

HUMAN DIMENSIONS MONITORING PLAN





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This Human Dimensions Monitoring Plan describes the Marine Reserve Program's socioeconomic studies and research tools, and also highlights collaborations that expand beyond internal ODFW efforts. Studies are organized by the four research categories outlined in the original monitoring framework developed when the reserves program was first implemented.

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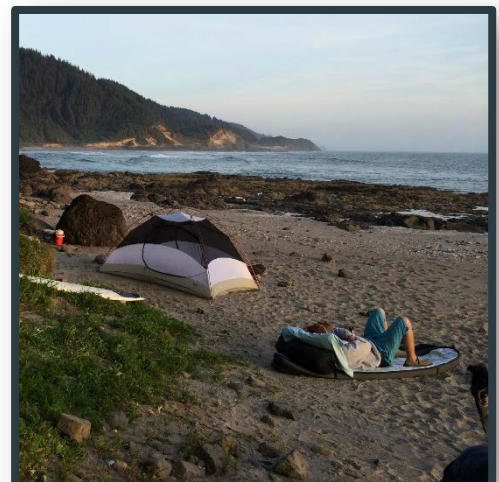
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A. OREGON'S MARINE RESERVES PROGRAM





BRINGING DEEPER UNDERSTANDING TO THE SURFACE

ABOUT OREGON'S MARINE RESERVES

Marine reserves are areas in Oregon's coastal waters dedicated to conservation and scientific research. Oregon's five marine reserve sites -- Cape Falcon, Cascade Head, Otter Rock, Cape Perpetua, and Redfish Rocks -- are each named after local natural landmarks. Within the reserves all removal of marine life is prohibited, as is ocean development. Some of the sites also include Marine Protected Areas (MPAs) adjacent to the reserves. The MPAs prohibit ocean development, but allow for some fishing activities. Local communities worked with state officials to site the reserves in areas that would provide ecological benefits while also avoiding significant negative impacts to ocean users and coastal communities. These sites are managed as a system by the State of Oregon. The Oregon Department of Fish and Wildlife's (ODFW's) Marine Reserves Program is the lead agency responsible for overseeing the management and scientific monitoring of the sites.

WHERE WE ARE NOW

We are studying both the ecology and the human dimensions of the reserves. Our human dimensions research is looking to describe and understand the effects that occur over time to regions, communities, social groups, and individuals when we implement marine reserves -- that is, when we set areas aside for conservation and cease fishing in those areas. During these early years of reserve implementation, ODFW's Marine Reserves Program has been collecting baseline data on ocean uses and users, communities of interest, and communities of place. These studies will be replicated in future years to assess any positive and negative impacts caused by the reserves. We are also collaborating with a wide variety of social scientists from academia and the private sector to help us broaden our understanding of attitudes and perceptions, knowledge, uses, non-market values, and effects of the marine reserves. This is a long-term research and monitoring program. What we're learning from this work is being used to support the management of marine reserves and sustainable nearshore ocean resources and coastal communities here in Oregon, now and into the future.

EVALUATION IN 2023

In the year 2023, there will be an evaluation of the Marine Reserves Program and a report submitted to the Oregon Legislature. The evaluation will review all aspects of the program and marks a point where the state will consider if and how marine reserves will continue to be used as a nearshore resource management tool moving into the future. While the evaluation timeframe is too short to detect substantive changes due to marine reserves, this duration does provide sufficient time to begin a multi-year data series and for constructive human dimensions research to be conducted that provides information used to support marine reserves and nearshore resource management here in Oregon.



WHAT IS HUMAN DIMENSIONS RESEARCH?

In natural resource management, human dimensions research looks to understand the ways in which humans value, use, and depend on the natural environment. This research draws from multiple social science fields -- including economics, sociology, anthropology, political science, and psychology. In some instances the information produced is quantitative; in others it is qualitative or descriptive. Each of these sciences has established protocols or research tools for collecting information and drawing conclusions from that information.

Our human dimensions research is looking to describe and understand the effects that occur over time to regions, communities, social groups, and individuals when we implement marine reserves -- that is, when we set areas aside for conservation and cease fishing in those areas. Our research is looking at:

- **How communities are affected.** We look at communities of place (e.g. Depoe Bay); of occupation (e.g. fishing industry); and of interest (e.g. wildlife viewers).
- **Ways ocean users are affected.** We consider both consumptive (e.g. fishing) and non-consumptive (e.g. surfing) uses and users.
- **How regional economies are affected.** This includes looking at economic contributions, losses, and changes.
- **Interactions between the economy, marine environment, and communities.** How do people value and depend on the ocean? What desires and expectations do the public hold for the ocean and conservation areas managed by the state?

Each of Oregon's marine reserve sites is unique. They are different shapes and sizes. They each experienced different types and levels of fishing before closure. The demographics of the coastal towns and communities most closely tied to each site are different. These unique features mean we will likely see different effects to people and communities at each site. This gives us an opportunity to use Oregon's marine reserves as five case studies to learn from.

Over time, we will begin to understand the variety and differences of effects that marine reserves can have here in Oregon. What we're learning from this work is being used to support the management of marine reserves and sustainable nearshore ocean resources and coastal communities here in Oregon, now and into the future.



Marine reserves goals and objectives, established by the Ocean Policy Advisory Council (OPAC 2008), provide the foundation and guide our human dimensions research program. We prioritize our research activities based on these goals and objectives, scientific accuracy, and cost.

OREGON'S MARINE RESERVE GOALS

CONSERVATION

Conserve marine habitats and biodiversity.

RESEARCH

Serve as scientific reference sites to inform marine reserve and nearshore ocean management.

COMMUNITIES

Avoid significant adverse impacts to ocean users and communities.



MARINE RESERVE OBJECTIVES

The marine reserve objectives that are pertinent and drive our human dimensions research:

- 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 or economic impacts on ocean users and coastal communities.
- ... Use the research and monitoring information in support of nearshore resource management and adaptive management of marine reserves.



ODFW'S APPROACH TO MARINE RESERVES

EACH SITE IS UNIQUE – FIVE CASE STUDIES

The five marine reserve sites in Oregon are unique. They differ in their spatial configurations, habitat attributes, and the demographics of the coastal communities tied to each site. The uniqueness of each marine reserve presents us with an opportunity to use each of Oregon's marine reserves as a case study. Because of these unique characteristics, reserve effects and impacts will likely differ at each site. By studying these unique cases over time, we can better understand if, where, and how different marine reserve designs and placements align with Oregon's programmatic goals, as well as inform how marine reserves might continue beyond the year 2023.



DESIGN AND PLACEMENT MATTER

Oregon's marine reserves vary in past fishing pressure, towns located near the reserves, and interest groups that use the reserves – important attributes that can influence perceptions and impacts of reserve implementation. Where possible, we collect comparable datasets using identical survey tools among all reserves to allow for comparisons across the entire reserve system. However, the unique attributes of each reserve dictate the need for different study designs to sample the appropriate communities.



BRINGING DEEPER UNDERSTANDING TO THE SURFACE

LIVING LABORATORIES

Marine reserves enable ODFW and collaborators to both research the community impacts resulting from reserve implementation, and learn about coastal towns and visitors. We conduct robust monitoring and novel research in and near these living laboratories to provide information that enhances our understanding of Oregon coastal communities and visitors and nearshore management.

RESEARCH PARTNERS

We are working in collaboration with a variety of research partners to scientifically monitor Oregon's marine reserves. Our research partners provide expertise, tools, methods, and personnel to supplement and expand ODFW's monitoring efforts. Partners currently include university scientists and students, non-governmental organizations, consultants, governmental agencies, and volunteers.

LEARNING AND ADAPTING

Marine reserves are a new management tool in Oregon. Based on what we learn, our long-term monitoring strategies will evolve over time to produce the best possible data. We will continue to evaluate our monitoring methods to generate robust, valid, and unbiased data about the perceptions and impacts of marine reserve implementation. Our goal is to constantly improve our monitoring methods based on the best available science and our experiences. Ultimately, we aim to develop innovative monitoring approaches that will be used throughout time to determine the effects of marine reserve protection in Oregon and, more generally, for managing Oregon's nearshore ecosystems.

SHARING WHAT WE LEARN

An important component of ODFW's Marine Reserves Program is sharing what we learn along the way. Our monitoring plans will be reviewed and updated at least every five years to reflect the adaptations as our monitoring evolves. We will regularly share stories and reports on our website and listserv about the research that we and our partners are conducting.



RESEARCH QUESTIONS



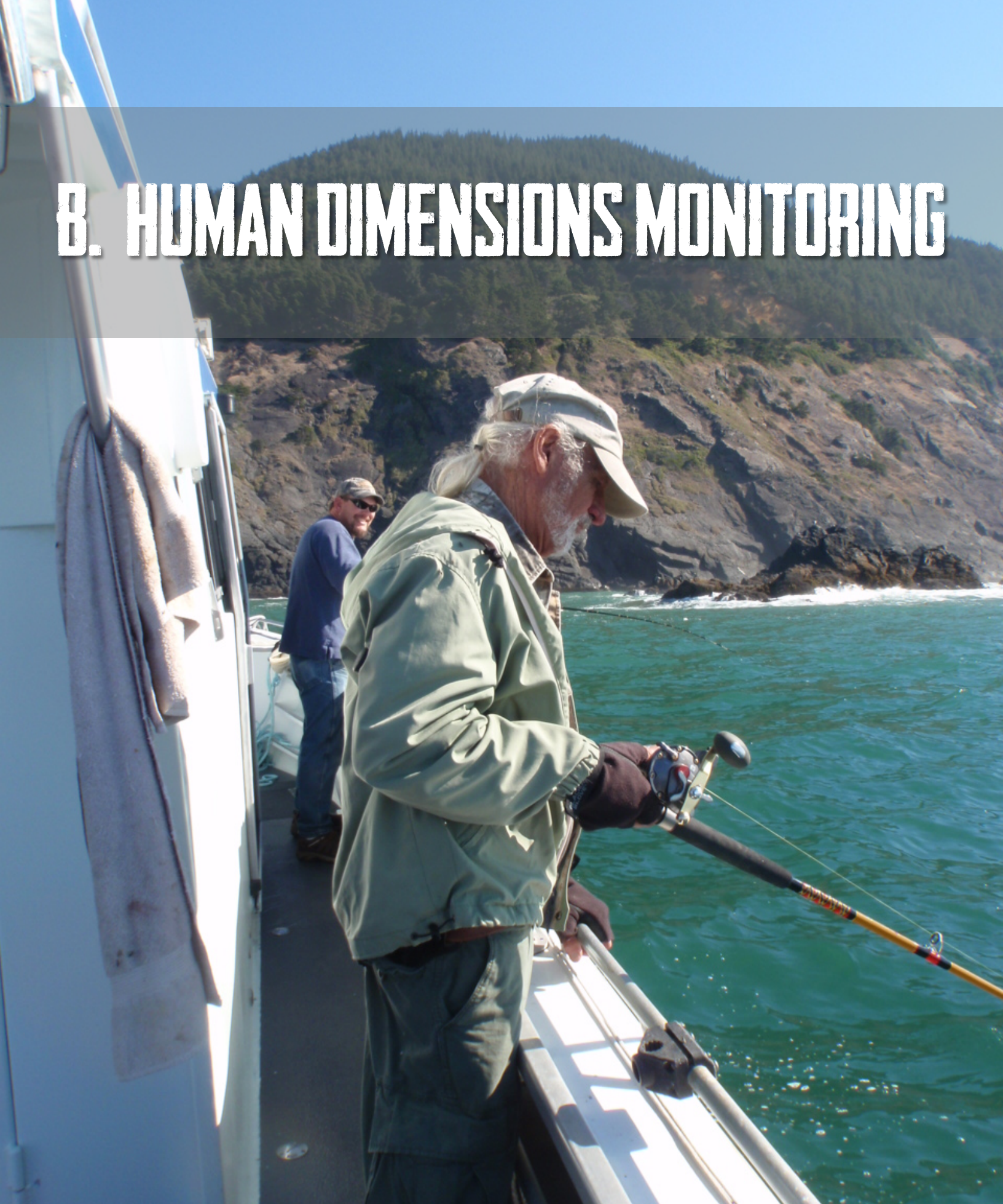
From the marine reserves goals and objectives, provided by OPAC and outlined previously, the following research questions were developed by ODFW in consultation with the Scientific and Technical Advisory Committee (STAC) and additional experts to guide our human dimensions research:

- 1** Who are the consumptive users of the site, comparison areas and general areas? 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 change 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?

THERE'S MORE BENEATH THE SURFACE



B. HUMAN DIMENSIONS MONITORING



MONITORING DESIGN

The Human Dimensions Monitoring Plan 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. This section describes our monitoring framework, which we use to guide our research and monitoring strategies for individual sites and the system as whole.

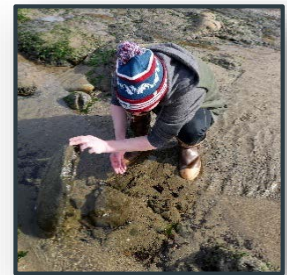


I. GENERAL SOCIAL AND ECONOMIC CHARACTERIZATION OF THE AREA

Collecting baseline information to develop a social, cultural, and economic characterization of the communities located adjacent to marine reserves, which could most directly be affected by marine reserve designation.

II. DIRECT USE OF THE AREA

Assessing the current use of marine reserve sites by commercial fisheries, recreational fisheries, and nonconsumptive ocean users.



III. ATTITUDES AND PERCEPTIONS OF IMPLEMENTATION AND MANAGEMENT

Understanding the attitudes and perceptions of stakeholders towards the process of implementation including monitoring and research, management, and enforcement.

IV. ASSESSMENT OF NON-MARKET VALUES OF THE AREA


Identifying the non-market values connected to the sites to better understand the potential economic and social effects, both positive and negative, of these protected areas.

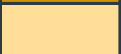


IMPLEMENTING THE MONITORING FRAMEWORK

ODFW began human dimensions monitoring of the marine reserves in 2010. During the first seven years, method development and adaptation have guided the Marine Reserves Program to consider several new approaches to monitoring. Each study is designed to address at least one of the research categories outlined in the human dimensions monitoring design. The table below shows which of the four research categories each study focuses on.

KEY

 Primary category

 Secondary category

RESEARCH CATEGORY

STUDY	Social and Economic Characterization	Direct Use	Attitude and Perceptions of Marine Reserves	Non-market Values
Coastal Community Profiles	Primary	Secondary	Secondary	Secondary
Modeling Economic Impacts of Fishing Restrictions	Secondary	Primary	Secondary	Secondary
Visitor Counts	Secondary	Primary	Secondary	Secondary
Visitor Surveys	Secondary	Primary	Secondary	Secondary
Ocean Awareness Visitor Survey	Secondary	Primary	Secondary	Secondary
Fishing Effort Shift	Secondary	Primary	Secondary	Secondary
Oregon Resident's Attitudes and Perceptions	Secondary	Secondary	Primary	Secondary
Coastal Community Resilience and Subjective Well-being	Secondary	Secondary	Primary	Secondary
Community Resilience related to Marine Reserve Implementation	Secondary	Secondary	Primary	Secondary
Business Surveys	Primary	Secondary	Secondary	Secondary
Residents' Perceived Value of Ecosystem Services	Secondary	Secondary	Secondary	Primary
Oregonian's Perspectives of Marine Conservation	Secondary	Secondary	Secondary	Primary
Native American Traditional Knowledge and Attitudes about Oregon Coast	Secondary	Primary	Secondary	Secondary





UNDERSTANDING CHANGES OVER TIME

During the designation and implementation process of all five marine reserves, we collected baseline data on ocean users, communities of place, and communities of interest. These baseline studies provided quantifiable data on the initial knowledge, perceptions, and use of marine reserves. This allows us to identify differences that already exist between stakeholder groups and track how these differences change over time. In order to detect changes over time, we use several monitoring tools to collect data on nine primary topics. These nine areas include demographics, knowledge of marine reserves, perceptions of marine reserves, economics, resilience, non-consumptive use of marine reserves, consumptive use of marine reserves, ecosystem services, and perceptions and knowledge of ocean issues (i.e. ocean awareness).



Demographics



Marine Reserve Knowledge



Marine Reserve Perceptions



Economics



Resilience



Non-consumptive Use



Consumptive Use



Ecosystem Services



Awareness of Ocean Issues

UNDERSTANDING THE APPROACH

Each human dimensions study is focused on a specific unit of analysis. The unit of analysis is the “who” or the “what” that is the subject of the study. The units of analysis studied in the ODFW monitoring program are progressively larger, ranging from the individual, to the social group, the community, and the region. Different social science disciplines and tools are used across this spectrum. In some cases the data in a study can be used to apply to more than one unit of analysis. For example, in the study looking at Oregon residents’ attitudes and perceptions of marine reserves, the surveys are conducted at the individual level, but that survey data can also be aggregated to compare communities. The table below shows which of the four units of analysis each study has focused on.

STUDY	UNIT OF ANALYSIS			
	Individual	Social Group	Community	Region
Coastal Community Profiles				
Modeling Economic Impacts of Fishing Restrictions				
Visitor Counts				
Visitor Surveys				
Ocean Awareness Visitor Survey				
Fishing Effort Shift				
Oregon Resident's Attitudes and Perceptions				
Coastal Community Resilience and Subjective Well-being				
Community Resilience related to Marine Reserve Implementation				
Business Surveys				
Residents' Perceived Value of Ecosystem Services				
Oregonian's Perspectives of Marine Conservation				
Native American Traditional Knowledge and Attitudes about Oregon Coast				





PRIMARY HUMAN DIMENSIONS MONITORING TOOLS

ODFW's human dimensions monitoring along the Oregon coast began in 2010. During the past seven years of baseline data collection, ODFW and research partners have experimented with various sampling approaches, study designs, and research tools to best establish a robust baseline of data about ocean users, communities of interest, and communities of place near Oregon's marine reserves.

The Marine Reserves Program focuses monitoring efforts on six research tools: mixed methods surveys, focus groups, in-person interviews, observational surveys, economic modeling, and use of secondary data (e.g., census data). These six methods provide data across all the ODFW human dimensions research categories.



C. HUMAN DIMENSIONS STUDIES





I. SOCIAL AND ECONOMIC CHARACTERIZATION STUDIES





COASTAL COMMUNITY PROFILES

PART I: BACKGROUND INFORMATION

ODFW is using secondary data, including history, demographics, economic, and census data, to create profiles that characterize coastal communities. To provide a relevant and understandable description of each community's socioeconomic characteristics, community information is compared both to the state of Oregon as well as to other coastal communities. These comparisons allow differences to be highlighted that might otherwise go unnoticed. The purpose of this research is to provide a comprehensive, comparative report with baseline data on coastal Oregon communities. This study is being conducted in collaboration with The Research Group LLC.



RESEARCH QUESTION:

2 General community characteristics



DATA COLLECTED





COASTAL COMMUNITY PROFILES

PART II: COMMUNITY RESILIENCE, ADAPTATION AND COMMUNICATION

In addition to the descriptive coastal community profiles and NOAA's community vulnerability indices, case studies were conducted in Garibaldi, Depoe Bay, Newport, Florence, Port Orford, and Gold Beach. These studies collected data through interviews of residents concerning community resilience and adaptation to external stresses, such as agency policy changes or economic decline. The purpose of these studies is to characterize how each of these coastal communities are able to adapt to disruptive changes in socioeconomic conditions. This study was initially conducted in collaboration with the University of Michigan School of Natural Resources and the Environment. Other community case studies will follow.



RESEARCH QUESTION:

2 General community characteristics



DATA COLLECTED

The data collected includes demographic information (represented by a bar chart with human figures), economic data (represented by a dollar sign), and community resilience/adaptation metrics (represented by a balance scale with arrows).



COASTAL COMMUNITY PROFILES

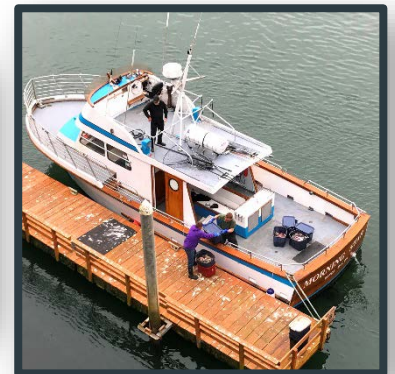
PART III: FISHING OCCUPATIONAL PROFILES

Qualitative studies of the fishing occupational community were conducted in Garibaldi, Pacific City, the Salmon River region, Depoe Bay, Newport, and Port Orford. These studies collected data through interviews of residents concerning the fishing community's characteristics, communication with other fishers and management, opinions of management, and perceptions of the ocean's resources and the fishing future. The purpose of these studies is to provide supplemental perspective-based information to the NOAA Short Form Profiles released in 2007. Three community studies were conducted independently by Oregon State University, following which, three reports were conducted by ODFW.



RESEARCH QUESTION:

2 General community characteristics



DATA COLLECTED



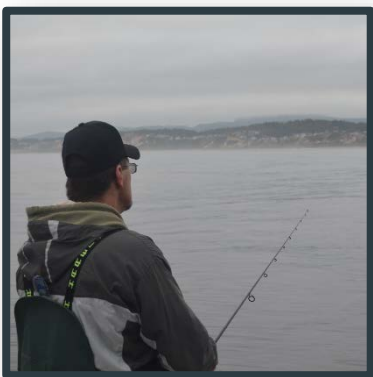
II. DIRECT USE OF MARINE RESERVES STUDIES





MODELING ECONOMIC IMPACTS OF FISHING RESTRICTIONS

An economic model was developed that can be used to conduct regional economic impact analyses of potential displacement of fishing effort due to spatial fishing closures, such as marine reserves or wave energy projects. This model uses inputs from commercial and recreational fisheries data, commercial logbooks, and seafloor habitat mapping. The model is used to conduct an analysis of potential economic dislocation of fishing effort for each marine reserve site and across the entire marine reserve system. The model was updated during 2015-16 to include the most recent fisheries economic data (three year averages) and seafloor habitat mapping data. This study is being conducted in collaboration with The Research Group LLC.



RESEARCH QUESTION:
4 Potential effects from displaced activities



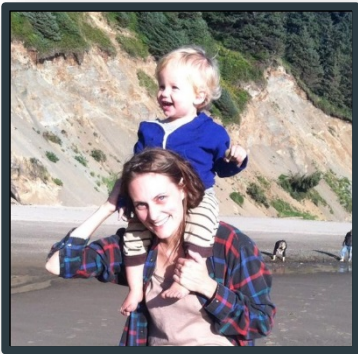
DATA COLLECTED





VISITOR COUNTS

ODFW has been conducting visitor observations (pressure counts) to determine who is using the marine reserve sites and what activities they are engaged in at these sites. Data have been collected from Cape Falcon, Otter Rock, Cape Perpetua, and Cascade Head. Pressure count surveys are a rapid assessment approach used to collect a “snapshot in time” of visitors’ activities and demographics. The ODFW pressure counts use shoreside visitor observations to categorize visitors’ age, gender, and intended activity. The data can be aggregated to generalize by marine reserve site, but the primary unit of analysis is the individual. The purpose of the pressure counts is to understand the demographic characteristics of visitors and visitor use of the areas adjoining marine reserves.



RESEARCH QUESTION:

5 Non-consumptive users and uses



DATA COLLECTED





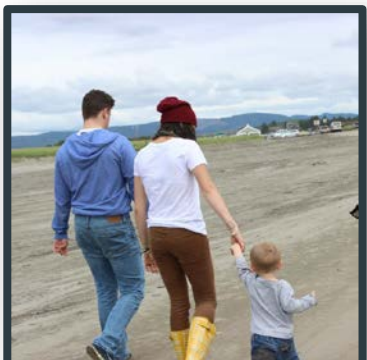

VISITOR SURVEYS

In addition to visitor pressure counts at marine reserve sites, ODFW has also been conducting visitor intercept surveys to collect more detailed information about marine reserves users and their activities. Survey data have been collected at Cape Falcon, Otter Rock, Cape Perpetua, and Cascade Head. To gather more detailed data than pressure counts provide, on-site intercept surveys are conducted among random samples of visitors. While the data can be aggregated by marine reserve site, the unit of analysis is again primarily the individual. The purpose of the intercept surveys is to understand user knowledge, attitudes, and opinions of reserve areas, expenditures associated with trips to the area, characteristics of trips to the area, and the demographic characteristics of visitors.



RESEARCH QUESTION:

5 Non-consumptive users and uses



DATA COLLECTED



OCEAN AWARENESS VISITOR SURVEY



There are many potential positive impacts derived from marine reserve designation, including the potential for increased understanding of local and global ocean issues and management. In addition to the marine reserve visitor surveys, ODFW conducted a coastwide visitor intercept survey to assess coastal visitors' ocean awareness. The ocean awareness survey included questions about visitation frequency, perceived and factual knowledge of ocean issues, demographics, sources of information about ocean issues, environmental attitudes, and a brief evaluation of agency communication efforts. The purpose of the surveys was to establish baseline information about coastal visitors' ocean awareness, determine what factors influence awareness, and investigate how ODFW can better provide information to visitors.



RESEARCH QUESTION:
5 Non-consumptive users and uses



DATA COLLECTED



FISHING EFFORT SHIFT

PART I. FISHERS INTERVIEWS

During the planning process for marine reserves, ODFW conducted a pilot study using structured qualitative interviews of charter and commercial fishers, the majority of whom were located in Newport or Port Orford. The interview instrument included questions on perceptions, expectations and knowledge of marine reserves, extractive use of future marine reserve sites, and characteristics of respondents' fishing businesses. The unit of analysis for these surveys was the individual, although aggregated data could also be used to compare charter and commercial fishers, or Newport and Port Orford based fishers. The purpose of this study is to provide a baseline for commercial and charter fishers' uses and perceptions of marine reserves. Given this baseline information, a current study of effort shift will allow assessment of changes in fishing patterns, fishers' attitudes, and assessment of reserve impacts over time.



RESEARCH QUESTIONS:

- 1** Consumptive users and uses
- 3** Attitudes and perceptions of marine reserves
- 4** Potential effects from displaced activities



DATA COLLECTED



FISHING EFFORT SHIFT

PART II. FISHING OBSERVATIONS

ODFW collected pilot observations of the existing fishing effort occurring at Cape Falcon during the year immediately prior to the reserve's designation. This study involved an observer standing at key observations sites that overlooked the marine reserve. The observer recorded the number and type of boats that were fishing within the soon-to-be marine reserve site. The purpose of this study is to understand the frequency and volume of fishing effort that occurred at Cape Falcon before the fishing restrictions were implemented. A report is forthcoming.



RESEARCH QUESTION:



Consumptive users and uses



**DATA
COLLECTED**





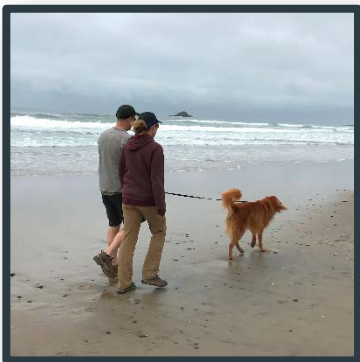
III. ATTITUDES AND PERCEPTIONS OF MARINE RESERVES STUDIES





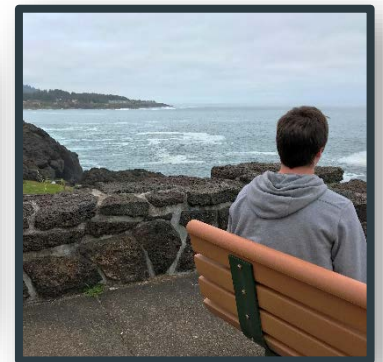
OREGON RESIDENTS' ATTITUDES AND PERCEPTIONS

Two random surveys were distributed to understand Oregon residents' perceptions and knowledge of marine reserves. In the first iteration of these studies (2012), questionnaires were mailed to Oregon coastal residents. During the second iteration of these studies (2016), the sample was drawn from Oregon residents that live along the I-5 corridor. This survey used a mixed method approach, incorporating both mail and internet response options. These data allowed comparisons among individuals, between coastal communities, and between regions. The purpose of these surveys was to understand Oregon residents' knowledge, support, attitudes and values pertaining to the marine reserves, and to compare coastal residents' opinions with those of residents from the Willamette Valley. These studies were conducted by Oregon State University, with collaboration and support from ODFW.



RESEARCH QUESTION:

3 Attitudes and perceptions of marine reserves



DATA COLLECTED



COASTAL COMMUNITY RESILIENCE AND SUBJECTIVE WELL-BEING

The resilience of both communities and individual residents is relevant to marine reserve implementation. A pilot study was conducted among a sample of coastal residents to assess a range of variables, including subjective well-being in response to the marine reserves and other potentially disruptive changes (stressors). The study used a mixed method approach, incorporating both mail and internet options. The unit of analysis was the individual, and analysis at the community level is tenuous due to the small sample size of this pilot effort. The purpose of this study was to understand individual resilience among coastal residents and to assess the value of subjective well-being as a measure of the impact of marine resource policy changes. This study was conducted by Oregon State University Cascades and funded by Oregon Sea Grant, with collaboration and additional funding provided by ODFW. A full implementation of this study is now underway funded by ODFW and US Forest Service.



RESEARCH QUESTIONS:

- 2 General community characteristics
- 3 Attitudes and perceptions of marine reserves

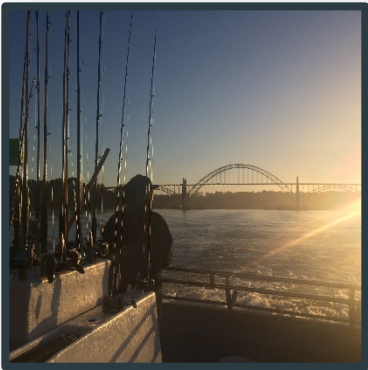


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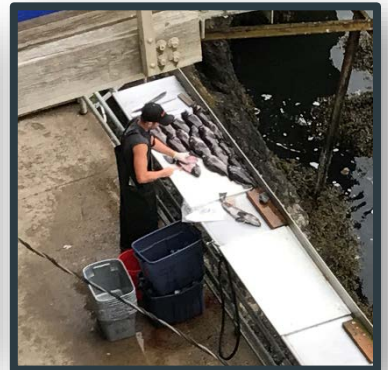
COMMUNITY RESILIENCE RELATED TO MARINE RESERVE IMPLEMENTATION

As a complement to the previously discussed survey research regarding resilience and subjective well-being, a related pilot qualitative study of fishers in a coastal community was conducted. The purpose of this study is to identify anticipatory decision-making strategies in response to marine reserves implementation, including effort shift among fishers and how their community may respond to marine reserves. This study was conducted by Oregon State University Cascades in collaboration with ODFW. A full implementation of this study in additional communities is underway, funded by ODFW.



RESEARCH QUESTIONS:

- 2 General community characteristics
- 4 Potential effects from displaced activities



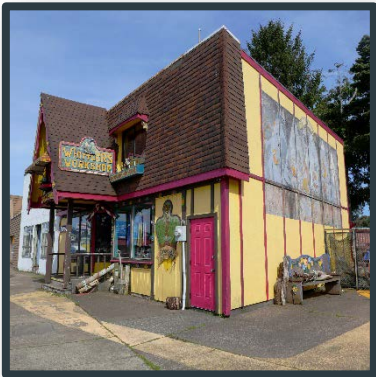
DATA COLLECTED





BUSINESS SURVEYS

ODFW conducted a series of surveys at businesses located in communities of place, i.e. communities near the reserves. Data have been collected from most of the communities close to the reserves. These brief questionnaires were completed by the owner or a knowledgeable employee of each business. The survey contained questions regarding business characteristics, coastal visitation, and expectations concerning the marine reserves. The unit of analysis is the social group, which in this context is the business community. The purpose of this study is to collect baseline data about the business communities' perceptions of coastal tourism and knowledge and expectations concerning the impact of marine reserves implementation on local business demand.



RESEARCH QUESTIONS:

- 2 General community characteristics
- 3 Attitudes and perceptions of marine reserves



DATA COLLECTED



IV. ECOSYSTEM SERVICES AND NON-MARKET VALUES STUDIES





RESIDENTS' PERCEIVED VALUES OF ECOSYSTEM SERVICES

A pilot study was conducted with focus groups to determine stakeholders' perceptions of the services provided by the marine environment, and the order of importance of those services. This approach is used to quantify an ecosystem service value by ranking the perceived importance of ecosystem services. Focus groups were based on the coast and in Corvallis. The purpose of this study was to contribute to developing a model with spatial attribution of ecosystem services and the capability to perform tradeoff analyses and to provide graphic visualization of those tradeoffs (heat maps). This study is being conducted at Oregon State University, funded by Oregon Sea Grant and ODFW, with collaboration from ODFW and The Research Group LLC.



RESEARCH QUESTION:

- 6 Non-market values of marine reserves



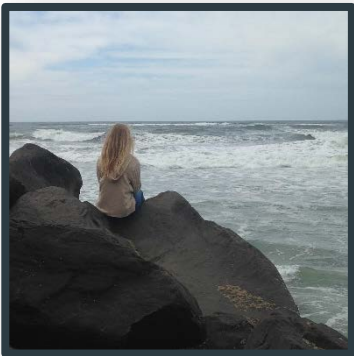
DATA COLLECTED





OREGONIAN'S PERSPECTIVES ON MARINE CONSERVATION

This state-wide survey is an exploration of perceptions, awareness, and values that Oregonians hold about the coast and marine reserves. The study includes a phone and internet survey, as well as a participatory GIS component to elicit the respondent's spatial attribution of perceived ocean and coastal values. The purpose of this study is to understand the desires and expectations that the public holds for the ocean and conservation areas that are managed by the state. This study is being conducted at Portland State University, with funding from Oregon Sea Grant, and supplemental funding provided by ODFW.



RESEARCH QUESTION:

- 3 Attitudes and perceptions of marine reserves



DATA COLLECTED





OTHER COLLABORATION STUDIES





NATIVE AMERICAN TRADITIONAL KNOWLEDGE AND ATTITUDES

Interviews with Native Americans from Oregon Coast Tribes are being conducted in a qualitative and spatial study of coastal and marine values and uses. The purpose of this study is to understand the traditional uses and cultural values among Oregon Coast Tribes relative to the Oregon coast, and more specifically, to the marine reserve sites. This study is being conducted by a graduate student at Portland State University, and ODFW is nominally involved.



RESEARCH QUESTIONS:

- 3** Attitudes and perceptions of marine reserves
- 6** Non-market values of marine reserves



DATA
COLLECTED





OREGON
MARINE RESERVES

