

# Tillamook Estuaries Partnership's Comprehensive Conservation and Management Plan



August 20, 2019

CCMP Update



**Tillamook Estuaries Partnership**  
*A National Estuary Project*

Tillamook Estuaries Partnership  
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Tillamook Estuaries Partnership thanks the many stakeholders, technical advisors, and members of the community who participated in the development of this CCMP. We are especially grateful to our former Board of Directors members who have helped guide our organization throughout the years. We thoroughly appreciate the time and effort of everybody who has contributed to TEP's mission to conserve and restore Tillamook County's estuaries and watersheds in their entirety.

## Prepared by the University of Oregon's Institute for Policy Research and Engagement

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## About the Institute for Policy Research and Engagement

The Institute for Policy Research and Engagement (IPRE) is a research center affiliated with the Department of Planning, Public Policy, and Management at the University of Oregon. It is an interdisciplinary organization that assists Oregon communities by providing planning and technical assistance to help solve local issues and improve the quality of life for Oregon residents. The role of the IPRE is to link the skills, expertise, and innovation of higher education with the transportation, economic development, and environmental needs of communities and regions in the State of Oregon, thereby providing service to Oregon and learning opportunities to the students involved.

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# Introduction

In 1994, Tillamook Bay was designated as a Bay of National Significance, and thus began the road to the first Tillamook Bay Comprehensive Conservation and Management Plan (CCMP). Completed in 1999 through the efforts of the Tillamook Bay National Estuary Project's (TBNEP) Management Conference, which was comprised of partners, key stakeholders, and interested members of the public, the CCMP was the guiding document supporting the health of Tillamook Bay (Figure 1 - inset). The original CCMP identified 63 actions that targeted four priority problems: key habitat, water quality, erosion and sedimentation, and flooding.

During its first two years, the TBNEP was implemented through a department within the Tillamook County government. The purpose of the Tillamook County Performance Partnership (TCPP), as it was then known, was to provide a dynamic, results-driven mechanism to build relationships, promote economic sustainability, and facilitate coordinated environmental restoration within the County.

TCPP quickly realized the need to include all Tillamook County estuaries and watersheds in its mission and focus area (Figure 1). Because many of the same issues are found throughout the county, applying the general principles of the CCMP beyond Tillamook Bay was a logical step. Linked by proximity, the estuaries share similar challenges and opportunities yet retain their unique characteristics because of the communities and land use that surround and nourish them.

In the Spring of 2002, TCPP re-organized to become a 501(c)(3) non-profit organization, its name was changed to the Tillamook Estuaries Partnership (TEP) to reflect the broadened geographic scope of work, and the various committees (Policy, Management, Citizen Action, Financial Strategies) were consolidated into a Board of Directors. The decision to restructure the organization was based on two factors: (1) as a non-profit, TEP could pursue more diversified and long-term funding to complement the annual EPA base funding, and (2) as a non-profit, the TEP Board of Directors would have greater autonomy over project implementation and financing. Over time, TEP's mission was changed to encompass a landscape-scale scope of work: TEP is dedicated to conserving and restoring Tillamook County's estuaries and watersheds in their entirety.

## What is the NEP?



In 1987, Congress established the National Estuary Program (NEP) as part of the Clean Water Act. The NEP's mission is to protect and restore the health of estuaries while supporting economic and recreational activities. The U.S. EPA administers the program. In April 1992, Oregon Governor Barbara Roberts nominated Tillamook Bay to the National Estuary Program (NEP). In her nomination, the Governor characterized Tillamook Bay as representative of the bays along the Pacific Northwest coast because it provided a vital resource to the local and regional economies, and supported diverse aquatic resources including anadromous fish, shellfish, and waterfowl. (1999 CCMP). In 1994, TBNEP joined 27 other National Estuary Projects around the United States in developing and implementing science-based, community-supported management plans. With issues like high bacteria concentrations affecting the shellfish industry and recreational use of the rivers and bay, sedimentation, declining salmon and trout populations due to loss of key habitats, and flooding, the Tillamook Bay aligned well with the intentions of the National Estuary Program.



*Figure 1. TEP Focal Area showing the Nehalem, Tillamook, Nestucca, Netarts, Sand Lake, and Neskowin watersheds. The figure also shows the estuary, lower, and upper watershed regions. Inset: Map of the 1999 TEP Focal Area showing the Tillamook Bay watershed (grey).*

## Key Performance Indicators

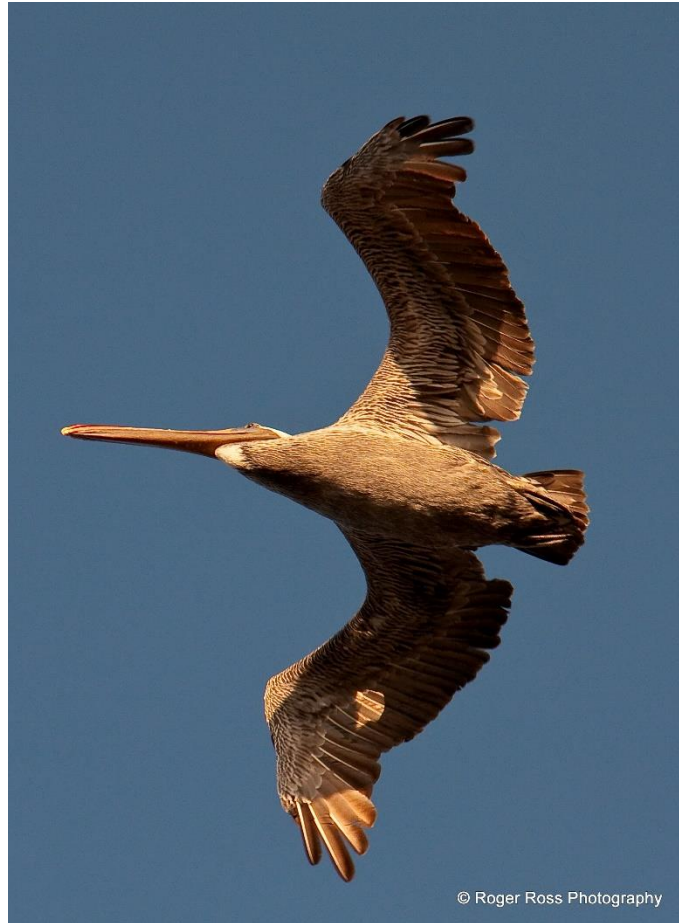
The non-profit organizational structure of TEP has proven to be highly successful as shown by these long-term Key Performance Indicators (through December, 2018):

- Since 1997, TEP's Volunteer Water Quality Monitoring Program has collected and analyzed more than 25,000 samples for bacteria levels in Tillamook County rivers, creeks, streams, and bays. Real-time results are posted online through an interactive map available to the public.
- Since 2004, TEP's Backyard Planting crew has planted 57,315 trees and shrubs to enhance 245 acres of riparian habitat (equivalent to 39.9 miles of stream banks) on 147 private landowner properties. Survival rates for post-2011 plantings are 89-94%.
- Over 300,000 native plants have been distributed to restoration projects since TEP assumed management of the native plant nursery in 2014.
- Nearly an entire generation of Tillamook County third and fourth grade students, over 10,200 children since 2001, have received 51,000 hours of science education during TEP's landmark outdoor learning experiences.
- 25 anthropogenic barriers have been replaced through TEP projects to reconnect 25.9 miles of historical salmon-bearing streams.
- TEP and its partners have completed three (3) large tidal-wetland restoration projects in Tillamook Bay that together have returned approximately 566 acres of this highly imperiled habitat type to more natural conditions.
- In total, TEP and its partners have completed 838 habitat-related projects in the focal area since 2001:
  - 416 projects to enhance riparian vegetation along rivers and streams,
  - 208 fish passage barrier removal projects (e.g., culvert and dam removal),
  - 99 in-stream enhancement projects (e.g. large woody debris placement),
  - 38 projects to limit fine sediments entering streams (e.g., road decommissioning),
  - 30 land acquisition efforts,
  - 20 wetland enhancement projects (e.g., tidal channel construction, wetland plantings),
  - 13 invasive plant removal projects,
  - 5 efforts to reintroduce native oysters (shellfish seeding),
  - 4 projects to enhance upper watershed vegetation,
  - 2 large-scale dike removal efforts, and
  - 1 each for projects to control flooding, enhance bird habitats, and remove contaminants.



TEP's action agenda for the upcoming decade (2019-2029) is described in this revised CCMP. This document utilizes the original CCMP as its foundation along with assessments of what has been completed, what is ongoing, what new issues have emerged, and what has lost relevance over the past 20 years. Priority issues from the original CCMP related to erosion, sedimentation, and flooding were broadened to include a full suite of natural hazards and have been integrated into both the water quality and habitat restoration action plans. Climate change stressors and vulnerabilities, which were not explicitly discussed in the 1999 CCMP, are now emerging challenges to TEP, its partners, and the community and have been incorporated throughout this document.

[Table 1](#), [Table 2](#), [Table 3](#), and [Table 4](#) (pp. vii-xv) provide crosswalks between the 1999 and 2019 CCMP action items. Additional information regarding the major accomplishments are provided in each action plan chapter, on the TEP website (<https://www.tbnep.org/>), and within TEP's Year in Review publications.



This CCMP revision also considers the evolving social, economic, and cultural values of the community. More than six stakeholder meetings and 15 public outreach meetings were held to gather a wide spectrum of input. An online survey asked the public about their interactions with the bays, how the bays are valued, and what challenges may be affecting those values. A draft of the updated CCMP, which included this myriad of perspectives, was posted online for public comment to give all stakeholders the opportunity to have their voices heard before the final document was adopted.

After updating the original CCMP and incorporating feedback received from the community, three new goals, which apply across TEP's entire focus area, have been developed for this Revised CCMP:

- Maintain and improve the beneficial uses of estuaries and watersheds for humans and native aquatic and terrestrial species;
- Conserve and restore ecological functions of Tillamook County's estuaries and watersheds to benefit native aquatic and terrestrial species and the communities that depend on them; and
- Foster awareness of Tillamook County's estuaries and watersheds, engage in problem solving, and take action to conserve and enhance our natural resources.

The corresponding action items exceeds the collective capacity of TEP and its partners to complete during the 10-year lifespan of the CCMP. TEP will work with its partners to prioritize activities based on critical gaps, relevancy, resources, and funding. TEP recognizes that as conditions change so will the CCMP implementation strategies: the CCMP is meant to be dynamic.



The 2019 CCMP focuses on three priority programs: Water Quality ([Chapter 1](#)), Habitat Restoration ([Chapter 2](#)), and Community Education and Engagement ([Chapter 3](#)). Each action item follows the format described in the Anatomy of a CCMP Action on [page vi](#). [Chapter 4](#) includes profiles of the watersheds within TEP's focal area along with a summary of how the CCMP action items will address the natural hazards and climate impacts identified during the recent climate change preparedness strategy development ([Table 5](#)).



The CCMP is not a stand-alone document. The habitat restoration and monitoring strategies ([Chapter 5](#)), finance strategy ([Chapter 6](#)), and the communication strategy ([Chapter 7](#)) shall be developed by TEP at later dates and incorporated into this CCMP (Chapters 5, 6, and 7 serve as placeholders). TEP issues a State of the Bays report every five years to monitor progress and changing needs. The Board of Directors and staff of TEP develop strategic plans to guide and prioritize CCMP activities. Annual workplans are established based on these priorities as well as available funding and resources.

The CCMP is also supported by local, state, and federal planning efforts. Specific resource management plans relevant to Tillamook County's estuaries and watersheds include, but are not limited to:

- [Tillamook County Comprehensive Plan](#) (1982)
- [Oregon Statewide Land Use Planning Goals](#) (1973)
- [Oregon Estuary Plan Book](#) (1987)
- Total Maximum Daily Loads: [North Coast Sub-basins](#) (2003), [Tillamook Bay Watershed](#) (2001) and [Nestucca Bay](#) (2002)
- [Oregon Senate Bill 1010](#) (1993, Agricultural Water Quality Management Act)
- [Oregon Senate Bill 1517](#) (2016, Tillamook County Wetland Habitat Restoration)
- [Water Quality Status and Action Plan: North Coast Basin](#) (2011)
- [ODA North Coast Basin Agricultural Water Quality Management Area Plan](#) (2018)
- [Pesticide Management Plan for Water Quality Protection](#) (2011)
- [Oregon Northwest State Forest Management Plan](#) (2001, in revision 2019)
- President's Northwest Forest Plan (1994)
- [Final ESA Recovery Plan for Oregon Coast Coho Salmon \(\*Oncorhynchus kisutch\*\)](#) (2016)
- [Tillamook County Multi-Jurisdictional Natural Hazards Mitigation Plan](#) (2017)
- [Natural Hazard Risk Report for Tillamook County, Oregon](#) (2018)
- [Tillamook County Community Wildfire Protection Plan](#) (2006)
- [Tillamook Estuaries and Watersheds Climate Change Vulnerability Assessment](#) (2018)
- [Climate Change Preparedness Strategy for Tillamook Estuaries Partnership](#) (2018)



This CCMP revision sets forth an action agenda to coordinate resources, strengthen commitments, and rededicate Tillamook County’s resolve to conserve and restore its estuaries and watersheds. Together, TEP and its partners will leverage opportunities to develop projects and make collaborative decisions over strategies and priorities that follow this blueprint for clean water, healthy habitats, abundant wildlife, and vibrant communities.



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Table 1 Water Quality Key Action Plan Accomplishments and Changes Since 1999

1999 CCMP "Water Quality" and "Erosion and Sedimentation" Action Plan			2019 CCMP "Water Quality" Action Plan		
Action Item	Description	Status	Action Item	Description	
WAQ-01	Define, Implement, and Enforce Pollution Prevention and Control Measures on Agricultural Lands	<b>ONGOING/REVISED:</b> ODA Water Quality Program strategies have been updated to include changes to the program. OR SB 1010 is being revised. Not many violations are currently reported.	}	WAQ-01	Improve farm management practices to address water quality
WAQ-02	Implement Voluntary Farm Management Plans	<b>ONGOING/REVISED:</b> CAFO participants required to have plans, non-CAFO ag lands voluntary.			
WAQ-03	Implement Revised Confined Animal Feeding Operation (CAFO) Inspection Procedure	<b>COMPLETE/REVISED:</b> Initial program achieved in 2005. CAFOs are inspected annually. CAFO program needs to be maintained and implementation continued. Program requirements include nutrient management plan.			
WAQ-04	Use Farm-Specific Agronomic Rates for Nutrient Management	<b>ONGOING/REVISED:</b> Need to encourage better use of ODARK.org (record keeping program by CAFOs). Online, nutrient planning tool to create their own plan - for non-permitted facilities record keeping.			
WAQ-05	Provide Farm Management Training Programs	<b>ONGOING/REVISED:</b> OSU Extension provides training, partners include TEP, NRCS, SWCD.			
WAQ-06	Ensure Adequate Wastewater Treatment Capacity	<b>ONGOING/REVISED:</b> Upgrades to the Tillamook WWTP have been accomplished. Upgrades will be needed in other cities as they grow.	}	WAQ-02	Improve rural residential and urban infrastructure to address water quality
WAQ-07	Expand and improve Sewer Network	<b>ONGOING/REVISED:</b> Limited improvements have been made in the City of Tillamook.			
WAQ-08	Ensure Adequate Urban Runoff Treatment and Retention Strategies	<b>ONGOING/REVISED:</b> Limited improvements have been made (e.g., bioswales, etc.). Includes unincorporated communities.			
WAQ-09	Ensure Properly Functioning On-Site Sewage Disposal Systems	<b>ONGOING/REVISED:</b> County has a program in place and investigating new strategies and partnerships.			
SED-05	Reduce Sedimentation from Non-Forest Management Roads	<b>ONGOING/REVISED:</b> Includes Public Works and has been initiated some small projects.			

1999 CCMP "Water Quality" and "Erosion and Sedimentation" Action Plan				2019 CCMP "Water Quality" Action Plan	
Action Item	Description	Status		Action Item	Description
WAQ-10	Implement Temperature Management	<b>ONGOING/REVISED:</b> Implementation of water quality management plans for the three TMDLs is occurring.	}	WAQ-03	Enhance riparian and in-stream areas throughout the watersheds to improve water quality
SED-01	Implement Road Erosion and Risk Reduction Projects	<b>ONGOING/REVISED:</b> ODF has road guidance that they continue to utilize. ODF roads have been surveyed using LiDAR data.	}	WAQ-04	Restore channel features and hillslope management to improve sediment storage and routing to address water quality
SED-02	Implement Practices That Will Improve Sediment Storage and Routing	<b>ONGOING/REVISED:</b> TEP has and continues to implement LWD, culvert replacement and other restoration project that address sediment issues. (Also achieved through 2019 actions HAB-06, -07, -08, and -13)			
SED-03	Reduce Risks in Landslide-Prone Areas	<b>ONGOING/REVISED:</b> ODF working on post-storm event and mitigation to decrease landslide risk. Areas have been identified in upper watersheds, areas outside of ODF jurisdiction are at risk. DOGAMI has identified risk in all areas within Tillamook County; applicable actions are identified in the Tillamook County Natural Hazards Mitigation Plan.			
WAQ-11	Implement Suspended Sediments Management Strategies	<b>ONGOING/REVISED:</b> Completed for Upper Nestucca, not complete for Tillamook. Focus on need to address lack of numeric standard and strategy. Nestucca TMDL addresses sediment.			
SED-04	Ensure Sufficient Resources to Enforce Forest Practices Act	<b>ONGOING/REVISED:</b> Support ODF stewardship staff who manage project implementation.			
SED-06	Develop and Implement a Stormwater Management Ordinance	<b>NOT STARTED/REMOVED:</b> County has not implemented. Significant political hurdles exist.	X		TEP will implement as applicable via HAB-14.
WAQ-12	Evaluate Shellfish Growing Area Classifications	<b>ONGOING/REVISED:</b> ODA Food safety is in the lead; TEP aids. Investigation how to update closure information.	}	WAQ-05	Identify status and trends and quantify changing environmental conditions in water quality to inform adaptive management strategies impacting our priority areas
WAQ-13	Update Shellfish Management Plan Closure Criteria	<b>ONGOING/REVISED:</b> ODA Food safety is in the lead and working on legislative policy for shellfish.			



Table 2 Habitat Restoration Key Action Plan Accomplishments and Changes Since 1999

1999 CCMP "Key Habitat" Action Plan			2019 CCMP "Habitat Restoration" Action Plan		
Action Item	Description	Status	Action Item	Description	
HAB-01	Characterize Riparian and Instream Habitat	<b>ONGOING/REVISED:</b> Federal state and local partners have employed AQI (Aquatic habitat inventory) and RBA (Rapid Bio Assessments) to characterize current conditions and track change related to actions, and a number of management plans have been developed that detail historic and current conditions.	}	HAB-01	Assess and prioritize estuarine habitats
HAB-02	Assess and Map Riparian and Wetland Habitat	<b>ONGOING/REVISED:</b> ODF is working on this, may still be doing it. ODFW does AQI (Aquatic habitat inventory, located out of Corvallis): A subset of streams they monitor periodically, including some restoration sites.		HAB-02	Assess and prioritize non-estuarine wetland habitats
HAB-03	Prioritize Upland Protection and Enhancement Sites	<b>ONGOING/REVISED:</b> Watershed assessments have been completed for the Nehalem, Tillamook, and the Nestucca watersheds. These prioritize important enhancement sites in higher gradient portions of the watershed.		HAB-03	Assess and prioritize in-stream habitats
HAB-04	Prioritize Floodplain/Lowland Protection and Enhancement Sites	<b>ONGOING/REVISED:</b> Watershed assessments have been completed for the Nehalem, Tillamook, and the Nestucca watersheds. These prioritize important enhancement sites in the lower and estuarine portions of the watershed.		HAB-04	Assess and prioritize riparian habitats
				HAB-05	Assess and prioritize upland habitats

1999 CCMP "Key Habitat" Action Plan			2019 CCMP "Habitat Restoration" Action Plan		
Action Item	Description	Status	Action Item	Description	
HAB-05	Protect and Enhance Upland Riparian Areas	<b>ONGOING/REVISED:</b> Federal, state, and local partners have implemented numerous projects in the upper watershed to improve riparian conditions.	}	HAB-06	Conserve and restore key habitats in the estuary
HAB-06	Protect and Enhance Lowland Riparian Areas	<b>ONGOING/REVISED:</b> Federal, state, and local partners have implemented numerous projects in the lower watershed to improve riparian conditions. TEP's Backyard Planting Program is entering its 16th year enhancing lowland riparian areas accomplishing over 250 miles of riparian enhancement work.		HAB-07	Conserve and restore key habitats in the lower watershed
HAB-07	Protect and Enhance Instream Habitat	<b>ONGOING/REVISED:</b> Federal, state, and local partners implemented several projects to improve in-stream habitat. These include passage barrier removal and replacement, large woody debris placement, stream complexity enhancement, and riparian restoration.		HAB-08	Conserve and restore key habitats in the upper watershed
HAB-08	Protect and Enhance Freshwater Wetland Habitat	<b>ONGOING/REVISED:</b> Limited progress has been made toward non-estuarine wetland enhancement due to lack of priority among other habitat, lack of comprehensive assessment, and challenges of accessing potential enhancement sites.			
HAB-09	Control Livestock Access to Streams	<b>ONGOING/REVISED:</b> Tillamook County Soil & Water in partnership with TEP's BYPP have implemented numerous fencing and off-channel watering projects eliminating livestock access to streams.	Included in HAB-13		
HAB-10	Stabilize Streambanks Using Alternatives to Riprap	<b>ONGOING/REVISED:</b> TEP's BYPP program and similar programs operated by other estuary partners have used extensive riparian vegetation enhancement to stabilize streambanks naturally reducing the need for rip rap. In addition, project partners such as TBWC and USFS are developing innovative strategies using soft revetment such as LWD structures to accomplish the same goal in-stream.	Included in HAB-13		
HAB-11	Encourage Protection and Enhancement on Private Lands	<b>ONGOING/REVISED:</b> Protection and enhancement of private lands has been a primary focus of project partners. Numerous cooperative projects have resulted highlighted by the 520-acre Southern Flow Land Owner Alternative project in Tillamook Bay.	Included in HAB-06, HAB-07, HAB-08		

1999 CCMP "Key Habitat" Action Plan			2019 CCMP "Habitat Restoration" Action Plan		
Action Item	Description	Status		Action Item	Description
HAB-12	Sponsor a Native Vegetation Planting Day	<b>REVISED:</b> Native vegetation has been planted by TEP and its partners for multiple projects and stewardship activities	}	HAB-10	Provide genetically appropriate native vegetation and promote its use among habitat restoration and enhancement partners
HAB-13	Increase Incentive Program Payments	<b>REVISED:</b> TEP does not lead incentive programs; however, partner-led programs may include incentives.		Included in HAB-13, HAB-14	
HAB-14	Ensure Minimum Streamflows	<b>REVISED:</b> TEP projects may have indirectly affected streamflows through the restoration work accomplished via other CCMP actions.	Included in HAB-13, HAB-14		
HAB-15	Revise Local Ordinances to Increase Protection of Riparian Areas, Wetlands, and Instream Habitat	<b>REVISED:</b> TEP and its partners have worked towards more effective ordinances through a robust outreach and education program but have not directly revised and specific ordinances or other regulations.	}	HAB-14	Encourage the adoption and implementation of policies, ordinances, regulations, and laws that ensure sustainable use and stewardship of natural resources and key habitats
HAB-16	Effectively Enforce Laws and Regulations	<b>REVISED:</b> TEP advocates for judicious and responsible use of natural resources. Partner agencies lead law and regulation enforcement.			
HAB-17	Characterize Estuarine and Tidal Habitats	<b>ONGOING/REVISED:</b> Estuary Technical Group assessed Tillamook Bay and Nehalem. Process different than what was outlined in CCMP.	Included in HAB-01		
HAB-18	Prioritize Tidal Sites for Protection and Enhancement	<b>ONGOING/REVISED:</b> Prioritization of Tidal Wetland Landward Migration Zones occurred in 2017 as part of a coastwide estuary project.	Included in HAB-01		
HAB-19	Protect and Enhance Tidal Marsh	<b>ONGOING/REVISED:</b> TEP has lead or contributed as a key partner in numerous projects that have resulted in the protection and enhancement of tidal marsh. Primary examples include the Southern Flow Corridor (520 acres), Miami Wetlands (60 acres), and the Kilchis Preserve (150 acres)	Included in HAB-06		
HAB-20	Protect and Enhance Eelgrass Habitats	<b>ONGOING/REVISED:</b> EPA and NOAA have done eelgrass studies, roughly a decade ago. Oyster growers may have been involved.	Included in HAB-01, HAB-06, HAB-11		

1999 CCMP "Key Habitat" Action Plan			2019 CCMP "Habitat Restoration" Action Plan		
Action Item	Description	Status		Action Item	Description
HAB-21	Remove or Modify Ineffective Tide Gates and Floodplain/Lowland Culverts	<b>ONGOING/REVISED:</b> Numerous assessments and projects have occurred within the focal area accomplishing this goal. These include assessments of passage infrastructure in Nehalem, Tillamook, and the Nestucca watersheds. These have resulted in several high value projects increasing connectivity.	}	HAB-09	Maximize ecosystem connectivity to ensure a landscape array of ecosystem processes and ease of species movement
HAB-22	Enhance Large Wood in Estuary	<b>ONGOING/REVISED:</b> TEP lead a large wood salvage program for several years meant to gather available LWD for projects in the estuary and other portions of the watershed. Numerous challenges exist to placing structures within the estuary including the maintenance of navigation and public safety. In areas where conservation land ownership has been established several LWD placement has been able to occur.		Included in HAB-01, HAB-09	
HAB-23	Update the Estuary Plan and Zoning	<b>REVISED:</b> Partner agencies lead planning and zoning activities. TEP provides technical assistance.	Included in HAB-14		
HAB-24	Reconnect Sloughs and Rivers to Improve Water Flow	<b>ONGOING/REVISED:</b> Several high value projects have occurred including the Southern Flow Corridor (520 acres), Miami Wetlands (60 acres), and the Kilchis Preserve (150 acres).	Included in HAB-09, and HAB-01, HAB-09		
HAB-25	Control Burrowing Shrimp Populations	<b>REVISED:</b> Burrowing Shrimp are a native species with important ecological roles in the estuaries. This effort may have been indirectly affected by restoration work accomplished via other CCMP actions.	Included in HAB-11		
HAB-26	Prevent Introduction and Control Exotic Species	<b>ONGOING/REVISED:</b> Numerous efforts have occurred in all portions of the watershed to target our most aggressive invaders. TEP facilitates the Partnership for Regional Invasive Species Management in Tillamook County.	}	HAB-12	Assess, prioritize, and manage non-native species emphasizing those that have or are likely to have disproportionate negative effects
HAB-27	Effectively Enforce Fishing Regulations	<b>ONGOING/REVISED:</b> ODFW regularly conducts this activity.		Included in HAB-14	
HAB-28	Evaluate Commercial and Sport-Fishing Practices	<b>ONGOING/REVISED:</b> ODFW regularly conducts this activity.	Included in HAB-14		

1999 CCMP "Key Habitat" Action Plan			2019 CCMP "Habitat Restoration" Action Plan		
Action Item	Description	Status		Action Item	Description
HAB-29	Implement Essential Fish Habitat Mandates	ONGOING/REVISED: ODFW regularly conducts this activity.	Included in HAB-1 through 12, and HAB-14		
HAB-30	Support the Oregon Plan for Salmon and Watersheds	DELETE: Accomplished through the CCMP.	X		
NEW			+	HAB-11	Assess, prioritize, and enhance key native species populations, emphasizing contribution to ecological function
NEW			+	HAB-13	Assess and implement best management practices for key habitat conservation.
NEW			+	HAB-15	Facilitate the development of pathways, funding sources, and prioritize actions taking place on "working" lands



Table 3 Community Education and Engagement Key Action Plan Accomplishments and Changes Since 1999

1999 CCMP "Citizen Involvement" Action Plan				2019 CCMP "Community Education and Engagement	
Action Item	Description	Status		Action Item	Description
CIT-01	Implement an OSU Extension Watershed Masters Series	<b>COMPLETE:</b> Replaced by OR Master Naturalist Program implemented through OSU Extension.	✓		
CIT-02	Implement an Associate of Arts Oregon Transfer Degree in Environmental Studies	<b>COMPLETE:</b> Agriculture and Natural Resource Associates Degree through TBCC	✓		
CIT-03	Improve Professional Development for K-12 Teachers	<b>ONGOING/REVISED:</b> OR Coast STEM Hub and OR Environmental Literacy Program	}	CEE-01	Strengthen STEM literacy for K-12
CIT-04	Strengthen Organizational and Institutional Linkages	<b>ONGOING/REVISED:</b> OR Coast STEM Hub and Tillamook School District Teacher on Special Assignment			
CIT-05	Expand Authentic Learning Experience Opportunities	<b>ONGOING/REVISED:</b> Landmark Outdoor Learning Experiences for all grades in Tillamook School District and county-wide for 3 <sup>rd</sup> and 4 <sup>th</sup> grades (TEP's DBTC and CCWF).			
CIT-06	Establish a Land Trust or Conservation Organization	<b>COMPLETE:</b> Lower Nehalem Community Trust and North Coast Land Conservancy.	✓		
CIT-07	Sustain the Tillamook Bay Watershed Council	<b>ONGOING/REVISED:</b> Landmark Capacity Building for Tillamook, Lower Nehalem, and Necanicum Watershed Councils and Lower Nehalem Community Trust	}	CEE-05	Build capacity for partner organizations
CIT-08	Sustain the Tillamook Coastal Watershed Resource Center	<b>COMPLETE:</b> GIS training available through TBCC and OSU Extension. Open access to geographic data online	✓		
<b>NEW</b>			+	CEE-02	Advance STEM-related career opportunities
<b>NEW</b>			+	CEE-03	Foster lifelong learning and environmental awareness
<b>NEW</b>			+	CEE-04	Cultivate community environmental stewardship

Table 4 Flood Key Action Plan Accomplishments and Changes Since 1999

1999 CCMP "Flood" Action Plan				2019 CCMP
Action Item	Description	Status		Description
FLD-01	Develop a GIS-Based, Unsteady State Hydrodynamic Model	<b>COMPLETE:</b> FEMA and DOGAMI completed an updated of the countywide flood insurance rate maps. Maps are effective as of 09/28/2018. GIS based data is provided with the updates via FEMA/DOGAMI. In addition, DOGAMI produced a Natural Hazard Risk Report for Tillamook County (IMS-58) in 2018. Furthermore, the County has an effective Natural Hazards Mitigation Plan (9/8/2017) that provides mitigation actions for natural hazards including flood.	✓	
FLD-02	Implement Watershed Drainage Modification Projects	<b>ONGOING/REVISED:</b> See habitat section for status of projects.	} }	Included in HAB-06, HAB-07, HAB-08
FLD-03	Elevate and/or Relocate Structures, Livestock and Equipment	<b>ONGOING/REVISED:</b> Several properties have been elevated, demolished, or relocated. Tillamook County has an active Natural Hazards Mitigation Plan. See Tillamook County NHMP for more information on actions to elevate and/or relocate structures, livestock, and equipment.	} }	Included in Tillamook County NHMP (2017)
FLD-04	Update Existing Floodplain Map	<b>COMPLETE:</b> Maps are effective as of 09/28/2018	✓	FIS/FIRMs will be adopted once they are effective.
FLD-05	Regulate New Construction and Development in the Floodplain	<b>COMPLETE:</b> Tillamook County and all incorporated cities have flood damage prevention ordinances.	✓	DLCD will assist Tillamook County with adopting a new Natural Hazards (Goal 7) element to their comprehensive plan. New flood damage prevention ordinances will be adopted after the FIS/FIRMs are effective.
FLD-06	Effectively Clear Mapped Lowland Floodways and Floodplain of Hazardous Materials	<b>ONGOING/REVISED:</b> This action is accomplished through enforcement of County/City flood damage prevention ordinances.	} }	See County/City flood damage prevention ordinances.

# Action Plans

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The Action Plans address the three priority problems (water quality, habitat restoration, and community education and engagement) through 25 specific actions. Each action details the steps required to complete the action; identifies coordinating entities, other partners, and completion dates; estimates costs; identifies metrics to evaluate the success of the action; and shows if the action benefits fish/shellfish/wildlife, natural hazard risk reduction, and climate change.

The 2019 CCMP incorporates many good ideas from relevant resource management plans that focus on their respective parts of the focal area environment. Although not all are specifically referenced, the CCMP includes goals and objectives from these plans and integrates them into a landscape-scale vision for performance-based management. This version of the CCMP includes enhanced information on causes and impacts of natural hazards and climate change.

The CCMP includes several types of actions to achieve immediate and long-term goals. It calls for on-the-ground projects to upgrade infrastructure, enhance habitat, reconnect rivers and sloughs, and improve land use practices. The plan also supports effective enforcement of environmental laws and ordinances, and outlines actions to build local capacity for better enforcement and education. Other actions define additional needs for continued research and monitoring to track progress in achieving stated objectives. By integrating on-the-ground projects, stronger enforcement, institutional development, and monitoring efforts, the CCMP presents a responsive and adaptable framework that combines local, state, and federal initiatives into a coordinated management plan for Tillamook County.



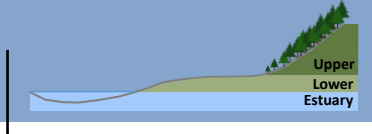
## Anatomy of a CCMP Action

Shows which of the Tillamook estuaries and watersheds the action impacts.  
Note: Solid circles indicate the watersheds to which each action applies.

Symbolizes actions that are beneficial to the health of fish/shellfish/wildlife, reduce risk to natural hazards, and/or reduce impacts from expected climate change.

**Action ID Number**

Nehalem  
Tillamook  
Netarts  
Sand Lake  
Nestucca  
Neskowin



### Title: Brief description of the action

**What:** Detailed description of the action providing information on what will be accomplished during this CCMP cycle.

**Lead(s):** List of lead agencies responsible for carrying out the implementation of the action.

**Partner(s):** List of potential partner agencies that will collaborate with the lead(s) to implement the action. Additional partners may be identified at any time.

#### How

**Activity (#):** Each activity lists how TEP and/or its partners plan to implement each action. (Cost/Funding Source, Timeline).

#### Anticipated Costs/Source:

Provides the cost estimate and funding source needed to implement the action. A symbol code (\$-\$\$\$\$) is used to show the total cost of the action, or in the case of ongoing actions, the typical annual cost:

\$	Less than \$25,000
\$\$	\$25,000 to \$99,999
\$\$\$	\$100,000 to \$499,999
\$\$\$\$	\$500,000 or more

A letter code is used to show the anticipated funding source:

- E = EPA 320 Grant Funds
- F = Federal (non-320) Grants
- S = State Grants
- P = Partner-funded Project
- O = Other Funding Sources (e.g. Foundation Grants, Donations)

Shows which region(s) of the watershed benefit from the implementation of the action.

*Estuaries* include the extremely low gradient area that is influenced by tides and the Pacific Ocean's salinity.

*Lower Watersheds (Lower)* include the areas adjacent to the estuary that are within the rivers alluvial plain.

*Upper Watersheds (Upper)* include the lands of relatively higher elevation that do not flood frequently and therefore do not display wetland characteristics.

#### Timing:

*Ongoing* – Action is currently active and expected to continue within the life of the CCMP.

*Short-term* – Action is expected to begin implementation within two years.

*Mid-term* – Action is expected to begin implementation within three to five years.

*Long-term* – Action is expected to begin implementation within ten years

**Why:** Description of why the action is important and how it accomplishes the goals.

#### Performance Measures:

- ✓ Describes how the action will be measured to track progress and determine if the action has been successfully implemented.

