

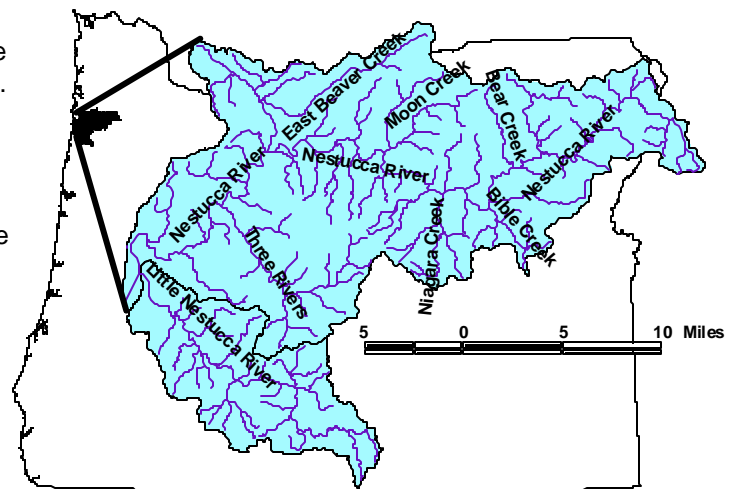


Nestucca Bay Watershed TMDLs and Water Quality Management Plan

Where is the Nestucca Bay Watershed?

The Nestucca River runs mostly east to west through southern Tillamook County. The river is about 50 miles long and receives water from many tributaries in the steep coast range before running through lower gradient lands on its way to Nestucca Bay and the Pacific Ocean. The Little Nestucca River also drains to Nestucca Bay.

The Nestucca Bay Watershed encompasses approximately 370 square miles that are largely covered by forests. Lowland areas where the river valley widens have been turned largely to agricultural purposes (mostly livestock). The watershed is contained mostly in Tillamook County, but a small area at the headwaters of the Nestucca River is in Yamhill County and the uppermost reaches of the Little Nestucca River pass through Yamhill and Polk Counties. Major rivers in the watershed are the Nestucca, Little Nestucca, Three Rivers, and Beaver Creek. These surface waters and all other tributaries that ultimately flow to Nestucca Bay are within Hydrologic Unit Codes (USGS) 1710020301 and 1710020302, subbasins within the same basin that includes rivers that flow to Tillamook Bay.



What pollutants are being addressed in this series of TMDLs?

The Clean Water Act requires that the State of Oregon list surface waters that do not meet water quality standards adopted to protect legally defined beneficial uses. Information collected in the basin over the years indicates that some surface waters are water quality limited in three ways: many reaches are too warm to protect salmon and trout; some reaches have excessive fine sediments in their streambeds, which also can harm salmon and trout; and fecal bacteria concentrations in Nestucca Bay are occasionally too high to protect human consumption of shellfish harvested from the Bay (**Table 1**).

Table 1. Water bodies in the Nestucca Bay Watershed listed as water quality limited under section 303(d) of CWQ (DEQ 1998)

Waterbody Name	Boundaries	Parameter	Criteria	Season
Niagara Creek	Mouth to Headwaters	Temperature	Rearing 64 F (17.8 C)	Summer
Powder Creek	Mouth to Headwaters	Temperature	Rearing 64 F (17.8 C)	Summer
Nestucca River	Mouth to Powder Creek	Temperature	Rearing 64 F (17.8 C)	Summer
Nestucca Bay	Bay	Bacteria (fecal coliform)	Marine and shellfish growing area	Year Around
Beaver Creek, East Fork	Mouth to Headwaters	Sedimentation	Narrative	Year Around
Nestucca River	Powder Creek to Headwaters	Sedimentation	Narrative	Year Around
Beaver Creek, East Fork	Mouth to Headwaters	Habitat Modification	Narrative	Year Around
Nestucca River	Powder Creek to Headwaters	Habitat Modification	Narrative	Year Around
Nestucca River	Mouth to Powder Creek	Flow Modification	Narrative	Year Around

Temperature

In the Rivers, the migration, rearing and spawning of salmonid (salmon and trout) fish are put at risk by high water temperatures (those that exceed 64°F for migration and rearing, or 55°F for spawning) in the summer. In the Nestucca Bay Watershed, 41.5 miles of surface waters were listed as water quality limited for temperature. These water bodies included Powder Creek, Niagara River, and Nestucca River downstream of Powder Creek. Sources of temperature in these streams are primarily from solar radiation that hits the surface of the water due to the widespread removal of riparian vegetation. Although there are three wastewater treatment plants in the watershed, flows from these facilities have a relatively small impact.



Bacteria

Shellfish harvesting in Nestucca Bay is dependent on waters with minimal concentrations of fecal bacteria. Fecal coliform bacteria in concentrations exceeding a log mean of 14 MPN/100 ml (“most probable number per 100 ml of sample”) or when more than 10% of samples have concentrations exceeding 43 MPN/100 ml) cause excessive risk for consumption of shellfish by humans. Bacteria in the rivers are the primary source of the impairment of Bay waters, which support recreational shellfish harvesting. The principal sources of fecal bacteria in the watershed are runoff from livestock operations, urban runoff, rural residential runoff, an undetermined

number of failing septic systems in the watershed, and wastewater treatment plant discharges. Due to the relative area under livestock management, this use has a larger impact on water quality. Wildlife in the watershed probably provide a relatively low contribution to fecal bacterial loads except in areas surrounding the Bay itself, where concentrations of waterfowl may have a significant effect.



Sedimentation

The upper reaches of the Nestucca River (above Powder Creek) and East Beaver Creek (a total of 34.3 miles of streams) are listed as impaired due to excessive sedimentation. Excessive sedimentation can result in streambeds that are unsuitable for spawning of salmonid fishes. There is not a numeric criterion defining excessive sedimentation, although the State of Oregon does have a narrative standard barring accumulation of deposits that would make the streambed unsuitable for support of beneficial uses. Excessive sedimentation is principally from poorly constructed or maintained forest roads, natural slides, and streambank erosion in areas where riparian vegetation has been removed. Road-building techniques and forest management practices have been improved in the last decade with the implementation of new rules under the Northwest Forest Plan (federal lands) and the Forest Practices Act (State- managed lands). Natural slides can be expected to continue at historical though variable rates. Streambanks in lower gradient reaches of the watershed are currently a continuing source of sedimentation. Stabilization of these areas with riparian vegetation will result in decreased sedimentation, narrower channels, and better habitat for fish.



What is being done to address pollutants?

In response to the listing of these waterbodies as water quality limited, the Department of Environmental Quality (DEQ) has developed Total Maximum Daily Loads for each of the pollutants defined. These TMDLs have determined the amounts of each pollutant that can be discharged to the watershed without causing an impairment of beneficial uses. These pollutants are allocated among various sources to ensure an equitable solution to the problems.

Temperature: A system potential shade and channel width has been allocated to the entire watershed. This requires riparian vegetation along all streams and rivers that will provide shade and stabilize streambanks. The direct provision of shade will cool rivers and narrower stream channels resulting from stable streambanks will also reduce the amount of solar radiation (sunlight) that reaches stream surfaces. The temperature of discharges from wastewater treatment plants will also be limited as new permits are developed for these facilities.

System Potential: The height and density of riparian vegetation that can potentially grow in a given area based on average growth of local species of riparian trees.

Bacteria: Fecal coliform bacterial loading was modeled for the entire watershed. Contributions from all sources were included in the mathematical model and reductions relative to current loads were allocated. Load allocations were developed for each landuse type; Urban and Residential, Commercial, and Pastures. Due to the large area in the basin supporting livestock operations, reductions are most evident in these allocations.

Sedimentation: System Potential riparian vegetation will result in system potential channel widths, which will result in stable streambanks and less erosion. This will result in a reduction of sedimentation in the watershed.

Who came up with all of this?

TMDLs for the Nestucca Bay Watershed were developed by DEQ. However, many other agencies and private parties have also contributed to this effort.

- Nestucca-Neskowin Watershed Council and provided considerable information through development of a watershed assessment and action plan. The council also has collected much of the data that was used for the assessment of current conditions and in support of the temperature and bacterial monitoring.
- United States Forest Service and Bureau of Land Management have collected a considerable amount of data over the years pertaining to the lands they manage in the watershed. Given that this accounts for approximately two-thirds of the watershed, that effort has been substantial.

Who will be responsible for implementing changes that need to be made?

- **USFS/BLM** will implement features of the Northwest Forest Plan on lands that they manage.
- **Oregon Department of Forestry** will implement the Forest Practices Act in forests managed by the State of Oregon and on privately owned forest lands.
- **Oregon Department of Agriculture** will implement the Agricultural Water Quality Management Area Plan for the North Coast Basin that was adopted in 1999.
- **DEQ** will require dischargers to comply with permits that set limits on the quality of wastewater effluent to meet the wasteload allocations provided in the TMDL.
- **Counties and Local Governments** will implement practices to the extent of their authorities (i.e., ordinances).

What happens now that TMDLs have been developed?

DEQ has developed these TMDLs to meet requirements of the Federal Clean Water Act. These documents were released for a public review period and comments have been addressed in the final TMDL. This final document, including public comments was submitted to the EPA for approval in April 2002. Upon submission to the EPA, the measures of the TMDL are in place under Department Order. EPA has the option to approve the TMDLs as submitted or to deny them. If it approves the TMDLs, they become the federally approved TMDLs as well. If EPA finds sufficient fault to disapprove a TMDL, they have 60 days to establish a TMDL of their own.

To Find Out More About these Plans

Documents are available on this website. Documents are also available by request from Eric Nigg [(503) 229-5325] at 2020 SW 4th Avenue, Suite 400, Portland, OR 97201-4987 or e-mail at:

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