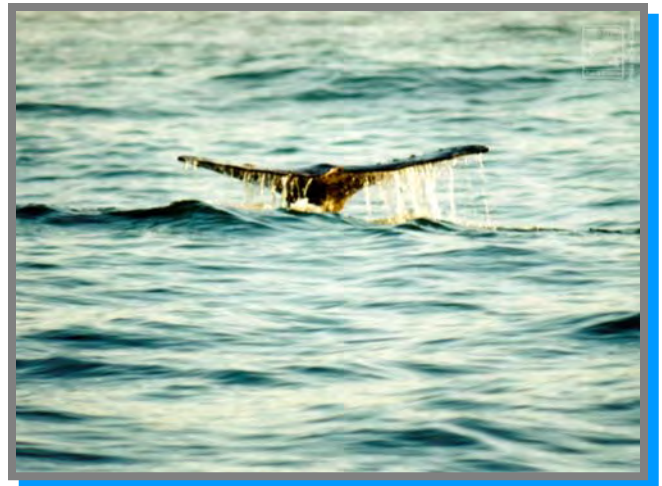
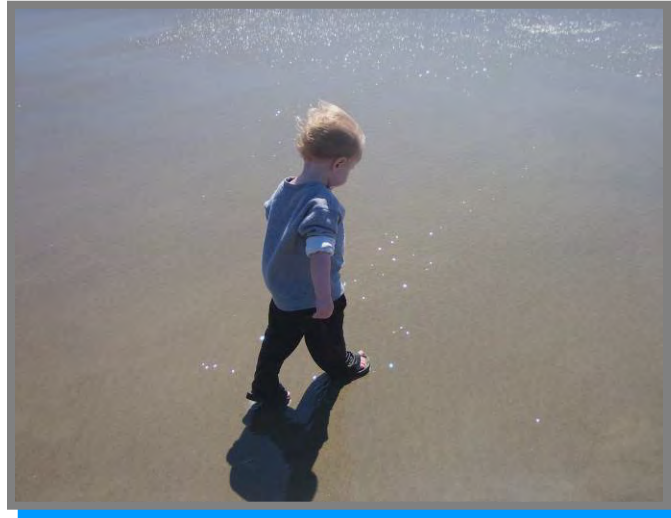


# Oregon Marine Reserves

## Human Dimensions Monitoring & Research Plan



2012

Marine Resources Program  
Newport, Oregon

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# Glossary of Terms

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**Comparison Area:** An area that provides a baseline to compare with non-reserve areas, specifically to evaluate changes in habitat, species abundance, and species composition due to natural changes, fishing and other human effects.

**Community of Interest:** Any group of individuals that share a common interest, activity, or feature that bonds them together. These individuals may only interact with others within this community when participating in the interest. For example surfing and surfers could be a community of interest.

**Community of Place:** Any group of individuals connected through a specific location in which they spend a continuous portion of their time, such as a town, work, a fishing port, a tavern, or vacation spot.

**Direct Effects:** The first level effects of a change in a market driver or availability of a resource to individuals or groups directly connected to the market or resource. A marine example may be the effect of fishing regulations on the commercial fishing industry.

**Ecosystem Service:** The benefits gained by humans from healthy and functioning ecosystems. Ecosystem Services fall into four main categories - Provisioning (ex: food), Regulating (ex: pollination), Supporting (ex: seed dispersal), and Cultural (ex: discovery).

**Human Dimensions:** The study of how humans interact with their environment and what drivers are responsible for human actions, attitudes, engagement, and connection to the natural resources within the environment. Areas of study could include social, cultural, and economic aspects and are often used to better understand and manage natural resources.

**In-Direct Effects:** The secondary effects of a change in a market driver or availability of a resource to individuals or groups not directly connected to the market or resource. A marine example could be the effect to the hotel industry in a port town where fishing regulations have directly affected the commercial or recreational fishing opportunity.

**Intrinsic Value:** The value something holds in and of itself or for “its own sake” as opposed to being valued for its association to something else (Stanford Encyclopedia of Philosophy online, <http://plato.stanford.edu>, 2011.)

**Logbook Program:** A program implemented by the state to collect data on commercial fisheries. Commercial fisheries logbooks record data on species caught, location of catch, port the catch was landed in, processor, etc. Oregon has commercial logbook programs for most of the commercial fisheries.

**Marine Reserve (Oregon):** An area within Oregon’s Territorial Sea or adjacent rocky intertidal area that is protected from all extractive activities, including the removal or disturbance of living and non-living marine resources, except as necessary for monitoring or research to evaluate reserve condition, effectiveness, or impact of stressors such as climate change.

**Marine Protected Area (Oregon):** Any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part of all of the natural and cultural resources therein (Executive Order 13158, May 26, 2000).

**Non-consumptive Activity:** Activity that does not involve a harvest element, or the physical removal of a resource from the environment (Eardley 2010).

**Stakeholder:** An individual or group that has an interest in a particular resource, project, organization, or other entity (Eardley 2010).

**Territorial Sea:** Oregon’s Territorial Sea Boundary is 3 nautical miles (3.45 statute miles) seaward of the coastal base line (Mean Lower Low Water) along the shore and from the baseline around offshore rocks or islands. This boundary is the seaward limit of Oregon’s Coastal Zone (Oregon Territorial Sea Plan, 1994).

# Introduction

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In 2008, the state of Oregon began a process to designate and implement a limited system of marine reserve sites within state waters. The Oregon Department of Fish and Wildlife (ODFW) is the lead agency responsible for implementation of Oregon's system of marine reserve sites. An important component of marine reserve implementation is monitoring and evaluation. In 2009, ODFW established a program focused on marine reserves implementation that includes staff responsible for the design and implementation of a Human Dimensions Monitoring Program that is to provide information for marine reserves evaluation and to be used in support of nearshore resource management.

The Human Dimensions Monitoring Program was developed by the ODFW Marine Reserves Program staff, with assistance and collaboration from external scientists and marine reserve community team members. This document provides a description of the plans for monitoring of Oregon's system of marine reserves.

## A. Monitoring Plan Purpose

The Human Dimensions Monitoring Program is designed for the long-term monitoring of Oregon's marine reserve system. The *monitoring plan* documents and describes the objectives, metrics, monitoring design, sampling activities, and data analyses that are all a part of the marine reserves Human Dimensions Monitoring Program. Both the biological and human dimensions monitoring plans will be included as appendices in the individual management plans developed for each protected site. We hope that by documenting these objectives and activities we also spur additional, complementary research that will be conducted by external entities to further assist in the marine reserves evaluation and add to our knowledge of the nearshore environment and resources.

Detailed methods, analyses and results, will be presented in biennial Monitoring Reports. We anticipate that adaptations will be made as we learn from our monitoring activities and upon designation of any new marine reserve sites. An extensive review of the Monitoring Program and necessary revisions to the Human Dimensions Monitoring Plan should be conducted every five years, with assistance from independent scientists and community members.

## B. Marine Reserves: Oregon's Policy Guidance

Designation and implementation of Oregon's limited system of marine reserves is guided by the "Oregon Marine Reserve Policy Recommendations" developed and approved by the Ocean Policy Advisory Council (OPAC) in 2008. OPAC is a legislatively mandated body that advises the Governor, state agencies, and local governments on marine resource policy issues. The policy recommendations laid out by OPAC provided the starting point for development of the Human Dimensions Monitoring Program. The key definitions, goals, and objectives that provide overall guidance for the monitoring project are described below.

### **B.1. Marine reserve definition**

The first policy recommendation that guides our monitoring program is the definition of a marine reserve. As established in the OPAC policy recommendations, Oregon defines a marine reserve as:

. . . an area within Oregon’s Territorial Sea or adjacent rocky intertidal area that is protected from all extractive activities, including the removal or disturbance of living and non-living marine resources, except as necessary for monitoring or research to evaluate reserve condition, effectiveness, or impact of stressors. (OPAC 2008)

### **B.2. Marine reserve goal**

The goal of Oregon’s marine reserves is to:

Protect and sustain a system of fewer than ten marine reserves in Oregon’s Territorial Sea to conserve marine habitats and biodiversity; provide a framework for scientific research and effectiveness monitoring; and avoid significant adverse social and economic impacts on ocean users and coastal communities.

A system is a collection of individual sites that are representative of marine habitats and that are ecologically significant when taken as a whole. (OPAC 2008)

### **B.3. Marine reserve objectives**

Marine reserve objectives, established in the OPAC policy recommendations, provide further guidance on planning and implementation of Oregon’s system of marine reserve sites. Marine reserve objectives that direct the design of our human dimensions monitoring program include:

- Site fewer than ten marine reserves and design the system in ways that are compatible with the needs of ocean users and coastal communities. These marine reserves, individually or collectively, are to be large enough to allow scientific evaluation of ecological effects, but small enough to avoid significant adverse social and economic impacts on ocean users and coastal communities.
- Use the marine reserves as reference areas for conducting ongoing research and monitoring of reserve condition, effectiveness, and the effects of natural and human-induced stressors. Use the research and monitoring information in support of nearshore resource management and adaptive management of marine reserves.

### **B.4. Marine Protected Areas**

Marine Protected Areas (MPAs), that allow certain specified extractive activities, are also included in Oregon’s limited system. With regards to monitoring and evaluation of the marine reserve system, ODFW focuses only on those MPAs that are considered complementary to a marine reserve site. That is, the MPA must complement the marine reserve in its protection of species and habitats most likely to respond to prohibition of extractive activities but must also avoid significant adverse social and economic impacts to ocean users and coastal communities. This may include when an MPA:

- Provides protection to fish and invertebrate species that are likely to benefit from, or show a response to, protection
- Provides a protective species buffer area to a marine reserve

- Provides an ecological corridor for fish species growth-related or seasonal movement
- Protects habitat forming and long lived invertebrate species from habitat destructive extractive activities or development
- Provides a balance between ecological protection and human uses to avoid adverse social and economic effects and allow for community support and compliance.

## C. Marine Reserves Evaluation

The OPAC policy recommendations described above, in section B, drive the design and execution of our Human Dimensions Monitoring Program. A comprehensive evaluation of Oregon’s marine reserves is to be conducted after the system of reserves has been in place for a minimum of 10-15 years after the prohibition of extractive activities have taken effect. This period will allow time for adequate data to be collected and for the detection of ecological responses to begin. The evaluation will focus on if, where, and to what degree each marine reserve site and the system as a whole are meeting the OPAC marine reserve goal and objectives. The evaluation will provide information so the state can determine if and how marine reserves should continue to be used as a nearshore resource management tool in the future.

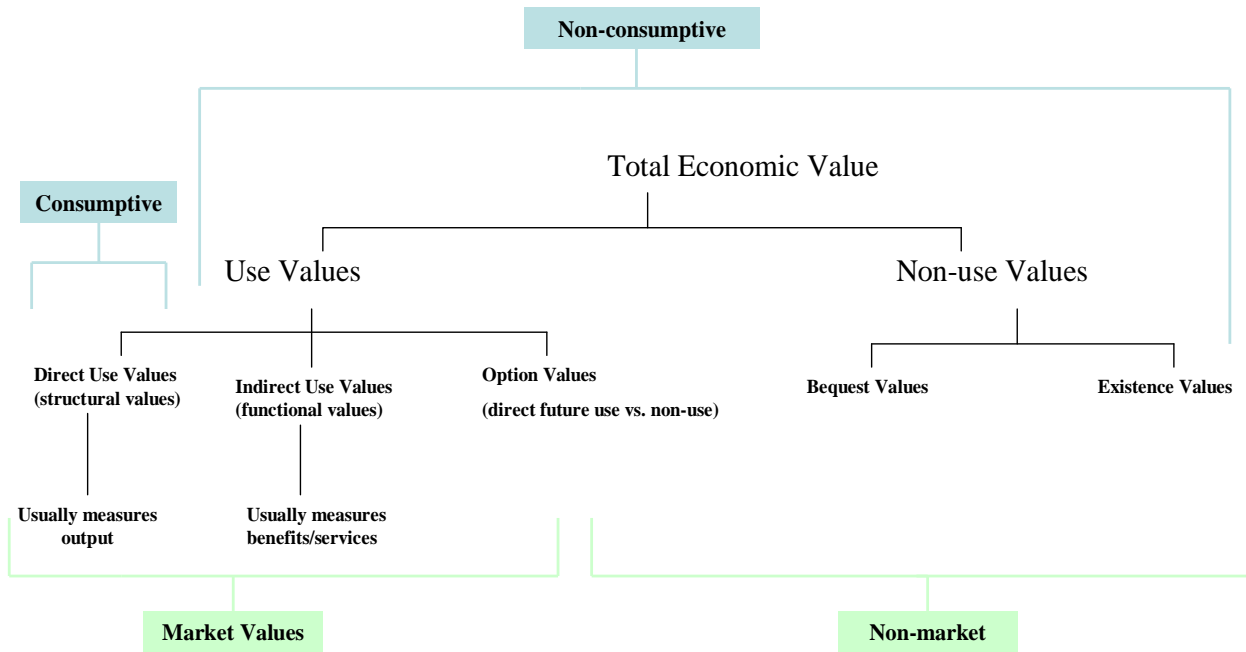
To assist the state’s evaluation of marine reserve sites and the limited-system as a whole, long-term human dimensions monitoring is designed to address the following aspects of the marine reserves evaluation:

1. Determine if marine reserves increase our knowledge of Oregon’s nearshore environment, resources, and uses. Ascertain if this information is being used to support nearshore resource management.
2. Determine if size, configuration, location, and prohibitions of marine reserve sites and associated MPAs, and the system as a whole, avoid significant adverse social and economic impacts to ocean users and coastal communities.



# Monitoring Program Design

The Human Dimensions Monitoring Program research questions, metrics, data collection activities, and data analyses have all been designed to provide the information needed to meet the goal and objectives of marine reserves. Any and all monitoring strategies developed for individual protected sites are grounded in a monitoring framework focused at long term monitoring and evaluation. The framework is based, in part, on the following concept of economic value measurements. The figure below shows the various types of stakeholders, uses, and values that should be considered when designing a plan for human dimensions monitoring. A description of the monitoring framework can be found in section II.A.1.



Total Economic Value (TEV) = use and non-use values

Diagram provided by Shannon Davis, TRG Systems, 2011

**Figure 1.** Economic Value Measurements



## A. Monitoring Design

Our monitoring is designed to determine what real and potential direct and indirect social, cultural, and economic effects exist for ocean users and identified communities of interest and place as a result of protected area implementation. Our research questions are the foundation of the monitoring framework and guide our monitoring strategies and activities for each reserve site. An important aspect of the monitoring design is the ability to evolve our monitoring framework over time as new data become available and to better meet the needs of Oregon stakeholders. We also attempt to balance our research and monitoring activities between site specific needs and broader aspects. We believe the information collected through this process will be valuable to other marine or coastal natural resource policy issues in Oregon. Therefore it is the intention to design a monitoring program that provides for area specific data and information but also addresses a broader scope of research to add to Oregon's nearshore management efforts.

### A.1 Monitoring Framework

This section describes our monitoring framework which we use to guide our research and monitoring strategies for individual sites and the system as a whole. The focus of our monitoring strategies will evolve as new data are collected and analyzed and our Human Dimensions Monitoring Program will adapt to the needs of stakeholders, scientists, and policy makers. The activities listed here hope to offer data and information to address the effects, both direct and indirect, of marine reserve and marine protected area implementation on coastal stakeholders. Most of the activities applied will reveal results useful in broader marine spatial planning and nearshore management efforts conducted in Oregon.

#### A.1.a. General Social & Economic Characterization of the Area

For each marine reserve or protected area designated we first develop a socio-cultural and economic characterization of the shore-side communities that could most directly be affected by the site. This includes information such as historical records, demographics including employment data, social structure, tribal or spiritual connections, cultural and social events, and economic drivers of the local markets. This characterization is our attempt to set the "back story" and monitoring parameters for these communities.

#### A.1.b. Direct Use of the Area

To address our research question of "who" is using the marine reserve and protected area sites we first analyze quantitative, qualitative, and spatial data from commercial and recreational fisheries. This includes data obtained through logbooks, port sampling, on-board observer programs, and interview or survey instruments. This analysis allows us to identify physical areas of use, which fisheries are prosecuted in these areas and communities of place and interest that may be affected from a displacement or disruption of these activities. We also gather data, both existing and primary, on non-consumptive use of the ocean and shore area connected to the sites. This allows us to understand what uses exist presently and monitor if any new uses develop with implementation of the protected area. Socio-cultural and economic information is also collected from these direct users of the area through various methods and will be integral to conducting social impact and economic impact analysis during monitoring.

#### A.1.c. Attitude & Perception of Implementation & Management

To manage these protected areas it is imperative to understand the attitudes and perceptions of stakeholders toward the process of implementation including the monitoring and research, management,

and enforcement. Understanding these aspects will allow us to properly address any issues of education and outreach that may assist the public in understanding the goals of the marine reserves and protected areas, what we hope to learn, how this information will be applied to policy and management of these areas, and how stakeholders are involved in the process. Collecting this information will allow us to adapt our strategies to better serve Oregonians and enlist stakeholder engagement in the success of these areas.

#### **A.1.d. Assessment of the Non-market Values of the Area**

To gain a more robust understanding of the potential economic and social effects, both positive and negative, of these protected areas it is essential to identify the non-market values connected to the sites. We attempt to address this important research question by first developing a comprehensive list of leisure and recreational stakeholders connected to the area. This list will allow us to develop research strategies to measure the importance of these stakeholders and their activities to the local communities and the importance of these areas to these stakeholders.

In addition we will also engage in research to identify and measure the different “values” associated with the natural resources and characteristics of the areas, such as the ecosystem services and studies to measure the various “benefits” of the area.

### **A.2 Research Questions**

To assist us in prioritizing information needed for marine reserves evaluation and to focus our monitoring efforts, we posed the following research questions:

1. Who are the consumptive users of the site, comparison areas and general area? What are these uses? What is the level of consumptive use? How does this use change over time?
2. What are the general social, cultural, and economic drivers and characteristics of the communities of place? How are these variables tied to the site? How do these change over time?
3. What are the general attitudes and perceptions held by members of the various communities (place and interest) concerning site implementation? What are the motivating variables behind these attitudes and perceptions? How do these attitudes and perceptions change over time?
4. What are the potential social, cultural and economic effects to consumptive users from displaced activities? How do these effects change over time?
5. Who, in general, are the non-consumptive users of the site, comparison areas, and general areas? What are these uses? What is the level of non-consumptive use? How does this use changes over time?
6. What are the non-market values connected to the site? Specifically, what are the intrinsic or non-use values associated with the site and how do these values change over time?

# Monitoring Activities

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In order to develop and carry out our long term monitoring it is first crucial to collect at least two years of baseline data and information prior to the implementation of any site prohibitions. Baseline data and information is collected for stakeholders identified as direct users of the marine reserves and marine protected areas as well as the coastal communities directly dependent on these areas, both socio-culturally and economically. It is also equally important to collect data and information to assess the non-market values of these protected areas. Areas of focus may include the opportunity value held by non-consumptive users, the intrinsic values held by individuals who may never visit the area, and the value to the public and scientific community of the educational and scientific opportunities provided by these areas. Funding for research and monitoring activities is scarce and therefore activities that provide the greatest return in data or crucial information are prioritized. The activities listed in this section are believed to be those that yield the highest return and allow for accurate monitoring of the effects of these areas. Over time these activities may change in scope or be removed from the monitoring strategy and replaced by those deemed more important. Methodologies used at the sites will be documented in further detail in the biennial Monitoring Reports

## A. Commercial & Recreational Fisheries Data

To develop a baseline of fisheries use we look at all existing data from commercial fisheries logbook programs and recreational fisheries observer programs. We analyze these data for the marine reserves, marine protected areas and comparison areas and in some cases a broader generalized area in the reserve and protected area vicinity. All available data are considered but primarily only the last two decades worth of data are used for trend analysis and to draw conclusions for potential effects.

Logbook programs give us the ability to assess spatial use of the individual sites and comparison areas, what species are being targeted, and effort information such as number of vessels, gear type, and number of sets or tows by these vessels. Observer programs are used for private sport and charter recreation fisheries and also give us limited data for spatial use, species caught, and effort in these areas. Both data sources are valuable but somewhat incomplete due to participation in these programs and therefore are best used in combination with other collection efforts.

## B. Interviews & Surveys

To support the spatial analysis done through logbook and observer programs and to collect socio-cultural information we conduct interviews and surveys in-person or by mail, phone, and internet. The individuals or groups that may be targeted in these efforts include:

- Commercial Fishermen
- Recreational Fishermen
- Charter Operators

- Local Businesses
- Non-consumptive Users
- Non-use Individuals

A sample of the commercial and charter fishermen identified as those that use or have used, in recent past, the reserve or protected area will be interviewed either in-person or by phone and asked a series of questions to ascertain how familiar they are with the area, what information they know about reserves in Oregon, their social and economic connection to the area, and how might their behavior change in response to use restrictions in the area? This information allows us to develop a socioeconomic characterization and assess the social and economic affects and effects to these stakeholders.

We also utilize in-person and phone interviews to collect information from local businesses within the communities of place and to gather data from recreational visitors to the area. These efforts allow us to assess the perception of reserve and protected area implementation by those individuals that spend money to use the area and those that gain income from these visitors. Through visitor spending data we can then analyze the economic impact of different types of visitors and how this impact might change due to implementation of a reserve or protected area. Over long term monitoring we will be able to track any changes in visitation and conduct studies to determine the influence of the reserve and protected area on visitation.

## C. Observational Surveys

As part of our spatial use monitoring we will employ the use of on-site observational surveys, both in-person and through video equipment. In combination with our existing spatial use data this observation work will allow us to develop a robust baseline of stakeholders and uses of the reserves and protected areas. It also opens the opportunity for more in-person survey collection of visitation data.

### C.1 Video Observations

Video observation of the ocean and shore-based use at the reserves and protected areas will aid in the baseline collection of spatial use data. This work will be most important and valuable at sites where visual access is difficult or at sites that are far from our base of operations. Video work allows for a constant on-site presence and collection method. The video data will be analyzed for presence and absence counts of vessels and human activity on the shore. If possible the type of activity will also be reported. This research method is dependent on adequate funding and will be used secondarily to in-person observations.

### C.2 In-Person Observations

In-person observations will be used whenever possible to conduct presence and absence counts of activity types and uses of the ocean and shore areas of the reserve and protected sites. In-person observation work has the ability to render more in-depth information about stakeholder uses and offers the opportunity to collect direct information from visitors utilizing the areas. In-person observation work may not be possible at all Oregon marine reserve sites and therefore will be used in combination with other methods, such as video observations, for collecting spatial use and other types of information.

## D. Long Form Fishing Community Profiles

Through in-person interviews with key fishing community members such as commercial, charter and recreational fishermen (active and retired), fishermen’s wives and partners, dock workers, processors, and other key community members (long time residents and business owners) we are able to develop socio-cultural profiles of the fishing communities connected to the marine reserves and protected areas. These profiles delve deeper into the sociology of fishing in these communities and offer a more well rounded and in-depth understanding of the social structure, opinions, history, and culture of fishing families along the Oregon coast.

Where short form profiles, such as those produced by NOAA or the U.S. Census Bureau, give the general demographic information for a place, these long form profiles give a socio-cultural characterization of a community. These profiles allow us to understand the interconnectedness of these communities and how marine reserves and protected areas may affect their social structure and communities.

## E. Ecosystem Services

To understand the full effects of marine reserve and protected area implementation for Oregonians it is important to know what services the sites offer to humans. As a first step in understanding these services we have, in collaboration with Oregon State University and Oregon Sea Grant developed a report of ecosystem services indicators for the Redfish Rocks and Otter Rock sites (ODFW 2011). The indicator lists were gleaned from a stakeholder process and will be utilized by Oregon State University to develop a “decision support tool” through a broader state process to assess stakeholder tradeoffs. We will utilize the ecosystem indicator lists in various analyses for both valuation of these coastal resources as well as social impact analysis.

## F. Economic Modeling

An important aspect of closing marine areas to consumptive activities is how this will change the behavior of users and what effects, socially and economically, a change in user behavior may have individually, locally, and statewide. To understand this question we have begun developing a model for Oregon’s Territorial Sea and will be assessing current use within the reserve, protected areas and comparison areas to assess the regional economic impacts to the coastal communities. The development of this model will take time and massive amounts of various biological, habitat and socioeconomic data. Phase 1 utilizes only primary use data such as logbook data, port landings, and preliminary habitat maps where as Phase 2 will address the implication of secondary socio-cultural data and better assess the effects of displacement. Phase 3 will incorporate a larval dispersal model for the Oregon ocean (not yet developed). The final report will be titled, *Using Fisheries and Habitat Data Spatial Analysis to Determine the Potential Economic Effects from Oregon Marine Reserve Sites*.

## G. Attitude & Perceptions

Part of efficient and effective natural resource managing is understanding the motivations behind human actions. Marine reserve implementation is a controversial issue whose success depends on stakeholder involvement and stewardship. To better understand the perceptions and attitudes of stakeholders in regards to marine reserve implementation and management we have contracted with Oregon State

University to conduct a survey of coastal residents. Examples of the type of information collected will be the level of knowledge a person has regarding the marine reserves, where they obtain information from, how they expect the marine reserves to affect them, what they think of the policy guiding implementation and management, and their opinions on how the state is managing the reserves. This information will allow us to address potential management issues and more efficiently serve the public interest.

# Current Complimentary Research for Oregon

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## A. Oregon's Coastal Economy

To better understand the effects and impacts to Oregon and coastal communities from marine spatial planning, in particular wave energy projects, the Oregon Department of Fish and Wildlife (ODFW) has contracted with the consulting firm *Ecotrust* to deliver a report entitled *A Shoreside Economic Analysis and Model for the Oregon Territorial Sea Plan*. This work will inform all aspect of marine spatial planning and policy including marine reserve and protected area implementation by offering a more vigorous depiction of Oregon's coastal economies. This information will also be included in the *Oregon Marine Map*, an online interactive mapping tool for marine spatial planning.

## B. Commercial & Recreational Fishing Ground Mapping

In an attempt to understand the potential effects and impacts to fishing stakeholders in regards to wave energy implementation the Department of Land Conservation and Development (DLCD) has contracted with the consulting firm *Ecotrust* to spatially map fishing grounds used by commercial, charter and recreational fishermen in Oregon's territorial sea. This information will inform the spatial use data being collected to monitor consumptive use in the marine reserves and protected areas.

In addition to the spatial analysis of fisheries being conducted now, numerous periodic reports are produced on the economic impacts and value of marine commercial and recreational fishing in Oregon. Most recent is a report produced by The Research Group, contracted by ODFW, on the economic contributions from commercial fishing in Oregon for the year 2009 (Davis, 2010).

## C. Marine Spatial Planning

Numerous data collection efforts are taking place in Oregon to better understand and manage the nearshore ocean environment. These data are directly contributing to amending Oregon's Territorial Sea Plan for the siting of renewable energy. Examples of the products that are being produced include Fishing Effort Maps, Nearshore Ecological Atlas, Recreational Use Survey, Existing Beneficial Uses, and Multi-Purpose Marine Cadaster. This effort to collect and compile ecological and socioeconomic data in Oregon's waters can help to inform the marine reserve and protected area monitoring program.

## D. Non-consumptive Recreational Use in Oregon

Just as important to Oregon's costal economy as consumptive ocean uses, such as commercial fishing, are those uses that are considered non-consumptive such as surfing or whale watching. However data for these uses is lacking and is needed to accurately assess the value of these sites to society. Two recent studies attempt to describe and characterize the community of non-consumptive recreational users that utilize Oregon's coast. Eardley and Conway (March 2011) have released the study titled Oregon's Non-Consumptive Recreational Ocean User Community: Understanding an Ocean Stakeholder, which gives a socio-cultural description of this user group and defines the who, what, and where of this group's activities. Similar to this study the Non-consumptive Ocean Recreation in Oregon: Human Uses, Economic Impacts and Spatial Data report released by Natural Equity (March 2011) offers a more spatially explicit analysis of this user group and offers economic data and economic impact analysis for the coastal economies. Both these reports will be used to inform the human dimensions baseline data collection and monitoring program for the Oregon marine reserves program.



# Expected Schedule of Monitoring Activities

Table 1 describes the general timeline for monitoring activities for marine reserve sites implemented along the Oregon coast. As new data and information become available the actions and monitoring schedule may be modified. The monitoring schedule is also reliant on available funds and may be adjusted for efficiency.

Monitoring Framework Category <sup>1</sup>	Included in Baseline <sup>2</sup>	Expected Monitoring Interval (years)	Action	Users/Affected Group <sup>3</sup>	Metric Type <sup>4</sup>	Focus Area <sup>5</sup>
II	Yes	1	Spatial use counts	Direct	Secondary & On-site Video	MR/CA
	Yes	2	<ul style="list-style-type: none"> <li>• Consumptive (at sea)</li> <li>• Non-consumptive (on shore)</li> </ul>			
II	Yes	2	Spatial use economic analysis	Direct	Modeling	MR
II	Partial	5	Recreational user economic data collection & analysis	Direct	Survey/Secondary	MR/CA
	Partial	5	<ul style="list-style-type: none"> <li>• ORBS<sup>6</sup> add on survey (fisheries)</li> <li>• Other (non-consumptive)</li> </ul>			
I	Yes	5	Affected coastal business data collection	Direct	Survey	CP
IV	Yes	5-10	Ecosystem services study (ongoing)	Direct/Indirect	Focus Group/Survey	MR/CP
III/IV	Partial	5	Community and State resident data collection	Direct/Indirect	Survey/Secondary	CP/CI
	No	5	<ul style="list-style-type: none"> <li>• Knowledge, attitudes, perceptions</li> <li>• Non-market valuations</li> </ul>			
I	Partial	2	Fishing Community Profiles	Direct/Indirect	Survey/	CP

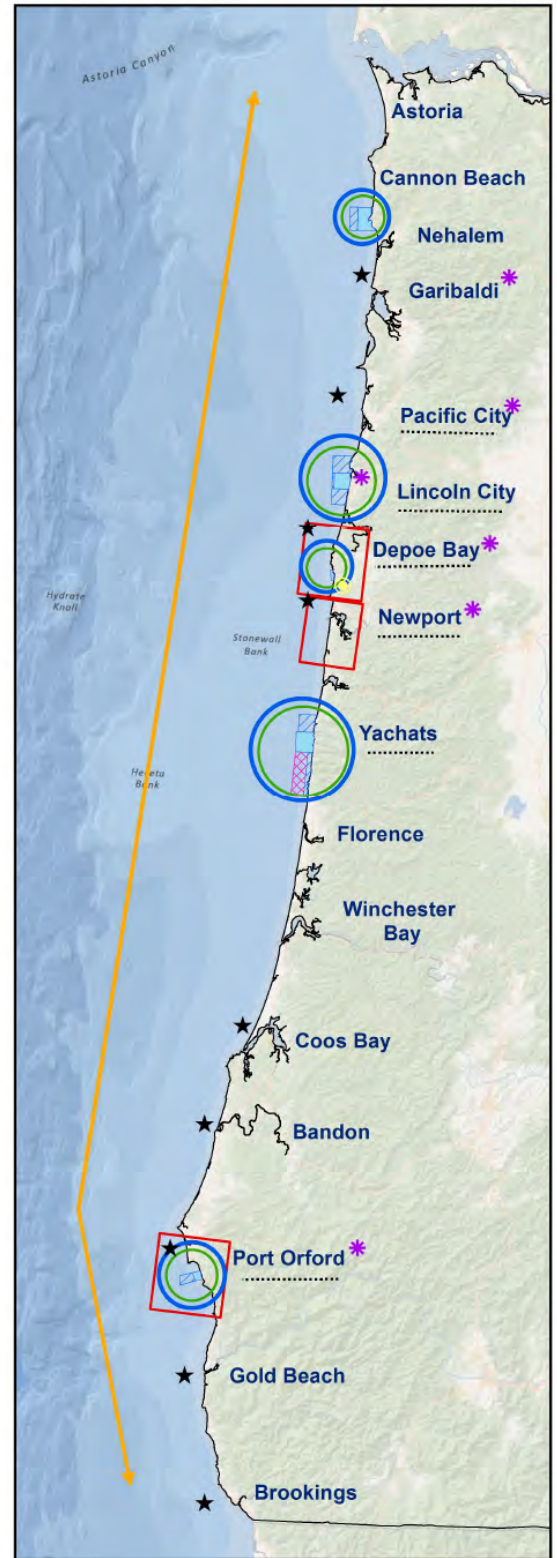
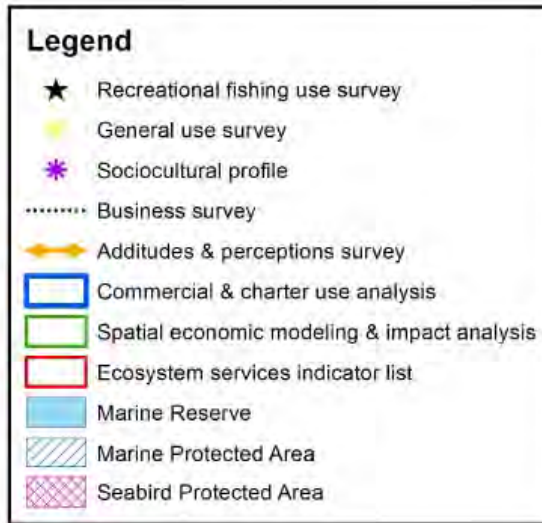
						Secondary	
III	Partial	2	Supporting institution tracking ( <i>Tribes, Academia, education, Government, Enforcement, Stakeholder Groups</i> )	Indirect	Focus Group/ Survey	CP/CI	
II/IV	Yes	5-10	Economic Impact Assessment	Direct/Indirect	Primary/ Secondary	CP/CI	
I/III	Yes	5-10	Social Impact Assessment	Direct/Indirect	Primary/ Secondary	CP/CI	

1. Monitoring framework categories can be found on page7 of this document.
2. The designation of “Partial” for this column means the information collected will be partially used to establish a baseline but will also be used in a broader capacity.
3. Direct users are those that have a tangible connection to the site or the resources provided by the site. Indirect users are those that benefit or are affected by the direct uses but are not directly using the site.
4. Primary collection describes any data gathered through action taken by the agency. Secondary collection is any data or information garnered from existing sources.
5. MR = marine reserve & marine protected area (including on shore at times), CA = biological comparison area, CP = community of place, CI = community of interest
6. ORBS = Oregon Recreational Boaters Survey

# Description of Current Human Dimensions Monitoring

The map on the right shows where our current monitoring efforts and research has been focused. It describes work conducted through the winter of 2012 but does not show projected or expected projects or effort. This map can be found on the [www.oregonocean.info](http://www.oregonocean.info) website. The work shown here is only reflective of that done by the agency and not the complimentary research being conducted by other state agencies, universities, or private organizations.

This map will be updated as work continues along the Oregon coast and new reserves are established.



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**Otter Rock Marine Reserve, Oregon**



**2012**

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