



CAPE PERPETUA MARINE RESERVE SITE MANAGEMENT PLAN

2020



Marine
Resources

ACKNOWLEDGMENTS

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CONTRIBUTING AUTHORS

Cristen Don – Oregon Department of Fish and Wildlife
Dr. Lindsay Aylesworth – Oregon Department of Fish and Wildlife
Dr. Tommy Swearingen – Oregon Department of Fish and Wildlife
Laurel Hillmann – Oregon Parks and Recreation Department
Sgt. Todd Thompson – Oregon State Police

Oregon Department of Fish and Wildlife

Marine Resources Program
2040 SE Marine Science Drive
Newport, OR 97365
(541) 867-4741

OregonMarineReserves.com

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ACRONYMS & ABBREVIATIONS

Cape Perpetua Site	Cape Perpetua Marine Reserve and Marine Protected Areas
DSL	Oregon Department of State Lands
MPA	Marine Protected Area
ODFW	Oregon Department of Fish and Wildlife
OPAC	Ocean Policy Advisory Council
OPRD	Oregon Parks and Recreation Department
OSP	Oregon State Police
RFP	Request for Proposals
STAC	Scientific and Technical Advisory Committee
USFWS	U.S. Fish and Wildlife Service

ICON LEGEND

Here are several icons you will find throughout this document, to help you navigate throughout the management plan.



FREQUENTLY ASKED QUESTION

Answers to some of our most frequently asked questions



MANDATE

A requirement, or guiding principle, that is to be carried out in the planning or implementation of marine reserves. Mandates come from state statutes, agency administrative rules, or policy recommendations from OPAC.



PROCEDURE

A procedure to be followed in order to stay in compliance with marine reserve administrative rules



FIND OUT MORE

Where you can find more information



KEY STRATEGIES

Management strategies that ODFW and our state agency management partners are committed to carrying out for the marine reserve sites



SITE SPECIFIC STRATEGY

A management strategy that has been developed specially for the Cape Perpetua site



CHAPTER 1. INTRODUCTION

OREGON'S MARINE RESERVES & HOW TO USE THIS PLAN

A. OREGON'S MARINE RESERVES AND THE ODFW MARINE RESERVES PROGRAM

Marine reserves are areas in Oregon's coastal waters dedicated to conservation and scientific research. In 2012, Oregon completed designation of five marine reserve sites. The Cape Falcon, Cascade Head, Otter Rock, Cape Perpetua, and Redfish Rocks sites are each named after local natural landmarks. These sites are managed as a system by the State of Oregon, with the Oregon Department of Fish and Wildlife (ODFW) as the lead management agency.



ODFW's Marine Reserves Program is responsible for overseeing the management and scientific monitoring of the reserve sites. The team includes six full-time staff located in Newport, Oregon. The program's responsibilities include scientific monitoring, developing and implementing site management plans, providing information to the public, engaging communities, and supporting compliance and enforcement. Four additional state agencies share management responsibilities with ODFW.

In the year 2023, the Oregon Legislature has called for an evaluation of the Oregon Marine Reserves Program. This evaluation will reflect upon all aspects of the program including the management, scientific monitoring, outreach, community engagement, compliance, and enforcement of the five reserve sites. It also marks the first point at which the state may consider adaptive management of the marine reserve system, including the role of reserves as a nearshore resource management tool moving into the future.



Parks and Recreation Department (OPRD)

Regulates shoreline activities, including removal of natural products and other activities requiring an ocean shore permit. Provides interpretative and educational opportunities to enhance recreational experiences.



Department of State Lands (DSL)

Regulates submerged and submersible land uses that require state authorization or a removal-fill permit, including harvest of subtidal kelp and the siting of ocean renewable energy projects and submarine cables.



WHAT IS A MARINE RESERVE?

Marine reserves are areas in our coastal waters dedicated to conservation and scientific research. All removal of marine life is prohibited, as is ocean development.

AND A MARINE PROTECTED AREA?

Marine Protected Areas (MPAs) are adjacent to the reserves. Ocean development is still prohibited, but some fishing activities are allowed. Rules are specific to each protected area.

HOW WERE THE LOCATIONS CHOSEN?

Local communities worked with state officials to site Oregon's reserves in areas that would provide ecological benefits while also avoiding significant negative impacts to ocean users and coastal communities (following Governor's Executive Order 08-07). The sites are located within Oregon's state waters, all within 3 nautical miles from land

B. OUR PROGRAM'S PRINCIPLES

The ODFW Marine Reserves Program is entrusted with leading the management and scientific monitoring of Oregon's marine reserve system. Our staff have developed the following program principles that serve as a daily guide to our work, help our program evolve as we learn and adapt, and ensure that we focus and stay true to the tasks that Oregonians have entrusted to us.

The ODFW Marine Reserves Program's principles hold that we are committed to:

- **MEETING OREGON'S MARINE RESERVE MANDATES** Our work is devoted to implementing the marine reserves mandates provided by the Oregon Legislature and the Ocean Policy Advisory Council.
- **PRODUCING ROBUST SCIENTIFIC INFORMATION** We do rigorous scientific monitoring and research that provides information to support marine reserves and nearshore ocean management.
- **PROVIDING DIVERSE WAYS FOR PEOPLE TO ENGAGE** We foster and support a diversity of ways for people with different interests, spanning different age groups and generations, to engage in marine reserves implementation.



Oregon State Police (OSP)

Provides enforcement of the regulations associated with each site. Provides information and education in support of voluntary compliance.



Department of Land Conservation and Development

Administers the Oregon Territorial Sea Plan, which provides the legal and regulatory framework for management of the Territorial Sea. Provides staff support for the Ocean Policy Advisory Council (OPAC).

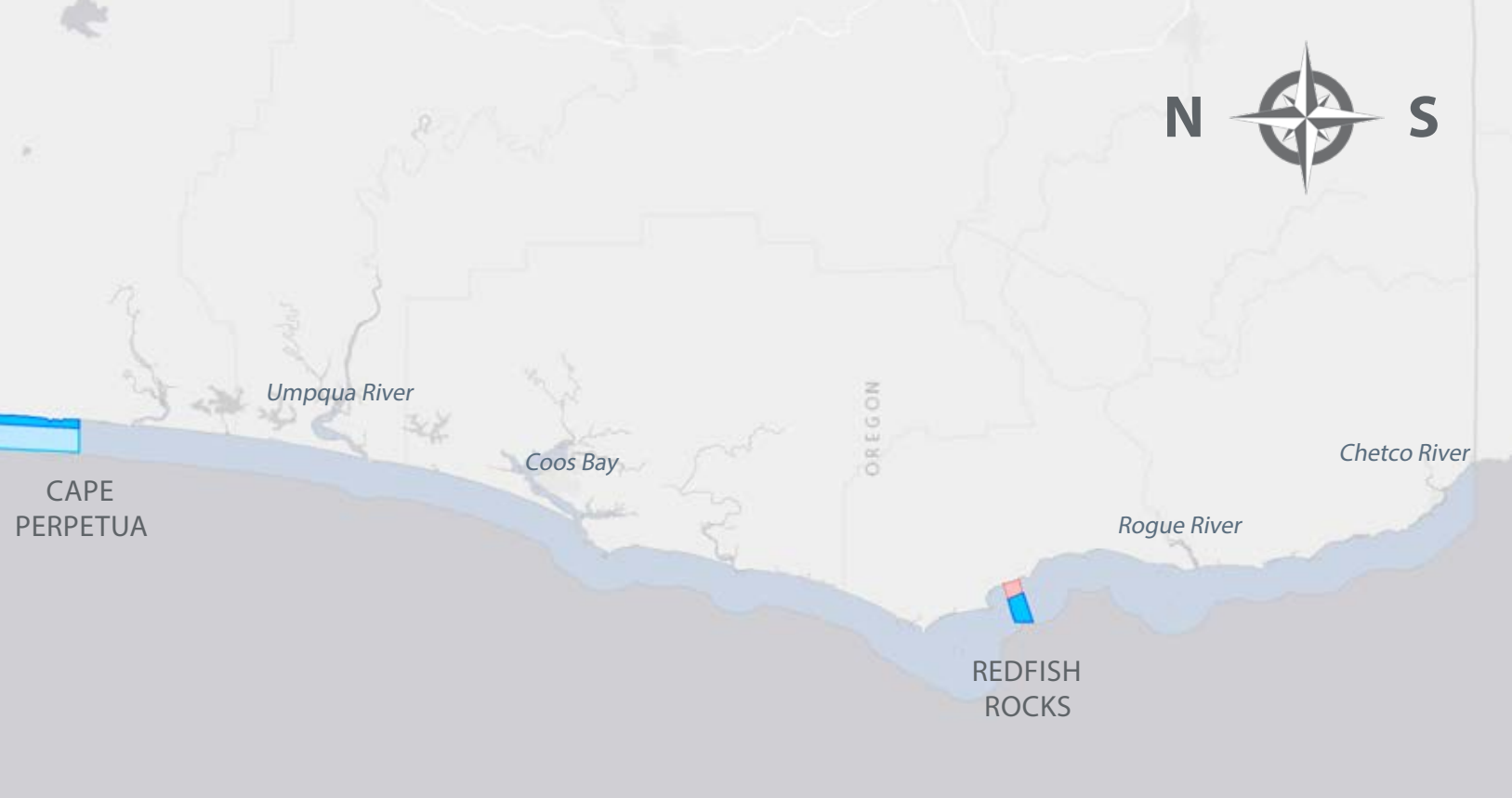


- **BUILDING PARTNERSHIPS AND COLLABORATIONS TO SUPPORT IMPLEMENTATION** We build partnerships with academic institutions, conservation organizations, the fishing industry, local community groups and beyond to support and bolster implementation efforts.
- **PROVIDING TRANSPARENCY AND SHARING AS WE GO** We document and clearly communicate our work and how it ties to our mandates. We are transparent in our Program's activities and operations.

C. HOW TO USE THIS DOCUMENT

The *Cape Perpetua Marine Reserve Site Management Plan* outlines the state's marine reserve mandates and describes the management strategies that have been developed for the site. The Cape Perpetua site includes a marine reserve, two Marine Protected Areas (MPAs), and one Seabird Protection Area. This plan has been developed by ODFW staff with assistance and collaboration from state and federal agencies, local community members, and other interested stakeholders. This site management plan can be used in the following ways:

- To understand the state's mandates guiding the implementation of Oregon's marine reserve sites and the ODFW Marine Reserves Program.
- To see the state's and communities' priorities for the management of the Cape Perpetua site.
- To see the management strategies that ODFW and our state agency management partners are committed to carrying out for the Cape Perpetua site. These management strategies have been developed to support scientific monitoring, provide information to the public, engage communities, and to support compliance and enforcement.
- To understand the local communities' interests for activities above and beyond what is being



carried out by ODFW or our state agency management partners. By highlighting the communities' interests we hope to attract additional research and resources, and to foster community led projects.

By documenting priorities and management strategies here in the management plan we hope to spur additional support and engagement, and attract complementary actions by others, to further assist with implementation of the Cape Perpetua site. As implementation of the site evolves over time, the *Site Management Plan* will be reviewed and updated at least every ten years with input and assistance from local communities and other interested stakeholders.

D. WHERE TO FIND MORE INFORMATION



VISIT THE STATE'S OFFICIAL OREGON MARINE RESERVES WEBSITE AT OREGONMARINERESERVES.COM



STAY UP TO DATE WITH OUR MONTHLY E-NEWSLETTER, SIGN-UP AT OREGONMARINERESERVES.COM/NEWSLETTER



FIND FISHING RULES, MAPS, AND BOUNDARY COORDINATES AT OREGONMARINERESERVES.COM/RULES



FIND PHOTOS AND UNDERWATER VIDEOS AT OREGONMARINERESERVES.COM/MEDIA



VISIT OUR LIBRARY TO FIND RESEARCH REPORTS, OUTREACH MATERIALS, CONTRACT APPLICATIONS AND MORE AT OREGONMARINERESERVES.COM/LIBRARY



CHAPTER 2. MARINE RESERVE MANDATES REQUIREMENTS & GUIDING PRINCIPLES

In this chapter we provide an overview of the state’s mandates for Oregon’s marine reserves. Mandates are the requirements, as well as guiding principles, for the planning and implementation of the reserves as necessitated by state statute, administrative rule, or policy guidance. In subsequent chapters we outline the priorities and specific management strategies that ODFW and our state agency management partners will be implementing for the Cape Perpetua site in order to best meet these mandates.

A. WHERE ARE THE MANDATES FROM?

A.1 STATUTES (ORS)

The Oregon Legislature has passed two marine reserves bills, one in [2009](#) and one in [2012](#). Oregon Revised Statutes (ORS) 196.540 through 196.555 provide instructions to state agencies and set siting, planning, and implementation requirements for the Cape Falcon, Cascade Head, Otter Rock, Cape Perpetua, and Redfish Rocks sites. The ORS also call for an evaluation and report on the Oregon Marine Reserves Program due to the Oregon Legislature in the year 2023.

A.2 ADMINISTRATIVE RULES (OARs)

Site boundaries, as well as the prohibited and allowed activities for marine reserves and MPAs are set in state agency administrative rules (OARs) by three state agencies. In 2009 and 2012, [OARs were adopted](#) for the Cape Falcon, Cascade Head, Otter Rock, Cape Perpetua, and Redfish Rocks sites by the State Land Board, the Fish and Wildlife Commission, and the Parks and Recreation Commission: OAR 141-142 (DSL), OAR 635-012 (ODFW), and OAR 736-029 (OPRD).



WHERE TO FIND THE STATUTES AND RULES

[OREGONMARINERESERVES.COM/LIBRARY/#POLICY](https://oregonmarinereserves.com/library/#policy)





WHAT DO YOU MEAN BY MANDATE?

Mandates are the requirements, as well as guiding principles, to be carried out for the planning and implementation of Oregon's marine reserves.

WHERE DO THE MARINE RESERVE MANDATES COME FROM?

- **STATUTES** - Passed by the Oregon Legislature
- **AGENCY ADMINISTRATIVE RULES** - Adopted by state agency Commissions and Boards
- **POLICY RECOMMENDATIONS** - Developed by the Ocean Policy Advisory Council



DEPARTMENT OF STATE LANDS (DSL)

Rules establish site boundaries and regulate submerged and submersible land uses that require state authorization or a removal-fill permit, including harvest of subtidal kelp and the siting of ocean renewable energy projects and submarine cables.



DEPARTMENT OF FISH AND WILDLIFE (ODFW)

Rules regulate fishing, hunting and take of fish, invertebrate, and wildlife species.



PARKS AND RECREATION DEPARTMENT (OPRD)

Rules regulate shoreline activities including extraction of living (i.e., seaweed) and non-living natural products, and disruptive activities.

A.3 POLICY RECOMMENDATIONS - OCEAN POLICY ADVISORY COUNCIL (OPAC)

The Oregon Ocean Policy Advisory Council (OPAC) -- a legislatively mandated body that advises the Governor, state agencies, and local governments on marine resource policy issues -- developed and approved the [*Oregon Marine Reserve Policy Recommendations*](#) document in 2008. These recommendations provide guidance to state agencies on the siting, development, and implementation of Oregon's marine reserve sites.

B. THE MANDATES THAT SHAPE OUR MANAGEMENT

Here we outline the key marine reserve mandates -- provided by OPAC and the Oregon Legislature -- that guide us in our development of management strategies for the Oregon marine reserve system and the Cape Perpetua site.

B.1 WHAT IS 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 ... AND A MARINE PROTECTED AREA?

Marine Protected Areas (MPAs), which allow or prohibit specific extractive activities, are also included Oregon's marine reserves system. As established in the OPAC policy recommendations, Oregon defines an MPA as:

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 or all of the natural and cultural resources therein. (OPAC 2008, adopted from Presidential Executive Order 13158 issued May 26, 2000).

The specific allowed and prohibited extractive activities of each MPA are defined in agency administrative rules.

B.3 WHY? MARINE RESERVE GOALS AND OBJECTIVES

The strategies outlined in this management plan for the Cape Perpetua site have been developed to meet the OPAC goals and objectives for Oregon's marine reserves.

OREGON'S MARINE RESERVE GOALS



CONSERVATION



Conserve marine habitats and biodiversity.

GOALS

Oregon's marine reserve goals are 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)

OBJECTIVES

Marine reserve objectives help guide the siting, development, and implementation of Oregon's marine reserves (OPAC 2008):

1. Protect areas within Oregon's Territorial Sea that are important to the natural diversity and abundance of marine organisms, including areas of high biodiversity and special natural features.
2. Protect key types of marine habitat in multiple locations along the coast to enhance resilience of nearshore ecosystems to natural and human-caused effects.
3. 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.
4. 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.
5. Although marine reserves are intended to provide lasting protection, individual sites may, through adaptive management and public process, later be altered, moved, or removed from the system, based on monitoring and reevaluation at least every five years.

RESEARCH



Serve as scientific reference sites, to learn about marine reserve protections and Oregon's nearshore ocean, to inform management.

COMMUNITIES



Avoid significant adverse social and economic impacts to ocean users and coastal communities.

B.4 PLANNING AND IMPLEMENTATION PRINCIPLES AND GUIDELINES

Additional guidance is provided in marine reserve planning and implementation principles and guidelines set by OPAC (2008).

PLANNING PRINCIPLES AND GUIDELINES:

1. The public, including ocean users, coastal communities and other stakeholders, will be involved in the proposal, selection, regulation, monitoring, compliance and enforcement of marine reserves.
2. Outreach and public engagement will be an ongoing part of the marine reserves planning and implementation process. Available scientific and other information will be made available to the public through outreach and websites.
3. Science and local knowledge will be used in the planning process for marine reserves. Such information will also be used to monitor and adaptively manage them into the future.
4. The planning process will encourage coordinated and collaborative marine reserve proposals from communities of place or interest. Communities of place may include coastal counties, cities, and ports; communities of interest may include fishing organizations, fishery/gear groups, governmental and inter-governmental organizations, and non-governmental organizations. Priority consideration will be given to proposals developed by groups comprised of coastal community members, ocean users and other interested parties.
5. The design and siting of marine reserves will take into account the existing regulatory regimes (e.g., fisheries management, ocean shore management, watershed management, land use planning, and water quality regulations) along with existing and emerging uses such as buried cables, ocean outfalls, wave energy, and proximity to ports.
6. Size and spacing guidelines developed by the Science and Technical Advisory Committee (STAC) will be used to help understand potential ecological benefits of marine reserve site proposals, rather than dictate minimums or maximums needed. The potential for adverse social and economic impacts will also be a key factor on the size and spacing of reserves recommended by OPAC for further evaluation.

IMPLEMENTATION PRINCIPLES AND GUIDELINES:

1. Marine reserves as a system and each individual marine reserve will have a plan that includes clearly defined objectives, monitoring protocols, compliance and enforcement provisions, effective management measures, and a commitment of long-term funding necessary to achieve its goals.
2. Marine reserves will be adequately enforced.
3. Marine reserves will be adequately monitored and evaluated in support of adaptive management. Cooperative and collaborative research will be encouraged as well as utilization of fishing vessels as research platforms. These activities will be compatible with the goal of conserving marine habitats and biodiversity.
4. Education and economic development opportunities that are compatible with the goal of

conserving marine habitats and biodiversity will be encouraged.

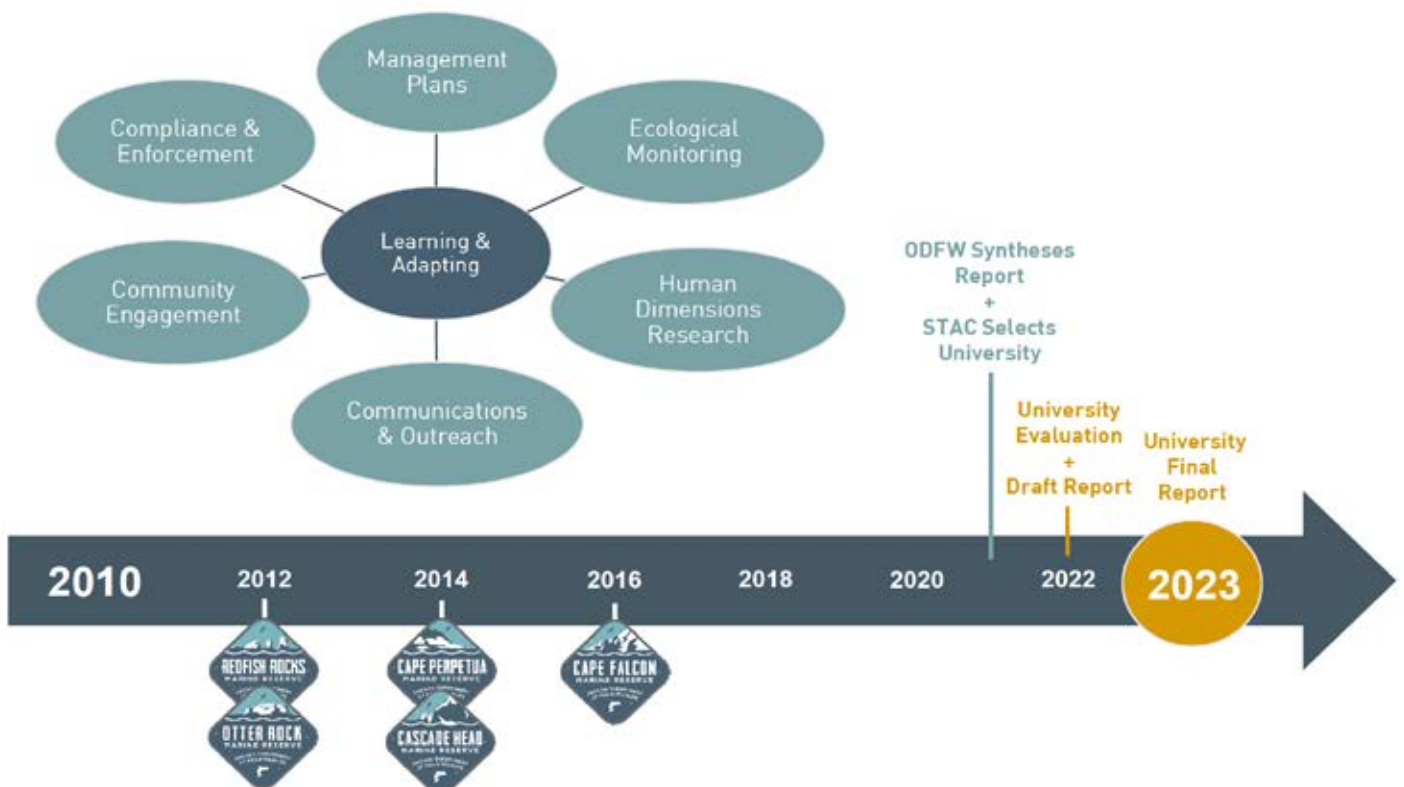
5. Marine reserves are not intended to prevent marine transit, safe harbor, and beach access.
6. Significant adverse social and economic impacts of marine reserves on ocean users and coastal communities will be avoided and positive social and economic effects will be sought.
7. Adequate baseline data will be collected at each site prior to excluding extractive activities. The types and adequacy of baseline data, and the timing and methods of data collection will be driven by the research and monitoring objectives and sampling designs employed at each site.

C. EVALUATION IN 2023: A CHECK-IN

The Oregon Legislature calls for a check-in and report on the Oregon Marine Reserves Program due to the Legislature by March 1, 2023 (ORS 196.540 through 196.555). The check-in will include evaluating the various aspects of the Program including management, scientific monitoring and research, outreach, community engagement, compliance, and enforcement of the reserves. It also marks the first point at which the state may consider adaptive management of the marine reserve system, including the role of reserves as a nearshore resource management tool moving into the future.



The Scientific and Technical Advisory Committee (STAC) is to select an Oregon public university to research and prepare the report due to the Legislature. ODFW staff will be preparing a synthesis report on the Program in the year 2021, to aid the university's evaluation. The university evaluation will be conducted in 2022, with a draft report provided to the Oregon Legislative Assembly's interim committees on environment and natural resources by October 1, 2022 and a final report to the Legislative Assembly no later than March 1, 2023.





CHAPTER 3. HOW WE IMPLEMENT THE RESERVES

In this chapter we provide an overview of how Oregon’s marine reserves are used, how we will review and adapt management strategies for the Cape Perpetua site over time, and the evaluation of the Oregon Marine Reserves Program in the year 2023.

A. HOW MARINE RESERVES ARE USED

A.1 CONSERVATION AND SCIENTIFIC RESEARCH

The goals and objectives, provided by OPAC (see [Chapter 2, B.3](#)), specify that Oregon’s marine reserves are to be used in two ways:



- 1. TO CONSERVE MARINE HABITATS AND BIODIVERSITY** In order to protect the marine habitats and biodiversity within a given site, all extractive activities are prohibited within a marine reserve.
- 2. TO SERVE AS SCIENTIFIC REFERENCE AREAS** As reference areas, the marine reserves allow us to learn about the effects that protections -- no fishing and no ocean development -- have on marine species and habitats, to differentiate the effects of natural vs. human-induced stressors, and to learn about Oregon’s nearshore ocean ecosystem.

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.

A.2 FIVE CASE STUDIES

Each of Oregon’s marine reserve sites is unique. They are different shapes and sizes. They have distinct habitats and biological characteristics. They experienced different types and levels of fishing pressure before closure. The coastal towns and communities most closely tied to each site have differing demographics and socioeconomic characteristics.

These unique characteristics mean we will likely see different conservation outcomes, and different effects on people and communities, at each site. This gives us an opportunity to use Oregon’s marine reserves as five case studies to learn from. By examining these case studies over time we will learn how these different marine reserve site designs and placement matter, and understand the strengths and weaknesses of different management strategies.

B. LEARNING AND ADAPTING

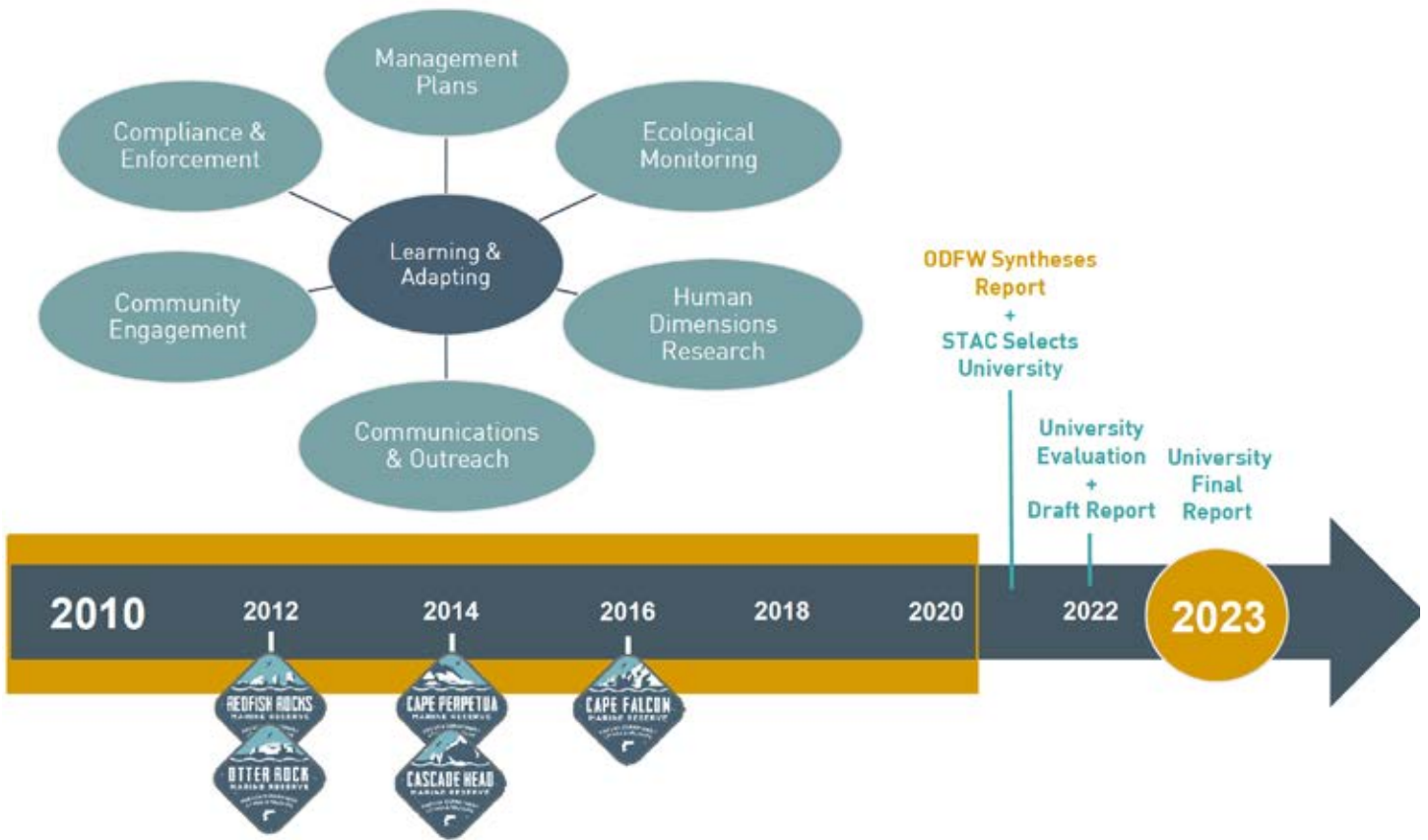
This plan outlines the state’s priorities and management strategies that ODFW and our other state agency management partners are committed to carrying out for supporting scientific monitoring, providing information to the public, engaging communities, supporting compliance and enforcement, and for addressing site specific management issues for the Cape Perpetua site. We anticipate these management strategies will evolve and be adapted over time as we continue to learn from our implementation efforts.

A review of these management strategies will be conducted at least every ten years with input from community members. The review will be guided by OPAC’s principles and guidelines ([Chapter 2, B.4](#)) and will focus on the progress made to date on implementing the management strategies and strategy effectiveness. The review may trigger adaptations to strategies, and updates to this site management plan, in order to better meet the OPAC planning and implementation principles and guidelines. Any adaptations to management strategies being considered will include consultation with local communities.

C. EVALUATION IN 2023: A CHECK-IN

The Oregon Legislature calls for a check-in and report on the Oregon Marine Reserves Program due to the Legislature by March 1, 2023 (ORS 196.540 through 196.555). The check-in will include evaluating the various aspects of the Program including management, scientific monitoring and research, outreach, community engagement, compliance, and enforcement of the reserves. It also marks the first point at which the state may consider adaptive management of the marine reserve system, including the role of reserves as a nearshore resource management tool moving into the future.





There is general agreement from the scientific community that this evaluation timeframe is too brief for substantive ecological changes to occur due to marine reserve protections. With Oregon's temperate marine ecosystem – where many species grow slowly, mature late, and are long-lived – scientists project a minimum of 10-15 years after extractive activities (e.g., fishing) have ceased before we might



begin to scientifically detect any ecological changes. However, this timeframe does provide for the establishment and evaluation of: (a) a rigorous long-term monitoring program, (b) the generation of robust datasets from which we can track and understand future ocean changes, (c) information that furthers our knowledge about design and placement of marine reserves in Oregon, and (d) contributions of data and information used to support other nearshore ocean management and policy efforts as well as support understanding of emerging ocean issues.





CHAPTER 4. CAPE PERPETUA MARINE RESERVE SITE CHARACTERISTICS & DESIGNATION HISTORY

The Cape Perpetua Marine Reserve is Oregon’s largest marine reserve. The site is located off the central Oregon coast, stretching between the towns of Yachats and Florence (Figure 1). The site includes a 37 km² marine reserve, as well as two Marine Protected Areas (MPAs) and a Seabird Protection Area that encompass an additional 107 km². The site also includes stretches of rocky shoreline protected both in the marine reserve and in the North MPA.

The marine reserve prohibits all extractive activities - including fishing and ocean development - with an exception provided for scientific monitoring or research if it is deemed necessary for evaluating the condition of the reserve, reserve effectiveness, or the impact of stressors (OPAC 2008; see [Chapter 2, B.1](#)).



The MPAs and Seabird Protection Area prohibit ocean development but allow for some fishing activities. Fishing prohibitions and allowances are specific to each MPA and are summarized here:

NORTH MPA	SOUTHEAST MPA	SEABIRD PROTECTION AREA
No take except: <ul style="list-style-type: none"> • Crab is allowed • Salmon (by troll) is allowed • Angling from shore is allowed 	<ul style="list-style-type: none"> • Trawl gear is prohibited • Take of herring, sardine, anchovies, smelt, sand lance, mackerel, and market squid is prohibited • All other legal take is allowed 	<ul style="list-style-type: none"> • Take of herring, sardine, anchovies, smelt, sand lance, and mackerel is prohibited • All other legal take is allowed

In this chapter we provide an overview of the geology and marine environments in the local region, look at what makes the marine reserve at Cape Perpetua unique, and provide a brief history of how the Cape Perpetua site came to be designated.

SCIENTIFIC MONITORING AND HARVEST RESTRICTIONS



BEGAN 2012



BEGAN 2014



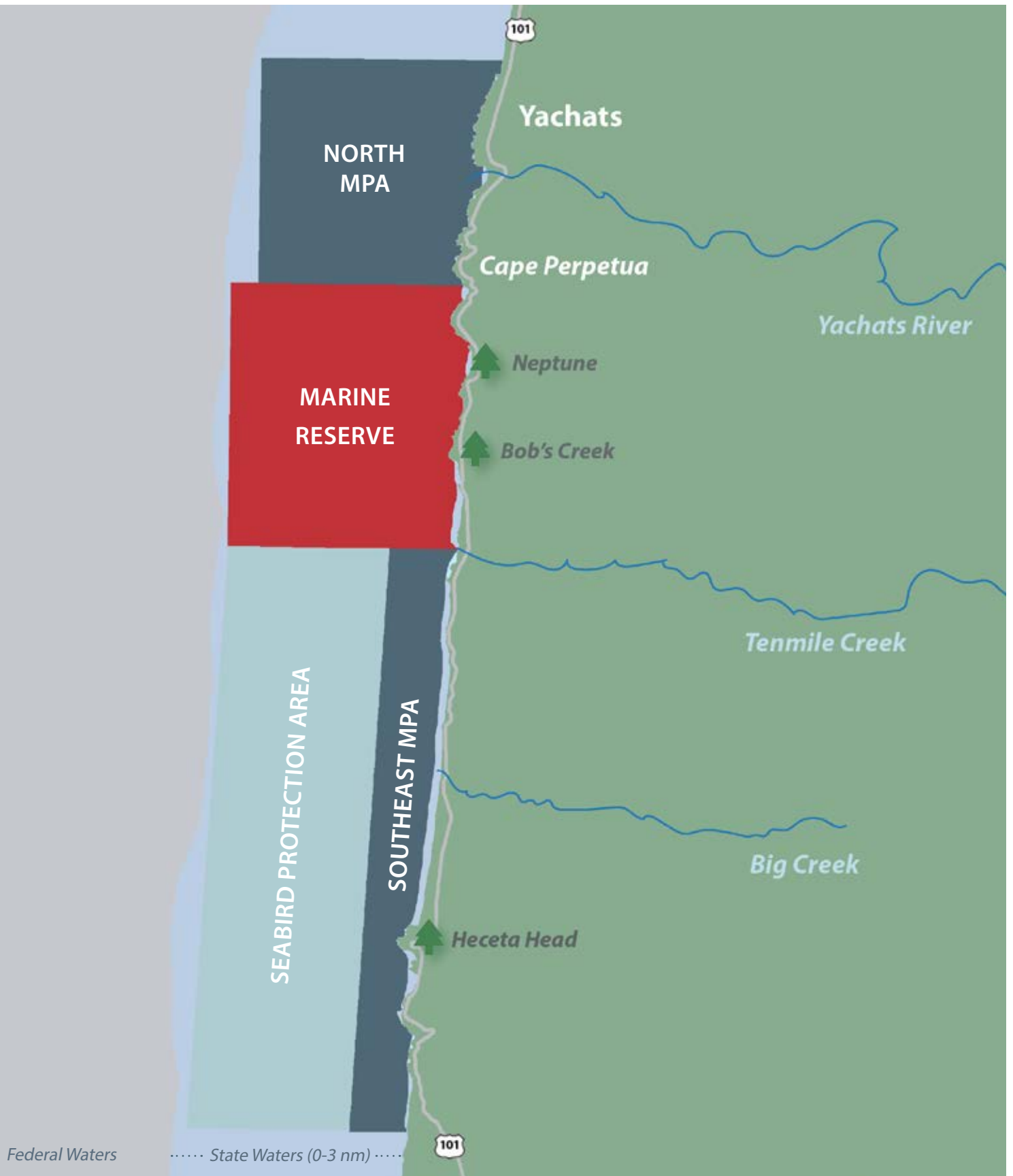


Figure 1. Map of the Cape Perpetua Marine Reserve site. The site includes a marine reserve that covers 37 km² (14.3 mi²) of ocean, surrounded by two Marine Protected Areas (MPAs) encompassing 49 km² (18.9 mi²) and a Seabird Protection Area encompassing an additional 58 km² (22.4 mi²).

A. THE LOCAL GEOLOGY AND MARINE ENVIRONMENT

Here we provide an overview of the geology and nearshore marine environment in the region in and around the Cape Perpetua site. Stretching from the town of Yachats, down to the prominent headlands at Cape Perpetua and Heceta Head, to Florence and the start of the Oregon Dunes National Recreation Area. Our ecological monitoring reports provide additional details about the marine environment and marine communities in this area. More information on the ecological monitoring being conducted at the Cape Perpetua site can be found in [Chapter 5](#).

A.1 YACHATS TO OCEAN BEACH

SHORELINE

North of Smelt Sands State Wayside the shoreline is a long stretch of sandy beach. Heading south from the Wayside down to Cape Perpetua, the shoreline consists of a fractured rocky intertidal bench that runs up to and abuts low cliffs. Most of the cliffs range in height from a few feet to 30 feet and are comprised of sedimentary deposits. The rocky intertidal bench is basalt and is interrupted in sections by large fissures and small steep coarse-grained sandy beaches. The Yachats River is also a major break in the bench, and a source of freshwater input into the ocean. In the higher rocky intertidal areas you'll find barnacles and algae, such as rockweed, covering the top of the rocky bench. Tidepools contain anemones and coralline algae. The mid-intertidal sections of the bench, that face seaward, are covered with mussel beds. Much of the base of the bench is subject to sand scour making it relatively bare except for a few species of algae and invertebrates that are resistant to scouring.

At Cape Perpetua, the sedimentary cliffs give way to massive basaltic cliffs hundreds of feet high. Once you are south of Cape Perpetua down to Ocean Beach, most of the cliffs range in height from a few feet to 50 feet and are once again composed of sedimentary deposits. These sedimentary cliffs are interspersed with small basalt promontories, such as Gwynn Knoll and Bray Point. Running below the cliffs, the rocky intertidal from Cape Perpetua to Ocean Beach is extensive. A basaltic bench forms an almost continuous intertidal area from Cape Perpetua to just south of Bob Creek. A few narrow sandy beaches and creeks provide breaks in the bench. South of Bob Creek the intertidal consists of low, more eroded basalt outcroppings among large sandy beaches. Much of the basalt is high relief with numerous fractures, crevices, caves, and overhangs. The relative amount of sandy beach increases as you travel from north to south. A number of creeks flow out into the ocean between Cape Perpetua and Ocean Beach. The intertidal bench around Cape Perpetua is at a relatively high elevation. Typical organisms found here include barnacles, algae such as rockweed, and mussel beds. Tidepools contain anemones, coralline algae, and purple urchins. As you proceed south to Neptune State Park, Strawberry Hill, and Bob Creek the intertidal benches are lower, and contain some of the most biologically diverse intertidal communities of organisms found anywhere in the Pacific Northwest. As you move even further south much of the intertidal bench becomes so low that it is periodically covered with sand.

SUBTIDAL

The seafloor, in the nearshore waters off of Yachats down to Ocean Beach, is dominated by sand, gravel, and other soft sediment habitats. Scattered among the soft sediment are numerous small disjunct patches of rock habitat. This patchy rock habitat forms an isolated rocky reef, unique to this region since there is no other subtidal rocky habitat found anywhere nearby.



Figure 2. Seafloor habitat map of the nearshore marine waters in and around the Cape Perpetua Marine Reserve site.

The northern portions of the rocky reef are located in deeper nearshore waters, between 40-50 meters deep, and are oriented in a north-south direction. The southern portions of the reef are slightly shallower, between 30-40 meters deep, and are oriented in an east-west direction. This deep, isolated rocky reef is home to a wide diversity of groundfish and invertebrates.

A.2 OCEAN BEACH TO FLORENCE

SHORELINE

Sand beaches dominate the area stretching from Ocean Beach down to Roosevelt Beach. Just south of Roosevelt Beach are two major basalt headlands, Heceta Head and Sea Lion Point. This stretch of shoreline consists of high forested coastal cliffs, upland meadows, small narrow embayments, nearshore rocks and islands, and numerous caves of various sizes. The largest cave, known as Sea Lion Cave, resulted from erosion of two intersecting fracture zones in the rock (Lund 1971). Most of the intertidal in this area is vertical basalt at the bases of cliffs. A few small pocket beaches are found between the two headlands. The cliffs and nearshore rocks host numerous seabird nesting colonies and a large sea lion haulout. The largest seabird colonies are at Conical Rock and adjacent cliffs, Parrot Rock, Sea Lion Point, and Cox Rock.

South of Cox Rock is Baker Beach, which stretches down into the town of Florence and is the beginning of the Oregon Dunes National Recreation Area. From Baker Beach, the next major rocky shoreline does not occur along the Oregon coast for another 55 miles, at Cape Arago, which is located south of the mouth of Coos Bay.

SUBTIDAL

The seafloor, in the nearshore waters off of Ocean Beach down to Florence, is comprised almost exclusively of sand.

B. WHAT MAKES THE CAPE PERPETUA RESERVE UNIQUE

Each of Oregon's marine reserves is unique. They are different shapes and sizes. They have distinct habitats and biological characteristics. They experienced different types and levels of fishing before closure. And the coastal towns and communities most closely tied to each site differ. These unique features mean we will likely see different conservation outcomes, and different effects on people and communities, at each site. Here we focus on some of the characteristics that make the marine reserve at Cape Perpetua unique.

B.1 RELATIVE COMPARISONS BETWEEN RESERVES

When we make a relative comparison of the characteristics between Oregon's five marine reserves, the reserve at Cape Perpetua:

- Is considered large in size.
- Has a diversity of habitats including rocky intertidal habitats; sand, gravel, and mixed soft sediment subtidal habitats; and an isolated subtidal rocky reef.
- Has rocky reef habitat almost exclusively contained within the reserve boundaries.
- Includes a broad range of depths, but subtidal rock habitat is only found in deeper portions of the reserve.
- Experienced low to moderate fishing pressure on groundfish in rocky reef areas, high fishing pressure on crab in sand habitat areas.

HARVEST RESTRICTIONS BEGAN	January 1, 2014
MONITORING BEGAN	2012
SIZE	Reserve: 37 km ² (14.3 mi ²) MPAs + Seabird Protection Area: 107 km ² (41.3 mi ²)
DEPTH RANGE	0-55 m (0-180 ft)
HABITATS	Dominated by soft sediment habitats. Isolated, patchy, low-relief rocky reef in deeper water. Rocky intertidal habitats.
HABITAT CONNECTIVITY	North portion of rocky reef is entirely contained within the reserve.
PRIOR FISHING PRESSURE	Relatively low to moderate fishing pressure on groundfish in rocky reef habitat areas. Relatively high fishing pressure on crab in sandy habitat areas.

B.2 UNIQUE FEATURES

Some of the distinctive features found within the marine reserve at the Cape Perpetua site are described here.

MARINE HABITATS

- **INTERTIDAL** A biological hot spot. Rocky shores within the marine reserve include some of the most biologically diverse rocky intertidal communities found anywhere in the Pacific Northwest.
- **SUBTIDAL** The reserve has a deep, isolated rocky reef which is considered unique as sand and gravel tend to be the dominate habitat types in this region. Even though the reef is patchy and of relatively low relief, the fish and invertebrate community is considered to be quite diverse. There is no rocky reef habitat at a similar depth, with similar oceanographic conditions and having experienced similar fishing pressure, anywhere in the nearby vicinity.

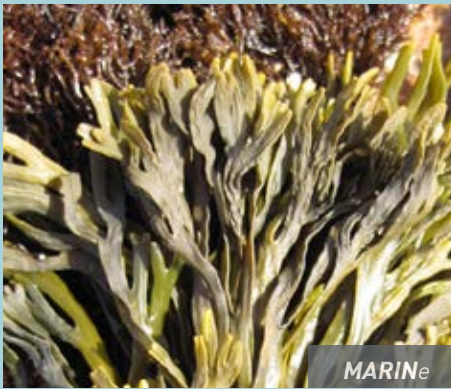
OCEANOGRAPHIC FEATURES

This is the only marine reserve within the unique and highly productive oceanographic area shoreward of Heceta Bank.

Heceta Bank and other nearby banks deflect the strong north-south summertime flow offshore creating an area of slowed or reversed currents in the Cape Perpetua area. As a result, the area retains nutrient-rich upwelled water, leading to higher primary production and often hypoxic water conditions.

Within the last two decades, the nearshore waters around Cape Perpetua have been experiencing episodes of hypoxia (low oxygen) as well as acidification (a lowering of pH). These have been associated with strong summer upwelling activity and are considered signs of a changing climate and changing ocean conditions.

COMMON INTERTIDAL ALGAE AND MARINE PLANT SPECIES



Dwarf Rockweed
(*Pelvetiopsis arborescens/limitata*)



Surfgrass
(*Phyllospadix* spp.)



Black Pine
(*Neorhodomela larix*)



Northern Rockweed
(*Fucus* spp.)



Sea Cabbage
(*Saccharina sessilis*)



Acrosiphonia/Cladophora spp.



Turfweed
(*Endocladia muricata*)



Corallina spp.



Iridescent Seaweed
(*Mazzaella cordata/oregona/splendens*)

COMMON FISH SPECIES



● Black Rockfish



● Yellowtail Rockfish



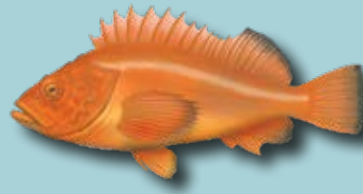
● Lingcod



● Quillback Rockfish



● Canary Rockfish



● Yelloweye Rockfish

○ Other



Hook and Line Surveys

Proportion of species caught during surveys to date in the marine reserve



ROV Surveys

Proportion of species observed from 3 years of surveys in the marine reserve

LONG-TERM RESEARCH HOTSPOT

The rocky intertidal habitats in the Cape Perpetua Marine Reserve are a hotspot of biodiversity. Scientists from Oregon State University (OSU)-PISCO and UC Santa Cruz-MARINE have been studying intertidal dynamics and monitoring intertidal communities here for decades. In addition, scientists from OSU-PISCO and ODFW have been conducting oceanography, hypoxia, and ocean acidification studies in this area since the early 2000s.

LAND-SEA CONNECTIONS

More than 80% of the adjacent watershed is in public ownership, including 17% designated as wilderness. Upland from the reserve is protected old growth coastal rainforest, managed by the US Forest Service (USFS), that boasts Oregon's highest concentration of marbled murrelets, a threatened seabird that nests in old growth trees on land.

The public lands in this area are managed by a combination of the USFS, Oregon State Parks (OPRD), and US Fish and Wildlife Service. Public lands include the Siuslaw National Forest, Cummins Creek Wilderness, Rock Creek Wilderness, Smelt Sands State Recreation Site, Yachats State Park, Yachats Ocean Road State Natural Site, Cape Perpetua Scenic Area, Neptune State Scenic Viewpoint, Stonefield Beach State Recreation Site, Tokatee Klootchman State Natural Site, Muriel O. Ponsler Memorial State Scenic Viewpoint, Carl G. Washburne Memorial State Park, Heceta Head Lighthouse State Scenic Viewpoint, and the offshore rocks which are

included in the Oregon Islands National Wildlife Refuge.

B.3 THE HUMAN CONNECTION

The towns and ports in closest proximity to the Cape Perpetua site include Yachats and Florence. The ocean, estuaries, and terrestrial lands in this area are also of cultural significance to the [Confederated Tribes of Grand Ronde](#), [Confederated Tribes of Siletz Indians](#), and the [Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians](#).

The nearshore waters in and around the Cape Perpetua site support many forms of consumptive and non-consumptive activities. Recreational and commercial fishing are established uses in this area. Commercial fishing vessels hailing from Newport, Florence, Coos Bay and other ports along the west coast fish these nearshore waters targeting mainly crab, salmon, and shrimp. Halibut are occasionally targeted and some years squid show up in great numbers sparking fishing interest and effort. Some charter boats would occasionally use this area to target mainly groundfish, crab, and salmon. Fishing from shore and intertidal harvest of both invertebrates and algae have also been common uses.

Visitors have many opportunities for wildlife viewing and other outdoor recreational activities in and around this area. Popular activities include hiking, exploring tidepools, artistic endeavors, or taking in views overlooking the reserve at the Cape Perpetua Scenic Area. This stretch of coastline and the adjacent forest hosts many opportunities for bird watching. Upland from the reserve is protected old growth coastal rainforest managed by the US Forest Service (USFS). The forest here boasts Oregon's highest concentration of marbled murrelets, a threatened seabird that nests in old growth trees on land. This area is also recognized by the National Audubon Society as a globally significant Marbled Murrelet Important Bird Area. Other popular attractions include the Cape Perpetua Visitor Center (USFS), the Cummins Creek Wilderness and Rock Creek Wilderness (USFS), Tenmile Creek Sanctuary (Portland Audubon), Sea Lion Caves, and the Heceta Head Lighthouse (OPRD).

Ongoing human dimensions research will provide us with more insights into the communities of interest and place associated with the Cape Perpetua site. This research will also provide us with a better understanding of the consumptive and non-consumptive uses and users of the Cape Perpetua site and the region. You can find more information in [Chapter 5](#) on the human dimensions research being conducted.

C. DESIGNATION HISTORY

Marine reserve discussions began at the state level in the year 2000, through the Oregon Ocean Policy Advisory Council (OPAC), under the direction of then Governor Kitzhaber. Marine reserves planning began in March 2008, with Governor Kulongoski issuing [Executive Order 08-07](#) and a letter to OPAC. The Governor asked OPAC to lead a public nomination process, with assistance from state agencies, and to forward recommendations for up to nine sites to be considered for marine reserve designation. OPAC proceeded by soliciting proposals from local community groups and individuals. In the summer of 2008, twenty marine reserve site proposals were submitted by the public to OPAC. After thorough consideration, OPAC forwarded recommendations to the Governor in November 2008 including:



- Two sites be designated immediately as pilot marine reserve sites (Redfish Rocks and Otter Rock).
- Three sites undergo further evaluation and community dialogue as potential marine reserve sites (Cape Perpetua, Cascade Head, Cape Falcon).
- One area undergo a local community process, led by the International Port of Coos Bay, to consider developing a new marine reserve proposal (Cape Arago).
- The OPAC August 19, 2008 Oregon Marine Reserves Policy Recommendations.

In 2009, the Oregon Legislature passed [House Bill 3013](#) (HB 3013) directing state agencies to implement the OPAC recommendations. The Legislature also approved funding and dedicated staffing for state agencies to carry out the evaluation and implementation of marine reserve sites.

In 2010, in accordance with HB 3013, ODFW formed three community teams. The teams included prescribed representation from a spectrum of stakeholder interests to further evaluate potential marine reserve sites at Cape Perpetua, Cascade Head, and Cape Falcon. Each team met over the course of 11 months, evaluating the original proposal recommended by OPAC in 2008. The evaluation consisted of determining whether the site could meet sideboards established in Executive Order 08-07, namely: was the site large enough to allow scientific evaluation of ecological benefits, but small enough to avoid significant economic or social impacts?

In November 2010, the three community teams forward final marine reserve recommendations to ODFW. The recommendations for the Cape Perpetua site included changes made to the original OPAC proposal and were made with strong support from the community team. The recommendations were the product of extensive community team discussions and many carefully-considered compromises. The final recommendations for the site included a marine reserve plus specific allowances and prohibitions for two MPAs and a Seabird Protection Area surrounding the reserve.

In December 2010, ODFW used the community teams' recommendations and information gathered throughout the community team process to forge marine reserve recommendations in consultation with OPAC. Following discussion and careful deliberation, OPAC reached a consensus supporting ODFW's recommendations for marine reserve sites. ODFW then forwarded the OPAC approved recommendations to coastal State Legislators.

During the 2012 legislative session, the Oregon Legislature passed [Senate Bill 1510](#) (SB 1510) directing state agencies to implement ODFW's recommendations for sites at Cape Perpetua, Cascade Head, and Cape Falcon. SB 1510 also provided that an evaluation and a report to the Legislature be provided on the Oregon Marine Reserves Program by March 1, 2023.

In the latter half of 2012, state agencies adopted marine reserve and protected area administrative rules for the Cape Perpetua, Cascade Head, and Cape Falcon sites. The harvest restrictions at the Cape Perpetua site became effective on January 1, 2014, following two years of baseline data collection for the site.



CHAPTER 5. MONITORING & RESEARCH APPROACHES, STRATEGIES, & PROCEDURES FOR RESEARCHERS

“Marine reserves will be adequately monitored and evaluated in support of adaptive management. Cooperative and collaborative research will be encouraged as well as utilization of fishing vessels as research platforms. These activities will be compatible with the goal of conserving marine habitats and biodiversity.” -- OPAC 2008



The Oregon Legislature has placed the Oregon Department of Fish and Wildlife (ODFW) in charge of leading the scientific monitoring and research of Oregon’s marine reserves. We are studying both the ecology and the human dimensions of the reserves. We have created long-term ecological monitoring and human dimensions research programs that allow us to track and understand ocean changes as

ECOLOGICAL MONITORING



Our monitoring focuses on tracking and understanding ocean changes in Oregon’s nearshore waters. We conduct surveys inside the five marine reserves and outside the reserves, in eight comparison areas, on an ongoing basis to look at changes over time. These “living laboratories” are giving us a better understanding of Oregon’s nearshore ocean and producing data being used to support management of nearshore ocean resources, adaptive management of marine reserves, and emerging ocean issues here in Oregon.

HUMAN DIMENSIONS RESEARCH



Our research focuses on understanding the different ways that people and communities may be affected by the reserves. When conservation strategies such as marine reserves are introduced they can create positive, negative, or no changes for individuals and for communities. We are studying the human dimensions of the reserves through multiple social scientific methods - including economics, sociology, and anthropology. This “natural laboratory” is invaluable for understanding current and long-term impacts of conservation and management decisions on people and communities.

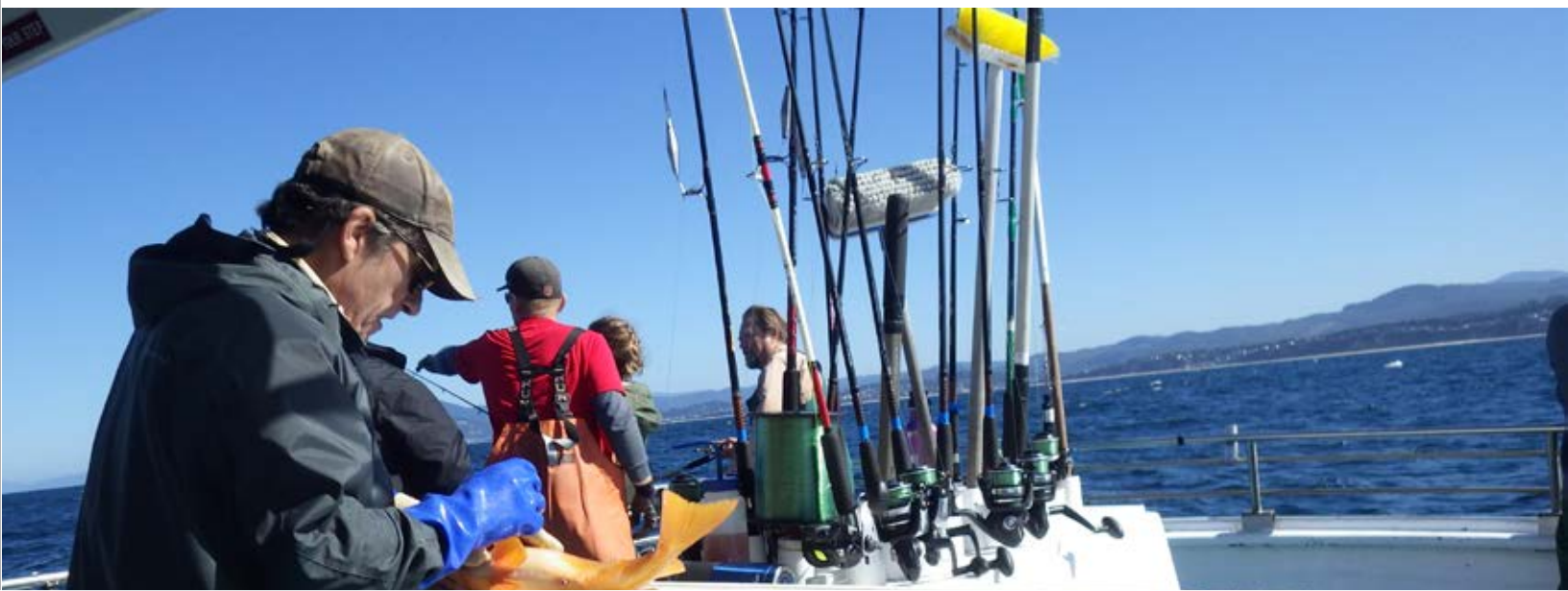
“Use ... research and monitoring information in support of nearshore resource management and adaptive management of marine reserves.”
-- OPAC 2008



well as understand changes and impacts to ocean users and coastal communities over time. What we're learning from this work is being used to support the management of nearshore ocean resources and adaptive management of marine reserves, now and into the future (OPAC 2008; see [Chapter 2, B.3](#)).

Questions our research is looking to answer include how do marine reserve protections — no fishing and no ocean development — affect marine species and habitats? How do these protections affect people and communities? How do different people value and depend on the ocean? What else can we learn about Oregon's nearshore ocean? The ODFW Marine Reserves Program works in collaboration with a number of research partners to study both the ecology and the human dimensions of the reserves.

In this chapter we describe the ODFW Marine Reserves Program's approach to long-term scientific monitoring and research. We also provide information for researchers who may be interested in conducting research in connection with Oregon's marine reserves. And finally, we outline the management strategies ODFW is committed to carrying out for sharing information and engaging communities with regards to our monitoring and research work.



DID YOU COLLECT BASELINE DATA BEFORE THE RESERVE CLOSED TO FISHING?

Yes, we began collecting data for the Cape Perpetua Marine Reserve in 2012, two years prior to harvest restrictions taking effect.



A. OUR APPROACH

A.1 ESTABLISHING LONG-TERM MONITORING AND RESEARCH PROGRAMS

ODFW has created long-term ecological monitoring and human dimensions research programs that are allowing us to track and understand ocean changes as well as understand changes and impacts to ocean users and coastal communities over time. What we're learning from this work is being used to support nearshore ocean management efforts and adaptive management of marine reserves here in Oregon.

MONITORING PLANS

We have developed ecological and human dimensions monitoring plans for Oregon's marine reserves. These plans describe our research questions, sampling designs, and sampling activities as well as sampling frequencies currently through the year 2023. These plans are reviewed and updated at least every five years, and are available from the Resource Library we've created on the state's Oregon Marine Reserves website at oregonmarinereserves.com/library.

HOW DO WE PRIORITIZE?

Since we have limited staff and budget resources, we prioritize our monitoring and research activities based on the goals and objectives of the marine reserves (OPAC 2008; see [Chapter 2, B.3](#)), scientific accuracy, and cost. We strive for rigorous scientific monitoring and research that provides information to support marine reserves and nearshore ocean management here in Oregon, and will be of substance in the 2023 Program evaluation.

A.2 RESEARCH PARTNERS HELPING TO EXPAND RESEARCH

We are collaborating with a variety of research partners. Our partners provide advice, lend different expertise, bring additional resources, and help us expand our monitoring and research. They include folks from academia, state and federal agencies, non-government organizations, consultants, and the fishing industry. In addition, Oregon's marine reserves and ODFW's monitoring programs are attracting additional research that is providing greater insights into Oregon's nearshore ocean, the design and placement of marine reserves, and emerging ocean issues.

EXPLORE MORE ABOUT THE SCIENCE

NEWS FROM THE FIELD

[OREGONMARINERESERVES.COM/NEWS](https://oregonmarinereserves.com/news)

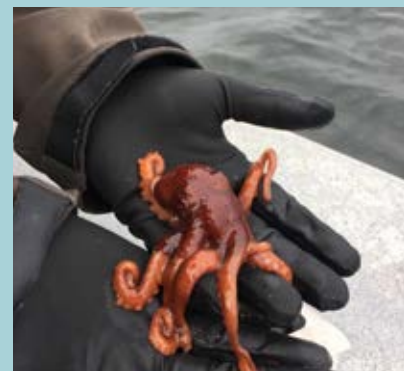
RESEARCH PLANS AND REPORTS

[OREGONMARINERESERVES.COM/LIBRARY](https://oregonmarinereserves.com/library)

THE SCIENCE OF MARINE RESERVES

[DOWNLOAD THIS BOOKLET](#) produced by **PISCO**

providing a great introduction to the science of marine reserves



A.3 EACH SITE IS UNIQUE

Each of Oregon’s marine reserves is unique. They are different sizes and shapes. They have distinct habitats and biological characteristics. They each experienced different types and levels of fishing before closure. And, the demographics and socioeconomic characteristics of the coastal towns and communities most closely tied to each site are different. These unique features mean we will likely see different conservation outcomes and different impacts to ocean users and coastal communities in association with each site. Our monitoring and research program have been set up to be able to distinguish these differences.

A.4 LEARNING AND ADAPTING

Marine reserves are a relatively new management tool here in Oregon. Based on what we’ve learned during this initial evaluation time period, our monitoring approaches and tools have evolved or been adapted in order to produce robust long-term datasets that best answer our research questions. We continue to refine our monitoring programs based on the best-available science and latest technologies. Updates to our monitoring plans reflect, and are a means of recording, adaptations we make.

A.5 SHARING WHAT WE LEARN

An important component of the ODFW Marine Reserves Program is sharing what we’re learning along the way. We are committed to producing monitoring and research reports or journal publications at least every two years. In [section D](#), we outline additional strategies we are employing to keep constituents, partners, and decision makers informed about the science being performed, what we are learning, and how that information is being used to support management.

A.6 OPPORTUNITIES FOR ADDITIONAL RESEARCH

There are additional research questions beyond ODFW’s current focus that could greatly add to what we might learn from Oregon’s marine reserve sites. We continue to look for ways to attract researchers and resources to answer some of these additional research questions -- especially those questions that have strong interest from local community members, the scientific community, and fishermen. We highlight some of the opportunities for additional research for the Cape Perpetua Marine Reserve in [Chapter 9](#).

B. OUR MONITORING AND RESEARCH PROGRAMS

The ODFW Marine Reserves Program is studying both the ecology and the human dimensions of the reserves. Here we provide an overview of the approaches we are using in our respective ecological monitoring and human dimensions research programs.

B.1 ECOLOGICAL MONITORING OF THE MARINE RESERVE SYSTEM

LIVING LABORATORIES

Oregon’s marine reserves are living laboratories where we are learning more about Oregon’s nearshore ocean, tracking ocean changes, and learning about the effects that protections — no fishing and no ocean development — have over time on species and habitats. We conduct robust, long-term monitoring and novel research that is supporting management of the reserves and of nearshore resources.

“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.”

-- OPAC 2008



The marine reserves mandates that propel our ecological monitoring approach include (OPAC 2008; see [Chapter 2.B.3](#)):

- Protect areas within Oregon’s territorial sea that are important to the natural diversity and abundance of marine organisms, including areas of high biodiversity and special natural features.
- Protect key types of marine habitat in multiple locations along the coast to enhance resilience of nearshore ecosystems to natural and human-caused effects.
- 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.



WHAT ARE WE FOCUSING ON?

- **LONG-TERM MONITORING OF MARINE COMMUNITIES** We are conducting long-term monitoring of fish, invertebrate, and macroalgal (seaweed) communities. We are tracking changes over time in organism size, organism abundance, and community composition inside and outside of the reserves.
- **METHODOLOGY DEVELOPMENT AND REFINEMENT** We are building upon advances in sampling technology and gear to design robust and contemporary survey tools that are able to effectively sample in Oregon’s challenging nearshore ocean environment.
- **NEARSHORE RESEARCH** We are supporting research that expands our understanding of Oregon’s nearshore ocean that can be used to inform management of marine resources.

This approach ensures we establish robust long-term datasets for detecting ecological changes over time, using the best available methods, while also pushing new discoveries and a better understanding of Oregon’s nearshore ocean.

TIMEFRAMES FOR DETECTING ECOLOGICAL CHANGES

There is general agreement from the scientific community that the program evaluation timeframe, set by the Oregon Legislature (ORS; see [Chapter 2.C](#)), is too brief a time for substantive ecological changes to have occurred due to marine reserve protections. With Oregon's temperate marine ecosystem – where many species grow slowly, mature late, and are long-lived – scientists project a minimum of 10-15 years, and for some species as long as 40 years, after extractive activities (e.g., fishing) have ceased before we might begin to scientifically detect any ecological changes. However, this timeframe does provide for the establishment and evaluation of: (a) a rigorous long-term monitoring program, (b) the generation of robust datasets from which we can track and understand future ocean changes, (c) information that furthers our knowledge about design and placement of marine reserves in Oregon, and (d) contribution of data and information that is used to support other nearshore ocean management efforts and understanding of emerging ocean issues.

DESIGN AND PLACEMENT MATTERS

Oregon's reserves vary in size, habitats, depths, and past fishing pressure — important characteristics that can influence ecological responses to reserve protections. Where possible, we collect data using the same sampling tools at all five reserves to allow for comparisons across the entire reserve system. However, the unique characteristics of each reserve requires that we use different sampling approaches and tools in order to sample the marine communities present at each particular site. We have therefore tailored our sampling approaches and monitoring activities for each site, which you can find in more detail in our Ecological Monitoring Plan (2017) .

B.2 ECOLOGICAL MONITORING AT CAPE PERPETUA

WHAT MAKES CAPE PERPETUA UNIQUE?

The marine reserve includes a patchy, deep, isolated rocky reef that is unique to the area as most of this region is dominated by sand and mixed-gravel habitats. The rocky intertidal habitats in the reserve have some of the most biologically diverse intertidal communities found anywhere in the Pacific Northwest. The waters around Cape Perpetua are known to be experiencing acidification (low pH) as well as episodes of hypoxia (low oxygen) in association with strong summer upwelling activity. These oceanographic events are considered indicators of a changing climate. Before harvest restrictions began, the reserve area had experienced relatively low to moderate fishing pressure on groundfish and relatively high fishing pressure on crab. This area also episodically experienced high fishing pressure on market squid, a species that periodically shows up in large numbers off this region of the Oregon coast. The Cape Perpetua area has also been a hotspot for long-term nearshore research for several decades.

HOW LONG TO DETECT CHANGES?

**10-15
YEARS
MINIMUM**

Due to Oregon's cold water and temperate marine ecosystem — where many species are long-lived and slow to grow and mature — scientists project a minimum of 10-15 years, and for some species as long as 40 years, after protections (i.e. no fishing) have begun before we might begin to scientifically detect ecological changes due to the protections. In the interim, the data and information from marine reserves monitoring and research is being used to support other nearshore ocean management and understanding of emerging ocean issues.



OUR MONITORING APPROACH AT CAPE PERPETUA



The Cape Perpetua Marine Reserve includes a deep, isolated rocky reef — which is unique to this area as sand and mixed-gravel habitats tend to dominate in this region. There is no rocky reef habitat at a similar depth, with similar oceanographic conditions and having experienced similar fishing pressure, anywhere in the nearby vicinity.

Because there is no comparable area outside of the reserve, we are unable to do a paired Before-After-Control-Impact (paired BACI) study design, and are instead looking at how this isolated, rocky reef marine community changes through time in a before-after comparison. We're also looking at how the trajectories of change inside the reserve compare to other, shallower rocky reef habitats in a nearby comparison area outside of the reserve over time.

Several other features make the Cape Perpetua Marine Reserve a unique research site and have influenced our monitoring activities and approach at this site. The rocky shores here host some of the most biologically diverse rocky intertidal habitats found anywhere in the Pacific Northwest. Upwelling, followed by periods of relaxation, create highly productive waters around the Cape Perpetua area. These waters are also known to experience episodes of hypoxia (low oxygen) and acidification (low pH).

WE SAMPLE IN THE

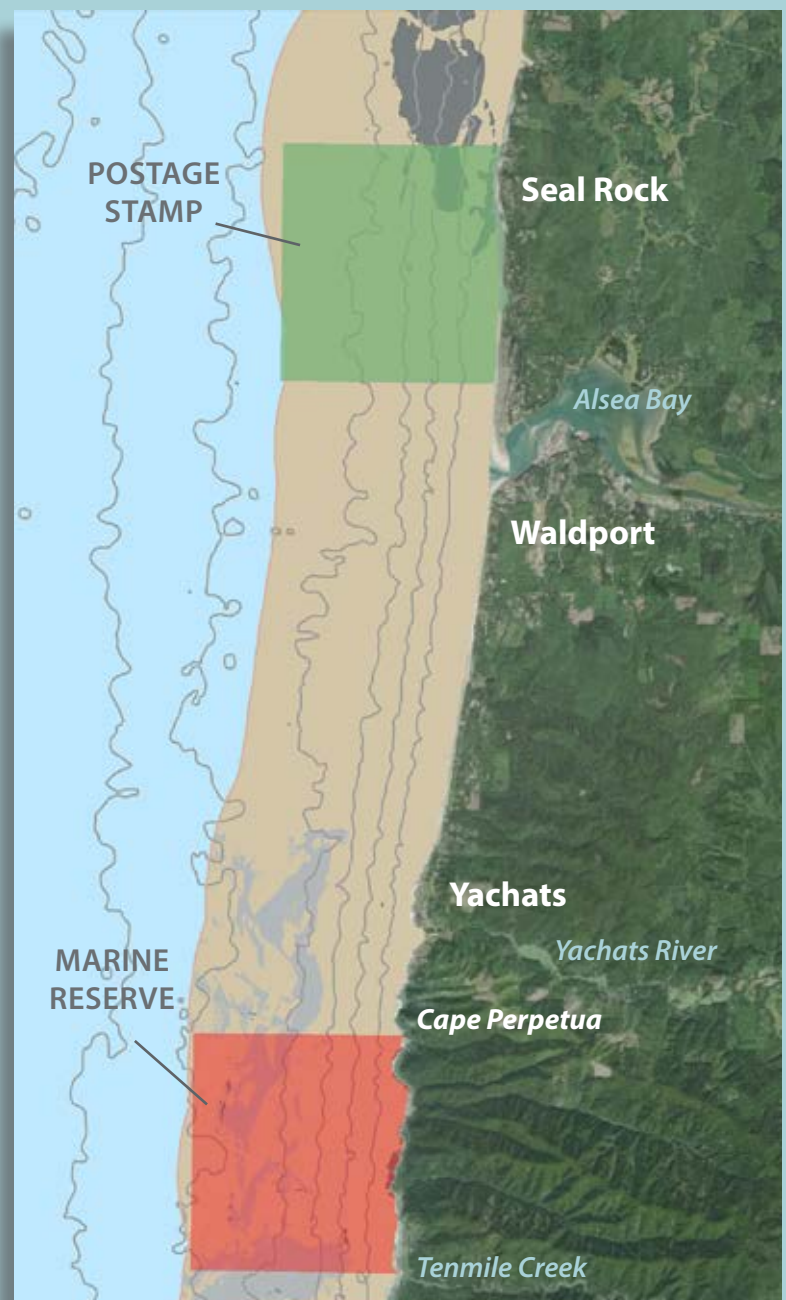


MARINE RESERVE



COMPARISON AREA

We began sampling in 2012, two years prior to the reserve being closed to fishing. You can find more information about our monitoring activities for the Cape Perpetua site in our [2017 Ecological Monitoring Plan](#).



ODFW LONG-TERM MONITORING SURVEYS AT CAPE PERPETUA

Based on the site's depths and habitat types, we are using the following two core sampling tools to collect long-term monitoring data for the Cape Perpetua site. These surveys are led by ODFW. More information about our survey tools and sampling frequency can be found at OregonMarineReserves.com/science/ecological or in our [2017 Ecological Monitoring Plan](#).

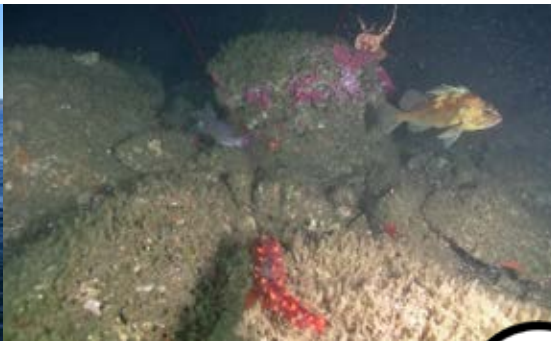


HOOK AND LINE



TOOL USAGE	
DEPTH RANGE	10-40 m
HABITATS	Rock
SAMPLING LIMITATIONS	Calm sea states, availability of volunteer anglers
WHAT DATA ARE WE COLLECTING?	Fish species, fish size, catch rates (CPUE)

REMOTELY OPERATED VEHICLE (ROV)



TOOL USAGE	
DEPTH RANGE	20-50 m
HABITATS	All habitat types
SAMPLING LIMITATIONS	Calm sea states, minimum visibility of 3 m
WHAT DATA ARE WE COLLECTING?	Fish and invertebrate species. Abundance for each fish species and for select invertebrates. Habitat characteristics.

LONG-TERM MONITORING COLLABORATIONS AT CAPE PERPETUA

Two additional long-term monitoring surveys, led by our partners, are being conducted at Cape Perpetua. These are ongoing surveys that are providing long-term datasets from which we can track ocean changes over time.



ROCKY INTERTIDAL



COLLABORATION LEADS	MARINe-UC Santa Cruz, PISCO-Oregon State University
WHAT DATA ARE BEING COLLECTED?	Community structure, plus abundance and size of key species. Biodiversity. Invertebrate larval recruitment. Effects of oceanographic factors on intertidal communities.

OCEANOGRAPHY



COLLABORATION LEADS	PISCO-Oregon State University
WHAT DATA ARE BEING COLLECTED?	Temperature, dissolved oxygen, carbon dioxide, pH, and wave and current motion.

“Significant adverse social and economic impacts of marine reserves on ocean users and coastal communities will be avoided and positive social and economic effects will be sought.”

-- OPAC 2008



B.3 HUMAN DIMENSIONS RESEARCH

WHAT IS HUMAN DIMENSIONS RESEARCH?

Human dimensions research looks at the different ways in which humans use, value, and depend on their natural environment. Oregon’s marine reserves are a staging ground for studying the human social interactions that surround natural resource issues. This “natural laboratory” is invaluable for understanding the current and long-term impacts of conservation and management decisions on people and communities, as well as the impacts demographic shifts, gentrification, and socio-economic changes have on the lives of Oregonians. What we’re learning from this research is being used to support future nearshore resource management and policy decision making, and adaptive management of marine reserves here in Oregon.

WHAT ARE WE STUDYING?

Our research focuses on understanding the different ways that people and communities may be affected by the marine reserve sites over time. When conservation strategies such as marine reserves are introduced they can create positive, negative, or no changes for individuals and for communities. Negative changes may include loss of income for businesses or fishermen; increased feelings of distrust towards government; or increased animosity between neighbors with different ideological perspectives on environmental issues. Positive changes may include increased tourism dollars to small businesses in communities near reserve sites, cultural shifts towards feeling closer to nature, or increased awareness about the ocean and ocean issues.

The marine reserves mandates that propel our research questions and approach include (OPAC 2008; see [Chapter 2.B.3](#)):

- 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 research and monitoring information in support of nearshore resource management and adaptive management of marine reserves.



RESEARCH QUESTIONS Stemming from these mandates, the following research questions were developed by ODFW in consultation with the Scientific and Technical Advisory Committee (STAC) and additional economics and social science experts to guide our human dimensions research.

1. Are people knowledgeable about the marine reserves?
2. What are the public's attitudes about the marine reserves?
3. What are the economic impacts of the marine reserves on fishermen?
4. What are other significant economic impacts of the marine reserves on local communities?
5. What are the social impacts of the marine reserves?

We also want to know if these change over time, and if long-term impacts are different from short-term or initial impacts.

BROADER QUESTIONS We have also developed a set of broader research questions aimed at increasing knowledge and understanding of social relationships that can be used to support nearshore resource management and policy in the future.

1. How do social and cultural values shape the way communities manage and relate to the ocean?
2. How do coastal communities adapt to social, political, or ecological change?
3. Under what circumstances is it possible for different stakeholder groups to come together and make difficult decisions about ocean management?
4. How do we build community resilience to risk?

OUR APPROACH

We work in close collaboration with a number of research partners from universities and the private sector. Together, we study the human dimensions of marine reserves through multiple social scientific methods - including economics, sociology, anthropology, political science, and psychology. Some of our studies provide quantitative information, while others provide qualitative or descriptive information. These partners also provide advice, lend different expertise, and help us round out our research program.

TYPES OF RESEARCH PROJECTS

Our human dimensions research falls into four different categories. We are conducting a variety

of scientific studies in each of these categories to help us address the research questions described above, and to understand the variety of effects marine reserve sites may have on people and communities.

1. CHARACTERIZATIONS OF COMMUNITIES

We develop general characterizations of the coastal communities most directly tied to each of the marine reserve sites. Characterizations include information such as historical records, demographics such as employment data, social structure, tribal or spiritual connections, cultural and social events, and economic drivers of the local economy. These characterizations set the “back story” and provide context to help us understand effects we might observe over time for these communities.



2. DIRECT USES OF COASTAL ENVIRONMENTS

Fishing:

To understand commercial and recreational fishing patterns associated with marine reserve areas, our studies analyze existing data from sources such as logbooks and fish landings, as well as new data collected from observations, interviews, and surveys. These analyses allow us to identify physical areas of use, which fisheries were conducted in these areas, and which communities may be affected from displacement or disruption of these activities.



Recreation and Aesthetic Engagement:

To understand other types of recreational use and aesthetic engagement with the coast, we gather existing and new data from visitor interviews and surveys. This allows us to understand what uses presently exist, and to monitor changes which may occur with implementation of the marine reserve site. Social and economic data are also collected from the users of these areas.





3. ATTITUDES AND PERCEPTIONS OF IMPLEMENTATION AND MANAGEMENT

To assist in management of the reserves, we are looking to understand the knowledge, attitudes, and perceptions of stakeholders, coastal businesses, and other Oregon residents pertaining to marine reserves purpose, regulations, monitoring and research, management, outreach, and enforcement. Collecting this information also allows us to tailor our marine reserves outreach to better serve Oregonians and engage community members and stakeholders in the implementation of these areas.



4. SOCIAL AND ENVIRONMENTAL VALUES

To gain a more complete understanding of how Oregon residents value the ocean and the marine reserves, this research examines the values associated with the natural resources and ecological characteristics of these areas, as well as how these values may be different across stakeholders, communities, and among the general public.

EXPLORE MORE HUMAN DIMENSIONS RESEARCH

You can explore more about the Human Dimensions Research being conducted by ODFW and our partners on the state's website at oregonmarinereserves.com/science/human-dimensions. You can also find research infographics, reports, and more in our [Resource Library](#).



ATTENTION RESEARCHERS!



Are you a scientist interested in conducting research in connection with the Cape Perpetua site or any of Oregon's other reserves? If so, we're interested in hearing from you. Please note that some research activities may require a permit.

Please see [Chapter 7, D](#) to determine if your research will require a permit and for instructions on how to apply.



C. PROCEDURES FOR RESEARCHERS

Scientific take of organisms (e.g. fish, invertebrates, and algae) or disturbance of habitats (e.g. equipment attached to the seafloor or in rocky intertidal habitats) is only permitted if deemed necessary and the research contributes to the evaluation of marine reserve site condition, effectiveness, or the impact of stressors (OPAC 2008; see Chapter 2, [A.2](#) and [B.1](#)). Researchers should refer to [Chapter 7, section D](#) to determine if your research will require a permit, and for instructions on how to apply.

In addition, researchers are urged to review the guidelines and best practices provided in [Chapter 8](#), established by the U.S. Fish and Wildlife Service, to avoid or minimize human disturbance to wildlife using offshore islands and rocks that are a part of the Oregon Islands National Wildlife Refuge.

Please contact ODFW Marine Reserves Program staff if you have any questions or would be interested in exploring possible collaborations. Our staff contact information can be found on the Oregon Marine Reserves website at oregonmarinereserves.com/team.



“Outreach and public engagement will be an ongoing part of the marine reserves planning and implementation process. Available scientific and other information will be made available to the public through outreach and websites.”

-- OPAC 2008



D. STRATEGIES FOR SHARING INFORMATION & ENGAGING COMMUNITIES



In this section we outline the management strategies ODFW is committed to carrying out for sharing information and engaging communities with regards to monitoring and research of the Cape Perpetua site. These strategies have been developed based on feedback and input we have received from local community members, fishermen, and scientists as well as other interested members of the public. We anticipate these strategies will evolve and be adapted over time as we continue to evaluate and learn from our implementation efforts. Changes in strategies will be captured in updates to this site management plan.

D.1 KEEPING TABS ON MONITORING AND RESEARCH

ODFW has developed several strategies to help keep constituents, partners, and decision makers regularly informed about the ecological and human dimensions science being performed, what we are learning along the way, and how that information is being used to support management.

VISIT THE RESOURCE LIBRARY ON OUR WEBSITE

We have created a Resource Library page for anyone to access marine reserves ecological and human dimensions monitoring plans, monitoring reports, workshop reports, and scientific journal publications produced by ODFW Marine Reserves Program staff and our research partners. The Resource Library is available on the state's Oregon Marine Reserves website at oregonmarinereserves.com/library.

SUBSCRIBE TO OUR E-NEWSLETTER

We have created a “Marine Reserves News” electronic newsletter that we email to subscribers once a month. Each newsletter includes a photo or video along with a brief news story or update on research and monitoring work being conducted by ODFW or our research partners. You can sign-up for the eNewsletter at oregonmarinereserves.com/newsletter.

FIND RESERVES NEWS ON OUR WEBSITE

We regularly post science news stories and updates on ODFW and partners' monitoring and research activities for the Cape Perpetua site. Reserves News posts can be sorted by category of science (ecology or human dimensions) as well as by marine reserve site. You can browse current and past news posts at oregonmarinereserves.com/news.



LEARN MORE ABOUT THE SCIENCE ON OUR WEBSITE

We have created several pages on the state's Oregon Marine Reserves website dedicated to the ecological monitoring and human dimensions research being conducted, including a photo gallery and video library.

ATTEND A PRESENTATION

Our staff are committed to presenting papers and posters at scientific conferences, professional meetings, and/or webinars a few times each year. Upon request staff may also give science presentations to college students, local community groups, or decision makers.

D.2 USING LOCAL FISHING VESSELS FOR RESEARCH

When and where feasible, ODFW contracts local fishing vessels to serve as research platforms for our ecological monitoring and research work (see mandates in Chapter 2, [A.1](#) and [B.4](#)). Contracting with fishermen allows us to use their expertise in vessel operations, in working with different gear types, and in building equipment. We work with local fishermen in order to improve our monitoring efforts and learn from their years of experience and in depth local knowledge of the ocean in and around the Cape Perpetua site.

For the Cape Perpetua site we contract local vessels for our hook and line and Remotely Operated Vehicle (ROV) surveys. Occasionally there may be other vessel contract opportunities available.

VESSEL CONTRACT PROCESS

In most instances we contract vessels through the state's open competitive bidding process. This entails posting a Request for Proposals (RFP) and then soliciting applications. The RFP outlines the at-sea project, vessel specifications, expectations and deliverables of the captain and any specified crew, and the insurance requirements. The RFP includes application forms to be filled out and submitted by bidders. Applications are scored based on estimated fees; qual-

"Cooperative and collaborative research will be encouraged as well as utilization of fishing vessels as research platforms."

-- OPAC 2008



ifications and experience; and project approach. Applicants should note that they may include the cost of insurance in their bid price. The highest scoring application is awarded the contract. Preference is given in the qualifications and experience segment to local vessels, with captains and crew that have local knowledge of the areas of work. Vessels unable meet vessel requirements or that are determined to be unsafe to conduct the work will not be awarded a contract.

WAYS TO BE NOTIFIED OF CONTRACT OPPORTUNITIES

Once we have an RFP posted, we use several methods for notifying local fishing vessel owners and captains to solicit applications.

- **EMAIL/PHONE/TEXTING NOTIFICATION** For vessel owners and captains that have expressed interest to our staff or have previously bid on a contract with us, we send notifications by email, phone call, or text message based on their stated preference.
- **E-NEWSLETTER** We include RFP announcements in our “Marine Reserves News” eNewsletter which is emailed to subscribers. You can subscribe to our eNewsletter at oregonmarinereserves.com/newsletter. We also post RFP announcements on our Reserves News page on the state’s Oregon Marine Reserves website at oregonmarinereserves.com/news.
- **DOCK WALKS** In some instances, particularly for new research projects at the Cape Perpetua site, our staff will walk the docks in Newport to talk to fishermen about the project and hand out applications for those who are potentially interested in applying.

WHERE TO GET AN APPLICATION

We provide several ways for folks to get applications.

- **DOWNLOAD FROM OUR WEBSITE** Applications can be downloaded from the Resource Library page on the state’s website at oregonmarinereserves.com/library/#applications.
- **RECEIVE BY EMAIL OR MAIL** You can contact one of our ODFW Marine Reserves Program staff to email you an application, or send you an application in the mail.





D.3 COMMUNITY SCIENTIST OPPORTUNITIES

ODFW currently engages community members in the following ecological monitoring surveys at Cape Perpetua.

VOLUNTEER ANGLERS

We use volunteer anglers to help us catch groundfish, in order to collect fish length data, during our hook and line surveys. These volunteers are experienced saltwater anglers willing to spend a full day out on the water helping us catch and sample fish, often in rough ocean conditions.

At the end of the year volunteers receive our “Fish On!” hook and line newsletter. The newsletter provides highlights from the year -- such as biggest and smallest fish caught -- as well as a summary of the data that the volunteers helped us collect. Copies of each year’s “Fish On!” newsletter are also available from our online Resource Library page at oregonmarinereserves.com/library/#ecological

FUTURE OPPORTUNITIES

As ODFW’s monitoring and research programs continue and evolve, opportunities may be explored to develop other community science opportunities or specific community science projects.

Beyond ODFW, there are other opportunities and community science projects being hosted by other researchers and organizations in and around the Cape Perpetua area. You can find some current ongoing projects listed in [Chapter 9](#). You can find more upcoming opportunities on the Cape Perpetua Collaborative’s website at capeperpetuacollaborative.org.



CHAPTER 6. COMMUNICATIONS

STRATEGIES FOR COMMUNICATION & OUTREACH

“Outreach and public engagement will be an ongoing part of the marine reserves planning and implementation process. Available scientific and other information will be made available to the public through outreach and websites.”

-- OPAC 2008



Our communications objectives are to raise awareness about Oregon’s marine reserves, the Cape Perpetua site, and the ODFW Marine Reserves Program’s activities. Our target audiences are coastal residents; fishermen and other extractive users; conservation organizations; scientists and marine resource managers; coastal leaders and decision makers; and coastal visitors who may be visiting at or near a marine reserve site.

Our communications and outreach predominately focus on the following:

RAISING AWARENESS ABOUT OREGON’S MARINE RESERVES	MARINE RESERVES PROGRAM ACTIVITIES
<p>EMPHASIS IS ON:</p> <ul style="list-style-type: none"> • What are marine reserves • Why marine reserves • Where are the marine reserve sites • What can and can’t I do in a marine reserve or MPA 	<p>EMPHASIS IS ON:</p> <ul style="list-style-type: none"> • Connecting people to the scientific research being conducted by ODFW scientists and our research collaborators • Sharing what we’re learning from Oregon’s marine reserve sites and how that information is being used • Connecting people to what lies below the surface of the ocean

In this chapter we outline our communication and outreach strategies. These will evolve over time as we continue to learn from, adapt and build on our current efforts.

A. COMMUNICATIONS STRATEGIES



Here we outline the current communications strategies that ODFW is committed to implementing. Some of these strategies are tailored specifically for the Cape Perpetua site based on input staff received from local community members and other interested members of the public at site management plan workshops, from written comments, and from one-on-one conversations.

These strategies have been prioritized based on our marine reserves mandates, our communications objectives, and the staff time and resources we have available. These strategies will evolve over time as we learn, adapt and build on our current efforts. Communications strategies specific to compliance and enforcement are covered in [Chapter 7](#).

A.1 COMMUNICATIONS PRODUCTS

We are committed to developing and implementing the following products to provide communications about Oregon’s marine reserve system, the Cape Perpetua site, and the work of our Program. We will work with partners on development or distribution of these products when pertinent and resources are available.

OREGONMARINERESERVES.COM WEBSITE

ODFW has created an official state website for Oregon’s marine reserves at oregonmarinereserves.com. The website was launched in Spring 2016, and provides information on the marine reserve sites, rules, monitoring and research, and ways for the public to engage. It also includes a Resource Library where folks can download reports, policy documents, outreach materials and more.

E-NEWSLETTER

We have created an electronic [newsletter](#) that we email to subscribers once a month. The newsletter provides very brief, current updates related to ODFW’s research and monitoring work and often includes photos or videos, as well as any marine reserves announcements. You can sign-up for the eNewsletter at oregonmarinereserves.com/newsletter.

RESERVES NEWS ON THE WEBSITE

We regularly write and post science news stories and updates for the Cape Perpetua site on the website. Reserves News posts can be sorted by category of science (ecology or human dimensions) as well as by marine reserve site. You can browse current and past news posts on the website at oregonmarinereserves.com/news.

BROCHURES AND FAQ HANDOUTS

We have brochures and Frequently Asked Question handouts available for each of Oregon’s marine reserve sites, including Cape Perpetua. There is also a statewide marine reserves brochure that covers all five sites. These brochures are for distribution to local information hubs, for use at tabling events, and for download by the public from the website.

CAPE PERPETUA COLLABORATIVE



ODFW is a participant of the Cape Perpetua Collaborative which creates community based projects and engagement opportunities, and helps expand outreach efforts related to the marine reserve and terrestrially based stewardship in and around Cape Perpetua. The Collaborative includes a small group of non-governmental organizations, state and federal agency staff who work at or around Cape Perpetua, tribes, local businesses and the City of Yachats. Find more at capeperpetuacollaborative.org.

CAPE PERPETUA VISITOR CENTER



In conjunction with the US Forest Service and Oregon Marine Reserves Partnership, information on Oregon's marine reserves and the Cape Perpetua site is available and on display at the Cape Perpetua Visitor Center. Information sources include brochures, a display, interpretive signs, and video footage.

EXHIBIT AT HATFIELD MARINE SCIENCE CENTER'S VISITOR CENTER

We have an exhibit on Oregon's marine reserves, highlighting ecological monitoring activities being conducted by the ODFW Marine Reserves Program and our Oregon State University research collaborators. The exhibit includes underwater video footage from the marine reserve sites collected during our monitoring activities.

CAPE PERPETUA LAND-SEA SYMPOSIUM



ODFW is committed to participating in the annual Cape Perpetua Land-Sea Symposium held in Yachats. This is a community event that promotes local stewardship efforts and raises awareness about current research being conducted within the nearshore ocean around Cape Perpetua and adjacent watersheds. The event is hosted by local groups including local chapters of the Surfrider Foundation, Portland Audubon, and the Cape Perpetua Collaborative.

PRESENTATIONS AND EVENTS

We will provide public presentations on Oregon's marine reserves and the Cape Perpetua site. Preference is for presentations to be given at events or venues with audiences of 20+ people, or for audiences that may not otherwise be reached. Each of our staff are committed to attending 1-2 presentations or events each year.

PHOTO AND VIDEO REPOSITORY

We have created a repository for marine reserves related photos and underwater videos on the website at oregonmarinereserves.com/media.

RESOURCE LIBRARY

We have created a Resource Library on the website for anyone to access and download ecological monitoring documents, human dimensions research documents, outreach materials, policy and management documents, as well as applications for vessel contracts. Visit the Resource Library on the website at oregonmarinereserves.com/library.

A.2 LOCAL COMMUNICATIONS PATHWAYS



For the Cape Perpetua site, we received input on local communications pathways for sharing marine reserves information and for engaging with members in local communities. These are pathways ODFW staff, or others, can consider when conducting marine reserves communications and outreach.

Here we provide a list of the local community connectors, events, and information hubs that were identified by local community members.

LOCAL CONNECTORS

These are specific local groups that may act as connectors to larger audiences. Targeting communications to these groups may help expand communications reach.

Examples identified by local community members:

- | | |
|---|---|
| <ul style="list-style-type: none">• MidCoast Watersheds Council• Siuslaw Watershed Council• Oregon Dungeness Crab Commission• City Club of Florence• Rotary Club• Florence Area Chamber of Commerce• Yachats Area Chamber of Commerce | <ul style="list-style-type: none">• Yaquina Birders & Naturalists• Rocky Shores Tidepool Naturalists (OPRD)• Siuslaw Chapter of the Surfrider Foundation• CoastWatch• Audubon Society of Portland |
|---|---|

LOCAL EVENTS

These are local area events that may provide opportunities to reach large local and visitor audiences.

Examples identified by local community members:

- | | |
|--|--|
| <ul style="list-style-type: none">• Yachats Agate Festival• Yachats Village Mushroom Fest• State of the Coast Conference | <ul style="list-style-type: none">• Cape Perpetua Land-Sea Symposium• Marine Science Day (OSU-HMSC) |
|--|--|



LOCAL INFORMATION SOURCES AND HUBS

Community members suggested that many folks in their community get their information from local radio, newspaper, and cable access TV. Communications that use these pathways may be a good way to reach local audiences and stakeholders. They also described local hubs where people in the community often seek or find information.

Examples identified by local community members:

- Local Newspapers:
The Siuslaw News, The Register-Guard, Newport News Times
- Local Radio:
KLCC, KCST's Our Town, KXCR
- Cape Perpetua Visitor Center (USFS)
- Heceta Head Lighthouse (OPRD)
- Sea Lion Caves
- Oregon Coast Aquarium
- Whale Watch Spoken Here (OPRD)
- Local Libraries:
Siuslaw Public Library, Yachats Public Library
- GoYachats website (City of Yachats)
- HMSC listserv (OSU)





Photo: Charlie Plybon



CHAPTER 7. COMPLIANCE & ENFORCEMENT STRATEGIES & MANAGEMENT PROCEDURES

“Marine reserves will be adequately enforced.
-- OPAC 2008



In this chapter we outline the management strategies to be implemented by state agencies that support compliance and enforcement of the Cape Perpetua site. These include methods for surveillance, periodic reviews of enforcement, as well as outreach methods and products. This chapter also outlines procedures for removing lost fishing gear and procedures for scientists conducting research in marine reserve sites. These strategies have been developed by the Oregon Department of Fish and Wildlife (ODFW) in consultation with Oregon State Police (OSP), Oregon Parks and Recreation Department (OPRD), and Department of State Lands (DSL) along with input from local community members.

We recognize that local communities have a large influence and play an important role in supporting compliance of the marine reserve and MPA rules at the Cape Perpetua site.

A. ENFORCEMENT STRATEGIES

Enforcement of Oregon’s marine reserves is carried out by OSP’s Fish and Wildlife Division. Surveillance of sites is conducted from land, by air via airplane operated by OSP and helicopter in cooperation with the U.S. Coast Guard, and on the water by boat. OSP also has a tip line for citizens to **call and report** any possible fish or wildlife **violations at 1-800-452-7888**. We highly promote citizens calling the OSP tip line to report any suspected violations at the Cape Perpetua site.



OSP is monitoring and collecting data on enforcement efforts carried out for the Cape Perpetua site. The state management agencies use this information along with observations from OPRD staff in the field and frequently asked questions or issues raised by constituents to review compliance and enforcement efforts and make adjustments. OSP, ODFW, and OPRD staff are committed to meeting twice per year to review compliance and enforcement. Adjustments may include shifting additional resources to certain locations, targeted education and outreach efforts, or piloting of new surveillance tools. Workshops with the fishing fleet, sport fishermen, or local community members may also be conducted when determined to be appropriate or requested as a means of disseminating information or discussing and gaining feedback on specific compliance or enforcement issues.



B. OUTREACH STRATEGIES

In this section we outline the outreach strategies ODFW is implementing to deliver information to commercial fishermen, sport fishermen, and the general public on the prohibitions and allowances of the Cape Perpetua site.



B.1 MAPS AND RULES SUMMARIES

ON THE OREGON MARINE RESERVES WEBSITE

The following are available on our website at oregonmarinereserves.com/rules or by contacting the ODFW Newport office at (541) 867-4741.

- **MAPS AND RULES** One page handouts that can be viewed and downloaded. Best for fishermen who may be fishing offshore from a boat. The handout provides a map of the Cape Perpetua site overlaid onto a nautical chart, the site boundary coordinates, and a summary of the prohibitions and allowances in the marine reserve and each of the three MPAs.
- **SHORESIDE MAPS AND RULES** One page handouts that can be viewed and downloaded. Best for folks who may be accessing the marine reserve or one of the MPAs via the shore. The handout provides a schematic map of the Cape Perpetua site that includes landmarks on land and a summary of the prohibitions and allowances in the marine reserve and each of the three MPAs.
- **OREGON ADMINISTRATIVE RULES (OARS)** The complete set of official Oregon Administrative Rules for Oregon's marine reserves and protected areas (OARs 141-142, 635-012, and 736-029) can be viewed and downloaded.

IN THE SYNOPSIS OF COMMERCIAL FISHING REGULATIONS

Booklet printed annually. We include boundary coordinates, maps, and a summary of the rules for each of Oregon's marine reserve sites.

IN THE OREGON SPORT FISHING REGULATIONS GUIDE

Guide printed annually. We include maps and a summary of the rules for each of Oregon's marine reserve sites in the Marine Zone section under Management Designations for Marine Areas. The guide is also available electronically at www.eregulations.com/oregon/fishing.

B.2 DOWNLOADABLE COORDINATES FOR DIGITAL DEVICES

We have marine reserve and MPA boundary coordinates available for download for some more commonly used digital devices. The following are available from the Oregon Marine Reserves website at oregonmarinereserves.com/rules or by contacting the ODFW Newport office at **(541) 867-4741**.

FOR GPS

The following formats are available to download for hand held GPS units.

- **GPX FILE** Used by most Garmin products.
- **PRINT FILE** A printable pdf file with all coordinates for each site. Can be used to hand enter coordinates into your GPS unit.

FOR MAPPING PROGRAMS

The following formats are available to download.

- **KMZ FILE FOR GOOGLE EARTH** The file can be imported into Google Earth “My Places.”
- **LAYER PACKAGE FOR ESRI ARCGIS** The layer package includes shapefiles of the site boundaries.

FOR VESSEL NAVIGATION SYSTEMS

ODFW has worked with the Oregon Fishermen’s Cable Committee (OFCC) to develop boundary coordinates and rules summaries that can be downloaded for some of the more common vessel navigation systems used by Oregon’s commercial fishing fleet. These are available for download as a .zip file from the website for use with the following systems:

- Maptech Offshore Navigator
- Rose Point Coastal Explorer
- Nobeltec Visual Navigation suite/Odyssey Time Zero
- OLEX
- P-Sea WindPlot II

There is also a separate instructions file to download that provides detailed instructions on how to load the boundary coordinate files for each specific navigation program.

ODFW and OSP also distributed electronic thumb drives containing these boundary coordinate files during commercial crab hold inspections at the start of the 2013-14, 2014-15, 2015-16 , and 2016-17 crab seasons.

Fishermen can also obtain a thumb drive by stopping by or calling the ODFW Newport office at **(541) 867-4741**.

WHAT ARE THE PENALTIES FOR VIOLATIONS?

Penalties for violations pertaining to fish, invertebrates, or wildlife within reserves are dictated by the wildlife code (Chapter 496) and commercial fishing code (Chapter 506) within Oregon Revised Statutes.



B.3 SIGNS

Two types of regulations signs have been developed and are posted at strategic locations near boat ramps and beach access points. Locations for the signs were decided in consultation with OSP, OPRD, the Port of Siuslaw, and the Port of Newport along with input from local community members. ODFW may consider adding sign locations, or changing existing locations, during biannual enforcement reviews (see [section A](#) above) based on feedback received from constituents or agency staff.

HARVEST RESTRICTIONS SIGNS

This sign is intended for fishermen who may be fishing offshore from a boat. This sign provides a map of the Cape Perpetua site overlaid onto a nautical chart, the site boundary coordinates, and a summary of the prohibitions and allowances in the marine reserve as well as in each of the three MPAs. These harvest restriction signs are currently posted at the Port of Siuslaw.





SHORESIDE REGULATIONS SIGNS

Aimed at folks who may be accessing the marine reserve or one of the MPAs via the shore. These shoreside regulations signs are placed at common beach access points adjacent to the Cape Perpetua site and provide a generalized summary of what activities are prohibited from the shore at that specific location.

B.4 A GUIDE FOR DEVELOPING OUTREACH PRODUCTS

The ODFW Marine Reserves Program has developed an Outreach Guide for folks who are looking to produce marine reserves outreach products. The guide provides guidelines for helping to ensure that maps and rules language on any outreach materials or products, developed by any person or group, is accurate and consistent with outreach products statewide.

Applying these guidelines will help ensure that your outreach products are accurate, up-to-date, and support compliance and enforcement measures. We encourage you to contact our Communications staff early in your development process. Our staff will provide a timely review of products and determine if any other agencies should be included in the review (i.e., Oregon State Police or State Parks).

WHERE TO FIND THE OUTREACH GUIDE

Available on the state's Oregon Marine Reserves website at oregonmarinereserves.com/library/#outreach

HOW TO CONTACT OUR STAFF

Contact information for our Communications staff can be found at oregonmarinereserves.com/team.

ATTENTION FISHERMEN, LOST YOUR GEAR?



Marine reserve rules allow you to retrieve fishing gear that has accidentally drifted into a marine reserve site.

The retrieving vessel operator **must notify Oregon State Police** at 1-800-452-7888 and receive permission before retrieving the gear. No species may be retained from the retrieved gear.

CALL OREGON STATE POLICE AT 1-800-452-7888

C. PROCEDURES FOR RETRIEVAL OF LOST FISHING GEAR



The marine reserve administrative rules (OAR 635-012) include provisions for the retrieval of fishing gear that has accidentally drifted into the Cape Perpetua site.

C.1 CONTACT OREGON STATE POLICE

The retrieving vessel operator must notify Oregon State Police at 1-800-452-7888 and receive permission before retrieving the gear. No species may be retained from the retrieved gear.

C.2 ADDITIONAL PROVISIONS FOR COMMERCIAL CRAB POTS

- If the pot(s) do not belong to the retrieving vessel, the vessel operator must follow the retrieval requirements set forth in OAR 635-005-0490.
- If the pot(s) do belong to the retrieving vessel, the vessel operator may re-set the pot(s) outside of the reserve area, pursuant to the requirements set forth in OAR 635-005-0490.



WHERE TO FIND MAPS AND RULES

[OREGONMARINERESERVES.COM/RULES](https://oregonmarinereserves.com/rules)

or by contacting the ODFW Newport office at
(541) 867-4741



Oregon’s marine reserve rules prohibit all extractive activities, with an exception for scientific take if the take is deemed necessary and the research contributes to the evaluation of site condition, effectiveness, or impact of stressors.



-- OAR 635-012; OPAC 2008

D. PROCEDURES FOR RESEARCHERS

Oregon’s marine reserves prohibit all extractive activities -- including the take of fish, invertebrates, wildlife, or seaweeds as well as the removal or disturbance of non-living marine resources (i.e. habitats). However, marine reserve rules do include provisions for scientific take if the take is deemed necessary and the research contributes to the evaluation of site condition, effectiveness, or impact of stressors (OAR 635-012; OPAC 2008).



The following sections describe which types of research activities require a permit or state authorization for conducting research in a marine reserve and how to apply for the respective permit. Please contact ODFW Marine Reserves Program staff if you have any questions or would be interested in exploring possible collaborations. Our staff contact information can be found on the Oregon Marine Reserves website at oregonmarinereserves.com/team.

Researchers are also urged to review the guidelines and best practices provided in [Chapter 8](#), established by the U.S. Fish and Wildlife Service, to avoid or minimize human disturbance to wildlife using offshore islands and rocks that are a part of the Oregon Islands National Wildlife Refuge.

D.1 PERMIT NEEDED FROM OREGON DEPARTMENT OF FISH AND WILDLIFE

A Scientific Taking Permit is required to **“take” fish and marine invertebrates** for scientific or educational purposes from any waters belonging to the state of Oregon (OAR 635-007 and 635-043). “Take” as defined in Oregon Administrative Rule (OAR 635-012) means to “fish for, hunt, pursue, catch, capture or kill or attempt to fish for, hunt, pursue, catch, capture or kill.” Take includes the use of all fishing gear and methods that affect an animal’s behavior or movement.

APPLICATIONS FOR SCIENTIFIC TAKING PERMITS

Researchers must apply for and obtain an Oregon Scientific Taking Permit in order to conduct scientific research that may include take in any marine reserve site.

In addition to the standard information required in the permit application, the following information must be provided:

- A project overview, including identification of marine reserve site(s) where work is to be conducted, and how project will contribute to the monitoring or scientific study of the site(s).



WHEN DO I NEED A PERMIT FROM ODFW?

A Scientific Taking Permit is required from ODFW in order to “take” fish and marine invertebrates for scientific or educational purposes from any waters belonging to the state of Oregon.

-- OAR 635-007 and 635-043

- Rationale for why the take of species is necessary for monitoring or scientific study in order to evaluate reserve condition, effectiveness, or impact of stressors. And why alternative, no-take, methods are not practicable.
- Rationale for species and amount of take requested.
- Under the application section, “measures to minimize negative effects” describe measures that will be taken to minimize impacts to species and habitats located within the site(s).

All Scientific Taking Permit applications are reviewed by the appropriate ODFW District Fish Biologist and/or Marine Resources biologist depending on the research location.

Applications that include research to be conducted within any marine reserve site will undergo an additional review by ODFW Marine Reserves Program staff to determine if the **take is deemed necessary and the research contributes to the evaluation of marine reserve site condition, effectiveness, or impact of stressors** (OAR 635-012).

Permits may take up to eight weeks for processing. For more information or to apply for a permit visit the ODFW website at: www.dfw.state.or.us/fish/license_permits_apps/index.asp.

NOTIFICATION OF RESEARCH ACTIVITY

The Principle Investigator (PI) named on the Scientific Taking Permit must send an email notification to ODFW and OSP at least 24 hours prior to conducting research within a marine reserve site. The PI is required to provide the date of the activity, site location (e.g. Redfish Rocks Marine Reserve), a brief general description of what the activity is (e.g. juvenile fish survey), vessel name and ID number (if applicable), and the species/species groups to be collected.

Please send email notifications at least 24 hours in advance to the following staff:

Cristen.N.Don@state.or.us (ODFW)

TThompson@osp.oregon.gov (OSP)



WHEN DO I NEED A PERMIT FROM DSL?

An authorization or removal-fill permit from DSL is required for activities that include structures in, on, under, or over the seafloor or the removal, fill, and/or alteration of material. An authorization is also needed for harvest or removal of subtidal kelp and other seaweeds.

-- OAR 141-125

D.2 AUTHORIZATION NEEDED FROM DEPARTMENT OF STATE LANDS

An authorization or removal-fill permit from the Oregon Department of State Lands (DSL) is required in order to conduct activities that may include structures in, on, under or over the seafloor or the removal, fill, and/or alteration of material (rock, gravel, sand, silt and other inorganic substances).

DSL's marine reserve rules include provisions for research in marine reserve sites that require authorization or removal-fill permits (OAR 141-142). DSL will only grant an authorization or a removal-fill permit **if activities are deemed necessary to study, monitor, evaluate, enforce or protect a marine reserve site**. In addition, DSL may grant an authorization for harvest or removal of subtidal kelp and other seaweeds (algae) **in order to study, monitor, evaluate, enforce or otherwise further the purpose of the marine reserve site**.

Authorizations for scientific experiments are issued under special use authorization rules by DSL (OAR 141-125). The different types of authorizations may include:

- **SHORT TERM ACCESS AGREEMENTS** Issued for a term of less than one year. No application fee, no compensation (rent). The authorization has some indemnification language. Appropriate for short term research including the placement of instrumentation for a limited duration.
- **SPECIAL USE LICENSES (LESS THAN 3 YEARS) AND SPECIAL USE LEASES (UP TO 30 YEARS)** Both authorizations have an application fee, compensation and insurance requirements. Appropriate for the establishment of research projects that include long term placement of scientific equipment.

APPLICATIONS FOR AUTHORIZATIONS AND REMOVAL-FILL PERMITS

Researchers must apply for and obtain any necessary authorization or removal-fill permit from DSL prior to conducting the research activity within the marine reserve site. The proposed activities must meet the requirements of OAR 141-142-0020(1) and the marine reserve site management plan(s).

Information on how to apply for an authorization or removal-fill permit can be found on the DSL website at www.oregon.gov/dsl/WW/Pages/Permits.aspx or by calling DSL in Salem at 503-986-5200.

In addition to the standard information required in the application to DSL, the following information must be provided:

- Detailed project overview, including identification of marine reserve site(s) where work is to be conducted, and how project will contribute to the monitoring or scientific study of the site(s).
- Rationale for why the activity is necessary for monitoring or scientific study to evaluate reserve condition, effectiveness, or impact of stressors. And why alternative methods are not practicable.
- Description of measures that will be taken to minimize impacts to species and habitats located within the site(s).

APPLICATIONS FOR SUBTIDAL KELP AND SEAWEED COLLECTION

Researchers must apply for and obtain authorization by DSL to harvest or remove subtidal kelp or other seaweeds (algae).

In addition to the standard information required in the application to DSL, the following information must be provided:

- Detailed project description, including identification of marine reserve site(s) where work is to be conducted, and how project will contribute to the monitoring or scientific study of the site(s).
- Rationale for why the harvest/removal of specimens is necessary for monitoring or scientific study to evaluate reserve condition, effectiveness, or impact of stressors. And why alternative methods are not practicable.
- Rationale for which types of kelp or other algae are to be harvested/removed and amount of take requested.
- Description of measures that will be taken to minimize impacts to species and habitats located within the site(s).

NOTIFICATION OF RESEARCH ACTIVITY

The Principle Investigator (PI) named on the Scientific Taking Permit must send an email notification to ODFW and OSP at least 24 hours prior to conducting research within a marine reserve site. The PI is required to provide the date and location of activity, type of activity, vessel name and ID number (if applicable), gear to be used or deployed, and brief description of activity to be performed.

Please send email notifications 24 hours in advance to the following staff:

Cristen.N.Don@state.or.us (ODFW)

TThompson@osp.oregon.gov (OSP)



WHEN DO I NEED A PERMIT FROM OPRD?

A permit from OPRD is required for scientific research or monitoring activities occurring in the intertidal zone, including extraction of living (i.e., seaweed) and non-living natural products, and activities that may disturb habitats.

D.3 PERMIT NEEDED FROM OREGON PARKS AND RECREATION DEPARTMENT

A permit from the Oregon Parks and Recreation Department (OPRD) is required in order to engage in a prohibited activity (listed below) for scientific research or monitoring purposes within the Ocean Shore State Recreation Area (Ocean Shore). The Ocean Shore as provided in ORS 390.605(2), means the land lying between extreme low tide of the Pacific Ocean and the statutory vegetation line as described by 390.770 or the line of established upland shore vegetation, whichever is farther inland. It is necessary that the activity be consistent with the purposes of the marine reserve.

Prohibited activities:

- a) Collect, pick, cut, mutilate or remove living or non-living natural products (e.g., marine plants, minerals, shells, rocks, and sand);
- b) Give or offer food items to any wildlife;
- c) Pursue, injure, or molest any wildlife or disturb their habitats;
- d) Dig up or remove any soil, sand, rock, or fossil materials; or
- e) Disturb or remove any archaeological, cultural, or historical material.

APPLICATIONS FOR SCIENTIFIC RESEARCH PERMITS

Researchers must apply for and obtain an OPRD scientific research permit in order to conduct any of the above prohibited activities within a marine reserve. In addition to the standard information required in the permit application, the following information must be provided:

- Detailed project overview, including identification of marine reserve site(s) where work is to be conducted, and how project will contribute to the monitoring or scientific study of the site(s).
- Rationale for why the prohibited activity is necessary for monitoring or scientific study to evaluate reserve condition, effectiveness, or impact of stressors and why alternative methods are not practicable.
- Description of measures that will be taken to minimize impacts to species and habitats located within the site(s).

All applications are reviewed by the appropriate OPRD Stewardship Division staff and relevant park staff. For more information or to apply for a permit visit the OPRD website at: oprpermits.org.

NOTIFICATION OF RESEARCH ACTIVITY

The Principle Investigator (PI) named on the Scientific Research Permit must send an email notification to OPRD and OSP at least 24 hours prior to conducting research within a marine reserve site. The PI is required to provide the date of activity and brief description of activity to be performed.

Please send email notifications 24 hours in advance to the following staff:

Laurel.Hillmann@oregon.gov (OPRD)

TThompson@osp.oregon.gov (OSP)



CHAPTER 8. SITE SPECIFIC MANAGEMENT ISSUES NON-REGULATORY MANAGEMENT STRATEGIES

This Chapter identifies management issues specific to the Cape Perpetua site and provides non-regulatory management strategies to address the issues in concurrence with the marine reserves goals, objectives, principles, and guidelines (see [Chapter 2](#)). Through ongoing management and monitoring efforts we may identify additional issues specific to the Cape Perpetua site in the future. A review of issues and strategies will be conducted every five years as part of the management review (described in [Chapter 3](#)). The review may trigger adaptations to strategies and updates to this segment of the site management plan.

A. SEABIRD DISTURBANCE

During the marine reserves planning process, human caused disturbances to seabirds and Black Oystercatchers (a shorebird that nests on rocky shorelines) was identified as a management issue to be addressed in the site management plan through non-regulatory strategies.

Oregon's rugged rocky shorelines and offshore islands provide habitat for approximately 1.3 million nesting seabirds, representing 15 species. This represents approximately half of the seabirds breeding along the west coast of the contiguous United States. In addition, there are millions of marine birds that breed elsewhere and migrate to Oregon's coastal waters ([USFWS 2007](#)). Seabirds spend the majority of their life at sea foraging on marine fishes and invertebrates and return to land for breeding, loafing, and roosting. In this section we identify specific geographic locations within or adjacent to the Cape Perpetua site of particular concern to human caused seabird disturbance, typical causes of disturbance, guidelines and best practices, and strategies for management.

This section was developed in consultation with the U.S. Fish and Wildlife Service (USFWS). The USFWS is responsible for the management and conservation of migratory birds in the United States. They also manage the Oregon Islands National Wildlife Refuge (NWR) which includes 1,853 emergent rocks and islands and two headland areas and spans 320 miles of the Oregon coast.

A.1 AREAS OF CONCERN

OREGON ISLANDS NWR ROCKS

The approximately 33 offshore emergent rocks located within the boundaries of the Cape Perpetua site, and considered part of the Oregon Islands NWR, were identified as specific geographic areas of concern for human caused disturbances to seabirds. These rocks provide hab-

itat that is important for vulnerable eggs, juveniles, and adults. The refuge is closed to public access at all times to minimize human disturbance to wildlife.

SHORELINE FROM CONICAL ROCK TO COX ROCK

The shoreline area, stretching from the north side of Heceta Head at Conical Rock south to Cox Rock (Figure 3) was also identified as a geographic area of concern for human caused disturbances to seabirds. This location was identified due to human access to nesting, loafing and roosting areas and a high amount of foot traffic by visitors.



Figure 3. The shoreline area stretching from Conical Rock, on the north side of Heceta Head, down to Cox Rock was as identified as a geographic area of concern for human disturbance to seabirds.

A.2 CAUSES OF HUMAN DISTURBANCE

BOATERS

Motorized and non-motorized watercraft approaching too close have a high potential for disturbing seabirds and can result in the reduction or loss of eggs and chicks, and in some cases in colony abandonment ([USFWS 2009](#)).

AVIATION

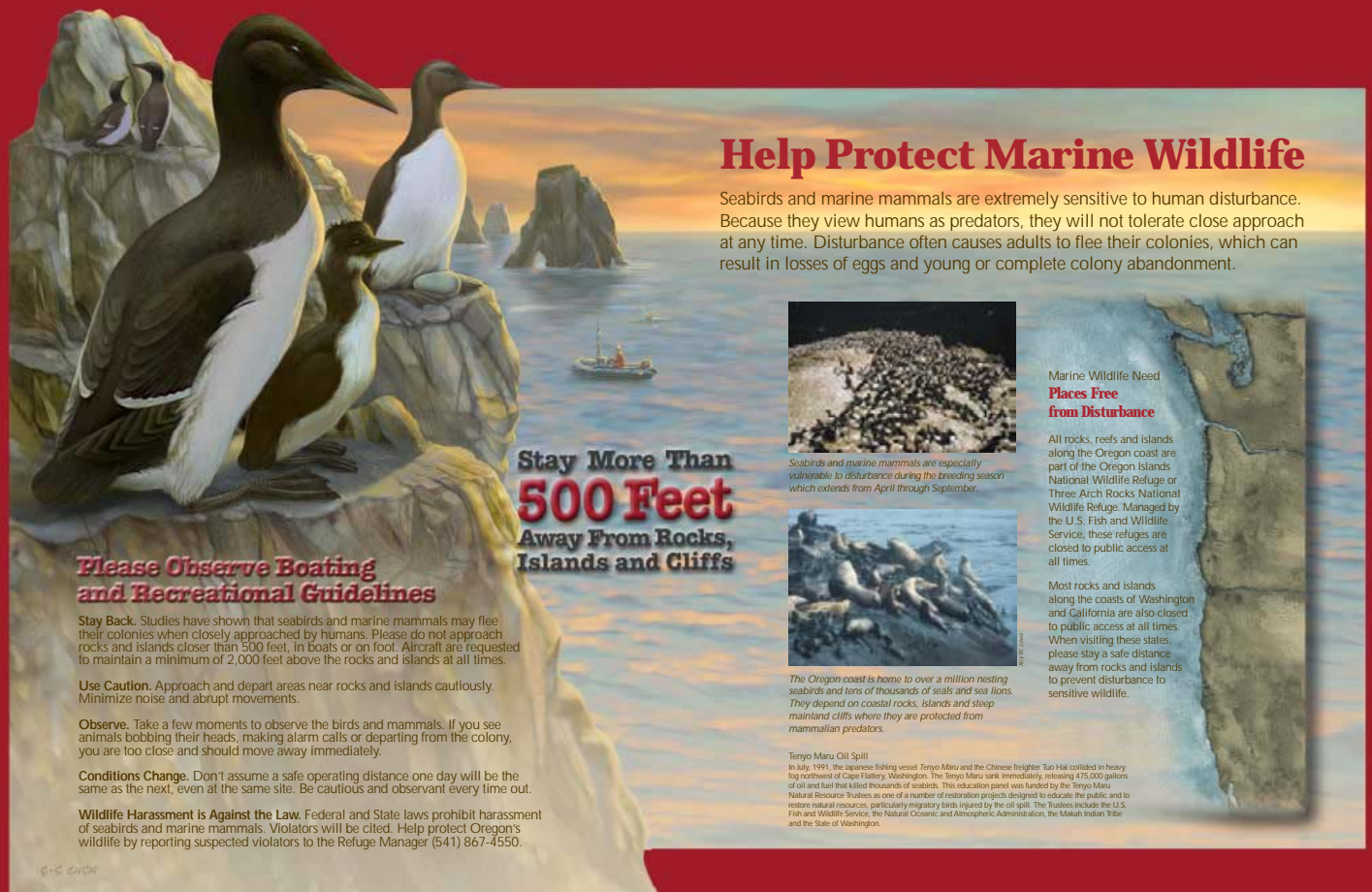
Low flying aircraft have a high potential for disturbing seabird nesting grounds ([USFWS 2009](#)).

DRONES / UNMANNED AIRCRAFT SYSTEMS (UAS)

Flying unmanned aircraft systems (UAS) over or near wildlife can create stress that may cause significant harm, and even death. Areas considered ecologically sensitive—including lands within the National Wildlife Refuge System—can be disproportionately affected by drone flights. Thus it is illegal to operate unmanned aircraft on Refuge lands. In addition, if a UAS operator stands beyond Refuge boundaries and flies the vehicle over the Refuge, fines can be levied if the UAS is observed disturbing wildlife, e.g. flushing nesting birds from an offshore island.

CLIMBING ON CLIFFS

People climbing on cliffs where seabirds or nests are present have a high potential for disturbing seabirds and can result in the reduction or loss of eggs and chicks. This activity can also result in the degradation or destruction of habitat important to seabirds for nesting, loafing or roosting (USFWS personal communication). This was noted of particular concern for the shore-



Help Protect Marine Wildlife

Seabirds and marine mammals are extremely sensitive to human disturbance. Because they view humans as predators, they will not tolerate close approach at any time. Disturbance often causes adults to flee their colonies, which can result in losses of eggs and young or complete colony abandonment.

Stay More Than 500 Feet Away From Rocks, Islands and Cliffs

Please Observe Boating and Recreational Guidelines

Stay Back. Studies have shown that seabirds and marine mammals may flee their colonies when closely approached by humans. Please do not approach rocks and islands closer than 500 feet, in boats or on foot. Aircraft are requested to maintain a minimum of 2,000 feet above the rocks and islands at all times.

Use Caution. Approach and depart areas near rocks and islands cautiously. Minimize noise and abrupt movements.

Observe. Take a few moments to observe the birds and mammals. If you see animals bobbing their heads, making alarm calls or departing from the colony, you are too close and should move away immediately.

Conditions Change. Don't assume a safe operating distance one day will be the same as the next, even at the same site. Be cautious and observant every time out.

Wildlife Harassment is Against the Law. Federal and State laws prohibit harassment of seabirds and marine mammals. Violators will be cited. Help protect Oregon's wildlife by reporting suspected violators to the Refuge Manager (541) 867-4550.

Marine Wildlife Need Places Free from Disturbance

All rocks, reefs and islands along the Oregon coast are part of the Oregon Islands National Wildlife Refuge or Three Arch Rocks National Wildlife Refuge. Managed by the U.S. Fish and Wildlife Service, these refuges are closed to public access at all times.

Most rocks and islands along the coasts of Washington and California are also closed to public access at all times.

When visiting these states, please stay a safe distance away from rocks and islands to prevent disturbance to sensitive wildlife.

Seabirds and marine mammals are especially vulnerable to disturbance during the breeding season which extends from April through September.

The Oregon coast is home to over a million nesting seabirds and tens of thousands of seals and sea lions. They depend on coastal rocks, islands and steep mainland cliffs where they are protected from mammalian predators.

Tenryo Maru Oil Spill

In July 1991, the Japanese fishing vessel Tenryo Maru and the Chinese freighter Tian Hai collided in heavy fog northwest of Cape Hatteras, Washington. The Tenryo Maru sank immediately releasing 475,000 gallons of oil and fuel that killed thousands of seabirds. This education panel was funded by the Tenryo Maru Natural Resource Trustee as one of a number of restoration projects designed to educate the public and to restore natural resources, particularly migratory birds, injured by the oil spill. The Trustee includes the U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration, the Makah Indian Tribe and the State of Washington.

line area stretching from Conical Rock to Cox Rock.

A.3 USFWS GUIDELINES AND BEST PRACTICES

USFWS has guidelines and best practices for boaters, aviators, and wildlife viewers to avoid or minimize human caused disturbances to wildlife.

USFWS advises all motorized and non-motorized watercraft to remain at least 500 feet away from all islands and emergent rocks and reefs associated with the Oregon Islands NWR. Watercraft venturing closer than 500 feet may disturb wildlife and place the boat operator in violation of the Migratory Bird Treaty Act.

USFWS requests aircraft pilots to maintain a minimum altitude of 2,000 feet above ground level (AGL) or maintain a one-half nautical mile lateral distance from all coastal rocks and islands. Overflights lower than 2,000 feet AGL or closer than one-quarter to one-half mile have a high potential for disturbing seabird nesting grounds as well as pinniped breeding and resting sites.

Recreational use of unmanned aircraft systems (UAS/drones) is prohibited at Oregon Islands NWR. Do not fly over or near wildlife as this can create stress that may cause significant harm, and even death. Pursuit, harassment, or an intentional disturbance of animals during breeding, nesting, rearing of young, or other critical life history functions is prohibited. Launch the UAS more than 100 meters (328 feet) from wildlife. Never approach animals or birds vertically with the UAS.

Photo: Amelia O'Connor



The FAA has authority over all airspace. Ensure that you comply with all [FAA regulations and guidance](#) for flying your UAS.

USFWS advises people to avoid climbing on cliffs in areas that seabirds are known to use.

A.4 MANAGEMENT STRATEGIES

ODFW STRATEGIES

ODFW looks to assist the USFWS by promoting and educating boaters, aviators, researchers, wildlife viewers, and the general public about USFWS guidelines and best practices for avoiding or minimizing human disturbance to wildlife.

FOR BOATERS, AVIATORS, WILDLIFE VIEWERS, AND THE GENERAL PUBLIC Provide the public with easy access to USFWS outreach materials and information including their Seabirds of the Pacific Northwest brochure at outreach events and on the Oregon Marine Reserves website at oregonmarinereserves.com/library/#outreach.

FOR SCIENTIFIC RESEARCHERS Inform researchers looking to conduct research in marine reserve sites about the Oregon Islands National Wildlife Refuge and the guidelines and best practices established by USFWS. Provide contact information for Oregon Islands National Wildlife Refuge staff for questions or consultation.

RECOMMENDED STRATEGIES

Establishing volunteer wildlife interpreters on lands managed by OPRD at Heceta Head and overlooking any NWR rocks was identified as a management strategy that could minimize disturbance issues through education and passive deterrence strategies.

A.5 ADDITIONAL USFWS RESOURCES



VISIT THE OREGON ISLANDS NATIONAL WILDLIFE REFUGE WEBSITE AT [WWW.FWS.GOV/REFUGE/OREGON ISLANDS](http://WWW.FWS.GOV/REFUGE/OREGON_ISLANDS)



FIND A MAP OF THE REFUGE AT [WWW.FWS.GOV/REFUGE/OREGON ISLANDS/MAP.HTML](http://WWW.FWS.GOV/REFUGE/OREGON_ISLANDS/MAP.HTML)



DOWNLOAD THE PACIFIC NORTHWEST SEABIRDS [BROCHURE](#)



LEARN ABOUT THE SCIENCE BEING CONDUCTED AT [WWW.FWS.GOV/REFUGE/OREGON ISLANDS/WHAT WE DO/SCIENCE.HTML](http://WWW.FWS.GOV/REFUGE/OREGON_ISLANDS/WHAT_WE_DO/SCIENCE.HTML)



OREGON COAST NATIONAL WILDLIFE REFUGE COMPLEX
2127 SE MARINE SCIENCE DRIVE NEWPORT, OR 97365
(541) 867-4550 OREGONCOAST@FWS.GOV

B. HUMAN INDUCED STRESSORS FOR FUTURE CONSIDERATION

During this initial marine reserves evaluation period (see [Chapter 3, section C](#)), implementation of Oregon’s marine reserves is being staffed and funded at an austerity level by the Oregon Legislature. With limited resources, the state agencies have prioritized management efforts that are focused on extractive activities (e.g. fishing, ocean development). However, it is recognized that there are additional non-extractive activities that may negatively impact the marine reserve goals of conserving marine habitats and biodiversity; providing a framework for scientific research and effectiveness monitoring; or avoiding significant adverse social and economic impacts on ocean users and coastal communities (OPAC 2008).

Given additional resources, the state agencies should consider a process for identifying and prioritizing additional human induced stressors for specific marine reserve sites and the marine reserve system. Prioritization should include factors such as likelihood of occurrence and severity of impact. The prioritization can then be used by the state agencies to select which stressors need management strategies to be developed and incorporated into management plans.

In some instances, we may determine that certain stressors cannot be addressed through non-regulatory management strategies. These may warrant specific discussion during the marine reserves program evaluation in 2023 on if or how to address in marine reserves implementation moving into the future.

During site management plan workshops and public comment for the Cape Perpetua Site Management Plan, comments were received that identified possible human induced stressors that may warrant future consideration. Here we highlight those stressors as identified by constituents.

Potential human induced stressors at the Cape Perpetua site:

WATER QUALITY <ul style="list-style-type: none">• Bacteria• Herbicides and pesticides• Pharmaceuticals	MARINE DEBRIS AND POLLUTION <ul style="list-style-type: none">• Land-based debris• Derelict fishing gear
VISITATION <ul style="list-style-type: none">• Impacts on intertidal ecology (e.g. trampling)• Impacts on seabirds and shorebirds• Impacts on pinnipeds	



CHAPTER 9. OPPORTUNITIES BEYOND THE AGENCY REPRESENTING LOCAL COMMUNITY INTERESTS

This Chapter highlights activities and opportunities that are of interest to local communities above and beyond what is being carried out by ODFW and state agency management partners for the Cape Perpetua site. These include additional opportunities for research, monitoring, outreach, and community engagement as well as for education and economic development.

By highlighting the communities' interests we hope to attract additional research and resources, and to foster community led projects.

A. IDENTIFYING ACTIVITIES AND OPPORTUNITIES

In developing this site management plan, ODFW was interested in learning what projects or additional research the community was interested in beyond what is being carried out by ODFW that could complement marine reserves implementation. In particular, we were interested in learning about potential projects that could be led by the community for the Cape Perpetua site.

Between 2013 and 2017, ODFW gathered input from local community members and other interested members of the public through site management plan workshops, in written comments provided to ODFW, and during one-on-one conversations with ODFW staff.

A.1 COMMUNITY WORKSHOPS

During a series of management plan community workshops held in 2013 and 2014, ODFW sought feedback on:

- Ways to improve our communication about the ecological monitoring and human dimensions research activities and results for the Cape Perpetua site.
- The best ways to share monitoring and research information with the community.
- Ideas for projects or additional research important to community members beyond what is being carried out by ODFW.

These workshops were designed to listen and learn about community interests and were conducted as brainstorming sessions where all ideas were recorded. Workshop attendees recommended more than 50 different research and monitoring ideas for the Cape Perpetua site and 30 different activities related to outreach and compliance. Summaries from the three workshops are included in [Appendix A](#).

A.2 TYPES OF PROJECTS IDENTIFIED

From the many ideas we gathered through workshops, written comment, and in one-on-one conversations -- those that fit ODFW's mandates (see [Chapter 2](#)) and were found to be feasible given staff and funding resources available have been adopted as management strategies in Chapters 5-8 or have been added as research and monitoring activities in ODFW's marine reserves monitoring plans. Other ideas shared have been identified as opportunities beyond the agency and are highlighted in this chapter. Projects included in this chapter fall into one of three categories:

- **COMMUNITY SUGGESTED RESEARCH** Research or monitoring of interest to the community to be carried out by non-ODFW scientists. The research would likely be led by an agency or academic institution due to complexity and/or expense.
- **COMMUNITY LED PROJECTS** The community provides all support, personnel, and resources needed to develop and perform the project.
- **PARTICIPATORY PROJECTS** A project made available locally that is likely to require resources and/or expertise beyond the community's capacity to develop and lead. Community members participate in the project.

B. RESEARCH AND MONITORING OPPORTUNITIES

Opportunities for research and monitoring identified in this section include ecological, human dimensions, and community science projects.

B.1 ECOLOGICAL PROJECTS

The community generated ideas and suggestions for ecological research and monitoring projects that might complement the work currently being carried out by ODFW and our research partners at the Cape Perpetua site. Recommendations included new "Community Suggested Research" projects as well as noting already existing (non-ODFW) research projects that could complement ODFW's monitoring efforts. The community also suggested that many of the identified projects could use local fishing boats to assist in the research, which could also be an economic development opportunity related to the Cape Perpetua site.

COMMUNITY SUGGESTED - RESEARCH ON MARINE COMMUNITIES

Multiple projects were identified pertaining to studying species, habitats, and interactions among animals and their surrounding environment. These studies were seen by community members as furthering knowledge of Oregon's nearshore marine environment, furthering our understanding of marine reserve protections, or were considered to be of cultural or economic importance to the community. Suggested research included:

- Research related to soft bottom habitats (e.g. sand, gravel) and associated species.
- Juvenile fish recruitment surveys in the subtidal and intertidal. Could expand the subtidal surveys currently being conducted at the Otter Rock and Redfish Rocks marine reserve sites.



- Invertebrate recruitment surveys in the intertidal.
- Genetics research: understand population connectivity, compare inside vs outside the reserve. Could be an add on to current hook-and-line surveys.
- Documenting fish and plankton species found in the water column (pelagic).
- Invasive and non-native species surveys.
- Foraging of terrestrial mammals in the rocky intertidal.

Possible Project Leads: Universities, NOAA Fisheries, State Fisheries Genetics Lab, Multi-Agency Rocky Intertidal Network (MARINe)

Existing Projects: Research pertaining to human impacts on benthic systems led by the Benthic Ecology Lab at Oregon State University (OSU).
Invertebrate recruitment and larval transport studies led by OSU-PISCO.

COMMUNITY SUGGESTED - SPECIES OF INTEREST RESEARCH

The community identified a number of species specific research projects of particular interest at the Cape Perpetua site. Community members expressed that they'd like to see special attention given to species with high economic or cultural value. Suggested research included:

- Crab research including movement studies, determining natural mortality rates, as well as abundance and size structure inside vs outside of reserve.
- Rockfish tagging and movement study. Could add on to current hook-and-line surveys.
- Assessments of abalone and scallops in the rocky intertidal.
- Forage fish surveys.
- Halibut surveys.

- Predator-prey and food web interaction studies focused on pinnipeds and lingcod as predators.
- Seabird and shorebird monitoring.

Possible Project Leads: Universities, NOAA Fisheries, ODFW Shellfish Program, Portland Audubon, US Fish and Wildlife Service (USFWS), Tribes

Existing Projects: Gray whale foraging research led by OSU.
 Seabird and Black Oystercatcher surveys led by Portland Audubon and USFWS.
 Corvid outreach led by Portland Audubon.
 Brown Pelican survey led by west coast Audubon network and USFWS.
 Marbled Murrelet radio tag project led by OSU (2017).

COMMUNITY SUGGESTED - OCEANOGRAPHIC RESEARCH

Community members identified physical, chemical, and biological oceanographic research projects. They noted that large-scale oceanographic events such as El Nino, La Nina, and ENSO as well as changing ocean conditions such as ocean acidification and nearshore hypoxia can influence marine reserve effects. They also noted that monitoring ocean acidification and hypoxia at the marine reserve site can provide data to inform nearshore resource management more broadly. Suggested research included:

- Localized effects of climate events (e.g. El Nino, hypoxia) on ecologically and commercially important species.
- Larval dispersal research.
- Expand the ocean acidification research and monitoring at Cape Perpetua.
- Role of intertidal algae as a carbon sink.
- Real time reporting of oceanographic data for use by fishermen and researchers.

Possible Project Leads: Universities

Existing Projects: Ocean acidification (pH) monitoring in the rocky intertidal led by OSU-PISCO. This project includes a community science opportunity (see B.3).

COMMUNITY SUGGESTED - HUMAN IMPACTS RESEARCH

A number of studies were recommended to understand or detect human impacts that may be occurring on species, habitats, or marine communities. Suggested research included:

- Studying any signs and recovery of bottom (benthic) habitat damage.
- Studying impacts of human foot traffic/trampling in the rocky intertidal.



- Water quality monitoring beyond just bacteria; herbicides, pesticides, and pharmaceuticals.
- Comparison of rocky intertidal communities adjacent to spray vs. no spray areas.
- Study the edge effects of the marine reserve. Particular interest in crab (highly mobile) and groundfish species with smaller adult home ranges.
- Effects of human disturbance on bird colonies at Heceta Head.
- Effects of human disturbance on pinnipeds at haul-out sites.

Possible Project Leads: Universities, USFWS, Portland Audubon, Oregon Department of Environmental Quality (DEQ)

Existing Projects: Water quality monitoring (bacteria) by Surfrider Foundation Blue Water Task Force.

COMMUNITY SUGGESTED - LAND-SEA CONNECTIONS RESEARCH

The lands abutting the Cape Perpetua site include diverse forest and riparian habitats managed or owned by various state, federal, and private land conservation or management groups. Community members noted that these terrestrial habitats and the watershed are home to a number of listed species that utilize the ocean as part of their life cycle. The community also expressed a strong interest in better understanding land-sea connections in this area, and if or how the combined marine and terrestrial protections are effecting local ecosystems. Suggested research included:

- Studies or monitoring for listed species that utilize both the Cape Perpetua site and adjacent terrestrial or freshwater habitats as part of their life cycle. These species include but are not limited to: Marbled Murrelet, Steelhead and Coho Salmon, Eulachon, and Pacific Lamprey.
- Paired watershed studies (Cummins Creek and Ten Mile) into effects on juvenile salmonid abundance.

Possible Project Leads: Universities, ODFW, US Forest Service, USFWS, Portland

B.2 HUMAN DIMENSIONS RESEARCH PROJECTS

Community members suggested the following ideas for human dimensions research projects that might complement the work currently being carried out by ODFW and our research partners for the Cape Perpetua site.

- Additional research to better understand the different effects that fishing effort shift has on the fishing fleet due to the reserve.
- Additional research on businesses. Do existing local businesses capitalize on marine reserves? Do businesses capitalize on information being generated for marine reserves? Are there new businesses generated around marine reserves?
- Expand existing visitor surveys. Use information gathered in surveys to help inform local businesses and local government.
- Expand existing surveys on tourist/visitor awareness of marine reserves.

Possible Project Leads: Universities, Chambers of Commerce, Oregon Sea Grant, US Forest Service, Oregon Parks and Recreation Department (OPRD)

Existing Projects: Visitor surveys led by the Cape Perpetua Collaborative.
Visitor surveys led by the American Cetacean Society.

B.3 COMMUNITY SCIENCE PROJECTS

Community members identified community science projects as a good way to engage people in marine reserves implementation. Community members recommended ideas for projects that could be performed by non-professional scientists. Some of these projects could be done by folks who, after a little training, are able to perform tasks that contribute to data collection. Some of the projects identified could be done on one's own schedule or wouldn't need active oversight by a professional staff. Community science recommendations included: "Community Led" projects, "Existing" projects that community members can plug into, as well as ideas for new "Participatory" community science projects.

COMMUNITY LED PROJECTS

Community members suggested the following ideas for community science projects that could be led by the community:

- Rocky intertidal monitoring. Expand on existing monitoring by ODFW and universities.
- Smelt spawning surveys on the beach.
- Juvenile fish recruitment surveys in the rock intertidal.
- Seabird observations.
- Marine mammal observations.

- Water quality monitoring.
- Tracking unusual events.
- Bioblitz: Biodiversity inventories and surveys of intertidal and adjacent watersheds.

Possible Project Leads: American Cetacean Society, Portland Audubon, CoastWatch, Oregon Coast Aquarium, Surfrider Foundation, The Nature Conservancy, Tribes, Watershed Councils

EXISTING COMMUNITY SCIENCE PROJECTS

The following community science projects were identified as being established projects that community members could plug into:

- Sea Star Wasting Disease: Monitoring in rocky intertidal habitats led by CoastWatch and MARINe.
- Blue Water Task Force: Monthly water testing for bacteria led by Surfrider Foundation Siuslaw Chapter.
- NOAA Shoreside Marine Debris Monitoring: Monthly marine debris survey. Surfrider Foundation Siuslaw Chapter, Oregon Shores, NOAA Marine Debris Program.
- Marbled Murrelet Surveys: Annual survey led by Portland Audubon and OSU.
- Black Oystercatcher Survey: Annual survey led by USGS, Portland Audubon, and USFWS.
- Seabird Monitoring Survey: Nesting success/productivity annual survey at Heceta Head Lighthouse and Sea Lion Caves. Led by Portland Audubon, USFWS, and OSU.
- CoastWatch Mile Surveys: Monthly beach surveys. Organized by Oregon Shores.
- Whale Trail: Visitor intercept surveys and whale observation. Led by American Cetacean Society.

PARTICIPATORY PROJECTS

Community suggestions included the following ideas for projects that could be developed for community members to participate in. These projects would likely require external support to develop and lead.

- Oceanographic sensors deployed by commercial and charter fishing boats
- Ocean acidification monitoring

Possible Project Leads: Universities, Crab Commission

Existing Projects: Ocean acidification (pH) monitoring in rocky intertidal zone. pH sensors are installed and maintained by local volunteers. Led by OSU-PISCO and The Nature Conservancy.



Photo: Amelia O'Connor

C. COMPLIANCE, OUTREACH, AND EDUCATION OPPORTUNITES

Community members shared ideas on ways in which marine reserves information could best be shared with local communities and the public. Many of the ideas shared have helped shape new communications tools, products, and channels that are actively being used by ODFW and are captured in [Chapter 6](#). Additional ideas for compliance, outreach, and education projects beyond what is being carried out by the agency are provided in this section. Recommendations included both “Community Led” and “Participatory” projects.

COMMUNITY LED PROJECTS

Community members suggested the following ideas for projects that could be led by the community:

- Friends of group for Cape Perpetua site.
- Video for businesses.
- Virtual tours: Web-based “tour” of the site.
- Train volunteers to provide marine reserves materials and information at local community events, make presentations at local meetings, and provide interpretive talks on hikes and outings.



- Develop marine reserves outreach packets to distribute to local businesses.
- Develop media packets for local visitor bureaus.
- Develop local marine reserves events.
- Develop a marine reserves best practices certification program for charter vessel operators.
- Destination tourism opportunities: Field trips, boat tours, tidepool programs.
- Establish a program for monitoring and report potential violations to Oregon State Police.
- Develop app for phone: Marine reserves boundaries and rules.

Possible Project Leads: Cape Perpetua Collaborative, US Forest Service, Oregon Coast Visitors Association (OCVA), Chambers of Commerce, Local Government

Existing Projects: Digital hospitality packet developed by the Cape Perpetua Collaborative and OCVA.
Tidepool tours led by US Forest Service seasonally.
Cape Perpetua Collaborative docent program.

PARTICIPATORY PROJECTS

Community suggestions included the following ideas for projects that community members could contribute to. These projects would likely require external support to develop and lead.

- Ocean literacy curriculum developed around the Cape Perpetua Marine Reserve.
- Exhibit for display at the Oregon Coast Aquarium, Hatfield Marine Science Center, and the Cape Perpetua Visitor Center.
- Boundary markers.

Possible Project Leads: Educators, Oregon Coast Aquarium, Oregon Sea Grant, US Forest Service





APPENDIX A. WORKSHOP SUMMARIES

CAPE PERPETUA MANAGEMENT PLAN WORKSHOP NOTES FROM PUBLIC INPUT

December 9, 2013 - Lincoln City Community Center

TOPIC: Best ways for ODFW to communicate ecological monitoring activities and results

This is a summary of the community's questions and ideas captured in a brainstorming session from our first workshop held as part of the development of the Cape Perpetua Marine Reserve Site Management Plan. Specifically, this first workshop was designed to listen and learn about the community's ideas on how ODFW can be sharing information with the local community about ecological research activities and results from the marine reserve. We asked specific questions on:

- What information would people like to know about the ecology of the marine reserve?
- What information would people like to know about the monitoring activities being conducted at Cape Perpetua?
- What products would be useful for sharing what we are learning from our ecological monitoring?
- What are local ways to share that information? What people, events, or other pathways?

ODFW will be looking at all these ideas, considering them against the state's marine reserve mandates and what is feasible with our available time and resources. We will identify those ideas to move forward with that best meet our mandates and our available resources. These will be documented in the site management plan as commitment by ODFW to implement those actions.

All non-selected ideas will be documented in the community section of the site management plan and will also be carried forward for further community discussion in additional workshops as part of the site management planning process. We hope that a few of these ideas are identified as community priority projects that could be led by community members or groups.

IDEAS FROM THE PUBLIC

WHAT DO YOU WANT TO KNOW?

- Species maps
 - Where do species live?
- Fish movements
 - What's swimming through the marine reserve (e.g., acoustic tagging)?
 - What species are in the marine reserve?
 - Specifically lingcod movements, both adult and juvenile
- Video – what does it look like in the marine reserve?
 - Live streaming
 - Post short videos on You Tube
- Fun facts
 - Biggest fish
 - Smallest fish
 - Strangest creature
 - Make it fun (“does the wolf eel howl at a full moon?”)
- Science
 - Explanation of spillover effect
 - How do scientists determine marine reserves?
 - How have species size and abundance changed over time
 - Food web and predator-prey interactions
 - Lingcod suggested
- Stories to tell about marine reserves
 - Why marine reserves?
 - Benefits of marine reserves
 - Success stories of marine reserves around the world
 - 10 year experiment to learn about marine reserves here in Oregon
 - Value of marine reserves as a no take reference area
- Current fisheries management practices and benefits need to be acknowledged and taken into consideration when determining possible benefits of marine reserve sites. This should be part of the education about the sites. Fish stocks were rebounding at faster than predicted levels before these sites were implemented.
- How will the information collected from the recreational sector, during the Territorial Sea Planning process, be factored into the baseline studies when it was dismissed as “anecdotal” by the body (STAC) that will be leading the 10 year review?

PRODUCTS?

- Hook-and-line volunteer newsletter
- Photos and species lists
 - Species inventory - kids and general public

- Smart phone app
 - Use QR codes can link to marine reserves information
- Blog
 - Post videos
 - Quick messages
 - Short stories
- Volunteers share stories of helping out with monitoring
- Year in the life of a marine reserve
 - Summary of what is happening in the marine reserve
 - Ecologically
 - What research will be conducted in the upcoming year
- Kiosk at Knight Park
- Maps with topography and habitat
- Video clips –on various topics
 - Biodiversity
 - Each reserve site
 - Different research projects

PEOPLE/GROUPS/EVENTS?

- Link data to children
 - Ocean literacy
 - Teachers in Lincoln County
 - REEF (volunteer SCUBA surveys)
 - Salmon Drift Creek Watershed Council
 - Oregon Coast Aquarium
- Docent led walks on Saturdays in summer - access beach from Logan Rd. or other access point
- Groups
 - HMSC
 - NOAA
- Events – single day big community events
 - Depoe Bay
 - Salmon Bake
 - Wooden Boat Show
 - Lincoln City
 - Clam Chowder Cook-off
 - Kite Festival
 - Westwind visitors open house (June 15th)
 - Cascade Head 40th birthday celebration – follow up with Jalene/Dick
 - Devils Lake revival – coho event

PATHWAYS/MECHANISMS?

- Local newspapers
- Guest editorials
- Insert special section
- Local radio
- Oregon Field Guide
- Can also highlight other groups involved and what they're doing
- Cable access TV
- Signage locations
- Information stop along Hwy 101
- City Park trail
- Logan Road and D River
- Internet and Social Media
- Website - better linkage/access between the main ODFW website and the Oregon Marine Reserves website
- I-Fish and other fishing blog spots
- Facebook
- You Tube
- Google Earth with details and photos
- Popular places for information distribution
- Safeway
- Lincoln City Cultural Center
- Visitor centers
- Whale Watch Center (OPRD)
- Whale Museum
- Chinook Winds Casino (Tribal)
- Westwind – also social media link
- Whale watching boats
- Chamber and tourism groups
- Docent trainings

CAPE PERPETUA MANAGEMENT PLAN WORKSHOP NOTES FROM PUBLIC INPUT

March 12, 2014 at the Newport Recreation Center

TOPIC: Best ways for ODFW to communicate Human Dimensions monitoring activities and results

This is a summary of the community's questions and ideas captured in a brainstorming session from our March workshop, held as part of the development of the Cape Perpetua Marine Reserve Site Management Plan. Specifically, this workshop was designed to listen and learn about the community's ideas on how ODFW can best share information with the local community about human dimensions (social and economic) monitoring activities and results. We asked specific questions on:

- What information would people like to know about human dimensions studies for Cape Perpetua?
- What products would be useful for sharing what we are learning from our human dimensions monitoring?
- What are local ways to share that information? What people, events, or other pathways?

ODFW will be looking at all these ideas, considering them against the state's marine reserve mandates and what is feasible with our available time and resources. We will identify those ideas to move forward with that best meet our mandates and our available resources. These will be documented in the site management plan as commitment by ODFW to implement those actions.

All non-selected ideas will be documented in the community section of the site management plan and will also be carried forward for further community discussion in additional workshops as part of the site management planning process. We hope that a few of these ideas are identified as community priority projects that could be led by community members or groups.

IDEAS FROM THE PUBLIC

WHAT DO YOU WANT TO KNOW?

- Visitor information
 - What is the monetary value of non-extractive uses of the marine reserve site, such as the big wave surfing competition?
 - How many people come to visit the marine reserve as a destination or specific activity?
 - Destination visitors need to be separated from auxiliary visits when looking at economic impacts/benefits
- How and who will track and ground-truth direct impacts, both positive and negative?
- Why is the marine reserve important to everybody living and/or vacationing on the coast?
- How has fishing effort shifted? What effect(s) does that have?
- Updates on what ODFW is monitoring
- Information about businesses

- How rapid do businesses capitalize on information around marine reserves?
- Are there new businesses generated around marine reserves?
- Effects of research
 - What other research is happening in the area by outside groups?
 - Coordinate research between federal, state, and university entities
 - Are researchers attracted there because of the marine reserve?
 - What monetary value does research bring to the community?
 - Will researchers be using local resources and personnel?
- Educational uses
 - What is the use of marine reserves by schools?
 - Are marine reserves promoted and used as living laboratories?
 - Does school use of marine reserves contribute to ocean literacy?
- Information or things to keep in mind while developing products
 - Concerns by fishing communities – be clear on their input into economic models
 - Need general marine reserves information. What can I do? Where to go?
 - Marine reserves in Oregon are an experiment. They are just one possible management tool. They are not the only current tool in use to recover stocks.
 - What other management existed before marine reserve?
 - Knight Park (Salmon River) should be monitored the same as other ports (Pacific City, Depoe Bay, Garibaldi)
 - ODFW's role needs to be neutral. Facilitating promotion and marketing of the sites will lead to distrust and lack of participation by certain sectors.
- Why are ODFW staff tasked with promoting the marine reserves? Sites were promoted to community groups as opportunity for economic development and need/want for community. Why do these communities need assistance?
- Note: Ideas pertaining to ecological research were added to the ecological workshop notes.

PRODUCTS?

- 1 pager or handout
- Be aware that not everyone is computer savvy
- Cookouts – fish recipes
- When boats are in the marine reserve – provide information on what they are doing to the public

PEOPLE/GROUPS/EVENTS?

- Groups
 - Nestucca Watershed Council
 - Salmon Drift Creek Watershed Council
 - Sitka Center
 - Lincoln City Audubon
 - Pacific City Doryman's Association
 - Neskowin Citizen Planning Advisory Group

- Panther Creek Community Center (Salmon River)
- Cascade Head Ranch (home group)
 - some members from the community team live there
- Events – single day big community events
- Depoe Bay
 - Salmon Bake
 - Wooden Boat Show
- Lincoln City
 - Clam Chowder Cook-off
 - Kite Festival
 - Westwind visitors open house June 15th
 - Cascade Head 40th birthday celebration – follow up with Jalene/Dick
 - Devils Lake revival – coho event
- Pacific City
 - Dory Days

PATHWAYS/MECHANISMS?

- Local newspapers
 - Guest editorials
 - Insert special section
- Local radio
- Cable access TV
- Popular places for information distribution
 - Safeway
 - Lincoln City Cultural Center
 - Visitor centers
 - Whale Watch Center (OPRD)
 - Whale Museum (Depoe Bay)
 - Chinook Winds Casino (Tribal)
 - Westwind – also social media link
- Events
 - Neskowin Saturday Market
 - Lincoln City Farmers Market
- Whale watching boats
- Chambers of commerce and tourism groups

CAPE PERPETUA SITE MANAGEMENT PLAN
WORKSHOP: COMMUNITY PROJECTS AND IDEAS
April 16, 2014 at the Lincoln City Community Center

This is a summary of the community's ideas captured in a brainstorming session from the third workshop held as part of the development of the Cape Perpetua Marine Reserve Site Management Plan. Specifically this workshop was designed to listen and learn about the community's ideas on what projects or research is important to them. We are particularly interested in learning about potential projects that could be led by the community. By highlighting the community's interests and priorities in the site management plans we hope to attract additional research and resources, and to foster community led projects. Community led projects can be focused on any aspect of marine reserves implementation including research, monitoring, economic development, outreach, or education.

Suggestions for types of projects are broken into two categories :

COMMUNITY SUGGESTED RESEARCH: Ideas for research done by non-ODFW scientists that the community supports and is documented in site management plan.

COMMUNITY LED PROJECTS: Community individual, group, or outside expert lead project. Community provides all support, personnel and resources needed to perform project.

IDEAS FROM THE PUBLIC

*= number of votes from informal dot poll performed by workshop participants

ECOLOGY - COMMUNITY SUGGESTED RESEARCH

- Study signs of bottom habitat damage
- Document fish and plankton species composition in the water column
- * Study fish movements
 - What species are swimming through the reserve (acoustic tagging?)
 - What species are in the reserves
 - Specifically lingcod movements, both adults and juveniles
 - ***Adult spillover from reserve
 - *Larval and young of the year fish, dispersal and movement
 - **Fish home range study – could use acoustic tags
- Food web and predator prey interactions
 - All aspects of reserve - fish, birds, mammals
 - Specifically suggested about lingcod
- Gather recreational fishing data and present any information already gathered
- ***Oceanographic data – monitor chlorophyll a, temp, pH, oxygen
 - Compare sites
 - Monitor and document hypoxic events
 - *El Nino and other large scale events – effects on productivity?

- ***Can this be done by vessels of opportunity (i.e., fishing boats)?
 - Note: Issues with revealing fishing locations
- **Fish parasites study
 - Black rockfish formerly had lots of parasites but with increased fishing pressure parasites appear to be reduced
 - Study parasite load relationship with fish age, size, growth, environmental conditions and fishing pressure
- *Research on the kelp bed that is in the MPA
- **Genetic work
 - Understand connectivity of reserves (could use fin clips)
- *Crab research
 - Effect of reserves on crab abundance
- *Workshop for experts to create wish list of long-term research projects
- ***Water quality monitoring – beyond bacteria
 - Herbicides and pesticides effects on species
- *Define and monitor ecological indicators (e.g., water quality, species abundance, oxygen, etc.)
 - Display with graphics for showing status of reserves
- Benthic extraction survey – more sites and frequency than ODFW is conducting
 - Study algae and invertebrates
- Invasive and non-native species survey in reserves
- **Surveys to include Salmon River estuary and very nearshore
 - River is a unique feature of this particular marine reserve – should highlight it
- Study salmon use of the nearshore

ECOLOGY - COMMUNITY LED PROJECTS

- Community science
 - *Species sighted/location map
 - Photo and species list for reserve
 - ***Monitor intertidal and sandy beach
 - *Whale monitoring – partner with Whale Watch Spoken Here sites
 - *Tap into Camp Westwind for volunteers for projects
 - Sea star wasting disease monitoring
- Birders in area help collect local data
- Marine mammal monitoring with Marine Mammal Institute lead

HUMAN DIMENSIONS

- Certified marine reserves best practices vessel operators
- Research/visitor center

- Business supported fundraiser
- ***Public tours/excursion - hike, boat all aspects – Docent led
 - Charter boat could sponsor
 - Associate with waterfall view (from boat)
- Service project – promote at visitors bureau
 - People come and help research or volunteer to do something to help

OUTREACH & COMPLIANCE - COMMUNITY LED PROJECTS

- *Volunteers publish stories of helping out with monitoring
- *Blog about marine reserves – videos and stories
- Group or forum (like “Friends of”) to discuss ideas
 - Need diverse representation
 - Help with project administration
- *Signs at access points either highlighting benefits or “you are here”
- *Boundaries viewer – ability to get frame of reference for where boundary of marine reserve is
 - Telescope or some kind of other physical viewer
- High definition camera on land to show/pan whole area (boundary area viewer)
 - Could show footage on web
- Adopt a part of marine reserve – advertise in schools to reach parents

Information Events:

- *Docent led walks on Saturdays in summer - access beach from Logan Rd. or other access point
 - Tie to Whale Watching Spoken Here, Master Naturalist Program, volunteer naturalists.
 - Camp West wind might be a point of contact
- Information booth at Saturday/farmers market , kite festival, senior fairs
 - Tabling kit with information might be beneficial
- ****Annual celebration –on start of marine reserve date
 - Could have speakers present research and data
- Booth at Dory Days or Blessing of the Fleet?
 - What info would they like if any about the marine reserve?

Information Pathways:

- *”Minimize disturbance” language on outreach products – promote best practices – “leave no trace”
 - Use language in all info for guides, businesses, users
 - Could use blog as delivery device
- Present information at city council meeting and commissioner meetings – updates on info
- Information kiosk

- Outreach packet – charters, ecotours, recreation info
- Speaker bureau gathering of “trained people” to give presentations to community groups
- Desk videos and outreach to hotels and other businesses
 - Show underwater video
 - Other brochures or information
- News media - target people who live in the Willamette Valley
- Create “competitions” between reserve sites to help generate interest and content
 - Biggest fish, best photo

Education:

- What is the use of marine reserves by schools?
- Are they promoted and used as living laboratories?
- Does school use of marine reserves contribute to ocean literacy?
- Example crab life history information
- **Curriculum – identify an educator
- Have a liaison for scientists conducting research and schools
- **Make ecological data available for use in educational materials



OUTREACH & COMPLIANCE - COMMUNITY SUGGESTED PROJECTS

- Exhibit at Oregon Coast Aquarium and HMSC Visitors Center, Sea Grant offices
 - *List/display icon of fish species that also live in the reserve
- Existing research results more widely spread to public/community

ODFW LED:

- Suggested projects that ODFW is currently or planning on conducting:
- Determine demand, economic impact, and value of visitation
- Measure economic impact on charter fleet
- Coordinates out to sport fishermen – on Garmin, Fler, Ray Marine platforms
- *Is use of the marine reserve area changing over time



Photo: Portland Audubon



Marine Resources

Oregon Department of Fish and Wildlife

Marine Resources Program
2040 SE Marine Science Drive
Newport, OR 97365
(541) 867-4741

OregonMarineReserves.com