



**NOTICE OF PROPOSED RULEMAKING**  
INCLUDING STATEMENT OF NEED & FISCAL IMPACT

CHAPTER 660  
LAND CONSERVATION AND DEVELOPMENT DEPARTMENT

**FILED**  
04/22/2019 1:30 PM  
ARCHIVES DIVISION  
SECRETARY OF STATE

FILING CAPTION: Amendment of Oregon's Territorial Sea Plan: Part Three – The Rocky Shores Management Strategy

LAST DAY AND TIME TO OFFER COMMENT TO AGENCY: 05/23/2019 9:30 AM

*The Agency requests public comment on whether other options should be considered for achieving the rule's substantive goals while reducing negative economic impact of the rule on business.*

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Filed By:  
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HEARING(S)

*Auxiliary aids for persons with disabilities are available upon advance request. Notify the contact listed above.*

DATE: 05/22/2019

DATE: 05/23/2019

TIME: 4:00 PM - 6:00 PM

TIME: 9:00 AM

OFFICER: Matt Spangler

OFFICER: LCDR

ADDRESS: Agate Beach Best Western  
3019 North Coast Hwy  
Moss Room  
Newport, OR 97365

ADDRESS: Agriculture Building -  
Basement Hearing Room  
635 Capitol Street  
Salem, OR 97031

NEED FOR THE RULE(S):

To update the Rocky Shores Management Strategy, originally adopted in 1994.

DOCUMENTS RELIED UPON, AND WHERE THEY ARE AVAILABLE:

- Statewide Land Use Planning Goal 19: Ocean Resources – <https://www.oregon.gov/lcd/OP/Documents/goal19.pdf>
- Oregon Territorial Sea Plan - <https://www.oregon.gov/LCD/OCMP/Pages/Territorial-Sea-Plan.aspx>

FISCAL AND ECONOMIC IMPACT:

No impact

COST OF COMPLIANCE:

(1) Identify any state agencies, units of local government, and members of the public likely to be economically affected by the rule(s). (2) Effect on Small Businesses: (a) Estimate the number and type of small businesses subject to the rule(s); (b) Describe the expected reporting, recordkeeping and administrative activities and cost required to comply with the rule(s); (c) Estimate the cost of professional services, equipment supplies, labor and increased administration required to comply with the rule(s).

(1) Identify any state agencies, units of local government, and members of the public likely to be economically affected by the rule(s).

State agencies (ODFW, OPRD, DSL, DLCD) will be required to act in accordance with the policies outlined in Section A.6. Agency staff will also be necessary to collect and review site management proposals, submitted by community members, for completeness which will incur the use of staff resources and personnel.

(2) Effect on Small Businesses: (a) Estimate the number and type of small businesses subject to the rule(s); (b) Describe the expected reporting, recordkeeping and administrative activities and cost required to comply with the rule(s); (c) Estimate the cost of professional services, equipment supplies, labor and increased administration required to comply with the rule(s).

(a) The department has not identified any small business of any type subject to the rules.

(b) Small businesses will not be expected to preform additional recordkeeping or administrative activities outside of the requirements of current administrative rules.

(c) The department has not identified cost to small businesses is associated with this rule in regard to professional services, equipment supplies, labor, or increased compliance administration.

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DESCRIBE HOW SMALL BUSINESSES WERE INVOLVED IN THE DEVELOPMENT OF THESE RULE(S):

A number of small business entities were involved in the development of this rule through membership of the Ocean Policy Advisory Council (OPAC) and its subcommittee, the Rocky Shores Management Strategy Working Group (RSWG), as well as through public comment. The makeup of OPAC is representative of all coastal interests. The working group was made up of representatives from the coastal recreation and tourism industries, conservations groups, coastal research institutions, local government and ports, and management agencies.

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WAS AN ADMINISTRATIVE RULE ADVISORY COMMITTEE CONSULTED? YES

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HOUSING IMPACT STATEMENT:

No impact.

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ADOPT: 660-036-0006

RULE SUMMARY: This rule incorporates more flexible update criteria with increased opportunity for public engagement through a community based proposal process, and updated policies integrating updated understanding of nearshore environments.

CHANGES TO RULE:

660-036-0006

Territorial Sea Plan: Rocky Habitat Management Strategy

The Land Conservation and Development Commission adopts as part of the Oregon Coastal Management Program, and herein incorporates by reference, an amendment to the Territorial Sea Plan Part Three: The Rocky Habitat Management Strategy recommended by the Ocean Policy Advisory Council on April 3, 2019, replacing text on pages 65 through 92, that the Commission approved on May 23, 2019.

Statutory/Other Authority: ORS 197.040

Statutes/Other Implemented: ORS 196.471

RULE ATTACHMENTS DO NOT SHOW CHANGES. PLEASE CONTACT AGENCY REGARDING CHANGES.

# Rocky Habitat Management Strategy

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# A. The Rocky Habitat Management Strategy

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## 1. Purpose

**Strategy Goal:** This strategy is a coordination and adaptive planning framework focused on the long term protection of ecological resources and coastal biodiversity within and among Oregon's rocky habitats, while allowing appropriate use.

The Rocky Habitat Management Strategy is one of several elements of Oregon's ocean-resources management program. It provides clear policies and direction for strong, site based management and the protection of unique ecosystems along the coast. The strategy is a combination of policies, objectives, and site specific recommendations supported by scientific information on the natural resources which exist in rocky habitat areas. The strategy relies on authorities and programs of local, state and federal agencies to carry out activities in the field.

## 2. Objectives

This strategy acts as a framework to support the following objectives:

- a. To maintain, protect, or restore rocky habitats and biological communities;
- b. To implement a holistic management program through site designations and management recommendations that allows for enjoyment and use of Oregon's rocky habitats while protecting them from degradation, and loss;
- c. To enhance appreciation and foster personal stewardship of Oregon's rocky habitats through education, interpretation, and outreach;
- d. To improve our knowledge and understanding of rocky habitat ecosystems by fostering research and monitoring efforts;
- e. To facilitate cooperation and coordination amongst local, state, and federal resource management agencies, and tribal governments, to ensure that marine resources and habitats are holistically managed.

## 3. Rocky Shores Importance

Oregon's rocky habitats are integral to the unique landscape and seascape of the Oregon coast. From Tillamook Head looming above the Clatsop Plains south to the cliffs of Brookings, rocky habitats are a trademark of the Oregon coast. These biologically rich and visually dramatic shores have high value to Oregonians as places to enjoy, learn, and use.

Oregon's rocky intertidal habitats harbor a variety of lifeforms uniquely adapted to live on the margin between the land and sea. Rocky habitat natural resources include a productive mix of invertebrates, fish, and algae in the intertidal areas as well as seabirds and pinnipeds that use adjacent cliffs and offshore rocks for breeding and raising young.

Rocky habitats provide a window to the marine environment, making them attractive places to visit for educational institutions, marine scientists, curious members of the public, and those interested in harvesting organisms for food or souvenirs. Oregon has long recognized the ecological value of rocky habitats, as well as the societal value associated with the variety of human uses occurring at the sites. Oregon's long history of managing rocky habitats to balance conservation and use reflects this recognition. Rocky habitat management needs to continue to account for human use pressure, which may increase as the number of coastal residents and visitors increases. Additionally, recent advances in the understanding of climate change has exposed new threats including warming temperatures, sea level rise, and changing ocean conditions, as well as potential cumulative impacts.

Oregon's rocky habitats belong to the public, with few exceptions. There are several state and federal agencies that are responsible for managing Oregon's rocky habitats in the public interest. Agency jurisdictional boundaries and authorities exist in a complex matrix and rely on a suite of management goals, objectives, and strategies. Section C of this plan outlines the authorities of state and federal agencies that have jurisdiction Oregon's rocky habitats.

Oregon's Rocky Habitat Management Strategy provides policies and direction for strong, site based management and protection of these unique ecosystems along the entire Oregon coast. The creation and stewardship of this strategy embraces this model and incorporates the voices of the diverse groups that share an interest in Oregon's rocky coast. The membership and mission of the Ocean Policy Advisory Council (OPAC) reflects legislative intent to make sure that the many governmental interests of coastal cities and counties, state and federal agencies, coastal tribal nations, and the diverse user groups on the coast are coordinated.

#### 4. Plan Implementation

Interagency coordination and cooperation has been critical to preparing and carrying out the Rocky Habitat Management Strategy and will remain essential in executing appropriate management. A collaborative, coordinated effort, based on a commitment to cooperate, increases the likelihood of success and decreases the need to add laws and authorities for any individual management agency. The management agencies responsible for implementing natural resource protection and managing human uses have reviewed and agreed to prioritize the recommendations within the Rocky Habitat Management Strategy. It should be noted that although this strategy includes a

substantial suite of recommendations for rocky habitat management, not all site management recommendations may be applied through state rule or statute.

## **a. Amending the Strategy**

### **i. General Strategy Amendments**

Due to constantly changing ocean conditions, coastal uses, and advancing scientific knowledge, this strategy will require periodic reconsideration and amendment to remain relevant. While there is not a specific timeline for updating the Rocky Habitat Management Strategy, or the Territorial Sea Plan more broadly, management agencies and the public at large are offered the flexibility of presenting proposed modifications at any time. General amendment initiation criteria for the Territorial Sea Plan are available in [Part 1.F.2](#) and apply to management agencies recommending any modifications to the Territorial Sea Plan (including the Rocky Habitat Management Strategy). Proposed amendments specific to the Rocky Habitat Management Strategy can be submitted through a community based proposal process, outlined in the section below (A.4.a.ii.) and Appendix I.

### **ii. Community Based Proposals**

The Rocky Habitat Management Strategy allows local community groups and the public at large to submit proposals for changes in rocky habitat management. Changes may include new recommended site designations, modifications of an existing recommended designation, or deletions of recommended designations. All members of the public are eligible to submit proposals, with proposals representing local multi-stakeholder interests strongly encouraged.

Proposals are subject to multi-agency analysis and review which will be used by the Ocean Policy Advisory Council to evaluate the proposed designation changes. All rocky habitat within the territorial sea is eligible to be proposed for designation alteration under the community proposal process. Proposals will be collected by Oregon Coastal Management Program staff on a rolling basis and do not require an active TSP amendment period to be submitted.

#### **Proposal Contents**

Proposal evaluation are available to guide interested parties on information regarding impacts of a proposed site recommendation, including ecological and socio-economic information, enforcement needs, alignment with strategy goals, arguments of opposition, conservation footprint, etc. Appendix I lists the full suite of prompting questions to include in a proposal as well as the proposal review process. All proposing entities should review this section and Appendix I carefully before submitting a proposal.

## 5. Strategy Elements

The management elements of the Rocky Habitat Management Strategy will be carried out primarily by state agencies such as the Parks and Recreation Department (OPRD), the Department of Fish and Wildlife (ODFW), and the Department of State Lands (DSL). The U.S. Fish and Wildlife Service (USFWS) manages offshore rocks and islands as National Wildlife Refuges<sup>1</sup>. In some cases, local governments, federal agencies, tribal governments, and other partner organizations may be involved. The timing for carrying out this plan will vary with the management needs, conditions and resources of each site, availability of financial and technical resources to agencies, and with the interests and involvement of local citizens and groups. This subsection outlines the major elements of this strategy for the states rocky habitats<sup>2</sup>.

### a. Management Principles

Refer to definitions in Section B.1. for clarification of terminology.

- i. **Management to Follow Plan.** Management of rocky habitat areas should aim to be consistent with the recommended site management designations, management objectives, policies, and management recommendations in this strategy;
- ii. **Ecological Units.** The interconnected relationship between rocky shoreline areas, offshore sites, and submerged rocky habitat warrants related areas to be managed as an ecological unit;
- iii. **Ecosystem Based Management.** Management recommendations and prescriptions should follow ecosystem based management and adaptive management principles;
- iv. **Planning and Management.** Planning or recommended management actions by the Ocean Policy Advisory Council (OPAC) or any agency with respect to rocky habitat areas should:
  - a. involve all appropriate management agencies, city or county planning agencies, affected tribal nations, and interested citizens and organizations;

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<sup>1</sup> Oregon Islands, Three Arch Rocks, and Cape Meares National Wildlife Refuge Comprehensive Conservation Plan and Wilderness Stewardship Plan. U.S. Fish and Wildlife Service, Oregon Coast National Wildlife Refuge Complex, Newport, Oregon.

<sup>2</sup> The intent of these principles is not to replicate or expand Oregon Marine Reserves under ORS196.540 – 196.555.

- b. be based on the best available scientific information and local knowledge, about the site, its resources, and uses as obtained through detailed site studies or as provided through comment and testimony by agencies and interested parties;
- c. include provisions for encouraging periodic monitoring of site use and condition of habitats and resources, where feasible, for the purpose of updating site management actions;
- d. comply with state and federal regulations and permitting;
- e. incorporate public educational, awareness, citizen science, and outreach programs as integral parts of local site management, where attainable.

## **b. Education & Public Awareness**

An informed and aware public is critical to protecting rocky habitat resources and carrying out the goal, objectives, and policies of the Rocky Habitat Management Strategy. It is essential for the continued ecological health and functioning of Oregon's rocky habitats that coastal visitors interact with rocky habitat resources in a manner that protects the ecological, cultural and economic resources of Oregon's rocky coast, and understands ways they can take action as individuals and in groups to positively affect these areas.

Successful implementation of the Rocky Habitat Management Strategy needs a strategic communication plan focused on both coast-wide and site-specific efforts that will foster stewardship of rocky habitat resources. Current education program providers should collaborate on a systematic approach to target audiences with agreed upon messages. This will require both financial and institutional support and coordination to achieve maximum effectiveness.

As part of a strategic communication effort, new and already established locally-based and regionally supported programs are needed to disseminate accurate and timely rocky habitat knowledge and stewardship messages. The principles, policies, and objectives in the Rocky Habitat Management Strategy should be used as a guiding framework for the development of state funded rocky habitat educational programs. Priority communication messages should focus on visitor best practices, current events, site based information, experience opportunities, and awareness of threats to Oregon's rocky habitats. Communication strategies should range from on-site signage to broader-reaching tools such as digital information products and social media campaigns.

Research and monitoring of rocky habitat ecosystems is crucial to understanding human impacts, both immediate and long-term. These efforts will require financial and structural support to assess and inform adaptation to emerging threats to rocky habitat ecosystems (e.g. ocean acidification). Citizen science programs are a recommended



strategy for engaging visitors while increasing their awareness of and commitment to protecting rocky habitats.

### Education Actions

In addition to general site management principles, this strategy also recognizes that the following actions should be used to build a successful public awareness and engagement component into rocky habitat management:

1. Creation of a coast-wide network and communication strategy that links private, local, tribal, state, and federal education and interpretive programs.
2. Fostering of existing education programs, as needed, to ensure they meet management and stewardship goals, and contributes to the understanding and long-term support of Oregon's rocky habitat resources.
3. Support existing education and interpretation programs as well as creation and implementation of new education and interpretation programs to cover sites where none exist.
4. Work with education providers, interested users and groups to plan and implement coordinated educational programs, messaging, and awareness campaigns.
5. Support volunteer-based organizations in the conduct of outreach activities that assist agencies and are consistent with the communication strategy.
6. Use a variety of communication tools including digital and social media to meet the diverse needs of schools, agencies, public facilities, local governments, and non-governmental organizations.
7. Seek additional funding in order to provide financial assistance to agencies and organizations whose education program support the Rocky Habitat Management Strategy objectives.
8. Work with agencies, researchers, tribal governments, and stakeholder groups to identify and support research and monitoring needs while also developing a citizen science network that engages local communities and visitors.

## 6. Policies

The policies for rocky habitat management have been crafted to ensure consistency with state goals and priorities. These policies are mandatory and all actions of local or state agencies in relation to managing rocky habitat areas and resources shall be consistent with them. A subset of these policies will be used for federal consistency review purposes and can be viewed in Appendix J. Refer to Section B.1. for rocky habitat classifications and definitions.

## **a. Policy Statement**

Oregon's rocky habitats, in the broadest definition, are unique and carry coast wide importance ecologically, economically, culturally, and recreationally. The Rocky Habitat Management Strategy recognizes the importance of these interconnected habitats and the resources within them regardless of designation or recommendation. Therefore, this strategy recommends management actions that protect ecological values and biodiversity within and among Oregon's rocky habitats while allowing appropriate use.

## **b. Policies**

- A. Consistent with Statewide Planning Goal 19, actions that are likely to affect rocky habitats shall be developed and conducted to conserve marine resources and ecological functions for the purpose of providing long-term ecological, economic, and social values benefits.
- B. Protection of rocky habitat resources (i.e. living marine organisms and their habitat) shall be prioritized over development of non-renewable ocean resource uses.
- C. Education about rocky habitats should be fostered through the implementation of principles outlined in Section A.5.b.
- D. Public access shall be preserved to the maximum extent practicable and minimize user conflict.
- E. Agencies may create temporary access restrictions at individual rocky habitat sites, when necessary, to ensure visitor safety, ensure resource and habitat protection, and to manage for user conflicts. Any non-emergency temporary access restriction must be accompanied by a scientific basis or decision rationale that describes the management concern and the duration of the access restriction.
- F. Standards and practices for designations described in Section D of this plan shall apply to activities occurring in rocky habitats. Managing agencies shall incorporate management recommendations outlined in Section D into administrative rule or site management practices.
- G. Managing agencies shall administer regulations, permits and other agreements in a way that considers the long-term conservation of rocky habitats and organisms.
- H. Managing agencies' education and information efforts for visitors to rocky habitat areas shall be conducted in a manner consistent with site-based management recommendations, Statewide Land Use Planning Goal 19, and education actions outlined in Section A.5.b.
- I. Harvesting, gathering, or scientific collection of marine plants and animals in rocky habitat areas shall be conducted in a manner that minimizes impacts and disturbance to habitats or other organisms.

- J. Marine development activities, not currently managed by a specific Part of the Territorial Sea Plan, that significantly alter and/or cause permanent<sup>3</sup> impacts to the form and function of submerged rocky habitats, or the fisheries dependent upon them, are prohibited.
- K. Management actions shall consider adaptation and resilience to climate change, ocean acidification, and hypoxia effects on rocky habitat ecosystems.
- L. Foster and promote research and monitoring, compatible with the Rocky Habitat Management Strategy, including effects of climate change, ocean acidification, and hypoxia.
- M. All affected Oregon federally recognized tribes shall be provided the opportunity for consultation regarding any development action taking place in the rocky habitat areas.
- N. Impacts of management actions to cultural resources<sup>4</sup> in rocky habitats shall be minimized, or mitigated, in consultation with affected Oregon federally recognized tribes and as determined by the State Historic Preservation Office
- O. Management measures in this plan will take no action to affect hunting and fishing consent decrees or other agreements between the State of Oregon and any Oregon federally recognized tribe.
- P. Managing agencies may propose site designations within rocky habitat areas as determined by the best available science.

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<sup>3</sup> “Temporary impacts” are adverse impacts to waters of this state that are rectified within 24 months from the date of the initiation of the impact. As defined by: ORS 141-085-0510 (88)

<sup>4</sup> Resources vital to and/or the product of the perpetuation of traditional practices, ceremonies and lifeways.

## B. Oregon's Rocky Habitat

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### 1. Defining Oregon's Rocky Coast

Rocky habitats account for approximately 41% of Oregon's 362 mile coastline and 6% of the states subtidal area. These areas include headlands, tide pools, rocky beaches, and cliffs, as well as offshore rocks, islands, and reefs.

#### **Rocky Substrate Definitions**

The rock in rocky habitat consists of geologic substrate comprised of:

- Bedrock, or
- Megaclasts (rock > 4 meters in size), or
- Rock fragments, boulders, or cobble which, individually, are greater than 64mm (2.5") in size, or
- any combination of the above

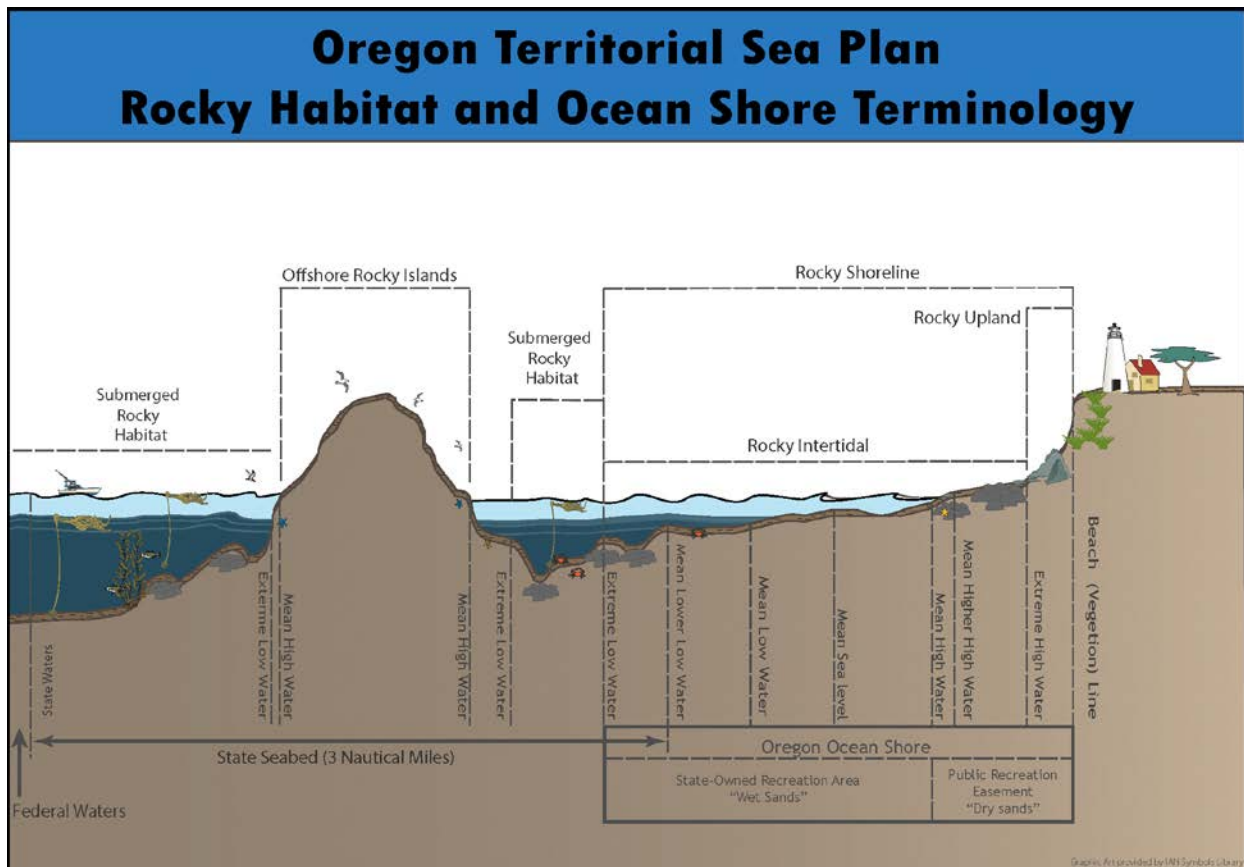
The rocks can comprise the substrate surface, rise above the substrate surface, or in some cases be covered with a thin layer of sand or mud (e.g, in the case of surfgrass beds – the surfgrass is anchored on rock but the presence of surfgrass can cause a thin layer of sand to be deposited on the rock, thus obscuring the rock from the view on the surface).

Rocky habitat consists of outcrops or deposits of the above-described material either along the shoreline or in submerged areas. The individual rock structures or fragments within a rocky habitat area are often interspersed with gravel or sediment and overlain with biogenic habitat features. This creates a complex mix of substrate characteristics that all contribute to the form and function of the rocky habitat. Thus, a rocky habitat can have non-rock (sand, gravel, biological) components. These habitats are variously referred to as rocky reefs, rocky banks, rocky beaches, rocky intertidal areas, rocky subtidal areas, boulder fields, rocky debris fields, benches, rock pavement, sea stacks, wash rocks, pinnacles, and many other names.

#### **Rocky Habitat Type Classifications**

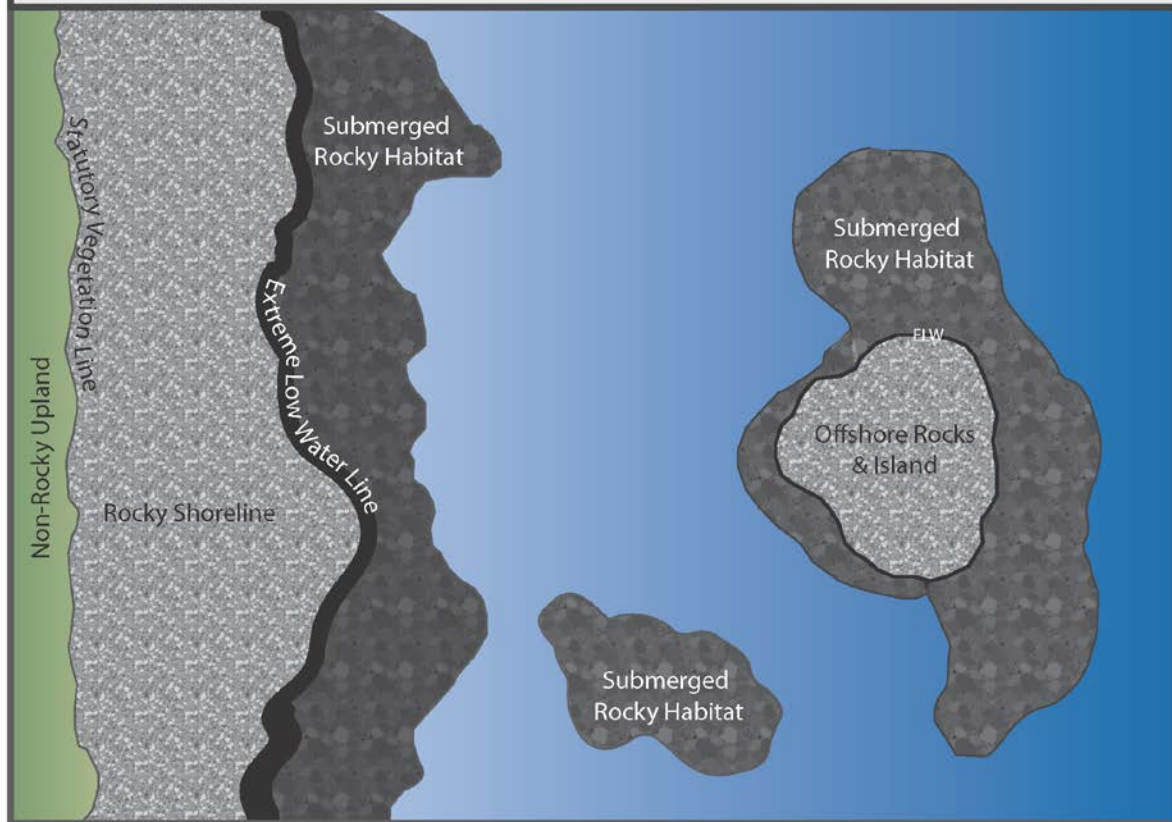
To appropriately manage the resources within these rocky areas, the differences and similarities between the many rocky habitat types must be recognized. For the purpose of this management strategy, Oregon's rocky habitats are grouped into three major classifications based on proximity to shore, jurisdictional boundaries, and ecological zone. Within these main classifications many other sub-classifications may be present including rocky intertidal and subtidal, cliffs, tidepools, etc. Additional descriptions of rocky habitat environments can be found in Appendix H.

- a. Rocky Shoreline – all rocky habitat (encompasses cliffs, tidepools, and rocky intertidal) between the upland vegetation line and extreme low water. These areas may be reached by foot from shore (regardless of hazard or convenience).
  - i. Rocky upland – rocky habitat area between the upland vegetation line and extreme high water line.
  - ii. Rocky intertidal – rocky habitat area between extreme high water line and extreme low water line.
- b. Submerged Rocky Habitat – all rocky habitat below extreme low water, out to the deepest limits of the Territorial Sea. This area includes submerged rocky reefs, shallow rocky subtidal, and other submerged rocky habitats.
- c. Offshore Rocks and Islands - Any rock or landform within the territorial sea separated from the mainland at mean high water which remains above the surface of the sea at mean high water<sup>5</sup>.



<sup>5</sup> As defined by the U.S. Fish and Wildlife Service.

## Oregon Territorial Sea Plan Rocky Habitat Definitions



## 2. Setting Context

This section provides a contextual overview of some key factors that influence and shape rocky habitat along the Oregon Coast

## a. Ocean Currents

Oregon's rocky coast is part of the California Current Large Marine Ecosystem (CCLME), an eastern boundary upwelling system situated at the land-sea interface. This dynamic system is responsible for making Oregon's broader territorial sea both immensely productive, and yet vulnerable to disturbance. Scientific study and exploration has taken place to better understand this system, yet the unique ocean currents, geology, and ecology of the area are still actively being investigated to build a better understanding of the system and potential impacts on the rich ecological and economic resources associated with the CCLME.

Oregon's coastal waters are part of the much larger CCLME oceanographic current system that connects cold subarctic waters from the Gulf of Alaska with tropical waters near the equator. The California Current is responsible for moving water southward along the Oregon Coast, while a deeper northward counter current is called the Davidson Current. In the most general sense, the California Current, along with seasonal northerly winds are responsible for spring/summer upwelling in the narrow ribbon of sea along the coast<sup>6</sup>. This upwelling water is tremendously productive due to deep nutrient rich water being exposed to light and oxygen near the surface and is responsible for feeding the regions fertile coastal ecosystems and fisheries. Although this upwelling brings great prosperity to the nearshore environment, it also makes the Oregon Coast more vulnerable to hypoxic events and exacerbates the impacts of ocean acidification. This risk is due ongoing ocean deoxygenation associated with climate change and the naturally elevated carbon dioxide in the surfacing deep sea water. The addition of carbon dioxide being absorbed from the atmosphere results in decreased buffering capacity of the system to moderate the natural production and respiration in these surface waters<sup>7</sup>. The impacts of global changes effects on the CCLME and Oregon's coastal waters are still being actively researched by scientists locally and worldwide in order to better predict impacts to Oregon's marine resources.<sup>8</sup>

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<sup>6</sup> A wide array of characteristics may impact local and regional upwelling including bathymetry, terrestrial inputs, etc. Oceanographic fluid dynamics is an evolving science and is still an open body of work.

<sup>7</sup> Hypoxic conditions occur when oxygen levels in the water column become too low for marine life to survive, while ocean acidification is the shift of ocean chemistry to become less basic. This creates an environment where marine organisms have difficulty forming calcium carbonate structures (i.e. shell material).

<sup>8</sup> Acknowledgement – Ocean Current section reviewed for accuracy by Dr. George Waldbusser (Oregon State University).

## b. Geology

Much like the ocean currents that support Oregon's coast, the regions rocky formations are also complex and have been evolving over a geologic timescale. The iconic headlands that protrude into the sea along the north coast, including Yaquina Head, Cape Lookout, and Seal Rock, are composed primarily of basalt. Many of the offshore rocks and islands in this area were once headlands that have since been eroded by wind and waves leaving only the disconnected hard basalt islands behind. Some of the most iconic of these remnant structures include Haystack Rock (both Cannon Beach and Pacific City), Gull Rock, and Otter Rock.

Coastal geology changes along the coast. Cape Arago, south of Coos Bay on the south-central coast, is composed of uplifted and tilted sedimentary rock, while south of the Coquille River rocky headlands and offshore rocks are primarily composed of ancient metamorphic rock<sup>9</sup>.

Although the coast has seen millennia of oceanographic processes, more periodic events have also helped to form the coast as we know it today. This has included the rise and fall of sea level, tectonic uplift and subsidence, and episodic earthquakes and tsunamis from the Cascadia subduction zone as well as distant faults.

## c. Biology

Oregon's rocky habitats along the shoreline are home to uniquely adapted organisms that have evolved to live in the harsh environment on the border of land and sea. Rocky habitat plants and animals are often exposed to disturbances including high wave energy, changing water levels, freshwater inflow, and many others. Distribution of these organisms is often dependent on physical factors including temperature, and exposure (to air and



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<sup>9</sup> Metamorphic features on the south coast have been dated to have been in the region for over 200 million years.



water), as well as biological factors such as predation and competition. These factors often help to characterize the rocky intertidal and subtidal into distinct zones. The zones are often based on dominant species such as mussels, barnacles, sea stars, anemones, and urchins, but these zones can also be used to define less common organisms such as nudibranchs, limpets, sponges, and red, green, or brown algae. Highly mobile species must also be considered in rocky habitats, including pinnipeds (seals and sea lions), cetacean (whales), marine fishes, and sea birds, who utilize rocky habitats for food, protection, isolation, and more.

An exhaustive list of rocky habitat organisms is outside the scope of this document, and species are still actively being discovered and identified. The full scope of biological diversity in Oregon's rocky coast is still not fully understood and continued scientific study will only aid in revealing the magnitude of variety in this dynamic niche environment.

#### **d. Stressors & Sustainability**

The environment that sustains rocky habitat life also makes the resources in these areas uniquely vulnerable to trampling, pollution, marine debris, and changing oceanographic conditions. The Rocky Habitat Management Strategy acknowledges the fragility of rocky habitat areas and is focused on promoting sustainable and adaptable management and conservation of rocky habitat areas and associated resources.

As coastal populations increase and Oregon becomes a more popular tourist destination, concerns regarding degradation of coastal resources are becoming exacerbated. Although intertidal rocky habitat organisms are adapted to living in a harsh and dynamic environment, they are also susceptible to trampling. This can take place when visitors are not aware of the organisms beneath their feet. Additionally, vehicles, bikes, and pets can impact entire ecosystems in tidepools or on rocks. As these areas become more accessible to foot traffic, visitors must become more aware of the dangers their steps may have on the ecosystem.

Recreational and commercial harvest of organisms, as well as collection of organisms for scientific and educational purposes, often raises concerns about overuse. Current harvesting of intertidal in rocky habitat organisms is primarily recreational. Although there is actively little commercial harvest of marine organisms in rocky intertidal areas, this strategy recognizes that harvest species and techniques are dynamic and the future may bring new commercial and recreational harvest ventures. Developing fisheries and plant harvest should be well studied and understood prior to the implementation of broad-scale open harvest to avoid unnecessary stress on the ecosystem and species.

More recently, the impacts of unmanned aerial vehicles (i.e. drones) use have been recognized in rocky areas. Drones give visitors a glimpse into rocky habitat areas never seen from public view points and have begun to be used by managing agencies to better understand areas with limited access. Yet without an understanding of nearshore

ecosystems, recreational drones may inadvertently disturb seabird colonies and pinnipeds and may impact reproductive success, and animal health.

Oceanographic stressors, such as ocean acidification and hypoxia, disease outbreak, warming waters, and increased frequency of severe storms will also have a growing impact on rocky habitat areas. It is estimated that rocky habitats may be the first areas to see change due to these shifting regional and global trends. These shifts may also increase opportunities for non-native and invasive species to colonize rocky habitat areas. In addition, land based runoff and pollution, as well as marine debris can also increase the susceptibility of these organisms to broader stressors.

All of these stressors can cumulate to impact the overall health of Oregon's iconic rocky areas. With the implementation of appropriate educational resources, visitors can become knowledgeable stewards of the area and promote a sustainable future for Oregon's rocky habitats.

This strategy encompasses a broad view of the entire coast to provide a larger ecosystem context for meeting local management needs and setting priorities for action. A coastwide ecosystem context is important due to the inherent interconnection between sites on the Oregon coast, as well as throughout the Pacific Ocean. The management and use of one site can affect the ecological function and resiliency of another site. This requires management actions to be scale-dependent with applications ranging from site level, to the regional or coastwide scale.

### 3. Rocky Habitat Uses

#### a. **Cultural Significance**

Oregon's rocky habitats are home to a unique cultural landscape with a history long predating European settlement. Archeological studies have found many ancestral tribal villages dating back 6,000 to 7,000 years, with experts estimating tribal settlement of the coast nearly 15,000 years ago. This legacy is connected to place and many rocky areas along the coast harbor a special meaning to past and present tribal nations. Much like mudflats in estuaries, some rocky habitats were also found to be easily accessible areas where resources could be gathered predictably. Additionally, Oregon's rocky coast has provided locations for ceremony, traditional cultural practices, and general sense of identity. The Rocky Habitat Management Strategy cannot begin to appropriately summarize the rich lineage of tribal nations use of the coast and traditional connection to rocky habitats. Tribal nations should be contacted to learn more about the individual cultural history surrounding these areas.

Oregonians as well as out of state visitors continue to be attracted to the dynamic rocky habitats along the coast. These areas provide a variety of opportunities for different onlookers including tidepooling, SCUBA diving, harvesting, and wildlife viewing. These

activities often provide a window into the sea where onlookers can learn firsthand about the exotic marine life hiding just below the water's surface. Even for those visitors unable to leave the road, Oregon's rocky coastline is often visually accessible from Highway 101, which runs parallel to much of the Oregon coast allowing drivers to easily gain a sense of the inspiring views. Regardless of activity, visitors quickly find a place-based connection to the coastline and its diverse habitats and organisms, which has helped to shape Oregon's unique coastal culture.

Overall, the cultural landscape of Oregon's rocky coast is one of tradition, recreation, discovery, inspiration, and scientific research. This strategy intends to honor the cultural significance surrounding rocky habitat resources and to respect traditional uses in consultation with tribal nations.

## **b. Recreation**

Rocky habitat areas account for millions of visits to the Oregon coast annually. More commonly known by the public for their tidepools, Oregon's rocky habitats are a tremendous resource for recreation, exploration and hands-on, field-based learning. Like Oregon beaches, access to these coastal resources is critical to the identity of Oregonians. With ecotourism and experience-based vacations becoming more popular, the number of visitors to rocky coastal areas continues to increase as does the potential ecological impacts of recreation. This strategy recognizes recreation in rocky habitat areas is critical to Oregonians and coastal economies; and, that those activities must be appropriately managed to balance the preservation and stewardship of these important resources. The strategy further recognizes that it is the diversity of flora, fauna, and challenging fishing that drives this strong recreational interest, supporting the need for a balanced approach.

Offshore rocky reefs contain some of Oregon's premier recreational fishing grounds in the Territorial Sea. Recreational fishers primarily target various rockfish species, lingcod, and cabezon on offshore reefs. Oregon's recreational charter boat industry also depends on healthy fish populations on these reefs. In addition to providing a recreational resource, these fisheries are essential to the coastal economy.

## **c. Research & Monitoring**

Sound information is necessary to prepare, carry out, and evaluate management programs. Oregon's coastal rocky habitats have long provided a location for scientific discovery and research. Research at rocky habitat sites has improved our understanding of marine environment and illuminated some of the defining ecological principles of the marine ecosystem. Long term monitoring in Oregon's rocky habitats has allowed us to better understand coastal ecosystems, and observe changes from natural and human-caused events, including changes related to climate change.

This strategy recognizes that the key to effective assessment and adaptive management is active, responsive research and monitoring programs. The strategy encourages additional support for existing research and monitoring programs as well as the development of new programs capable of detecting and responding to rapidly emerging challenges.

#### **d. Education**

Oregon's rocky coast provides a window into the marine environment that most people, other than SCUBA divers or fishermen, will never encounter. For many, this is the first and sometimes only place that they may encounter the rich biodiversity of the Pacific Ocean. Providing a living classroom like no other marine ecosystem can, coastal rocky habitats inspire a sense of wonder and spark curiosity in children and adults alike.

The Oregon coast has long supported the educational mission of schools, aquariums, universities, and life-long learners. Rocky habitats are living laboratories which host a suite of these institutions throughout the year. These educational programs directly aid in the appropriate management of the diverse and fragile rocky habitat system by instilling a sense of knowledge and stewardship in all who visit.

An informed citizenry with a strong connection to and sense of personal stewardship of the resource will be the most effective means of managing, protecting, and conserving Oregon's rocky habitat resources. The strategy supports education and interpretation initiatives that increase awareness of and engagement with marine resources.

Overall, this strategy recognizes that to meet growing usage and impact issues in rocky-habitat areas, a robust, coast-wide awareness and engagement strategy is essential. This strategy encourages additional support for existing education and interpretation programs as well as the development of new programs as necessary.

#### **e. Commercial Uses**

Oregon's offshore rocky reefs support vibrant commercial fisheries. The primary commercial fisheries occurring on offshore reefs in the Territorial Sea include the nearshore groundfish fishery and sea urchin fishery. The nearshore groundfish fishery targets a number of rockfish species, kelp greenling, cabezon as well as other rocky reef species. Fishermen sell the fish to both live fish and fresh fish markets. A number of other commercial fisheries occur in the Territorial Sea, but not necessarily on rocky reefs, including Dungeness crab, salmon, trawl-caught groundfish, and sardine. Commercial fisheries occurring in the Territorial Sea and beyond have long been an integral part of the fabric of Oregon coastal communities and are critical to Oregon's coastal economy.

In contrast to the use of offshore rocky areas for commercial fishing, commercial harvest in rocky shoreline areas has historically focused around invertebrate fisheries,

with mussels being the most common commercial species over the past 30 years. Past commercial harvest has also included sea stars and other invertebrates for gift shops and the aquarium trade. Total harvest of invertebrates in rocky shoreline areas has decreased dramatically from 20,000 – 40,000 pounds per year in the early 1990s to <100 - 1800 pounds per year since 2010. This strategy recognizes that adapting global markets and changing environments may ignite interest in the development of more substantial commercial ventures in these habitats. For example, recent interest in gooseneck barnacle harvest has initiated discussion of the needs required to manage a sustainable commercial fishery. Impacts of commercial harvest of rocky shoreline species or use of the rocky habitats requires an extensive understanding of potential risks and impacts to the ecosystem as a whole.

# C. Rocky Habitat Management

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## 1. Statewide Land Use Planning Goal 19

Oregon's land use planning is founded on 19 Statewide Planning Goals. These goals express the state's policies on land and sea use related topics. Goals 16-19 address marine influenced environments, with Goal 19 focusing on ocean resources (Appendix F). In addition to addressing matters such as dumping of dredge spoils and discharge of waste products into marine waters, Land Use Planning Goal 19 frames management of rocky habitats and specifies that agency action regarding resources in the territorial sea "shall be developed and conducted to conserve the long-term values, benefits, and natural resources of the nearshore ocean and the continental shelf."

## 2. Agencies & Governments

### a. **Federal Agencies**

- **U.S. Fish and Wildlife Service (USFWS)** is in charge of managing several National Wildlife Refuges and enforcing fish and wildlife laws. It is jointly responsible for enforcing the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) with the National Oceanic & Atmospheric Administration. The list of endangered and threatened species can be found online. National Wildlife Refuges (NWR) along the coast include the Oregon Islands NWR and Three Arch Rocks NWR which include all offshore islands in Oregon's Territorial Sea along with several mainland portions: Coquille and Crook Points, and Cape Meares NWR.
- **The National Oceanic and Atmospheric Administration (NOAA)**. Multiple offices within NOAA have a role in coastal and rocky habitat management in Oregon. Primarily, this includes NOAA Fisheries and NOAA's Office for Coastal Management. NOAA Fisheries (also known as the National Marine Fisheries Service or NMFS) is in charge of fisheries management as well as being jointly responsible for implementation of both the ESA and the MMPA with USFWS. In Oregon's marine environments, NOAA Fisheries is the agency primarily responsible for activities related to marine mammal species and their habitats including the pinnipeds that rest on Oregon's rocky coast. NOAA's Office for Coastal Management (OCM) is responsible for implementation of the National Coastal Zone Management Program, providing annual funding, federal consistency authority, technical and policy assistance, as well as access to a variety of data, tools and training.

- **Bureau of Land Management (BLM)** owns and manages public lands throughout the state, including some that front Oregon’s rocky shorelines, primarily Yaquina Head Outstanding Natural Area (YHONA).
- **USDA Forest Service (USFS)** owns and manages public lands in national forests and grasslands throughout the state, including several large forests (Rogue River, Siskiyou and Siuslaw) within the coastal zone and one that fronts the coast, the Siuslaw National Forest, home to Cape Perpetua Scenic Area and Cascade Head Scenic Research Area.
- **Environmental Protection Agency (EPA)** is responsible for developing and enforcing environmental laws to protect human health and the environment, such as the Clean Water and Clean Air Acts. The EPA also conducts environmental research to further its mission of protecting human health and the environment, as well as promoting education, volunteer efforts and offering financial assistance to state-level environmental programs.

## b. State Agencies

- **Oregon Parks and Recreation Department (OPRD)** has two main roles in managing areas within Oregon’s coastal zone. The first is as a landowner. OPRD manages more than 70 parks, waysides, and other facilities along the coast that offer shoreline access. The second is the agency’s statutory authority for managing Oregon’s ocean shore recreation area. The “ocean shore” is defined as the land lying between extreme low tide of the Pacific Ocean and the statutory vegetation line or the line of established upland shore vegetation, whichever is farther inland, and does not include estuaries (ORS 390.605). Within the Ocean Shore Recreation Area, OPRD issues ocean shore alteration permits, including those for shore protective structures (e.g., riprap), natural product removal use permits and scientific research and collection permits. OPRD developed the Ocean Shore Management Plan for this area. OPRD is responsible for protecting a variety of natural and cultural resources, managing many shoreline uses, and providing public access, recreational facilities, and recreational opportunities.
- **Oregon Department of Fish and Wildlife (ODFW)** manages fish and wildlife. It implements fish and wildlife laws and programs (including recreational and commercial fishing rules), issues scientific collection permits, and advises other agencies on biological issues. ODFW also manages seven intertidal marine gardens, six research reserves, one habitat refuge (OAR 635-011-0100), and five marine reserves with nine associated marine protected areas (ORS196.540 – 196.555)
- **Oregon Department of State Lands (DSL).** DSL has jurisdiction over the submerged and submersible land of the territorial sea. DSL has both proprietary

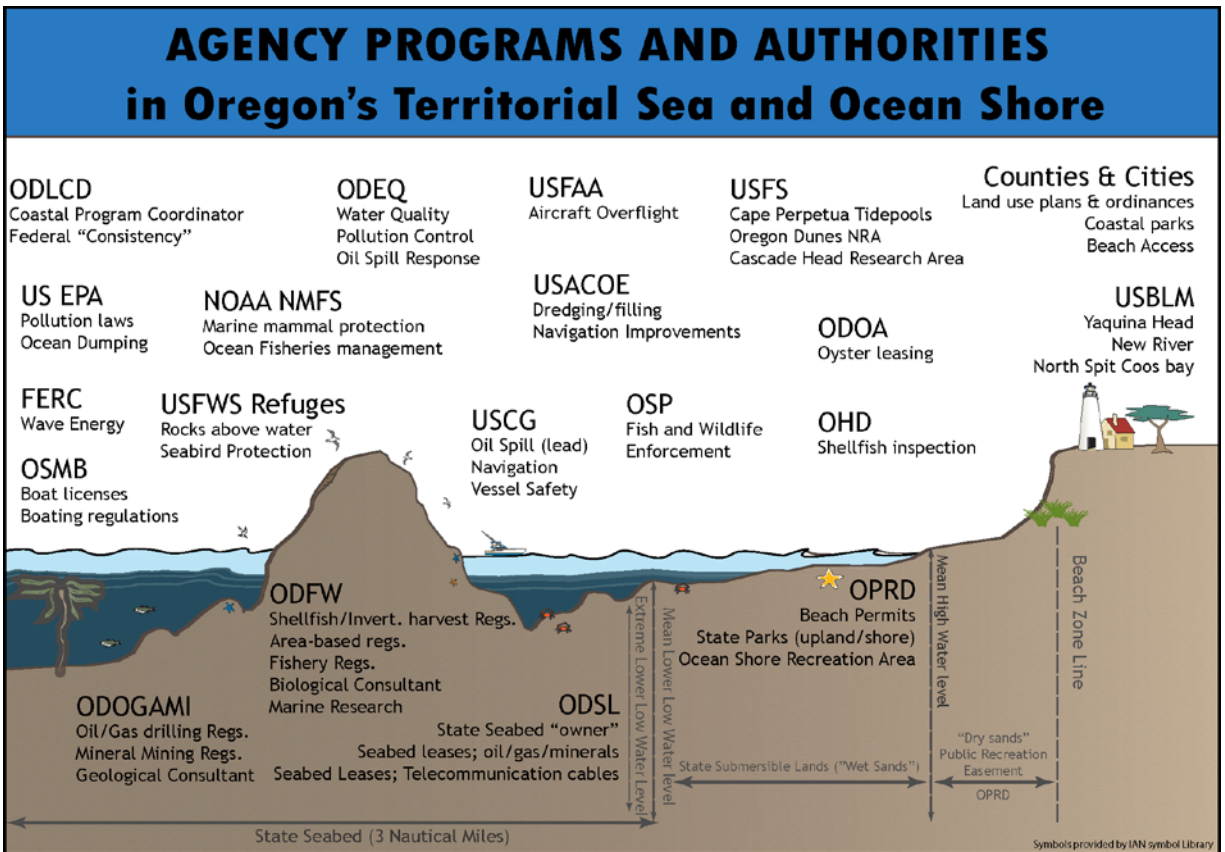
ownership and regulatory responsibilities within the territorial sea. DSL authorizes uses of the seafloor, including placement of submarine cables, installation of wave and wind energy devices and research equipment, kelp removal, and the placement of other structures. DSL also administers Oregon's removal-fill law which governs the removal, fill, and alteration of sediments, rock, and other materials comprising the submerged and submersible land underlying the territorial sea (SB11, 1999). Additionally, DSL has rules that designate marine reserves and MPA's. See the jurisdictional figure below for spatial context.

- **Oregon Department of Land Conservation and Development (DLCD)** houses the state's Ocean and Coastal Management Program (OCMP). It ensures that projects from the federal to local level are consistent with the state's federally-approved Coastal Zone Management (CZM) program, which includes the 19 statewide planning goals. In partnership with several other organizations, DLCD has developed Oregon's Coastal Atlas, which has information on rocky habitats and other coastal areas in Oregon. OCMP is also the main staff agency supporting the Ocean Policy Advisory Council.
- **Oregon Department of Environmental Quality (DEQ)** has authority for protecting water and air quality in Oregon's Territorial Sea, including oil spill prevention and response, and enforcing laws such as the Clean Water Act.
- **Oregon Marine Board (OSMB)** regulates boating activity within the territorial sea.
- **Oregon State Police (OSP)** enforces fish and wildlife regulations and other state environmental laws and rules.

### c. Oregon's Coastal Tribes

While many tribes claim ties to areas along the Oregon Coast, federally recognized tribal nations within the states coastal zone include the Confederated Tribes of Coos, Lower Umpqua & Siuslaw, the Coquille Indian Tribe, the Confederated Tribes of Siletz Indians, and the Confederated Tribes of the Grand Ronde Community of Oregon. Oregon's federally recognized tribes are each their own sovereign government and may have treaty-protected gathering rights, consent decrees, and other legal mechanisms that shall be respected (in consultation with the Tribes as appropriate) when making any resource management decision. Additionally, it may be appropriate to expand definitions of cultural sites to include all those that have associated traditionally used resources, such as gathering sites.





### 3. Rules & Regulations

Much like Oregon's diverse coastal ecosystems, the associated rules, regulations, and authorities governing the use of rocky habitat resources are also complex in nature. This section includes a brief description of the primary coastwide and site-based state and federal rules and regulations regarding Oregon's rocky habitats.

The site management goals and recommendations in Section D should not be confused with applied agency management designations. Instead, the intent of this strategy is that agencies will work towards implementing the site management recommendations outlined in the strategy.

\*An exhaustive description of all of the regulations is beyond the scope of this plan; instead, this section offers a summary of current regulations and management measures enforced within Oregon's rocky habitats with references to more detailed materials.

#### a. Coastwide Rules and Regulations

##### i. Marine Fish and Invertebrate Harvest

The ultimate goal of managing fish and invertebrate harvest is to allow for public use and enjoyment of these resources while ensuring their long-term sustainability. Oregon

Department of Fish and Wildlife (ODFW) manages marine fish and invertebrates through a program of harvest or take regulations, area closures, collection of research and monitoring data to determine species or habitat status, and recommending habitat protections to permitting or land management agencies. This section provides a general summary of the regulatory aspects of management that were in place as of May 2019. Refer to [Oregon Administrative Rules Chapter 635](#) for a full listing of the regulations.

Managing species harvest employs multiple layers of regulations tailored to the purpose, species, and area of harvest. Separate sets of regulations apply to sport (recreational) harvest, commercial harvest, and take for scientific or educational purposes. ODFW draws on a suite of tools to accomplish management goals including license and permit requirements, limiting participation in fisheries, restrictions on harvest gear or methods, limits on catch (annual or seasonal quotas, trip limits, daily bag limits, etc.), size or sex restrictions, seasonal closures, and area closures. ODFW applies these tools singularly or in combination depending on the species, area, fishery, and many other factors. For some species, harvest regulations may remain constant for years, while for others, regulations change on an annual or shorter timeframe.

### Sport Harvest of Marine Fish and Invertebrates

Marine sport fishery regulations apply to the Pacific Ocean, coastal bays, and beaches. An angling (fishing) license is required to take and land marine fish, including halibut, lingcod, rockfish, flounder, surfperch, greenling, cabezon, sole, salmon, and others. Special tags are required for some species. A shellfish license is required for recreational harvest of shellfish and other marine invertebrates.

Management of sport harvest in Oregon's rocky habitats relies primarily on the rules and regulations placed on daily catch limits (bag limits), type of equipment or harvest method used, seasons, and area closures. ODFW's Oregon Sport Fishing Regulations and supplemental materials, available at license sales locations or on the ODFW website, provide details of the regulations.

### Commercial Harvest of Marine Fish and Invertebrates

Commercial fisheries management employs a wide array of regulations, many of which are specific to the individual fishery. Commercial fisheries most likely to occur in Oregon's rocky intertidal and adjacent subtidal areas include intertidal invertebrate harvest, subtidal harvest of urchins and some other invertebrates, harvest of nearshore fish species, and a sporadic and small-scale harvest of fish in intertidal areas for the aquarium trade.

Harvest of intertidal invertebrates requires a Commercial Shellfish Harvest Permit or Intertidal Animal Harvest Permit, in addition to other licenses that are required of a commercial fisher. These permits contain standard language indicating areas closed to commercial harvest, and ODFW has the authority to place additional requirements on

the permit concerning allowable species, seasons, harvest areas, catch limits, and harvest gear and techniques.

Management of subtidal fisheries varies by species. For invertebrates, species such as urchins, Dungeness crab, and pink shrimp are controlled with longstanding limited entry systems along with a myriad of other regulations. Commercial urchin harvest is not allowed in waters shallower than 10 feet, so there is no commercial urchin harvest in rocky intertidal areas. There are also seasonal urchin harvest closures on Orford Reef and around Pyramid Rock on Rogue Reef. Harvest of subtidal invertebrate species not regulated with a limited entry program or other specific regulations are subject to the Commercial Shellfish Harvest Permit described above. Management of fish species caught in subtidal environments includes a complex array for regulations set both regionally by the Pacific Fishery Management Council and by the West Coast states.

## ii. Marine Plant Harvest

The removal of natural products, including plants from the ocean shore state recreation area (otherwise known as the "ocean shore," the area between extreme low tide and the line of vegetation) is prohibited by law except in compliance with regulations of the Oregon Parks and Recreation Department (OPRD) ([ORS 390.705](#)).

There are no permits required for the souvenir collection of marine plants on the ocean shore; however, OPRD has rules that apply to collection and that defines and restricts souvenir collection in protected areas ([OAR 736-021-0090](#); [736-029-0010](#)). Commercial harvest on the ocean shore is uncommon and regulated under ocean shore alteration permit requirements outlined by [ORS 390.725](#) and OAR Chapter 736 Division 20. Below extreme low tide removal of marine plants is regulated under [ORS 274](#), and administered by the Division of State Lands (DSL). Individuals may harvest up to 2000 pounds of wet kelp per year for personal consumption from submerged lands (below extreme low tide) within the Territorial Sea without a lease from DSL ([ORS 274.895](#)).

## iii. Rocky Shoreline Access

The ocean shore is, by law, a public recreation area, managed by the Oregon Parks and Recreation Department (OPRD) who is charged with preserving and maintaining the public's free and uninterrupted use of Oregon's shoreline ([OAR 736-021](#)). In addition, OPRD is also mandated to manage the Ocean Shore area for the preservation and protection of recreational uses and natural resources. To achieve the goal to preserve and protect the recreational uses and natural resources on the Ocean Shore, OPRD has the legislative authority to regulate certain activities and "improvements" within its jurisdiction between extreme low tide and the line of vegetation. Such regulation of uses or activities may result in certain restrictions in response to safety or resource concerns. These regulations may restrict construction of shoreline protection structures, beach accesses, pipelines and conduits, signage, removal of natural products, and other issues that may have an impact on the Ocean Shore. ([OAR 736](#))

## b. Site-Based Regulations

### i. State Site Designations

#### Marine Gardens

ODFW has designated seven Marine Gardens in rocky intertidal areas along the coast. ODFW's regulations in these areas protect the rocky intertidal invertebrate community from harvest impacts ([OAR 635-005-0260](#)). Currently ODFW designated Marine Gardens include:

Site Name	Town/City, County
Haystack Rock	Cannon Beach, Clatsop County
Cape Kiwanda	Pacific City, Tillamook County
Otter Rock	Otter Rock, Lincoln County
Yaquina Head	Agate Beach, Lincoln County
Yachats	Yachats, Lincoln County
Cape Perpetua	Lincoln County
Harris Beach	Brookings, Curry County

Marine Gardens are closed to the take of marine invertebrates with two exceptions: single mussels may be taken for bait, and razor clams (a sandy beach species) may be taken at Cape Perpetua. The Cape Perpetua Marine Garden has some small stretches of sandy beach among the rocky areas where razor clams can be harvested without affecting rocky habitat areas. Sport fishing is allowed in and from Marine Gardens, while commercial harvest of invertebrates is prohibited. No collection of marine plants is allowed within the ocean shore in these areas, except by scientific research permit from OPRD. These regulations may differ in areas where Marine Gardens overlap with Marine Reserves or Marine Protected Areas (Section E.2.b)

#### Research Reserves

ODFW has designated Research Reserves in both rocky intertidal areas and subtidal areas. ODFW's Research Reserve regulations vary by site and are designed to limit sport harvest of most invertebrate species and manage scientific/educational take through a permit program ([OAR 635-005-0260](#); Section E.3.). The designated Research Reserves include:

Site Name	Town/City, County
Boiler Bay (intertidal only)	Depoe Bay, Lincoln County
Pirate Cove (intertidal and subtidal)	Depoe Bay, Lincoln County
Neptune State Park (intertidal only)	Florence, Lane County
Gregory Point (subtidal only)	Charleston, Coos County
Cape Arago (intertidal only)	Charleston, Coos County
Brookings (intertidal only)	Brookings, Curry County

At most intertidal-only research reserves, sport harvest of most invertebrate species is closed. However, harvest of abalone<sup>10</sup>, clams, Dungeness crab, red rock crab, mussels, piddocks, scallops, and shrimp is allowed. The regulations divide Cape Arago into three zones (Areas A, B, and C – North to South); Area B employs the research reserve regulation described above, while Areas A and C prohibit take of all marine invertebrates. Pirate Cove and Gregory Point research reserves are close to the take of all marine invertebrates. Sport fishing is allowed in research reserves, while commercial harvest of invertebrates is prohibited. No collection of marine plants is allowed within the ocean shore in these areas, except by scientific research permit from OPRD. These regulations may differ in areas where Research Reserves overlap with Marine Reserves or Marine Protected Areas (Section E.2.c).

#### Habitat Refuge

ODFW has designated one Habitat Refuge on the coast, the intertidal and subtidal areas of Whale Cove in Lincoln County. ODFW’s regulations at Whale Cove prohibit harvest of both marine invertebrates and fish ([OAR 635-005-0260](#)). No collection of marine plants is allowed within the ocean shore in these areas, except by scientific research permit from OPRD ([OAR 736-020-0003](#)).

#### **ii. Marine Reserves and Protected Areas**

There are five Marine Reserves designated in Oregon, four of which have one or more associated Marine Protected Areas (MPAs). All of the Marine Reserves contain subtidal habitat and four of the Marine Reserves contain rocky intertidal habitat. ([OAR 635-012](#))

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<sup>10</sup> All abalone harvest was closed coastwide for at least a 3-year period beginning in 2018 due to population concerns. As of the date of this document, it is not known if and when harvest will re-open.

The Marine Reserves include:

Site Name	Town/City, County
Cape Falcon (subtidal and rocky intertidal habitat)	Tillamook and Clatsop Counties
Cascade Head (subtidal and rocky intertidal habitat)	Tillamook County
Otter Rock (subtidal and rocky intertidal habitat)	Otter Rock, Lincoln County
Cape Perpetua (subtidal and rocky intertidal habitat)	Lincoln County
Redfish Rocks (subtidal habitat only)	Port Orford, Curry County

ODFW’s regulations for Marine Reserves prohibit the take of fish and invertebrates. ODFW’s regulations for its nine MPAs vary by site and can be found in [OAR 635.012](#). Only two MPAs have regulations that materially affect rocky intertidal areas: Cascade Head North MPA and Cape Perpetua North MPA. Regulations pertaining to rocky intertidal areas of Cascade Head North MPA and Cape Perpetua North MPA prohibit take of fish from shore and prohibit take of invertebrates except crab. The regulations may differ where the MPAs overlap with Marine Gardens and Research Reserves (Section E.2.c).

**iii. Areas of Overlap between Designations**

There are some rocky intertidal areas where Marine Reserves or Marine Protected Areas (MPA) overlap with Marine Gardens or Research Reserves. ODFW designated Marine Gardens and Research Reserves in years prior to designating Marine Reserves, and their designations were for different purposes. Even though many of the regulations are redundant in areas of overlap, ODFW chose not to change the status or rescind the underlying Marine Gardens and Research Reserves in favor of the newer Marine Reserve regulations because the longevity of the Marine Reserve designations is not known. The Oregon Legislature will evaluate Marine Reserves in 2023, with an option of maintaining, changing, or removing designations. Maintaining the Marine Garden and Research Reserve designations in areas of overlap ensures that these long standing rocky intertidal area protections will remain should the overlying Marine Reserve or MPA designations be removed.

Areas of overlap include:

- partial overlap between the Otter Rock Marine Garden and Otter Rock Marine Reserve
- partial overlap of the Yachats Marine Garden and Cape Perpetua North MPA
- partial overlap between the Cape Perpetua Marine Garden and Cape Perpetua North MPA



- partial overlap between the Cape Perpetua Marine Garden and Cape Perpetua Marine Reserve (note, sandy beaches are not in the Marine Reserve)
- complete overlap of the Neptune State Park Research Reserve and the Cape Perpetua Marine Reserve (note, sandy beaches are not in the Marine Reserve)

The general interpretation of rules in areas of overlap is that the more stringent regulation (by species) applies. For example, the Otter Rock Marine Garden allows fishing and taking single mussels for bait. The Otter Rock Marine Reserve does not allow any take; therefore, the more stringent marine reserve regulations (i.e., no take) apply for those species where the two areas overlap. For a full detailed description of Marine Reserves and Marine Protected Areas rules and regulations visit <http://oregonmarinereserves.com/>.

#### iv. Federal Laws and Regulations

##### Threatened and Endangered Species

Endangered Species Act ([16 USC 1531-1543](#))

A number of bird and mammals species that use Oregon's rocky habitat areas, either as residents or when migrating, are protected as threatened or endangered species under federal law. The [U.S. Fish and Wildlife Service: Environmental Conservation Online System](#) should be consulted for the most up to date list of listed species, and consult with USFWS and NMFS as appropriate.

Federal regulations prohibit the unauthorized "taking" of any species listed by federal regulation as "threatened" or "endangered." The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. These federal regulations determine the protection standards for these animals or plants even when they occur in state waters. Federal regulations authorize the designation of "critical habitat" for threatened or endangered species that can have consequences for human activities within or adjacent to such designated areas.

##### National Wildlife Refuge System/National Wilderness System

National Wildlife Refuge System Administration Act ([16 USC 668dd-668ee](#)) and Oregon Islands National Wildlife Refuge; Wilderness Act ([16 USC 1131-1136](#))

Almost all the rocks and islands along the Oregon coast are in the Oregon Islands National Wildlife Refuge, Three Arch Rocks National Wildlife Refuge, or Cape Mears National Wildlife Refuge, which are administered by the U.S. Fish and Wildlife Service. There are extensive regulations for managing these rocks and islands under many different laws. The chief regulations of interest for rocky habitats relate to prohibiting trespass (no climbing or landing on), or harassing wildlife, whether intentional or unintentional. In addition, the operation of unmanned aircraft (i.e. drones) is illegal on

refuge islands. Most rocks under National Wildlife Refuge System jurisdiction are also in the Oregon Islands Wilderness designated by Congress.

### Migratory Species

Migratory Bird Conservation Act of 1929 ([16 USC 715-715r](#)) and Migratory Bird Treaty Act of 1918 ([16 USC 703-712](#))

Oregon's rocky coast offers habitat for many migratory species that are covered under federal law, including the Migratory Bird Conservation Act of 1929 and the Migratory Bird Treaty Act of 1918. Thus, these habitat areas are of interest not just to the State of Oregon or the United States but to other nations, too. Federal regulations protecting migratory species are an important part of Oregon's rocky habitat management.

### Marine Mammals

Marine Mammal Protection Act ([16 USC 1361-1407](#))

Several species of marine mammals make Oregon's rocky coast their home for all or part of the year. All these mammals are protected under federal law, the Marine Mammal Protection Act. Under this law it is unlawful to "take" a marine mammal; this means that it is unlawful to harass, hunt, capture, or kill, or attempt to do these things to any marine mammal.

### **v. Boating/Closure Areas**

The State Marine Board has authority to adopt regulations for boating activity in state waters. The Marine Board has adopted regulations ([OAR 250-20-309](#)) to establish a seasonal boating closure around Three Arch Rocks to protect wildlife.

### **c. Scientific and Educational Permitting**

Oregon Department of Fish and Wildlife (ODFW) and Oregon Parks and Recreation Department (OPRD) administer permitting programs for scientific research and education programs proposing projects in rocky habitat areas. ODFW scientific research permits are required for any project proposing the take of marine organisms for scientific or educational purposes. An OPRD permit is necessary for any project proposed to take place on lands owned and managed by the department and is required for activities pertaining to natural and cultural resources involving the collection and take of organisms. Take can include actions that cause mortality of the organism, capture and release (regardless of whether or not there is mortality), and tagging and release. In some cases, observation of organisms can also require the take permit, but this applies mostly to wildlife or listed threatened or endangered animals where observational studies can disturb the organisms.



Both programs requires permittees to submit documentation prior to the beginning and after the conclusion of projects. Departmental websites should be consulted for a full description of permitting rules and requirements.

Additional permits may be required by state or federal agencies based on the proposed activity and location. Users are encouraged to contact local site authorities to determine appropriate permitting.

#### **d. Rapid Response**

The dynamic and unique features that make the Oregon Coast most memorable also present many challenges to managing disaster and threat response. An extreme wave climate and low accessibility can hamper response attempts, while the interconnectivity of marine ecosystems allows for accelerated spread of potential issues. Due to this complex nature, this strategy recognizes that no single plan or method may be appropriate for responding to all events. Therefore, to best respond to sudden and unforeseen events, agencies and stakeholders shall coordinate individual response plans to imminent threats and impacts to rocky habitats in a timely manner once recognized<sup>11</sup>.

Two key factors to successful threat mitigation is early detection and rapid deployment of response efforts. Sustained monitoring should follow these efforts to track the threat and any recovery or changes that may have occurred in the environment. Foreseeable threats to the rocky habitats should be discussed and preemptively planned for by agencies. Early detection can greatly reduce the overall damage caused by a threat and potential cost in combatting it.

Oregon's rocky coast is not unfamiliar to expeditious onsets of threats, all of which could have benefitted from greater coordination in rapid response. Beginning in 2013, an outbreak of sea star wasting syndrome substantially impacted sea star populations in Oregon and along the West Coast. The impacts of this sudden decline in sea star populations has led to substantial and persistent impacts to the rocky intertidal ecosystems along the west coast that are still being studied and actively monitored by a number of institutions. More commonly, rocky habitats must combat sudden onsets of marine debris washing ashore into intertidal areas. In these instances, a more general plan may be created to determine appropriate removal and jurisdiction.

#### **i. Oil Spill Response Planning for Oregon's Rocky Coastal Habitats**

Oil spill response planning in Oregon is the responsibility of both the Oregon Department of Environmental Quality (DEQ) and facilities that store, transport, or

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<sup>11</sup> Agency action prior to rapid response planning may be required to assure immediate safety of life and resources.

process large amounts of oil products. Vessels and facilities have their own plans for stopping spills before they can spread. Oregon DEQ regulates these facility plans and also develops plans for areas that contain many potential sources of oil spills or that are especially vulnerable to harm from oil spills. The Oregon Coast is one such area. Updated oil spill response plans released by DEQ in 2019 provide new strategies for the containment and collection of spilled oil in the Oregon coastal region. These strategies intend to keep oil away from sensitive natural, cultural, historic, and socioeconomic resources. Where possible, these oil spill response plans for the coast will include strategies to protect rocky habitat areas for the species that live there and the people who visit them. These plans include information for notifying resource managers and effected facilities when spills happen. View DEQ [web resources](#) for more information on DEQ's work to update the coastal oil spill response plans.

### **e. Ecosystem Based Management**

This strategy intends management to be adaptable to changing information and conditions with the goal of maintaining long term ecosystem viability and sustainability. To do this, management prescriptions shall be applied following principles of ecosystem based management (EBM). Although EBM is an ever-evolving concept, the general principles and takeaways have been agreed upon since the 1970's. This interdisciplinary framework considers ecosystem connections, coupled social ecological influence, system uncertainty, adaptive and integrative management, stakeholder involvement, and sustainability, all using the integration of scientific knowledge and appropriate monitoring<sup>12</sup>. More broadly, ecosystem-based management is a holistic management approach informed by science and monitoring, which managers use to better consider the tradeoffs in resource uses and protections in order to sustain biodiversity and productivity in a system<sup>13</sup>. The adaptive component of EBM is comprised of a suite of flexible strategies and tools that can be applied where uncertainty exists. This management structure can be altered based on the intricacies of an issue.

This plan contains no direct prescriptions for applying EBM into the management of rocky habitat resources. Instead, the key principles and elements of EBM have been woven into each section of the Rocky Habitat Management Strategy, and as additional scientific knowledge and monitoring takes place, agencies shall incorporate best practices into site based management prescriptions and actions. Additionally, this strategy supports-

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<sup>12</sup> Long, R. D., Charles, A., & Stephenson, R. L. (2015). Key principles of marine ecosystem-based management. *Marine Policy*, 57, 53-60.

<sup>13</sup> National Oceanic and Atmospheric Administration (NOAA), Ecosystem Based Management Chore Characteristics; <https://ecosystems.noaa.gov/EBM101/WhatIsEcosystem-BasedManagement.aspx>

- a) Continued update and refinement of the coastwide rocky habitat resource inventory using information from ongoing scientific research and monitoring.
- b) Regional communication and collaboration with coastal partners including California, Washington, British Columbia, and Alaska in order to appropriately manage and understand larger ecosystem events and trends;
- c) Ongoing inventory and monitoring of rocky habitat ecosystems and organism populations to quickly account for variations and adapt management accordingly;
- d) Increasing understanding of rocky habitat ecosystems through scientific study and gathering of local ecological knowledge;
- e) Incorporation and growth of monitoring activities to support best management measures for ecosystem sustainability and use. Scientific study and monitoring should be implemented through a diversity of forms based on level of information, cost, and frequency of need.

Oregon's rocky habitat environment lends itself well to EBM due to its inherent complexities, vulnerabilities, and interconnection with land, sea, and society. Without the use of an applied and adaptable management system, rocky habitats cannot be properly managed and sustained for future generations.

*\*Section A-C (proposed adoption May 23, 2019) replaces Section A-E of the original Territorial Sea Plan-Part 3 (Rocky Shores Management Strategy, 1994).*

*\*Draft appendices are available on [www.OregonOcean.info](http://www.OregonOcean.info) and will be adopted after Phase 2 of the update process.*