

North Coast Water Quality Status and Action Plan Summary 2012

Did you know?

- Bacteria levels are decreasing.
- Tillamook Bay clams safe to eat.
- Six out of 10 monitoring sites had excellent or good water quality.

From the Columbia River to the southern Tillamook County line, the rivers, streams, bays and estuaries in the North Coast provide economic and recreational resources for people who live inside and outside of the area. These resources provide for commercial and recreational shellfish collection, habitat for native salmon and drinking water. Water is also used by the Tillamook dairy industry. Everyone has a stake in keeping the waters of the North Coast Basin healthy and clean.

With these facts in mind, the Oregon Department of Environmental Quality takes a holistic approach to monitoring the current condition of water bodies in the state and identifying specific actions we all can take to reduce pollution problems.

DEQ's "watershed approach" assesses all pollution sources in the interconnected water system and proposes solutions to reduce pollution from each source. This document provides an overview of DEQ's work in the North Coast Basin, identifies pollutants posing the greatest risk to the environment and public health, and proposes solutions.

This work includes input from DEQ staff and community partners. DEQ looks forward to continued input and interaction with stakeholders to revise and update this report in the future.

View the complete North Coast Status Report at www.oregon.gov/DEQ/WQ/

North Coast characteristics

The North Coast Basin extends from the Columbia River to the southern Tillamook County line and consists of six watersheds that drain to the Pacific Ocean: Necanicum, Nehalem, Tillamook Bay, Nestucca, Netarts/Sand Lake and Neskowin. The subbasin includes portions of Clatsop, Columbia, and Tillamook counties and the major cities of Tillamook, Vernonia, Cannon Beach, and Rockaway Beach. There are five estuaries in the area: Necanicum, Nehalem, Tillamook, Netarts, Sandlake and Nestucca.



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Oregon's air, land and
water.*

Water quality concerns

DEQ has identified five pollutants that affect water quality in the North Coast. The report card below summarizes water quality conditions by watershed and pollutant.

Water Quality Report Card by Watershed		Data Needed	Acceptable	Needs Improvement	Severely Degraded
Necanicum	Bacteria	██████████	██████████	██████████	██████████
	Temperature	██████████	██████████	██████████	██████████
	Sediment	██████████	██████████	██████████	██████████
	Dissolved Oxygen	██████████	██████████	██████████	██████████
Nehalem	Bacteria	██████████	██████████	██████████	██████████
	Temperature	██████████	██████████	██████████	██████████
	Sediment	██████████	██████████	██████████	██████████
	Dissolved Oxygen	██████████	██████████	██████████	██████████
Tillamook Bay	Bacteria	██████████	██████████	██████████	██████████
	Temperature	██████████	██████████	██████████	██████████
	Sediment	██████████	██████████	██████████	██████████
	Dissolved Oxygen	██████████	██████████	██████████	██████████
	Toxics	██████████	██████████	██████████	██████████
Nestucca	Bacteria	██████████	██████████	██████████	██████████
	Temperature	██████████	██████████	██████████	██████████
	Sediment	██████████	██████████	██████████	██████████
	Dissolved Oxygen	██████████	██████████	██████████	██████████
Neskowin	Bacteria	██████████	██████████	██████████	██████████
	Temperature	██████████	██████████	██████████	██████████
	Sediment	██████████	██████████	██████████	██████████
	Dissolved Oxygen	██████████	██████████	██████████	██████████

Figure 1: Area included in North Coast Water Quality Status Summary

Protecting people and fish

Water pollution can affect both human health, fish and other aquatic life. In the North Coast, the primary ways in which people can be exposed to pollutants are swimming, boating and fishing; eating fish, oysters, clams and crabs; and drinking water. Bacteria, toxic contaminants including metals, pesticides, turbidity (muddy water) and nitrates are pollutants that can directly affect people.

Coho and Chinook salmon, steelhead and cutthroat trout are distributed throughout most of the streams and rivers of the North Coast. Salmon are affected by temperature, sediment (bedded, total solids and turbidity) and dissolved oxygen. These pollutants disturb salmon habitat and affect aquatic life that the salmon depend on. Coho are currently listed as a threatened species and steelhead is listed as a species of concern in the North Coast.

Bacteria and swimming, boating and fishing

While bacteria problems still exist in the lower portions of most rivers and estuaries in urban and agricultural areas of the North Coast, there is progress in the Tillamook Bay Watershed. The Wilson River has been meeting standards for recreational use since approximately 2005

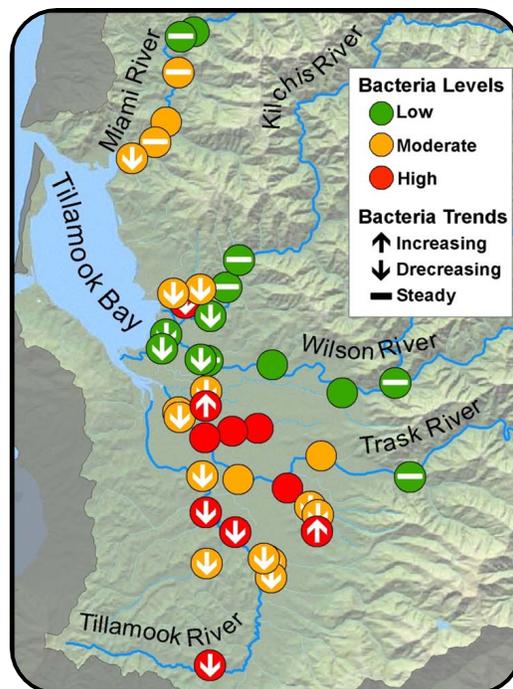


Figure 2: New 2010 Results for E. coli Bacteria monitoring in the Tillamook Bay Watershed

and the Kilchis River has been meeting standards since 2009. Monitoring in the Tillamook River Watershed shows bacteria levels decreasing at all sites in the watershed. Although bacteria levels are improving, the Tillamook Watershed still has some of the highest bacteria levels in the region.

Local partnerships deserve credit for the bacteria improvement success. Several organizations and agencies have come together to implement best management practices that reduce bacteria levels in the water. Some of these practices include streamside habitat enhancement, livestock exclusion, wet and dry manure storage, off-channel livestock watering stations, and buried sewer lines to reduce leakage from moving manure.

Bacteria and eating shellfish

While community actions are helping to lower bacteria levels in the rivers and streams of the Tillamook Bay watershed, bacteria still impacts the shellfish harvest. Oregon Department of Agriculture monitors fecal coliform levels in Tillamook Bay and regulates the commercial oyster harvest based on the results. Oyster harvesting is frequently closed, particularly after rainfall, due to unsafe fecal coliform levels in the bay (see chart). Additionally, areas of the main bay that are adjacent to the mouths of the rivers are either closed or more restricted for commercial harvesting due to their proximity to sources of contamination.

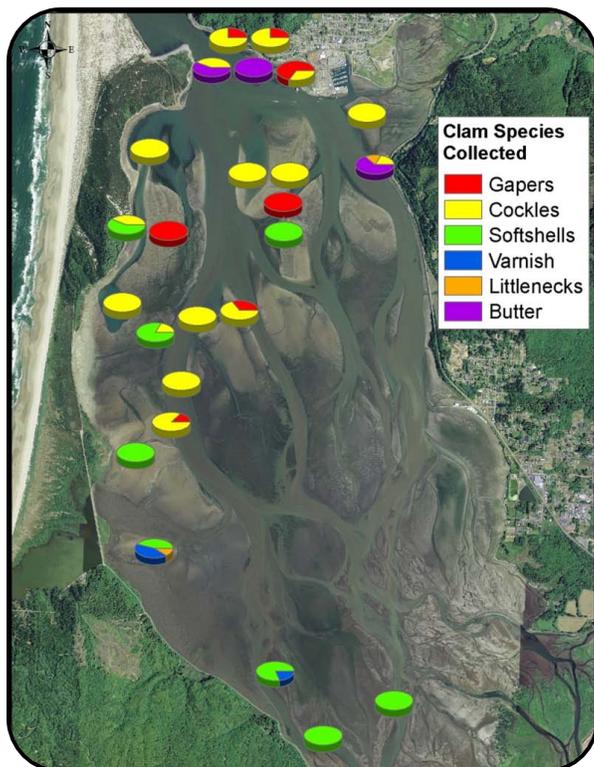
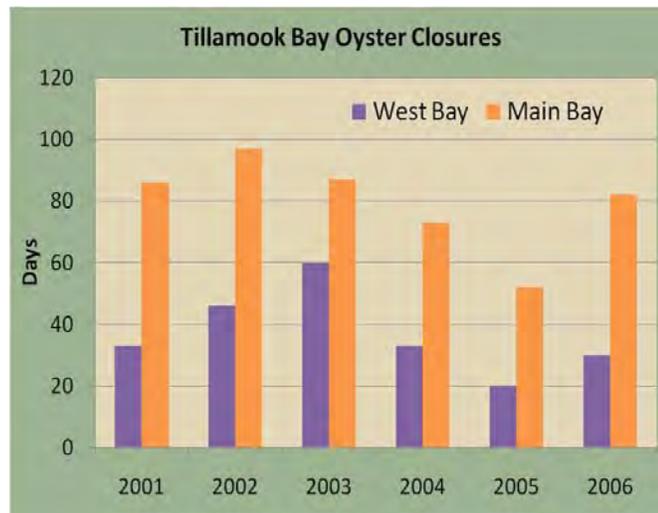


Figure 3: Location and species of clams for shellfish sampling in Tillamook Bay

Toxics and eating clams

Industry, agriculture, and activities in urban areas in the Tillamook Bay Watershed has increased the potential for several pollutants to affect fish and shellfish. In addition to bacteria concerns in Tillamook Bay, DEQ identified toxics as a potential contaminant risk to shellfish. DEQ investigated toxics in the bay by sampling shellfish clam tissue (see map).

The DEQ Laboratory analyzed clam tissues for the following pollutants: metals, PCBs (polychlorinated biphenyls), PAHs (polycyclic aromatic hydrocarbons), chlorinated pesticides, and dioxins. The most frequently detected metals in clam tissues were aluminum, arsenic, chromium, iron, and nickel. Dioxins were detected in only one tissue sample. PCBs, PAHs, chlorinated pesticides, and mercury were not detected

in any of the samples. DEQ provided these in any of the samples. DEQ provided these results to the Environmental Toxicology Section of the Office of Environmental Public Health at the Oregon Health Authority and it determined that eating Tillamook Bay clams did not pose an unsafe risk to the public at this time.

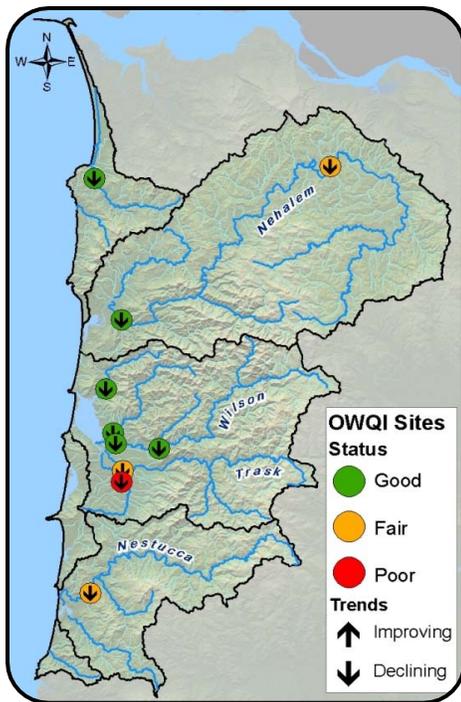


Figure 4: OWQI Monitoring Sites in the North Coast

Oregon water quality index - status

The Oregon Water Quality Index provides a general assessment of water quality at a site by combining information from eight water quality pollutants into a single score. The index scores are classified into status from excellent to very poor. Six out of the ten ambient water quality monitoring sites in the North Coast had “excellent” or “good” water quality as depicted by the index. Three sites were in “fair” condition and one location, the Tillamook River, was categorized as “very poor.” For simplicity of reporting, the map has combined the five categories into three: Good, Fair, and Poor.

Water quality trends

All ten North Coast sampling sites showed declining trends in Oregon Water Quality Index scores from 1999 to 2009. Suspended sediment showed significantly declining scores at eight of the ten North Coast ambient sites. The water quality index shows that general water quality in the basin is in good condition although sediment continues to be a problem in the rivers and streams of the North Coast.

Watershed planning and implementation

TMDLs and restoration projects

Significant water quality achievements in this area have resulted from a variety of activities and management strategies. DEQ established limits known as “Total Maximum Daily Loads” or TMDLS for each pollutant entering a waterbody. As information from the North Coast TMDLs became available, DEQ began to plan for and initiate restoration projects that led to water quality improvements. The DEQ North Coast Basin coordinator identified partners in the basin that could assist with on-the-ground projects and used federal grant dollars to leverage and engage the work of local organizations. Restoration projects were tailored to address water quality concerns and began before the TMDLs were complete. Water pollution prevention projects have been ongoing for more than 10 years. To date approximately 165 riparian restoration projects have been implemented in the

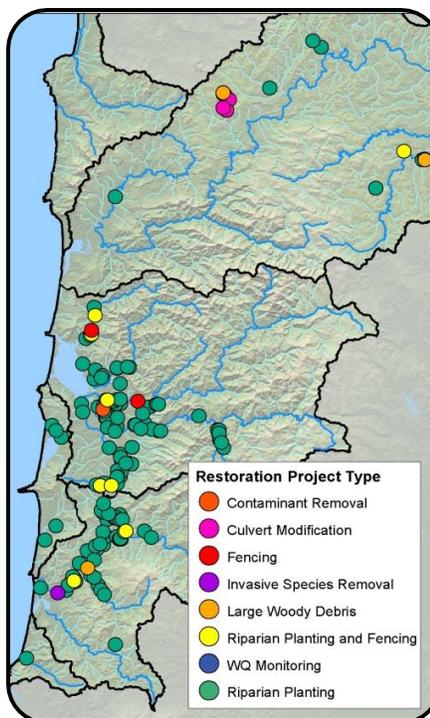


Figure 5: Restoration projects

North Coast. These projects equate to restoring approximately 200 miles of the 320 miles of stream miles identified in the TMDLs.

What's next for the North Coast?

DEQ and its basin partners will continue with status and effectiveness monitoring and look for opportunities to align the existing and emerging water quality problems with the priority actions needed to address them. DEQ will concentrate on improving partnerships in the basin. The following is a summary of opportunities for water quality improvement and partnership efficiencies (see the full [action plan](#) for detailed discussion):

Action plan highlights

To protect the human uses of shellfish harvesting and recreational contact, DEQ will continue the bacteria source identification work for the estuaries, streams, and beaches. This includes identifying the high priority actions that agriculture (dairy farming), cities (sewage and stormwater) and rural homeowners (septic systems) can do to address the sources of bacteria that they can control. Also shoreline and stream restoration that improves habitat and streamside shade, reduces sediment, bacteria and associated pollutants will continue to be a focus in every North Coast watershed.

Other key proposed actions for the North Coast include:

- Tillamook Wastewater Treatment Plant should focus on addressing sewer and stormwater cross-connection that are contributing human sources of bacteria to the watershed
- Reduce risks to public water systems from elevated turbidity and pesticide sources associated with forest management practices
- Address human sources of bacteria identified through Oregon State University Bacteria DNA study in Holden Creek and segments of the Miami and Tillamook Rivers