

The Pacific Regional Ocean Uses Atlas

*Informing offshore alternative energy planning through
participatory mapping of ocean uses*



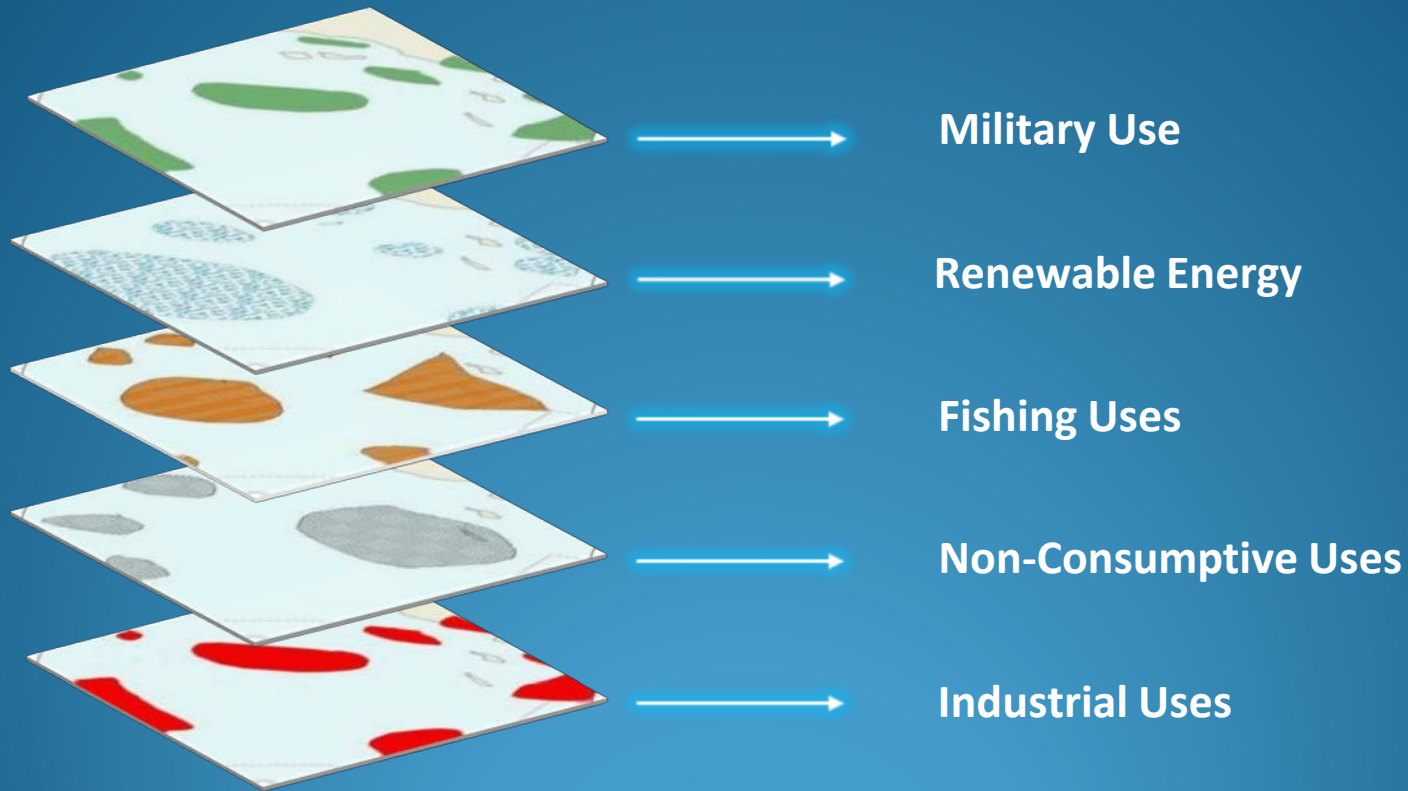
Presented by:
NOAA's Coastal Services Center
September 2012

The Ocean is a BUSY place !



The Pacific Regional Ocean Uses Atlas

Comprehensive, Continuous, and Consistent Spatial Data on Ocean Uses




Designed to inform renewable energy planning using contemporary participatory tools

Project Details


PURPOSE: To enhance ocean planning for offshore renewable energy development and inform other ocean planning strategies that require insight to ocean use activities

GOALS: To collect spatial data on the full range of human uses of the ocean through consultation with use experts, community stakeholders, and cultural practitioners; to create data and analysis tools to assist in understanding use patterns, hotspots, conflicts and compatibilities

GEOGRAPHY: The Outer Continental Shelf areas off the states of Washington, Oregon, and Hawaii, with some additional mapping in state waters in select areas




The Pacific Regional Ocean Uses Atlas
Collecting expert community knowledge on ocean uses through participatory mapping



The nation's oceans are getting crowded, and human uses of the ocean and coasts are expanding at a rate that challenges our ability to plan and manage them. To identify suitable operating areas for new and emerging uses, like renewable energy, it is critical to understand the patterns and drivers of ocean uses occurring in the study areas. Prior to the workshops, existing geospatial base layers are gathered and compiled into a base map that is used as the basis of interactive mapping.

The Pacific Interagency Bureau of Ocean Energy Management designed use categories for mapping of marine, coastal, and human uses of the ocean.

- Military Use
- Renewable Energy
- Fishing
- Non-Consumptive Uses
- Underwater cables



The Pacific Regional Ocean Uses Atlas
Informing offshore renewable energy planning through participatory mapping of ocean uses

The Participatory Mapping Approach: Ocean use data are gathered in interactive, participatory mapping workshops that capture the knowledge of community experts about the patterns and drivers of ocean uses occurring in the study areas. Prior to the workshops, existing geospatial base layers are gathered and compiled into a base map that is used as the basis of interactive mapping.

Target List of Uses: This project will gather information on a wide range of ocean uses occurring offshore Washington, Oregon, and Hawaii, including, but not limited to:

<p>Industry/Military Sector</p> <ul style="list-style-type: none"> • Renewable Energy • Military Operations & Ordnance Disposal • Mining and Mineral Extraction • Underwater Telecommunication & Power Cables • Commercial Shipping (excluding Towing & Barging) • Designated Dumping & Outfall Sites • Underwater Pipelines • Manufacture 	<p>Fishing Sector</p> <ul style="list-style-type: none"> • Commercial Fishing with Benthic Mobile & Fixed Gear • Commercial Pelagic Fishing • Commercial Dive Fishing • Commercial Seaweed Harvest • Commercial Shore-based Harvest • Recreational Dive Fishing • Recreational Fishing From Boats • Recreational Shore-based Harvest • Bayak Fishing • Indigenous Fishing 	<p>Non-Consumptive Sector</p> <ul style="list-style-type: none"> • Motorized Boating • Sailing • Paddling • Surface Board Sports • SCUBA Diving • Swimming • Wildlife Viewing at Sea • Tide Posing • Shore Use • Indigenous Cultural Use • Tourism Cruise Ships
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Products: Data gathered through the participatory mapping workshops will be compiled and analyzed to create a suite of data products in various formats for use in ocean planning applications. These products include, but are not limited to:

- GIS data and online mapping services
- Digital and paper maps of ocean patterns
- Maps of ocean use hotspots and potential use conflict areas

Timeline:
Washington: Fall 2012 – Summer 2013
Oregon: Winter 2012 – Fall 2012
Hawaii: Fall 2013 – Summer 2014

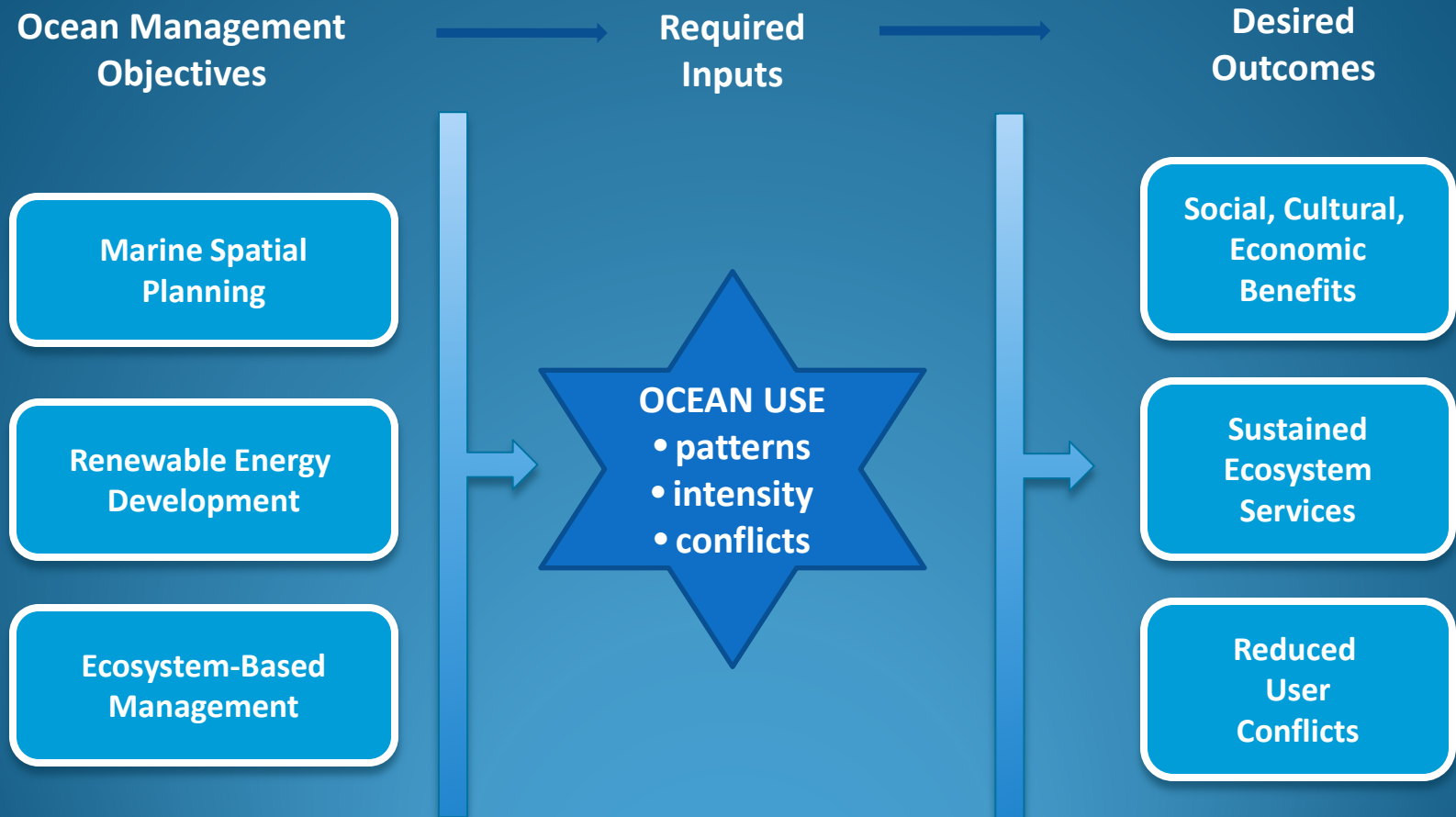
Funding: This project was funded by the U.S. Department of the Interior, Bureau of Ocean Energy Management, through an Interagency Agreement with the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service.

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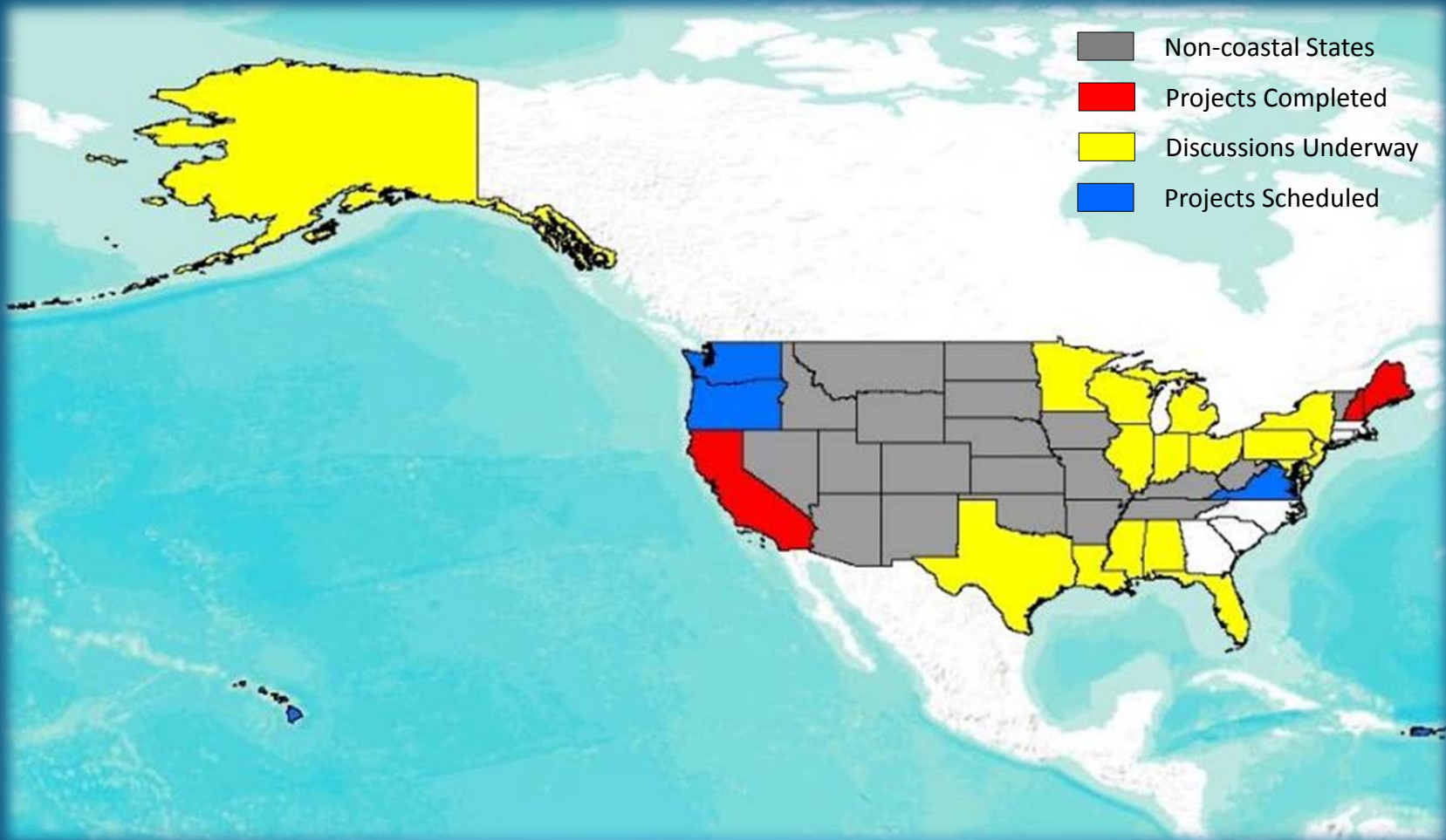



Capturing spatial knowledge on non-consumptive, fishing, industrial and military uses

Understanding Ocean Uses is Key To Planning



National Perspective on Ocean Use Mapping Efforts



Previous Efforts

Virginia's Atlantic Coast Recreational Use Mapping Project (2012)

- NOAA ROP grant to MARCO, Virginia CZM
- MARCO Regional Ocean Planning Portal & VA Coastal Zone Program

The STEER Coastal Use Mapping Project (2012)

- NOAA-CRCP, USVI DPNR
- St Thomas East End Reserve Management Plan Review

Hawaii Coastal Use Mapping Project (2010-11) : Hawaii & Maui

- Hawaii DAR, TNC, NOAA-CRCP, PSC, PIRO, PIFSC
- Conservation Action Planning & Priority Site Assessment

New Hampshire & So. Maine Ocean Uses Project (2010)

- UNH & NOAA's Office of Response & Restoration
- Spill of National Significance Drill in Portland, ME

The California Ocean Uses Atlas Project (2008-09)

- MCBI, Resources Legacy Fund, Moore Foundation
- California MLPAL MPA Designation Process

Participatory Mapping (pGIS)

- Adapts historically proven social science methods
- Collects expert knowledge using consistent, repeatable, reliable methods
- Engages communities and stakeholders to help solve planning challenges
- Captures use perspectives from actual ocean user



Modern spatial tools capturing community perspectives on ocean uses

Participatory Mapping Workshops

- ❖ Workshop # and location TBD
- ❖ ~ 35-50 participants per day
- ❖ Unique blend of participants
- ❖ Each day targets specific sector
- ❖ 3-4 breakout groups per day
- ❖ All groups map all uses



- Lifeguards
- Park Managers
- Harbor Masters
- Local Fishermen
- Fish & Game Wardens
- Federal Agency Officials
- Charter Operators
- Law Enforcement Agents
- Marine Business Operators
- Local NGO Representatives
- Tribal Council Representatives
- Scientists & Researchers
- Military Representatives
- Naturalists and Docents

Target List of Uses

Industrial/Military

- Renewable Energy
- Military Operations & Ordnance Disposal
- Mining and Mineral Extraction
- Underwater Telecommunication & Power Cables
- Commercial Shipping (including Towing & Barging)
- Mariculture
- Designated Dumping and Outfall Sites
- Underwater Pipelines



Fishing

- Commercial Fishing with Benthic Fixed Gear
- Commercial Fishing with Benthic Mobile Gear
- Commercial Pelagic Fishing
- Commercial Dive Fishing
- Commercial Seaweed Harvest
- Commercial Shore-Based Harvest
- Recreational Dive Fishing
- Recreational Fishing from Boats
- Recreational Shore-Based Harvest
- Kayak Fishing
- Indigenous Subsistence Fishing



Non-Consumptive

- Motorized Boating
- Sailing
- Paddling
- Surface Board Sports
- SCUBA/Snorkeling
- Swimming
- Wildlife Viewing at Sea
- Tide Pooling
- Shore Use
- Indigenous Cultural Use
- Tourism Cruise Ships



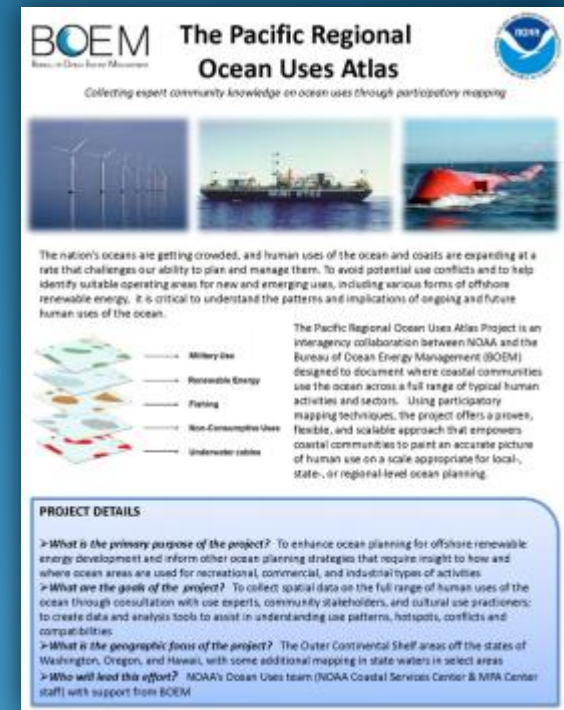
Project Phases

- ❖ Project Scoping & Planning
- ❖ Mapping Workshops & Data Collection
- ❖ Data Processing, Analysis & Synthesis
- ❖ Data Validation, Integration & Reporting

PHASE I

Project Scoping & Planning

- ✓ Conduct outreach and present process
- ✓ Meet with industry, community and tribal leaders
- ✓ Identify key stakeholders & potential participants
- ✓ Mine and catalog existing spatial data
- ✓ Confirm participation of key user communities
- ✓ Plan workshop timing and logistics



BOEM The Pacific Regional Ocean Uses Atlas
Bureau of Ocean Energy Management

Collecting expert community knowledge on ocean uses through participatory mapping

The nation's oceans are getting crowded, and human uses of the ocean and coasts are expanding at a rate that challenges our ability to plan and manage them. To avoid potential use conflicts and to help identify suitable operating areas for new and emerging uses, including various forms of offshore renewable energy, it is critical to understand the patterns and implications of ongoing and future human uses of the ocean.

The Pacific Regional Ocean Uses Atlas Project is an interagency collaboration between NOAA and the Bureau of Ocean Energy Management (BOEM) designed to document where coastal communities use the ocean across a full range of typical human activities and sectors. Using participatory mapping techniques, the project offers a growing, flexible, and scalable approach that empowers coastal communities to paint an accurate picture of human use on a scale appropriate for local, state-, or regional-level ocean planning.

PROJECT DETAILS

- > **What is the primary purpose of the project?** To enhance ocean planning for offshore renewable energy development and inform other ocean planning strategies that require insight to how and where ocean areas are used for recreational, commercial, and industrial types of activities.
- > **What are the goals of the project?** To collect spatial data on the full range of human uses of the ocean through consultation with use experts, community stakeholders, and cultural use practitioners; to create data and analysis tools to assist in understanding use patterns, hotspots, conflicts and compatibilities.
- > **What is the geographic focus of the project?** The Outer Continental Shelf areas off the states of Washington, Oregon, and Hawaii, with some additional mapping in state waters in select areas.
- > **Who will lead this effort?** NOAA's Ocean Uses team (NOAA Coastal Services Center & MPA Center staff) with support from BOEM.

Preparing for the mapping workshops

PHASE II

Mapping Workshops & Data Collection

- ✓ Conduct workshops throughout the region
- ✓ Map ocean uses across the OCS *
- ✓ Fill use data gaps and verify existing use data
- ✓ Collect supplemental data on use history
- ✓ Survey participants about use knowledge

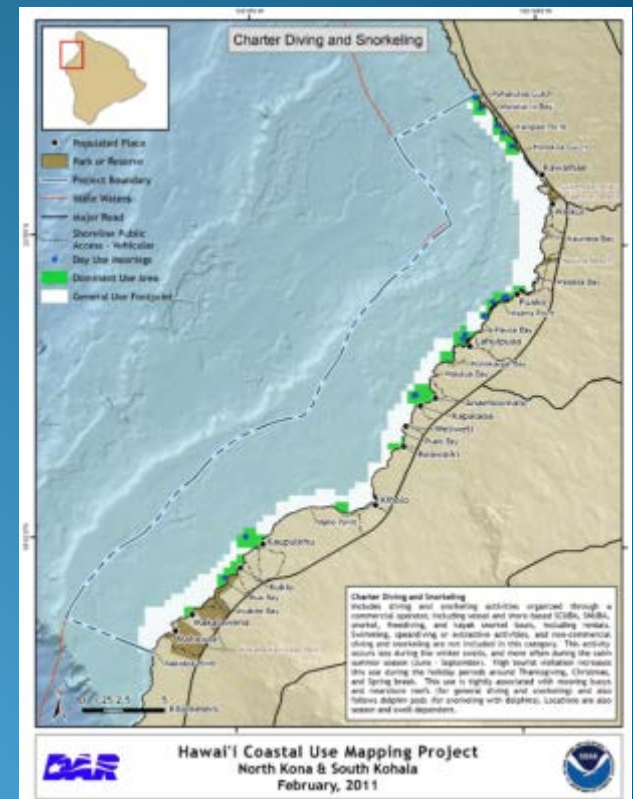


Conducting the mapping workshops

PHASE III

Data Processing, Analysis & Synthesis

- ✓ Clean, process and compile workshop data
- ✓ Apply tools to analyze conflicts & compatibilities
- ✓ Create cartographic, GIS products & services
- ✓ Build customized analytical products
- ✓ Synthesize results



Compiling and analyzing the workshop data

PHASE IV

Data Validation, Integration & Reporting


- ✓ Perform QAQC of draft data & maps
- ✓ Seek feedback from select user groups
- ✓ Integrate data into online portals
- ✓ Document process and activities
- ✓ Submit and publish reports and products

PRODUCTS

Various data layers, maps and analytical products have been derived from the atlas project. Individual use maps, sector comparisons and applied management scenarios are some of the ways that the information can be used to inform ocean management and decision making. The following examples highlight some these products and suggest ways in which the atlas data can be applied to existing marine planning issues.

1. INDIVIDUAL USE MAPS

Statewide and regional maps of individual ocean uses detail the patterns and trends of the use activities as they occur throughout the study area. Helpful for visualizing the relative extents and locations of use areas, hot spots, and gaps in use, these maps may also provide insight to potential spatial relationships between human uses and other geographic features and processes (e.g. access points, coastal morphology).



For example, individual use maps of paddling (left), commercial fishing with benthic fixed gear (center) and offshore oil and gas (right) reveal a variety of interesting use patterns depicting how each use varies spatially throughout coastal California as well as in relation to other uses. Paddling is mainly restricted to state waters with isolated dominant use areas scattered throughout the state, benthic commercial fishing with fixed gear extends further offshore with increasing dominant use areas in the northern regions, while dominant use for offshore oil and gas is concentrated in the southern region and limited to transportation (narrow swaths) and lightning areas in the north.

Viewed at the regional scale, atlas data reveal trends that are relevant to local and regional marine planning efforts. For example, the map of paddling (right) in the Southern California region shows that this use is pursued throughout state waters with isolated areas of dominant use near major cities (Santa Barbara, Long Beach and San Diego) and on the seaward side of the near shore Channel Islands.

Individual use maps can guide users to the most popular areas to pursue their activities, reveal unknown gaps in use that may be of interest for development, and help visualize patterns of use in a spatial context at various scales. Additionally, these data can be used to evaluate socio-economic relationships between uses, infrastructure, administrative boundaries and other geographic and demographic features and trends.

Use similar types of data together in one map. Combining use maps reveals patterns that describe how a larger group of users, or all of common ends. At either the statewide or regional scale, many use maps overlap which can be useful for evaluating non-consumptive uses. Sectoral analysis lends insight to the collective pattern of non-consumptive use at state (left) and regional scales (below). These maps suggest that non-consumptive activities are pursued in more variety and cover a larger area in southern California than the rest of the state with additional high use areas concentrated around San Francisco, Monterey, and Marin Bay.



Forming management issues that focus on certain groups of uses. Providing a feasible way to interpret various sorts of use or aggregation of uses for selected uses, view within each

Offshore alternative energy options are currently under consideration in certain areas off the California coast. Cling to the development of offshore energy facilities requires a clear understanding of the human uses that occur in and around proposed development areas. Currently, researchers are using spatial models to define the sensitive areas with the greatest potential for wind energy capture in the Southern California region. Preliminary findings have delineated the areas (not outlined areas) in



Get the products to the people who need it

Analyzing Conflicts + Compatibilities among Ocean Uses

- ❖ Analytical tools being developed concurrently in a separate project by NOAA's MPA Center
- ❖ Con/Com tools will *incorporate*:
 - ❖ Specific operational requirements for each use
 - ❖ Direct and indirect conflicts
 - ❖ Potential synergies among uses
- ❖ PROUA project will use Con/Com tools to:
 - ❖ Identify ocean areas where renewable energy may conflict or be compatible with existing ocean uses
 - ❖ Inform strategies to avoid, minimize or mitigate those conflicts

Identifying Conflicts among Co-Occurring Ocean Uses

BOEM Project

Mapping Patterns of Ocean
Use



Identification of Potential
Conflicts w/ Renewable
Energy

Con/Com Project

Conflict +
Compatibility
Analysis Tools



Timeline



Washington

Fall 2012 – Summer 2013

Workshops planned for early Spring 2013

Oregon

Winter 2012 – Fall 2013

Workshops planned for late Spring 2013

Hawaii

Fall 2013 – Summer 2014

Workshops planned for Winter 2013

Products & Tools

GIS Data and Mapping Services

Cartographic Products

Analysis of Use Conflicts

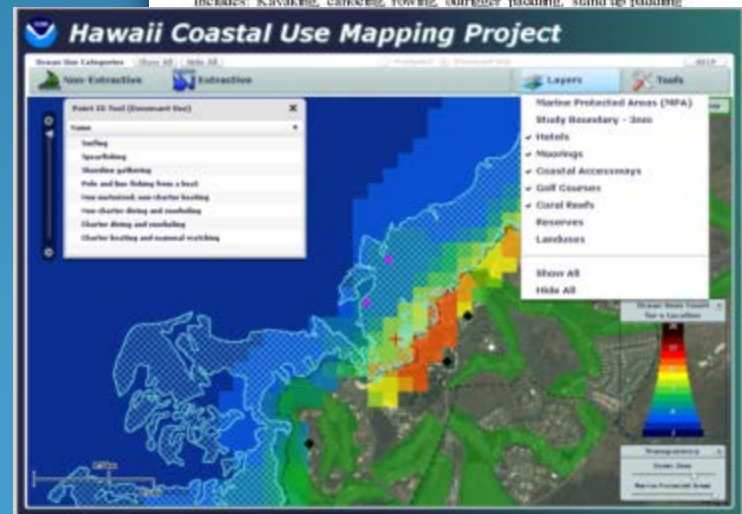
**PACIFIC REGIONAL OCEAN USES ATLAS
INTERAGENCY AGREEMENT
MASTER LIST OF USES**

Below is a Master List of Uses analyzed for their requirements as part of the Pacific Regional Ocean Uses Atlas study. Uses are sorted into three sectors: Non-consumptive, Fishing and Industrial/Military. Each use is defined by what it includes and excludes as well as the components involved in the successful pursuit of the use. Use components include descriptions of the main aspects of the use in terms of accessing the water, getting to the primary operating area, doing the use and deploying or installing any gear. There are a couple of uses that are binned here and broken down into separate profiles for the full analysis. For example, although each type of Renewable Energy is analyzed in its own profile, it is listed here as one combined use. Uses that are binned here and analyzed separately in the requirements analysis are noted with an asterisk.

NON-CONSUMPTIVE SECTOR

Motorized Boating
Includes: Motorized vehicles, personal watercraft
Excludes: Fishing boats and wildlife viewing charters, cruise ships
Use Components: Getting boat down and in the water, accessing primary operating area, cruising around, anchoring.

Paddling
Includes: Kayaking, canoeing, rowing, outrigger paddling, stand-up paddling



All products will be available online via various sources

Sample Data

Hawai'i Coastal Use Mapping Project

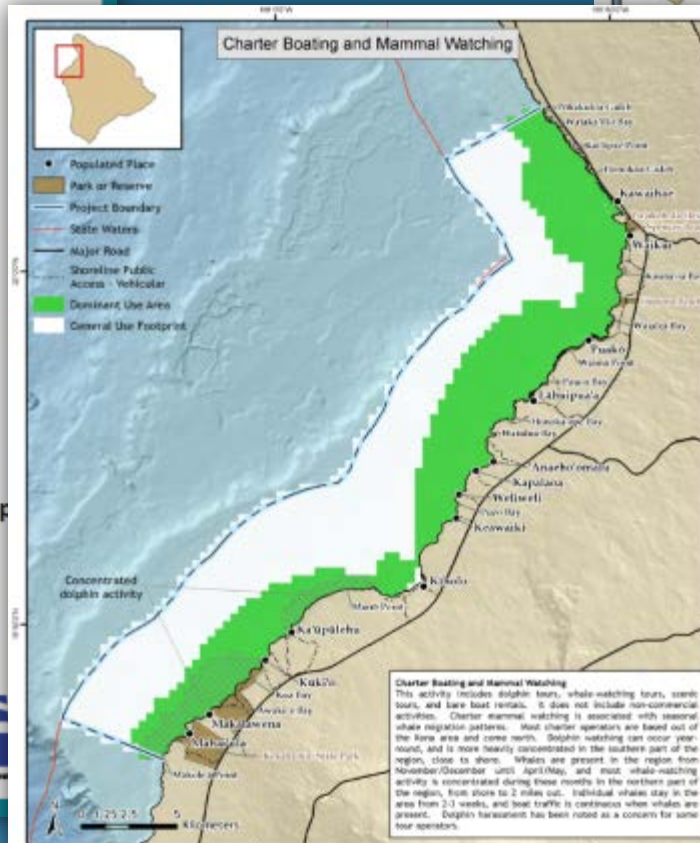


Ocean Uses Map Book

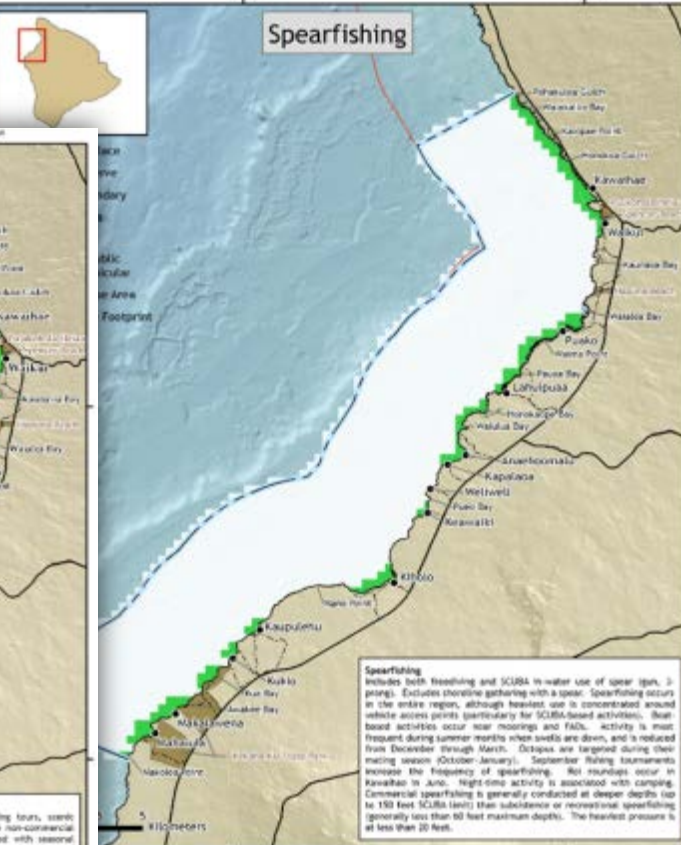
Results from:
Participatory Ocean Use Mapping Workshop
 South Kohala & North Kona Districts
 Ka'upulehu Interpretive Center
 September 23-25th, 2010



March 2011



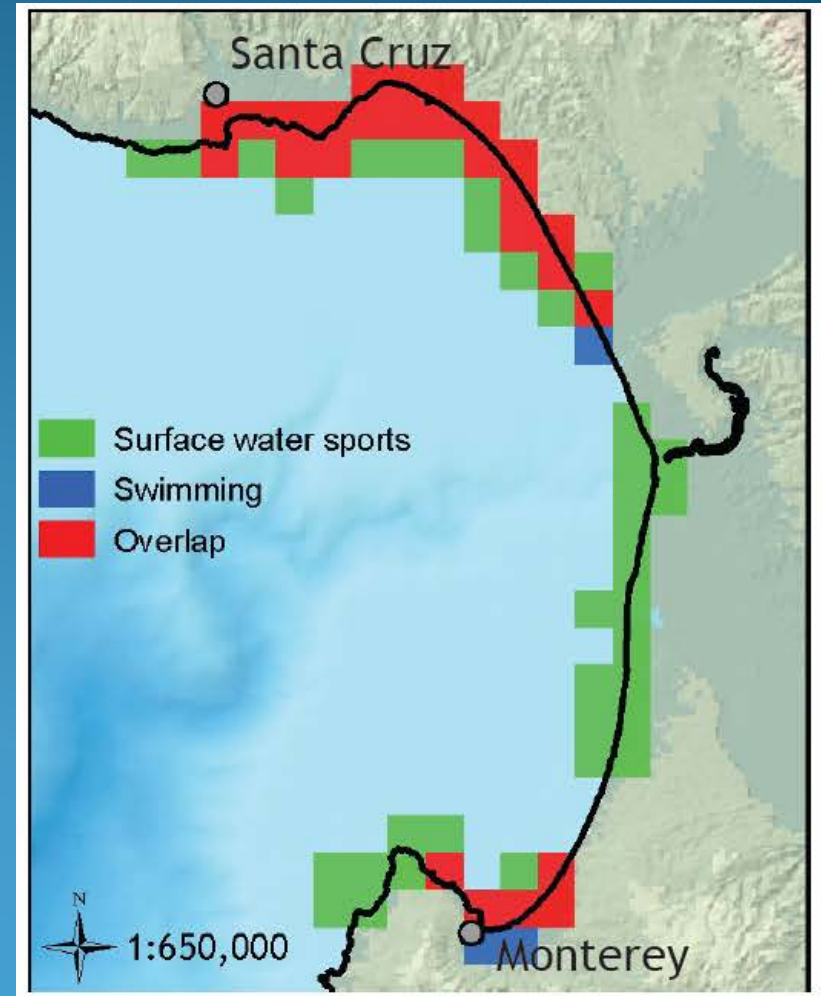
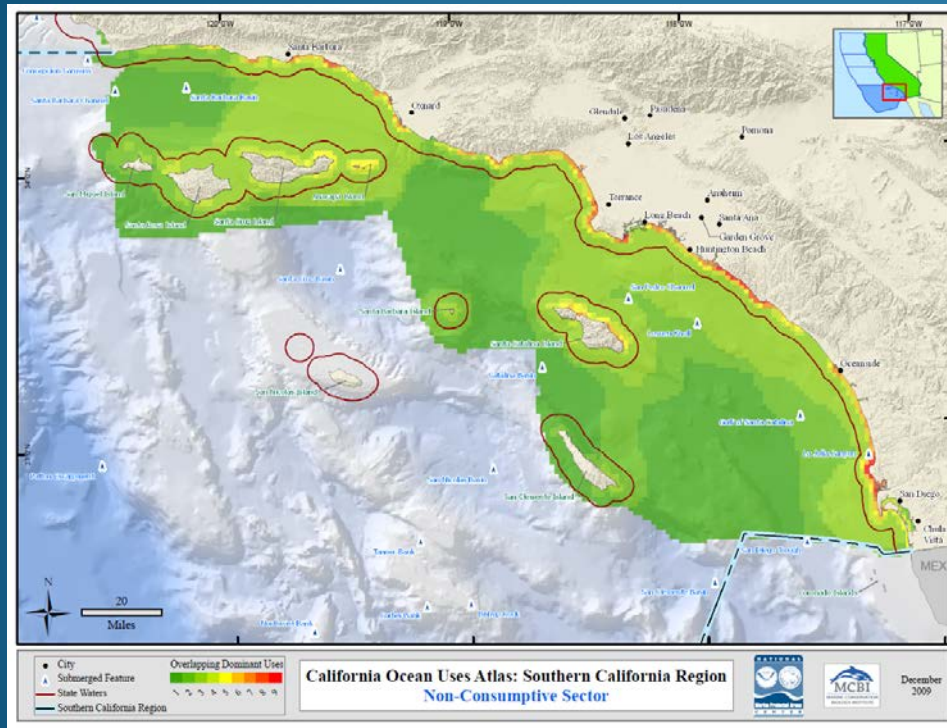
Hawai'i Coastal Use Mapping Project
 North Kona & South Kohala
 March, 2011



Hawai'i Coastal Use Mapping Project
 North Kona & South Kohala
 February, 2011



Sample Map Products



Sample Analyses



California Ocean Uses Atlas Statewide Pattern Summary



Introduction

The California Ocean Uses Atlas has compiled human use data on nearly 30 different uses of the coastal and marine environment off the state of California from the shoreline to the 200 nautical mile offshore boundary of the US Exclusive Economic Zone (EEZ). The data were gathered through a series of expert-based, participatory GIS workshops held in four geographic regions (left) of the state in 2008 and 2009. The resulting data and maps lend valuable insight to how and where the ocean is used for various sorts of activities including non-consumptive, fishing, industrial and military uses. This document provides a statewide pattern summary for all the uses mapped in the atlas project and is designed to supplement the spatial GIS data, metadata and multi-



more robust pattern analysis and customized analysis of select

Non-Consumptive Uses

Beach use occurs consistently in many of the offshore islands. In all regions but show most cover and north coast regions. In the regions, dominant use areas are around major bays and harbors and Morro Bay). Dominant use major coastal parks and reserve access points. Use patterns also morphology, as dominant use of sandy beach, with the exception (Vandenberg) and some private. *Beach use includes walking, ruck collecting, wildlife viewing, drive picnicking, and dog walking and dredging, scientific/educational viewing from boats or from shore and swimming.*



Fishing

Commercial dive fishing occurs in small, isolated areas throughout the California coastal and marine environment. This use is most commonly pursued in the north and north central coast regions near Point Arena and Fort Bragg, and in the south coast region, at most of the potential use areas are enclosed in marine reserves (red areas) where take is prohibited. A number of future use areas are indicated to denote areas where this use may increase in the foreseeable future, most likely due to increased or improved coastal access. *Commercial dive fishing includes commercial SCUBA and free diving for invertebrates and excludes all other forms of commercial fishing.*

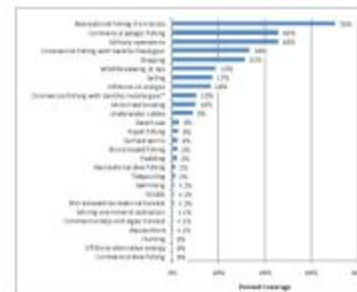


Commercial fishing with benthic fixed gear occurs to some degree throughout California state waters and beyond out to a distance of 20-50 miles from shore. The general use footprint extends further offshore in the south coast region, but the dominant use areas are more prevalent in the north central and north coast regions. Nearly all of state waters north of the San Francisco Bay are mapped as a dominant use area. A fairly large future area was mapped in the north and north central coast to indicate that this use may increase in the foreseeable future in this area. *Commercial fishing with benthic fixed gear includes fishing with trawls, pots, bottom longlines, bottom gillnets, and vertical hook and line, and excludes all other forms of commercial fishing.*

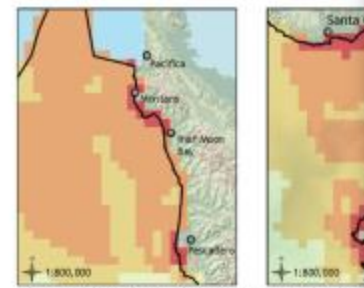
Commercial fishing with benthic mobile gear occurs mainly in state



LOOKING AT USES WITHIN THE MBNMS



Percent of entire MBNMS that is a dominant use area for individual uses. Additional analyses can be refined or normalized to more accurately reflect the spatial scales of uses (shore-based open water, etc.).



Hotspots and Overlap

Use analysis in the Sanctuary can reveal hotspots that exist at a localized level. Nearly 60% of the Sanctuary sees dominant use from three or more uses. Areas of dominant use might be of increased concern for outreach, res

Utility for MBNMS

- Where are the most heavily-used areas of the Sanctuary? Do you see better ways to coordinate monitoring and management to use
- What is the level of use at or near prioritized resources (spawning, or other) and what are the potential impacts on these resources being pursued in

OCEAN USES IN THE MONTEREY BAY NATIONAL MARINE SANCTUARY

ANALYSIS

General Ocean Use Patterns in the MBNMS

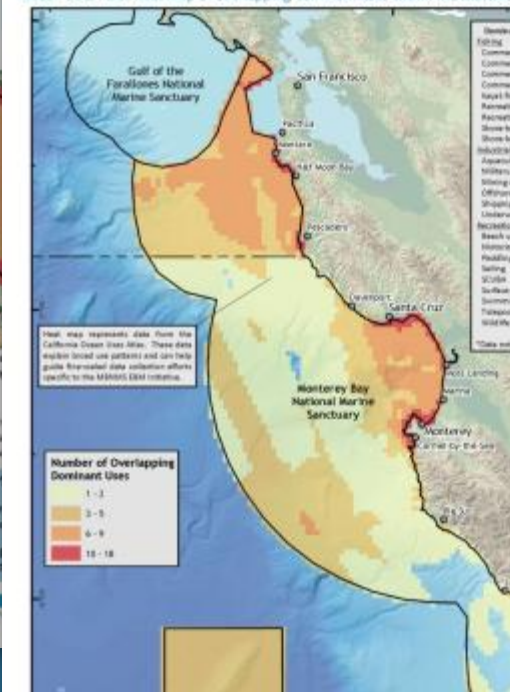
The heat map on the previous page and the graph on the left illustrate that 24 ocean uses have dominant use areas located within the MBNMS. Dominant use areas are those where most of the use occurs, most of the time. Use is generally higher in coastal areas and near population centers, but shipping, fishing, and military activities create distinct offshore patterns. Ocean uses are generally influenced by access, oceanography, and regulations, among other factors.

Utility for MBNMS EBM Initiative:

- For any ocean activity, what is the general use footprint and where are the dominant use areas (where most of the use

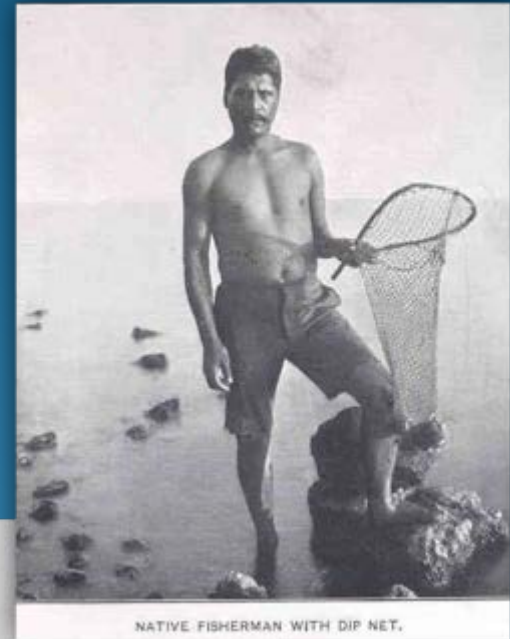
OCEAN USES IN THE MONTEREY BAY NATIONAL MARINE SANCTUARY

Ocean Uses Atlas heat map of overlapping dominant uses within the MBNMS



Lessons Learned

- ❖ Scoping is essential; research the area, the issues, the people, the history
- ❖ Reach out early and often: plan ahead to ensure that the key experts can participate and muster support
- ❖ Stakeholders want to tell their stories: make time to listen
- ❖ Build trust and live up to commitments, deliver what you promise, when you promise it



Important Considerations


- ❖ Previous Efforts & Existing Data
- ❖ Communicating the Message
- ❖ Documenting Sensitive/ Illegal Uses
- ❖ Intended Applications of Data
- ❖ Expert Representation

Preparing for Oregon

- ❖ Research on completed & ongoing efforts
- ❖ Consultation with data providers, state leads
- ❖ Compilation of existing data sources
- ❖ Planning outreach to user groups & stakeholders
- ❖ Refining workshop strategy & mapping approach
- ❖ Testing analytical tools & process models

The Oregon Ocean Uses Atlas
Informing offshore renewable energy planning through participatory mapping of ocean uses

The Oregon Ocean Uses Atlas is part of the Pacific Regional Ocean Uses Atlas Project, an interagency collaboration between NOAA and the Bureau of Ocean Energy Management (BOEM) designed to document where coastal communities use the ocean across a full range of typical human activities and sectors. Using participatory mapping techniques, the project offers a proven, flexible, and scalable approach that empowers coastal communities to paint an accurate picture of human use on a scale appropriate for local-, state-, or regional-level ocean planning. The project will focus on activities occurring on the Outer Continental Shelf (OCS) and in select near shore areas (TBD) off the state of Oregon, and will document a wide range of ocean uses, including:



Industry/Military Sector <ul style="list-style-type: none">• Renewable Energy• Military Operations & Ordnance Disposal• Mining and Mineral Extraction• Underwater Telecommunication & Power Cables• Commercial Shipping (Including Towing & Barging)• Designated Dumping & Outfall Sites• Underwater Pipelines• Mariculture	Fishing Sector <ul style="list-style-type: none">• Commercial Fishing with Benthic Mobile & Fixed Gear• Commercial Pelagic Fishing• Commercial Dive Fishing• Commercial Seaweed Harvest• Commercial Shore-Based Harvest• Recreational Dive Fishing• Recreational Fishing from Boats• Recreational Shore-Based Harvest• Kayak Fishing• Indigenous Fishing	Non-Consumptive Sector <ul style="list-style-type: none">• Motorized Boating• Sailing• Surface Board Sports• SCUBA/Snorkeling• Swimming• Wildlife Viewing at Sea• Tide Pooling• Shore Use• Indigenous Cultural Use• Tourism Cruise Ships
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❖ **Method:** Ocean use data will be gathered in participatory mapping workshops through consultation with use experts, community stakeholders, and cultural use practitioners.

❖ **Existing Data:** Designed to complement previous efforts, this project will gather and integrate existing data into the workshop process and provide participants the opportunity to review the extent of current knowledge, add to existing patterns and extend use boundaries as appropriate.


❖ **Data Products:** Workshop results will be processed to create custom maps, GIS data and services, and analytical tools to assist in understanding use patterns, hotspots, conflicts and compatibilities.

❖ **Timeline:** Project scoping is currently underway with workshops targeted for Spring 2013.

❖ **Funding:** This project was funded by the U.S. Department of the Interior, Bureau of Ocean Energy Management, through an Interagency Agreement with the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service.

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BOEM
Bureau of Ocean Energy Management



Planning & scoping underway – Workshops targeted for Spring 2013

Previous Ocean Use Mapping in Oregon

- ❖ Oregon Fishing Community Mapping Project (2010)
- ❖ Non-consumptive Ocean Recreation in Oregon (2011)
- ❖ OCS Renewable Energy and Space-Use Conflicts and Related Mitigation
- ❖ Shoreside Economic Analysis for the Oregon Territorial Sea Plan (2011)

Supporting the Oregon
Territorial Sea Plan Revision:
Oregon Fishing Community Mapping Project



Shoreside Economic Analysis for
the Oregon Territorial Sea Plan
Final Report

Report to Oregon Department of Fish and Wildlife

How is the PROUA different?



- ❖ Scale and Domain – Broad scale across the OCS with some fine scale targeted areas closer to shore
- ❖ Target – Full Suite of Ocean Use: Recreational, Fishing, Military, and Industrial
- ❖ Method – Interactive participatory mapping workshops
- ❖ Purpose – Renewable Energy Planning

Participatory mapping to complement existing knowledge and fill data gaps

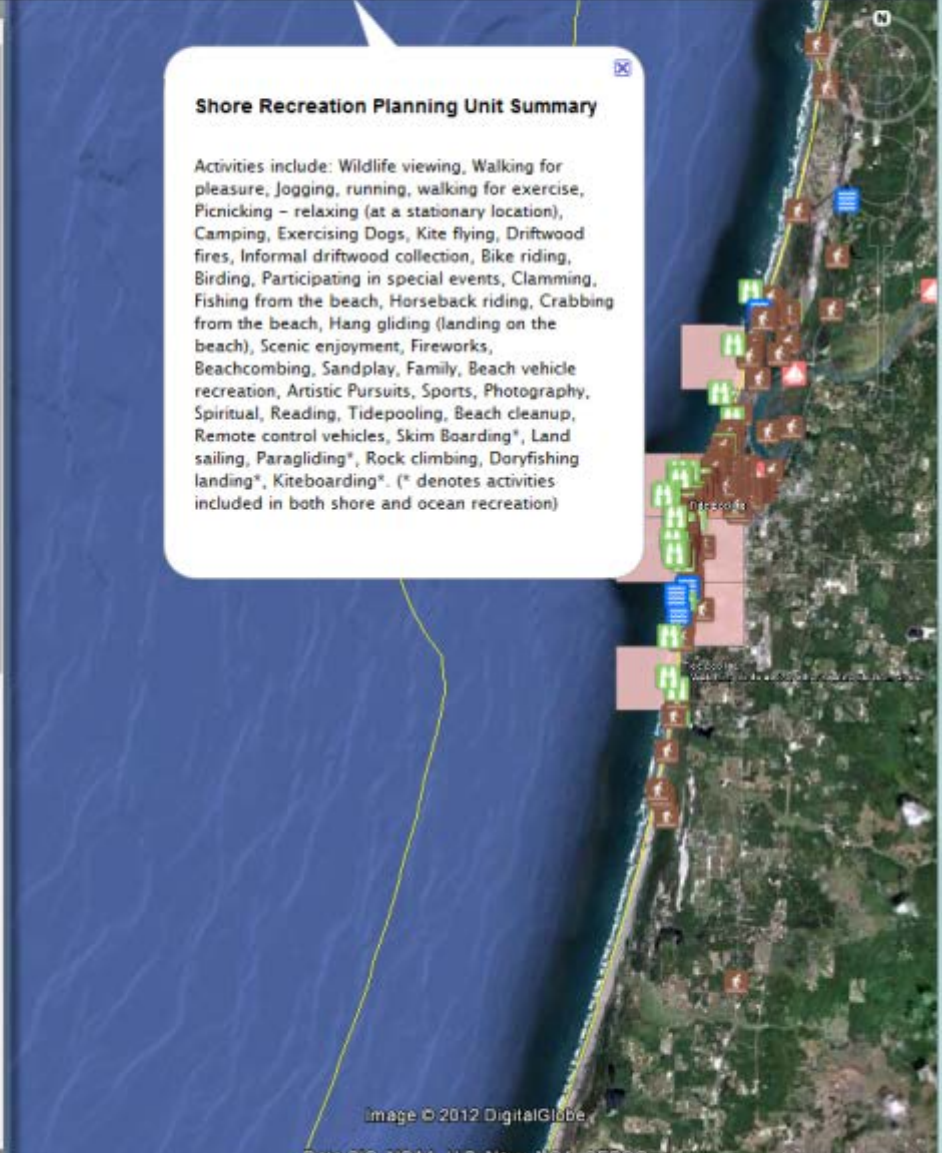
Data Layers

Oregon

- ▼ Human
 - ▼ Boundaries
 - Graticules
 - Oregon Territorial Sea (DLCD, 2008)
 - West Coast Exclusive Economic Zone (PFMC, 2010)
 - U.S. Maritime Zones/Boundaries (NOAA, 2011)
 - Nautical Charts
 - ▼ Economy
 - ▶ Marine Industry
 - ▼ Marine Recreation and Tourism
 - ▼ Beach User Observation Survey, 2001
 - ▼ Shore Recreation
 - Shore Recreation Planning Unit Summary
 - Legend
 - ▼ Ocean Recreation
 - Ocean Recreation Planning Unit Summary
 - Legend
 - ▶ All Recreation
 - ▶ Coastal State Park Visitation, Parking Lot Counts, OPRD, 2010
 - ▼ Non-consumptive Recreational Ocean User Study, 2010
 - ▼ Recreational Uses
 - Ocean Recreation
 - Boating
 - Wildlife Viewing
 - Shoreside Recreation
 - ▶ Representative Panel Block Unit Data
 - ▶ Opt-In Survey Block Unit Data
 - ▶ Expenditure by County

Shore Recreation Planning Unit Summary

Activities include: Wildlife viewing, Walking for pleasure, Jogging, running, walking for exercise, Picnicking – relaxing (at a stationary location), Camping, Exercising Dogs, Kite flying, Driftwood fires, Informal driftwood collection, Bike riding, Birding, Participating in special events, Clamming, Fishing from the beach, Horseback riding, Crabbing from the beach, Hang gliding (landing on the beach), Scenic enjoyment, Fireworks, Beachcombing, Sandplay, Family, Beach vehicle recreation, Artistic Pursuits, Sports, Photography, Spiritual, Reading, Tidepooling, Beach cleanup, Remote control vehicles, Skim Boarding*, Land sailing, Paragliding*, Rock climbing, Doryfishing landing*, Kiteboarding*. (* denotes activities included in both shore and ocean recreation)



Leveraging Existing Efforts

- ❖ Incorporate existing data where available
- ❖ Fill gaps for certain categories of data
- ❖ Apply hindsight & lessons learned
- ❖ Engage audience outside the user community
- ❖ Create integrated data products



What to Expect

- ❖ Workshops in select locations in Spring 2013
- ❖ Delivery of draft products in early Summer 2013
- ❖ Conversations on data integration, sharing and applications
- ❖ Regional product development & integration
- ❖ Comprehensive metadata & reporting to document process

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