



## Local Soils

Fire, ice and water are the primary geologic and climatic forces which formed the soils of Grays Harbor and Pacific Counties, Washington.

Our area, sitting on the western edge of the North American Plate, is part of the tectonically-active "Ring of Fire" that encircles the Pacific Ocean. Numerous regional volcanoes have erupted in the past, producing vast quantities of lava and ash. As these lava and ash deposits weathered, they became the basis for much of our rich local soils, along with marine and non-marine sedimentary deposits exposed to erosion by uplifting.



During the various Ice Ages, large glaciers from Canada extended down into our region, covering much of Western Washington with ice. As these glaciers moved, they scoured the land like giant bulldozers, grinding, sorting, and reworking the existing soils. When the glaciers receded, large deposits of sand, gravel and clay were left behind. Today, some of these glacial deposits are found on or near the surface, while others have been buried by later sedimentation or eroded away completely.



Water also plays an important role in our soil formation. During the Ice Ages, melt water from the glaciers flowed through our area to the Pacific Ocean, forming outwash terraces and leaving deep sedimentary deposits in the river valleys. Additionally, Grays Harbor and Pacific Counties are subject to high annual rainfall totals. These rains are usually gentle in nature and very effective in maintaining high soil moisture. However, one of the results of the high soil moisture is that alkaline salts and soluble nutrients are readily leached out of the soil, making our soils generally acid in nature and potentially deficient in some essential plant nutrients.

As evidenced by the thousands of acres of timber and lush plant growth, the soils of Grays Harbor and Pacific Counties are generally rich and fertile. However, a gardener in our area may face some unique challenges:

- Gravelly or very sandy soils deficient in organic material (especially in the coastal areas).
- Acidic soils.
- Pockets of impermeable clay or other heavy soils.
- Soluble plant nutrient deficiencies.
- High ground water tables.
- Thin soils in areas subject to erosion or past glacial action.

To determine what your specific soil conditions are, it is recommended that gardeners have their soil tested by a laboratory.

Source:

"Soil Survey of Grays Harbor County Area, Pacific County, and Wahkiakum County, Washington". United States Department of Agriculture, Natural Resources Conservation Service.

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