

## Willapa River Basin

The Willapa River, draining an area of 240 square miles, originates in the Willapa Hills in southwestern Washington and flows in a northwest direction about 37 miles to Willapa Bay. The bay is an inlet of the Pacific Ocean, 30 miles north of the Columbia River. Its principal tributaries are the South Fork, which rises in the southwestern part of the basin and flows north 16 miles to its confluence at Raymond; Wilson Creek, which rises in the northeast part and flows westerly 12 miles to join the river at Willapa; and Mill Creek, which flows almost parallel and is about 4 miles south of Wilson Creek. Hills in the eastern and southern parts of the basin are massive lava formations, covered with a 3- to 25-foot-deep mantle of loams and clayloams, interspersed with angular basaltic fragments. The soil is too thoroughly drained for agricultural uses but supports a heavy growth of timber. The remaining uplands are too broken and rugged for agriculture. River bottoms, composed of alluvial soils, are subject to overflow in high water periods. Where diked and drained, however, the lands have proven highly productive.

## Willapa River at Raymond

Flood Control Project, Terminated (Seattle District) A flood control levee system was authorized in 1944 to protect Raymond from tidal-aggravated flooding from the South Fork and main stem of Willapa River. The project was later deferred due to lack of local sponsorship. A restudy was completed in September 1975, prompted by renewed local interest. That study found the authorized levee project was still feasible from an engineering and economic standpoint. Estimated cost was about \$1.6 million. The city of Raymond agreed to provide necessary local cooperation and the project was reclassified active in November 1976. Advance engineering and design studies were started in November 1978 and were scheduled for completion in 1981 to allow a construction start in early 1982. The local sponsor, however, was unable to provide the necessary items of cooperation and all work has been terminated. Deauthorized July 1995.

## Willapa River and Harbor, Naselle River

Completed Navigation Project (Seattle District) Willapa Harbor includes the lower reaches of the Willapa River and Willapa Bay. Entrance into the bay is over a bar across the inlet which varies seasonally and annually in depth from 16 to 24 feet. Depths within the bay to Raymond vary with the most shallow depths being about 18 feet. Maintenance dredging is performed as needed at three small boat basins in Willapa Bay. A channel 10 feet deep extends from deep water in the Bay to the Bay Center dock with widening at the shoreward end creating a small mooring basin. Tokeland on the southeastern tip of the peninsula jutting into northern Willapa Bay has an entrance channel 15 feet deep. Nahcotta on the southwestern side of Willapa Bay has an entrance

channel 10 feet deep. The Nahcotta basin is protected by a rubble-mound breakwater built by the Corps in 1958. Federal costs of the project through September 1998 were \$1,619,269 for new work and \$17,145,058 for maintenance. Also, \$78,372 in contributed funds were expended for new work. Other non-federal costs are estimated at \$111,000. The Willapa Environmental Impact Statement, filed in February 1976, proposed discontinuing maintenance of the deep draft navigation facilities after 1977 based on lack of commerce. A supplement to the final EIS, filed in August 1978, concurred with discontinuation of maintenance dredging for deep draft navigation. Although deep-draft channel and bar maintenance have not been performed, frequent hydrographic surveys are performed. Shallow draft project maintenance dredging has continued.

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