Oregon Shores
Conservation Coalition

A People's Primer for Protecting Oregon's Eelgrass

2nd Edition

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Introduction

Eelgrass (*Zostera marina*) is Oregon's most common seagrass, and can be found in all 22 major estuaries of the state. This unassuming submerged aquatic vegetation is a crucial component of healthy and productive estuarine ecosystems. Eelgrass in Oregon's estuaries helps to sustain salmon and other fish, water birds, Dungeness crab, oysters, and many other species. It is a plant of great cultural significance to the tribal groups that have occupied the Oregon coast, historically and in the present, and plays an important role in their lifeways. It supports commercially and recreationally important fish and shellfish species, and thus undergirds coastal economies. The plant will be a key factor in the calculus of climate change resilience for Oregon's coast: it sequesters carbon from greenhouse gases, mitigates ocean acidification, and helps to safeguard coastal communities from the impacts of extreme storm and flood events.

Despite being one of the most important and productive marine species in the world, seagrasses are at risk due to impacts from human activities and changing ocean conditions. Approximately 30 percent of the world's seagrass has vanished since the 1870s, with coastal communities losing an area of eelgrass that would cover two football fields about every hour.[1] Eelgrass on the Oregon coast is following this disturbing global trend. Recent evidence of eelgrass disappearance in Coos Bay and Yaquina Bay adds urgency to Oregon's need to transform its approach to eelgrass management, and strengthen protections for the estuarine habitat it needs to thrive.

Informed public participation in decision-making processes with the potential to impact eelgrass is key to meeting this need. Eelgrass in Oregon is managed by several different local, state, and federal authorities. While many of these offer opportunities for the public to improve protections for eelgrass, the legal frameworks and decision-making processes involved are technically complex and difficult to navigate. The Oregon Shores Conservation Coalition ("Oregon Shores") offers the second edition of this Primer to help community members learn more about the issues impacting eelgrass and to support effective public participation to protect this crucial species.

A New Version of the Primer

Estuary Management Plans for Oregon's estuaries are outdated, typically 40 years old or more. Much has changed and much has been learned about estuarine ecology in the interim. The Oregon Coastal Management Program has launched an effort to revise and update all of the state's EMPs. The first under review is the Yaquina Bay EMP, shared by Lincoln County and the cities of Newport and Toledo. The process is already underway, and there will be opportunities for public involvement early in 2023. Preserving the estuary's eelgrass beds, and planning for their survival as climate change affects their habitat, is a key conservation goal in the EMP updates.

The second edition of this Primer was developed with support from the Spirit Mountain Community Fund and Crag Law Center. This version specifically focuses on expanding

[1] Paul Shively, *Eelgrass is Essential to Ocean Health*, Pew Charitable Trusts (June 7, 2019), https://www.pewtrusts.org/en/research-and-analysis/articles/2019/06/07/six-reasons-to-protect-eelgrass; Pamela L. Reynolds, *Seagrass and Seagrass Beds*, Smithsonian Institution Ocean Initiative (Apr. 2018) https://ocean.si.edu/ocean-life/plants-algae/seagrass-and-seagrass-beds.

awareness of eelgrass and its role in Yaquina Bay, and explaining what changes could be made to the Yaquina Bay Estuary Management Plan to better protect eelgrass and its habitat.

The first version of this Primer was developed in May 2021, with support from Pew Charitable Trusts, the City of Coos Bay, and Crag Law Center, and focused more strongly on Coos Bay. Both versions provide a general introduction to eelgrass habitats on the Oregon coast, a description of their ecological importance and the threats to their health, and resources for people interested in helping their communities to begin the long process of protecting and preserving this vital component of Oregon's estuaries.

Part I: A Primer on How to Protect Eelgrass and its Habitat in Oregon

Studies show that a lack of public awareness is a serious threat to eelgrass.[2] Sustained public participation is needed to create stronger eelgrass protections at the local, state, and federal level. Part I of the second edition of this Primer can be used as a standalone, quick reference guide for interested members of the public on how to get involved in decision-making processes that impact eelgrass.

Like the first edition, Part I of the second edition of this Primer begins with an overview of eelgrass, why it needs protection, and how existing legal frameworks can be strengthened to protect it. Part I of the second edition has been revised to focus specifically on the basics for getting involved in the Yaquina Bay Estuary Management Plan Update, since this process will provide public participation opportunities to protect eelgrass habitat beginning in 2023.

1. What is Eelgrass and why should we protect it?

Eelgrass is a type of seagrass. Seagrasses are marine flowering plants that live worldwide in saltwater environments. They have roots, stems, and strap-like leaves that sway around in the water column.[3] Seagrasses conduct their entire lifecycles, including pollination and photosynthesis, underwater.[4] Eelgrass and other seagrasses provide several important services to estuarine ecosystems and coastal communities.

Two species of seagrass live in Oregon's estuaries: native Oregon eelgrass (*Zostera marina*) and introduced dwarf eelgrass (Z. *japonica*).[5] As Oregon does not have management policies directed at *Z. japonica*, this Primer focuses on native Oregon eelgrass ("eelgrass" or "*Z. marina*").[6] However, it is recognized that *Z. japonica* is also experiencing decline, and that more research is needed to understand how this introduced species will interact with native eelgrass as sea levels rise. Appendix C contains resources to learn more about eelgrass as a species, how it will be impacted by climate change, and its interactions with *Z. japonica*.

1.1. Optimal environmental conditions for eelgrass in Oregon.

Native eelgrass beds in Oregon occur primarily in estuaries, and are found along the lower fringes of estuarine intertidal flats and the upper edges of bordering subtidal slopes.[7] It

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[2] Kate Sherman & Lisa A. DeBruyckere, *Eelgrass Habitats on the U.S. West Coast: State of the Knowledge of Eelgrass Ecosystem Services and Eelgrass Extent*, Pacific Marine and Estuarine Fish Habitat Partnership for The Nature Conservancy, 49 (2018), http://www.pacificfishhabitat.org/wp-content/uploads/2017/09/EelGrass_Report_Final_ForPrint_web.pdf.

[3] James Kaldy, *Past, Present & Future of Seagrasses in Yaquina Bay and other Estuaries*, MidCoast Watersheds Council Community Presentations, (Feb. 2022) [hereinafter *Kaldy MCWC Presentation*] https://www.youtube.com/watch?v=rXHgawkbK9o&feature=emb_imp_woyt.

[4] *Id.*

[5] Or. Dept. of Fish & Wildlife, *Native Eelgrass*, The Oregon Conservation Strategy, https://www.oregonconservationstrategy.org/strategy-species/native-eelgrass/ (last visited Dec. 17, 2020).

[6] *Kaldy MCWC Presentation*, *supra* note 3; *See also* Deborah Shafer, James E. Kaldy & Jeffrey Gaeckle, *Science and Management of the Introduced Seagrass Zostera japonica in North America*, J. Envtl. Mgmt., (2013) ("Oregon…[appears]to have no specific policies with regard to *Z. japonica*."), https://www.researchgate.net/publication/257177292_Science_and_Management_of_the_Introduced_Seagrass_Zostera_japonica_in_North_America.

[7] James W. Good, *Summary and Current Status of Oregon's Estuarine Ecosystems*, Or. State of the Envt. Report, Ch. 3.3, 35

forms dense, underwater meadows, which are only exposed by the lowest tides.[8] In Yaquina Bay, eelgrass tends to occur from -6 feet to +1.5 feet relative to Mean Lower Low Water ("MLLW").[9] Experiments to test the effects of salinity and water temperature on the ecological performance of *Z. marina* showed that the optimum water temperature for eelgrass seemed to be between 10 to 20 degrees C or 50-60 degrees F.[10] For reference, traditional temperatures in Yaquina Bay are typically pretty cold, ranging between 50-60 degrees F—the optimum temperature for eelgrass.[11]

Based on over 40 years of research, scientists have a strong understanding of optimal environmental conditions for eelgrass, and can effectively predict how eelgrass will respond to basic environmental drivers like light, temperature, salinity, and nutrients.[12] Due to the specificity of environmental conditions eelgrass needs to thrive, eelgrass mitigation has a poor track record.[13] This means effective eelgrass protections must prioritize avoidance of impacts, rather than reliance on mitigation of impacts.

1.2. Why should we protect eelgrass?

Eelgrass beds in Oregon's estuaries provide an array of important services for a variety of marine species, including as nursery habitat for fish and shellfish and food. Eelgrass beds offer shelter and foraging areas for rockfish and halibut. They are important nursery habitat for salmonids and Dungeness crabs. Pacific herring, a culturally significant and vital forage fish, use the long slender leaves of eelgrass to lay their eggs. Migratory waterfowl, including the Pacific black brant, eat eelgrass. Eelgrass serves as the base of the food chain for several marine mammals by physically forming habitat where microorganisms such as plankton thrive.

Eelgrass beds also:

- **Improve water quality, clarity, and oxygen levels.** Eelgrass helps improve water quality by absorbing pollutants. Recent studies show a drastic reduction in harmful chemicals such as polychlorinated biphenyls (PCBs) in areas with eelgrass beds. Other studies on the West Coast have shown that bacteria found in eelgrass beds help prevent harmful algal blooms. Eelgrass traps and retains sediment, resulting in clearer water. By pulling carbon dioxide out of the water during photosynthesis, eelgrass produces oxygen.
- **Sequester carbon and reduce ocean acidification.** Eelgrass absorbs greenhouse gases like carbon dioxide and methane, and stores them in its root system. An acre of eelgrass can sequester 740 pounds of carbon annually, about the same amount emitted by a car traveling 3,860 miles.[14] Ocean acidification inhibits the ability of some marine life, such

(2000), https://www.oregon.gov/dsl/WW/Documents/soer_ch33.pdf.
[8] Or. Sea Grant, *The Yaquina Estuary and Its Inhabitants*, Or. St. U., 6-7 (2019), https://seagrant.oregonstate.edu/sites/seagrant.oregonstate.edu/files/h19001_002_accessible.pdf.
[9] *Kaldy MCWC Presentation*, *supra* note 3. MLLW is a tidal datum defined as "the average of the lower low water height of each tidal day observed over the National Tidal Datum Epoch." Or. Coastal Mgmt. Program, *Or. Territorial Sea Plan*, Dep't of Land Conservation & Dev., App. D, (1994), https://www.oregon.gov/lcd/OCMP/Documents/otsp_app-d.pdf.
[10] Sherman & DeBruyckere, *supra* note 2, at 50.
[11] *Kaldy MCWC Presentation*, *supra* note 3.
[12] *Id.*
[13] *Id.*
[14] Ashley Gallagher, *Blue Carbon Infographic*, Smithsonian Institution Ocean Initiative, https://ocean.si.edu/conservation/climate-change/blue-carbon-infographic (last visited Dec. 17, 2020).

as oysters and Dungeness crab, to form shells.[15] Carbon sequestration by eelgrass acts as a local buffer against the effects of ocean acidification.[16]

- **Protect and stabilize coastal shorelines.** Eelgrass beds provide natural buffers against coastal storms by absorbing the force of waves and, through their extensive root systems, preventing bay bottom sediments from washing away. The underwater meadows provide protection against shoreline erosion, storm surges, and rising sea levels.
- **Strengthen coastal economies.**[17] Healthy eelgrass beds support fish and shellfish that are integral to the commercial and recreational fishing industries—the economic engines of many coastal communities. They provide fertile ground for recreational fishing and encourage tourist activities, such as snorkeling and diving. Eelgrass also supports a wide array of wildlife that draws millions of visitors to the West Coast each year.

Conservation and restoration of eelgrass is important to sustain a variety of marine uses, and assist in adapting to and mitigating the harmful impacts of global warming (i.e., strengthening coastal climate resilience). However, eelgrass in Oregon is at risk due to human activities and changing ocean conditions. Eelgrass has begun disappearing from parts of Coos Bay:[18] Between 2016 through 2019, researchers observed a 51 percent loss in eelgrass habitat at Valino Island within the South Slough National Estuarine Research Reserve in Coos Bay.[19] Scientists have also observed drastic reductions in eelgrass bed acreage and density in Yaquina Bay, with estimates of between 50 to 70 percent loss in some areas of the estuary.[20]

2. Why is Eelgrass at Risk?

Eelgrass faces threats related to human activities and changing ocean conditions.[21] Existing legal frameworks fail to meaningfully account for how these threats present in Oregon's estuaries, how they interact with one another, and how each threat is exacerbated by climate change. Effective eelgrass advocacy must ensure these threats are adequately considered and addressed in permitting and estuary planning processes.

Effective public comments should raise the possibility of these multiple threats to eelgrass and their impacts to decision-makers, and ensure they are addressed to the greatest extent possible under the applicable laws and policies. This section lists typical threats to eelgrass, and discusses what scientists have theorized are the likely causes of eelgrass decline in Oregon's estuaries. In particular, multiple stressor impacts must be addressed to ensure eelgrass beds are adequately protected.

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[15] *Seagrass and Kelp as an Ocean Acidification Management Tool in California*, California Ocean Science Trust, https://www.oceansciencetrust.org/projects/sav/ (last visited Dec. 17, 2020).
[16] Jes Burns, *Can Kelp and Seagrass Help Oysters Adapt to Major Ocean Change?,* OPB (Jan. 31, 2018), https://www.opb.org/news/article/kelp-seagrass-oysters-ocean-change/.
[17] Jessie Neumann, *Splendors of Seagrass*, The Ocean Foundation (July 8, 2015), https://oceanfdn.org/splendors-of-seagrass/.
[18] Toni Greaves, *Oregon's Eelgrass Is Disappearing, With Potentially Big Impacts*, Pew Charitable Trusts (July 16, 2019), https://www.pewtrusts.org/en/research-and-analysis/articles/2019/07/16/oregons-eelgrass-is-disappearing-with-potentially-big-impacts.
[19] *Kaldy MCWC Presentation*, *supra* note 3.
[20] *Id.*
[21] Steve Marx, *Eelgrass and Kelp Play Vital Role in Coastal Ecosystems, Communities—but Face Diverse Threats*, Pew Charitable Trusts (June 24, 2022) https://www.pewtrusts.org/en/research-and-analysis/data-visualizations/2022/eelgrass-and-kelp-play-vital-role-in-coastal-ecosystems-communities-but-face-diverse-threats.

2.1. Threats from Physical Land and Water Use

- **Aquaculture.** The rapid expansion of fish farming and other aquaculture practices (e.g., shellfish culture) can have serious consequences on local populations of seagrasses through physical disturbance or increased deposition of organic matter and nutrients.[22]
- **Coastal development.** Coastal development leads to activities, such as shoreline armoring, overwater structures, impervious surfaces, outfalls and includes general coastal construction. All of these activities and uses have localized impacts on eelgrass meadows.[23]
  - Shoreline armoring can disrupt natural sediment delivery and transport.
  - Construction of overwater structures can have direct physical impacts on eelgrass meadows, and result in reduced light to eelgrass meadows, which can inhibit growth and increase eelgrass plant mortality.
  - In-water construction includes installation of pilings, overwater structures, underwater cables, and outfalls and can lead to eelgrass plant mortality by physical uprooting or burying plants.
  - Coastal infrastructure construction along the coast can increase runoff, sedimentation, and pollution.[24]
- **Increased sedimentation.** Increasing sediments to estuaries reduces water clarity and can stress eelgrass growth by reducing available photosynthetic light, and can also lead to burial or fragmentation of eelgrass meadows.[25] Major causes include river channelization, agriculture, and upstream logging.[26]
- **Dredging and filling activities.** Dredging and filling activities involve a number of easily measurable direct impacts, which include the physical removal of the eelgrass along with the dredged sediments.[27] Indirect impacts to eelgrass in adjacent un-dredged areas may occur as a result of increased turbidity associated with dredging activities.[28]

2.2. Threats from Climate Change Events

- **Warming ocean waters.** Elevated temperatures directly affect eelgrass productivity and respiration. Extended periods of high temperatures can reduce eelgrass growth and survival.[29]
- **Sea level rise ("SLR").** Sea level is projected to rise in response to global warming, resulting in a shift in the distribution of existing eelgrass habitats.[30] Relative rates of SLR will vary depending on local factors, including eustatic SLR (related to change in the total amount of water in the ocean, together with the shape and capacity of ocean basins), sediment elevation change, and tectonic elevation change.[31]

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[22] Robert J. Orth et al., *A global crisis for seagrass ecosystems*, 56 BioScience 987, 992 (2006), https://www.researchgate.net/publication/232689519_A_Global_Crisis_for_Seagrass_Ecosystems.
[23] Sherman & DeBruyckere, *supra* note 2, at 48, 50.
[24] *Id.*
[25] *Id.* at 48.
[26] *See id.* at 48 (discussing causes); Greaves, *supra* note 16, (same).
[27] Bruce Sabol, Deborah Shafer & Elizabeth Lord, *Dredging Effects on Eelgrass (Zostera marina) Distribution in a New England Small Boat Harbor*, 8 J. Marine Envtl. Engineering 1, 1 (2005).
[28] *Id.*
[29] Sherman & DeBruyckere, *supra* note 2, at 50.
[30] *Id*.
[31] *Id.*

- **The Ejection Effect.** Eelgrass habitat losses will occur when the rate of bottom change surpasses the eustatic rate and the eelgrass cannot survive the levels of desiccation and wave energy occurring at shallower depths into which it is being pushed.[32] This is known as the ejection effect.
- **The Landward Migration Zone and the Extinction Effect.** Another possible change in eelgrass meadows occurs with changes in light attenuation (i.e., loss of intensity in light) as the depth of the eelgrass meadow increases with SLR.[33] These changes will be especially prominent at the deep edge of the eelgrass bed, and impact varies by location.
  - In eelgrass meadows in which water is more turbid, the changes in light attenuation may have a greater impact.[34]
  - Where eelgrass is distributed across a much wider depth range, the survival of eelgrass meadows will depend on the availability of suitable eelgrass habitat on the landward side of the bed (i.e., a landward migration zone).[35] Where habitat is available, eelgrass may be able to respond and move upslope. However, areas that have been heavily modified by coastal development (shoreline armoring and other coastal infrastructure) will have limited landward migration opportunities.[36] This scenario is known as the extinction effect.
  - In areas on the West Coast that are more limited in the depth band for eelgrass, such as estuaries in Washington, Oregon, and Northern California, the ability for eelgrass beds to migrate landward may be more important than in other regions.[37]

2.3. Other Human Threats

- **Lack of up-to-date data on status and condition.** Limited monitoring of the existing extent of eelgrass beds makes it difficult to quantitatively measure loss, which in turn makes it difficult to identify and monitor specific threats to eelgrass habitat. Without knowledge of what is being managed—i.e., what threats there are and to what degree Oregon's eelgrass is facing them—decision-making is being carried out in the dark. Critical gaps in data, both globally and regionally, on eelgrass conditions, distribution, mapping, and status monitoring raises barriers to developing habitat specific legal protections for eelgrass.
- **Lack of cultural resource protection and tribal consultation policies.** Oregon's lack of acknowledgement of eelgrass as a habitat important to the lifeways of several coastal Tribes, as well as its lack of explicit cultural resource protection designations for eelgrass and tribal consultation requirements for impacts to eelgrass means that the cultural significance of eelgrass is likely not adequately considered in decision-making processes.
- **Lack of consideration of multiple stressor and cumulative impacts to eelgrass beds in legal frameworks.** Ecology literature indicates that eelgrass habitats have been heavily degraded in the past century as a result of inadequate protection in law and regulation.[38] Oregon lacks ecosystem-based management policies specific to eelgrass that prioritize

[32] *Id.*
[33] Sherman & DeBruyckere, *supra* note 2, at 50.
[34] *Id.*
[35] *Id.*
[36] *Id.*
[37] *Id.*
[38] Julia A. Ekstrom et al., *Evaluating functional fit between a set of institutions and an ecosystem*, 14 Ecology & Soc'y, App. 1 (2008), https://www.ecologyandsociety.org/vol14/iss2/art16/.

avoidance of impacts. Management is instead solely targeted at human activities that may impact eelgrass, and relies on mitigation of "unavoidable impacts." The lack of specific acknowledgment in the law of climate change impacts and the multiple threats to eelgrass, as well as the lack of explicit plans to address these known threats, indicates that protections are not addressing the net result of multiple stressors or cumulative impacts.

- **Lack of public awareness.** Lack of public awareness of the ecological, cultural, and societal importance of eelgrass means that bold management and restoration decisions may not be met with robust public support. It also means that communities may not be effectively addressing the cumulative impacts of decisions (from individual permitting processes to government rulemaking action) that contribute to continued eelgrass loss and degradation.[39]

2.4. Likely Causes of Eelgrass Decline in Oregon's Estuaries – Temperature Stressors combined with Multiple Stressor Impacts

Large scale decline and loss of native eelgrass habitat is occurring up and down the west coast, including in Yaquina and Coos Bay.[40] Although this west coast trend mirrors eelgrass declines observed on the east coast, preliminary research indicates that this may not be due to the same primary documented causes of eelgrass decline.[41] On the east coast, eelgrass wasting disease and avian overgrazing have resulted in large scale losses of eelgrass habitats. While eelgrass wasting disease and avian overgrazing are present on the west coast, their effects appear to be more localized and do not seem to be contributing to the large-scale habitat losses observed in Oregon's estuaries.[42] Rather, temperature stressors associated with chronic increases in water temperature due to global warming and episodic warming events (e.g., marine heat waves like "the blob") correlate strongly with observed eelgrass losses. Warming waters disrupt eelgrass photosynthesis, limiting the amount of carbon the plant can store as food supply.[43] As temperatures increase, eelgrass meadows get stressed, and ultimately die.[44]

While the complex interaction amongst water levels, temperature, and light complicates the ability to predict the exact degree of climate change impacts on eelgrass, the fact is that changing ocean conditions related to extreme weather events and climate change are correlated with eelgrass habitat decline. These climate change vulnerabilities coupled with the challenges associated with eelgrass mitigation indicates that laws and regulations must be updated at the local level to ensure that multiple-stressor impacts from coastal development and increased sedimentation are avoided to the greatest extent practicable.

3. Estuary Management Plan Updates as a Pathway to Improve Eelgrass Protection

Because the legal frameworks that govern estuaries also govern eelgrass habitat, they are a logical starting point to improve eelgrass protections. Part I, Section 3 of the second edition of

[39] Richard K.F. Unsworth et al., *Global Challenges for Seagrass Conservation*, 48 Ambio 801, 802 (2019), https://link.springer.com/article/10.1007/s13280-018-1115-y.
[40] *Kaldy MCWC Presentation*, *supra* note 3.
[41] *Id.*
[42] *Id.*
[43] *Id.*
[44] *Id.*

this Primer discusses estuary management plans, how they can be improved to protect eelgrass, and the basics of getting involved in the ongoing Yaquina Bay Estuary Management Plan update.

3.1. What are Estuary Management Plans and why do they matter for eelgrass?

An estuary management plan ("EMP") is a legal document required by Oregon Statewide Land Use Planning Goal 16 ("Goal 16") that establishes mandatory planning and regulatory standards for land use decisions within estuarine aquatic areas.[45] The objective of Goal 16, which governs "Estuarine Resources," is generally to "protect the long-term values, diversity, and benefits of estuaries and associated wetlands and also to provide for appropriate restoration and development."[46] To achieve this objective, Goal 16 requires estuary-adjacent local governments to adopt EMPs as a component of their overall comprehensive land use plans.[47] Through its inventory and management unit designation requirements, Goal 16 is one of the few existing state laws with specific, place-based requirements that protect eelgrass habitat.

Oregon's statewide land use law, codified in 1973 as Oregon Revised Statutes ("ORS") Chapter 197, required the state to adopt mandatory planning procedures and standards to guide land use decision-making by local governments and state agencies.[48] These standards are the 19 Statewide Land Use Planning Goals ("Goals"), listed below in Table 1.

Table 1: OREGON STATEWIDE LAND USE PLANNING GOALS
Oregon has adopted 19 Statewide Land Use Planning Goals ("Goals") to guide comprehensive planning by local governments as well as land use decisions by state agencies.

GOAL 1: Citizen Involvement GOAL 2: Land Use Planning	Goals 1 and 2 are the process goals
GOAL 3: Agricultural Lands GOAL 4: Forest Lands GOAL 5: Natural Resources, Scenic and Historic Areas, and Open Spaces GOAL 6: Air, Water, and Land Resources Quality GOAL 7: Areas Subject to Natural Hazards GOAL 8: Recreational Needs GOAL 9: Economic Development GOAL 10: Housing GOAL 11: Public Facilities and Services GOAL 12: Transportation	Goals 3 through 8, 13 and 15 express natural resource conservation goals.
GOAL 13: Energy Conservation GOAL 14: Urbanization GOAL 15: Willamette River Greenway GOAL 16: Estuarine Resources	Goals 9 through 12 and Goal 14 are concerned with housing, public facilities, transportation, urban growth and economic development.
GOAL 17: Coastal Shorelands GOAL 18: Beaches and Dunes GOAL 19: Ocean Resources	Goals 16 through 19 are known as the coastal goals, and apply specifically to the unique resources of the Oregon coast.[49]

Every city and county in the state is required to adopt what is known as a comprehensive land use plan to comply with each of the applicable Goals.[50] Comprehensive plans must contain

[45] Or. Dept. of Land Conservation & Dev., *Assessment of Oregon's Regulatory Framework for Managing Estuaries*, 9 (Mar. 2014) [hereinafter *2014 DLCD Assessment*], https://www.oregon.gov/lcd/OCMP/Documents/RegulatoryAssessment.pdf.
[46] Or. Coastal Mgmt. Program, *Understanding Oregon's Land Use Planning Program – Ch. 6: Goal 16, Estuarine Resources*, https://www.oregonlandusetraining.info/data/6_index.html (last visited Dec. 12, 2022) [hereinafter *Ch. 6: Goal 16, Estuarine Resources*].
[47] Or. Dept. of Land Conservation & Dev., *The Oregon Estuary Plan Book*, 8 (1987) [hereinafter *1987 Estuary Plan Book*], https://www.oregon.gov/lcd/Publications/TheOregonEstuaryPlanBook_1987.pdf.
[48] *Id.*
[49] *Id.*
[50] *Id.*

inventories and plan policies, consistent with standards set forth in each of the Goals. Goal 16 provides the principal guidance for the planning and management of estuarine resources in Oregon, and sets forth the inventory and plan policy standards for EMPs.[51] Specifically:

• **Inventory of Estuarine Habitats and Uses:** Goal 16 requires inventories to be conducted to "provide information necessary for designating estuary uses and policies."[52] Specifically, inventories within local EMPs must provide information on "the nature, location, and extent of physical, biological, social, and economic resources..." EMP inventory information is the basis for identifying management units, establishing policies and use priorities and reaching other planning and management decisions.[53]

• **EMP Plan Policies:** Comprehensive plan policies are mandatory, enforceable standards which apply to all subsequent land use decisions and provide the basis for specific implementation measures to carry out the comprehensive plan.[54] Goal 16 requires EMPs to divide each estuary into a type of zone called a management unit, designate appropriate uses for each management unit, and provide for review of estuarine alterations to assure that they are as compatible as possible with the protection of estuarine values.[55]

Through its inventory and management unit designation requirements, Goal 16 is one of the few state laws with specific, place-based requirements to protect and preserve. Goal 16 requires each EMP to establish, at the minimum, three types of management units: natural, conservation, and development units.[56] Goal 16 then directs what kinds of areas are to be included in each management unit and what kinds of uses can be allowed in each management unit.[57] Estuarine areas with inventoried eelgrass beds must either be designated as natural or conservation management units. Both units require EMP policies that are protective of eelgrass habitats, with natural management units being the most protective.

3.2. Why updating Oregon's EMPs matters for eelgrass protection.

Ensuring that EMP inventories and management unit designations are regularly updated is key to ensuring that eelgrass is protected as required under Goal 16. However, most EMPs (including the YBEMP) have not been updated since their adoption 40 years ago. As such, their inventories and plan policies are nearly obsolete, and revising them is a major opportunity for strengthening eelgrass protections in Oregon.

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[51] Lisa Phipps, DLCD, *Yaquina Bay Estuary Management Plan Update*, Presentation to Newport City Council, 2 (Apr. 5, 2021), https://legistarweb-production.s3.amazonaws.com/uploads/attachment/pdf/874533/YBEMP_update_presentation_to_Newport_City_Council_4-5-21.pdf.
[52] Goal 16.
[53] *Ch. 6: Goal 16, Estuarine Resources*, *supra* note 40.
[54] Or. Coastal Mgmt. Program, *Understanding Oregon's Land Use Planning Program – Ch. 1: Overview of the Oregon Land Use Planning Program*, https://www.oregonlandusetraining.info/data/1_index.html (last visited Dec. 22, 2022) [hereinafter *Ch. 1: Overview of the Oregon Land Use Planning Program*].
[55] *1987 Estuary Plan Book*, *supra* note 41, at 9.
[56] *Id.* at 12.
[57] *Id.* at 10.

In some ways, Oregon's EMPs were visionary when they were first adopted about 40 years ago, and in some respects, they remain innovative today. For instance, instead of solely relying on site-specific evaluation triggered by development proposals, Goal 16 and local EMPs emphasize advance decision-making based on spatial planning and inventories of physical, biological, social, and economic resources. The result is a more system-wide approach to estuarine management, which could in turn support the protection of eelgrass habitat function and quality (rather than just quantity).

However, the existing EMPs are far from perfect. The EMPs were adopted based on socioeconomic, demographic, and environmental conditions as they were understood in the late 1970s and early 1980s, and have not been revisited since. The original adoption processes did not acknowledge or address systemic barriers to public participation faced by traditionally underrepresented groups. They did not involve meaningful government-to-government engagement with impacted tribal governments, and did not address legacy harms to culturally significant areas and resources. The original EMPs do not consider climate change issues. They do not acknowledge state and federal policies and programs that have emerged since adoption. They rely on obsolete inventory data and resource mapping, and have not benefited from digitization, technological advances in data collection, and digital GIS mapping.

The EMPs themselves are often unwieldly and difficult to navigate; digital formatting and hyperlinks have not been used to improve document structure and readability. This could undermine broader public understanding of estuary planning. For all of these reasons, decision-making based on these EMPs may not effectively protect eelgrass or estuarine function to the fullest extent required by law.

3.3. Legal process for revising and adopting an EMP.

Below is a summary of the legal processes for updating the Yaquina Bay Estuary Management Plan. Appendix A lists resources relevant to participating in the Yaquina Bay and Coos Bay EMP updates. Appendices C and D provide a general overview of tribal sovereignty as well as other local, state, and federal decision-makers with roles in eelgrass management.

3.3.1. Local Land Use Processes - Estuary Management Plan Updates:

The EMP update process begins at the local government level, and will be coordinated by DLCD in its role as the state's coastal zone planning authority. Because EMPs for major estuaries usually involve multiple local jurisdictions (e.g., a county and one or more cities), EMP update planning efforts will usually be led at the local level by the county serving in its role as the coordinating entity for local comprehensive planning.[58] The EMP update procedure is governed by ORS 197 and Goal 2, and can roughly be summarized as follows:

- **Planning and Revision:** DLCD will work with local governments to determine what revisions are necessary to existing EMP components, including inventories and plan policies. The goal of this process is to develop an audit of an existing EMP, and ultimately craft amendments to present for adoption by local decision-makers.

[58] *2014 DLCD Assessment*, *supra* note 39, at 9.

- **Legislative Land Use Decision Process:** As discussed below, EMP updates are post-acknowledgment plan amendments, and must be considered at the local level through a legislative land use decision-making process. In most communities, proposed legislative amendments to the comprehensive plan or zoning code are considered first by the planning commission, which holds one or more public hearings.[59] The planning commission's recommendation on the proposed amendments is then considered by a governing body (either a county board of commissioners or city council), which holds at least one public hearing before taking final action.[60]

Following DLCD acknowledgment, the updated EMP becomes governing land use law for the relevant estuary.

3.3.2. State Processes - Estuary Management Plan Updates:

The Oregon Department of Land Conservation and Development has a key role in the EMP updates. DLCD is the primary agency responsible for overseeing Oregon's federally approved coastal management program, called the Oregon Coastal Management Program ("OCMP"). DLCD also assists the Land Conservation and Development Commission ("LCDC"), local governments, and state agencies in the implementation of Oregon's statewide land use planning goals ("Goals").[61]

DLCD is working with local governments with authority over Oregon's EMPs to update outdated EMP inventories and plan policies, most of which were drafted in the early 1980s. As of Fall 2022, DLCD is supporting Lincoln County, the City of Newport, and the City of Toledo with an update of the Yaquina Bay Estuary Management Plan. DLCD is also in the process of assisting Coos County and local communities to reinitiate an update of the Coos Bay Estuary Management Plan, which has been in process since 2019.[62] DLCD's role can be summarized as follows:

- **Post Acknowledgement Plan Amendments:**[63] State law requires local governments to submit all comprehensive plan change proposals to DLCD before adoption.[64] These are known as Post Acknowledgement Plan Amendments ("PAPAs"). EMP updates will go through the process required for PAPAs prior to adoption. One way for the public to stay tuned for opportunities to comment on estuarine plan amendments with the potential to impact eelgrass is by signing up for DLCD's Plan Amendment Notification Service (see Appendix A).

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[59] Or. Coastal Mgmt. Program, *Understanding Oregon's Land Use Planning Program – Ch. 4: Making Land Use Decisions*, https://www.oregonlandusetraining.info/data/4_index.html (last visited Dec. 22, 2022) [hereinafter *Ch. 4: Making Land Use Decisions*].
[60] *Id.*
[61] DLCD, *Oregon Statewide Land Use Planning Goals – Introduction*, 1 (2019), https://www.oregon.gov/lcd/Publications/compilation_of_statewide_planning_goals_July2019.pdf.
[62] *Coos Bay Goal 16 Estuary Management Plan Assessment*, (Dec. 2016), https://www.co.coos.or.us/sites/default/files/fileattachments/planning/page/13111/cbemp_goal_16_audit.pdf.
[63] DLCD, *Plan Amendments (PAPA)*, https://www.oregon.gov/lcd/CPU/Pages/Plan-Amendments.aspx (last visited May 26, 2021).
[64] ORS 197.610.

- **Federal Consistency Review (FCR):** DLCD is the lead agency responsible for coordinating federal consistency reviews pursuant to the Coastal Zone Management Act of 1972 (CZMA) and CZMA governing regulations in Title 15 CFR §930 and §923.[65] These reviews ensure that federal agency activities affecting any coastal use or resource are consistent to the maximum extent practicable with the enforceable policies of the OCMP. Federal rulemaking and certain federal development permits are examples of activities that require federal consistency certification by DLCD. Goal 16 and EMPs are enforceable policies of the OCMP for the purposes of FCR.

3.3.3. Federal Processes: NOAA and the Coastal Zone Management Act

Local government plans and ordinances must respond to state laws and policies, which in turn must respond to federal laws and policies. The two primary federal agencies with authority over federal activities and rulemaking relevant to Oregon's eelgrass and eelgrass habitat include several offices of National Oceanic and Atmospheric Administration ("NOAA") and the U.S. Army Corps of Engineers ("USACE"). As with the state and local level, the public can participate in formal federal agency decision-making processes with the potential to impact eelgrass resources. Participatory structures for these decision-making processes will differ depending on the federal statute and relevant agency implementing rules governing the particular action.

NOAA is the federal scientific agency that is responsible for the conditions of the ocean, major waterways, and the atmosphere.[66] NOAA's National Marine Fisheries Service ("NMFS")[67] and NOAA's Office for Coastal Management ("NOAA-OCM")[68] have authority under the Magnuson-Stevens Fishery Conservation and Management Act ("MSA") and the Coastal Zone Management Act of 1972 ("CZMA"), respectively, to work with Oregon's state and local governments to support eelgrass protection efforts on the Oregon Coast. This section discusses NOAA's role in the EMP updates. Appendix D offers more detail as to how the public can engage in NMFS' and USACE's federal agency processes.

NOAA and the Coastal Zone Management Act of 1972 ("CZMA"). NOAA has authority to partner with the DLCD, and approve future program changes to the OCMP that would serve to protect Oregon's eelgrass and eelgrass habitat. NOAA-OCM is responsible for the National Coastal Zone Management Program, one of three programs authorized by the CZMA. The National Coastal Zone Management Program comprehensively addresses the nation's coastal issues (such as eelgrass protection) through a voluntary partnership between the federal government and coastal states (like Oregon), and provides the basis for protecting, restoring, and responsibly developing the nation's diverse coastal communities and resources.[69] NOAA-OCM approval is required for the establishment of a state coastal zone management

[65] OAR 660-035-0020(1).
[66] *About Our Agency*, NOAA, https://www.noaa.gov/about-our-agency (last visited Dec. 17, 2020).
[67] NMFS is informally known as "NOAA Fisheries."
[68] NOAA's Office for Coastal Management is a program office of NOAA's National Ocean Service (NOAA-NOS). *See*, *National Ocean Service Program Offices*, NOAA, https://oceanservice.noaa.gov/programs/ (last visited Dec. 17, 2020).
[69] NOAA, *The National Coastal Zone Management Program*, (last visited on May 26, 2021), https://coast.noaa.gov/czm/

program—Oregon received NOAA approval for the OCMP in 1977.[70] DLCD is required to submit any changes to the OCMP, including new or revised enforceable policies associated with the EMP updates, to NOAA-OCM for approval through the program change process.[71]

NOAA's program change process.[72] provides an opportunity for public comment and testimony on whether NOAA should approve proposed changes to a state coastal zone management program.[73] Most of Oregon's existing EMPs and their implementing measures are enforceable policies of the OCMP for purposes of FCR. Updating the EMPs will ensure that future federal actions with the potential to impact estuaries and eelgrass will be evaluated for federal consistency based on current conditions and community preferences. All modifications and updates to Oregon's EMPs must undergo the program change process through NOAA-OCM to be approved as enforceable policies of the OCMP. Interested members of the public can sign up to receive notices of proposed program changes to the OCMP, review materials related to the proposed change, and submit testimony encouraging NOAA to approve any future changes (including new enforceable policies) that go toward better protecting eelgrass habitats in Oregon.

3.4. The Yaquina Bay EMP Update.

Beginning in Spring 2021, Oregon began working with Lincoln County, the City of Newport, and the City of Toledo to update the 1982 Yaquina Bay Estuary Management Plan ("YBEMP"), both to address changes in bay conditions as well as projected future climate change impacts.[74] As of the writing of this updated Primer, the YBEMP Update completion timeline was extended through Summer of 2023. Decisions on updates to the YBEMP will ultimately be made by a Steering Committee, whose members include representatives from the Cities of Newport and Toledo, Lincoln County, the Confederated Tribes of Siletz Indians ("CTSI"), the Oregon Department of Land Conservation and Development ("DLCD"), and the Ports of Newport and Toledo.[75] An Advisory Group will help the Steering Committee review the YBEMP update options memo and the revised draft of the YBEMP.[76] The Advisory Group is comprised of several representatives of tribal governments; state and federal agencies; Lincoln County and the Cities of Newport and Toledo; Universities; Conservation Organizations (including Oregon Shores); and others. Once revised, the draft YBEMP update will be considered for adoption by local decisionmakers in Lincoln County, the City of Newport, and the City of Toledo. The adoption process will include at least one public hearing per jurisdiction.

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[70] NOAA, *States and Territories*, (last visited on May 26, 2021), https://coast.noaa.gov/czm/mystate/#oregon
[71] NOAA, *Program Change Process*, (last visited on May 26, 2021), https://coast.noaa.gov/czmprogramchange/#/public/home
[72] 15 CFR §§ 923.80 - 923.85.
[73] 15 CFR § 923.81 - Program change procedures, deadlines, public notice and comment, and application of approved changes.
[74] Or. Dep't of Land Conservation & Dev., *Biennial Report 2019-2021*, 40-41 (Jan. 2021), https://www.oregon.gov/lcd/About/Documents/2019-21_Biennial_Report.pdf; Lisa Phipps, *Yaquina Bay Estuary Management Plan Update*, DLCD presentation to the City of Newport Planning Comm'n, (Apr. 2021), https://legistarweb-production.s3.amazonaws.com/uploads/attachment/pdf/874533/YBEMP_update_presentation_to_Newport_City_Council_4-5-21.pdf. DLCD secured funding from National Ocean Atmospheric Administration ("NOAA") for the YBEMP Update and accompanying guidance document in 2021 through a grant of a NOAA Project of Special Merit Award. *See* 16 U.S.C. § 1456b (1996), ("Coastal zone enhancement grants"); *See also* 15 C.F.R. §§ 923.121 - 923.128, (1996), ("Coastal Zone Enhancement Grants Program").
[75] Willamette Partnership, *Estuary Management Planning for Yaquina & the Oregon Coast - Meeting 1 of Advisory Group*, Presentation, 21 (Feb. 22, 2022), https://docs.google.com/presentation/d/1LjXPRe4TiCLbzo0IgE3OKAaHHkh4wUQeRM9lrk11SqI/edit#slide=id.g10e0e31caf2_0_395.
[76] *Id.* at 22-23.

A Technical Sub-Group is providing expertise on building out data sets to support updating the maps and data required for the revision of the YBEMP itself.[77] A Project Team, comprised of staff from the Willamette Partnership, the University of Oregon Institute for Policy Research and Engagement ("IPRE"), and Lincoln County, will be working to guide each committee on concurrent tracks through August 2023.

Although the YBEMP update milestones are contingent upon any future timeline modifications by DLCD and the Project Team, the process for updating the plan can be roughly summarized as follows:

- Spring 2021 to Present. Data Collection to update 1982 YBEMP Inventories and Maps, Needs and Gaps Assessment of 1982 YBEMP.
- Fall 2022 through Spring 2023. Steering Committee and Advisory Group Review and make recommendation on Draft Options for Updating the YBEMP.
- January 2023 through March 2023. Community engagement, including a public meeting, town hall, community conversations, and lecture series on the YBEMP update.
- Between April and May 2023. Draft YBEMP Estimated Completion Date.
- Beginning June 2023. County & City Public Hearing Process to Consider and Adopt a revised YBEMP.[78]

Through the YBEMP update, the public has the opportunity to close gaps in existing legal frameworks that leave estuarine and eelgrass habitats vulnerable to development pressures and climate change impacts. This revised Primer will help you get familiar with eelgrass, why it matters, how to review the 1982 YBEMP for needs and gaps related to eelgrass protections, and how to write comments that will help decision-makers to strengthen protections for eelgrass in the revised YBEMP. In addition, members of the public who wish to participate should:

- Contact Willamette Partnership to request information on YBEMP update events, how to get engaged at each stage of the process, and to receive notice of when the YBEMP update website goes live: https://willamettepartnership.org/yaquina-bay/.
- Visit the planning department websites of Lincoln County, the City of Newport, and the City of Toledo to learn more about how to participate in YBEMP update hearings.
- Contact staff at DLCD to learn more about the estuary planning and post-acknowledgement plan amendment ("PAPA") process.

Relevant contact information for local governments and DLCD, along with planning documents that will support public comment on the YBEMP update, are provide in Appendix A to this revised Primer. Oregon continues to work with Coos County and project team partners at the Partnership for Coastal Watersheds to update the Coos Bay Estuary Management Plan ("CBEMP").[79] The YBEMP update will inform statewide guidance that is meant to guide the ongoing revision of the CBEMP.

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[77] *Id*.

[78] Willamette Partnership, *Yaquina Bay Estuary Management Plan Update - Advisory Group Meeting #1 Summary*, (Feb. 22, 2022), https://docs.google.com/document/d/1Y_xnHJYzZNBK3ePk30fsxoJmwGSLNHFh/edit

[79] Appendix E of the second edition of this Primer provides a case study of the Jordan Cove Energy Project and identifies issues

Part II: Commenting on the Yaquina Bay Estuary Management Plan Update

Part II of the second edition of this Primer is meant to help the reader anticipate potential gaps in eelgrass protection and write effective comments to close those gaps in the ongoing YBEMP update. Although some of the below recommendations are specific to the YBEMP update, most of the below discussion regarding how to address potential weaknesses in eelgrass protections generally applies to other EMP updates (including the ongoing CBEMP update).

4. Oregon Statewide Land Use Planning Goal 16 - Estuarine Resources

State statutes, Goals, and their implementing regulations are legally binding documents that govern the contents of EMPs. These criteria are important to identifying what should be in the updated YBEMP, including with respect to criteria to protect eelgrass habitat. Reviewing the 1982 YBEMP will help the reader anticipate potential weaknesses in eelgrass protections in a revised draft. Effective comments for eelgrass should aim to:

- Ensure the revised YBEMP contains the strongest eelgrass protections allowed by the applicable statutes and regulations.

- Ensure the revised YBEMP and associated planning documents are easily available to the public so the public can use it to review whether planning actions or development proposals adequately consider and protect eelgrass.

- Improve the readability of the revised YBEMP and associated planning documents to remove systemic barriers to public participation for underrepresented and under-resourced groups. Specifically, the revised YBEMP should explain emerging issues related to eelgrass, the EMP planning process, and how EMPs apply to individual development proposals.

Relevant criteria for creating a checklist to review a draft YBEMP document are discussed in this section, and throughout Part II of the second edition of this Primer.

4.1. Oregon Statewide Land Use Planning Goal 16 - Estuarine Resources

To protect resources unique to estuaries while allowing compatible land uses, LCDC adopted Goal 16, or the estuarine resource goal.[80] Goal 16 establishes legal requirements for estuary management plans ("EMPs"). The overall objectives of Goal 16 are:

> "To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and

that are relevant to the participating in the CBEMP update.

[80] Goal 16, OAR 660-015-0010(1), https://www.oregon.gov/lcd/OP/Documents/goal16.pdf (last visited Dec. 22, 2022). Goal 16 is one of four specific "coastal goals" adopted by LCDC. The other three include Goal 17 (coastal shorelands), Goal 18 (beaches and dunes), and Goal 19 (ocean resources).

> To [*sic*] protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries."[81]

In order to achieve these objectives, Goal 16 requires local, state, and federal agencies that regulate or have an interest in activities in Oregon's estuaries to develop comprehensive management programs. As discussed in Part I, Goal 16 requires local governments to adopt an EMP consistent with the overall classification for the estuary as established by LCDC.[82] Estuary classifications set overall limits on the amount of development that can occur in each estuary.[83] and mirror management unit classifications: estuaries must be categorized as natural, conservation, or development. Natural and conservation estuaries lack maintained jetties and channels, while Development estuaries are characterized by maintained jetties and channels.[84] The level of development allowed in an estuary depends on its classification. In development estuaries, natural, conservation, and development management units must be established as required by Goal 16, and uses allowed in natural, conservation, and development management units may be allowed.[85] Yaquina Bay is classified as a Deep-draft Development Estuary, meaning it has maintained jetties and a main channel maintained by dredging at deeper than 22 feet.[86]

EMPs implement Goal 16 requirements for the spatial designation and classification of discrete estuarine management units, establish permissible uses for different portions of estuaries based on management unit classification, and contain the regulatory standards for the review of aquatic area development proposals.[87] EMPs are typically adopted as an independent component of the overall comprehensive plan.[88] Goal 16 sets out several different planning steps for local governments, which can roughly be summarized as followed:

- Inventory Requirements
- Use Priorities
- Comprehensive Plan Requirements
- Management Unit Classification & Designation of Uses
- Implementation Requirements.

As discussed above, updates to a locally adopted EMP will be considered under a legislative land use decision-making process. As such, any amendments to the Yaquina Bay EMP and implementing measures must meet or exceed the above requirements of Goal 16 as well as conform with the rest of the Goals.[89] Further, updates to an EMP must also be responsive

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[81] Goal 16, Objectives.
[82] The first way Goal 16 provided for estuarine management was by requiring LCDC to classify Oregon's 22 major estuaries to specify the most intense level of development allowable in each estuary for the purpose of maintaining diversity among estuaries. *1987 Estuary Plan Book*, *supra* note 31, at 10. LCDC adopted the estuary classification system by rule in 1977. *2014 DLCD Assessment*, *supra* note 39, at 9. These rules, contained at OAR 660, Division 17, classified Oregon's major estuaries into four classes and specified the level of development allowed in each class. *Id.* The four classes are natural, conservation, shallow-draft development, and deep-draft development estuaries. OAR 660-017-0010.
[83] *1987 Estuary Plan Book*, *supra*, at 10.
[84] OAR 660-017-0010.
[85] OAR 660-017-0025(3).
[86] OAR 660-017-0010(4); OAR 660-017-0015(4).
[87] *2014 DLCD Assessment*, *supra* note 39, 9.
[88] *Id.*
[89] *Ch. 6: Goal 16, Estuarine Resources*, *supra* note 40; *1987 Estuary Plan Book*, *supra*, at 9.

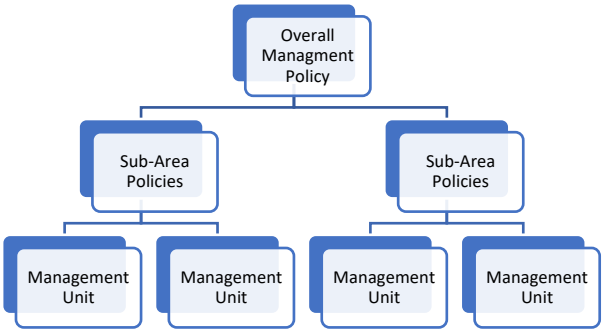
to state and federal regulatory authorities with roles in estuary management: meaning, they must implement or be consistent with state and federal requirements, including standards for the management and protection of water quality as well as fish and wildlife uses.[90] At the very minimum, revising EMPs to ensure robust compliance with Goal 16's planning requirements will improve eelgrass protection. Goal 16 could also serve as a foundation for more habitat specific protections for eelgrass in each EMP. Goal 16's requirements are discussed in further detail below as relevant to the YBEMP update and talking points to improve eelgrass protections are provided per relevant plan section.

4.2. The 1982 Yaquina Bay Estuary Management Plan

In 1982, Lincoln County adopted the Lincoln County EMP ("1982 Lincoln County EMP") to comply with Goal 16.[91] The 1982 Lincoln County EMP is organized into ten parts with a Definitions section, and includes the Lincoln County Comprehensive Plan Inventory. It governs the four major estuaries under Lincoln County's jurisdiction: Salmon River, Siletz Bay, Yaquina Bay, and Alsea Bay.[92] The 1982 Yaquina Bay EMP ("1982 YBEMP") consists of all Parts and components of the 1982 LCEMP, except for those portions specific to the other three major estuaries. The 1982 Lincoln County EMP will be referred to as the 1982 YBEMP when discussing opportunities to strengthen eelgrass protections through the EMP update.

The 1982 YBEMP is set forth in "a concept of descending levels of policies,"[93] the stated purpose of which is to ensure that individual property owners as well as local governments consider bay-wide and site-specific factors during permitting processes.[94] The three primary levels of policy are, from least to most specific in application: (1) Overall Management Policies, (2) Sub-Area Policies, and (3) Management Units.[95] These three levels of policies govern uses and activities in management units as well as plan implementation, and are depicted below.

1982 YBEMP – Plan Policy Hierarchy



[90] *1987 Estuary Plan Book*, *supra*, at 9.
[91] Lincoln County, Or., *Lincoln County Estuary Management Plan*, (Sept. 1982) [hereinafter *1982 YBEMP*], https://www.co.lincoln.or.us/sites/default/files/fileattachments/planning_amp_development/page/3820/estuary_management_plan_searchable.pdf.
[92] 1982 YBEMP, 1.
[93] 1982 YBEMP, 2.
[94] 1982 YBEMP, 2.
[95] 1982 YBEMP, 2.

There are several opportunities to strengthen eelgrass protections in the 1982 YBEMP. These are discussed in throughout the remainder of this section.

5. 1982 YBEMP – Resource Inventories

The estuarine resource inventory documents that were used to develop the 1982 YBEMP are not included within the document. Part I of the 1982 YBEMP provides an executive summary of the plan's "Resource Inventory."[96] It states, in full:

> As part of Lincoln County's overall comprehensive plan, detailed resource inventories of the County's estuarine areas have been adopted. The information contained in the plan's management unit descriptions and resource capability assessments is based on factual base material drawn from these comprehensive resource inventories. The rationale for permitted use decisions and management classifications is contained in these brief factual base summaries; for detailed resource information and a bibliography of documents included in the inventory, the Lincoln County Comprehensive Plan Inventory should be consulted.[97]

This summary is the only discussion of how the estuarine resource inventory informed the development of the 1982 YBEMP.

5.1. 1982 YBEMP Resource Inventory – Checklist for Improving Eelgrass Protections.

To provide a factual base for required planning decisions, Goal 16 requires local governments to assemble estuarine resource inventories. Specifically, it requires that information on the nature, location, and extent of the inventoried resource be provided "in sufficient detail to establish a sound basis for estuarine management and to enable the identification of areas for preservation and areas of exceptional potential for development."[98] Because much of the estuarine resource inventory has been superseded by more accurate and current information, particularly in digital format for use in a Geographic Information System ("GIS"), it is out of date. Prior inventory data is no longer a sound basis for estuarine management policies, and thus both inventory data and estuarine plan policies must be updated to demonstrate consistency with Goal 16.

As a precursor to local government inventory efforts, Goal 16 required DLCD to establish common inventory standards and techniques so that inventory data from different sources, or data between estuaries, would be comparable. Consistent with this Goal 16 obligation, DLCD contracted with the Oregon Department of Fish and Wildlife ("ODFW") to develop a guidance document ("1979 ODFW Guidance Document") to assist local governments in completing the resource inventory requirements of Goal 16. This project produced an overall

[96] 1982 YBEMP, 4.
[97] *Id.*
[98] Goal 16, Inventory Requirements. The level of detail required under Goal 16 increases as the level of development increases in an estuary, meaning an inventory for an estuary classified as natural requires the least amount of detail and an inventory for an estuary classified as development requires the most detail. *See Audubon Society v. Or. Dep't of Fish & Wildlife*, 7 Or LUBA 166, 177–78, *aff'd*, 67 Or App 776 (1983); OAR 660-017-0000(2)(c).

estuarine habitat classification system, a set of guidelines for conducting estuarine resource inventories (including for biological characteristics such as eelgrass), and a series of recommendations for research needs in Oregon's estuaries.[99]

Per the 1979 ODFW Guidance Document, the biological data "needed to describe" seagrass as a biological component of Oregon's estuaries is as follows.

Seagrass - Data Needs	Seagrass – Use of the Data[100]
I. Species, distribution, biomass, area of cover (and influential environmental factors), map of seagrass beds	To identify areas with at least 30% cover, which are defined as "aquatic beds" in the subclass level of the Oregon Estuarine Habitat Classification System. To identify "major tracts" of seagrasses as required by the LCDC Estuarine Resources Goal. To determine the diversity of seagrass species in the estuary. To correlate biomass and distribution of seagrass with environmental conditions.
2. Identify animal species associated with seagrass communities	To determine the relative importance of seagrass communities as a habitat for benthic invertebrates and fish.
3. Seagrass productivity (and influential environmental factors)	To correlate with biomass estimates (see #1 above). To determine the relative contribution of seagrass production to the total productivity of the estuary. To correlate productivity with environmental factors. To determine variations in productivity with season and location in the estuary.

Per ODFW's guidance, distribution of intertidal and subtidal seagrass beds should be surveyed "at least quarterly, preferably for more than one annual cycle to follow seasonal variations" and periodically "to follow changes in distribution."[101] Water samples should be collected concurrently with seagrass distribution surveys for nutrient analyses (nitrate, nitrite, ammonia, phosphate), temperature, and salinity measurements.[102] Sampling to identify animal species associated with seagrass communities should also "include invertebrates attached to blades of seagrass."[103] Monthly determinations of seagrass productivity, preferably for more than one annual cycle, which include representative intertidal and subtidal species throughout the estuary."[104] Because Oregon's EMP inventories have not been updated since their adoption, these data needs for eelgrass have not been addressed.

5.2. Writing comments on the revised Draft YBEMP Resource Inventory.

• **The YBEMP Inventory as revised should provide easy access to inventory data.** The 1982 YBEMP does not include a copy of the referenced Lincoln County Comprehensive Plan Inventory documents or bibliography of documents included in the inventory. These documents contain the rationale for permitted use decisions and management unit classifications set forth in the 1982 YBEMP, which makes the 1982 YBEMP functionally weak. To ensure that plan users understand the basis for actions under the revised YBEMP, the inventory should be easily accessible in an electronic format.

[99] ODFW, *Habitat Classifications and Inventory Methods for Management of Oregon's Estuaries*, i-ii (1979) [hereinafter *1979 ODFW Guidance Document*], https://odfw.forestry.oregonstate.edu/freshwater/inventory/pdffiles/Habitat%20Classification%20and%20Inventory%20Methods%20for%20Oregon%20estuaries.pdf.
[100] *Id.*, App. C, 103.
[101] *Id.*
[102] *Id.*
[103] *Id.*
[104] *Id.*

• The YBEMP Inventory as revised should provide hyperlinks to digitized versions of 1982 YBEMP inventory documents, data, and maps, including maps of estuary biota such as eelgrass, and describe how these documents were relied upon to develop the 1982 YBEMP.

• The YBEMP Inventory as revised should provide hyperlinks to new the inventory as updated, and describe how the new inventory supported development of the draft revised YBEMP.

• **Eelgrass habitat in the YBEMP Inventory as revised should be based on current and historic spatial extent data.** Understanding both the current and historic spatial extent of eelgrass habitats in Yaquina Bay is necessary to ensure that the revised estuarine inventory has "sufficient detail to establish a sound basis for estuarine management and to enable the identification of areas for preservation" as required under Goal 16.[105] Because eelgrass presence varies annually, and because sea level rise will result in species migration to the higher intertidal zone, reliance on current (or existing) eelgrass habitat data alone is insufficient to protect estuarine values as required under Goal 16. Current and historic spatial extent data of eelgrass habitats is also important to ensure that restoration can occur as required under Goal 16, IR 8.[106] The Pacific Marine and Estuarine Fish Habitat Partnership's ("PMEP") "West Coast USA Eelgrass Maximum Observed Extent" map is an authoritative and dynamic data product representing the presence and maximum observed extent of eelgrass.[107] "Maximum observed extent" data represents the full spatial extent of all datasets for eelgrass collected for an estuary or location, and is a more accurate characterization of eelgrass nature, location, and extent over time.[108] As such, this PMEP dataset and map should be incorporated into the revised inventory to ensure that estuarine management is based on the most current eelgrass data available for Yaquina Bay.[109]

• **Data on current and historic spatial eelgrass extent, as well as site suitability for eelgrass restoration, should be inventoried in accordance with modern best practices.** The PMEP has recently developed a comprehensive assessment of eelgrass restoration techniques and outcomes, which also discusses the importance of developing standardized monitoring plans in all major waterways containing eelgrass.[110] The YBEMP resource inventory as revised should use this assessment as a guide for inventorying current and historic spatial extent data, eelgrass productivity, restoration site suitability, as well as creating eelgrass monitoring programs to periodically update the inventory itself.

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[105] Goal 16, Inventory Requirements.
[106] Goal 16, IR 8.
[107] Pacific Marine and Estuarine Fish Habitat Partnership (PMEP), *West Coast USA Eelgrass Maximum Observed Extent*, (May 15, 2018) https://psmfc.maps.arcgis.com/home/item.html?id=12ed43ed0fe342bc86225268cbb638c7.
[108] *Id*.
[109] *Id.*; This data is consistent with and appears to incorporate data from the 2007 EPA case study on eelgrass distribution in Yaquina Bay. Cheryl A. Brown et al., *An Approach to Developing Nutrient Criteria for Pacific Northwest Estuaries: A Case Study of Yaquina Estuary, Oregon*, Envtl. Protection Agency, Figs. 11.1, 11.5 (2007), https://www.epa.gov/sites/default/files/2019-02/documents/an-approach-pacific-nw-estuaries-oregon.pdf.
[110] Kathryn M. Beheshti & Melissa Ward, *Eelgrass Restoration on the U.S. West Coast: A Comprehensive Assessment of Restoration Techniques and Their Outcomes*, Pacific Marine and Estuarine Fish Habitat Partnership, (2021), http://honu.psmfc.org/media/PMEP/Eelgrass_Restoration_Synthesis/Documents/PMEP_Beheshti_Ward_2021_EelgrassSynthesisReport.pdf.

6. 1982 YBEMP – Part I: Introduction

6.1. 1982 YBEMP Part I: Introduction - Checklist for Improving Eelgrass Protections.

Goal 16 – Comprehensive Plan Requirements. Under Goal 16, comprehensive plans for coastal areas must be based on estuarine inventories, the overall limits imposed by the estuary's established classification, and the needs identified in the planning process.[111] EMPs must, in relevant part:

> (1) identify each estuarine area;
> (2) describe and maintain the diversity of important and unique environmental, economic and social features within the estuary;[112]***

The introduction section of an EMP would be a logical place to implement the above Goal 16 requirements. Based on these provisions, Plan Part I of the YBEMP as revised should include a description of the diversity of the "important and unique environmental, economic and social features within the estuary." In particular, this description should include a description of the diversity of the significant habitats (such as salt marsh, tideflats, eelgrass, and algae beds) and their historical extent in Yaquina Bay.

Part I of the 1982 YBEMP contains the plan's Introduction. It states that there are four major and two minor estuaries within the jurisdiction of Lincoln County, but does not identify these estuaries on a map of the Oregon coastline.[113] It notes that of the four major estuaries in Lincoln County's jurisdiction, "Salmon River, Siletz Bay and Alsea Bay are of primary importance as recreation areas, while Yaquina Bay is one of three major estuaries on the Oregon Coast with an authorized deep water navigation channel and major port."[114] Part I does not offer any further textual or graphic information on each estuary's classification or subsystems. None of the original comprehensive plan maps of the estuary are provided within the 1982 YBEMP.

Part I of the 1982 YBEMP then offers a very brief description of the process of developing the original plan, but does not offer an overview of the relationship of the 1982 YBEMP to Goal 16 or the Estuary Classification Rule. It concludes with guidance on how to use of the document, and an executive summary of each of the plan's nine parts as well as the companion Dredged Material disposal Plan and Resource Inventory.[115] However, Part I of the 1982 YBEMP does not include a summary of inventoried habitats (such as salt marsh, tideflats, eelgrass, and algae beds). Nor does it include a summary of emerging issues and needs addressed in the planning process as required under Goal 2.

[111] Goal 16, Comprehensive Plan Requirements.
[112] *Id.*
[113] 1982 YBEMP, 1.
[114] *Id.*
[115] 1982 YBEMP, 4.

6.2. Writing comments for YBEMP - Part I: Introduction.

• **Part I as revised should include a summary of needs identified and addressed as part of the planning process, and should prioritize eelgrass protection as an urgent need.** Goal 16 requires that "[c]omprehensive plans for coastal areas must be based on the estuarine inventories…and the needs identified in the planning process."[116] The Introduction as revised should provide a summary of the needs identified and addressed in the planning process. Eelgrass protection is urgently needed due to its alarming rate of decline in recent years, and this issue should be discussed in the introductory summary. In addition, state processes to address climate change impacts and to designate eelgrass as a natural and working landscape should also discussed in the Introduction as relevant to plan implementation.[117]

• **Part I as revised should summarize important and unique environmental features within Yaquina Bay, including eelgrass beds and their maximum observed extent habitat.** Part I of the 1982 YBEMP omits a summary of inventoried resources, including eelgrass. Consistent with Goal 16's Comprehensive Plan Requirement (2), Plan Part I as revised should provide a summary of the resources contained within updated Yaquina Bay inventory, including the nature, location, and extent of resources.

• **Part I as revised should provide an overview of Goal 16 and the Estuarine Classification Rule contained at OAR 660, Division 17, as well as explain the relationship of the YBEMP to these rules.** The Introduction section should provide a summary of these rules, and how the YBEMP as revised will implement these rules. A graphic representation of the hierarchy the land use plan would support usability.

• **Effective eelgrass protections require up-to-date mapping that is easily accessible for public review.** The 1982 YBEMP does not contain a copy of the original comprehensive plan map showing the location of the 34 estuary management units established in Yaquina Bay to comply with Goal 16, including which units are under the concurrent authority of Lincoln County and the Cities of Newport and Toledo. The Introduction section to the YBEMP as revised should provide a high-quality comprehensive plan map with each of the established sub-areas and management units clearly mapped. Further, this section should offer hyperlinks to accurate and accessible digital maps through Geographic Information Systems (GIS), with the ability to access CMECs Biota Data Layers for eelgrass (*Z. Marina*) as well as PMEP Data Layers for Eelgrass Maximum Observed Extent.

7. 1982 YBEMP Part II: Overall Management Policies

Part II of the 1982 YBEMP sets forth "Overall Management Policies."[118] These policies apply to all estuaries in the county, and represent the first, most general level of policy in the three-level policy hierarchy established by the 1982 YBEMP.[119] The 1982 YBEMP lists five

[116] Goal 16, Comprehensive Plan Requirements.
[117] These state efforts are discussed in Part III of the second edition of this Primer.
[118] 1982 YBEMP, 2.
[119] *Id.*

overall management policies applicable to the "total estuary," which in turn guide the implementation of site-specific policies such as management units.[120]

7.1. 1982 YBEMP Part II: Overall Management Policies – Checklist for Improving Eelgrass Protections.

Part II of the 1982 YBEMP is essentially the local application of Goal 16's Use Priorities, Comprehensive Plan Requirements, and Implementation Requirements.[121] These represent minimum standards for what must be contained within local EMPs. While Goal 16 gives local governments discretion as to how to organize these elements within an EMP, it does intend that EMPs fully integrate all planning and regulatory requirements of Goal 16 into a single, cohesive document.[122] Further, the planning process described in Goal 2, the Land Use Planning Goal, applies to estuarine areas and implementation of the Estuarine Resources Goal. This means local governments must explain the basis for ultimate policy choices set forth in the plan.[123]

Goal 16's Use Priorities. Goal 16 requires EMPs and activities to "protect the estuarine ecosystem, including its natural biological productivity, habitat, diversity, unique features and water quality."[124] Goal 16 then sets out a clear priority of use for management of all estuarine resources. Specifically, the general priorities (from highest to lowest) for management and use of estuarine resources as implemented through the management unit designation and permissible use requirements per unit shall be:

> (1) Uses which maintain the integrity of the estuarine ecosystem;
> (2) Water-dependent uses requiring estuarine location, as consistent with the overall Oregon Estuary Classification;
> (3) Water-related uses which do not degrade or reduce the natural estuarine resources and values;
> (4) Non-dependent, nonrelated uses which do not alter, reduce or degrade estuarine resources and values.[125]

In other words, the highest priority for use of an estuary is one that maintains the integrity of the estuarine ecosystem, whether the management unit designation is natural, conservation, or development. The lowest priority is a use that is not dependent on or related to estuarine resources, but that nonetheless does not alter, reduce, or damage such resources. Overall management policies should clearly reflect Goal 16's stated requirement to protect the estuarine ecosystem and conform to Goal 16's use hierarchy.

Goal 16, Implementation Requirements. In addition to use priorities, Goal 16 provides a number of implementation requirements that apply to local government review of specific estuarine developments.[126] As relevant here, those requirements are summarized as follows:

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[120] *Id.* at 2.
[121] Goal 16.
[122] *2014 DLCD Assessment*, *supra* note 39, at 9.
[123] Goal 2.
[124] *Id.*
[125] Goal 16, Use Priorities.
[126] *2014 DLCD Assessment*, *supra* note 39, at 23; *1987 Estuary Plan Book*, *supra* note 41, at 14.

Goal 16, IR 1. Impact Assessment. Goal 16, IR 1 requires that requires an impact assessment for actions which would potentially alter the estuarine ecosystem.[127] The impacts assessment must either be addressed in the EMP at adoption or as a component of project/permit review.[128]

Goal 16, IR 2. "Dredge, Fill, and Other Alterations" Test. Goal 16, IR 2 sets forth a four-part test for dredging and/or filling in estuarine aquatic areas, three of the tests also apply to "other uses or activities that could alter the estuary." These tests are (1) Water dependency (dredge and fill only); (2) demonstrated need (defined as substantial public benefit) and non-interference with public trust rights; (3) no feasible upland alternatives; and (4) minimization of adverse impacts.[129] Under Goal 16, dredging and filling is disfavored, limited and seen as a last alternative.[130] ***

Goal 16, IR 5. Mitigation. Under Goal 16, IR 5, dredge and fill activities in intertidal or tidal marsh areas must be mitigated and plans must designate and protect mitigation areas.[131] ***

Goal 16, IR 8. Restoration. Under Goal 16, IR 8, state and federal agencies shall assist local governments in identifying areas for restoration. Restoration is appropriate in areas where human or natural activities have adversely affected the estuarine system.[132]

The five overall management policies listed in Part II of the 1982 YBEMP do not set forth the bases for each ultimate policy choice adopted.[133] However, Overall Management Policy 1 is a local expression of Goal 16's use priority requirements, while Overall Management Policies 4 and 5 are local expressions of Goal 16, IR 2 and Goal 16, IR 1, respectively.[134] Each should be updated to more explicitly demonstrate the plan's relationship to the Goal itself. Overall Management Policy 2 is an expression of Goal 16's requirement to protect estuarine ecosystems as it was understood at the time of adoption, and should be strengthened to reflect the current text of Goal 16.[135] Overall Management Policy 3 protects recreational access to Lincoln County's estuaries, and addresses a planning need identified at the time of adoption of the 1982 YBEMP.[136] Part II should be revised to incorporate additional policies to address planning needs identified based on current estuarine conditions: particularly, the need to strengthen eelgrass protections bay-wide.

[127] Goal 16, IR 1.
[128] Goal 16, IR 1.
[129] *2014 DLCD Assessment*, *supra* note 39, at 20.
[130] Edward J. Sullivan, *Protecting Oregon's Estuaries*, 23 Ocean & Coastal L.J. 373, 398 (2018), https://digitalcommons.mainelaw.maine.edu/cgi/viewcontent.cgi?article=1368&context=oclj.
[131] Goal 16, IR 5.
[132] Goal 16, IR 8.
[133] 1982 YBEMP, 5.
[134] *Id.*
[135] *Id.*
[136] *Id.*

7.2. Writing comments for YBEMP Part II: Overall Management Policies.

- **Part II should explain the basis for each adopted overall management policy.** Part II of the 1982 YBEMP provides a list of five overall management policies, but fails to provide background information as to why each policy was adopted.[137] This puts the burden of background research onto the plan user, and make it difficult to understand how the Overall Management Policies apply to proposed developments and land use actions. Consistent with the requirements of Goal 2 and Goal 16, Part II should be revised to explain the basis for each ultimate policy choice adopted.

- **Overall Management Policy 1 should be revised to acknowledge the overall objective of Goal 16, and the diverse values that make estuaries important to communities in Lincoln County.** Overall Management Policy 1 incorporates Goal 16's priority of use hierarchy.[138] It describes the importance of Lincoln County's estuaries solely in terms of their economic importance, and discusses management of each estuary solely in terms of ensuring "adequate provision for development" consistent with estuarine classification.[139] However, Yaquina Bay is a development estuary with a mix of natural and conservation segments, and must be managed in full consideration of these values. Consistent with Goal 16, Overall Management Policy 1 should be revised as follows:

1982 YBEMP Overall Management Policy #1	Suggested Revision
1. Lincoln County's estuaries represent an economic resource of regional importance. The overall management of each estuary shall ensure adequate provision for development, consistent with the Overall Oregon Estuary Classification and according to the following general priorities (from highest to lowest): a. Uses which maintain the integrity of the estuarine ecosystem b. Water dependent uses requiring an estuarine location c. Water related uses which do not degrade or reduce natural estuarine resources and values d. Non-dependent, non-related uses which do not alter, degrade or reduce estuarine resources or values and are compatible with existing and committed uses.	1. **Priority of Use.** Estuaries within Lincoln County ~~'s estuaries represent~~ support cultural lifeways, fish and wildlife habitat, and economies in the region, and represent a crucial tool in the region's resilience to climate change. ~~an economic resource of regional importance~~. The overall management of each estuary shall ensure adequate provision for ~~development~~ for these diverse values, consistent with the Overall Oregon Estuary Classification and according to the following general priorities (from highest to lowest): a. Uses which maintain the integrity of the estuarine ecosystem b. Water dependent uses requiring an estuarine location c. Water related uses which do not degrade or reduce natural estuarine resources and values d. Non-dependent, non-related uses which do not alter, degrade or reduce estuarine resources or values and are compatible with existing and committed uses.

This revision acknowledges that local governments must ensure adequate provision for a diversity of uses, in accordance with Goal 16's listed use priorities.

- **Overall Management Policy 2 should be revised to incorporate Goal 16's express language regarding protection of estuarine ecosystems.** Overall Management Policy 2 expresses the County's general obligation to ensure "adequate provision" for the protection and conservation of "natural resources," but does not define this term. Consistent with Goal 16's use priorities, Overall Management Policy 2 should be revised as follows:

[137] *Id.*
[138] Goal 16, Use Priorities.
[139] 1982 YBEMP, 5.

1982 YBEMP Overall Management Policy #2	Suggested Revision
2. Lincoln County's estuaries support a variety of vitally important natural resource values. The overall management of each estuary shall include adequate provision for both conservation and preservation of natural resources.	2. **Protection of Estuarine Ecosystems.** Lincoln County's estuaries support a variety of vitally important natural resource values. The overall management of each estuary shall protect and conserve the estuarine ecosystem, including its natural biological productivity, habitat, diversity, unique features and water quality. ~~include adequate provision for both conservation and preservation of natural resources.~~

- **Overall Management Policy 5 should be revised to incorporate Goal 16, Implementation Requirement 1's complete Resource Impact Assessment.** Consistent with Goal 16, IR 1, Overall Management Policy 5 should be revised as follows:

1982 YBEMP Overall Management Policy #5	Suggested Revision
5. Actions which would potentially alter the integrity of estuarine ecosystem shall be preceeded [*sic*] by a clear presentation of the impacts of the proposed alteration and a demonstration of the public's need and gain which warrant such modification or loss.	5. **A Resource Impact Assessment is required for actions which would potentially alter the estuarine ecosystem.** Unless fully addressed during the development and adoption of comprehensive plans, actions which would potentially alter the estuarine ecosystem shall be preceded by a clear presentation of the impacts of the proposed alteration. Such activities include dredging, fill, in-water structures, riprap, log storage, application of pesticides and herbicides, water intake or withdrawal and effluent discharge, flow-lane disposal of dredged material, and other activities which could affect the estuary's physical processes or biological resources. The impact assessment need not be lengthy or complex, but it should enable reviewers to gain a clear understanding of the impacts to be expected. It shall include information on: a. The type and extent of alterations expected; b. The type of resource(s) affected; c. The expected extent of impacts of the proposed alteration on water quality and other physical characteristics of the estuary, living resources, recreation and aesthetic use, navigation and other existing and potential uses of the estuary; and d. The methods which could be employed to avoid or minimize adverse impacts.

Revising Overall Plan Policy 5 to include Goal 16, IR 1's non-exclusive list of the types of actions which would potentially alter the estuarine ecosystem as well as criteria for an impact assessment would protect eelgrass, since many of these actions are also known threats to eelgrass.[140]

- **Lincoln County should add overall management policies directed at protecting eelgrass beds and suitable habitat.** Goal 16 mandates that estuary plans and activities "shall protect the estuarine ecosystem, including its natural biological productivity, habitat, diversity, unique features and water quality."[141] Given eelgrass' importance as a sentinel species, the addition of explicit Overall Management Policies to protect eelgrass beds and areas suitable

[140] *See* Goal 16, IR 1, (suggested revision incorporates exact language).
[141] Goal 16, Use Priorities.

for eelgrass habitat within the YBEMP would ensure consistency with this Goal 16 mandate. Community members should thus suggest the addition of the following overall management policies for eelgrass protection:

> **Eelgrass Protection Policy.** Given eelgrass' importance to estuarine productivity, cultural lifeways, regional economies, and climate resilience, the overall management of estuaries in Lincoln County shall ensure enhanced management and protection of existing eelgrass beds as well as areas suitable for these habitats in the future.
>
> **Avoidance Policy.** It is Lincoln County's policy that adverse impacts to eelgrass and its suitable habitat should be avoided to the greatest extent practicable. Unavoidable impacts must be minimized through consideration of alternative sites and project modifications, and mitigated in accordance with the best available science for eelgrass restoration and in consultation with Tribal governments.

8. 1982 YBEMP – Plan Part VI: Management Units

Goal 16 requires local EMPs to divide each estuary into a series of "management units" to maintain each estuary's diverse resources, values, and benefits.[142] Each management unit is a discrete geographic area defined by biological and physical characteristics and features, within which particular uses and activities are promoted, encouraged, protected, or enhanced, and others are discouraged, restricted, or prohibited.[143] In Part VI of the 1982 YBEMP, Lincoln County adopted 31 different management units, each with their own unit classification, narratives, and permitted use matrices.[144] Management units are the third and most site-specific policy level of the 1982 YBEMP. Thus, revising outdated management unit policies offers one of the strongest potential avenues to protect eelgrass and suitable eelgrass habitat.

8.1. YBEMP Part VI: Management Units - Checklist for Improving Eelgrass Protections.

1982 YBEMP Management Unit and Estuarine Habitat Maps. As discussed above, the 1982 YBEMP does not include original estuarine management unit and estuarine inventory habitat maps (which include seagrass beds). However, these maps and relevant data summaries, which were developed by ODFW between 1978 and 1979, [145] are included within "*The Oregon Estuary Plan Book*" ("1987 Estuary Plan Book").[146] These maps should be cross-referenced when reviewing the 1982 YBEMP for needs and gaps related to eelgrass protection, and for reviewing the revised YBEMP materials to ensure that management unit classification ensures the protection of eelgrass and suitable eelgrass habitat to the greatest extent possible under the law.[147]

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[142] Goal 16, Management Unit Requirements.
[143] *1987 Estuary Plan Book*, *supra*, at 12.
[144] *See* 1982 YBEMP, 29-94. The 1982 YBEMP units are numbered from 1-34. Units 11, 26, and 29 are not established. Although this appears to be a numbering error, if the original unit numbering is retained, community members should recommend that the revised YBEMP explain the absence of these units.
[145] *1987 Estuary Plan Book*, *supra* note 41, at 36.
[146] *Id.* at 84-85; *See also id.*, Introduction, (discussing maps included in the guide).
[147] *Id.* at 85.

Goal 16 - Mix of Management Units required in Deep-Draft Development Estuaries. Under Goal 16, management unit classifications and boundaries must be determined through a consideration of the resource inventory in conjunction with (1) "[a]djacent upland characteristics and existing land uses," (2) "[c]ompatibility with adjacent uses," (3) "[e]nergy costs and benefits," and (4) the estuary's limited water surface area and its commitment to different surface uses.[148] As noted above, Goal 16 defines three types of estuary management unit classifications: "natural," "conservation," and "development."[149] Local governments must establish a mix of all three unit classifications in development estuaries.[150] Consistent with Goal 16's requirements, Part VI of the 1982 YBEMP adopts 13 natural units, 10 conservation units, and 7 development units in accordance with Goal 16.[151] However, these management units were established based on information developed in the late 1970s, and do not adequately account for the current status of eelgrass and suitable eelgrass habitat extent in Yaquina Bay.[152] As such, management unit classifications and boundaries within Part VI of the 1982 YBEMP will likely require revision following consideration of an updated estuarine resource inventory and an updated assessment of adjacent upland characteristics and existing land uses, compatibility with adjacent uses, energy costs and benefits, and Yaquina Bay's water surface area and its commitment to different surface uses.

Goal 16, Comprehensive Plan Requirements – Management Unit Boundaries and Narratives. As noted above, Goal 16 requires comprehensive plans for coastal areas to be based on estuarine inventories, the overall limits imposed by the estuary's established classification, and the needs identified in the planning process.[153] EMPs must, in relevant part: ***

> 3. Classify the estuary into management units; and
> 4. Establish policies and use priorities for each management unit using the standards and procedures set forth [by Goal 16].***[154]

Following management unit classification, Goal 16 requires local governments to establish policies and use priorities for each type of management unit. Goal 16 prescribes the overall purpose ("management objective") of each management unit, and then limits the types of uses that are or may be allowed within each unit's boundaries.[155] The management objective of each unit provides an overall standard for planning and for review of proposed uses.[156] Goal 16 requires EMPs to list "permissible uses" for each management unit, which are typically those uses that are consistent with the overall management objective of the unit as defined by the Goal.[157] Consistent with Goal 16, EMPs must describe each of these elements within a management unit narrative, which typically also includes a description of the area covered by the unit.

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[148] Goal 16, Management Unit Requirements.
[149] *1987 Estuary Plan Book*, *supra*, at 12.
[150] *2014 DLCD Assessment*, *supra* note 39, at 12.
[151] *1987 Estuary Plan Book*, *supra*, at 84.
[152] *See id.* at 35, 84-87.
[153] Goal 16, Comprehensive Plan Requirements.
[154] *Id.*
[155] Goal 16, Management Unit Requirements; *1987 Estuary Plan Book*, *supra*, at 12,
[156] *Id.*
[157] *Id.*

Each management unit narrative within the 1982 YBEMP includes a boundary description, unit classification, resource capability statement, management objective, and permitted use matrix.[158] All units except for 13-EC, 18-EN, 21-EN, 24-EN, and 27-EN have special policies.[159] As noted above in the discussion regarding the 1982 YBEMP resource inventory, the ODFW estuarine habitat maps developed in conjunction with the 1982 YBEMP may not accurately identify the nature, location, and extent of eelgrass beds and suitable eelgrass habitat. The West Coast USA Eelgrass Maximum Observed Extent data gathered aggregated and maintained by PMEP provides a more accurate picture of the current status of eelgrass in Yaquina Bay, and is a dynamic product.[160] This data should be used to update Management Unit boundaries, narratives, and special policies in the revised YBEMP.

A revised draft of Part VI of the YBEMP should include a draft revised management unit map overlaid upon an estuarine habitat resource map for the public to assess the location of current and historic eelgrass habitat extent in relation to established management unit boundaries. However, layering publicly available GIS data depicting the 1982 YBEMP's management unit boundaries onto the PMEP's West Coast USA Eelgrass Maximum Observed Extent map for Yaquina Bay shows that eelgrass and its suitable habitat (based on historical observed extent) is present in all 31 of the 1982 YBEMP management units, except for 2-EC, 33-EN, and 34-EC.[161] Of the 28 management units within the 1982 YBEMP where current PMEP data shows that eelgrass and its suitable habitat are present, eelgrass is only acknowledged in the narrative statements (i.e., description, management objective, classification, resource capability) of 10 management units (3-EC, 5-ED, 6-EC, 7-ED, 8-EC, 9-EN, 10-EN, 14-ED, 21-EN, 24-EN).[162] Only one 1982 YBEMP management unit (7-ED) has a special policy to minimize impacts to existing eelgrass beds.[163] The lack of explicit of acknowledgement and special policies related to eelgrass in these 1982 YBEMP management units where eelgrass habitat is currently known to exist risks inadequate protection of the species, contrary to the requirements of Goal 16. As such, each management unit narrative should be revised to accurately describe tracts of eelgrass based on current and historic extent data.

Goal 16, Natural Management Units. Goal 16 defines the objective of natural management units as follows:

> [T]o assure the protection of significant fish and wildlife habitats, of continued biological productivity within the estuary, and of scientific, research, and educational needs. These shall be managed to preserve the natural resources in recognition of dynamic, natural, geological, and evolutionary processes.[164]

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[158] 1982 YBEMP, 3.
[159] *See id.* at 53-54, 63-64, 70-71, 76-77, 81-82 (lacking listed special policies between management unit narrative and permitted use matrix).
[160] *See* PMEP, *supra*, (Yaquina Bay maximum observed extent data opened in map viewer), https://psmfc.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=12ed43ed0fe342bc86225268cbb638c7.
[161] OCMP, *Estuary Management Units for the Yaquina River Estuary Plan*, (1987) *available at* https://www.coastalatlas.net/?option=com_jumi&view=application&fileid=8&e=10&Itemid=107; *See also* PMEP, *supra*, (OCMP YBEMP management unit data downloaded and then added to PMEP map to layer).
[162] 1982 YBEMP, 33, 38, 40, 42, 44, 47, 49, 55, 70, 76.
[163] *Id.*, 42, 43.
[164] Goal 16, Management Unit (1).

Local governments must place all "major tracts" of salt marsh, tideflats, seagrass, and algal beds into natural management units.[165] According to LCDC, "major tracts" include those that provide significant rearing and feeding areas for juvenile salmon, such as eelgrass.[166] LCDC has also determined that areas with high invertebrate populations must be placed in a natural management unit.[167] LCDC has ruled that an area that otherwise qualifies for a natural management unit designation may not be designated as a conservation management unit merely to provide a buffer between the area and incompatible upland uses.[168] Rather, upland uses must be regulated to protect the natural management unit.[169] Each of these standards must be considered when revising Part VI of the 1982 YBEMP.

Goal 16, Natural Management Units – Permissible and Resource Capability Uses. Because management emphasis in natural units is on preserving natural resources and processes, permissible uses are limited accordingly to low intensity uses, location-dependent uses that involve no or minimal alteration, and maintenance of existing uses.[170] More intensive uses must pass the resource capability test to be permissible in a natural management unit.[171]

Natural Management Unit – Uses	
Permissible uses:	**Conditional or Resource Capability-Dependent Uses**
(a) undeveloped low-intensity, water-dependent recreation; (b) research and educational observations; (c) navigation aids, such as beacons and buoys; (d) protection of habitat, nutrient, fish, wildlife and aesthetic resources; (e) passive restoration measures; (f) dredging necessary for on-site maintenance of existing functional tidegates and associated drainage channels and bridge crossing support structures; (g) riprap for protection of uses existing as of October 7, 1977, unique natural resources, historical and archeological value, and public facilities; and (h) bridge crossings.	(a) aquaculture which does not involve dredge or fill or other estuarine alteration other than incidental dredging for harvest of benthic species or removable in-water structures such as stakes or racks; (b) communication facilities; (c) active restoration of fish and wildlife habitat or water quality and estuarine enhancement; (d) boat ramps for public use where no dredging or fill for navigational access is needed; and (e) pipelines, cables and utility crossings, including incidental dredging necessary for their installation. (f) installation of tidegates in existing functional dikes. (g) temporary alterations. (h) bridge crossing support structures and dredging necessary for their installation.

In natural management units, resource capability-dependent uses may be allowed "where consistent with the resource capabilities of the area and the purposes of [the natural management unit]."[172] A use or activity is consistent with the resource capabilities of a particular natural management unit when:

> (1) the impacts of the use or activity on estuarine species, habitats, biological productivity, and water quality are not significant, or
>
> (2) the resources of the area are able to assimilate the use and activity and their effects and continue to function in a manner that protects (as defined for the purposes of the

[165] Goal 16, Management Unit (1); *1987 Estuary Plan Book*, *supra*, at 12.
[166] Columbia River Estuary Study Task Force Plan Review, 50 (1981) [hereinafter "Crest Plan Review"].
[167] *Id.* at 48.
[168] *Id.* at 49.
[169] *Id.*
[170] Goal 16, Management Unit (1); *2014 DLCD Assessment*, *supra* note 39, at 12.
[171] *Id.*
[172] Goal 16, Management Unit (1).

> Goals) significant wildlife habitat, natural biological productivity, and scientific and educational values.[173]

In the revised YBEMP, each natural management unit with identified existing and suitable eelgrass habitat should include a special policy stating that development proposals with the potential to impact these areas must provide a Resource Capability Test, supported by an Impacts Assessment, in accordance with Goal 16.

Goal 16, Conservation Management Units. Areas that must be included in a conservation management unit include those needed for maintenance and enhancement of biological productivity, tracts of "significant habitat" that are smaller or "of less biological importance" than those placed in natural management units, and recreational or commercial oyster and clam beds not included in natural management units. Partially altered areas adjacent to existing development of moderate intensity which do not possess the resource characteristics of natural or development units must also be included in this classification. An example of such an area could be estuarine waters within urban growth boundaries. The objective of a conservation management unit is to provide "for long-term uses of renewable resources that do not require major alteration of the estuary, except for the purpose of restoration."[174] Conservation units "shall be managed to conserve the natural resources and benefits."[175]

As with "major tracts" determinations for natural management units in the 1982 YBEMP, it is unclear how Lincoln County determined that the tracts of eelgrass habitat in conservation management units 13, 16, 17, 25, and 30 were "of less biological importance" when adopting Part VI of the 1982 YBEMP. In the revised YBEMP, the County should consider whether any of these units would qualify for natural management unit designation, and re-classify portions of these units accordingly.

Goal 16, Conservation Management Units – Permissible and Resource Capability Uses. Goal 16 defines the objective of conservation management units as follows:

> [A]reas shall be designated for long-term uses of renewable resources that do not require major alteration of the estuary, except for the purpose of restoration. These areas shall be managed to conserve the natural resources and benefits. These shall include areas needed for maintenance and enhancement of biological productivity, recreational and aesthetic uses, and aquaculture.[176]

The management of conservation units emphasizes the conservation of natural resources, providing for long term use of renewable resources, and accommodating recreational development activities that do not require major alterations.[177] Permissible uses are low to moderate intensity, while higher impact uses must pass the resource capability test.[178]

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[173] *Id.* "Protect" for the purposes of the Goals is defined as "[s]ave or shield from loss, destruction, or injury or for future intended use." Goals, Definitions.
[174] Goal 16, Management Unit (2).
[175] Goal 16, Management Unit (2).
[176] Goal 16, Management Unit (2).
[177] *2014 DLCD Assessment*, *supra* note 39, at 12.
[178] *Id.*

Conservation Management Unit – Uses	
Permissible uses:	**Conditional or Resource Capability-Dependent Uses**
All Permissible and Resource Capability Dependent Uses allowed in Natural Management Units, except for temporary alterations.	(a) High-intensity water-dependent recreation, including boat ramps, marinas and new dredging for boat ramps and marinas; (b) Minor navigational improvements; (c) Mining and mineral extraction, including dredging necessary for mineral extraction; (d) Other water dependent uses requiring occupation of water surface area by means other than dredge or fill; (e) Aquaculture requiring dredge or fill or other alteration of the estuary; (f) Active restoration for purposes other than [protection of habitat, nutrient, fish, wildlife and aesthetic resources;] (g) Temporary alterations.

Although not mentioned in Goal 16, riprap may only be allowed in conservation units subject to findings that it is consistent with the resource capabilities and purpose of the particular unit.[179] The other resource capability-dependent uses may be allowed "where consistent with the resource capabilities of the area and the purposes of [the conservation management unit]." A use or activity is consistent with the resource capabilities of a particular conservation management unit when:

> (1) the impacts of the use or activity on estuarine species, habitats, biological productivity, and water quality are not significant, or
>
> (2) the resources of the area are able to assimilate the use and activity and their effects and continue to function in a manner which conserves (as defined for the purposes of the Goals) long-term renewable resources, natural biologic productivity, recreational and aesthetic values and aquaculture.[180]

In the revised YBEMP, each conservation management unit with identified existing and potential eelgrass habitat should include a special policy stating that development proposals with the potential to impact these areas must provide a Resource Capability Test, supported by an Impacts Assessment, in accordance with Goal 16.

Goal 16, Development Management Units. Areas that must be included in a development management unit include deep-water areas adjacent or in proximity to the shoreline, navigation channels, subtidal areas for in-water disposal of dredged material, and areas of "minimal biological significance needed for uses requiring alterations of the estuary not included in natural and conservation units.[181] The objective of a development unit is "to provide for navigation and other identified needs for public, commercial, and industrial water-dependent uses," consistent with the level of alteration allowed by overall estuary classification.[182] Usually, the only areas that would automatically qualify for designation as development management units are existing developed areas and authorized navigation channels.[183] In order to authorize new areas for development, EMPs typically must seek a "goal exception" under the rules set forth in OAR 660, Division 4.

[179] *Or. Shores Cons. Coalition v. Lane Cnty.*, 52 Or LUBA 471, 477–478 (2006).
[180] Goal 16, Management Unit (1). Protect for the purposes of the Goals is defined as "[s]ave or shield from loss, destruction, or injury or for future intended use." Goals, Definitions.
[181] Goal 16, Management Unit (3).
[182] *Id.*
[183] *1987 Estuary Plan Book*, *supra*, at 13.

Development Management Unit – Uses	
Permissible uses:	**Conditional or Resource Capability-Dependent Uses**
Permissible uses in areas managed for water dependent activities shall be navigation and water-dependent commercial and industrial uses. As appropriate the following uses shall also be permissible in development management units: (a) Dredge or fill, as allowed elsewhere in the goal; (b) Navigation and water-dependent commercial enterprises and activities; (c) Water transport channels where dredging may be necessary; (d) Flow-lane disposal of dredged material monitored to assure that estuarine sedimentation is consistent with the resource capabilities and purposes of affected natural and conservation management units; (e) Water storage areas where needed for products used in or resulting from industry, commerce, and recreation; (f) Marinas.	Water-related and nondependent, nonrelated uses not requiring dredge or fill; Mining and mineral extraction; and Other uses and activities identified in natural and conservation management units

The management emphasis of the development unit is on accommodating navigation and public, commercial and industrial water dependent uses, including those uses which may require significant dredging, fill or other major alterations.[184] Dredge and fill as well as dredge material disposal is further regulated by Goal 16 Implementation Requirements 1, 2, 3, 5, and 6.[185]

In the revised YBEMP, any proposal to expand development units 4, 5, 7, 12, 14, 31, and 32 would likely require a goal exception. Development management units with existing and potential eelgrass habitat should be revised to include the following special policy:

> Eelgrass beds and suitable eelgrass habitat areas are located within this management unit. Adverse impacts of future development on these resources shall be avoided, and unavoidable impacts shall be minimized.

This policy would ensure that tracts of eelgrass beds in the vicinity of the South Beach Marina, Port of Newport, federal navigation channel, and other existing docks or moorages are protected to the greatest extent allowable under the development unit classification.

8.2. Writing comments on YBEMP Part VI: Management Units.

• The revised YBEMP should update management unit narratives to accurately reflect eelgrass bed location and extent, and areas suitable for eelgrass habitat based on maximum observed extent data. As noted above, PMEP maximum observed extent data shows eelgrass habitat present in 28 of the 31 existing 1982 YBEMP management units. However, several of these 1982 YBEMP management units do not acknowledge eelgrass presence anywhere in their narratives and all but one omits special policies for eelgrass protection within their permitted use matrices. To demonstrate consistency with Goal 16, each management unit narrative in the revised YBEMP should be based on up-to-date, maximum observed extent eelgrass data.

[184] *2014 DLCD Assessment*, *supra* note 39, at 12.
[185] Goal 16, Implementation Requirements.

• **The revised YBEMP should adjust management unit boundaries for Natural and Conservation units to include contiguous tracts of eelgrass habitat and suitable habitat area, based on maximum observed extent and historical observation.** Determining "major tracts" of eelgrass beds based on single-year observations of eelgrass presence alone does not provide an accurate picture of the nature, location, and extent of this habitat.[186] Specifically, such a determination would be insufficient to establish a sound basis for the management of this vulnerable species, because it fails to account for seasonal variations in eelgrass presence and would not support an understanding of how a particular use could impact eelgrass habitat quality over time.[187] In particular, this approach undermines the County's ability to identify and preserve areas that will eelgrass require to migrate landward (i.e., higher into the intertidal zone) in response to sea level rise. In the revised YBEMP, decisions on "major tracts" of eelgrass should be determined using maximum observed extent data.[188] Based on this evaluation, Lincoln County should consider expanding natural management unit boundaries to incorporate contiguous tracts of current and historical eelgrass habitat extent. Examples include, but are not limited to:

- Expanding the southeastern boundary of 9-EN to include the tract of existing and potential eelgrass habitat which crosses the northern boundary of 13-EC.
- Expanding the northern boundaries of 18-EN and 19-EN to include the tract of existing and potential eelgrass habitat lining the southern boundary of 17-EC.
- Expanding the eastern and western boundaries of 21-EN to include the tract of existing and potential eelgrass habitat lining the southern boundary of 17-EC.
- Expanding the southern boundaries of 20-EN to include the tract of existing and potential eelgrass habitat crossing the northern boundary of 16-EC.

The revised 1982 YBEMP should re-classify conservation and development management units into natural management units where maximum observed extent data shows "major tracts" of eelgrass habitat.

• **Management units within the revised YBEMP that are mapped with eelgrass habitat (based on maximum observed extent data), should include a special policy requiring that a resource capability test be conducted at the time of permit review for any activity with the potential to impact existing and suitable eelgrass habitat areas.** Each of the 31 management units in the 1982 YBEMP have a resource capability statement, each of which was developed based off the conditions known at the time of plan adoption.[189] These statements must generally be updated to reflect current estuarine conditions, which could be the basis to advocate for changes in management unit boundaries, classifications, special policies, and permitted use matrices that would better protect eelgrass. The 1982 YBEMP expressly acknowledges eelgrass in its resource capability findings for management units 8-EC, 21-EN, and 24-EN.[190] These findings are largely inconsistent with the best available science on eelgrass environmental tolerances for light, and must be updated to indicate that eelgrass would not be able to assimilate uses that limit light penetration.[191] Generalized resource capability findings set forth at EMP

[186] Goal 16, Inventory Requirements.
[187] *Id.*; Goal 16, Management Unit 1.
[188] PMEP, *supra* note 99.
[189] *See, e.g.,* 1982 YBEMP, 38 (Management Unit 5's Description and Resource Capability Statements).
[190] 1982 YBEMP, 44, 70, 76.
[191] Beheshti & Ward, *supra*, at 31.

adoption within a management unit narrative are insufficient to protect eelgrass habitats, which experience seasonal variability and are sensitive to multiple stressors. As such, for management units with existing eelgrass beds or suitable eelgrass habitat (based on maximum observed extent data), the revised YBEMP should explicitly defer resource capability tests for any land use activity or proposal that impacts known eelgrass beds or suitable eelgrass habitat to the permit review process rather than adopting generalized findings in the EMP.

• The revised YBEMP should include a digital map of each management unit suitable for inclusion in the EMP (e.g., via hyperlink), and this map should have the capability of displaying eelgrass maximum observed extent data in relation to management unit boundaries.

9. 1982 YBEMP Part X: Plan Implementation

Part X of the 1982 YBEMP covers Plan Implementation.[192] It generally describes:

- The administrative procedures for review of individual development proposals (i.e., proposed new uses and alterations within Yaquina Bay);
- The application of plan standards to individual development proposals listed under individual management unit use matrices as either *permitted* or *conditional*;
- The process for coordinating local review procedures for estuarine development proposals with state and federal agency regulatory programs as they existed in 1982; and
- A list of major state and federal regulatory authorities, as understood in 1982, that are applicable to estuarine development.

The suggestions to strengthen eelgrass protections provided by Part II of the second edition of this Primer depend on a robust EMP implementation process. In particular, ensuring that estuarine alterations with the potential to impact eelgrass habitat are reviewed under the most rigorous public decision-making processes provided under the law will be an important way to protect the species.

9.1. 1982 YBEMP Part X: Plan Implementation – Checklist for Improving Eelgrass Protections.

Procedure for review of proposed estuarine developments with the potential to impact eelgrass habitat. As discussed above, Goal 16 requires local EMPs to set forth procedures and standards for the review of proposed estuarine developments.[193] These EMP plan policies and implementing measures are typically applied through local government review of permit applications for specific projects.[194] Local decisions on specific estuarine development proposals

[192] 1982 YBEMP, 166-80.
[193] Goal 16; *1987 Estuary Plan Book, supra*, at 10.
[194] *1987 Estuary Plan Book, supra*, at 10.

are usually made through either a quasi-judicial or ministerial land use decision-making process.[195]

- **Quasi-Judicial Land Use Decisions.** Local governments make quasi-judicial decisions when they apply existing comprehensive plan policies or zoning criteria to specific land use or development permit proposals.[196] In other words, they typically involve the exercise of discretion by the local decision-maker in applying the plan or ordinance to the facts of a land use application.[197] Because some discretion is applied by the local government, quasi-judicial decisions require at least some form of public notice, opportunity for public review and comment, and appeal.[198]

- **Ministerial or Administrative Decisions.** Ministerial or administrative decisions are made by local planning staff based on "clear and objective standards" applicable to a specific development proposal or factual situation.[199] They also include decisions that are made under land use standards "that do not require interpretation or the exercise of policy or legal judgment."[200] Activities reviewed under this process generally have predictable impacts that can be controlled by requiring compliance with certain routine conditions of approval.[201]

The statutory requirements for quasi-judicial decision-making proceedings allow for greater public oversight and a fuller consideration of impacts, and are thus generally more protective of environmental values. The below chart contains more detail on each of these types of decisions and the process typically required for each:

Decision	Examples	Notice Required	Hearings	Findings
Quasi-Judicial	Quasi-judicial decisions include conditional use permits, variances, subdivisions, and road and street vacations.[202] They also include amendments to the zoning or comprehensive plan map, policies, or regulations in conjunction with a specific development proposal.[203]	Must identify the type of land use decision to be made and the time and place of the hearings.[204]	Parties are entitled to present and rebut evidence presented by others.[205] Local governments must grant requests to present additional testimony made prior to the close of the first evidentiary hearing.[206] The applicant bears the burden of proof of establishing compliance with criteria. The local government may not cite evidence outside of the hearings record as a basis for the decision.	Decisions are not final until written findings have been adopted by the decision-making body.[207] Failure to prepare and adopt "adequate" findings can result in reversal or remand of a decision on appeal.
Ministerial or Administrative	Ministerial or administrative decisions include building permits for a use permitted by code or a determination that a proposed structure meets setback or height standards.[208]	None required, but some local governments provide as a courtesy.[209]	Not required.	Not required.

[195] *Id.* at 9.
[196] *Ch. 4: Making Land Use Decisions*, *supra* note 53.
[197] *1987 Estuary Plan Book*, *supra,* at 9.
[198] ORS 197.763.
[199] ORS 197.015(10)(b)(B).
[200] ORS 197.015(10)(b)(A).
[201] *1987 Estuary Plan Book*, *supra*, at 9.
[202] *Ch. 4: Making Land Use Decisions*, *supra* note 53.
[203] *Id.*
[204] ORS 197.763.
[205] *Id.*
[206] ORS 197.763(6).
[207] *See* ORS 215.416(9) (counties); *See* ORS 227.173(3) (cities).
[208] *Ch. 4: Making Land Use Decisions*, *supra* note 53.
[209] ORS 197.015(10)(b).

The interpretation and application of Goal 16's resource-capability test, dredge, fill, and other alterations test, or impacts assessment requires a significant exercise of discretion on the part of a local government. Thus, to demonstrate compliance with state law, EMPs must make clear that proposals involving uses triggering these analyses, whether permitted or conditional, must be reviewed under a quasi-judicial decision-making procedure.[210]

Local governments implement Goal 16's requirements through locally adopted EMPs, and cannot defer findings required under Goal 16 to other state and federal processes that are not directly responsive to the Goal's requirements. Goal 16's management unit and implementation requirements task local governments with specific responsibilities for the review of proposed estuarine developments, including the "resource capability" test, the "dredge, fill or other alteration" test, and the requirement for an impact assessment.[211] As discussed throughout this Primer, EMP processes for local project review are the primary mechanisms for complying with these Goal 16 management unit and implementation requirements. Local governments must apply EMP plan policies and implementation measures to estuarine development proposals to develop these required Goal 16 findings.[212] Under ORS 197.646(3), any EMP whose provisions are out of compliance with Goal 16's requirements must directly apply the relevant Goal 16 provisions to local land use decisions.[213]

Part X of the 1982 YBEMP states that Lincoln County "will rely on certain state and federal regulatory authorities and programs to meet" certain Goal 16 management unit and implementation requirements, instead of including explicit measures and standards for compliance with those requirements within the YBEMP itself.[214] These Goal 16 management unit and implementation requirements include:

- Reliance on U.S. Army Corps of Engineers ("USACE") and Oregon Department of State Lands ("DSL") authority to regulate dredge and fill activities under Section 404 of the Federal Clean Water Act ("CWA") and state Removal/Fill Law, respectively, to meet the "public need" element of the "Dredge, Fill, and Other Alterations" Test required under Goal 16, IR 2(b).[215]
- Reliance on regulations that implement USACE's authority under Section 404 of the CWA to "[p]rovide findings that, where permitted, structural bank stabilization or dredging activities in conjunction with aquaculture, public facilities, and/or active restoration measures" are consistent with the resource capability test required for natural management units under Goal 16.[216]
- Reliance on regulations that implement USACE's authority under Section 404 of the CWA to "[p]rovide findings that, where permitted, fill, structural bank stabilization or dredging activities in conjunction with marinas, minor navigational improvements, mining and mineral extraction, bridge crossings, and water dependent uses requiring occupation of surface area

[210] *See* ORS 197.646(3), (if local land use decision-making procedures are inconsistent with state law, state law will control.)
[211] *2014 DLCD Assessment*, *supra*, at 23.
[212] *Id.*
[213] ORS 197.646(3).
[214] 1982 YBEMP, 166.
[215] Goal 16, IR 2; 1982 YBEMP, 169.
[216] Goal 16, Management Unit (1); 1982 YBEMP, 169.

by means other than fill" are consistent with the resource capability test for conservation management units under Goal 16.[217]

- Reliance on regulations that implement USACE's authority under Section 404 of the CWA to "[p]rovide findings that, where allowed, fill, bank stabilization or dredging activities in conjunction with mining extraction, public facilities, bridge crossings, research and education observations or protection of habitat and other natural values" are consistent with the resource capability test for development management units under Goal 16.[218]
- Reliance on regulations that implement USACE's authority under Section 404 of the CWA to "clearly present the impacts of a proposed estuary alteration" for the purposes of the Impacts Assessment required under Goal 16, IR 1.[219]
- Reliance on regulations that implement USACE's authority under Section 404 of the CWA to "[p]rovide findings that the proliferation of single purpose docks and piers is being restricted by encouraging community facilities" as required under Goal 16, IR 7.[220]

The analyses performed under the above-referenced USACE and DSL permitting processes in some ways parallel the analyses required under Goal 16, particularly with respect to the natural resource impact assessment, findings of need, analysis of alternatives, and impact avoidance/minimization findings.[221] However, neither process is targeted toward satisfying Goal 16's specific management unit or implementation requirements. The 1982 YBEMP's reliance on these processes to meet Goal 16's management unit and implementation requirements, instead of adopting explicit measures and standards for compliance into the YBEMP itself, essentially defers local review of potential impacts to eelgrass habitat to state and federal decision-makers.

1982 YBEMP Part X: Plan Implementation – State and Federal Agency Coordination. The 1982 YBEMP is part of a larger framework of state and federal permitting processes required for development projects in Yaquina Bay. Local permitting processes under Goal 16 cannot directly conflict with outside permitting processes and other applicable state and federal programs, and should recognize how local YBEMP permitting processes relate to other permits in overall state and federal estuarine legal frameworks to avoid confusion. In particular, the YBEMP as revised must recognize changes that have occurred to applicable federal and state programs related to estuaries, eelgrass, eelgrass habitat, and species that depend on eelgrass since its adoption 1982 and ensure that local land use permitting processes do not directly conflict with these rules. Appendix D of the second edition of this Primer discusses several of the state and federal authorities and statutes currently applicable to eelgrass.

9.2. Writing Comments on YBEMP Plan Part X: Plan Implementation.

• **Part X should be revised to clarify that proposals for uses and activities which involve the application of discretionary standards, whether listed as "permitted with standards" or "conditional," must be reviewed via a quasi-judicial land use decision-making process.** The

[217] Goal 16, Management Unit (2); 1982 YBEMP, 169.
[218] Goal 16, Management Unit (3); 1982 YBEMP, 170.
[219] Goal 16, IR 1; 1982 YBEMP, 170.
[220] Goal 16, IR 7; 1982 YBEMP, 170.
[221] *2014 DLCD Assessment*, *supra* note 39, at 23. Of particular note, Part X of the 1982 YBEMP even states that "[i]n the event that these State or Federal regulations change so as to *no longer satisfy these [Goal 16] requirements*, equivalent implementary [*sic*] measures will be required." 1982 YBEMP, 170 (emphasis added).

1982 YBEMP states that for "uses and/or activities which are 'Permitted with Standards' (i.e., those activities or uses which are designated 'P' in the appropriate permitted use matrix) no local permit is required."[222] In other words, under the 1982 YBEMP, the procedure for review of uses listed as "permitted with standards" prescribes a ministerial process, despite the fact that many of those proposals would involve the application of discretionary standards.[223] For instance, a proposal for new dredging in management unit 9-EN for the purpose of submerged crossings would likely trigger a "Dredge, Fill, and Other Alterations" test under Goal 16, IR 2 (a discretionary review process), but is currently listed as "permitted with standards" under the unit's permitted use matrix.[224] As such, the 1982 YBEMP does not provide for the minimum due process requirements for this type of proposal as is required under state land use law.[225] The local review procedure for these types of uses must be updated in the revised YBEMP to require a quasi-judicial process, rather than a ministerial one.

• **Part X must be updated to clarify that local permits <u>are required</u> for uses and/or activities identified as "permitted with standards."** Currently, Part X states that no permit is required for activities listed as "permitted with standards."[226] Part X should be revised to clearly explain that:

> Uses and activities that are listed as "permitted with standards" by the YBEMP are subject to overall management policies, sub-area policies, site-specific management objectives, and special conditions to comply with the YBEMP as adopted by Lincoln County, the City of Newport, and the City of Toledo. Compliance with these standards must be verified; therefore, all uses and activities under the jurisdiction of the YBEMP must be reviewed and may only be allowed with an approved permit.

• **The state and federal agency coordination process described in Part X is inconsistent with Goal 16 and Oregon Land Use Law.**[227] As discussed above, the provisions that use state and federal standards to fulfill certain requirements of Goal 16 are improper. Goal 16 requires that local governments make specific findings during the local project review process, and local governments cannot defer a determination of compliance with Goal 16 to another agency or process. The revised YBEMP should adopt explicit measures and standards for compliance with Goal 16's requirements, including the "resource capability" test, the "dredge, fill or other alteration" test, and the requirement for an impact assessment.

• **Part X should be revised include a graphic representation of applicable agencies with jurisdiction, popular names of regulatory programs, and links to agency websites with information on up-to-date approval criteria for ease of user reference.**[228] In particular, state and federal agency programs, such as the Magnussen-Stevens Fisheries Act, that protect eelgrass must be explicitly recognized.

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[222] 1982 YBEMP, 166.
[223] *Id.* at 166-67.
[224] *Id.* at 48.
[225] *Id.* at 166; ORS 197.646(3); ORS 215.416; ORS 227.175.
[226] 1982 YBEMP, 166-67.
[227] 1982 YBEMP, 168-69.
[228] *See, e.g.,* Or. Ocean Information, *Legal Authorities in Oregon's Territorial Sea – Agencies and Authorities in Oregon's Territorial Sea and Ocean Shore*, (diagram of Oregon's territorial sea with relevant authorities) https://www.oregonocean.info/index.php/cs-reg-road-map#Authority_TSP (last visited Dec. 22, 2022).

Part III: Avenues for Further Advocacy and Conclusion

With active public engagement, it is still possible to protect existing and suitable eelgrass habitat in Oregon's estuaries. Several state and federal processes relevant to improving management frameworks for eelgrass are not addressed in-depth in the second edition of this Primer, but could offer avenues for further advocacy. These include:

- **Oregon's Climate Adaptation Framework and Climate Equity Blueprint.**

As discussed in the first edition of this Primer, DLCD developed and adopted the Oregon Climate Change Adaptation Framework ("CCAF") and Climate Equity Blueprint ("CEB") in January 2021.[229] The CEB provides a set of best practices to guide government decisions as well as tools for agency staff to apply an "equity lens" while designing state agency policies, processes, and programs to address climate change.[230] The CCAF explores the impacts of climate change in Oregon and identifies how state agencies can effectively respond to them. Its recommendations are designed to strengthen interagency coordination and consideration of equity, diversity, and inclusion in program planning and delivery.[231] Although the CCAF is aimed at state agency action, many of its programs and projects must be implemented in collaboration with local governments and community partners.[232] Of note for improving eelgrass protections in Oregon, the 2021 CCAF recognizes that combinations of ocean change drivers (e.g., warming, coastal currents and upwelling, ocean acidification, and hypoxia) "are causing…*loss of key submerged aquatic vegetation (SAV) habitats*" and impacting fisheries in Oregon.[233]

The 2021 CCAF calls on all state agencies to examine current policies, practices, and guidance in order to identify opportunities to address climate change within existing agency programs in the 2021-23 biennium.[234] Based on the results of these reviews, each agency must prepare an agency-specific climate change action plan.[235] One avenue to improve eelgrass protections would be for DLCD to adopt the 2021 CCAF's recommendations for protection of estuary health and blue carbon ecosystems into its existing coastal land use program, since this would help address multiple stressor impacts to eelgrass while recognizing eelgrass' importance as a blue carbon habitat.[236] DLCD should further coordinate with DSL to adopt a climate change action policy requiring the avoidance and minimization of impacts to existing and suitable eelgrass habitat within the state's removal/fill program. These eelgrass protection strategies should be developed through ongoing government-to-government consultation with tribes as well as an equitable public process in accordance with best practices set forth in the 2021 CEB.

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[229] DLCD, *Oregon's Climate Change Adaptation Framework*, https://www.oregon.gov/lcd/CL/Pages/Adaptation-Framework.aspx (last visited May 26, 2021).
[230] DLCD, *2021 State Agency Climate Equity Blueprint*, 5 (Jan. 2021) [hereinafter *2021 CEB*], https://www.oregon.gov/lcd/CL/Documents/2021_CLIMATE_CHANGE_ADAPTATION_FRAMEWORKandBlueprint.pdf.
[231] DLCD, *2021 State Agency Climate Change Adaptation Framework*, i (Jan. 2021) [hereinafter *2021 CCAF*], https://www.oregon.gov/lcd/CL/Documents/2021_CLIMATE_CHANGE_ADAPTATION_FRAMEWORKandBlueprint.pdf.
[232] *Id.*
[233] *2021 CCAF*, *supra* note 157, at 2 (emphasis added).
[234] DLCD, *2021-2023 Policy Agenda*, 8 (Nov. 22, 2021) https://www.oregon.gov/lcd/NN/Documents/DLCD_FullPolicyAgenda_2021-2023.pdf; DLCD, *Updated 2021-2023 Policy Agenda*, 4-5 (Nov. 18, 2022), https://www.oregon.gov/lcd/Commission/Documents/2022-11_Item_4__Attachment_A_DLCD_UpdatedPolicyAgenda-2021-2023.pdf.
[235] *2021 CCAF*, *supra* note 157, at 2 (emphasis added).
[236] *Id.* at 27.

- **The Oregon Global Warming Commission's Natural and Working Lands Proposal**

The Oregon legislature has tasked the Oregon Global Warming Commission ("OGWC") with preparing communities in Oregon for the effects of climate change, including tracking greenhouse gas emission trends and recommending ways to reduce them.[237] In response to Governor Kate Brown's climate action Executive Order 20-04, the OGWC began developing a Natural and Working Lands Proposal ("NWL Proposal").[238] As adopted in August 2021, the NWL Proposal establishes state goals for increasing carbon sequestration in Oregon's natural and working landscapes, including forests, wetlands, agricultural lands, and most importantly, "blue carbon" habitats.[239] Specifically, the NWL Proposal identifies increasing the protection and restoration of blue carbon habitats, which include kelp forests, seagrass beds, marshes, scrub-shrub wetlands, and forested swamps, as a key strategy for increasing carbon sequestration.[240]

In 2022, the OGWC put forth S.B. 1534, a bill entitled "Climate Change and Natural & Working Lands," to advance several foundational recommendations from the NWL Proposal. S.B. 1534 would have defined the term "natural and working lands" in statute, and begun the process of establishing the NWL Proposal's recommended strategies as state policy.[241] Although S.B. 1534 did not pass in the 2022 session, it is anticipated that the bill will be put forward again in the 2023 session.[242] Encouraging the legislature to establish statutory mandates based on the NWL Proposal's blue carbon habitat strategies would be a key way to strengthen eelgrass protections in estuaries.

- **2022 Oregon Nearshore Science and Monitoring Research.**

Oregon has yet to implement ongoing coastwide science and monitoring programs for eelgrass habitat. However, Oregon's 2022 Budget Bill, H.B. 5202, made a one-time appropriation of $1 million to DSL for science and monitoring "on nearshore keystone species including sea otters, nearshore marine ecosystems, kelp and eelgrass habitat, and sequestration of blue carbon."[243] Better understanding Oregon's nearshore species and habitats can guide agency and local government decision-making, and thus ensure that decisions sustainably conserve the

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[237] Robin Eckensberger, *Oregon Global Warming Commission*, Oregon Encyclopedia (2020) https://www.oregonencyclopedia.org/articles/oregon-global-warming-commission/.
[238] Exec. Order No. 20-04, (Mar. 10, 2020), https://www.oregon.gov/gov/Documents/executive_orders/eo_20-04.pdf.
[239] Catherine Macdonald, *Oregon Global Warming Commission Proposes New State Goals for Carbon Sequestration*, (Sept. 27, 2021), https://energyinfo.oregon.gov/blog/2021/9/27/oregon-global-warming-commission-proposes-new-state-goals-for-carbon-sequestration; Sylvia Troost, Alex Clayton & Elizabeth Ruther, *Oregon Climate Plan Is First in U.S. to Account for 'Blue Carbon' Benefits of Coastal Habitats*, Pew Charitable Trusts, (Aug. 5, 2021), https://www.pewtrusts.org/en/research-and-analysis/articles/2021/08/05/oregon-climate-plan-is-first-in-us-to-account-for-blue-carbon-benefits-of-coastal-habitats.
[240] OGWC, *Natural and Working Lands Proposal 2021*, 19-20 (Sept. 27, 2021) https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/6148a9d36431174181e05c7c/1632152029009/2021+OGWC+Natural+and+Working+Lands+Proposal.pdf;
[241] Or. Dept. of Energy, *Legislative Report 2022*, 15 (2022), https://www.oregon.gov/energy/Data-and-Reports/Documents/2022-ODOE-Legislative-Report.pdf
[242] Oregon Wild, *The 2022 Oregon Legislature: Significant Victories for Forests, Waters, and Wildlife; Disappointment on Climate*, (Mar. 11, 2022), https://oregonwild.org/about/blog/2022-oregon-legislature-significant-victories-forests-waters-and-wildlife-disappointment.
[243] H.B. 5202, 2022 Reg. Sess. (Or. 2022); *See* Oregon Wild, *The 2022 Oregon Legislature: Significant Victories for Forests, Waters, and Wildlife; Disappointment on Climate*, (Mar. 11, 2022) (discussing appropriation made to the Department of State Lands for nearshore keystone species research and monitoring), https://oregonwild.org/about/blog/2022-oregon-legislature-significant-victories-forests-waters-and-wildlife-disappointment.

ecological functions of eelgrass habitat in full consideration of multiple-stressor impacts (including climate change). EMP resource inventories should be updated with any data regarding current and suitable eelgrass habitat that may be developed from this funding grant to DSL. Once available, EMP resource inventories should be also be updated with data related to the blue carbon sequestration potential of eelgrass beds, since this will present a more accurate picture of the species' importance to estuarine ecosystem productivity.

Appendix D discusses further avenues for eelgrass advocacy through federal NMFS regulations, and the California Eelgrass Mitigation Policy ("CEMP") as a potential action example for eelgrass protection in Oregon.

Conclusion

Our hope is that future editions of this Primer will continue to delve into the above topics, in addition to those presented in the first edition. Oregon is still in the early stages of a much-needed, comprehensive discussion of eelgrass issues. Our goal is to make sure that this discussion about the science and policy of eelgrass conservation continues and expands, and extends to a wider audience. This Primer provides a "white paper" which we hope will enrich a statewide reconsideration of our estuaries and eelgrass habitats, with a view toward sustaining and enhancing them for the benefit of all.

About Oregon Shores, Crag Law Center, and The Coastal Law Project

About Oregon Shores

The Oregon Shores Conservation Coalition was founded in 1971 to protect the public interest in Oregon's beaches created by the Beach Bill. Oregon Shores became a 501(c)(3) non-profit in 1991. The organization's mission has widened over the years to encompass conservation of the environment of the entire coastal region, from the crest of the coastal mountains to the edge of the continental shelf. Our mission statement:

> *In Oregon, the beaches belong to the people. As part of Oregon's tradition of environmental stewardship, the Oregon Shores Conservation Coalition serves as a guardian of the public interest for Oregon's coastal region. Oregon Shores is dedicated to preserving the natural communities, ecosystems and landscapes of the Oregon coast while conserving the public's access. Oregon Shores pursues these ends through education, advocacy, and engaging citizens to keep watch over and defend the Oregon coast.*

Among Oregon Shores' key program activities:

- Oregon Shores has a long history of advocating for protection of beach, headland and tidepool areas, and the Land Program has been involved in literally hundreds of land use and other regulatory issues. Among many other successes (often in partnership with a local group) are preservation of Coquille Point, Fishing Rock, Yaquina Head, Indian Point in the Coos estuary and the extraordinary 804 Trail near Yachats. Oregon Shores was a leader in advocating for creation of the South Slough National Estuarine Research Reserve, which has spearheaded key research on spatial mapping of eelgrass in Oregon.[244]

- Oregon Shores was one of the founding groups of what was then Oregon Ocean, subsequently renamed Our Ocean, the coalition working to create a network of marine reserves off our coast. The Ocean Program played a leading role in the campaign to create Oregon's first five marine reserves; we continue to make support for these reserves a priority, as a founding member of the Oregon Marine Reserves Partnership. We are currently at the forefront of efforts to assure careful environmental assessment of wave energy impacts as well as benefits, and likewise the potential impacts of offshore wind development, and are active participants in Oregon's new Rocky Habitat Management Strategy, seeking to better protect our rocky shore areas.

- Our Climate Program focuses on adaptive planning, with the goal of building the resiliency of both natural and human communities in the face of sea level rise, increased storm surges, and other likely impacts due to climate change.

- CoastWatch engages more than 1,600 volunteers in monitoring the shoreline; it is the only program in the nation through which the citizens of a state (and some citizens of other states who love the Oregon coast) have adopted their state's entire shoreline. CoastWatch reports

[244] Sherman & DeBruyckere, *supra* note 2, at 22.

assist public resource managers and conservation groups in protecting the shoreline, and CoastWatchers get involved in innumerable ways as individuals, from organizing their own debris pick-ups to participating in surveys to advocating for stronger regulations or opposing unnecessary shoreline armoring projects.

Our vision is of a coastal region protected by a powerful grassroots movement—statewide, but strongly rooted in the communities of the coast—that demands sustainability, conservation of resources, protection of ecosystems and habitats and reconfiguration of human communities so as to work with nature and preserve the coastal environment for all generations.

To learn more about Oregon Shores and how you can get involved, please visit our website: https://oregonshores.org/

About Crag Law Center

Founded in 2001, Crag is a client-focused law center that supports community efforts to protect and sustain the Pacific Northwest's natural legacy. Crag provides free and low-cost legal services to folks who are working on the ground to protect our environment, climate and communities. We believe that conservation and community groups deserve access to high-quality lawyers regardless of their ability to pay, and understand that effective legal aid extends far beyond lawsuits. We help our clients and partners understand the complex legal landscape and identify a set of tools to help them achieve their goals for a healthy environment and a sustainable future. Many of Crag's clients are battling well-funded corporations with large teams of attorneys, and Crag's advocacy elevates those who would not otherwise have a voice in decisions directly affecting their frontline communities. We take on the cases that others often overlook, including cases that have no possibility of recovering attorneys' fees.

By nature, Crag's work is long-term. Our strategy is to push back against the erosion of environmental protections on public lands, elevate the voices of tribes and other traditionally underrepresented groups, and advance climate policy that will preserve the prosperity and safety of generations to come. We use our legal skills to defend Portland's fossil fuel ban and support youth who are demanding that our governments take action on climate change. We help communities challenge dangerous fossil fuel projects and stopped Nestlé from bottling and selling their local water. We help conservation and recreation groups secure protections for old growth forests, wilderness areas and rivers, preserving critical wolf and native fish habitats. We aim to make our environmental laws work for everyone, support civic engagement, and hold decision-makers accountable for land management and environmental protections.

Since 2001, Crag Law Center has provided free and low-cost services to folks who are working on the ground to protect the environment, climate, and communities, with the goal of making environmental laws work for everyone.

If you would like more information about how the Crag Law Center can provide assistance, please visit our website: https://crag.org/

About the Coastal Law Project:

The Coastal Law Project is a collaborative partnership formed in 2004 between the Oregon Shores Conservation Coalition and Crag Law Center to protect and preserve the Oregon coast and its ecosystems for all people. You can learn more about our history here (https://oregonshores.org/land-use/coastal-law-project) and our work here (https://crag.org/our-work/communities/coastal-law-project/). Oregon Shores and Crag revised the Coastal Law Project's charter in 2021. We consider this an ongoing process. You can read more about the Coastal Law Project's vision, values, and commitments here (https://crag.org/wp-content/uploads/2021/08/2021.06.17-FINAL-Coastal-Law-Project-Charter.pdf).

The Oregon coast is the pride of the state, crucial as a public resource for recreation, marine-based economies, and vital species habitat. However, it is under ever present and increasing threat from climate change, harmful resource extraction schemes (including fossil fuel infrastructure), and ill-advised shoreline development proposals, as well as the ongoing loss of public beach access due to hardened protection structures. Through a range of tools including legal representation, public education about conservation laws and land use, and policy advice, the Coastal Law Project works with coastal communities to protect sensitive coastal and marine ecosystems, preserve and promote equitable public beach access, and defend coastal watersheds. The partnership draws upon the respective expertise and knowledge of our two organizations to identify and address issues critical for the preservation of the Oregon Coast. Together, Crag and Oregon Shores hope to work alongside people and communities to help preserve Oregon's treasured coastal regions for generations to come.

Acknowledgments

This first edition of this Primer was inspired by the community members and estuary of Coos Bay; the second edition comes in response to the concerns of community members living in the Yaquina Bay watershed. We would like to thank Mike Graybill, Sierra Killian, Daniel Bornstein, and Courtney Johnson for their contributions to this Primer.

Appendix A: Resources for Public Participation – Oregon's EMP Updates

Appendix A offers resources to get involved with the Yaquina Bay and Coos Bay EMP updates. Participating in local EMP updates will require familiarity with the state agencies, tribal governments, and local governments with responsibilities and management authority over estuaries in Oregon. Please note that the state resources provided in Appendix A will apply to all future EMP updates.

YAQUINA BAY ESTUARY MANAGEMENT PLAN UPDATE

YBEMP 2022 Update Status: In Data Collection and Needs and Gaps Assessment stage as of December 2022 (See Part I of second edition of Primer).

Relevant Planning Contacts and Public Comment Resources: Lincoln County implements the Yaquina Bay EMP in coordination with the Cities of Newport and Toledo. Yaquina Bay is within the ancestral homelands of the Confederated Tribes of the Siletz Indians.

- **Confederated Tribes of the Siletz Indians (CTSI) - CTSI Heritage:** https://www.ctsi.nsn.us/heritage/

This website contains information for the public interested in learning more about the Confederated Tribes of the Siletz Indians government, heritage, and history.

- **CTSI Natural Resources Department:** https://www.ctsi.nsn.us/tribal-services/natural-resources/

"It is the mission of the Siletz Tribal Natural Resources Department to care for, protect, enhance and provide for the wise use of all of the Tribe's natural resources in a manner which will ensure that all generations to come will benefit from these resources. This philosophy applies to all lands to which the Tribe is historically tied, including its ancient, aboriginal, ancestral lands, its Coast Reservation, and its current and future land holdings."

The Natural Resource Department describes CTSI programs for Oyster Restoration and Estuarine Research, which will support an understanding of how CTSI programs contribute to eelgrass restoration in Yaquina Bay.

- **CTSI, *Estuary Ecology Curriculum*, 11, 17, 30 (2019):** https://www.ctsi.nsn.us/wp-content/uploads/2020/12/Siletz-Estuaries-Curriculum-Book.pdf

Estuary Lessons include background information on Estuaries, Cultural Uses of Estuaries, Estuarine Food Webs, Salmon Use of Estuaries, and Oyster Ecosystem Services & Restoration.

- **CTSI, Multi-Hazard Mitigation Plan, (2020):** https://www.ctsi.nsn.us/wp-content/uploads/2021/03/2020MHMP-FEMA-Apprv.pdf.

"The purpose of the [CTSI] Multi-Hazard Mitigation Plan (MHMP) is to guide current and future efforts to effectively and efficiently mitigate natural hazards on all CTSI Reservation lands, in coordination with other jurisdictions as appropriate, to mitigate and respond to natural hazards that are generated off the reservation lands, and tribally owned fee lands, or that cross these boundaries…"

The MHMP is an important resource to learn more about the CTSI's history, particularly with respect to Yaquina Bay and the Tribe's hazard mitigation efforts.

- **Lincoln County - Lincoln County Planning Department Website:** https://www.co.lincoln.or.us/planning/page/planning-division

  Lincoln County Public Notices – Email Planning Staff to request notices about land use applications and rulemaking that might impact Lincoln County's estuaries.

- **City of Newport - City of Newport Community Development Department Website:** https://www.newportoregon.gov/dept/cdd/default.asp

  Includes the City of Newport's planning and building divisions, and contact information for planning staff relevant to learning more about estuary management plan updates.

- **City of Newport Planning Commission and City Council Public Notices:** https://www.newportoregon.gov/common/connect.asp

Sign-up here to receive email notices of planning commission and city council agendas and packets, as well as public comment opportunities related to the YBEMP update.

- **City of Toledo - Planning Department Website:** https://www.cityoftoledo.org/planning

- **City of Toledo Public Notices:** https://www.cityoftoledo.org/newsletter/subscriptions

Sign-up here to receive notices of Planning Commission and City Council Meetings.

Yaquina Bay, Relevant Planning Documents:

- **Lincoln County Estuary Management Plan (Sept. 1982):*** https://www.co.lincoln.or.us/sites/default/files/fileattachments/planning_amp_development/page/3820/estuary_management_plan_searchable.pdf

*The first edition of this Primer incorrectly stated that "The [YBEMP] Update will amend the portions of the [1982 LCEMP] related to the Yaquina Bay Sub-Area."[245] The YBEMP update will include revisions to all ten parts of the 1982 YBEMP, the 1982 YBEMP Inventory, and associated mapping documents. The authors apologize for this error.

[245] Oregon Shores Conservation Coalition, *A People's Primer for Protecting Eelgrass*, 53 (May 2021), https://crag.org/wp-content/uploads/2021/06/eelgrass_citizens_guide_6-1-21.pdf.

- **City of Newport Comprehensive Plan (NCP)**: https://www.newportoregon.gov/dept/cdd/CompPlanDocuments.asp

- **The YBEMP update will amend NCP Ch. 7 - The Yaquina Bay and Estuary Section** https://www.newportoregon.gov/dept/cdd/documents/Chptr7_Yaquina-Bay-Estuary-Section.pdf

- **City of Toledo Comprehensive Plan (TCP):** https://www.cityoftoledo.org/documents

- **The YBEMP Update will amend TCP Art. 16 - Estuarine Resources:** https://www.cityoftoledo.org/sites/default/files/fileattachments/planning/page/1061/comp_plan-updated_2016.pdf

COOS BAY ESTUARY MANAGEMENT PLAN (CBEMP)

CBEMP 2022 Update Status: Undergoing update.

***CBEMP Relevant Authorities*:** Coos County implements the Coos Bay Estuary Management Plan ("CBEMP"), in coordination with the Cities of Coos Bay and North Bend. Coos Bay is within the ancestral homelands of the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI). The Partnership for Coastal Watersheds (PCW) is a collaborative effort among public-and private-sector citizens in the Coos Bay community to develop locally-driven approaches to responsible development, and to help prepare for climate-related changes on Oregon's south coast. The PCW is supporting the CBEMP Update.

CBEMP Relevant Planning Contacts and Public Comment Resources:

- **Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI) - CTCLUSI Website:** https://ctclusi.org/

This website contains information accessible to members of the public interested in learning more about the CTCLUSI's government, heritage, and history. In addition, the website offers the following resources:

- **CTCLUSI Abundance StoryMap**: https://ctclusi.org/abundance-storymap/

The Abundance StoryMap is provided by the modern Tribal government of CTCLUSI to give voice to the CTCLUSI's stories and culture to enrich public school curriculum in Oregon. The StoryMap can be viewed here: https://clusi.maps.arcgis.com/apps/Cascade/index.html?appid=27e3174e06514e55b45d7a0cef5a59f9

- **CTCLUSI Department of Natural Resources & Culture**: https://ctclusi.org/department-of-natural-resources-culture/

The CTCLUSI's Department of Natural Resources & Culture was established to conserve and manage resources on Tribally-held lands and to work with other governments to influence conservation and management of resources throughout the Tribes' Ancestral Territory. This website is a resource to learn more about CTCLUSI's water quality and traditional culture property programs.

- **Coos County - County Planning Department Website:** https://www.co.coos.or.us/community-dev/page/planning-department

- Coos County Public Notices – Email the Planning Director at planning@co.coos.or.us to ask about how you can receive notices about land use applications and rulemaking that might impact Coos Bay, including the planned CBEMP update.

- AM-19-003 – CBEMP Update: https://www.co.coos.or.us/planning/page/am-19-003-coos-bay-estuary-managment-plan-update

- Coos Bay Goal 16 Estuary Management Plan Assessment, (Dec. 2016): https://www.co.coos.or.us/planning/page/coos-bay-goal-16-estuary-management-plan-assessment

- **City of Coos Bay -** City of Coos Bay Community Development Department Website - Includes the City's planning division: https://www.coosbayor.gov/government/city-departments/public-works-community-development-department/pwcd-planning

- **City of Coos Bay Planning Public Notices:** Email the Community Development Administrator or Planner to ask about how you can receive public notices about land use applications and rulemaking that might impact Coos Bay, including the planned CBEMP update (http://coosbay.org/directory/staff).

- **City of North Bend -** City of North Bend Public Works – Planning and Zoning: https://www.northbendoregon.us/pview.aspx?id=21068&catid=25

- City of North Bend Public Notices: Sign-up here to receive emails about public notices and agendas: https://www.northbendoregon.us/notify.aspx?id=21097&catid=70

Email the City of North Bend Planning Staff for assistance with obtaining application and rulemaking materials.

- **Partnership for Coastal Watersheds (PCW):** https://www.partnershipforcoastalwatersheds.org/

CBEMP Relevant Estuary Planning Documents:

- **Coos County Comprehensive Plan Website – Coos Bay Estuary Management Plan (July 1984):** https://www.co.coos.or.us/community-dev/page/comprehensive-plans

The CBEMP is part of the Coos County Comprehensive Plan, codified at Volume 2, Parts 1-3, and will be amended by the ongoing estuary management plan update. Coos County offers the CBEMP in three separate, but related parts as a non-text-searchable PDF document.

- CBEMP Vol. 2, Pt. 1 contains CBEMP Plan Provisions: https://www.co.coos.or.us/sites/default/files/fileattachments/planning/page/21510/vol_2_part_1_-_cbemp.pdf

- CBEMP Vol. 2, Pt. 2 contains CBEMP Inventories and Factual Base: https://www.co.coos.or.us/sites/default/files/fileattachments/planning/page/21510/vol_2_part_2.pdf

- CBEMP Vol. 2, Pt. 3 contains CBEMP "Linkage" findings and existing goal exceptions: https://www.co.coos.or.us/sites/default/files/fileattachments/planning/page/21510/vol_2_part_3.pdf

- **City of Coos Bay Comprehensive Plan:** https://www.coosbayor.gov/government/city-codes-plans-standards/city-plans

The City of Coos Bay's Comprehensive Plan, Volume 3 contains the management units (including those containing known eelgrass beds) under the City of Coos Bay's jurisdiction. It is also subject to amendment through the CBEMP update process.

- **City of North Bend Functional Plans:** https://www.northbendoregon.us/documents.aspx

The City of North Bend's implementation of its comprehensive plan will be impacted by the CBEMP update process, including aquatic and upland units within the City of North Bend's jurisdiction that contain eelgrass. The City of North Bend has adopted Coos County's CBEMP into its comprehensive plan for the purpose of complying with Goal 16. The City of North Bend's Functional Plan website includes text-searchable versions of Coos County's CBEMP.

- The City of North Bend's Comprehensive Plan: https://www.northbendoregon.us/files/documents/comprehensive_plan_2019_final.pdf

- The City of North Bend's Comprehensive Plan states that the City of North Bend "will follow the implementation strategies, policies and allowable uses outlines in the Coos Bay Estuary Management Plan."

- The City of North Bend provides a helpful list of the City's estuary management units: https://www.northbendoregon.us/files/documents/northbend_cbemp_searchable_amd.ord_1994.pdf

- City of North Bend Zoning Map, with Estuary Aquatic Units: https://www.northbendoregon.us/files/documents/nb_d_zoning-map_1-16-2020.pdf

PUBLIC PARTICIPATION - STATE RESOURCES AND TOOLS

Oregon Department of Land Conservation and Development (DLCD)

DLCD – Plan Amendments (PAPA): https://www.oregon.gov/lcd/CPU/Pages/Plan-Amendments.aspx

Once coastal counties and cities decide to adopt amendments to their relevant EMPs through a legislative land use process at the local level, these proposed EMP amendments must be submitted to the DLCD for approval through the PAPA process.

• **DLCD - Notices of Proposed or Adopted Amendments:**
https://www.oregon.gov/lcd/NN/Pages/PAPA-Notices.aspx

• **DLCD's Plan Amendment Notification Service:**
https://db.lcd.state.or.us/PAPA_Subscription/Login.aspx?ReturnUrl=%2fPAPA_Subscription%2f

DLCD created the above Plan Amendment Notification Service for anyone interested in receiving an automatic notification of comprehensive plan proposals or adoptions received. Subscribers may select the cities and counties of interest, and when DLCD receives a proposed or adopted amendment from that jurisdiction, it will send an email notification to the subscriber.

GOAL 16 RESOURCES

• DLCD - *Goal 16: Estuarine Resources*: https://www.oregon.gov/lcd/OP/Pages/Goal-16.aspx

• DLCD – *Estuary Planning:* https://www.oregon.gov/lcd/OCMP/Pages/Estuary-Planning.aspx

• DLCD, *Oregon Estuary Plan Book*, (1987), https://www.oregon.gov/lcd/Publications/TheOregonEstuaryPlanBook_1987.pdf.

• DLCD, *Assessment of Oregon's Regulatory Framework for Managing Estuaries*, (Mar. 2014), https://www.oregon.gov/lcd/OCMP/Documents/RegulatoryAssessment.pdf.

OREGON COASTAL ATLAS – ESTUARY RESOURCES

• Estuary Data Viewer (About): https://www.coastalatlas.net/index.php/tools/planners/63-estuary-data-viewer

• Estuary Data Viewer Tool: https://www.coastalatlas.net/estuarymaps/

Select "Yaquina Bay" or "Coos Bay" from the drop-down menu. To view Yaquina Bay estuarine management units, select "Estuary Mgmt Units, 1987" from the "Estuary Plan Maps" file on the left toolbar. To view Coos Bay estuarine management units, select "Coos County Zoning" from the Zoning folder file in the left toolbar.

Appendix B: Tribal Sovereignty and Governance

Appendix B contains some resources that can support a better understanding of the historical and present-day context of inherent tribal sovereignty versus the grant of self-government, and the government-to-government relationship between tribal nations and local, state, and federal decision-makers. These resources are by no means a comprehensive list, nor do they represent the totality of the diverse and complex perspectives of Indigenous people who live in Oregon.

Coastal Tribes. In addition to the CTSI and CTCLUSI, the following tribal government websites will assist community members to learn more about tribes with traditional ancestral homelands on what we now call the Oregon Coast:

- Coquille Indian Tribe: https://www.coquilletribe.org/
- Confederated Tribes of Grand Ronde: https://www.grandronde.org/
- Confederated Tribes of the Umatilla Indian Reservation: https://ctuir.org/
  - Columbia Inter-tribal Fish Commission – CTUIR: https://critfc.org/
- Chinook Tribe: https://chinooknation.org/
- Clatsop Nehalem Confederated Tribe: https://clatsop-nehalem.com/

Articles and Publications:

• Shaun Chapoose, Chairman, Ute Indian Tribe of the Uintah & Ouray Reservation, Utah, *Resolution #ECWS-17-001 – Recognition and Reaffirmation of American Indian Tribes' Right to Sovereignty, Self-Determination, and a Government-to-Government Relationship with the United States*, (2017), https://www.ncai.org/resources/resolutions/recognition-and-reaffirmation-of-american-indian-tribes-right-to-sovereignty-self-determination-and-a-government-to-government-relationship-with-the-united-states

• NCAI, *Tribal Nations & the United States: An Introduction*, (Feb. 2020), https://www.ncai.org/about-tribes.

• Dina Gilio-Whitaker, *The Problem with The Ecological Indian Stereotype*, KCET (Feb. 7, 2017), https://www.kcet.org/shows/tending-the-wild/the-problem-with-the-ecological-indian-stereotype.

• Cheryl L. Daytec, *Fraternal Twins with Different Mothers: Explaining Differences between Self-Determination and Self-Government Using the Indian Tribal Sovereignty Model as Context*, 22 Minn. J. Int'l L. 25, (2013), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2325508

• Sibyl Diver, *Native water protection flows through self-determination: understanding tribal water quality standards and "treatment as a state*, 163 J. Contemp. Water Res. Educ., 6-30 (2018), https://onlinelibrary.wiley.com/doi/full/10.1111/j.1936-704X.2018.03267.x.

Appendix C: Resources to learn more about eelgrass in Oregon.

As with the first edition, this Primer is focused on providing insight into existing legal frameworks for eelgrass management in Oregon, and supporting community members in navigating these frameworks. Learning about threats to eelgrass habitat is important for informed public participation, but an in-depth discussion of these topics is not the focus of the second edition of this Primer. The following resources may be helpful to understanding more about eelgrass in Oregon:

- **James Kaldy, *Past, Present & Future of Seagrasses in Yaquina Bay and other Estuaries*, MidCoast Watersheds Council Community Presentations, (Feb. 2022)** https://www.youtube.com/watch?v=rXHgawkbK9o&feature=emb_imp_woyt.

This YouTube presentation was given by James Kaldy, an ecologist with the Environmental Protection Agency, to the MidCoast Watersheds Council's monthly community meeting. This presentation is frequently referenced in the second edition of this Primer, and discusses Mr. Kaldy's research findings on species interactions with eelgrass beds, seagrass bed mapping, climate change impacts on eelgrass beds, and human effects on eelgrass beds. The Presentation also discusses the history and possible future of eelgrass beds in Yaquina Bay.

- ***Eelgrass habitats on the U.S. West Coast - State of the Knowledge of Eelgrass Ecosystem Services and Eelgrass Extent,* (Apr. 2018):** http://www.pacificfishhabitat.org/wp-content/uploads/2017/09/EelGrass_Report_Final_ForPrint_web.pdf.

This report is referenced frequently throughout the second edition of this Primer, and continues to be one of the most up-to-date documents on the state of knowledge on eelgrass ecosystems and habitat extent for Oregon. Beyond providing a thorough literature review of the presence and spatial extent of eelgrass, it offers provides a comprehensive discussion of eelgrass' ecosystem services as well as several helpful tables and figures to learn more about eelgrass. Figure 3 depicts the state of knowledge of eelgrass presence in Oregon.[246] Table 5 depicts the ecosystem services of eelgrass habitats.[247] Table 6 outlines threats to eelgrass habitats on the West Coast, including water quality, land use, climate, and lack of human awareness.[248] Finally, Table 7 details known data gaps and limitations of eelgrass habitats.[249]

Lack of monitoring using a consistent methodology and significant scientific data gaps make a holistic assessment of the current status of eelgrass habitat in Oregon's coastal waters challenging.[250] In general, consistent monitoring of the distribution of all eelgrass species is needed to document losses of this critical habitat type so as to inform effective action.[251] The full

[246] Sherman & DeBruyckere, *supra* note 2, at 21 (Fig. 3).
[247] *Id.* at 34-35, 37-38.
[248] *Id.* at 49.
[249] *Id.* at 57.
[250] *See id.* at 2 ("Using historical records and monitoring data to track changes to eelgrass habitat is a helpful tool. Monitoring change in eelgrass habitats through consistent sampling methodology is crucial to evaluating causes of decline and factors contributing to success of restoration efforts."); *See also* Oregon Shores, *A People's Primer for Protecting Eelgrass*, 9-10 (Part I, Section 3 of the first edition of this Primer, discussing data gaps as a challenge to effective eelgrass protection), https://crag.org/wp-content/uploads/2021/06/eelgrass_citizens_guide_6-1-21.pdf.
[251] Sherman & DeBruyckere, *supra* note 2, at 53.

extent of eelgrass habitat currently present in Oregon's estuaries and nearshore areas, relative to historic acreage in those places, seems to be limited to aerial imagery (e.g., Oregon's 1972-1973 Estuary Plan Book) and anecdotal information (Columbia River).[252] Modern data is otherwise over a decade old (Nehalem River, Sand Lake, Nestucca Bay, Salmon River, Siuslaw River, Umpqua River, Coquille River), and thus obsolete, as well as limited to aerial imagery (all estuaries in Oregon, except for Coos Bay) or limited in extent.[253] In Barker Creek, Rogue River, and Chetco River, eelgrass appears to be present in ShoreZone imagery and literature, but no spatial extent data exists.[254] A 2018 study indicates that 36 out of 54 estuarine areas identified in Oregon have no data present at all (66 percent of estuaries), including in four major estuaries (Winchuck River, Elk River, Necanicum River, and Depoe Bay).[255] In five major estuaries, data shows eelgrass is present, but its extent is currently unknown (Chetco River, Pistol River, Rogue River, Sixes River, and Columbia River).[256]

- **Deborah Shafer, et. al., *Science and Management of the Introduced Seagrass Zostera japonica in North America*, J. Envtl. Mgmt., (2013),** https://www.researchgate.net/publication/257177292_Science_and_Management_of_the_Introduced_Seagrass_Zostera_japonica_in_North_America.

This article provides an overview of *Z. japonica*, and discusses how it might relate to *Z. marina* (native eelgrass) in estuaries in Oregon and Washington. *Z. japonica* was introduced to the Pacific Northwest along with oyster stock imported from Japan in the early 1900s, and was first discovered in Yaquina Bay in 1976.[257] Formal and informal surveys in the 2000s showed *Z. japonica* present in 60 percent of estuaries in Oregon, including Yaquina and Coos Bay.[258] *Z. japonica* occurs higher in the estuarine intertidal zone than native eelgrass, so there is typically little opportunity for direct competition between the two species.[259] Where the two species do co-mingle in beds, neither species seem to exhibit clear competitive dominance over the other.[260] Thus, *Z. japonica* does not appear likely to displace native eelgrass.[261]

Oregon does not have management policies directed at *Z. japonica*, which is also experiencing decline.[262] More research is needed to understand the interactions between native eelgrass and *Z. japonica*: specifically, how *Z. japonica* and native eelgrass will interact as native eelgrass migrates to higher elevations in the intertidal zone as sea level rises. More research is also required to understand the relationship of *Z. japonica* to estuarine ecosystem health and whether further regulatory action is warranted with regard to *Z. japonica*.

[252] *Id.* at 20, 22.
[253] *Id.* at 20-22, 51 (Tbl. 7).
[254] *Id.* at 51.
[255] *Id.* at 20-21.
[256] *Id.*
[257] Shafer, et al., *supra*, at https://www.researchgate.net/publication/257177292_Science_and_Management_of_the_Introduced_Seagrass_Zostera_japonica_in_North_America.
[258] *Id.*
[259] *Id.*
[260] *Id.*
[261] *Id.*
[262] *Id.*

- **Pew Charitable Trusts Eelgrass Toolkit, 2019:** https://www.pewtrusts.org/en/research-and-analysis/articles/2019/11/12/eelgrass-is-essential-to-ocean-health

Pew's Ocean Conservation program is a helpful resource for members of the public interested in learning more about eelgrass conservation topics relevant to Oregon and the West Coast. The above site lists Pew's most recent work related to eelgrass on the West Coast, which is an excellent way for members of the public to learn about potential key initiatives for protecting eelgrass and estuaries in Oregon. Finally, Pew's website also offers members of the public an email newsletter sign-up to receive notices regarding U.S. West Coast coastal habitat and marine conservation news, analysis, and opportunities to act.

- **EcoAdapt and the Climate Adaptation Knowledge Exchange:** https://www.cakex.org/

EcoAdapt, a Washington-based 501(c)(3) was founded to provide adaptation support, training, and assistance to make planning and management decision-making less vulnerable to climate change. EcoAdapt runs the Climate Adaptation Knowledge Exchange, also known as CAKEX. CAKEX includes a Climate Adaptation Toolkit for Marine and Coastal Protected Areas (https://www.cakex.org/MPAToolkit). The Toolkit contains an Adaptions Action Table (https://www.cakex.org/MPAToolkit/adaptation-actions-table), which lists management suggestions for eelgrass habitats/locations as well as for specific potential climate stressors.

A 2020 three-day virtual training series organized by the Commission for Environmental Cooperation (CEC) in collaboration with EcoAdapt, Parks Canada, and NOAA's Marine Protected Area (MPA) Center, entitled "Building Capacity for Climate Adaptation Planning in Atlantic Coastal and Marine Protected Areas,"[263] may be of particular interest to members of the public who wish to learn more about how local, state, and federal decision-makers can effectively evaluate climate change impacts to eelgrass. In the training, the participants used the Toolkit's rapid vulnerability assessment to engage in an eelgrass breakout group exercise,[264] and developed a comprehensive planning summary entitled "Climate Change Vulnerability Assessment & Adaptation Planning for Eelgrass Habitats of the North Atlantic."[265] Initiating a similar vulnerability assessment and adaptation planning process amongst stakeholders and interested conservation groups on the West Coast could be a helpful starting point for evaluating existing eelgrass management frameworks.

[263] Commission for Environmental Cooperation (CEC), et. al., *Building Capacity for Climate Adaptation Planning in Atlantic Coastal and Marine Protected Areas*, EcoAdapt Virtual Training Series, (Oct. 2020), http://ecoadapt.org/workshops/cec-atlantic-canada.
[264] CEC, *Habitat Breakout Group Exercises – Eelgrass*, From EcoAdapt Virtual Training Series: Building Capacity for Climate Adaptation Planning in North Atlantic Coastal and Marine Protected Areas, (Oct. 2020), http://ecoadapt.org/data/documents/AtlanticTrainingModuleExercises_Fillable_FACILITATORS-EELGRASS.pdf.
[265] CEC et. al., *Climate Change Vulnerability Assessment & Adaptation Planning for Eelgrass Habitats of the North Atlantic*, Summary report from EcoAdapt Virtual Training Series, (Oct. 2020), http://ecoadapt.org/data/documents/Eelgrass_SummaryReport_NorthAtlantic_Dec2020final.pdf.

Appendix D: Legal Authorities with Roles in Management Eelgrass in Oregon

In addition to the local government role discussed in the second edition of this Primer, state and federal agencies, alongside sovereign tribal governments, each have roles in eelgrass management in Oregon. An understanding of these players and how their authorities interact to create management frameworks is important for members of the public who are interested in advocating for stronger eelgrass protections in Oregon.

General Considerations. Local government EMPs and implementing ordinances must respond to state laws and policies, which in turn must respond to federal laws and policies. Each must meaningfully respond to the assertion of tribal sovereign power, or else should be updated to include a requirement to do so. When participating in any rulemaking or permit review process with the potential to impact eelgrass beds or estuarine habitat, the following considerations will assist in a comprehensive understanding of relevant management frameworks:

- For coastal city or county land use permitting processes or planning, consider what other state or federal permitting processes or regulatory planning obligations apply, and how the local government's action must be responsive to each.
- For any state permit review or planning processes, consider (1) what federal permitting processes or regulatory obligations may apply; (2) how the state must be responsive to each; and (3) how the state must consider applicable local government processes.
- For any federal permit review or planning processes, consider (1) what federal statutes and regulations apply and (2) how the federal process is required to take into account state and local land use and regulatory obligations.
- For local, state, and federal decision-making, consider which tribal nations or Indigenous-led organizations may have impacted interests, and consider whether these interests have been meaningfully considered. Remember that consultation does not equal consent.

Appendix D describes the institutional players, their respective authorities to make decisions related to eelgrass, and their jurisdictions.

Role of Tribal Nations and Indigenous People. As with the first edition, the second edition of this Primer cannot, and does not seek to, speak for the interests of tribal nations and Indigenous people. Instead, the goals of this section are to:

- Highlight the cultural importance of eelgrass for some tribal nations and tribal fisheries;
- Highlight the importance of eelgrass habitat to the health of estuarine environments within the traditional ancestral homelands of different tribes;
- Provide community members with resources to develop a basic understanding of tribal sovereignty and government-to-government relationship of tribal nations and people to the United States in context of decision-making related to eelgrass; and
- Highlight the importance of expanding inherent tribal sovereignty over eelgrass and its habitats in Oregon.

Indigenous people of many different tribal affiliations have existed and lived along the coastlines and estuaries of the land that is now referred to as Oregon for as long as 10,000 years. Today, descendants still live, work, and continue to make important contributions to their communities on the Oregon coast, and many are members of federally recognized tribes including the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians ("CTCLUSI"), Coquille Indian Tribe, Confederated Tribes of Siletz Indians ("CTSI"), Confederated Tribes of Grand Ronde, and Confederated Tribes of the Umatilla Indian Reservation.[266] Thus, Indigenous peoples have both lived alongside and in relationship with eelgrass habitats and estuaries in Oregon for thousands of years. Eelgrass is an important cultural resource for some tribal nations, including but not limited to the CTCLUSI. Further, tribal nations and Indigenous peoples may have different, complex cultural and land management practices related to estuaries and shoreline areas in Oregon. Understanding the role of tribal sovereignty and governance is vital for members of the public interested in developing effective and sustainable management frameworks to protect eelgrass and eelgrass habitat in Oregon.

The following are some resources for non-Indigenous people to learn more about the Indigenous lands on the coast of Oregon where eelgrass and its habitat are present:

- Native Land Digital Map:[267] The Native Land Digital Map "does not represent or intend to represent official or legal boundaries of any Indigenous nations," and notes that "[t]o learn about definitive boundaries, contact the nations in question."[268] Instead, the map is an educational tool to "create and foster conversations about the history of colonialism, Indigenous ways of knowing, and settler-Indigenous relations."

- "The Land You Live On": [269] This Teacher's Guide released by Native Land on March 2019 discusses how to use the Native Land Digital Map, the pros and cons of the map itself, and the importance of learning more about colonialism and its impacts.[270]

Federally recognized tribes may choose to assert their sovereign powers through government-to-government avenues in local land use, state, and federal decision-making processes related to eelgrass.[271] Appendix B of the second edition of this Primer includes further resources to learn about tribal sovereignty.

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[266] In addition to the federally recognized tribes in the Oregon coast region, there are other Indigenous people of different tribal affiliations who may not be federally recognized, but continue to have a unique relationship to the coastal lands and estuaries, as well as to the eelgrass habitats that support these places. This connection predates European colonization and exists regardless of federal recognition status.

[267] Native Land Digital, *Native Land Map,* https://native-land.ca/ (last visited Dec. 22, 2022).

[268] Native Land Digital, *Why it Matters,* https://native-land.ca/about/why-it-matters/ (last visited Dec. 22, 2022).

[269] Native Land, *The Land You Live On - An Education Guide*, (2019), https://native-land.ca/resources/teachers-guide/ (last visited Dec. 22, 2022).

[270] *Id.*

[271] Some non-federally recognized tribes are choosing to assert power to fight for federal recognition. The Chinook people are the original inhabitants around the mouth of what is now known as the Columbia River, an area where eelgrass is present, whose members have been fighting to regain federal recognition status for decades. *See* The Chinook Indian Nation, *Recognition - Seeking Justice Since 1851*, (Last Visited May 26, 2021), https://chinooknation.org/recognition/. *See* Tony A. Johnson, *GUEST COLUMN: Right a wrong: Restore federal recognition to Chinook Indian Nation*, Chinook Observer, (May 17, 2021), https://www.chinookobserver.com/opinion/guest-column-right-a-wrong-restore-federal-recognition-to-chinook-indian-nation/article_ce486768-b724-11eb-b391-fb210152987c.html; Anna V. Smith, *Members of Chinook Indian Nation liken lack of federal recognition to slow-motion 'genocide'*, OregonLive, (Apr. 3, 2021), https://www.oregonlive.com/pacific-northwest-news/2021/04/members-of-chinook-indian-nation-liken-lack-of-federal-recognition-to-slow-motion-genocide.html; Cassandra

Role of State Agencies. Local decision-making must be responsive to state authority, and both in turn must be responsive to federal authority. As discussed above, the Oregon Department of Land Conservation and Development and Department of State Lands are two key agencies with programs and decision-making powers that can impact Oregon's eelgrass beds.

The Oregon Department of Land Conservation and Development. DLCD is a state agency that works in partnership with local governments, as well as state and federal agencies, to address the land use needs of the public, communities, regions, and the state.[272] The Land Conservation and Development Commission ("LCDC") provides policy direction for Oregon's land use planning program and oversees DLCD's operations.[273] DLCD also provides "government-to-government collaboration and consultation with Oregon's nine federally recognized tribes on issues of interest."[274] Several DLCD authorities involve actions that could impact eelgrass beds and habitat in Oregon's coastal zone, including:

DLCD Federal Consistency Review. DLCD serves as the lead state agency responsible for Federal Consistency Review ("FCR") under the CZMA and its governing regulations. FCR is a provision under the CZMA which requires federal actions with reasonably foreseeable effects on any land or water use or natural resource of a state's coastal zone to be consistent with the enforceable policies of a coastal state's federally approved coastal management program.[275] An "enforceable policy" is a state policy that is legally binding under state law (e.g., through constitutional provisions, laws, regulations, land use plans, ordinances, or judicial or administrative decisions), and by which a state exerts control over private and public coastal uses and resources, and are incorporated in a state's federally approved coastal management program.[276] The primary authorities for the Oregon Coastal Management Program are the Oregon Land Use Planning Act and Oregon's 19 statewide land use planning goals.[277] Through the OCMP, coastal comprehensive plans and land use regulations, including those related to eelgrass in Oregon's estuaries, can be submitted for approval to NOAA-OCM as "enforceable policies." Once approved, enforceable policies become applicable review criteria for certain federal activities within Oregon's coastal zone.

Climate Change Adaptation and Mitigation. DLCD addresses climate change mitigation, adaptation, and sequestration through its role as an agency that supports comprehensive planning in partnership with local governments and state entities throughout Oregon.[278] Under its climate change program, DLCD is tasked with developing Oregon's Climate Change Adaptation Framework and Climate Equity Blueprint.

Profita, *Clatsop-Nehalem tribes 'dreaming again' with return of ancestral land*, Or. Public Broadcasting (Dec. 15, 2020), https://www.opb.org/article/2020/12/15/oregon-native-tribes-clatsop-seaside-land/.

[272] DLCD, *About DLCD*, https://www.oregon.gov/lcd/About/Pages/About-DLCD.aspx (last visited May, 26, 2021).

[273] *Id.*

[274] DLCD, *Biennial Report 2019-2021*, 7 (Jan. 2021), https://www.oregon.gov/lcd/Publications/2019-21_DLCD_Biennial_Report.pdf.

[275] NOAA, *CZMA Federal Consistency Review Overview*, 5 (Feb. 2020) [hereinafter *NOAA FCR Overview*], https://coast.noaa.gov/data/czm/consistency/media/federal-consistency-overview.pdf; 16 U.S.C. § 1456(c)(1)(A).

[276] *NOAA FCR Overview* at 5.

[277] NOAA-OCM, *States – Oregon*, https://coast.noaa.gov/czm/mystate/#oregon (last visited May 26, 2021).

[278] DLCD, *Land Use Planning and Climate Change*, https://www.oregon.gov/lcd/CL/Pages/index.aspx (last visited May 26, 2021).

Outside of the EMP update process, community members can start with these programs to seek opportunities to participate in decision-making with the potential to strengthen eelgrass protections.

Oregon Department of State Lands ("DSL"). DSL has authority over Oregon's tidelands, and has served as the state agency partner for the South Slough National Estuarine Research Reserve ("SNERR") in Charleston since 1974.[279] DSL's Aquatic Resource Management Program ("ARM") is responsible for administering Oregon's Removal-Fill Law (ORS 196.795-990), and is tasked with conserving and protecting waters of the state (including wetlands).[280]

DSL's removal-fill permit review process, particularly for estuarine dredge and fill activities, is a key example of a public participation opportunity where community members can make their voices heard about the importance of avoiding harms to eelgrass.[281] Removal-fill permits for activities in Oregon's estuaries, particularly those proposing estuarine dredging, are frequently subject to a minimum 30-day public review that could involve opportunities to submit both written comment and oral testimony. Signing up for DSL's removal-fill program public review list, and providing comment on removal-fill applications for projects within estuaries, offers another avenue that the public could use to ensure decision-makers avoid harms to seagrasses in Oregon's estuaries.[282]

DSL's removal-fill program – mitigation versus avoidance of impacts to eelgrass. Currently, DSL's removal-fill program focuses on mitigation of impacts to eelgrass, rather than emphasizing avoidance of impacts to this habitat in the first instance.[283] As discussed above, mitigation and restoration of eelgrass is not typically successful. Updating DSL's removal-fill process itself to prioritize avoidance of impacts to eelgrass is one potential avenue for strengthening eelgrass protections in Oregon.

Role of Federal Agencies and Programs. Several federal agencies are responsible for managing Oregon's coastal resources through project review and rulemaking.[284] As discussed above, the two primary federal agencies with authority relevant to Oregon's eelgrass and eelgrass habitat include several offices of the National Oceanic and Atmospheric Administration ("NOAA") and the U.S. Army Corps of Engineers ("USACE").

As discussed above, NOAA is the federal scientific agency that is responsible for the conditions of the ocean, major waterways, and the atmosphere.[285] NOAA-OCM has authority to

[279] DSL, *About Us*, https://www.oregon.gov/dsl/About/Pages/AboutAgency.aspx (last visited May 26, 2021).
[280] DSL, *Permits and Authorizations*, https://www.oregon.gov/dsl/ww/pages/permits.aspx (last visited Dec. 22, 2022).
[281] *See* DSL, *A Guide to the Removal-Fill Permit Process*, (2019) (The Removal-Fill Guide is designed to help people understand the process, timelines and other important topics related to the DSL's administration of Oregon's Removal-Fill Law), https://www.oregon.gov/dsl/WW/Documents/Removal_Fill_Guide.pdf.
[282] Participating in a review process related to a state removal fill permit application with the potential to impact seagrasses will also prepare members of the public to participate in a parallel federal permit process under Section 404 of the Clean Water Act administered by the U.S. Army Corps of Engineers.
[283] OAR 141-085-0565.
[284] DLCD, *About Coastal Zone Management,* (last visited May 26, 2021) https://www.oregon.gov/lcd/OCMP/Pages/About.aspx.
[285] NOAA, *About Our Agency*, https://www.noaa.gov/about-our-agency (last visited Dec. 17, 2020). NOAA is housed within the

work with Oregon state and local governments to support eelgrass protection in estuaries. NOAA's National Marine Fisheries Service ("NMFS") has authority under the Magnuson-Stevens Fishery Conservation and Management Act ("MSA") to work with Oregon's state and local governments to support eelgrass protection efforts on the Oregon Coast.[286] USACE (also known as "the Corps) is an engineer formation of the United States Army. The Corps' Civil Works mission contains its regulatory and permit program, and has the potential to impact Oregon's eelgrass resources.

The National Coastal Zone Management Program ("CZMP"). The OCMP is the state of Oregon's implementation of this national CZMA program.[287] Funding for and changes to the OCMP are subject to review and approval from NOAA-OCM (16 U.S.C. §§1455-1456). NOAA-OCM also provides technical expertise in support of state coastal zone management programs.

NOAA's Office for Coastal Management - The National Estuarine Research Reserve System ("NERRS") pursuant to 16 U.S.C. 1461. NERRS is a network of 29 coastal sites, established by the CZMA, designated to protect and study estuarine systems through a partnership program between NOAA-OCM and the coastal states.[288] NOAA-OCM provides funding and national estuarine research guidance, and each site is managed on a daily basis by a lead state agency or university with input from local partners. The South Slough National Estuarine Research Reserve ("SNERR") is a 4,771-acre natural area located in the Coos estuary on the southern Oregon coast, and was designated in 1974 as the first unit of NERRS.[289] Eelgrass is an important study component of the South Slough ecosystem. DSL serves as the state partner to NOAA-OCM responsible for daily management of the Reserve. SNERR "coordinates research, education, and stewardship programs that serve to enhance a scientific and public understanding of estuaries and contribute to improved estuarine management," and thus serves as an excellent resource for members of the public to learn more about the issues impacting Oregon's eelgrass and estuaries.[290]

NMFS, the Pacific Fishery Management Council, and the MSA. NMFS regulates commercial and recreational ocean fishing in the United States under its authority derived from the MSA, and helps states conserve coastal areas as part of the MSA's mandate to protect Essential Fish Habitat ("EFH"). This includes anadromous fish such as salmon and steelhead, groundfish, and halibut.[291] Established in 1976, the MSA is the primary law governing marine fisheries conservation and management in U.S. federal waters.

The MSA establishes eight regional fishery management councils ("RFMCs"), and requires them to formulate and recommend fishery management plans ("FMPs") to NMFS.[292] For

United States Department of Commerce.

[286] NMFS is informally known as "NOAA Fisheries."

[287] NOAA-OCM, *The National Coastal Zone Management Program*, https://coast.noaa.gov/czm/ (last visited Dec. 15, 2022).

[288] NOAA-OCM, *National Estuarine Research Reserves Overview*, https://coast.noaa.gov/nerrs/about/ (last visited Dec. 15, 2022); 16 U.S.C. § 1461.

[289] *2017-2022 South Slough National Estuarine Research Reserve Management Plan*, Ch. 2, 2-1 (2017), https://coast.noaa.gov/data/docs/nerrs/Reserves_SOS_MgmtPlan.pdf.

[290] DSL, *South Slough National Estuarine Research Reserve*, https://www.oregon.gov/dsl/SS/Pages/About.aspx (last visited May 26, 2021).

[291] DLCD, *Federal Agency Program Partners*, https://www.oregon.gov/lcd/OCMP/Pages/Federal.aspx#3c52a224-71e5-4469-bad4-f99acf4b2900 (last visited May 26, 2021).

[292] 16 U.S.C. § 1852(a)(1). The RFMCs are composed of the director of the regional NMFS office, state fishery management officers, and individuals from each state who are recommended by state governors and appointed by the Secretary of Commerce.

each FMP formulated, the RFMC must identify EFH for the managed fishery.[293] RFMCs are also required to identify any habitats that fall within "Habitat Areas of Particular Concern" ("HAPC") as a discrete subset of EFH, and recommend HAPCs to NMFS consistent with the MSA.[294] HAPCs are considered high-priority areas for conservation, management, or research because they are important to ecosystem function, sensitive to human activities, and/or especially vulnerable to degradation. The below graphic illustrates HAPC in relation to EFH:

Figure 1 NOAA HAPC Web Graphic[295]

The Pacific Fishery Management Council ("PFMC") and NMFS are responsible for fisheries management measures for federal waters off Washington, Oregon, and California.[296] Given its high ecological value, eelgrass is designated by the PFMC as EFH for both salmon and groundfish in the Pacific Northwest. Because of significant declines in this foundational habitat and its importance to the region's fisheries, the PFMC further designated eelgrass as HAPC for Pacific Coast groundfish.[297] In addition, the PFMC has designated marine and estuarine submerged aquatic vegetation (including eelgrass) as HAPC for Pacific Coast salmon.[298] As discussed below, one important comparative study and possible eelgrass action opportunity for Oregon is examining how NMFS reviews potential impacts to eelgrass in California. As with Oregon, the PFMC has designated eelgrass as EFH and a HAPC in California. Unlike Oregon and Washington, however, NMFS has crafted specific guidance for eelgrass protection in California called the California Eelgrass Mitigation Plan ("CEMP").

Comparative Case Studies and Examples: Eelgrass Protections in California and Action Examples for Oregon. Comparative analysis of existing seagrass management systems, policies, and scientific research in other regions of the U.S. can provide important context and an opportunity for informing decision-making related to Oregon's eelgrass.[299] Evaluating scientific

16 U.S.C. § 1852(b)(1). RFMCs include voting and non-voting members. 16 U.S.C. § 1852(b)-(c). For each RFMC, non-voting members include representatives of the U.S. Coast Guard, U.S. State Department, and U.S. Fish and Wildlife Service. 16 U.S.C. § 1852(c).

[293] 16 U.S.C. § 1853(a)(7).

[294] 50 C.F.R. § 600.815(a)(8).

[295] NOAA, *HAPC on the West Coast*, https://www.fisheries.noaa.gov/west-coast/habitat-conservation/habitat-areas-particular-concern-west-coast (last visited May 26, 2021).

[296] 16 U.S.C. § 1852(a)(1)(F). The preparation, review, approval, and implementation of fishery management actions and the implementing rules and regulations under the MSA comprises a complex process in which the RFMCs and NMFS, acting on behalf of the Secretary of Commerce (Secretary), have distinct, yet sometimes overlapping, roles. *PFMC Regional Operating Agreement*, 3 (Dec. 2021), https://www.pcouncil.org/documents/2019/10/pfmc-nmfs-regional-operating-agreement.pdf/.

[297] 50 C.F.R. § 600.815(a)(8); Pacific Fishery Management Council, *Pacific Coast Groundfish Fishery Management Plan*, Sec. 7.3.1.3, 106 (Aug. 2022) https://www.pcouncil.org/documents/2022/08/pacific-coast-groundfish-fishery-management-plan.pdf/.

[298] 50 C.F.R. § 600.815(a)(8); *See* Pacific Fishery Management Council, *Pacific Coast Salmon Fishery Management Plan,* App. A, at 10-12 (2014) (designating estuaries and marine and estuarine submerged aquatic vegetation as HAPC), https://www.pcouncil.org/documents/2019/08/salmon-efh-appendix-a.pdf/

[299] Envtl. Protection Agency, *Seagrass science and policy in the Pacific Northwest proceedings of a seminar series*, 62 (1994), https://nepis.epa.gov/Exe/ZyPDF.cgi/91024XGC.PDF?Dockey=91024XGC.PDF

and institutional models derived from other areas of the United States, and analyzing their appropriateness for the Pacific Northwest, could suggest modifications and provide model language and policies for improving existing frameworks in Oregon. Studying other models may also highlight, by comparison, areas where Oregon's eelgrass systems and management histories are unique, and thus could warrant development of specific new rules and policies to improve management.[300]

California Eelgrass Mitigation Plan ("CEMP"). In 2014, NMFS issued guidance for eelgrass habitats in California known as the California Eelgrass Mitigation Policy ("CEMP"). As noted by NMFS, the CEMP and its related guidelines support but do not expand upon NMFS' existing authorities for federal actions under the MSA, the Fish and Wildlife Coordination Act ("FWCA"), and the National Environmental Policy Act ("NEPA").[301] The CEMP is meant to serve as specific guidance for staff and managers within NMFS for developing recommendations concerning eelgrass issues during EFH and FWCA consultations and NEPA reviews throughout California.[302]

The CEMP and its guidelines apply only in California. To date, the NMFS' West Coast Regional ("WCR") Office has not issued a comparable policy for Oregon and Washington. Accordingly, this may provide a pathway for interested people and groups to seek opportunities to engage with the PFMC to assess whether expansion of the CEMP or creation of new, estuary-specific policies based on the CEMP would be appropriate for eelgrass habitats in Oregon and Washington.

History of the CEMP. In 2014, NMFS' WCR released the CEMP to provide guidance on eelgrass mitigation efforts. NMFS and California state resource management officials worked together to develop the CEMP and companion state regulations, which set forth:

- Eelgrass survey protocols to evaluate impacts from coastal development projects;
- Eelgrass mitigation requirements to ensure "no net loss of habitat function;"
- Restrict industrial activities that could harm eelgrass habitat (including strict requirements for restoration); and
- Require some consideration of avoidance of impacts to eelgrass habitat.[303]

In southern and central California, eelgrass mitigation had been addressed in accordance with the Southern California Eelgrass Mitigation Policy ("SCEMP") applied by NMFS, US Fish & Wildlife Service, California Department of Fish and Wildlife, California Coastal Commission, USACE, and other resource and regulatory agencies since 1991.[304] NMFS noted that the SCEMP

[300] *Id.*
[301] NOAA Fisheries, *California Eelgrass Mitigation Policy and Implementing Guidelines*, 3-4 (2014) [hereinafter *2014 CEMP*] https://www.cakex.org/sites/default/files/documents/cemp_oct_2014_final.pdf; NOAA, *California Eelgrass Mitigation Policy and Implementing Guidelines: Frequently Asked Questions*, (Nov. 2014) https://media.fisheries.noaa.gov/dam-migration/eel_grass_cemp_faq_112014.pdf.
[302] *Id.*
[303] *Id.*
[304] *2014 CEMP* at 298.

had "generally been effective at ensuring eelgrass impacts [were] mitigated in most circumstances."[305] The 2014 CEMP expanded and superseded SCEMP.[306]

California's Ocean Protection Council - 2020 Proposed Recommendations to NMFS. The CEMP has provided critical policy and technical guidance for local, state, and federal agencies reviewing project permits under state and federal law and regulations. The CEMP has also ensured that many projects first avoid, then minimize, and finally mitigate any adverse impact to eelgrass. Increased understanding and concern about eelgrass since the publication of the CEMP in 2014 has led to several major legislative and administrative initiatives over the past five years that have a focus on the protection, restoration, and understanding of eelgrass in California. In conjunction with NOAA's five-year review of the CEMP, and based on this eelgrass learning journey, California's Ocean Protection Council's ("OPC") staff recommended in September 2020 that the OPC adopt a proposed resolution on supporting substantive updates to the 2014 CEMP.[307] In particular, California regulators identified key areas in the CEMP related to mitigation ratios, buffer zones, avoidance measures, and the incorporation of emerging science that would benefit from a substantive update. CEMP updates to improve outcomes for eelgrass include, but are not limited to:

- "Using the best available science to discretely define mitigation ratios, buffer zones, and avoidance measures to effectively maintain and restore ecosystem function;
- Increasing the focus on the protection and restoration of degraded and historical eelgrass beds that are designated as Essential Fish Habitat;
- More clearly prioritizing avoidance of impacts above minimization and mitigation;
- Better defining adverse impacts to suitable eelgrass habitat and providing a mechanism for ensuring there will be places for eelgrass to migrate with sea level rise;
- Incorporating emerging science on the role eelgrass plays in mitigating climate change impacts (e.g., sea level rise, acidification, hypoxia, carbon flux,[308] wave energy attenuation);
- Requiring baseline assessments to use multi-year surveys to account for inter- annual and seasonal variability."[309]

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[305] *Id.*

[306] *Id*. It should be noted that the 2014 CEMP seems less stringent in terms of requirements to avoid or minimize impacts prior to development of mitigation plans, stating "[c]ompensatory mitigation should be recommended for the loss of existing eelgrass habitat function, but only after avoidance and minimization of effects to eelgrass have been pursued *to the maximum extent practicable*." *2014 CEMP* at 1. Compare this approach to that of the SCEMP, which required that avoidance and minimization must be pursued to the fullest extent possible prior to the development of any mitigation program. *See, e.g.,* City of Newport, CA, *Harbor Area Master Plan – HAMP*, 33 (June 2009) (discussing this provision of the 1991 SCEMP, as amended) https://www.newportbeachca.gov/home/showdocument?id=9189.

[307] *See Ocean Protection Council Meeting – September 17, 2020 – Teleconference*, California Ocean Protection Council, (agenda item 6 discussing a possible resolution updating the CEMP), https://www.opc.ca.gov/2020/08/ocean-protection-council-meeting-september-17-2020-teleconference/ (last visited Dec. 17, 2020).

[308] Also known as a "carbon cycle."

[309] See COPC, *Item 6: Staff Recommendation - Resolution Supporting Updates to the National Marine Fisheries Service's California Eelgrass Mitigation Policy*, 3 (Sept. 17, 2020), https://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20200917/Item6_CEMP-Resolution-Staff-Rec.pdf.

The OPC passed the resolution at its meeting on September 17, 2020. As of the time of writing of the second edition of this Primer, it remains unclear how NMFS intends to consider the OPC's resolution within its five-year review process. This offers a potential avenue for members of the public in Oregon to understand NMFS' process for coordinating with state natural resource agencies to improve eelgrass protection policies.

Action Opportunity for Oregon's Eelgrass. The 2014 CEMP has been a valuable first step for California to meet the ambitious goals of protecting existing eelgrass as well as create additional habitat by 2025. However, this policy applies only to the state of California and not the entire West Coast. The PFMC's HAPC designation does not automatically confer or guarantee additional protections or restrictions upon an area containing eelgrass beds, but is meant to "help to prioritize and focus conservation efforts."[310]

As noted above, NOAA has yet to work together with Oregon state natural resources staff at DLCD, DSL, and Department of Fish & Wildlife ("ODFW") to implement similar eelgrass mitigation policies for Oregon's coastal waters and estuaries. Accordingly, people and groups can urge the PFMC to recommend that NMFS WCR strongly consider initiating a coordinated, multi-state agency process to craft an Eelgrass Mitigation Policy for Oregon that would incorporate, at a minimum, the improvements suggested by the OPC.

The U.S. Army Corps of Engineers ("USACE" or "Corps"). Many of Oregon's estuarine, nearshore, and wetland areas are waters of the United States and are thus subject to USACE's regulatory authority under the Clean Water Act and the Rivers and Harbors Act. USACE's regulatory program is tasked with "protecting the Nation's aquatic resources and navigation capacity, while allowing reasonable development through fair and balanced decisions."[311] It administers and enforces Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act ("CWA") of 1972, both of which regulate activities with the potential to impact eelgrass in Oregon's estuaries.[312] Under Section 404 of the CWA, a Corps permit is required for the discharge of dredged or fill material into waters of the United States. USACE's Portland District Regulatory Branch has jurisdiction over the state of Oregon, southern Washington ports, and restoration projects in the Columbia River estuary funded by the Bonneville Power Administration.[313] USACE individual permits are one type of permit issued by the Corps that have the potential to impact Oregon's eelgrass.

USACE Individual Permit Review. Certain estuarine dredging activities and in-water structure projects require an Individual Permit from the Portland District to ensure consistency with these two statutes and their implementing regulations.[314] A standard Individual Permit is typically subject to a public interest review process, and a public notice will be issued to allow federal, state and local agencies, adjacent property owners, and the general public an opportunity

[310] *HAPC on the West Coast*, *supra* note 289.
[311] USACE, *Civil Works - Regulatory Program and Permits*, https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/ (last visited May 26, 2021).
[312] *Id.*
[313] USACE Portland District, *Missions-Regulatory*, (last visited May 26, 2021), https://www.nwp.usace.army.mil/Missions/Regulatory/.
[314] USACE, *Portland District - How to apply for a permit*, https://www.nwp.usace.army.mil/Missions/Regulatory/Apply/ (last visited May 26, 2021).

to review, provide comment, and request public hearing on the project. Thus, interested parties can sign up for notices from Portland District by emailing the regulatory office, review relevant dredging projects to see if they will impact Oregon's eelgrass and eelgrass habitat, and offer comments on specific projects to encourage USACE to make decisions that avoid harm to eelgrass and eelgrass habitat. The public may also request a public hearing before the agency. In Oregon, the USACE 404 permit and DSL removal fill permit share a joint permit application. Examples of construction activities subject to review by USACE and DSL that could impact eelgrass and eelgrass habitat include channel dredging (whether by private corporations or port entities) and the construction of in-water structures (such as docks and marinas).

PUBLIC PARTICIPATION - STATE AND FEDERAL RESOURCES

• **Oregon Department of State Lands:**
https://www.oregon.gov/DSL/News/Pages/Subscribe.aspx

Subscribe to DSL Notice Lists related to the South Slough Estuarine Reserve, Waterways & Wetlands Program, Rulemaking, and Aquatic Resource Planning.

• **NOAA PFMC**: https://www.pcouncil.org/navigating-the-council/getting-involved/

PFMC's "Get Involved" website explains how to comment and get to know the Council: PFMC, *Getting Involved*.

• **NOAA-OCM:** https://coast.noaa.gov/czmprogramchange/#/public/home

NOAA, Coastal Zone Management Act Program Changes Email Notification Sign-up

• **NOAA-Digital Coast:** https://coast.noaa.gov/digitalcoast/

NOAA Digital Coast is a resource for coastal communities and interested members of the public to learn about and address issues commonly associated climate change, as well as learn more about the CZMA and state CZMA programs.

• **USACE Permit Application Public Notices:**
https://www.nwp.usace.army.mil/Missions/Regulatory/Notices/

• **USACE - Public Notice mailing list subscriptions:**
https://www.nwp.usace.army.mil/Missions/Regulatory/Contact/

> **New subscriptions:** Send USACE an email with the seven coastal counties to receive notices about permits with the potential to impact estuaries in Oregon.
>
> **Email:** PortlandRegulatory@usace.army.mil

Appendix E: Jordan Cove – A Case Study for Protecting Eelgrass in Coos Bay

Permitting processes that impact eelgrass habitat in Oregon can have far-reaching effects on individuals, communities, economies, and ecosystems.[315] Appendix E analyzes permit review that took place between 2018 and 2020 for the proposed Jordan Cove Energy Project ("Jordan Cove") in Coos Bay to illustrate existing state, local, and federal as well as tribal government roles related to eelgrass in Oregon. Specifically, this project is an excellent case study for:

- Assessing whether eelgrass is adequately protected by Oregon's EMPs and state rules related to estuarine dredging;
- Assessing local, state, and federal government responsiveness to tribal sovereigns;
- Assessing local, state, and federal responsiveness to the public's desire for better planning and protection of eelgrass beds and habitat.

About Jordan Cove. Jordan Cove was a proposed liquified natural gas ("LNG") terminal and export facility proposed by the Calgary-based Pembina Corporation for the North Spit of Coos Bay.[316] Natural gas would have been transported to the terminal by the proposed Pacific Connector Gas Pipeline, a 229-mile, 36-inch diameter pipeline with the capacity to transport up to one billion cubic feet of natural gas per day.[317] Once processed, the LNG would be transported through Coos Bay on LNG export tankers for sale in overseas markets.[318]

Jordan Cove - Existing Eelgrass Management Frameworks at Play. Estuarine dredging, in-water structures, and even mitigation proposals developed without consideration of best practices are key examples of projects that may impact Oregon's eelgrass. The application review processes for Jordan Cove involved permit requests for all three of these activities between late 2018 through 2020. The table below and the following discussion describes relevant permits at the local, state, and federal level, how existing rules required eelgrass to be considered compared to how eelgrass was actually considered, and the ultimate outcome.

Activities Proposed	Affected areas:	Permits required:	Decision-Makers	Impacted Tribes	Consulting Agencies
Jordan Cove proposed to widen the federal navigation channel in Coos Bay to allow increased LNG tanker traffic between the North Spit and foreign markets. The proposal involved dredging, dredge material transport via several underwater and in-water pipelines, floating in-water surface structures, dredge material disposal in areas adjacent to wetlands and eelgrass habitat, as well as mitigation via dredging.	The construction and operation of Jordan Cove's proposed LNG terminal on the North Spit and expanded LNG export scheme could have direct and indirect impacts on existing eelgrass beds and potential eelgrass habitat in the Lower Bay in perpetuity	Local Land Use, including: Estuary management plan amendments Estuarine Development permits Conditional Use Permits	Coos County City of Coos Bay City of North Bend	Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI). Coquille Indian Tribe* *The first edition of this Primer incorrectly referred to the "Coquille Indian Tribe" as the "Coquille Band of Indians." The authors of	ODFW South Slough Estuarine Reserve
		State Removal Fill State Federal Consistency Certification	DSL DLCD		
		Clean Water Act Section 404/ Rivers Harbor Act Section 10 Approval (Section 404/10)	USACE		

[315] Envtl. Law Institute, *Step-by-Step Tips for Writing Effective Public Comment*, (Dec. 2013) http://eli-ocean.org/wp-content/blogs.dir/2/files/Written-Commenting.pdf.
[316] Liam Moriarty, *Battle over Jordan Cove energy project is over after developers pull plug*, Or. Public Broadcasting, (Dec. 2, 2021), https://www.opb.org/article/2021/12/01/jordan-cove-pipeline-terminal-project-abandoned-by-developers/.
[317] *Id.*
[318] *Id.*

				this Primer apologize for this error.[319]	

Jordan Cove - Land Use – Estuarine Development Permits. Jordan Cove required multiple local land use permits from the cities of Coos Bay and North Bend as well as Coos County to move forward with its proposed activities, including permits from:

- The City of Coos Bay to allow new and ongoing maintenance dredging to facilitate increased LNG tanker traffic in areas of the estuary with known eelgrass beds; in-water dredge material transport and offloading through and adjacent to eelgrass beds and habitat; and additional dredging to mitigate adverse impacts to eelgrass from its proposed new and ongoing maintenance dredging activities.
- The City of North Bend to conduct under- and overwater dredge material transport through installation of an underwater and overwater "temporary" dredge material transport pipeline, and a floating dredge material offloading facility that would impact the same eelgrass habitat as the proposed activities within the City of Coos Bay.
- Coos County to allow new and ongoing maintenance dredging for increased LNG tanker traffic; excavation in areas with known eelgrass beds for LNG tanker berthing ("Omnibus II" Application); and "temporary" in-water and overwater dredge material disposal pipeline activities that would cross known and potential eelgrass habitat in and around the North Spit.

Jordan Cove submitted these land use applications in late 2018through 2019. The CBEMP management unit provisions governing the impacted areas for the City of Coos Bay and the City of North Bend acknowledged the existence of eelgrass beds.[320] However, the outdated CBEMP management unit provisions governing impacted areas within Coos County did not.[321] The local EMP policies governing these permits requests were also enforceable policies under the OCMP for the purposes of DLCD's federal consistency review. Additionally, the CBEMP includes a policy requiring government-to-government negotiation between impacted tribes (including the CTCLUSI) and local governments to ensure protection of cultural resources prior to the beginning of development.

Between February 2019 and January 2020, members of the public provided comments to these local governments raising concerns about the potential for Jordan Cove's activities to damage eelgrass beds in the proposed project areas. A research coordinator from the South Slough National Estuarine Research Reserve highlighted Jordan Cove's failure to consider the potential presence of eelgrass in the areas to be dredged, and reliance on outdated data to delineate the presence of eelgrass. Sovereign tribes asserted their power to protect cultural resources pursuant to government-to-government negotiation requirements, and also offered expert testimony to explain the importance of eelgrass as a cultural resource, how the species supported the health of Coos Bay, as well as to raise concerns about adverse impacts. In spite of these potential impacts to eelgrass and cultural resources, each local jurisdiction approved Jordan Cove's permit requests between December 2019 and January 2020.

[319] Oregon Shores, *A People's Primer for Protecting Eelgrass*, 32 (May 2021), https://crag.org/wp-content/uploads/2021/06/eelgrass_citizens_guide_6-1-21.pdf.
[320] CBEMP Management Unit 52-NA. Regarding existing eelgrass beds, both cities' codes and comprehensive plans acknowledged that the impacted aquatic unit "contains extensive eelgrass beds with associated fish and waterfowl habitat, and shall accordingly be managed to maintain these resources in their natural condition in order to protect their productivity."
[321] 5-DA (CCZLDO Sec. 3.2.270), 5-WD (CCZLDO Sec. 3.2.260)

Jordan Cove – State and Federal Permits - Joint Removal-Fill Permit Application. In addition to and concurrent with the above local land use permit processes, Jordan Cove also needed a removal-fill permit from DSL and a CWA Section 404/Rivers and Harbors Act Section 10 permit (404/10 Permit) from the Corps to move forward with its LNG Terminal proposal and associated dredging activities.

DSL received a joint permit application from JCEP in November 2018, and deemed the application complete in mid-December 2019. From there, DSL opened a 60-day public comment period to accept written and oral testimony at five scheduled public hearings in Klamath, Jackson, Douglas, and Coos counties, and Salem.[322] By the close of comment and testimony in February, 2019, DSL received oral testimony from 3,500 people and written testimony from over 49,000 people, many of whom shared information and perspectives on Jordan Cove's potential adverse impacts to eelgrass in Lower Coos Bay, the project's failure to avoid those impacts, and the inadequacy of Jordan Cove's proposed eelgrass mitigation in lower Coos Bay.

Under Oregon law, DSL has the authority to deny permits for projects that are inconsistent "with the protection, conservation, or best use of Oregon's waters and that unreasonably interfere with navigation, fishing, or public recreation."[323] Where a project is deemed allowable, but involves "unavoidable impacts" to protected aquatic resources, it is required to provide "mitigation" for its impacts. For the purpose of mitigation, eelgrass is defined as an aquatic resource of special concern under DSL's rules, as well as a Category 2 "Essential and Limited" habitat under the Oregon Department of Fish and Wildlife's ("ODFW") Habitat Mitigation Policy for the purposes of mitigation recommendations.[324] Both emphasize "in-kind on a landscape scale" and "in-kind, in-proximity mitigation," respectively.[325] DSL completed review of public comment in April 2019, and sent Jordan Cove a letter to request additional information.[326] DSL specifically asked Jordan Cove to directly address substantive public comments raising concerns about impacts to eelgrass.[327] In November 2019, DSL reissued this request in part, stating that ODFW's comments related to inconsistencies with the Habitat Mitigation Policy had not been addressed and needed to be resolved prior to a final decision on the project.[328]

In July 2019, the Corps opened a 30-day supplemental public comment period in part to seek further comment on the same project modifications made by Jordan Cove in Lower Coos Bay as in its "Omnibus II" applications to Coos County. These specifically involved a proposed

[322] OAR 141-085-0560 - Public Review Process for Individual Removal - Fill Permit Applications; ORS 196.825 - Criteria for issuance of [Removal Fill] permit.
[323] OAR 141-085-0565(5).
[324] OAR Ch. 635, Division 415
[325] DSL, *A Guide to the Removal-Fill Permit Process*, *supra* note 275, at 34; ODFW, *Fish and Wildlife Habitat Mitigation Policy*, (Oct. 8, 2022), https://www.dfw.state.or.us/habitat/mitigation_policy.asp.
[326] DSL, *State requests additional information for Jordan Cove removal-fill permit*, (Apr. 2019), https://web.archive.org/web/20210525053015/https://www.oregon.gov/dsl/News/Documents/StateRequestsAdditionalInformationforJordanCoveRemovalFillPermit_4.11.19.pdf
[327] DSL, *DSL Removal-Fill Permit Application No. 60697-RF - Request for Additional information*, 7 (Apr. 2019) [hereinafter *April 2019 DSL RFAI*], https://www.oregon.gov/dsl/WW/Documents/DSL%20letter%20to%20Jordan%20Cove%20(April%2010,%202019).pdf.
[328] DSL, *DSL Removal-Fill Permit Application No. 60697-RF - Jordan Cove Energy Project, Multiple Counties*, 7, 10 (Nov. 2019), https://www.oregon.gov/dsl/WW/Documents/60697RF%20PRPCommentResponseRemainingIssuesLetter20191112.pdf.

shoreline stabilization measure called a "pile dike rock apron" and a proposed in-water "submerged temporary dredge material pipeline" route that caused permanent impacts to eelgrass beds.[329] The Corps received multiple requests from concerned members of the public to extend the public notice comment period as well as hold public hearings regarding the proposed project modifications. In August 2019, the Corps extended the public comment period for another 30 days, and pledged to "work with the applicant directly to address issues raised through public comment to determine if a public hearing is necessary."[330]

Section 10 of the River and Harbors Act prevents unauthorized obstruction or alteration of U.S. waterways, including wetlands. The Corps oversees and regulates any work activities (such as dredging, beach nourishment, and geotechnical surveys) or construction of structural features (such as piers, boat docks or ramps, wharfs, weirs, booms, breakwaters, bulkheads, and jetties) that would affect an eelgrass bed's location, condition, or support capacities.[331] Seagrasses such as eelgrass are also protected by CWA Section 404. Seagrasses such as eelgrass are considered a wetland under CWA Section 404, and thus protected from fill activities, stormwater runoff, and other water quality issues.[332] Digging into eelgrass beds for burying cables, dredging, and other seafloor activities requires federal and state permits.[333]

As with DSL's policies, eelgrass is defined as a "Special Aquatic Site" under 40 CFR § 230.43 (Vegetated shallows) and a wetland for the purposes of the Corps' review under CWA Section 404, both of which dictate the type of compensatory mitigation required for unavoidable impacts to eelgrass habitat. However, at the time of Jordan Cove's dredging applications, neither DSL or USACE's agency rules (nor DLCD's enforceable policies and NMFS' EFH guidance) contained explicit requirements that would have mandated that Jordan Cove avoid impacts to eelgrass in Oregon's estuaries prior to developing mitigation.

Jordan Cove - DLCD Federal Consistency Review ("FCR").[334] JCEP required two major federal permits needed for the proposed project: a USACE Section 404/10 permit and certificates pursuant to Sections 3 and 7 of the Natural Gas Act from the Federal Energy Regulatory Commission. As discussed above, the former permit proposed activities that risked significant direct and indirect impacts to existing eelgrass beds and potential habitat (mudflats, intertidal areas, as well as eelgrass beds adjacent to deep tidal habitat).[335] Each of these permits are subject to federal consistency review by DLCD through the OCMP.[336]

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[329] *See id.* at 7 (discussing pile dike rock apron).
[330] USACE, *Jordan Cove LNG Project comment period extended 30 days*, (Aug. 5, 2019), https://www.nwp.usace.army.mil/Media/Public-Notices/Article/1938031/jordan-cove-lng-project-comment-period-extended-30-days/.
[331] *Federal Laws, Regulations, and Policies to Protect Wetlands*, (Feb. 2, 2019), https://mywaterquality.ca.gov/eco_health/wetlands/improvements/regulations.html#federal.
[332] Bureau of Ocean Mgmt. & NOAA, *So What? Seagrass Distribution*, https://marinecadastre.gov/SiteCollectionDocuments/SoWhat_Seagrass_final_template.pdf (last visited Dec. 13, 2022).
[333] *Id.*
[334] DLCD, *Federal Consistency Review*, https://www.oregon.gov/lcd/OCMP/Pages/Federal-Consistency.aspx (last visited Dec. 13, 2022).
[335] *April 2019 DSL RFAI*, *supra* note 318, at 7.
[336] 15 CFR §930.53; OCMP, *Federal Licenses and Permits Which Must Be Certified for Consistency with the Oregon Coastal Management Program*, Tbl. 7 (Sept. 2015), https://www.oregon.gov/lcd/OCMP/Documents/September2015_Table_7_Listed%20Activities.pdf.

In April 2019, DLCD received a joint federal consistency review application from Jordan Cove.[337] In its application, Jordan Cove certified to DLCD that its proposed dredging, dredge material transport via several underwater and in-water pipelines, floating in-water surface structures, dredge material disposal, and mitigation activities complied with the enforceable policies governing the local land use permits and the DSL removal-fill permit discussed above. In April 2019, Jordan Cove had not received these local land use permits or approval from DSL for its proposed removal-fill activities.[338]

DLCD initiated the formal federal consistency review process in May 2019.[339] This process included a three-month public comment period, as required by 15 C.F.R. § 930.2, beginning July 2019.[340] The OCMP received approximately 20,000 public comments on Jordan Cove's proposed project, which DLCD logged, reviewed, and considered for review purposes.[341] Approximately 80 percent of public comments were opposed to the project, and many of those opposed expressed concern about adverse impacts to archeological and historical sites, adverse impacts to water resources, insufficient compensatory mitigation, and lack of compliance with the statewide planning goals.[342]

DLCD found that Jordan Cove had not achieved compliance with the enforceable policies of the OCMP in large part because of lack of sufficient information to assess impacts associated with its proposed dredge and fill activities in Coos Bay. On this basis, it denied federal consistency certification for Jordan Cove in February 2020.[343] Of note, DLCD did reference insufficient analysis of avoidance of impacts to eelgrass beds throughout its discussion.[344] However, in its supplemental considerations, DLCD emphasized that a future application could be consistent if it considered alternative, more appropriate eelgrass mitigation sites.[345]

Jordan Cove – Conclusions and Frameworks for Analyses. The outcomes of these permit processes are useful to understanding whether existing management frameworks governing project review within Oregon's estuaries are sufficient to protect and adequately manage eelgrass:

- **Local Land Use Approvals under the CBEMP and local implementing ordinances.** All but one of the above referenced local land use approvals for Jordan Cove's proposed activities issued by the City of Coos Bay, City of North Bend, and Coos County were later overturned (i.e., reversed or remanded) by Oregon's Land Use Board of Appeals (LUBA) between the summer of 2020 and the spring of 2021. Each permit was challenged by Oregon Shores, joined by other conservation organizations and members of the public.[346] In the case

[337] DLCD, Letter to JCEP, 1 (May 13, 2019), https://www.oregon.gov/lcd/OCMP/Documents/FINAL_JCEP_PCGP_CZMReviewInitiated_May13_2019.pdf.
[338] *Id.* at 4, 6-9.
[339] DLCD, *Jordan Cove Energy Project/Pacific Connector Gas Pipeline - Federal Consistency Determination (Objection)*, 7 (Feb. 19, 2020), https://www.oregon.gov/lcd/OCMP/FCDocuments/FINAL-CZMA-OBJECTION_JCEP-DECISION_2.19.2020.pdf.
[340] *Id.*
[341] *Id.* at 8.
[342] *Id.*
[343] *Id.* at 47.
[344] *Id.* at 19-22.
[345] *Id.* at 49-50.
[346] *Or. Shores Conservation Coal. v. City of North Bend*, _ Or. LUBA _, (July 17, 2020, LUBA No. 2019-118) (City of North

of the City of Coos Bay dredging permit, Oregon Shores intervened in support of an appeal brought by CTCLUSI. But none of these cases cited potential adverse impacts to eelgrass, Jordan Cove's failure to meaningfully consider alternatives to avoid those impacts, or Jordan Cove's failure to develop a sufficient mitigation plan as a basis for reversal and remand. LUBA did not reach arguments assigning error to the City of Coos Bay and Coos County's interpretation of a local policy protecting cultural resources in the two dredging cases.

- **Eelgrass Mitigation Permit from the City of Coos Bay.** Jordan Cove's approval from the City of Coos Bay to conduct dredging (for the purposes of eelgrass mitigation) adjacent to existing eelgrass habitat was not challenged. Mitigation is allowed in the impacted City of Coos Bay estuarine aquatic unit, but dredging is prohibited. Despite comment from ODFW and expert testimony obtained by CTCLUSI raising concerns about the appropriateness of the proposed mitigation site and method, the City Council agreed with Jordan Cove's distinction between "prohibited" dredging activities and its proposed dredging to "recontour" and "enhance" the area for eelgrass mitigation. This mitigation site was identified as inappropriate compared to alternatives by DSL, DLCD, and ODFW. The City of Coos Bay permit expired in October 2021.
- **DSL Removal-Fill Permit and USACE Section 404/10 Permit.** Anticipating permit denial, Jordan Cove withdrew its pending DSL removal-fill application in January 2020.[347] DSL released incomplete draft findings for the proposed project following Jordan Cove's withdrawal. While the document does not represent a determination by DSL as to whether the withdrawn application was consistent with Removal-Fill criteria, the document appears to prioritize mitigation rather than avoidance of direct and indirect impacts to known and potential eelgrass habitat.[348] On June 10, 2021, Jordan Cove's Section 404/10 permit was withdrawn by USACE because "the applicant [had] paused the project for an undetermined length of time."[349]
- **DLCD FCR Objection.** Jordan Cove's USACE Section 404/10 permit and certificate requests to FERC under Sections 3 and 7 of the Natural Gas Act were required to establish consistency with OCMP enforceable policies for the purposes of DLCD federal consistency review. DLCD's objection was based in part on ORS 196, containing Oregon's removal-fill law, which does require consideration of harms to eelgrass. In this instance, enforceable local land use policies derived from the CBEMP were not directly cited as a basis for denial. DLCD's denial did reference eelgrass impacts, but appears to indicate that a supplemental consideration for the proposed project in order to establish consistency would be to consider alternative eelgrass mitigation sites rather than meaningful avoidance of impacts. DLCD's federal consistency review decision appears to be the only decision that issued findings on

Bend Dredge Material Disposal); *Or. Shores Conservation Coal. et al., v. Coos Cnty.*, _ Or LUBA _, (Dec. 22, 2020, LUBA Nos. 2019-137 & 2020-006) ("Omnibus 1"); *Confederated Tribes of Coos et al. v. City of Coos Bay*, _ Or LUBA _, (May 4, 2021, LUBA No. 2020-012) (City of Coos Bay Dredging); *Or. Shores Conservation Coal. et al., v. Coos County*, _ Or LUBA _, (May 4, 2021, LUBA No. 2020-002) (Coos County Dredging).

[347] DSL, *Draft Removal-Fill Permit Findings for the Jordan Cove Energy Project*, 1 (Feb. 4, 2020), https://www.oregon.gov/dsl/WW/Documents/FindingsDraftWord_group_ForRelease.pdf.

[348] *Id.* at 9.

[349] Jordan Cove LNG Terminal and Pacific Connector Gas Pipeline, *Section 10 Rivers and Harbors Act of 1899 and Section 404 Clean Water Act*, Permitting Dashboard, https://www.permits.performance.gov/proj/jordan-cove-lng-terminal-and-pacific-connector-gas-pipeline/section-10-rivers-and-harbors-act (last visited Dec. 15, 2022); Scott DiSavino, *Pembina pauses development of Oregon Jordan Cove LNG plant*, Reuters (Apr. 23, 2021) https://www.reuters.com/business/energy/pembina-pauses-development-oregon-jordan-cove-lng-plant-2021-04-23/.

direct and indirect coastal effects as well as cumulative impacts. The U.S. Secretary of Commerce upheld DLCD's objection on February 8, 2021.

- **State and Federal Programs for Eelgrass.** These state findings and decisions, respectively, were issued under frameworks where eelgrass is federally recognized as EFH and a HAPC under the MSA as well as a Special Aquatic Site under CWA Section 404. Further, DSL and ODFW agency rules designate eelgrass as an aquatic resource of special concern under DSL's rules as well as a Category 2 "Essential and Limited" habitat.

In December 2021, Pembina cancelled Jordan Cove, citing difficulties in obtaining the necessary state permits.[350] However, a change in political circumstances could reawaken similar fossil fuel infrastructure proposals for Coos Bay.

Using Jordan Cove as a case study analysis of Oregon's current eelgrass management framework illustrates several key issues. On the one hand, it demonstrates the possibility of protecting eelgrass and its suitable habitat via permitting processes that are governed by EMPs, state agency rules, and federal project review. Specifically, public participation in state and local permitting processes, alongside tribes asserting their sovereign powers, played an important role in ensuring that Coos Bay's eelgrass habitat was protected. These efforts helped reverse key local land use approvals that would have allowed dredging activities in Coos Bay. Further, Pembina's failure to address concerns raised in public comments ultimately led to DSL's refusal to extend permit review and the withdrawal of Jordan Cove's DSL Removal-Fill application. On the other hand, outdated state agency and EMP inventory data as well as the lack of explicit criteria requiring avoidance of impacts left the door open for permitting processes to rely on dubious mitigation proposals to address harms to eelgrass. This suggests that Coos Bay and Oregon's estuaries require stronger, eelgrass-specific protections at the local, state, and federal level.

[350] Moriarty, *supra* note 310.

Appendix F: Primer Revision History

The below table summarizes key changes between the first and second edition of this Primer. Readers can refer to both editions to learn about key topics related to eelgrass. Sections from the first edition of this Primer that were not updated in the second edition of this Primer can be reviewed in the former document here (https://crag.org/wp-content/uploads/2021/06/eelgrass_citizens_guide_6-1-21.pdf).

First Edition, May/June 2021	Second Edition, December 2022
Part I: A People's Primer for Protecting Eelgrass Part I, Sections 3 and 6 of the first edition of this Primer were not updated during the drafting of the Second Edition of this Primer.	Part I of the second edition of this Primer is revises Part I, Sections 1 and 5 of the first edition of this Primer to provide a quick reference guide specifically focused on participating in Oregon's EMP updates. The second edition of this Primer has updated materials relevant to learning more about eelgrass from Part I, Sections 3 and 4 of the first edition and provided them in Appendix C.
Part II: Existing Legal Frameworks Part II, Section 12 of the first edition of this Primer was not updated during the drafting of the Second Edition of this Primer.	Part II of the second edition of this Primer is revised to focus on how to draft public comments for stronger eelgrass protections in YBEMP update. It updates and moves Part II, Sections 7 through 10 of the first edition to Appendix D. Part II, Section 11 of the first edition, which discusses Jordan Cove, is updated and moved to Appendix E.
Part III: Comparative Case Studies	The second edition of this Primer moves Part III, Sections 13 and 14 of the first edition discussing the California Eelgrass Mitigation Policy to Appendix D.
Part III, Section 15: Conclusion and Further Avenues for Research. Information on bringing Oregon's Coastal Non-Point Source Pollution Program into compliance with the Coastal Zone Act Reauthorization Amendments of 1990 as a potential avenue to fund eelgrass management has not changed since the first edition of this Primer, and was not updated during the drafting of the second edition of this Primer.	Part III of the second edition of this Primer incorporates and updates Part III, Section 15 of the first edition to suggest additional future avenues for advocacy.