PMEP

PACIFIC MARINE & ESTUARINE FISH HABITAT PARTNERSHIP

Estuary and Nearshore Habitat Data Tools

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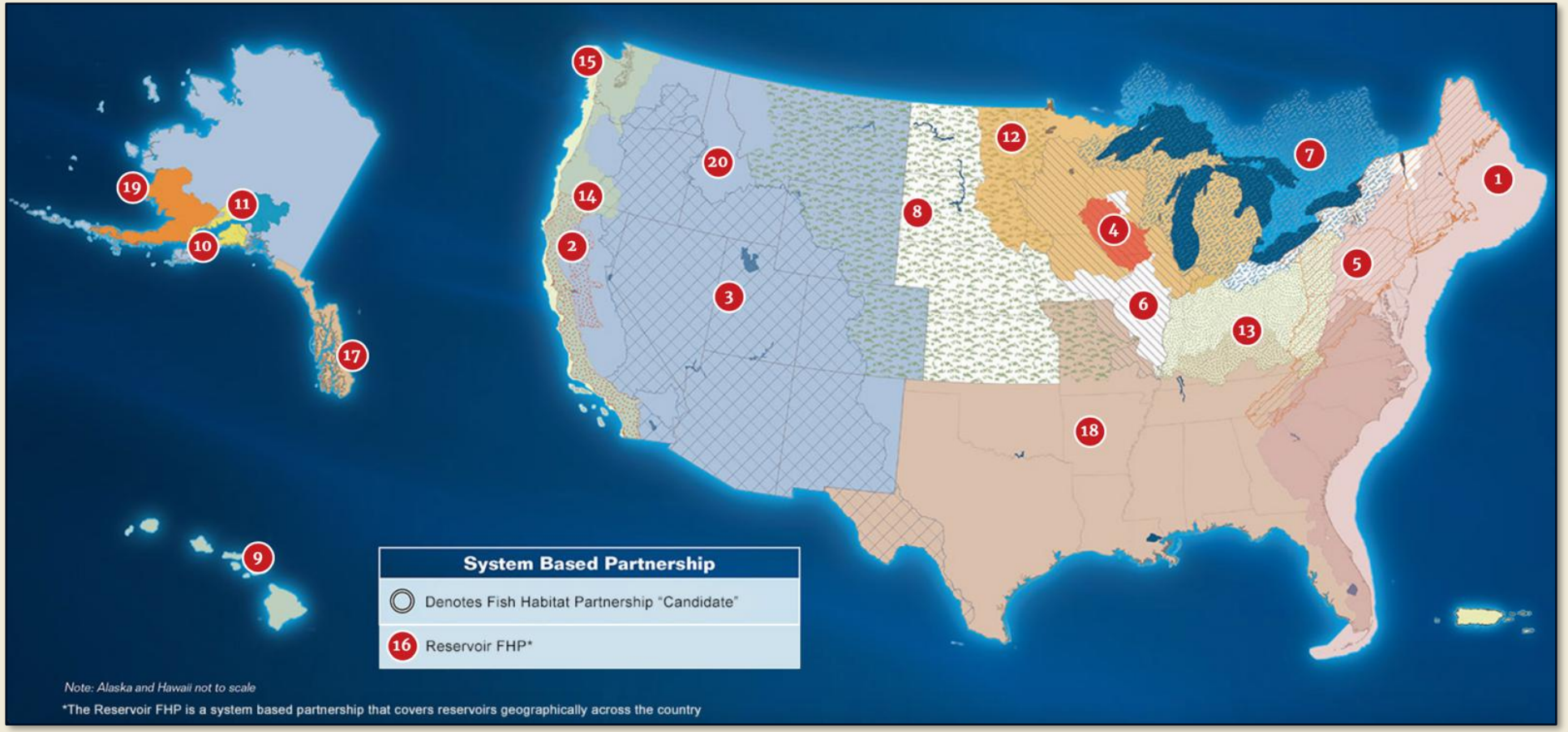
National Fish Habitat Partnership

Mission is to protect, restore, and enhance fish and aquatic communities through partnerships that foster fish habitat conservation



NATIONAL FISH HABITAT PARTNERSHIP

www.fishhabitat.org

Pacific Marine and Estuarine Fish Habitat Partnership

- Gathers expertise to synthesize best available information estuaries, nearshore, and connectivity
- Develops and compiles new datasets to fill high-priority data gaps in our understanding of fish habitats
- Provides targeted funding for high-priority restoration and conservation projects

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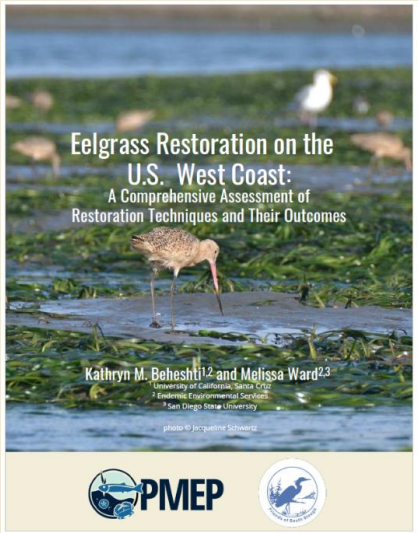
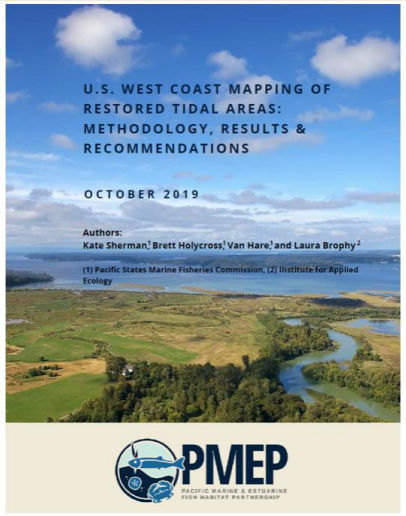
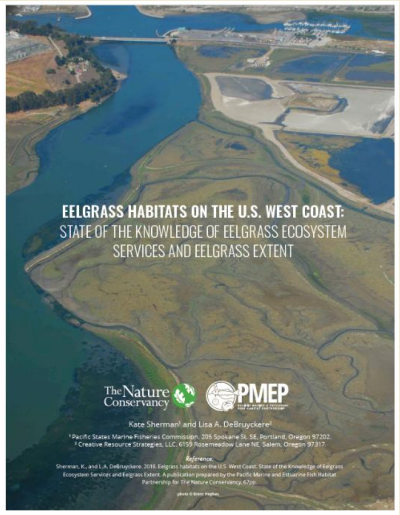
Assessments, Reports, & Literature



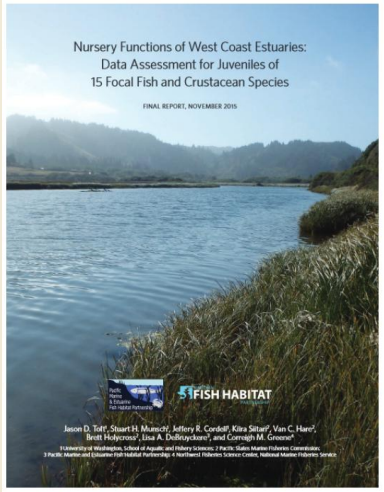
Eelgrass Restoration Synthesis on the U.S. West Coast (2021)



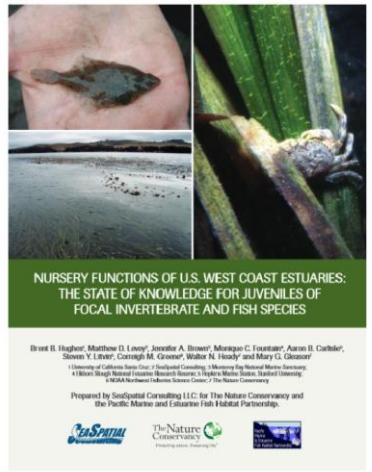
U.S. West Coast Mapping of Restored Tidal Areas: Methodology, Results & Recommendations (2019)



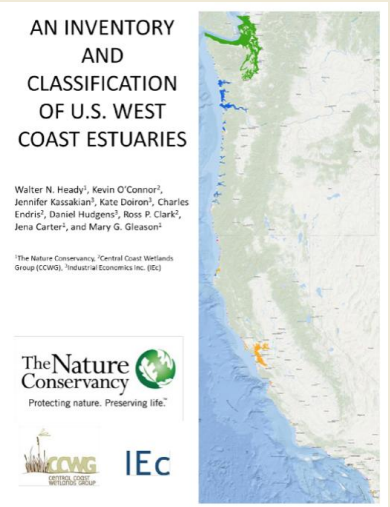
Eelgrass Habitats on the U.S. West Coast: State of the Knowledge of Eelgrass Ecosystem Services and Eelgrass Extent (2018)



Nursery Functions of West Coast Estuaries: Data Assessment for Juveniles of 15 Focal Fish and Crustacean Species (2015)



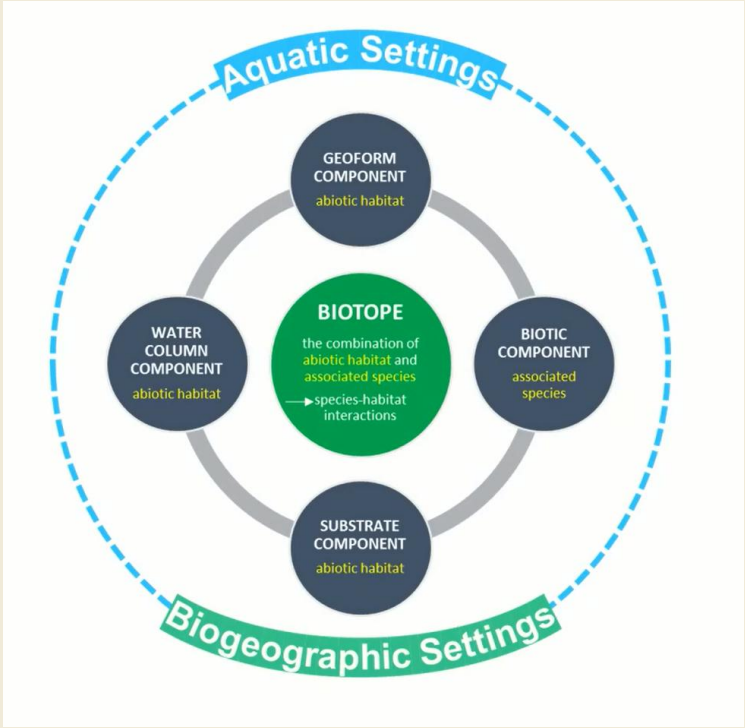
Nursery Functions of U.S. West Coast Estuaries: The State of Knowledge for Juveniles of Focal Invertebrate and Fish Species (2014)



An Inventory and Classification of U.S. West Coast Estuaries (2014)

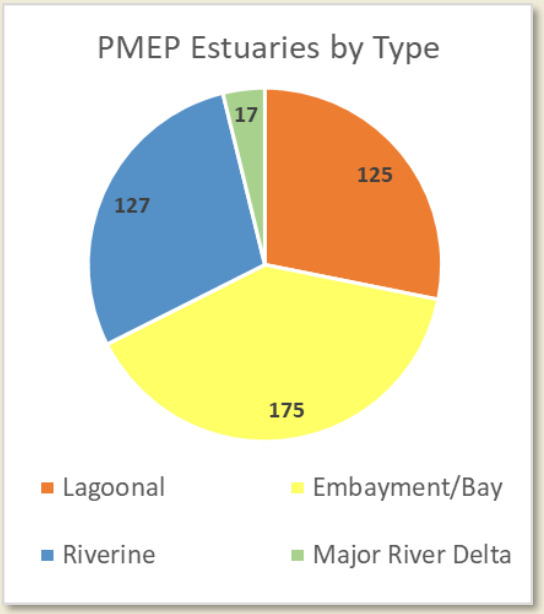
West Coast Spatial Framework

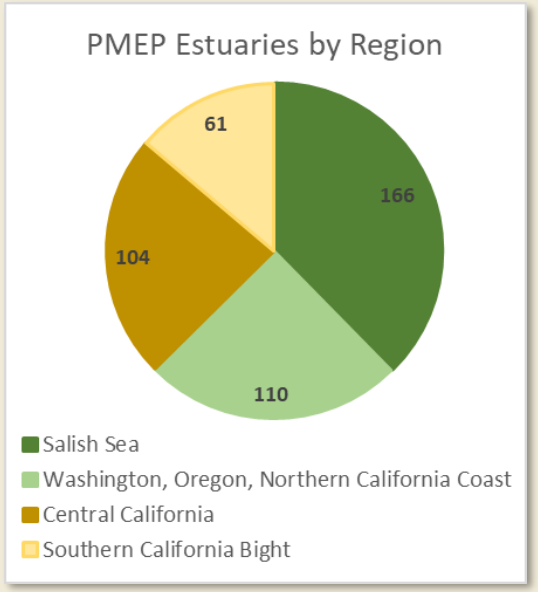
Coastal Marine and Ecological Classification Standard (CMECS)



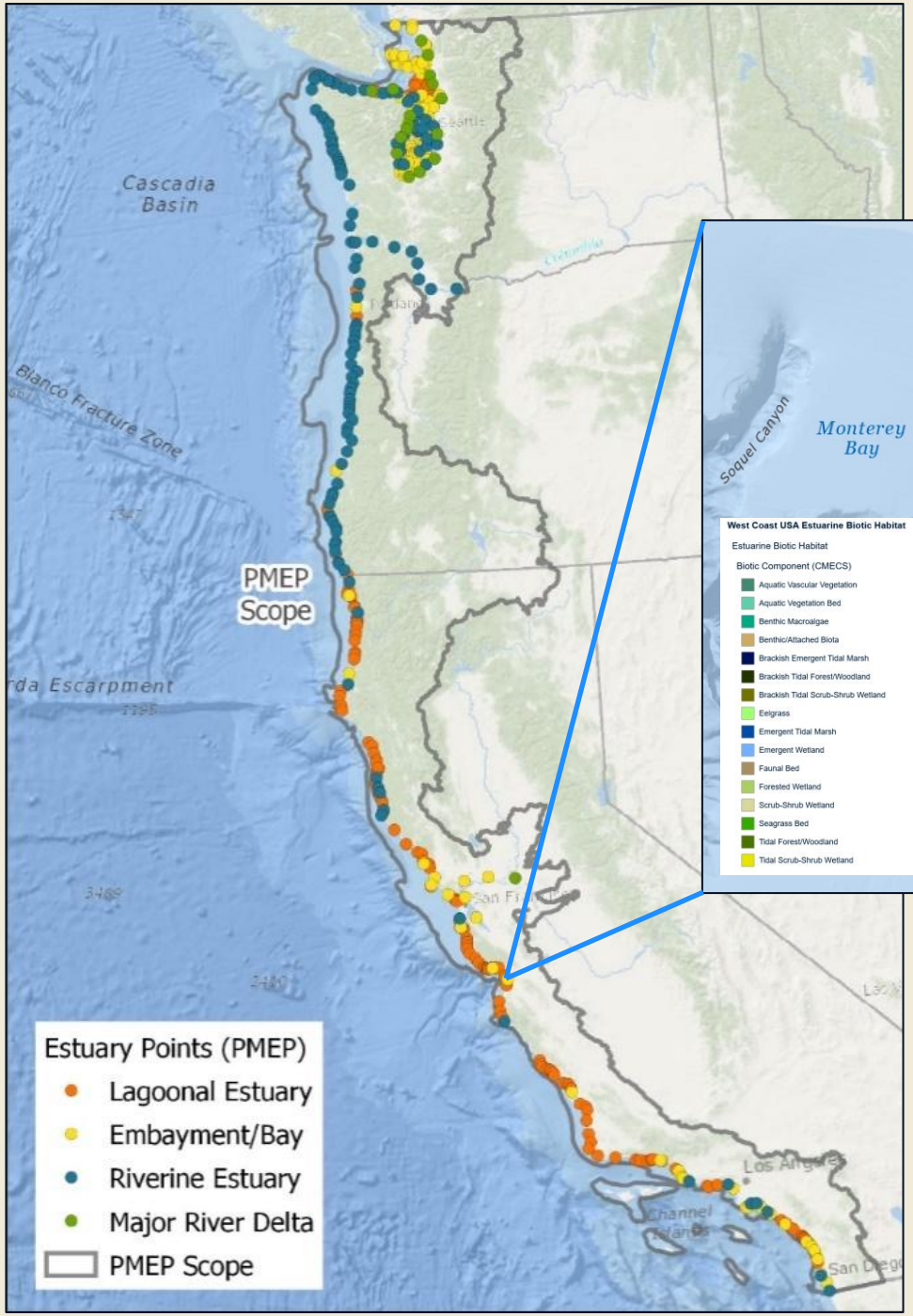
Recognized by the FGDC as the federal standard for classifying coastal and estuarine habitats

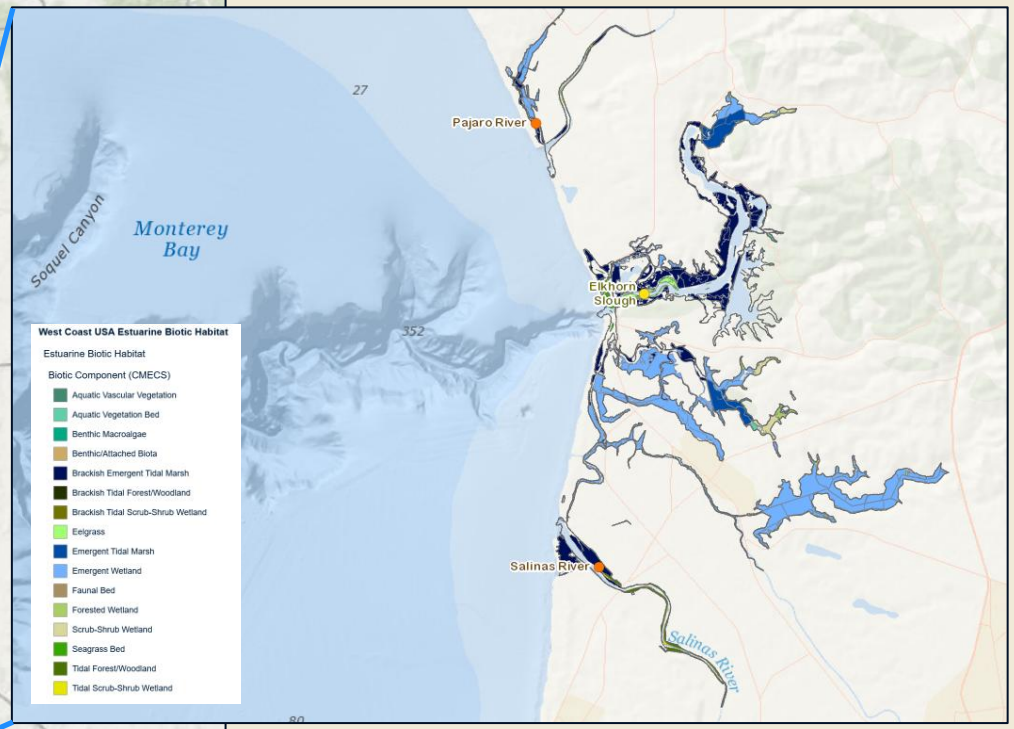
Estuary Data





444 Estuaries Mapped

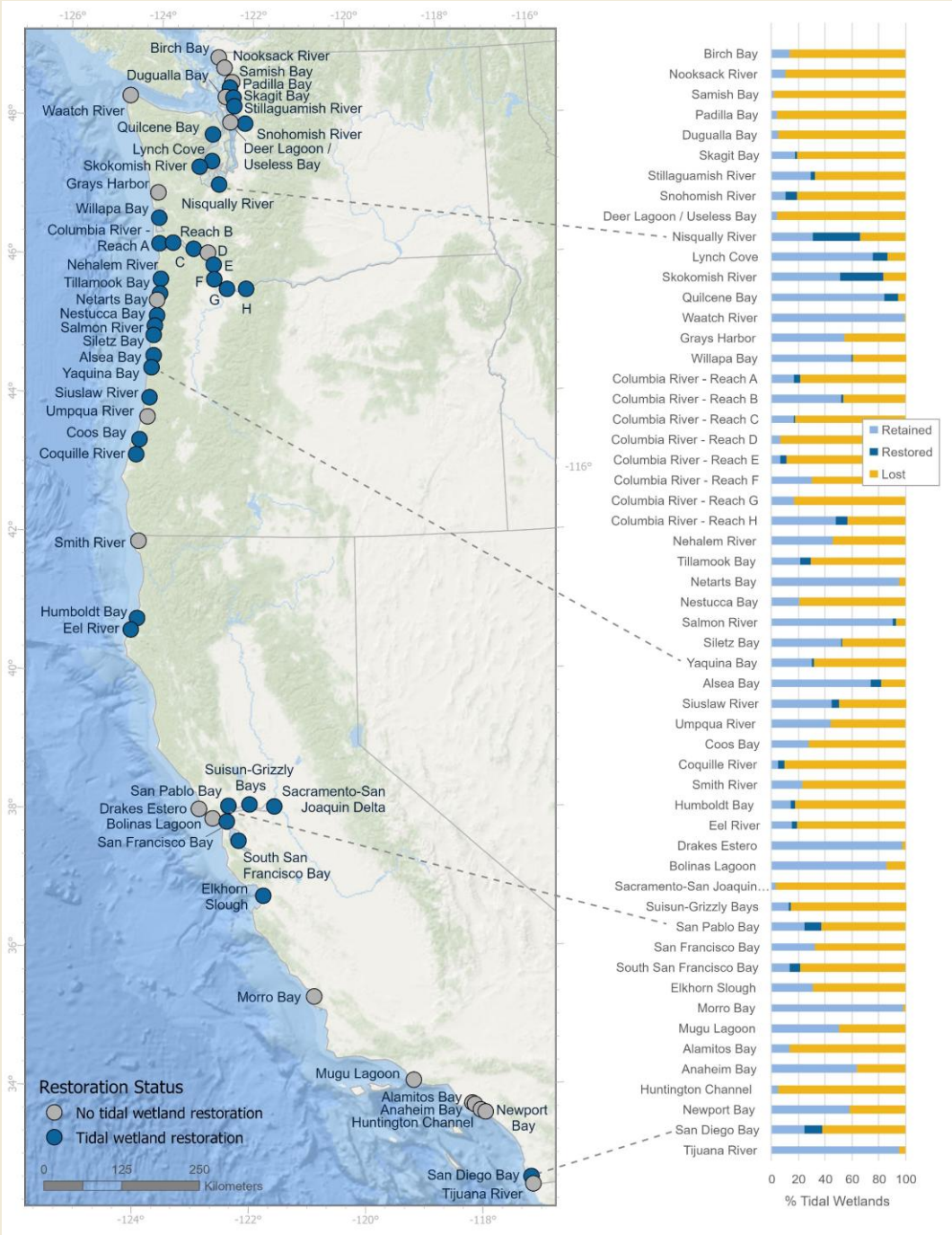




- Current and Historic Estuary Extent
- Focal species presence (JP, P)
- CMECS Biotic Habitat Types
  - Eelgrass
- Tidal wetland loss rapid assessment (55 estuaries)

TWL Assessment

- Indirect assessment of tidal wetland loss -55 estuaries (Brophy et al. 2019)
  - Compared NWI with PMEP Estuary Extent mapping
  - Focused the analysis on estuaries with >100 hectares of historical tidal wetland area, and with substantial human alterations
  - This subset of PMEP estuaries captures the vast majority (97%) of historical West Coast tidal wetlands by area.
- Limitations:
  - Elevation based methodology: areas lost due to fill that elevates the land surface not captured
  - Restored areas based on a snapshot in time*
  - Lagoonal estuaries were excluded
  - Many areas, NWI is outdated

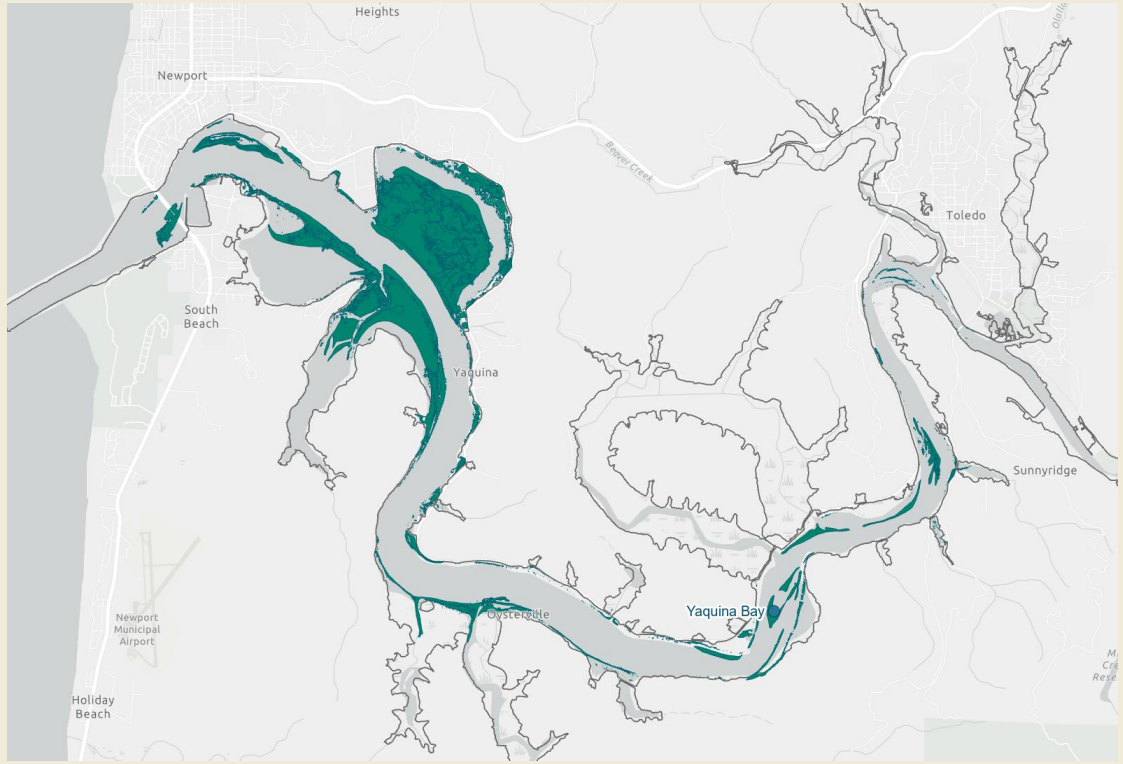


*Update to restored areas - summer 2025

Eelgrass Resources

Maximum observed extent
(or “potential” area for eelgrass)

Eelgrass restoration synthesis table



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Eelgrass Restoration Synthesis Table

Home › Eelgrass Restoration Synthesis Table

This table is a summary of all projects included into analyses described in the Eelgrass Synthesis Report. Project numbers denoted by an asterisk (projects 52-57) mark restorations where quantitative information was unavailable (i.e., shoot densities or areas), but whose qualitative data on likely drivers of eelgrass loss were included in analyses. Information on whether projects “met defined success criteria” refers to practitioner defined success, whereby “varies” implies that some plots may have met criteria while others failed. The parenthetical values in ‘Method Category & Type’ cells indicate the applied mitigation ratio (i.e., if an active mitigation project planted a 1.2:1 ratio, the cell would read ‘Active, Mitigation (1.2)’.

How To Use The Table

To search within the tool, click the blank search box and the drop down to select the field to search. Alternatively, use the category specific filters to the left of the search box. Select “Clear Filters” to clear your selection. Select “CSV” to download a copy of the table to open as a spreadsheet or “print” to print a copy of the table.

Please refer to the Eelgrass Synthesis Report for important information on how the data were gathered, how to interpret results, and qualifiers and exclusions.

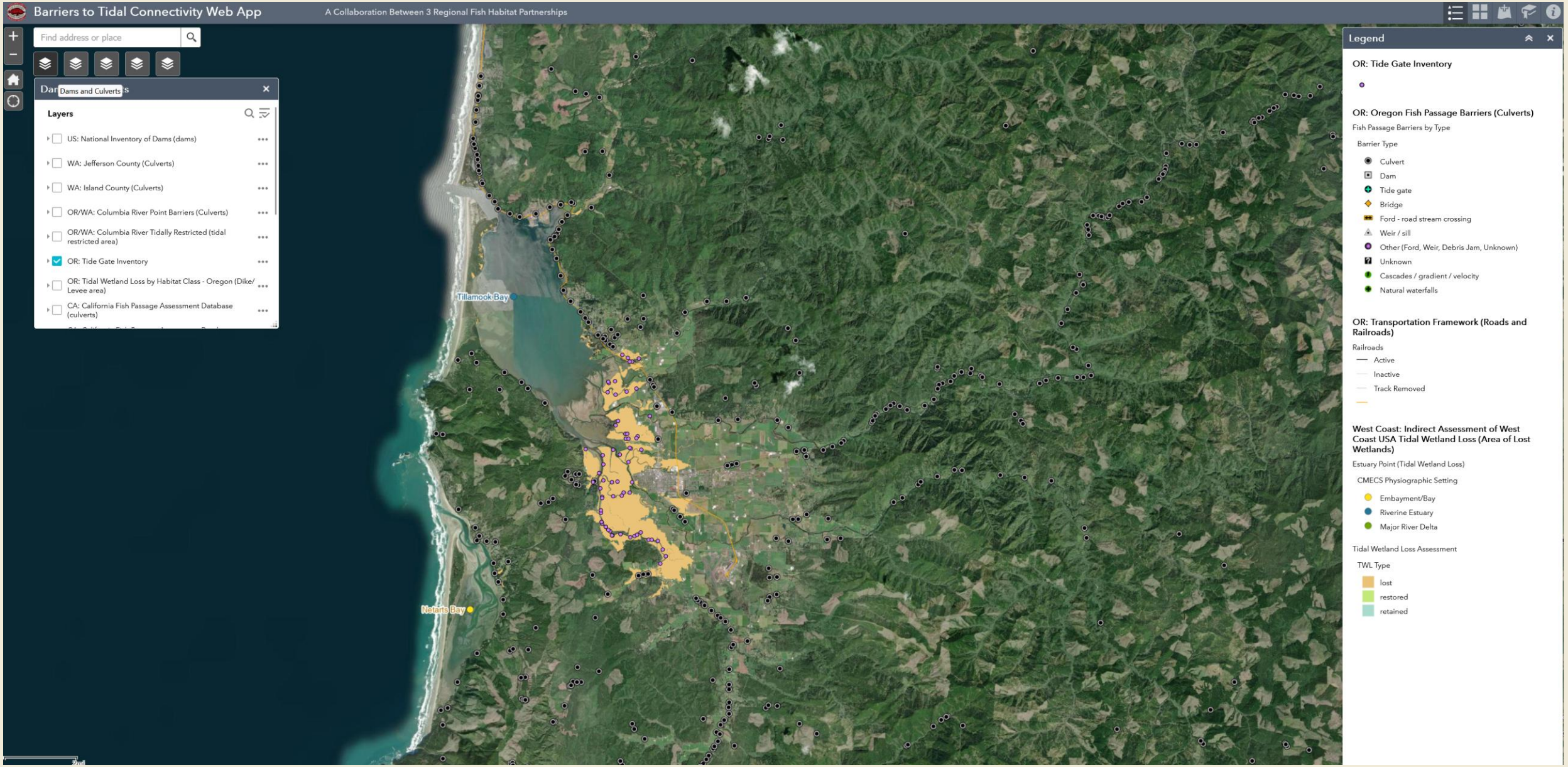
Back to project page

State: All | Year: All | Method Category & Type: All | Method: All | Number Months Monitored: All

Clear Filters | Search | CSV | Print

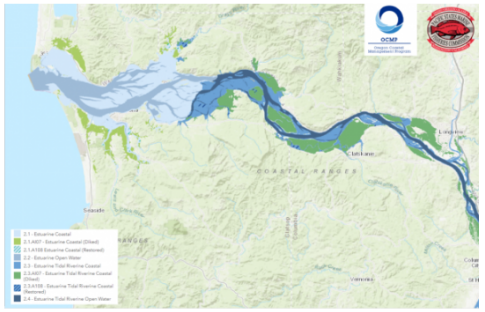
Project #	Site	State	Year Planted	Season Planted	Total monitor-ing time (months)	Number of plots	Method Category & Type	Specific Method	Reference Meadow (Y/N)?	Did project meet defined success?	Ecosystem services measured	Citation (see works cited)
1	Puget Sound	WA	2016	Spring, Summer	24	6	Active, Non-mitigation	Other (burlap)	N	NA	pH amelioration	23, 65
2	Puget Sound	WA	2017	Spring, Summer	12	15	Active, Non-mitigation	TERF, Bamboo/Rebar Stake	N	NA	None	23, 65
3	Willapa Bay	WA	2016	Spring, Summer	3	22	Active, Non-mitigation	Unanchored	N	NA	None	63
4	Siuslaw	OR	2007	Summer	108	3	Active, Mitigation (1.5)	Plugs and EPUs (bare roots tied to rebar, anchored by bamboo)	Y	Yes	None	Raw data
5	Siuslaw	OR	2008	Summer	96	3	Active, Mitigation (1.5)	Plugs and EPUs (bare roots tied to rebar, anchored by bamboo)	Y	Yes	None	Raw data
6	Coos Bay	OR	2020	Summer	4	24	Active,	Garden staple	Y	NA	None	Raw data

Barriers to Tidal Connectivity HUB



Partner Data

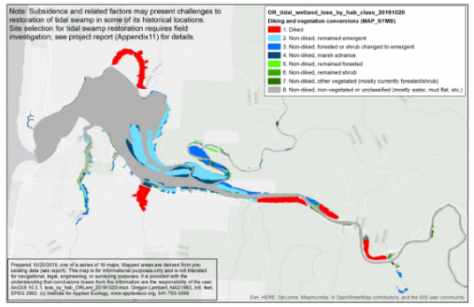
Partner Data Products



Columbia River Estuary Coastal Marine and Ecological Classification Standard (CMECS)

Oregon Coastal Management Program, 2021

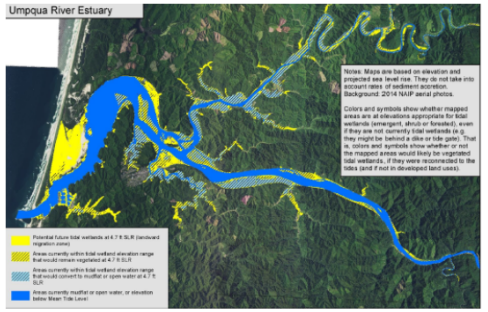
The goal of this effort was to produce estuary habitat information for the Columbia River Estuary, using the federally adopted Coastal and Marine Ecological Classification Standard (CMECS) version 4.0. This project is an extension of previous efforts by the Oregon Coastal Management Program (Lanier et al., 2014). While no new geospatial information was collected as part of this project, many recently collected or published data sets were utilized to derive CMECS habitat products.



Comparing Historical Losses of Tidal Wetlands on the Oregon Coast, USA

Institute for Applied Ecology, 2019

This study evaluated historical extent (prior to European settlement), current extent, and losses for each of the three major tidal wetland types (emergent, scrub-shrub, and forested) on the Oregon coast. The first study of its kind on the Oregon coast, it produced results vital to conservation and restoration planning, since these wetland types are often targets for restoration and each type supplies unique ecosystem services. The study included the coast's 15 largest estuaries; they contain 96.5% of the coast's historical tidal wetland area, so results are representative of the coast in general.



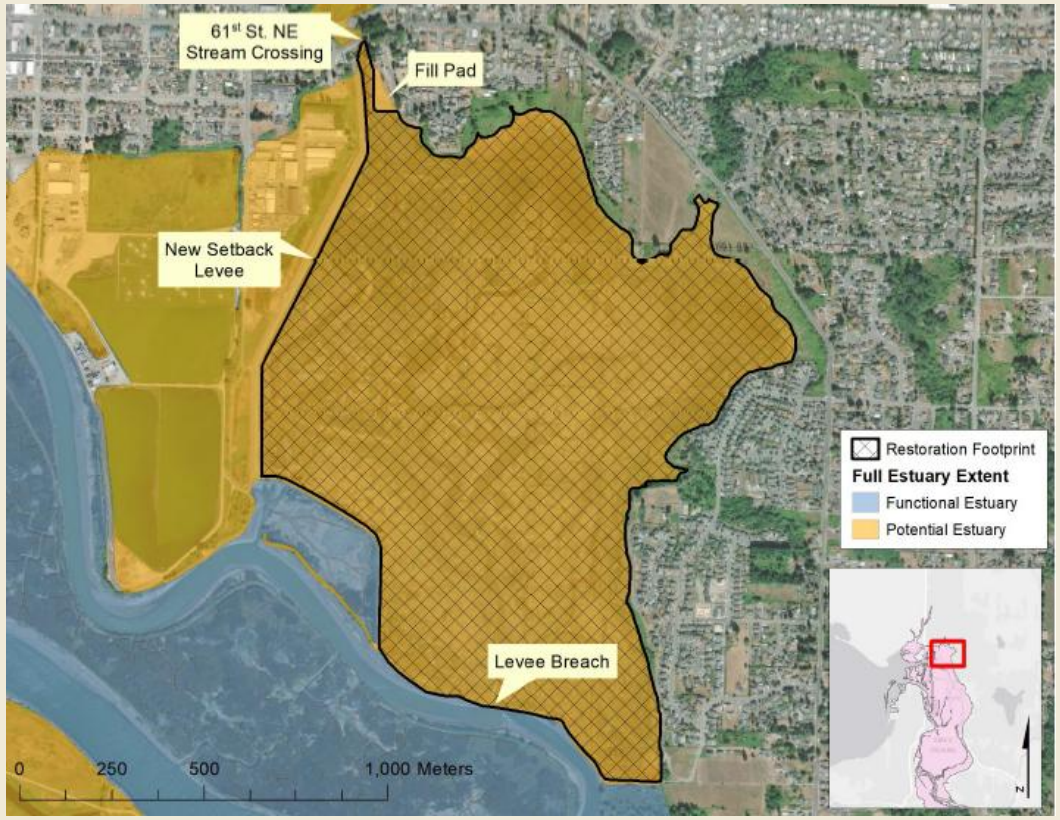
Modeling Sea Level Rise Impacts to Oregon's Tidal Wetlands

Institute for Applied Ecology, 2017

Tidal wetlands currently exist just at and above sea level, and healthy tidal wetlands are able to adapt to slow sea level changes. But if sea level rises too fast, tidal wetland plant communities may not be able to persist at their current locations. To survive, these plants may have to move to areas of higher elevation. These higher areas are called “landward migration zones” (LMZs); they are potential future tidal wetlands under sea level rise ("SLR"). This project modeled and prioritized these LMZs in Oregon.

Tracking Estuarine Wetland Restoration in Puget Sound

- The Estuary Vital Sign indicator tracks the amount of land returned to full, natural tidal flooding in Puget Sound's 16 large river deltas
- PMEP's Estuary Extent dataset was used to determine the full potential estuary (including disconnected areas) to determine upper limit of delta boundaries.
- Restoration projects completed within the "potential estuary" are summarized to assess total area of estuarine wetlands restored as part of the Estuaries Vital Sign targets.



Ramirez, M. 2019. Tracking Estuarine Wetland Restoration in Puget Sound; Reporting on the Puget Sound Estuaries Vital Sign Indicator. Report prepared for the Puget Sound Partnership at the University of Washington, Seattle, WA.

Nearshore Habitat Report and Data

- Identified need to understand large-scale processes and connectivity between species and habitats for nearshore and offshore along the U.S. West Coast
- To provide the best available science and inform opportunities to conserve, protect, restore, and enhance fish habitat in nearshore areas

Joseph J. Bizzarro[1], Jamey Selleck [2], Kate Sherman[3], Joan Drinkwin[2], Van C. Hare[3], David S. Fox[4]

1 UC Santa Cruz

2 Natural Resources Consultants

3 Pacific States Marine Fisheries Commission

4 Oregon Department of Fish and Wildlife

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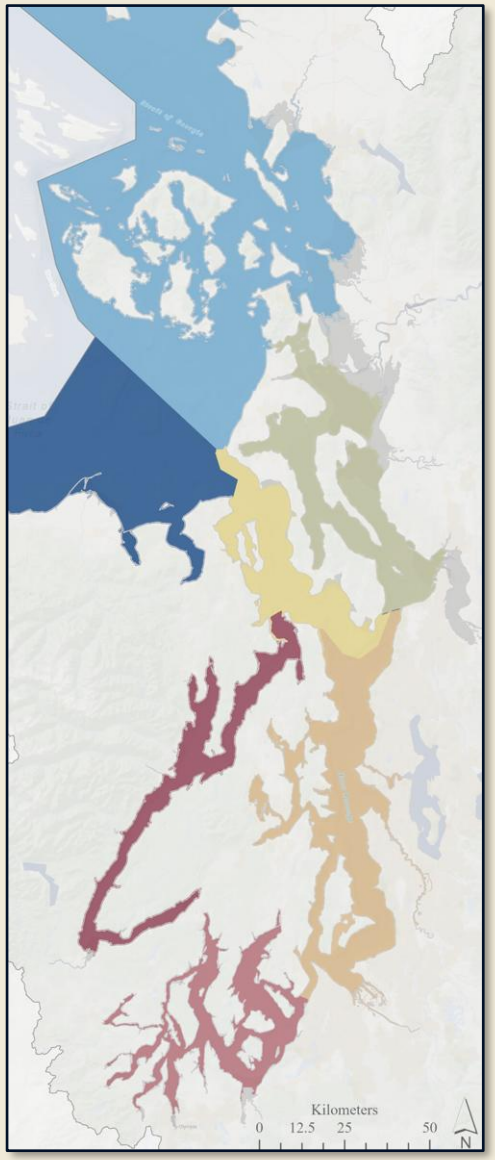
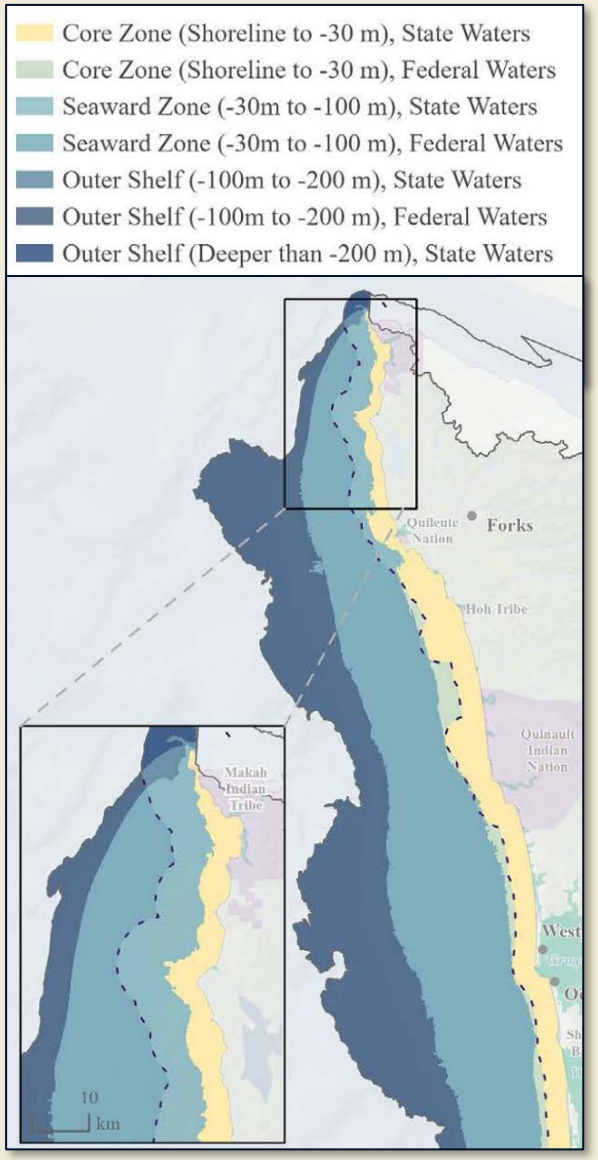
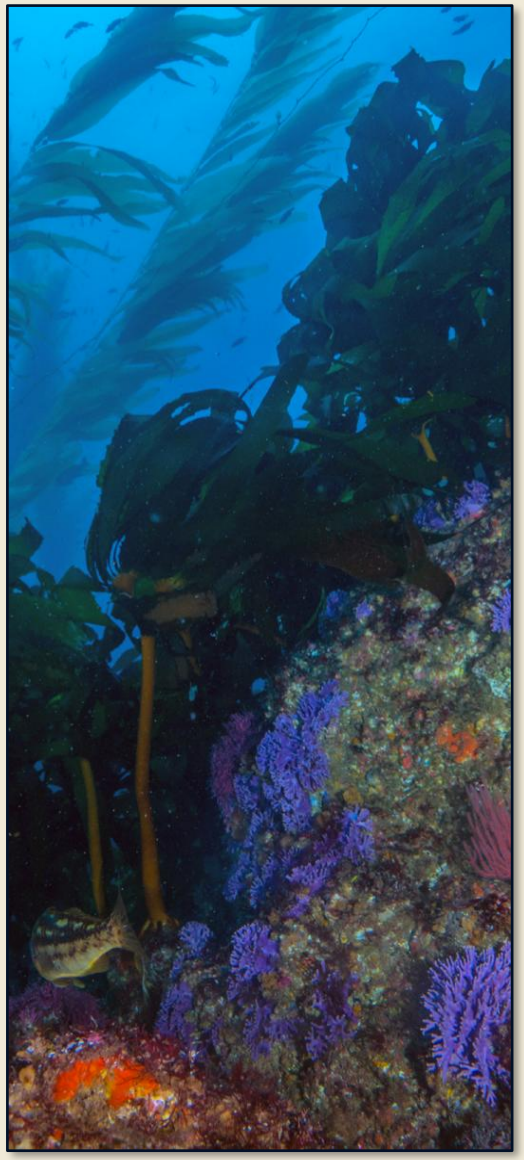
Ecoregions & Subregions



Depth
(CMECS aquatic setting subsystem)



Habitats
(CMECS substrate and biotic components)

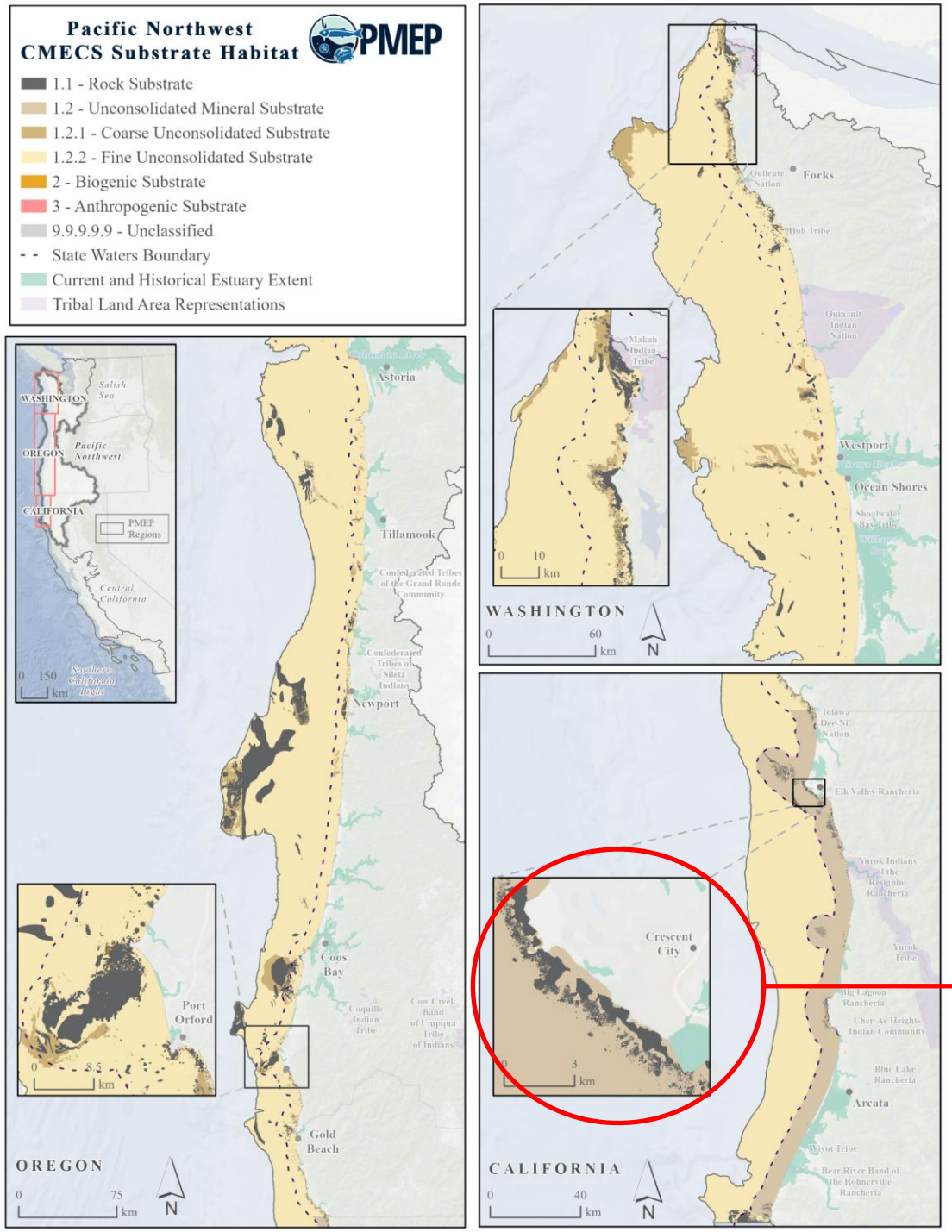


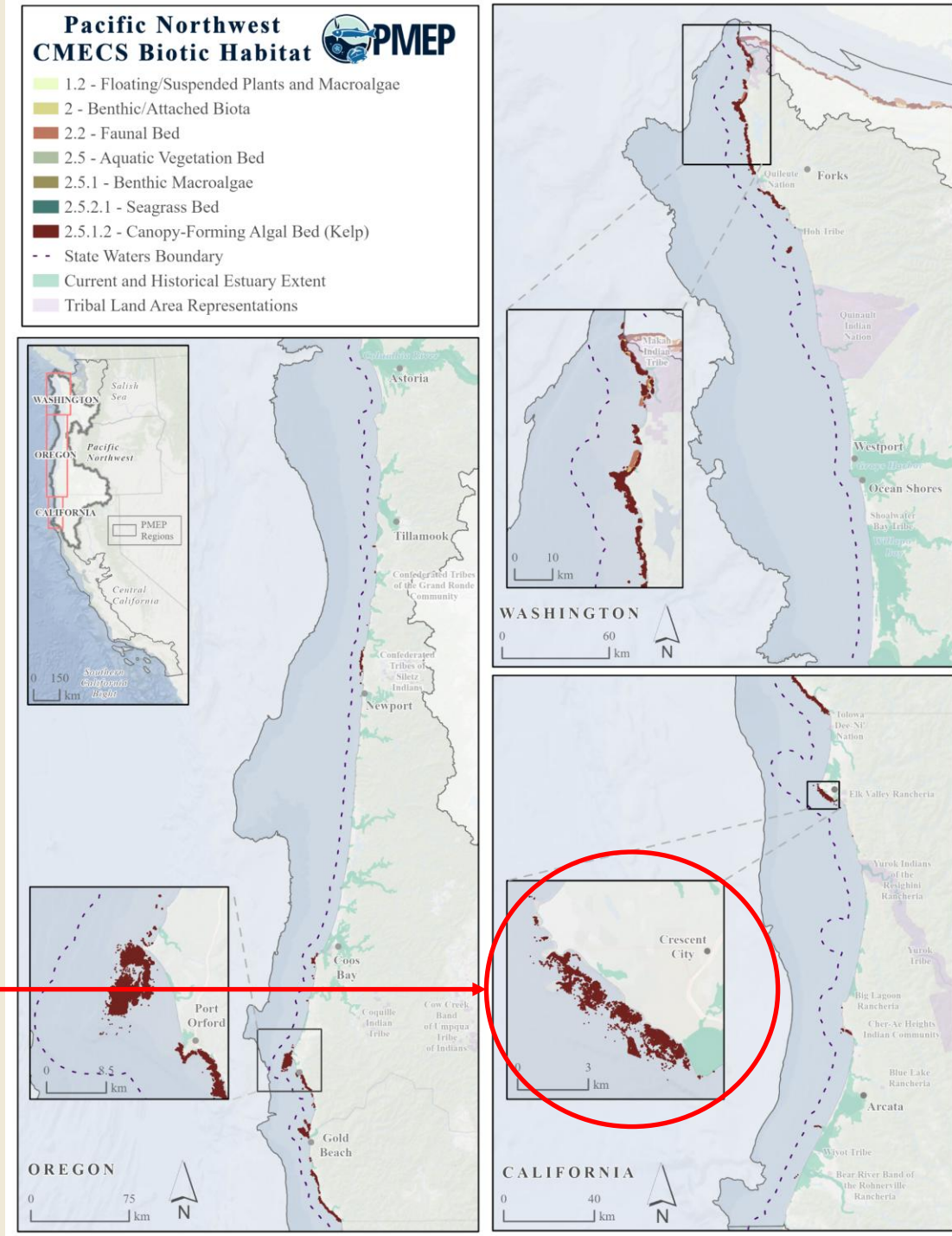
Fishes & Invertebrates

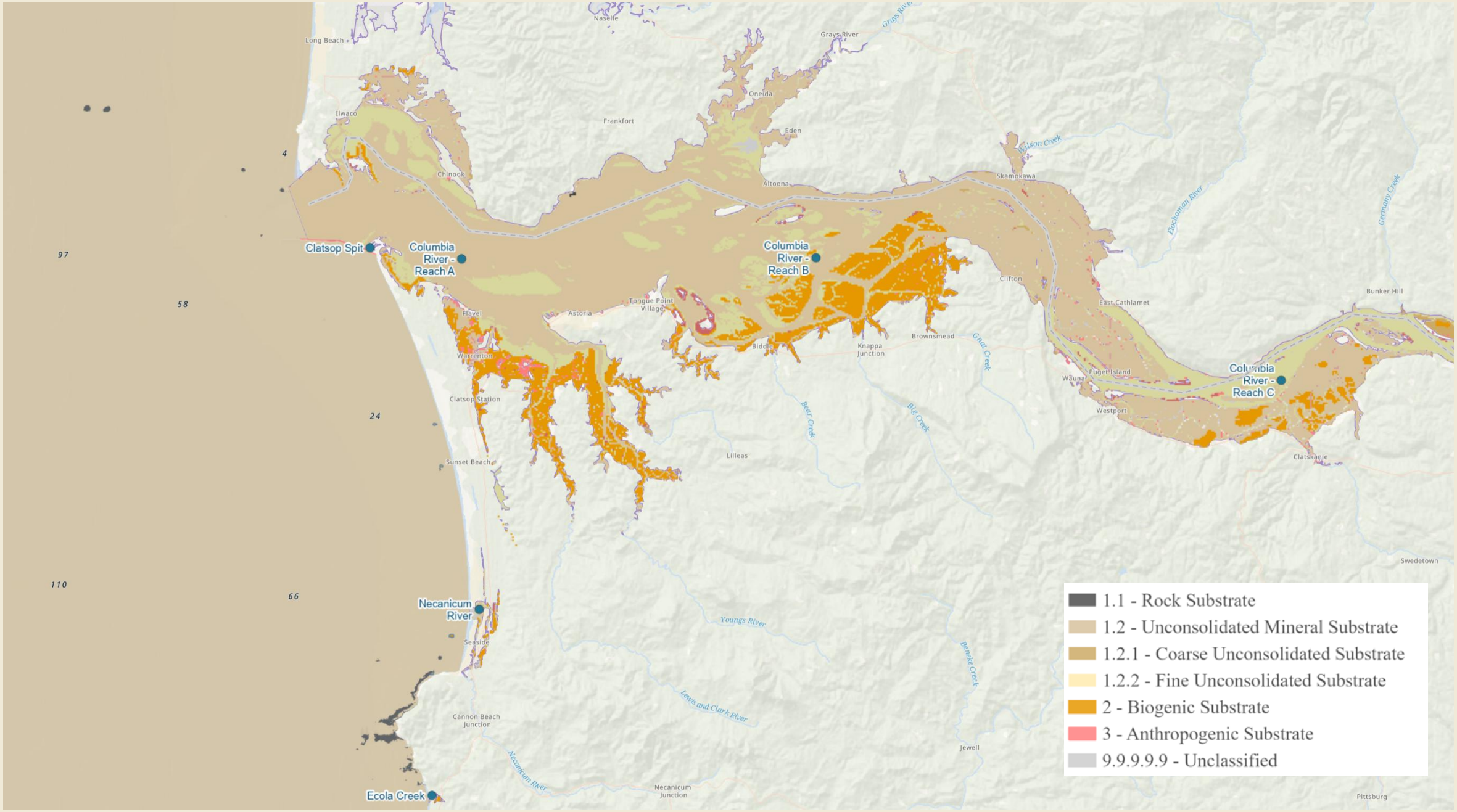
Photo by Adam Obaza
Fish art by Joe Tomelleri
Invertebrate art by Claudia Makeyev

Biotopes

Rock and Kelp In Core Zone (0 – 30m)






Clatsop Spit
Columbia River - Reach A
Columbia River - Reach B
Columbia River - Reach C
Necanicum River
Ecola Creek
1.1 - Rock Substrate
1.2 - Unconsolidated Mineral Substrate
1.2.1 - Coarse Unconsolidated Substrate
1.2.2 - Fine Unconsolidated Substrate
2 - Biogenic Substrate
3 - Anthropogenic Substrate
9.9.9.9.9 - Unclassified

Rocky Reef Spatial Data Update

- NOAA Fisheries and Pacific Fishery Management Council staff identified a need to update the spatial data for the Rocky Reef Habitat Areas of Particular Concern (HAPC)
- NOAA Fisheries is currently using the updated substrate data in planning for development off the West Coast, but the spatial data will also inform an upcoming review by PFMC of groundfish essential fish habitat beginning in 2025
- PMEP's CMECS substrate dataset was identified as the best available source for West Coast nearshore substrate data
- PSMFC GIS staff are engaged in the working group for the current update to the Rocky Reef spatial data

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Data Products

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Applications

PMEP West Coast Estuary Viewer

This map viewer highlights spatial data products developed by PMEP to characterize habitats and synthesize information in support of habitat conservation and restoration goal setting. Most of the data presented in this viewer are available for download below.

West Coast Estuaries Explorer

This application is useful for quickly comparing estuaries to each other along the coastlines of Washington, Oregon, and California. Using dynamic filters and an interactive map you can find estuaries that meet specific criteria; or estuaries that provide habitat for focal species of interest to you.

West Coast USA Current and Historical Estuary Extent

This layer represents the current

PMEP Estuary Points

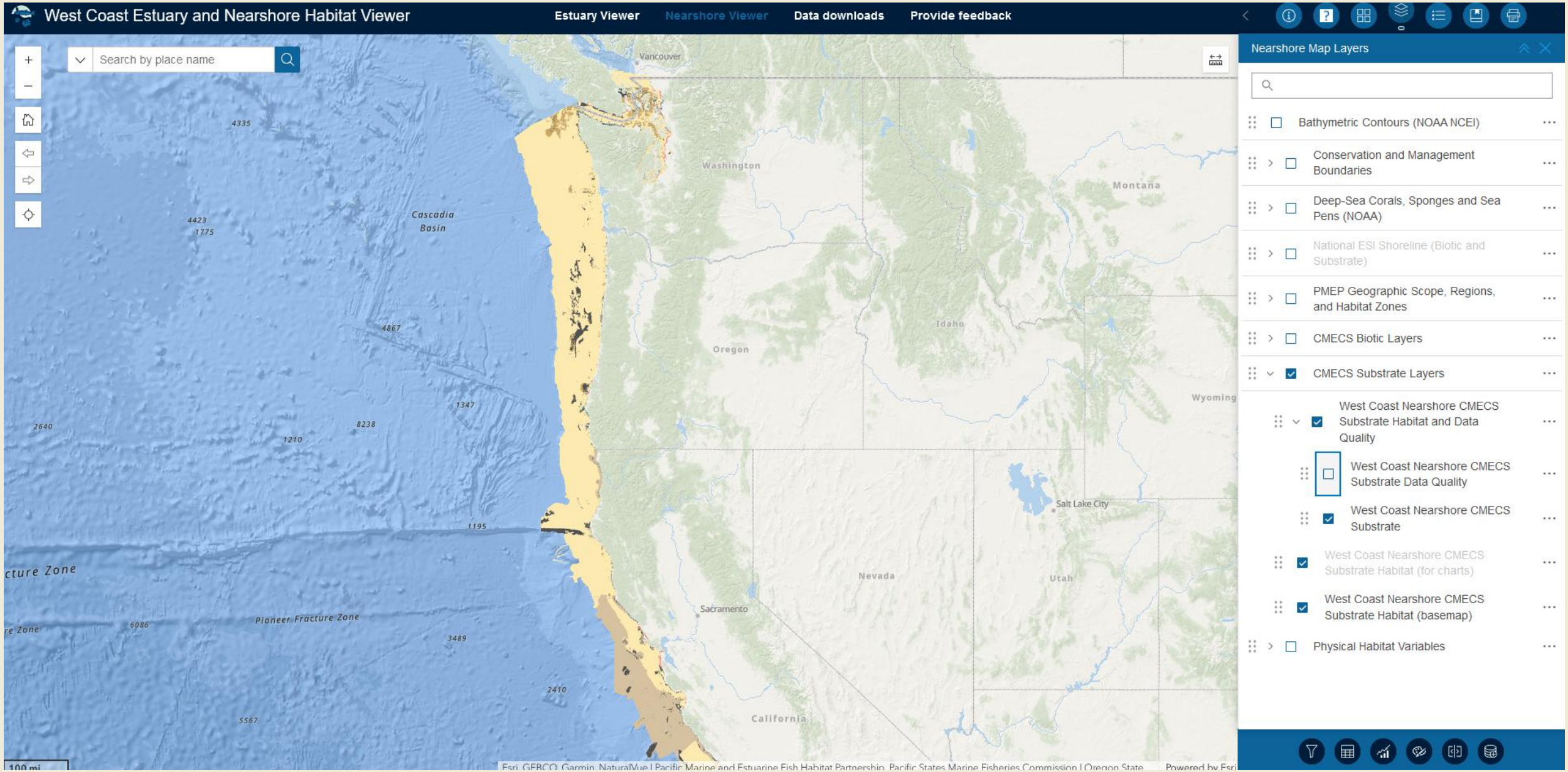
This layer represents estuaries, as points, in the Pacific Marine and

West Coast USA Estuarine Biotic Habitat

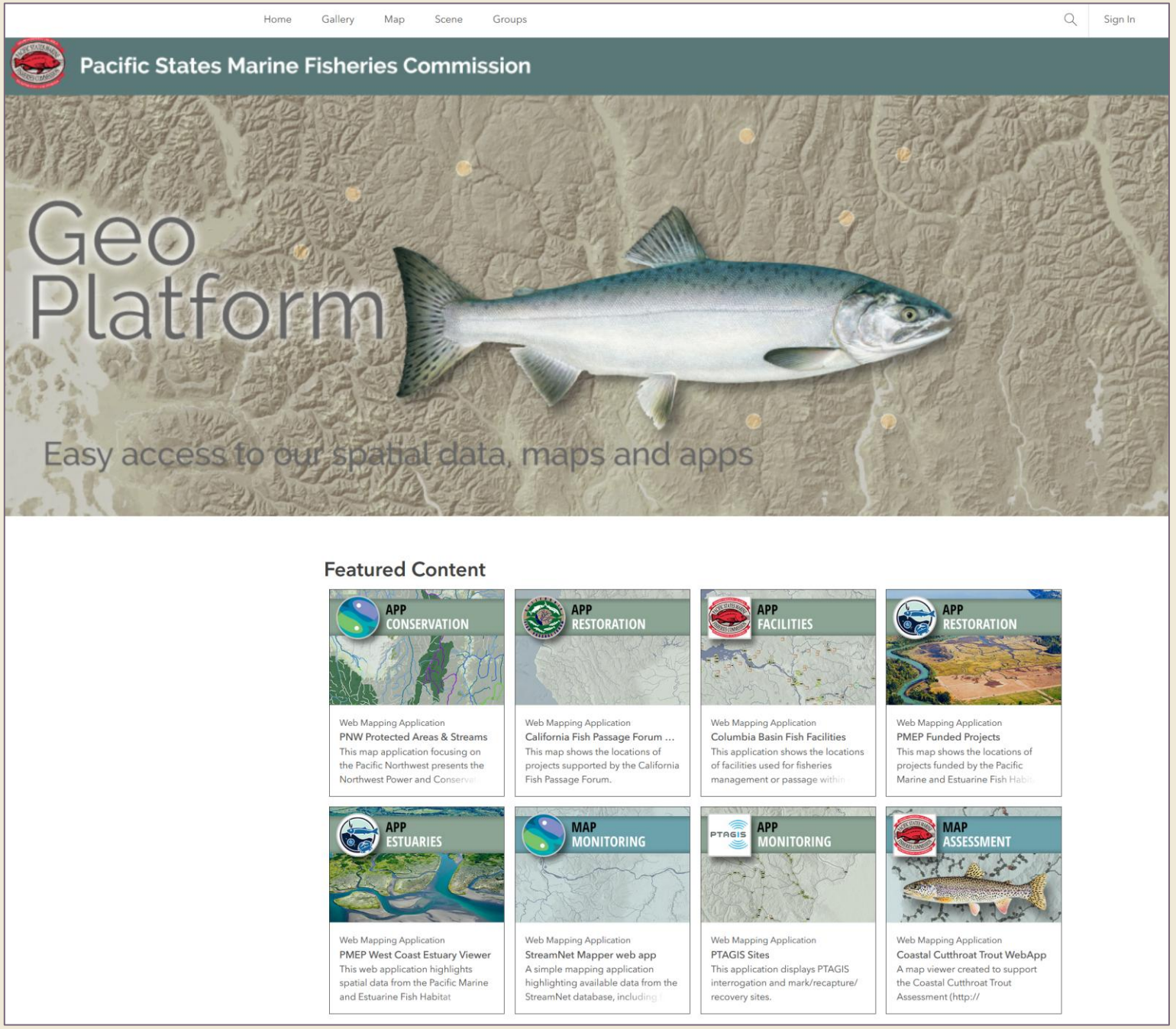
These data represent the Biotic

Indirect Assessment of West Coast USA Tidal Wetland Loss

https://www.pacificfishhabitat.org/data



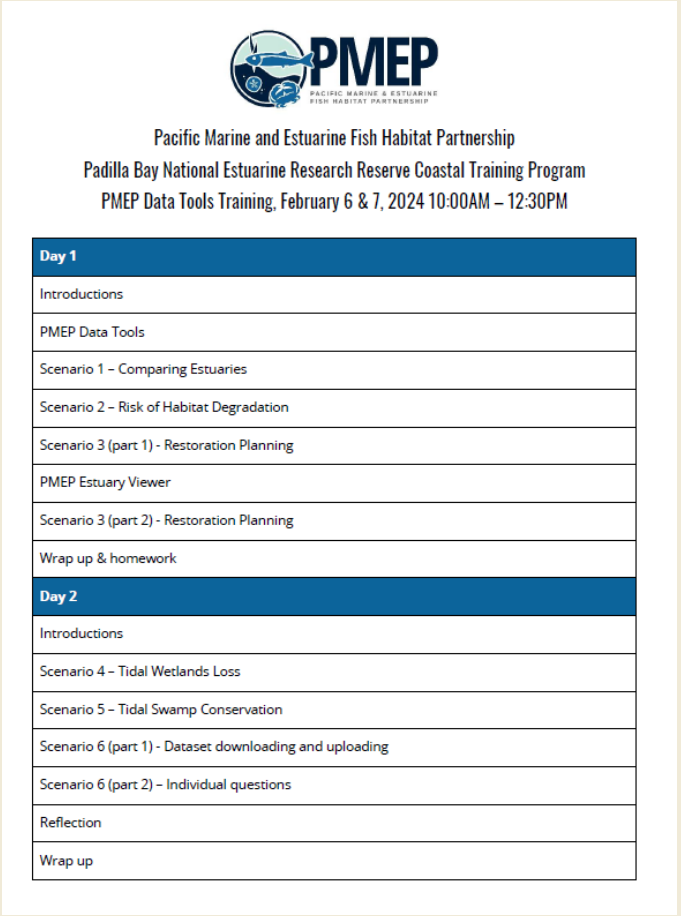
https://arcg.is/0D0Ori0



https://psmfc.maps.arcgis.com

Data Training and Education

- PMEP partners with the National Estuarine Research Reserve system to host virtual trainings to provide training on PMEP's data and applications
- Hosted trainings through Padilla Bay NERR and South Slough NERR, and scheduling a future training with Tijuana River NERR
- Recorded "how-to" videos to supplement hands-on trainings, available on PMEPs website



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Padilla Bay National Estuarine Research Reserve Coastal Training Program

PMEP Data Tools Training, February 6 & 7, 2024 10:00AM – 12:30PM

Day 1
Introductions
PMEP Data Tools
Scenario 1 – Comparing Estuaries
Scenario 2 – Risk of Habitat Degradation
Scenario 3 (part 1) - Restoration Planning
PMEP Estuary Viewer
Scenario 3 (part 2) - Restoration Planning
Wrap up & homework
Day 2
Introductions
Scenario 4 – Tidal Wetlands Loss
Scenario 5 – Tidal Swamp Conservation
Scenario 6 (part 1) - Dataset downloading and uploading
Scenario 6 (part 2) – Individual questions
Reflection
Wrap up

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Pacific States Marine Fisheries Commission

ALASKA · CALIFORNIA · HAWAII

IDAHO · OREGON · WASHINGTON

Thank you!

Kate Sherman, ksherman@psmfc.org