



Washington Coastal Zone Management Program

Section 309 Assessment & Strategy 2026-2030

Shorelands and Environmental Assistance Program

Washington State Department of Ecology
Olympia, Washington

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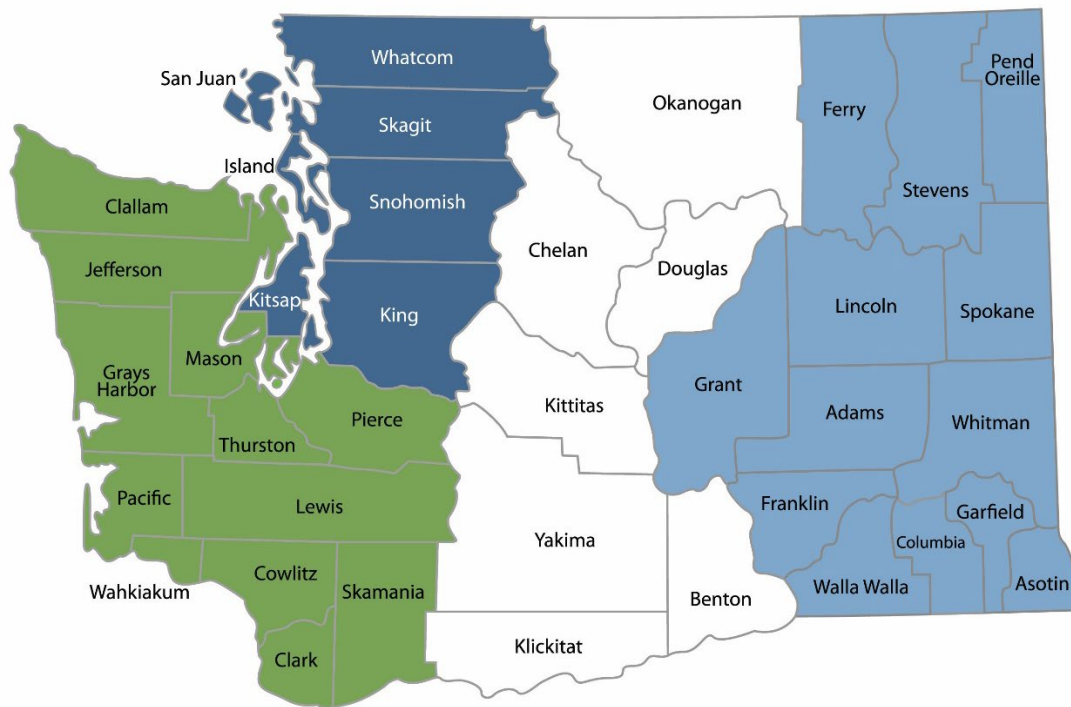
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Northwest Region
206-594-0000

Central Region
509-575-2490

Eastern Region
509-329-3400

Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
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DEPARTMENT OF
ECOLOGY
State of Washington

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Glossary

Common Terms

ACRE – Applied Coastal Research and Engineering
CAO – Washington Critical Areas Ordinance
CHRN – Coastal Hazards Resilience Network
CMP – Coastal Management Program
COHORT – Coastal Hazards Organizational Resilience Team
CoSMoS – Coastal Storms Modeling System
CZMA – Coastal Zone Management Act
GLD – Geographic Location Description
MSP – Marine Spatial Plan
NEPA – National Environmental Policy Act
NWI – National Wetlands Inventory
NWP – Nationwide permit
PEIS – Programmatic Environmental Impact Statement
PSM – Project of Special Merit
RAD – Resilience Action Demonstration Project
SAMP – Special Area Management Plan
SEHMP – State Enhanced Hazard Mitigation Plan
SMA – Shoreline Management Act
SMP – Shoreline Master Program
SWAP – State Waters Alteration Permit
WATOR – Washington Tool for Online Ratings
WQC – Water quality certification

Agencies and Organizations

BOEM – Bureau of Ocean Energy Management
DNR – Washington State Department of Natural Resources
Ecology – Washington State Department of Ecology
EFSEC – Washington State Energy Facility Site Evaluation Council
EMD – Washington State Emergency Management Division
EPA – Environmental Protection Agency
FERC – Federal Energy Regulatory Commission
NOAA OCM – National Oceanic and Atmospheric Administration Office for Coastal Management
USFWS – United States Fish and Wildlife Service
USGS – United States Geological Survey
Washington CZMP – Washington Coastal Zone Management Program
WCMAC – Washington Coastal Marine Advisory Council
WDFW – Washington Department of Fish and Wildlife
WSU – Washington State University
FEMA – Federal Emergency Management Agency

Introduction

Washington is one of thirty-four states and territories that participate in the national Coastal Zone Management Program, established under the Coastal Zone Management Act of 1972 (CZMA). This voluntary state-federal partnership encourages states to adopt their own management programs in order to meet the federal goals of protection, restoration, and appropriate development of the nation's coastal communities and resources.

Washington became the first state to establish a federally-approved state Coastal Zone Management Program in 1976. [Washington's Coastal Zone Management Program \(Washington CZMP\)](#)² is based primarily upon our [Shoreline Management Act \(SMA\)](#)³ of 1971, as well as other state land use and resource management laws. The Washington CZMP applies to the state's coastal zone, which is comprised of the state's fifteen coastal counties.

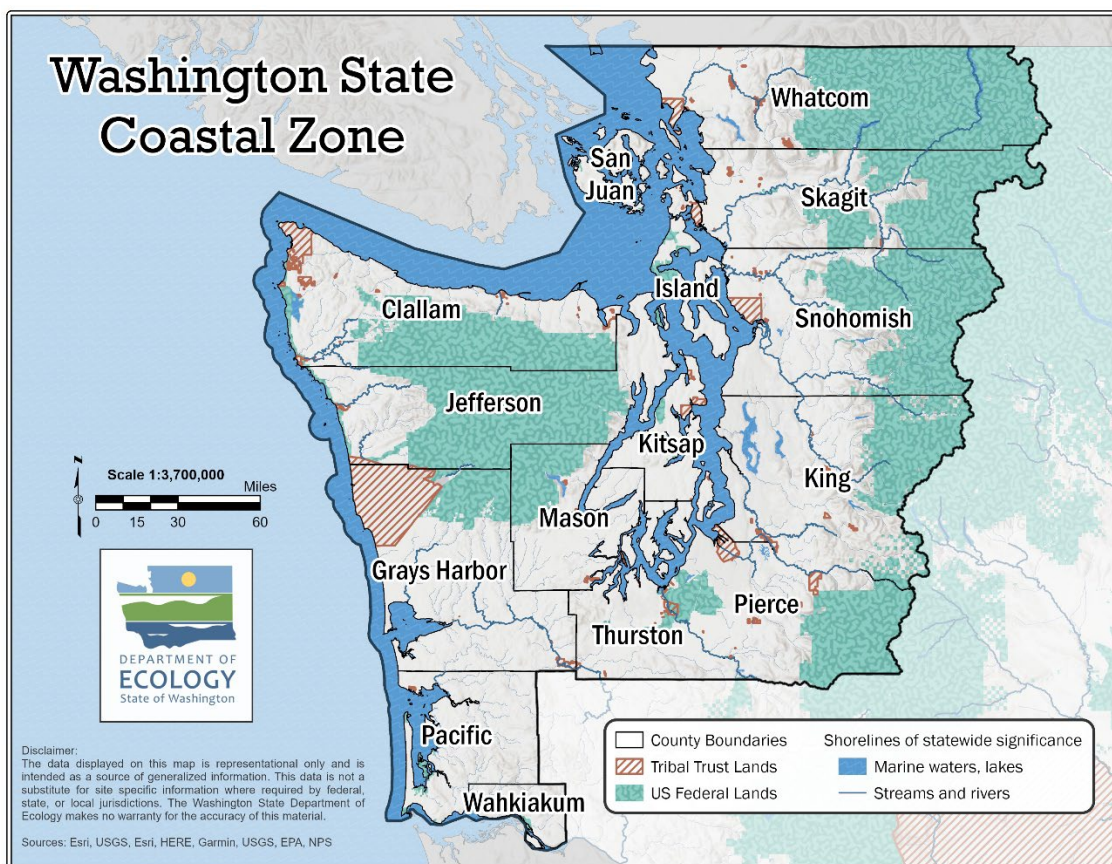


Figure 1. Washington's coastal zone includes all lands and waters within these coastal counties and extends three nautical miles seaward. Tribal lands and lands the federal government owns, leases, or holds in trust are excluded from the coastal zone.

² <https://ecology.wa.gov/water-shorelines/shoreline-coastal-management/coastal-zone-management>

³ <https://ecology.wa.gov/water-shorelines/shoreline-coastal-management/shoreline-coastal-planning/shoreline-management-act-sma>

Section 309 Enhancement

The National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management (OCM) administers the CZMA. The Coastal Zone Management Section 309 Enhancement Grants Program was established by Congress in its 1990 reauthorization of the CZMA and expanded in its 1995 reauthorization. Congress set aside the Section 309 funding to encourage states and territories to make improvements to their federally approved coastal zone management programs in one or more of nine possible improvement areas:

1. Siting of public and private **aquaculture** facilities in the coastal zone, which will enable states to formulate, administer, and implement strategic plans for marine aquaculture.
2. Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in **coastal high-hazard areas**, managing development in other hazard areas, and anticipating and managing the effects of potential sea level rise.
3. Development and adoption of procedures to assess, consider, and control **cumulative and secondary impacts of coastal growth and development**, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources.
4. Reducing **marine debris** entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris.
5. Planning for the use of **ocean resources**.
6. Attain increased opportunities for **public access**, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological, or cultural value
7. Adoption of procedures and enforceable policies to help facilitate the **siting of energy facilities and government facilities** and energy-related activities and government activities which may be of greater than local significance.
8. Preparing and implementing **special area management plans** for important coastal areas.
9. Protection, restoration, or enhancement of the existing **coastal wetlands** base, or creation of new coastal wetlands.

Every five years, states and territories are encouraged to conduct self-assessments of their coastal management programs to determine problems and enhancement opportunities within each of the nine enhancement areas, and to assess the effectiveness of existing management efforts. Then state and territories, including Washington, work with NOAA's Office for Coastal Management to develop multi-year improvement strategies that focus on one or more of the nine enhancement area goals.

Program enhancement priorities do not directly determine the overall goals of the Washington CZMP, but rather supplement them. Federal law and regulation strictly define activities that are

eligible for Section 309 funding.⁴ In addition to using the funds to develop the assessment and strategy, or to revise the assessment and strategy as needed during the five-year cycle, Section 309 funds can be used to carry out strategies, develop and submit program changes, and implement those program changes.

A program change is a change to a state's or territory's federally approved coastal management program. As defined by NOAA OCM, program changes include the following:

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

Section 309 funds can also be used to implement Section 309 program changes.

Implementation activities include administrative actions to carry out and enforce program change policies, authorities, and other management techniques, including the development, collection, and analysis of measurable management objectives and performance measures. All implementation activities are described in the strategy and must meet the following general requirements:

- Advance the objectives of a high priority 309 enhancement area for the CZMP
- Relate to at least one 309 program change identified in an approved strategy
- Demonstrate cost effectiveness and technical soundness

As mentioned above, Section 309 priorities do not directly determine the overall goals of the Washington CZMP, but rather supplement them. Federal rules and policies for implementation of the 309 Program require identification of one or more improvement areas in which a state will be eligible to receive Section 309 funding. **Therefore, the strategies contained in this document should not be taken to be the program's sole priorities, but rather the identified priorities that fit within the constraints of the Section 309 program.**

⁴ Coastal Zone Management Act 1972: <http://coast.noaa.gov/czm/act/sections/?redirect=301ocm>

Allocation of Section 309 funding

There are two types of Section 309 funding: weighted formula and competitive projects of special merit.

Weighted formula (or base) funding is intended to provide a predictable level of funding over the multi-year strategy period to achieve core milestones. NOAA OCM allocates weighted formula funding to CZMPs according to the size of their coastal population and length of shoreline. During the 2021-2025 Program Enhancement cycle, Washington received a relatively stable allocation of between \$478,000 and \$480,000 annually. Weighted formula funding is predictable and best used for supporting the basic functions necessary to achieve the core strategy milestones. Therefore, the Washington CZMP uses this source to fund portions of approximately 10-15 existing staff annually, depending on the activities that will be completed under the 309 strategies.

Funding for competitive projects of special merit is intended to offer coastal management programs the opportunity to develop innovative projects that will further the program's approved enhancement area strategies within identified areas of national importance. Projects of special merit typically involve a scope of work that takes place over an eighteen-month timeframe, with budgets between \$100,000 and \$250,000. During the 2021-2025 Program Enhancement cycle, the Washington CZMP completed work on a project of special merit that commenced in 2019 and received one new project of special merit award. These projects are discussed further under "Summary of Recent Section 309 Achievements."

2026-2030 Assessment and Strategy Process

To better understand where program improvements are needed in 2026-2030 (July 1, 2026 – June 30, 2031), the Washington CZMP conducted an assessment for each of the nine enhancement areas. The assessment was broken down into two stages:

Phase I (high-level) was intended to measure the extent to which problems and opportunities for program enhancement exist within each of the enhancement area objective and determine whether the enhancement area is a high priority enhancement objective for the Washington CZMP that warrants a more in-depth assessment.

Phase II (in-depth) determined the effectiveness of existing management efforts to address identified problems, and identified high priority needs for program enhancement. Phase II assessments are only required for areas ranked “high” in Phase I.

NOAA OCM provides a variety of tools to help coastal management programs more easily respond to the guidance questions required by NOAA. While this national data offered informative baseline information, it was often high level and did not always reflect the most current or useful information to accurately characterize existing conditions and trends in Washington State. Where available, the Washington CZMP used more regionally appropriate data and information. The Washington CZMP also worked with other implementing programs, agencies, and local partners to help acquire relevant information.

After completing the Phase II assessment, the Washington CZMP staff identified, in consultation with NOAA OCM, which enhancement areas it will develop a strategy for. Strategies must be designed to lead to a program change and must address high priority needs for program improvement within one or more enhancement areas that were identified through the Washington CZMP’s self-assessment. Strategies establish clear goals and a pathway and method to reach those goals during the next five years. It is important to note that there is no requirement to develop a strategy for every enhancement area that was designated as a high priority. Programs are encouraged to focus their strategies on the greatest opportunity for improvement and likely resources available to achieve the strategy goals. Furthermore, programs should only develop strategies for activities the state intends to fund and work on given their anticipated level of Section 309 funding.

OCM can choose to designate one or more enhancement areas as “areas of national importance.” Designating areas of national importance helps to further focus Section 309 funding and demonstrate a national impact for the National Coastal Zone Management Program by aligning resources to address one or more critical coastal management issues across the country. Coastal management programs are strongly encouraged to develop one or more strategies to improve the effectiveness of their program in designated areas of national importance. For the 2026-2030 assessment and strategy cycle, OCM has designated both “coastal hazards” and “wetlands” as enhancement areas of national importance. This is a change from the previous two cycles, where only “coastal hazards” was identified. “Wetlands” was added for this cycle to recognize the important role wetlands play in the overall resilience of the nation’s coast in adapting to a changing conditions.

Engagement with Tribes, Stakeholders, and the Public

The Department of Ecology, including the Washington CZMP, works with Tribes in a government-to-government relationship to protect and manage shared natural resources and to cooperate across jurisdictions. The unique legal status of Tribes and the presence of treaty-reserved rights and cultural interests throughout the state create a special relationship between Tribes and agencies responsible for managing and protecting the state's natural resources.

Washington's CZMP prioritizes strong partnerships and close collaboration and consultation with Tribes, local governments, state and federal agencies, and regional organizations. The CZMP also encourages the participation and engagement of coastal community members, stakeholders, and other members of the public in addressing and improving the state's coastal management goals. Many staff from other Ecology programs as well as representatives of other state agencies and organizations participated in the development of the draft assessment and strategy.

The Washington CZMP provides support for a number of groups and forums that focus on Tribal and community engagement, partnership, and consensus building. The CZMP helps exchange information related to managing coastal and ocean lands and resources. These groups provide opportunities for management partners, Tribes, stakeholders, and members of the public to participate in and provide input on our work. These strong networks allowed staff to reach out to a number of internal and external representatives from various agencies to gather data and information to develop the assessments. The level of involvement and input varied based on the enhancement area and included individual and group meetings, review and feedback on draft documents, and coordinated efforts to align strategies with key partnering agencies.

The Washington CZMP reached out to all coastal Tribes in December 2024 regarding the development of the 2026-2030 Assessment and Strategy to provide information on the CZMP's work, the Assessment and Strategy process, and to share a series of opportunities for Tribal representatives to learn more about the process and provide input. A presentation and discussion with interested Tribal staff was held on January 8, 2025, with additional engagement and input opportunities held after publication of the draft assessment and strategy.

The Washington CZMP published a draft Section 309 Assessment and Strategy on March 17, 2025, for a 30-day open comment period, as required by NOAA. The draft document was posted on the Washington CZMP webpage and Ecology's public input & events webpage and was shared directly with networks and listservs that the Washington CZMP administers or co-manages (e.g., [Shoreline & Coastal Planners Group](https://www.coastalplanners.org/)⁵, [Coastal Hazards Resilience Network](https://wacoastalnetwork.com/)⁶, [Washington Ocean Email List](https://public.govdelivery.com/accounts/WAECY/subscriber/new?topic_id=WAECY_145)⁷, etc.). All coastal Tribes were also directly notified at this time

⁵ <https://www.coastalplanners.org/>

⁶ <https://wacoastalnetwork.com/>

⁷ https://public.govdelivery.com/accounts/WAECY/subscriber/new?topic_id=WAECY_145

and had an additional two weeks to review and comment after the public comment period closed.

The CZMP received no public comments on the draft Section 309 Assessment and Strategy. On March 19, the CZMP presented the draft to the Washington Coastal Marine Advisory Council, an advisory body to the Governor on marine and coastal policy issues, and on March 21, to the Olympic Coast National Marine Sanctuary. The CZMP also received a formal comment letter from one Tribe. While the letter included several requests outside the scope of the CZM 309 Assessment & Strategy, such as concerns related to oil spills and water pollution, the CZMP worked internally over the following months to coordinate with Ecology's Spill Prevention, Preparedness and Response Program and Water Quality Program. Information from those discussions was compiled into a response letter to the Tribe to ensure their comments were fully considered by Ecology. The CZMP also incorporated relevant feedback where possible into the final 309 document. Notably, new language was added to the Sea Level Rise Guidance Strategy in Phase III to emphasize providing technical assistance on alternatives to hard armoring. The CZMP is committed to continued collaboration with Tribes, state agencies, and local stakeholders to support local jurisdictions as they address shoreline armoring and consider best practices and nature-based approaches to manage flooding and erosion.

Summary of Recent Section 309 Achievements

During the 2021 - 2025 Section 309 Program Enhancement cycle, the Washington CZMP worked on three enhancement areas:

1. Coastal hazards
2. Cumulative and Secondary Impacts of Growth
3. Ocean Resources

Coastal hazards

The Washington CZMP's coastal hazards strategy for the 2021-2025 cycle focused on updating key state plans and guidance that are used to address coastal hazards in Washington communities. This involved partnering with Washington Emergency Management Division (EMD) to update the State Enhanced Hazard Mitigation Plan (SEHMP), providing leadership on the state's coastal resilience initiatives, and supporting an update to Washington's comprehensive flood hazard management guidance to better address coastal flood risk.

Accomplishments include:

- In 2021, the WA CZMP completed the federal fiscal year 2019 Project of Special Merit, the [Washington Coast Resilience Action Demonstration \(RAD\) Project](https://wacoastalnetwork.com/resilience-action-demonstration-project/).⁸ The final report was published in 2022. The RAD was a two-year partnership between the Washington CZMP and Washington Sea Grant that provided multi-organizational hazards assistance to communities on the Pacific Coast of Washington and laid the groundwork for the Coastal Hazards Organizational Resilience Team (COHORT), described further below.
- The WA CZMP provided input to Ecology's Floodplain Management Program regarding coastal flood risk on its comprehensive flood hazard management guidance, which was published in July 2021. Several sections of the guidance are dedicated toward coastal flooding as well as the impacts of sea level rise and increasing storm severity. The guidance will continue to be updated regularly with new information.
- The WA CZMP supported Washington EMD in developing and finalizing the [2023 update to the SEHMP](https://mil.wa.gov/enhanced-hazard-mitigation-plan)⁹, which was approved by FEMA in September 2023. The WA CZMP served as the lead for the coastal resilience section which involved updating priorities, roles and responsibilities, and strategic investments to support coastal hazards resilience. The WA CZMP will continue to collaborate with EMD to support future updates to the SEHMP including integration of new resilience information, data, and programs.
- The WA CZMP worked with other Ecology programs and many local, Tribal, and state partners that work in coastal hazards fields on a budget request that was passed by the Washington State Legislature in the 2023-2025 biennium. The Coastal Hazards budget package combined several coastal resilience recommendations from the Washington Coastal Marine Advisory Council (WCMAC) related to coastal resilience assistance and

⁸ <https://wacoastalnetwork.com/resilience-action-demonstration-project/>

⁹ <https://mil.wa.gov/enhanced-hazard-mitigation-plan>

coastal monitoring work areas led by the Washington CZMP. This included expanding Ecology's Coastal Monitoring & Analysis Program into the Applied Coastal Research and Engineering (ACRE) section and establishing an inter-agency [Coastal Hazards Organizational Resilience Team \(COHORT\)](#)¹⁰ to provide hazards resilience project assistance to coastal communities and Tribes. The budget package also included a new resilience small grants program that would provide capacity building funds to assist communities with the planning to hazards project pipeline, although this aspect of the package has not been funded yet.

- The COHORT is staffed by Ecology, Washington Sea Grant, Washington Emergency Management Division, and the Washington State University Extension. Since being established in 2023 and launched shortly thereafter, the COHORT has carried out over 275 technical assistance meetings and outreach events across the Pacific Coast and Puget Sound and helped Washington communities and Tribes secure over \$75 million in funding for coastal resilience.

Cumulative and secondary impacts of growth

The Washington CZMP's cumulative and secondary impacts strategy for the 2021-2025 cycle focused on completing important updates to local [Shoreline Master Programs \(SMPs\)](#)¹¹ and guidance, which included providing resources to local governments to address key SMP priorities and needs. Local governments must review and, if necessary, revise their SMP at least once every ten years (recently changed from eight during the 2023 legislative session) on a staggered cycle to incorporate relevant statutory amendments. Accomplishments include:

- The Washington CZMP reviewed and approved over 55 SMP periodic review amendments submitted by coastal zone jurisdictions.
- For communities on the Pacific Coast, the SMP periodic review process involved updating local SMPs to align with the state's Marine Spatial Plan (MSP), including its management framework and enforceable policies. The CZMP worked closely with coastal communities to provide technical assistance, proactive support, and feedback to ensure MSP alignment, using guidance and a checklist developed by the CZMP.
- In 2021, Ecology launched a new Shoreline Planning Competitive Grant Pilot Program. The program was available to local governments with SMPs across Washington State and funds projects in three categories: sea level rise planning, SMP monitoring and adaptive management, and local shoreline planning priorities. Ecology received 27 funding proposals for a total request of \$1,512,699. Using both state funds as well as federal CZM pass-through funding, Ecology was able to support 24 of the projects for a total of \$1,213,992 with award amounts ranging from \$10,000 to \$150,000.

¹⁰ <https://wacoastalnetwork.com/cohort/>

¹¹ <https://ecology.wa.gov/water-shorelines/shoreline-coastal-management/shoreline-coastal-planning/shoreline-master-programs>

- In fall 2023, Ecology opened the application period for the second, expanded round of the [Shoreline Planning Competitive Grant Program](https://ecology.wa.gov/about-us/payments-contracts-grants/grants-loans/find-a-grant-or-loan/shoreline-planning-competitive-grants)¹² and announced approximately \$3 million in total funding for 23 successful applicants, with awards ranging up to \$250,000. The expanded grant program is helping local governments and Ecology address key local needs and improve coastal management, particularly through sea level rise adaptation planning efforts and assessing and improving implementation of SMP requirements.

Ocean resources

The Washington CZMP's ocean resources strategy for the 2021-2025 cycle focused on updating key state plans, management tools, and guidance that are used to address ocean resources.

This has involved implementation and refinement of [Washington's Marine Spatial Plan \(MSP\)](https://www.msp.wa.gov/)¹³ and finalizing a Geographic Location Description (GLD) for Washington's CZMP.

Accomplishments include:

- Following the completion of the Washington CZMP's federal fiscal year 2018 Project of Special Merit, Ensuring Effective Implementation of the Marine Spatial Plan for Washington's Pacific Coast, the CZMP conducted a 2021 effort to identify ocean resources data gaps and prioritize needs for improved implementation of the MSP.
- The WA CZMP finalized guidance for MSP implementation and incorporation into Shoreline Master Programs.
- The WA CZMP worked to update the 2021 data prioritization assessment and identify additional data gaps, based on extensive interviews and engagement with area experts and Tribes. This work will be used to put together a publication so that it can be leveraged more broadly to support research and data collection. Staff coordinated with organizations, regional partnerships, and Tribal, state, federal, and academic partners to help facilitate the acquisition of data and information that will support MSP implementation.
- WA CZMP staff collected and organized scientific data and research on new ocean uses, to inform potential coastal effects analyses and prepare for the submission of a marine renewable energy GLD, which must be approved by NOAA. NOAA OCM's regulations provide CZMPs with the GLD tool to use when certain, specified activities taking place somewhere outside of a state's coastal zone boundary would have reasonably foreseeable effects on state resources or uses of the coastal zone.

¹² <https://ecology.wa.gov/about-us/payments-contracts-grants/grants-loans/find-a-grant-or-loan/shoreline-planning-competitive-grants>

¹³ <https://www.msp.wa.gov/>

Recent Program Changes

Federal Consistency Procedures Program Change

NOAA OCM approved the Washington CZMP's Federal Consistency Procedures Program Change on September 9, 2022. The Washington CZMP has since updated its [federal consistency webpage¹⁴](https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Coastal-zone-management/Federal-consistency) to reflect these changes

A 2017 Office of Coastal Management 312 Evaluation included a Necessary Action that directed the Department of Ecology to update its federal consistency procedures from the 2001 Coastal Zone Management Program document. This update – the Federal Consistency Procedures Document – includes procedures that Ecology follows when reviewing federal actions pursuant to federal consistency regulations (15 CFR Part 930). This includes activities under Subpart C (federal agency activities), Subpart D (activities requiring a federal license or permit), and Subpart F (federal funding assistance to state and local governments). The document includes background information on Washington's CZMP to provide context for internal and external users. This background is important so the reader can better understand how federal consistency works in Washington's coastal zone and what regulations apply to the different scenarios laid out in those regulations. The bulk of the Federal Consistency Procedures document is broken into three main sections – each addresses one of the Subparts mentioned above – and includes simple language from the applicable federal regulation that addresses each federal consistency process.

The updated Federal Consistency Procedures document also includes two new forms: one for Subpart D and one for Subpart F. Ecology now requires federal permits/licenses applicants and those seeking federal funding assistance to use these forms as their Certifications of Consistency. The forms have been in use as a checklist for applicants, and Ecology has revised them to address all of our enforceable policies and assist applicants to complete their Consistency Certifications. The forms include no new required Necessary Data and Information.

The Program Change also included a revised Federal Licenses and Permits list. Ecology modified and clarified roughly fourteen previously listed authorizations; deleted seven that we have never reviewed; and added five new authorizations that we review. Adding these new authorities will allow us to review future activities such as marine energy projects and Liquefied Natural Gas facilities and reduce impacts to coastal uses and resources such as the state's abundant fisheries, highly productive coastal and marine habitats, and marine mammal and fish species of high ecological, cultural, and economic importance.

The five new listed authorizations are:

1. New construction or expansion of railroad facilities or services. [Surface Transportation Board]
2. Licenses required for construction, operation, modification, and decommissioning of non-federal hydroelectric projects (e.g., conventional, pumped storage, and marine and

¹⁴ <https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Coastal-zone-management/Federal-consistency>

hydrokinetic) and associated transmission lines under the Federal Power Act. [Federal Energy Regulatory Commission (FERC)]

3. Orders authorizing the siting and construction of onshore and nearshore liquid natural gas import or export facilities under the Natural Gas Act. [FERC]
4. Leases and agreements for any mineral other than oil, gas and Sulphur in any area of the Outer Continental Shelf. [Bureau of Ocean Energy Management (BOEM)]
5. A lease, easement or right of way on the Outer Continental Shelf for activities that produce or support production, transportation, storage, or transmission or energy from sources other than oil and gas; (construction and operation plans). [BOEM]

Updated List of Federal Licenses and Permits

On February 16th, 2024 NOAA OCM approved the Washington CZMP's program change request to incorporate changes to Washington's List of Federal Licenses and Permits. The Washington CZMP updated its List of Federal Licenses and Permits, which is a listing of the various federal authorizations given to applicants for projects that the CZMP wishes to review. The CZMP removed the U.S. Army Corps of Engineers' Section 10 Letters of Permission (LOP) from its listed activities with the exception of projects that require an individual Section 401 Water Quality Certification.

The Washington CZMP proposed these changes because, for many projects receiving an LOP, the enforceable policies of our coastal program are either not applicable to these types of projects or are already included in the local government review processes which occur regardless of the federal consistency requirements under the CZMA. The WA CZMP excluded projects that require an individual Section 401 Water Quality Certification from this delisting of LOPs, because these types of projects may have coastal effects that the CZMP would like to further evaluate through CZMA federal consistency.

Phase I: High-Level Assessment

Purpose: The purpose of the Phase I Assessment is to quickly determine whether the enhancement area is a high-priority enhancement objective for the CZMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CZMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Aquaculture

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

Resource Characterization

1. In the table below, characterize the existing status and trends of aquaculture facilities in the state's coastal zone based on the best-available data. Your state Sea Grant Program may have information to help with this assessment.

Table 1. Status and Trends of Aquaculture Facilities and Activities¹⁵

Type of Facility/Activity	Number of Facilities	Approximate Economic Value	Change Since Last Assessment ¹⁶ (↑, ↓, -, unknown)
Food Fish Farm	14	\$34,086	Increase
Mollusks	147	\$242, 786	Increase in # of facilities; unknown economic value change
Misc. Aquaculture	2	NA	Increase
Total Farms	162	\$276,890	Increase
Method Used			
Pond Farms	25	NA	Increase
Flow through raceways	55	NA	Increase
Recirculating systems	16	NA	Increase
Non-recirculating systems	21	NA	Increase

¹⁵ This table was generated from the 2023 United States Department of Agriculture (USDA) census data available at https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Census_of_Aquaculture/index.php.

¹⁶ In relation to the 2018 USDA census data reported in the 309 Strategy for 2021 – 2025.

Cages or pens	4	NA	Decrease
Aquaponics system	2	NA	No Change
Mollusks on bottom	112	NA	Increase
Mollusks off bottom	85	NA	Increase
Other production methods	3	NA	Decrease

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

Washington Sea Grant has funded marine research related to shellfish and aquaculture and has published the following relevant studies:

- [Reviving the Past to Protect the Future: Developing a Social-Ecological Clam Garden Site Selection Model](#).¹⁷ The Swinomish Indian Tribal Community revived an ancient mariculture practice by installing the first known present-day clam garden in the United States. Long-term goals were to enhance native clam populations, support local food security, provide ecological and cultural benefits, and promote integration of traditional ecological knowledge in contemporary resource management adaptation strategies. The project completed the first of four steps to develop a clam garden – applying a social-ecological decisions framework that considers both people and their environment. The site selection model will be used for future clam gardens. This project began in 2018 and was completed in 2021.
- [Growing Sustainable Shellfish: Understanding the Ecological Role of Shellfish Aquaculture Using Emerging Technology](#).¹⁸ In partnership with The Nature Conservancy and NOAA, Washington Sea Grant documented the ecological role of shellfish aquaculture relative to natural habitats, and engaged with industry and the public on growing shellfish sustainably. Washington Sea Grant-supported researchers from the Nature Conservancy, UW and NOAA partnered with local shellfish growers to studied how fish and crabs use aquaculture versus non-aquaculture habitats. They did this by collaborating with shellfish growers to deploy video cameras (i.e., GoPros) underwater, and used public outreach use this data to address barriers to sustainable aquaculture growth around public perception and the permitting process. Understanding how shellfish aquaculture affects its environment is critical for resource managers to assess the potential tradeoffs of potential aquaculture expansions. Results of this project, published in Aquaculture Environment Interactions (AEI), demonstrated high or neutral abundances, and increased species richness in some aquaculture sites relative to

¹⁷ <https://wsg.washington.edu/research/clam-gardens/>

¹⁸ <https://wsg.washington.edu/research/26155-2-10/>

mudflats and eelgrass. However, responses were regional and species-specific. The presence of certain species also depended on the type of aquaculture — for example, surf perch were more often found in farms that use flipbags than farms where shellfish are grown on the sediment. This project began in 2017 but is still ongoing.

- [**Pilot-scale net-pen grow-out of sablefish \(“black cod”\) by the Jamestown S’Klallam Tribe.**](#)¹⁹ While sablefish are highly sought after, their populations are not increasing and the wild fisheries are highly controlled. Aquaculture offers a possible solution to address the gap between sablefish supply and demand. This project brings together scientists from the University of Washington and NOAA Manchester with Jamestown S’Klallam tribal experts in an experiment to grow 12,000 sablefish to harvest size. This project began in 2017 but is still ongoing.
- [**Enhancing sustainability of shellfish aquaculture through streamlined maturation control.**](#)²⁰ Researchers applied genomic science to develop a viable alternative to the sterile triploid oyster. Using the cutting-edge technology of single cell sequencing, they developed methods to separate embryos into viable single cells and were able to obtain gene expression data from these individual cells at various embryonic stages. They ultimately discovered genes that are likely involved in the development of oyster gonads, or reproductive organs. They also made several improvements to research methods throughout the process. This research could inform novel methods for growing oysters in the shellfish industry that are more stable, amenable to breeding, and cost effective than triploid oysters.
- [**Laying the Groundwork to Advance the Practice of Sustainable Seaweed Farming.**](#)²¹ Connecticut Sea Grant, in partnership with Washington Sea Grant and the other above state programs, proposed to establish a National Sea Grant Seaweed Hub. The topic-based Hub would serve as a central clearinghouse for available science-based, non-proprietary, practical resources related to previous and current seaweed aquaculture research and extension efforts. The Seaweed Hub would enable Sea Grant programs as well as federal and state agencies to access current information to guide their own planning and outreach efforts. The establishment of the Seaweed Hub could also provide seaweed aquaculture stakeholders with the information they need to make better informed decisions.

¹⁹ <https://wsg.washington.edu/research/pilot-scale-net-pen-grow-out-of-sablefish-black-cod-by-the-jamestown-sklallam-tribe/>

²⁰ <https://wsg.washington.edu/research/26155-2-6/>

²¹ <https://wsg.washington.edu/research/26155-2-12/>

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any state- or territory-level changes (positive or negative) that could facilitate or impede the siting of public or private aquaculture facilities in the coastal zone.

Table 2. Significant Changes in Aquaculture Management

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

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

- **Permitting Shellfish & Kelp Aquaculture Projects**

The Washington State Department of Ecology's (Ecology) has a regulatory role in permitting shellfish and kelp aquaculture. This role has become even more important after a Federal Court Decision (*Center for Food Safety vs. US Army Corps*) in 2020 vacated the Nationwide Permit (NWP) 48 that had been historically used for permitting commercial shellfish growers in Washington. Under the NWP program Ecology would issue programmatic Section 401 Water Quality Certifications (WQCs) and CZM federal consistency decisions for NWP 48, that covered the vast majority of existing and proposed shellfish farms. After NWP 48 was vacated, the United States Army Corps of Engineers (Corps) had to instead permit *all* shellfish aquaculture projects individually – including those that have already been in existence. The Corps began to process hundreds of individual shellfish and kelp aquaculture projects under their Section 404 and Section 10 authorities.

This individual review of shellfish projects by the Corps' created a nexus for an individual review of shellfish aquaculture projects by Ecology as well. Hence, as of 2021 Ecology reviewed over 500 shellfish and kelp aquaculture projects to issue individual CZM federal consistency decisions, since the NWP programmatic decisions were no longer valid or available for use. In reviewing these projects for CZM federal consistency, Ecology also verifies whether an individual Section 401 WQC or shoreline permit is needed. If required, Ecology is responsible for reviewing, developing, and issuing

individual Section 401 WQCs for shellfish projects, and Ecology would also act as the final reviewer for certain types of shoreline permits that are initially approved by the local government.

In carrying out these responsibilities, Ecology coordinates with a range of government agencies and industry representatives to develop policy and practices for reviewing shellfish and kelp aquaculture projects. This includes staff from local government planning departments and sister state agencies like the Washington State Department of Fish and Wildlife (WDFW) and the Washington State Department of Natural Resources (DNR). Ecology has also met with representatives from the Pacific Coastal Shellfish Growers Association to help convey permitting requirements to growers and to receive feedback from the shellfish farming community. Ecology also coordinates closely with federal partners and federally recognized tribes as needed or requested. In particular, Ecology has developed procedures for review and communication with the Corps on aquaculture projects and meets biweekly to discuss any issues or pressing topics.

- **Commercial Marine Finfish Aquaculture Guidance**

In early 2022, and after several years of work, the Washington Departments of Ecology, Agriculture, Fish and Wildlife, and Natural Resources released a guidance document for Commercial Marine Finfish Net Pen Aquaculture in Puget Sound and Strait of Juan de Fuca.

This guidance addressed ways the aquaculture industry and the state could reduce escaped fish from commercial net pens and avoid adverse impacts to water quality, fish and fish health, sensitive habitats, shellfish, and wildlife. It was designed to help:

- Local governments and state agencies identify and address risks from existing and future commercial marine net pens in Puget Sound and Strait of Juan de Fuca.
- Manage commercial net pens rearing native species such as steelhead trout.
- Deliver recommendations for future considerations by state managers and the Legislature.

The value of the net pen guidance was short lived. In November 2022, the Department of Natural Resources commissioner issued an executive policy declaring that DNR is no longer providing leases to commercial finfish net pen aquaculture. As a result, the net pens sites were vacated and are clear of all above and below water structures including anchors. Barring any major changes in the future, commercial marine net pen aquaculture is now effectively prohibited in state waters.

There are no 309-driven activities related to aquaculture in Washington State. The recent changes in the process for reviewing shellfish and kelp aquaculture projects and the prohibition on finfish aquaculture in Washington State is not likely to change in the immediate or foreseeable future. There may be other legal or political challenges in response to these changes in the future, most likely from the aquaculture industry or environmental groups, but they are difficult to predict at this time.

Enhancement Area Prioritization

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

High ☐

Medium ☒

Low ☐

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

Aquaculture could be considered a high priority for management for the following reasons:

- Ecology is now responsible for reviewing and permitting any new shellfish or kelp aquaculture projects, primarily through Section 401 of the Clean Water Act and CZMA authorities.
- Shellfish aquaculture in particular is a major industry in Washington and is a primary source of economic revenue. Washington State is the leading producer of shellfish in the country.
- Shellfish aquaculture operation and development is a highly controversial and politicized in Washington, as evidenced by the recent federal court case in 2020.
- There are serious implications for the future of shellfish and kelp aquaculture in the face of ocean acidification.
- Shellfish and kelp aquaculture continue to expand in Washington state, creating a need for improved research to understand potential impacts and associated policy development to address concerns.

However, the following reasons also make aquaculture a lower priority:

- Finfish aquaculture has been banned in Washington State, making the future of this industry and any associated technological developments nonviable.
- The role of Ecology and other Washington State agencies in aquaculture is primarily as regulators, and while the Governor's Office and other local governments have explicitly supported shellfish aquaculture as an industry, there are currently no efforts underway to develop further policy or practices that would notably change the regulatory landscape for aquaculture.

Therefore, Aquaculture is classified as a medium priority for Washington's CZMP.

Ecology will not be developing a strategy for this management area because current capacity is being utilized towards other high priority goals including coastal resilience and hazards mitigation, wetlands protection, and ocean resource management. Ecology is committed to continuing to prioritize aquaculture on an agency, but the 309 CZM funding parameters are not applicable to current aquaculture goals, and there are insufficient resources available for the development of a 309 strategy for this topic. The vast majority of ongoing aquaculture activities

have already been in existence for years; however, the state will continue to review proposed aquaculture projects, including assessing authorizations under Section 401, National Pollutant Discharge Elimination System, and the CZMA, and evaluate potential impacts to the state's uses and resources.

Coastal Hazards

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

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

Resource Characterization:

1. In the table below, indicate the general level of risk in the coastal zone for each of the coastal hazards.

As directed by the CZMA, the resource characterization in this section is focused on natural hazards, rather than human-caused hazards such as oil spills or other forms of water pollution, which remain a critical priority for the Department of Ecology and are addressed through our Spill Prevention, Preparedness and Response and Water Quality Programs.

Table 3. General Level of Hazard Risk in the Coastal Zone

Type of Hazard	General Level of Risk ²² (H, M, L)
Flooding (riverine, stormwater)	H
Coastal storms (including storm surge)	H
Geological hazards (e.g., tsunamis, earthquakes)	H
Shoreline erosion	H
Sea level rise	H
Great Lakes level change	n/a
Land subsidence	L
Saltwater intrusion	M
Other (please specify)	Wildfire – M Groundwater flooding – M

²² Risk is defined as “the estimated impact that a hazard would have on people, services, facilities and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage.” Understanding Your Risks: Identifying Hazards and Estimating Losses. FEMA 386-2. August 2001

- If available, briefly list and summarize the results of any additional data or reports on the level of risk and vulnerability to coastal hazards within your state since the last assessment. The state's multi-hazard mitigation plan or risk assessment or plan may be a good resource to help respond to this question.

Since the last update, there have been a variety of additional data and reports of the state's inventory of hazards, which include:

- **Overall Hazards**

The [Washington State Enhanced Hazard Mitigation Plan²³](https://mil.wa.gov/asset/651ec296d76a9/2023_WA_SEHMP_final_20231004.pdf) (SEHMP) is a key resource for information on coastal hazards, profiling hazards, identifies risks and vulnerabilities, and proposes strategies and actions to reduce risks to people, property, the economy, the environment, infrastructure and first responders. The Washington SEHMP is a multi-agency, statewide document that integrates best practices, programs, and expertise from multiple state agencies. It tracks progress in achieving mitigation goals through state and local programs and strategies, while fostering communication among agency partners and elected leadership. Updated in 2023, the plan builds on the 2018 version by incorporating regional vulnerability assessments. These assessments identify existing hazards, evaluate how they place critical assets and populations at risk, and outline the specific vulnerabilities of these assets and populations to inform future mitigation efforts. While the state's SEHMP highlights "hotspot" areas with elevated wildfire risks primarily outside Washington's coastal regions, wildfire is emerging as a coastal hazard that communities are increasingly beginning to address. Coastal communities are now planning for the risks associated with wildfires, including the impacts of smoke and fire events.

- **Flooding**

The state has partnered with FEMA's Risk Mapping, Assessment, and Planning Program (RiskMAP). The Department of Ecology's RiskMAP program helps to fill in data gaps in partnership with FEMA to provide technical assistance to local communities by providing tools and expertise to better understand their flood risks. Although RiskMAP is a federal program, Ecology coordinates RiskMAP in Washington with practical mapping tools, mitigation actions, and strategies across multiple agencies, including the state's Emergency Management Division and Department of Natural Resources. RiskMAP updates the state Flood Insurance Rate Maps which outline flood hazards in a community. As of the last 309 update, RiskMAP completed mapping updates for all but two counties in Washington's coastal zone, Clallam and Whatcom counties. These counties now have updated mapping and risk analysis so FEMA mapping is updated for entire coastal zone.

- **Erosion**

²³ https://mil.wa.gov/asset/651ec296d76a9/2023_WA_SEHMP_final_20231004.pdf

Ecology has continued to work with communities on the Pacific Coast to test and refine methods for delineating and characterizing erosion hazards. This has included working with communities to identify best practices for the appropriate scale and communication of erosion hazard information. The recently completed [Pacific County Shoreline Erosion Master Plan](#)²⁴ is an example of continued partnership work with coastal communities and CZM staff.

- **Future Risk**

Between 2020 and 2022, a team from Washington Sea Grant and Coastal Geologic Services developed a [Puget Sound Parcel Scale Sea Level Rise Vulnerability Assessment](#).²⁵ The goals of the project were to construct, calculate, and map a sea level rise vulnerability index that accounts for potential impacts to both the built environment (homes, roads, and critical infrastructure) and the natural environment (coastal habitats), using publicly available data, based on exposure to both erosion and flooding.

Washington recently released the [Washington Resilience Strategy](#)²⁶. This strategy proposes actions to help the state achieve hazard goals and prepare for future impacts. These actions identify initial steps that the state government can take to address the greatest needs and opportunities we heard from our partners. They reflect the range of risks and challenges facing our state, and were designed to mirror the priorities of Tribes, local governments, and other partners working to prepare for hazard resilience.

Washington legislation passed HB 1811 in 2023, requiring local governments in Washington state to address hazards from sea level rise in their Shoreline Master Programs. Ecology is currently undergoing a rulemaking update to add requirements for local governments to address the impact of sea level rise and increased storm severity on people, property, and shoreline natural resources and the environment. These new rule requirements will be finished in 2026.

The [USGS Coastal Storm Modeling System \(CoSMoS\)](#)²⁷ is continuing to provide modeling predictions of coastal flooding due to future sea-level rise, storms, and river flooding. An emphasis for the first phase of modeling has been Puget Sound communities. Whatcom county data has been published, while the rest of Puget Sound counties will have flood data available in 2025 and 2026, while the coast will have data available in 2027.

Management Characterization

1. In the tables below, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred that

²⁴ <https://wacoastalnetwork.com/wp-content/uploads/2024/06/Willapa-Erosion-Mitigation-Master-Plan-Final-Final.pdf>

²⁵ <https://wacoastalnetwork.com/puget-sound-parcel-scale-sea-level-rise-vulnerability-assessment/>

²⁶ <https://apps.ecology.wa.gov/publications/documents/2401006.pdf>

²⁷ <https://wacoastalnetwork.com/project-support/mappers-and-visualizations/cosmos/>

could impact the CMP's ability to prevent or significantly reduce coastal hazards risk since the last assessment.

Table 4. Significant Changes in Hazards Statutes, Regulations, Policies, or Case Law

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Elimination of development/redevelopment in high-hazard areas ²	Y	Y	N
Management of development/redevelopment in other hazard areas	Y	Y	N
Sea level rise or Great Lakes level change	Y	Y	Y

Table 5. Significant Changes in Hazards Planning Programs or Initiatives

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

Table 6. Significant Changes in Hazards Mapping or Modeling Programs or Initiatives

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

2. Briefly state how “high-hazard areas” are defined in your coastal zone.

The most common natural hazards threatening Washington’s coastal zone are extreme weather, flooding, landslides, and erosion. These hazards are being exacerbated by the effects of sea level rise and increasing storm severity. Washington’s coastal zone also faces the possibility of major earthquake, tsunami, and volcanic eruption events. The Washington Coastal Zone Management Program directly addresses high-hazard areas through Shoreline Management Act (SMA) policies and state guidelines. The SMA requires that the impact of natural hazards be considered during the preparation, review, and approval of shoreline master programs. While there is no common definition for “high-hazard areas” across the coastal zone, local shoreline master programs require consideration of erosion, flooding, geological hazards, and natural protective features including beaches, dunes, and wetlands. Notably, Washington state law defines geologically hazard areas as “areas susceptible to erosion, sliding, earthquake, or other geological events. They pose a threat to the health and safety of citizens when incompatible commercial, residential, or industrial development is sited in areas of significant hazard” (WAC 365-190-120).

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

Significant changes in hazards statutes, regulations, policies, or case law

- **Shoreline Master Program periodic reviews and comprehensive updates**

Over the last 5 years, The CZMP has worked with over 55 of the 133 local coastal jurisdictions to complete their first round SMP periodic reviews to ensure SMP compliance with the SMA and its guidelines, including new statutory requirements. This work includes technical and planning assistance to local governments, final review of proposed changes, the development of findings and conclusions, and making recommendations to agency management. As of July 2025, only 15 remaining jurisdictions are awaiting final approval: Duvall, Lake Forest Park, Seattle, Island Co., Jefferson Co., Skagit Co., Thurston Co., Port Townsend, Bainbridge Island, Hamilton, Lyman, Anacortes, Tumwater, Bellingham, and Wahkiakum Co.

- **Shoreline Management Act – sea level rise and storm severity**

Washington legislation passed House Bill 1811 in 2023, requiring local governments in Washington state to address hazards from sea level rise in their Shoreline Master Programs. Ecology is currently undergoing a rulemaking update to add requirements for local governments to address the impact of sea level rise and increased storm severity on people, property, and shoreline natural resources and the environment. These new rule requirements will be finished in 2026. This process is not included in the Washington CZMP 309 strategy.

- **State’s updated resilience strategy**

As mentioned above, Washington recently released the Washington State Resilience Strategy. This strategy proposes actions to help the state prepare for future impacts. These actions identify initial steps that the state government can take to address the greatest needs and opportunities we heard from our partners. They reflect the range of risks and challenges facing our state, and were designed to mirror the priorities of Tribes, local governments, and other partners working to prepare for changing hazards. This ongoing process is not included in the Washington CZMP 309 strategy.

Significant Changes in Hazards Planning Programs or Initiatives

- **State Enhanced Hazard Mitigation Plan 2023 update**

Every five years, state agencies, led by the Washington Emergency Management Division (WA EMD), convene to update the State Enhanced Hazard Mitigation Plan (SEHMP). The SEHMP is a FEMA-required plan that helps make Washington state cities, counties, towns, special districts and certain non-profits eligible for grants or aid through FEMA's Hazard Mitigation Assistance (HMA) and Public Assistance programs. As one of 12 "Enhanced" states, Washington also maintains a "comprehensive mitigation program" to support local jurisdictions in writing local hazard mitigation plans and in qualifying for grants through these programs. The update of the SEHMP was completed in 2023 as part of the CZM's 309 strategy to develop a unified vision across state agencies for coastal hazards resilience and complete a comprehensive update to the SEHMP to support strategic implementation. The efforts to integrate emergency management and coastal management to address natural hazards resilience has been a strong partnership in Washington. The SEHMP is an opportunity to identify common priorities, identify roles and responsibilities, and coordinate on strategic investments.

- **Coastal Hazards Assistance Programs**

The Coastal Hazards Organizational Resilience Team (COHORT) was developed in response to coastal communities' request for the state to help address the growing severity of natural hazards, which include flooding, erosion, sea level rise, landslides, and a Cascadia earthquake and tsunami event. Building off the recommendations of the Ruckelshaus assessment, the Washington Coast Resilience Action Demonstration Project (RAD) was a two-year (2019-2021) pilot program and partnership between the Department of Ecology and Washington Sea Grant that provided multi-organizational hazards assistance to communities on the Pacific Coast of Washington and laid the groundwork for the COHORT and other future resilience efforts. After the initial success of the RAD, and with support from the Washington Coastal Marine Advisory Council (WCMAC), the Department of Ecology requested funding to create the COHORT, which was approved by the Washington State Legislature in 2023. The COHORT works collaboratively with Tribes and communities on the identification, co-creation, and implementation of resilience projects, planning efforts, and other capacity building activities. This work has been supported by the Washington CZMP's 309 Strategy.

- **Washington Coastal Resilience Partnership**

Washington Department of Ecology was awarded \$73.5 million dollars to advance a portfolio of coastal resilience projects through a recent NOAA award. Funded work will improve the capacity of coastal Tribes and communities to thrive in the present and adapt to meet current and future hazard threats and challenges. Shovel-ready projects will progress in three regions that represent Washington's various coastal ecosystems and unique cultures; North Puget Sound (\$21.7 million), North Olympic Peninsula (\$24 million) and along the Pacific coast (\$15 million). The award will also fund a grant program for coastal Tribes (\$3.9 million), a fellowship program (\$3.6) and development of career pathways (\$1.26 million), all with a coastal resilience focus. Projects and geographic priorities were selected in collaboration with over 30 local, Tribal, state, and nonprofit partners, culminating in the establishment of the Washington Coastal Resilience Partnership. This is not a 309 driven change, however, this reflects the CZM team's efforts to collaborate and implement plans to address coastal hazards across Washington State.

Significant Changes in Hazards Mapping or Modeling Programs or Initiatives

- **Applied Coastal Research and Engineering (ACRE) and shoreline mapping efforts**

- Between 2018 and 2021, WA Emergency Management Division funded one-time project to map coastal erosion hazards along Washington's outer coast, Willapa Bay, Gray's Harbor, and the Strait of Juan de Fuca. The hazard assessment drew from historic and present aerial imagery to detect and quantify erosion hazards, and resulted in an erosion hazard web map. The work also included summaries of erosion hazards by local jurisdiction and quantified the infrastructure in hazard zones. The Washington Coastal Erosion Hazard Assessment was completed, and the data helps local communities identify erosion hot spots and quantify risk along specific shoreline segments. This work was part of the 309 strategy.
- At the request of Governor Inslee, in 2021, the WCMAC delivered a set of coastal resilience recommendations to the Governor's Office, Legislature, and Washington's Congressional Delegation that prioritized expanding Ecology's Coastal Monitoring and Analysis Program. (This recommendation from WCMAC also included the formation of previously mentioned COHORT.) This recommendation led to an Ecology budget request to expand the Coastal Monitoring and Analysis Program to better serve Washington's communities on both the Pacific Coast and Puget Sound, resulting in the establishment of the new Applied Coastal Research and Engineering (ACRE) section in January 2024. ACRE includes three distinct units focused on Coastal Monitoring and Analysis, Shoreline Mapping, and Coastal Engineering.
- With direction from the ACRE section, contractors completed collection of oblique shoreline photos covering parts of Puget Sound, Washington's outer coast, and parts of eastern Washington shorelines. These photos were collected to update

Washington's Coastal Atlas Oblique Photo Viewer, previously updated in 2016. Additionally, in 2023, Ecology was funded under Senate Bill 5104 to map marine Puget Sound shorelines and provide three data products to the public: 360-degree on-the-water photos, georeferenced oblique photos, and a shoreline condition survey. The 360-degree on-the-water photos are collected by Ecology contractors from a small vessel that contours the shoreline for a close-up on-the-water view of the shoreline. The georeferenced oblique photos are collected by a fixed wing aircraft and offer the ability to pick coordinates from any location on the photo. The shoreline condition survey is conducted by Ecology scientists and will include an updated hybrid reference shoreline that is attributed with shoreline structure characteristics. This ongoing process is not included in the Washington CZMP 309 strategy.

- ACRE continues seasonal monitoring of beach profiles within the Columbia River Littoral Cell in southwest Washington. They completed their 25th year of seasonal monitoring in 2022, amassing one of the longest continuous coastal monitoring datasets of its kind in the world. Their beach profile data is made public and is used by local communities, consultants, and other coastal practitioners to evaluate erosion rates and beach changes for planning and design purposes. Additionally, ACRE monitors 5 dynamic revetments along Washington's outer coast. Data is used to inform adaptive management in preparation for winter storms and for research to inform engineering design guidance on nature-based solutions.
- Ecology is also engaged in an ongoing project to collect seasonal topographic beach profiles in the Columbia River Littoral Cell and other sites of interest, from Fort Stevens State Park in OR north along outer coast beaches to South Beach in the Quinault Reservation. Ecology conducts more detailed topographic mapping along beaches exhibiting erosion hazards. This ongoing process is not included in the Washington CZMP 309 strategy.
- **Sea level rise and changing storm conditions**
 - There are three CoSMoS products: overland flooding, groundwater and shoreline change. Overland Flooding products are already available for Whatcom County. King and Pierce County can expect flooding products to be available mid-2025. Flooding products for other Salish Sea and Pacific Coast locations are estimated to be available between 2026-2027. Groundwater products are currently available for all of Puget Sound and expected to be available to the Pacific Coast by end of 2025. Shoreline Change products will be made available to the Pacific Coast only and is expected by the end of 2026. This ongoing process is not included in the Washington CZMP 309 strategy.
 - As mentioned above, between 2020 and 2022, a team from Washington Sea Grant and Coastal Geologic Services developed a Puget Sound Parcel Scale Sea Level Rise Vulnerability Assessment. This report uses publicly available exposure data of both erosion and flooding to enable new insights about the spatial distribution of vulnerability in Puget Sound. Currently, this vulnerability assessment is only available

in Puget Sound, but work is ongoing to expand it out to Neah Bay and create an interactive online tool to increase the accessibility of the tool. This ongoing process is not included in the Washington CZMP 309 strategy, however, CZM staff advised the development of this tool.

- **Geologic hazards**

[The Washington Geological Survey²⁸](#) is led by the Washington State Department of Natural Resources (DNR). The Survey is the primary source of geological products on landslides, active faults and earthquakes, tsunamis and services in support of decision making by Washington’s government agencies, its businesses, and the public. DNR has updated mapping and communication of data, which has been centered on interactive and easily accessible data for the public use. Their interactive map has a variety of hazard layers including landslides, tsunami inundation zones, evacuation routes and more.

- **Flooding: RiskMap complete for all coastal zone**

Refer to section 1 of this document on the update of RiskMAP. This was part of the previous 309 strategy and is now complete.

Enhancement Area Prioritization

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

High ☒
Medium ☐
Low ☐

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

Coastal communities in Washington State and around the country are already experiencing the impacts of natural stressors that will be exacerbated by expected future ocean conditions. By taking steps to become more resilient, communities can proactively mitigate the risk and exploit the opportunities associated with hazard events. Many of Washington’s coastal communities are increasingly aware of these challenges and have expressed a strong interest in taking action.

The Washington CZMP has prioritized engaging in various community led meetings on coastal issues across the state, including Marine Resources Committee meetings and [Bay to Bay Community Coastal Resilience Action²⁹](#) workshops. At these meetings, CZM staff regularly hear rural and remote communities lack sufficient staffing, funding and capacity to address a rising number of challenges that are exacerbated by coastal hazards.

²⁸ <https://www.dnr.wa.gov/geologyportal>

²⁹ <https://wacoastalnetwork.com/bay-to-bay-community-based-coastal-resilience-action/>

Additionally, The Washington CZMP has observed significant and growing interest from local governments, community-based organizations, stakeholders, and Tribes for community-based resilience workshops and state resources to better understand coastal processes as well as the drivers and future impacts of coastal hazards. Events such as the annual Coastal Hazards Resilience Network meeting, the 2024 Winter Storm Forum, and regional sea level rise planning workshops have seen rising participation, underscoring the increasing interest in the latest science and information, as well as peer-to-peer sharing related to resilience efforts. This growing engagement has also brought to light the need for greater clarity on what future hazards may look like, as communities seek to incorporate this information into their planning efforts.

The Washington CZMP has also seen increased interest in addressing coastal hazards and sea level rise through Ecology's shoreline planning competitive grant program, which has supported a significant number of local sea level rise vulnerability assessments. However, despite these investments, communities have consistently reported that next steps for adaptation planning can be difficult to identify. There remains a demand for clear minimum requirements, guidance, and technical assistance to help translate plans into actionable strategies. Efforts to help address these gaps are underway through initiatives like COHORT and federal investments. Furthermore, the Washington CZMP is already in the process of developing land use planning requirements and guidance through the sea level rise rulemaking process. There has been an encouraging increase in collaboration among various groups, including local governments, Tribes, nonprofits, and other stakeholders, working together to proactively address these challenges across the state. This combination of rising challenges, increasing demand for support, and ongoing efforts to provide solutions underscore why coastal hazards remain a top priority for the Washington CZMP.

Cumulative and Secondary Impacts of Growth

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

Resource Characterization

1. Using National Ocean Economics Program Data on population and housing,³⁰ please indicate the change in population and housing units in the state's coastal counties between 2017 and 2021. You may wish to add additional trend comparisons to look at longer time horizons as well (data available back to 1970), but at a minimum, please show change over the most recent five-year period data is available (2017-2021) to approximate current assessment period.

Table 7. Trends in Coastal Population and Housing Units

	2017	2021	Percent Change (2017-2021)
Number of people	5,148,215	5,339,836	3.72%
Number of housing units	2,170,140	2,276,425	4.90%

	2000	2021	Percent Change (2000-2021)
Number of people	4,070,689	5,339,836	31.2%
Number of housing units	1,712,161	2,276,425	33.0%

Development of population projections for the Growth Management Act (GMA) is a shared responsibility. As directed by state statute, Office of Financial Management (OFM) prepares a reasonable range of possible population growth for Washington counties participating in GMA.³¹ County officials, also by law, are responsible for selecting a 20-year GMA planning target from within the range of high and low prepared by OFM. County officials select the county planning target; then within each county, population planning targets for cities, towns, and unincorporated areas are developed among all affected local jurisdictions as part of the city and county planning process.

³⁰ www.oceaneconomics.org/

³¹ <https://www.ofm.wa.gov/washington-data-research/population-demographics/population-forecasts-andprojections/growth-management-act-county-projections> (Washington State Office of Financial Management Growth Management Act County Projections 2024).

Table 8. Growth Management Act Population Change, April 1, 2009, to April 1, 2024

County	Fully Planning Under GMA	2009 Postcensal Estimate of Population	2019 Postcensal Estimate of Population	2024 Postcensal Estimate of Population	2009–24 Numeric Change in Population	2009–24 Percentage Change in Population	2019–24 Numeric Change in Population	2019–24 Percentage Change in Population
State	N	6,668,200	7,546,410	8,035,700	1,367,500	20.5%	489,290	6.5%
Clallam	Y	69,500	76,010	78,550	9,050	13%	2,540	3.3%
Grays Harbor	N	71,200	74,160	77,400	6,200	8.7%	3,240	4.4%
Island	Y	80,300	84,820	88,650	8,350	10.4%	3,830	4.5%
Jefferson	Y	29,000	31,900	33,700	4,700	16.2%	1,800	5.6%
King	Y	1,909,300	2,226,300	2,378,100	468,800	24.6%	151,800	6.8%
Kitsap	Y	247,600	270,100	286,100	22,500	15.5%	16,000	5.9%
Mason	Y	56,800	64,980	67,465	10,665	18.8%	2,665	4.1%
Pacific	Y	21,800	21,640	23,950	2,150	9.9%	2,310	10.7%
Pierce	Y	813,600	888,300	952,600	139,000	17.1%	64,300	7.2%
San Juan	Y	16,300	17,150	18,475	2,175	13.3%	1,325	7.7%
Skagit	Y	118,900	129,200	133,300	14,400	12.1%	4,100	3.2%
Snohomish	Y	704,300	818,700	867,100	162,800	23.1%	48,400	6%
Thurston	Y	249,800	285,800	307,000	57,200	22.9%	21,200	7.4%
Wahkiakum	N	4,100	4,190	4,550	450	11%	360	8.6%
Whatcom	Y	193,100	225,300	238,000	44,900	23.3%	12,700	5.6%

- Using the tables below as a guide, provide information on land cover changes and development trends. Be as quantitative as possible using state or national land cover data.³² The tables are a suggestion of how you could present the information. Feel free to adjust column and row headings to align with data and time frames available in your state or territory. If quantitative data on land cover changes and development trends are not available, provide a brief qualitative narrative describing changes in land cover, especially development trends, including significant changes since the last assessment.

Table 9. Distribution of Land Cover Types in Coastal Counties

*Information is available as of 2016.

Land Cover Type	Land Area Coverage in 2016 (Acres)	Gain/Loss Since 2011 (Acres)
Developed, High Intensity	321,894	960
Developed, Low Intensity	619,379	166
Developed, Open Space	162,598	672
Grassland	452,288	(- 43,654)
Scrub/Shrub	1,300,000	(- 47,117)
Barren Land	670,912	(-4,838)
Open Water	2,401,952	2,227

³² National data on wetlands status and trends include NOAA's Land Cover Atlas (<https://coast.noaa.gov/digitalcoast/tools/lca.html>) and the US Geological Survey's National and Cover Database (usgs.gov/centers/eros/science/national-land-cover-database).

Agriculture	459,130	(-1,216)
Forested	7,856,736	97,907
Woody Wetland	297,478	5,210
Emergent Wetland	87,046	2,470

Table 10. Development Status and Trends for Coastal Counties - Percent land area developed

	2011	2021	Percent Net Change
Clallam County	2.40%	2.42%	0.79%
Grays Harbor County	2.77%	2.8%	1.20%
Island County	9.94%	9.99%	0.45%
Jefferson County	1.30%	1.33%	2.19%
King County	19.95%	20.19%	1.22%
Kitsap County	18.07%	18.36%	1.65%
Mason County	4.66%	4.70%	0.73%
Pacific County	1.96%	2.02%	2.85%
Pierce County	16.50%	16.82%	1.92%
San Juan County	3.10%	3.10%	0.05%
Skagit County	4.46%	4.49%	0.80%
Snohomish County	11.07%	11.27%	1.85%
Thurston County	16.00%	16.24%	1.54%
Wahkiakum County	2.32%	2.37%	2.03%
Whatcom County	4.18%	4.23%	1.24%

Table 11. Development Status and Trends for Coastal Counties - Percent impervious surface

	2011	2021	Percent Net Change
Clallam County	0.89%	0.90%	0.87%
Grays Harbor County	0.96%	0.98%	2.08%
Island County	3.32%	3.34%	0.54%
Jefferson County	0.42%	0.43%	4.51%
King County	8.04%	8.16%	1.52%
Kitsap County	5.89%	6.04%	2.44%
Mason County	1.54%	1.56%	1.31%
Pacific County	0.64%	0.67%	4.24%
Pierce County	6.20%	6.42%	3.48%
San Juan County	0.99%	0.99%	0.13%
Skagit County	1.64%	1.66%	1.16%
Snohomish County	4.04%	4.15%	2.86%
Thurston County	5.19%	5.37%	3.51%
Wahkiakum County	0.77%	0.78%	2.02%
Whatcom County	1.52%	1.55%	1.58%

Table 12. How Land Use Is Changing in Coastal Counties

Land Cover Type	Areas Lost to Development Between 1996-2016 square miles
Emergent Wetland	2.95 square miles of emergent wetland lost
Agriculture	9.01 square miles of agricultural lands lost
Grassland	61.03 square miles of grassland lost
Forested	499.11 square miles of forested lands lost

Land Cover Type	Areas Gained Between 1996-2016 square miles
Barren Land	112.13 additional square miles of Barren Land
Woody Wetland	0.21 additional square miles of woody wetland
Open Water	9.55 additional square miles of open water
Scrub/Shrub	312.62 additional square miles of scrub shrub lands

3. Briefly characterize how the coastal shoreline has changed in the past five years due to development, including potential changes to shoreline structures such as groins, bulkheads and other shoreline stabilization structures, and docks and piers. If available, include quantitative data that may be available from permitting databases or other resources about changes in shoreline structures.

The Washington Coastal Zone area continues to grow. Puget Sound is still experiencing high rates of growth, but in recent years there are also increased changes on the Pacific Coast and southwest Washington counties. Emergent wetlands, agricultural lands, grasslands, and forested areas continue to be lost. Barren lands, woody wetlands, open water, and scrub shrub areas are expanding. In recent years, high intensity, low intensity and open space development is occurring mostly within the existing urban growth areas resulting in lower percent of increase in developed areas and imperious surface. Approximately 29% of Puget Sound’s shoreline has shoreline armor.³³ There is limited data on shoreline armor, but both this data gap and the issue overall have become significant priorities of concern that Ecology, other state agencies, local jurisdictions, and Tribes are working to address. Some local jurisdictions have begun to fund their own studies on shoreline armor. A study of San Juan County examined shorelines over the period from 2009 to 2019 and found that 100 segments and 1.8 miles of new armor were installed, with only .3 miles of armor removed during that same period.³⁴ Of the new structures, 74% had no permits at all. In Island County, a recent survey found that between 2016 and 2023, an estimated 14,100 feet (2.7 miles) of new armor was installed along shorelines, while about 12,400 feet (2.3 miles) of armor was removed or lost. Overall, this resulted in a net increase of roughly 1,770 feet (0.3 mile) of shoreline armor during that time period.³⁵

³³ T. Francis and Aimee Kinney, 2018. Shoreline Armoring Vital Sign State of Knowledge. Puget Sound Institute. https://www.pugetsoundinstitute.org/wp-content/uploads/2023/11/Final_SoK_Shoreline-Armoring__05.2018.pdf

³⁴ Friends of the San Juans. 2022. Changes in Shoreline Armoring in San Juan County, WA 2009-2019: Mapping, Analysis and Regulatory Review. Prepared by Tina Whitman. Funded by the National Estuary Program and the Puget Sound Partnership NTA 2018-0828. Friday Harbor, WA.

³⁵ <https://www.islandcountymrc.org/media/21287/20240205-island-county-shoreline-armoring-survey-2023.pdf>

According to the Puget Sound Partnership’s 2021 State of the Sound report, “By 2020, more armor had been permitted for removal than construction, resulting in a net removal length of 739 feet.”³⁶ However, this does not account for the problem of unpermitted shoreline armor addition. In January 2023, Ecology established a new shoreline compliance and enforcement team, in direct response to growing concerns about the protection of riparian and coastal areas. This program provides five regional positions statewide, three of which are stationed in Western Washington to serve communities within the coastal zone. Approximately 40% of staff time is devoted to addressing violations of the SMA, while 50% of staff time focuses on improving local implementation of Shoreline Master Programs. The shoreline compliance and enforcement team is actively working with local governments and partner agencies to address priority violations, including unpermitted hard armor installations, through both informal and formal enforcement actions. Informal actions focus on securing voluntary compliance from property owners, while formal enforcement actions may involve issuing orders and penalties when necessary.

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

A particular focus of the Coastal Zone Management Program has become planning for the impacts of sea level rise and other coastal resilience strategies.

- Our shoreline management planning grant program funded sea level rise planning projects for the City of Bainbridge Island, City of Tacoma, City of Westport, City of Ilwaco, City of Fife, Town of Coupeville, City of Port Townsend, Jefferson County, Pierce County, Whatcom County, Grays Harbor County, and Kitsap County during our 2021-2023 and the 2023-2025 biennium.
- Ecology published [Interim Resilience Planning Guidance for Shoreline Master Programs](#)³⁷ in April 2024. This guidance provides recommendations for aligning plans as local governments develop new resilience element for their comprehensive plans under the state’s Growth Management Act (Chapter 36.70A RCW), outlines suggestions for planning for sea level rise under the current shoreline master program guidelines, and includes an appendix on sea level rise vulnerability assessments. The interim guidance will be replaced after new requirements for sea level rise planning are established in rule.
- Recent state legislation (RCW 90.58.630) directs Ecology to update the Shoreline Management Act implementing rules to require local shoreline master programs to address sea level rise and increased storm severity on people, property, shoreline

³⁶ <https://www.psp.wa.gov/sos-archive.php>

³⁷ <https://apps.ecology.wa.gov/publications/documents/2406004.pdf>

natural resources, and the environment. This rulemaking process began in May 2024 and is anticipated to be completed in the summer of 2026.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any significant state-level changes (positive or negative) in the development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources, since the last assessment.

Table 13. Significant Changes in Management of Cumulative and Secondary Impacts of Development

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

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

See response under Phase I of Coastal Hazards, above, regarding Ecology’s Shoreline Management Act rulemaking, grant funding, and interim guidance published during this assessment period.

Enhancement Area Prioritization

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

High ☐
 Medium ☒

Low ☐

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

The Washington CZMP will not be developing a strategy for this management area because current capacity is being utilized towards other high priority goals including coastal resilience and hazards mitigation, wetlands protection, and ocean resource management. Additionally, many of the priorities under the cumulative and secondary impacts section overlap with and will be addressed as part of the enhancement priorities of coastal hazards.

Marine Debris

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

Resource Characterization

1. In the table below, characterize the existing status and trends of marine debris in the state’s coastal zone based on the best-available data.

Table 14. Existing Status and Trends of Marine Debris in Coastal Zone

Source of Marine Debris	Significance of Source (H, M, L, unknown)	Type of Impact (aesthetic, resource damage, user conflicts, other)	Change Since Last Assessment (↑, ↓, -, unknown)
Beach/shore litter	H	Aesthetic, Resource Damage	-
Land-based dumping	M	Aesthetic, Resource Damage	Unknown
Storm drains and runoff	H	Aesthetic, Resource Damage, Human Health, Water Quality	Unknown
Land-based fishing (e.g., fishing line, gear)	L	Aesthetic, Resource Damage, Human Health, Water Quality	-
Ocean/Great Lakes-based fishing (e.g., derelict fishing gear)	H	Aesthetic, Resource Damage, Water Quality, User Conflict	↓
Derelict vessels	H	Aesthetic, Resource Damage, Human Health, Water Quality, Navigational Hazard	Unknown
Vessel-based (e.g., cruise ship, cargo ship, general vessel)	M	Resource Damage, User conflict	Unknown
Hurricane/Storm	H	Aesthetic, Resource Damage, Navigational Hazard	↑

Tsunami	L	Aesthetic, Resource Damage, Navigational Hazard, Human Health, Water Quality	↓
Creosote Logs	M	Aesthetic, Resource Damage, Water Quality	↓

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

The Washington Coastal Management Program does not collect or track marine debris. NOAA and several Washington State partners prepared the [2021 Washington Marine Debris Action Plan \(Action Plan\)](#),³⁸ the first update of the original 2018 Action Plan, a framework for strategic action to reduce marine debris impact. The overall Action Plan applies from 2018 to 2024, and the operational cycle applies from 2021 to 2022. The Washington Coastal Management Program was involved in the creation of the plan and will continue to support the actions and partners. At the end of 2022, partners met to update the Action Plan and on October 22-23, 2024, a workshop took place to reflect on the 2018-2024 Action Plan, update collaborative actions to address marine debris issues, and begin drafting the next Action Plan, to be published in 2025.

Management Characterization

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

Table 15. Significant Changes in Marine Debris Management

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

³⁸ <https://marinedebris.noaa.gov/regional-action-plans/washington-marine-debris-action-plan>

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

The significant changes described below were not driven or supported by the Washington CZMP 309 strategy:

- During the 2020 legislative session, the Washington Legislature passed a statewide ban on single-use plastic bags to reduce plastic pollution, litter, and waste.
- On May 17, 2021, Governor Inslee signed into law SB5022 which mandates minimum post-consumer recycled content for certain products.
- On March 24, 2022, Governor Inslee signed bipartisan legislation that increased funding for the Washington Department of Natural Resource (DNR)'s derelict vessel removal program. DNR manages a Derelict Vessel Removal Program (DVRP) to address the problem of derelict or abandoned vessels in Washington waters. Effective since June 9, 2022, 25% of the water excise tax is deposited in the derelict vessel removal account. RCW 82.49.030 was amended accordingly. In the 2021-2023 biennium, DVRP removed 319 vessels. Recently, DNR has also expanded efforts to remove debris from tribal lands. In 2024, DVRP received \$1 million from the NOAA Marine Debris Program and \$400,000 from DNR to remove abandoned, derelict vessels in waterways and on tribal land.³⁹

DNR also has a [Vessel Turn-in Program](#)⁴⁰ which underwent significant changes in 2020. In 2020, the legislature amended various provisions of the regulations relating to derelict vessels to increase the effectiveness of the derelict vessel removal program. A suite of prevention and enforcement measures were added to RCW 79.100 including the removal of the \$200,000 spending cap per biennium on the voluntary vessel turn-in program, as well as revisions to vessel inspection and marine insurance policy requirements. Additionally, to prevent future potential dereliction or vessel abandonment, RCW 88.02.380 was amended to authorize derelict vessel removal program staff of DNR to issue tickets by mail for vessel registration enforcement.

- In 2023, the Northwest Straits Commission secured \$6 million in Congressionally Directed Spending funding for derelict vessel removal by a collaborative working group made up by the Marine Resource Committees and tribal partners within the Northwest Straits region.

³⁹ <https://www.dnr.wa.gov/news/dnr-commits-14-million-remove-even-more-polluting-vessels-waterways>

⁴⁰ <https://www.dnr.wa.gov/programs-and-services/aquatics/derelict-vessels/vessel-turn-program>

- On April 24, 2023, Gov. Jay Inslee signed into law HB 1085, a bill to reduce single-use plastic water bottles; plastic containers, wrappers, and packaging for health and beauty products; and certain foam structures for overwater docks.
- The 2021 Action Plan outlines goals, strategies, ongoing actions, leads, and partners that are dedicated to marine debris prevention, removal, research, and coordination.
- The [Salish Synergy: Cross-Border Debris Removal and Recycling \(Salish Synergy\) project](#)⁴¹ took place from September 2021 to February 2024. The National Marine Sanctuary Foundation and its partners conducted six cleanup events on the outer coast beaches of Washington State, detecting and removing medium- to large-scale marine debris.

Enhancement Area Prioritization

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

High ☐
Medium ☐
Low ☒

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

Marine debris remains a lower priority for the Washington CZMP due to more urgent needs in other areas of coastal management and limited staff capacity. Additionally, other state agencies and organizations are leading efforts to address marine debris in Washington and are effectively managing both land and ocean-based sources. The Program is committed to maintaining strong partnerships with these organizations and will seek additional funding and support to enhance their efforts where possible.

⁴¹ <https://clearinghouse.marinedebris.noaa.gov/project?mode=View&projectId=2243>

Ocean Resources

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

Resource Characterization

1. Understanding the ocean and Great Lakes economy can help improve management of the resources it depends on. Using Economics: National Ocean Watch (ENOW),⁴² indicate the status of the ocean and Great Lakes economy as of 2021 (the most recent data) in the tables below. Include graphs and figures, as appropriate, to help illustrate the information. Note ENOW data are not available for the territories. The territories can provide alternative data, if available, or a general narrative, to capture the value of their ocean economy.

All Coastal Counties in Washington

The tables below present data from ENOW for all counties in Washington’s coastal zone, encompassing both Puget Sound and the Pacific Coast. These two regions have distinct economies.

Table 16. Status of Ocean and Great Lakes Economy for Coastal Counties (2021)

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	122123	8905	2607	18727	23685	1080	67117
Establishments (# of Establishments)	6811	558	167	144	474	65	5403
Wages (Millions of Dollars)	6571	663	278	1577	1953	88518	2012
GDP (Millions of Dollars)	14982	1567	492	4658	2892	260	5112

⁴² coast.noaa.gov/digitalcoast/tools/enow.html. If you select any coastal county for your state, you are directed to various data displays for that county. In the upper left of the screen, click the “State” box, to the left of the county box so that the state name will be highlighted. Now the data will reflect statewide data for all of the state’s coastal counties. Make sure “2021” is selected for the year (top right corner). You can then click through the sector types by selecting the icons along the top and the type of economic data (employment, wages, GDP, etc.), by clicking through the icons on the left.

Table 17. Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2021)

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	9529	-732	245	2326	5446	82	2162
Establishments (# of Establishments)	683	-118	9	-8	79	-9	730
Wages (Millions of Dollars)	2748	150	132	631	897	38890	900
GDP (Millions of Dollars)	6419	500	188	2198	909	99	2525

The tables below display ENOW data for all counties adjacent to the Pacific Coast (Clallam, Jefferson, Grays Harbor, Pacific, and Wahkiakum).

Pacific Coastal Counties (Clallam, Jefferson, Grays Harbor, Pacific, Wahkiakum)

Table 18. Status of Ocean and Great Lakes Economy for Coastal Counties (2021)

	All Ocean Sectors ###	Living Resources ***	Marine Construction	Ship & Boat Building ^^^	Marine Transportation ^^^	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	8172	1001	NA	131	80	NA	6116
Establishments (# of Establishments)	804	109	NA	7	6	NA	650
Wages (Millions of Dollars)	262.6	39.4	NA	7.44	7.74	NA	155.1
GDP (Millions of Dollars)	635.4	85.8	NA	22	9.48	NA	411.5

Does not include Wahkiakum County

*** Does not include Clallam or Wahkiakum County

^^^ Clallam County data only

Table 19. Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2021)

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	-363	139	NA	NA	NA	NA	355
Establishments (# of Establishments)	-46	- 71	NA	NA	NA	NA	36
Wages (Millions of Dollars)	104.4	13.7	NA	NA	NA	NA	83.7
GDP (Millions of Dollars)	204.7	28.4	NA	NA	NA	NA	204.9

Does not include Wahkiakum County

*** Does not include Clallam or Wahkiakum County

There are significant gaps in certain sectors due to data suppression or absence. However, the data reveals an economy with increased GDP and wages and a decline in jobs and establishments over the past 16 years. Notably, tourism and recreation show strong growth, suggesting a potential shift in the economic landscape.

- Understanding existing uses within ocean and Great Lakes waters can help reduce use conflicts and minimize threats when planning for ocean and Great Lakes resources. Using Ocean Reports,⁴³ indicate the number of uses within the ocean or Great Lakes waters off of your state. To avoid duplication, energy uses (including pipelines and cables) are reported under “Energy and Government Facility Siting” in the following template. However, feel free to include energy uses in this table as well if listing all uses within ocean and Great Lakes waters in one place is preferred. Add additional lines, as needed, to include additional uses that are important to your state. Note: The Ocean Reports tool does not include data for the Great Lakes states. Great Lakes states should fill in the table as best they can using other data sources.

⁴³ coast.noaa.gov/digitalcoast/tools/ort.html. Select the “view quick reports” button and enter the name of your state or territory in the search bar. Some larger states may have the “quick reports” for their state waters broken into several different reports. Click on the “state waters” reports to view. Note the Ocean Reports tool also generates “quick reports” for national estuarine research reserve boundaries in your state. These reports are just a subset of the “state waters” report(s) so you can ignore the reserve “quick reports.” Use the icons on the left hand side to select different categories: general information, energy and minerals, natural resources and conservation, oceanographic and biophysical, transportation and infrastructure, and economics and commerce. Scroll through each category to find the data needed to complete the table. The top six categories in the table above are in the “energy and minerals” section while the other information to complete the table can be found under the “transportation and infrastructure” section.

Table 20. Uses within Ocean or Great Lakes Waters

Type of Use	Number of Sites
Federal sand and gravel leases <i>(Completed)</i>	"The data are not applicable to this location"
Federal sand and gravel leases <i>(Active)</i>	"The data are not applicable to this location"
Federal sand and gravel leases <i>(Expired)</i>	"The data are not applicable to this location"
Federal sand and gravel leases <i>(Proposed)</i>	"The data are not applicable to this location"
Beach Nourishment Projects	10
Ocean Disposal Sites	36 inside; 17 outside within 10 nm
Principle Ports <i>(Number and Total Tonnage)</i>	9; total yearly tonnage 92,519,121
Coastal Maintained Channels	47
Designated Anchorage Areas	40
Danger Zones and Restricted Areas	3
Other (please specify)	

3. In the table below, characterize how the threats to and use conflicts over ocean and Great Lakes resources in the state's or territory's coastal zone have changed since the last assessment.

Table 21. Significant Changes to Ocean and Great Lakes Resources and Uses

Resource/Use Change in the Threat to the Resource or Use Conflict	Since Last Assessment (↑, ↓, -, unknown)
Benthic habitat (including coral reefs)	↑ Threats from hypoxia, harmful algal blooms, marine heat waves, and ocean acidification are increasing. Habitat could be impacted by cables and infrastructure associated with offshore development.
Living marine resources (fish, shellfish, marine mammals, birds, etc.)	↑ Threats from hypoxia, harmful algal blooms, marine heat waves, and ocean acidification are increasing. These threaten most species, either directly or indirectly, including ESA species, and economically important species.
Sand/gravel	-
Cultural/historic	↑ Impacts on living marine resources from threats such as changing ocean conditions and ocean acidification hold profound cultural and historical significance for coastal Tribes and communities. Furthermore, shorelines of cultural and historical importance are being lost and threatened by sea level rise and coastal erosion.
Transportation/ navigation	-

Offshore development	↑ Interest in ocean energy development has increased nationwide, including two unsolicited lease requests for areas west of Washington being submitted to BOEM. Any offshore development would have significant use conflicts with fishing and shipping. Separately, at least one fiber optic cable project is moving forward.
Energy production	↑ The future potential for offshore energy projects has increased, which could have major use conflicts with ocean users, primarily fishing and shipping.
Fishing (commercial and recreational)	↑ Fisheries trends can vary significantly. Salmon stocks have been depressed by unfavorable ocean conditions; Dungeness crab have experienced robust years but also faced closures due to harmful algal blooms; groundfish fisheries have been fairly stable; and shrimp landings have increased. Changing ocean conditions, including hypoxia, harmful algal blooms, marine heat waves, and ocean acidification pose varying threats to fishing. Any offshore development with significant infrastructure would constrain fishing areas.
Recreation/tourism	-
Sand/gravel extraction	-
Dredge disposal	-
Aquaculture	↑
Other (please specify)	

4. For those ocean and Great Lakes resources and uses in the table above that had an increase in threat to the resource or increased use conflict in the state's or territory's coastal zone since the last assessment, characterize the major contributors to that increase. Place an "X" in the column if the use or phenomenon is a major contributor to the increase.

Table 22. Major Contributors to an Increase in Threat or Use Conflict to Ocean and Great Lakes Resources

	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Commercial and Recreational)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/ Mineral Extraction	Ocean Acidification	Other (Specify)
Benthic habitat		X		X							X	Ocean warming, hypoxia, HABs
Living marine resources		X		X				X			X	Ocean warming, hypoxia, HABs
Cultural/ historic		X		X	X			X			X	Ocean warming, hypoxia, HABs, sea level rise, coastal erosion
Offshore development					X			X				
Energy production		X			X			X				
Fishing (commercial and recreational)		X		X							X	Ocean warming, hypoxia, HABs
Aquaculture			X	X	X	X					X	

5. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of ocean and Great Lakes resources or threats to those resources since the last assessment to augment the national data sets.

- [State of the Sound Report 2023](#)⁴⁴

The latest State of the Sound Report, released in 2023, utilizes the Puget Sound Vital Signs to assess ecosystem health and progress toward recovery. The report showed mixed results: six indicators improved, 23 showed no trend, seven had mixed results, and five worsened. Notably, the report stated:

“We see progress in indicators where decisionmakers and land managers have direct influence on habitat outcomes, for example, restoring estuaries and floodplains. We are encouraged by improving trends in summer chum salmon and some herring stocks.

We see the least progress or declines in indicators affected by multiple factors (such as Chinook salmon and orca population abundance) and large-scale forces, where we rely on decisions made nationally or even globally to create positive change.” (Pg 8).

- [Olympic Coast National Marine Sanctuary Condition Report – 2008-2019](#)⁴⁵

This report, officially published in 2022, evaluates the condition and trends of various resources and ecosystem services within the Olympic Coast National Marine Sanctuary. It adheres to a framework used throughout the National Marine Sanctuary system. While summarizing such a comprehensive condition report is challenging, the following paragraph from the concluding remarks is particularly instructive:

“While many aspects of the sanctuary, including water quality, seafloor habitat, many fish and marine mammal species, the condition of maritime archaeological resources, and several ecosystem services appear healthy and stable, we believe that current and projected impacts pose significant threats to the sanctuary. During this assessment period, starting in 2008, we have observed impacts that have influenced many of the status and trends presented throughout the report. These include marine heatwaves like ‘the blob,’ increased intensity and frequency of HABs, epizootic diseases like the widespread sea star wasting disease, impacts from ocean acidification, and an increase in the severity and duration of seasonal hypoxic events. Multi-stressor impacts to the ecosystem that may occur when two or more of these disruptions overlap in space and time present additional complexity that is challenging to understand and anticipate.” (Pg 329).

- [California Current Ecosystem Status Report 2023-2024](#)⁴⁶

The report describes a system presenting both positive and negative environmental conditions, resulting in mixed responses by marine organisms.

“Since the unprecedented marine heatwave of 2014-2016 (“The Blob”), the waters of the Northeast Pacific and most of the California Current have been warmer than normal. One of the larger El Niños on record occurred in late 2015-2016, followed by a brief

⁴⁴ <https://www.psp.wa.gov/sos>

⁴⁵ <https://nmssanctuaries.blob.core.windows.net/sanctuaries-prod/media/docs/2008-2019-ocnms-condition-report.pdf>

⁴⁶ <https://www.pcouncil.org/documents/2024/06/2023-2024-annual-ecosystem-status-report.pdf/>

respite during 2017 and 2018 when conditions were more “normal.” Since 2019, there have been large heatwaves offshore each year, typically lasting through late fall, with occasional penetrations into coastal waters from summer through fall. These often have ecological consequences (e.g. HAB events).” (Pg 4).

"While the CCE proved reasonably robust to ocean conditions in 2023, this resilience is not likely to be sustained indefinitely [...] continued ocean warming and ancillary impacts suggest that our methods for interpreting anomalous conditions must evolve. This need is particularly pronounced as species and habitats are confronted with new combinations of conditions, the information conveyed by familiar indicators changes, and 'new normals' replace historic expectations.” (Pg 37).

Management Characterization

1. Indicate if the approach is employed by the state or territory and if any significant state- or territory-level changes (positive or negative) in the management of ocean and Great Lakes resources have occurred since the last assessment?

Table 23. Significant Changes to Management of Ocean and Great Lakes Resources

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

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

- a. Describe the significance of the changes;

While there were no new state statutes, regulations, policies, case law, or comprehensive plans related to ocean resources during this assessment timeframe, there was significant effort to implement existing ones into local Shoreline Master Programs. Specifically, it has been a major focus to build Marine Spatial Planning policies, and Ocean Resources Management Act (ORMA) rules into Shoreline Master Programs. This is occurring during the periodic update process and

is supported by tools and guidance provided by the CMP. Some counties and municipalities have incorporated those changes, while others are in the process.

b. Specify if they were 309 or other CZM-driven changes; and

Yes, these were part of the previous 309 strategy that aimed to make Shoreline Master Programs consistent with the Marine Spatial Plan.

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

The outcome of this effort is that all local Shoreline Master Programs will be consistent with the policies of the Marine Spatial Plan, and ORMA rules. If new ocean use projects are proposed, the policies will be applied during the process to acquire necessary shoreline permits.

3. Indicate if your state or territory has a comprehensive ocean or Great Lakes management plan.

Table 24. Ocean Management Plan

Comprehensive Ocean/Great Lakes Management Plan	State Plan	Regional Plan
Completed plan (Y/N) (If yes, specify year completed)	Y, 2018	N
Under development (Y/N)	N	N
Web address (if available)	https://ecology.wa.gov/water-shorelines/shoreline-coastal-management/ocean-management/marine-spatial-planning	NA
Area covered by plan	State waters off Washington's Pacific Coast, from Cape Flattery to Cape Disappointment	NA

Enhancement Area Prioritization

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

High ☒

Medium ☐

Low ☐

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

Ocean resources hold immense importance for Washington State residents, Tribes, and coastal communities. Their environmental, economic, cultural, and historical significance is profound. Given the threats from changing ocean conditions and the potential for new uses, Washington State will continue to prioritize this enhancement area for the foreseeable future.

Public Access

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

Resource Characterization

1. Use the table below to provide data on public access availability within the coastal zone.

Table 25. Public Access Status and Trends

Type of Access	Current number	Changes or Trends Since Last Assessment (↑, ↓, -, unknown)	Cite data source
Beach access sites	584 (pedestrian access available)	—	Marine Shoreline Public Access Project – WA Department of Ecology (2009)
Shoreline (other than beach) access sites	106 (visual access primary usage) 314 (watercraft access available)	—	Marine Shoreline Public Access Project – WA Department of Ecology (2009)
Recreational boat (power or non-motorized) access sites	243 (two sources of information with different numbers)	—	WDFW Water Access Sites: http://wdfw.wa.gov/lands/water_access/county_map.html Marine Shoreline Public Access Project – WA Department of Ecology (2009).
Designated scenic vistas or overlook points	78 (view only)	—	Marine Shoreline Public Access Project – WA Department of Ecology (2009).
Fishing access points (i.e. piers, jetties)	79	—	Marine Shoreline Public Access Project – WA Department of Ecology (2009).

Coastal trails/ boardwalks (Please indicate number of trails/boardwalks and mileage)	No. of Trails/ boardwalks: ~200 access sites have trails of some sort 422 sites provide beach walking	—	Washington Public Shore Guide to Marine Waters - Department of Ecology (1986); Marine Shoreline Public Access Project – WA Department of Ecology (2009).
Acres of parkland/open space	Total sites: 1001 public access sites With ~ 980 miles of public shoreline Sites per miles of shoreline: 1.08 sites per mile	—	Marine Shoreline Public Access Project – WA Department of Ecology (2009).
Access sites that are Americans with Disabilities Act (ADA) compliant	8 on Pacific coast, 24 in Puget Sound 32 state parks (with marine shorelines) with ADA-compliant features	Unknown	Washington State Parks ADA Recreation interactive map
Other (please specify)		—	

Protecting public access to the State’s shorelines is one of three major policies of the Shoreline Management Act (SMA). “The public’s opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible...” [RCW 90.58.020]. The SMA requires Shoreline Master Programs (SMPs) to include a public access element to provide for public access to publicly-owned shorelines and a recreational element to preserve and enlarge recreational opportunities. [RCW 90.58.100(2)(b)(c)]. Public access to publicly owned shorelines is also a preferred use on shorelines of statewide significance. [RCW 90.58.020(5)(6)].

The SMP Guidelines address SMP public access requirements. These include a requirement to identify public access opportunities and comply with specific principles and standards. The Shoreline Master Programs Handbook and Public Access Handbook provides guidance for how local governments can best meet the Guidelines.⁴⁷ Following these requirements, local

⁴⁷ SMP Handbook Chapter 9 – Shoreline Public Access:
<https://fortress.wa.gov/ecy/publications/parts/1106010part9.pdf>

governments are required to include a public access element as part of their Shoreline Master Programs.

At this time, the best available data on public access is a public access inventory developed between 2009-2011 and displayed on the [Washington Coastal Atlas](#).⁴⁸ Used in the previous assessment, this comprehensive inventory includes marine shoreline public access within Washington's Coastal Zone. This project represented a significant update to the last comprehensive public access inventory which was in 1986. Products include downloadable GIS map layers indicating both the lengths of public shoreline and the point where the shoreline can be accessed. Each access point feature is associated with around 50 descriptive attributes, allowing for both quantitative and qualitative analysis related to public access using the downloadable GIS data. The Coastal Atlas also features a public access search tool allowing users to search for access sites by county, by name, by location or by specific amenities and activities, providing pictures and notes for most locations.

Regarding public access trends and changes since last assessment, since the completion of the 2009 Marine Shoreline Public Access Project, the Washington CZMP has had very limited capacity to add new public access locations to the Coastal Atlas or remove locations that are now defunct. Addressing this gap has been a priority for the Washington CZMP and future updates to this dataset are scheduled to be completed in 2026 by the Washington CZMP's NOAA Coastal Management Fellow.

Regarding the category of ADA compliant access sites, Washington State Parks hosts an interactive web view map where members of the public can find ADA-compliant facilities and recreational opportunities at state parks. According to WDFW, the map is "a cooperative effort between Washington State Parks, Washington Department of Fish and Wildlife, the Recreation and Conservation Office, Department of Natural Resources, U.S. Forest Service, as well as various counties, cities, and private landowners." It is important to note that ADA-compliant features can vary widely across state parks and at public access sites in general (i.e. campsites, walkways, restrooms); therefore, the data provided does not include uniform features.

2. Briefly characterize the demand for coastal public access and the process for periodically assessing demand. Include a statement on the projected population increase for your coastal counties. There are several additional sources of statewide information that may help inform this response, such as the Statewide Comprehensive Outdoor Recreation Plan, the National Survey on Fishing, Hunting, and Wildlife Associated Recreation, and your state's tourism office.

As Washington's population continues to grow, so does the demand for shoreline public access for outdoor recreation. The Washington State Office of Financial Management estimates Washington State's current population to be 8,035,700 residents (2024), an increase of 16.3% since 2010. By 2050, Washington's population is expected to continue to increase by almost 2 million residents. However, many Washington residents who have interest in recreational activities may not have equal access to pursue these activities. Many communities lack access

⁴⁸ <https://apps.ecology.wa.gov/coastalatlas/tools/PublicAccessAdvanced.aspx>

to outdoor recreation opportunities like water-dependent activities, fishing, and boating access, throughout Washington and across the United States.⁴⁹ For example, much of Washington's shoreline is private property, and there is an increasing demand for public access points.⁵⁰

Among recreation providers, water access (41%) is ranked the third most common type of managed outdoor recreation. However, shoreline public access can include neighborhood or community parks (46%) and regional, county, local trails or greenways (43%), which were the top two most common types. Usage of these public access facilities by residents has increased. The [Washington State Recreation and Conservation Plan \(2023\)](#)⁵¹ noted that since 2017, Washington resident participation in paddle sports increased by 28%, wildlife or nature viewing increased by 28%, and visiting outdoor cultural or historical facilities increased by 27%. However, recreation users expressed that two of the most significant barriers to outdoor recreation participation are overcrowding and limited access to outdoor recreation spaces, including shorelines for boater and paddler access.⁵² As reported by the Washington State Recreation and Conservation Plan, 62% of Washington residents use water access for swimming, 52% participate in paddle sports, and one-third of Washington residents participate in motorized boating. Based on these trends, shoreline public access is an essential component of outdoor recreation in Washington.

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

As mentioned above, the Washington State Recreation and Conservation Office published a 2023 Recreation and Conservation plan which was approved by the Washington State Governor and National Park Service. The final plan includes challenges, trends, an inventory of opportunities, and statewide priorities and goals for public access.

The Washington CZMP successfully matched with a 2024-2026 NOAA Coastal Management Fellow whose primary project focuses on improving shoreline public access in Washington's coastal zone. This project addresses two of the NOAA Office for Coastal Management's strategic focus areas, advances the Washington State Coastal Zone Management Section 309 Assessment and Strategy for cumulative and secondary impacts of growth, and will reduce information barriers to public access. The Fellow will provide Washington's visitors and residents with easily accessible and up-to-date information on marine shoreline public access locations, update Washington's Shoreline Permitting Manual to address shoreline public access, and provide broader guidance and best practices for local governments who are interested in comprehensively planning for shoreline public access.

Management Characterization:

⁴⁹ https://www.dnr.wa.gov/publications/amp_rec_oarrplan.pdf

⁵⁰ <https://fortress.wa.gov/ecy/publications/publications/0903019.pdf>

⁵¹ <https://wa-rco-scorp-2023-wa-rco.hub.arcgis.com/documents/23587e5259f84294b040cf20b0838271/explore>

⁵² <https://rco.wa.gov/wp-content/uploads/2019/10/RecAssetStateSignificance.pdf>

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could impact the future provision of public access to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.

Table 26. Significant Changes in Public Access Management

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

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

- **Shoreline Master Program Updates**

Shoreline Master Program (SMP) Guidelines require local governments to “identify public access needs and opportunities within the jurisdiction and explore actions to enhance shoreline recreation facilities” ([WAC 173-26-201\(3\)\(d\)\(v\)](#)). During the shoreline inventory phase, local governments identify current physical and visual public access sites. Additional public access opportunities are identified through public outreach and comment periods. Existing and potential public access sites are identified in the shoreline inventory and characterization report, preferably for each shoreline reach. While these data exists within local SMPs, the Washington CZMP has not had the capacity to inventory the full set of data across all jurisdictions in the coastal zone in recent years.

To date, 127 of the 133 local governments in the coastal zone have Ecology-approved SMPs, all containing a public access component.

- **Acquisition Programs or Policies**

While Washington's CZM program does not directly acquire or protect public access, we do fund staff who work with state, local, and tribal governments, as well as land trusts and other nonprofit organizations, to connect interested groups with federal grants for acquisition and restoration. Many of the sites acquired have a public access component.

3. Indicate if your state or territory has a publicly available public access guide. How current is the publication and how frequently it is updated?

Table 27. Publicly Available Access Guide

Public Access Guide	Printed	Online	Mobile App
State or territory has? (Y or N)	N	Y: Washington Coastal Atlas	N
Web address (if applicable)		https://apps.ecology.wa.gov/coastalatlas/tools/PublicAccess.aspx	
Date of last update		2014	
Frequency of update		Updates to individual sites happen as needed, however, a comprehensive update has not occurred in many years (EST. 2026)	

Enhancement Area Prioritization

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

High ☐
Medium ☒
Low ☐

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

Public Access remains a medium priority in this assessment. It is one of the primary goals of the Shoreline Management Act, which forms the cornerstone of Washington's CZMP. While the CZMP does not currently acquire or protect public access sites with CZM funds, it encourages

public access through development of SMPs and provides access to information on the Coastal Atlas website. Additionally, as described above, the Washington CZMP has a NOAA fellow working on a multi-year public access inventory and improvement project.

The Washington Department of Ecology also offers grant funding and administration to support local government shoreline planning efforts, including public access planning. Grants have been awarded on a competitive basis, with approximately \$3 million total available in the most recent funding cycle. All Washington towns, cities, and counties with a Shoreline Master Program (SMP) are eligible to apply for funding up to \$250,000. In the 2021-2023 biennium, one project was funded that prioritized a public access element. The City of Stevenson, Public Works Department was awarded \$87,000 to develop a Shoreline Public Access and Trail Plan to identify local public access needs that reflect the community vision. In the 2023-2025 biennium, multiple projects were funded that prioritized a public access element. The City of North Bend was awarded \$100,000 to develop a shoreline public access and trail plan to implement the SMP and identify local needs for integrated access that focuses on community vision, efficient permitting, and reducing use conflicts. The City of Port Townsend was awarded \$222,890 to review and streamline the permitting process to merge the city's Waterwalk (public access) with sea level rise and king tide mitigation. Lastly, the City of Rock Island was awarded \$40,282 to evaluate and identify safe public access points for water-related recreation to increase recreational opportunities and public access to publicly owned areas of the shoreline.

Siting Energy and Government Facilities

Section 309 Enhancement Objective: Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities and energy-related activities and Government activities which may be of greater than local significance. §309(a)(8)⁵³

Resource Characterization

1. In the table below, characterize the status and trends of different types of energy facilities and activities in the state's or territory's coastal zone based on best-available data. If available, identify the approximate number of facilities by type. For ocean-facing states and territories (not Great Lakes states), Ocean Reports⁵⁴ includes existing data for many energy facilities and activities.

Table 28. Status and Trends in Energy Facilities and Activities in the Coastal Zone

Type of Energy Facility/Activity	Exists in Coastal Zone (# or Y/N)	Change in Existing Facilities/Activities Since Last Assessment (↑, ↓, -, unknown)	Proposed in Coastal Zone (# or Y/N)	Change in Proposed Facilities/Activities Since Last Assessment (↑, ↓, -, unknown)
Pipelines	8	-	Y	-
Electrical grid (transmission cables)	Y	Unknown	N	Unknown
Ports	9	-	N	-
Liquid natural gas (LNG)	N	-	N	↓
Electric Power Facilities (Oil)	Unknown	Unknown	N	Unknown
Electric Power Facilities (Gas)	16*	Unknown	Y	Unknown
Electric Power Facilities (Coal)	N		N	-

⁵³ CZMA § 309(a)(8) is derived from program approval requirements in CZMA § 306(d)(8), which states: “The management program provides for adequate consideration of the national interest involved in planning for, and managing the coastal zone, including the siting of facilities such as energy facilities which are of greater than local significance. In the case of energy facilities, the Secretary shall find that the State has given consideration to any applicable national or interstate energy plan or program.”

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

⁵⁴ coast.noaa.gov/digitalcoast/tools/ort.html

Electric Power Facilities (Nuclear)	N	-	N	-
Electric Power Facilities (Wave)	N	-	N	-
Electric Power Facilities (Tidal)	N	-	Y	↑
Electric Power Facilities (Current, ocean, lake, river)	N	-	N	-
Electric Power Facilities (Hydropower)	35*	Unknown	Unknown	Unknown
Electric Power Facilities (Ocean thermal energy conversion)	N	-	N	-
Electric Power Facilities (Solar)	1*	Unknown	1	↑
Electric Power Facilities (Biomass)	16*	Unknown	1	↑
Electric Power Facilities (Battery Storage)	Y	Unknown	6	↑
Other (please specify)				

= Previous report

* = Taken from or based on Ocean Reports, questionable data accuracy

? = Unknown, unsure

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

- **Low Carbon Energy Project Siting Improvement Report 2022**

In 2022, at the direction of the Legislature, the departments of Ecology and Commerce convened stakeholders and consulted with tribes to produce the Low Carbon Energy Project Siting Improvement Report (2022) about improving siting, environmental review, and permitting processes for low-carbon energy projects in Washington. The purpose of the report was to develop recommendations for potential improvements to the permitting processes for utility-scale projects and facilities in Washington. These

processes would contribute to achieving greenhouse gas emissions limits established under RCW 70A.45.020, while maintaining standards for the protection of the environment and the preservation of tribal consultation and treaty rights. The Low Carbon Energy Project Siting Improvement Report proposed 73 recommendations to address the identified concerns. Many of the recommendations were implemented in HB 1216 or in other legislation.

- **ESSHB 1216**

This bill was passed to improve siting and permitting of clean energy projects. HB 1216 establishes specific activities to advance more efficient and effective siting and permitting of clean energy facilities. These activities include developing programs and a new permit pathway, conducting environmental reviews and studies, and formation of the Council. As of October 1, 2024, seven of these activities are completed, nine are ongoing, and two are planned.

- **Interagency Clean Energy Siting Coordinating Council Annual Legislative Report (Clean Energy Siting Council 2024)**

The Clean Energy Siting Council members represent 13 state agencies, councils, offices, departments, and commissions. The annual report summarizes, “Progress on efficient, effective, and responsible siting and permitting of clean energy projects; areas of additional work, including where clean energy project siting and permitting outcomes are not broadly recognized as efficient, effective, or responsible; resource needs; recommendations for future non-project environmental impact statements for categories of clean energy projects; and any needed policy changes to help achieve the deployment of clean energy necessary to meet the state's statutory greenhouse gas emissions limits, chapter 70A.45 RCW, and the clean energy transformation act requirements, chapter 19.405 RCW, and to support achieving the state energy strategy adopted by the department of commerce.”

- **Siting and Permitting Reform in Washington: A Report to the Washington Department of Commerce**

HB 1216 directed Commerce to contract with an external party to carry out an [independent evaluation](#) of state agency siting and permitting processes for clean energy projects. The evaluation identified models used in other states and developed recommendations for improving Washington’s processes to achieve more efficient and effective siting of clean energy projects. The authors conclude that Washington’s permitting process requires significant reform and propose recommendations addressing funding and staffing, permitting oversight and information, SEPA, EFSEC, local government, and planning and development of generation and transmission facilities.

- **Transmission Corridors Workgroup**

Due to Washington’s unique geography and distribution of renewable resources relative to sources of electric load, geographically-specific transmission needs and

considerations emerged frequently as a topic at TCWG meetings. Given its importance, the TCWG articulated the following finding:

Several existing transmission corridors need increased capacity to meet CETA goals.

The current transmission grid has several constrained pathways of bi-directional power flow. Often in these corridors during periods of peak demand, existing transmission infrastructure has limited (or no) capacity to accommodate the demand increases. To ensure sufficient transmission from areas of generation to areas of demand, increased transmission capacity is projected to be needed in at least two, and potentially three, specific corridors:

- East-West, across the Cascades (bringing in wind and solar from eastern Washington, as well as abundant wind power from Montana and Wyoming)
- North-South, along the I-5 corridor (bringing in wind and solar from eastern Washington, abundant wind power from Montana and Wyoming, solar from California and the Southwest, plus possible hydro resources from Canada)
- Southern Coastal Areas to I-5 corridor

- **Environmental Impact Statements**

Ecology developed three non-project environmental impact statements for utility-scale solar energy projects, utility-scale onshore wind energy projects, and green electrolytic or renewable hydrogen projects.

- **EFSEC non-project environmental impact statement for high-voltage electrical transmission facilities**

As directed by SSB 5165 (Chapter 229, Laws of 2023), EFSEC engaged a contractor in June 2024 to develop a Programmatic Environmental Impact Statement (PEIS) for high-voltage electrical transmission facilities. Building on the work that Ecology has already completed with the other related PEISs, EFSEC expects the preliminary draft of the PEIS to be ready by the end of 2024.

- **Green Electrolytic Hydrogen Report**

At the direction of the Legislature (SB 5910; Chapter 292, Laws of 2022), Commerce produced the report *Green Electrolytic Hydrogen and Renewable Fuels: Recommendations for Deployment (January 2024)*. The report found that Washington will have strong demand for green electrolytic hydrogen and renewable fuels as part of a net zero economy, and the state will need to rapidly scale up production of green hydrogen through electrolysis. The report also found that hydrogen and renewable fuels production must be developed in coordination with expanded renewable electricity capacity, and siting and permitting processes for green hydrogen will pose challenges.

- **\$1 billion federal award for Pacific Northwest Hydrogen Hub**

In October 2023, the U.S. Department of Energy (DOE) selected the Pacific Northwest Hydrogen Association's \$1 billion Hydrogen Hub proposal for award negotiations. The

award is intended to accelerate the commercial-scale deployment of clean hydrogen and is expected to leverage more than \$8 billion in public and private investments in Washington, Oregon and Montana. Commerce helped to establish the association and serves on its board. Phase I of the award from DOE was finalized in July 2024.

- **WSU Energy Program conducted pumped storage siting study**

As directed by HB 1216 Sec. 306, this study was initiated to identify issues and interests related to siting pumped storage projects in Washington State in order to support expanded capacity to store intermittently produced renewable energy. The bill states that “The goal of the process is to identify and understand issues and interests of various stakeholders and federally recognized Indian tribes related to areas where pumped storage might be sited, providing useful information to developers of potential projects, and for subsequent environmental reviews under the state environmental policy act.”

- **Rural clean energy study**

As directed by HB 1216 Sec. 310, the study’s purpose is to increase mutual understanding between rural communities, representative interests, and government agencies and policymakers about the potential opportunities and impacts of renewable energy development in rural communities throughout Washington. Joint Committee on Energy Supply, Energy Conservation, and Energy Review Rural Energy Study to be complete December 2024.

- **Advancing Zero Emission Fuels in Washington’s Shipping Sector (2024 RMI)**

In pursuit of ambitious state decarbonization goals, the Washington State Department of Commerce has identified renewable fuels made from clean hydrogen as an essential solution, especially in hard-to-electrify sectors such as shipping and aviation. Washington ports and regional maritime stakeholders have also demonstrated a strong ambition to advance shipping-specific decarbonization initiatives, given regulatory pressures from the International Maritime Organization (IMO) and the availability of robust hydrogen production subsidies in the United States this decade.

3. Briefly characterize the existing status and trends for federal government facilities and activities of greater than local significance in the state’s coastal zone since the last assessment.

- Tacoma LNG permit withdrawn
- Six Sovereigns Agreement: The Biden-Harris Administration announced a historic agreement to work in partnership with Tribes and States from the Pacific Northwest to restore wild salmon populations, expand Tribally sponsored clean energy production, and provide stability for communities that depend on the Columbia River System for agriculture, energy, recreation, and transportation. (2023)
- Bonneville Power Administration Transmission Plan (2022)

- Department of Energy (DOE) Hydrogen Hub (2023)

Management Characterization

1. Indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) that could facilitate or impede energy and government facility siting and activities have occurred since the last assessment.

Table 29. Significant Changes in Energy and Government Facility Management

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

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

- a. Describe the significance of the changes;

Ecology has been engaged in meetings with EFSEC to develop a review process and coordination methods between sister agencies and potential applicants for energy projects that may require a CZM federal consistency decision. These procedures will support EFSEC in evaluating newly proposed clean energy projects and allow Ecology to maintain an effective role as the lead state agency for CZM federal consistency review.

- b. Specify if they were 309 or other CZM-driven changes; and

These changes were not 309 or CZM-driven changes.

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

The likely and intended outcome for all of these changes is to create a regulatory environment that allows Washington state to transition its energy sector to one that produces less emissions while simultaneously continuing the state's commitment to environmental protection.

Enhancement Area Prioritization

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

High ☐
Medium ☒
Low ☐

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

As the assessment above indicates, this area of work is of paramount importance to the state and extends beyond the scope of the Washington CZMP. Although its significance is undeniable, we have classified it as a medium priority for the CZMP for this assessment. This classification is not due to a lack of real-world importance, but because the state is adopting a broader, more comprehensive approach to addressing the pressing issue of transforming our energy economy.

Special Area Management Planning

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

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

Resource Characterization

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

Washington’s CZMP is not considering the development of a new SAMP within the next five years. The Washington CZMP’s primary comprehensive planning mechanism for balancing coastal uses and natural resource protections is local Shoreline Master Programs (SMPs). While not considered SAMPs, SMPs are locally developed land-use policies and regulations that guide use of Washington shorelines. SMPs apply to both public and private uses for Washington’s more than 28,000 miles of lake, stream, and marine shorelines.

Table 30. Opportunities for New or Updated Special Area Management Plans

Geographic Area	Opportunities for New or Updated Special Area Management Plans Major conflicts/issues
N/A	N/A

Although they are not being considered for formal SAMPs, several ongoing collaborative approaches and plans to manage high priority coastal and estuarine uses, issues, and conflicts are ongoing or have been adopted. They are listed under the question below.

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of SAMPs since the last assessment.

Washington's CZMP does not actively implement formal SAMPs as a management tool nor is it considering the development of a new SAMP within the next five years. However, the CZMP supports and participates in other plans and planning processes to proactively address high priority issues, potential conflicts, and resource uses in the coastal zone. These include:

- [Washington State Marine Spatial Plan](#)⁵⁵

Although it is not an officially designated SAMP, the Washington CZMP adopted the Marine Spatial Plan (MSP) for Washington's Pacific Coast in 2018. The development of the MSP was a collaborative process, with project management for CZMP staff funded under Section 309. The MSP provides information on coastal uses and resources, provides analyses to support decision-making, and establishes a framework and guidance that improve the coordination, siting, and evaluation of new ocean uses and assist in the implementation of Washington's state laws and policies, including the enforceable policies contained in the Ocean Resources Management Act and its regulations. The MSP achieves similar goals of a SAMP for Washington's Pacific Coast.

- [The Willapa-Grays Harbor Estuary Collaborative](#)⁵⁶

The Willapa-Grays Harbor Estuary Collaborative formed in April 2022 following the conclusion of a study involving shellfish farmers and resource managers that examined interactions between shellfish farming, eelgrass, and burrowing shrimp. It is a group of local, Tribal, state, federal, industry, and environmental organizations that are coordinating to manage shellfish aquaculture and other activities in the coastal estuaries of Willapa Bay and Grays Harbor through ecosystem-based management. Their goal is to increase the resilience of communities and ecosystems in the bays while building trust and common understandings. The collaborative is coordinated by Washington Sea Grant and a member-elected Planning Committee. Department of Ecology participates as a member, with the Washington CZMP currently exploring opportunities to

⁵⁵ <https://ecology.wa.gov/water-shorelines/shoreline-coastal-management/ocean-management/marine-spatial-planning>

⁵⁶ <https://wghec.org/>

collaborate and align with the collaborative's efforts related to coastal community resilience.

- [Lower Columbia Solutions Group](#)⁵⁷

The Lower Columbia Solutions Group (LCSG) was first convened in 2002 by the governors of Washington and Oregon to work towards a solution for severe erosion at the mouth of the Columbia River by increasing the beneficial use of dredge sediment. The LCSG is a bi-state partnership of local, state, and federal agencies, fishing and crabbing interests, environmental groups, developers, and other stakeholders. The Washington CZMP has provided leadership on LCSG efforts since its inception. The US Army Corps' Portland District, the Oregon Coastal Zone Management Program, EPA, and NOAA have also provided the leadership backbone to maintain the team. The LCSG maintains a Regional Sediment Management Plan, which was last updated in 2023. The Plan outlines near-shore and beneficial use disposal sites along the Oregon and Washington coasts, which are monitored for biological and other impacts.

- [European Green Crab 2025-2031 Management Plan for Washington](#)⁵⁸

In 2024, the Washington Department of Fish and Wildlife (WDFW) published a new long-term management plan for invasive European green crabs. This harmful shore crab species is a threat to native shellfish, estuary habitats, eelgrass, Washington's aquaculture industry, and other tribal, cultural, and environmental values. The plan represents a year-long collaboration with Tribal governments, U.S. federal agencies, Washington state agencies, shellfish growers, public universities, and additional partners. The Department of Ecology's Shorelands & Environmental Assistance Program, which houses the CZMP, supported the co-creation of the management plan through participation by Northwest Straits Commission and Padilla Bay National Estuarine Research Reserve staff. The CZMP will work with these partners to support implementation of the plan and alignment with other CZM efforts as needed.

- The Washington CZMP has led or participated in numerous planning efforts to address coastal hazards issues through a multi-benefit resilience lens, particularly on Washington's Pacific Coast. These plans and initiatives are detailed in the Coastal Hazards section of this assessment.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could help prepare and implement SAMPs in the coastal zone.

⁵⁷ <https://lowercumbiasolutions.org/>

⁵⁸ <https://wdfw.wa.gov/publications/02537>

Table 31. Significant Changes in Special Area Management Planning

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

*Washington's CZMP does not currently develop formal SAMPs but instead develops or provides input on management plans and planning approaches that contain the same elements as a formal SAMP. These include local SMPs as well as other plans and collaborative planning approaches.

The only exception is the Grays Harbor Estuary Management Plan (GHEMP), which was formally certified as a SAMP by NOAA OCM in 1993. The GHEMP was first adopted in 1986 by the Grays Harbor area local governments and by the state and federal agencies with pertinent regulatory authorities, following conflicts over development proposals in the early 1970s. The combination of very high resource values and the importance of industrial and port uses to the local economy led to these conflicts. To resolve these disputes, a task force of federal, state, and local agencies with management responsibility for Grays Harbor prepared the special area management plan, with funding support from the CZM Program. The GHEMP did not eliminate or modify any of the laws, regulations, or policies which govern the actions and decisions of local, state, or federal agencies. Rather, the GHEMP aimed to improve interpretation and implementation of laws and regulations that existed at the time.

Today, the GHEMP does not have an implementation mechanism. The GHEMP has effectively been replaced and superseded by local SMPs, which serve as the primary instruments for guiding protection, use, and development of shoreline areas in and around the Grays Harbor estuary. Local SMPs have the notable advantage of containing both policy and regulatory elements, periodic review timelines and amendment processes, as well as clear implementation and enforcement authorities.

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

No significant changes occurred.

Enhancement Area Prioritization

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

High ☐

Medium ☐

Low ☒

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

There continues to be considerable interest in collaborative planning approaches that protect natural resources, provide for reasonable coastal-dependent economic growth, and improved protection of life and property in hazardous areas. However, other management resources and tools have been identified to address these issues outside the scope of the formal SAMP process.

The Washington CZMP would engage with Tribes prior to any discussion about the creation of a new SAMP. The Department of Ecology, including Washington's CZMP, works with Tribes through a government-to-government relationship to protect and manage shared natural resources and to cooperate across jurisdictions. The unique legal status of Tribes and the presence of treaty-reserved rights (including usual and accustomed fishing and hunting grounds) and cultural interests throughout the state create a special relationship between Tribes and agencies responsible for managing and protecting the state's natural resources.

Previously, communities on Washington's Pacific Coast expressed interest in a locally driven but state supported process to develop creative and multi-benefit solutions for various management questions and issues – including but not limited to interactions between shellfish aquaculture and burrowing shrimp, European green crab, coastal hazards, and economic resilience – at a regional scale. The Willapa-Grays Harbor Estuary Collaborative is working on many of these questions through an ecosystem-based management lens. While it is possible that a SAMP could be developed for these issues in the future, it has not been identified as a likely avenue at this time. For this reason, the SAMP enhancement area is assigned a low priority.

Wetlands

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

Note: For the purposes of the Wetlands Assessment, wetlands are “those areas that are inundated or saturated at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” [33 CFR 328.3(b)]. See also pg. 14 of the CZMA Performance Measurement Guidance⁵⁹ for a more in-depth discussion of what should be considered a wetland.

Resource Characterization

1. Using the tables below as a guide, provide information on the status and trends of coastal wetlands. Be as quantitative as possible using state or national wetland trend data.⁶⁰ The tables are information presentation suggestions. Feel free to adjust column and row headings to align with data and time frames available in your state or territory. If quantitative data is not available for your state or territory, provide a brief qualitative narrative describing wetlands status and trends and any significant changes since the last assessment.

Current state of wetlands in 2024 (acres): 960,000

Data from NOAA were not available for percent net change in total wetlands aggregated across Washington’s coastal zone. However, on average, wetlands in Washington’s coastal counties experienced a loss of over 20% of estuarine wetland area between 1996 and 2016. Much of the wetland loss in coastal counties was from conversion to open water, followed by conversion to bare land, agriculture, and development.

Historic tidal wetland losses are extensive in Washington. Brophy et al. (2019) estimated a median of about 83% of historic estuarine wetland area has been lost from 16 estuaries in the Salish Sea and eight reaches of the Columbia River.

⁵⁹ coast.noaa.gov/data/czm/media/czmapmsguide.pdf

⁶⁰ National data on wetlands status and trends include NOAA’s Land Cover Atlas (coast.noaa.gov/digitalcoast/tools/lca.html), the U.S. Geological Survey’s National Land Cover Database (usgs.gov/centers/eros/science/national-land-cover-database), and the U.S. Fish and Wildlife Service’s National Wetland Inventory data (fws.gov/program/national-wetlands-inventory).

Table 32. Wetland impacts and mitigation associated with 401 and AOs in the CZM counties

	Acres of permit-estimated wetland loss*	Acres of required gain or mitigation (creation, restoration, enhancement, preservation, banks)*
1 st half 2020	3.45	12.01
2 nd half 2020	15.13	30.00
1 st half 2021	4.92	10.04
2 nd half 2021	19.68	82.90
1 st half 2022	4.35	16.91
2 nd half 2022	16.52	46.72
1 st half 2023	4.60	9.91
2 nd half 2023	26.53	91.51
1 st half 2024	1.22	4.62
2 nd half 2024	4.4	10.36
Total	100.8	314.98

*This does not include projects that used in-lieu fee credits since the fee paid takes multiple years to convert to acreage due to the long process of selecting, designing, and constructing in-lieu fee mitigation sites.

Table 33. How Wetlands Are Changing

*Table reporting from 1996-2016, as this is the most current data available.

Land Cover Type	Area of Wetlands Transformed to Another Type of Land Cover between 1996-2016 (Sq. Miles)
Development	2.43
Agriculture	1.04
Barren Land	2.07
Water	23.78

Wetlands cover more than 900,000 acres in Washington, and account for about two percent of the state's total land area. These wetlands help absorb the impacts of floods, provide erosion control, filter and clean stormwater runoff, recharge our underground sources of drinking water, and offer essential habitat for salmon, birds, and other wildlife.

Wetlands in Washington's coastal zone counties, particularly in the Puget Sound, are under increasing pressure from development. Wetland losses are minimized to the greatest extent possible through state and local jurisdictional regulations. Though Ecology requires compensation for lost wetlands, it is more challenging to find estuarine restoration sites than freshwater sites. Despite this, there have been some major estuarine restoration projects in the last five years (i.e., the Snohomish estuary). The Floodplains by Design Program also contributes

significantly to restoration, but sites restored through the program can also have wetland impacts so it is unclear how much wetland has been gained through these efforts.

Management Characterization

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

Table 34. Significant Changes in Wetland Management

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

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

- **Changes in wetland protection under the Clean Water Act**

In the last several years, changes in federal policy have resulted in reductions in federal protection of wetlands that have increased the need for state regulation to protect wetlands. In 2020, the definition of Waters of the United States (WOTUS) changed with the publication of the Navigable Waters Protection Rule (NWPR). The definition of WOTUS in the NWPR resulted in over 40% of wetlands in Washington losing federal protection. However, the state's Water Pollution Control Act (Chapter 90.48. RCW) provides protection for all of Washington wetlands and waters. Prior to the change in the definition of WOTUS, the U.S. Army Corps of Engineers issued permits for projects that could impact these waters. Once federal permits were no longer applicable for certain waters, the state needed to provide authorization via Administrative Orders (AO), before such projects could proceed legally. This resulted in an increased workload associated with issuing AOs to authorize work in non-federally regulated wetlands and waters. Ecology began to see an increase in this workload in 2021, until the NWPR was stayed in Washington and other states. At that point, the state returned to the pre-2015 regulatory regime.

In January 2023, a new definition of WOTUS was promulgated that was more comprehensive than the NWPR. However, on May 25, 2023, the United States' Supreme Court issued a decision in *Sackett v. EPA*, which significantly affected the scope of the Clean Water Act and reduced the types of water bodies, including most wetlands, that receive federal protection. Under that ruling, over 50% of wetlands and at least 14% of streams lost federal protection.

In late 2023, Ecology considered proposing agency request legislation for a fee-based permit program. Ecology withdrew the proposal after receiving comments from stakeholders on the proposal. Concurrently, Ecology requested additional staffing to assist with the anticipated influx of projects needing AOs that were no longer eligible to apply for a permit under the U.S. Army Corps of Engineers' Section 404 permit program, including Nationwide Permits. Ecology received funding in Fiscal Year 2025 for additional staff to process AOs and conduct technical assistance and enforcement. In 2024, to respond to the increased federal gap in wetland protections and the need for a codified process to authorize projects, Ecology chose to develop a permitting program for state waters including wetlands. The rule development began in November 2024.

This was not a CZM-driven change but a response to a change at the federal level affecting which waters are protected under the Clean Water Act. Ensuring that all of Washington's wetlands are protected is a state goal. Therefore, developing a permit program for impacts to non-federally regulated wetlands will support meeting wetland goals consistent with the state's Coastal Zone Management Plan.

- **2023 Washington's Wetlands Program Plan update**

Washington's Wetland Program Plan (WPP) was adopted in March of 2015, with a six-year planning horizon. The WPP began as a comprehensive strategy that articulated the state's planned areas of focus in its wetland program during the 2015-2021 period. The WPP continued to be implemented as written during 2022. In updating the WPP for the period of 2023-2029, we continue to assert the importance of our wetland resources and the appropriate initial content of the plan.

The Washington Wetland Program Plan identifies monitoring and assessment of wetlands as a key priority to implement in the next 5 years. Ecology will seek funding to conduct investigations and mapping of wetlands in Washington.

- **2022 Critical Area Ordinance (CAO) guidance update**

Ecology updated its guidance to local governments on Critical Area Ordinances for wetlands. The updated guidance included refined code language recommendations consistent with Best Available Science. During the last five years, 19 local jurisdictions in coastal counties updated their critical areas ordinances. Ecology provided technical assistance and comments to local governments on their draft ordinance.

- **2023 published Version 2 of Washington Wetland Rating System**

Version 2 of the 2014 Update to the Washington Wetland Rating System for Western Washington (Ecology Pub # 23-06-009) provides clarifications and updated information

needed for applying wetland ratings in Washington’s coastal counties but does not change the underlying model that was published in 2014. The wetland rating system is used by regulators at the local, state, and federal level to determine buffer sizes around wetlands and compensation for unavoidable impacts to wetlands during development.

- **WATOR developed**

In addition to Version 2 of the wetland rating system, Ecology produced and released an online application for conducting wetland ratings, the Washington Tool for Online Ratings (WATOR). The application provides geospatial tools to answer questions and generate figures that are required as part of a wetland rating report. It also serves as an electronic version of the rating form. The application provides access to geospatial tools that were only available through GIS programs in the past. Users report satisfaction with the tool and indicate that it saves time when generating wetland rating reports. Maintenance and database management of the application are ongoing requirements to meet user needs.

- **Mitigation guidance updated**

The majority of impacts to wetlands are in the coastal counties and in an effort to improve the quality of compensatory mitigation proposals, coastal staff developed a Wetland Mitigation Guidance document that describes the policies and considerations for compensatory mitigation by Ecology, the US Army Corps of Engineers, and EPA. The 2021 guidance update provides detailed discussions on aspects and decision-making by the agencies in evaluating the adequacy of compensatory mitigation. Thus far, Ecology has provided three trainings on the guidance update through the Coastal Training Program at Padilla Bay NERR.

- **Monitoring and Assessment**

Ecology worked with the University of Washington Remote Sensing and Geospatial Analysis Laboratory (RSGAL) to develop a wetland probability mapping tool, the Wetland Intrinsic Potential (WIP) tool. The WIP tool was developed in collaboration with the Washington Cooperative Monitoring, Evaluation, and Research Committee for Forest Practices to help identify wetlands under forest canopies. It has since been refined and applied to estimate carbon in forested wetland soils ([Stewart et al. 2024](#))⁶¹ and map the probability of wetland locations in coastal areas, including the Hoh River watershed ([Halabisky et al. 2023](#)).⁶²

Ecology surveyed local jurisdictions, state agencies, federal agencies, and others who use or develop spatial data for mapping wetlands to determine the extent and status of available wetland spatial data and wetland data needs. This mapping inventory resulted in a list of contacts for organizations and people who generate wetland maps, information on the source and quality of data for those maps, and a characterization of

⁶¹ <https://www.nature.com/articles/s41467-024-44888-x>

⁶² <https://hess.copernicus.org/articles/27/3687/2023/>

data gaps that need to be filled for improving wetland identification and protection in the state ([Ecology Pub # 22-06-023](#)⁶³). The project also resulted in [a map of locations](#)⁶⁴ where wetland data are being produced and contacts for those data.

Ecology participated in [EPA's 2021 National Wetland Condition Assessment](#)⁶⁵ (NWCA), one of the National Aquatic Resource Surveys (NARS) conducted by EPA in collaboration with state partners on a rotating basis. The 2021 effort included an intensification where Ecology collaborated with the Washington Natural Heritage Program to apply their Ecological Integrity Assessment (EIA) and Ecology's wetland rating system to the sites sampled for NWCA.

Ecology also updated the Coastal Atlas web map by adding wetland inventory analysis data from NOAA's Coastal Change Analysis Program for years 1992-2016 and NRCS hydric soils layers. Ecology also added locations of approved and proposed wetland mitigation banks in Washington and wetland compensatory mitigation sites required under Ecology's authority from Section 401 of the Clean Water Act and/or the State Water Pollution Control Act.

Enhancement Area Prioritization

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

High ☒
Medium ☐
Low ☐

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

This level of priority is driven by the need to enhance our regulatory program and increase our knowledge of wetlands, including their extent, condition, and their role related to contaminants.

One driver is the lack of a permit program to protect state waters that are no longer protected under the Clean Water Act. While wetlands are protected through state laws such as the Water Pollution Control Act and the Growth Management and Shoreline Management Acts, Ecology does not have a permitting program for wetlands and other waters no longer determined to be WOTUS.

Ecology conducted outreach in 2023 and 2024 seeking input on how to respond to the increased need for state-only authorizations. Ecology conducted outreach to Tribes to solicit input on a potential state waters permit program to protect wetlands. We heard support for a

⁶³ <https://apps.ecology.wa.gov/publications/SummaryPages/2206023.html>

⁶⁴ <https://ecology.wa.gov/water-shorelines/wetlands/tools-resources/mapping-resources/map-inventory-project>

⁶⁵ <https://www.epa.gov/national-aquatic-resource-surveys/national-wetland-condition-assessment-2021-results>

state permit program to ensure that wetland impacts are avoided and minimized, and successful compensation of unavoidable impacts to wetlands is achieved. We also heard a concern that habitat restoration projects should not be delayed or made more expensive due to permitting under the new program. Agricultural stakeholders voiced concerns that they would have a new permitting burden as well as potential fees for permits. Environmental interests such as the Sierra Club, Washington Protects supported the development of a permit program. With the information garnered from discussions with Tribes and stakeholders, Ecology has begun rulemaking for a State Waters Alteration Permit (SWAP) and will begin engagement with interested parties on SWAP rule development in 2025.

With regard to mapping and information needs, Ecology is often asked for information on wetland extent and condition. For example, the Puget Sound Partnership has identified Wetlands as a key indicator for the status of progress in Puget Sound restoration activities. However, we do not have a current, comprehensive dataset of wetland spatial information. Updating our mapping tools and wetland data sets is a high priority for our program.

The only statewide inventory of wetland extent and location is the National Wetland Inventory (NWI), which was completed by USFWS in 1984. The wetlands were identified from aerial imagery collected in the late 1970s and early 1980s. A few small, discrete areas in Washington have been updated as part of pilot projects in the 2010s. Completing an update to statewide mapping is a crucial first step to evaluating changes in wetlands in the coastal zone.

Phase II: In-Depth Assessment

Purpose: For any enhancement areas ranked as a high priority after the Phase I assessment, an in-depth assessment is required to further explore potential problems, opportunities for improvement, and specific needs.

Coastal Hazards

In-Depth Resource Characterization

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

1. Based on the characterization of coastal hazard risk, what are the three most significant coastal hazards¹ within your coastal zone? Also indicate the geographic scope of the hazard, i.e., is it prevalent throughout the coastal zone, or are there specific areas most at risk?

Table 35. Significant Coastal Hazards

	Type of Hazard	Geographic Scope (throughout coastal zone or specific areas most threatened)
Hazard 1	Compound Flooding (riverine, stormwater, storm surge, and sea level rise)	Throughout coastal zone
Hazard 2	Shoreline erosion	Throughout coastal zone, but higher impacts along Pacific Coast
Hazard 3	Geological hazards (e.g., tsunamis, earthquakes)	Throughout coastal zone, but higher impacts along Pacific Coast

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

Through endeavors such as COHORT and other efforts from the Washington CZMP, significant progress has been made to increase technical assistance and planning efforts in partnership

with local governments. Ecology, Washington Sea Grant, the University of Washington CIG organization, Washington State University Extension, and the State Emergency Management Division, and others have been working together to enhance the state’s capacity for resilience initiatives. As part of this work, local governments along marine and estuarine shorelines identified that they have been impacted most frequently by flooding and shoreline erosion. They are also most concerned about the looming threat of tsunami and seismic risk.

Flooding is one of the most pervasive and costly coastal hazards, exacerbated by sea level rise and increasingly intense storm events. Shoreline erosion poses direct impacts to beaches, cliffs, and waterfront developments, often leading to property damage, loss of habitat, and challenges for public access to coastal areas. As erosion causes coastal habitats to migrate inland, this inland shift is challenged by the presence of human-made and natural barriers, which may result in considerable declines in coastal habitats and associated fish and wildlife populations. Finally, Washington’s coastal zone lies along the Cascadia Subduction Zone. This event will cause catastrophic damage to coastal communities within minutes of occurring. Addressing this hazard through better communication, planning, emergency preparedness, and tsunamic vertical evacuation towers is essential for Washington.

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

Table 36. Emerging Coastal Hazards

Emerging Issue	Information Needed
Wildfire	While wildfires are a well studied hazard in eastern Washington, it is becoming a rising concern for our coastal zone communities as well. Mapping wildfire risk areas in coastal regions and assessing how changing conditions will impact wildfire likelihood and vegetation shifts is needed.
Groundwater flooding	Improved modeling is required to predict how rising sea levels and extreme precipitation events will elevate groundwater tables in coastal areas. Through new CoSMoS modeling, communities are just now able to incorporate groundwater flooding into vulnerability assessments and planning documents.
Saltwater Intrusion	Impacts of saltwater intrusion on wells and other underground infrastructure is still not well understood. A few vulnerability assessments in 2023 have started to model these impacts, but this information is still rarely incorporated into vulnerability assessment across most of Washington.

In-Depth Management Characterization

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

1. For each coastal hazard management category below, indicate if the approach is employed by the state or territory and if there has been a significant change since the last assessment.

Table 37. Significant Changes in Coastal Hazards Statutes, Regulations, and Policies

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Shorefront setbacks/no build areas	Y	Y	N
Rolling easements	N	Y	N
Repair/rebuilding restrictions	Y	N	N
Hard shoreline protection structure restrictions	Y	Y	N
Promotion of alternative shoreline stabilization methodologies (i.e., living shorelines/green infrastructure)	Y	Y	Y
Repair/replacement of shore protection structure restrictions	Y	Y	N
Inlet management	Y	N	N
Protection of important natural resources for hazard mitigation benefits (e.g., dunes, wetlands, barrier islands, coral reefs) (other than setbacks/no build areas)	Y	Y	N
Repetitive flood loss policies (e.g., relocation, buyouts)	Y	Y	N
Freeboard requirements	Y	Y	N
Real estate sales disclosure requirements	N	N	N
Restrictions on publicly funded infrastructure	N	N	N
Infrastructure protection (e.g., considering hazards in siting and design)	Y	Y	N
Other (please specify)			

The Washington CZMP directly addresses high-hazard areas through Shoreline Management Act (SMA) policies and state guidelines. The SMA requires that the impact of natural hazards be considered during the preparation, review, and approval of shoreline master programs. The local shoreline master programs require consideration of erosion, flooding, geological hazards, and natural protective features including beaches, dunes, and wetlands.

Ecology adopted amended Shoreline Master Program (SMP) Guidelines in 2003. These Guidelines direct the process of updating every local shoreline master program in the coastal zone. Since 2003, 127 out of 132 coastal zone communities have had their comprehensively updated SMPs approved by Ecology. There are 5 coastal zone jurisdictions that are behind their statutory deadlines but all 5 of these SMPs have been locally adopted, submitted to Ecology, and undergoing our final review and approval process.

The Coastal Hazards Resilience Network (CHRN), co-managed by Ecology and Washington Sea Grant, also provides a valuable website that aids in the process of learning about coastal hazards, directs users to tools and resources, provides examples of projects happening along the coast, and connects users with other people who are involved in this work. The Coastal Hazards Resilience Network website was redesigned and launched in February 2020 and is maintained with new resources as they are produced. Washington Sea Grant and Ecology are currently in the early process of redesigning and updating the website again with additional resources.

Table 38. Significant Changes to Coastal Hazard Management Plans or Initiatives

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

The [Washington Coast Resilience Action Demonstration Project](https://wacoastalnetwork.com/resilience-action-demonstration-project/)⁶⁶ (RAD) was a two-year (2019-2021) partnership between the Washington State Department of Ecology and Washington Sea Grant that provided multi-organizational hazards assistance to communities on the Pacific

⁶⁶ <https://wacoastalnetwork.com/resilience-action-demonstration-project/>

Coast of Washington and laid the groundwork for future coastal resilience efforts. The RAD team piloted a priority recommendation from coastal communities to establish a “[Coastal Hazards Organizational Resilience Team](#),⁶⁷” or COHORT, to enhance and integrate coastal hazards resilience initiatives while providing hands-on assistance to communities to scope local projects and apply for funding. The concept was initially identified by coastal communities within the William D. Ruckelshaus Center 2017 [Washington State Coast Resilience Assessment Final Report](#).⁶⁸

Since the last 309 cycle, and after the initial success of the RAD, the Department of Ecology developed a budget request to create the COHORT, which was approved by the Washington State Legislature in 2023. The COHORT works collaboratively with Tribes and communities on the identification, co-creation, and implementation of resilience projects, planning efforts, and other capacity building activities.

Refer to the coastal hazards phase 1 assessment for additional information on State Enhanced Hazard Mitigation Plan 2023 update and the Washington Coastal Resilience Partnership (NOAA CRRC).

Table 39. Significant Changes to Coastal Hazard Research, Mapping, and Education Programs or Initiatives

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

Refer to the coastal hazards phase 1 assessment for additional information on the Applied Coastal Research and Engineering (ACRE) section expansion and shoreline mapping.

2. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state’s management efforts in addressing coastal hazards since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state’s management efforts?

Part of the RAD project, described above, was to complete an inventory of coastal resilience projects across Washington’s Pacific Coast. The goals of the project inventory analysis were to

⁶⁷ <https://wacoastalnetwork.com/cohort/>

⁶⁸ <https://mrsc.org/getmedia/0498ef44-89e8-46c7-b834-469b992196c6/Washington-Coast-Resilience-Assessment-Report.aspx>

document the status of coastal hazards-related projects across the Pacific Coast of Washington State and identify specific opportunities to support coastal hazards resilience across the region. This inventory has been useful for the continued work of coastal resilience practitioners, policy-makers, and community members. State agencies and the COHORT have found the inventory particularly useful for connecting projects to available funds, related projects, and other resources.

The 2023 SEHMP outlines a list of mitigation actions aimed at reducing risks from various hazards across the state, including coastal hazards. This document establishes a strong baseline for identifying high-priority actions and strategic goals, which can serve as a valuable resource for guiding future updates to the SEHMP. These actions reflect a strategic approach to addressing flood hazards through infrastructure improvements, community planning, and ecosystem restoration.

Key flood-specific actions include:

- Supporting the construction of the North Shore Levee and West Segment in Aberdeen and Hoquiam:
- Furthering flood safety through integrated management of floodplain areas throughout the state:
- Developing and evaluating a comprehensive local action plan to reduce flood damage in the Chehalis Basin:
- Enable communities to do flood risk reduction planning and projects, including home elevations, buyouts, levee work, and ecosystem improvement

These mitigation actions provide a framework for coordinated efforts to address coastal risks, ensuring alignment with evolving priorities and hazard management strategies.

Additionally, The Washington State Resilience Strategy was published in September 2024. This document covers a wide variety of hazards and requires the Department of Ecology to submit progress reports on strategy implementation every two years beginning in 2025. The law also requires Ecology and partners to update the entire strategy every four years. These reporting and update cycles will ensure that agencies are making progress towards resilience goals and reflecting top community needs over time will track. The state has also partnered with the University of Washington CIG organization to track certain metrics to measure the success of implemented actions. Since this strategy was finalized very recently, there are no conclusions yet regarding the implementation of the plan.

Identification of Priorities

1. Considering changes in coastal hazard risk and coastal hazard management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively address the most significant hazard risks. *(Approximately 1-3 sentences per management priority.)*

Management Priority 1: Developing a Centralized Coastal Data and Mapping Tool

Description: Ecology aims to create a centralized mapping tool to house and display critical coastal data, including vulnerability assessment results and resilience projects. This platform will serve as a single, accessible location for sharing information, ensuring that local governments, stakeholders, and the public can easily access and utilize data funded by Ecology. The Department of Ecology's [Coastal Atlas](#)⁶⁹ was originally intended to fulfill this role, but it requires significant updates to effectively meet current needs. The functionality of the Coastal Atlas currently faces challenges due to outdated and stagnant data, with some layers originating as far back as the 1970s. For example, shoreline datasets have remained unchanged since the early 2000s, as updates require labor-intensive manual processes. These gaps, coupled with the absence of more recently developed critical information like up-to-date sea level rise projections and vulnerability assessments, limit the Coastal Atlas's relevance for modern shoreline planning and decision-making.

This tool can host ACRE's shoreline erosion research and mapping efforts, integrating data on shoreline change and erosion rates to support more informed decision-making. The updated tool will allow local governments to obtain coastal data from one central location, promoting more informed SMP updates and improving coastal resilience planning statewide. A centralized mapping tool will formally establish procedures for local governments to incorporate updated data into SMPs and permitting processes. By formalizing how data informs vulnerability assessments and adaptive strategies, the tool directly supports improvements in coastal resource management.

Management Priority 2: Incorporate sea level rise priorities into shoreline master plan updates and provide local jurisdictions with the guidance and technical support.

Description: In 2023, the Washington State legislature passed HB 1181, amending the SMA (RCW 90.58.630) mandating the Washington State Department of Ecology to update the SMA requirements to ensure local governments address sea level rise impacts within their SMPs. Once this rulemaking process is finished in 2026, local jurisdictions will update their SMPs between 2027-2030. Updated SMPs will have to align with the new sea level rise rulemaking update, which will likely include conducting a vulnerability assessment. This will require local governments to have guidance and technical assistance from Ecology to implement adaptive, sustainable approaches to shoreline management, including exploring strategies such as managed retreat and rolling easements. Beyond SMP updates, vulnerability assessments will inform broader processes, such as permitting and long-term planning. Ecology is committed to ensuring that these assessments go beyond physical infrastructure, incorporating cultural and natural resources to create a holistic approach to shoreline resilience.

Management Priority 3: Enhancing Intergovernmental Collaboration and Engagement for Coastal Hazard Planning

⁶⁹ <https://apps.ecology.wa.gov/coastalatlas/>

Description: The growing interest of the CHRN, COHORT, and other coastal resilience initiatives around the state highlights the need for growing intergovernmental collaboration and a unified approach to addressing coastal hazards. As initiatives like COHORT and CHRN become more established and take on larger projects, it will require increased funding and MOUs to ensure strong engagement with partners and stakeholders. Washington Department of Fish and Wildlife and other state agencies are also expanding their focus on coastal hazards, creating opportunities for stronger interagency and inter-program coordination. Washington recently released our Resilience Strategy, bringing together ten agencies to address various aspects of hazard resilience. Ensuring effective collaboration among agencies working on coastal resilience is critical to maximizing impact, avoiding duplication of efforts, and fostering meaningful partnerships with stakeholders. By coordinating on projects and new administrative decisions, this strategy aims to solidify coastal hazards as a core focus across agency programs and create a more cohesive and efficient approach to resilience planning in Washington’s coastal communities.

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

Table 40. Coastal Hazards Priority Needs

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Direct and indirect impacts to the built and natural environment from changing ocean conditions and rising seas Statewide understanding of sediment processes Statewide shore change and erosion data
Mapping/GIS/modeling	Y	Creating a centralized mapping tool that is a better geospatial database for erosion data / USGS CoSMoS modeling for Puget Sound and the Pacific Coast
Data and information management	Y	Clearing house of multi-hazard data and geospatial information A collection of data and geospatial layers that can be used for conducting a vulnerability assessment in Washington communities
Training/Capacity building	Y	Training for local governments on how to use a vulnerability assessment and adaptation planning pathways
Decision-support tools	Y	Guidance on sea level rise
Communication and outreach	Y	Trainings on how to best incorporate sea level rise planning into SMPs

Enhancement Area Strategy Development

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

Yes ☒

No ☐

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

The threat and risks posed by coastal hazards in Washington are increasing. Furthermore, the state legislature recently passed a law requiring the Department of Ecology to develop guidance and requirements for addressing sea level rise and storm severity within SMPs. For these reasons, the Washington CZMP will develop strategies for this enhancement area to support our work to address coastal hazards and support local governments with planning for sea level rise.

Ocean Resources

In-Depth Resource Characterization

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

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

Table 41. Ocean Resources Stressors

	Stressor/Threat	Geographic Scope (throughout coastal zone or specific areas most threatened)
Stressor 1	Changing ocean and ecosystem conditions: ocean acidification, marine heat waves, hypoxia, harmful algal blooms (HABs)	Throughout. Hypoxia events most frequently occur near the Quinault canyon where upwelled water comes to the surface but effects have also been seen coast-wide.
Stressor 2	Offshore development and uses: marine energy, oil and gas exploration and extraction, sea floor mining, aquaculture, marine carbon dioxide removal	Coastal waters south of the Olympic Coast National Marine Sanctuary are most likely to see pressure from offshore development. There currently are no projects but the likelihood is increasing.
Stressor 3	Invasive and pest species: establishment of European green crab	Coastal estuaries and Puget Sound

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

The suite of impacts driven by changing ocean conditions remains a primary stressor to the ocean resources of Washington. Ocean acidification is steadily worsening, threatening numerous marine species that build their own shells, including oysters, crabs, pteropods, and other foundational species. Marine heat waves and hypoxia events are periodic but increasing in frequency and have the potential to cause mass die-off events. Harmful algal blooms pose

significant risk to human health resulting in temporary closures of high value fisheries, including crab and shellfish.

Though no offshore development is imminent, there is increasing likelihood of activities in the coming years if policy and economic conditions become favorable. There is great concern from Tribes and coastal communities about the impacts of offshore development on oceanographic processes that drive the California current ecosystem and to the commercial fishing industry.

The establishment of European green crab in coastal estuaries and parts of the Puget Sound are of significant concern as they are considered one of the world's worst invasive species. A rapid increase in population led to Washington State taking emergency action to address the threat, with the Governor issuing an emergency proclamation and the Legislature providing emergency funding. In October of 2024, the Washington State Department of Fish and Wildlife issued a 6-year management plan to address the European green crab threat.

Stakeholder Input

Through the Washington Coastal Marine Advisory Council (WCMAC), the Olympic Coast National Marine Sanctuary Advisory Council (OCNMSAC), and the Intergovernmental Policy Council¹ (IPC), we have heard significant concern about all the listed threats. The WCMAC has tracked all three of the above stressors, although it typically allows its sister council, the Marine Resources Advisory Council (MRAC) to focus on issues like HABs and ocean acidification. In 2020, the WCMAC wrote a letter of recommendation urging action on European green crab; in 2023 they wrote a letter to the Washington legislature recommending management changes of crab during HAB outbreaks. The Sanctuary Advisory Council regularly hears from researchers and managers about the science and impacts from changing ocean conditions, with members voicing concern for the natural resources within the Sanctuary and the uncertainty of future conditions.

Reports, Studies and Recommendation Letters

- [California Current Ecosystem Status Report 2023-2024](#)⁷⁰
- [Olympic Coast National Marine Sanctuary Condition Report – 2008-2019](#)⁷¹
- [Evaluating the Evolving Ocean Acidification Risk to Dungeness Crab: Time-Series Observations and Modeling on the Olympic Coast, Washington, USA](#)⁷²
- [State of the Sound Report 2023](#)⁷³
- [European Green Crab 2025-2031 Management Plan for Washington](#)⁷⁴

⁷⁰ <https://www.pcouncil.org/documents/2024/06/2023-2024-annual-ecosystem-status-report.pdf/>

⁷¹ <https://sanctuaries.noaa.gov/science/condition/ocnms/>

⁷² <https://tos.org/oceanography/article/evaluating-the-evolving-ocean-acidification-risk-to-dungeness-crab-time-series-observations-and-modeling-on-the-olympic-coast-washington-usa>

⁷³ <https://pspwa.box.com/shared/static/ijudxsn5pcnl614485td4lgwc3j4wcmi.pdf>

⁷⁴ <https://wdfw.wa.gov/publications/02537>

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

Table 42. Ocean Resources Emerging Issues

Emerging Issue	Information Needed
Marine debris	Microplastic impacts to wildlife and human health
Marine species diseases	Effect of environmental parameters, transmission, and many other aspects are still unknown

In-Depth Management Characterization

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

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

Table 43. Significant Changes in Management of Ocean and Great Lakes Resources

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

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

Since the completion of Washington's Marine Spatial Plan, several research and assessment activities have occurred. A major data gaps assessment has been undertaken, supported by our 309 program, resulting in a report that will be released very soon. Development of a qualitative network model for two ocean habitat types (kelp forest and seafloor), was done with outside funding but supported by the CZM program. We expect a soon to be released data gaps report to be a major tool as we aim to develop an ocean research agenda in the future.

The GIS-based map and database that was developed alongside the Marine Spatial Plan is moving from a standalone application under the Department of Natural Resources, to Ecology's more comprehensive Coastal Atlas that houses a wealth of marine and shoreline data. This work was supported by our CZM program and now that the data will be housed by our agency, we will have more control over data updates and maintenance.

Guidance and technical assistance was provided to local governments during periodic updates to their Shoreline Master Programs, ensuring that they would be aligned and consistent with the policies developed for the Marine Spatial Plan. Most of those updates were completed during this assessment period and the remaining ones should be done within the next year. This work was supported by our 309 program and ensures that new ocean uses that require a shoreline permit will also adhere to the Marine Spatial Plan and its relevant policies.

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

Since the finalization of the state's Marine Spatial Plan, no comprehensive assessment of ocean resources management has been done for Washington State.

Identification of Priorities

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

Management Priority 1: Improve knowledge base used to inform ocean management and decision making

Description: Building off Washington’s Marine Spatial Plan, subsequent data gaps assessments, and considering input from Tribes, stakeholders, and researchers, it is evident that there are significant information needs about ocean resources and processes. Without adequate information, it will be difficult to accurately assess impacts from new ocean uses, particularly projects that would occupy large areas, such as offshore development.

Management Priority 2: Improve our federal consistency review processes

Description: Washington’s federal consistency program has made significant progress in recent years, but certain aspects have been identified that could be improved upon. Some existing enforceable policies could be clarified and there is a good possibility that existing state laws could be added to enhance the protection of coastal resources.

Management Priority 3: Enhance communication and coordination with Tribes, sister agencies, and coastal communities

Description: The stressors and threats to ocean resources are complicated and management solution will be equally difficult to identify and implement. Enhanced coordination with Tribes, stakeholders, sister agencies, and federal agencies will be absolutely necessary to find solutions.

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

Table 44. Ocean Resources Priority Needs

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	There are significant ocean research needs to better understand impacts from new ocean uses.
Mapping/GIS	N	
Data and information management	Y	There is a significant amount gaps in data and information on future impacts of ocean development, and implementing up-to-date information, data, and best practices in the Marine Spatial Plan.
Training/Capacity building	N	
Decision-support tools	N	
Communication and outreach	Y	There is considerable communication and outreach needs regarding new ocean uses and potential CZM activities, including establishment of a GLD

Other (specify) – Policy and federal consistency review	Y	Washington’s current federal consistency process has gaps that limit the state’s ability to fully protect coastal and ocean resources, particularly in the face of emerging federal activities such as offshore energy development. Improvements are needed to clarify existing enforceable policies and strengthen internal review procedures.
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Enhancement Area Strategy Development

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

Yes ☒
No ☐

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

Ocean resources has been a priority work area for the Washington CZMP program for many years. Significant progress has been made, especially with the creation of a Marine Spatial Plan. Nevertheless, there are significant data and information needs. Potential new ocean uses pose major challenges to the management of ocean resources, and the regulatory environment is complex. Efforts to improve available data and information and enhance the state’s federal consistency program will greatly help the state prepare for new ocean uses when they occur.

Wetlands

In-Depth Resource Characterization

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

1. What are the three most significant existing or emerging physical stressors or threats to wetlands within your coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout your coastal zone, or are there specific areas that are most threatened? Stressors can be development/fill; hydrological alteration/channelization; erosion; pollution; invasive species; freshwater input; sea level rise/Great Lakes level change; or other (please specify).

Table 45. Wetlands stressors and threats

	Stressor/Threat	Geographic Scope (throughout coastal zone or specific areas most threatened)
Stressor 1	Urban Expansion	Puget Sound region seeing greatest growth
Stressor 2	Non-native species	Throughout coastal zone
Stressor 3	Hydrologic changes	Throughout coastal zone

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

The 1990 report, [Wetlands of Washington: A Resource Characterization and Risk Assessment](https://apps.ecology.wa.gov/publications/SummaryPages/9006041.html)⁷⁵ identified several stressors for wetlands including urban expansion, non-native species and hydrologic changes. These continue to be significant threats to wetlands. Continued growth in the Puget Sound region has resulted in the development of most suitable lands, while most of the remaining undeveloped areas are those that contain wetlands and other aquatic critical areas. These remaining undeveloped areas with wetlands are under increasing threat as cities try to increase infilling in their jurisdictions. While wetlands are directly impacted by filling and elimination, remaining wetlands can be altered by indirect impacts. For example, insufficient stormwater management can result in changes to wetland functions by increasing hydroperiods and altering plant communities, or by redirecting surface flows that diminish hydrologic inputs to wetlands. Compensation for wetlands lost in urban areas is often conducted outside of the urban area, further reducing wetland resources and their functions in the urbanizing areas.

Wetland vegetation removal and other wetland disturbances have contributed to an increase in the presence and dominance of non-native vegetation and a reduction in wetland quality.⁷⁶

⁷⁵ <https://apps.ecology.wa.gov/publications/SummaryPages/9006041.html>

⁷⁶ Pacific Northwest NWCA report on stressors report on the 2016 Pacific Northwest Wetland Condition Assessment by the US EPA: <https://assessments.epa.gov/risk/document/&deid%3D362638#downloads>

Non-native vegetation tends to gain a foothold where vegetation has been removed, resulting in the conversion of native communities to those dominated by non-native species. Expansion of non-native vegetation has negative impacts on habitat and, in the case with reed canarygrass, obstruction of stream channels blocking fish access.

Hydrologic changes to wetlands occur from intentional manipulations and alterations to the watershed due to changing land uses. Coastal wetlands will be impacted by sea level rise and changes in water chemistry. More specifically, a 2015 [State of the Knowledge of Puget Sound](#) report⁷⁷ documents the following projected impacts to wetlands:

- Sea level rise is projected to expand the area of some tidal wetlands in Puget Sound but reduce the area of others, as water depths increase and new areas become submerged. For example, the area covered by salt marsh is projected to increase, while tidal freshwater marsh area is projected to decrease.
 - Increased inundation and erosion due to sea level rise are expected to cause habitat loss and shifts in habitat types. At-risk habitat types include coastal wetlands.
 - Decrease in summer water availability can have negative consequences for freshwater wetlands. Wetland ecosystems are projected to decline in both extent and number as a result of decreasing water availability in summer.
 - Amphibians are threatened by the loss of wetland habitat due to projected shifts in temperature and precipitation regimes.
3. Are there emerging issues of concern but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Table 46. Wetlands emerging issues

Emerging Issue	Information Needed
6PPDQ ⁷⁸ contamination	Research is needed to assess the effects of 6PPDQ on wetland functions and the capacity of wetlands to remove 6PPDQ from surface waters.

In-Depth Management Characterization

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

1. For each additional wetland management category below that was not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory

⁷⁷ <https://cig.uw.edu/resources/special-reports/ps-sok/>

⁷⁸6PPD [N-(1,3-Dimethylbutyl)-N'- phenyl-p-phenylenediamine]-quinone

and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

Table 47. Significant Changes in Wetland Management

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

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

Wetland Mapping and GIS

Since the last assessment, Ecology developed an [inventory of wetland spatial data](https://apps.ecology.wa.gov/publications/SummaryPages/2206023.html)⁷⁹ available in Washington and made that information available on the agency's website. The next step is to complete wetland mapping statewide to establish an updated and more comprehensive baseline of wetlands for trend analyses. Ecology will use the Wetland Intrinsic Potential tool to complete initial statewide mapping and establish a more accurate baseline for wetland extent. Better wetland mapping will allow state agencies and local governments to more effectively screen development applications by being able to identify whether a wetland may be affected by a proposed project. Better wetland mapping will also assist efforts to update long-range and watershed planning, restoration planning, and siting of compensatory mitigation.

Wetland technical assistance, education, and outreach

Several guidance document and tools were updated or developed during the past five years:

⁷⁹ <https://apps.ecology.wa.gov/publications/SummaryPages/2206023.html>

- [Western Washington Rating System](#)⁸⁰ and associated online tool (WATOR)
- [Wetland Mitigation Guidance](#)⁸¹
- [Wetland Guidance for Critical Area Ordinance Updates](#)⁸²

See Phase 1 assessment for detailed descriptions.

While not a directed CZM action, improving wetland knowledge and developing tools for assessing wetlands, education and outreach, and local government technical assistance are important aspects of our management of wetlands in the coastal zone. Expected outcomes include more consistent assessment of wetland functions, appropriate and clear requirements for compensatory mitigation, and protective local regulatory standards.

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

- The Pacific Northwest [National Wetland Condition Assessment report](#)⁸³ on stressors identified that a significant stressor on wetland condition is the prevalence of invasive species and their effect on native communities. This study will continue to provide information on trends in the condition of wetlands because the NWCA study is expected to be conducted again in 2026.
- The [State of Puget Sound report](#)⁸⁴ synthesizes information on indicators of Puget Sound health and change over time. Wetland extent and condition have not been specifically monitored except in estuarine wetlands. Wetland indicators are being added to the vital signs indicators to be monitored in the 2026-30 assessment period.

A lack of information on wetlands inhibits our ability to assess the effect of our management actions on the protection of wetlands and their functions. One barrier to accurately assessing wetland trends and the effectiveness of our management is a lack of detailed data on wetland location, extent and condition. [Washington's Wetland Program Plan \(WPP\)](#)⁸⁵ identified the need to have better data on wetlands in order to assess our management strategies. Actions listed in the WPP include implementing phases of wetland mapping efforts, including Level 1 and Level 2 assessments. The 2021 update to the WPP specifically identified the need to implement the Wetland Intrinsic Potential tool statewide in preparation for a National Wetlands Inventory (NWI) update.

Identification of Priorities

⁸⁰ <https://apps.ecology.wa.gov/publications/SummaryPages/2306009.html>

⁸¹ <https://apps.ecology.wa.gov/publications/summarypages/2106003.html>

⁸² <https://apps.ecology.wa.gov/publications/summarypages/2206014.html>

⁸³ <https://assessments.epa.gov/risk/document/&deid%3D362638>

⁸⁴ <https://stateofthesound.wa.gov>

⁸⁵ <https://ecology.wa.gov/water-shorelines/wetlands/tools-resources/wetland-program-plan>

1. Considering changes in wetlands and wetland management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively respond to significant wetlands stressors. *(Approximately 1-3 sentences per management priority.)*

Management Priority 1: Regulation – improving mitigation and permitting

Description: As noted earlier, Ecology intends to adopt a rule for a state-only waters and wetlands permitting process to ensure that wetlands are protected and when needed, impacts are appropriately compensated. Another enhancement and priority in regulation is evaluating the success of wetland compensatory mitigation to ensure that unavoidable impacts are successfully offset.

Management Priority 2: Monitoring and Assessment

Description: Washington has gaps in its knowledge of where wetlands are located and the condition of those wetlands. To be able to answer questions on trends in wetland resources and effectiveness of management, Ecology plans to improve statewide wetlands mapping that quantifies wetland type and extent by working with USFWS to update NWI; as well as developing a strategy to address integrating wetland mapping work with Washington's National Hydrography Dataset (NHD) 3D mapping updates currently underway. Another aspect of this management priority is to identify and study hotspots of 6PPDQ, a chemical compound used as an antidegradant in tires and is lethal to coho salmon, and assess how wetlands can contribute to addressing 6PPDQ pollution before it enters streams.

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

Table 48. Wetlands Priority Needs

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Understanding where 6PPDQ contamination hot spots are located and how 6PPDQ moves through the aquatic environment is needed to develop management actions to address 6PPDQ contamination of salmon streams and coastal waters.
Mapping/GIS	Y	Much of Washington has outdated wetlands maps. These maps need to be updated, which would include an updated NWI dataset. Additionally, the updated wetland maps need to align with the state's NHD update to more accurately map the state's aquatic systems.
Data and information management	Y	One key element with improving wetland mapping will be ensuring sufficient data storage capacity and integration into Ecology's Coastal Atlas or other publicly accessible platform.
Training/capacity building	Y	Additional capacity is needed to carry out field verification of wetland location and extent. For management priority one, permit rule, internal and external parties will need training on how to implement the rule. Ecology needs to continue to provide technical support to local governments to allow for effective management of wetlands.
Decision-support tools	Y	Accurate wetland maps can assist local governments in screening permit applications to identify when a wetland delineation and wetland report are needed. Ecology needs to continue to update and expand its wetland guidance to ensure sufficient information is available to make effective management decisions.
Communication and outreach	Y	Extensive outreach will need to occur during the permit rule development to advise the public on the new permit program. Communications on the permit rule will need to be developed to ensure buy-in from the public.
Other (specify)		

Enhancement Area Strategy Development

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

Yes ☒

No ☐

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

As mentioned in the Wetland Phase I Assessment, Washington State currently does not have a permit program to protect state waters no longer protected under the Clean Water Act. Ecology is in the early stages of the rulemaking process for a State Waters Alteration Permit,

with outreach scheduled to begin in 2025. The Washington CZMP plans to carry out this rulemaking process supported by a Section 309 strategy.

Additionally, Ecology has not had the ability to provide up-to-date wetland information on the status and extent and type of changes in wetland area and type. Our only reference is a report by [Canning \(1990\)](#)⁸⁶ that summarizes the 1980s USFWS wetland data and stressors to wetlands in Washington that were identified at that time. For us to be able to assess the effectiveness of our wetland management activities and policies, we must update our baseline wetland inventory.

Ecology is currently in the process of conducting a statewide implementation of the Wetland Intrinsic Potential tool to get a more accurate picture of wetlands. The second phase needed will be working with the USFWS to update the National Wetland Inventory maps for Washington. This will enable us to run a comparison of wetland extent between the original 1984 wetland data to today. We plan to use that information to evaluate if changes are needed to our wetland management policies.

We value the importance of green space in urban communities and the positive impact these areas have on the local community. Our goal is to balance the need for protecting mitigation sites that are compensating for wetland impacts while providing opportunities for the surrounding community to interact with natural spaces. To achieve this goal, our program will need to develop policies and procedures to address the challenges of providing mitigation in urban settings. Challenges for urban mitigation sites include high land values, site constraints, contaminants, large buffers, and managing public use.

⁸⁶ <https://apps.ecology.wa.gov/publications/SummaryPages/9006041.html>

Strategies

Purpose: Establish clear goals for high-priority areas and a pathway and method to reach those goals during the next five years. This includes, task descriptions, cost estimates, and milestones, as appropriate.

Coastal Hazards

Coastal Hazards Strategy - Sea Level Rise Planning

Provide guidance, data, and technical assistance to local jurisdictions to effectively address sea level rise

I. Issue Area(s)

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area:

- | | |
|--|---|
| ☐ Aquaculture | ☐ Cumulative and Secondary Impacts |
| ☐ Energy and Government Facility Siting | ☐ Wetlands |
| X Coastal Hazards | ☐ Marine Debris |
| ☐ Ocean/Great Lakes Resources | ☐ Public Access |
| ☐ Special Area Management Planning | |

B. The proposed strategy or implementation activities will also support the following enhancement areas (*check all that apply*):

- | | |
|--|--|
| ☐ Aquaculture | X Cumulative and Secondary Impacts |
| ☐ Energy and Government Facility Siting | X Wetlands |
| ☐ Coastal Hazards | ☐ Marine Debris |
| ☐ Ocean/Great Lakes Resources | X Public Access |
| ☐ Special Area Management Planning | |

II. Strategy Description

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

- ☐ A change to coastal zone boundaries;
- X New or revised authorities, including statutes, regulations, enforceable policies,

administrative decisions, executive orders, and memoranda of agreement/understanding;

X New or revised local coastal programs and implementing ordinances;

☐ New or revised coastal land acquisition, management, and restoration programs;

☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,

X New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

Goal

Support local jurisdictions with incorporating sea level rise into their SMPs through the periodic review process by creating state guidance, developing a centralized data mapping tool, and providing technical assistance.

Description

In 2023, the Washington State legislature passed HB 1181, amending the Shoreline Management Act (SMA) (RCW 90.58.630) and mandating the Washington State Department of Ecology to update the SMA requirements to ensure local governments address sea level rise impacts within their SMPs. Once this rulemaking process is finished in 2026, the first two groups of local jurisdictions will update their SMPs to address the new requirements beginning in 2027 and finishing by June 30, 2030. A third group of coastal jurisdictions begin the process but will not finish by the conclusion of this Section 309 Enhancement cycle 2030. Updated SMPs will have to align with the new sea level rise rulemaking update, and will likely involve leveraging a completed vulnerability assessment.

To ensure successful implementation of the new rules, the Washington CZMP will take the following steps to provide local governments with clear and robust guidance, resources, and technical assistance to implement adaptive, sustainable approaches to shoreline management.

- Develop clear guidance for local governments that outline best practices for integrating vulnerability assessments and actionable adaptation planning. Guidance on vulnerability assessments will include utilizing CoSMoS model outputs (as available) and the Parcel-Scale Sea Level Rise Vulnerability Assessment for Puget Sound. Additionally, this guidance will help local governments incorporate vulnerability assessment results into the development of adaptation pathways within their land use plans and SMPs. As a result, local governments will have improved access to relevant data and technical assistance, reducing the need for piecemeal local modeling projects. The Washington CZMP is committed to ensuring that these assessments consider not only physical

infrastructure but also cultural and natural resources to create holistic and locally informed approaches to shoreline planning and community resilience.

- Provide technical assistance and training to local governments through workshops, webinars, and one-on-one consultations to ensure staff understand the requirements and have the tools they need to carry them out effectively.
- Support integration of sea level rise vulnerability assessments into permitting and long-term planning, so that communities are equipped to use SMP updates as a foundation for broader adaptation and hazard mitigation strategies

Through trainings, guidance, and technical assistance, the CZMP will emphasize that sea level rise adaptation is not simply a matter of constructing more shoreline armoring. Instead, guidance and technical assistance will highlight the benefits of nature-based solutions and other adaptive strategies that maintain shoreline functions, protect habitat, and support community resilience. Reducing unnecessary shoreline structures and ensuring consistent enforcement against unpermitted armoring will be a priority, alongside helping local governments identify incentives and approaches that encourage softer, more resilient shoreline management practices.

Additionally, to accompany the guidance, the WA CZMP will create a centralized mapping tool to house and display critical coastal data. This platform will serve as a single, accessible location to publish information, ensuring that local governments, stakeholders, and the public can easily access and utilize shoreline and coastal data developed or funded by Ecology. A centralized mapping tool will enable Ecology to establish procedures for local governments to incorporate updated data into SMPs and permitting processes.

This would involve updating and modernizing the Coastal Atlas, with the possibility of replacing it if a better platform can be developed. Integrating a broader range of datasets—such as updated wetlands data from the National Wetland Inventory, stream functional assessments, WDFW riparian and habitat data, and restoration initiatives like Floodplains by Design—would transform the Coastal Atlas into a comprehensive resource for shoreline management. This goal also aligns with the Washington CZMP’s wetlands enhancement strategy of regulatory enhancements by working with USFWS to update the National Wetland Inventory and developing a strategy to integrate this mapping work with other Ecology efforts. This tool could also host Ecology’s Applied Coastal Research and Engineering (ACRE) section’s shoreline aerial obliques, erosion research, and mapping efforts, integrating data on shoreline change and erosion rates to support more informed decision-making. The updated tool will allow local governments to obtain coastal data from one central location, promoting more informed SMP updates and improving coastal resilience planning statewide.

Needs and Gaps Addressed

The Department of Ecology will complete the SMA rulemaking update in 2026, prior to the initiation of this strategy. Several counties will then begin the required periodic review update

to their SMPs starting in 2027. As stated in our second management priority of the Phase II assessment of coastal hazards, state guidance will be essential to support the implementation of the new rule. A recent survey of local government planners on their priorities for the next SMP update showed the number one thing they needed from Ecology to successfully implement the new SMA rule is state sea level rise guidance. Without clear, actionable guidance and technical assistance from the Washington CZMP, local governments will miss a critical opportunity to integrate the best available practices for sea level rise planning into the upcoming round of SMP periodic reviews.

As additionally stated in our phase II assessment of coastal hazards, Ecology's current mapping tool is out of date, and does not meet the needs of current planners to comply with Ecology's guidance and incorporate sea level rise requirements into their SMPs. They require access to the best available science and information to conduct required vulnerability assessments and establish scientifically sound regulatory requirements. Similarly, data generated through competitive grants to local governments for vulnerability assessments are often housed by local governments and can be hard to find or inaccessible to a broader public audience. There is a pressing need to enhance the Coastal Atlas by publishing a wider range of coastal and shoreline data and ensuring that existing datasets are regularly updated to reflect the latest scientific findings and planning priorities.

Finally, not only is this an important priority for the WA CZMP, but the third strategy from the State's resilience strategy is to support Tribes, local governments, and communities with technical assistance, guidance, and best practices. This part of the strategy aligns with broader Washington gaps that are needed to address community resilience against the impacts of coastal hazards and storms.

Benefits to Coastal Management

Focusing on providing guidance and technical assistance will assist local jurisdictions in amending their SMPs to address the impacts of sea level rise and related coastal hazards. This effort will bridge existing gaps in vulnerability assessment and adaptation planning, offering clear pathways for local governments to avoid new development in areas at risk to sea level rise and associated coastal hazards while avoiding other maladaptive actions. Washington State's sea level rise requirements and guidance will become one of the first examples in the country for how local governments will integrate sea level rise into regulatory land use decisions. Technical assistance provided by CZMP staff to support local planners with undertaking this process will help ensure successful implementation while also creating opportunities to document lessons learned, update resources as necessary, and improve future integration of sea level rise resiliency within regulatory land-use frameworks to advance the field of coastal management in Washington State and beyond.

The Washington CZMP frequently hears from local jurisdictions about their need for updated coastal data, such as shoreline erosion and mapping information. With new planning efforts for sea level rise, many jurisdictions are developing their own vulnerability assessments, which could greatly benefit from centralized access to other assessments to promote coordination and avoid a fragmented approach to planning. This strategy ensures that vulnerability assessments created by local jurisdictions will be housed in a single, easily accessible location.

By creating a centralized, up-to-date mapping and data tool, local jurisdictions throughout Washington will have streamlined access to the resources needed for their SMP updates, vulnerability assessments, and permitting processes.

Likelihood of Success

The SMA rulemaking update is well underway, which the CZMP expects to complete in 2026. Given the resources being dedicated to shoreline planning in Washington and opportunities for key external funding support, this priority has a strong likelihood of success.

The coastal mapping effort will build on and enhance current resources like the Coastal Atlas. Currently, CZMP staff are participating in Ecology workgroups to identify mapping and data storage needs related to coastal, shoreline, wetland, and hazard information that Ecology develops, houses, or funds. This work has already generated momentum that will continue and expand with support from Section 309 funding beginning in 2026. Given that this early work has already begun, the project has a high likelihood of success.

III. Strategy Work Plan

Years: 2026 - 2030

Budget: \$1,300,000

Major Milestone(s):

- By June 2027, identify and compile updated mapping data from various Ecology programs, including shoreline erosion, sea level rise, wetland inventory, and habitat assessments, and design a framework for integrating these datasets into a new centralized Coastal Atlas tool.
- Create sea level rise planning guidance document for local governments for the first round of SMP periodic reviews in 2027.
- By end of 2028, update the Coastal Atlas as needed with new models, information and data.
- In 2028, once the Coastal Atlas is updated, train CZM staff to ensure they are well versed with the new data and information available for local programs to implement into their SMP updates.
- Begin working with jurisdictions across Washington's coastal zone to provide guidance and technical assistance to integrate sea level rise planning into SMP updates. CZMP staff will support the first round of jurisdictions working on their periodic reviews between 2027-2030.
- Continue to work with jurisdictions across Washington's coastal zone to provide guidance and technical assistance to integrate sea level rise planning into SMP updates. CZMP staff will support the second round of jurisdictions completing their periodic reviews between 2028-2030.

IV. Fiscal and Technical Needs

A. Fiscal Needs

The CZMP applied for a 2025 PSM to secure funding for a contractor to provide capacity and technical support to create sea level rise guidance. This PSM was selected to be funded, however, before funds could be obligated, all 2025 funds for PSM nationwide were cancelled. The CZMP will need to apply for future rounds of PSM grants or seek alternative sources of funding to develop strong guidance that will accompany new sea level rise planning requirements for local governments.

B. Technical Needs

Guidance for building out coastal resilience will need to be developed in close partnership with long-standing collaborators such as Washington Sea Grant and the UW CIG organization. These organizations bring critical scientific expertise and have been central to advancing the data, modeling, and applied research that underpin coastal resilience planning in Washington.

Over the past five years, competitive grant funding has been instrumental in piloting efforts and showcasing the benefits of resilience initiatives. Recently, NOAA awarded nearly \$75 million in coastal resilience funding for Washington. This funding supports construction projects, grant programs, research initiatives, and capacity-building efforts. However, as the state has identified clear needs and a strategic direction, it is critical to transition to a stable funding source to establish durable programs. This will ensure the retention of institutional knowledge, sustained outreach and technical assistance, and strong coordination and collaboration among agencies and communities.

V. Projects of Special Merit (Optional)

The WA CZMP was successful in applying to the 2025 PSM to create sea level rise guidance. However, before the project could start the funding was cancelled. The WA CZMP intends to apply again next year with the same project to obtain funding for the sea level rise guidance.

Ocean Resources

Ocean Resources Strategy I. Update Marine Spatial Plan

I. Issue Area(s)

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):

- | | |
|---|---|
| ☐ Aquaculture | ☐ Cumulative and Secondary Impacts |
| ☐ Energy and Government Facility Siting | ☐ Wetlands |
| ☐ Coastal Hazards | ☐ Marine Debris |
| ☒ Ocean/Great Lakes Resources | ☐ Public Access |
| ☐ Special Area Management Planning | |

B. The proposed strategy or implementation activities will also support the following enhancement areas (*check all that apply*):

- | | |
|---|--|
| ☒ Aquaculture | ☒ Cumulative and Secondary Impacts |
| ☒ Energy and Government Facility Siting | ☒ Wetlands |
| ☒ Coastal Hazards | ☐ Marine Debris |
| ☐ Ocean/Great Lakes Resources | ☐ Public Access |
| ☐ Special Area Management Planning | |

II. Strategy Description

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

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

applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

Goal: Update Washington’s Marine Spatial Plan through development of an ocean research strategy and agenda.

Description

The [Marine Spatial Plan](#)⁸⁷ for Washington’s Pacific Coast was finalized in 2018 and formally approved and adopted into Washington’s Coastal Zone Management Program in 2019. In addition to providing a management framework for new ocean uses and developing new enforceable policies, the Marine Spatial Plan describes implementation activities needed to further achieve the Plan’s goals and objectives. One of those activities is to “develop and implement a Pacific Coast Science and Research Agenda with researchers, tribal, federal, state and local governments, WCMAC, and others, to improve scientific information available for managing ocean resources.” (Marine Spatial Plan 4.2.2(2)). This strategy would support that activity by providing resources to engage those entities and formally draft a report that could be used to pursue new research and science that would improve implementation of the existing Marine Spatial Plan.

A research strategy and agenda would enhance the existing Marine Spatial Plan by supporting priority science, research, and data and information collection. An effort to compile expert feedback on data and information gaps was recently completed and published by Ecology. This initiative assessed various data and information needs and identifies those deemed critical or of high interest, however they were not prioritized. A research strategy and agenda would take the next step of assessing the data gaps and developing a method for the state to support efforts to address them. When complete, this research strategy and agenda would be published as an addendum to Washington’s Marine Spatial Plan and made publicly available on Ecology’s website. The data and information resulting from the research strategy and agenda would ultimately help protect coastal resources and would enhance Washington’s ability to assess impacts when reviewing projects, whether that be through state permitting authorities or federal consistency.

Needs and Gaps Addressed

This strategy would generally improve the understanding of the threats and stressors to our ocean resources identified in the Phase 1 and 2 Ocean Resources assessments. It addresses Management Priority 1 of the Phase 2 assessment - improving the knowledge base used to inform ocean management and decision-making. It also addresses the data and information management gaps identified in table 44, with the goal of integrating up-to-date best practices into the Marine Spatial Plan. This approach will ensure that our ocean management decisions are well-informed and that our federal consistency review processes are more effective and responsive to the identified threats and stressors.

⁸⁷ <https://apps.ecology.wa.gov/publications/documents/1706027.pdf>

Assessing the effects of activities that may occur in state or federal waters requires sufficient data and information. Projects evaluated under state authorities or through the federal consistency review process are required to provide the necessary data and information for the state to make regulatory decisions. However, as recent efforts to assess data gaps has demonstrated, the lack of availability of information can be a substantial challenge. For example, large scale projects that have significant footprints may be substantial enough to affect oceanographic and ecological processes or generate cumulative impacts when coupled with other activities at local or regional scales. Ensuring that adequate information is available to help answer important questions like this is critical to sound environmental review but if it is not readily available it may not be considered. Addressing priority data and information gaps will improve decision making processes and lead to enhanced management and protection of coastal resources.

Benefits to Coastal Management

The development and implementation of an ocean research strategy and agenda and the resulting addendum to the Marine Spatial Plan would provide the state with a thoughtful approach to identify and seek support for new research and data collection which will help fill critical information gaps needed for planning, evaluating, and decision-making about ocean use activities. The resulting information would greatly improve coastal management and the ability to assess impacts to coastal resources during future local, state, and federal permitting processes. The information would benefit coastal communities; the Washington CZMP; local, state and federal permitting agencies; and project proponents who could use it to better understand and address potential impacts while gaining greater certainty about project outcomes.

Likelihood of Success

There is a fairly high likelihood of success with this strategy given prior work on the Marine Spatial Plan and the recent assessment of data gaps. There is also significant support for and interest in developing research strategies at the regional level that could complement this strategy. The need for this strategy was clearly articulated in the Marine Spatial Plan's implementation section (Marine Spatial Plan 4.2.2(2)), as well as recommendations from the Washington Coastal Marine Advisory Council (Marine Spatial Plan 5.4).

III. Strategy Work Plan

Total Budget: \$150,000

Years: 2026 - 2028

Major Milestone(s):

- July 2026 – June 2027
 - Develop communication and outreach plan

- Solicit electronic input (email, survey, webinars, etc.) from Tribes, affected communities, agencies, and researchers about their interests, priorities, and ability to support development of a research strategy and agenda
- Convene at least one in-person workshops to solicit input from Tribes, affected communities, agencies, and researchers to discuss and develop goals and priorities for a research strategy and agenda
- Develop a preliminary draft research strategy and agenda
- July 2027 – June 2028
 - Solicit electronic input (email, survey, webinars, etc.) from Tribes, affected communities, agencies, and researchers on draft research strategy and agenda
 - Convene at least one in-person workshop to solicit input from Tribes, affected communities, agencies, and researchers on an updated draft research strategy and agenda
 - Offer public comment period on an updated draft research strategy and agenda
 - Incorporate feedback and comments into a finalized research strategy and agenda
 - Publish research strategy and agenda as an addendum to Washington’s Marine Spatial Plan

IV. Fiscal and Technical Needs

A. Fiscal Needs:

Washington could use 309 funding to sufficiently execute development of an ocean research strategy and agenda. Funding from a PSM or the legislature could allow for a more robust engagement and outreach process, a more thorough prioritization processes of strategies for specific ocean use activities, and a more detailed final product.

B. Technical Needs

The Washington CZMP has the technical knowledge and skills to facilitate a process to develop an ocean research agenda, and can leverage existing forums such as the State Ocean Caucus, the Washington Coastal Marine Advisory Council, the Intergovernmental Policy Council, and the Olympic Coast National Marine Sanctuary Advisory Council. However, the state will need to seek advice and input from scientific experts and Tribes to help identify the most needed research for inclusion in a research strategy and agenda. Fortunately, the recent data gaps assessment helped develop a connection with dozens of experts on a range of topics, which can be leveraged for the development of a research strategy and agenda. Staff also have ample experience convening and facilitating discussions on various issues.

V. Project of Special Merit

At this time, the Washington CZMP does not have a proposed PSM for Ocean Resources, however this work has a high likelihood of aligning with a future PSM.

Ocean Resources Strategy II. Assess enforceable policies and identify areas for improvement

I. Issue Area(s)

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):

- | | |
|---|---|
| ☐ Aquaculture | ☐ Cumulative and Secondary Impacts |
| ☐ Energy and Government Facility Siting | ☐ Wetlands |
| ☐ Coastal Hazards | ☐ Marine Debris |
| ☒ Ocean/Great Lakes Resources | ☐ Public Access |
| ☐ Special Area Management Planning | |

B. The proposed strategy or implementation activities will also support the following enhancement areas (*check all that apply*):

- | | |
|---|--|
| ☒ Aquaculture | ☒ Cumulative and Secondary Impacts |
| ☒ Energy and Government Facility Siting | ☒ Wetlands |
| ☒ Coastal Hazards | ☐ Marine Debris |
| ☐ Ocean/Great Lakes Resources | ☐ Public Access |
| ☐ Special Area Management Planning | |

II. Strategy Description

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

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

applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

Goal: Enhance the protection of coastal and ocean resources by assessing the state’s existing enforceable policies alongside other state laws and identifying opportunities for improvement.

Description

Through the federal consistency process, federal agencies and applicants seeking permits or licenses for activities listed by the state must demonstrate consistency with Washington’s enforceable policies. In recent years, after reviewing federal activities and federally issued licenses/permits, and observing federal consistency efforts in neighboring states, it has become apparent that Washington could improve the protection of coastal and ocean resources by enhancing its federal consistency process and authority.

Effective implementation of this strategy would begin with an assessment of Washington’s authorities relevant to current and future ocean resource needs, including the potential development of ocean energy in federal waters. Existing enforceable policies would be carefully analyzed, and new or revised policies based on state laws and regulations would be considered for inclusion into the Washington Coastal Zone Management Program to enhance the state’s federal consistency reviews. Any new or revised enforceable policies identified, would then eventually be incorporated or updated for federal consistency implementation purposes through a program change request submitted to NOAA. This approach aims to improve the federal consistency review process and strengthen mechanisms for evaluating potential coastal impacts.

Developing an effort to enhance Washington’s Coastal Zone Management Program by incorporating new and modified enforceable policies will have a greater impact on the overall efficacy of the state’s program if efforts are also implemented to evaluate the state’s processes and practices for reviewing actions for federal consistency. Therefore, this strategy also includes goals for addressing areas for improvement when it comes to issuing notifications and soliciting input from key partners, determining coastal effects and evaluating consistency, and providing technical support and resources for applicants and federal agencies. A major component of this effort would be to also strengthen coordination and communication efforts between state agencies, federal agencies and Tribes, as well as providing clearer and more readily available information on federal consistency and the Washington Coastal Zone Management Program to the public more generally.

Needs and Gaps Addressed

This strategy addresses the Ocean Resource Phase II Management Priority 2 - enhancing our federal consistency review processes, as well as the needs and gaps identified in table 44. Assessing Washington’s federal consistency review process and existing enforceable policies would provide valuable insights into the changes that are needed to better prepare for future federal activities. This assessment may reveal gaps in the state’s ability to protect existing coastal and ocean uses and resources. These gaps may be addressed by improving internal processes, modifying existing enforceable policies, or introducing new policies based on

Washington's existing state laws that could be used to enhance the protection of coastal resources. Additionally, there may also be a need to clarify existing state authorities, including when they are triggered and how they apply, which may be achieved through rulemaking efforts or the development of guidance. This strategy addresses the needs identified in our phase II section by focusing staff capacity to clarify and potentially expand enforceable policies, strengthen internal processes, and ensure Washington's federal consistency program is better equipped to protect coastal resources.

Benefits to Coastal Management

Initiating an assessment of the state's federal consistency process and enforceable policies in a holistic and strategic manner would be the first since the development of the Washington Coastal Zone Management Program in 1976. Improving internal and state-level processes and, if necessary, supplementing the state's enforceable policies would strengthen resource protection and management by giving the state a stronger voice in federal decision making, especially considering increasing pressure on ocean resources from development, changing ocean conditions, and other environmental stressors.

The improvements identified through this effort would provide benefits when conducting any federal consistency review, not just those within or adjacent to the ocean. The benefits of this work would be lasting and impactful, boosting the state's ability to sustain a healthy ocean ecosystem, promoting economic and recreational opportunities, and preserve coastal and cultural livelihood and values. More strategic and robust internal processes and procedures for coordination, program planning, and the development of useful tools and resources will help carry out these beneficial goals more effectively.

Likelihood of Success

This strategy has a high likelihood of success, particularly if Ecology is successful in gaining additional staff and capacity for this work. Some level of assessment and identification of potential new enforceable policies could be done with existing staff. Further funding support via the legislature or a future Project of Special Merit would allow for a more thorough assessment of current processes and authorities. A budget proviso in the Governor's 2025-2027 budget would, if funded by the legislature, support an assessment of existing state authorities related to ocean development, and would greatly bolster capacity for this work.

This effort would include consultation with Tribes and education and outreach to affected communities, including the WCMAC. This engagement could be carried out in tangent with other similarly aligned goals for the state around federal consistency review more generally. This would include efforts to gather input from Tribes, federal and state agencies, and the public on preferences for notification and coordination, understand areas of concern, and provide resources and opportunities for dialogue around the implementation of federal consistency review. We believe these activities would further develop support to improve our federal consistency process.

- **Strategy Work Plan**

Total Budget: \$300,000

Years: 2026 - 2030

Major Milestones:

- July 2026 – June 2027
 - Assess coastal programs from other states, primarily key enforceable policies utilized in federal decision making
 - Gather data and information on current enforceable laws and policies currently implemented during federal consistency reviews for ocean energy projects and identify areas for improvement, using past examples and lessons learned both within Washington and from other coastal states to inform conclusions
 - Determine methods and ideas for better internal and external processes for federal consistency review to ensure more effective implementation
 - Develop a plan for outreach and engagement with key players on this process
- July 2027 – June 2029
 - Set up workgroups with key Ecology and state agency representatives and subject matter experts to solicit input on the potential new/modified enforceable policies and to assess implementation of federal consistency reviews generally
 - Solicit and evaluate feedback from key partners, Tribes, and state and federal agencies on priorities for federal consistency review, engagement, and protections for ocean and coastal resources
 - Develop a list of modifications to be made to existing enforceable policies, if applicable
 - Develop a list of new enforceable policies that Washington should adopt into the Coastal Zone Management Program to strengthen future federal consistency reviews
 - Evaluate enforceable policies of interest against NOAA requirements for approval and real-life scenarios for potential future projects
 - Develop a plan for implementing identified improvements of the state's federal consistency review processes
 - Share findings with ocean and coastal managers, including coastal Tribes, academics, and stakeholders
- July 2029 – June 2031
 - Incorporation of identified new or modified enforceable policies into the CZMP via program change

- Update the CZMP's [enforceable policies document](#)⁸⁸ and Ecology webpages once program change(s) are finalized
- Implement identified improvements of the state's federal consistency review process.

III. Fiscal and Technical Needs

A. Fiscal Needs:

Washington could utilize 309 funding to execute the enforceable policies improvement strategy at a basic level, primarily through internal processes, as we currently have limited staff to handle this extra workload. Additional funding via a PSM or other funding source would allow for a more robust and timely assessment of enforceable policies from other states, more engagement and outreach to Tribes, agencies, and the public, and formal reports that could be provided to the Governor's Office and the Legislature. Following work with the Governor's Office and the WCMAC, it is possible that the state legislature may provide funding that would support this strategy, which would greatly accelerate the timeline and the rigor of the assessment process.

B. Technical Needs:

The Washington CZMP has the technical knowledge and skills to execute the strategy on enforceable policies improvement. Ecology's Aquatic Permitting & Protection Section staff implement federal consistency reviews (i.e., the enforceable policies) on a regular basis for a wide range of federal agency and federal license/permit activities and are therefore already very familiar with both the challenges and advantages of existing enforceable policies. Since all of Washington's enforceable policies are housed within Ecology, review of these enforceable policies for federal consistency often requires coordination with other water quality, air quality, shoreline, and ocean/coastal staff within the agency, as they are experts in implementing the associated enforceable policies in their own work.

IV. Projects of Special Merit (Optional)

At this time, the Washington CZMP does not have a proposed PSM for this strategy, however this work has a high likelihood of aligning with a future PSM.

⁸⁸ <https://apps.ecology.wa.gov/publications/SummaryPages/2006013.html>

Wetlands

Wetlands Strategy: Wetlands Regulatory Enhancements

I. Issue Area

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):

- | | |
|--|---|
| ☐ Aquaculture | ☐ Cumulative and Secondary Impacts |
| ☐ Energy and Government Facility Siting | ☒ Wetlands |
| ☐ Coastal Hazards | ☐ Marine Debris |
| ☐ Ocean/Great Lakes Resources | ☐ Public Access |
| ☐ Special Area Management Planning | |

B. The proposed strategy or implementation activities will also support the following enhancement areas:

- | | |
|--|--|
| ☐ Aquaculture | ☒ Cumulative and Secondary Impacts |
| ☐ Energy and Government Facility Siting | ☐ Wetlands |
| ☐ Coastal Hazards | ☐ Marine Debris |
| ☐ Ocean/Great Lakes Resources | ☐ Public Access |
| ☐ Special Area Management Planning | |

II. Strategy Description

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

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

Goal: Wetland protection is enhanced at the state and local levels ensuring no net loss of area and function through a new state waters alteration permit program that leverages improved mapping and data on wetlands.

Description

Ecology implements the state's Water Pollution Control Act (RCW 90.48), which protects wetlands from pollution and protects wetlands' beneficial uses such as habitat for endangered and threatened species, flood attenuation and storage, protection from coastal erosion, and water quality functions. Before the U.S. Supreme Court's Sackett decision in 2023, most state authorizations for wetland impacts and mitigation were accomplished through issuing Section 401 Water Quality Certifications on Section 404 permits. There was occasional use of Administrative Orders, issued through [RCW 90.48.120](https://app.leg.wa.gov/RCW/default.aspx?cite=90.48.120),⁸⁹ for impacts to non-federally regulated wetlands. With the new, more restrictive definition of Waters of the U.S., more wetlands have lost federal protection and now rely on state protections. Unfortunately, the Administrative Order (AO) process has not been codified, does not have a public notice and comment requirement, and is not transparent to the regulated community. Because of this, Ecology and the Washington CZMP need to create a more robust permitting program with criteria for the applications process and mitigation requirements.

Ecology proposes to develop a new wetland and other state waters permit program, the State Waters Alteration Permit (SWAP), which will fill the gap in wetland protection left by the Sackett decision. The permit program will enhance the Washington CZMP's application of the State Water Pollution Control Act and Washington's goal of no net loss of wetlands and facilitate an eventual increase in the quality and quantity of wetlands ([Executive Order 89-10](https://governor.wa.gov/sites/default/files/exe_order/ao_89-10.pdf)⁹⁰). Administering the permit program will help to ensure that wetlands are still protected in the coastal zone while accommodating growth. This will lead to a program change by creating new regulations and enforceable policies for protecting wetlands of Washington.

The first two years of this strategy will build on work started for the wetland/state waters permit rule and produce a final rule that responds to Tribal and public comments. CZMP staff will respond to comments received on the rule and publish the final rule. Staff will employ various public engagement strategies, such as blogs, webinars, email lists, and a dedicated web page to publicize the permit program.

It will be vital to secure the understanding and support of those who will be subject to the new regulatory program including Tribes, interested parties, and the public. The Washington CZMP will do that by developing a communications plan to guide the outreach and communications on the permit rule that includes key audiences and key messages. Outreach materials and activities will be developed under this strategy to elevate the awareness and understanding of the permit program by interested parties including local governments, applicants and their agents, and the general public. Materials will include why wetlands are important, what the permit program is, what the process is for applying for a State Waters Alteration Permit, and

⁸⁹ <https://app.leg.wa.gov/RCW/default.aspx?cite=90.48.120>

⁹⁰ https://governor.wa.gov/sites/default/files/exe_order/ao_89-10.pdf

technical requirements for the permit. CZMP staff will follow the communication plan to conduct outreach to Tribes, local governments, state and federal agencies, and interested parties to explain the permit program and process and build support.

Internal training will be necessary to ensure that the permit program is implemented consistently and effectively. Guidance on the new permit process and requirements will be developed and training provided to permit review staff and regional wetland staff.

As part of the new permit program, Ecology will update wetland maps in the coastal zone. The CZMP will use staff time to develop the training data to implement and run the Wetland Intrinsic Potential (WIP) mapping for updating outdated National Wetland Inventory (NWI) maps. Updated maps will enhance the screening and review of permit applications by identifying which projects have wetlands on site or nearby. Updated maps will enhance the ability of local governments to do more effective management of wetlands when implementing their shoreline management plan and critical area ordinances. More accurate maps will enable local governments to target wetland restoration and preservation actions, flag projects that are likely to impact wetlands, conduct more accurate screening for permit applications that need further investigation, enhance natural infrastructure to contribute to surface water management, and more effectively manage their wetland resources while accommodating growth. This wetland's strategy is also closely linked with the coastal hazards strategy that involves developing a centralized coastal data and mapping tool to support SMP updates, as it is possible that the mapping and data tools could be combined. All of these actions will enhance local planning and land use activities that are compatible with protecting coastal resources. Updated maps would also allow Ecology to evaluate the effectiveness of the SWAP program in future years.

Needs and Gaps Addressed

This strategy will address Wetland's Phase II Management Priority 2 by updating WIP mapping data and NWI maps. Currently, Washington has gaps in its knowledge of where wetlands are located and the condition of those wetlands. Closing these gaps is critical, as the Washington CZMP must also ensure wetlands are protected and that any unavoidable losses are offset through a transparent and efficient authorization process with compensatory mitigation where required. Updated maps will address gaps in Table 49 under Phase II by improving decision-support tools, data management, and GIS needs. These improvements will give state and local governments more accurate, accessible information to guide permitting, restoration, and long-term planning for wetlands.

Additionally, With the loss of the federal Nationwide Permit process for large numbers of wetlands, and no existing state wetland permit, Ecology continues to use its enforcement authority under the state Water Pollution Control Act to authorize work in wetlands and other waters by issuing Administrative Orders (AO). Rather than continuing to rely solely on Ecology's enforcement authority, which can be confusing to the public, Ecology is developing a permit (SWAP) program rule to more clearly articulate the process for obtaining authorization for projects proposing to impact state waters. It will include answers to questions such as "when is a permit required," "what activities are exempt," and "how to apply for authorizations."

Benefits to Coastal Management

This wetlands strategy will provide significant benefits to coastal management by strengthening the protection and sustainable use of vital wetland ecosystems. By implementing the State Waters Alteration Permit program, the strategy will establish a transparent, predictable process for authorizing activities that impact wetlands, ensuring continued compliance with state environmental goals despite federal regulatory changes. The development of updated wetland maps using Wetland Intrinsic Potential data will enhance local governments' ability to identify, protect, and restore critical wetland areas, aiding in land use planning, stormwater management, and salmon habitat conservation. By balancing growth with environmental stewardship, this approach supports resilient coastal ecosystems and communities.

Likelihood of Success

The development of a formal permit program aligns with the future rulemaking efforts of the Washington CZMP's wetlands section and will provide clear guidance on when permits are required and how to navigate the application process, reducing confusion and improving regulatory compliance. Because of its alignment with the rulemaking process and support from the Department of Ecology, this part of the strategy has a high likelihood of success. Furthermore, the investment in updated wetland mapping aligns with the goals of multiple other sections in the Department of Ecology as described in the coastal hazard strategy, making this ongoing effort a high priority and likely to be completed.

III. Strategy Work Plan

Total Years: 2026 - 2030

Total Budget: \$640,000

Major Milestones:

- July 2026 – June 2027
 - Conduct community engagement with Tribes, affected interests, state agencies and local governments on the framework and content of the draft permit program.
 - Respond to public comment on the draft rule and incorporate appropriate changes into permit program final rule.
 - Finalize rulemaking to adoption of the State Waters Alteration Permit (SWAP)
 - Develop communications plan for the roll out of the SWAP program.
 - Update wetland website with information on the SWAP program
 - Complete applying Wetland Intrinsic Potential tool in the coastal zone.
- July 2027 – June 2030
 - Develop materials to conduct effective community engagement on the permit program

- Conduct outreach to interested and affected parties on the permit rule
- Develop guidance materials for applicants
- Develop guidance and provide training to coastal staff reviewing SWAPs.
- Update Aquatics database to include the SWAP
- Coordinate with US Army Corps of Engineers and EPA on the SWAP and determine if a memorandum of agreement on its relationship to federal permitting would be useful.
- Meet with USFWS to explore updating NWI in Washington using WIP maps
- Conduct outreach on maps and the need for NWI update
- Explore funding options for updated NWI maps post-2030

IV. Fiscal and Technical Needs

A. Fiscal Needs:

The 309 funding alone will not be sufficient for accomplishing the strategy and will be supplemented by state funding for staff to complete the rule finalization. The Washington CZMP will develop materials under this cycle to pursue and secure funding to implement the NWI map updates in future cycles. Ecology will work with local partners to advocate for state or federal funding for the NWI updates.

Ecology does not currently have funding to conduct research into the transport and retention of the pollutant 6PPD-Q and its relationship to wetlands. Staff will work with the Department of Ecology Environmental Assessment Program on a study design and seek funding for a pilot project that can help inform application of land use requirements and stormwater management within the state permit program.

B. Technical Needs:

Ecology staff have the technical knowledge and skills necessary to implement this strategy. The state has already begun the rulemaking process for the State Waters Alteration Permit and this strategy will complete subsequent steps to institutionalize the permitting program. Ecology has staff who are experienced in applying the WIP tool in coastal jurisdictions. Those staff will continue work to apply the WIP and have the knowledge to engage in conversations with USFWS on updating the NWI maps.

V. Projects of Special Merit

- 6PPD-Quinone is a pollutant of emerging concern that affects aquatic life when it moves into streams. It is an urban pollutant that has been directly linked to salmonid declines in Puget Sound. In order to plan management actions to address 6PPD-Q pollution, data are needed on pollutant transport and the effects wetlands have on the transport, retention, and transformation of 6PPD-Q. For a potential PSM, CZMP staff could explore the design of, and work to secure funding for, a pilot to include the collection and analysis of data from wetlands with a 6PPD-Q source. This information could help

determine how the contaminant moves through wetlands and whether wetlands remove or transform 6PPD-Q. This information could be used in planning to identify hot spots and locations where wetlands are important for pollutant removal and/or transformation as an element of a natural infrastructure system, and areas where restoration and preservation should be targeted. This information could help inform permit decisions related to stormwater management and salmon recovery investments.

- With the threat of extreme wildfires on Washington residents' minds, efforts are underway in the state legislature to address fire risk and hardening of structures to prevent ignition. Current requirements in the International Wildland Urban Interface Code for defensible space could cause harm by removing all mature trees within wetlands and their buffers and shoreline areas, running contrary to local codes regulating vegetation removal and wetland and shoreline protection. A potential future PSM could support Ecology, with the departments of Commerce and Fish and Wildlife, to explore the development of guidance for local governments on how to implement fire risk reduction strategies while ensuring compliance with state and local wetland protection regulations.

Five-Year Budget Summary by Strategy

Table 49. Five-Year Budget Summary by Strategy, July 2026 - June 2031

Strategy	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Coastal Hazards	237,500	237,500	275,000	275,000	275,000	1,300,000
Wetlands	105,500	105,500	143,000	143,000	143,000	640,000
Ocean Resources	135,000	135,000	60,000	60,000	60,000	450,000
Total Funding	478,000	478,000	478,000	478,000	478,000	2,390,000