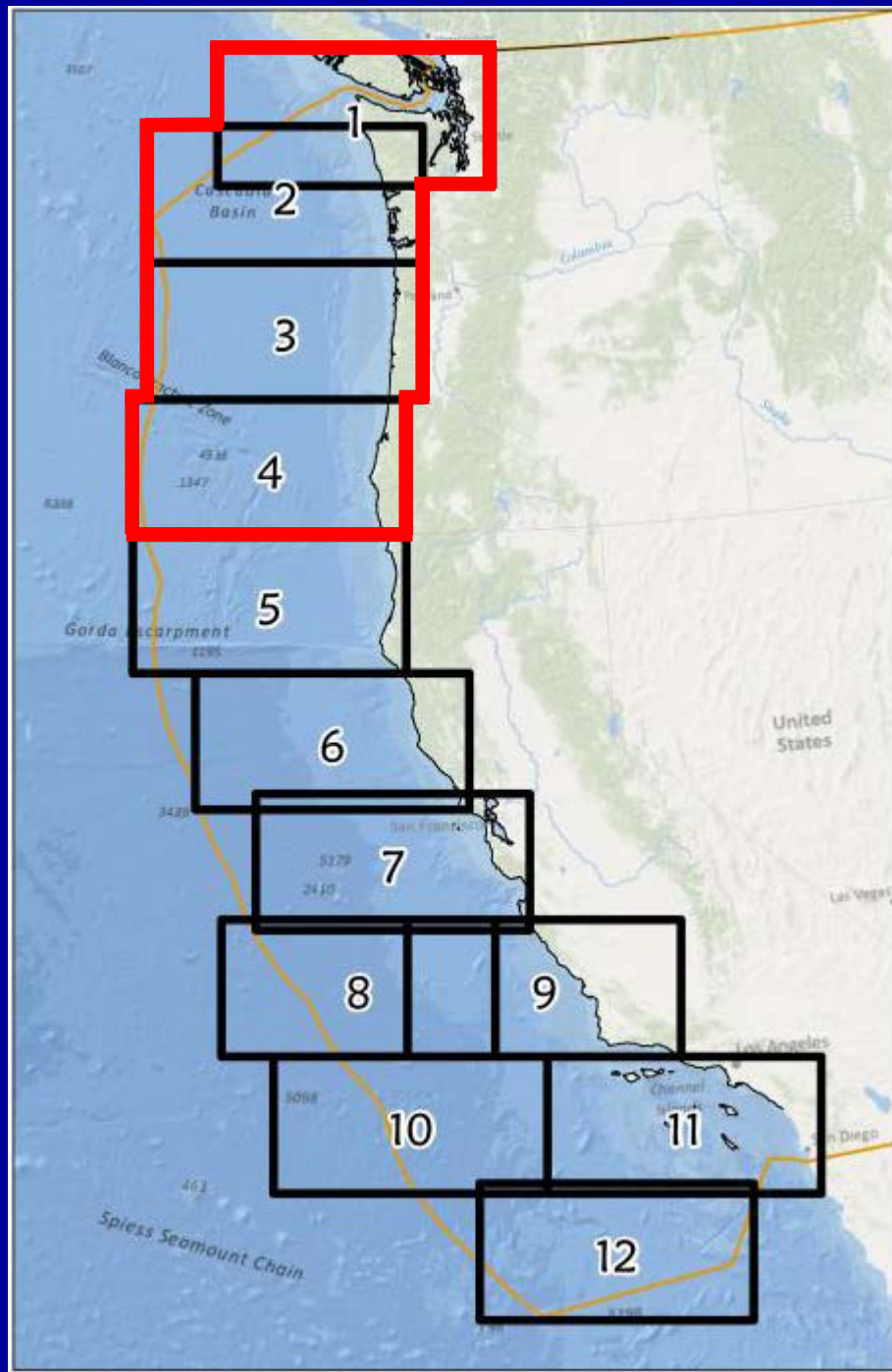
# Phase I Products

- Comparisons for regional survey coverage between 2005 and 2011



# Phase I Products

- Comparisons for regional survey coverage between 2005 and 2011







# Regional Survey Coverage

**2005**

2005 Coverage Level

- Sidescan Only
- Bathy Only
- Bathy & Backscatter

Regional Bathymetric Coverage Available to the PFMC 2005



Astoria

Newport

NOAA Ocean Service 2005 Project Area  
Geographic Coordinate System: GCS North American 1983  
Horizontal Datum: North American Datum 1983  
Datum: GRS 1980  
False Easting = 0  
False Northing = 0  
Coordinate Unit = Feet  
First Standard Parallel = 39°  
Second Standard Parallel = 48°  
Latitude of Origin = 40°  
Linear Unit: Meter

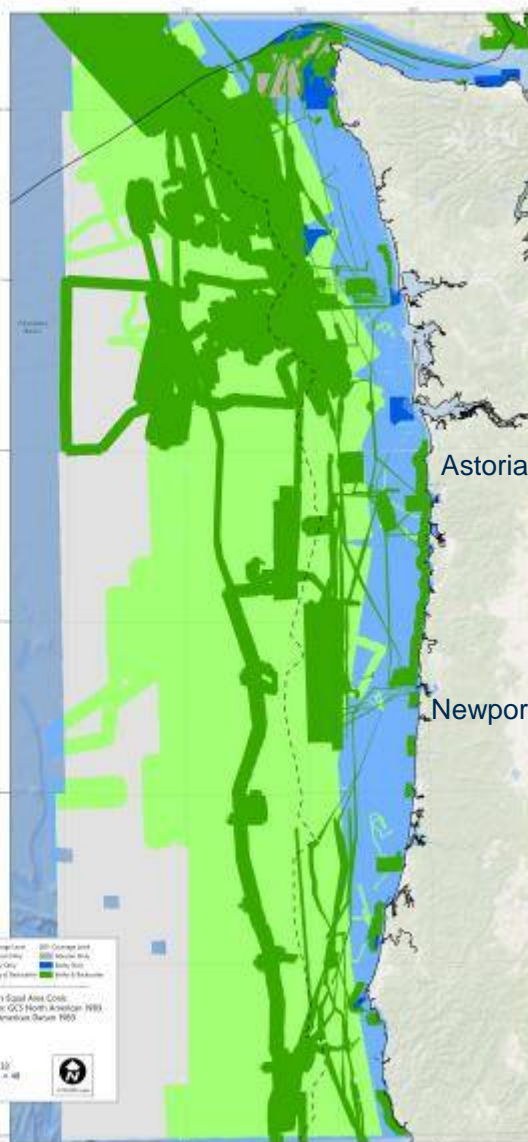
0 20 40 80 120 160 200  
0 20 40 80 120 160 200  
Kilometers Nautical Miles

**2011**

2011 Coverage Level

- Sidescan Only
- Bathy Only
- Bathy & Backscatter

Regional Bathymetric Coverage Available to the PFMC 2011



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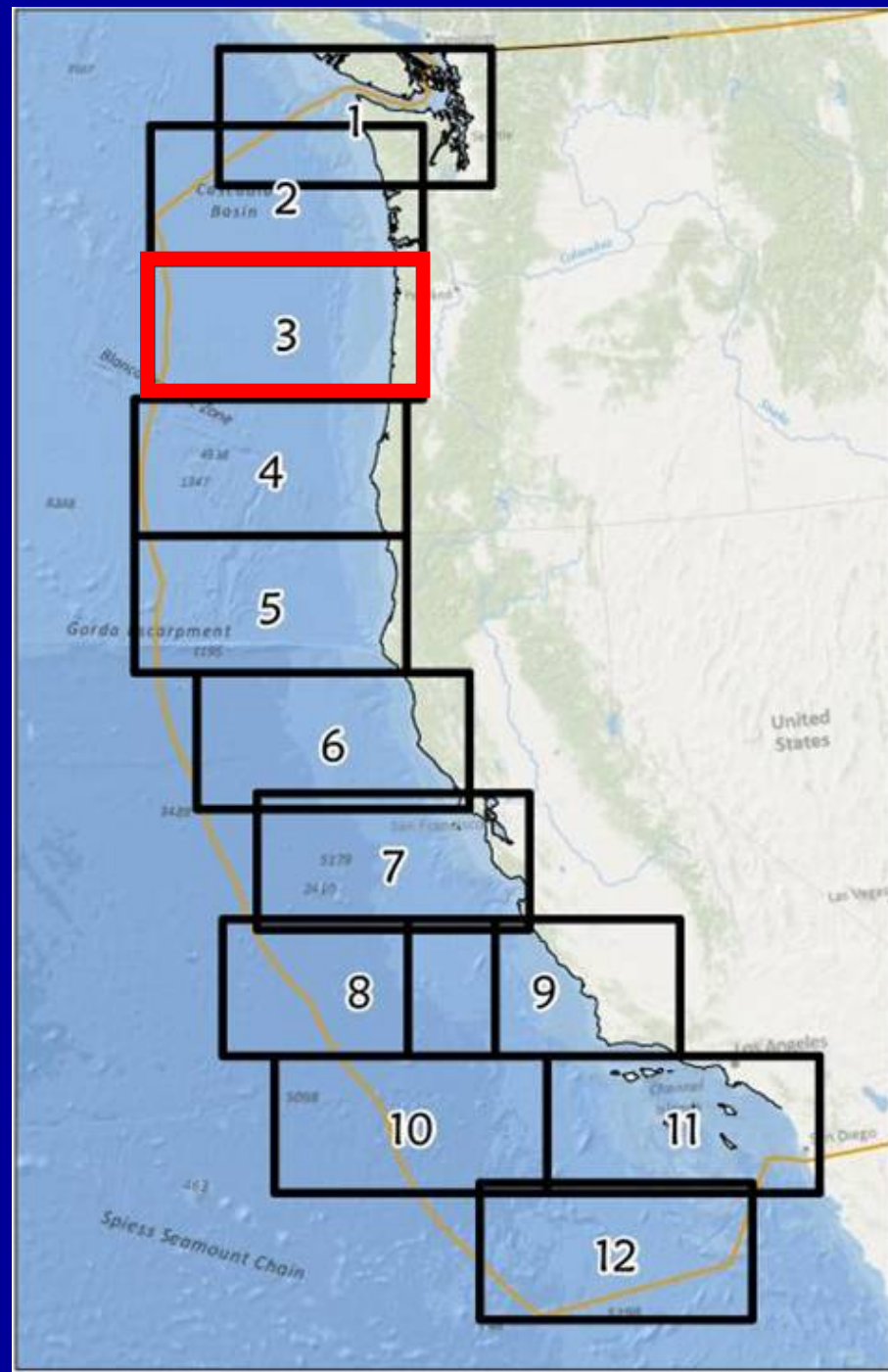
0 20 40 80 120 160 200  
0 20 40 80 120 160 200  
Kilometers Nautical Miles





# Phase I Products

- Comparisons for habitat between 2005 and 2011





# Seafloor Habitat Map 2005

## Map Plate 3 of 12, Northern Oregon Coast

Map Plate 3 of 12

Northern Oregon Outer Coast

0 5 10 20 30 40  
Nautical Miles  
0 5 10 20 30 40  
Kilometers

### Distribution And Abundance Of Habitat Mapping Data For The West Coast

Seabed Habitat Type:  
Standardized According to Seabed Hardness

--- 700 Fathom Closure Boundary

Predicted Rock

Hard

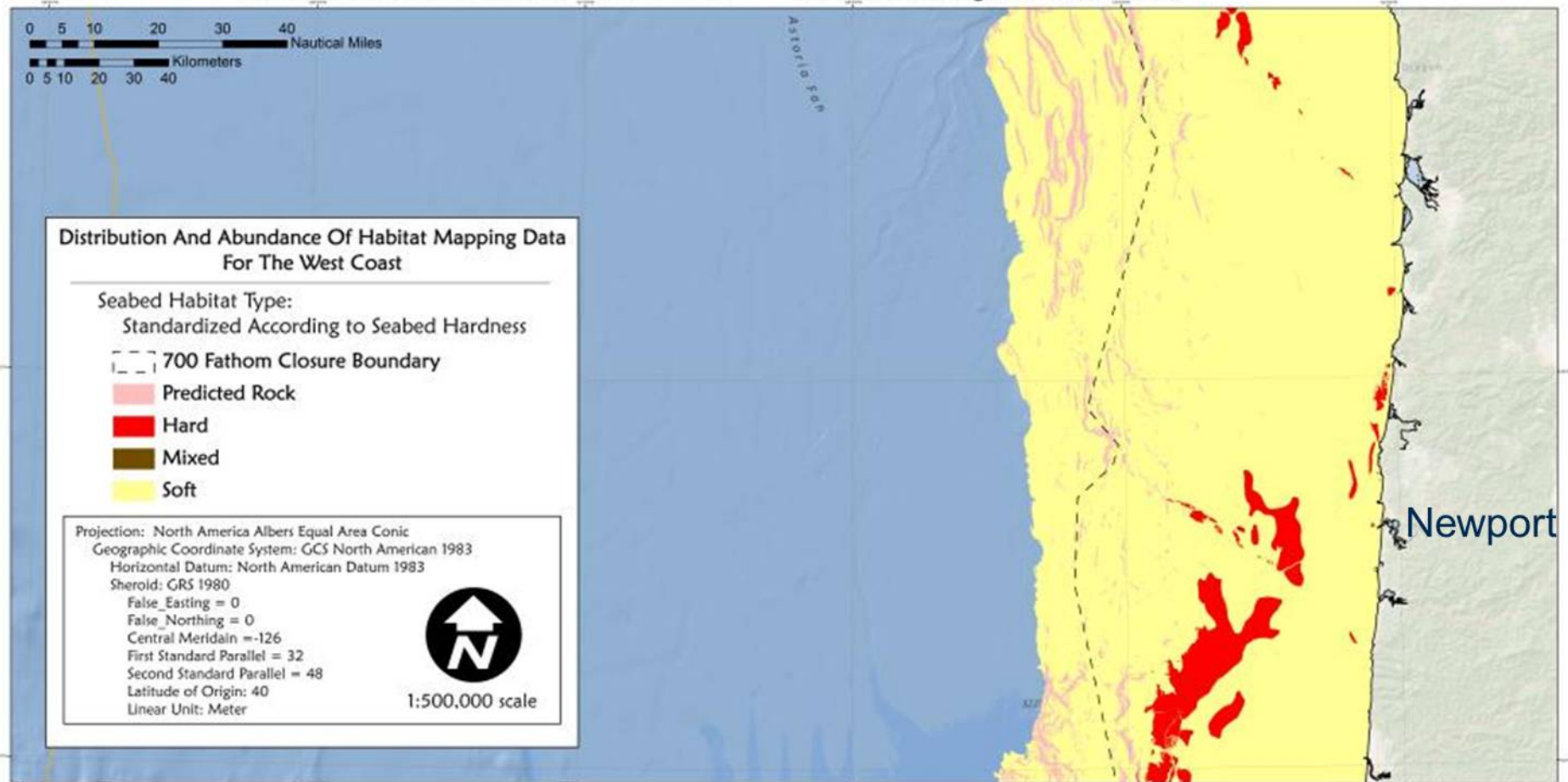
Mixed

Soft

Projection: North America Albers Equal Area Conic  
Geographic Coordinate System: GCS North American 1983  
Horizontal Datum: North American Datum 1983  
Spheroid: GRS 1980  
False\_Easting = 0  
False\_Northing = 0  
Central\_Meridian = -126  
First\_Standard\_Parallel = 32  
Second\_Standard\_Parallel = 48  
Latitude\_of\_Origin = 40  
Linear Unit: Meter



1:500,000 scale



# Aggregate Seafloor Habitat Map 2011

## Map Plate 3 of 12, Northern Oregon Coast

Map Plate 3 of 12

Northern Oregon Outer Coast

0 5 10 20 30 40  
Nautical Miles  
0 5 10 20 30 40  
Kilometers

### Distribution And Abundance Of Habitat Mapping Data For The West Coast

Seabed Habitat Type:  
Standardized According To Seabed Hardness

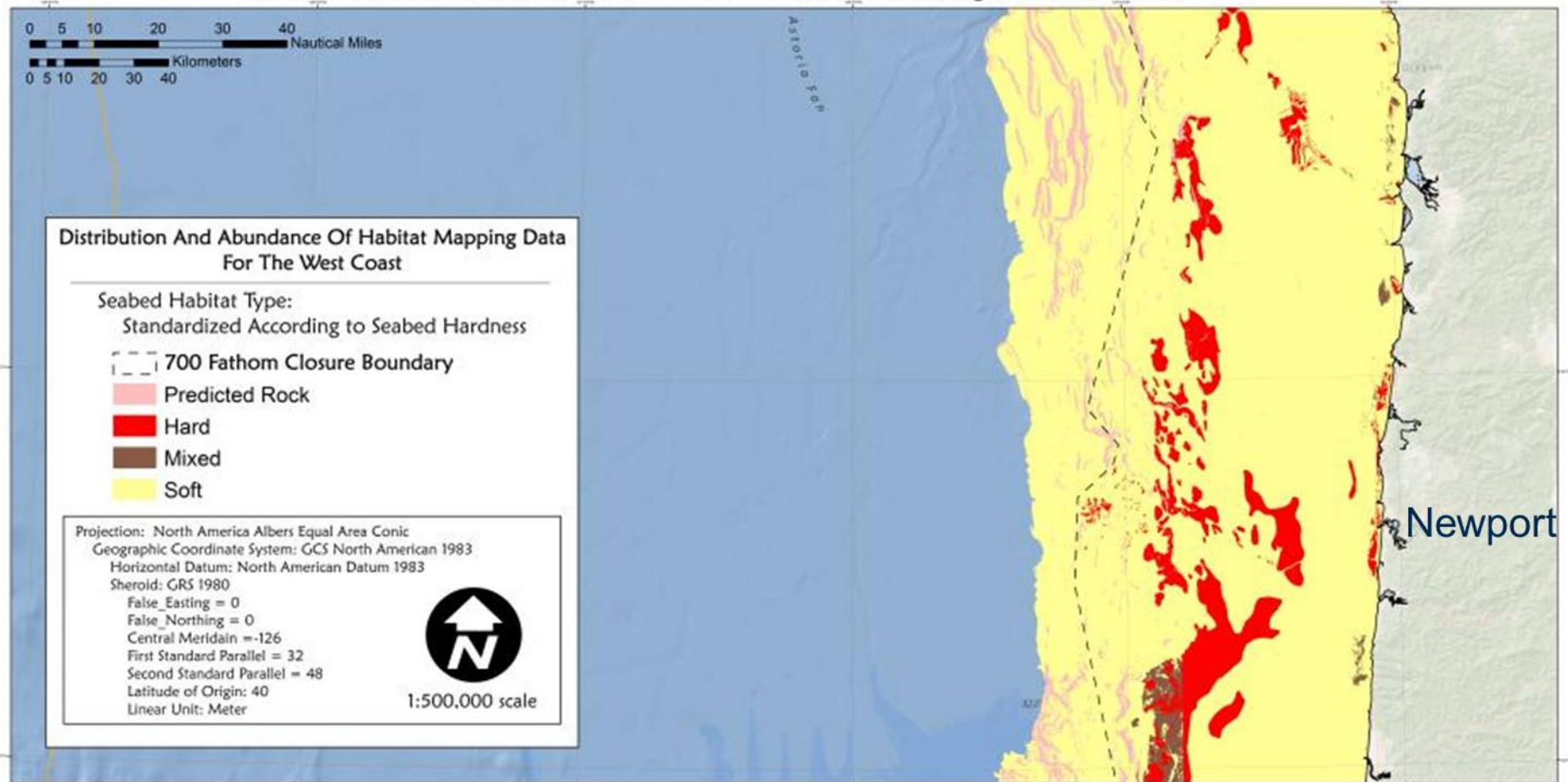
--- 700 Fathom Closure Boundary

Predicted Rock  
Hard  
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1:500,000 scale



# Other Phase 1 Products

- Footprints of commercial trawl and fixed gear fishing effort
- Fishery observer derived catch of corals and sponges in the bottom trawl fishery
- Comparative maps of spatial management boundaries (to minimize effects on EFH)



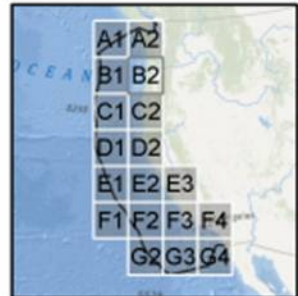
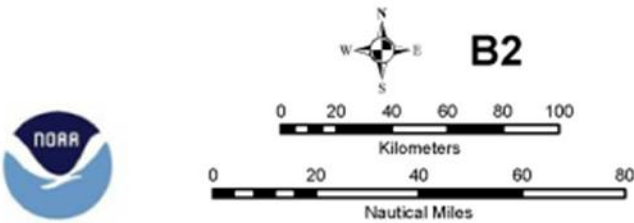
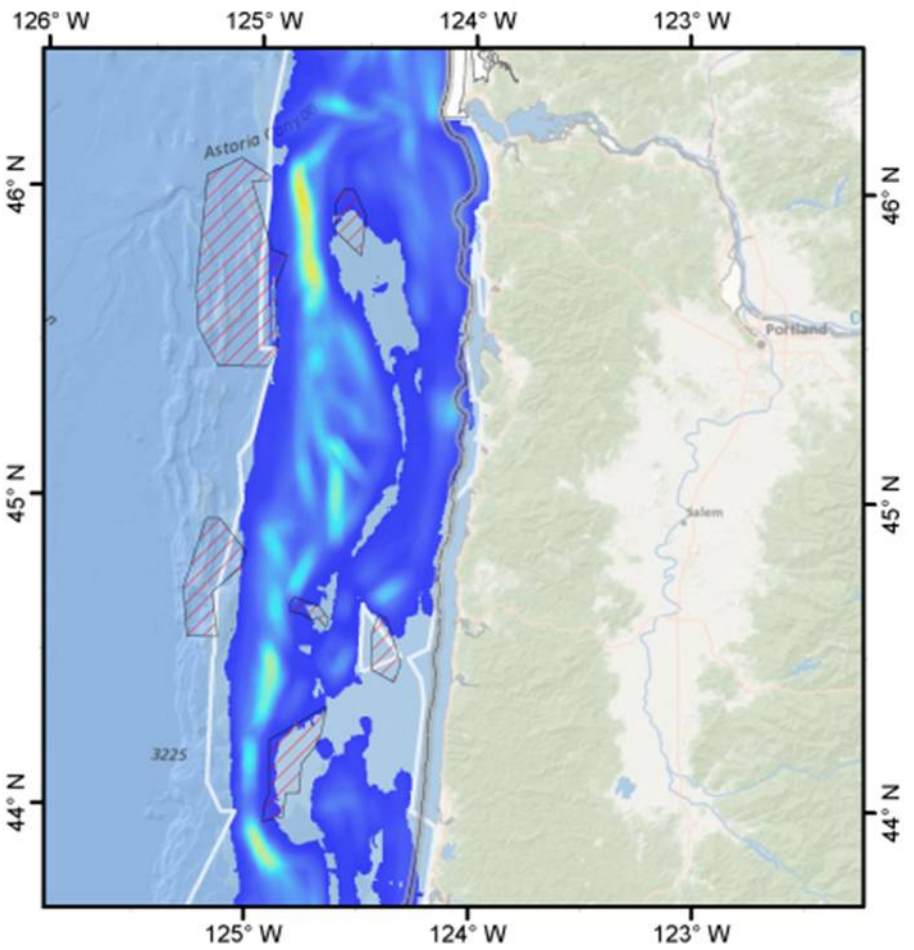
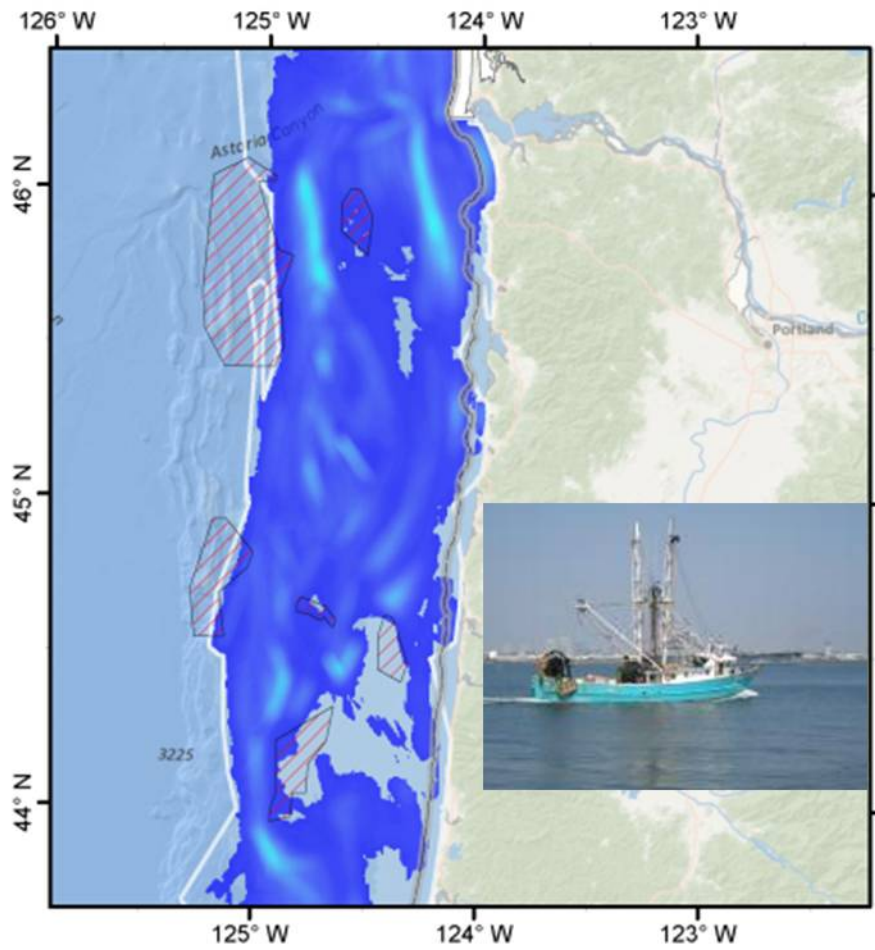




Before: 2002–2006

# Bottom Trawl Fishing Effort (PacFIN)

After: 2006–2010

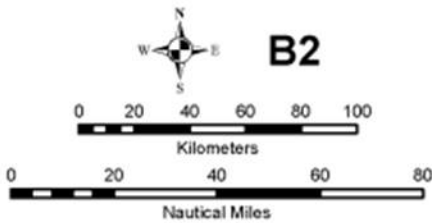
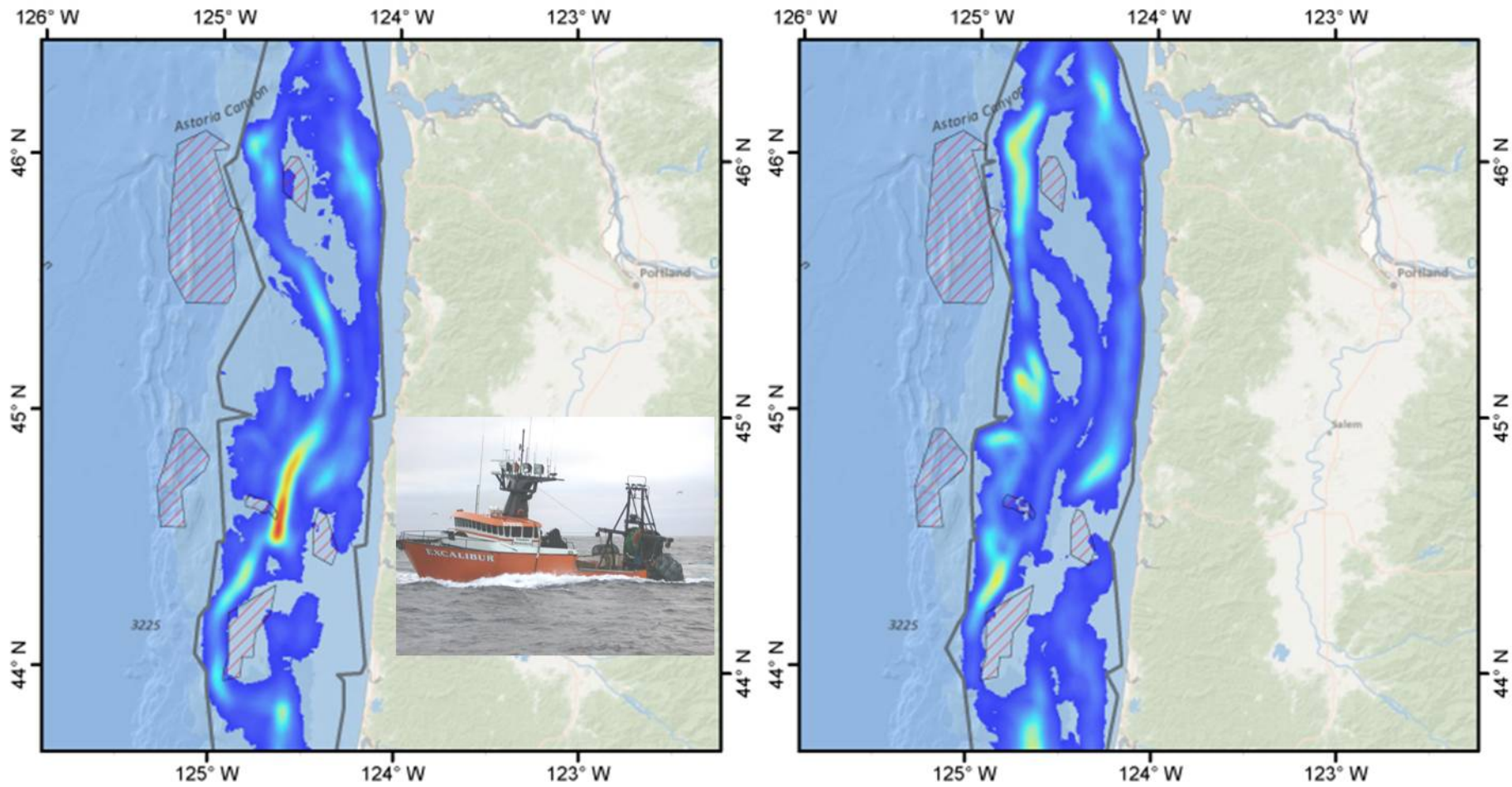


Map 2 of 8

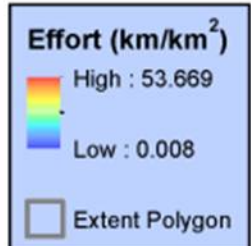
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Cell Size: 500 m



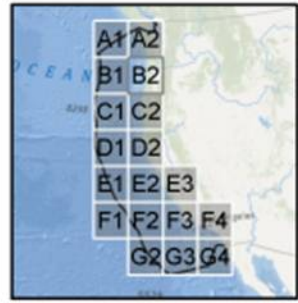
Before: 2002–2006 Midwater Trawl Fishing Effort (At-Sea & Shoreside Sectors) After: 2006–2010



Map Scale: 1:2,400,000  
Date Saved: 19 Feb 2012



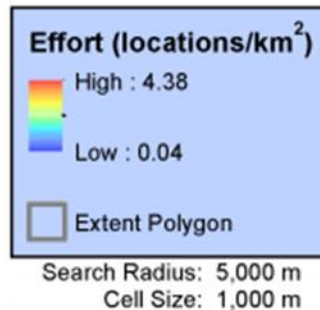
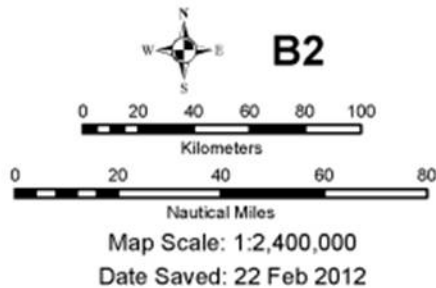
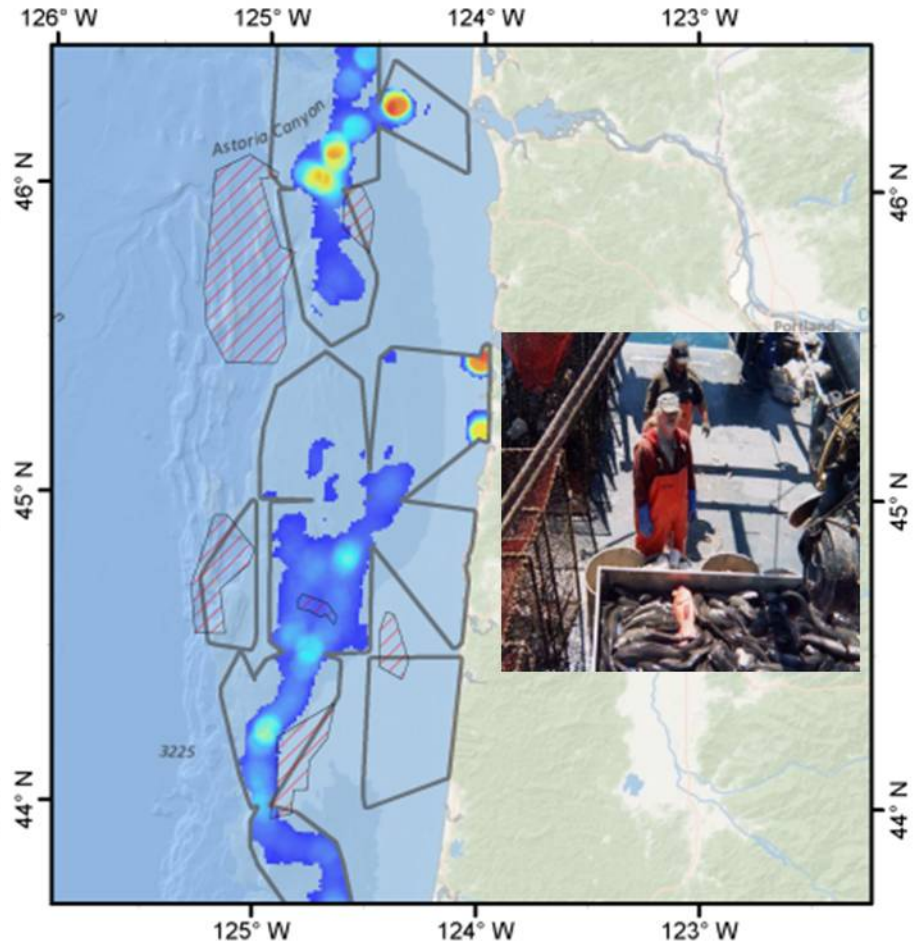
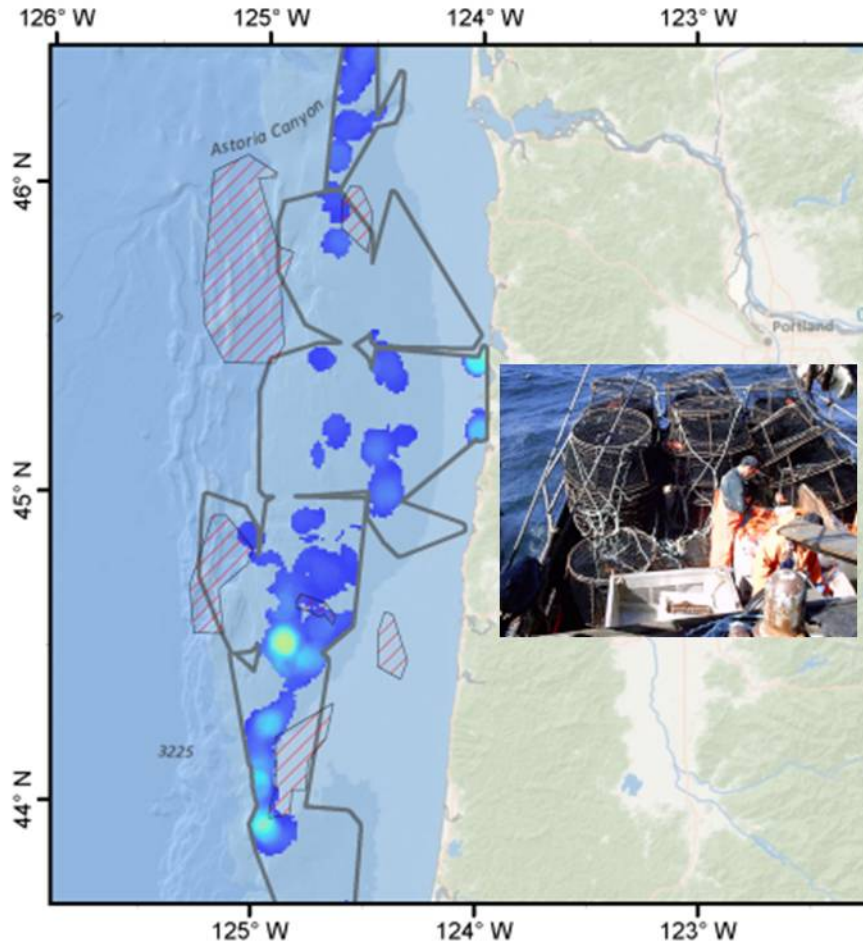
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Cell Size: 500 m



Before: 2002–2006

# Fixed Gear Effort (WCGOP)

After: 2006–2010



Map 2 of 9

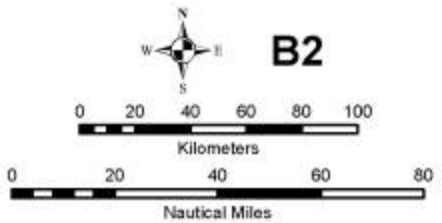
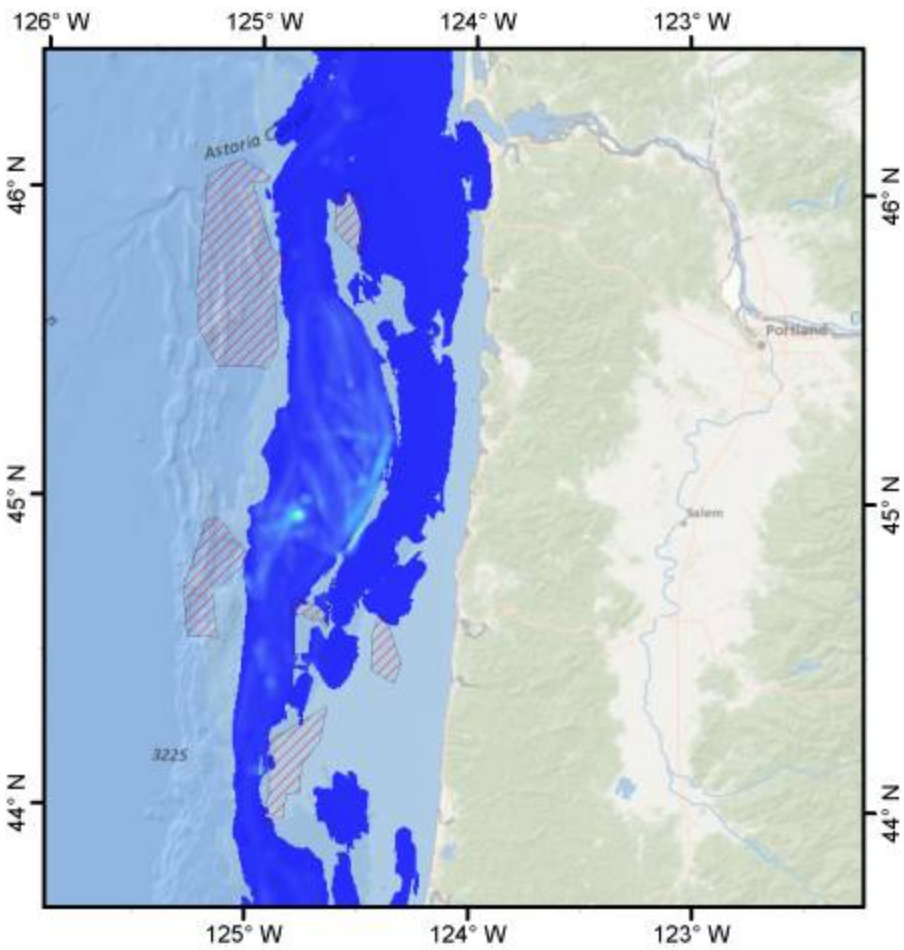
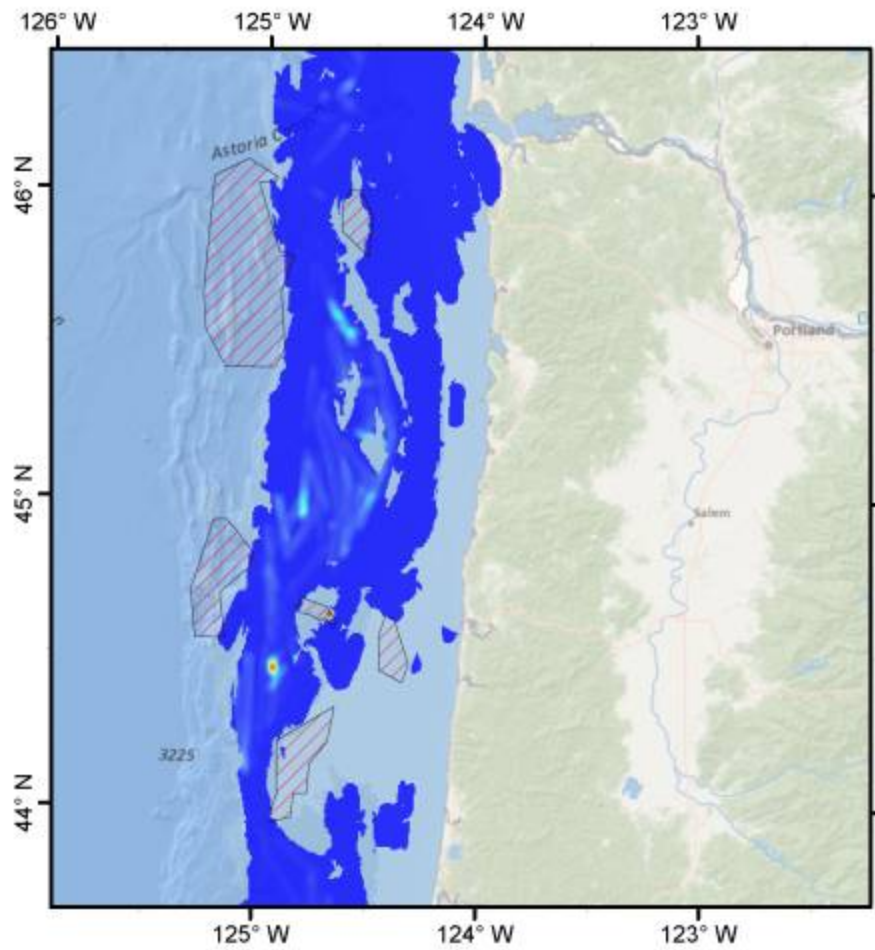




Before: 2002–2006

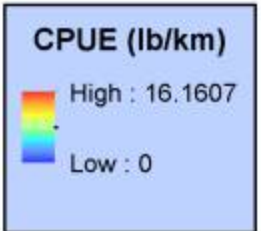
Standardized Coral/Sponge Catch (WCGOP - Trawl)

After: 2006–2010



Map Scale: 1:2,400,000  
Date Saved: 13 Feb 2012

Author: Curt Whitmire (NOAA Fisheries - NWFSC)



Search Radius: 3,000 m  
Cell Size: 500 m

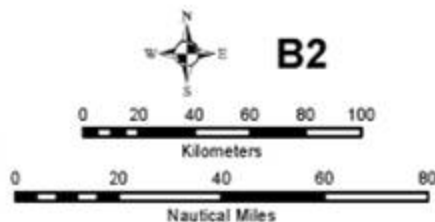
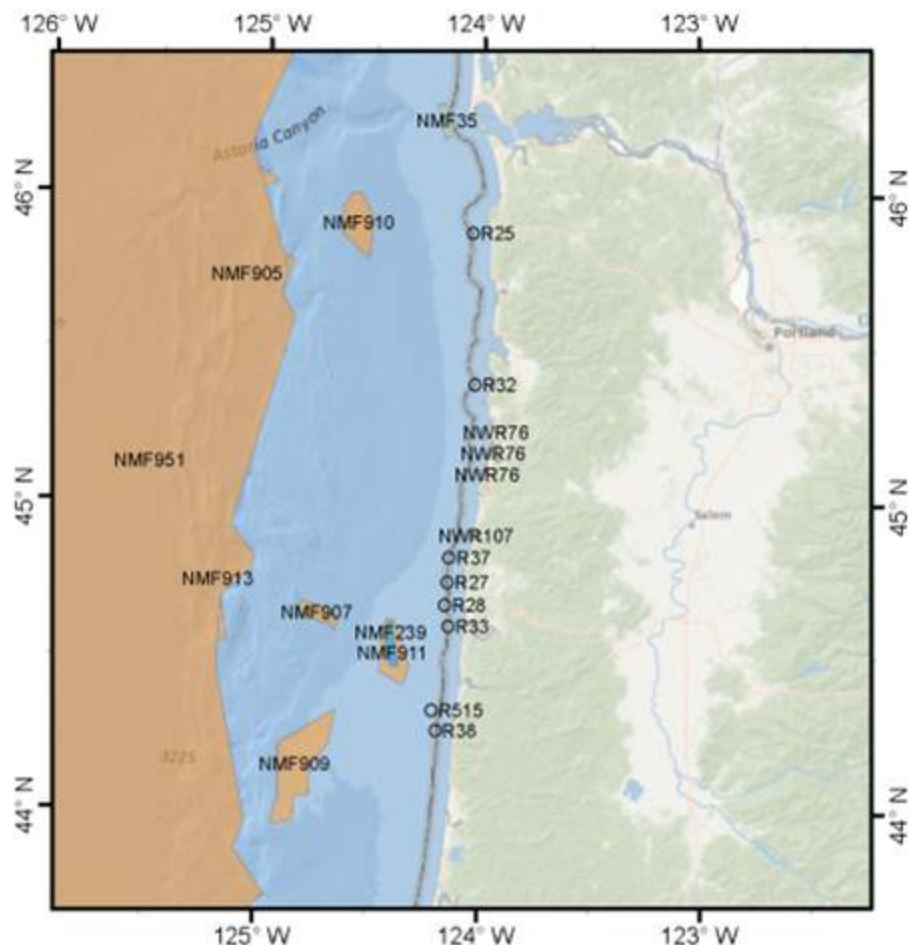
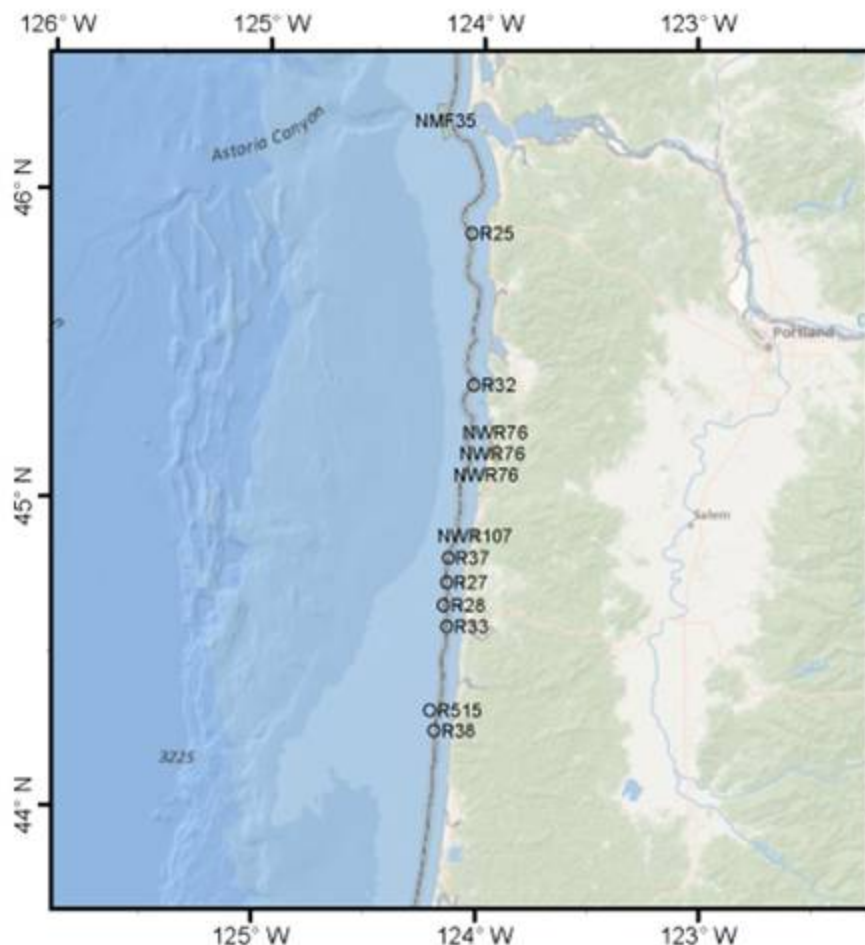




Before: 2002–2006

## Selected Federal and State Marine Protected Areas

After: 2006–2010



Map 4 of 17

Map Scale: 1:2,400,000

Date Saved: 24 Feb 2012

Author: Curt Whitmire (NOAA Fisheries - NWFS)

- Commercial Fishing Prohibited
- Commercial Fishing Prohibited and Recreational Fishing Restricted
- Commercial Fishing Restricted
- Commercial Fishing Restricted and Recreational Fishing Prohibited
- Commercial and Recreational Fishing Prohibited
- Commercial and Recreational Fishing Restricted
- Recreational Fishing Restricted
- No Site Restrictions
- State Territorial Sea



# Additional Phase I Products

- Description of available models relevant to EFH  
(spatial, trophodynamic, ecosystem)
- Comparison of information in Habitat Use Database
- Life history summaries using updated information
- Update on effects from fishing activities
- Review of “emerging” non-fishing threats
- A description of the major prey species





# Questions?

