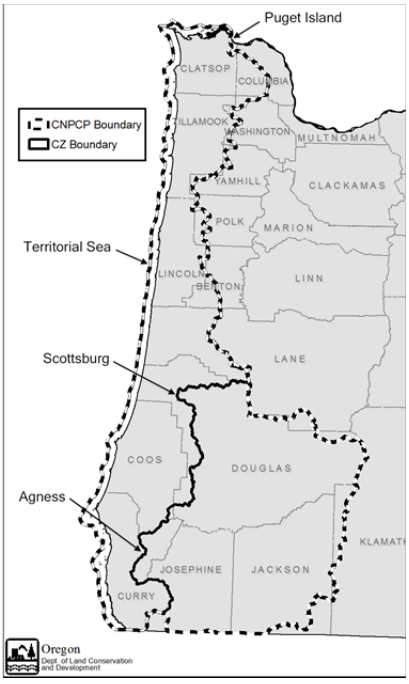
Coastal and Nearshore Oregon: Using and Protecting Our Natural Resources

Executive Summary

In 2009, the LWVOR convention voted to do an update study on Coastal Natural Resources with emphasis on marine reserves and ocean energy. This paper provides a summary of the study information for developing a consensus on coastal natural resources.

Oregon's coastline forms a transition between land and water and thus laws and regulations used in managing this region and its natural resources must incorporate many interacting natural and economic and cultural factors. Oregon's Coastal Zone extends from the three-mile territorial sea limit to the peak of the coast mountain range along Oregon's ocean border.



Laws and Regulations:
Oregon initiated planning for the Coastal Zone in the early 1970s. The Coastal Zone is subject to international, federal, state and local treaties, laws and regulations. Oregon is a participant in the Federal Coastal Zone Management Act a voluntary tool created to encourage state level development of coastal management plans by providing money and guidance. Once state level plans are approved all federal policies and actions must be consistent with any mandatory provision of the state program.

Oregon's program is guided by state planning goals developed the 1970s – in particular: Goal 16 (Estuarine resources), Goal 17 (Coastal Shorelands), Goal 18 (Beaches and Dunes) and Goal 19 (Ocean Resources). The Ocean Resources Management Act of 1987/1991 (Oregon Revised Statutes (ORS) 196.405 – 196.515) provides the legislative and policy framework for Oregon's Ocean Program. It establishes the Oregon Resources Management Program and the Ocean Policy Advisory Council (OPAC). The act also mandates an Ocean Resources Management Plan and a Territorial Sea Plan as part of the Oregon Coastal Management Program, which is administered by the Department of Land Conservation and Development (DLCD). The program combines the State's coastal management statutes into a unified program. The three principle elements are statewide planning goals, city and county comprehensive plans, and state natural resource laws and agencies. Funding for the program comes mostly from federal funds appropriated by NOAA. The comprehensive plans and land use ordinances of coastal counties and cities also contribute to coastal management.

Coastal Environment:
The interrelationship of natural resources with cultural and economic issues must be considered in developing good coastal management.

Estuaries: Estuaries are the tidal and seasonal transition between the marine dominated systems of the ocean and the upland river system. This area where salt and fresh water mix is intensively productive serving as a nursery for fish, habitat for waterfowl, and as a zone for encouraging biodiversity by providing refuge for species and genetic resources. The estuaries mitigate the effects of storms, functioning as flood control zones, spreading

and slowing the movement of water. The areas also filter water, removing sediments and pollutants. There are 22 major estuaries and many smaller estuaries on Oregon's Coastline. The largest is the Columbia River estuary. The South Sough National Estuary Research Reserve was the first national reserve. The reserve promotes education and scientific study.

Over time, estuaries have been lost or altered due to human activities including dredging and development. Methods for preservation and restoration of these habitats for both their biological and structural functions are currently being researched and implemented. Restoration work is taking place in many Oregon estuaries.

Development and Coastal Maintenance: Only about 5% of the coastal area is zoned for development. Because of natural hazards including earthquakes, tsunamis, storms, and floods, development must take place with careful planning. Coastal cities are required to have flood plans and to participate in tsunami planning. Modern planning is taking advantage of better geological understanding and mapping of the coastal region. Communities are looking at moving buildings to safer ground and restricting development in areas of natural risk.

Beach and Shoreline: The Oregon Beach Act protects the shoreline from development and guarantees public access by restricting development in the beach zone.

Demographics: Population growth is slower in the coastal region than in the rest of Oregon. The population tends to be older and a significant portion of the income is from investment and pensions. Forestry and fisheries, although still important coastal incomes sources, are no longer the major income and employment sources. Tourism and recreation are increasing components of coastal employment.

Working waterfronts: Coastal culture centers on waterfront communities. Maintaining ports for their economic, recreational and aesthetic value is a priority for Oregon's Coast. However, ports are challenged by the costs of maintaining facilities, requirements to comply with environmental protections and unpredictable destruction from storms and seismic events.

Current Natural Resource topics.

Fisheries: Fishing has always been an important economic activity on the Oregon Coast. In 2009, the estimated personal income from commercial fisheries was $398 million. The modern commercial fisherman has investigated significant resources in equipment to compete successfully. They are also challenged by reduction in fish stocks and competition with other ocean uses.

Internationally, significant portions of fish stocks have been overfished. In the United States, efforts to address this loss of fish stock have been put in place. These efforts include controls on types of equipment for fishing, limits on catch, and seasonal limits. Commercial fishermen must comply with these controls.

In Oregon, eight species of ground fish have been identified as overfished and rebuilding programs are in process. The West Coast Fish and Trawl Share program has been put in place to control catch of ground fish and give fisherman the opportunity to continue fishing. Two Oregon fisheries, the pink shrimp fisheries and the Dungeness crab fisheries have qualified as Certified Sustainable Fisheries (CSF) by meeting standards that include reducing by-catch, tracking gender and age of catch, and signing a code of conduct. Other CSF West Cost fisheries include Pacific albacore (American Albacore Fishing Assoc. and Western Fishboat Owners Assoc.) –Pacific hake midwinter trawl in the North Pacific.

Fish farming is limited in Oregon to hatcheries and oyster farming. In the short term, there are no indications that aquaculture will expand.

Marine Reserves and Marine Protected Areas: Marine reserves are defined as areas of the ocean that are completely protected from activities that remove animals and plants or alter habitats, except as needed for scientific research. Marine protected areas have fewer controls.

Marine reserves are being developed throughout the world. These areas provide protection for species and have been shown in scientific research to increase the numbers, body size and density of plants and animals as well as increasing diversity. There is often a spill-over effect by actually increasing the numbers of fish outside the reserve.

Oregon's marine goals call for a system of fewer than ten reserves that serve as areas for species and habitat conservation and research while avoiding significant social and economic impacts on ocean users and coastal communities. Factors to consider in identifying reserves include location, size, number of reserves and distance between reserves.

Opposition to reserves occurs because of loss of traditional fishing grounds. Commercial and recreational fishermen see increased cost for travel to fishing grounds. Local communities fear economic hardship from loss of fisheries. Because benefits do no occur overnight, there may be a need to compensate the commercial fisherman during the development period. In 2009, Oregon House bill 3013 adopted rules to establish a pilot marine reserve at Otter Rock and a pilot reserve and protected area at Redfish Rock. The bill also called for development of a team including technical, scientific, state agency, ocean users, and coastal communities to study additional proposed sites for marine reserves at Cape Perpetua, Cape Falcon, Cascade Head and Cape Arago-Seven Devils. The team was to develop a work plan including the biological and economic assessments, development of scientific goals, provision for baseline data, enforcement plans, public information plans and the formation of community stakeholder teams. After spending over 25,000 volunteer hours the community teams submitted recommendations for Cape Perpetua, Cascade Head and Cape Falcon. In 2012, a bill passed the legislature adopting these sites. A sixth site at Cape Arago has not been approved. The sites will provide a network of reserves and protected areas extending from the mouth of the Columbia to Humbug Mountain. (see map of sites at http://www.oregonocean.info/index.php?option=com_content&view=article&id=419&Itemid=138)

Ocean Energy: The need to seek renewable energy resources to maintain our economy and reduce dependence on carbon dioxide emitting fossil fuels has slowly garnered more attention. Initial efforts centered on wind and solar energy. More recently, attention has turned to capturing energy from the ocean. Ocean energy including thermal, tidal and wave energy, is a renewable technology that is still in the development stages. There are uncertainties with regard to cost and viability. The Electric Power Research Institute (EPRI) estimates that 18,000 MW of rated (or maximum) capacity from ocean energy is available off the US West Coast, enough to power 5 million households.

In Oregon, the current focus is wave energy. Wave energy has excellent forecastability (48 hours in advance) because waves can be tracked for hundreds of miles. This advanced knowledge assists in planning and control of demand. A number of different technologies are being investigated. There are four general categories: point absorbers, oscillating water columns, overtoppings and attenuators. They are being evaluated for cost, indestructibility, efficiency and environmental impact. The primary impacts on the environment are 1) removal of energy from the ocean making it less available for natural uses and 2) the introduction of hard structures, thus

altering habitats. Other environmental impacts include impact on migratory species and noise. Wave energy parks would likely be closed to fishing and thus impact commercial fishing habitat, in particular the sandy bottoms of the Dungeness crab fisheries. The economic impact is yet to be determined. Licensing and permitting procedures are under development. Oregon is in the process of identifying appropriate sites for development. The Territorial Sea Plan Amendment, Part 5 sets up specific decision-making criteria for ocean energy projects. Funding remains a final challenge for moving forward with these projects. Actual funding available has decreased in recent years. However, the first buoy as part of the Reedsport project has been constructed and is scheduled for deployment in Summer 2012.

Invasive Species: Invasive species are introduced accidentally or intentionally to the coastal habitat. They may take over a habitat altering it or successfully competing with native species for resources. Control of these invaders is expensive and challenging. Once entrenched, undesirable invasives may be difficult to remove. Some problematic coastal invasives include, East Cost *Spartina* (cordgrass) and Japanese knotweed. Competition from these introduced species has impacted native fisheries including salmonid populations. In coastal environments, invasives carried in the ballast waters of ships or biofouling ship surfaces are particularly problematic and difficult to manage. International, national and state regulations are being developed specifically to address this problem. Management will carry costs for inspections and eradication.

Forestry: Forestry has been an important natural resource industry in Oregon since the mid 1800s. The environmental impacts of forestry in Oregon have been regulated since 1971 when the Oregon Forest Practices Act was enacted. Since then, state and national regulations have encouraged improvement in forest practices. However, historic lumbering techniques included practices for road construction and run off control have damaged the streams flowing through forest lands. In 1990, the Coastal Zone Act Reauthorization Amendments (CZARA) added Section 6217, which calls upon states and tribes with federally approved Coastal Zone Management Programs to develop and implement coastal nonpoint pollution control programs. The program is administered at the federal level jointly by EPA and NOAA. In 2009 NOAA and the EPA were sued for providing funding to the State of Oregon under the Coastal Zone Management Act despite Oregon's lack of an approved management program for its coastal forest. In settlement, the state has agreed to develop "implementation-ready" TMDLS, the first of their kind to address non-point pollution sources in forestland. A second court decision in 2010 determined that logging roads should be subject to national stormwater permitting requirements. This decision is being appealed.

Dredging: Dredging is the excavation of materials underlying either fresh or salt water. Dredging is used to deepen and widen shipping channels, to change the course of stream flow, to harvest bottom fish and crustaceans, to enrich eroding beaches, to harvest rocks, gravel and sand for construction, to extract minerals, to place underwater cables, to construct bridges and to develop waterfronts. The maintenance of navigation channels through dredging is crucial for viable ports.

By disturbing the bottom, dredging creates turbidity, destroys the habitat of bottom-dwelling organisms and may bring buried toxics into the water. The architecture of the stream is affected and the banks and may be damaged by equipment used in the dredging process.

To keep ports operational *channels must be maintained through dredging*. Dredging requires permitting and environmental impact statements. Although these procedures are recognized as essential to protect habitat, some stakeholders see the multi-step requirements a major hurdles that delay necessary operations. *Suction gold mining* is another form of dredging that creates controversy. The 2010 ban on California suction mining and the high price of gold has increased the demand for permits and opportunities for suction gold mining

in Oregon. The state has regulations controlling methods, seasons and reporting. Permits are required for the activity.

Gravel mining is the removal of aggregate for construction purposes. The impact of this process on Oregon's salmonid population is a current concern. In July 2008, federal and state agencies (USFWS, NMFS, the Corps, EPA, DSL, DEQ, ODFW and DLCD) signed an agreement along with the gravel industry, represented by the Oregon Concrete and Aggregate Producers Association, to engage in a process toward Regional General Permits on coastal systems where gravel is removed. Although still contentious, the first such permit on the Chetco River was issued in July 2011.

A chromite mining stormwater permit was recently issued in Coos County, Oregon Shores. This process involves excavating ancient beach sands, extracting chromite and returning the remaining sand. Residents remain concerned about the impact on the quality and quantity of groundwater.

Coastal Non-Point Pollution Control Program: Oregon's Coastal Non-Point Pollution Control Program is a region specific program requiring the Coastal Zone to comply with federal and state Clean Water Act regulations and NOAA's Coastal Zone Reauthorization Amendments of 1990. In 2009, the plan developed by DEQ and DLCD for the Coastal Zone did not receive full approval from NOAA and EPA for three components: 1) new development, 2) operating onsite disposal systems, and 3) forestry. Work has been ongoing in these areas. The "implementation-ready" TMDLS are part of this process. Within the CZMA, the state has required a septic system inspection program at the time of sale. Rule making is in process. Some local communities, such as Dunes City, have taken further steps to address community water quality, with mixed acceptance by residents. *Monitoring for pollutants* is occurring along the coastline. The Tillamook Estuary Partnership has been successful in addressing pollutants in its watershed through a cooperative regional program including partnerships with residents and the dairy industry.

Along the coastline the beach monitoring system tracks pollutants at coastal beaches. The federally financed programs tracks the health of beaches while looking at potential sources for pollutants. Through the SOLV program, volunteers have removed tons of garbage from the beaches. The possible effects of small particulate plastics from trash permeating the ocean is receiving increasing attention.

Climate change: Oregon can expect impacts from climate change including changes in wave height, ocean height, storm characteristics and habitats. There will be changes in the salinity of water, migration of species to habitat more suited to their needs, loss of land and increased erosion. The ability of Oregon's forest to capture carbon dioxide will be increasingly important and must be considered in future decisions regarding timber harvest.

Public Involvement: In light of climate change and demands on natural resources, public understanding of the issues and involvement in decision-making is essential. To support this dialogue platforms should be created where participants can hear the range of viewpoints from all stakeholders and share an understanding of the vocabulary used. Successes and failures in coastline protection are measured in terms of public understanding. The marine reserves development plans and the Territorial Sea Plan provide significant opportunities for public comment and participation. Planners recognize the value of diverse opinions and the wealth of information about natural resources that non-experts hold and also realize "a nonconsulted public is often an angry one"[276] For a more complete description of how the public is involved in coastal resource planning, please see the Oregon Coastal Zone Management Association's FAQs at http://www.oczma.org/pdfs/FAQ%20Ocean%20Planning%202011%206-1-11_1.pdf.

For references and further information please read the entire document, *Coastal and Nearshore Oregon: Using and Protecting Our Natural Resources*, at http://voteoregon.org/issues/study-reports/study-report-library/.