

Rocky shores help define Oregon’s dramatic 362-mile long coastline (Figure 1). Tidepools, cliffs, rocks, and submerged reefs support an ecologically rich and diverse ecosystem at the boundary of the land and sea along 161 miles (41%) of Oregon’s

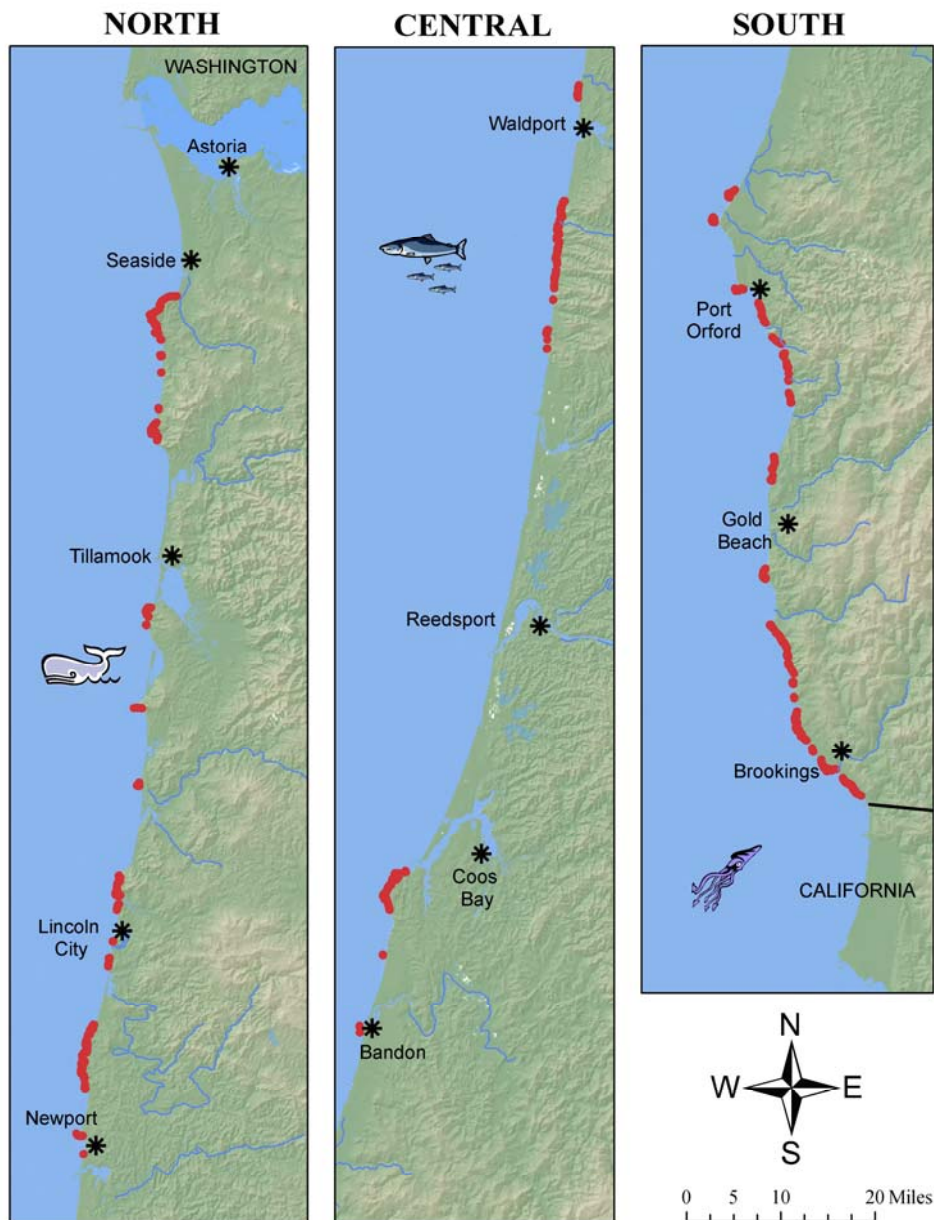


Figure 1. Rocky intertidal areas (shown in red) make up approximately 82 miles (21%) of Oregon’s coastline.

shoreline. These rocky shore areas, particularly the 82 miles of rocky intertidal habitat, attract hundreds of thousands of visitors annually (Figure 2).

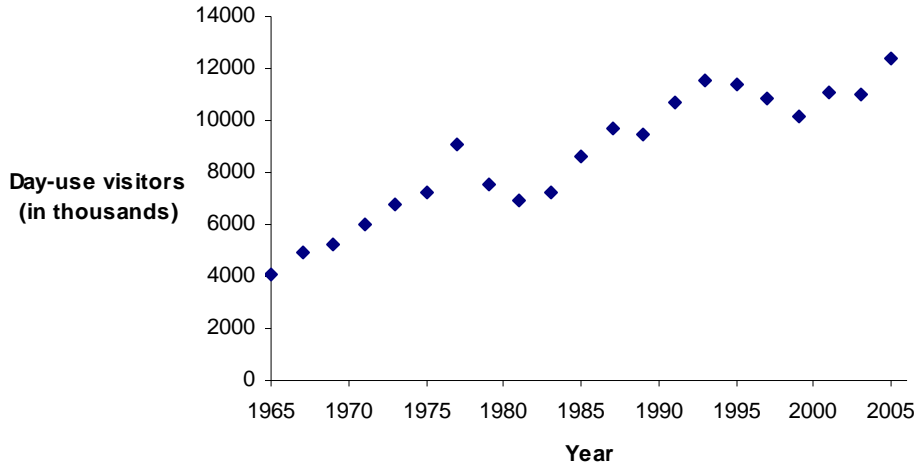


Figure 2. Human use trends for rocky shore adjacent Oregon state parks (1965-2005)

As is the trend worldwide, Oregon’s population is increasing rapidly. So is interest in coastal recreation. Human population in Oregon’s coastal counties has increased approximately 800 percent during the past 100 years (Figure 3). The U.S. Census Bureau predicts Oregon’s population will increase more than 25 percent by 2025 (U.S. Census Bureau, 2005). In all but one of Oregon’s coastal counties, the U.S. Census Bureau predicts population will increase five to ten percent by 2008 (Crossett et al., 2004).

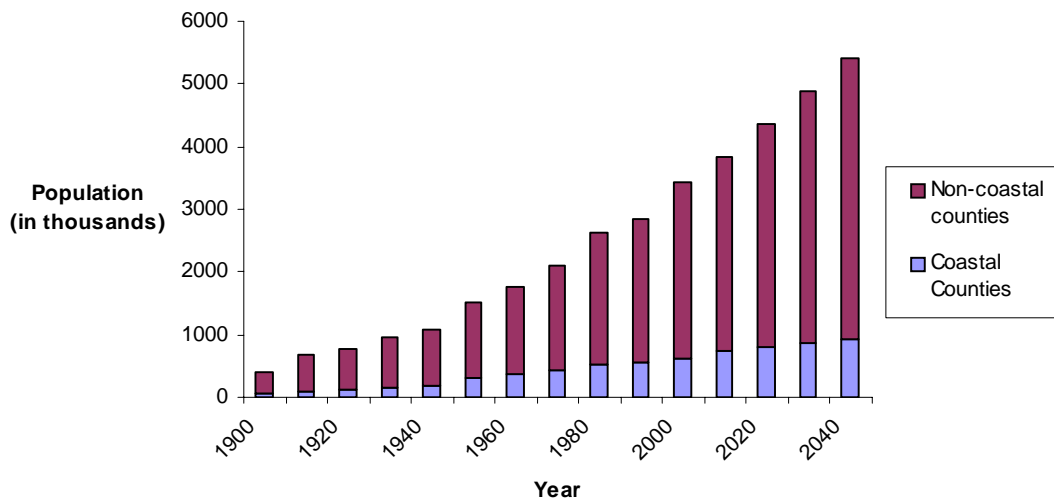


Figure 3. Oregon’s statewide and coastal population from 1900-2040. Source: U.S. Census Bureau (1900-1999) and the Population Research Center, Portland State University (2000-2040).

People use the rocky shores to play, conduct scientific research, maintain a livelihood, perform traditional tribal activities, harvest food, and to teach and learn about nature. From exploring the unique creatures of the rocky intertidal to fishing from rocky outcroppings and observing marine mammals, activities on Oregon’s rocky shores are diverse. The rocky shores have ecologic, economic, and social value to a wide range of stakeholders, from local communities to state agencies and citizens of the world.

Although sixty-one percent of the visitors to Oregon’s beaches are Oregonians, a large number are from out of state, drawn for various reasons to Oregon’s unique and beautiful coast (Shelby and Tokarczyk, 2002). Therefore, although Oregon’s population increase is likely to be reflected in visitor use of coastal areas, out-of state visitors will also play a role. Tourist revenue in Oregon’s coastal counties is increasing, which suggests that more out-of-state visitors are using Oregon’s coast (Dean Runyan Associates, 2004). This increase in population and tourism is also reflected in visits to Oregon’s state parks next to rocky shores (Figure 2).

Two of Oregon’s coastal resources that depend upon rocky shore areas (marine wildlife and tidepools) have been identified by coastal visitors as ones they are most interested in learning about (Shelby and Tokarczyk, 2002). Additionally, results from a study of recreation preferences of Oregon’s aging population show that more than half (59%) of Oregonians age 42-80 take part in ocean beach activities, and 39% spend time exploring tidepools (Lindberg, 2006; Table 1).

Table 1. Top 10 Outdoor Recreation Types (by percent participating) for Oregon’s aging population.

Rank	Recreation Type	Percent participating
1	Walking	81%
2	Picnicking	66%
3	Sightseeing	66%
4	Visiting historic sites	63%
5	<i>Ocean beach activities</i>	59%
6	Day hiking	54%
7	<i>Exploring tidepools</i>	39%
8	Grandchildren to playground	35%
9	Bicycling	33%
10	Freshwater beach activities	33%

Oregonians age 42-80 rank ocean beach activities and exploring tidepools as their fifth and seventh favorite forms of outdoor recreation (see Table 1). Oregonians in this age bracket make up 42% of Oregon’s population (PRC, 2005), which means about 596,659 people explore Oregon’s tidepools each year. That use is evenly distributed

among income brackets, likely because it is virtually cost-free, except for traveling to the sites.

It has gotten easier to get to rocky shore areas during the past few decades (Fox et al., 1994). As a result, these areas are subject to an unknown amount of human disturbance that is increasing in many areas. Potential effects of human use on rocky shore areas range from trampling sensitive intertidal habitat (Brosnan and Crumrine, 1994), to collecting intertidal plants and animals (Castilla, 1999) to conflicts between humans and marine wildlife (Riemer and Brown, 1997).

Comprehensive, interdisciplinary management that balances human use and natural resource stewardship is crucial to successful management of these rocky shore treasures. This is important not only for resource conservation, but also because high-quality ecosystems are essential for tourism, which provides livelihoods for many Oregonians.

Purpose

The Oregon Legislature has charged OPRD with key management responsibility for Oregon's intertidal rocky shores. This document reviews those management responsibilities. It provides information to help guide and inform OPRD decisions, as well as other agencies' decisions.

This document includes:

- Background information on rocky shores, including why they are important ecologically, recreationally and economically
- Current and future management considerations
- Recommendations for balancing recreation, conservation and sustainability

In keeping with the goals set forth in the Ocean Shore Management Plan, management of this resource should attempt to strike a balance between recreation and protecting resources and provide for the public's enjoyment and understanding of the rocky shores.

History of Rocky Shore Management in Oregon

The state of Oregon, recognizing the need to coordinate ocean management, developed the Oregon Ocean Plan in 1991 through a collaborative effort between stakeholders. The plan's goals are to conserve all marine resources, protect marine habitats and preserve fragile, vulnerable, unique, and critical marine communities and habitats (OORMTF, 1991). The Ocean Plan identifies management needs for Oregon's territorial sea and makes suggestions for sensitive marine bird and mammal habitats and rocky intertidal areas (OORMTF, 1991).

In the ocean plan, the Ocean Task Force lays the groundwork for a detailed, management-oriented plan for the territorial sea. The 1991 Oregon Legislature established the Ocean Policy Advisory Council (OPAC) to advise the governor as well as state coastal resource management agencies on coastal issues. One of the council's primary duties was to create and maintain a plan for Oregon's territorial sea (ORS 196.443). "Territorial sea" means the waters and seabed extending three geographical miles seaward from the coastline in conformance with federal law (ORS 196.405).

OPAC and state and federal natural resources agencies, particularly the Oregon Department of Land Conservation and Development (DLCD) created the Territorial Sea Plan (TSP). The DLCD is the state agency responsible for Oregon's coastal management program. In 1994, OPAC published the TSP. The Rocky Shore Management Strategy (RSMS) is part of the TSP. That same year, the Oregon Coastal Management Program adopted the TSP, including the RSMS. The Oregon Coastal Management Program is part of the National Coastal Zone Management (CZM) Program, a partnership between the federal government and U.S. coastal states and territories, authorized by the federal Coastal Zone Management Act of 1972. For the purposes of the TSP, Oregon's territorial sea includes the ocean shore recreation area, which is the land between extreme low tide of the Pacific Ocean and the line of vegetation (OPAC, 1994).

The RSMS was the first step toward a plan that would encompass all of Oregon's nearshore ocean and coast. The RSMS includes a coast-wide framework for managing rocky shore sites and habitats and a site-by-site evaluation of management needs and related prescriptions (OPAC, 1994). It summarizes the protected status of rocky shore sites and proposes new designations for rocky shores areas that did not have special management status (OPAC, 1994). The TSP was adopted as part of the state's federally approved coastal management program in 1994.

The RSMS created site designations for rocky shore areas. When the implementation stage began in 1996, problems with obtaining public buy-in began (R. Bailey, personal communication, 2004). The RSMS modified and formalized protections and designations for a large number of marine managed areas in a document to be adopted by state, local and federal agencies. Neither the previous protections (such as intertidal permit only areas) nor the new protections set forth in the RSMS were well known to the public.

Public concern for sites in the Coos Bay area spurred a community planning process from 1997 to 1998. The RSMS's designation of the rocky shore areas of the Cape Arago headland was reviewed, and OPAC changed Cape Arago's designation to include three different areas. All three areas became research reserves with slightly different use restrictions. The ODFW adopted these restrictions, which are now part of the sport fishing regulations (ODFW Marine Zone Fishing Regulations, 2006).

OPAC also changed the way the RSMS designated the Cape Arago headland. It is now an intertidal marine protected area (OPAC, 1999). Signs at the site inform visitors that the area is an intertidal marine protected area, where only people with permits can collect shellfish, other marine invertebrates, algae and seaweed. This informal designation does not carry any new regulations or restrictions; it is only an educational tool.

In 1999, an informal review of Oregon's southern coast rocky shore sites was conducted for areas from Brookings to Gold Beach and also at Humbug Mountain and Cape Blanco (R. Bailey, personal communication, 2004). OPAC approved a community-based planning process for rocky shores in this region, similar to the one done for Cape Arago (OPAC, 1999). In addition, public meetings to review the Port Orford and Brookings area rocky shore site designations were held (OPAC, 1999). Additionally, the possibility of a similar process for the Port Orford area was discussed and approved.

The decision was made to hold public review of the Brookings area rocky shore sites and to conduct the Port Orford area review in the near future (OPAC, 1999). In 2000, a community-based review process examined designations for Oregon's southern rocky shores from Brookings to Samuel H. Boardman State Scenic Corridor. Two stakeholder meetings were held and ODFW adopted the rocky shore next to Harris Beach State Park as a marine garden.

In 2001, an amendment to the TSP, "Ocean Management Goals and Policies" and a description about the changes for the Cape Arago headland sites were added to the plan (OPAC, 2001a and OPAC, 2001b). The amendment to the TSP Ocean Management Goals and Policies section included a preamble, overall ocean management goals of the State of Oregon, and four general ocean and coastal policies (scope of authority, estuaries, management measures, and ocean stewardship area). Several policy definitions were added to the glossary.

OPAC dissolved in 2002. In the past five years, little statewide rocky shores planning has happened. Since the TSP's inception 10 years ago, few things have been done to assess its effectiveness and/or implementation of plan provisions. OPAC was reconstituted by the legislature and reconvened in 2005. It has focused on marine reserves planning and the governor's effort to pursue National Marine Sanctuary status for the Oregon coast. Increased use of the coast, combined with the governor's desire to pursue marine protected areas in Oregon waters, along with new scientific information on rocky shore ecosystems, make a review of rocky shores management in Oregon timely.

Rocky Shores Fellowship Project

The National Oceanic and Atmospheric Administration (NOAA) funds a program in which coastal states may host Coastal Management Fellows. Established in 1996, the Coastal Management Fellowship offers postgraduate students on-the-job education and training in coastal resource management and policy (CSC, 2006). Through the program,

selected state agencies are given money for a project of their choice in the coastal zone management arena.

The DLCD administers Oregon's Coastal Management Program. OPRD is a key partner agency. OPRD has statutory authority for managing Oregon's ocean shore recreation area, including rocky intertidal areas along the entire coast. OPRD's responsibilities include protecting natural resources, managing many shoreline uses, and providing public access, recreational facilities, and recreational opportunities.

OPRD, along with DLCD, submitted a project proposal to NOAA for a fellowship project to develop an interagency assessment to improve management of Oregon's rocky shores. The project was accepted and funded for a two-year period starting Aug. 3, 2004. This report is the result of the fellowship project.

Current Management of Oregon's Rocky Shores

The TSP includes a comprehensive overview of state, federal and local agencies responsible for managing Oregon's territorial sea (OPAC, 1994). A brief summary of those key groups charged with rocky shore management is provided here.

Different levels of government have jurisdiction over ocean and coastal management, depending on how close to the coast they are (Figure 4). In general:

- From 0-3 nautical miles (nm) seaward of its coastline, the state is primarily in charge of management. This area is Oregon's Territorial Sea.
- From 3-12 nm, the federal government is in charge. This is the Federal Territorial Sea. Federal laws regarding issues like fisheries, environmental/water quality and mineral development establish federal interest.
- In 1999, President Clinton proclaimed that the "contiguous zone" of the U.S. extends to 24 nm; this zone was established so that the U.S. can "exercise the control necessary to prevent infringement of its customs, fiscal, immigration, or sanitary laws and regulations ... and to punish infringement of the above laws and regulations committed within its territory or territorial sea."
- From 12-200 nm, the United States has proclaimed the resources in the waters to be within an Exclusive Economic Zone (EEZ). The U.S. has rights and responsibilities in this area, only with respect to specific resources through applicable laws.
- Beyond 200 nm, and not within another country's waters, is an area known as the "high seas" or "international waters" where international laws apply. If all coastal countries claimed a 200 nm EEZ, only 66 percent of the oceans would be part of the "high seas."

State agencies are primarily in charge of managing rocky intertidal areas, with a few exceptions. For a more detailed explanation of the agencies and other entities responsible for managing Oregon's marine areas, see the Oregon Ocean Plan, Territorial Sea Plan and Oregon Nearshore Strategy. The diagrams below illustrate state and federal jurisdictional boundaries (Figure 4) and summarize federal, state, and local jurisdictions and programs (Figure 5).

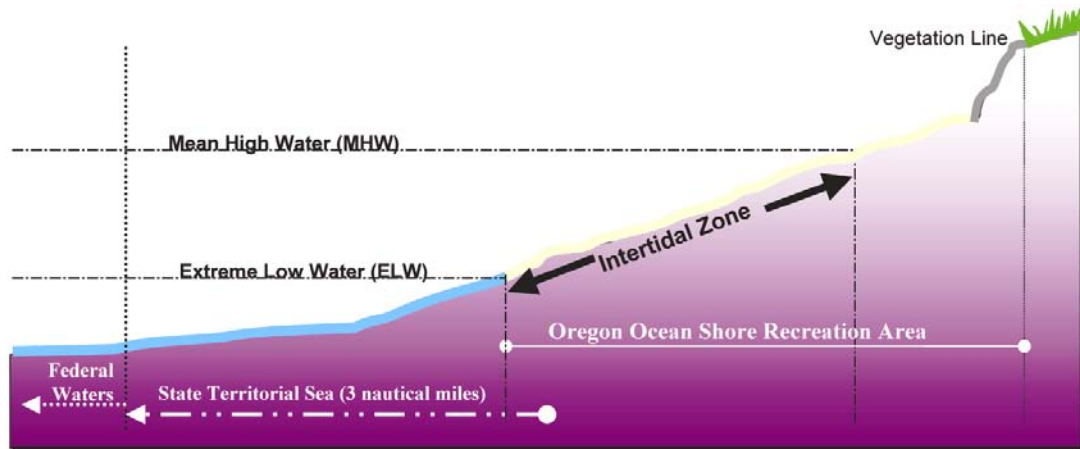


Figure 4. Diagram of Oregon’s coastal and marine areas, illustrating state and federal jurisdictional boundaries. Image modified from original provided courtesy of Robert Bailey, Oregon Department of Land Conservation and Development.

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 (USFWS, 2006). National Wildlife Refuges (NWR) along the coast include the Oregon Islands NWR (all offshore islands in Oregon’s Territorial Sea along with several mainland portions: Coquille and Crook Points), Three Arch Rocks NWR, and Cape Meares NWR.
- **The National Oceanic and Atmospheric Administration (NOAA)**. NOAA Fisheries (formerly 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 mammalian species and their habitats including the pinnipeds that rest on Oregon’s rocky shores.
- **Bureau of Land Management (BLM)** owns and manages public lands throughout the state, including some that front Oregon’s rocky shores, 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.
- **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 (EPA, 2006).

Coastal Tribes

Coastal Indian Tribes along the Oregon coast include the Confederated Tribes of Coos, Lower Umpqua & Siuslaw, the Coquille Indian Tribe, and the Confederated Tribes of Siletz. The Confederated Tribes of the Grand Ronde Community of Oregon is not directly on the coast but is composed of members who were traditionally part of coast-based tribes, including the Tillamook and Nestucca (Grand Ronde, 2006). Oregon's tribes, each their own sovereign government, have treaty-protected gathering rights that should be considered (in consultation with the tribes as appropriate) when making any natural 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.

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 80 parks, waysides and other facilities along the coast (APPENDIX A). The second is the agency's statutory authority for managing Oregon's ocean shore recreation area (Figure 1). 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 (ORS 390.605). The ocean shore does not include estuaries or areas bordering a state park or wayside. Individual parks' rules govern areas of the ocean shore bordering state parks (listed in OAR 736, Division 10). Within the Ocean Shore Recreation Area, OPRD issues ocean shore alteration permits, including those for shore protective structures (e.g., riprap), natural product removal (e.g., intertidal marine macroalgae), miscellaneous use permits and scientific research and collection permits. OPRD developed the Ocean Shore Management Plan for this area (OPRD, 2005). OPRD is responsible for protecting a variety of natural resources, managing many shoreline uses, and providing public access, recreational facilities, and recreational opportunities.
- **Oregon Department of Fish and Wildlife (ODFW)** enforces fish and wildlife laws. It issues scientific collection permits and advises other agencies on biological issues. ODFW manages seven intertidal marine gardens, six research reserves, and one habitat refuge. ODFW has recently developed a plan for managing Oregon's nearshore, which includes rocky intertidal and subtidal areas (ODFW, 2005).
- **Oregon Department of State Lands (DSL)**. In addition to being the state agency charged with holding public lands in trust for the public, it is in charge of Oregon's submerged and submersible lands, therefore, it has overlapping authority over the intertidal area with OPRD (up until mean high water). This includes authority for kelp harvesting and leasing.

- **Oregon Department of Land Conservation and Development (DLCD)** coordinates the state's Ocean and Coastal Management Program. It ensures that projects from the federal to local level are consistent with the state's Coastal Zone Management (CZM) plan and the 19 statewide planning goals. In partnership with several other organizations, DLCD has developed Oregon's Coastal Atlas, which has information on rocky shores and other coastal areas in Oregon (DLCD, 2006).
- **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.

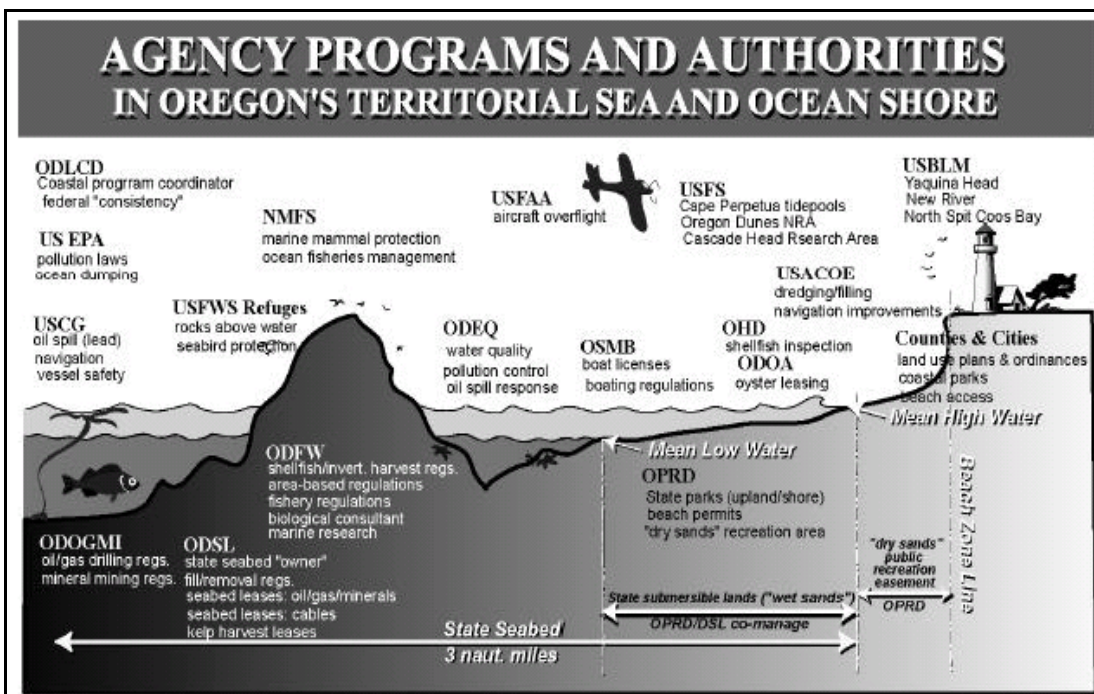


Figure 5. Agency programs and authorities in Oregon's territorial sea and ocean shore (image courtesy of Robert Bailey, Oregon Department of Land Conservation and Development).

Table 2 summarizes the 14 specially managed rocky shore areas that ODFW manages. The table lists the ways species at the sites are protected. The status of these sites is discussed in much greater detail in following pages, both in the updated site notes for each site and in the discussion section.

Local Government

Counties and cities are responsible for land use plans and ordinances as well as maintaining some public access points. They also own and manage some coastal parks.

Table 2. Specially managed rocky shore areas on the Oregon coast and the protections afforded to the species found within them.

Rocky Shore Area	ODFW Marine Zone Special Rules
<p><u>Marine Gardens:</u></p> <ul style="list-style-type: none"> ▪ Haystack Rock (Cannon Beach) ▪ Cape Kiwanda ▪ Otter Rock (Devil’s PB) ▪ Yaquina Head ▪ Yachats State Park ▪ Cape Perpetua ▪ Harris Beach (Brookings) 	<p>Closed to collection of <i>shellfish & marine invertebrates</i>, except:</p> <ul style="list-style-type: none"> a. Single <i>mussels</i> for bait b. <i>Razor clams</i> at Cape Perpetua
<p><u>Subtidal Research Reserves</u></p> <ul style="list-style-type: none"> ▪ Pirate Cove (Depoe Bay) ▪ Gregory Point <p><u>Intertidal Research Reserves</u></p> <ul style="list-style-type: none"> ▪ Boiler Bay ▪ Neptune State Park ▪ Cape Arago/Sunset Bay (Area B) ▪ Brookings ▪ Cape Arago/Sunset Bay (Areas A & C) 	<p>Closed to collection of <i>shellfish and marine invertebrates</i>, except when a scientific collection permit has been issued.</p> <p>Closed to take of <i>shellfish and marine invertebrates</i>, except <i>abalone, clams, Dungeness crab, red rock crab, mussels, piddocks, scallops</i> and <i>shrimp</i> may be taken. Scientific collection permits may be issued for marine invertebrates.</p> <p>Closed to take of all <i>shellfish and marine invertebrates</i> except when a scientific collection permit has been issued.</p>
<p><u>Habitat Refuge</u></p> <ul style="list-style-type: none"> ▪ Whale Cove (Lincoln Co.) 	<p>Closed to the collection of marine fish, shellfish and invertebrates</p>

NOTE: This information summarizes some of the regulations for Oregon’s specially managed rocky shore areas and is current for 2005 only. Shellfish licenses are required where collection is allowed. Please consult Fish & Wildlife Sport Fishing Regulations for the most current information and for maps showing the boundaries of these specially managed areas.