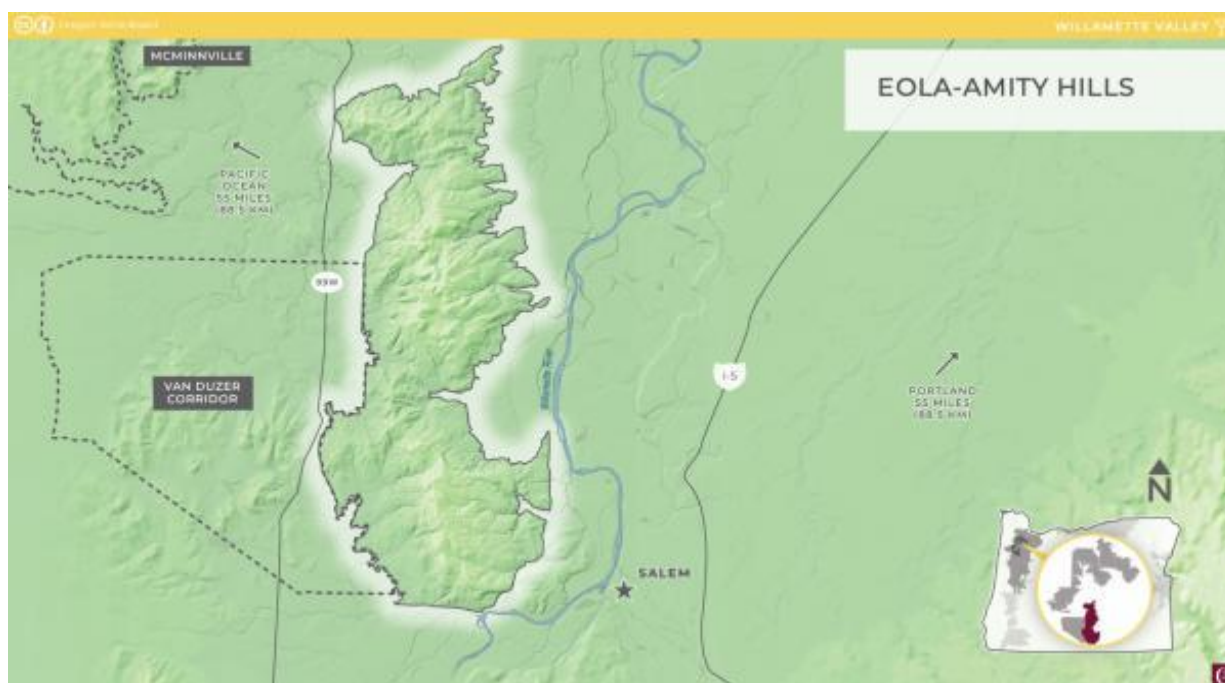


Terroir of the Eola-Amity Hills American Viticultural Area

The Eola-Amity Hills American Viticultural Area (AVA) is located in the north Willamette Valley of Oregon in the U.S. Pacific Northwest. Just 50 miles southwest of Portland, the AVA sits entirely within Polk and Yamhill counties at an approximate latitude of 44°N and longitude of 123°W.

Officially recognized in 2006, this unique viticultural area sits adjacent to the Willamette River to its east and is shaped by the Eola Hills on its southern edge and the Amity Hills in the north. With a total area of some 40,000 acres, the Eola-Amity Hills is one of 11 distinct sub AVAs that comprise the northern portion of the larger 3.5 million acre Willamette Valley AVA.¹



Oregon Wine Board

The Eola-Amity Hills' predominant grape variety is Pinot Noir, which constitutes about 80 percent of the fruit grown within its boundaries. Smaller plantings of Chardonnay (8 percent), Pinot Gris (3 percent), Riesling and Gamay Noir, among others, round out primary production.²

The AVA's location is dramatically influenced by the Van Duzer Corridor, a break or low point in the Oregon Coast Range that allows cool air from the Pacific Ocean to flow into the region. The moderating influence of the ocean winds, which bring down afternoon temperatures during the

¹ The Willamette Valley Wineries Association - Willamette Valley AVAs. Retrieved November 15, 2024, from <https://willamettewines.com>

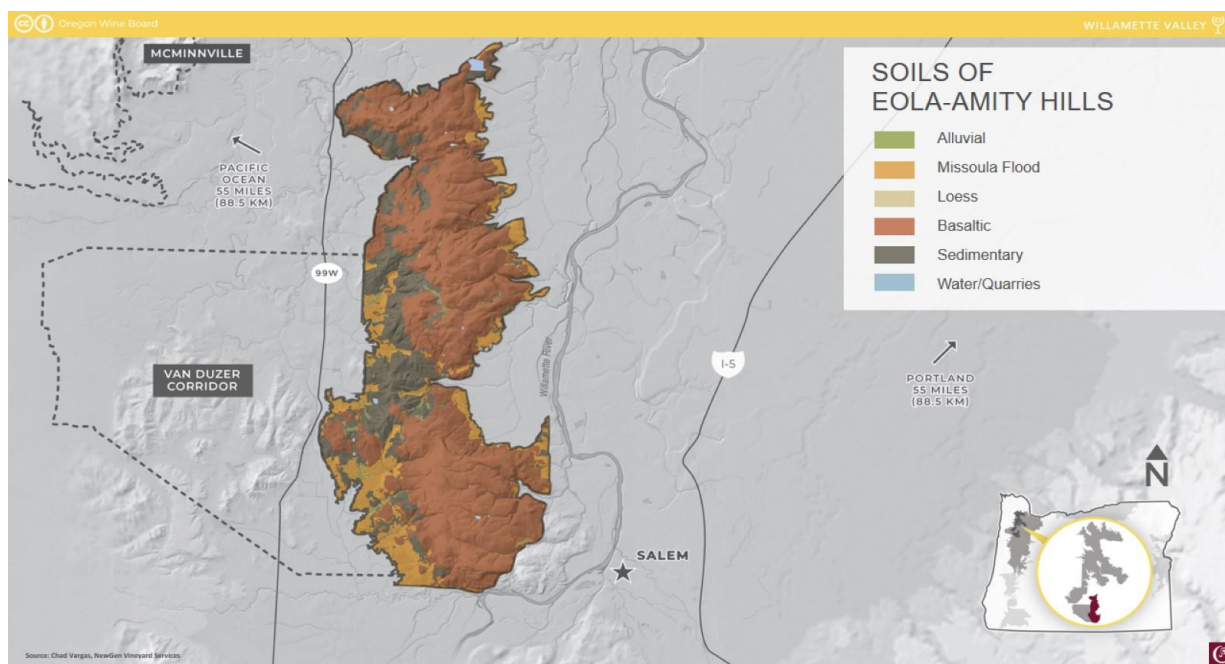
² The Willamette Valley Wineries Association - Eola-Amity Hills AVA. Retrieved November 15, 2024, from <https://willamettewines.com>

warmest parts of the growing season, helps vines produce smaller berries with thicker skins, a higher skin-to-juice ratio and better acid retention.³

This wind protection also helps dry out vine canopies and decrease fungus pressures and the need for fungicide sprays, for example, which makes the AVA attractive to growers who follow sustainable farming practices like Demeter (biodynamic), LIVE Certified-Sustainable, USDA Organic and Salmon-Safe, among others.⁴

The soils underlying the Eola-Amity Hills are volcanic basalt from ancient lava flows in the higher elevations and silt loams from marine sedimentary rocks at lower elevations. As a result, these soils tend to be shallow, rocky and well-drained and much different than those found elsewhere in the Willamette Valley.⁵

Survey maps from the U.S. Dept. of Agriculture show that the dominant basalt-derived soils in the Eola-Amity Hills are Gelderman and Jory, while the most common sedimentary soils include Steiwer, Chehulpu and Helmick. Therefore, it's possible for a single vineyard site to include multiple soil types depending on the altitude.⁶



Oregon Wine Board

³ The Oregon Wine Board - Oregon Wine, Eola-Amity Hills. Retrieved November 15, 2024, from <https://trade.oregonwine.org>

⁴ The Eola-Amity Hills Winegrowers Association - Our Vineyards. Retrieved November 15, 2024, from <https://eolaamityhills.com>

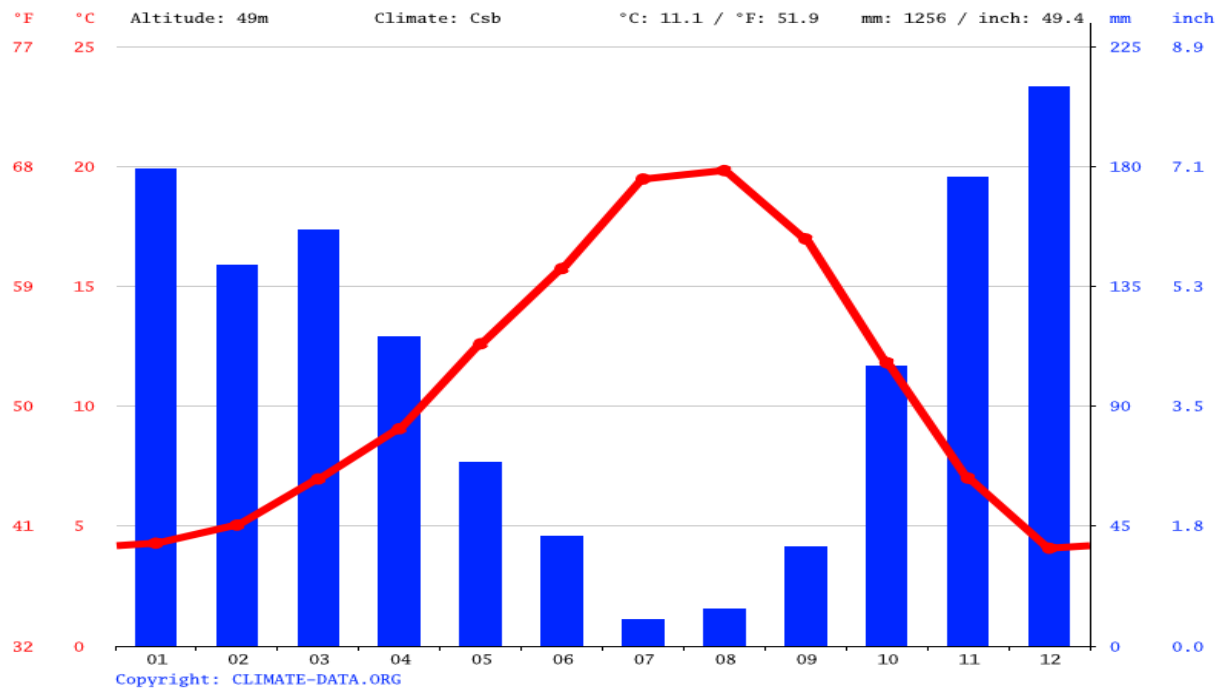
⁵ The Eola-Amity Hills Winegrowers Association - Eola-Amity Hills AVA Background By David Patte. Retrieved November 15, 2024, from <https://eolaamityhills.com>

⁶ "Establishment of the Eola-Amity Hills Viticultural Area (2002R-216P)" (27 CFR 9 71 FR 40400). Federal Register. Alcohol and Tobacco Tax and Trade Bureau. July 17, 2006. pp. 40400–40404. Retrieved November 15, 2024.

The main ridge of the Eola-Amity Hills runs north to south, and most vineyard sites have southwestern, southeastern or southern aspects or orientations. While a majority of the planted vines can be found at elevations between 250 ft. and 700 ft., the AVA boasts high points of 1,093 ft. in the south, 1,160 ft. in the central portion of the hills and 863 ft. in the north.⁷

The climate of the Eola-Amity Hills can be generally characterized as temperate, with its close proximity to the Pacific Ocean, with warm summers – not excessively hot, however – and mild winters during which temperatures normally remain above freezing. Once again, the moderating influence of the Van Duzer Corridor can be observed as ocean winds pour through the break in the Coast Range, helping keep maximum temperatures between an average of 62°F in April and 83°F in July.⁸

Annual precipitation across the AVA ranges from roughly 40 inches in the southeast portion of the Eola Hills to 45 inches or more in higher elevations. It is estimated that just 15 percent of the region's total annual rainfall occurs during the growing season.⁹



Climate-Data.org, Weather By Month, Amity, OR, 1991-2021

⁷ ["Establishment of the Eola-Amity Hills Viticultural Area \(2002R-216P\)"](#) (27 CFR 9 71 FR 40400). Federal Register. Alcohol and Tobacco Tax and Trade Bureau. July 17, 2006. pp. 40400–40404. Retrieved November 15, 2024.

⁸ ["Establishment of the Eola-Amity Hills Viticultural Area \(2002R-216P\)"](#) (27 CFR 9 71 FR 40400). Federal Register. Alcohol and Tobacco Tax and Trade Bureau. July 17, 2006. pp. 40400–40404. Retrieved November 15, 2024.

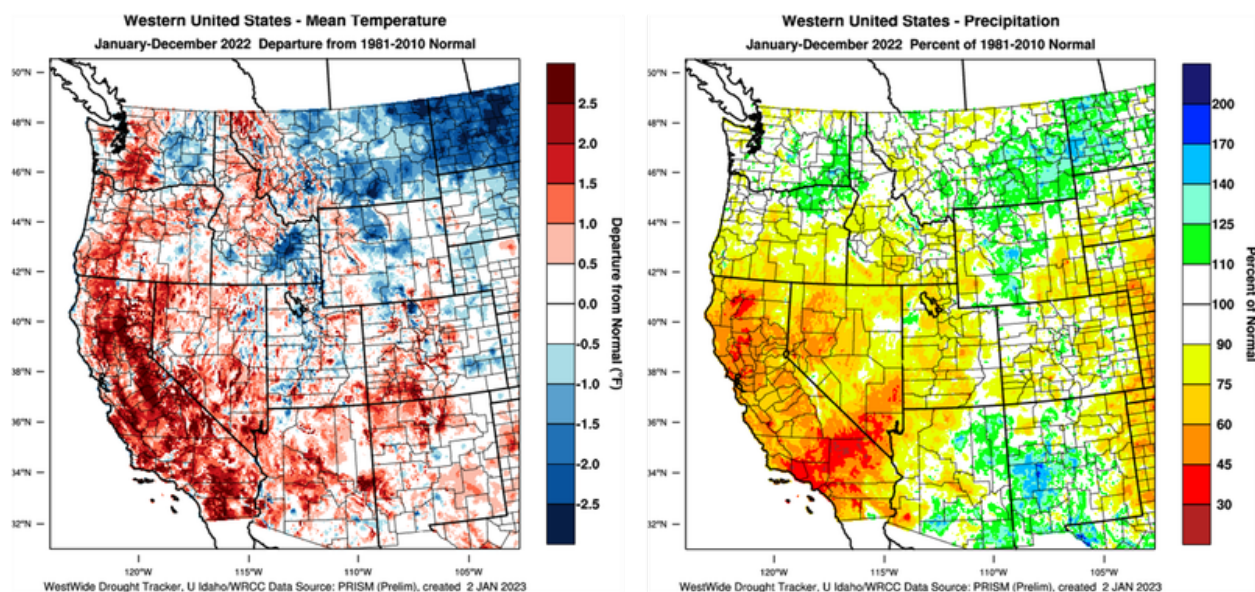
⁹ ["Establishment of the Eola-Amity Hills Viticultural Area \(2002R-216P\)"](#) (27 CFR 9 71 FR 40400). Federal Register. Alcohol and Tobacco Tax and Trade Bureau. July 17, 2006. pp. 40400–40404. Retrieved November 15, 2024.

The month with the lowest rainfall is July, which typically records less than an inch of precipitation. December, on average, receives the highest amount of rainfall with a mean of more than eight inches.¹⁰

The growing season spans the months April through October and has a heat accumulation range of 2,300-2,500 degree days, which falls within Region 1 of the Winkler Index, a system for measuring the amount of heat a site receives and its ability to ripen wine grapes. Region 1 sites are suitable for cool-climate and early-ripening varieties, such as Pinot Noir, Pinot Gris and Chardonnay.¹¹

According to annual vintage reports by Linfield University, the north Willamette Valley, including the Eola-Hills AVA, experienced frost free days totaling 231 in 2018, 232 in 2019 and 223 in 2020, for an average of 229 frost free days over the three year span. In 2020, the median last spring frost date was March 26, and the median first fall frost date was Oct. 26.¹²

Moving forward, wine and grape production in the Eola-Amity Hills AVA and all of Oregon will continue to be affected by rising temperatures and the risk of wildfires and wildfire smoke. According to a recent report by the Oregon Wine Board, that trend continued in 2022, which ranked as the sixth-warmest year on record since 1880 and was the 46th consecutive year with above-average temperatures, according to the U.S. National Oceanic and Atmospheric Administration (NOAA).¹³



WestWide Drought Tracker, Western Region Climate Center, University of Idaho

¹⁰ Climate-data.org - Data and Graphs for Weather & Climate in Amity. Retrieved November, 15 2024, from <https://en.climate-data.org/north-america/united-states-of-america/oregon/amity-124407/>

¹¹ "Establishment of the Eola-Amity Hills Viticultural Area (2002R-216P)" (27 CFR 9 71 FR 40400). Federal Register. Alcohol and Tobacco Tax and Trade Bureau. July 17, 2006. pp. 40400–40404. Retrieved November 15, 2024.

¹² Jones, G.V., Vintage Report 2020: North Willamette Valley. Linfield University Wine Studies Reports. Retrieved November 15, 2024 from https://digitalcommons.linfield.edu/owha_winstudies_reports/43

¹³ Murdoch, Sarah, 2022 Oregon Harvest Report. The Oregon Wine Board. Retrieved November 15, 2024, from <https://industry.oregonwine.org/resources/reports-studies/2022-oregon-harvest-report/>

Oregon experienced 889 forest fires in 2022, down from 1,134 the year before, while the western U.S. recorded summertime temperatures 2.5 percent higher than average. That made 2022 the third-hottest U.S. summer on record in the past 128 years, according to the NOAA.¹⁴

The main pests and diseases of concern in the Eola-Amity Hills and broader Willamette Valley AVA include Powdery mildew, Botrytis bunch rot, mites and trunk diseases as well as Red Blotch and Leafroll. Powdery mildew is of significant concern at bloom through veraison and can be prevented by leaf removal, shoot thinning and positioning and with the use of fungicides.¹⁵

The risk of Botrytis should be addressed at bloom through fruit set and into harvest. Leaf removal is important to the prevention of Botrytis and Powdery mildew as it can increase spray penetration and air flow through the vines and help ward off infection early in the season. Research in Oregon shows that early leaf removal beginning at bloom does not reduce grape yield or lead to fruit sunburn.¹⁶

Growth Stage	Dormant— Early growth	6" shoots	Pre-bloom	Bloom	Fruit Set	Fruit Growth (summer)		Véraison	Pre-harvest
BBCH Scale	00-12	14-15	17–60	61-69	71	71-79		83-85	85-88
	POWDERY MILDEW								
Primary Applications		Sulfur: high label rate (7-10 days)	Products from groups 50 or U6 alone or in mixes with other FRAC groups. ^a			Sulfur: high label rate (7-10 days) ^b	Groups 50 or U6, alone or mixed with other groups ^a	Sulfur: half rate (7-14 days) ^b	Groups 50 or U6, alone or mixed with other groups
Supplemental Applications		M-Pede or JMS Stylet Oil; use caution if applying after sulfur, do not mix with sulfur							
Cultural Methods		Reduce canopy density: shoot thinning and positioning; sucker removal			Pull leaves in cluster-zone of dense canopies	Hedge dense canopies or regulate growth through irrigation			
	BOTRYTIS								
Primary Applications				Critical to spray at bloom; if sprays not allowed, apply cluster zone leaf removal		Critical to spray at bunch closure ahead of rain events (BBCH 77-79).	Use cultural control methods; spray ahead of rain events and only when necessary.		
	Cultural methods to reduce canopy density and shading should be used with chemical applications to prevent Botrytis. Rotate and/or tank mix fungicides that have different mode of action (FRAC) groups so that no product is used more than two times per season to prevent fungicide resistance. Always use a product with a different FRAC group than was used for the previous application.								
Supplemental Applications			Fungicides that have Botrytis efficacy can be considered based on weather and cultivar susceptibility to Botrytis. Heed to warnings under "Primary Actions."						
Cultural Methods		Shoot thinning and positioning to reduce canopy density			Pull leaves in cluster-zone and hedge as needed	Hedge or avoid excess growth by regulated deficit irrigation		2 nd pass to pull leaves in cluster-zone if needed (western OR)	

^aSpray Interval: Watch growth rates closely and reapply as needed based on the amount of growth. Grapevine growth rates tend to be high in early summer in some areas of the state and/or when vines are grown under full irrigation. Shorten application windows to 14-days in high growth rate situations. ^bSulfur: To avoid foliar burn or phytotoxicity, adhere to cautionary statements on the product label for air temperatures at application and in the days to follow.

Oregon State University Extension Service

¹⁴ Murdoch, Sarah, 2022 Oregon Harvest Report. The Oregon Wine Board. Retrieved November 15, 2024, from <https://industry.oregonwine.org/resources/reports-studies/2022-oregon-harvest-report/>

¹⁵ Skinkis, P.A., Pscheidt, J.W., KC, A., Moretti, M.L., Walton, V.M., Copp, C., 2024 Pest Management Guide for Wine Grapes in Oregon, Oregon State University Extension Service, Retrieved November 15, 2024, from <https://extension.oregonstate.edu/catalog/pub/em-8413-2024-pest-management-guide-wine-grapes-oregon>

¹⁶ Skinkis, P.A., Pscheidt, J.W., KC, A., Moretti, M.L., Walton, V.M., Copp, C., 2024 Pest Management Guide for Wine Grapes in Oregon, Oregon State University Extension Service, Retrieved November 15, 2024, from <https://extension.oregonstate.edu/catalog/pub/em-8413-2024-pest-management-guide-wine-grapes-oregon>

In addition, the practice of leaf removal is critical for vineyards with high vigor and large canopies and those dedicated to organic and biodynamic production – like many in the Eola-Amity Hills AVA – which limits the use of conventional sprays and fungicides in disease prevention and treatment.¹⁷

Depending on the particular region or AVA, Oregon vineyards experience only occasional pressures and economic impacts from insect and mite pests such as mealybugs. Accordingly, it is recommended that insecticide sprays not be used until those pests are identified in the vineyard and a negative economic impact is expected.¹⁸

¹⁷ Skinkis, P.A., Pscheidt, J.W., KC, A., Moretti, M.L., Walton, V.M., Copp, C., 2024 Pest Management Guide for Wine Grapes in Oregon, Oregon State University Extension Service, Retrieved November 15, 2024, from <https://extension.oregonstate.edu/catalog/pub/em-8413-2024-pest-management-guide-wine-grapes-oregon>

¹⁸ Skinkis, P.A., Pscheidt, J.W., KC, A., Moretti, M.L., Walton, V.M., Copp, C., 2024 Pest Management Guide for Wine Grapes in Oregon, Oregon State University Extension Service, Retrieved November 15, 2024, from <https://extension.oregonstate.edu/catalog/pub/em-8413-2024-pest-management-guide-wine-grapes-oregon>