

and William Orr to explain that the geological history of the Dundee Hills area dates back 66 million years with the uplifting of the North American tectonic plate, which formed the Coast Range of mountains and the inland ridges and valleys. Lava flows, dating back 15 million years, pushed into the area from northeast Oregon, depositing Columbia River basalts and restructuring the landscape with hills and broken ridges, according to the petition.

To the west, the Coast Range, a huge uplifted landmass paralleling the Pacific Ocean coastline, provides a rain shadow for the Dundee Hills proposed viticultural area, according to the petition. The Yamhill-Carlton area is between the petitioned area and the Coast Range, to the immediate northwest and west of the Dundee Hills area. The petition notes that the Yamhill-Carlton area has small uplifted slopes that drain entirely into the Yamhill River system, while only the west side of the Dundee Hills area drains into this watershed.

To the north, the petition states that the Chehalem Mountains, with an east to west orientation, have a large footprint covering more land surface area than the proposed viticultural area. Taller than the Dundee Hills, these mountains provide some protection to the petitioned area from climatic extremes created by the Columbia River Gorge to the north.

The petition also explains that to the east and immediate south of the proposed area, the lower-elevation Willamette Valley floor has different growing conditions and is subject to standing water in the winter and spring.

The petitioner adds that the Eola Hills, 20 miles south of the proposed Dundee Hills viticultural area, have a north-south orientation, a large footprint, and a strong marine climate. The Van Duzer Corridor, a mountain gap in the Coast Range, pushes the cooling marine summer breezes inland toward the Eola Hills area and Salem, Oregon.

#### Climate

The petition also examines the differences in climate between the proposed Dundee Hills viticultural area and the surrounding regions. The petition states that the Dundee Hills is a foothill area protected from great climatic variations, with warmer nights and less frost than the adjacent valley floors. The mountain ranges to the west and north lessen the climatic effect of the strong Pacific Ocean winds and storms. These mountain ranges also

lessen the influence of the Columbia River Gorge effect.

In examining these climatic differences, the petition notes, for example, that the proposed Dundee Hills viticultural area lies in the rain shadow of the Coast Range. The proposed viticultural area receives 30 to 45 inches of rain annually, while the Coast Range annually receives 90 to 135 inches, about three times as much rain as the proposed area. The Coast Range is also cooler in the summer and warmer in the winter, the petition comments, based on its proximity to the Pacific Ocean's marine influence. It also states that this mountain range buffers the proposed area from the Pacific Ocean's heavy rainfall pattern, windy storms, and temperature-moderating marine influence.

The Yamhill-Carlton area is located between the Coast Range and the Dundee Hills proposed viticultural area. This district averages 60 inches of annual precipitation, has 150 fewer degree-growing days, and receives a stronger marine influence, with more wind and rainfall, than the proposed Dundee Hills viticultural area, according to the petitioner.

The petition also explains that the Columbia River Gorge funnels cold air in the winter, and warm air in the summer, into the Willamette Valley area from the interior of northern Oregon. With the Chehalem Mountains standing between the Columbia River Gorge and the proposed Dundee Hills viticultural area, the petition notes that these large mountains protect the petitioned area from the climatic influences of the Columbia River Gorge weather effect.

In addition, the petitioner states that the Willamette Valley floor, to the east and south of the Dundee Hills area, has seasonal fog and frost. Cool night air drains from the higher elevation hillsides onto the valley floor, creating fall and spring fog and frost.

The petition also explains that the Eola Hills, 20 miles to the south, receive a strong cooling marine influence that pushes inland from the Pacific Ocean through the Van Duzer Corridor, an opening in the Coast Range. This marine effect loses most of its cooling benefit before reaching north to the proposed Dundee Hills area, according to the petition.

#### Soils

The petition relies on the "Soil Survey of the Yamhill Area, Oregon," issued by the U.S. Department of Agriculture's Soil Conservation Service in January 1974 for its evidence regarding the proposed viticultural area's soils. The petition states that the

reddish color in the proposed area's soil is derived from the Columbia River basalt lavas, including the Jory soil series that covers approximately 80 percent of the proposed area. These lava-based soils decompose quickly with the high rain levels of the northwest Oregon area and produce the Jory series reddish silt, clay, and loam soils. This soil series, found predominantly on the Dundee Hills's eastern side, is moderately fertile and well-drained, with slight to moderate erosion levels, according to the petition.

The petition adds that the west side of the proposed viticultural area, with its steeper slopes, is primarily covered by the sedimentary-derived Willakenzie soil series. This series is categorized as well drained with moderate to high erosion levels. A smaller amount of the Jory series exists on the area's western side where the Columbia River lava flows cover the sedimentary formations, the petition notes.

The petition states that, outside the petitioned area's boundaries, the soils of the Coast Range, the Yamhill-Carlton area, the Chehalem Mountains, the Willamette Valley floor, and the Eola Hills contrast with the soils found within the proposed Dundee Hills viticultural area. The petition explains that the Coast Range to the west has marine volcanic and sediment soils, with high water holding capacity silts and basalt layers sandwiched between marine sediments. The Yamhill-Carlton area, to the west and northwest, has soils derived from marine sediments and ocean floor volcanic basalt with high water holding capacity. The Chehalem Mountains, to the north and northeast, have the Columbia River basalt, ocean sedimentation, and wind-blown loess derivation soil types. The Willamette Valley floor, to the east and south, has deep, alluvial soils with high water holding capacity. The Eola Hills area, to the south, has predominantly Gelderman and Ritner basalt soil series that are characterized by their low water holding capacity, slow permeability, and moderate erosion level.

#### Boundary Description

The proposed Dundee Hills viticultural area covers 6,490 acres, of which 1,264 acres are planted to wine grapes. It is located entirely within the established Willamette Valley viticultural area and Yamhill County, Oregon. The area is west of the town of Newberg, approximately 28 miles southwest of Portland and 40 miles east and inland from the Pacific Ocean coastline. Portions of the townships of Dundee and Lafayette are included within the proposed area where the 200-