



# Oregon Coastal Management Program Section 309 Assessment and Strategy 2021-2025

PREPARED BY THE OREGON COASTAL MANAGEMENT PROGRAM  
FOR FEDERAL CZMA §309 ENHANCEMENT PROGRAM  
OFFICE FOR COASTAL MANAGEMENT,  
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION,  
U.S. DEPARTMENT OF COMMERCE

# Oregon Coastal Management Program: Section 309 Assessment and Strategy 2021-2025

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## Introduction

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The Coastal Zone Enhancement Program, established under Section 309 of the Coastal Zone Management Act (CZMA) of 1972, as amended, encourages state coastal management programs to strengthen and improve their federally approved coastal management programs. Section 309 establishes a voluntary grant program that provides funding for states and territories to develop and implement coastal management program changes in one or more of nine enhancement areas. These specific “enhancement areas” are:

- Wetlands
- Coastal hazards
- Public access
- Marine debris
- Cumulative and secondary impacts
- Special area management plans
- Ocean resources
- Energy and government facility siting
- Aquaculture

Every five years, states and territories are encouraged to conduct self-assessments of their coastal management programs to identify issues and enhancement opportunities within each of the nine enhancement areas—and to assess the effectiveness of existing management efforts to address identified problems. Each coastal management program identifies high priority management issues as well as important needs and information gaps the program must fill to address these issues.

Through this self-assessment, each coastal management program identifies high priority needs for improvement within one or more of the nine areas. The coastal management program then develops strategies, in consultation with NOAA’s Office for Coastal Management (OCM), to address these management needs. The strategies provide a stepwise approach to reach a stated goal and lead to enhancement of the state’s or territory’s federally approved coastal management program.

OCM reviews and approves the Section 309 “assessment and strategy” document for each state and territory and, after approval, provides funding under Section 309 to help states carry out those strategies.

This document comprises the Oregon Coastal Management Program’s (OCMP) 309 Assessment and Strategy for the five year period from 2021-2025. The development process for this assessment and strategy began with an internal review of OCM issued guidance and a broad scoping of potential program enhancement priorities. During these initial stages of the preparation of the assessment and strategy, the OCMP solicited input from an expansive group of stakeholders through a short survey on program enhancement priorities, a coastal planner network meeting, and two workshops held on the Oregon coast.

Based on the results of the Phase I assessments and the stakeholder input received OCMP staff identified enhancement areas for which Phase II assessments would be completed. Informed by the results of these Phase II assessments and stakeholder input, OCMP’s internal review team then identified the selected strategy areas and formulated preliminary strategies. All of the assessment results and the proposed strategies were then compiled into a Draft Section 309 Assessment Strategy

document. The completed draft was submitted to OCM for review and comment, and concurrently the OCMP circulated a Public Notice providing for a 30-day public comment period on the draft assessment and strategy.

Upon the close of the public comment period, the OCMP internal review team revised the draft assessment to reflect the comments and direction received from OCM, resulting in further refinement of the strategies and budget. This final Section 309 Strategy and Assessment for 2021-2025 was submitted to OCM for review on February 18, 2020.

## Summary of Recent Section 309 Achievements

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### Coastal Hazards Planning

The Coastal Hazards Planning Strategy 2015-2020 goal was to work with six local jurisdictions to develop hearing-ready draft comprehensive plan elements and land use regulations that address tsunami hazards and/or incorporate the latest generation coastal risk zone maps for chronic hazards; based on the guidance contained in Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities and the OCMP model code for chronic coastal hazards. The strategy aimed to implement program changes that created new or revised authorities and new or revised local coastal programs and implementing ordinances.

Local jurisdictions who have completed work or are in progress to address the above strategy with OCMP staff assistance and support:

1. City of Cannon Beach revised their foredune management plan consistent with Statewide Planning Goal 18: Beaches and Dunes. The Planning Commission recommended adoption of the updated foredune management plan to the City Council in November 2018. It was formally adopted by their City Council in April 2020 after an extension public involvement process. This issue has been particularly divisive for the city and there was a change in their planning director, which resulted in a protracted adoption process.
2. Coos County developed revised natural hazard regulations. This work incorporated new hazards data into regulations for coastal and riverine erosion, earthquake, tsunami, and landslide hazards. County and OCMP staff worked together to draft and revise comprehensive plan policy, code revisions, and map products, which were favorably reviewed by the County's Citizen Advisory Committee and Planning Commissioners. The proposed changes were adopted by the Coos County Board of County Commissioners in December 2019. This work was funded both by 309 dollars, as well as a RiskMAP Grant from FEMA.
3. Douglas County adopted new regulations for the Beach and Dune overlay zone in December 2019.
4. Yachats is currently updating its comprehensive plan policies and zoning codes related to Statewide Planning Goals 7, 16, 17, and 18 to incorporate new natural hazard and resource information and best practices. This process will result in hearing ready drafts by June 2020, with the intention of adopting these updates after that.
5. Bandon is currently updating its natural hazards code and maps related to Statewide Planning Goals 7 and 18 to incorporate new natural hazard information and best practices. This process will result in hearing ready drafts by June 2020, with the intention of adopting these updates after that.



6. Astoria is currently updating its landslide hazards code and maps to incorporate new data and best practices. They are embarking on a public involvement process to gather feedback and support for the updated landslide regulations to be completed by June 2020, with the intention of adopting the new regulations after that.

Tsunami-specific work: OCMP worked with communities along the coast on tsunami land use planning efforts. The OCMP Tsunami Land Use Guide has been utilized to provide guidance to and assist local government in moving to develop and adopt land use policies and development code provisions to increase resilience to this potential catastrophic hazard. Additionally, many communities are pursuing the development of a Tsunami Evacuation Facilities Improvement Plan (comprehensive assessment of evacuation facilities, both needed and existing). While initial work with these communities was supported through 309 funds, ultimately all communities with tsunami regulations and evacuation plans have been supported through two competitively funded grant efforts.

Additionally, DLCD staff is currently working with Clatsop, Coos, and Curry Counties (and the cities and special districts within those counties) to update and adopt a FEMA-approved Natural Hazards Mitigation Plan. These plans utilize many new natural hazards data sets and identify mitigation action items. Updating land use plans to incorporate new hazards data and regulations are included as mitigation action items. These efforts lay the groundwork for future coastal hazards land use work.

Almost all coastal jurisdictions have now completed, or are currently completing, updates to their flood ordinances and maps at the direction of FEMA and DLCD staff. This process has been time sensitive and time consuming for coastal communities, who have limited long term planning capacity. This has made planning for other natural hazards difficult. However, it has resulted in the adoption of improved flood maps (using high resolution Lidar) and flood hazard ordinances to improve or prohibit floodplain development. Other jurisdictions have expressed interest in long-term planning with new natural hazards data but have not yet entered a formal process to update their planning programs. OCMP will continue to solicit interest and assist those who have the capacity to move long term planning activities forward.

### Estuary Management Planning

The goal of the Estuary Management Planning Strategy was to work with affected communities to develop revised draft estuary management plans for two or more major estuaries. This strategy aimed to implement program changes centered on new or revised local coastal programs and implementing ordinances and new or revised special area management plans.

The department worked with Coos County, the cities of North Bend and Coos Bay, and South Slough NERR in completing the Coos Bay Estuary Land Use analysis, a conceptual evaluation for the update of the Coos Bay Estuary Management Plan (CBEMP). The final report and recommendations for Land Use Analysis were published in January 2019. The final phase of work to facilitate the CBEMP update process was completed; this work consists of the development of an adoption framework and proposed plan policy and implementing regulation amendments based on the Land Use Analysis recommendations and the completion of hearing ready drafts for the CBEMP inventory update and CBEMP implementing zoning district updates. Due to highly controversial projects involving Coos Bay, the adoption process for this plan update was postponed. However, the adoption process is expected to begin within the last half of 2020. The department joined the local partners and NERRS on the technical

steering committee for the project. Program changes in the form of locally adopted amendments to the CBEMP are not expected until early 2021.

The department plans to work with Lincoln County and associated cities to update the Yaquina Bay Estuary Management Plan during the last strategy period 2016-2021. DLCD anticipates beginning work on this update in the fall of 2020. This effort was postponed due to decreased staff capacity and resources at the local level, but with the awarding of a Project of Special Merit the project will proceed.

### Ocean Resources Planning

The goal of the Ocean Resources Planning Strategy was to amend the Oregon Territorial Sea Plan for the purpose of updating Part Three, the Rocky Shores Management Strategy. This strategy aimed to achieve the following program changes: new or revised authorities; new or revised coastal land acquisition, management, and restoration programs; new or revised special area management plans; and new or revised guidelines, procedures and policy documents which are formally adopted by the state.

Completion of the public process for amending Part Three is expected by the end of 2021, with a fully revised chapter and a set of sites that has been recommended for designation by the Ocean Policy Advisory Council (OPAC) and adopted by the Land Conservation and Development Commission (LCDC). Progress made to date includes sections A-E of the Part Three chapter that were re-written and approved as amendments to the TSP by both the Ocean Policy Advisory Council and the Land Conservation and Development Commission. As of the writing of this assessment, the OPAC working group has released a draft of the new strategy for public comment, released a beta version of the Oregon SeaSketch marine spatial planning web mapping tool, and is preparing for an open public nomination period where local communities can propose changes in the sites that are designated in the plan. Site designation changes are not expected to occur until the completion of the next phase of work where site specific management recommendations for Oregon's rocky habitats are considered, recommended, and adopted by the OPAC and LCDC.

Completion of the program improvement measure is expected in the late spring of 2021, when the OCMP will submit the Part Three amendments to the Secretary of State and then to NOAA for formal incorporation into the program as a revised management plan.



## ASSESSMENT

### Phase I (High-Level) Assessment

#### Wetlands

Section 309 Enhancement Objective: Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands. §309(a)(1)

*Note: For the purposes of the Wetlands Assessment, wetlands are “those areas that are inundated or saturated at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” [33 CFR 328.3(b)]. See also pg. 174 of the CZMA Performance Measurement Guidance<sup>1</sup> for a more in-depth discussion of what should be considered a wetland.*

#### Resource Characterization

1. Extent, status, and trends of wetlands in Oregon’s coastal counties.  
Current state of wetlands in 2016 (acres): 197, 831 acres (woody and emergent wetlands)

#### Coastal Wetlands Status and Trends

Change in Wetlands	from 1996-2016	from 2010-2016
Percent net change in total wetlands (% gained or lost)*	-0.11%	0.17%
Percent net change in freshwater (palustrine wetlands) (% gained or lost)*	-0.27%	0.05%
Percent net change in saltwater (estuarine) wetlands (% gained or lost)*	-0.49%	-0.15%

Oregon’s wetlands are as diverse as its landscape. Wetlands in Oregon range from salt marshes to pitcher plant bogs, mountain fens, desert saltgrass flats and wet prairies. Water, geology, soils, and surrounding land use influence water chemistry, which in turn shapes wetland habitat for plants and animals. Vernal pools are home to a variety of rare wetland plants and animals but are parched and shriveled by July. Wetlands and streams on limestone bedrock may contain delicate formations of calcareous tufa. Spring-fed fens on serpentine soils are laced with toxic metals but are habitat to several rare plants. Some lakes on sand dunes and old lava flows are as nutrient-free as distilled water. In contrast, some streams and lakes are full of naturally occurring phosphorus and choked with aquatic vegetation. There are lakes so alkaline and salty that only brine flies can survive in them, and wetlands so enriched by agricultural and urban runoff that only the hardiest weedy plants and animals can be found in them. <sup>2</sup>

<sup>1</sup> <https://coast.noaa.gov/czm/media/czmapmsguide2018.pdf>

<sup>2</sup> <https://wetlandsconservancy.org/wetlands-faq/>

Data suggest wetland losses in various regions of the state vary from 57 percent in the Willamette Valley to 75 percent in the Klamath Basin, while losses for individual coastal estuaries range from 2 to 94 percent (Oregon State of the Environment Report 2000). Losses for particular rare wetland types have high losses, such as 99.5 percent of wet prairie and 98 percent of peatland in the Willamette Valley, 88 percent of tidal spruce swamps along the coast and lower Columbia River, and 40 percent of Agate Desert vernal pools in southwestern Oregon (Christy 2010).<sup>3</sup>

Between 1982 and 1994, 67 percent of the loss was to upland agricultural land uses. Between 1994 and 2005, a period of rapid population and economic growth, 68 percent of the loss was to urban and rural development. Extensive modification of rivers and streams has reduced wetland area and complexity and altered wetland types and functions. Water quality standards for wetlands have not been established, but wetland water quality condition and trends may roughly parallel stream condition. Existing regulatory programs have slowed wetland loss substantially but are not sufficient in themselves to halt the loss of wetland acreage and functions. Wetland restoration incentive programs are helping to reverse wetland loss trends and improve wetland ecosystem health, particularly in agricultural regions. Principal threats to wetland ecosystem health today include continued pressure to convert wetlands to other economic uses, and the cumulative impacts from human activities—such as pollution, sedimentation, and invasion of nuisance species—on wetland condition.<sup>4</sup>

Local governments inventory and include protections for resources listed in Oregon's land use planning goals 5 (Natural Resources), 16 (Estuaries) and 17 (Coastal Shorelands). The Department of State Lands' aquatic resource planner works with local governments and the Department of Land Conservation and Development (DLCD) to provide both technical and planning assistance to local governments that are completing inventories and other related tasks. Goal 5 wetland compliance includes using inventory information about the locations, type and functional capacity of wetlands within the city or county to make development planning decisions.<sup>5</sup>

The Wetland Conservancy reported that 55% of Oregon's Greatest Wetlands Are Permanently Conserved.

Research by Laura Brophy reported on tidal wetland losses and reported the following:

“Overall, 57.9% (8917 ha) of historical tidal wetlands were lost due to diking, and an additional 21.9% (3371 ha) of historical tidal wetlands were lost through conversion to another vegetation class (mostly from forested to emergent) (Table 3).

Losses were not distributed equally across wetland types. Losses were highest for tidal forested wetlands (95.0% loss, 7964 ha), whereas tidal marsh losses totaled 58.9% (3827 ha) (Table 3, Figure 2). A high proportion of tidal scrub-shrub wetlands were lost (95.9%), but this constituted a smaller area (497 ha) than the other two classes.

Diking affected a higher proportion of historical tidal swamps (68.3% and 61.3% for forested and scrub-shrub, respectively) compared to tidal marshes (44.3%).

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<sup>3</sup> <https://www.oregon.gov/dsl/WW/Pages/WetlandConservation.aspx>

<sup>4</sup> <https://www.oregon.gov/dsl/WW/Pages/WetlandConservation.aspx>

<sup>5</sup> <https://www.oregon.gov/dsl/WW/Pages/WetlandConservation.aspx>

Although 44.3% of Oregon's historical tidal marsh is currently diked (Table 3), this loss has been offset by 1770 ha of new marsh formed on formerly non-vegetated surfaces such as mudflats ("marsh advance", Table 4 and Appendix 1 maps). The net loss of tidal marsh was also reduced by vegetation conversion: 1174 ha of historical tidal forests were converted to emergent tidal wetlands (Table 4; Appendix 1 maps). When marsh advance and vegetation conversions are considered, there has been only a 10% net reduction in tidal marsh area for the Oregon coast compared to historical conditions (Table 5). By contrast, only 136 ha transitioned from historical tidal marsh to current tidal forested wetland (Table 4), so there was a very high net loss (91.8%) for tidal forested wetlands (Table 5). Scrub-shrub wetlands saw a small net gain in area (12.4%, 64 ha) compared to historical conditions (Table 5), but this habitat class still makes up only a small proportion (8.2%) of the coast's tidal wetlands (Table 2).

This study's analysis accounts for tidal wetland restoration efforts, which have totaled more than 700 ha on the Oregon coast (Sherman et al. 2019). Such areas were historically tidal wetlands, then were diked for agricultural uses -- but due to restoration, they are once again tidal wetlands today. In other words, tidal wetland restoration has resulted in lower losses from diking than would otherwise have been found in this study. However, many tidal wetland restoration sites have undergone vegetation conversions such areas may be included in the area of tidal wetland loss due to vegetation conversion (Table 3)."<sup>6</sup>

Table 1. Historical area of each major tidal wetland vegetation class by estuary, and percent of historical tidal wetland area consisting of tidal forested wetlands and "tidal swamp" (forested plus scrub-shrub tidal wetlands).

Estuary	Historical tidal wetland area (ha)				Percent of historical tidal wetland area	
	Tidal marsh (EM)	Tidal scrub-shrub wetland (SS)	Tidal forested wetland (FO)	All tidal wetlands (EM+SS+FO)	% tidal forested wetland (FO)	% tidal swamp (FO+SS)
Alsea Bay	259	31	156	445	35.0	41.9
Beaver Creek	26		64	90	71.1	71.1
Coos Bay	1790	245	779	2815	27.7	36.4
Coquille River	565		2989	3554	84.1	84.1
Necanicum River	20		108	127	84.6	84.6
Nehalem River	367	28	609	1004	60.6	63.4
Nestucca Bay	293	16	347	656	52.9	55.3
Netarts Bay	68	0	54	122	43.9	44.3
Salmon River	228	3	36	266	13.5	14.5
Sand Lake	212		18	230	7.7	7.7
Siletz Bay	300	33	101	434	23.3	30.8
Siuslaw River	262	89	740	1090	67.9	76.0
Tillamook Bay	694	4	1178	1876	62.8	63.0
Umpqua River	787	32	828	1647	50.3	52.2
Yaquina Bay	631	37	374	1042	35.9	39.5
Grand Total	6501	518	8380	15399	54.4	57.8

<sup>6</sup> Brophy, L.S. 2019. Comparing historical losses of forested, scrub-shrub, and emergent tidal wetlands on the Oregon coast, USA: A paradigm shift for estuary restoration and conservation. Prepared for the Pacific States Marine Fisheries Commission and the Pacific Marine and Estuarine Fish Habitat Partnership. Estuary Technical Group, Institute for Applied Ecology, Corvallis, Oregon, USA.

Table 2. Historical and current area and percent of tidal wetlands in each major vegetation class for the Oregon coast.

Vegetation class	Historical tidal wetlands		Current tidal wetlands	
	Area (ha)	% of historical area	Area (ha)	% of current area
Emergent ("tidal marsh") (EM)	6501	42.2	5820	82.1
Scrub-shrub (SS)	518	3.4	582	8.2
Forested (FO)	8380	54.4	690	9.8
Scrub-shrub plus forested ("tidal swamp")	8897	57.8	1271	17.9
<b>Total (EM + SS + FO)</b>	<b>15399</b>	<b>100.0</b>	<b>7092</b>	<b>100.0</b>

Table 3. Losses of historical tidal wetlands (area and percentage) for the Oregon coast, by historical wetland vegetation class and type of loss. These figures do not include new wetlands formed since the historical period (see Table 5 for that summary).

Historical vegetation class	Loss due to diking		Loss due to vegetation conversion		Total loss	
	Area (ha)	% lost	Area (ha)	% lost	Area (ha)	% lost
Emergent ("tidal marsh", EM)	2880	44.3	947	14.6	3827	58.9
Scrub-shrub (SS)	317	61.3	179	34.7	497	95.9
Forested (FO)	5720	68.3	2245	26.8	7964	95.0
<b>Total (EM + SS + FO)</b>	<b>8917</b>	<b>57.9</b>	<b>3371</b>	<b>21.9</b>	<b>n/a*</b>	<b>n/a*</b>

\* Total loss is not summed across classes due to interconversions from one class to another.

Table 4. Area of diked former tidal wetlands ("Diked area") and current tidal wetlands ("Non-diked area") for the Oregon coast, by historical and current vegetation class. Key values are in bold and are footnoted. See Appendix 4 for guidance on interpreting this table.

Historical vegetation class	Diked area (ha)							Non-diked area (ha)							Historical total
	Current vegetation class <sup>a</sup>							Current vegetation class							
	Emergent (EM)	Scrub-shrub (SS)	Forested (FO)	Aquatic bed (AB)	Un-classified (NA)	Not mapped (UNK)	Diked total	Emergent (EM)	Scrub-shrub (SS)	Forested (FO)	Aquatic bed (AB)	Un-classified (NA)	Not mapped (UNK)	Non-diked total	
Emergent ("tidal marsh") (EM)	2,436	82	64	6	91	201	2,880	2,674	149	136	17	503	143	3,621	6,501
Scrub-shrub (SS)	273	15	17	0	9	3	317	137	21	11		24	8	201	518
Forested (FO)	4,982 <sup>b</sup>	239	195	10	130	164	5,720	1,174 <sup>c</sup>	244	415	20	711	96	2,660	8,380
Non-vegetated (NONVEG)	268	8	9	14	62	39	400	1,770 <sup>d</sup>	139	88	1,143	16,512	181	19,834	20,234
Not mapped (UNK)	8	7	2		1	23	41	64	29	40	2	811	44	989	1,030
Total	7,968	350	287	31	293	430	9,359	5,820	582	690	1,182	18,561	471	27,305	36,663
Sum of historical EM, SS and FO that is now diked →							8,917	Sum of historical EM, SS and FO (diked & non-diked) →							15,399 <sup>e</sup>
								Sum of current EM, SS and FO →							7,092

<sup>a</sup> Areas behind dikes may or may not be wetlands; however, field experience suggests the vast majority are seasonal wetlands

<sup>b</sup> 4982 ha = area of former tidal forested wetlands converted to diked emergent lands (mostly pastures)

<sup>c</sup> 1174 ha = area of former tidal forested wetlands converted to tidal emergent wetlands

<sup>d</sup> 1770 ha = area of formerly unvegetated mudflat or water converted to tidal marsh via sediment accretion ("marsh advance" or "marsh progradation")

<sup>e</sup> 15399 ha = total historical area of EM, SS and FO wetlands on the outer coast

Table 5. Historical and current area and percentage of tidal wetlands for the Oregon coast, by vegetation class. "Net % loss" at right accounts for newly vegetated areas (marsh advance) and areas converted from one type to another (predominantly forested to emergent); a negative value of "net % loss" indicates gain in area.

Vegetation class	Historical		Current		Net % loss, historical to current (negative value indicates gain)
	Area (ha)	% of total historical area	Area (ha)	% of total current area	
Emergent ("tidal marsh", EM)	6501	42.2	5820	82.1	10.5
Scrub-shrub (SS)	518	3.4	582	8.2	-12.4
Forested (FO)	8380	54.4	690	9.8	91.8
SS + FO ("tidal swamp")	8897	57.8	1271	17.9	85.7
Total (EM + SS + FO)	15399	100.0	7092	100.0	53.9

### How Wetlands Are Changing\*

Land Cover Type	Area of Wetlands Transformed to Another Type of Land Cover between 1996-2016 (Sq. Miles)	Area of Wetlands Transformed to Another Type of Land Cover between 2010-2016 (Sq. Miles)
Development	0.0000	0.0000
Agriculture	0.0375	0.0000
Barren Land	0.3993	0.0000
Water	0.8965	0.0275
Unconsolidated Shore	0.1866	0.0000

### Development Status and Trends for Coastal Counties

	1996	2016	Percent Net Change
Percent land area developed	1.68%	1.82%	8.14%
Percent impervious surface area	0.87%	0.94%	7.80%

### Distribution of Land Cover Types in Coastal Counties

Land Cover Type	Land Area Coverage in 2016 (Acres)	Gain/Loss Since 1996 (Acres)
Developed, High Intensity	4,829	408
Developed, Low Intensity	78,345	5,236
Developed, Open Space	14,483	1,733
Grassland	356,367	54,779
Scrub/Shrub	643,660	226,764
Barren Land	45,002	507
Open Water	902,447	-473
Agriculture	76,558	1,014
Forested	3,888,730	-290,903
Woody Wetland	84,842	3,905
Emergent Wetland	77,388	-4,339

### How Land Use Is Changing in Coastal Counties

Land Cover Type	Areas Lost to Development Between 1996-2016 (Acres)
Barren Land	557
Emergent Wetland	255
Woody Wetland	196
Open Water	20
Agriculture	233
Scrub/Shrub	542
Grassland	2,516
Forested	4,128



## Wetland Change (sq mi)

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of coastal wetlands since the last assessment to augment the national data sets.

n/a

### Management Characterization

1. Significant changes at the state level (positive or negative) that could impact the future protection, restoration, enhancement, or creation of coastal wetlands since the last assessment:

### Significant Changes in Wetland Management

Management Category	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	N
Wetlands programs (e.g., regulatory, mitigation, restoration, acquisition)	Y

2. Wetland Management Changes, Connection to Coastal Zone Management, and Outcomes:

Division 85, Division 89, and Division 93; Rules to incorporate changes to compensatory mitigation for unavoidable impacts to waters of this state (Aquatic Resource Mitigation Framework)

DSL has updated the statewide compensatory mitigation requirements using a watershed-based approach, and function-based assessment and accounting methods; and made other non-substantive edits for routine rules maintenance. New rules took effect on April 1, 2019.

The policy was changed because in 2008, the federal government adopted a new rule – the Final Compensatory Mitigation Rule – which promotes a watershed- and function-based approach to compensatory mitigation. Studies show that the current practice of requiring acreage-based mitigation is leading to an overall loss of functions and values of aquatic resources across the nation. The new mitigation framework brings Oregon’s mitigation program into alignment with the 2008 Rule and provides more successful, sustainable benefits for all aquatic resources across the state. Existing exemptions are not affected. Click [here](#) to go to the Aquatic Resources Mitigation Framework website.

This new approach to compensating for wetland and stream losses will be collaboratively implemented by DSL, US Army Corps of Engineers-Portland District (Corps) and US Environmental Protection Agency-Region 10 (EPA) as provided in the Special Joint Public Notice of Change to Wetlands and Stream Mitigation in Oregon . This change was not 309 or CZM driven.

### Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High X

Medium \_\_\_\_\_

Low \_\_\_\_\_

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

As finite, critical resources of fundamental ecological value, wetlands remain a high priority in Oregon. While the Department of State Lands plays a lead role in conserving the state's wetland resources through its permitting authority, Oregon's statewide planning program also fills a key role in managing and protecting wetlands at the local community planning level. Stakeholder responses expressed strong support for continued work to improve management and protection of Oregon's wetland resources through this advance planning approach. Although important advancements have been made in improved inventory data and regulatory standards, there are still significant needs and gaps at the land use planning level. Stakeholders engaged included local governments, state agency partners involved in wetland regulation and management, and NGOs with interests in coastal resource management and conservation.

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## Resources and Tools:

*Below are a few national resources and tools that may be useful in conducting your assessment or developing wetlands strategies. States likely have other state-specific resources, tools, and data that would be useful as well.*

### NOAA C-CAP Coastal Land Atlas

Online data viewer provides user-friendly access to regional land cover and land cover change information developed through NOAA's Coastal Change Analysis Program (C-CAP). The tool summarizes wetland change trends and can highlight specific changes of interest (salt marsh losses to open water, for instance). Users can investigate how land cover changed between 1996, 2001, 2006, 2011, and 2016. Although data are provided by county, NOAA staff members are able to help states and territories easily aggregate county data into a statewide summary.

*Geographic Scope:* All coastal states and territories (except Puerto Rico)

*Website:* <https://coast.noaa.gov/digitalcoast/tools/lca.html>

### NOAA Environmental Sensitivity Index Maps

Environmental Sensitivity Index (ESI) maps are designed to provide a concise summary of coastal resources at risk in case of an oil spill or other disaster. They characterize coastal and estuarine shorelines for several wetlands classes, and may be useful for resource characterization and assessment. ESI maps are periodically updated on a state-by-state basis, and are generally available in multiple formats (pdf maps, GIS layers, etc.)

*Geographic Scope:* All coastal states and territories

Website: <http://response.restoration.noaa.gov/maps-and-spatial-data/environmental-sensitivity-index-esi-maps.html>

### **NOAA High-Resolution C-CAP Data**

Nationally standardized database of land cover information (developed using remotely sensed imagery) for the coastal regions of the United States. C-CAP products provide inventories of coastal intertidal areas, wetlands, and adjacent uplands. High-resolution C-CAP products focus on bringing NOAA's national mapping framework to the local level by providing data relevant for addressing site-specific management decisions. Although this product requires desktop GIS and some GIS technical skills, NOAA staff are able to help states analyze data to support wetlands assessment.

*Geographic Scope:* Targeted watershed and other hotspots in the Caribbean, Pacific Islands, and Monterey Bay, California

Website: [www.coast.noaa.gov/digitalcoast/data/ccaphighres.html](http://www.coast.noaa.gov/digitalcoast/data/ccaphighres.html)

### **CZMA Performance Measurement System Data**

Annual CZMA performance measurement data for government coordination and habitat measures. The online database can be used to synthesize existing state and territory data reported during the assessment period. Note: Only CMP staff with permission to enter performance measurement data are able to access the database through their assigned account.

*Geographic Scope:* All coastal states and territories

Website: [www.coast.noaa.gov/czmpm/Login.aspx?ReturnUrl=%2fczmpm%2f](http://www.coast.noaa.gov/czmpm/Login.aspx?ReturnUrl=%2fczmpm%2f)

### **NOAA Sea Level Rise and Great Lakes Level Change Viewers**

The Sea Level Rise Viewer displays potential future sea levels and provides simulations of sea level rise at local landmarks, including modeling potential marsh migration due to sea level rise. The viewer overlays social and economic data onto potential sea level rise and visualizes how tidal flooding will become more frequent with sea level rise. The Great Lakes Level Change Viewer creates visuals that capture lake level changes that range from six feet above to six feet below historical long-term average water levels in the Great Lakes. Potential shoreline and coastal impacts are also provided.

*Geographic Scope:* All coastal states and territories except for Alaska.

Website: [www.coast.noaa.gov/digitalcoast/tools/slr.html](http://www.coast.noaa.gov/digitalcoast/tools/slr.html) (Sea Level Rise Viewer) or [www.coast.noaa.gov/llv/](http://www.coast.noaa.gov/llv/) (Great Lakes Level Change Viewer)

## Coastal Hazards

**Section 309 Enhancement Objective:** Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea level rise and Great Lakes level change. §309(a)(2)

*Note: For purposes of the Hazards Assessment, coastal hazards include the following traditional hazards and those identified in the CZMA: flooding; coastal storms (including associated storm surge); geological hazards (e.g., tsunamis, earthquakes); shoreline erosion (including bluff and dune erosion); sea level rise; Great Lake level change; land subsidence; and saltwater intrusion.*

### Resource Characterization

1. General level of risk in the coastal zone for each of the coastal hazards:

#### General Level of Hazard Risk in the Coastal Zone

Type of Hazard	General Level of Risk <sup>7</sup> (H, M, L)
Flooding (riverine, stormwater)	H
Coastal storms (including storm surge)	M
Geological hazards (e.g., tsunamis, earthquakes)	H
Shoreline erosion	M
Sea level rise	M
Great Lakes level change	N/A
Land subsidence	L
Saltwater intrusion	L
Other (please specify)	N/A

2. Additional Data and Reports Summary:

#### Oregon Resilience Plan to Resiliency 2025

Directed by the Oregon Legislative Assembly, The Oregon Resilience Plan was completed and published in February, 2013 by the Oregon Seismic Safety Policy Advisory Commission (OSSPAC). The plan reviews policy options, summarizes relevant reports and studies by state agencies, and makes recommendations on policy direction to protect lives and keep commerce flowing during and after a Cascadia earthquake and tsunami. The plan includes a specific section addressing the unique risks faced by Oregon's coast.

[https://www.oregon.gov/oem/documents/oregon\\_resilience\\_plan\\_final.pdf](https://www.oregon.gov/oem/documents/oregon_resilience_plan_final.pdf)

In 2018, an assessment of the accomplishments and progress toward achieving the goals within The Oregon Resilience Plan was completed. <https://www.oregon.gov/gov/policy/orr/pages/index.aspx#>

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<sup>7</sup> Risk is defined as "the estimated impact that a hazard would have on people, services, facilities and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage." *Understanding Your Risks: Identifying Hazards and Estimating Losses. FEMA 386-2. August 2001*

In response to The Oregon Resilience Plan and the five-year assessment, the State of Oregon developed and published Resiliency 2025: Improving Our Readiness for the Cascadia Earthquake and Tsunami. The purpose of Resiliency 2025 is to build upon the success of the 2013 Oregon Resilience Plan and provides six key strategies for moving the state forward, the last of which will be to update the Oregon Resilience Plan in 2021 to reflect current best practices, community input, academic research, and a specific plan for the Oregon Coast. <https://www.oregon.gov/gov/policy/Documents/resiliency-policy-agenda.pdf>

### **Climate Change Adaptation Framework**

Developed through the collaborative effort of the directors of several state agencies, universities, research institutions and extension services, the Climate Change Adaptation Framework provides a framework for state agencies to identify authorities, actions, research, and resources needed to increase Oregon's capacity to address the likely effects of a changing climate. The plan identifies a broad range of expected changes to Oregon's climate in the coming decades. It identifies risks, lays out short-term priorities, and provides momentum and direction for Oregon to prepare for future climate change. The framework plan was developed in parallel with the Oregon Climate Assessment Report (OCAR) by the Oregon Climate Change Research Institute (OCCRI).

[https://www.oregon.gov/lcd/Publications/Climate\\_Change\\_Adaptation\\_Framework\\_2010.pdf](https://www.oregon.gov/lcd/Publications/Climate_Change_Adaptation_Framework_2010.pdf)

In 2018, a process was initiated to begin updating the initial framework, with publication expected in summer 2020. As part of this process, a work group has been formed, to include subject matter experts, and several meetings have been held. Goals for the new framework include developing an inventory of what actions have been taken, update the science and adaptation actions, address gaps in the 2010 framework, and integrate actions into agency programs and work plans.

### **Oregon Natural Hazards Mitigation Plan**

In 2015, the most recent version of the Oregon Natural hazards Mitigation Plan was released. The plan was approved by FEMA on September 24, 2015 and is effective through September 23, 2020. The plan includes a risk assessment for the following hazards: coastal hazards, droughts, dust storms, earthquakes, floods, landslides, tsunamis, volcanoes, wildfires, windstorms, and winter storms. All hazards, with the exception of dust storms, are applicable to the coastal region of Oregon. The Oregon NHMP contains the most complete and up-to-date description of Oregon's natural hazards and their probability, the state's vulnerabilities, its mitigation strategies and implementation capability. Oregon's counties and cities can rely upon this information when preparing local natural hazard mitigation plans.

[https://www.oregon.gov/LCD/NH/Documents/Approved\\_2015ORNHMP.pdf](https://www.oregon.gov/LCD/NH/Documents/Approved_2015ORNHMP.pdf)

A process to update the State's NHMP was started in the summer of 2019 with a goal to have the next plan approved by FEMA by September 2020. The updated plan will also include the Climate Change Adaption Framework.

### *Management Characterization*

#### **1. State Management Approaches and Significant Changes:**

These changes can be positive or negative and could impact the CMP's ability to prevent or significantly reduce coastal hazards risk since the last assessment.

### Significant Changes in Hazards Statutes, Regulations, Policies, or Case Law

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Elimination of development/redevelopment in high-hazard areas <sup>8</sup>	Y	Y	Y
Management of development/redevelopment in other hazard areas	Y	Y	N
climate change impacts, including sea level rise or Great Lakes level change	Y	Y	N

### Significant Changes in Hazards Planning Programs or Initiatives

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Hazard mitigation	Y	Y	Y
Climate change impacts, including sea level rise or Great Lakes level change	Y	Y	Y

### Significant Changes in Hazards Mapping or Modeling Programs or Initiatives

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Sea level rise or Great Lakes level change	Y	Y	Y
Other hazards (coastal erosion, tsunami)	Y	Y	Y

#### 2. Defining “high hazard areas”:

The OCMP does not employ a singular definition of “high hazard areas”. In general, the following hazard areas are subject to mandatory land use limitations and/or development standards for reducing risk:

- Floodplains (1% probability, both river and ocean);
- Beaches, active and conditionally stable foredunes, and interdune areas subject to ocean flooding;
- Other areas of geologic instability, including areas subject to chronic coastal erosion and landslides;
- Areas subject to tsunami inundation (no longer mandatory as of 2019)

#### 3. Significant Management Changes

*Significant Changes in Elimination of development/redevelopment in high-hazard areas*

House Bill 3309

During the 2019 legislative session, HB 3309 was passed and then signed into law by the Governor. Portions of this bill relate to development in the tsunami regulatory zone and affect coastal local

<sup>8</sup> Use state’s definition of high-hazard areas.



governments in communities with tsunami risk. With the passage of HB 3309, all prohibited uses under ORS 455.446-447 become consultation uses. That means that all new essential facilities, hazardous facilities, major structures, and special occupancy structures (as defined in the statute) may now be permitted within the regulatory tsunami inundation line. These uses are still subject to consultation with DOGAMI for assistance in determining the impact of possible tsunamis on the proposed development and for assistance in preparing methods to mitigate risk at the site of a potential tsunami. Consultation must take place prior to submittal of design plans to the building official for final approval. There is no requirement to adhere to the mitigation that DOGAMI suggests. The passing of this bill was not 309-driven.

For those jurisdictions that have locally adopted Tsunami Hazard Overlay Zones, corresponding maps, and comprehensive plan policies, the change in the state statute language does not change anything. Those jurisdictions will still apply the land use provisions as outlined in their respective plans and development code. For example, if the Tsunami Hazard Overlay Zone prohibits certain uses from being allowed in the “Large” tsunami inundation zone, those provisions still prevail, regardless of the changes to the Oregon Building Codes regulations in HB 3309. For jurisdictions that do not have tsunami specific regulations in their land use programs, the changes in HB 3309 (as outlined above) will be administered through building codes. Any and all coastal jurisdictions can move forward voluntarily with adopting their own tailored tsunami hazard land use regulations. The Oregon Department of Land Conservation & Development (DLCD) developed a Tsunami Land Use Guide that provides model code and comprehensive plan policy language as a starting point. Many jurisdictions have done this or are in the process of adopting these types of regulations. DLCD provides technical assistance and support on this topic. It is important to note that the provisions of the model code do not apply to single family homes on existing lots or parcels, nor does it apply to existing development.

#### *Significant Changes in Hazard Mitigation Planning Programs or Initiatives*

##### *Goal 18 Focus Group*

OCMP led a focus group to review the usage of Statewide Planning Goal 18: Beaches and Dunes, Implementation Requirement #5. This provision of the Goal relates specifically to what type of development is eligible to apply for beachfront protective structure (e.g. riprap) permits to mitigate erosion. The agency convened this focus group to address issues related to the implementation of this requirement over the four decades since its origin. The group was composed of stakeholders representing various interests and expertise related to this topic. The implementation of this working group was not 309-driven, but was outlined as a task (306-9) in the work plan.

Final considerations from the group were compiled into a report completed in October 2019. Feedback from the group may inform DLCD’s future policy development into the 2019-21 biennium, which may include rule-making. There have been no changes to policy yet.

##### *Implementation of Tsunami Land Use Guide in Coastal Communities*

OCMP secured two federal grants to work with local coastal jurisdictions to implement [tsunami resilience land use planning](#). Much of this work utilized the steps outlined in the DLCD Tsunami Land Use Guide developed during the previous 309 assessment and strategy period. The provisions as suggested in the Land Use Guide focus on three main areas:

- Prohibit the development of certain new critical and special occupancy facilities, such as hospitals, police and fire stations, schools, and large gathering facilities in a specified tsunami inundation zone (such as the

“Large” or “Medium” tsunami inundation zones on the DOGAMI maps). This is to allow those facilities and services to function post-event.

- Require new land divisions within the specified tsunami inundation zone to include evacuation improvements in their overall development design, such as route signs, educational materials, or pedestrian pathways. This is to help ensure evacuation success to the maximum possible extent.
- Provide an optional flexible permit process which would allow a development proposal to modify underlying code standards (such as density requirements or setbacks) in order to achieve higher degrees of risk reduction than is required, similar in concept to a planned development.

OMCP staff provided technical support for these communities through mapping support, interpretation of map and modeling products, development of comprehensive plan and development code provisions, and outreach assistance. Through these efforts, several coastal jurisdictions adopted changes to their land use ordinances to address tsunami hazards, and several others are in the process of adoption.

Current jurisdictions with adopted Tsunami Hazard Overlay Zones:

- Coos County
- Reedsport
- Florence
- North Bend
- Rockaway Beach
- Gearhart
- Port Orford

These changes were 309-driven changes and are directly related to the OCMP’s 309 strategy in coastal hazards.

Communities are able to address their specific tsunami risk and have adopted new land use regulations to address that risk with the support of OCMP staff. This work becomes especially important given the passage of HB 3309 (see above). It is anticipated that this work will continue for the next several years.

#### [Coos County All-Hazards Integration Project](#)

Coos County adopted updated land use regulations and maps to address various natural hazards throughout the county, including for tsunami, erosion, earthquake-induced liquefaction, landslide, and wildfire. This work was supported by OCMP staff. These changes were 309-driven changes and are directly related to the OCMP’s 309 strategy in coastal hazards. The County is using the latest natural hazards information and new regulations in their planning to help inform development decisions and make their community more resilient.

#### [Significant Changes in Sea Level Rise Mapping Initiatives](#)

##### [Sea Level Rise Mapping in Oregon Estuaries](#)

In 2017, the OCMP completed an analysis on sea level rise impacts to Oregon estuaries and associated assets. Products included an online map and webpage that can be used by coastal planners. The Estuary Sea Level Rise Exposure Inventory identified infrastructure and other assets within six scenarios that represent future flooding along Oregon’s estuaries. The project objective was to identify the assets and geographies most likely to be impacted by sea-level rise in 21 of Oregon’s estuaries, and prioritize areas to focus future resources and further study. The project included 21 major estuaries and the surrounding low-lying shorelands (less than 25 feet in elevation), excluding the Columbia River. An online map and webpage where the future flooding scenarios are available for download complement

this written report<sup>9</sup>. These changes were not 309 driven, but were relevant to 309 strategies developed by the OCMP.

The OCMP identified a non-exhaustive list of opportunities for incorporating sea level rise into decision-making at both the state and local levels. At the state level, this tool can be used to inform Statewide Planning Goals 7 and 17, Oregon Department of Transportation Planning, the Oregon Statewide Hazard Mitigation Plan, DLCD Urban Growth Boundary Decisions, Shoreline Armoring Permitting, and Mitigation Wetland Planning. At the local level, the tool can be used to incorporate sea level rise into estuary management plans, local hazard mitigation plans, comprehensive plans, coastal flood hazard overlay zones, floodplain regulations, building design standards, transportation system plans, habitat restoration plans, stormwater management plans, capital improvement plans, and conservation easement projects.

#### *Significant Changes in Other Hazards Mapping Programs or Initiatives*

##### *Tsunami Inundation Map Adoption in Local Jurisdictions*

The coastal communities who have adopted tsunami land use regulations (reported above) used DOGAMI's Tsunami Inundation Maps as their overlay boundaries for implementing regulations. These map products, which were finalized in 2013, are critical data products for communities looking to understand their tsunami risk. These maps have now become regulatory maps in the seven communities with adopted tsunami hazard overlay zones. These changes were 309-driven changes and are directly related to the OCMP's 309 strategy in coastal hazards. Using the guidance that OCMP provided through the Tsunami Land Use Guide and technical assistance, communities are now able to use the best available science in their land use planning for tsunami hazards.

##### *Tsunami Pedestrian (time/distance) Evacuation Modeling & Evacuation Planning*

DOGAMI has completed detailed tsunami evacuation modeling for several coastal communities to determine the best routes to "beat the wave" to safety for a local tsunami event. These maps show areas of expected tsunami inundation, the most efficient routes to reach safety, and how fast one must travel to get there. They can also explore hypothetical evacuation improvements and their effectiveness for improving evacuation success (such as a new pedestrian pathway or vertical evacuation structure). OCMP staff have helped communities use these maps when available to improve their evacuation planning through the development of a Tsunami Evacuation Facilities Improvement Plan (TEFIP, see Chapter 6 of the Tsunami Land Use Guide). A TEFIP is a comprehensive look at a community's existing evacuation routes and vulnerable areas, and identifies improvement projects. The communities of Reedsport, Florence, Coos County, Rockaway Beach, Waldport, and Tillamook County have all developed TEFIPs. [DOGAMI has completed beat the wave modeling in many communities, but not for the whole coast.](#)

These changes were 309-driven changes and are directly related to the OCMP's 309 strategy in coastal hazards. These "Beat the Wave" maps and associated publications are a key component to improving a community's evacuation routes and facilities. Using the guidance that OCMP provided through the Tsunami Land Use Guide and technical assistance, communities are now able to use the best available science to improve their evacuation planning. It is anticipated that this work will continue for several years.

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<sup>9</sup> <https://www.coastalatlantis.net/index.php/tools/planners/68-slr>

### Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High        X  
Medium     \_\_\_\_\_  
Low         \_\_\_\_\_

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The OCMP has placed a priority on and devoted significant effort to improving management of coastal hazards. Substantial work has been completed during both the former (2011-2015) and current (2016-2020) 309 cycles. The OCMP has provided and continues to provide technical support for a number of local efforts to improve coastal hazards management. These efforts have made it clear that there is much additional work to be done to provide technical tools and support for improved local, on the ground, management efforts. Stakeholder responses solicited for this assessment consistently ranked coastal hazards as one of the highest priorities for continued program improvements. Stakeholders engaged included local governments, state agency partners, concerned citizens, and NGOs with interests in coastal land use and development issues.

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### Resources and Tools:

*Below are a few national resources and tools that may be useful in conducting your assessment or developing coastal hazards strategies. States likely have other state-specific resources, tools, and data that would be useful as well.*

#### Climate.gov

NOAA's Climate.gov provides science and information for a climate-smart nation. The "Supporting Decisions" is a clearinghouse of reports, resources, and decision-support tools for planners and policy leaders who want authoritative climate science information to help them understand and manage climate-related risks and opportunities.

*Geographic Scope:* Various by resource

*Website:* [www.climate.gov](http://www.climate.gov)

#### CZMA Performance Measurement System Data

Annual CZMA performance measurement data for government coordination and habitat measures. The online database can be used to synthesize existing state and territory data reported during the assessment period. Note: Only CMP staff with permission to enter performance measurement data are able to access the database through their assigned account.

*Geographic Scope:* All coastal states and territories

*Website:* [www.coast.noaa.gov/czmpm/Login.aspx?ReturnUrl=%2fczmpm%2f](http://www.coast.noaa.gov/czmpm/Login.aspx?ReturnUrl=%2fczmpm%2f)

### **National Climate Assessment Web Tool**

The U.S. Global Change Research Program provides an interactive web tool to quickly view key findings from the Fourth National Climate Assessment. Data are summarized by region and national topics (including coastal effects which includes a summary of key coastal effects, by region).

*Geographic Scope:* Entire United States (including territories)

*Website:* [www.nca2018.globalchange.gov](http://www.nca2018.globalchange.gov)

### **NOAA C-CAP Coastal Land Atlas**

Online data viewer provides user-friendly access to regional land cover and land cover change information developed through NOAA's Coastal Change Analysis Program (C-CAP). The tool summarizes wetland change trends and can highlight specific changes of interest (salt marsh losses to open water, for instance). Users can investigate how land cover changed between 1996, 2001, 2006, 2011, and 2016. Although data are provided by county, NOAA staff members are able to help states and territories easily aggregate county data into a statewide summary.

*Geographic Scope:* Contiguous United States and Hawaii

*Website:* [www.coast.noaa.gov/digitalcoast/tools/lca.html](http://www.coast.noaa.gov/digitalcoast/tools/lca.html)

### **NOAA Coastal County Snapshots: Flood Exposure**

Assesses a county's exposure and resilience to flooding. Analyzes a county's dependence on the ocean or Great Lakes for a healthy economy. Examines the benefits a county receives from its wetlands. Compares counties to each other or for regional analysis. Allows users to download a PDF report for the snapshot of their choice.

*Geographic Scope:* Coastal states only. Currently not available for territories.

*Website:* [www.coast.noaa.gov/digitalcoast/tools/snapshots.html](http://www.coast.noaa.gov/digitalcoast/tools/snapshots.html)

### **NOAA Coastal Flood Exposer Mapper**

The online visualization tool supports communities that are assessing their coastal hazard risks and vulnerabilities. The tool creates a collection of user-defined maps that show the people, places, and natural resources exposed to coastal flooding. The maps can be saved, downloaded, or shared to communicate flood exposure and potential impacts. In addition, the tool provides guidance for using these maps to engage community members and stakeholders.

*Geographic Scope:* East Coast, Gulf of Mexico, and islands in the Pacific and Caribbean.

*Website:* [www.coast.noaa.gov/digitalcoast/tools/flood-exposure.html](http://www.coast.noaa.gov/digitalcoast/tools/flood-exposure.html)

### **NOAA Sea Level Rise and Great Lakes Level Change Viewers**

The Sea Level Rise Viewer displays potential future sea levels and provides simulations of sea level rise at local landmarks, including modeling potential marsh migration due to sea level rise. The viewer overlays social and economic data onto potential sea level rise and visualizes how tidal flooding will

become more frequent with sea level rise. The Great Lakes Level Change Viewer creates visuals that capture lake level changes that range from six feet above to six feet below historical long-term average water levels in the Great Lakes. Potential shoreline and coastal impacts are also provided.

*Geographic Scope:* All coastal states and territories except for Alaska.

*Website:* [www.coast.noaa.gov/digitalcoast/tools/slr.html](http://www.coast.noaa.gov/digitalcoast/tools/slr.html) (Sea Level Rise Viewer) or [www.coast.noaa.gov/llv/](http://www.coast.noaa.gov/llv/) (Great Lakes Level Change Viewer)

## **U.S. Climate Resilience Toolkit**

The toolkit provides information and tools to help people understand and assess their climate risk. The toolkit includes a framework to discover and document climate hazards and then develop workable solutions to lower climate-related risks and case studies to see how others are reducing their climate risk. A visualization tool generates interactive graphs and maps showing climate projections and observations for any county in the contiguous U.S. and allows users to explore historical temperature and precipitation observations at hundreds of climate stations as well as view observed and projected days of high-tide flooding at more than 80 coastal tide gauge stations.

*Geographic Scope:* National

*Website:* [toolkit.climate.gov/](http://toolkit.climate.gov/)



## Public Access

**Section 309 Enhancement Objective:** Attain increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological, or cultural value. §309(a)(3)

### Resource Characterization

- Public access availability within the coastal zone:

#### Public Access Status and Trends

Type of Access	Current number <sup>10</sup>	Changes or Trends Since Last Assessment <sup>11</sup> (↑, ↓, –, unkwn)	Cite data source
Beach access sites	628	–	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Shoreline (other than beach) access sites	595	↑	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Recreational boat (power or nonmotorized) access sites	162	↑	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Number of designated scenic vistas or overlook points	227	-	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Number of fishing access points (i.e. piers, jetties)	198	↑	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Coastal trails/ boardwalks (Please indicate number of trails/boardwalks and mileage)	845, miles unknown	–	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Number of acres parkland/open space	216, site per mile of shoreline 0.24	↑	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Access sites that are Americans with Disabilities Act (ADA) compliant <sup>12</sup>	unknown	unknown	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010

<sup>10</sup> Be as specific as possible. For example, if you have data on many access sites but know it is not an exhaustive list, note “more than” before the number. If information is unknown, note that and use the narrative section below to provide a brief qualitative description based on the best information available.

<sup>11</sup> If you know specific numbers, please provide. However, if specific numbers are unknown but you know that the general trend was increasing or decreasing or relatively stable or unchanged since the last assessment, note that with a ↑ (increased), ↓ (decreased), – (unchanged). If the trend is completely unknown, simply put “unkwn.”

<sup>12</sup> For more information on ADA see [www.ada.gov](http://www.ada.gov).

2. Coastal public access demand characterization and the process for assessment:

A 2010 projection of the population within Oregon's coastal shoreline counties estimated a 9% increase between 2010 and 2020<sup>13</sup>. Yearly certified population estimates indicate only a 4% population growth from 2010 to 2018, and a yearly growth rate between 0.6% and 1.0%<sup>14</sup>. This more modest trend is likely to continue over the next five years. Demand for coastal public access will likely follow a similar trend of modest but steady increases. Statewide recreation surveys identified increased demand for public access among older and more diverse populations, which may be reflected along the Oregon coast. The primary management authority for coastal public access is the Oregon Parks and Recreation Department; assessment of demand and management of public access resources is accomplished primarily through the Oregon Ocean Shore Management Plan.

3. If available, briefly list and summarize the results of any additional data or reports on the status or trends for coastal public access since the last assessment.

n/a

*Management Characterization*

1. Management Approaches and Significant Changes (positive or negative) that could impact the future provision of public access to coastal areas of recreational, historical, aesthetic, ecological, or cultural value:

**Significant Changes in Public Access Management**

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	N
Operation/maintenance of existing facilities	Y	N	N
Acquisition/enhancement programs	Y	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
- Describe the significance of the changes;
  - Specify if they were 309 or other CZM-driven changes; and
  - Characterize the outcomes or likely future outcomes of the changes.

<sup>13</sup> NOAA Coastal Population Report from 1970 – 2020

<sup>14</sup> PSU Population Research Center

n/a

3. Indicate if your state or territory has a publically available public access guide. How current is the publication and how frequently it is updated?<sup>15</sup>

#### Publically Available Access Guide

Public Access Guide	Printed	Online	Mobile App
State or territory has? (Y or N)	N	Y	N
Web address (if applicable)	N/A	<a href="http://www.coastalatlantlas.net/coastalaccess/">http://www.coastalatlantlas.net/coastalaccess/</a>	N/A
Date of last update	N/A	2010	N/A
Frequency of update	N/A	Every ten years	N/A

#### Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

**High** X

**Medium** \_\_\_\_\_

**Low** \_\_\_\_\_

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Oregon is one of just a few states with explicit statutory protections guaranteeing free and uninterrupted public use of all ocean beaches. In addition, the state has an extensive parks system that provides beach access, camping and other recreational opportunities along the entire coastline. The OCMP incorporates strong regulatory provisions requiring the retention of existing coastal public access points. However, secondary impacts, particularly coastal hazards and shoreline armoring policies, are increasingly threatening the longevity of current public access sites. Increased OCMP focus on public access is required to address these concerns. Additionally, communication of public access sites can be improved to better meet the needs of an increasingly connected society. The OCMP's Coastal Atlas has provided a web-based resource for exploring access points and coastal recreation. The OCMP wishes to adapt this tool as a mobile app to increase usage among wider populations; a 2019-2021 NOAA Coastal Management Fellow is leading this project now, updating the public access inventory and identifying additional challenges that the OCMP may want to address in the future for program enhancement. Both of these considerations substantiate program enhancement at a high priority. Stakeholders also ranked public access and an important management priority for the Oregon Coast. Stakeholders included local jurisdictions, state agencies, non-governmental organizations, and concerned citizens.

<sup>15</sup> Note some states may have regional or local guides in addition to state public access guides. Unless you want to list all local guides as well, there is no need to list additional guides beyond the state access guide. You may choose to note that the local guides do exist and may provide additional information that expands upon the state guides.

\*\*\*\*\*

## Resources and Tools:

*Below are a few national resources and tools that may be useful in conducting your assessment or developing public access strategies. States likely have other state-specific resources, tools, and data that would be useful as well.*

### **CZMA Performance Measurement System Data**

Annual CZMA performance measurement data for public access. The online database can be used to synthesize existing state or territory data reported during the assessment period.

*Geographic Scope:* All coastal states and territories

*Website:* [www.coast.noaa.gov/czmpm/Login.aspx?ReturnUrl=%2fczmpm%2f](http://www.coast.noaa.gov/czmpm/Login.aspx?ReturnUrl=%2fczmpm%2f)

### **National Survey on Fishing, Hunting, and Wildlife Associated Recreation**

The U.S. Census partners with the U.S. Fish and Wildlife Service to present information on individuals involved in fishing, hunting, and other wildlife-associated recreation, such as wildlife observation, photography, and feeding. Data include states in which these activities occurred; number of trips taken; days of participation; and expenditures for food, lodging, transportation, and equipment. While not focused on coastal areas, the reports do include information on saltwater and Great Lakes fishing and some coastal wildlife viewing. The 2016 reports compare 2016 data to 2011, 2006 and 2001 survey results to inform understanding of how usage has changed.

*Geographic Scope:* All states (territories not included)

*Website:* [www.wsfrprograms.fws.gov/subpages/nationalsurvey/national\\_survey.htm](http://www.wsfrprograms.fws.gov/subpages/nationalsurvey/national_survey.htm)

### **Statewide Comprehensive Outdoor Recreation Plans**

Most states regularly develop Statewide Comprehensive Outdoor Recreation Plans (SCORPs). While each SCORP varies by state, at a minimum, the plan must (1) identify outdoor recreation issues of statewide importance; (2) evaluate demand, i.e., public outdoor recreation preferences; and (3) evaluate the supply of outdoor recreation resources and facilities.

*Geographic Scope:* All states (territories not included)

*Website:* [www.recpro.org/scorp-library](http://www.recpro.org/scorp-library)

## Marine Debris

**Section 309 Enhancement Objective:** Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris. §309(a)(4)

### Resource Characterization

- Existing status and trends of marine debris in the state's coastal zone:

#### Existing Status and Trends of Marine Debris in Coastal Zone

Source of Marine Debris	Significance of Source (H, M, L, unknwn)	Type of Impact <sup>16</sup> (aesthetic, resource damage, user conflicts, other)	Change Since Last Assessment (↑, ↓, -, unknwn)
Beach/shore litter	L	Aesthetic/User Conflict/Public Safety	-
Land-based dumping	M	Aesthetic/Public Safety	↑
Storm drains and runoff	M	Aesthetic/Resource Effects	↑
Land-based fishing (e.g., fishing line, gear)	L	Aesthetic/Resource Effects	-
Ocean/Great Lakes-based fishing (e.g., derelict fishing gear)	M	Resource Effects/User Conflicts	-
Derelict vessels	M	Aesthetic/Resource Effects	-
Vessel-based (e.g., cruise ship, cargo ship, general vessel)	M	Aesthetic/Public Safety	↑
Hurricane/Storm	L	Aesthetic/Public Safety	-
Tsunami	M	Aesthetic/Public Safety/Resource Effects	-
Other (please specify)			

- If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from marine debris in the coastal zone since the last assessment.

**Marine Debris Strategy and Action Plan:** The Oregon Marine Debris Action Plan was created in 2017 in response to interest from the State and leadership of NOAA. To keep the Oregon Marine Debris Action Plan relevant and applicable over time, partners convened for a workshop in March 2019 to update the Action Plan. They discussed achievements and lessons learned; reviewed and, if needed, modified ongoing actions; and identified future actions on which to embark. The 2019 Oregon Marine Debris Action Plan summarizes the input and insight of workshop participants, as well as the contribution of other partners. The 2019 Oregon Marine Debris Action Plan has four major goals: Goal 1: Prevention; Prevent the generation of marine debris through community engagement and education efforts. Goal 2: Removal; Locate, identify, remove, and recycle or dispose of land- and ocean-based marine debris from Oregon's shorelines and waters. Goal 3: Coordination; Coordinate

<sup>16</sup> You can select more than one, if applicable.

marine debris actions effectively throughout Oregon. Goal 4: Research; Conduct coordinated, high-quality research to inform actions that reduce the adverse impacts of marine debris.

**Marine Debris Application and Database:** NOAA has developed a Marine Debris Tracker Application for monitoring debris clean up events, and worked with the state on the conduct of workshops to establish and update research priorities and information gaps. Access the 2017 proceedings of the Research Priorities Workshop at: [https://marinedebris.noaa.gov/sites/default/files/publications-files/Oregon\\_Marine\\_Debris\\_Research\\_Priorities\\_Workshop\\_Proceedings.pdf](https://marinedebris.noaa.gov/sites/default/files/publications-files/Oregon_Marine_Debris_Research_Priorities_Workshop_Proceedings.pdf)

#### *Management Characterization*

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) for how marine debris is managed in the coastal zone.

**Significant Changes in Marine Debris Management**

<b>Management Category</b>	<b>Employed by State/Territory (Y or N)</b>	<b>CMP Provides Assistance to Locals that Employ (Y or N)</b>	<b>Significant Changes Since Last Assessment (Y or N)</b>
Marine debris statutes, regulations, policies, or case law interpreting these	Y	N	N
Marine debris removal programs	Y	N	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
  - a. Describe the significance of the changes;
  - b. Specify if they were 309 or other CZM-driven changes; and
  - c. Characterize the outcomes and likely future outcomes of the changes.

Please see the description of the new Oregon Marine Debris Strategy and Action Plan described in the previous section.

#### *Enhancement Area Prioritization*

1. What level of priority is the enhancement area for the coastal management program?

**High**      \_\_\_\_\_  
**Medium**    \_\_\_\_\_  
**Low**        X

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

While marine debris is an important issue in Oregon, the state has established an effective partnership of agencies and non-profits to address and manage the issue. Stakeholder input



received did not identify any major gaps in current management efforts; stakeholders engaged included local jurisdictions, state agencies, NGOs, and concerned citizens.

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## **Resources and Tools:**

*Below are a few national resources and tools that may be useful in conducting your assessment or developing marine debris strategies. States likely have other state-specific resources, tools, and data that would be useful as well.*

### **NOAA Marine Debris Program**

The NOAA Marine Debris Program supports national and international efforts to research, prevent, and reduce the impacts of marine debris. The program coordinates and supports marine debris activities within NOAA and with other federal agencies, and uses partnerships to support projects carried out by state and local agencies, tribes, nongovernmental organizations, academia, and industry. The program also provides funding opportunities for projects that address marine debris.

*Geographic Coverage:* National and international

*Website:* [www.marinedebris.noaa.gov](http://www.marinedebris.noaa.gov)

DRAFT

## Cumulative and Secondary Impacts

**Section 309 Enhancement Objective:** Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources. §309(a)(5)

### Resource Characterization

1. Change in population and housing units in Oregon's coastal counties between 2012 and 2017:

#### Trends in Coastal Population and Housing Units

	2012	2017	Percent Change (2012-2017)
Number of people	1,414,068	1,500,888	6.14
Number of housing units	624,630	651,205	4.25

2. Status and trends for various land uses in Oregon's coastal counties between 2001 and 2016:

#### Distribution of Land Cover Types in Coastal Counties

##### Distribution of Land Cover Types (acres)

Land Cover Type	2001	2016	Gain/Loss
Developed, High Intensity	4,412	5,074	662
Developed, Medium Intensity	11,554	13,081	1,527
Developed, Low Intensity	37,269	37,284	15
Developed, Open Space	224,145	223,823	-322
Grassland	313,555	337,735	24,180
Scrub/Shrub	494,631	580,291	85,660
Barren Land	42,464	38,797	-3,667
Open Water	911,471	911,511	40
Agriculture	79,735	76,088	-3,647
Forested	3,897,667	3,791,460	-106,207
Woody Wetland	58,639	58,766	127
Emergent Wetland	137,433	139,065	1,632
<b>Percent Land Developed</b>	4.46%	4.49%	0.03%
<b>Percent Impervious Surface</b>	4.46%	4.49%	0.03%

3. Status and trends for developed areas in Oregon's coastal counties between 2001 and 2016:

#### Development Status and Trends for Coastal Counties

	2001	2016	Percent Net Change
Percent land area developed	4.46	4.49	0.03
Percent impervious surface area	4.46	4.49	0.03

### How Land Use Is Changing in Coastal Counties

Land Cover Type	Areas Lost to Development Between 1996-2016 (Acres)
Barren Land	361
Emergent Wetland	357
Woody Wetland	54
Open Water	66
Agriculture	54
Scrub/Shrub	104
Grassland	278
Forested	607

4. Coastal shoreline Change in the Past Five Years:

In the period from January 1<sup>st</sup>, 2015 to Dec 31<sup>st</sup> 2019, 20 new structures were constructed on the ocean coast, for a minimum\* of 1,449 linear feet of new armoring.

Source: OPRD shoreline protective structures permit database, queried January 21, 2020

\* Length, volume and material was not available for 2 of the 20 permits granted.

5. Briefly summarize the results of any additional state- or territory-specific data or reports on the cumulative and secondary impacts of coastal growth and development, such as water quality, shoreline hardening, and habitat fragmentation, since the last assessment.

n/a

The most recent analysis we have for this topic was completed in April 2015 by a coastal management fellow which resulted in a Shoreline Armoring Policy Analysis Report.

### *Management Characterization*

1. Management approaches and significant changes (positive or negative) in the development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources, since the last assessment.

## Significant Changes in Management of Cumulative and Secondary Impacts of Development

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	N
Guidance documents	Y	Y	N
Management plans (including SAMPs)	Y	Y	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
- Describe the significance of the changes;
  - Specify if they were 309 or other CZM-driven changes; and
  - Characterize the outcomes or likely future outcomes of the changes.

n/a

### Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High X

Medium

Low

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The OCMP is based in large part on the state's strong comprehensive land use planning laws. These laws mandate the local development of coordinated, long range comprehensive plans implemented by specific land use regulations. These plans anticipate and address a variety of cumulative and secondary effects of growth and development, and incorporate strong growth management controls to minimize significant adverse effects. Likewise, the state's regulatory framework for water, wetlands, fish and wildlife habitat and endangered species provides substantial mechanisms to avoid and mitigate adverse effects. However, stakeholder engagement efforts consistently show that there is major concern on cumulative and secondary impacts to coastal resources and communities. Additionally, as climate changes, these impacts are exacerbated and putting further pressure on these resources and communities, while capacity to address through management and planning is increasingly limited, justifying this enhancement area as a high priority. Stakeholders engaged include local jurisdictions, state agencies, NGOs, and concerned citizens.

\*\*\*\*\*

## Resources and Tools:

*Below are a few national resources and tools that may be useful in conducting your assessment or developing strategies for cumulative and secondary impacts of development. States likely have other state-specific resources, tools, and data that would be useful as well.*

### **NOAA C-CAP Coastal Land Atlas**

The online data viewer provides user-friendly access to regional land cover and land cover change information developed through NOAA's Coastal Change Analysis Program (C-CAP). The tool summarizes land use change trends. Users can investigate how land cover changed between 1996, 2001, 2006, 2011, and 2016. Although data are provided by county, NOAA staff members are able to help states easily aggregate county data into statewide summary. *Geographic Scope:* Contiguous United States and Hawaii; *Website:* [www.coast.noaa.gov/digitalcoast/tools/lca.html](http://www.coast.noaa.gov/digitalcoast/tools/lca.html)

### **NOAA Environmental Sensitivity Index Maps**

Environmental Sensitivity Index (ESI) maps are designed to provide a concise summary of coastal resources at risk in case of an oil spill or other disaster. They characterize the type of shoreline (armored, vegetated, beach, etc.) and may be useful for resource characterization and assessment. ESI maps are periodically updated on a state-by-state basis, and are generally available in multiple formats (pdf maps, GIS layers, etc.) *Geographic Scope:* All coastal states and territories; *Website:* [www.response.restoration.noaa.gov/maps-and-spatial-data/environmental-sensitivity-index-esi-maps.html](http://www.response.restoration.noaa.gov/maps-and-spatial-data/environmental-sensitivity-index-esi-maps.html)

### **NOAA Impervious Surface Analysis Tool**

The Impervious Surface Analysis Tool (ISAT), a custom suite of easy-to-use scripts for ArcGIS, is used to calculate the percentage of impervious surface area within user-selected geographic areas, such as watersheds, municipalities, and subdivisions. ISAT uses imperviousness values to categorize areas as having good, fair, or poor water quality. A correlation between an increase in impervious surfaces and a decrease in water quality has been well established, and ISAT users may find the information derived from ISAT helpful in predicting how different management scenarios might impact local water quality. The tool **calculates** the percent impervious area and total impervious surface area of each selected polygon, **categorizes** polygons to represent conditions of good, fair, and poor water quality based on calculated imperviousness, and **incorporates** land cover change scenarios to examine how changes influence impervious surfaces. Although it requires desktop GIS and some GIS technical skills, NOAA staff members are able to help states analyze data to support wetlands assessment. *Geographic Scope:* Appropriate geographic scope should be based upon the resolution and complexity of the data. The tool is built on ESRI's ArcGIS, so it will only run as fast as allowed within that software. *Website:* [www.coast.noaa.gov/digitalcoast/tools/isat.html](http://www.coast.noaa.gov/digitalcoast/tools/isat.html)

### **NOAA OpenNSPECT Data**

OpenNSPECT is the open-source version of the Nonpoint Source Pollution and Erosion Comparison Tool to investigate potential water quality impacts from development, other land uses, and climate change. OpenNSPECT was designed to be broadly applicable. When applied to coastal and noncoastal areas alike, the tool simulates erosion, pollution, and their accumulation from overland flow. The tool provides estimates and maps of surface water runoff volumes, pollutant loads, pollutant concentrations, and total sediment loads, helps users identify areas that might benefit from changes to proposed

development strategies, and provides a means to analyze “what if” land use change scenarios. Although it requires desktop GIS and some GIS technical skills, NOAA staff members are available to provide technical assistance. Geographic Scope: Appropriate geographic scope should be based upon the resolution and complexity of the data. The tool is a plugin for open-source MapWindow GIS.

Website: [www.coast.noaa.gov/digitalcoast/tools/openspect.html](http://www.coast.noaa.gov/digitalcoast/tools/openspect.html)

#### **CZMA Performance Measurement System Data**

Annual CZMA performance measurement data for coastal community development. The online database can be used to synthesize existing state and territory data reported during the assessment period. *Geographic Scope:* All coastal states and territories; *Website:*

[www.coast.noaa.gov/czmpm/Login.aspx?ReturnUrl=%2fczmpm%2f](http://www.coast.noaa.gov/czmpm/Login.aspx?ReturnUrl=%2fczmpm%2f)

## Special Area Management Planning

**Section 309 Enhancement Objective:** Preparing and implementing special area management plans for important coastal areas. §309(a)(6)

The Coastal Zone Management Act defines a special area management plan (SAMP) as “a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone. In addition, SAMPs provide for increased specificity in protecting natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, including those areas likely to be affected by land subsidence, sea level rise, or fluctuating water levels of the Great Lakes, and improved predictability in governmental decision making.”

### Resource Characterization

1. In the table below, identify geographic areas in the coastal zone subject to use conflicts that may be able to be addressed through a SAMP. This can include areas that are already covered by a SAMP but where new issues or conflicts have emerged that are not addressed through the current SAMP.

Geographic Area	Opportunities for New or Updated Special Area Management Plans Major conflicts/issues
Ocean Shore	Need for coastal hazard adaptation planning (addressing sea level rise and climate change); need for tsunami hazard area resilience planning; need for rocky shores planning
Estuaries and Shorelands	Need to incorporate updated resource information into existing management plans; need for improved coordination between existing local management plans with current state and federal regulatory processes.

2. Additional data and reports on the status and trends of SAMPs since the last assessment:

### ***Assessment of Oregon's Regulatory Framework for Managing Estuaries***

This report was prepared as a component part of a multi-year effort by the Department of Land Conservation and Development to facilitate the modernization of local estuary management plans. The analysis provides a qualitative assessment of the current state regulatory framework for managing estuaries, including the provisions of and administrative rules for Statewide Planning Goal 16, Estuarine Resources, Statewide Planning Goal 17, Coastal Shorelands, and other program authorities, for the purpose of determining suitability to meet future needs for the management of Oregon's estuaries. The report identifies several priorities for improving estuary plans, and provides recommendations for future work. [http://www.oregon.gov/LCD/OCMP/Pages/Est-Shore\\_RegulatoryAssessment.aspx](http://www.oregon.gov/LCD/OCMP/Pages/Est-Shore_RegulatoryAssessment.aspx)



### ***Assessment of Trends Affecting Planning for Oregon's Estuaries and Shorelands***

Prepared for DLCD by Cogan Owens Cogan, and based on available information and extensive interviews, this investigation identifies trends in the social and economic drivers for future estuary and shoreland uses and activities. It is designed to help develop a better understanding of the likely forces and actions affecting estuaries and shorelands that communities may need to plan for. While the project report refers to broad-scale coast-wide trends, the primary focus of the project was on the trends that may affect estuaries that Oregon has classified to accommodate some level of estuarine development. This assessment will help support local efforts to update economic opportunity analyses related to estuary and shoreland planning. [http://www.oregon.gov/LCD/OCMP/Pages/Est-Shore\\_TrendsAssessment.aspx](http://www.oregon.gov/LCD/OCMP/Pages/Est-Shore_TrendsAssessment.aspx)

#### *Management Characterization*

1. Management approach and changes (positive or negative) that could help prepare and implement SAMPs in the coastal zone:

#### **Significant Changes in Special Area Management Planning**

<b>Management Category</b>	<b>Employed by State or Territory (Y or N)</b>	<b>CMP Provides Assistance to Locals that Employ (Y or N)</b>	<b>Significant Changes Since Last Assessment (Y or N)</b>
SAMP policies, or case law interpreting these	Y	Y	N
SAMP plans	Y	Y	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
  - a. Describe the significance of the changes;
  - b. Specify if they were 309 or other CZM-driven changes; and
  - c. Characterize the outcomes or likely future outcomes of the changes.

#### *Oregon Territorial Sea Plan (OTSP) Updates*

**OTSP Part 3:** The Rocky Habitat Management Strategy is undergoing a three-phased update process to incorporate the best available science and public interests. This work was first supported by an Oregon Sea Grant fellow and has since been supported by a NOAA Project of Special Merit grant and associated limited duration project coordinator. Phase 1 of the update was adopted by the Land Conservation and Development Commission into administrative rule in May, 2019. This phase of work encompassed an update to the general text of the strategy, including management principles, coast wide rocky habitat policies, habitat definitions, and regulatory frameworks. Phase 2 of the update is ongoing and is focused on updating site-based designations, as well as creating a public process for creating, removing, and adapting designations. This phase is expected to continue through winter of 2019-2020. The final phase of the update will aim to create an appropriate communication strategy for increasing awareness and understanding of the updated management strategy. These updates were 309-driven. Outcomes included Adopted general language including management principles and policies. There is ongoing

update to site-based designations and public proposal processes. Creation of a communication strategy will occur following the adoption of site-based management.

#### *Enhancement Area Prioritization*

1. What level of priority is the enhancement area for the coastal management program?

**High**           X

**Medium**       \_\_\_\_\_

**Low**           \_\_\_\_\_

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The Oregon Coastal Management Program relies largely on comprehensive planning and special area management planning to achieve coastal management objectives. Enhancement areas that were consistently given a high priority by responding stakeholders included wetlands and coastal hazards; both are currently managed in Oregon at least in part through the application of SAMPs. Opportunities for program changes that address these priority enhancement areas will therefore involve the development, application and improvement of special area management planning concepts. Stakeholders engaged included local governments with primary land use planning responsibilities, as well as agencies and NGOs currently involved in a variety of planning and resource management efforts in Oregon's coastal zone. Concerned citizens were also engaged and consistently mentioned the need for OCMP to dedicate additional resources to updating estuary management plans.

\*\*\*\*\*

#### **Resources and Tools:**

*Below are a few national resources and tools that may be useful in conducting your assessment or developing SAMP strategies. States likely have other state-specific resources, tools, and data that would be useful as well. Davis, Braxton. 2004. "Regional Planning in the U.S. Coastal Zone: A Comparative Analysis of 15 Special Area Plans." *Ocean and Coastal Management*. Volume 47, Pages 79 to 94.*

*Geographic Scope: National; Website: [www.sciencedirect.com/science/article/pii/S0964569104000225](http://www.sciencedirect.com/science/article/pii/S0964569104000225)*

## Ocean and Great Lakes Resources

**Section 309 Enhancement Objective:** Planning for the use of ocean [and Great Lakes] resources.  
§309(a)(7)

### Resource Characterization

1. Status of the ocean economy as of 2015:

**Status of Ocean and Great Lakes Economy for Coastal Counties (2015)**

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	38702	2601	426	1935	5380	503	27513
Establishments (# of Establishments)	2378	283	45	43	183	21	1805
Wages (Millions of Dollars)	1.2	0.11	0.03	0.12	0.36	0.03	0.55
GDP (Millions of Dollars)	2.7	0.23	0.05	0.16	1.1	0.1	1.1

**Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2015)<sup>17</sup>**

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	6317	-504	-384	150	301	-20	6431
Establishments (# of Establishments)	208	29	-23	-16	13	-2	209
Wages (Millions of Dollars)	.46	.06	-.01	.05	.12	.01	.23
GDP (Millions of Dollars)	1.1	.11	-.02	.06	.41	.02	.52

<sup>17</sup> The trend data is available at the bottom of the page for each sector and type of economic data. Mouse over the data points for 2005 and 2015 to obtain the actual values and determine the change by subtracting 2005 data from 2015.

2. Number of uses within ocean waters off of Oregon:

**Uses within Ocean or Great Lakes Waters**

Type of Use	Number of Sites
Federal sand and gravel leases ( <i>Completed</i> )	-
Federal sand and gravel leases ( <i>Active</i> )	-
Federal sand and gravel leases ( <i>Expired</i> )	-
Federal sand and gravel leases ( <i>Proposed</i> )	-
Beach Nourishment Projects	2
Ocean Disposal Sites	45
Principle Ports ( <i>Number and Total Tonnage</i> )	1, 1755356
Coastal Maintained Channels	27
Designated Anchorage Areas	14
Danger Zones and Restricted Areas	1
Other – Protected Areas within 15 miles	99

3. Changes in threats to and use conflicts over ocean resources in Oregon's coastal zone :

**Significant Changes to Ocean and Great Lakes Resources and Uses**

Resource/Use	Change in the Threat to the Resource or Use Conflict Since Last Assessment (↑, ↓, -, unkwn)
Benthic habitat (including coral reefs)	↑
Living marine resources (fish, shellfish, marine mammals, birds, etc.)	↑
Sand/gravel	-
Cultural/historic	-
Other (please specify)	
Transportation/navigation	↓
Offshore development <sup>18</sup>	↑
Energy production	↑
Fishing (commercial and recreational)	↑
Recreation/tourism	↑
Sand/gravel extraction	-
Dredge disposal	-
Aquaculture	↑
Hypoxia	↑
Ocean Acidification	↑

<sup>18</sup> Offshore development includes underwater cables and pipelines, although any infrastructure specifically associated with the energy industry should be captured under the "energy production" category.

4. Characterization of the major contributors to the increase in threats and conflicts of ocean resources:

#### Major Contributors to an Increase in Threat or Use Conflict to Ocean Resources

	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Comm and Rec)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/Mineral Extraction	Ocean Acidification	Hypoxia
Living Marine Resources				X							X	X
Benthic Habitat		X	X	X					X		X	X
Offshore Development				X	X	X		X				
Fishing		X	X	X		X	X	X	X		X	X
Aquaculture	X	X	X	X	X		X	X	X		X	

5. Additional data and reports on the status and trends of ocean resources or threats to those resources since the last assessment:

#### OAHC Recommendations and Work Plan

In 2017, the passage of Oregon Senate Bill 1039 created the Oregon Coordinating Council on Ocean Acidification and Hypoxia (OAHC) to provide recommendations and guidance for the State of Oregon on how to respond to this issue. The OAHC recently released Oregon's Ocean Acidification and Hypoxia Action Plan which outlines actions that Oregon will take to adapt to and mitigate the impacts of Ocean Acidification and Hypoxia (OAH). The Action Plan built off of the council's 2018 biennial report. The plan outlines 5 main priorities for reaching this goal including the advancement of scientific understanding, reducing carbon emission, increasing system resilience, raising awareness, and mobilizing agencies to incorporate priorities directly into management. The Council plans on continuing its work by incorporating the 5 priorities into agency management

#### Offshore MRE Studies (Wind Energy)

Throughout the last five years there has been a significant increase in the interest in the development of offshore marine renewable energy development in the form of offshore floating wind turbines. The Bureau of Ocean Energy Management completed the production of several reports on the topic including an analysis of the Wind Resource (2015), Infrastructure needs to support development (2016), and an assessment of Feasibility and cost for a set of example locations on the outer continental shelf of Oregon (2019) to name a few. See the BOEM studies program list for a full set of studies associated with evaluation of offshore wind energy off of Oregon ([https://www.boem.gov/sites/default/files/documents/oil-gas-energy/Selected-BOEM-Research-Renewable-OR\\_3.pdf](https://www.boem.gov/sites/default/files/documents/oil-gas-energy/Selected-BOEM-Research-Renewable-OR_3.pdf) ).

#### Management Characterization

1. Management approaches and significant changes (positive or negative) in the management of ocean resources:

### Significant Changes to Management of Ocean and Great Lakes Resources

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	Y
Regional comprehensive ocean/Great Lakes management plans	N	N	N/A
State comprehensive ocean/Great Lakes management plans	Y	N	Y
Single-sector management plans	Y	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
- Describe the significance of the changes;
  - Specify if they were 309 or other CZM-driven changes; and
  - Characterize the outcomes or likely future outcomes of the changes.

#### Oregon Territorial Sea Plan

The Oregon Territorial Sea Plan is the approved coordination mechanism for planning in state waters and has had two significant changes made during the last Strategy period. Both of the changes are significant in that they have resulted in new state policies that will be incorporated into the OCMP as enforceable policies. The policies help to establish the state's vision for the management of the state ocean resources into the future as the impacts of climate change are being newly discovered.

Part Five, the chapter focused on the use of the ocean for the development of marine renewable energy facilities, was amended to add the incorporation of a spatial framework and the associated standards for review and assessment of proposals for development. The Part Five amendment was driven by demands from the marine renewable energy technology sector for a process to allow the testing and development of new technology for harnessing the ocean's kinetic energy. The completed plan provides a comprehensive framework for evaluation of new proposals, and provides the process whereby they will be analyzed, evaluated, and permitted (if consistent with the plan). The Department of State Lands completed a rule amendment process whereby they incorporated Part Five into the Oregon Administrative Rules (141-140-0010 to 141-140-0130), thereby integrating the project evaluation and review standards into law.

Part Three, the Rocky Shores Management Strategy, was also amended during the strategy period in response to a request from concerned members of the public that the existing plan framework was out of date and did not consider the challenges to the natural resources that have been identified by climate change science. The amendment process, while not yet complete, resulted in the complete revision of Part Three to establish new state policies related to protection of the natural resources. The completed

plan revision will likely result in new special area management designations for sites along with the newly established polices for management and protection of natural resources.

[Division 85, Division 93, and Division 140; Rules governing the placement of ocean renewable energy devices in the territorial sea](#)

The Department of State Lands has concluded rulemaking to codify the requirements of recent administrative and legislative actions affecting the placement of ocean renewable energy devices in the territorial sea. These actions include adoption of Part 5 of the Territorial Sea Plan by the Land Conservation and Development Commission; enactment of HB 2694 (2013) – establishing seafloor data sharing requirements; enactment of SB 606 (2013) – amending financial assurance and civil penalty statutes for ocean renewable energy projects; and enactment of SB 319 (2015) refining the Department’s regulatory and proprietary roles in siting ocean renewable energy projects. SB 319 specifically requires the Department to convene a committee to assist in evaluating whether to establish by rule a general permit under ORS 196.816, or grant by rule a general authorization under ORS 196.850, for ocean renewable energy facilities that are used as components of research projects or demonstration projects that produce ocean renewable energy. Public Hearings were held on June 20, 21 & 28, 2017 & July 6, 2017 around the state. Final rule is being presented to the State Land Board on October 17th at DSL. This change was not 309 or CZM driven.

<https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=368>

### 3. Comprehensive Ocean Management Planning:

Comprehensive Ocean/Great Lakes Management Plan	State Plan	Regional Plan
Completed plan (Y/N) (If yes, specify year completed)	Y-Territorial Sea Plan, completed 1994; amended 2000; 2013	N
Under development (Y/N)	N	N
Web address (if available)	<a href="https://www.oregon.gov/lcd/OCMP/Pages/Territorial-Sea-Plan.aspx">https://www.oregon.gov/lcd/OCMP/Pages/Territorial-Sea-Plan.aspx</a>	N
Area covered by plan	Oregon Territorial Sea	n/a

### Enhancement Area Prioritization

#### 1. What level of priority is the enhancement area for the coastal management program?

High      X

Medium    \_\_\_\_\_

Low        \_\_\_\_\_



2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The state's ocean resources are continuing to be stressed in response to climate change impacts and an increase in the number of uses of the ocean. The OCMP will continue to administer the Territorial Sea Plan in conjunction with stakeholders and natural resource managers as new proposed uses of the ocean are considered. The amendment to Part Three of the Territorial Sea Plan provides a mechanism for more frequent plan amendments due to the identification of concerns from local communities, which may propose on an annual basis new special area management designations. The enforceable policies of Part Five of the Territorial Sea Plan are likely to be considered in planning for offshore marine renewable energy projects on the outer continental shelf, as documented in Oregon's GLD for marine renewable energy. Additionally, the pilot system of marine reserves and protected areas that were established in 2012 will be evaluated during the next strategy period, and new areas may be proposed for designation. Finally, the consideration of aquaculture opportunities within the territorial sea will add yet another potential use to evaluate in the context of conflicting uses and natural resource protection or enhancement. Stakeholders engaged include local jurisdictions, state agencies, NGOs, and concerned citizens.

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## Resources and Tools:

*Below are a few national resources and tools that may be useful in conducting your assessment or developing strategies for ocean and Great Lakes Resources. States likely have other state-specific resources, tools, and data that would be useful as well.*

### MarineCadastre.gov Viewer

This data viewer provides the baseline information needed for ocean planning efforts, particularly those that involve finding the best location for renewable energy projects. Users pick the ocean geography of their choosing and quickly see the applicable jurisdictional boundaries, restricted areas, laws, critical habitat locations, and other important features. With the national viewer, potential conflicts can be identified and avoided early in the planning process, and users can visually analyze and explore geospatial data for marine spatial planning activities and find direct access to authoritative marine cadastral data from federal and state sources.

*Geographic Scope:* National

*Website:* [www.coast.noaa.gov/digitalcoast/tools/mmc.html](http://www.coast.noaa.gov/digitalcoast/tools/mmc.html)

### NOAA Coastal County Snapshots: Ocean Jobs

Provides a snapshot of the economic value of ocean and Great Lakes jobs within a coastal county.

*Geographic Scope:* Coastal states only. Currently not available for territories.

*Website:* [www.coast.noaa.gov/digitalcoast/tools/snapshots.html](http://www.coast.noaa.gov/digitalcoast/tools/snapshots.html)

### NOAA Economics: National Ocean Watch Data (ENOW)

The effective management of coastal resources requires an understanding of the ocean and Great Lakes economy. This tool allows users to interact with ENOW data, which describe six economic sectors that

depend on the oceans and Great Lakes: living resources; marine construction; marine transportation; offshore mineral resources; ship and boat building; and tourism and recreation. Users can discover which sectors are the largest in various parts of the county, which sectors are growing and declining, and which account for the most jobs, wages, and gross domestic product. They can view up to four counties, states, or regions to compare trends or the makeup of their ocean and Great Lakes economies. The ENOW Explorer's interface is designed to allow users who are familiar with economic data to interact with and view data and trends. The tool provides the highest level of interaction with ENOW data short of downloading the full data set. *Geographic Scope:* National and regional; *Website:* [www.coast.noaa.gov/digitalcoast/tools/enow.html](http://www.coast.noaa.gov/digitalcoast/tools/enow.html)

### **NOAA Essential Fish Habitat Mapper**

The Essential Fish Habitat Mapper is an online tool that displays essential fish habitat, and habitat areas of particular concern, established under provisions in the Magnuson-Stevens Fishery Conservation and Management Act. The tool also includes areas where steps have been taken to minimize the impact that fisheries have on essential fish habitat, including anchoring restrictions, required fishing gear modifications, and bans on certain types of gear. Users can query information from multiple fishery management plans at once to view habitat maps and lists of species for a specific location. The tool displays habitat maps and species lists for specific locations, **queries** spatial information from multiple fishery management plans at once, and **provides** links to text descriptions and data inventories, including related fishery management plans, federal regulations, and data and metadata download. *Geographic Scope:* National and regional; *Website:* [www.coast.noaa.gov/digitalcoast/tools/efhmapper.html](http://www.coast.noaa.gov/digitalcoast/tools/efhmapper.html)

### **NOAA Ocean Reports**

Allows users to draw or select an area and get in-depth quick reports of coastal and marine areas for ocean-facing coastal states and territories. The tool includes the following types of information: energy and minerals, natural resources and conservation, transportation and infrastructure, economics and commerce, and others.

*Geographic Scope:* Ocean-facing coastal states and territories (not Great Lakes)

*Website:* [www.coast.noaa.gov/digitalcoast/tools/ort.html](http://www.coast.noaa.gov/digitalcoast/tools/ort.html)

### **OceanData.gov**

The National Ocean Council's portal for data, information, and decision tools to support people engaged in regional marine planning for the future use of the ocean, coasts, and Great Lakes.

*Geographic Scope:* National and regional

*Website:* [www.data.gov/ocean/community/ocean](http://www.data.gov/ocean/community/ocean)

### **U.S. Marine Protected Areas Mapping Tool**

The U.S. Marine Protected Areas (MPAs) mapping tool is an online application designed to help users visualize MPA boundaries and provide access to MPA Inventory data. This mapping tool provides data on over 1,600 MPAs nationwide, offering easy access to spatial boundaries, conservation-based classification data, and site management information. Managers, scientists, and the public will find a detailed picture of the type, abundance, and distribution of MPAs throughout the United States, gaining an increased understanding and technical capacity for ocean resource protection, management, and stewardship. The tool **visualizes** patterns and characteristics of MPAs throughout the United States and filters the MPA Inventory in various ways to show only certain MPAs with specific attributes.

*Geographic Scope:* National and regional

*Website:* [www.coast.noaa.gov/digitalcoast/tools/mpaviewer.html](http://www.coast.noaa.gov/digitalcoast/tools/mpaviewer.html)

## Energy and Government Facility Siting

**Section 309 Enhancement Objective:** Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities and energy-related activities and Government activities which may be of greater than local significance. §309(a)(8)19

### Resource Characterization

1. status and trends of different types of energy facilities and activities in Oregon's coastal zone:

#### Status and Trends in Energy Facilities and Activities in the Coastal Zone

Type of Energy Facility/Activity	Exists in Coastal Zone (# or Y/N)	Change in Existing Facilities/Activities Since Last Assessment (↑, ↓, -, unkwn)	Proposed in Coastal Zone (# or Y/N)	Change in Proposed Facilities/Activities Since Last Assessment (↑, ↓, -, unkwn)
Pipelines	Y	-	Y	-
Electrical grid (transmission cables)	Y	-	N	-
Ports	Y	-	N	-
Liquid natural gas (LNG)	N	-	Y	-
Other (please specify)				
Oil and gas	N	-	N	-
Coal	N	-	N	-
Nuclear	N	-	N	-
Wind	N	-	Y	-
Wave	N	-	Y	-
Tidal	N	-	N	-
Current (ocean, lake, river)	N	-	N	-
Hydropower	N	-	N	-
Ocean thermal energy conversion	N	-	N	-
Solar	N	-	N	-
Biomass	N	-	N	-
Other (please specify)				

2. If available, briefly list and summarize the results of any additional state- or territory-specific information, data, or reports on the status and trends for energy facilities and activities of greater than local significance in the coastal zone since the last assessment.

<sup>19</sup> CZMA § 309(a)(8) is derived from program approval requirements in CZMA § 306(d)(8), which states:

"The management program provides for adequate consideration of the national interest involved in planning for, and managing the coastal zone, including the siting of facilities such as energy facilities which are of greater than local significance. In the case of energy facilities, the Secretary shall find that the State has given consideration to any applicable national or interstate energy plan or program."

NOAA regulations at 15 C.F.R. § 923.52 further describe what states need to do regarding national interest and consideration of interests that are greater than local interests.

On February 14, 2020, the OCMP received a [federal consistency certification and associated application materials](#) for the installation of a grid-connected wave energy test facility approximately 6 miles outside of the Territorial Sea near Newport. Oregon State University (OSU or the applicant) proposes to construct and operate the facility, known as [PacWave South](#). The proposed project's test facility will be on the Outer Continental Shelf and will be connected to the electrical power grid through buried cables that travel through the Oregon Territorial Sea to a grid connection point with the Central Lincoln People's Utility District (CLPUD) Project in Lincoln County, Oregon.

This is the first time a project of this type and magnitude has taken place in Oregon, and as a result, an extensive level of coordination has been necessary. The applicant has been consulting with stakeholder groups for nearly a decade to assure the location, size, and spacing of the facility has the lowest impact on coastal users. Similarly, agency staff have been highly involved in project coordination to avoid hang-ups during project permitting.

In coordination with the applicant, OCMP is conducting a consolidated federal consistency review for 3 of the 4 federal permits that the project requires (Corps, FERC, and BOEM). The federal consistency application was determined to be complete on March 11, 2020, and is currently under active review. OCMP staff continue to coordinate with networked partners and the applicant to ensure the project is consistent with [Oregon's enforceable policies](#).

3. Existing status and trends for federal government facilities and activities of greater than local significance<sup>20</sup> in Oregon's coastal zone:

One significant federal facility in Oregon's coastal zone is the NOAA Marine Operations Center-Pacific (MOC-P) facility in Newport, which was completed in 2011. The facility is located on the south shore of Yaquina Bay on a site formerly occupied by a salmon ranching operation. The redevelopment of this site to accommodate the MOC-P included construction of 40,852 square feet of office and warehouse space, a 1,300-foot-long pier, and a small boat dock.

The NOAA Marine Operations Center-Pacific serves as a homeport for four NOAA research and survey ships and provides administrative, engineering, maintenance and logistical support for NOAA's Pacific fleet. In all, the MOC-P supports nine ships, including vessels home ported in Hawaii and Alaska. The center and ships are part of the Silver Spring, Maryland based NOAA Office of Marine and Aviation Operations. The Newport facility also houses the Marine Operations Center directorate, which oversees both the Pacific and Atlantic marine centers and all NOAA ship operations.

#### *Management Characterization*

1. Management approaches and significant changes (positive or negative) that could facilitate or impede energy and government facility siting and activities:

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<sup>20</sup> The CMP should make its own assessment of what Government facilities may be considered "greater than local significance" in its coastal zone, but these facilities could include military installations or a significant federal government complex. An individual federal building may not rise to a level worthy of discussion here beyond a very cursory (if any at all) mention).

### Significant Changes in Energy and Government Facility Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	N
State comprehensive siting plans or procedures	Y	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
  - a. Describe the significance of the changes;
  - b. Specify if they were 309 or other CZM-driven changes; and
  - c. Characterize the outcomes or likely future outcomes of the changes.

n/a

#### Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High \_\_\_\_\_  
 Medium X  
 Low \_\_\_\_\_

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The one major energy facility issue affecting Oregon's coastal zone is the proposed LNG export facility (Coos Bay) and associated pipelines. For the proposed LNG facility, the FERC licensing process is in progress, therefore any program changes developed through this 309 cycle would not be applicable to the proposals.

While Oregon will continue to devote significant resources to the review and management of energy facility development in the coastal zone, program changes in this area are not seen as a high priority during this assessment and strategy cycle. Stakeholders engaged included local governments, state agency program partners, and various NGOs with interests in coastal management and development issues.

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### Resources and Tools:

*Below are a few national resources and tools that may be useful in conducting your assessment or developing energy and federal government facilities strategies. States likely have other state-specific resources, tools, and data that would be useful as well.*

### **GSA Lists of Federally Owned and Leased Facilities**

The Government Services Agency (GSA) maintains a national list of all federally owned and leased facilities in each state.

*Geographic scope:* National

*Website:* [www.gsa.gov/iolp](http://www.gsa.gov/iolp)

### **MarineCadastre.gov Viewer**

This data viewer provides the baseline information needed for ocean planning efforts, particularly those that involve finding the best location for renewable energy projects. Users choose an ocean geography and quickly see the applicable jurisdictional boundaries, restricted areas, laws, critical habitat locations, and other important features. With the national viewer, potential conflicts can be identified and avoided early in the planning process, and users can visually analyze and explore geospatial data for marine spatial planning activities and find direct access to authoritative marine cadastral data from federal and state sources.

*Geographic Scope:* National

*Website:* [www.coast.noaa.gov/digitalcoast/tools/mmc](http://www.coast.noaa.gov/digitalcoast/tools/mmc)

### **NOAA Economics: National Ocean Watch Data (ENOW)**

The effective management of coastal resources requires an understanding of the ocean and Great Lakes economy. This tool allows users to interact with ENOW data, which describe six economic sectors that depend on the oceans and Great Lakes: living resources; marine construction; marine transportation; offshore mineral resources; ship and boat building; and tourism and recreation. Users can discover which sectors are the largest in various parts of the country, which sectors are growing and declining, and which account for the most jobs, wages, and gross domestic product. They can view up to four counties, states, or regions to compare trends or the makeup of their ocean and Great Lakes economies. The ENOW Explorer's interface is designed to allow users who are familiar with economic data to interact with and view data and trends. The tool provides the highest level of interaction with ENOW data short of downloading the full data set.

*Geographic Scope:* National and regional

*Website:* [www.coast.noaa.gov/digitalcoast/data/enow](http://www.coast.noaa.gov/digitalcoast/data/enow)

### **NOAA Ocean Reports**

Allows users to draw or select an area and get in-depth quick reports of coastal and marine areas for ocean-facing coastal states and territories. The tool includes the following types of information: energy and minerals, natural resources and conservation, transportation and infrastructure, economics and commerce, and others.

*Geographic Scope:* Ocean-facing coastal states and territories (not Great Lakes)

*Website:* [www.coast.noaa.gov/digitalcoast/tools/ort.html](http://www.coast.noaa.gov/digitalcoast/tools/ort.html)

## Aquaculture

**Section 309 Enhancement Objective:** Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable states to formulate, administer, and implement strategic plans for marine aquaculture. §309(a)(9)

### Resource Characterization

- Existing status and trends of aquaculture facilities in Oregon's coastal zone:

#### Status and Trends of Aquaculture Facilities and Activities

Type of Facility/Activity	Number of Facilities <sup>21</sup>	Approximate Economic Value	Change Since Last Assessment (↑, ↓, -, unkwn)
Oyster farms	17	\$10,555,000	-

<https://www.oregon.gov/ODA/shared/Documents/Publications/MarketAccess/AquacultureInvestment.pdf>

[http://www.agcensus.usda.gov/Publications/2012/Online\\_Resources/Aquaculture/aquacen.pdf](http://www.agcensus.usda.gov/Publications/2012/Online_Resources/Aquaculture/aquacen.pdf)

- If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from aquaculture activities in the coastal zone since the last assessment.  
n/a

### Management Characterization

- Management approaches and changes (positive or negative) that could facilitate or impede the siting of public or private aquaculture facilities in the coastal zone:

#### Significant Changes in Aquaculture Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Aquaculture comprehensive siting plans or procedures	N	N	N
Other aquaculture statutes, regulations, policies, or case law interpreting these	Y	Y	N

- For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
  - Describe the significance of the changes;
  - Specify if they were 309 or other CZM-driven changes; and

<sup>21</sup> Be as specific as possible. For example, if you have specific information of the number of each type of facility or activity, note that. If you only have approximate figures, note "more than" or "approximately" before the number. If information is unknown, note that and use the narrative section below to provide a brief qualitative description based on the best information available.



- c. Characterize the outcomes or likely future outcomes of the changes.

n/a

#### *Enhancement Area Prioritization*

1. What level of priority is the enhancement area for the coastal management program?

**High** \_\_\_\_\_

**Medium** X

**Low** \_\_\_\_\_

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Oyster farming is the largest commercial aquaculture enterprise presently operating in Oregon's coastal zone, with some small scale seaweed aquaculture operations recently being tested for feasibility. The industry has a generally stable recent history, although over the past decade, a number of operations have been adversely impacted by ocean acidification. Management is principally the responsibility of the Oregon Department of Agriculture; ODA works in cooperation with other resource agencies to assess and consider impacts of aquaculture operations on other coastal resources and uses. Stakeholder input did not identify any priority needs for program changes related to aquaculture. Stakeholders engaged included resource agencies involved in the management of aquaculture activities. In 2019, the Oregon Legislature passed legislation and funding for DLCD to create an electronic database for shellfish mariculture to include public records that could be shared.

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### **Resources and Tools:**

*Below are a few national resources and tools that may be useful in conducting your assessment or developing aquaculture strategies. States likely have other state-specific resources, tools, and data that would be useful as well.*

#### **Coastal Aquaculture Planning Portal**

The Coastal Aquaculture Planning Portal is a toolbox of coastal planning tools designed to assist managers, planners, and industry with sustainable aquaculture development.

*Geographic Scope:* National

*Website:* [www.coastalscience.noaa.gov/research/marine-spatial-ecology/coastal-aquaculture-planning-portal-capp/#](http://www.coastalscience.noaa.gov/research/marine-spatial-ecology/coastal-aquaculture-planning-portal-capp/#)

#### **MarineCadastre.gov Viewer**

This data viewer provides the baseline information needed for ocean planning efforts, particularly those that involve finding the best location for renewable energy projects. Users choose an ocean geography and quickly see the applicable jurisdictional boundaries, restricted areas, laws, critical habitat locations, and other important features. With the national viewer, potential conflicts can be identified and avoided early in the planning process, and users can visually analyze and explore geospatial data for marine spatial planning activities and find direct access to authoritative marine cadastral data from federal and state sources.

*Geographic Scope:* National

*Website:* [www.coast.noaa.gov/digitalcoast/tools/mmc](http://www.coast.noaa.gov/digitalcoast/tools/mmc)

### **NOAA Office of Aquaculture**

The Office of Aquaculture fosters sustainable aquaculture that will create employment and business opportunities in coastal communities; provide safe, sustainable seafood; and complement NOAA's comprehensive strategy for maintaining healthy and productive marine populations, species, and ecosystems and vibrant coastal communities.

*Geographic Coverage:* National and regional

*Website:* [www.nmfs.noaa.gov/aquaculture/index.htm](http://www.nmfs.noaa.gov/aquaculture/index.htm)

### **USDA Census of Aquaculture**

The U.S. Department of Agriculture publishes the Census of Aquaculture. The census provides a variety of state-specific aquaculture data to understand current status and recent trends. The last census was released in 2013.

*Geographic Coverage:* National

*Website:* [www.agcensus.usda.gov/Publications/Census\\_of\\_Aquaculture/](http://www.agcensus.usda.gov/Publications/Census_of_Aquaculture/)

DRAFT

## Phase II (In-Depth) Assessment

### Wetlands

#### *In-Depth Resource Characterization*

*Purpose: To determine key problems and opportunities to improve the CMP's ability to protect, restore, and enhance wetlands.*

1. Three most significant existing or emerging physical stressors or threats to wetlands within Oregon:

	Stressor/Threat	Geographic Scope (throughout coastal zone or specific areas most threatened)
Stressor 1	Development / Fill	Throughout coastal zone
Stressor 2	Hydrological alteration	Former tidal wetlands
Stressor 3	Climate change and sea level rise	Tidal areas <sup>22</sup>

2. Justification for Stressor and Threats Rankings:

Hydrological alteration of Oregon's tidal wetlands (mostly diking and draining) is primarily historical, but these alterations serve to reduce wetland functions and values. While new development and fill is substantially regulated, cumulative effects from this activity continue to impact wetland resources.

An important finding in research led by Laura Brophy states that *"Because of steep topography and the limited width of the coastal plain, Oregon's outer coast estuaries are vulnerable to climate change and sea level rise. With SLR above 4.7ft, there is likely to be considerable loss of valued tidal wetland resources. Sediment accretion may reduce this loss, but different studies show very different potential for accretion as a mitigating factor. Restoration of subsided, diked lands through dike removal is a good way to begin; the sooner available sediment can be restored to these areas, the more chance they have to equilibrate with future SLR. However, to ensure tidal wetland functions are available in the future, it will be very important for coastal groups to build and continue relationships with upslope landowners of LMZs [landward migration zones], and to begin to plan for conservation and restoration of native habitats within these areas."*<sup>23</sup>

The document has a recommendation related to land-use planning:

*"To reduce future land use conflicts between developed uses and tidal wetland resources, and to help ensure valued tidal wetland functions are retained under SLR conditions, coastal communities and planners can work to avoid new development within LMZs. This effort would help avoid cumulative impacts to potential future tidal wetland resources as sea level rises. A change in land use planning approach may be needed; instead of considering land use permit applications on a site-by-site basis using primarily current conditions for decision support, future conditions and landscape patterns of LMZs*

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<sup>22</sup> "Modeling sea level rise impacts to Oregon's tidal wetlands" completed in Dec 2017, and available at: [https://appliedeco.org/wp-content/uploads/Modeling-SLR-impacts-to-Oregon-tidal-wetlands-12\\_1\\_2017.pdf](https://appliedeco.org/wp-content/uploads/Modeling-SLR-impacts-to-Oregon-tidal-wetlands-12_1_2017.pdf)

<sup>23</sup> by Laura Brophy and Michael Ewald "Modeling sea level rise impacts to Oregon's tidal wetlands" completed in Dec 2017

could also be considered. This might be considered "planning in 4 dimensions" – considering topography and time as well as 2-dimensional map locations for land use decision-making."

3. Emerging issues of concern and lack of sufficient information to evaluate level of potential threat:

Emerging Issue	Information Needed
Climate Change	Estuary Vulnerability Assessments To Hazards and Climate Change (natural, social, and economic systems)
Lack of education	Public Information, Education and Outreach Material on Wetland Laws, Data and Inventories, Mitigation Best Practices

#### *In-Depth Management Characterization*

*Purpose: To determine the effectiveness of management efforts to address identified problems related to the wetlands enhancement objective.*

1. Management approaches and significant changes (positive or negative):

#### **Significant Changes in Wetland Management**

Management Category	Employed By State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Wetland assessment methodologies	Y	Y	N
Wetland mapping and GIS	Y	Y	Y
Watershed or special area management plans addressing wetlands	Y	Y	N
Wetland technical assistance, education, and outreach	Y	Y	Y

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
  - a. Describe significant changes since the last assessment;
  - b. Specify if they were 309 or other CZM-driven changes; and
  - c. Characterize the outcomes or likely future outcomes of the changes.

#### **CMECS Mapping<sup>24</sup>**

<sup>24</sup> This is for estuarine wetlands only and not freshwater wetlands, which are managed by Oregon Department of State Lands.

DLCD led the development of CMECS mapping products for all major estuaries in Oregon and this initiative was completed in 2018. These products were provided to all jurisdictions with responsibilities in estuary management planning. The method used for this work was then replicated for the entire West Coast and has been published in the peer-reviewed literature. These changes were 309 driven and have been funded by both 309 grants and projects of special merit. Likely future outcomes include local jurisdictions updating their Estuary Management Plans to incorporate this data into their resource inventories and maps. Once updated at the local level, DLCD anticipates submitting a program change to incorporate the updated plans as enforceable policies of the OCMP.

### **Estuary Management Planning Technical Assistance, Education, and Outreach<sup>25</sup>**

As part of the efforts to update local estuary management plans, DLCD increased its attention on providing technical assistance, education, and outreach to local jurisdictions with estuary management planning responsibilities. This included participating on technical advisory committees for local jurisdiction planning processes, partnering with other agencies and organizations to submit proposals to fund estuary planning work, and development of model estuary management plan language to be used by local jurisdictions.

3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts in protecting, restoring, and enhancing coastal wetlands since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

See Phase I Assessment on Wetlands for a description of research conducted and published by Laura Brophy.

#### Identification of Priorities

1. Top management priorities where there is the greatest opportunity for the OCMP to improve its ability to more effectively respond to significant wetlands stressors:

***Management Priority 1: Provide technical and financial support to local government partners to update and improve the implementation of estuary management plans.***

#### *Description:*

Despite the general success and durability of Oregon's estuary management plans, a number of current and anticipated developments indicate the need for modernization. In particular, current drivers for various conservation and restoration initiatives (e.g. salmonid recovery) are largely unanticipated by current plans. The application of digital mapping technology presents an opportunity to incorporate a more refined application of updated data sets to both planning and implementation decisions, thus improving the quality and certainty of management decisions.

Updating Estuary Management Plans has had its challenges in Oregon. Planning update efforts have proven to be costly for some jurisdictions. Furthermore, local jurisdiction capacity to take on major revisions to plans has led to reprioritization of planning work. There continues to be interest in plan updates, but staff capacity and financial resources remain obstacles for successful completion. DLCD

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<sup>25</sup> This is for estuarine wetlands only and not freshwater wetlands, which are managed by Oregon Department of State Lands.

will focus its newest strategy on developing examples and guidance for EMP updates so that the burden for updates is minimized for local jurisdictions.

***Management Priority 2: Develop Model Ordinances for Ecosystem Services Protection/ Natural Infrastructure***

***Description:***

The risks posed to ecosystem services are inherently dangerous for coastal communities that rely on these services for economic sustainability and community culture. Often, these risks come from the many small impacts from development and use and are most recognizable as cumulative and secondary impacts. Of critical concern is the development and fill of wetlands as growth pressures continue in the coastal zone. Appropriate planning to combat secondary and cumulative impacts to ecosystem services is necessary, and can be systematically improved with the development of protective local ordinances. Creation of a model ordinance offers a beneficial product for multiple jurisdictions to implement these protections, by leveraging previous work and reducing unnecessary costs and expertise to implement.

***Management Priority 3: Provide technical and financial support to local governments partners to update inventories of potential wetland restoration sites.***

***Description:***

While all of Oregon's remaining estuarine wetlands are subject to special area management plans (98% are in protected status), it is estimated that more than 70% of Oregon's original tidal marsh has been lost to diking, fill and other alterations. Many of these former tidal wetlands have not been inventoried or assessed as a part of local management plans. There has been growing interest in and work related to tidal wetland restoration in Oregon, particularly as an element of salmon restoration efforts. While the original estuary management plans do include some identification of potential restoration and mitigation site, these inventories are outdated and typically incomplete. Many local governments lack the resources and capacity to complete the work of updating these inventories. The support of the OCMP to facilitate this work can be key to expanding local wetland protection programs and facilitating restoration and enhancement opportunities.

2. Priority needs and information gaps the OCMP has to help it address the management priorities identified above:

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Research is needed on habitat migration/impacts to wetlands from sea level rise. Research is needed on the impacts to tidal wetlands from ocean acidification and hypoxia.
Mapping/GIS	Y	There is a need to assist local government partners in finding, accessing and deploying GIS resources for local planning. The current CMECS-based habitat classification maps need to be adapted for direct application to local estuary management planning.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Data and information management	Y	There is a need to provide updated digital data sets for non-estuarine wetland resources to local planning departments and to state agencies with program responsibility for wetland regulation.  There is a need to establish a plan for maintaining and updating estuarine and wetland resource information used in regulatory decisions. The state currently lacks such a plan/system.
Training/capacity building	Y	Some local planning agencies lack sufficient capacity to undertake plan modernization efforts. Needed capacity includes enhanced expertise, both programmatic and technical, and additional staff resources (time)
Decision-support tools	N	
Communication and outreach	Y	Because most estuary plans have not been comprehensively updated for three decades or more, there is a need to re-engage key agency partners and stakeholders in estuary and wetland management programs. The objective of this reengagement would be to increase the understanding of the role of the local plans among the various state and federal regulatory entities, and to establish strong coordination relationships between local, state, and federal partners.
Other (specify)		

#### *Enhancement Area Strategy Development*

1. Will the CMP develop one or more strategies for this enhancement area?

**Yes**      X

**No**      \_\_\_\_\_

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

There is an identified need to provide technical support to affected communities to update and improve the implementation of locally adopted estuary management plans and corresponding shoreland plan elements. To address this need, the OCMP intends to develop a strategy focused on facilitating and supporting local efforts to modernize locally adopted SAMPs. One focus of this strategy will be on incorporating the CMECS resource inventory product into local plans to enhance the utility of the plans and improve decision making. Other work on system improvements as identified in program assessments will be focused on improving regulatory coordination for better implementation of local plans, updating out of date state plans, and providing improved outreach and training to local jurisdictions. Program enhancement areas included in the SAMPs strategy will include wetlands, special area management planning, public access, and cumulative and secondary impacts.



## Coastal Hazards

### *In-Depth Resource Characterization*

*Purpose: To determine key problems and opportunities to improve the CMP's ability to prevent or significantly reduce coastal hazard risks by eliminating development and redevelopment in high-hazard areas and managing the effects of potential sea level rise and Great Lakes level change.*

1. Three most significant coastal hazards<sup>26</sup> within the Oregon coastal zone:

	Type of Hazard	Geographic Scope (throughout coastal zone or specific areas most threatened)
Hazard 1	Geological (Earthquake and Tsunami)	Throughout the coastal zone
Hazard 2	Shoreline Erosion	Throughout the coastal zone
Hazard 3	Flooding	Throughout the coastal zone

2. Justification for Stressor and Threats Rankings:

The scientific understanding of the level of seismic and related tsunami risk on the Oregon coast is a relatively recent development. This understanding has advanced significantly in the last decade and has been documented in numerous reports and studies. The damage from the impending Cascadia subduction zone earthquake and tsunami will be extreme, and there is an urgent need for planning for the impacts of this event on several fronts. This need is fully identified in the Oregon Resilience Plan (February 2013): [http://www.oregon.gov/OMD/OEM/osspace/docs/Oregon\\_Resilience\\_Plan\\_Final.pdf](http://www.oregon.gov/OMD/OEM/osspace/docs/Oregon_Resilience_Plan_Final.pdf)

Shoreline erosion is the most significant chronic hazard affecting Oregon's coast. Large segments of Oregon's ocean shore are extensively developed with residential and commercial uses and attendant infrastructure and the pressure for additional ocean front development and re-development is substantial. Much of this existing and future development will be subject to risk from shoreline erosion. The risks associated with shoreline erosion on Oregon's coast have been documented in a series of reports by the Oregon Department of Geology and Mineral Industries (DOGAMI), an example of which can be reviewed here: <https://www.oregongeology.org/pubs/ofr/p-O-14-02.htm>

Coastal flooding risk is increasing in Oregon due to heightened storm intensity, increasing winter wave heights and long term sea level rise. A number of published studies have identified these trends; one which provides a summary analysis of potential climate change impacts on coastal flooding is Impacts of Climate Change on Coastal Erosion and Flood Probability in the Pacific Northwest. [http://www.geo.oregonstate.edu/files/geo/Ruggiero\\_Coastal%20Disasters\\_2008.pdf](http://www.geo.oregonstate.edu/files/geo/Ruggiero_Coastal%20Disasters_2008.pdf)

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<sup>26</sup> See list of coastal hazards on pg. 24 of this assessment template.

3. Emerging issues of concern and lack of sufficient information to evaluate level of potential threat:

Emerging Issue	Information Needed
Climate Change	Better understanding of climate change effects and vulnerabilities on Oregon Coast, especially in regards to development and infrastructure.
Beach closures due to fecal bacterial contamination. <sup>27</sup>	Track trends and locations. Source of contamination reported as unknown. Need protocols for discovering source of contamination if problem is to be addressed.
Advancing mitigation action items identified in local Natural Hazard Mitigation Plans. Integrating these plans with local land use programs.	Good understanding of funding programs available to move mitigation projects forward. Capacity to apply for and administer these grants. Technical expertise to turn ideas into projects.

*In-Depth Management Characterization*

*Purpose: To determine the effectiveness of management efforts to address identified problems related to the coastal hazards enhancement objective.*

1. Management approaches and significant changes:

**Significant Changes in Coastal Hazards Statutes, Regulations, and Policies**

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Shorefront setbacks/no build areas	Y	Y	Y
Rolling easements	Y	Y	N
Repair/rebuilding restrictions	N	Y	N
Hard shoreline protection structure restrictions	Y	Y	N
Promotion of alternative shoreline stabilization methodologies (i.e., living shorelines/green infrastructure)	Y	Y	N
Repair/replacement of shore protection structure restrictions	Y	Y	N
Inlet management	N	Y	N
Protection of important natural resources for hazard mitigation benefits (e.g., dunes, wetlands, barrier	Y	Y	N

<sup>27</sup> As of June 2018, DEQ report says 19 fecal bacteria advisories since 2016. In 2019 reporting season (Memorial Day to Labor Day) 6 advisories issued.

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
islands, coral reefs) (other than setbacks/no build areas)			
Repetitive flood loss policies (e.g., relocation, buyouts)	Y	Y	N
Freeboard requirements	Y <sup>28</sup>	Y	N
Real estate sales disclosure requirements	Y	Y	N
Restrictions on publicly funded infrastructure	Y	Y	Y
Infrastructure protection (e.g., considering hazards in siting and design)	N	Y	N
Other (please specify)			

#### Significant Changes to Coastal Hazard Management Planning Programs or Initiatives

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Hazard mitigation plans	Y	Y	Y
Sea level rise/Great Lake level change or climate change adaptation plans	Y	Y	Y
Statewide requirement for local post-disaster recovery planning	N	Y	N
Sediment management plans	Y	Y	N
Beach nourishment plans	Y	Y	N
Special Area Management Plans (that address hazards issues)	Y	Y	Y
Managed retreat plans	N	Y	N
Other (please specify) Resilience Planning	Y	Y	

<sup>28</sup> In coastal A zones (none designated in OR), and V-zones only. Freeboard requirement removed from building code in 2017. BCDs intent was to give locals more flexibility to increase freeboard. Why freeboard remains in coastal A zones is not known, but likely an oversight.

### Significant Changes to Coastal Hazard Research, Mapping, and Education Programs or Initiatives

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
General hazards mapping or modeling	Y	Y	Y
Sea level rise mapping or modeling	Y	Y	Y
Hazards monitoring (e.g., erosion rate, shoreline change, high-water marks)	Y	Y	N
Hazards education and outreach	Y	Y	Y

2. Studies that have been done that illustrate the effectiveness of Oregon's management efforts in addressing coastal hazards since the last assessment:

In 2018, an assessment of the accomplishments and progress toward achieving the goals within The Oregon Resilience Plan was completed: <https://www.oregon.gov/gov/policy/orr/pages/index.aspx#>. In response to The Oregon Resilience Plan and the five-year assessment, the State of Oregon developed and published Resiliency 2025: Improving Our Readiness for the Cascadia Earthquake and Tsunami. The purpose of Resiliency 2025 is to build upon the success of the 2013 Oregon Resilience Plan and provides six key strategies for moving the state forward, the last of which will be to update the Oregon Resilience Plan in 2021 to reflect current best practices, community input, academic research, and a specific plan for the Oregon Coast.

The coastal zone is in need of updated beach and dune landform data. This is an essential piece of data to implement Statewide Planning Goals 17 and 18, which work to limited or prohibit development in certain hazardous or ecologically important areas. Having this data would help the coastal program assess the effectiveness of its management efforts in these areas.

#### *Identification of Priorities*

1. Top management priorities where there is the greatest opportunity for the OCMP to improve its ability to more effectively address the most significant hazard risks:

***Management Priority 1: Increase resilience to tsunami of at-risk coastal communities through the implementation of land use planning based management strategies and measures.***

#### *Description:*

Preparing for a local Cascadia subduction zone earthquake and tsunami is a primary priority for Oregon and especially the coast. Most of the coast was developed without knowledge of this hazard and so is extremely vulnerable to the impacts of a major earthquake and tsunami. The OCMP Tsunami Land Use Guide has provided an important base to work with communities to update their local ordinances and will continue to be a resource for additional communities. Additionally, there is need to assist communities in re-locating critical facilities out of the inundation zone, improve evacuation facilities, and integrate mitigation projects with climate adaption strategies. Given the

state's reversal of a prohibition on critical and essential facilities being built in the tsunami zone, this local land use work becomes even more important.

### **Management Priority 2: Climate Change Planning**

#### *Description:*

Risk from chronic hazards in ocean shore areas continues to be a significant issue in Oregon. These hazards (shoreline erosion, sea level rise, ocean flooding, etc.) are expected to be exacerbated by climate change. Traditional approaches to land use planning use historical information to identify and map hazardous areas to avoid, but this approach is not appropriate in an era of climate change where the expression of hazards along the coast is expected to deviate from historical trends, and affect areas already developed. New approaches to land use planning under conditions of climate change need to be brought forward for local government consideration and adoption. These might include, for example, new approaches to identifying and mapping future hazard zones, purchase or transfer of development rights, land swaps, revised design standards for critical service infrastructure, increased buffer zone requirements, etc.

### **Management Priority 3: Hazard Mitigation Advancement**

Many coastal communities have recently updated or are in the process of updating their FEMA Natural Hazard Mitigation Plans. These plans can take a significant amount of work to develop but are rarely put into practice. OCMP can work with coastal communities to identify land use related mitigation action items and strategies for integrating them into their land use programs and into applications for funding (if needed). This has been identified as a need and a gap by program stakeholders and fits well with Management Priorities 2 and 3 above.

2. Priority needs and information gaps the OCMP has for addressing the management priorities identified above:

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	How to implement a managed retreat program in Oregon. How to develop a mitigation or compensation program in Oregon to offset new shoreline armoring. Economic valuation of private oceanfront property vs. the public beach vs. protection of public infrastructure
Mapping/GIS/modeling	Y	Coast-wide coastal erosion data and SLR analysis. Exposure inventory for outer coast. Amount of oceanfront that is still developable and vacant. Inventory of critical infrastructure along the Oregon coast. Analysis of all littoral cells in regards to armoring, physical processes, and other hazards. Updated beach and dune landform data.
Data and information management	N	
Training/Capacity building	Y	Training in how to apply for and administer FEMA Hazard Mitigation Assistance Grants (especially in regards to the changes in this funding). Training in Benefit/Cost Analysis processes.
Decision-support tools	N	
Communication and outreach	Y	Capacity to assist local governments and state agencies in utilizing the outcomes of the above stated topics.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Other (specify)		

#### *Enhancement Area Strategy Development*

1. Will the CMP develop one or more strategies for this enhancement area?

**Yes**      X

**No**      \_\_\_\_\_

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

There is a great deal of momentum around coastal hazards in Oregon. There are many newly developed data products and tools, such as tsunami inundation maps, pedestrian evacuation modeling, improved landslide maps, updated natural hazard mitigation plans, and more. Most coastal communities would like to take advantage of these resources, however, most lack the capacity and knowledge to do so.

## Cumulative and Secondary Impacts

### *In-Depth Resource Characterization*

*Purpose: To determine key problems and opportunities to improve the CMP's ability to address cumulative and secondary impacts of coastal growth and development.*

1. Three most significant existing or emerging cumulative and secondary stressors or threats within the Oregon coastal zone:

	<b>Stressor/Threat</b>	<b>Coastal Resource(s)/Use(s) Most Threatened</b>	<b>Geographic Scope</b> (throughout coastal zone or specific areas most threatened)
Stressor 1	Climate Change	-Wetlands -Ocean Resources -Commercial & Recreational Fishing -Ecosystem Services -Local & State Economies -Public Health & Safety	Throughout coastal zone
Stressor 2	Development	-Coastal Recreation -Rocky Habitat Resources -Public Access -Ecosystem Services -Wetland & Estuarine Resources	Throughout coastal zone
Stressor 3	Point and Non-point Source Pollution	-Water Quality -Commercial & Recreational Fishing -Ecosystem Services -Estuarine & Coastal Resources -Public Health & Safety -Coastal Recreation	Throughout coastal zone

2. Justification for Stressor and Threats Rankings:

The table above outlines the most significant cumulative and secondary threats identified through stakeholder engagement via in-person workshops and online survey responses. Appendix E and F provide summaries of stakeholder engagement. Due to the broad nature of cumulative and secondary stressors, the OCMP recognizes that the table of specific threats above is not a comprehensive list of coastal issues that have secondary and cumulative effects. OCMP considers secondary and cumulative impacts in all aspects of Program tasks.

3. Emerging issues of concern and lack of sufficient information to evaluate level of potential threat:

Emerging Issue	Information Needed
Need more science	Data and modeling to demonstrate impacts
Climate Change	-Region specific data, including modeling outputs -Regional vulnerability analyses -Public information, and outreach
Sea Level Rise	-Region specific data, including modeling outputs -Impact data and modeling for the open coast (non-estuarine) -Community & ecological vulnerability analyses
Development	-Region specific data assessment -Modeling outputs for impacts over space and time

*In-Depth Management Characterization*

*Purpose: To determine the effectiveness of management efforts to address identified problems related to the cumulative and secondary impacts (CSI) enhancement objective.*

1. Management approaches and significant changes (positive or negative):

**Significant Changes to Management of Cumulative and Secondary Impacts of Development**

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Methodologies for determining CSI impacts	Y (Qualitative)	Y	N
CSI research, assessment, monitoring	Y	Y	N
CSI GIS mapping/database	Y	Y	N
CSI technical assistance, education and outreach	Y	Y	N

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.

- Describe significant changes since the last assessment;
  - Specify if they were 309 or other CZM-driven changes; and
  - Characterize the outcomes or likely future outcomes of the changes.
- n/a



3. Studies that have been done that illustrate the effectiveness of Oregon's management efforts in addressing cumulative and secondary impacts of development :

Due to the broad nature of secondary and cumulative impacts, nearly all work products developed by the OCMP work to address these threats. A non-exhaustive list of projects with this nexus are listed below-

**Territorial Sea Plan: Part 3 (Rocky Habitat Management Strategy) Update Process-** this ongoing update process has explicitly addressed cumulative and secondary impacts due to the nature of rocky habitat resources in Oregon. The organisms that use these rocky habitats are uniquely adapted to the harsh nearshore environment, yet most of the threats to these species come from the additive impacts of multiple stressors. The updated management strategy, and upcoming adaptive proposal process work to address these cumulative and secondary impacts.

**Climate Adaptation Strategy Update** – Impacts from climate change, as highlighted in question 1 of this section, poses a significant threat to the Oregon Coast, and the state as a whole. To modernize adaptation and mitigation associated with climate change, OCMP has been undergoing an update process for the states Climate Adaptation Strategy and creating pathways to holistically address these threats at the state and local level.

**Territorial Sea Plan Part Five** – The OCMP recently worked with the Ocean Policy Advisory Council to re-adopt Part Five of the Territorial Sea Plan, which focuses on marine renewable energy (MRE) siting in the territorial sea. This plan recognizes the potential cumulative and secondary impacts of un-managed development of MRE within state waters. After extensive stakeholder engagement and adaptive planning, Part Five has now been readopted with support from both the industry and the fishing community.

#### *Identification of Priorities*

1. Top management priorities where there is the greatest opportunity for the OCMP to improve its ability to more effectively address management efforts to better assess, consider, and control the most significant threats from cumulative and secondary impacts of coastal growth and development:

##### ***Management Priority 1: Climate Change Planning***

###### *Description:*

Risk from chronic hazards in ocean shore areas continues to be a significant issue in Oregon. These hazards (shoreline erosion, sea level rise, ocean flooding, etc.) are expected to be exacerbated by climate change. Traditional approaches to land use planning use historical information to identify and map hazardous areas to avoid, but this approach is not appropriate in an era of climate change where the expression of hazards along the coast is expected to deviate from historical trends, and affect areas already developed. New approaches to land use planning under conditions of climate change need to be brought forward for local government consideration and adoption. These might include, for example, new approaches to identifying and mapping future hazard zones, purchase or transfer of development rights, land swaps, revised design standards for critical service infrastructure, increased buffer zone requirements, etc.

### ***Management Priority 2: Develop Model Ordinances for Ecosystem Service Protection/Natural Infrastructure***

#### ***Description:***

The risks posed to ecosystem services are inherently dangerous for coastal communities that rely on these services for economic sustainability, and community culture. Often, these risks come from the many small impacts from development and use and are most recognizable as cumulative and secondary impacts. Appropriate planning to combat secondary and cumulative impacts to ecosystem services is necessary, and can be systematically improved with the development of protective local ordinances. Creation of a model ordinance offers a beneficial product for multiple jurisdictions to implement these protections, by leveraging previous work and reducing unnecessary costs and expertise to implement.

### ***Management Priority 3: Provide Technical Assistance, Education and Outreach to Local Jurisdictions on Cumulative and Secondary Impacts and how to Incorporate into the Planning Process***

#### ***Description:***

Outreach to local jurisdictions is an ongoing priority for the OCMP, and is expected to be incorporated into all aspects of management planning, and program projects. Due to the high turnover of staff at the local level, this continual outreach and education is critical to supporting the networked nature of the OMCP. Building these networks allows the OCMP to efficiently provide necessary technical assistance to local jurisdictions, which can leverage this assistance to combat limitations in funding or technical capacity. Cumulative and secondary impacts effect local communities significantly, with local jurisdictions on the front lines of combatting these issues. Creating these professional networks to share and leverage technical expertise and local ecological and community knowledge is the most proactive method to minimizing these detrimental impacts to the coast.

2. Explain priority needs and information gaps the OCMP has to help it address the management priorities identified above:

<b>Priority Needs</b>	<b>Need? (Y or N)</b>	<b>Brief Explanation of Need/Gap</b>
Research	Y	Modeling cumulative impacts, methods for measuring direct and indirect impacts
Mapping/GIS	Y	GIS modeling of impacts
Data and information management	N	
Training/Capacity building	Y	Build capacity and train local planners on how to effectively measure cumulative impacts into planning and permitting processes
Decision-support tools	Y	Scenario planning tools to assist with state and local land use decisions and regulatory processes
Communication and outreach	Y	Educate local jurisdictions on what cumulative and secondary impacts are, how they can be measured, and how they can be

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
		incorporated into planning, development and other decision-making processes

#### *Enhancement Area Strategy Development*

1. Will the CMP develop one or more strategies for this enhancement area?

**Yes**            X

**No**            \_\_\_\_\_

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

Due to the expansive nature of cumulative and secondary impacts, the OCMP prefers to incorporate strong considerations for these impacts in each management strategy. This will allow the Program to address the complex nature of secondary and cumulative impacts from a multi-directional methodology.

## Special Area Management Planning

### *In-Depth Resource Characterization*

*Purpose: To determine key problems and opportunities regarding the preparation and implementation of special area management plans for important coastal areas.*

1. Three most significant geographic areas facing existing or emerging challenges that would benefit from a new or revised special area management plan (SAMP) or better implementation of an existing SAMP:

	<b>Geographic Scope</b> (within an existing SAMP area (specify SAMP) or within new geographic area (describe new area))	<b>Challenges</b>
Geographic Area 1	Major estuaries currently subject to estuary management plans	Need for incorporation of updated resource inventory information. Need for better integration of EMPs with other regulatory programs (coordination). Need for outreach and education regarding SAMP policies.
Geographic Area 2	Coastal shoreland areas adjacent to major estuaries	Need for improved mapping of shoreland resources and jurisdictional boundaries. Need to update inventories of potential estuarine restoration and mitigation sites. Need to identify shoreland areas subject to resource impact from climate change/sea level rise. All challenges must be linked to Landward Migration Zones (LMZs) with the intent of jurisdictions planning for these areas in their comprehensive plans and land use regulations.

2. Justification for Geographic Area and Challenges Rankings:

As identified in the report ***Assessment of Oregon's Regulatory Framework for Managing Estuaries***, most of Oregon's major estuary management plans have seen little in the way of update or revision since originally developed more than thirty years ago. Despite the general success and durability of these plans, a number of current and anticipated developments indicate the need for modernization. In particular, current drivers for various conservation and restoration initiatives (e.g. Salmonid recovery) and the potential impacts from climate change are largely unanticipated by current plans. The application of digital mapping technology presents an opportunity to incorporate a more refined application of updated data sets to both planning and implementation decisions, thus improving the quality and certainty of management decisions.

- Emerging issues of concern and lack of sufficient information to evaluate level of potential threat:

Emerging Issue	Information Needed
Climate Change and Sea Level Rise	Data, models, and tools for scenario planning.
Understand physical and social coastal processes	Multi-stakeholder outreach methodology and broadcast capabilities

### *In-Depth Management Characterization*

*Purpose: To determine the effectiveness of management efforts to address identified problems related to the special area management planning enhancement objective.*

- Management approaches and significant changes (positive or negative):

#### **Significant Changes Related to Special Area Management Planning**

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
SAMP research, assessment, monitoring	Y	Y	N
SAMP GIS mapping/database	Y	Y	Y
SAMP technical assistance, education, and outreach	Y	Y	N
Other (please specify)			

- For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.

- Describe significant changes since the last assessment;
- Specify if they were 309 or other CZM-driven changes; and
- Characterize the outcomes or likely future outcomes of the changes.

See Wetlands section for information on CMECS mapping initiatives completed by OCMP-DLCD.

- Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's special area management planning efforts since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

n/a

### *Identification of Priorities*

1. Top management priorities where there is the greatest opportunity for the OCMP to improve their ability to prepare and implement special area management plans to effectively manage important coastal areas:

***Management Priority 1: Provide technical and financial support to local governments partners to update and improve the implementation of estuary management plans.***

*Description:* Despite the general success and durability of Oregon's estuary management plans, a number of current and anticipated developments indicate the need for modernization. In particular, current drivers for various conservation and restoration initiatives (e.g. salmonid recovery) are largely unanticipated by current plans. The application of digital mapping technology presents an opportunity to incorporate a more refined application of updated data sets to both planning and implementation decisions, thus improving the quality and certainty of management decisions.

***Management Priority 2: Provide technical and financial support to local governments partners to update inventories of potential estuarine wetland restoration sites.***

*Description:* While all of Oregon's remaining estuarine wetlands are subject to special area management plans (98% are in protected status), up to 70% of original tidal marsh has been lost to diking, fill and other alterations. There has been growing interest in and work related to tidal wetland restoration in Oregon, particularly as an element of salmon restoration efforts. While the original estuary management plans do include some identification of potential restoration and mitigation sites, these inventories are outdated and typically incomplete. The recently completed CMECS-based Habitat Atlas provides a foundational tool to conduct a more comprehensive inventory and assessment of estuarine restoration opportunities for integration into local plans. However, many local governments lack the resources and capacity to complete the work of updating these local plan inventories; the support of the OCMP to facilitate this work can be key to updating these inventories and thus improving this element of estuary and shoreland management.

***Management Priority 3: Provide Technical Assistance, Education and Outreach to Local Jurisdictions and State Agency Partners on Special Area Management Plans in the Coastal Zone.***

*Description:*

As the OCMP continues to update and expand special area management planning, expansive outreach and technical assistance will be a critical step in assuring plan implementation and appropriate use. While the planning processes used to update these strategies are important for incorporating best-available-science, if coastal stakeholders are not aware of the strategies, or the underlying importance of the management plans, then implementation will suffer. Local jurisdictions and agency partners are the point of contact between special area management strategies and the public, so creating methods and providing technical assistance that aids local jurisdictions in implementing these strategies is necessary for the success of management.

Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	<p>Further understanding of the estuarine subtidal habitats and their use by important species (from ecological, economic, and cultural perspectives).</p> <p>Understanding water quality conditions in estuaries from a nutrient loading perspective, as related to their susceptibility to impacts from ocean acidification and hypoxia.</p>
Mapping/GIS	Y	<p>There is a need to assist local government partners in finding, accessing and deploying GIS resources for local estuary and shoreland planning.</p> <p>The current CMECS-based habitat classification maps need to be adapted for direct application to local estuary and shoreland management planning.</p> <p>Estuarine bathymetry is a significant data gap for understanding extent and quality of subtidal habitats.</p> <p>Gap: Maps that can provide the extent, duration, and frequency of ocean acidification or hypoxia related water quality conditions.</p>
Data and information management	Y	<p>There is a need to provide updated digital data sets for wetland resources to local planning departments and state agencies with program responsibility for wetland regulation.</p> <p>There is a need to establish a plan for maintaining and updating estuarine and wetland resource information used in regulatory decisions. The state currently lacks such a plan/system.</p>
Training/Capacity building	Y	<p>Some local planning agencies lack sufficient capacity to undertake plan modernization efforts. Needed capacity includes enhanced expertise, both programmatic and technical, and additional staff resources (time).</p>
Decision-support tools	N	
Communication and outreach	Y	<p>Because most estuary plans have not been comprehensively updated for three decades or more, there is a need to re-engage key agency partners and stakeholders in estuary and shoreland management programs. The objective of this reengagement would be to increase the understanding of the role of the local plans among the various state and federal regulatory entities, and to strengthen coordination relationships between local, state, and federal partners.</p>
Other (specify)		

*Enhancement Area Strategy Development*

1. Will the CMP develop one or more strategies for this enhancement area?

**Yes**            X

**No**            \_\_\_\_\_

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

There is an identified need to provide technical support to affected communities to update and improve the implementation of locally adopted estuary management plans and corresponding shoreland plan elements. To address this need, the OCMP intends to develop a strategy focused on facilitating and supporting local efforts to modernize locally adopted SAMPs. One focus of this strategy will be on incorporating the CMECS resource inventory product into local plans to enhance the utility of the plans and improve decision making. Other work on system improvements as identified in program assessments will be focused on improving regulatory coordination for better implementation of local plans, updating out of date state plans, and providing improved outreach and training to local jurisdictions. Program enhancement areas included in the SAMPs strategy will include wetlands, special area management planning, public access, and cumulative and secondary impacts.

DRAFT



## Ocean and Great Lakes Resources

### *In-Depth Resource Characterization*

*Purpose: To determine key problems and opportunities to enhance the ability of state CMP to better address ocean and Great Lakes resources.*

1. What are the three most significant existing or emerging stressors or threats to ocean and Great Lakes resources within your coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout the coastal zone, or are specific areas most threatened? Stressors can be land-based development; offshore development (including pipelines, cables); offshore energy production; polluted runoff; invasive species; fishing (commercial and/or recreational); aquaculture; recreation; marine transportation; dredging; sand or mineral extraction; ocean acidification; or other (please specify). When selecting significant stressors, also consider how climate change may exacerbate each stressor.

	Stressor/Threat	Geographic Scope (throughout coastal zone or specific areas most threatened)
Stressor 1	Ocean Acidification, Hypoxia, Ocean Warming	Throughout the territorial sea
Stressor 2	Recreation and Tourism	Ocean Shore (intertidal zone and beach zone to the vegetation line)
Stressor 3	Cumulative impacts	Throughout the territorial sea and intertidal zone

2. Briefly explain why these are currently the most significant stressors or threats to ocean and Great Lakes resources within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

#### **Changing Ocean Conditions:**

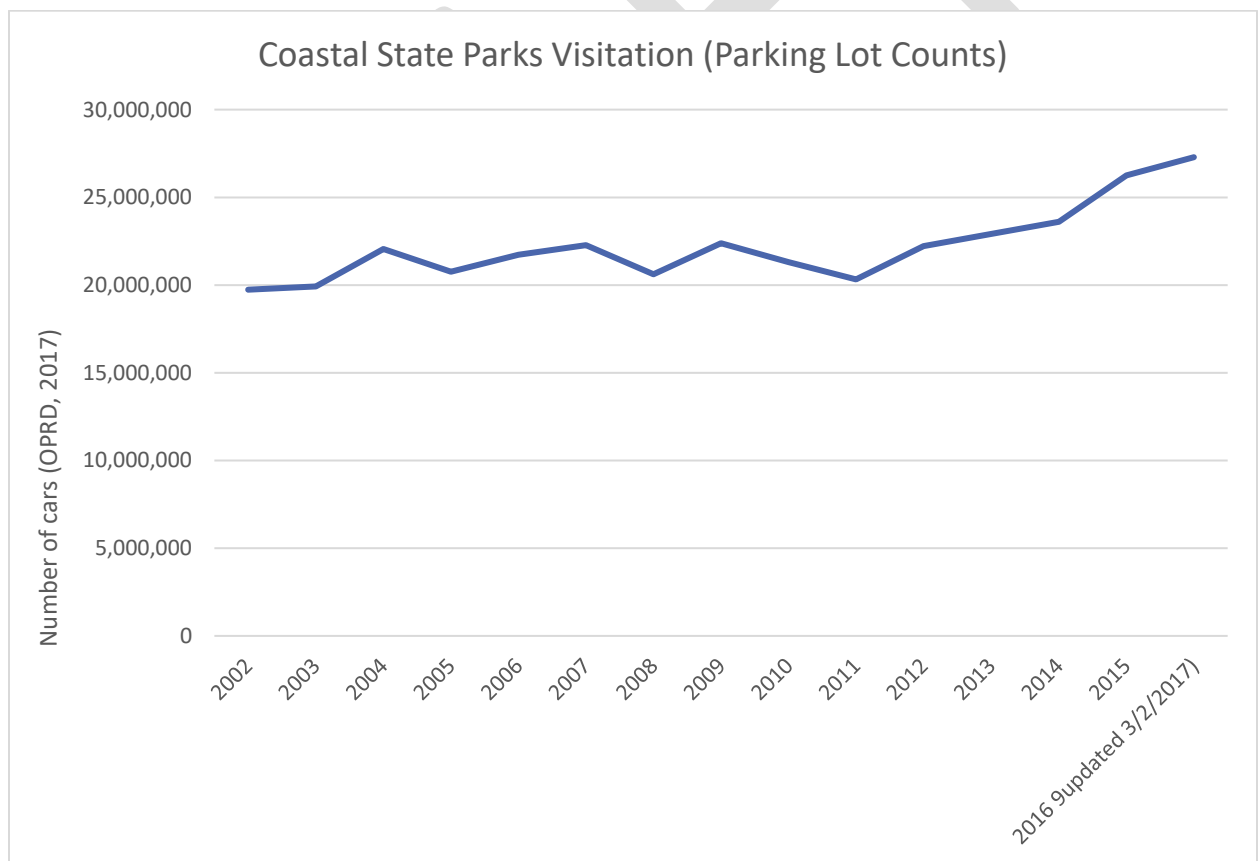
The threat of changing ocean conditions encompasses the stressors of ocean acidification, hypoxia, and marine heat waves that were brought up repeatedly during the stakeholder input sessions, and are issues which the CMP is seeking to improve our knowledge of, and to develop program policies, plans, and adaptation strategies around. Specifically, how management agencies will respond to the challenges brought about by climate change is something that was repeatedly identified by stakeholders as one of the most pressing management concerns. State agencies with management responsibility are just beginning to respond to the universe of concerns related to natural resource susceptibility of changing ocean conditions

Ocean acidification and hypoxia were identified by regional and state managers and researchers as one of the most concerning threats to our living marine resources. Regional activities conducted by the West Coast Ocean Acidification and Hypoxia Science Panel (<http://westcoasttoah.org/>) provided a set of key concepts and management recommendations to follow. The State of Oregon implemented one of those recommendations through legislative establishment of the Ocean Acidification and Hypoxia Coordination Council (Senate Bill 1039). One of the primary concerns about ocean acidification and hypoxia, which have been shown to have a coupled relationship, is

that they will impact the base of the food chain by making it increasingly difficult for a broad range of organisms to settle, develop, and reproduce, thereby limiting population growth and replenishment. A recent [2020 publication](#) demonstrated for the first time that ocean acidification impacts the growth and development of Dungeness crab, a significant ecologically and economically important species to the state. [Attached](#) is a letter to the Oregon Department of Environmental Quality regarding the release of the State Integrated Water Quality Report for the incorporation of ocean acidification and hypoxia into the report, providing links to the scientific publications supporting listing, and the data available for initial assessment:  
<https://www.oregon.gov/deq/wq/pages/2018-integrated-report.aspx>.

### Recreation and Tourism:

Increasing human presence and impacts from recreation and visitation were identified as threats to intertidal organisms because of the issues of trampling, overharvest, disturbance, and habitat loss or alteration. The Oregon Nearshore Strategy indicates that over the past five decades visitation to intertidal areas has increased. The Oregon Parks and Recreation Department (OPRD) conducts annual parking lot counts, which provide a benchmark from which to estimate approximate tidepool visitation rates, and the data demonstrates that millions of people visit Oregon's coast annually, as shown in the figure below.

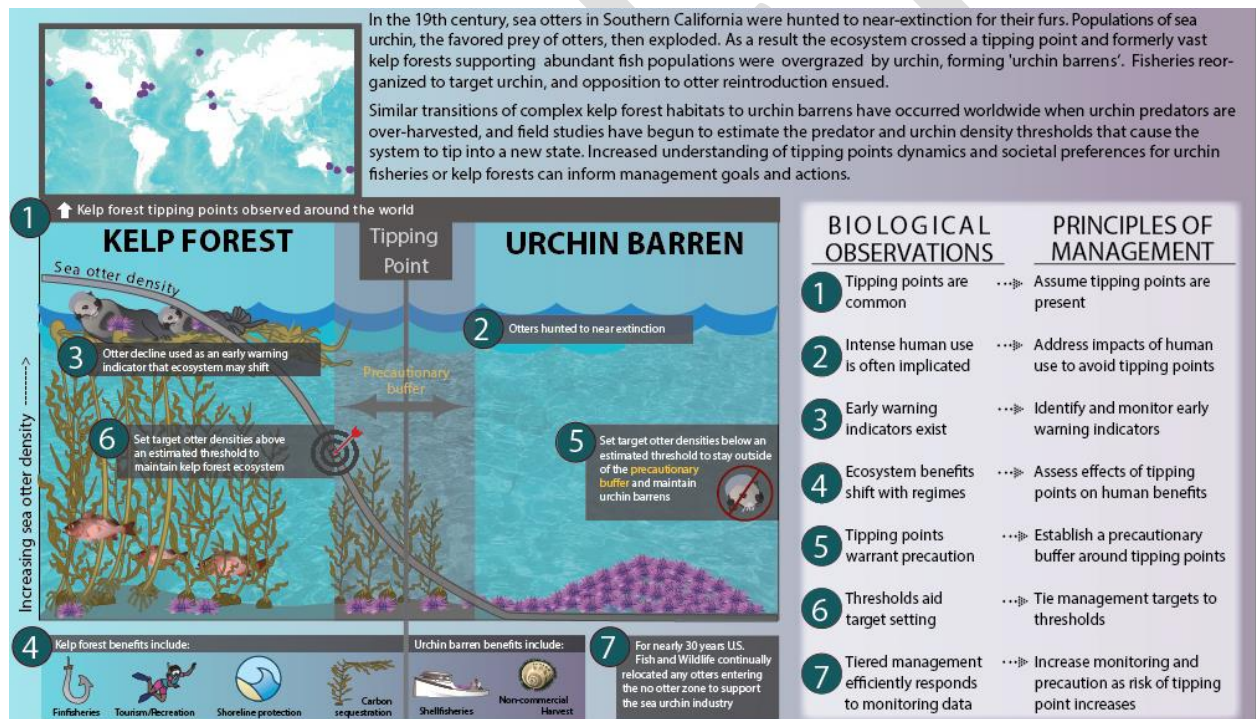


There is a clear trend for increasing visitation over time, which can add stress to the intertidal zone ecosystems through trampling and other recreational impacts. The OPRD, in their [Statewide Comprehensive Outdoor Recreation Plan](#) survey (2013-2017), found that tidepooling was the 4<sup>th</sup>

most common user activity, with approximately 4.7 million user occasions, representing ~ 40% of the total population participating in outdoor recreation within State Parks.

### Cumulative Impacts:

More so than any individual stressor, the impact together of a lot of individual stressors on species or habitats is a growing concern. Cumulative impacts to nearshore ecological systems in the marine environment is a growing area of concern, as many pressures on the ecosystems are increasing, including direct impacts (e.g. commercial harvest, trampling) and indirect impacts (e.g. ocean acidification, hypoxia, ocean warming, harmful algal blooms, trophic cascades). A concern mentioned in our stakeholder input is the ability of our resource management frameworks to respond to the challenges brought about by climate change, thereby potentially impacting ecosystem structure and health through cumulative impacts on species and habitats. Ocean tipping points are defined as a sudden, dramatic shift in the composition of an ecosystem resulting from the combination of individual stressors. A commonly studied example is the kelp forest transition to urchin barrens, which documents the impacts from: ocean warming, marine disease impacts (Sea star wasting disease), and top predator removal. The OCMP is worried about the potential for this ecosystem shift, given all of the existing services provided by kelp forests.



Ocean Tipping Points Example (<http://oceantippingpoints.org/portal/what-are-tipping-points>)

The cumulative impacts from individual stressors is concerning for the intertidal ecosystems of Oregon due to increasing human presence (and direct disturbance to habitats), while those systems are also being influenced by the water quality stressors of ocean acidification and hypoxia, marine debris (increasing concentrations of microplastics), and invasive species. The development of Oregon's [2019 Marine Debris Action Plan](#) highlights the need to understand the impacts of microplastics, and the changing concentrations of them over time. Aquatic invasive species (or

aquatic nuisance species) pose a threat to key sectors of Oregon's economy that depend upon natural resources and native ecosystems. Agriculture (shellfish growers), tourism (recreational fishing, clamming, tidepooling, wildlife watching), and water resource infrastructure (including hydropower facilities), are at serious risk of being adversely impacted by invasive species. This is a growing threat as climate change can impact water temperatures, species ranges, and ocean currents, potentially carrying new non-native species into Oregon's landscape. The Oregon Nearshore Strategy provides a list of non-native species known to occur in the nearshore waters, whether nearshore marine or estuarine, in [Appendix G](#). The cumulative stress of invasive species and changing ocean conditions is a significant concern for the protection of species and habitats within Oregon's marine ecosystems.

- Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Submerged Aquatic Vegetation Die-offs	Cause of decline, algal bed extent on annual basis, mapping diversity of marine vegetation, restoration techniques
Poor water quality (OAH, Harmful Algal Blooms)	Extent and duration, and effects on economically important species, additional stressors.
Marine heat waves	Event frequency, spatial extent, duration, species impacts
Marine aquaculture	Use conflicts, feasibility, areas of interest

#### *In-Depth Management Characterization*

*Purpose: To determine the effectiveness of management efforts to address identified problems related to the ocean and Great Lakes resources enhancement objective.*

- For each of the additional ocean and Great Lakes resources management categories below that were not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

#### **Significant Changes in Management of Ocean and Great Lakes Resources**

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Ocean and Great Lakes research, assessment, monitoring	Y	N	Y
Ocean and Great Lakes GIS mapping/database	Y	N	Y
Ocean and Great Lakes technical assistance, education, and outreach	Y	N	N

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.

Ocean resources research, assessment, and monitoring have had slow and steady improvement in the state during the last strategy period, driven by efforts in the establishment of coordination entities at the state (the Oregon Ocean Science Trust, the [Oregon Coastal and Ocean Information Network](#), and the [Coordinating Council on Ocean Acidification and Hypoxia](#)) and regional levels ([West Coast Ocean Alliance](#), [West Coast Ocean Data Portal](#), [Pacific Coast Collaborative](#), [Pacific Marine and Estuarine Fish Habitat Partnership](#)). Efforts to inventory the ocean acidification and hypoxia monitoring efforts have been the drivers of the work ([view the West Coast OAH Monitoring Inventory](#)) and those results were used by the OAH Council to make recommendations for future monitoring efforts. While the CMP was a partner in those efforts, it was not a 309 or other CZM-driven assessment. In addition to the OAH monitoring assessment, completion of a resource inventory focused on the assessment of nearshore intertidal areas was completed for the purpose of informing the amendment to the Rocky Habitat Management Strategy of the Territorial Sea Plan (this was a CZM-driven change). As the knowledge base grows and the state establishes a better understanding of the impacts of ocean acidification and hypoxia, it is likely that new water quality standards, criteria, and monitoring methods will be established (as referenced in the changing ocean conditions section above) leading to improvements in our mitigation and adaptation strategies.

Use of ocean GIS data and resource catalogs through the continuation of regional partnerships and state data networks during the last strategy period has also led to significant improvements in the state's capacity. A new marine spatial planning tool, [Oregon Seasketch](#), has been established to replace the tool formerly known as Oregon MarineMap (which was broken due to technology changes by Google), for use in the amendment process for the Territorial Sea Plan. The underlying GIS resource catalogs that contribute data to the Oregon SeaSketch tool (and others), are being continually developed as projects are completed and new information becomes available. These improvements to our data infrastructure (the Oregon Coastal Atlas, [Oregon Explorer](#)) within the state will benefit the regional efforts, like the West Coast Ocean Data Portal, as the web services can easily be provided to the regional catalog once they are published at the state level. The improvements in data within state catalogs and the coordination with regional entities will likely result in the increased efficiency in data discovery and delivery to the management communities that seek to understand the challenges and potential solutions to maintaining healthy ocean resources and communities.

3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts in planning for the use of ocean and Great Lakes resources since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

The [NOAA integrated ecosystems assessment report for the California Current](#) provides the best summary of the ecosystem changes and management responses for ocean resources (including the State of Oregon). The report however does not refer specifically to the effectiveness of management efforts in planning for the use of ocean resources, rather, it provides a summary of the



management responses to ecologically driven challenges. Significant management challenges identified by the report are provided below.

- The ecological effects of the marine heat wave of 2015-2016, including but not limited to:
  - 1) the razor clam fishery closures that resulted from harmful algal blooms increasing the concentration of domoic acid in tissue samples;
  - 2) delays in the Dungeness crab fishery openings;
  - 3) increased in whale entanglement in Dungeness crab fishing gear; and
  - 4) reproductive failures of marine seabirds.
- Hypoxia events covering large areas of the continental shelf in 2018, 2019.

One of the most significant information gaps in understanding the ecological impacts of OAH is the nutrient loading balance in the nearshore coastal ecosystems. This gap makes it extremely difficult to understand whether nutrient inputs from terrestrial or ocean-based human activities is exacerbating the stressors to the system through further reductions in oxygen levels. This information is important for understanding the potential effects of at-sea fish waste disposal and our management requirements for disposal practices.

#### *Identification of Priorities*

1. Considering changes in threats to ocean and Great Lakes resources and management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to effectively plan for the use of ocean and Great Lakes resources. (*Approximately 1-3 sentences per management priority.*)

***Management Priority 1: To understand and respond to the impacts of water quality changes to Oregon's rocky intertidal and subtidal habitats through amendments to the Territorial Sea Plan (TSP).***

*Description: The Oregon TSP coordinates ocean management within the state territorial sea and also guides management of the rocky shoreline areas in the intertidal zone. Part Three was amended in the last strategy period to allow for annual changes in site management based upon needs identified through state or local resources assessments. The management framework will allow study of the ecological and social responses to changes in water quality conditions and provides a pathway for adaptive management responses focused at a local level. Part Two of the TSP provides a framework for consideration of the ecosystem conditions in relation to any new proposed activity, and amending it could help to address new concerns associated with impacts of changing ocean water quality conditions. Additionally, the pilot system of marine reserves and protected areas established in the 2010-2012 time period will be evaluated during the upcoming strategy period and may be permanently established. Once established, those sites should be incorporated into the TSP as part of the Part Three chapter.*

***Management Priority 2: To establish a comprehensive set of indices and metrics related to ocean health. This will help the state's understanding of the cumulative impacts to nearshore ecosystems of stressors related to water quality conditions, human pressures, ecosystem shifts, and how the state can avoid, mitigate, and adapt to further stresses on our ocean resources.***

*Description: Establishing a coordinated framework for monitoring and responding to OAH effects, HAB's, and marine heat waves is one of the most significant management challenges the state will*

*face in the near future. Doing so in a strategic manner through the establishment of a set of ocean health indices will allow our management and ocean user community to come together and set standards and thresholds that will put into context the importance of monitoring and research on the stressors on ocean health.*

- Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Poor water quality conditions (OAH, marine heat waves, HAB's) and the effects on species life history stages, trophic cascades, and ecosystem tipping points. Understanding the nutrient loading budgets for ocean benthic habitats is a significant gap in evaluating the significance of inputs from terrestrial and marine activities.
Mapping/GIS	Y	The nearshore habitats are poorly mapped, and our understanding of the functional relationships between species is at a basic level. We need a habitat map baseline to evaluate future changes. Mapping the levels of human use would provide context for determining how stressors impact nearshore ecosystems. Need: improvements to our understanding of the extent, duration, and frequency of water quality stressors. Need: Extent and persistence of submerged aquatic vegetation on an annual basis.
Data and information management	Y	The CMP engages in marine data networking and cataloging at both the state and regional levels. This work must continue to be able to provide context for resource management decisions
Training/Capacity building	Y	Resource management agency staff could benefit from data catalog training and data publishing associated with the collection and analysis of information generated by management agencies, researchers, and the public.
Decision-support tools	Y	The CMP plans to continue to invest staff time and resources into the generation of data viewers and spatial analysis tools.
Communication and outreach	Y	Staff time and capacity for conducting public policy processes are necessary to successfully engage the ocean stakeholder communities during any TSP amendment process.
Other (specify)		

#### *Enhancement Area Strategy Development*

- Will the CMP develop one or more strategies for this enhancement area?

**Yes**      **X**

**No**      \_\_\_\_\_

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

As strategy for Ocean Resources will be developed in order to ensure the amendment of the Territorial Sea Plan for the management of rocky habitat resources will be successfully implemented. The state is working towards completion of the initial, multiple-year phased amendment process, scheduled to be completed in 2020. Following completion of the initial amendment process, the state may receive nominations on an annual basis for modifications to the site management rules and regulations associated with the different designations, and based on local community needs and observations. Those amendments will require consideration from the Ocean Policy Advisory Council, and a public process for review and comment. Additionally, when the pilot phase of marine reserves and protected areas comes to completion with an assessment of the program, those protected area sites may require incorporation into the TSP. Finally, as a part of the focus on nearshore habitats the state will need to move towards the implementation of a comprehensive framework for understanding ocean health, through a set of monitoring capabilities and a select set of indicators to evaluate as part of any new proposed ocean uses within the territorial sea.



## Public Access

### *In-Depth Resource Characterization:*

*Purpose: To determine key problems and opportunities to improve the CMP's ability to increase and enhance public access opportunities to coastal areas.*

1. What are the three most significant existing or emerging threats or stressors to creating or maintaining public access within your coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout the coastal zone or are specific areas most threatened? Stressors can be private development (including conversion of public facilities to private); non-water-dependent commercial or industrial uses of the waterfront; increased demand; erosion; sea level rise or Great Lakes level change; natural disasters; national security; encroachment on public land; or other (please specify). When selecting significant stressors, also consider how climate change may exacerbate each stressor.

	Stressor/Threat	Geographic Scope (throughout coastal zone or specific areas most threatened)
Stressor 1	Tourism	Ocean shorelines
Stressor 2	Ecosystem disturbance/degradation	Throughout the entire coastal zone
Stressor 3	Encroachment	Throughout the entire coastal zone

2. Briefly explain why these are currently the most significant stressors or threats to public access within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

Stakeholder input revealed a concern for the sustainability of current public access sites facing increased tourism. The Oregon Department of Parks and Recreation and Travel Oregon have recently enhanced their efforts to increase coastal tourism in Oregon by creating a new through trail (OCT) that covers the entire ocean coastline in Oregon.<sup>29</sup> The trail often intersects with public access sites, as they commonly offer necessary amenities such as camping, restrooms, showers, and drinking water. The OCT has already drawn in new tourist communities and tourism is expected to increase in the future. This may have a significant impact on public access by heavily increasing foot traffic and facility use, necessitating increased management effort, construction of additional facilities, or expansion of sites to accommodate increased use.

Stakeholders are concerned about disturbance and degradation of coastal ecosystems, particularly at or near public access sites with critical habitat or protected species. 315 public access sites exist along wetlands or estuarine shorelines, habitats that offer important ecosystem services and support rich biological communities.<sup>30</sup> Many public access sites also intersect with habitat used by

<sup>29</sup> [https://www.oregon.gov/oprd/PARKS/Pages/OCT\\_main.aspx](https://www.oregon.gov/oprd/PARKS/Pages/OCT_main.aspx)

<sup>30</sup> Mitsch, William J. 2015. "Ecosystem services of wetlands." *International Journal of Biodiversity Science, Ecosystem Services & Management* (11:1).

species that are federally protected by the U.S. Endangered Species Act: Western Snowy Plover, Stellar Sea Lion, Marbled Murrelet, and Northern Spotted Owl.<sup>31</sup> Public use and increased tourism may place additional pressure on these critical habitats and protected species.

There is also a growing concern that development, private interests, and coastal hazards will restrict public access or result in the loss of currently protected access sites. Between 2000 and 2010, 130 public access sites have been encroached upon or lost entirely<sup>32</sup>. We may reasonably expect to see a similar trend when the 2020 inventory is completed. Oregon residents have the expectation that any beach should be publicly accessible, due to Oregon’s unique “Beach Bill” that established public ownership of all coastal beaches.<sup>33</sup> Therefore, any form of encroachment on public beaches is perceived as a critical threat to Oregon’s identity and freedoms.

3. Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Climate Change	Vulnerability assessments
Accessibility for Disabilities	Comprehensive evaluation of current ADA compliance and assessment of accessibility gaps
Lack of education	Public Information, Education, and Outreach Materials for access sites

*In-Depth Management Characterization:*

*Purpose: To determine the effectiveness of management efforts to address identified problems related to the public access enhancement objective.*

For each additional public access management category below that was not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if significant changes (positive or negative) have occurred at the state or territory level since the last assessment.

<sup>31</sup> EPA Critical Habitat Dataset

<sup>32</sup> Oregon’s Public Access Inventory, 2000 and 2010

<sup>33</sup> Oregon Beach Bill, HB 1601, 54<sup>th</sup> Legislative Assembly (OR 1967)

### Significant Changes to Public Access Management

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Comprehensive access management planning	N	N	N
GIS mapping/database of access sites	Y	Y	Y
Public access technical assistance, education, and outreach (including access point and interpretive signage, etc.)	Y	N	N
Other (please specify)	N/A	N/A	N/A

- For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
  - Describe significant changes since the last assessment;
  - Specify if they were 309 or other CZM-driven changes; and
  - Characterize the outcomes or likely future outcomes of the changes.

The OCMP hired a NOAA Coastal Management Fellow in August 2019 to assist with the decadal public access inventory and improve the GIS user interface that shares site information. Though this project will be completed over 2 years, some significant changes have already occurred. This project was inspired by three main drivers: (1) the need to update the decadal inventory to fulfill section 309; (2) interest in enhancing coordination with networked agencies that collect or use public access information; (3) the desire to improve the public GIS platform to reflect the efforts and sophistication of the CMP. Final outcomes from this project will be a Data Stewardship Agreement that delineates a process for collecting and maintaining a comprehensive public access database, a website and mobile application for public use that shares locations and services available at public access sites, and an up-to-date access inventory.

- Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's management efforts in providing public access since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's management efforts?

There have been no studies that illustrate the effectiveness of state managed public access since the last assessment. By the time the fellowship concludes in August 2021, we expect to have a document that summarizes the state of public access in Oregon, trends and changes from the past decades, and recommendations for future management.

#### *Identification of Priorities:*

- Considering changes in public access and public access management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve the effectiveness of its management effort

to better respond to the most significant public access stressors. (*Approximately 1-3 sentences per management priority.*)

***Management Priority 1: Comprehensive planning for public access***

*Description:*

Provide local governments with updated public access inventories, confirm that their inventories are up to date in their comprehensive plans, and assess that their inventoried sites are being adequately protected. Engage with local government and communities to address balancing public access with environmental stewardship and management capacity. Plans should incorporate strategic access enhancements and 306A projects to increase the capacity of public access sites, accessibility improvements to support public access for all physical abilities, and support strategies for sites experiencing environmental pressure.

***Management Priority 2: Environmental stewardship***

*Description:*

Monitor environmental impacts on relevant public access sites, particularly those with potential for impacts on critical habitat and wildlife. Results from this monitoring may be considered during comprehensive planning assist with balancing public access and environmental stewardship.

***Management Priority 3: Education and Outreach***

*Description:*

Increase the availability of information for finding public access site locations and facilities, and integrate advisories on sustainable behavior for resources located at each access site.

2. Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Environmental stewardship assessment, ADA assessment and gap analysis
Mapping/GIS	Y	Institutionalize and standardize public access data collection for agencies participating in the Shoreline Public Access Work Group
Data and information management	N	
Training/Capacity building	N	
Decision-support tools	Y	Release and maintain tools for finding public access site locations and facilities [web, mobile, etc.]
Communication and outreach	Y	Release and maintain a publicly available web map and mobile application for finding public access site locations and facilities
Other (specify)		

#### Enhancement Area Strategy Development:

1. Will the CMP develop one or more strategies for this enhancement area?

Yes      X

No      \_\_\_\_\_

2. Briefly explain why a strategy will or will not be developed for this enhancement area.  
Strategic planning for public access has been identified as a critical need to address issues of tourism, environmental degradation, and encroachment. The public has also voiced concern about the availability of ADA-compliant access sites and a lack of public education and engagement. To address these needs and concerns, the OCMP will support local governments in comprehensive strategic planning for current and future public access needs. A Shoreline Access Guidance document will be developed as a revival of the Ocean Beach Access Plan, which became inactive in 2010. This guidance will include the 2020 Shoreline Access Inventory (to be completed by a NOAA Coastal Management Fellow), needs assessment, and guidelines for the collaborative development of regional access goals and management plans. Regional access goals and management plans will be incorporated into local plans to support strategic development and management of public access sites.

# Strategy

## Resilience Planning

### I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas (*check all that apply*):

- |   |  |
|---|--|
| <input type="checkbox"/> Aquaculture                                      | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input checked="" type="checkbox"/> Energy and Government Facility Siting | <input type="checkbox"/> Wetlands                                    |
| <input checked="" type="checkbox"/> Coastal Hazards                       | <input type="checkbox"/> Marine Debris                               |
| <input type="checkbox"/> Ocean/Great Lakes Resources                      | <input type="checkbox"/> Public Access                               |
| <input checked="" type="checkbox"/> Special Area Management Planning      |  |

### II. Strategy Description

#### A. The proposed strategy will lead to, or implement, the following types of program changes (*check all that apply*):

- ☐ A change to coastal zone boundaries;
- ☒ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- ☒ New or revised local coastal programs and implementing ordinances;
- ☐ New or revised coastal land acquisition, management, and restoration programs;
- ☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- ☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

#### B. **Strategy Goal:** State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project, with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis,

present proposed legislation on wetland buffers to state legislature for consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.

***Goal: Reduce risk due to hazards and climate change, enhance planning efforts, and increase capacity to local governments and networked agency partners.***

- C. Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

The strategy will focus on efforts to help reduce coastal community risk to hazards and climate change impacts with an emphasis on resilience planning and increasing capacity of local governments and networked state agency partners. This will be achieved by implementing the following projects:

1. Resilience Land Use Planning Guide (development and implementation)
2. Chronic and acute coastal hazard planning

The strategy is comprised of developing comprehensive resources in the form of a guidebook and providing technical and financial support to willing local government program partners to improve resilience to coastal erosion, tsunami, and climate change impacts through improved land use measures. This assistance will consist of GIS and mapping support, planning to support evacuation facility planning, interpretation and adaptation of map and modeling products for land use planning purposes, policy guidance on changing state statutes related to hazards and climate change planning, and writing support in the development and drafting of comprehensive plan and development code provisions. These efforts will provide the technical support needed for program changes in the form of adopted local comprehensive plan provisions and land use regulations

OCMP expects to work with five or more communities during the five-year period under this strategy. These communities will choose which focus they will take, which will in-turn achieve one or more of the following program changes for each community:

1. Updated Tsunami Hazard Overlay Zone Maps, Plans, and Ordinances.
2. Tsunami Evacuation Facilities Improvement Plans.
3. Updated Geologic Hazard Overlay Zone Maps and Ordinances (to address multiple hazards).
4. Updated comprehensive plans and related ordinances intended to increase resilience to climate change impacts.

Since ultimate adoption of these program changes is within the legislative purview of the OCMP's local government program partners, the OCMP cannot guarantee that these changes will be achieved within the five year assessment and strategy cycle. However, developing draft products suitable for adoption, working in collaboration with local partners, and providing technical support as described above will result in a high likelihood of eventually achieving these program changes.

Technical assistance will be offered to all coastal cities and counties. Which ones will move forward with proposed projects will depend on interest, capacity, and resources since program changes are not

mandatory for local governments and OCMP currently has limited financial resources to incentivize local jurisdictions. If OCMP is able to secure additional funding, additional communities will likely be able to participate in this strategy.

### **III. Needs and Gaps Addressed**

The major need in the enhancement area of coastal hazards management is for local implementation of improved land use measures, utilizing the best available data. This strategy is specifically designed to provide technical capacity and support to local governments in their efforts to incorporate updated maps and data, and develop improved management measures and land use regulations addressing coastal hazards. The primary focus will be on (but is not limited to) the high priority hazards of coastal erosion and tsunami inundation, where improved modeling has produced enhanced risk analysis and hazard area mapping suitable for incorporation into local land use plans.

### **IV. Benefits to Coastal Management**

The OCMP has in place and available a number of technical support resources for hazard planning, including model code provisions for (chronic) coastal hazards, tsunami land use guidance, tsunami evacuation facility planning guidance, newly updated Climate Adaptation Framework, and updated local natural hazard mitigation plans. This strategy will seek to integrate all available resources to establish on-the-ground implementation through local hazard management programs and comprehensive planning. This work will improve hazard management at the local development review level, and will ultimately result in safer, more resilient coastal communities. Successful efforts engaged in through this strategy will also provide a template and momentum for other coastal communities to improve and strengthen their hazard management programs.

### **V. Likelihood of Success**

There is a high likelihood of success for the program to achieve the desired program changes proposed as part of this strategy. The OCMP enjoys strong working relationships with coastal local governments and coastal hazards were identified as a high priority for OCMP to address through recent stakeholder feedback sessions. There are several resources and initiatives happening across the coast and the state that OCMP will leverage as part of this strategy, such as the DLCD Tsunami Land Use Guide, the recently updated Climate Adaptation Framework, local Natural Hazard Mitigation Plans, The Oregon Resilience Plan, model ordinances, and more. OCMP will capitalize on the current interest in resilience to chronic and catastrophic hazards, availability of many new data sets, the existing planning framework in place at the local level, the readiness of existing planning concepts through these resources, and the strong relationships with local governments to provide a high likelihood that the strategy will be successful.

### **VI. Strategy Work Plan**

**Strategy Goal:** Reduce risk due to hazards and climate change, enhance planning efforts, and increase capacity to local governments and networked agency partners.

**Total Years:** 5

**Total Budget:** \$300,000



**Year(s): 1**

**Description of activities:**

- Utilizing foundational work already developed through the Tsunami Land Use Guide, Landslide Land Use Guide, model hazard ordinances, and Sea Level Rise Code Guidance, Oregon will develop an outline for compiling a Resilience Land Use Planning Guide, which will include policy guidance for coastal local governments on how to integrate climate change in their land use plans, as well as updated model code language for coastal erosion, geologic, and tsunami hazards. The Guide will stitch together many stand-alone resources and build upon them to create a more comprehensive and coordinated set of resources for communities to address resilience.
- Develop a first draft of the Resilience Land Use Planning Guide.
- Solicit interest from local communities to engage in the development of enhanced local hazard plans and implementing regulations. Identify and work with two candidate communities to identify technical and financial needs, identify available capacity and resources, and develop work scopes to address identified needs and desired outcomes.
- Collaborate with other state agencies and academic partners to address outstanding research needs, such as a sea level rise exposure analysis of the outer Oregon coast. This will entail that research projects incorporate community and coastal management needs and address co-benefits to the extent possible, leading to future program changes.

**Major Milestone(s):** Completed outline and first draft for the Resilience Land Use Planning Guide and work scopes for enhanced natural hazard planning measures for up to two candidate communities. Inventory of existing data products to assist local natural hazard planning and major research gaps.

**Budget: \$60,000**

**Year(s): 2**

**Description of activities:**

- Finalize the Resilience Land Use Planning Guide, which will include policy guidance for local governments on how to integrate climate change in their land use plans, as well as updated model code language for coastal erosion and tsunami hazards. Engage local government stakeholders during revision and finalization process.
- Provide technical support to the two local government program partners selected in year 1 to initiate the development and implementation of improved land use measures to address climate change and the high priority hazards. This assistance will consist of GIS and mapping support, interpretation and adaptation of map and data products for land use planning purposes, assistance in the development and drafting of comprehensive plan and development code provisions, and technical assistance grants (if funding is available) to support local staff capacity for this work. (Funding availability is dependent on state and federal funding and success in outside funding competitions.) Funding for local government is not identified at this point, but can

come from various sources including Transportation and Growth Management Grants, General Fund Technical Assistance Grants and other grants.

- Continue to solicit interest from local communities to engage in the development of enhanced local hazard plans and implementing regulations, specifically to pilot the newly finalized Resilience Land Use Planning Guide. Identify and work with an additional 1-3 candidate communities to identify technical and financial needs, identify available capacity and resources, and develop work scopes to address identified needs and desired outcomes.

**Major Milestone(s):** Finalized Resilience Land Use Planning Guide. Completed hearing-ready draft comprehensive plan elements and land use regulations that address coastal hazards for selected communities. This work will be based on the guidance contained in the Draft Resilience Land Use Planning Guide, Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities, Preparing for Landslide Hazards: A Land Use Guide for Oregon Communities, and model ordinances for coastal hazards and sea level rise.

**Budget: \$60,000**

**Year(s): 3-5**

**Description of activities:**

- Continue to support the development of improved land use measures to address climate change and the high priority hazards for the selected communities initiated in year 2.
- Provide technical support to the one to three local government program partners selected in year 2 to initiate the development and implementation of improved land use measures to address climate change and the high priority hazards. This assistance will consist of GIS and mapping support, interpretation and adaptation of map and data products for land use planning purposes, assistance in the development and drafting of comprehensive plan and development code provisions, and technical assistance grants (if available) to support local staff capacity for this work.
- Provide assistance and support to communities proceeding through the plan amendment and adoption process for enhanced coastal hazards management plans and regulations.

**Major Milestone(s):** Completed hearing-ready draft comprehensive plan elements and land use regulations that address climate change and/or coastal hazards for five or more communities. This work will be based on the guidance contained in the Resilience Land Use Planning Guide, Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities, Preparing for Landslide Hazards: A Land Use Guide for Oregon Communities, and the updated OCMP model code for coastal hazards.

**Budget: \$180,000**

## **VII. Fiscal and Technical Needs**

### **A. Fiscal Needs:**

It is expected that 309 funding will not be sufficient to carry out all elements of the proposed strategy. Participating local governments will be expected to contribute resources to the efforts undertaken on their behalf, primarily in-kind resources in the form of staff time and volunteer time from appointed and elected officials. The strong partnership relationship OCMP enjoys with local communities on the coast has facilitated a number of successful projects of a similar nature, and it is anticipated that this approach will likewise be effective in carrying out this strategy.

Additionally, OCMP will be seeking funds from additional sources to assist with some of the proposed research needs and to provide financial support to local communities if possible.

### **B. Technical Needs:**

It is anticipated that the technical knowledge and skills needed to carry out this strategy can be provided by the OCMP. In the event that the need for additional technical resources (e.g. additional hazard mapping) is identified during the course of this strategy, OCMP will call upon its strong partnerships with the Oregon Department of Geology and Mineral Industries, NOAA/OCM, Oregon State University, or other appropriate network partners, for assistance.

## **VIII. Projects of Special Merit (Optional)**

If desired, briefly state what projects of special merit the CMP may wish to pursue to augment this strategy. (Any activities that are necessary to achieve the program change or that the state intends to support with baseline funding should be included in the strategy above.) The information in this section will not be used to evaluate or rank projects of special merit and is simply meant to give CMPs the option to provide additional information if they choose. Project descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not provide detailed project descriptions that would be needed for the funding competition.

Undertake updated beach and dune landform mapping coast wide to support implementation of statewide planning goals 18. The data that is generally used now is over forty years old.

## Estuary Management Planning

### I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas (*check all that apply*):

- |  |  |
|--|--|
| <input type="checkbox"/> Aquaculture                                 | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting       | <input checked="" type="checkbox"/> Wetlands                         |
| <input type="checkbox"/> Coastal Hazards                             | <input type="checkbox"/> Marine Debris                               |
| <input type="checkbox"/> Ocean/Great Lakes Resources                 | <input type="checkbox"/> Public Access                               |
| <input checked="" type="checkbox"/> Special Area Management Planning |  |

### II. Strategy Description

#### A. The proposed strategy will lead to, or implement, the following types of program changes (*check all that apply*):

- ☐ A change to coastal zone boundaries;
- ☐ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- ☒ New or revised local coastal programs and implementing ordinances;
- ☐ New or revised coastal land acquisition, management, and restoration programs;
- ☒ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- ☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

***Strategy Goal: Update state and local special area management plans, enhance planning efforts, and increase capacity to local governments and networked agency partners.***

#### B. Strategy Description and Approach for Program Changes

The strategy will focus on efforts to updating state and local special area management plans, enhance planning efforts, and increase capacity to local governments and networked agency partners. This will be achieved by implementing the following projects:

- Develop a report on prior efforts to conduct the EMP Update process and its challenges and implications
- Develop and distribute an EMP Update Guide

- Public Outreach & Scoping “Road Show” coast wide to discuss approaches to updating to EMPs at the local level
- Update Resource Inventories at the local level

The strategy is comprised of providing technical and financial support to willing local government program partners for the implementation of updated estuary management plans.

The OCMP will provide technical support to affected communities to update and better facilitate the implementation of locally adopted estuary management plans. This work will be based on the priority areas for plan improvement identified in the report “Assessment of Oregon’s Regulatory Framework for Managing Estuaries”. The primary focus will be on incorporating the CMECS resource inventory product into 1-2 local plans to enhance the utility of the plans and improve decision making. The adoption of these products will result in new resource inventories and updated local estuary management plans (maps, text, and policies). The ultimate goal will be to have all jurisdictions adopt the CEMCS resource inventory product, but this is not feasible within a five year time period with limited state and local resources. An improved understanding of the resource values within each of the management units will provide decision makers with the tools necessary to make sound planning decisions that will best enhance the use of each of the management units. It may also provide support for reviewing the management units and determining if the current zone is the most appropriate given potential changes in the quality and quantity of the resource.

These efforts will provide the technical support for program changes that will occur in the form of adopted local comprehensive plan provisions and land use regulations. Since ultimate adoption of these program changes is within the legislative purview of the OCMP’s local government program partners, the OCMP cannot guarantee that these changes will be achieved within the five year assessment and strategy cycle. However, completing the stated strategy goal of producing draft products suitable for adoption and working in collaboration with local partners will result in a high likelihood of eventually achieving these program changes. Identifying 1-2 local jurisdictions to actively engage through the EMP update process will further enhance likelihood of success.

### **III. Needs and Gaps Addressed**

As identified in the Phase II assessments for wetlands and special area management planning, the major need in these enhancement areas is for improved implementation of local estuary management plans using the best available information. This strategy is specifically designed to provide technical capacity and support to local governments in their efforts to incorporate updated resource inventory mapping into estuary plans., and to modernize management measures and decision making processes based on these improved resource inventories. The primary focus will be on incorporating the habitat inventory products generated through the Oregon Estuary and Shoreland Habitat Atlas project into local plans. An overall focus of this strategy is to provide a guide to help local jurisdictions move through the process of updating the EMPs understanding that each jurisdiction will have different concerns and challenges to address.

#### **IV. Benefits to Coastal Management**

Knowledge transfer will happen at all phases of work consistent with [Oregon Statewide Land Use Planning Goal 1: Citizen Involvement](#). In addition, multiple aspects of this project have been crafted to be highly transferable to other local, state, and federal initiatives. Some of these areas of transferability include:

- identifying best practices for multi-jurisdictional environment and hazards planning that incorporate human uses and climate change impacts and
- the development of deliverables that may be used to help inform other coastal programs' estuary management and planning in high use coastal areas to minimize impacts of development, climate, and hazards impacts

The OCMP has established a foundation to support local estuary plan improvements through several recently completed projects; in particular the Oregon Estuary and Shoreland and Habitat Atlas, the Assessment of Oregon's Regulatory Framework for Managing Estuaries, and the Assessment of Trends Affecting Planning for Oregon's Estuaries and Shorelands provide important resources for this effort. This strategy seeks to employ these resources in support of local efforts to modernize and update estuary management plans, which are key elements of Oregon's coastal resource management program. The incorporation into local plans of updated habitat classification mapping through the application of digital mapping technology will allow a more refined application of these important data sets to both planning and implementation decisions. The result will be improvement in the quality and certainty of management decisions for critical estuarine and related wetland resources.

#### **V. Likelihood of Success**

Despite the general success and durability of local estuary management plans, a number of current and anticipated developments indicate the need for modernization. Informed by history, it is now clear that many of the economic development assumptions and projections incorporated into the original plans need to be updated. Likewise, current drivers for various conservation and restoration initiatives (e.g. salmonid recovery) are largely unanticipated by current plans. And, growing local technology capacity will now allow for significantly more refined application of updated data sets to both planning and implementation decisions.

As a result of these factors, there is heightened awareness among local planning staff and officials of the benefits to be gained from the modernization of these plans. This awareness has manifested recently in the initiation of locally driven efforts to update the management plan for the Coquille River Estuary, and the work currently underway by the Partnership for Coastal Watersheds on the Coos Bay Estuary Inventory. OCMP believes that this strategy will be able to build upon this momentum, and that the timely delivery of technical assistance and capacity will facilitate the successful completion of these, and other, local plan modernization efforts.

#### **VI. Strategy Work Plan**

**Strategy Goal: Update state and local special area management plans, enhance planning efforts, and increase capacity to local governments and networked agency partners.**

**Total Years: 5**

**Total Budget: \$300,000**

**Year(s): 1****Description of activities:**

- Solicit interest from local communities to undertake estuary plan modernization efforts. In cases where estuary plans are multi-jurisdictional, OCMP will seek to identify interest from a lead jurisdiction as well as other participating communities. Work with candidate communities to identify technical and financial needs, identify available capacity and resources, and develop work scopes to address identified needs and desired outcomes.
- Develop a report on prior efforts to conduct the EMP Update process and its challenges and implications
- Public Outreach and Scoping “Road Show” coast wide to discuss approaches to updating to EMPs at the local level

**Major Milestone(s):**

- Completed work scopes for the update/modernization of selected estuary management plans.
- Establishment of a technical work group to evaluate integration of Estuary Management Plan implementation and State-Federal regulatory review of removal-fill process.

**Budget: \$60,000****Year(s): 2-3****Description of activities:**

- Provide technical and financial support to selected local governments for the modernization of estuary management plans. This assistance will consist of GIS and mapping support, interpretation and adaptation of CMECS habitat classification data products for estuary planning purposes, assistance in the development and drafting of estuary plan and implementing regulation provisions, and technical assistance grants to local governments (contingent on funding) to support local staff and/or contract work.
- Public Outreach and Scoping “Road Show” coast wide to discuss approaches to updating to EMPs at the local level

**Major Milestone(s):**

- Development and implementation of a public outreach strategy (EMP Road Show to include Outreach and Engagement Plan, Updated Estuary Planning Website, Presentation and Resource Repository)
- Adoption-ready language for ordinance and/or comprehensive plan amendments
- Evaluation of the process by the technical work
- Completion of report summarizing results from the needs assessment
- Presentation to LCDC of findings and recommendations from the inventory and needs assessment

**Budget: \$120,000****Year(s): 4-5****Description of activities:**

- Provide technical and financial support to selected local governments for the modernization of estuary management plans. This assistance will consist of GIS and mapping support, interpretation and adaptation of CMECS habitat classification data products for estuary planning purposes, assistance in the development and drafting of estuary plan and implementing regulation provisions, and technical

assistance grants to local governments (contingent on funding) to support local staff and/or contract work.

- Public Outreach and Scoping “Road Show” coast wide to discuss approaches to updating to EMPs at the local level

**Major Milestone(s):**

- Adoption of EMP mapping updates
- Adoption of comprehensive plan and/or ordinance amendments
- Evaluation of process and further refine the EMP update guide

**Budget: \$120,000**

**VII. Fiscal and Technical Needs**

**A. Fiscal Needs:**

Section 309 funding will not be sufficient to carry out all elements of the proposed strategy. Although the OCMP anticipates providing both technical and financial assistance to participating local governments, these local jurisdictions and other agency partners will contribute additional resources to efforts undertaken in collaboration, primarily in-kind resources in the form of staff time and volunteer time from appointed and elected officials. The strong partnership relationship OCMP enjoys with local communities on the coast has facilitated a number of successful projects of a similar nature, and it is anticipated that this approach will likewise be effective in carrying out this strategy.

**B. Technical Needs:**

It is expected that the technical knowledge and skills needed to carry out this strategy can be provided by the OCMP and participating agencies and local partners.

**VIII. Projects of Special Merit (Optional)**

If desired, briefly state what projects of special merit the CMP may wish to pursue to augment this strategy. (Any activities that are necessary to achieve the program change or that the state intends to support with baseline funding should be included in the strategy above.) The information in this section will not be used to evaluate or rank projects of special merit and is simply meant to give CMPs the option to provide additional information if they choose. Project descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not provide detailed project descriptions that would be needed for the funding competition.



## Ocean Resources Planning

### I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas (*check all that apply*):

- |  |  |
|--|--|
| <input type="checkbox"/> Aquaculture                                 | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting       | <input type="checkbox"/> Wetlands                                    |
| <input type="checkbox"/> Coastal Hazards                             | <input type="checkbox"/> Marine Debris                               |
| <input checked="" type="checkbox"/> Ocean/Great Lakes Resources      | <input type="checkbox"/> Public Access                               |
| <input checked="" type="checkbox"/> Special Area Management Planning |  |

### II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes (*check all that apply*):

- ☐ A change to coastal zone boundaries;
- ☒ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- ☐ New or revised local coastal programs and implementing ordinances;
- ☒ New or revised coastal land acquisition, management, and restoration programs;
- ☒ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- ☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

**B. Strategy Goal: To improve the management framework for evaluating ocean health indicators as part of implementing the Rocky Habitat Management Strategy while working to improve the knowledge base around cumulative impacts to nearshore marine ecosystems and species. This will involve amendment of the Territorial Sea Plan to incorporate changes to the resources inventory and effects evaluation framework (Part Two), and in rocky habitat management designations, incorporation of the marine reserves and protected areas, and creation of an ocean health index (Separate from the TSP) for understanding changing ocean conditions and the impacts to water quality.**

### **C. Strategy Description and Approach for Program Changes**

The Ocean Resources Planning Strategy will be focused on implementing the amended Territorial Sea Plan (TSP) Rocky Habitat Management Strategy (Part Three), and amending the TSP generally to include a more focused ecosystem evaluation framework for all proposed activities through the revision of Part Two. As an approved part of Oregon's Coastal Management Program, the Territorial Sea Plan is officially adopted by the State of Oregon, Land Conservation and Development Commission, and serves to provide management recommendations on the appropriate uses and actions within the rocky intertidal areas of Oregon's coast. The completion of the Part Three amendment process is expected in 2021, following a nomination process for the designation, alteration, or removal of site specific management strategies on areas of Oregon's rocky shore. The strategy will focus on implementation of the recommended changes to the site management from the initial phase of work, along with the potential for consideration of newly proposed site designations throughout the 2021-2025 time period. Implementation of the new recommendations will involve support for the development of site management plans (to include monitoring and assessment of the resources and uses), support for rulemaking amendments by the regulating agencies (ODFW, OPRD, DSL). Changes to Part Three that occur as a result of new designations would require approval by the Ocean Policy Advisory Council and the Land Conservation and Development Commission, and satisfy the program change requirements as specified under the 309 guidance. Additionally, revisions of Part Two of the TSP will be considered based upon the need to incorporate an understanding of the stressors on ocean health into the resources inventory and assessment framework provided in Part Two. Finally, upon completion of the evaluation process of the pilot marine reserves and protected areas designations, it may be necessary to incorporate those areas into the Part Three framework, requiring further amendment of Part Three in the later years of the Strategy (2023-2025).

### **III. Needs and Gaps Addressed**

This strategy is designed to address the cumulative stressors on kelp and submerged aquatic vegetation as well as the recreational and tourism stressors to the nearshore and intertidal environment. The rocky habitat management strategy designated areas provide an important set of managed areas that can be used to focus attention and observations related to measuring the health of Oregon's nearshore ecosystems, while also providing areas to focus outreach and education efforts and areas to conserve marine resources. During the initial implementation phase of work the program will focus efforts on a needs assessment for managing the designated sites, outreach and community engagement opportunities, and the identification of resources to support the monitoring and evaluation of site performance.

Additionally, the TSP Part Two framework has a noticeable lack of enforceable policies associated with evaluations of ocean health related to the stressors of ocean acidification and hypoxia, harmful algal blooms, and other ecosystem stressors on important marine habitats like submerged aquatic vegetation. Amendment of Part Two for the incorporation of an ecosystem evaluation framework would provide the state a new mechanism for consideration of the impacts of any proposed development activities not already considered by existing chapters of the TSP.

#### **IV. Benefits to Coastal Management**

The nearshore ecosystems of Oregon are one of the first in the world to show impacts from ocean acidification and hypoxia and the successful implementation of the strategy will help the state and region to understand the implications of those impacts, and provide an opportunity to identify potential strategies for increasing resilience in those systems. At a basic level, maintenance of the state's established coordination framework (the TSP) for the protection of ocean resources must be conducted so that the strategy is relevant into the future. Successfully implementing it will require flexible and creative mechanisms for securing resources to monitor and assess the impacts of changing ocean conditions, and in establishing a community of stewards to help in those activities.

#### **V. Likelihood of Success**

There is a high likelihood of success for the program to achieve the desired program changes proposed as part of this strategy. In part, the OMCP will leverage the time and resources allocated during the last strategy period, but it will also likely benefit from the resources being allocated through broader statewide efforts (e.g. OAH Action Plan supported projects). Climate change adaptation efforts of the state of Oregon have identified ocean related challenges and opportunities. Work on the Rocky Habitat Management Strategy fits into near-term actions that will support local community resilience, and potentially generating a source of resources to support implementation.

#### **VI. Strategy Work Plan**

Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. For example, even if the final adoption of the program change is outside of the CMP's control, what steps will be included in the work plan so the CMP ensures the program change is considered, reviewed, and hopefully adopted by the outside entity? Who are the other stakeholders or elected officials that need to be engaged, and how and when during the strategy development process? What is the decision-making or voting process that is involved in the adoption of the program change, and how will the CMP interact with this process to ensure that the proposed program change is considered? If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions) and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCM recognizes that they may change somewhat over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

**Strategy Goal: Implement and amend the TSP to accomplish the following: implementation of Part Three Rocky Habitat Management Strategy Designations; incorporate an ecosystem evaluation framework into Part Two for the consideration of ocean health stressors; amend Part Three for site**

**additions, alterations, or deletions that come up through the public nomination process institutionalized at the Ocean Policy Advisory Council; and amend Part Three to incorporate marine reserves and protected areas (if permanently established).**

**Total Years:** 2021-2025

**Total Budget:** \$300,000

**Year(s): 1**

**Description of activities:** Assist partner agencies in rulemaking to establish, modify, or remove TSP Rocky Habitat Management Sites in accordance with the amendment of Part Three. Implement the communications strategy generated as a result of the previous strategy's Part Three amendment process.

**Major Milestone(s):** Site alterations, additions, or deletions will be implemented in administrative rule by the managing agencies.

**Budget:** \$60,000

**Year(s): 2**

**Description of activities:** Establish with local communities and management agencies site management and evaluation plans. Work with local governments and agency staff to assist in the implementation of the site management plans. The OCMP will review Part Two for consideration of new amendments that will improve the ecosystem evaluation framework provided through the resource inventory and effects evaluation chapter.

**Major Milestone(s):** Generation of site management plans for newly proposed and long-established designated areas.

**Budget:** \$60,000

**Year(s): 3**

**Description of activities:** Consideration of amendments for Part Two of the TSP will be brought to the public policy making bodies (OPAC and LCDRC) for consideration. Assist OCMP partner agencies (OPRD, ODFW) in the public process for evaluating the marine reserves and protected areas program implementation. Amend Part Three for site additions, alterations, or deletions that come up through the public nomination process institutionalized at the Ocean Policy Advisory Council.

**Major Milestone(s):** Outreach materials provided on the marine reserves program evaluation and hosted on the appropriate websites. Meetings of the Ocean Policy Advisory Council conducted to coordinate stakeholder input on the evaluation process. TSP Part Three amendment initiated through a rulemaking process of the Land Conservation and Development Commission.

**Budget:** \$60,000

**Year(s): 4-5**

**Description of activities:** Continue the process for amending Part Two of the TSP with the public policy making bodies (if needed). Amend TSP Part Three for incorporation of the marine reserves and protected areas (if continued to be implemented by the state following the program evaluation). Amend Part Three for rocky habitat site additions, alterations, or deletions that come up through the public nomination process institutionalized at the Ocean Policy Advisory Council.

**Major Milestone(s):** TSP Part Three fully incorporates the marine reserves and protected areas. Additional sites are designated through the community proposal process established in the 2016-2020 Strategy amendment.

**Budget:** 120,000

## **VII. Fiscal and Technical Needs**

### **A. Fiscal Needs:**

Due to the uncertainty associated with the implementation of the new TSP rocky habitat public proposal process (how many nominations for new managed areas are submitted in upcoming years), it's hard to say if the 309 funding will be sufficient to carry out the strategy. No additional efforts have been made by the CMP to secure funding at this time.

### **B. Technical Needs:**

The CMP should be able to meet the technical needs described in this strategy.

## **VIII. Projects of Special Merit (Optional)**

In the first year of the strategy a PSM proposal will be developed that would coordinate and assist with the in-depth baseline characterizations (biophysical and human uses) of sites being newly implemented the Amended Part Three, the Rocky Habitat Management Strategy and provide content for use in the communication strategy developed as part of the amendment process. In years 4 or 5 of the strategy, another PSM will be developed that would coordinate the development of a marine habitat and ecosystem focused documentary on the marine reserves and protected areas in Oregon. The materials developed would support the goal of incorporating marine reserves and protected areas into the Rocky Habitat Management Strategy, Part Three of the TSP.

## Public Access Planning

### IX. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas (*check all that apply*):

- |  |  |
|--|--|
| <input type="checkbox"/> Aquaculture                                 | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting       | <input type="checkbox"/> Wetlands                                    |
| <input type="checkbox"/> Coastal Hazards                             | <input type="checkbox"/> Marine Debris                               |
| <input type="checkbox"/> Ocean/Great Lakes Resources                 | <input checked="" type="checkbox"/> Public Access                    |
| <input checked="" type="checkbox"/> Special Area Management Planning |  |

### X. Strategy Description

D. The proposed strategy will lead to, or implement, the following types of program changes (*check all that apply*):

- ☐ A change to coastal zone boundaries;
- ☐ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- ☒ New or revised local coastal programs and implementing ordinances;
- ☐ New or revised coastal land acquisition, management, and restoration programs;
- ☒ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- ☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

***Strategy Goal: Update state and local special area management plans, enhance planning efforts, and increase capacity to local governments and networked agency partners.***

#### E. Strategy Description and Approach for Program Changes

The strategy will focus on efforts to updating state and local special area management plans, enhance planning efforts, and increase capacity to local governments and networked agency partners. This will be achieved by implementing the following projects:

- Update the Ocean Access Plan, including inventory, needs assessment, and regional goals
- Provide an updated inventory to assist updates to local access inventories

The OCMP will update the Ocean Beach Access Plan and support local planning for public access. This effort will build upon Oregon’s previous “Ocean Beach Access Plan”, which has been inactive since 2010, and the upcoming Shoreline Public Access Inventory update, which is currently being updated by a NOAA Coastal Management Fellow. The new document, renamed as the Shoreline Access Planning Guidance, will begin with the 2020 Shoreline Public Access Inventory, assess access needs, and offer guidelines for local government partners to develop relevant regional access goals. The needs assessment will help local governments identify critical gaps in their access, such as a lack of ADA accessibility, suitable facilities, or enforced protection of public access. By understanding the areas in which they can improve, local government partners will be better equipped to plan and manage effectively. Guidelines for the collaborative development of regional access goals and management plans will support this planning process, and outcomes will be incorporated into local plans to support strategic development and management of public access sites.

These efforts will provide the technical support for program changes that will occur in the form of adopted local comprehensive plan provisions and land use regulations. Since ultimate adoption of these program changes is within the legislative purview of the OCMP’s local government program partners, the OCMP cannot guarantee that these changes will be achieved within the five year assessment and strategy cycle. However, completing the stated strategy goal of producing draft products suitable for adoption and working in collaboration with local partners will result in a high likelihood of eventually achieving these program changes.

#### **XI. Needs and Gaps Addressed**

Stakeholder surveys, workshops, and public comments identified critical needs for future public access planning: ADA accessibility, suitable facilities, enforced protection of public access, and coordination and collaboration. The 2020 Shoreline Access Planning Guidance specifically addresses each of these needs with a thorough needs assessment and management recommendations. This will provide local governments with a current assessment of their own public access, and allow them to compare across jurisdictions. Management recommendations will support the consideration of identified needs in future planning decisions regarding public access to shorelines.

#### **XII. Benefits to Coastal Management**

Knowledge transfer will happen at all phases of work consistent with [Oregon Statewide Land Use Planning Goal 1: Citizen Involvement](#). In addition, multiple aspects of this project have been crafted to be highly transferable to other local, state, and federal initiatives.

The OCMP’s guiding legislation, the Coastal Zone Management Act of 1972, delineates 11 objectives including the provision of “public access to the coasts for recreation purposes.”<sup>34</sup> The extent of this provision is not narrowly specified but explained as serving “current and future needs”. Therefore, quality and quantity of public access sites is largely dependent on each state’s unique legislative framework and relationship to public access. Oregon is one of just a few states with explicit statutory protections (i.e. the Beach Bill) guaranteeing free and uninterrupted public use of all ocean beaches. Coastal access is also protected through local comprehensive planning. Senate Bill 100 passed in 1973

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<sup>34</sup> Coastal Zone Management Act, 1972

and mandated that all local comprehensive plans comply with 19 statewide planning goals. Three of these goals are relevant to shoreline public access: Goal 8 – Recreational Needs, Goal 17 – Coastal Shorelands, and Goal 18 – Beaches and Dunes. Goal 17 covers Coastal Shorelands and, among other things, requires that cities and counties in coordination with OPRD, have plans to provide public access to the beach.

Stakeholder engagement and interagency discourse suggest that the OCMP may better serve these goals by increasing their focus on public access. This strategy serves to fill that need by increasing coordination with agency and local partners, explicitly assessing salient access needs, and providing informed recommendations. In doing so, the OCMP can more effectively fulfill their public access goals as identified in our federal and state mandates.

### **XIII. Likelihood of Success**

Increased staff capacity, inter-agency collaboration, and concurrent public access projects (i.e. the development of the Oregon Coast Trail) create an environment that is highly supportive of improvements to shoreline public access management. The recent addition of a NOAA Coastal Management Fellow to work specifically on public access to Oregon’s Shorelines secures the time and focus needed to complete this strategy. The fellow also has the support of multiple agencies that also interact with shoreline access – the Oregon Parks and Recreation Department, Department of Environmental Quality, and the Oregon State Marine Board.

### **XIV. Strategy Work Plan**

**Strategy Goal: Complete the 2020 Shoreline Access Inventory and use the results to inform local comprehensive plan updates, outreach & education materials, and Shoreline Access Planning Guidance for local jurisdictions.**

**Total Years: 5**

**Total Budget: \$75,000**

**Year(s): 1**

**Description of activities:**

- Document and communicate the updated Shoreline Access inventory to stakeholders and local jurisdictions to help inform planning efforts at the local level
- Coordinate a working group of agencies involved in collecting or using public access data, to establish best practices and processes for collecting and maintaining data

**Major Milestone(s):**

- Completion of 2020 Inventory, agency interface, and public tool.
- Agreement on data standards and long-term stewardship for the Shoreline Public Access dataset

**Budget: \$15,000**

**Year(s): 2-3**



**Description of activities:**

- Use the updated Shoreline Access Inventory to conduct a needs assessment that considers quality and quantity of access, with particular focus on ADA compliance, supply/demand ratios, and encroachment.
- Use the outcomes of the updated Inventory and assessment to pursue resources to develop a Shoreline Access Planning Guidance including regional access goals.

**Major Milestone(s):**

- Creation of education materials to support stewardship of public access data by partner agency contributors.
- Completion of Shoreline Access Planning Guidance

**Budget: \$30,000**

**Year(s): 4-5**

**Description of activities:**

- Incorporate learning outcomes from the updated Inventory and Shoreline Access Planning Guidance into state agency partner communications and online materials to assure wider use of the most up-to-date information for public use and local planning.

**Major Milestone(s):**

- Agency trainings updated to incorporate access tools and Shoreline Access Planning Guidance recommendations

**Budget: \$30,000**

**XV. Fiscal and Technical Needs****A. Fiscal Needs:**

Section 309 funding will not be sufficient to carry out all elements of the proposed strategy. Although the OCMP anticipates providing both technical and financial assistance to participating local governments, these local jurisdictions and other agency partners will contribute additional resources to efforts undertaken in collaboration, primarily in-kind resources in the form of staff time and volunteer time from appointed and elected officials. The strong partnership relationship OCMP enjoys with local communities on the coast has facilitated a number of successful projects of a similar nature, and it is anticipated that this approach will likewise be effective in carrying out this strategy.

**B. Technical Needs:**

It is expected that the technical knowledge and skills needed to carry out this strategy can be provided by the OCMP and participating agencies and local partners.

**XVI. Projects of Special Merit (Optional)**

- Oregon Parks and Recreation Department (OPRD) maintains an Ocean Shore Access Plan, which serves as a complementary document to the Shoreline Access Planning Guidance. The Ocean Shore Access Plan will expire in 2025, and OPRD has not yet started planning for creation of a new document. OCMP may submit a PSM proposal to support OPRD's development of this document. This partnership would build upon the public access planning efforts identified in this 309 assessment. Additionally, this project would strengthen the coastal public access network and establish feedback loops for management decisions.

- OCMP is interested in further developing the connection between public access and coastal hazards, with a specific focus on utilizing the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance program<sup>i</sup> to acquire new access sites. A PSM project would work directly with the Climate Change Specialist and Coastal Shores Specialist to identify and acquire sites that are eligible for a FEMA buyout. This project is highly aligned with state priorities on climate change and hazards resilience, and takes advantage of a federal assistance program.

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### Five Year Budget Summary by Strategy

At the end of the strategy section, please include the following budget table summarizing your anticipated Section 309 expenses by strategy for each year. Generally, CMPs should only develop strategies for activities that the state intends to fund and work on given their anticipated level of Section 309 funding. However, in some circumstances, CMPs may wish to use the assessment and strategy development process as a broader strategic planning effort for the CMP. In that case, the CMP may elect to include additional strategies that exceed the state's anticipated Section 309 funding over the five-year period. If the CMP chooses this approach, it should still clearly indicate which strategies it anticipates supporting with Section 309 funding and which strategies it anticipates supporting through other funding sources.

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
<b><i>Resilience Planning</i></b>	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$300,000
<b><i>Estuary Management Planning</i></b>	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$300,000
<b><i>Ocean Resources Planning</i></b>	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$300,000
<b><i>Public Access Planning</i></b>	15,000	15,000	15,000	15,000	15,000	\$75,000
<b>Total Funding</b>	\$195,000	\$195,000	\$195,000	\$195,000	\$195,000	\$975,000

## Summary of Stakeholder Engagement and Public Comment

### Overview

The OCMP made stakeholder engagement an integral part of the 2021-2025 Assessment and Strategy Process. Stakeholder engagement included a variety of mechanisms for the public and stakeholders to participate in the development of the OCMP 2021-2025 Assessment and Strategy. These efforts included a working session with coastal land use planners at the annual Coastal Planners Network Meeting, a stakeholder engagement workshop in Bandon, a stakeholder engagement workshop in Lincoln City, an online survey, and the opening of public comment on the draft document. Below is a brief summary of each effort, followed by a summary of the results as they were consolidated and analyzed.

### Coastal Planners Network Meeting

*Identified Enhancement Area Priorities: Coastal Hazards, Wetlands, Cumulative and Secondary Impacts, and Special Area Management Planning*

A working session was facilitated at the annual Coastal Planners Network Meeting to get feedback from coastal land use planners. The session began with an introduction to the 309 Assessment and Strategy process, its importance, and examples of how DLCD has added management priorities and program enhancements in the past. The majority of the session was focused on group breakout discussions. Once groups were identified, each group was tasked with voting for their top three enhancement areas by a sticky dot vote. The votes were tallied and the three enhancement areas with the most votes were the focus of that group's discussion. For each three enhancement areas, groups were tasked with identifying the following for the top three enhancement areas:

- Top stressors and threats
- Emerging issues and information needs
- Management priorities

The enhancement areas chosen by each group are listed below.

Group 1	Group 2	Group 3	Group 4	Group 5
Coastal Hazards	Coastal Hazards	Coastal Hazards	Coastal Hazards	Coastal Hazards
Cumulative/Secondary Impacts	Special Area Management Planning	Wetlands	Special Area Management Planning	Cumulative/Secondary Impacts
Wetlands	Energy/Government Facility Siting		Ocean Resources	Wetlands

All five groups ranked coastal hazards as the top enhancement area priority. Wetlands received three group votes as a top enhancement area priority. Cumulative and Secondary Impacts and Special Area Management Planning tied for the third top enhancement area priority, both receiving two group votes.

### Bandon Stakeholder Workshop

*Identified Enhancement Area Priorities: Coastal Hazards, Wetlands, Cumulative and Secondary Impacts, and Special Area Management Planning*

DLCD held a stakeholder engagement workshop in Bandon, Oregon on November 1, 2019 from 9am to 4pm. The workshop included a presentation on the 309 Assessment and Strategy process, a question and answer session, and group discussions on coastal management priorities. Notes were taken throughout the workshop and consolidated with all other stakeholder engagement feedback and summarized in the Consolidated Results section below.

### Lincoln City Stakeholder Workshop

*Identified Enhancement Area Priorities: Wetlands, Cumulative and Secondary Impacts, Public Access, and Coastal Hazards*

DLCD held a stakeholder engagement workshop in Bandon, Oregon on November 8, 2019 from 9am to 4pm. The workshop included a presentation on the 309 Assessment and Strategy process, a question and answer session, and group discussions on coastal management priorities. Notes were taken throughout the workshop and consolidated with all other stakeholder engagement feedback and summarized in the Consolidated Results section below.

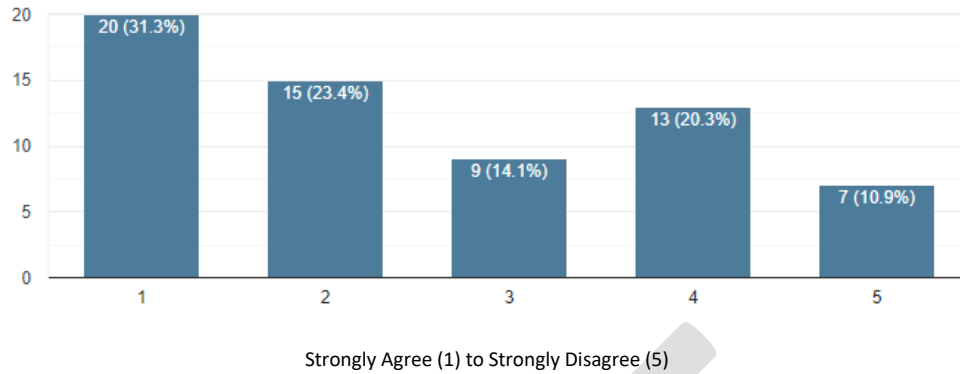
Workshop participants agreed unanimously that it would be most beneficial to the 309 process if the group voted on their top priority enhancement areas. Wetlands were ranked as the top priority among this group with 12 votes. Cumulative and Secondary Impacts were ranked as the second top priority among the group with 10 votes. Public Access and Coastal Hazards tied as the third top priority among the group with 6 votes each.

### Online Survey

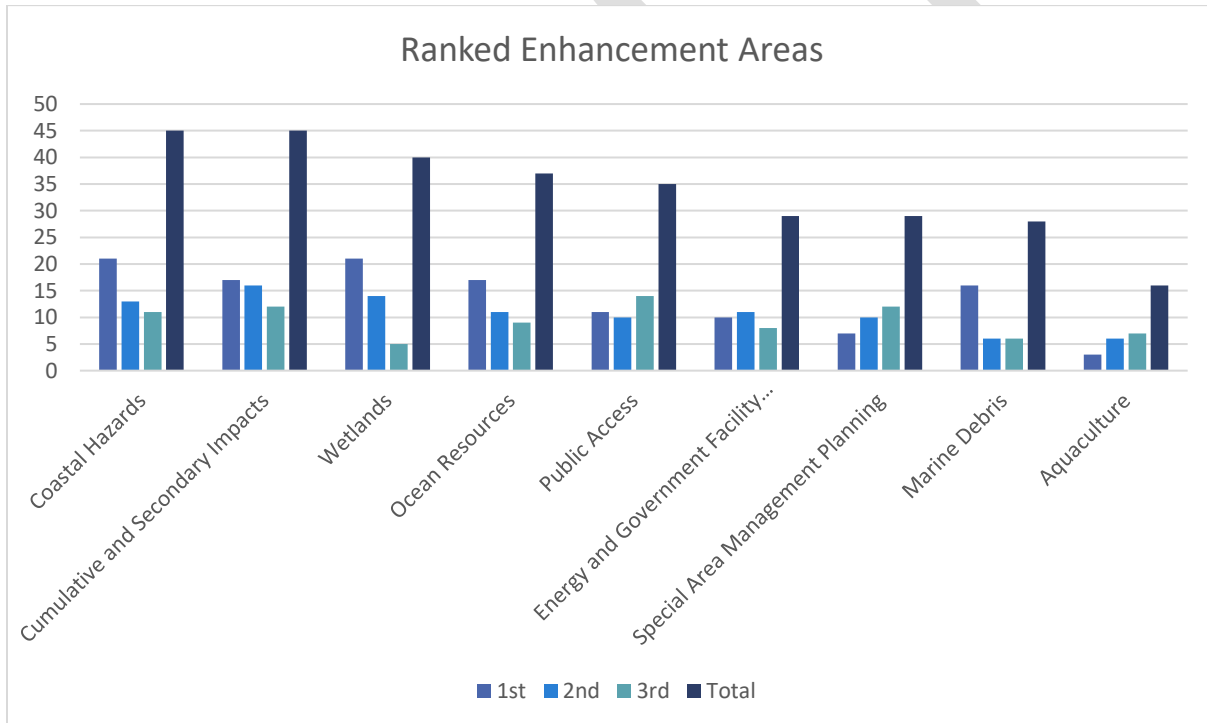
*Identified Enhancement Area Priorities: Coastal Hazards, Cumulative and Secondary Impacts, Wetlands, and Ocean Resources*

A survey was developed utilizing Google Forms and was open to the public from October 7, 2019 to November 22, 2019. The purpose of the survey was to gather stakeholder input about coastal concerns and input for the OCMP 5-year assessment and strategy. The survey asked respondents to identify the program enhancement areas that they identified as being top priorities for the Oregon coast, threats to those issue areas, information needs to address concerns, and management strategies to address coastal threats. DLCD distributed the survey via email, listservs, and DLCD's website. The survey received sixty-six responses.

Survey Responses on Level of Agreement with Prior OCMP Enhancement Area Strategies



DLCD asked respondents to first determine whether or not they agree with the former 2016-2020 Assessment and Strategy priority enhancement areas (coastal hazards, special area management planning, and ocean resources). 54.7% of respondents either strongly agreed or agreed with the chosen strategies. Only 31.2% of respondents either disagreed or strongly disagreed with the chosen strategies.



Enhancement Area	1st	2nd	3rd	Total
Coastal Hazards	21	13	11	45
Cumulative and Secondary Impacts	17	16	12	45
Wetlands	21	14	5	40
Ocean Resources	17	11	9	37
Public Access	11	10	14	35
Energy and Government Facility Siting	10	11	8	29
Special Area Management Planning	7	10	12	29

<b>Marine Debris</b>	16	6	6	28
<b>Aquaculture</b>	3	6	7	16

Respondents were also asked to identify the priority enhancement areas that they deemed as the most critical for Oregon coastal management. Coastal Hazards and Cumulative and Secondary Impacts received the most votes (45 votes). Wetlands received a total of 40 votes and Ocean Resources received a total of 37 votes.

Respondents were given the opportunity to write in open-ended responses to questions related to threats, information needs, and management priorities for their chosen enhancement areas. These responses are consolidated with all stakeholder feedback and will be summarized in the consolidated results section below.

## Public Comment

### Consolidated Results

Stakeholder engagement had three priority enhancement areas that consistently rose to the top among participants: coastal hazards, wetlands, and cumulative and secondary impacts. In addition, other priority enhancement areas that received a substantial amount of support included special area management plans, ocean resources, and public access. Detailed results from the stakeholder feedback gather can be found in Appendix E and F, which provide tables of all feedback received by enhancement area and word clouds summarizing those tables visually using word counts.

## Appendix A – Public Notice

### Appendix B – Stakeholder Engagement Survey

In 2015 the Oregon Coastal Management Program (OCMP) chose the following areas to focus on from 2016-2020: Coastal Hazards, Special Area Management Planning, and Ocean Resources. How much do you agree with these focus areas?

Which of the following enhancement areas should be the HIGHEST PRIORITY for the Oregon Coastal Management Program?

What do you believe to be the top 3 stressors and/or threats to your top ranked enhancement area?

What are some emerging issues and/or information needs in that area?

What are the top three management priorities for that area?

Which of the following enhancement areas should be the SECOND HIGHEST PRIORITY?

What do you believe to be the top 3 stressors and/or threats to the enhancement area you ranked #2?

What are some emerging issues and/or information needs in that area?

What are the top three management priorities for that area?

Which of the following enhancement areas should be the THIRD HIGHEST PRIORITY?

What do you believe to be the top 3 stressors and/or threats to the enhancement area you ranked #3?

What are some emerging issues and/or information needs in that area?

What are the top three management priorities for that area?

What is your relationship to the Oregon Coast?

What is your affiliation?

If you would like to be contacted regarding coastal management issues in the future please provide your email address.

Name

Phone Number

Anything we missed?

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# Help Guide the Future of the Oregon Coast

## Oregon's Coastal Management Program (OCMP) wants to hear from you.

OCMP is seeking feedback on the following 9 categories in addition to other issues that arise through the public engagement: Wetlands, Coastal Hazards, Public Access, Marine Debris, Cumulative and Secondary Impacts, Special Area Management Planning, Ocean and Great Lakes Resources, Energy and Government Facility Siting, and Aquaculture. Your input will inform the OCMP's approach and its next Strategic Plan and its work over the next five years.


**Friday, Nov 1 - 9am-4pm**

**The Barn, 1200 11th St SW, Bandon**

**RSVP: [http://bit.ly/Oregon\\_Coast](http://bit.ly/Oregon_Coast)**

- Coffee, Lunch (with RSVP) and Snacks provided
- Presentation on OCMP's process by Heather Wade, Coastal Policy Specialist with Department of Land Conservation and Development (DLCD). Contact: 503-934-0400
- In-person participation encouraged. Can't make it? Please complete this survey (launches October 7): [http://bit.ly/OCMP\\_Survey](http://bit.ly/OCMP_Survey)

# Help Guide the Future of the Oregon Coast



Friday, November 8 - 9am-4pm  
Oregon Coast Community College  
North County Center | Community Room  
3788 SE High School Dr, Lincoln City  
RSVP: [http://bit.ly/Oregon\\_Coast](http://bit.ly/Oregon_Coast)

## Oregon's Coastal Management Program (OCMP) wants to hear from you.

OCMP is seeking feedback on the following 9 categories in addition to other issues that arise through the public engagement: **Wetlands, Coastal Hazards, Public Access, Marine Debris, Cumulative and Secondary Impacts, Special Area Management Planning, Ocean and Great Lakes Resources, Energy and Government Facility Siting, and Aquaculture.** Your input will inform the OCMP's approach and its next Strategic Plan and its work over the next five years.

- Coffee, Lunch (with RSVP) and Snacks provided
- Presentation on OCMP's process by Heather Wade, Coastal Policy Specialist with Department of Land Conservation and Development (DLCD). Contact: 503-934-0400
- In-person participation encouraged. Can't make it? Please complete this survey (launches October 7): [http://bit.ly/OCMP\\_Survey](http://bit.ly/OCMP_Survey)



## Appendix D – Workshop Participation Lists

First Name	Last Name	Zip Code	A bit more about you: do you represent a group or industry? And/or why is this issue important to you?	Dietary Restrictions
Deanna	Caracciolo	97301	OCMP Staff	Vegetarian
Kristi	Foster	97118	Tillamook Estuaries Partnership	No Seafood
Jay	Sennewald	97365	Oregon Parks and Recreation Department / Ocean Shore permitting	None
Jamie	Mills	97493	City Administrator for Dunes City, Oregon	None
Robin	Mills	97493	Will be attending with my wife.	None
David	Mattison	97141	City of Yachats	None
Derrick	Tokos	97365	I am the City of Newport's Community Development Director and will be attending as a representative of the City	None
Denise	Lofman	97103	I am the Director of the Columbia River Estuary Study Taskforce, a bi-state council of governments in the Columbia River Estuary.	Vegan
Nancy	Ferber	97103	I am the Coastal Planner at CREST and work with a number of local jurisdictions-many of whom are tackling Comprehensive Plan	Vegan
Joe	Liebezeit	97210	Portland Audubon	None
Matthew	Taylor	97368	Westwind Stewardship Group - all mentioned issues! Thx	None
Dick	Vander Schaaf	97206	The Nature Conservancy	None
Steve	Griffiths	97367	I am a member of Lincoln City's Planning Commission and also a board member of the Audubon Society of Lincoln City. I am eager to	Vegetarian
Robert	Bailey	97322		None
Phillip	Johnson	97214	Executive Director of Oregon Shores Conservation Coalition. We have been working on coastal land use concerns for 48 years, since before Oregon's land use planning system was created.	None
Shelley	Reeder/Lueth	97143	I live on the coast and I'm a board member of Friends of Netarts Bay WEBS	Vegan
Greg	Lueth	97143	Live in Netarts	Vegan
Diane	Pugh	97365	I'm a member of Climate Reality and 350.org. Also a co-leader of Newport Citizen's Climate Lobby.	None
Angie	Reseland	97138	I am the Watershed Council Coordinator for the Necanicum Watershed Council	None
Sara	Hamilton	97331	I am a kelp forest ecologist here in Oregon	Vegetarian
dawn	villaescusa	97367	Audubon Lincoln City	
Lenny	Nelson	97367	Planning Commissioner for Lincoln City	None
Lacy	Jane	97365	No	Vegetarian
Paul	Robertson	97367	Work with Cascade Head Biosphere Reserve. Long time coastal resident and business owner.	None
Lindsay	Beddingfield	97341		Vegetarian
Bobby	Hayden	97201	Representing the Pew Charitable Trusts	None
Justin	Peterson	97322	Oregon Cascades West COG. OCWCOG is working with coastal communities including Yachats and Toledo.	
Evan	Hayduk	97365	MidCoast Watersheds Council Coordinator	
Paul	Engelmeyer		Audubon and Wetlands Conservancy	
Barbara	Beattie	98672	Vehicles driving on the beach near Pacific City and Cape Kiwanda because of safety, environmental and experience issues.	
Joe	Liebezeit	97210	Portland Audubon.	
David	Mattison	97498	City of Yachats	

# Lincoln City

Name (please print)	Email or phone number	I am interested in:
LENNY NELSON	[REDACTED]	Bluffs
Justin Peterson	[REDACTED]	
Bobby Hayden	[REDACTED]	eelgrass, sea level rise
Phillip Johnson	[REDACTED]	all aspects of coastal planning
Richard Townsend	[REDACTED]	LC Andubon
Nancy Ferber	[REDACTED]	
Derise Hofman	[REDACTED]	
Barbara Beatti	[REDACTED]	shipping on beach
Shelley Reeder-Luech	[REDACTED]	variety
Greg Luech	[REDACTED]	all
JAY SENNEWALL	[REDACTED]	COASTAL MANAGEMENT
Kristi Foster	[REDACTED]	Education
Lisa Phipps	[REDACTED]	DLCD
Dave Mattison	[REDACTED]	coastal cities
Joe Libezert	[REDACTED]	Ocean Conservation
Diane Pugh	[REDACTED]	
Heather Wade	[REDACTED]	
Deanna Ciracciolo		
dawn villaescuse	[REDACTED]	LC Andubon
Steve Griffiths	[REDACTED]	LC Andubon
Paul Engelmeyer		

# BANDON

309 workshop

NAME

email

Bob Bailey

Mike Mueller

Teri Spencer

NANCY BAILEY

Bruce Williams

Elizabeth Ruther

Kate Jaguinto

John Briggs

Bob Ivey

Darcy Grahak

Bill Stenberg

Mary Garrett

Steve Garrett

Jeff Gilbrin

Deanna Gracciolo (OCMP)

Heather Wade (OCMP)

Hui Rodomsky (OCMP)

Nick Tealer (OCMP)

Bill Binnewies

Mike Graybill

Ian Hodder

Paul Fisher

Christine Moffitt

Steve Miller

Sean Culp

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

LAUREA ARNOLDT

Roy Arnoldt

LOREN MORRIS

TOM CALVANESE

TOM RUDOLPH

Mary Schenckhorn

## Appendix E – Consolidated Engagement Feedback Tables

### Coastal Hazards

Stressors/Threats	Emerging Issues/ Needs	Mgmt Priorities
coastal development	Evacuation shelters	How to manage port development in inundation prone areas.
lack of a coastal resilience plan	how the FEMA buyout program could be used as a way of managed retreat	1. Protect life, 2. Protect property, 3. continue to allow sustainable development
climate change	How climate change alters the potential for coastal hazards	Managed retreat
Potential Earthquake, Potential landslide, and potential flooding	Additional funding for Tsunami safety areas	Need legislation to ensure that new construction cannot occur within the Tsunami zones, within landslide zones
Politics	politics	maintenance
People	We need the resources to implement hazard mitigation plans	Don't know yet.
Sea Level Rise, climate change, flood risk, development, maintaining ocean health	technical assistance for communities	identifying flood management projects and practices (including habitat restoration that doubles as flood storage/off channel habitat)
extreme weather, tsunamis, ocean warming and acidification	fire, drought & wind preparation	Vertical evacuation facility, fire and drought management planning
Development, lack of knowledge about hazards, preparedness	knowledge	updates to plans, more funding for planning and increased knowledge
Climate-related impacts (sea level rise, storms surges, increased landslides); pressures for increased development in hazard areas; local ordinances not adequate to deal with these impacts, and lack of local resources to do good adaptive planning	Continually improved mapping of hazard areas	Improved geologic hazard ordinances (short-term); adaptive planning that incorporates what we know and progressively learn about climate impacts (long-term); statewide policies that block shoreline armoring and other desperation measures to resist increasing climate impacts, and instead mandate pulling back from hazard areas as they expand
rising sea level, ocean side development, lack of public education	land planning (restrict further development)	regulating building permits in low lying areas, creation and implementation of climate change action plans, creation of dialogues and unification of public, private and business communities
1. Climate induced storm intensification. 2. Cascadia subduction hazards. 3. Sea level rise.	Model code for coastal development in tsunami and sea level rise inundation areas.	Local planning
Cascadia event, ongoing communication, clear policy that can be understood by developers.	political will to say no to development in these areas	Update local authority with training
over-development in coastal areas, climate change, sea level rise	How much is sea level rise predicted to be? How will it affect the Clatsop County coast? How can we balance demands for development and housing with the long-term coastal effects of climate change?	tools for development standards for landslide and erosion
Conflicting land use goals (containing growth vs. escaping hazards), shifting ocean conditions, lack of funding and regulation.	Uniform hazard data and regulatory requirements.	Relocation of critical facilities out of tsunami areas, managed retreat for SLR, providing local jurisdictions the regulatory framework to accomplish these.

Global warming, Seismic activity, overharvesting of marine resources	Siting of government buildings in inundation zones, preparing for sea level rise, monitoring marine harvest methods more closely.	Do not allow government buildings and hospitals in inundation zones, restrict home building in inundation zones, and restrict building in areas where sea level rise impacts the coastline.
Sea level rise, raising ocean temperatures, pollution (radiological, plastic, chemical).	Honest evaluation of health impacts of Fukushima and pollution on the food we eat from the ocean. More open discussion of potential sea level rise and impacts to people. Full extent of military tools and impacts on sea life.	Moving people away from areas most likely to be impacted by sea level rise and associated storm surge, protecting sea life from impacts of technology in the oceans.
Tourist crowding, trash and lack of escape routes if emergency occurs.	Tsunami routes, overflow trash and marine debris	Evacuation routes, marine and wildlife protection, and trash control
Corporations - pipeline. Climate change/water quality. Infrastructure along the coast.	Improve the understanding of watersheds, local ordinances to reduce the impact of development.	Land conservation, protect and maintain responsible public access, and protect watersheds.
LNG sites, pollution from onshore activities and waste, climate change	community involvement	sediment budgets
Gas pipeline in North Bend	Public voice has not been listened to. Think for long range.	Preservation of aquaculture and water
1. Sea level rise 2. Coastal erosion due to increasing climate variability and storm intensity	Plan for other climate-related coastal hazards such as sea-level rise and increasing storm intensity. With respect to sea-level rise, we encourage Oregon to go beyond mapping and further address this issue by developing specific strategies related to growth and development (see Rhode Island's Shoreline Change Special Area Management Plan, <a href="https://www.beachsamp.org/beachsamp-document/">https://www.beachsamp.org/beachsamp-document/</a> , as an example) that are based on the best available science and modeling related to flooding and climate change impacts; as well as advance habitat-focused strategies such as soft shorelines, submerged aquatic vegetation and tidal wetlands conservation and restoration. Pew encourages the Program to craft specific and clear policies with an eye towards inclusion in the state coastal program as enforceable policies and to maintain the strength of ocean shore lands development rules in Planning Goal 18 (known as the Pre-1977 rule, which prohibits new development if it had not already occurred by 1977).	1. Maintain the strength of statewide planning goal 18 (land use regulations pertaining to beaches and dunes), which addresses shoreline armoring, and include new data on risk, sea level rise, and coastal bluff/beach erosion to avoid catastrophic impacts and protect communities and shorelines from rapidly changing coastal conditions. Work with network state agency partners to incentivize safe development and de-incentivize risky choices. 2. Research ecological solutions to address community hazards. Coastal habitats have evolved to withstand hazards, mitigate for hazards, and recover quickly. In addition, nature based solutions to address coastal hazards as an alternative to armoring cost relatively little in maintenance after initial capital outlay. Research could include an inventory of current hard infrastructure that is aging and must be replaced (i.e., levees, dikes, tidegates, culverts, storm water pipes, and roads) as well as creating an resource guide of soft infrastructure (i.e. bio-engineered, living shorelines solutions) that are appropriate for Oregon's energetic waters. 3. Work with networked state and local Program partners to create clearer policies for habitats (i.e., estuaries and wetlands) that protect coastal communities from coastal hazards and create resilience for the ecosystem and natural resource-dependent economies that drive the coast.
User ignorance, failure to enforce building codes, beach erosion	Attention getting signs about the dangers placed in tourist facilities and at access points, increased awareness of and participation in Coast Watch	Investment in tourist safety by local governments, realistic strategic plans developed with timeline and funding in place, rip rap hotline and consequences



Increased erosion, increased public Parking at Cape Kiwanda beach, human conflict of boats launching, surfers, kayakers, cars parking and pedestrians	Pacific City/Woods Parking plan currently under development indicates this is an area of concern for safety. Increased beach erosion has reduced the area for all users to access the beach forcing everyone into a smaller area. Vehicles get stuck, blocking access to and from the beach. Some vehicles get caught in the incoming tide, users leave trash, parked cars decrease the walkable area, hostilities between users occur frequently. The county provides traffic parking direction during some part of the day, but when they leave so do all rules about who can access and park where.	Because the county is now in process about developing a parking plan this is a good opportunity to voice opinions and support for removing cars on the beach other than vehicles involved in launching a boat or kayak over the minimum length (16'±?).
Business as Usual, lack of knowledge, too much homework for the average citizen.	Publications, literature and more public awareness.	Prevent Waste, Reuse items and then recycle
Staircases in Bandon	developing climate action plans	Parking, handicap access to all beaches in Coos County
Unrestricted building on sloughing, unstable ground. Specifically, on shoreline lots vulnerable to erosion or ground movement.	Weak building codes, poorly enforced prohibitions and restrictions on shoreline construction.	Restricted construction along all shoreline areas, strengthening shorelines through soil stabilization, rock placement, restriction of sand collection and sand mining, much stronger building codes restricting construction on loose or unstable ground.
climate change impacts on tides, flooding; visitors unfamiliar with ocean	increased flooding in winter with higher tides combined with rain	assist locals with how to help manage impacts of climate change
Imported consumption and materialistic values.	Perhaps people are invariably short-sighted, need to learn the hard way = climate change, California fires/power hardships = Oregon is next.	developed actions minus the profit/greed motive
climate change impacts, regulation and preparedness surrounding hazards	how climate change may escalate hazards,	sea level rise heights
Climate change, fossil fuels as well as existing earthquake hazards	modeling for hazards	Earthquake
Again, climate change (hotter drier summers/ rainier stormier winters etc.)	Understanding risks to areas that haven't been associated with certain hazards (e.g., coastal areas and wildfire risk)	potential policy changes based on those risks (e.g., wildfire risk maps leading to changes to forest practices on the coast especially in dense mono-aged forest stands)
Community not prepared for disasters, communication accessibility,	Flood recovery and redevelopment strategies. (E.g. managed retreat or shoreline defenses)	Raise awareness of importance of hazard, education
Infrastructure systems. Dam in Newport. Water system resiliency™s and municipalities connectivity and water system redundancy backup measures.	Public awareness and driving of the issues and of course money.	Federal, state, and county partnerships. Public driven needs to achieve outcomes.
Poor planning globally and locally to manage one use packaging.	deregulation of putting government facilities in known hazard zones	Better practices for waste and fishing.

Climate change, tsunami, over development	Ready the people for the big one, new data, pollution	Policy, regulations, practice
1. Ongoing Storm surges and unexpected rapid ocean condition changes. 2. Dynamic tidal exchanges. 3. Climatic wind changes driving energy device collapse or breaking free from mooring - debris clean-up.	Local and seasonally sensitive informative science discussions.	Air, water, and water quality disturbances.
geotech reports can be biased	Catastrophic event planning for cities and counties.	Goal 18 change
erosion	local National Hazard Mitigation Plans need to coordinate with local plans	define public infrastructure
shoreline continuing to move landwards	Does riprap on ocean spits affect estuary inside the spit?	transparency on DLCD process of Goal 18
failing rip rap	Can we even think about a pilot project for managed retreat?	incorporate peer review process into hazards work, science based
exposed rip rap	Account for natural processes in estuaries – public facilities around estuaries	managed retreat
local governments approve land use but state parks approves permit	need bigger strategies over individual situations	Account for natural processes in estuaries – public facilities around estuaries
better to ask forgiveness than permission	How to think about estuaries as link between watershed and ocean – Can 309 cover this?	coordination and collaboration
shoreline erosion	Need to protect estuaries for natural values	wetland restoration
landslides	What is role of mitigation and role of DLCD in ensuring mitigation	blue carbon in estuaries
fire	behavior change	carbon sequestration in estuaries
transportation	capacity building	no net loss policy
emergency response	cost-benefit analysis	flood storage
tourism	mapping seafloor topography	spatial planning
infrastructure	time and distance modeling	Toxic materials introduced to disturbed in the near shore waters.
tsunami	inventory of built environment	Economic impacts to near shore natural resource extraction.
earthquake	funding for capacity and planning	
sea level rise	what about aftermath of hazard	
stronger storms	Evacuation plans - realistic on infrastructure damage	
erosion	Evacuation plans based on roads that may not exist	
entire coast	Wetlands	
lack of political will	education	
stick to "business as usual" (reactive)	lack of geotech expertise	
worry that give an inch, take a mile	effective tools for managing development in hazard areas	
more and more regulations		
increasing population		

populations putting pressure on fragile areas		
tourism		
development pressure		
increase in tourism		
infrastructure needs, future plans		

## Cumulative and Secondary Impacts

Stressors/Threats	Emerging Issues/ Needs	Mgmt Priorities
dredging permits, Jordan Cove LNG project permits, EPA regulation changes	consistent data reflecting biological, chemical, socio-economic, etc. to use as background	technical assistance
CO2, climate deniers. Donald Trump	need more detailed science explanations of the dangers	fake news, lack of science education
Misuse by visitors, marine debris (plastic),	Education on protecting resources,	Education of visitors, expanding protected areas
1) Climate change 2) climate-related public health/safety and 3) coastal hazards related to climate change.	Scenarios that incorporate likely catastrophic effects of global ice melt in planning frameworks and goals (Goal 20: Climate Resiliency???) Realistic depictions and awareness of the impacts and hazards of sea level rise; deteriorating transportation infrastructure; impacts (for Oregon) of global sea level rise;	better understanding and awareness of local esp. as related to landslides, King tides, access to interior Oregon; long-range flooding (planning horizon 100 years)
LNG sites, pollution from onshore activities and waste, climate change	more information about managed retreat	wider stream buffers from logging - any stream
Uninformed county planners	Poor communication, no thought for environmental impact of development on existing wildlife and threatened ecosystems.	Submitting well documented studies, together with input from local residents, not creating new problems by trying to remedy problems in one area to the detriment of another area.
Poor infrastructure planning and tourism impedance of natural areas and unnecessary motor vehicle traffic on the beaches in Pacific City	A better informed voting public and property owners. County Government is making changes with less than 10% of the populous.	Better State Park Ranger Support for Cape Kiwanda and Bob Straub State Park and Tillamook County should restrict Beach access for motorized vehicles that enter at the turnaround on Sunset Drive and Pacific Avenue. The failure of state and county governments to work out a solution to preserve wildlife, flora, and rivers in this area is tragic.
Worldwide pollution, local/inland runoff & over-use or misuse.	Emerging issue: too many dogs on beaches (misuse), development in coastal towns without added infrastructure (trash/recycling, parking) & continued collection of debris.	Preserve & protect for wildlife by having some areas no-dog beaches, coastal construction management & awareness of run-off.
Sea level rise, raising ocean temperatures, pollution (radiological, plastic, chemical).	Honest evaluation of health impacts of Fukushima and pollution on the food we eat from the ocean. More open discussion of potential sea level rise and impacts to people. Full extent of military tools and impacts on sea life.	Moving people away from areas most likely to be impacted by sea level rise and associated storm surge, protecting sea life from impacts of technology in the oceans.

Lack of materials management infrastructure on the south coast. Low state of engagement towards waste prevention on the south coast. No offshore waste prevention programs that I can find I posted on the south coast.	Exposure to Tool/Lending Libraries, Exchange Sites and Workshops for the DIY	Prevent Waste, Reuse Items, Then Recycle
Sea rise, storm surge, and flooding	Strategic planning for climate crisis impacts on coastal areas and estuaries	zoning, planning, local education and outreach
Warming oceans, acidification,	People need to understand the seriousness of climate change to the oceans	Education
Navigation, resource migration impacts, and shoreline ocean view disturbance.	To be kept abreast of site planning, local ocean planning discussions.	1. Fisheries management involvement. 2. Resource migration disturbances. 3. Dependable and reliable energy output with grid improvements.
Climate change, pollution, over population development	Sea armoring, water quality, sea level rise	Policy, regulations, climate change
long-term economic stability	more information about what cumulative impacts are	OAH plans
Runoff, clear cutting and urban sprawl	Need for political transparency. Impact of future development. Public involvement	plan to abate causes of greenhouse gasses
Over use by vehicles, poor county planning, county planners not listening to local people	Vehicles on beaches, degradation of sand dunes, no planning for development i.e. inadequate parking associated with new business development.	Overuse, environmental impact of county plans, better plans for coping with the vacation influx to coastal communities.
Collecting information	Info collecting and collation	Clarity
climate change	Not sure what this enhancement area means; but I assume it is the sum of a range of different impacts. emerging issues might be cultural change from change in econ activities, climate refugees and migration, infrastructure updates to accommodate changing demographics	climate change policies
Lack of partnerships in coastal communities, isolation risk of winter storms could be a driver, governance education.	Cost of impacts to natural infrastructure and value of ecosystem services, analysis of successful/sustainable maritime redevelopment, estuarine food chain and geomorphic drivers of aquaculture (benthic organism and bathymetric surveys).	Management/retention of ecosystem services (watershed resiliency for drinking water and nearshore water quality), innovative maritime economic development, impacts of aquaculture on juvenile salmonids.
Public awareness of cause and effect, wildlife and habitat impacts, increasing public access should not be a priority.	Public access at current levels is enough. No new building, enforce and tighten building codes.	Stop using rip-rap to protect buildings poorly sited in the first place. Set and enforce maximum building heights. Ocean and wind patterns always respond the same way to building on sensitive areas, especially when building heights are much taller than surrounding geology and trees.
Human activities and runoff impacts to coastal health	Managing human waste, runoff from impermeable surfaces, riparian zones and wetland health	Reduce agricultural runoff. Eliminate sewage inputs. Protect and create riparian buffers. Reduce vehicle access points to coast.

Invasive vegetation, elk overpopulation, energy facility citing	Retaining scenic ocean views versus tree and vegetation wildlife habitat, safety concerns of large elk in city neighborhoods,	dune grading & vegetation, elk population control
Overlaps with some of my earlier responses. Introduction of non-native genotypes/species, habitat loss, ocean biochemical health	acidification, hypoxia, dead zones, food web collapse, plastics, human encroachment	There's your information need
People need more access and education - leave intertidal organisms alone, don't touch, water quality education, etc.	Schools used to have money to take kids to beach, educate, no longer. We need to teach kids about ocean resources, manners, systems. Bigger picture but also - beach etiquette? Many tourists don't have it.	inter-organizational consistency about what cumulative impacts are
Lack of coordination between projects, government entities, and others. No big picture planning or considerations. Lack of information.	Climate change impacts, Wetland loss, effects of dredging, effects of fisheries, near shore and kelp bed dynamics	Coordination of actions affecting the coast. Planning for climate change impacts. increasing our understanding of coastal ecosystems e.g. kelp bed dynamics
Forest practices, forest practices, forest practices--okay, also human population growth and the water quality and quantity issues it raises	Current TMDLs for all coastal streams; thorough testing of all drinking water sources for full range of chemicals as well as bacteria; good information on projected coastal watershed/water quantity/flow regimes under future climate scenarios	Abolish ODF and make forest management a branch of DLCD--on the first day of the transfer, celebrate by imposing drastically widened buffers around all streams, not just fish-bearing ones; abolish the spraying of pesticides and herbicides in coastal watersheds; establish a fund to use in condemning and purchasing forest land, initially as buffers around drinking water sources, eventually to buy out Wall Street investment firms that own Oregon forests
Logging, ranching, development too close to water.	Ocean level is rising, rising temperatures combined with siltation, nitrates and fecal runoff causing toxic and dead zones, interruption of natural processes through development causing a static environment in what should be a dynamic environment.	Laws and policies, industry monitoring, heavy fines for non-compliance.
Plastics and micro plastics polluting the shoreline, potential over harvesting of aquatic resources,	Lack of enforcement of Ocean Shores Rules. Lack of technology to remove marine debris	Develop ways to remove marine debris, plastic and micro plastics more efficiently. Monitor and restrict aquaculture activities to protect resources. Give OPRD Beach Rangers broader enforcement authority and expand the number of officers patrolling the ocean shores.
People/business are often unaware of their impact on the environment. Or they are in denial or just don't care.	People need to learn cause and effect. The chain reactions of their behavior. For example, Oregon has no Sea Otters because of the fur trade many years ago. Therefore, urchins got out of control and are now destroying kelp forest. It is a chain reaction. And some people probably don't know there was a fur industry...	People not realizing the consequences of their behavior or underestimating their impact. Not thinking about the chain reactions they cause.

Once identified, hard to effect the impact so establishing priorities and publicizing efforts are important. Continue to seek long term investment in marine science research funding. Find permanent funding for Oregon Shores and encourage statewide participation.	Knowledge is power. Tie state wide middle school program to learning about and creating solutions to life of the coastline.	Commitment to making change. Involvement of public at kitchen table conversations. Leadership
development, extraction, past actions	marine renewable energy - is it real for Oregon	loving places to death in the intertidal, runoff & water quality, protection
Cumulative impacts measured in centuries but decisions are made short-term	Need to modernize criteria and processes for permitting projects (e.g. dredge and fill)	
climate impacts are diverse and broad	Need to connect science to decision-making	
future of increasing change	consider climate change lens that affects everything	
offshore wind	use best available science	
development in estuaries	futures thinking	
long lasting impacts	select future direction based on science, culture, etc.	
limitations on mitigation	incentivize science	
unforeseen impacts	training	
marine water quality	need cold water	
old and failing septic tanks	need to protect stream temperatures	
water quality in estuaries is declining	desalinization impacts	
nonpoint source pollution (forest, urban)		
logging impacts affects estuarine habitat		
forest and agricultural practices impacts to salmon		
aerial spraying		
wetland loss		
aquifer withdrawal		
aquifer quantity and supply		
climate change		
sea level rise		
development and downstream effects		
transportation		
housing		
deferred planning		

## Wetlands

### Stressors/Threats

### Emerging Issues/ Needs

### Mgmt Priorities

development, harvest and ocean acidification, sea level rise	natural OA buffers, aquaculture and development siting	limit development and harvest, prohibit aquaculture, protect areas in reserves
Climate change including sea level rise, lack of government interest/action, a focus on minor issues rather than a big picture	sea level rise, ecological changes in the ocean environment, land use planning	wetland retreat planning, zoning regulation, restoration of former wetlands
Development, ranching, lack of education	Their importance in the overall environment, their historical versus current location and extent, their protective ability from ocean level rise.	Acquire more, restore damaged, public access with interpretive signs.
sea level rise, upland forest practices, other climate change stressors (e.g., increased temperatures both water and air)	climate change vulnerability assessments for Oregon's estuaries (including vulnerabilities to natural, social and economic systems)	Updating estuary management plans to include climate change issues; addressing our current forest practices policies to help make wetlands more resilient.
People, pollution, urban sprawl	Educate people about these sensitive area. Restore these areas and provide a way for people to enjoy the restoration in a low impact way.	Restore them. Build up in urban areas not out. Basically stop sprawling. When housing for people is needed then build taller.
development, loopholes in development regulations, money	better maps, transparent processes, better/stronger protections for shrinking habitat	Maps and authorities for specific areas, standardization of regulations, stronger protections.
degradation, invasive species, commercial/residential pollutants	research on understanding processes better to better inform wetland mitigation bank	Tidegates Team
Encroachment, climate change, ignorance	Public information output, educate locals and visitors	Reclamation, stabilizing, signage/education
1. Loss of estuarine and wetland habitat 2. Derivative impacts from changing climate conditions such as ocean acidification and sea-level rise. 3. Outdated Estuary Management Plans	We believe a top priority for this area should be to update Oregon's estuary management plans (EMPs) with current information. EMPs, in coastal management terms, are called special area management plans (SAMPs). SAMPs are created to address management of complex, multi-jurisdictional areas with important coastal resources needed or used by a wide set of stakeholders. Oregon EMPs have not been updated since they were originally created over 35 years ago, yet estuarine science and community needs have changed greatly. Newer or emerging issues include the presence of federally-listed species like salmon, listed in the mid-1990s, major advancements in restoration science and practice, and climate change. EMPs were a visionary accomplishment and work well, particularly for those designated as natural and conservation estuaries. However, without effectiveness monitoring or periodic updates, particularly for development estuaries, it is difficult for the Program to defend state land use planning regulations (e.g., the statewide planning goals governing estuaries and adjacent uplands) or to improve governing regulations or specific aspects of EMPs from issues identified by such monitoring.	1. Incorporate new restoration science and policies to identify and update locations for mitigation and restoration in estuaries to mitigate appropriately for resource losses from development actions. An example of the need for this action is the currently proposed development in Coos Bay, which is going through permit review without up-to-date locally identified restoration and mitigation sites that are based on new restoration science or the Department of State Lands removal-fill guidelines that regulate impacts to wetlands. Since provisions in state coastal land use regulations explicitly focus on the protection and management of resources unique to estuaries and shoreland areas adjacent to estuaries, and require the identification of potential restoration or mitigation sites within them to mitigate for unavoidable impacts, it is critical the Program and coastal network state agency partners work to rectify this issue.  2. Complete natural resource inventories to support updating Estuary Management Plans. With the new information, the



	<p>A growing body of research supports the importance of estuarine habitat and the ecosystem services they provide to our coastal communities. Similarly, threats to these critical habitat types are also better understood. For example, the Program has used data on sea level rise to determine what critical infrastructure will be impacted in the next 13 years and beyond. This information can be used with new natural resources data (e.g., Coastal and Marine Ecological Classification Standard (CMECS) data) to determine which estuarine resources will be impacted by sea level rise. Additionally, new estuary boundaries have been identified based on head of tide for the entire West Coast, which Oregon can be credited with leading. Current EMPs are based on less accurate boundaries and as such some estuarine habitat has not been designated and thus not governed by county/city ordinances that implement the protections related to the estuarine and adjacent upland land use regulations.</p> <p>Other wetland types in the coastal zone have been under-studied and under-inventoried, some of which will become at high risk as sea level rise continues. Dunal wetlands and lakes, forested tidal wetlands, and fens and bogs hold a substantial amount of biodiversity, and deliver a myriad of ecosystem services, but lack spatial extent information or species richness/diversity data. Salt intrusion into some of these systems will decrease function and support for salmon as well as a host of iconic pacific Northwest species. For example, new research has illuminated the decline in spruce-dominated forested brackish wetlands. Where applicable, this type of information should be used to update estuary management plans on a frequent basis.</p>	<p>Program should work with local jurisdictions to create model ordinances that protect ecologically important and climate mitigating habitat types such as eelgrass, mudflats, and tidal wetlands that increase community resilience.</p> <p>3. Develop specific strategies related to sea level rise within the EMP update process or as a stand-alone process. For example, strategies could advance initiatives to ensure wetlands persist and keep pace with sea level rise, as well as facilitate the landward migration of marsh into adjacent lands, particularly those lands that are in the public domain. The EMPs or similar collaborative processes could be considered, like New Jersey's coastal resilience planning process. (see: <a href="https://www.nj.gov/dep/coastalresilience/">https://www.nj.gov/dep/coastalresilience/</a>) New Jersey recognized that siloed planning, mitigation and restoration activities across the coastal zone will be limited in their effectiveness to address sea-level rise, future storm events and other flood-related threats to the coastal zone and have commenced a planning process. A process like this could help inform local jurisdiction comprehensive plans in Oregon. New policies emanating from these collaborative planning processes should be crafted to be eligible for use in the Programs federal consistency reviews.</p>
Degradation of wet lands, invasion of debris.	Public participation	Have to leave that to experts
Worldwide pollution, local/inland runoff & over-use or misuse.	Emerging issue: too many dogs on beaches (misuse), development in coastal towns without added infrastructure (trash/recycling, parking) & continued collection of debris.	Preserve & protect for wildlife by having some areas no-dog beaches, coastal construction management & awareness of run-off.
Sea level rise, raising ocean temperatures, pollution (radiological, plastic, chemical).	Honest evaluation of health impacts of Fukushima and pollution on the food we eat from the ocean. More open discussion of potential sea level rise and impacts to people. Full extent of military tools and impacts on sea life.	Moving people away from areas most likely to be impacted by sea level rise and associated storm surge, protecting sea life from impacts of technology in the oceans.



Tourist/recreational development. Public awareness and corporate awareness. Legal restraints/guidelines.	The same development - sensitive areas co-existence. Who else is doing this well?	Aligning ecological priorities with public will.
Tourism, failure of Federal, State & County entities to collaborate.	Species are dying out or not present. Facebook and other entities drilling trenches in the benthic floor to bring fiber through small fishing communities is impacting our environment without cohesive studies.	Hold the planning commissions to a more thorough permitting process that is fully vetted and quit selling out our natural resources to corporate greed for a song.
1) Industrial and other commercial development projects in estuaries 2) impacts of climate change on the character and extent of our estuarine wetlands 3) colonization of Oregon coastal wetlands by invasive species from a variety of sources	1) more quality research on the impacts of climate change on our coastal zone wetlands and projections of emerging future impacts 2) Will our estuarine wetlands be able to remain productive, functioning habitats for fish and wildlife species with conversion and other compensatory mitigations producing different results allowed within those existing habitat types?	1) Maintaining the wetland habitat types and their extent within the coastal zone---preventing the continuing erosion of our wetland resources 2) Preventing contamination and other impacts to wetlands from more distant development projects 3) Develop a plan and strategies with the purpose to successfully address impacts to our wetlands from climate change
Business as Usual, lack of knowledge, too much homework for the average citizen.	Publications, literature and more public awareness.	Prevent Waste, Reuse items and then recycle
Sea rise and adjacent development.	The protection of migrating fish and healthy wetland habitats.	Data collection, monitor upstream users, public awareness and involvement.
Sea level rise, ADA accessibility, recent proposed changes to Endangered Species Act.	Motor vehicles on beaches impacting resource protection, developers destroying wetlands, threatened species under further distress due to changes to Endangered Species Act.	Restrict vehicle access further to protect the resource, ensure SPMA's are maintained, better manage wetland areas to maintain wetland habitat.
1. Timber clear-cuts, 2. Continued demand for development and housing, 3. climate change	1. How to protect drinking water supply, 2. How to protect fish habitat, 3. how to balance #1 and #2 with the continued demand for development/housing	1. Protect drinking water supplies, 2. Protect fish habitat, 3. continue to allow sustainable development
Development pressure	Lack of floodplain management during development review	NEP – 10 year Action Agenda Coord. w/ 309
Sea level rise (loss of estuarine marshes and flats); ocean acidification and eutrophication in bays and estuaries; effects of climate change on upwelling.	Support decision makers with training to meet their expressed needs (e.g., in collaboration with SSNERR Coastal Training Program and Oregon Sea Grant), demonstrate actions people can take to care for estuaries.	Find land for migrating marshes; support local governments to revise estuary management plans; support research on ocean acidification.
Development, climate change, invasive species	The role that wetlands play in mitigating climate change/hazards along the coast; environmental value of a wetland used to prevent development	Enhancing their buffering capacity
Encroachment, livestock, too little too late	The importance of wetlands	utilize partnerships for estuary management plan updates
wetlands / estuaries - Sea level rise, development and water quality	SLR - how effective is our communication on this issue?	the need for an adaptive strategies, mapping options, communication
Rising sea levels will impact the wetlands	Identification of how king tides and high tides will be affecting the wetlands	Protection of the wetlands
invasive species	dune wetlands, need better information	
gorse	update significant wetlands definition	
knotweed	best available science to deal with impacts	

lack of enforcement	dune system	
no follow up	wildlife impacts, water fowl, nutria	
runoff	migration of salt marshes inland due to sea level rise	
sea level rise	how to accommodate marsh migration	
policy issue for state response	mapping marsh migration	
dune deflation	DIKES Inventory potential for removal proactive planning for removal and spread of wetlands	
dune wetlands	Tidegates Team	
mitigation only to tide line	SB 1517 Pilot Program in Till Co. – Register estuary restoration next to Ag. Land	
Devils Lake vulnerable to becoming an estuary	Estuary Management Plans – need update of inventory base tools to help local planners	
Losing freshwater wetlands cumulative from permitted uses	Need to distinguish wetland types	
agriculture	Potential partnerships key with political leadership to allow collaboration	
forestry	CMECS covered all estuaries EXCEPT Columbia River as basis for update of CREMP	
Tourism, failure of Federal, State & County entities to collaborate.	Need comprehensive assessment	
increased population	wetland inventories	
recreation	raise awareness	
filling	how to make processes less "scary"	
wetlands as a result of evolving natural and man-made processes (failing infrastructure)	Education and outreach	
lack of space for mitigation banks	educate public	
growing population pressures	educate developers	
Tourism, failure of Federal, State & County entities to collaborate.		
late night filling		

## Ocean Resources

Stressors/Threats	Emerging Issues/ Needs	Management Priorities
1) Ocean acidification, 2) other climate-related stressors such as ocean heatwaves, 3) secondary effects of climate stressors such as increased hypoxia and harmful algal blooms	Emerging issues include greater pressure for multiple human uses of the ocean (e.g., fisheries, ocean energy, and aquaculture) and how to manage all human uses in the context of OA and climate change. Information needs include more complete understanding of ocean habitat, ecosystem relationships, and changes that are occurring and will occur due to OA and climate change.	1) managing fisheries in the context of ocean acidification and other climate-related stressors, 2) managing competing human uses: fisheries, ocean energy, aquaculture, Others, 3) making coastal communities and ocean uses more resilient to OA and climate change

Rapidly increasing population with folks unaware or don't care re: necessary human values to slow down the recent (20 yrs. & more?) livability decline of Oregon's once environmental quality = I'm a 76 yr. native. Trump's domestic policies. Proposed Coos Bay LNG and its destruction. Over fishing by all the imports. Diesel pickups.	education, increased necessary regulation, dump the dumpster	Steer away from the greed of this capitalistic society.
climate change impacts on the oceans, over fishing by other countries	how local residents can help ocean health	mitigate impact of climate change on ocean, assist local industries dependent on the ocean resources
Ocean acidification.	The changes in water temperature that creates areas of challenge for aquatic life.	Collection of data, research in specific species, public awareness, and working with fisheries.
climate change (OA, hypoxia, sea level rise)	community adaptive capacity	Unclear! how to integrate these adaptive capacity strategies depends on what policies exist to address these strategies
Sustainable use, waste management	Usage: what and how much is harvested, use of that harvest, who is harvesting	ID of the parties involved; getting participants to report honestly; collation of that information into one reliable and accessible source that is available to all concerned.
Fishing pressures, climate change and over development	Kelp forest destruction by various threats	Species management, climate change, pollution
Alternative uses, Resource management and public access		
Climate change, ocean acidification, impacts to fisheries	Ocean acidification	Effective scientific research, reduction of greenhouse gas emissions
Population, climate change, timber management	Seismic and tsunami vulnerability	Balancing stakeholder interests, efficient infrastructure, funding
Water quality. Disease control in aqua culture. Sustainability.	don't know	don't know
Tourism, failure of Federal, State & County entities to collaborate.	Species are dying out or not present. Facebook and other entities drilling trenches in the benthic floor to bring fiber through small fishing communities is impacting our environment without cohesive studies.	Hold the planning commissions to a more thorough permitting process that is fully vetted and quit selling out our natural resources to corporate greed for a song.
Overutilization, changing climatic conditions, financial profit outweighing conservation.	More data needed on oceanic variables, continued harvest levels based on old data.	Increased monitoring, reduction of harvest levels, and ecosystem based management plans.
Business as Usual, lack of knowledge, too much homework for the average citizen.	Publications, literature and more public awareness.	Prevent Waste, Reuse items and then recycle
climate change especially in how it affects extraction industries (e.g., fishing)	modeling related to how climate change is likely to affect resources (e.g., the blob and other thermal "anomalies")	Would be based on modeling results but perhaps changes to catch limits and open seasons.
overfishing, climate change, aquaculture, development	shifting baselines and stock status, climate resiliency	prohibit finfish aquaculture, expand marine reserve system, improve kelp and seagrass management

Human visitation and collection ("loving it to death") as an immediate impact; climate-change-driven impacts, notably sea level rise, longer-term; invasive species (also related to climate)	Strengthened layers of protection for intertidal areas; increased monitoring of tide pool health (e.g., sea star populations) and vigilance over new invasive species; more information about offshore habitats and the need to link them ecologically (recognizing that ODFW has management over marine reserves and MPAs, but they are also part of the territorial sea)	New draft rocky shores management strategy is well underway, so completing this and strengthening it in some ways is first priority (to begin with, reverse the absurd decision to call it the Rocky Habitat strategy--the summit of Mt. Hood has rocky habitat, too); support an ongoing site designation process for rocky shores in which citizens are given a strong role in decision-making; territorial sea plan should reflect real needs for offshore habitat and resource protection, regardless of the current results of the highly political process that produced the current marine reserves and MPAs
Overlaps with some of my earlier responses. Introduction of non-native genotypes/species, habitat loss, ocean biochemical health	acidification, hypoxia, dead zones, food web collapse, plastics, human encroachment	There's your information need
Plastics	Bans on Plastic	The Program should work with state agency network partner, Department of Environmental Quality, to strategize and prioritize compliance and enforcement efforts to address localized sources of point and non-point source pollution in upland coastal lands as well as in bays and estuaries to improve coastal water quality issues identified by NOAA.
anthropogenic-derived pollution (plastics, oil), increased tanker transit between Oregon and Asia, climate change and warming waters	What all the pollution does to the ocean, current corporate polluters & rich abusing the environment.	Creating Geographic Location Descriptions (GLDs) for specific federal activities that impact coastal resources should be established. GLDs result in automatic federal consistency review for previously identified federally permitted activities in federal waters via the "federal activities list" also known as "Table 7". Ensuring "Table 7" reflects the appropriate suite of federal permits and authorizations that may impact coastal resources is also of critical importance. In concert with the above actions, also important to ensure best outcomes for the state, we believe the Program should review the enforceable policies related to the statewide planning goal that governs ocean resources as well as state statutes/rules that apply to marine waters to ensure the state's preferences are considered by federal agencies and federal permit applicants in federal waters.
climate change	preservation of wetlands, marine reserves, pollution from mining, plastics, and inland use of chemicals	Reduction of pollution, reduced/eliminated CO2 emissions, management of inland habitat for salmon reproduction

<p>1) human-caused climate change and its various impacts (e.g. ocean acidification)</p> <p>2) exploitation of various ocean fish and wildlife stocks past sustainable levels</p> <p>3) introduction of pollutants and human-manufactured debris into the marine environment</p>	<p>gathering current information and identifying information needs on the carbon, methane and other greenhouse gas sequestration potential of submerged aquatic vegetation (SAV) and tidal wetland habitats in Oregon including kelp forests, eelgrass beds, emergent tidal wetland, and forested tidal wetland (salt, brackish, and tidal-fresh) would help implement Oregon's Ocean Acidification and Hypoxia (OAH) Action Plan. The Plan specifically calls for protecting SAV and the Program is uniquely situated to assess both marine and estuarine carbon sequestration potential. Updating the data related to historic and current extent of kelp forest (approximately 7,458 acres historically) in Oregon's territorial sea is a critical first step.</p>	<p>1) Support research to determine the rate and type of various environmental impacts</p> <p>2) monitor population trends and condition of key species (indicator or economic)</p> <p>3) enhance relationships with other states to help coordinate conservation efforts</p>
<p>Pollution, corporate pollution &amp; excessive lifestyles.</p>	<p>prohibit mining in state and federal waters</p>	<p>The Program should continue to work on coordinating and creating effective and enforceable rules governing marine submerged aquatic vegetation with state agency partners that are consistent across state agency jurisdictions to implement the OAH Action Plan. In addition, generally protective policies for marine natural resources should be incorporated into Territorial Sea Plan so that the Program can respond rapidly to unanticipated proposed activities. These policies should be crafted to be eligible for use in the Program's federal consistency reviews.</p>
<p>Acidification, warming waters, over-fishing</p>	<p>more information on upland effects on ocean conditions</p>	
<p>Overfishing, climate change, pollution</p>	<p>transfer of information from other countries with offshore wind</p>	

<p>1. Unanticipated development or activities in federal or state marine waters that impact Oregon coastal resources like hard mineral seabed mining, offshore energy development, and offshore industrial mariculture. .</p> <p>2. Rapidly changing ocean conditions including ocean acidification, hypoxia, warming water, viruses and diseases affecting wildlife and leading to trophic cascade events, shifting ocean currents, and other anomalies.</p> <p>3. Water quality issues including fossil fuel combustion and related accumulation of CO<sub>2</sub>, along with point source and nonpoint source pollution from headwaters to the bays and estuaries and industrial scale offshore nutrient inputs.</p>	<p>Second, baseline monitoring of point and nonpoint source pollution throughout coastal watersheds including a spatial inventory of point sources currently permitted by the Department of Environmental Quality is needed. New research on micro-plastics and emerging chemicals of concern points toward wastewater treatment plants, biosolids applications, and other permitted actions as a likely source, but potential impacts from these sources to Oregon estuaries and marine waters has not been examined. Offshore nutrient inputs, like offshore seafood discharge, have been calculated by the Department of Environmental Quality to be comparable to raw sewage inputs on land and these inputs may be exacerbating OAH issues in marine waters. The Program should work with state agency partners to illuminate these varied pollution sources.</p>	<p>protect ecosystem balance in ocean/offshore decisions</p>
seabed mining	restore sea otters	expand marine reserves
shoreside impacts	protect ecosystem balance in ocean/offshore decisions	protection of kelp
energy facilities	restoration, not just conservation (kelp loss)	connect marine reserves
offshore wind	understand low impact sources of protein	if information supports it, include offshore energy in the plan
changing climate	go beyond marine reserves	
fisheries management	How does DLCD interact for CO <sub>2</sub> Sequestration in kelp and eelgrass outside of mapping?	
	map potential restoration areas	
	sea otter restoration	
	linkages between land and sea	
	modeling land-sea linkages	
	kelp inventory	
	kelp roles in territorial sea plan	
	funding for rocky habitat work support	

## Special Area Management Planning

Stressors/Threats	Emerging Issues/ Needs	Mgmt Priorities
Restrictive access, navigation, and resource impacts.	Ocean energy (seafloor) cabling, resource protection, ocean energy environmental impacts - air, waters, sound and installation disturbances. Secondly - sustainable energy generation and repairable maintenance.	1. Local government approval 2. Resource impact monitoring 3. Local sustainable economic growth.
LNG sites, pollution from onshore activities and waste, climate change	Sea level rise	restoration
Uninformed county planners	Poor communication, no thought for environmental impact of development on existing wildlife and threatened ecosystems.	Submitting well documented studies, together with input from local residents, not creating new problems by trying to remedy problems in one area to the detriment of another area.
Poor infrastructure planning and tourism impedance of natural areas and unnecessary motor vehicle traffic on the beaches in Pacific City	A better informed voting public and property owners. County Government is making changes with less than 10% of the populous.	Better State Park Ranger Support for Cape Kiwanda and Bob Straub State Park and Tillamook County should restrict Beach access for motorized vehicles that enter at the turnaround on Sunset Drive and Pacific Avenue. The failure of state and county governments to work out a solution to preserve wildlife, flora, and rivers in this area is tragic.
Lack of materials management infrastructure on the south coast. Low state of engagement towards waste prevention on the south coast. No offshore waste prevention programs that I can find I posted on the south coast.	Exposure to Tool/Lending Libraries, Exchange Sites and Workshops for the DIY	Prevent Waste, Reuse Items, Then Recycle
ocean acidification, micro plastics,	Lack of knowledge about community needs and interests related to special area management (like MPAs?)	Need economic development focus on water-dependent industry, or need acknowledgement that the industry is not coming back
Water quality. Disease control in aqua culture. Sustainability.	misinformation, better understanding of management goals within agencies, coordination and support	Support for planning, education and better coordination.
Sea level rise, ADA accessibility, recent proposed changes to Endangered Species Act.	Motor vehicles on beaches impacting resource protection, developers destroying wetlands, threatened species under further distress due to changes to Endangered Species Act.	Restrict vehicle access further to protect the resource, ensure SPMA's are maintained, better manage wetland areas to maintain wetland habitat.
Out of date estuary management plans. Out of date mitigation policies. Acceptance of historic modifications and habitat loss in estuaries as establishing a baseline for Estuarine habitat protection policies	A need to establish a compensatory mitigation policy for projects that impact sub tidal portions of estuaries. A need to develop policies designed to address excessive and unacceptable levels of historic Estuarine habitat alteration and loss	1. Create incentives to encourage Recovery and restoration of impacted Estuarine habitat. 2. Provide support for up to date biological assessments of Estuarine habitats and functions. 3. Provide technical assistance to counties and cities to revise estuary management plans.

Imported consumption and materialistic values.	Perhaps people are invariably short-sighted, need to learn the hard way = climate change, California fires/power hardships = Oregon is next.	developed actions minus the profit/greed motive
Invasive vegetation, elk overpopulation, energy facility citing	Retaining scenic ocean views versus tree and vegetation wildlife habitat, safety concerns of large elk in city neighborhoods,	dune grading & vegetation, elk population control
Development pressures, changing economy,	Lack of water-dependent industry coming in	Find new parking area on county land near the Cape Kiwanda, not pushing it into residential areas and the State Park parking lot.
Coordination, lack of education and training	OAH	more regional representatives or consultants
human activity	estuary management plans	Education
Don't think you need a special committee just need common sense	Public Health Disclosures	science-informed policy
climate change, changing ocean conditions, demographic change	Climate Change	conservation, balanced and sustained use, adaptability
The county seems under the impression they need to provide access to the shore because of the 1913 beach road law. The law appears randomly applied as some areas are closed and others not. It unfairly impacts some owners and not others. The county tends to put the responsibility on the state for allowing vehicle driving on the beach. The vehicles access across county property at two locations. 1 at Cape Kiwanda and 2 at the end of Pacific Ave at the west end of the bridge in Pacific (also known as the Turnaround). Increased visitors have impacted the user experience and safety at both locations.	As stated above the parking plan is moving forward but the specifics are not determined yet. The plan is a vague overview of charging for parking, redirecting traffic to dead end lots currently used by others - fishermen, horse riders and their trailers and visitors wanting to access Bob Straub park.	develop funding
Lack of robust data sets and maps, lack of funds to collect that data, lack of interdepartmental communication.	same as stressors/threats	same as stressors/threats
Lack of transparency and willingness to hear another opinion.	Environmental impact as well as impact on users and owners of property.	That is your job.
insufficient protection for sensitive areas, HABs,	Can we recover keystone species like the ocean otter?	Kelp, sea stars, forage fish
Overuse/misuse, pollution & poor planning.	plan updates	increase areas of ecological function
out of date inventories	protection of eelgrass	mitigation
dynamic resources versus static maps	up to date inventories	
development of estuaries	improvement in water quality	
complex resources	new technology	
ecological functions threatened	update estuary plans and implementation	
De-centralized approach and lack of expertise to implement in estuary management	Review designated mitigation sites based on new understanding to account for restoration	



40 year old plans	modernize system	
lack of expertise at local level	need new technology and new information	
protecting private property can affect public lands (i.e. parks)		
funding to update plans		
economic development versus conservation		
lack of qualified consultants with coastal planning and science experience		

## Public Access

Stressors/Threats	Emerging Issues/ Needs	Mgmt Priorities
Vehicle traffic on the beach: pedestrian safety, environmental damage to wetlands and inland bays by illegal driving in these areas, wildlife harassment and decreased experience for pedestrians	Increased vehicle traffic because of increased visitors to the coast and lack of management by the county to prohibit vehicle access across their property. New parking plan for Pacific City Woods area does not immediately close vehicle access across county property to the shore. Pedestrian safety is compromised by vehicles trying to get over the sand dune. Pedestrian experience is compromised because beach is now like a road in front of residents homes and along the Bob Straub park. Vehicles enter Bob Straub dunes, Nestucca bay and wetland areas.	1. Immediately close county access point at the Turn a round at the west end of the bridge in Pacific City. 2. Stabilize the sand dune in this area by planting grass and trees. 3. Create pedestrian pathways over the dune to allow pedestrian access to the beach.
Vehicles on the beach south of the turnaround at Pacific City and unrestricted horse access at Bob Straub Park.	Lack of transparency of the Pacific City parking plan and limited public input.	Consideration of home owners and their input
Restrictive access, navigation, and resource impacts.	Ocean energy (seafloor) cabling, resource protection, ocean energy environmental impacts - air, waters, sound and installation disturbances. Secondly - sustainable energy generation and repairable maintenance.	1. Local government approval 2. Resource impact monitoring 3. Local sustainable economic growth.
Uninformed county planners	Poor communication, no thought for environmental impact of development on existing wildlife and threatened ecosystems.	Submitting well documented studies, together with input from local residents, not creating new problems by trying to remedy problems in one area to the detriment of another area.
Poor infrastructure planning and tourism impedance of natural areas and unnecessary motor vehicle traffic on the beaches in Pacific City	A better informed voting public and property owners. County Government is making changes with less than 10% of the populous.	Better State Park Ranger Support for Cape Kiwanda and Bob Straub State Park and Tillamook County should restrict Beach access for motorized vehicles that enter at the turnaround on Sunset Drive and Pacific Avenue. The failure of state and county governments to work out a

		solution to preserve wildlife, flora, and rivers in this area is tragic.
Lack of materials management infrastructure on the south coast. Low state of engagement towards waste prevention on the south coast. No offshore waste prevention programs that I can find I posted on the south coast.	Exposure to Tool/Lending Libraries, Exchange Sites and Workshops for the DIY	Prevent Waste, Reuse Items, Then Recycle
Gas pipeline in North Bend	I feel the public voice has not been listened to. Think for long range.	Preservation of aquaculture and water
Sometimes access needs to be put aside to let the land rest so it can recover its eco system people	People like access to everything but have no clue or care that just being in that area over an extended time can hurt the creatures and agriculture to the extent it doesn't survive take	Taking time out for regrowth. Protecting the wildlife. Letting the natural habitat alone so it can replenish
Private interests can be a threat to public access. There should be no privatizing of beaches - they should all be publicly owned and have access (unless a threat to wildlife). Also making areas accessible for all abilities and having ongoing maintenance.	need to acknowledge and understand safety concerns	Preserving public access, increasing accessibility, maintaining areas.
Political pressure	Public education and participation	Will have to leave to experts
Privatization - people needs to have access to beautiful areas or they won't care about preserving them.	More education is needed.	Build trails, decks, etc. so people won't damage sensitive areas.
Sea level rise, ADA accessibility, recent proposed changes to Endangered Species Act.	Motor vehicles on beaches impacting resource protection, developers destroying wetlands, threatened species under further distress due to changes to Endangered Species Act.	Restrict vehicle access further to protect the resource, ensure SPMA's are maintained, better manage wetland areas to maintain wetland habitat.
Lack of partnerships in coastal communities, isolation risk of winter storms could be a driver, governance education.	Cost of impacts to natural infrastructure and value of ecosystem services, analysis of successful/sustainable maritime redevelopment, estuarine food chain and geomorphic drivers of aquaculture (benthic organism and bathymetric surveys).	Management/retention of ecosystem services (watershed resiliency for drinking water and nearshore water quality), innovative maritime economic development, impacts of aquaculture on juvenile salmonids.
Out of sight\out of mind, indifference, lack of education	Vague information available about access areas, difficult access causing injuries and keeping others away, engagement of public to fight for pristine quality of public access areas.	Easier access (parking lots, trails, stairs, and board walks better maintained), more guided activities (more volunteer organizations), broader distribution of information about public access areas.
Imported consumption and materialistic values.	Perhaps people are invariably short-sighted, need to learn the hard way = climate change, California fires/power hardships = Oregon is next.	developed actions minus the profit/greed motive

Increased visitation, more diverse and underserved populations on the coast, shoreline armoring	Investigating how new access sites could be created from FEMA buyouts	Access as a mitigation technique
People need more access and education - leave intertidal organisms alone, don't touch, water quality education, etc.	Schools used to have money to take kids to beach, educate, no longer. We need to teach kids about ocean resources, manners, systems. Bigger picture but also - beach etiquette? Many tourists don't have it.	retain access
Vehicle access, roads and induced erosion.	Intact beach riparian zones, intact wetlands, intact coastal zones accessed only by foot or non-motorized power.	identify opportunities and maintenance strategies
Again, educating the public about safe usage of the beach	More signage, brochures in motels, restaurants and local businesses to educate visitors	Funding for staff on the beach on weekends
Sharing the results (info collected, results developed) with the general public	Clarity of process and info collected	Educational materials development and dissemination.
Too many people using limited facilities	Lack of trash collection	retain all access sites
Overuse, inadequate plans for saving the coastal areas from overuse, keeping the coastal area pristine.	Poor enforcement of existing laws, poor county planning, over commercialization.	Enforcement of laws, restricting development in areas that can't support more commercialization,
Overuse/misuse, pollution & poor planning.	Oregon Coastal Trail can be tied to public access	revive 306A projects
climate change	need to protect in face of pressure	enhance access sites
freshwater runoff from storm events	understand impacts to natural resources	
non-point source pollution runoff		
mobility issues		
habitat disturbance		
drone use over habitats		
riprap can affect access along the shores		
habitat disturbance from vehicles on beach		
Nestucca Spit is a problem area		
overbank dumping		

## Energy and Government Facility Siting

Stressors/Threats	Emerging Issues/ Needs	Mgmt Priorities
Pipelines and the proposed Jordan Cove facility and others like it	Stop supporting these places for exporting fossil fuels at high risk to our land and water	Renewable energy and conservation and eliminating plastic

<p>1) Marine, estuarine, and terrestrial environmental impacts can be enormous from big projects and do not currently get necessary attention and regulation</p> <p>2) There is a near total lack of local, state, or federal law or regulation for the decommissioning, reclamation, and restoration of certain facilities(e.g. LNG export terminals), with guaranteed financial bonding for that work.</p> <p>3) Public safety appears to be insufficiently addressed (local, state, federal)</p>	<p>The impacts of proposed energy facilities on climate change, recognition of risks to public safety from proposed projects by local and state government, careful assessment of costs to decommission, reclaim, and restore energy facility sites.</p>	<p>1) Make certain that the OCMP can work to encourage development of better local governmental responsibility for environmental protection by encouraging updated ordinances and focus on protecting and enhancing existing natural resources.</p> <p>2) DLCDD can work to support state and local requirements that decommissioning of energy facilities be thoroughly done for all larger-scale projects.</p> <p>3) Hazards of new, large scale energy facilities to public safety should be given heightened attention in the OCMP, backed by ordinances or regulatory requirements that can make public safety associated with these projects enforceable policies.</p>
Jordan Cove LNG siting, wave energy siting, offshore fossil fuel drilling	Sea level rise, pollution of rivers, fire danger from natural gas lines and facilities	Enforcement of clean water regulations, ending fossil fuel production and exportation
Gas pipeline in North Bend	I feel the public voice has not been listened to. Think for long range.	Preservation of aquaculture and water
Navigation, resource migration impacts, and shoreline ocean view disturbance.	To be kept abreast of site planning, local ocean planning discussions.	<p>1. Fisheries management involvement.</p> <p>2. Resource migration disturbances.</p> <p>3. Dependable and reliable energy output with grid improvements.</p>
Tourism, failure of Federal, State & County entities to collaborate.	Species are dying out or not present. Facebook and other entities drilling trenches in the benthic floor to bring fiber through small fishing communities is impacting our environment without cohesive studies.	Hold the planning commissions to a more thorough permitting process that is fully vetted and quit selling out our natural resources to corporate greed for a song.
Lack of science supporting plans.	Better focus on reality.	Consider an opposite view without rancor or hate because it's different.
Business as Usual, lack of knowledge, too much homework for the average citizen.	Publications, literature and more public awareness.	Prevent Waste, Reuse items and then recycle
Agency Coordination, layers of permitting, education on processes	Better agency Coordination, layers of permitting, education on processes	energy policies, coordination agreements, education
climate change, lack of political action, unwillingness to see the need for a rapid response	wind, solar and wave facilities and siting, energy storage, alternative transport systems	Reduce fossil fuel use, encourage renewables, add resilience to the energy supply for the coast
Money, money, money	More efforts to move to renewable energy.	Hard to say, the plan isn't done.
Invasive vegetation, elk overpopulation, energy facility citing	Retaining scenic ocean views versus tree and vegetation wildlife habitat, safety concerns of large elk in city neighborhoods,	dune grading & vegetation, elk population control

Offshore energy development creates a stressor on fisheries, the ocean ecosystem, and on coastal communities.	Space use conflicts between fisheries and ocean energy; impacts of the energy device and seafloor cables to fish and wildlife, Impacts of on-shore development and power infrastructure on coastal communities and Oregon's economy.	1) Ensure state's voice is heard in permitting decisions. 2) Develop methods that resolve conflicts between fisheries and development without sacrificing the ecosystem; 3) Revisit and strengthen state policies for seafloor cables.
People need more access and education - leave intertidal organisms alone, don't touch, water quality education, etc.	Schools used to have money to take kids to beach, educate, no longer. We need to teach kids about ocean resources, manners, systems. Bigger picture but also - beach etiquette? Many tourists don't have it.	self sufficiency
Fisheries interactions Federal energy policy Shoreside impacts of offshore development.	Critical energy infrastructure (e.g. transmission infrastructure for renewable energy, need to modernize liquid fuel storage and delivery systems) Need to enumerate and evaluate options for transition to low carbon surface transportation	Surface transportation Energy transmission systems Management of Offshore development
offshore energy facilities, repeal of state legislation, onshore energy facilities	Importance of facility relocation despite repeal of state requirements	relocating emergency services and facilities out of the inundation zone
Political pressures	Public education and participation	Will have to leave to experts
Extraction industries.	Unbiased (if possible!) cost-benefit analysis of the extraction industry at specific points.	Big picture view on industry/ecology interface. Particular view on physical sites of industry/ecology interface (such as Jordon's Cove). Citizen scientist involvement.
Problems of biosolids being applied in uplands – microplastics issue	emergency preparedness	tsunami hazard overlay zones
visual impacts	site planning to minimize effects	site planning to minimize effects
fisheries impacts	grid resilience	grid resilience
	self sufficiency	

## Marine Debris

Stressors/Threats	Emerging Issues/ Needs	Mgmt Priorities
Sewage/Waste storm runoff into ocean, Sewage escape, bilge/waste flushing	Increasing amounts of poisons, human waste, petroleum pollution being flushed into the ocean through storm drain runoff and sewage system leakages	Create sewer intercept system for all storm drain systems, collecting all stormwater runoff and processing at sewage treatment plant before release
Climate change, plastics pollution, human expansion/improper building	Learning from past mistakes.	More beach cleanup, building code enforcement, education
Plastics, litter and pollution runoff	Storm runoff, plastic and ocean trash	Ocean trash management and storm/pollution from land and human activities
I think we need to focus on keeping what we have healthy and cleaning up what we have and	The garbage and chemicals. In our oceans bigger	Bigger fines for people not following the rules and regular reinforcement

enforcing taking care of our wetlands for future populace		
We need stronger regulations on pollution, waste, and carbon. More work to keep plastic out of the ocean and preserving the diversity of species in the area.	Need to be inclusive of the indigenous communities in the area - create space for their expertise and involvement. They should have a meaningful presence in decision making.	Wildlife conservation, reducing carbon footprint, cleaning up the ocean/beaches
Degradation of wet lands, invasion of debris.	Public participation	Have to leave that to experts
Poor management of wetlands	Building too close to seashore	Clear cutting too close to streams and watersheds. Jordan cove and the special interest behind it
Unrestricted garbage/waste management upstream	waste management/education/ figuring out ways to incentivize the public in this effort	Waste management company focused cooperation, education of public, coordinating efforts of organized entities
Worldwide pollution, local/inland runoff & over-use or misuse.	Emerging issue: too many dogs on beaches (misuse), development in coastal towns without added infrastructure (trash/recycling, parking) & continued collection of debris.	Preserve & protect for wildlife by having some areas no-dog beaches, coastal construction management & awareness of run-off.
Lack of materials management infrastructure on the south coast. Low state of engagement towards waste prevention on the south coast. No offshore waste prevention programs that I can find I posted on the south coast.	Exposure to Tool/Lending Libraries, Exchange Sites and Workshops for the DIY	Prevent Waste, Reuse Items, Then Recycle
Trash control, overcrowding, near waterways and lack of patrol	Receptacles that are wind and animal proof	Park Ranger, sheriff and cleanup
China's decision not to take plastic to recycle, too much plastic in our society,	need to have ways to recycle plastics	recycling, ways to reuse plastic, decrease amount of plastic packaging
The amount of plastic, rope and items that entangle wildlife	Educating and providing opportunities for the public to help keep the beach clean	Preventing materials from entering the ocean
People need more access and education - leave intertidal organisms alone, don't touch, water quality education, etc.	Schools used to have money to take kids to beach, educate, no longer. We need to teach kids about ocean resources, manners, systems. Bigger picture but also - beach etiquette? Many tourists don't have it.	Lead by example
Plastics added to the ocean by people in Oregon, especially microplastic fibers and particles; drifting plastic and exotic marine debris deposited on Oregon shorelands; influx of exotic non-native and potentially invasive species arriving on floating marine debris. Also, though it doesn't seem to pose a problems yet, Oregon should be on the watch for changes in ocean temperatures or chemistry that may trigger the buildup of organic marine debris, e.g., from excessive primary production, affecting water quality or accumulating on shorelands.	How to effectively reduce your use of plastic; effects of plastics in marine food webs; effects of plastics in human physiology.	Comprehensive plastics-avoidance education; Continue to support the Oregon Ocean Policy Advisory Council

invasive species, funding for cleanups/response, promotion of alternatives to plastic reduction (e.g. chemical recycling)	understanding the magnitude of the issue, greenwashing, re-branding (it's pollution, not debris)	mandate source reduction of single-use plastics, coordinate state agencies and resources for rapid response, secure funding for cleanups and to fund partnerships
Plastics and microplastics polluting the shoreline, potential over harvesting of aquatic resources,	Lack of enforcement of Ocean Shores Rules. Lack of technology to remove marine debris	Develop ways to remove marine debris, plastic and microplastics more efficiently. Monitor and restrict aquaculture activities to protect resources. Give OPRD Beach Rangers broader enforcement authority and expand the number of officers patrolling the ocean shores.
Poor planning globally and locally to manage one use packaging.	Better recycling and affordable waste disposal options. In pacific city the minimum price to drop anything like one bag of trash is over \$20 and the recycling choices so limited that it does not encourage recycling in the first place.	Better practices for waste and fishing.
Too much plastic disposable crap	Recycling in our area, and looking at ways to just not have so much plastic packaging and other stuff	
currently plan to produce more plastic	how to control or avoid	
microplastics	marine biofueling	
debris from logging	ban the bag	
upland animal waste	ballast discharge tracking	
ghost fishing nets	geographic response plans, support revisions	
stormwater culverts as sources	sewer treatment plan upgrades	

## Aquaculture

Stressors/Threats	Emerging Issues/ Needs	Mgmt Priorities
Water quality. Disease control in aqua culture. Sustainability.	relationship with tribes	formalize tribal consultation
Business as Usual, lack of knowledge, too much homework for the average citizen.	Publications, literature and more public awareness.	Prevent Waste, Reuse items and then recycle
Lack of partnerships in coastal communities, isolation risk of winter storms could be a driver, governance education.	Cost of impacts to natural infrastructure and value of ecosystem services, analysis of successful/sustainable maritime redevelopment, estuarine food chain and geomorphic drivers of aquaculture (benthic organism and bathymetric surveys).	Management/retention of ecosystem services (watershed resiliency for drinking water and nearshore water quality), innovative maritime economic development, impacts of aquaculture on juvenile salmonids.
Imported consumption and materialistic values.	Perhaps people are invariably short-sighted, need to learn the hard way = climate change, California fires/power hardships = Oregon is next.	developed actions minus the profit/greed motive

Overlaps with some of my earlier responses. Introduction of non-native genotypes/species, habitat loss, ocean biochemical health	acidification, hypoxia, dead zones, food web collapse, plastics, human encroachment	There's your information need
Aquaculture creates the following stressors: 1) water quality, 2) space use conflicts with fisheries and other uses; 3) risk of introduced species and diseases	Need to understand what types of aquaculture are possible in Oregon waters and what the potential impacts of that development would be.	Resolve or minimize the conflicts/stressors of: 1) water quality, 2) space use conflicts with fisheries and other uses; 3) risk of introduced species and diseases
Insufficient support for new aquaculture operations, inadequate set of rules governing operations of aquaculture businesses.	Funding, grants and economic area enhancements designed to entice aquaculture businesses to the area, thorough review and rewrite of operations restrictions for aquaculture businesses.	Develop ways to remove marine debris, plastic and microplastics more efficiently. Monitor and restrict aquaculture activities to protect resources. Give OPRD Beach Rangers broader enforcement authority and expand the number of officers patrolling the ocean shores.
Plastics and microplastics polluting the shoreline, potential over harvesting of aquatic resources,	Lack of enforcement of Ocean Shores Rules. Lack of technology to remove marine debris	
Overuse/misuse, pollution & poor planning.	effects of ocean acidification	
ocean acidification	restorative mariculture	
issue in estuaries	link to offshore energy	
	congressional action - waive NEPA for agriculture on O/G leases	
	transition in oyster ownership, management and regulation of oysters	
	traditional knowledge	
	traditional ecological knowledge	
	advantage to ocean aquaculture	
	tradeoffs and threats on a bigger scale	
	incorporation of coastal tribes	
	how to extend into watershed and upland via hatcheries	



## Coastal Hazards

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knowledge emergency stronger Climatic population pressure visitors  
erosion ground communication system LNG storm kayakers  
pressures coast developers marine Cascadia existing surges  
populations future onshore exposed Seismic building increasing  
preparedness deal political rap move tsunami Water flooding  
landslide movement fire unstable resilience changes  
growth temperatures resources climate coastal Sea  
level human mile geotech Bend stormier rip variability  
fossil Gas Global Infrastructure increase regulation  
Community beach storms intensity flood pipeline  
landslides Climate-related unrestricted planning pollution  
shoreline over-development pedestrians  
change rising Business warming development  
change/water acidification funding tourism  
enforce shifting Staircases tides  
tsunamis Parking

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## Threats



## Threats





## Threats





## Threats





## Aquaculture

### Threats



### Emerging Issues and Information Needs



### Management Priorities



## **Purpose of Phases:**

### **Phase I (High-Level) Assessment:**

**Purpose:** To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

### **In-Depth Resource Characterization**

**Purpose:** To determine key problems and opportunities to improve the CMP's ability to protect, restore, and enhance wetlands.

### **In-Depth Management Characterization**

**Purpose:** To determine the effectiveness of management efforts to address identified problems related to the wetlands enhancement objective.

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<sup>i</sup> [https://www.fema.gov/media-library-data/1487973067729-d34bd451527229a45bad0ef5ac6ddf93/508\\_FIMA\\_Acq\\_FAQs\\_2\\_24\\_17\\_Final.pdf](https://www.fema.gov/media-library-data/1487973067729-d34bd451527229a45bad0ef5ac6ddf93/508_FIMA_Acq_FAQs_2_24_17_Final.pdf)