

# Data and information needs for effective coastal and marine spatial planning: a Washington State case study

**NAAFE Forum 2017**

Special Session - Coastal and marine spatial planning in North America: case studies and data needs

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Washington Department of Fish and Wildlife



# We have a preliminary draft Marine Spatial Plan out for review.

(see [www.msp.wa.gov](http://www.msp.wa.gov))

## NEXT STEPS

- *Preliminary draft plan review (February – March 2017)*  
WCMAC and tribal feedback
- *Draft plan and draft EIS (May 2017)*  
Public comment period
- *Revise and adopt final plan (June 2017)*

## MSP Preliminary Draft Documents Available

*Posted February 16, 2017 by [WA MSP](#) & filed under [News](#), [WCMAC](#).*

### **The Preliminary Draft Marine Spatial Plan is now available!**

These preliminary documents are intended to provide key stakeholders and tribes an opportunity to conduct an early review of the plan and provide feedback to state agencies on plan content. A formal draft is currently expected to be released for public comment in May.

The preliminary plan is provided in [five documents](#):

**1. Introduction:** Section 1 provides basic background information on topics including the planning process, goals, and tribal treaty rights.

**2. Baseline Information: Current Conditions and Future Trends** Section 2 gives information about current conditions and existing uses in the study area. It also includes discussions of potential new uses and climate change.

**3. Spatial Analyses:** Section 3 provides an overview of the data, methods, and results of three spatial analyses done to support the Marine Spatial Planning Process.

**4. Management Framework:** Section 4 describes information related to the implementation of the Marine Spatial Plan.

**Appendices:** This section provides additional information including maps referenced in the plan and a full list of WCMAC recommendations.

These sections are also available in one combined file. Please visit the [Resources page](#) to view or download the preliminary plan files.

Tags: [COMMUNICATION](#) [MARINE SPATIAL PLANNING](#)

# An Interagency Team is charged with creating the plan, WDFW's role is fairly narrow.

## **Governor's Office**

- Chair

## **Washington Department of Ecology**

- Lead agency on writing and implementing the Plan.

## **Washington Department of Natural Resources**

- Manages budget and projects, hosts map portal, producing maps for the Plan, and more.

## **Washington Department of Fish and Wildlife**

- Focused on fisheries mandates and mapping ecologically important areas.

## **Washington Sea Grant**

- Outreach and other activities.

## **Et al.**

- All agency member sof Washington's State Ocean Caucus have been involved to some degree.

# Marine Spatial Planning for Washington's Pacific Coast





# Marine Spatial Planning for Washington's Pacific Coast



Why are we creating a Marine  
Spatial Plan?

## **June 2009**

President Obama forms a National Ocean Policy Task Force

## **Sep. and Dec. 2009**

Task Force releases initial recommendations and takes public comment with MSP at front and center.

## **March 2010**

WA State Legislature passes Substitute Senate Bill 6350, directing a state interagency team to develop recommendations on conducting MSP and report back.

## **July 2010**

President Obama issues Executive Order 13547 adopting Task Force's recommendations.

## **November 2010**

Mid-term elections changes composition of the U.S. Congress

## **March 2012**

WA Legislature amends MSP law

## **Spring 2013**

State interagency team begins planning.

# The Washington Legislature's mandate

- (1) Upon the receipt of federal, private, or other funding for this purpose, the marine interagency team shall coordinate the development of a comprehensive marine management plan for the state's marine waters. The marine management plan must include marine spatial planning, as well as recommendations to the appropriate federal agencies regarding the exclusive economic zone waters.

**RCW 43.372.030** (2010 version)

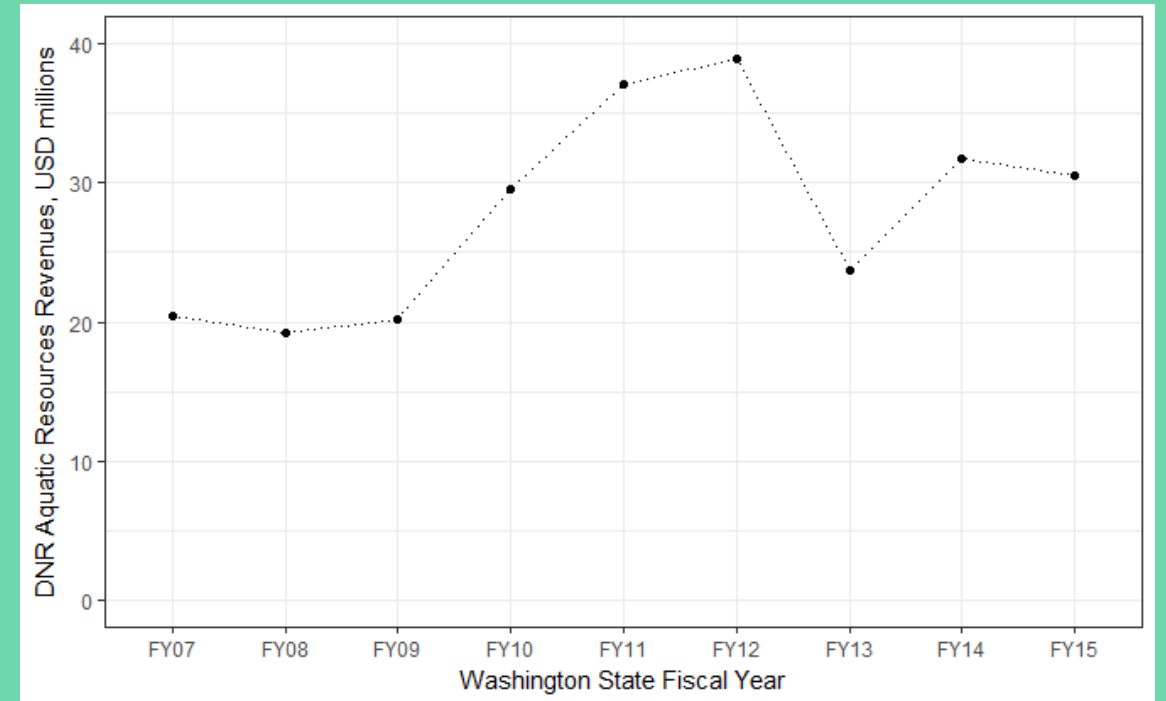
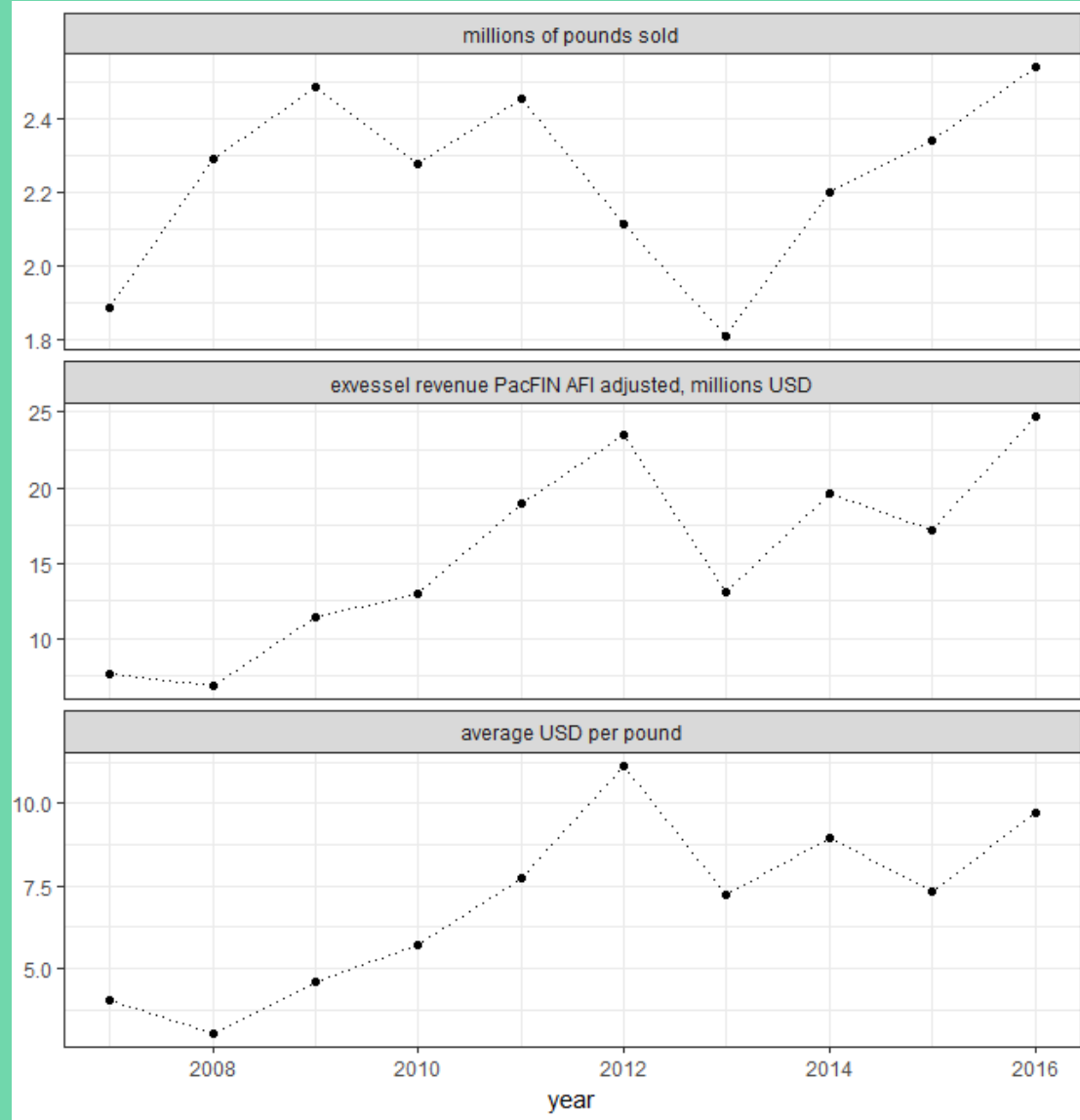


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## The Geoduck “Windfall”



# Our fisheries specific mandates

# Discretion to include a Fisheries Management Element

- (7) If the director of the department of fish and wildlife determines that a fisheries management element is appropriate for inclusion in the marine management plan, this element may include the incorporation of existing management plans and procedures and standards for consideration in adopting and revising fisheries management plans in cooperation with the appropriate federal agencies and tribal governments.

**RCW 43.372.040**

# Minimize negative impacts on fishing.

(8) Any provision of the marine management plan that does not have as its primary purpose the management of commercial or recreational fishing but that has an impact on this fishing **must minimize the negative impacts on the fishing**. The team **must accord substantial weight to recommendations from the director of the department of fish and wildlife** for plan revisions to minimize the negative impacts.

**RCW 43.372.040**



# Existing Policies – The Ocean Resources Management Act

(2) Uses or activities that require federal, state, or local government permits or other approvals and that will adversely impact renewable resources, marine life, fishing, aquaculture, recreation, navigation, air or water quality, or other existing ocean or coastal uses, **may be permitted only if** the criteria below are met or exceeded:

...

(e) **All reasonable steps are taken to avoid and minimize adverse social and economic impacts, including impacts on aquaculture, recreation, tourism, navigation, air quality, and recreational, commercial, and tribal fishing;**

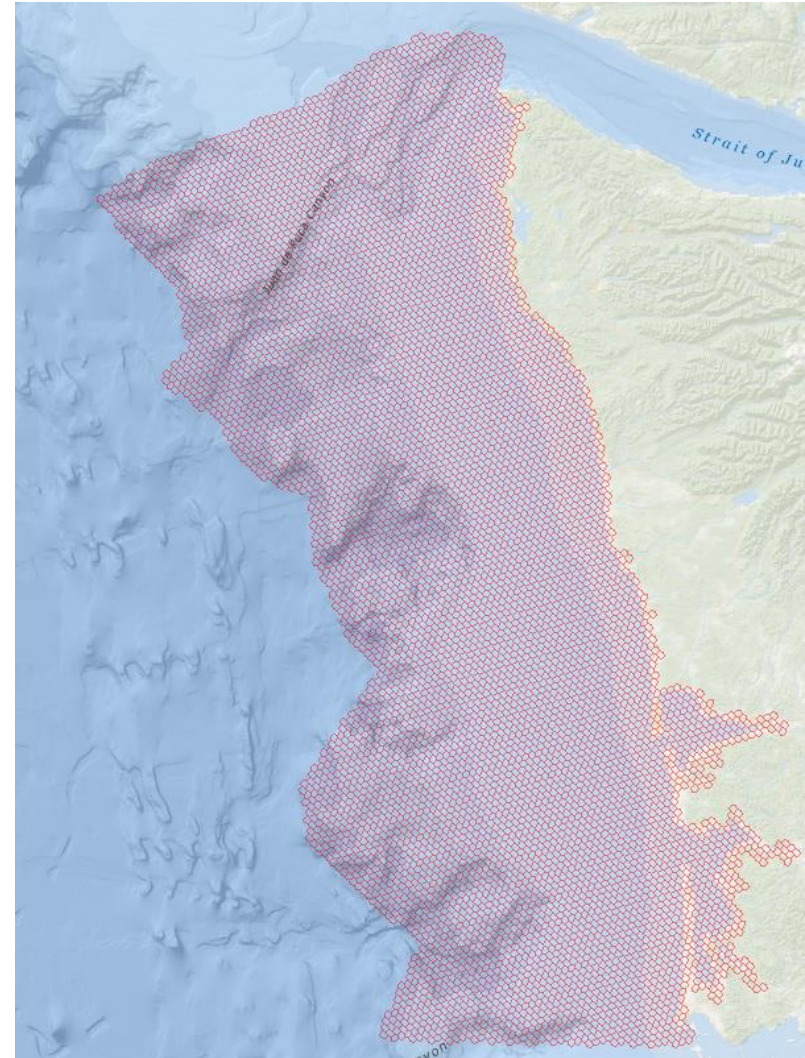
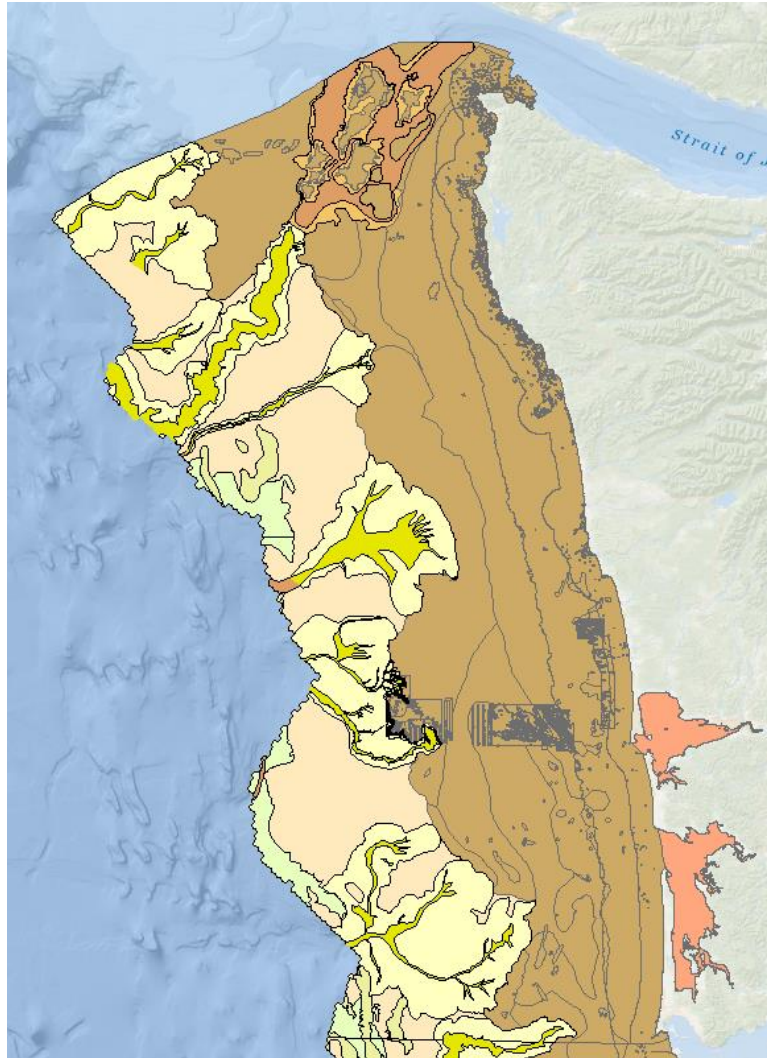
...

**RCW 43.143.030**

# The “series of maps”

(6)(c) A series of maps that, at a minimum, summarize available data on: . . . human uses of marine waters, particularly areas with **high value for fishing**, shellfish aquaculture, recreation, and maritime commerce; and appropriate locations with **high potential for renewable energy production** with minimal potential for conflicts with other existing uses or sensitive environments;

**RCW 43.372.040**



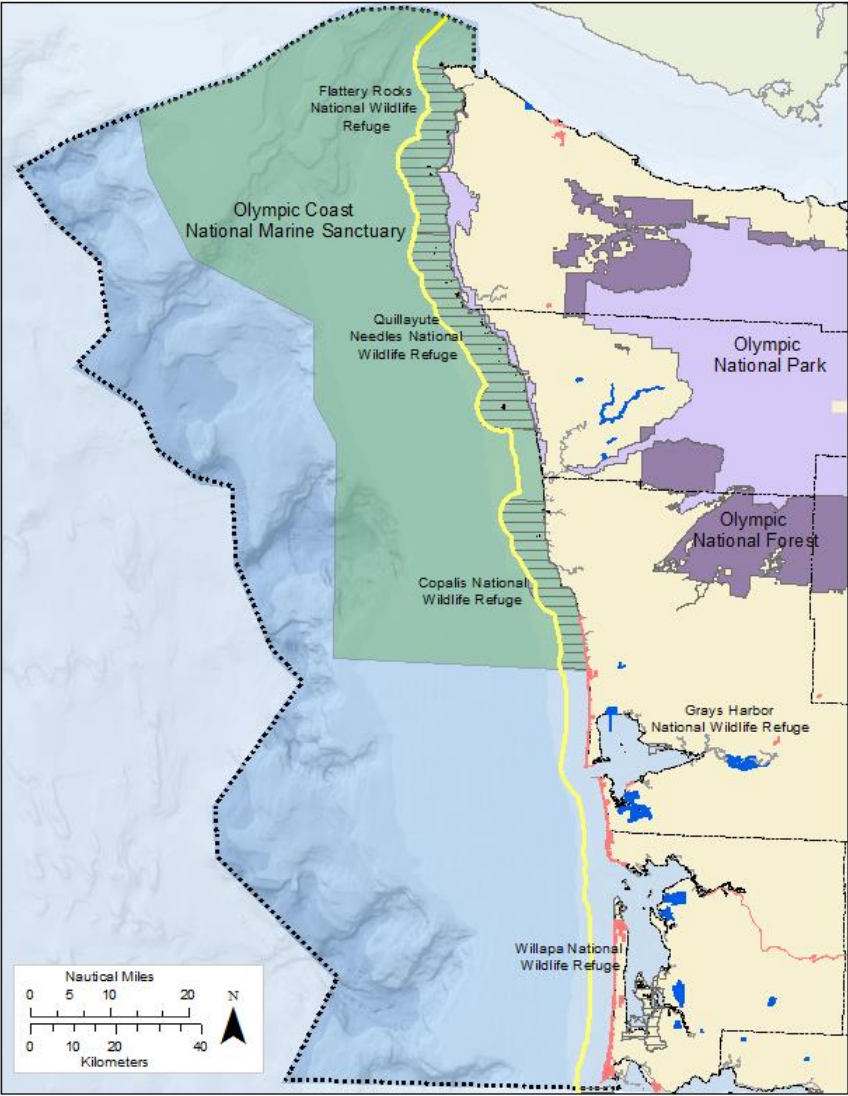
The MSP Study Area, physical habitat characterization and the hexagonal grid







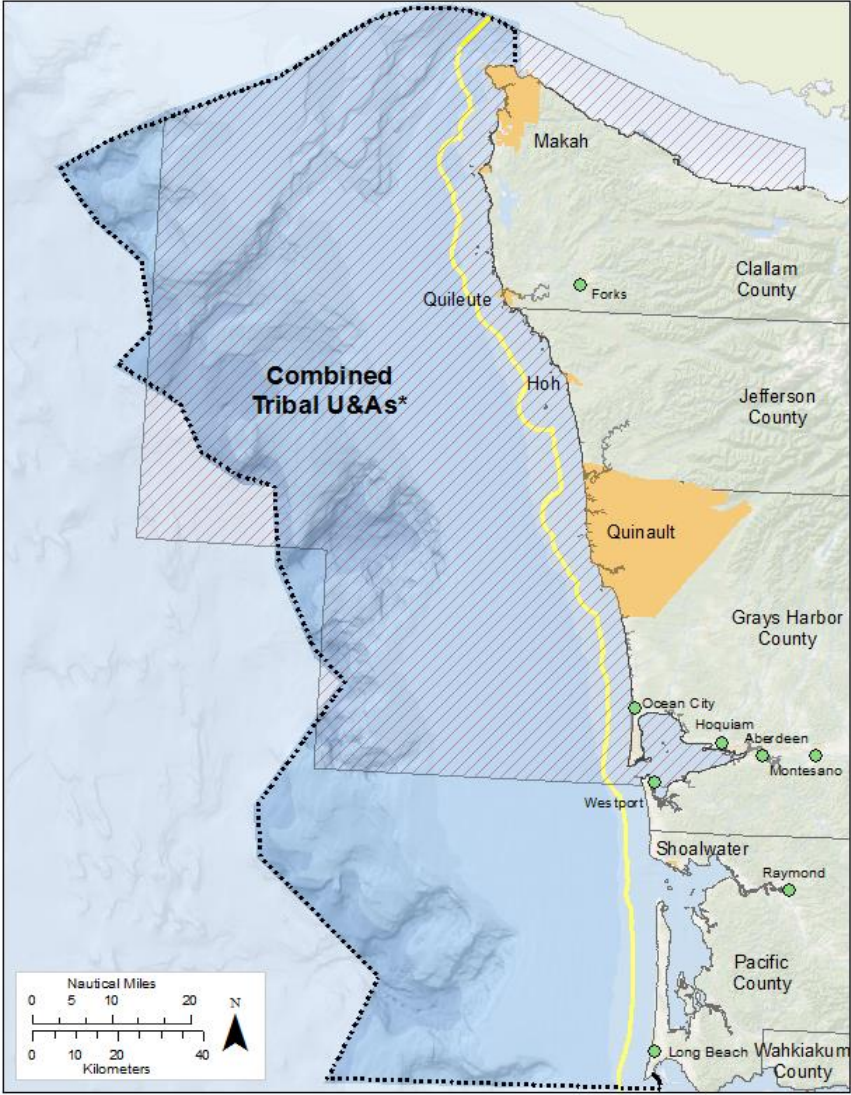
Map 1: MSP Study Area, Government and Conservation Areas



- National Park Service Lands<sup>12</sup>
- State Park Seashore Conservation Areas<sup>2</sup>
- National Marine Sanctuary<sup>13</sup>
- National Forest Service Lands<sup>12</sup>
- National Wildlife Refuges and Acquisition Areas
- State DNR Conservation Areas<sup>2</sup>
- MSP Study Area<sup>7</sup>
- State Boundary<sup>10</sup>
- County Boundary<sup>2</sup>

Map coordinate system: North American Datum of 1983 (NAD83), Washington South State Plane Coordinate System, meters. Not to be used for legal purposes.

Map 2: Cities, Coastal Tribal Reservations, and Combined Tribal Usual and Accustomed Areas (U&As)



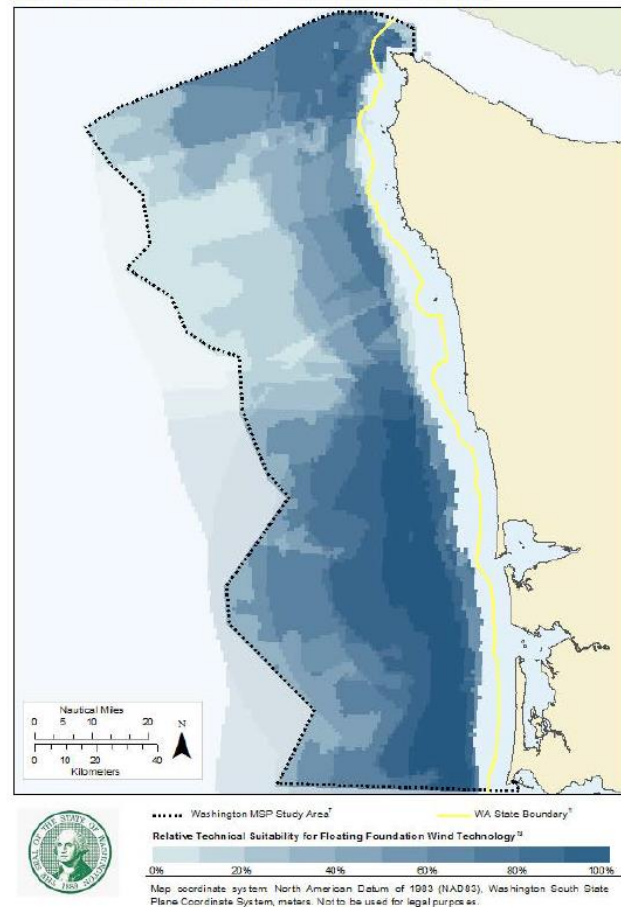
- Washington Coastal Tribal Reservations<sup>2</sup>
- Incorporated City<sup>2</sup>
- County Boundary<sup>2</sup>
- Washington MSP Study Area<sup>7</sup>
- WA State Boundary<sup>10</sup>
- Combined Tribal U&As<sup>11</sup>

Map coordinate system: North American Datum of 1983 (NAD83), Washington South State Plane Coordinate System, meters. Not to be used for legal purposes.

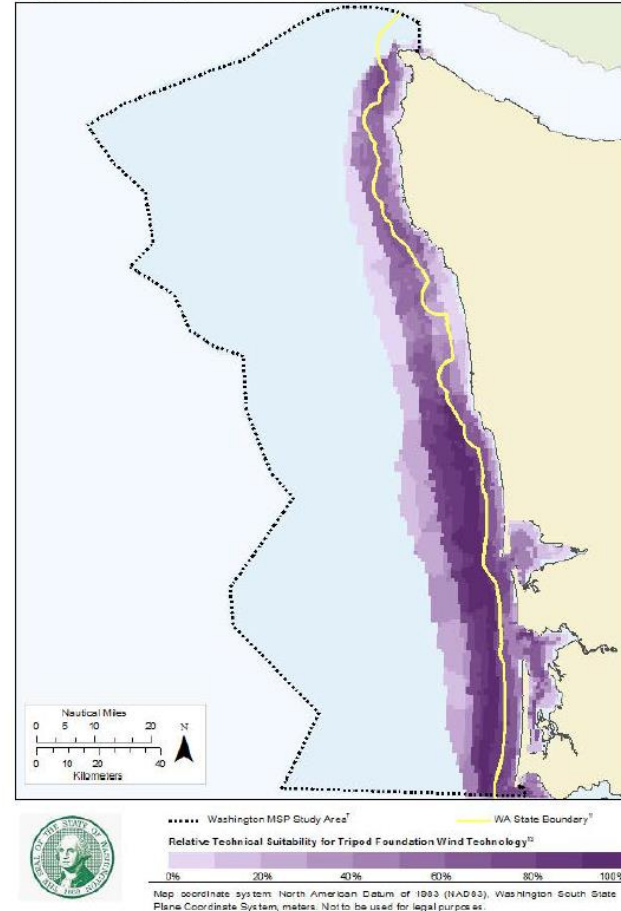
*\*This represents the combined U&A footprints for the Hoh, Quileute, Quinault and Makah tribes. Each tribe's individual U&A varies within this area.*



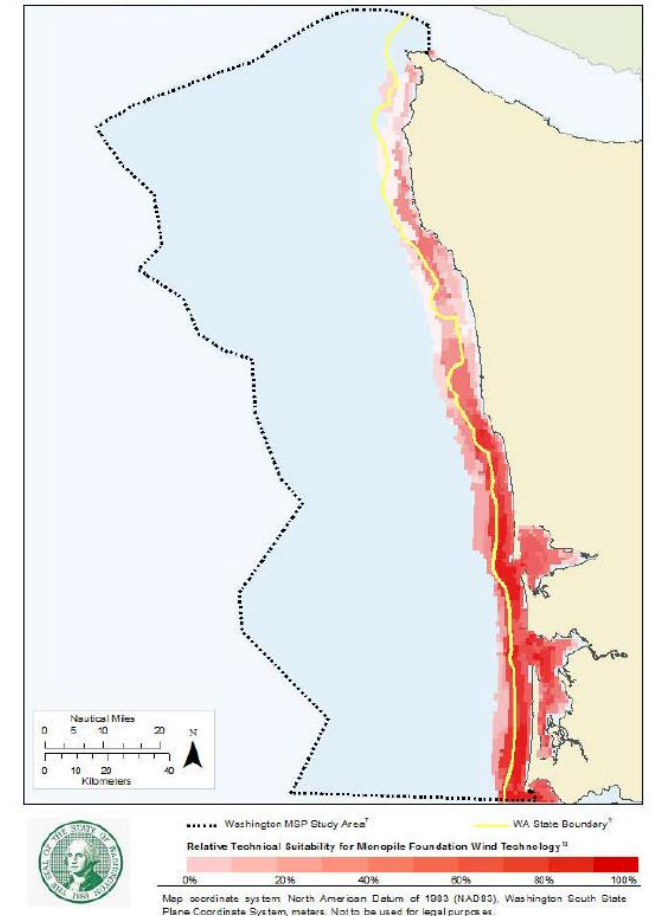
Map 44: Renewable Energy Wind Turbine Suitability (Floating Foundation) PRELIMINARY DRAFT



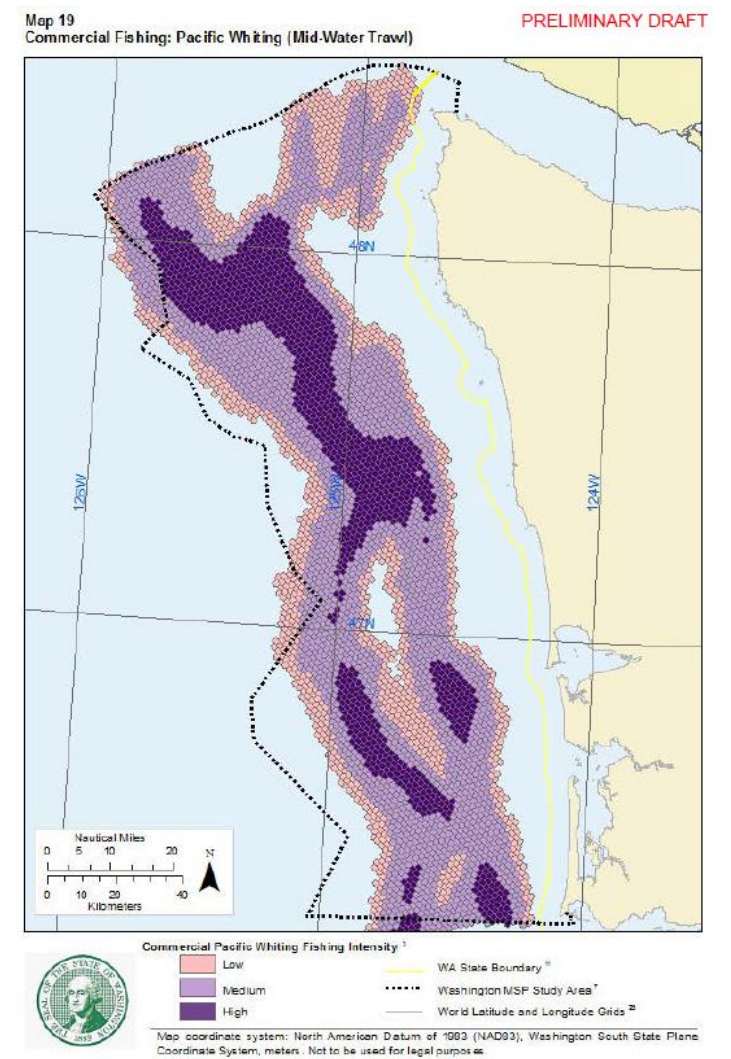
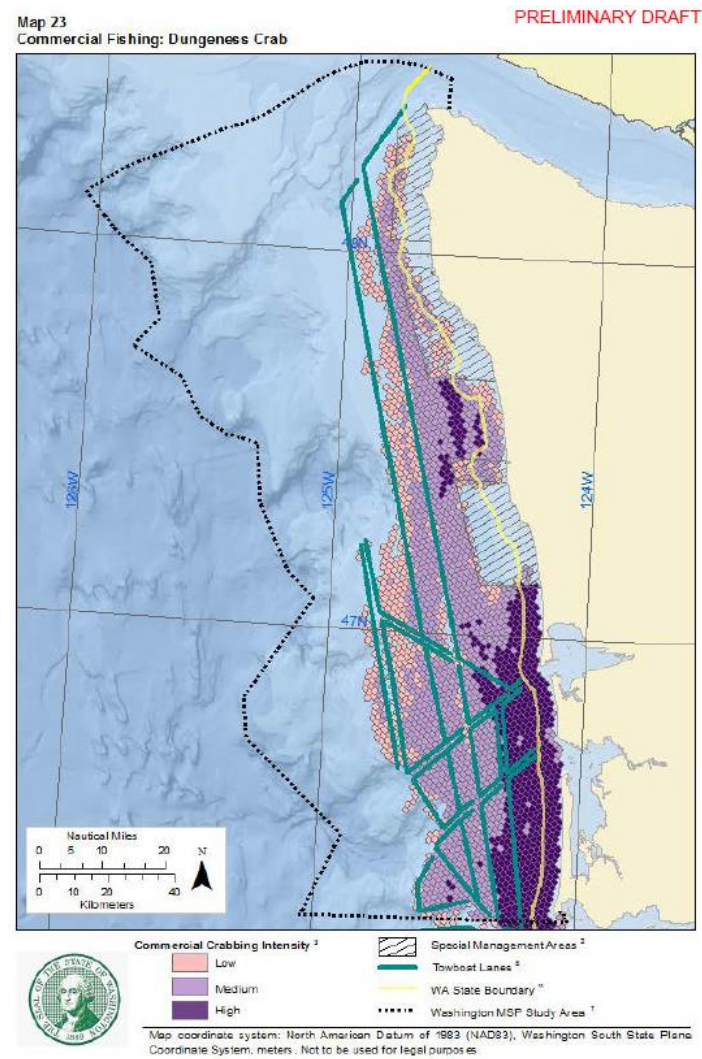
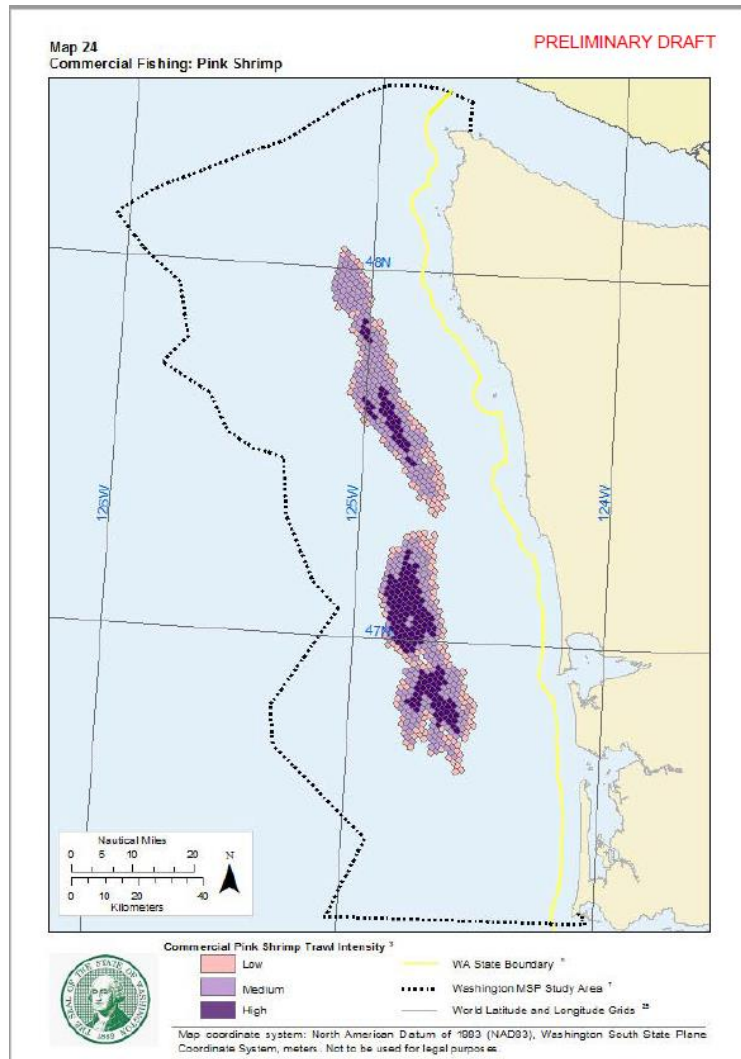
Map 42: Renewable Energy Wind Turbine Suitability (Jacket-Tripod Foundation) PRELIMINARY DRAFT



Map 43: Renewable Energy Wind Turbine Suitability (Monopile Foundation) PRELIMINARY DRAFT



Suitability maps for the three offshore wind turbine types considered in the Plan (darker colors are higher suitability). Maps were produced by researchers at the Pacific Northwest National Laboratory for the state.

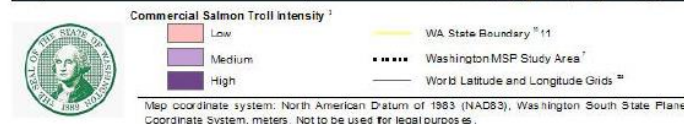
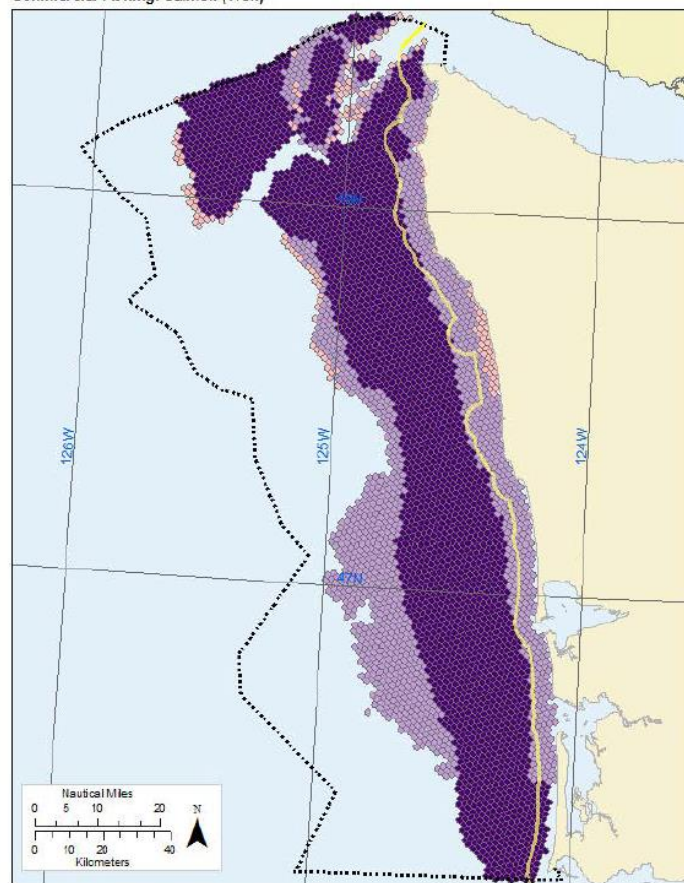


Maps from commercial fisheries we used logbook data to rank intensity.



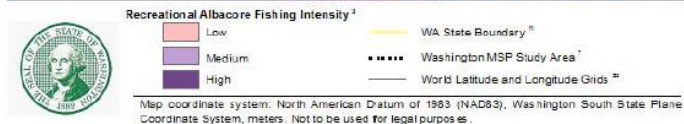
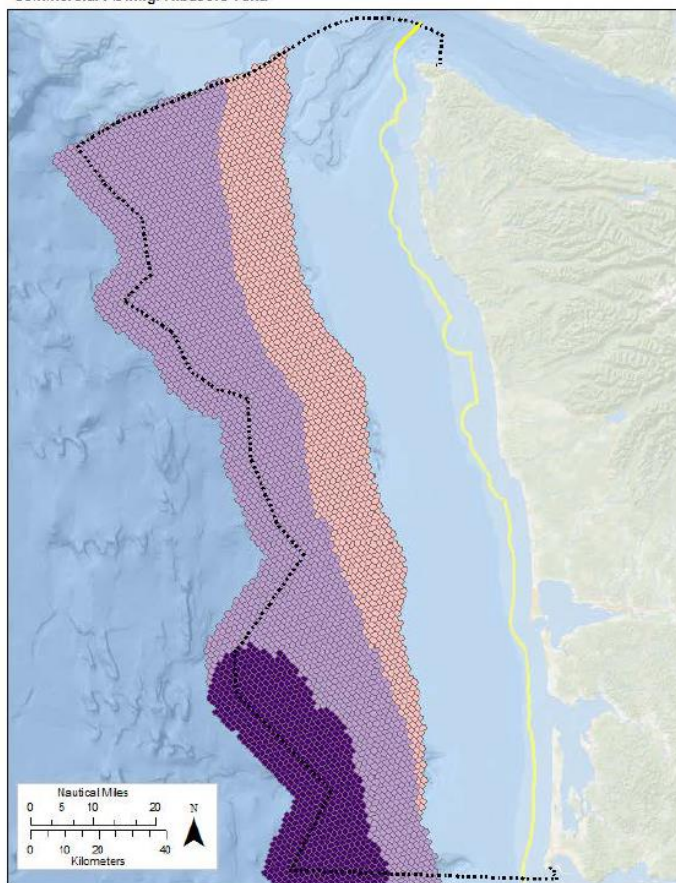
Map 20  
Commercial Fishing: Salmon (Troll)

PRELIMINARY DRAFT



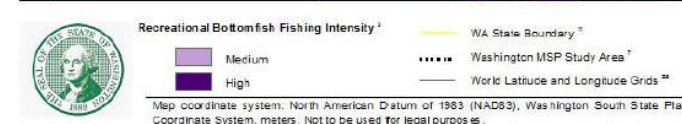
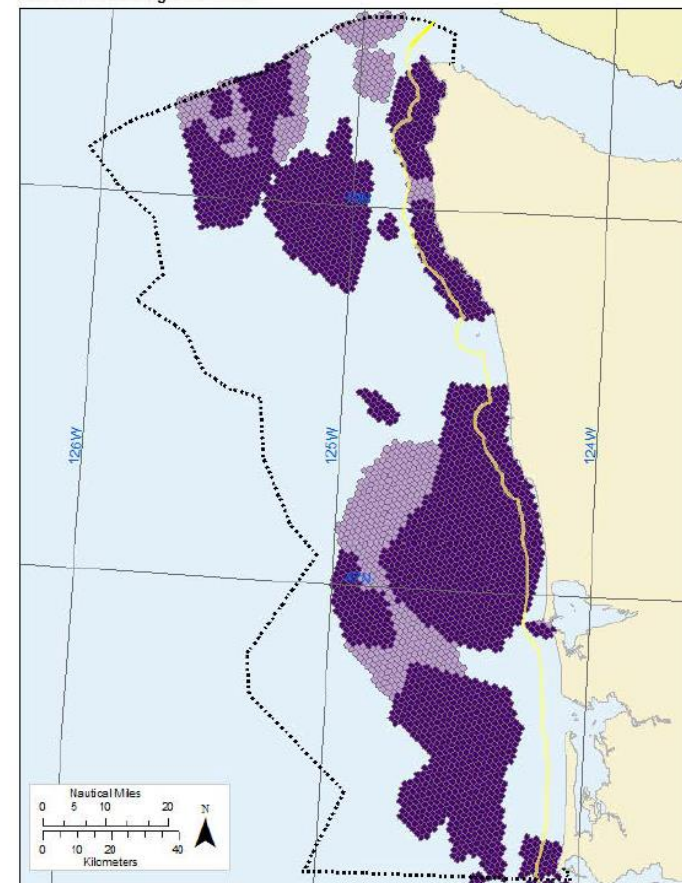
Map 21  
Commercial Fishing: Albacore Tuna

PRELIMINARY DRAFT



Map 26  
Recreational Fishing: Bottomfish

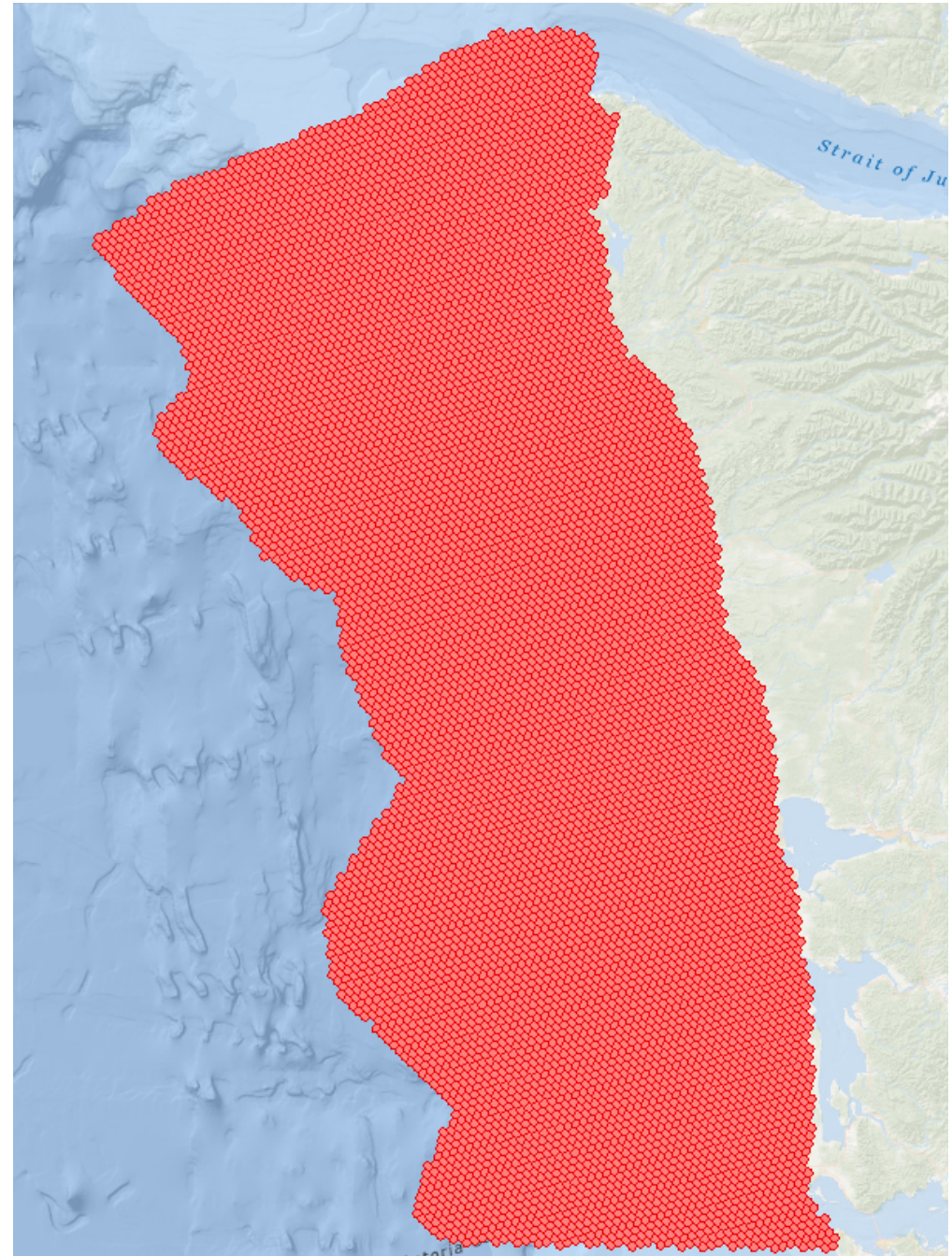
PRELIMINARY DRAFT



Maps we ranked using qualitative criteria based on expert opinion of managers and fishery participants.

# Fisheries presence/absence map

One fishery or the other shows up in every cell in the planning grid.

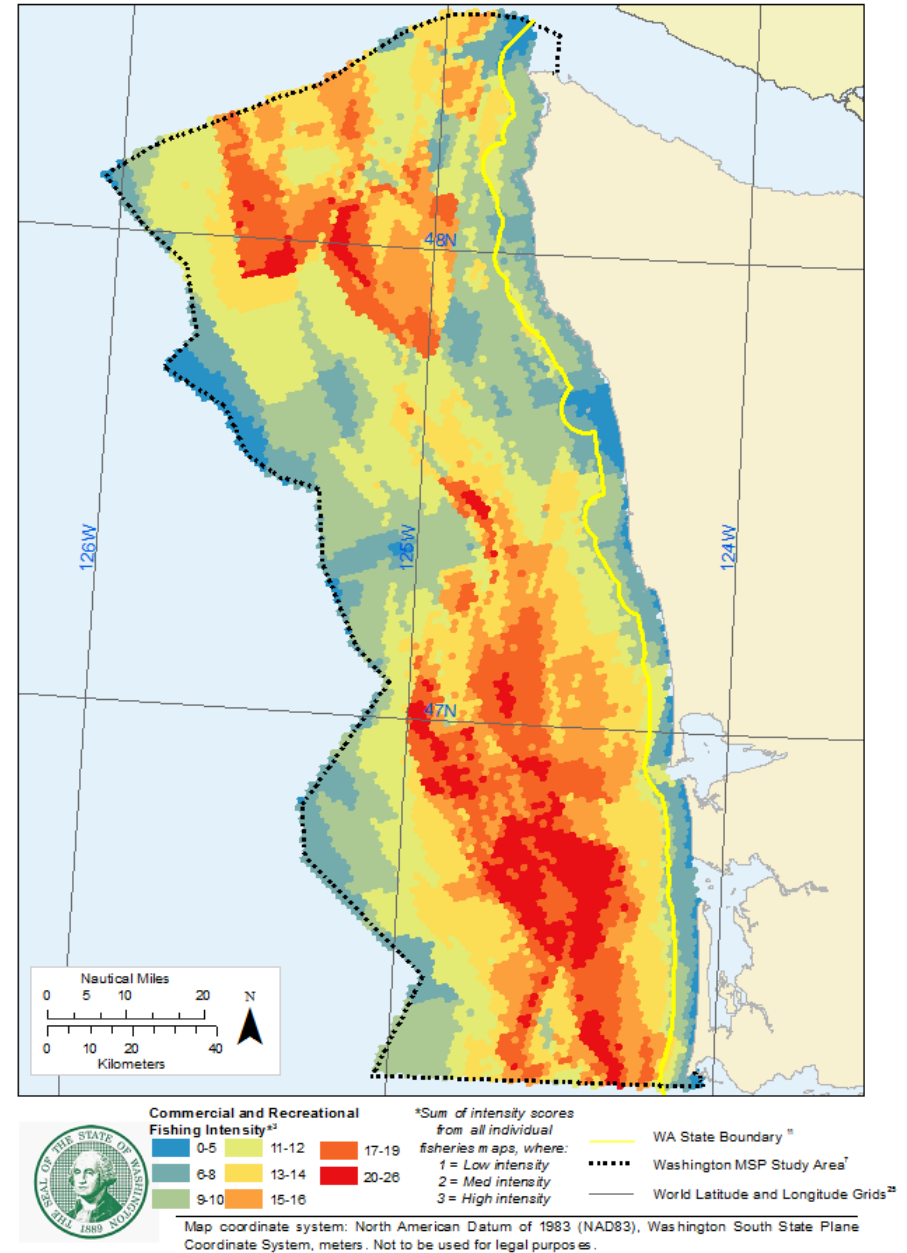




# Aggregate fisheries map

Represents the sum of the individual intensity scores.

Map 55  
Fishing Activity: All Commercial and Recreational

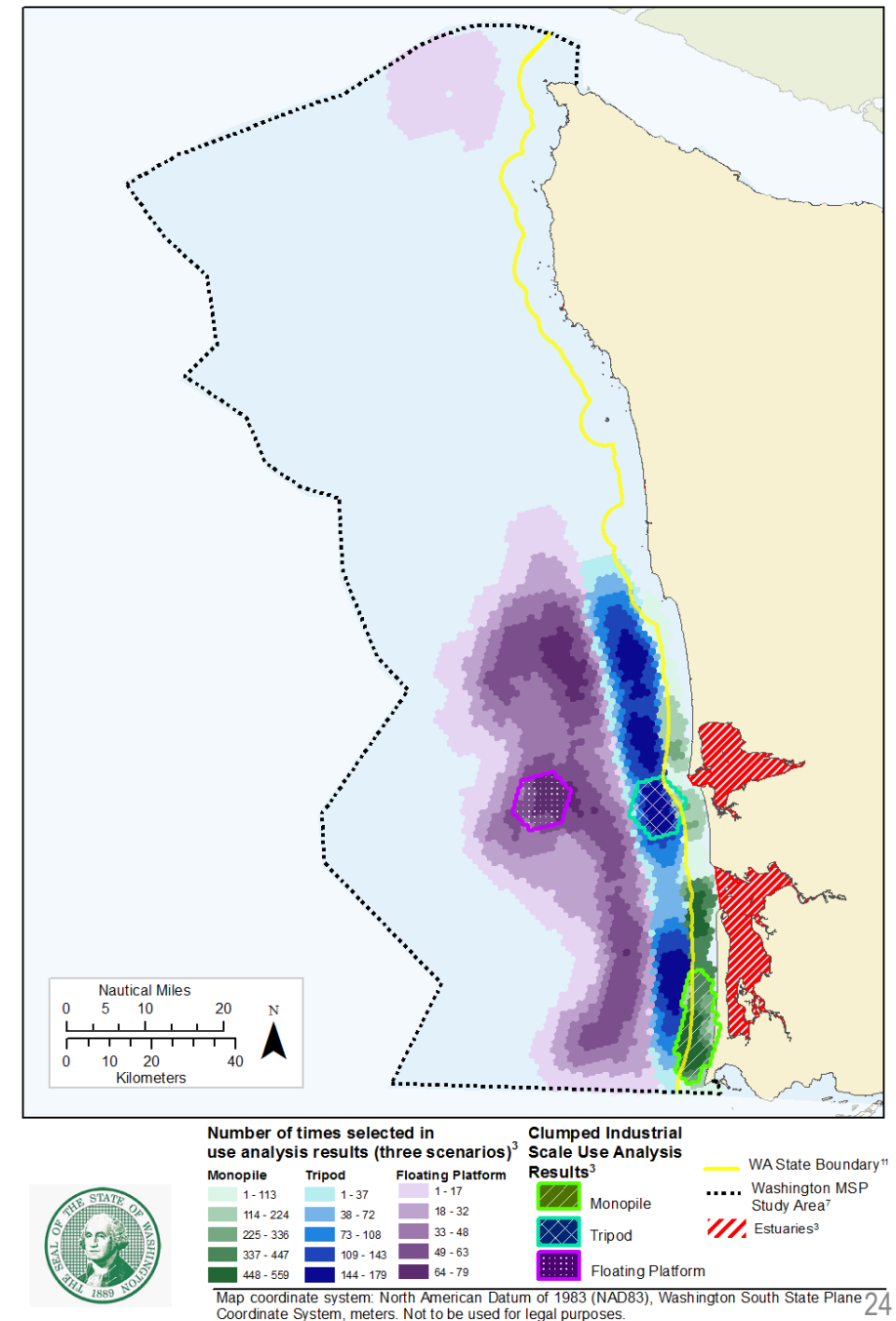




# Example: Wind Energy “Industrial Scale”

- Marxan analysis combining all three offshore wind technology types:
  - Monopile
  - Jacket-mounted
  - Floating
- 300-400 MW scale = approximately 50 square miles.

\*Fishing is just one of the existing uses included here.

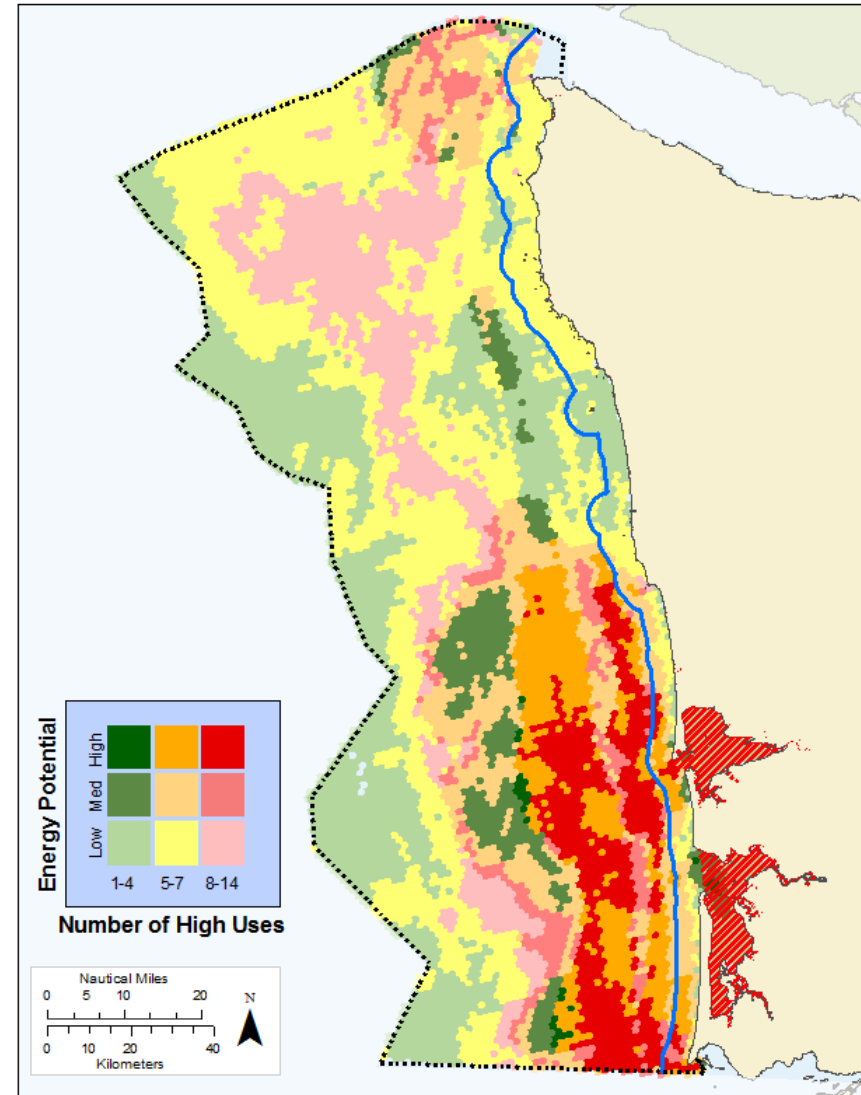


# Energy Potential (wind) and High Uses/Ecological Hotspots

- Simple overlay approach based on binned energy suitability and intensity rankings.

\*Again, fishing is just one of the existing uses included here.

Figure 3.4.2 Renewable Energy Wave Device Suitability (Mid-Depth Energy Device)



..... Washington MSP Study Area<sup>1</sup>

Estuaries<sup>2</sup>

— WA State Boundary<sup>3</sup>

Map coordinate system: North American Datum of 1983 (NAD83), Washington South State Plane Coordinate System, meters. Not to be used for legal purposes.

What kind of economic analysis has been done?

## New! Final Report Released: Economic Analysis to Support Marine Spatial Planning in Washington

*Posted July 14, 2015 by Katrina Lassiter & filed under [Economic Analysis](#), [Reports](#).*

Cascade Economics completed an analysis of the economies of Washington's coastal communities. The economic analysis provides the tools and data to characterize baseline conditions for ocean uses and their important relationships to coastal communities on the Washington coast, and can be used to evaluate the economic consequences of proposed uses or planning options in the future.

The final report includes:

- An economic profile of the Washington coast;
- Economic profiles of coastal tribal communities;
- Profiles of current marine sectors;
- An analysis of ecosystem services;
- A social well-being assessment;
- A risk and vulnerability assessment; and
- A qualitative analysis of potential new uses.

The final report provides several tables of with overall impact of a current marine sector from potential new human uses. The above figure shows the current marine sector, the report lists potential impacts for each sector, then compares and documents the potential impacts of potential new uses.

For more information, read the [Executive Summary](#) or the [Final Economic Analysis Report](#)

Tags: [Fishing](#) [Marine Spatial Planning](#) [Outreach](#) [Recreation](#) [Research](#)



### Economic Analysis to Support Marine Spatial Planning in Washington

*Prepared for:*

WASHINGTON COASTAL MARINE ADVISORY COUNCIL

*Prepared by:*



*In association with:*

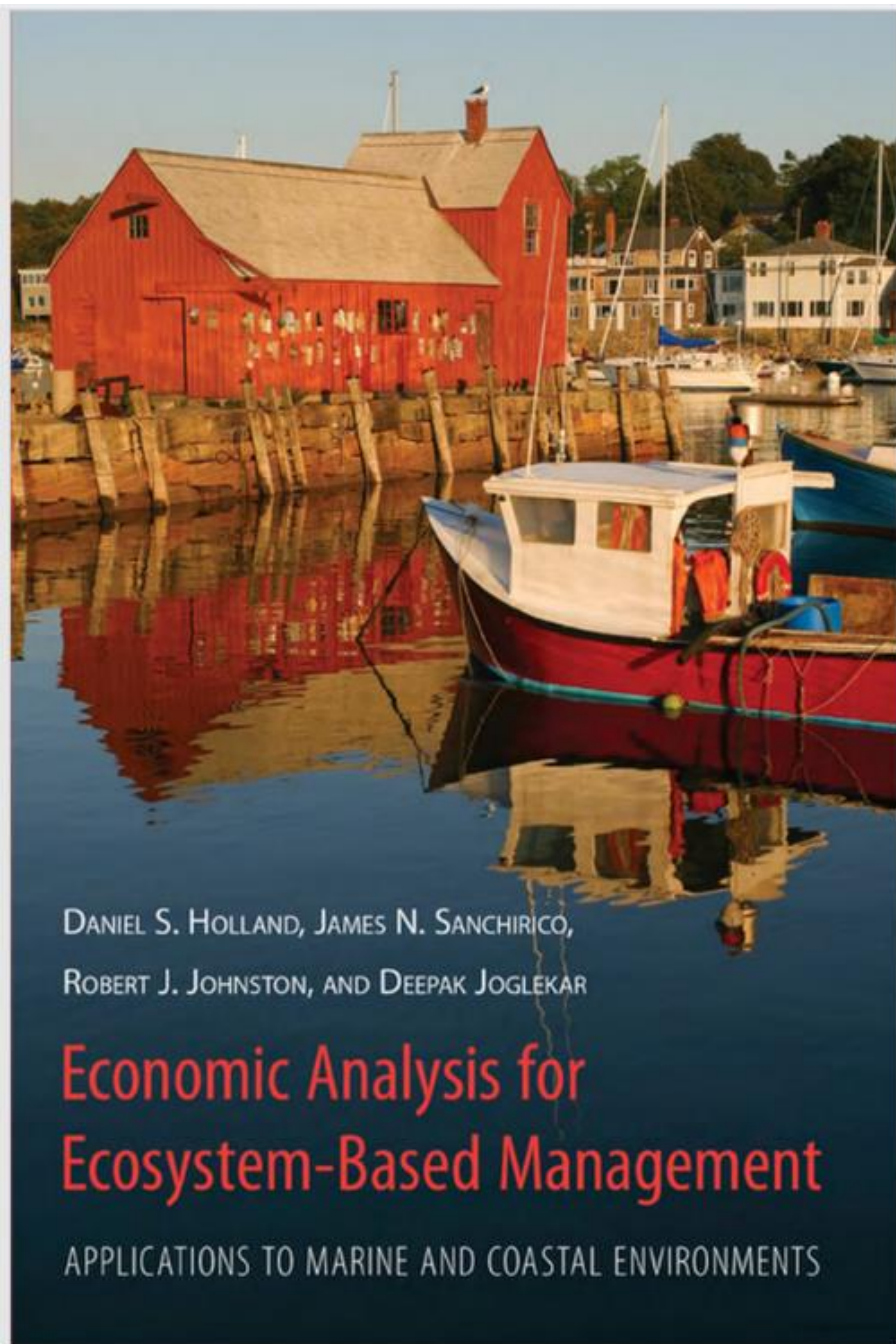
TCW ECONOMICS  
NORTHERN ECONOMICS, INC.

June 30, 2015

## So as things stand now...

- Preliminary recommendation: no industrial scale projects in state waters.
- Instead of identifying spatial areas where alternative energy would be best, we've recommended a process for considering, on a case by case basis, how fisheries will be impacted by a project.

Why marine spatial planning at all?



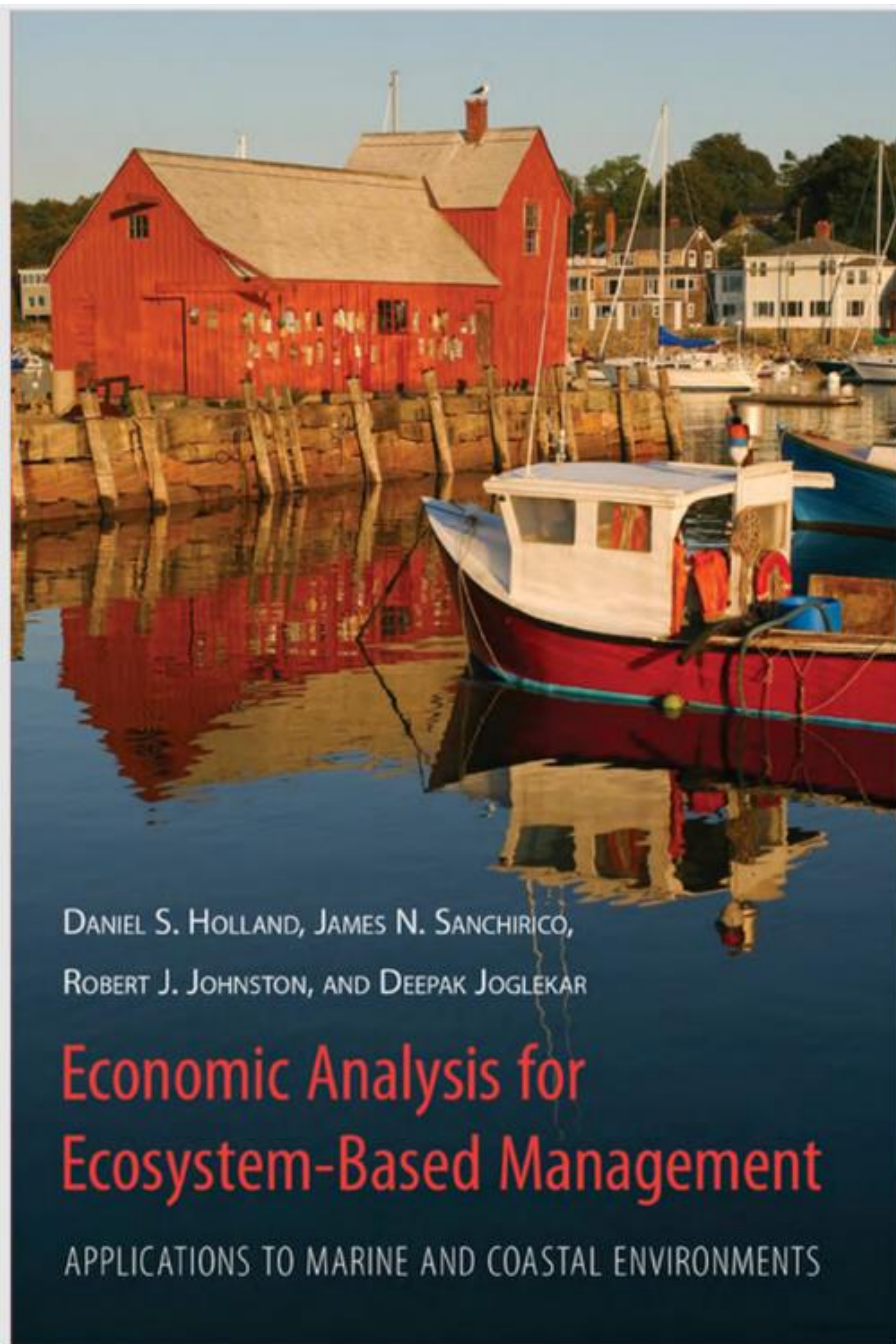
## **“The Economic Rationale for Explicit Spatial Management and Zoning**

Consider the case where two activities take place in close proximity to each other, such that one or both of the activities increase the cost or decrease the benefits of the other activity. Economists call this a negative externality...

To optimize the overall level of interdependent activities, one must consider the external costs and benefits.”

p. 142

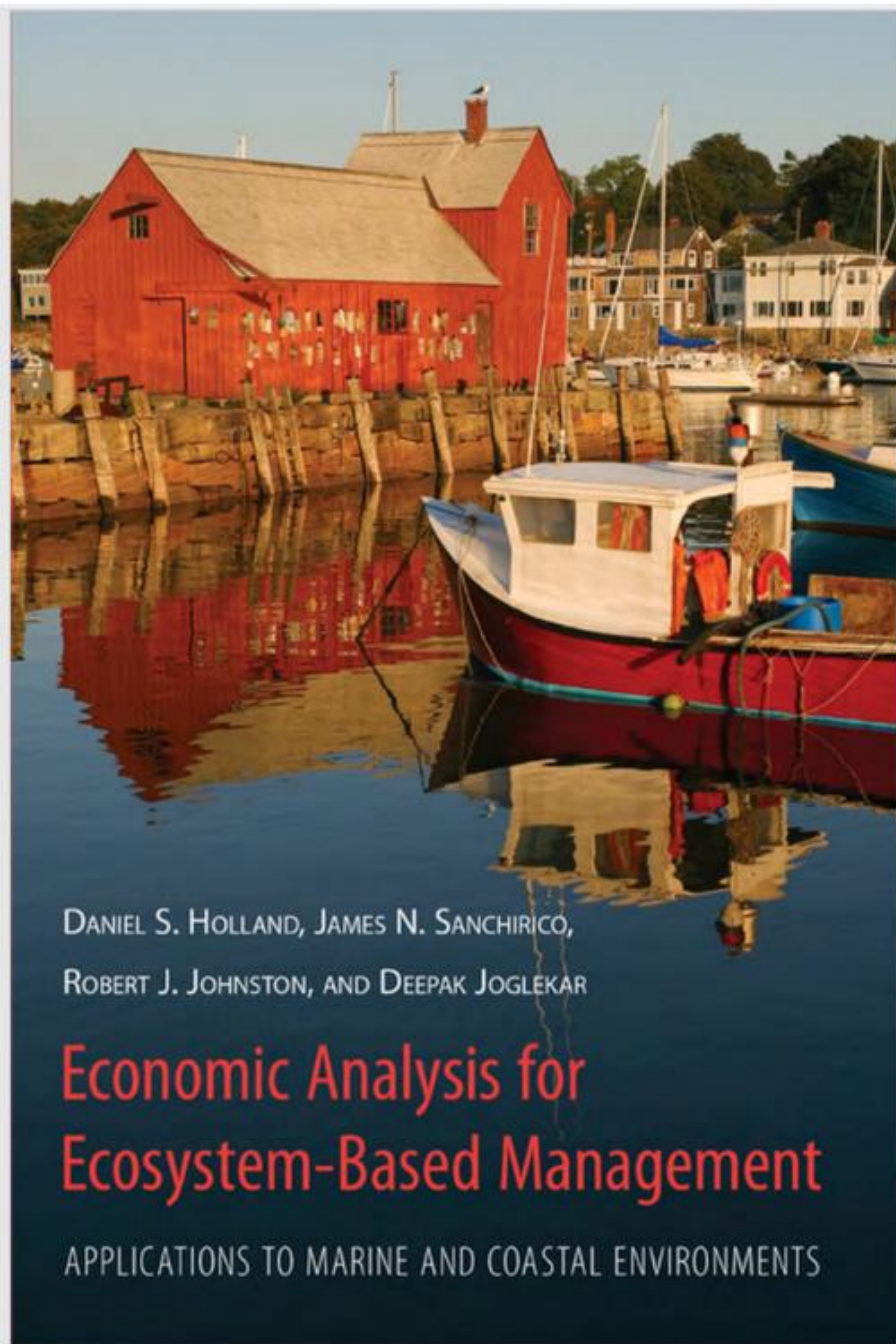




“Traditionally, federal, state, and local agencies manage ocean resources sector-by-sector . . . Overall this approach has been unsuccessful. . .

The field of economics offers a conceptual framework for thinking about interactions between humans and other components of the ecosystem. Many decisions regarding natural resources management hinge on the question of how people value resources and how those valuations can inform tradeoffs.”

-Foreword by Stephanie Moura.



“This traditional single-sector/single species approach has resulted in negative spillover effects and conflicts among user groups and has proven inadequate for sustaining the levels of goods and services provided by ecosystems. . .

As ecosystem-based management is applied to coastal and marine ecosystems, we expect managers and stakeholders to demand information for decision making produced by spatially and temporally dynamic models of human activities that account for linkages with biological, chemical, and physical components those ecosystems. . . Building such economic models presents significant challenges to marine resource economists.”

-Foreword by Jon G. Sutinen

# My takeaway of these “ideals”

- Trade-offs are best evaluated and confronted directly, otherwise things like negative externalities and spillovers happen by default.
- “When” and “where” uses take place can be key pieces of the equation.
- Sector-by-sector management does not do a good job of this because of a lack of coordination, myopic agency mandates, etc.
- Marine spatial planning and ecosystem based management can do better.

How does Washington’s experience compare against these ideals?

While we've been planning...

“The NREL Offshore Wind Cost Model indicates that between 2015 and 2030, average cost reductions of approximately 5% can be achieved annually, and **by 2030 offshore wind may become economically viable in some parts of the United States.**”

“By comparing costs to a preliminary assessment of avoided costs, the more detailed results of the study indicate that offshore wind may approach economic viability without direct policy support in some parts of the United States within the next decade, **particularly in parts of the northeastern Atlantic Ocean and in a small number of locations along the mid-Atlantic coast.**”



**A Spatial-Economic Cost-Reduction Pathway Analysis for U.S. Offshore Wind Energy Development from 2015–2030**

Philipp Beiter, Walter Musial, Aaron Smith, Levi Kilcher, Rick Damiani, Michael Maness, Senu Srinivas, Tyler Stehly, Vahan Gevorgian, Meghan Mooney, and George Scott  
*National Renewable Energy Laboratory*

Prepared under Task No. WE15.CA02

September 2016





Photo Credit :

[http://www.oregonlive.com/lake-oswego/index.ssf/2011/05/lake\\_oswego\\_residents\\_complete\\_emergency\\_preparedness\\_training\\_by\\_tackling\\_an\\_earthquake.html](http://www.oregonlive.com/lake-oswego/index.ssf/2011/05/lake_oswego_residents_complete_emergency_preparedness_training_by_tackling_an_earthquake.html)



# Coastal and Marine Spatial Planning

National Oceanic and Atmospheric Administration



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[Data and Tools](#)

[Regional Activities](#)

## National Framework

### National Ocean Policy Implementation

On July 19, 2010, President Obama signed an [executive order](#) establishing a [National Policy for the Stewardship of the Ocean, Our Coasts, and the Great Lakes](#). The executive order adopts the [Final Recommendations of the Interagency Ocean Policy Task Force](#) and directs federal agencies to implement them. The [National Ocean Policy Implementation Plan](#) and [Implementation Plan Appendix](#) describe specific actions federal agencies will take to address key ocean challenges, provide greater opportunity for state, local, and tribal engagement in marine planning decisions, streamline federal operations, save taxpayer dollars, and promote economic growth. The national policy identifies [marine planning](#) as one of nine priority implementation objectives to address conservation, economic activity, user conflict, and sustainable use of the ocean, our coasts, and the Great Lakes. Marine planning is intended to

### Regional Planning Areas

- Northeast
- Mid-Atlantic
- South Atlantic
- Great Lakes
- Caribbean
- Gulf of Mexico
- West Coast
- Pacific Islands
- Alaska/Arctic



Thank you for your interest in  
this subject.

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# Thanks and Points of Contacts for Questions

## **Department of Ecology**

- Jennifer Hennessey
- Eric Bates

## **Department of Natural Resources**

- Katrina Lassiter
- Asleigh McCord

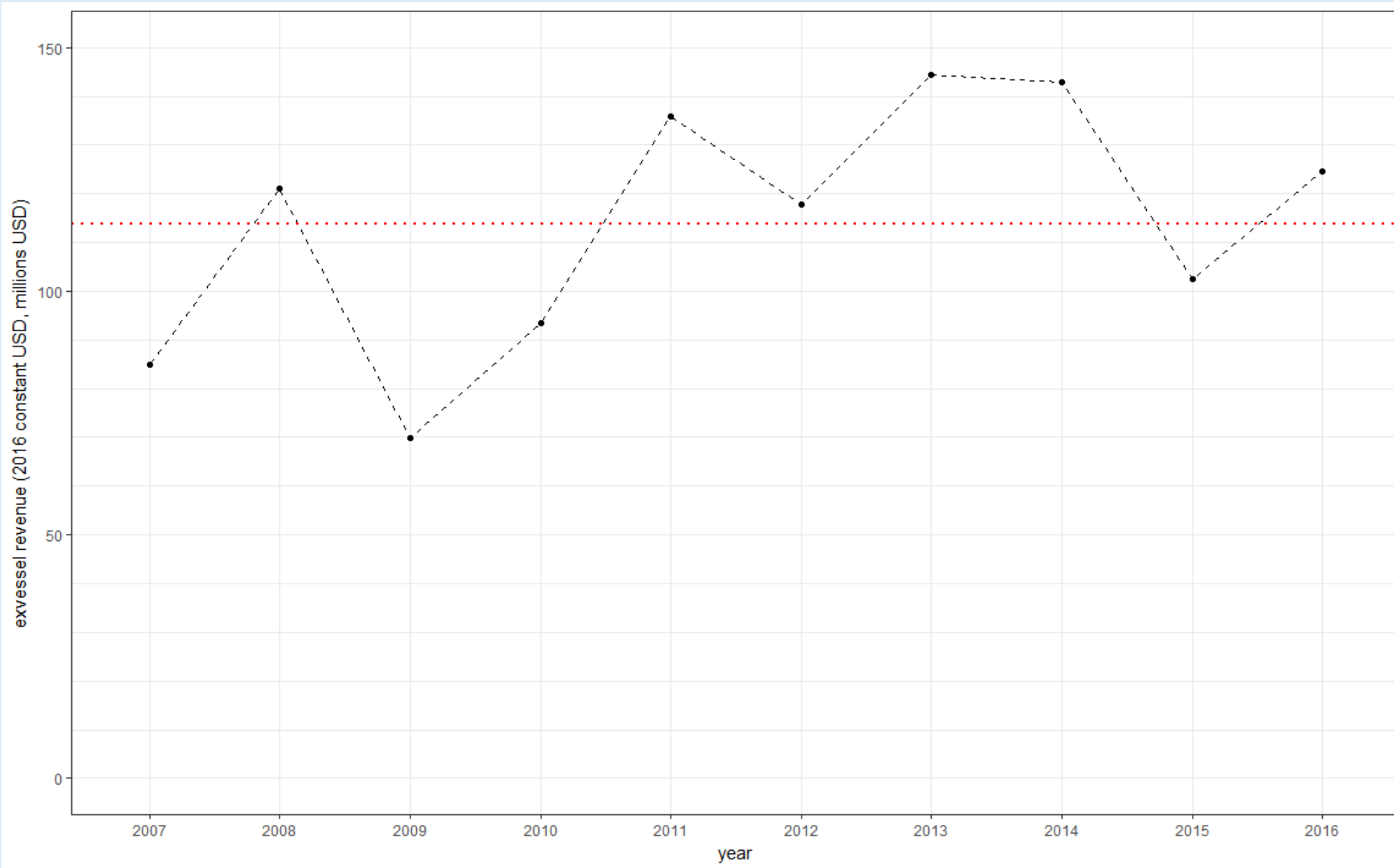
## **Department of Fish and Wildlife**

- Michele Culver
- Jessi Doerpinghaus
- John Pierce

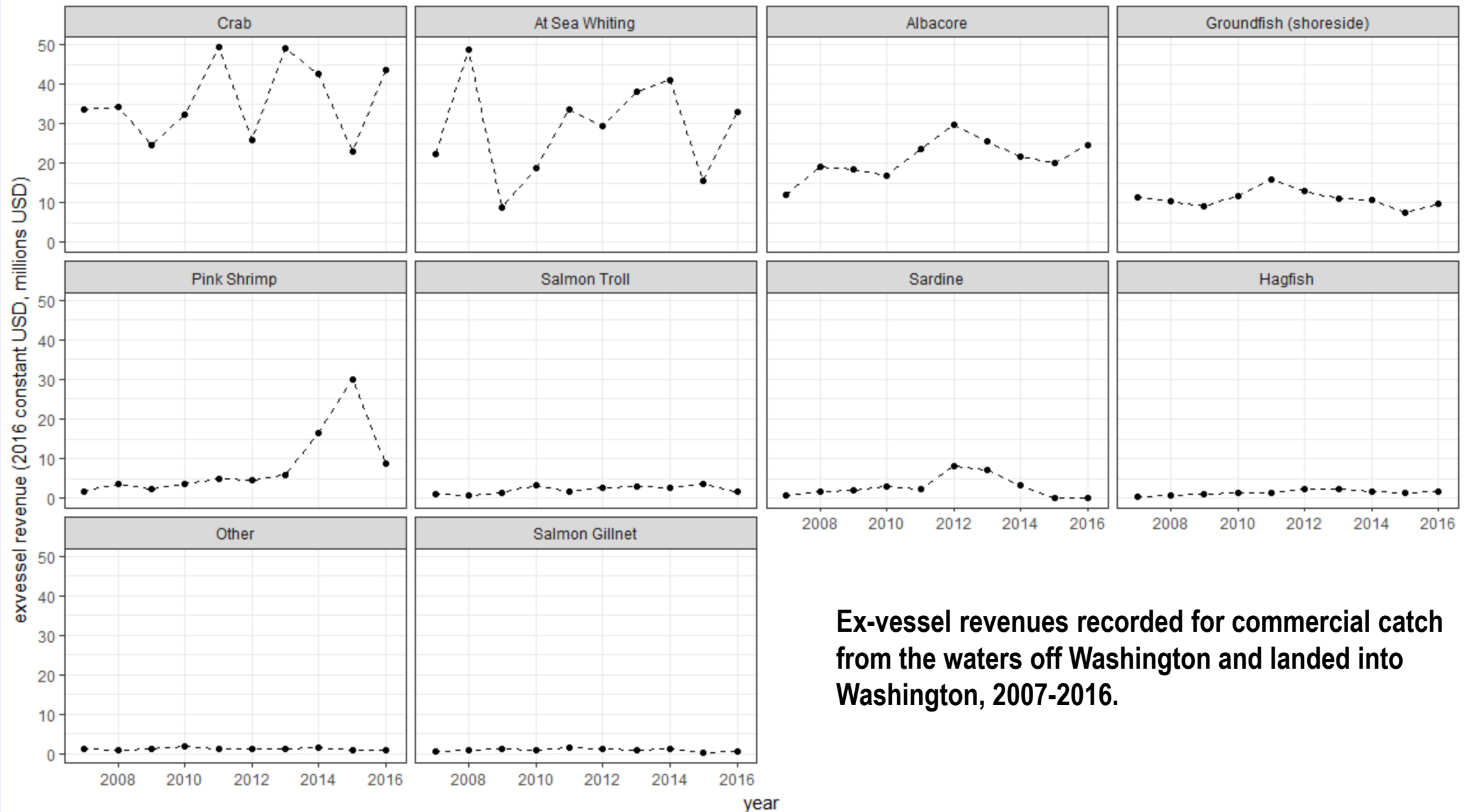
# Extra Slides

# Washington's Commercial Fisheries





**Ex-vessel revenues recorded for commercial catch, all fisheries combined, from the waters off Washington and landed into Washington, 2007-2016. The red dotted line marks the average over the time period.**



**Ex-vessel revenues recorded for commercial catch from the waters off Washington and landed into Washington, 2007-2016.**