Mr. Tom Crone
Chief of Regulations Division
Bureau of Alcohol, Tobacco, and Firearms
650 Massachusetts Avenue, 5th Floor
Washington D.C. 20226

March 15, 2002

Dear Mr. Crone:

Please accept this petition to form a new American Viticultural Area (AVA) called "Red Hills". Within this binder you will find our "Red Hills" AVA petition, exhibits, and U.S. Geological Survey Maps.

If you have any questions or need more information please feel free to contact us:

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Thank you for your consideration of this petition.

Sincerely,

Rollin Soles

Alex Sokol Blosser

See letter of 4/18/02

Red Hills AVA Proposal

On behalf of the grape growers of the Red Hills, we petition the Bureau of Alcohol, Tobacco and Firearms to establish an American Viticultural Area (AVA) to be known as the "Red Hills of Dundee." This proposed viticultural area is wholly within and toward the northern end of Oregon's "Willamette Valley" AVA in Yamhill County. The Red Hills of Dundee AVA would encompass approximately 10.14 square miles or 6,490 acres. Within its proposed boundaries there are 40 + vineyards planted, totaling about 1200 acres, plus 12 Commercial wineries. Total plant able acres within this proposed Red Hills of Dundee Appellation is estimated to be 2000 acres. David Lett of Eyrie Vineyards planted the first vineyard in the proposed Red Hills AVA in 1966.

Evidence that the area is known by the proposed name:
The "Red Hills of Dundee" are referred to many times in USGS maps including the 7.5 minute "Dundee" U.S.G.S. topographic map (See included 7.5 minute maps), and the 30 x 60 minute "Yamhill River" quadrangle U.S.G.S. map (Exhibit A). The wine guide *Northwest Wines* (Exhibit B) also makes references to wineries and vineyards that are in the "Red Hills of Dundee." In a recent article in *The Underground Wine Journal* (Exhibit C) refers many times to the "Red Hills of Dundee." The author, Tom Hyland, wrote the following: "Today, almost half of the state's 10,000 acres planted to vines are Pinot Noir. While the grape is planted in several regions, Yamhill County is clearly the nexus of the plantings. Several districts in this county produce distinctive wines, with most of the attention focused on one area in particular- the Red Hills of Dundee."

The October 2000, Yamhill County Verizon phone book (Exhibit D) lists three businesses that use the name "Red Hills" in their business names, and all three are located in the proposed viticultural area. By comparison, the *White Pages* (Exhibit E) for nearby Multnomah, Clackamas, and Washington counties list no businesses that use the name "Red Hills" that are within those counties.

Historical or current evidence that the boundaries of the viticultural area are as specified in the petition:
The petitioners know of no previous attempt to define the exact boundaries of the Red Hills. The attached map of the Red Hills show that they constitute a single, continuous landmass, uplifted above the floor of the Willamette Valley. The Chehalem Valley, which is a flood plain for Chehalem Creek, forms the northern boundary. The Willamette Valley delineates the east and southern boundaries. The western boundary for the Red Hills is unlike its boundaries on the east, south, and northern sides. The western boundary is not surrounded by flood plain low land, which are below 200 feet, but by a road, which serves as the boundary between the proposed Red Hills and Yamhill-Carlton District AVAs. These roads, Abbey and Kuehne Roads, are a natural depression where drainage flows south to the Yamhill River and also north to the Chehalem Creek drainage system.

For the purposes of this petition, we have used two tests to try to delineate the line between what constitutes "hills" and what is "valley floor" and why the 200' contour was chosen as that delineation:

Red Hills AVA Proposal

On behalf of the grape growers of the Red Hills, we petition the Bureau of Alcohol, Tobacco and Firearms to establish an American Viticultural Area (AVA) to be known as the "Red Hills." This proposed viticultural area is wholly within and toward the northern end of Oregon's "Willamette Valley" AVA in Yamhill County. The Red Hills AVA would encompass approximately 10.14 square miles or 6,490 acres. Within its proposed boundaries there are 40 + vineyards planted, totaling about 1200 acres, plus 12 Commercial wineries. Total plant able acres within this proposed Red Hills Appellation is estimated to be 2000 acres. David Lett of Eyrie Vineyards planted the first vineyard in the proposed Red Hills AVA in 1966.

Evidence that the area is known by the proposed name:
The name Red Hills has been in continuous use since at least 1928[1] to the present to represent the hills in which the proposed viticultural area is located. The "Red Hills" are referred to many times in USGS maps as well as many geological reference books to name the hills in which the proposed viticultural area is located. *Landforms of the Northwestern States* (Exhibit A) as well as the *Atlas of the Pacific Northwest* (Exhibit B) both refer to the proposed viticultural area as the "Red Hills." The wine guide *Northwest Wines* (Exhibit C) also makes references to wineries and vineyards that are in the "Red Hills."

The October 2000, Yamhill County Verizon phone book (Exhibit D) lists three businesses that use the name "Red Hills" in their business names, and all three are located in the proposed viticultural area. By comparison, the *White Pages* (Exhibit E) for nearby Multnomah, Clackamas, and Washington counties list no businesses that use the name "Red Hills" that are within those counties.

Historical or current evidence that the boundaries of the viticultural area are as specified in the petition:
The petitioners know of no previous attempt to define the exact boundaries of the Red Hills. The attached map of the Red Hills show that they constitute a single, continuous landmass, uplifted above the floor of the Willamette Valley. The Chehalem Valley, which is a flood plain for Chehalem Creek, forms the northern boundary. The Willamette Valley delineates the east and southern boundaries. The western boundary for the Red Hills is unlike its boundaries on the east, south, and northern sides. The western boundary is not surrounded by flood plain low land, which are below 200 feet, but by a road, which serves as the boundary between the proposed Red Hills and Yamhill-Carlton District AVAs. These roads, Abbey and Kuehne Roads, are a natural depression where drainage flows south to the Yamhill River and also north to the Chehalem Creek drainage system.

For the purposes of this petition, we have used two tests to try to delineate the line between what constitutes "hills" and what is "valley floor" and why the 200' contour was chosen as that delineation:

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[1] *Map of Yamhill County 1928,* Swender Blue Print Company, Portland, Oregon; Found in Map section at Oregon Historical Society Archeives

1. Elevation – the foot of the Red Hills generally lies at 200' above sea level. We use this contour to form the main boundary of the proposed appellation except where the contour crosses over Highways 240 in the north, and 99W in the east, and McDougall and Stoller Roads in the south. This elevation point marks a contrast between the start of the Red Hills and the valley floor. Similar to the 200' contour, sections of the before mentioned roads also mark a contrast between the start of the Red Hills and the valley floor. On the western side of the proposed Red Hills AVA, the 200' contour fails to become a clear delineation for a boundary of the Red Hills and a road is used which is a low point between the proposed Red Hills and Yamhill-Carlton District AVAs.

   The 200' contour is also reflective of where the slope of the hills turns into level valley floor that is considered a potential frost zone. Hillside vineyards are unaffected by valley frosts, and experience warmer nighttime temperatures due to inversion. It is the experience of Oregon growers that vineyards in valley floor locations ripen much later and are poorer in quality than hillside vineyards (Exhibit F).

2. Slope – flat or barely sloping lands are rarely "hills", while hillsides almost always are considered "hills." Using personal observation and topographic maps, we have tried to draw the AVA boundary where sloping hillsides flatten into valley floor. On the western boundary the slopes of the proposed Red Hills and of the proposed Yamhill-Carlton District AVA to the west converge at a low point that is marked by Abbey and Kuehne Roads.

The 200' contour boundary does fall with in the urban growth boundaries of two adjacent cities, Lafayette, and Dundee. The contour does not include most of the urban areas in Lafayette, but it does include most of Dundee. We considered excluding the areas within the corporate city boundaries of both cities even if they were above 200' because the land would be used for development and not viticulture. We decided not to, because there is a large vineyard with in the corporate city boundary of Dundee, and it is above 200' and is part of the Red Hills.

In defining the "Red Hills" AVA, the petitioners have tried to contact every winegrower in the area to insure that they had a voice in this description. We have tried to include all commercial vineyards that are on hillsides that are within the boundaries of the proposed Red Hills AVA.

A description of the specific boundaries of the viticultural area, based on features which can be found on United State Geological Survey maps of the largest applicable scale:

The proposed Red Hills viticultural area is located in Yamhill County, Oregon. The boundary generally relies on the 200' contour line that defines the base of the Red Hills around the entire uplifted hill mass (i.e. where the valley floor begins), but roads are used where they provide a better delineation.

On the U.S.G.S. 7.5 minute map "Dundee"

1. The boundary starts at the intersection on Fox Farm Road and Oregon State Highway 99W in Dundee.

2. It follows Highway 99W in a SW direction for about .30 miles until it meets the 200 foot contour line.
3. It then follows the 200 foot contour line as it goes in a SW direction out of the town of Dundee until it intersects with Highway 99W about .5 miles south of the incorporated line of Dundee.
4. The boundary then becomes Highway 99W and goes SW for .25 miles until Highway 99W intersects with the 200 foot contour at the intersection of Highway 99W and Sheperds Road.
5. The boundary then becomes the 200 foot contour and goes SW until it intersects Highway 99W about .75 miles south of the incorporated line of Dundee.

On the U.S.G.S. 7.5 minute map "Dayton"

6. Highway 99W then becomes the boundary and it goes SW for .25 miles until it intersects with the 200 foot contour about 1.5 miles south of the incorporated line of Dundee.
7. The 200 foot contour then becomes the boundary and it travels SW until it intersects with McDougall Road on the south side of the proposed Red Hills AVA.
8. McDougall Road becomes the boundary and the road travels west until it intersects with Stoller Road.
9. The boundary then goes north on Stoller Road and follows that road north and then west until it intersects with the 200-foot contour near the intersection of Henry Creek Road and Stoller Road.
10. The boundary then becomes the 200-foot contour and heads north.

On the U.S.G.S. 7.5 minute map "Dundee"

11. The 200 foot contour boundary makes an upside down U shape around Henry Creek and heads south.

On the U.S.G.S. 7.5 minute map "Dayton"

12. The 200-foot contour boundary then makes a small U shape then heads north.

On the U.S.G.S. 7.5 minute map "Dundee"

13. The 200 foot contour boundary then heads northwest until it intersects with Abbey Road on the west side of the proposed Red Hills AVA.
14. Abbey Road becomes the boundary and the road goes north for about 1000 feet until it intersects with the 200-foot contour.
15. The 200-foot contour then becomes the boundary and it heads directly east then goes northeast until it intersects with Abbey Road near the intersection of Brookside Lane and Abbey Road.
16. Abbey Road then becomes the boundary for only 500 feet as it goes northeast until it intersects with the 200-foot contour.
17. The 200-foot contour then becomes the boundary and it goes in a northeast direction until it intersects with Abbey Road.
18. Abbey road then becomes the boundary as it goes north until it ends/intersects with Kuehne Road.

19. Kuehne Road then becomes the boundary and it goes northeast from the intersection of Abbey Road/Kuehne for .8 miles until it intersects with the 200-foot contour line which is parallel to Kuehne Road on the right hand side of the road.
20. The 200-foot contour becomes the boundary and it heads directly east then goes northeast until it intersects with Oregon State Highway 240.
21. Highway 240 becomes the boundary and it goes east for about .20 miles until it intersects with the 200-foot contour line.
22. The 200-foot contour line becomes the boundary as it goes directly south of Highway 240 for 1000 feet then it goes directly north for 1000 feet until it intersects with Highway 240.
23. Highway 240 then becomes the boundary and it goes east for 500 feet until it intersects with the 200-foot contour line.
24. The 200-foot contour line then becomes the boundary and it goes east and then southeast until it intersects with Red Hills Road on the northeast boundary of the proposed Red Hills AVA.
25. Red Hills Road becomes the boundary and it goes south until it intersects with Sunnycrest Road.
26. Sunnycrest Road becomes the boundary and it goes east for 600 feet until it intersects with the 200-foot contour line.
27. The 200-foot contour line then becomes the boundary and it goes south and then east until it intersects with Fox Farm Road.
28. Fox Farm Road then becomes the boundary and it goes south until it intersects with Highway 99W.

What Evidence Relating to Geographical Features Has Been Provided?

Red Hills Geologic History[2]*:* Beginning 66 million years ago, waves of oceanic plates uplifted the North American land mass to form the Coast Range and rippled inland to create the anticlines (ridges) and synclines (valleys) that distinguish the topography of the North Willamette Valley (See Overview Map). Viewed from the air, the features tend to align in a southeast to northwest orientation like a tablecloth pushed from one corner to the center. About 15 million years ago, massive rivers of basaltic lava flowed from northeastern Oregon, scouring the Gorge and accumulating to depths of 1,000 feet in and around Portland before finally fingering away near Salem. These Columbia River basalts poured over the Oligocene sediments during the middle Miocene epoch. The broken hills of these ridges harbor nestled vineyard sites that favor diverse small-production wines. The **Red Hills** represents such an anticline.

Climate and Topography: The 'spine' of the Red Hills runs in a north to south direction with ridges and valleys falling out of the spine to the east and to a lesser degree to the south and west. It is positioned east of, thus in the rain shadow of the Coastal Range with average precipitation in the range of 30-45inches (Exhibit G), which is about one third the maximum precipitation of the Coastal Range. To the North of the Red Hills is the

[2] *Geology of Oregon*, Orr, Elizabeth & William, 5th edition, 1999

higher ridgeline of the Chehalem Mountains, and 20 miles to the south is the Van duzer Corridor, the geographical 'gateway' to the Pacific Ocean through the Coast Range. The cooling ocean breezes of summertime pass south after exiting the Van Duzer, with little effect on the Red Hill's summer weather compared to the Eola Hills.

Soil and Terrain: The fine-grained Columbia River Basalt lavas found primarily on the eastern ridges decomposed quickly in the persistent rains of Western Oregon, yielding a distinctly reddish surface colluvium of silt, clay and loam underlain by intermediary clay atop the bedrock basalt. These Jory series soils are well-drained (Exhibit H), available water capacity is 7 to 11 inches, erosion is a slight to moderate problem and only moderately fertile, lending the eponymous Red Hills to the cultivation of vinifera grapes. The western side of the Red Hills is primarily comprised of steeper slopes of sedimentary derived soils of the Willakenzie soil series, and a minority of the basalt derived soil series, Jory where the Columbia River flows managed to cover the prior existing sedimentary formations. Sedimentary derived soils series such as Willakenzie (Exhibit H) are well drained, moderate to highly erosive and have water holding capacity 5- 7.5 inches.

Key Features of the Red Hills proposed AVA

- ***Singular hill formation geographically isolated from the valley floor and neighboring hill/mountain formations***
- ***Defined North-South spine with an elevation maximum of 1067***
- ***Uniformity of parent rock for soil derivation within the boundary described in this petition. Approximately 80% of total area is derived from basalt from the Columbia River lavas, e.g. Jory soil series***
- ***Geographic location affords: protection from the marine winds out of the Van Duzer Corridor (Coast Range), rainfall amounts lowered by being in a rain shadow position east of Coast Range, and the influence of weather from the Columbia River Gorge is mitigated by being south of the Chehalem Ridge line.***

Geographic Neighbors of the Red Hills Proposed Appellation: Neighboring the Red Hills Appellation described above include the Willamette Valley Floor, Chehalem Mountain, Eola Hills, the Coast Range, the Yamhill-Carlton area and Coast Range Foothills.

Willamette Valley Floor: The primary distinctions of the Valley floor from the Red Hills include climate and soil differences. The valley floor suffers from frost in the spring and fall which has damaged grapevines during their growing season. During the nighttime, cool air from the higher elevations of the hills will drain into the valley creating conditions of both fog and frost not present on hillside slopes. The soils of the valley floors are deep and alluvial, holding significantly higher quantities of water. The water table can be within reach of vine roots, thus encouraging excessive growth in the grapevines to the detriment of fruit quality. By comparison, Hillside soils are thinner, hold significantly less water, and are prone to erosion. Hillside vineyards are unaffected by valley frosts, and experience warmer nighttime temperatures due to inversion. It is the experience of Oregon growers that vineyards in valley floor locations ripen much later and are poorer in quality than hillside vineyards.

Key Features differentiating Valley Floor from Red Hills:

- ***Valley floor areas are Frost Prone in spring and fall seasons.***
- ***Soils are deep, alluvial, and exhibit significantly higher water holding capacity***
- ***Water table is high and many areas prone to having standing water and/or flooding in Winter/Spring seasons.***

Chehalem Mountains: To the north of the Red Hills, the soils and high elevation of the Chehalem Mountains form significant differences to the Red Hills. The Chehalem Mountains' ridge runs generally east to west, with its highest point in the west, Bald Peak. This range has a basalt ridge line, with basalt derived soils predominating the south and south east ridge lines (e.g. Jory and Nekia soil series), sedimentary rock derived soils (e.g. Willakenzie soil series) predominate the southwest slopes (from Kings Grade Road west), and a unique soil series consisting of wind-blown loess deposited some 12,000 years ago in the cataclysms associated with the Missoula Floods north of the ridgeline (e.g.Laurelwood Series on the north side). During the recent Ice Age, 13,000 to 16,000 years ago, ice dams stemming vast Lake Missoula would periodically give way, sending torrents of water westward through the Columbia Gorge. The floods carried mountains of sand, silt and rock, blanketing the valleys and lower slopes of Western Oregon with their present day alluvium. Prevailing east winds deposited flood sediments on to the northern ridges of the Chehalem Mountains during drought periods lasting as long as 100 years between flood events. Steep slopes characterize the south, southeastern side of Chehalem Mountain and basalt derived soils jumbled together by landslides off the steep ridgeline. These soils are well drained, can be shallow and have stones mixed with the fine grain weatherized Columbia River basalts. The southwestern slopes spill away from the highest point in the Chehalem Mountains, Bald Peak, and are predominantly soiled by weatherization of Sedimentary rock, with the Willakenzie soil series serving as a typical example of soil found in successful orchards and vineyards. On northern slopes the predominant soil series is Laurelwood. This series is Missoula Flood loess overlaying basalt bedrock, has moderate permeability, deep soil depth of over 40 inches, and water capacity of 7.5-12 inches and is moderately erosive in unprotected areas.

Key Features differentiating Chehalem Mountain from Red Hills:

- ***Chehalem has a larger 'footprint' in area with an East-West ridgeline orientation***
- ***Chehalem is more directly influenced by the Columbia River Gorge weather effect***
- ***Chehalem is divided into roughly three significant soil series including derivations from wind-blown loess, Columbia River basalt, and ocean sedimentation.***
- ***Chehalem's basalt derived soil regions are steeper sided with many areas displaying historical landslide characteristics***

Eola Hills: South of the Red Hills, the soils and climate found in the Eola Hills form a significant difference to the Red Hills Appellation. The waning tendrils of basaltic lava lace the Eola Hills whose ridge line travels in a north to south direction, similar to the Red Hills. Soils largely derived from basalt are found from the top and eastern slopes in the Eola Hills (Gelderman, Nekia, Ritner soil series). Previously mapped on gentle as

well as steep slopes the Nekia soil series is being reclassified as Gelderman soil series. Gelderman is derived from basalt which is significantly softer pararock layer than Nekia or the Red Hills dominant, Jory soil series. Gelderman and Ritner are characterized with much less water capacity than soil series derived from basalt in the Red Hills and Chehalem Mountains, 3-6 inches. Permeability is moderately slow, and erosion hazard is moderate.

The western facing slopes of the Eola Hills are comprised of Sedimentary derived soils on rapidly changing slope aspects ('dipsy doodles'). The Steiwer, Chehulpum, and Helmick soil series predominate the west side of Eola Hills, and are derived from Sedimentary rock. Chehulpum is shallower soiled than Steiwer and exhibit similar water capacity, permeability, and erosion characteristics to the Willakenzie soil series. Helmick is found on convex slopes at the foot of slopes and ridges and is poorly drained soil.

Geographically, like Red Hills and Chehalem Mountain, the Eola Hills are in the rain shadow of the Coastal Range (Exhibit I). Brisk ocean winds are vented through the Van Duzer Corridor south into the Eola Hills, dropping daytime temperatures during summer's late afternoons distinguish the Eola Hills from its neighbors. These strong ocean influenced summer winds present a phenomenon significantly differing from the Red Hills located to the north of this Van Duzer Corridor. The eastern slopes can be gentle and extensive, while the western slopes are somewhat steeper, pocketed, and fall away below 200' quickly, which is somewhat similar to the Topology of the Red Hills (although the Eola Hills are significantly larger in area).

Features differentiating Eola Hills from Red Hills:

- ***Eola Hills experience significant weather influence from the Van Duzer Corridor bringing in Pacific Ocean derived wind and temperature changes***
- ***Eola basalt derived soils are generally shallower, have lower water-holding capacity, and are derived from a softer pararock. Gelderman and Ritner soil series[3] in Eola and Jory soils series in Red Hills***
- ***Eola Hills is a significantly larger 'footprint' in surface area than the Red Hills***

Oregon's Coast Range: Looking at a map of Oregon, the Coast Range is a massive mountain range uplifted parallel and adjacent to the Pacific Ocean. This range is the first landfall to be affected by weather coming off the Pacific. Thus, the winds and rainfall are significantly higher while the temperatures are virtually unaffected by Continental weather systems. This means it is colder in the summer and warmer in the winter than inland areas of Oregon. Thus, the Coastal Range provides the 'rain shadow' for the Red Hills. The soils are derived from both marine volcanics and sediments, with a preponderance of high water holding capacity silts with basalt layers sandwiched between marine sediments. Except for the eastern facing Foothills, the Coast Range is not warm and dry enough for successful vineyard cultivation.

Features differentiating the Coastal Range from Red Hills:

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[3] Interview with Andy Gallagher, Soil Scientist, CPSC/Sc, Corvallis, Oregon

- ***Coastal Range is located next to the Pacific Ocean***
- ***Coastal Range bears the full impact of weather coming off the Pacific Ocean including high rainfall, wind, and moderation from Continental weather extremes***
- ***A significant portion of the soil is derived from parent sills of marine basalt sandwiched between marine sediments***

Yamhill-Carlton AVA and McMinnville Foothills AVA: Located between the Red Hills proposed AVA and the higher elevation line of the east facing slopes of the Coast Range lies the Yamhill-Carlton proposed AVA and the Foothills growing areas on east slopes of the Coast Range. This region could be best described as providing a significant portion of the drainage of the Yamhill River System. The Yamhill-Carlton area is characterized by a 'patchwork quilt' of small uplifted slopes exposing soils from the parent rock of marine derived sediments and ocean floor volcanic basalt. The parent rock is associated with geology relating to the Eocene and Oligocene Periods. Only the eastern foothills below 900-1000' of the Coast Range are warm enough for successful vineyard production. Weather and soil derivation of the proposed Yamhill-Carlton AVA have significant differences to the Red Hills. The proposed Red Hills AVA has an average precipitation of 42", while the growing region abutting the Coast Range and Yamhill River drainage averages 60" of annual precipitation (Exhibit J). Additionally, the Red Hills AVA averages 150 more degree-growing days (a significant difference especially in light of the regions 45th parallel, Region I location). Both the Red Hills and the Coast Range regions have soil derived from sedimentary and basalt parent material. However, the inclusions within these basic basalts are quite different. The Red Hills basalt parent derives from 'terrestrial' volcanic origin, i.e. Columbia River Basalts. While the Coast Range basalt parent rock is derived from 'marine' volcanic origin, "(seafloor) Basalt". Additionally the Columbia River Basalts date from the Miocene Period (5-25 million years old) while the seafloor Basalts date to the Eocene Period, 40-60 million years old (Exhibit K).

Features differentiating Yamhill-Carlton proposed AVA and the Foothills of the Coast Range from Red Hills:

- ***Soils derived from Sedimentary rock predominate esp. in the Yamhill-Carlton proposed AVA***
- ***The soils derived from basalt are higher water holding capacity and derived from older marine volcanics***
- ***Positioned adjacent to the higher ridgelines of the Coast Range increases marine, Pacific Ocean weather influences including higher rainfall and higher winds especially as one approaches the entry of the Van Duzer Corridor***
- ***This area could be entirely described as drainage land for the Yamhill River system, while only the west slopes of the Red Hills fits into this system***

This petition is submitted by:

Rollin Soles, Argyle Winery, Dundee, Oregon
Alex Sokol Blosser, Sokol Blosser Winery, Dundee, Oregon

Sokol Blosser
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Nancy Sutton
Bureau of ATF
Regulations Division
221 Main Street, 11th Floor
San Francisco, CA 94105

April 8, 2002

Dear Ms. Sutton:

This letter is in reference to the "Red Hills" AVA petition which we, Rollin Soles and I submitted to you a few weeks ago. We would like to change the petition's name from the current "Red Hills" to read "Red Hills of Dundee."

I also want to submit a re-draft of the first section of the original petition that argues in favor of the "Red Hills of Dundee," along with three new supporting exhibits.

Please make a note of this change.

Sincerely,

Alex Sokol Blosser
Co-petitioner "Red Hills of Dundee" AVA

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Nancy Sutton
BATF
P.O. Box 4644
Petaluma, CA 94955

December 4, 2002

Dear Ms. Sutton:

Enclosed is our supporting evidence to change the name of our AVA petition from "Red Hills of Dundee," to "Dundee Hills." While the name "Red Hills of Dundee," appears on all USGS maps for the area, we feel there is ample evidence to change the name to "Dundee Hills."

The name "Dundee Hills," is used interchangeably with "Red Hills," and "Red Hills of Dundee," not only by the local vintners and residents but by many others outside the area. In fact we've found many more references to "Dundee Hills", than "Red Hills of Dundee" during our research for the name change.

These hills have always been associated with the town of Dundee, as evidenced by the USGS naming the area "Red Hills of Dundee." The new proposed name "Dundee Hills," stays with that strong association, and builds upon the prevalent use of that name by locals and others outside of the area.

Please accept this evidence and feel free to contact me with any questions.

Sincerely,

Alex Sokol Blosser
Co-Petitioner for "Dundee Hills" AVA

Reference List for "Dundee Hills" AVA Petition

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34. www.lifeinvine.com/stories/Westry.html
35. Verizon Super Pages, Yamhill County, October 2002; Page 33

36. Steven Kolpan, Brian Smith, Michael Weiss, Exploring Wine, Van Nostrand Reinhold, NY, NY, 1996, Page 165

THE

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FREDERIC GEORGE YOUNG

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1912

A GLIMPSE INTO PREHISTORIC OREGON

By Ellen Condon McCornack

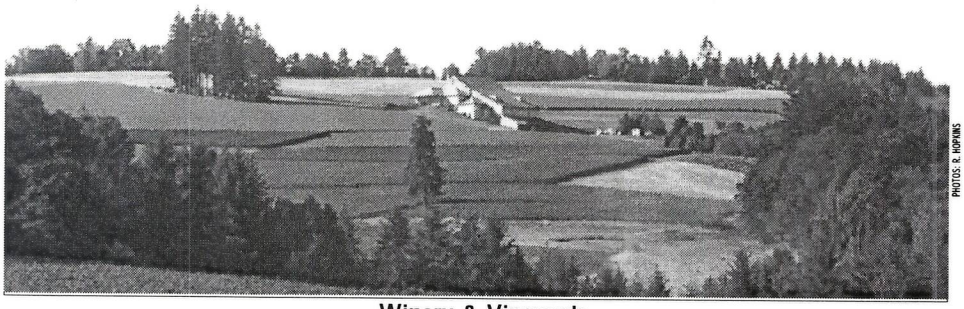
water from the mountains than it did at this time, for its numerous tributaries were fed by many melting glaciers still lingering from the age of ice. In some places where the river gorge was narrow, as at the Cascades, the waters must have been very deep. While beyond The Dalles, near the mouth of the Des Chutes, there was a large "lake like extension of the river" where this great volume of water could quietly write its own history, for here it deposited layer after layer of sediment in which it carefully buried the bones and teeth of the animals that roamed on its shores or were washed down from the mountains when this lake stood over two hundred and fifty feet above the present surface of the Columbia. At this time, too, the Walla Walla Valley and the Valley of the Yakima were flooded and were writing other chapters of the same old history.

If the encroachment of the sea crowded back the Columbia until it produced such high water in Eastern Oregon and Washington, what was its effect upon the valley of the Willamette? When the waters stood over three hundred feet above their present level at the mouth of the Willamette they evidently covered the whole valley from the coast mountains to the Cascades and from the Scappoose Mountains on the north, to the hills that surround Eugene on the south. And it was a beautiful body of water, one hundred and twenty miles in length and fifty miles or more in width, for not only was the level valley covered but the waters had quietly climbed the lower slopes of the foothills until they stood far above the present altitude of the church spires of Portland and Salem.

In the northern part of this Willamette Sound the Chehalem Mountains formed a fine wooded island from which could be seen the broad bay that covered Tualatin plains, on whose waters one might have sailed more than a hundred feet above the present towns of Forest Grove and Hillsboro. Across a narrow straight from Chehalem was the island of the Dundee Hills and from both of these elevations could be seen the great expanse of waters and the many distant snowpeaks of the Cascade Mountains. Perhaps the largest of these islands was

Winery Profile

French-owned winery in Dundee Hills refines plan



PHOTOS: R. HOPKINS

Winery & Vineyards

FRANCE'S tribute to Oregon's wine country—a state-of-the-art, gravity-feed winery—clings to the heights of the Dundee Hills. Burgundy's wine powerhouse, Maison Josef Drouhin, witnessed Oregon Pinot noir wines measuring up to Burgundy's best. The House sent Robert Drouhin to search out the country. He came to Dundee, liked what he saw, bought land in 1988, planted vineyards, and built a winery to produce Pinot noir carrying the Domaine Drouhin Oregon label.

From the start, the five-level winery built into the hillside sat rather grandly aloof above other vineyards and wineries. No tasting room was available for visitors. Visits to the winery were, in fact, by invitation only.

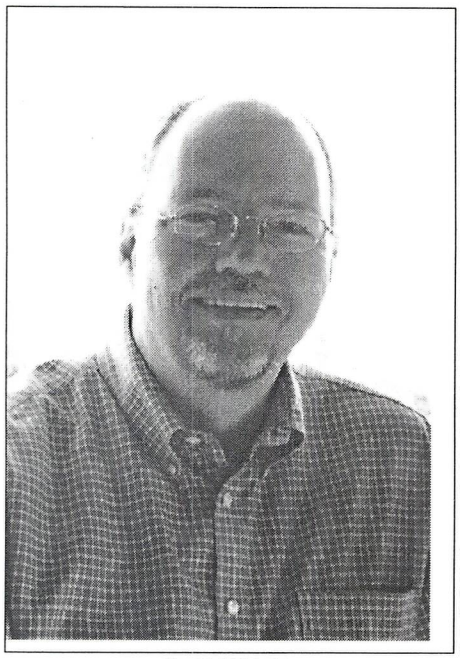
All of that was about to change for the better, I learned.

■

In the middle of September I drove out to the winery to interview the new managing director, Scott Wright, who was just back from Beaune, the home in Burgundy of Maison Josef Drouhin. Wright had spent a week there with the family and other senior members of the establishment.

He told me that one of the key management decisions was to open the winery to the public on a regular basis for the first time. Tour groups will be welcomed two or three days a week. Hospitality director Brad McElroy, joining the staff recently, is seeing to placement of a tasting bar in the winery's elegant entrance gallery.

But don't fire up your SUV for a quick trip to the winery just yet. At this stage, visits are limited to small groups who have confirmed reservations to visit.



Scott Wright

According to Wright, visits will work like this—a group of eight to ten or so calls McElroy for an appointment to visit. He will want to know something about the interests of the group members. How experienced as wine drinkers are they? Are they more interested in winery or vineyard matters? Is this their first visit to an Oregon winery? Do they want guidance about tasting and choosing fine wines? Are they interested in the availability of wine-friendly food in the area?

Such attention to detail assures visitors of a personalized tour rather than just winery boiler plate, which quickly stales in the telling.

A touring company with a stretch limo or a van could probably supply the group's transportation. I, for one, would want to know the tour company's experience in touring our wine country.

■

Scott Wright strikes me as just the person to honcho developments at the wine estate, particularly its public face.

He became a Pinot noir fanatic, he said, at the age of fourteen when his father sat him down (with an open bottle of Pinot noir on the table) and said it was time for him to start learning about fine wine. The lessons' subjects were usually red or white Burgundies.

As a young child at dinner, he had been used to seeing an open bottle of wine on the table. Later he noticed that his father's travels abroad usually yielded rare wines for the cellar. The clincher was a family trip to Burgundy.

Wright's career, however interesting, was not about wine until now. He moved around as a "radio personality" in New York, Chicago, and Los Angeles. He later managed a string of radio stations before moving to do promotions and marketing for Epic Records.

■

Living in San Francisco but not particularly tied to any office there, he realized he could start a little winery in the Napa Valley and live there, just an hour from the big city. He moved there in 1988.

Along with a partner, Wright founded Scott Paul Wines in 1999. They produced Pinot noir and Chardonnay from grapes purchased from various California vineyards. Land for their own vineyard, however, was simply not available in the Napa Valley.

He soon came to Oregon looking for Pinot noir grapes. What he found was a new home. He moved here, leaving the operation of the winery to his partner. He wasn't looking for a job at all when someone suggested he talk to Domaine Drouhin Oregon, which was reportedly looking for a managing director. He started there this past April.

The meeting in Beaune had reviewed the Oregon winery's status and decided on a sort of five-year plan. Robert Drouhin liked the progress the winery has

Domaine Drouhin Oregon

Breyman Orchard Road, Dayton
(P.O.Box 700, Dundee 97115)
Open by appointment only
503-864-2700

Vineyard

Elevation: 450–800 feet
Size of estate: 225 acres

First Planting:
1988, Pinot noir
(Pommard & Wadenswil clones).
1989–2001:
3–10 acres per year, Pinot noir
Dijon clones,
(including 10 acres Chardonnay).

Total Planted:
95 acres
55 additional acres plantable
Vineyard Goal: 150 acres
Also buys grapes from Knudsen Vineyard, Durrant Vineyards, and Stoller Vineyards (all from Dundee Hills), and Seven Springs Vineyard (from Eola Hills).
Vineyard Management:
Vineyard Master:
Philippe Drouhin,
On-site Vineyard Manager
Allen Holstein (Dundee Wine Co.),

Winery

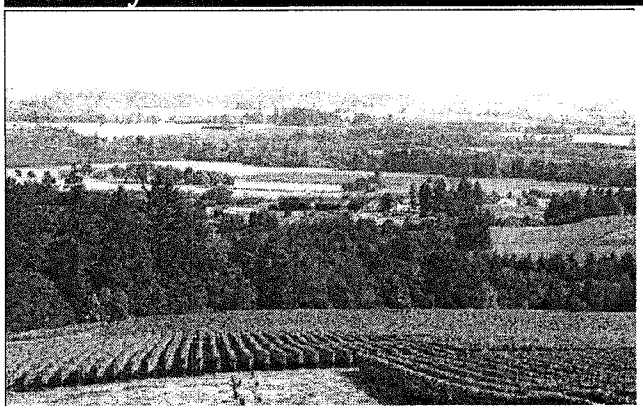
First commercial crush: 1996,
1,200 gallons.
1997 crush, 1,800 gallons
1998 crush, 1,800 gallons
2000 crush:

Pinot noir	32,000 gallons
Laurène	5,000 "
Chardonnay	2,000 "
Total 2000	39,000 gallons

Winemaker
Veronique Drouhin
Chef d' cave
Michael Beckly
Managing Director
Scott Paul Wright
Hospitality Director
Brad McElroy
Ownership
Maison Josef Drouhin

Product Line

1998 Pinot noir "Laurène," Oregon.
1999 Pinot noir, Oregon.
1998 Chardonnay, Oregon.



Vineyards overlooking valley

made to date and wanted to continue the general course taken, with special emphasis on viticulture. In the field, observing developments of newer vines is the main object. Which combinations of root stocks, cuttings, soils, and vineyards' exposure to the sun give what the winery is looking for? What will be the long term impact of such decisions?

The person on the scene to make such decisions is Robert's daughter Veronique Drouhin, who spends half of her time at the Dundee-area winery and half at Beaune. She has had primary responsibility for the vineyards and the winery from the beginning, helping to plant the vineyard in 1988 when she was in her twenties. These days, she is the ambassador from Domaine Drouhin Oregon to the world.

Her brother Philippe is in charge of vineyard management, making many trips back and forth between Dundee and Beaune. He is backed up on-site by Allen Holstein, a member of the cadre which broke ground there in 1988.

The hospitality program is expected to backup the dependably good wines by asserting Drouhin's prominence in the global world of wine. Additionally, tastemakers and other consumers visiting the Domaine will multiply efforts to educate the public about quality and value in wine as well as wine's growing importance in American society.

■

New plant stock was originally purchased from commercial nurseries. But these days the vineyard depends on its own new-plant nursery and greenhouse. All plant materials are now propagated on site. Various rootstocks and fruiting wood are planted in various combinations of clones in twenty-eight separate vineyard blocks (to be harvested and fermented separately).

Rootstocks, for example, are chosen for resistance to phyloxera damage, resistance to various diseases, holding back too-vigorous vine growth, toleration of cold or drought, and so forth. Once the rootstock is well rooted, cuttings from the previous harvest are grafted on, and then planted into a single block to be monitored for growth and quality of fruit.

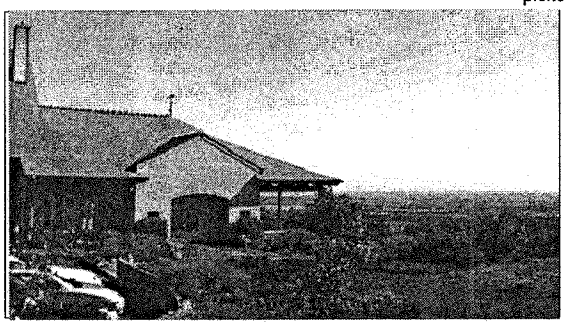
The cuttings to be grafted onto rootstock are selected in the age-old method of saving them from the plants that produce the best grapes. Our neolithic forefathers and foremothers started the selection process that eventually brought us Pinot noir and the other noble grapes.

Such is the making of a "Heritage Vineyard." In a few generations, the vineyard will have its own genetically distinctive vines and fruit.

In the beginning, the vineyard depended on purchasing plants for the 1988 planting. The most popular (and available) clones of Pinot noir in Oregon at the time were the Pommard and the Wadenswil clones. Veronique decided against the Wadenswil and pulled it out. Subsequently, all planting of Pinot noir has been to the Dijon clones (mostly numbers 114, 115, 116, 667, and 777). The Chardonnay also is planted to a number of Dijon clones. The Dijon clones of both Pinot noir and Chardonnay are planted one meter apart in the row and a meter-and-a-third between rows (that's about thirty-nine by fifty-one inches). That adds up to thirty-two-hundred plants per acre, very dense compared to most Oregon vineyards.

Vineyard planting continued after 1988 at the rate of three to ten acres a year, depending on a variety of conditions. Ninety-five acres are planted so far. Another fifty-five acres on the estate are yet to be planted, bringing the vineyard total to one-hundred-fifty acres. In addition to grapes from its own vineyard, the winery continues to buy grapes from four of its original growers, three in the Dundee Hills and one in the Eola Hills.

■



Main entryway to winery; Willamette Valley in distance

The winery is amazing. Its mission requires something out of the ordinary—imitating the practices small, family wineries of Burgundy typically employ, but on a much larger scale. Such Burgundian wineries often make only one or two barrels a year. Maison Josef Drouhin knows those small wineries extremely well from its long experience as wine négociant, buying up small lots a barrel at a time to blend into reliably fine bottlings for export under the firm's name.

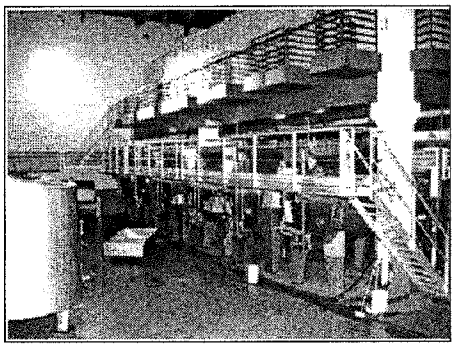
Veronique Drouhin, according to Wright, is the animating force responsible for the winery's success. It's her show. Wright spoke of her enthusiasm, even passion, for the wines. He believes one can perceive parallels of her personality and dedication in the character of the aged wines, just now coming into their own.

She makes her wines to be well aged. How long a vintage should rest in bottles depends upon the conditions under which the vintage was made. She aims for her Pinot noirs from good vintages to age about eight years. Then, down the hatch!

Her watchword from vine to bottle is "handle with care." It is a commonplace among knowledgable wine drinkers that Pinot noir displays feminine characteristics while other reds tend to be more boisterously masculine. Pinot noir's womanly tenderness needs only a minimum of intervention from the winemaker in good years.

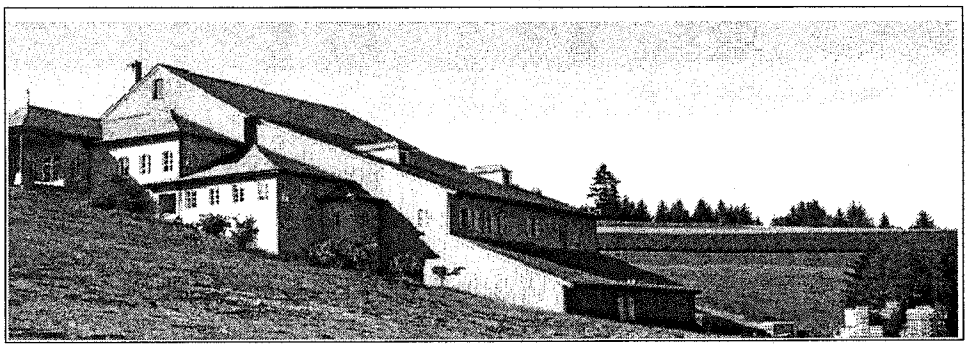
Here is the process: The grapes are picked in the cool of the morning or evening and immediately brought to the winery while still cool. Gravity helps here—the fruit is unloaded at the top level onto a sorting line (to separate out clusters with some green berries and pick out bits of leaves and stems) and then dropped into the destemmer. The destemmer is set slackly enough so that eighty- to ninety-percent of the fruit dropped through the floor to fermenters below are whole berries.

Un-crushed berries help to slow down fermention (which, uninhibited, can quite violently "boil" off torrents of carbon dioxide and nearly cook the wine). No yeast is added at the fermenters–the native yeasts resident in the vineyard and in the winery are preferred. The fermenters, in this case, are large stainless steel tanks laid on their sides. Loaded with fruit, they rotate all during fermentation. The temperature of the fermentation is controlled automatically by heating or cooling coils. Wright calls the fermentation temperature "cool to warmish."

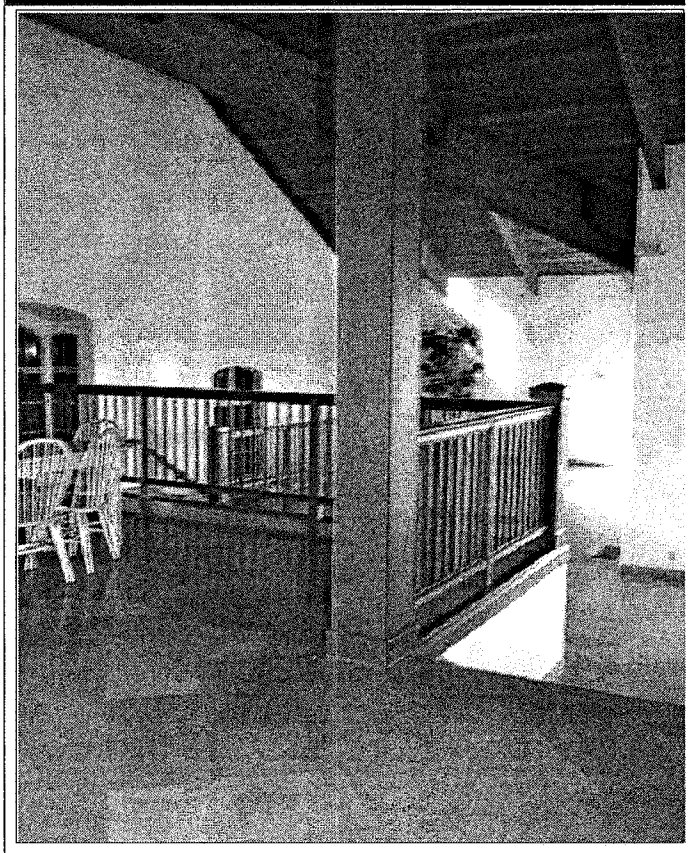


Rotary fermenters

Rotating fermenters sidestep the necessity of punching down the "cap" of seeds and skins, or pumping juice over the cap. The process assures picking up enough red pigment for the red wine's color and enough tannin to protect the aging wine. Under rotation, a cap cannot form and the extraction of pigment and



Gravity-feed winery; view from south



Public foyer to winery. The tasting bar is planned for this space

tannin is continuous.

The labor-saving rotaries stop when fermentation is complete. The fermented juice is allowed to drain to the press on the next level down. The hatch on the end of the tank is opened while a worm drive pulls all of the valuable sediment out to drain through the grate in the floor down to the press.

After pressing, the new wine is piped by gravity to a barrel room to begin its life of aging, one hopes, to "reflect the nature of the vintage and terroir," in Wright's words, "to reveal innate qualities—passionate, elegant wines of great finesse." He feels the wines have a good record of aging well, and should be held for six to eight years to reach their potential.

Veronique favors going light on the oak—the wines don't need it. Pinot noir sees only twenty percent new oak. Each lot sees some new and some old oak during aging at the winery. Chardonnay is fermented half in stainless steel barrels and half in oak, even less oak than the Pinot noir sees.

Veronique does the blending of the lots lying in separate barrels. She designates the best blend for the "Lauréne" label, a "super-premium, to date her top of the line. The vineyards are still young, with fifty-five acres still to be planted. Wright expects she will eventually produce an "ultra-premium" Pinot noir when she tastes a barrel of transcendent quality.

Meanwhile, aspiring young winemakers from around the world come to Domaine Drouhin Oregon for the privilege of learning about Pinot noir by working under the tutelage of Veronique Drouhin and the other staff. For the current crush, France and New Zealand are represented (as well as the U.S., of course).

We applaud the decision to open the winery to the public. If the tasting bar is ready by November, the winery may be open for the popular Thanksgiving Weekend Wineries Tour. We hope so.

—Rich Hopkins ❑

Wineries Profiled

During the Past Year

•

Benton-Lane Winery, April 2001.

Beran Vineyards, February 2001.

Chateau Benoit, July 2001.

Edgefield Winery, November 2000.

High Pass Winery, June 2001.

La Garza Cellars, September 2000.

Secret House Vineyards Winery, March 2001.

Stangeland Vineyards & Winery, May 2001.

The Academy, August 2001.

The Eyrie Vineyards, October 2000.

Van Duzer Vineyards, Dec.-Jan.2000-01.

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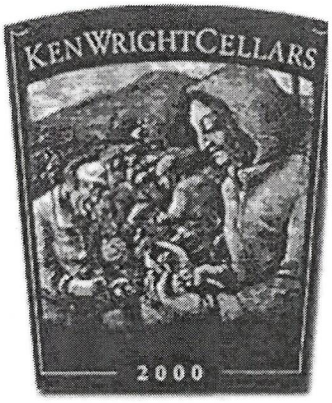
TASTING REPORT: Ken Wright's Dynamite Dozen

Oregon Vintner Lets The Vineyard Speak Through His Pinot Noirs



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Web: kenwrightcellars.com

WHEN KEN WRIGHT LOOKS AT PINOT NOIR he doesn't see just another grape variety he has to muscle through the winery until it surrenders into some homogenous house style; he sees a wide open canvas on which he can work all through the season with the goal of allowing each individual vineyard site to express its inherent character and style.

Wright came to Oregon in 1986. After he and a partner sold Panther Creek in 1993, he launched Ken Wright Cellars to focus on small-lot Pinot Noir (as well as some Chardonnay and Pinot Blanc) from the best vineyard sites available to him. Today, he produces around a dozen vineyard designated Pinots—many of which struggle to meet even the definition of "small" in terms of production—from his winery in Carlton, Oregon, on the Western side of the Willamette Valley. However, one taste of these wines tells you that they are truly "huge" in terms of quality and individual character with dramatic differences between the bottlings.

Searching For The Right - Or Wright - Sites

Wright and his Vineyard Manager Mark Gould have carefully selected vineyards from all around the Willamette Valley and beyond. From the Dundee Hills in the northern Willamette Valley come bottlings from the Abbey Ridge, Arcus and Nyssa vineyards. Vineyards in the Dundee Hills, also called the "Red Hills of Dundee" for the reddish soils, are some of the older plantings in Oregon with very deep soils and relatively high clay content. From the Yamhill Foothills just to the north and west of the Dundee Hills come several more vineyard bottlings: Guadalupe, McCrone, Shea, Wahle and Whistling Ridge vineyards. Soils in the Yamhill Foothills tend toward a sedimentary soil with sandstone base and are well drained.

Vineyards in the Eola Hills, south of McMinnville, have shallower soils and less clay than Dundee. Bottlings from the Eo Hills include the Canary Hill, Carter and Elton vineyards. One vineyard, Freedom Hill, comes from the Coastal Range south of Dallas, Oregon. The vineyard's soil is mainly sedimentary and tends to produce very firm and tannic wines.

Ken Wright's wines are all testaments to how good Oregon Pinot Noir can be. More than that, however, they truly demonstrate his talents in "hands off" winemaking and the dramatic contribution that the right vineyard site and proper selection can make to the finished bottle.

Tasting Notes: Ken Wright Cellars

(Listed alphabetically by vineyard name)

We tasted 12 bottlings from Ken Wright's 2000 vintage. All wines were tasted blind and scored before knowing anything other than the producer. Our notes and comments follow.

Pinot Noir Willamette Valley Abbey Ridge Vineyard 2000
Deep rich ruby color; spicy cherry, nutmeg aromas, toasty oak. Rich, ripe bright red fruit and spicy notes, balanced toas oak. Abbey Ridge Vineyard is located at the Northwest end of the Dundee Hills and is one of the older Ken Wright vineyard sources. The vineyard was planted in 1977 and sits at an elevation of 650 feet with a southwest facing. Soils ir Abbey Ridge are largely the Jory type -- a volcanic basalt-based soil. The vineyard is owned and managed by Bill & Juli Wayne.
365 cases made $50 Score: 89

Pinot Noir Willamette Valley Arcus Vineyard 2000
Very deep, rich ruby color; spicy, anise, licorice aromas, very fruity, young, lots of red raspberry and cherry. Very forwar

and fruity right now but balanced with good structure. Arcus Vineyard is in the Dundee Hills and sits at an elevation of 3 feet. Soil in the vineyard is the volcanic Jory type. Arcus is owned and managed by Archery Summit Winery.
200 cases made $50 Score: 91

Pinot Noir Willamette Valley Canary Hill Vineyard 2000
Deep rich ruby color; toasty oak aromas along with some black cherry on the nose; big, full, good structure, lots of complex black cherry, plum and cola flavors, long full finish. This wine has the structure and balance to age well. Canar Hill Vineyard is located in the southern portion of the Eola Hills and was planted in 1982 and 1983. The site has a southeast facing at an elevation ranging from 450 to 550 feet. The vines are vertically trellised and the reddish-brown sc is a mixture of Jory and Nekia types. Canary Hill is owned by Dick and Nancy Daniel.
650 cases made $50 Score: 92

Pinot Noir Willamette Valley Carter Vineyard 2000
Medium-deep ruby color; earthy aromas, lots of extract, earth, wood, tannin and depth; fruit is a little buried. Needs time develop. Carter Vineyard is lower at 350 feet than the nearby Canary Hill Vineyard and has a leaner soil profile with mai Nekia soil. The vineyard was planted in 1983 and is owned by Jack and Kathleen Carter.
320 cases made $50 Score: 90

Pinot Noir Willamette Valley Elton Vineyard 2000
Medium-deep ruby color; toasty oak, spice and cherry on the nose; big, full tannins, lots of extract and structure, fruit is subdued but black cherry notes are there. This is one worth waiting for. Elton Vineyard is located on the eastern side of the Eola Hills. The vineyard has an east-southeast facing and sits at an elevation of approximately 250 feet. Elton is owned and managed by Dick and Betty O'Brien.
150 cases made $50 Score: 93

Pinot Noir Willamette Valley Freedom Hill Vineyard 2000
Medium-deep ruby in color; earthy, black fruits on nose; big full and toasty on palate with balance and black cherry flavc Freedom Hill Vineyard was planted in 1980 at a site in Oregon's Coast Range just south of the city of Dallas. The soils a sedimentary in origin and nature. Freedom Hill is owned and managed by Dan & Helen Dusschee.
365 cases made $50 Score: 91

Pinot Noir Willamette Valley Guadalupe Vineyard 2000
Very deep in color, black/purple; earthy, black fruits on nose; big full and toasty on palate, lots of black cherry and earth flavors. Guadalupe Vineyard was planted in 1989 at an elevation of 350 feet. Soils are of the Willakenzie type—a shallo well drained top soil over siltstone. Guadalupe is owned by Jim Stonebridge and Kathleen Boeve.
680 cases made $50 Score: 93

Pinot Noir Willamette Valley McCrone Vineyard 2000
Deep ruby-purple in color; very ripe black fruit aromas, big, full, intense, lots of black fruit, spice and toasty oak. Clean a well balanced with lots of depth and a full lingering finish. McCrone Vineyard is located in the Yamhill Foothills at an elevation of 400 feet with a south to southwest facing. Planted in 1992, the site has Willakenzie soils. McCrone Vineyar owned by Don and Carole McCrone.
220 cases made $50 Score: 92

Pinot Noir Willamette Valley Nysa Vineyard 2000
Very deep, rich ruby color, muted notes of spice and oak on nose, seems closed now; tart red fruit flavors; more tannic l seems less forward than others. Nysa Vineyard was planted in 1990 and is owned and managed by Michael Mega. The vineyard sits with a southeast to northeast facing in the middle of the Dundee Hills, roughly between Domaine Drouhin and Archery Summit and has Jory soil.
285 cases made $50 Score: 86

Pinot Noir Willamette Valley Shea Vineyard 2000
Deep ruby-purple color; complex nose of red cherry and blueberry and spice; balanced, good structure, great fruit and spice; blueberries, red cherry and earth. Dynamite. Shea Vineyard was planted in 1989 and is located just west of the Chehalem Valley in the Yamhill Foothills. The site lies at an elevation of 350 feet and the soils are primarily Willakenzie. Shea Vineyard is owned by Dick Shea.
560 cases made $50 Score: 94

Pinot Noir Willamette Valley Wahle Vineyard 2000
Medium-deep ruby color; deep and complex spices, earth, clove aromas—these notes carry to the palate; very big and but with the fruit and structure to match. Will age well. Wahle Vineyard was planted in 1974—one of the Yamhill Foothill first vineyard plantings. The site lies at 425 feet and is made up primarily of Willakenzie soil. Wahle Vineyard is owned a managed by Betty Wahle.
135 cases made $50 Score: 93

Pinot Noir Willamette Valley Whistling Ridge Vineyard 2000
Deep ruby-purple color; closed on the nose, hints of blackberry and anise on the nose; very big flavors, black fruits, earl

anise with good structure and a balanced finish. Whistling Ridge Vineyard is adjacent to Beaux Freres on the southwest end of the Chehalem Ridge. The elevation is 450 feet with a southern facing. Whistling Ridge is owned and managed by Dick Alvord and Patricia Gustafson.
110 cases made $50 Score: 92

About Our Tastings

Generally, there are two types of tastings that appear in each issue of ***PinotReport***. The first are our regular "New Releases" tastings of Pinot Noirs new on the market. The second are our "Tasting Reports" that focus on a particular appellation, producer or style. The mechanics behind both of these tasting types is the same.

How We Taste

We taste wine in flights of usually no more than 10 wines. These flights are organized appropriately based on the particular type of tasting. We generally taste no more than 30 wines in a tasting session. Ringers and duplicate wines are inserted in tastings to measure consistency and whether the Editor is paying attention.

All tasting unless otherwise noted is done blind by the Editor. From time to time other tasters may participate, but their scores and comments are not part of the official tasting record. The tasting coordinator (who does not taste) arranges and bags all wines, which are then scored and comments recorded before bags are removed.

Our tastings are done under controlled, consistent conditions. We do not under any circumstances use tasting notes from large tasting events or other sub-optimal tasting venues in our published tasting reports.

Wine Prices and Sourcing

Wine prices vary all around the country and can often vary significantly within the same city. We make every effort to only publish a winery's suggested retail price. This price in many cases will be higher than you can find in your local store. The wines we taste either come from the wineries in the form of tasting samples (always finished bottles ready for market) or wines we purchase at retail or at the winery.

Our Wine Ratings

The wines we taste are rated using a 100-point rating system. We fully understand the ongoing debate over the use of the 100-point system and while we respect the rights of those who simply despise the system to continue to do so, we believe that the scale has value when used with the accompanying tasting notes as a relative guide to wine quality that has the added benefit of being familiar and truly intuitive for most consumers.

Here is ***PinotReport***'s 100-point scale:

96-100 Superior; it doesn't get better.
90-95 Outstanding; approaching the best
80-89 Above Average; a fine Pinot.
70-79 Average; OK if it's all you have.
60-69 Below Average; not recommended.
50-59 Undrinkable.

Wednesday, May 15, 2002

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Web-weaving by Cliffwood Organic Works

Ken Wright Cellars

2000 Pinot noir Futures

To be shipped to you around 12/2001

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Oregon Reserve Pinot Noir Club

Received Ken Wright 99 Pinot Noirs in their shipments in December, January, and February of 2001!

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1999 Ken Wright Pinot Noir Notes

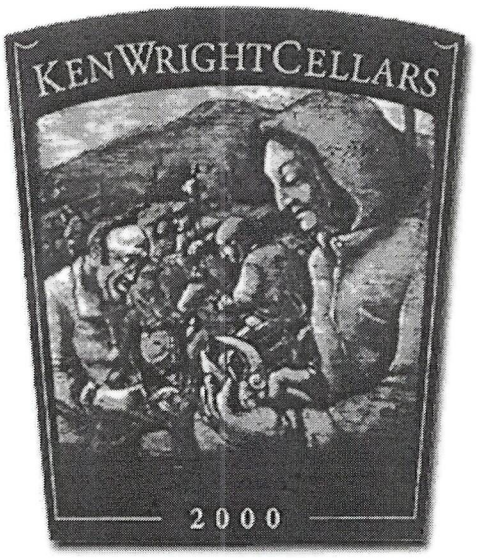
1998 Ken Wright Pinot Noir Notes

Ken Wright Harvest 2000 tour

Ken Wright Home page

Shipping charge for Ken Wright futures will be charged to your credit card when they are released- we will ship Air freight only, average charge $65 per case 2 bottles.

->Go to wine ordering



Another great vintage, the fruit from 2000 was beautiful- a rainy spring led to a dry, warm summer with cool evenings and a long dry fall. The wines are of wonderful intensity and reflect the expertise Ken's 27 years of winemaking has given him. Each wine is different, reflecting the vineyard sites, clones, and winemaking. As good as the 99 vintage, we think, but there's not as much of it- harvest was off by several hunderd cases this year. These are wonderful wines, very fine, worthy of collection and cellaring by the most discerning winelover.

2000 Guadalupe Vineyard

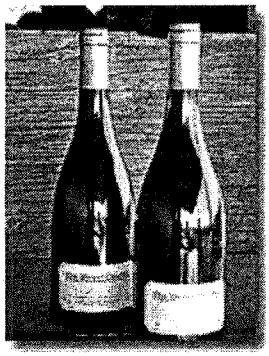
One of our two favorite of Ken's single vineyard wines, always a big bruiser, we called the 99 the Mohammed Ali of Ken's wines- big and bruising, yet light on its feet. The 2000 exhibits that same character, but perhaps an additional year of vine age has increased complexity and toned down the exhuberance of this vineyard's wines a little.

99 Tasting Notes: Our other favorite, the wine has an inky black color that stained the wine glass. Flavors were of red and black fruits, cedar, mint, black cherry and plum, massive tannins balanced by huge fruit. Hugely extracted. We call this the Mohammed Ali of Ken's 99 single vineyard Pinot Noirs- both huge in body and light on its feet. This is a big, broad shouldered wine, not for the faint of heart.Sort of a California Cab of Pinot noirs. Extraordinary!

Wine Spectator Guadalupe 98 vintage review- 90 points
"Especially youthful, with a gamy edge to the dense blackberry and currant flavors, all balancing on a sharp edge of acidity. Finishes balanced and refined, but needs time to come together. Best from 2001 through 2007. (480 cases produced)"

The winery says: The vineyard was planted in 1989 and represents the definable change of the Jory soils of the Dundee Hills to the Willakenzie soil of the Yamhill Foothills. It is spaced 7' by 5' and is planted to the Pommard clone. The Willakenzie soil is a well-drained shallow soil over siltstone. It lies at an elevation of 350'. The vineyard consistently produces small berries and clusters that are intensely colored. The wine possesses the character of black fruits, cocoa,

leather and earth. Approximately 425 cases will be produced. Jim Stonebridge and Kathleen Boeve own the vineyard. It is managed by Joel Myers.



2000 Canary Hill Vineyard

This wine usually drinks well fairly soon after release- well balanced, easy drinking.

99 Tasting Notes: Dark ruby color that stained the glass. Flavors of tart black cherry, chocolate and cassis, flavors cascading off the palate including candied black cherry, fruitcake, black berry, plum, and black currant, the tannins are wonderfully integrated in this big, easy drinking wine. Wonderful balance of big fruit, big tannins, big acid make this an immediate stunner with a future if laid down a year or so after bottling.

Wine Spectator review, 98 vintage Canary Hill 90 points
"Bright, juicy, distinctive for the floral, citrusy edge to the core of blackberry and spice flavors. Everything lingers nicely on the long finish. Drink now through 2006 . (480 cases produced)"

The winery says: Located at the southern end of the Eola Hills and faces southeast. The vines were planted in 1982 and 1983. They are vertically trellised and are of the Pommard clone. Elevation is 450' to 550'. The soil is a mix of Jory and Nekia. Both are formed from igneous rock and have a reddish-brown tint. This site, however, has less depth than similar soils in the Dundee Hills. Wine from this vineyard is typically very forward, with aromas of black cherry and cola. Approximately 380 cases will be produced. The vineyard is owned by Dick and Nancy Daniel, and managed by Mark Gould.

2000 Pinot Noir Carter Vineyard

99 tasting notes: Color dark garnet/ruby with beautiful inner glow. The nose is smoky, quiet, the flavors big, with sweet black cherry fruit dominating. Tempting notes of raspberry and spice show through the very big tannin and acid backbone. The big fruit flavors are somewhat overwhelmed by the tannins, which is characteristic of this wine when first made. Ken has worked with the Carter site for ten years and the wine typically softens and shows stellar flavors and beautiful, balanced structure, a year or so later than the Canary Hill or Shea, for example.

Wine Spectator review, Carter 98 vintage 91 Points:
"Broad and generous, densely packed with flavors of black cherry and currant and a touch of earth, nicely balanced by a refined thread of acidity. Drink now through 2006 . (265 cases produced)"

The winery says: A small 5-acre vineyard located just 1 mile from Canary Hill in the Eola Hills. Carter Vineyard is lower on the hillside yet has a leaner and less fertile soil. It is mainly Nekia soil, which is formed from weathered basic rock. It lies at an elevation of 325' and was planted in 1983. This bottling is exclusively comprised of the Wadenswil clone. The wine is firmer than Canary Hill in its youth but evolves beautifully after a few years in bottle to show black fruits and fresh, healthy earth scents. Approximately 300 cases will be produced. The vineyard is owned by Jack and Kathleen Carter, and managed by Mark Gould.

Freedom Hill Vineyard

The winery says: We work with one site in the Coast Range just south of Dallas, OR. Freedom Hill Vineyards soil type is known as Bellpine, which is sedimentary in origin. The clone is Pommard and the vineyard was planted in 1980. The wines from this site are the firmest and most structured that we work with. They have great longevity. The vineyard is owned and managed by Dan & Helen Dusschee.

2000 Pinot Noir Abbey Ridge

The winery says: Planted in 1977, Abbey Ridge is one of the older vineyards in the Dundee Hills from which we source two clones: Wadenswil and Coury (also known as the suitcase clone). The vines are own-rooted with 9x6 spacing. Located at the northwest end of the Dundee Hills, the vineyard is at an elevation of 650' with a southwest inclination. Soils are of the Jory type, which are volcanic in origin and basalt based. Red fruits dominate the aroma with nutmeg and earth. Approximately 325 cases will be produced. The vineyard is owned and managed by Bill & Julia Wayne.

2000 Pinot Noir Shea Vineyard

One of our two favorite vineyard designate wines of Ken's, Shea is always a stunner.

99 Tasting notes: Our favorite of all Ken's 99s, this wine is a stunner. Dark dark color staining the glass. Nose had massive cherry fruit, spice, rapidly evolving array of fruit flavors that kept changing in complex and interesting ways. Every red and black fruit you could imagine wafted past the palate in a seemingly never ending series of taste sensations. Flavors included black berry, black and red raspberry, black cherry, allspice, clove, nutmeg, even subtle minty herbal hints that could be from adjoining mint fields. We bought a full barrel of this wine, the best Pinot noir we have ever experienced, from any part of the world.

Wine Spectator Review 98 vintage Shea Vineyard
93 points, Cellar Selection
"One of Oregon Pinot Noir specialist Ken Wright'snew releases, this has a purity of flavor and agraceful balance that are totally disarming. A seductive wine, its pretty raspberry, black cherry and floral aromas and flavors linger enticingly on the open-textured finish. Best from 2001 through 2008. (360 cases produced)"

The winery says: This site is in the Yamhill Foothills just west of the Chehalem Valley. Our fruit is sourced from two small blocks (2.02 and 2.72 acres), one of which is planted to the Pommard clone, the other to the Wadenswil clone. Soils are primarily Willakenzie. It lies at an elevation of 350' and was planted in 1989. The wine from this vineyard has a complex array of aromas and flavors including black and red fruits, particularly blueberry, spice and earth. Approximately 425 cases will be produced. The vineyard is owned by Dick Shea and managed by Javier Marin.

2000 McCrone Vineyard

99 Vintage tasting notes: Dark ruby color. The scent is herbal, with hints of tea and dark black fruit. The flaovrs are broad, fleshing out beautifully. Red raspberry and other red fruits dominate, with anise and nutmeg on the finish. A tightly wound wine, tannins big, but balanced by equally big fruit.

Wine Spectator Review 98 McCrone 90 points
"Smooth and polished, generous with its spicy berry and cherry flavors that grow with each sip. Finish echoes cinnamon and nutmeg. Needs time to settle down, but it's a winner. Best after 2001. (145 cases produced)"

The winery says: Located in the Yamhill Foothills, this is a densely planted vineyard (1 meter x 2 meters). The soil is of the Willakenzie type that is extremely well drained and promotes earlier ripening. Elevation is 400' with a south-southwest inclination. Slopes are 5 to 15 degrees. The vineyard was planted in 1992 to the Dijon 115 clone grafted on 3309. The wine from this site is powerful, dense and deeply colored focusing mainly on black fruits. Approximately 150 cases will be produced. Don and Carole McCrone are the vineyard owners. John Gilpin is the vineyard manager.

The Vineyards

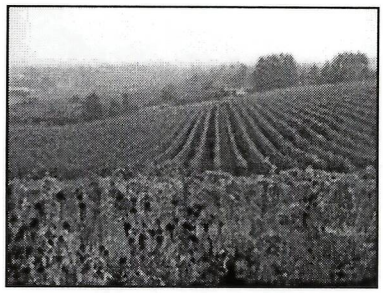
The Bergström family owns two vineyards, the Bergström vineyard and the de Lancellotti vineyard, and has exclusive farming contracts with Wahle and Archery Summit Vineyards.

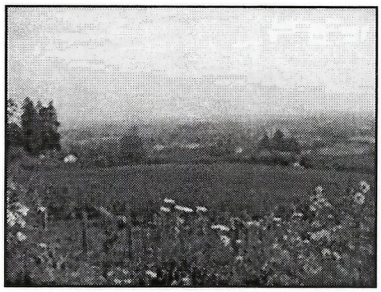
Our family vineyards are **hand-farmed**. We use **sustainable agriculture** and **organic practices** to ensure the health and vitality of these very special sites. Having vineyard land on both the red Jory soils of Dundee (Bergström vineyard) and the sandy Willakenzie soils of Calkins Lane (de Lancellotti vineyard) gives us **great diversity and complexity in our wines**.

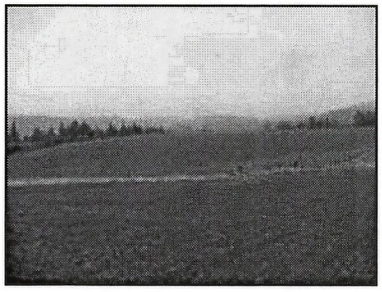
Bergström Vineyard
de Lancellotti Vineyard

We have the pleasure of working with two other fine vineyards, Arcus and Wahle. The men and women who farm these vineyards for us are top notch. Through our contracts we control yields and farming practices to ensure that only the best and most concentrated fruit comes out of these fine vineyard sites.

Arcus
Wahle Vineyard







Bergström Vineyards

Bergström Vineyard

The Bergström vineyard is a 15-acre vineyard in the Red Hills of Dundee on Worden Hill Road. With east- and south-facing slopes and an elevation of 350-450 feet, this densely planted warm vineyard site produced our best fruit of the 2001 vintage. The site is one of the more envied in the Dundee Hills and we expect great things from this vineyard in the years to come.

The Bergström Vineyard is blessed with both rocky terrain and red jory clay, creating an ideal environment for balanced vine growth and sustained fruit ripening throughout the dry summer months. Our vineyard is planted at a high density to several of the traditional older clones (Pommard and Wadenswil) and newer Dijon clones (114, 115, 667, and 777) on an assortment of rootstocks to best fit their microclimates. The best fruit from the Dundee Hills produces wines that have often been likened to the wines of Volnay or Pommard in the great Cote de Beaune.

[TOP]

de Lancellotti Vineyard


de Lancellotti Vineyard

The de Lancellotti vineyard is a 26-acre parcel on the Willakenzie-soil slopes of the Chehalem Mountain, adjacent to the Ribbon Ridge. Here we have planted eight acres to the Pommard, Wadenswil, 115, and 777 clones, on a variety of rootstocks.

This vineyard was planted in 2001, and will not come on line until 2003, but we expect great things from it. It is another warm site with a magnificent south-facing hillside. The sand-dominated soils promise that vines will work hard to push their roots deep in search of water, producing concentrated fruit of great character, as the district is known for its lush and earthy Cote de Nuits styled Pinot Noir.

[TOP]

Arcus


Arcus Vineyard

Arcus is owned and operated by Archery Summit Winery in the Red Hills of Dundee. Arcus is the old Archibald vineyard, which includes many older vines and several newer plantings of the Dijon clones.

We have had a close relationship with the Archery Summit team since 1999, and have been fortunate to be able to work with the Arcus vineyard since that time. Only a stone's throw from the Bergström Vineyard, Arcus has similar slopes and soils and is planted to several of the same Dijon clones. The Arcus wine often produces graceful, full-bodied Pinot Noirs with aromas of violets, carnations, chocolate, bright red-fruit liqueur, and dark cherry-like fruit.

Wahle Vineyard

[TOP]

Wahle Vineyard is above the towns of Yamhill and Carlton. Betty Wahle has been farming on her Yamhill/Carlton south- and east-facing hillside since the 1970s. Her Pinot Gris vines, planted in Willakenzie soil, are nearly 30 years old. Betty works very closely with Josh to maximize the ripeness and concentration of this fantastic vineyard. These old vines produce a very rich and stylish Alsatian-style Pinot Gris.

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Phone 503.554.0468 Fax: 503.554.0078

www.bergstromwines.com
contactus@bergstromwines.com
Updated October 9, 2002

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D

Business Name	Address	Phone #	Links
D & K Plumbing	PO Box 149 Newberg, Oregon 97132	503-538-7405	
D-Nest Properties	Newberg, Oregon 97132	503-538-3195	
D.L. Richards Concrete	PO Box 748 Newberg, Oregon 97132	503-538-6860	
Dairy Queen	404 W. First St. Newberg, Oregon 97132	503-538-6112	
Danielson's	1140 N Springbrook Rd. Newberg, Oregon 97132	503-538-6161	
Dave's Trophy Shop	331 N. Baker McMinnville, Oregon 97128	1-800-347-4794	
David Campbell Painting	175 NW Carmel Circle Dundee, Oregon 97115	503-538-5342	
Davis Lock & Key	3302 Portland Road Newberg, Oregon 97132	503-537-1133	
Dayton, City of	PO Box 339 Dayton, Oregon 97114		
Deann McCormick	606 E 1st Newberg, Oregon 97132	503-538-1251	
Deborah Cook Court Reporting	1102 N Springbrook Ste #132 Newberg, Oregon 97132	503-537-0339	
Del/Pix Photo	8680 NE St. Paul Highway Newberg, Oregon 97132	503-538-3460	
Delano Supply	114 S Meridian Newberg, Oregon 97132	503-538-7790	
Denman Fine Woodworking	10425 NE Fox Farm Road Dundee, Oregon 97115	503-538-6547	
Dental Components, Inc.	PO Box 228 305 N. Springbrook Newberg, Oregon 97132	503-538-8343	
Denture Center of Newberg	446 N Villa Road Newberg, Oregon 97132	503-538-3424	
Dew Gardens	9660 NE Fox Farm Road Dundee, Oregon 97115	503-538-0500	
Diamond B Training Stables	14720 NE Tangen Road Newberg, Oregon 97132	503-538-7956	
Dog Leg Ranch	28300 N.E. Wilsonville Rd. Newberg, Oregon 97132	503-554-0711	
Domino's Pizza	717 E 1st Newberg, Oregon 97132	503-538-7777	
Don's Barber Shop	809 E. First St. Newberg, Oregon 97132	503-538-9692	
Door Man, The	814 E Second St. Newberg, Oregon 97132	503-538-3359	
Doran Automotive	411 S Meridian Newberg, Oregon 97132	503-538-7488	
Dormer's Screen Printing	112 S Edwards	503-538-1234	

	Newberg, Oregon 97132	
Double M Tire Factory	2305 Portland Rd. Newberg, Oregon 97132	503-538-2104
Down II Details	503 E. First St. Newberg, Oregon 97132	503-538-6901
Doyle Engineering, Inc.	24001 NE Ellis Ln. Newberg, Oregon 97132	503-538-2380
Drabkin & Tankersley	701 N. Evans McMinnville, Oregon 97128	503-472-0344
Dreyer's Grocery & Deli	703 N Deskins Newberg, Oregon 97132	503-538-6010
Drivtrain Specialties	205 S. Harrison Newberg, Oregon 97132	503-538-1275
Duck Pond Cellars	PO Box 429 23145 Hwy 99W Dundee, Oregon 97115	503-538-3199
Dundee Bistro, The	100-A SW 7th Dundee, Oregon 97115	503-554-1650
Dundee Chiropractic Clinic	PO Box 86 Dundee, Oregon 97115	503-538-9119
Dundee Family Dentistry	120 SW Seventh St. Dundee, Oregon 97115	503-538-8860
Dundee Hills Farm	10100 NE Worden Hill Road Dundee, Oregon 97115	503-538-7614
Dundee Inn	974 SW Highway 99W Dundee, Oregon 97115	503-538-7301
Dundee Market	710 SW Hwy 99W Dundee, Oregon 97115	503-537-9605
Dundee Orchards, Inc.	PO Box 327 Dundee, Oregon 97115	503-538-8105
Dundee Springs Winery	9605 NE Fox Farm Rd. Dundee, Oregon 97115	503-554-8000
Dundee, The City of	PO Box 220 Dundee, Oregon 97115	503-538-3922
Dura-Craft, Inc.	PO Box 459 Newberg, Oregon 97132	503-538-3100

Wine Press Northwest

Our passion is Pacific Northwest wines

7

In with the New World

Burgundy's famous red grape finds a comfortable home in the vineyards of Oregon

From the Fall/Winter 1998 issue

By Nick Tomassi
Wine Press Northwest

To understand pinot noir (pee-no nwar), one must first know something of its origins. To begin with, noir means "black" in French. The word pinot comes from the shape of the grape clusters, which look like pine cones, and "pine cone" in French is pin.

Pinot noir has the following general characteristics: It is a dry red wine with a medium ruby-garnet color, an aroma of berries, cherries, violets, new leather and wood, and it tastes of strawberry, raspberry, oak and cedar. It is a medium-bodied wine with a smooth, silky feel in the mouth, light tannins and a lingering finish. It is best served cool.

We know much about pinot noir from various historical sources and numerous wine writers. It is an old variety, probably selected from wild vines at least 2,000 years ago. Pinot is believed to have existed in Burgundy in the 4th century A.D. A vine called pinot already was described in records of Burgundy in the 14th century and is linked with the

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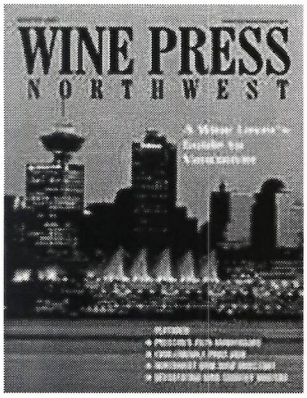

powerful medieval monasteries of France and Germany.

The wines of the Old World (France, Italy, Germany and Spain) usually are named after the place where the grapes are grown and the wine is made. For example, pinot noir is the noble grape from the Burgundy region of France, and the wine called Burgundy is from that region. Any wine made from the pinot noir grape anywhere else is properly called by its varietal name, pinot noir.

Vitis vinifera - that is, European - grapes came to the New World by a number of different routes. Immigrants settling in California in the early 1800s are said to have brought and planted cuttings from the Old World. Records indicate that, in 1833, Jean Louis Vignes imported French vines to California and planted them in his El Aliso vineyard in Los Angeles. In 1861, Agoston Haraszthy, assigned to study wine grape growing in Europe, sent 100,000 vines of 300 varieties to California.

Vinifera grape growing and winemaking came to Oregon in the 1850s, when early settlers brought cuttings by way of the Oregon Trail and from California. Most of the early varieties did not make good wine, and Prohibition struck before the Oregon wine industry was developed. After repeal, wines were mostly sweet, made from berries and other fruits. Demand for this type of wine decreased in time, and by 1960, only four wineries remained in Oregon.

In 1961, Richard Sommer bought land in the Umpqua Valley near Roseburg and planted cuttings from wine grapes he brought from California. In 1965, David Lett arrived with a degree in viticulture from the University of California-Davis and a plan to find a cool climate suitable for planting pinot noir and other varieties from Burgundy. Lett decided on the Dundee Hills in the Willamette Valley, southwest of Portland, and founded Eyrie Vineyards, which still produces some of the best pinot noir wines in Oregon.

Another early pioneer is Dick Erath of Erath Vineyards, also still producing great wines in the Dundee Hills near Newberg. He and a few others followed Sommer and Lett in the 1960s, and by the end of the 1970s, Oregon's wine industry was growing at a rapid pace. Most of the wineries and vineyards of that time were developed in the

Wine of the Week

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Willamette Valley. Today, it is the most extensive of Oregon's appellations, about 100 miles long and 60 miles at its greatest width. There are 120 wineries in Oregon, and the wines made there, especially pinot noir and pinot gris, are believed to be comparable with the best in the world.

Oregon's pinot noir came into worldwide prominence with a famous 1979 tasting called "The Olympics of the Wines of the World," sponsored by a French food and wine magazine. About 330 of the best wines from 33 of the world's wine-producing regions competed. The French wines did not fare so well. Robert Drouhin of the highly regarded Burgundian wine firm Joseph Drouhin proposed a rematch of the top-scoring non-French pinot noirs against Burgundies from the Drouhin cellars.

At the rematch, the first- and third-place wines were Drouhins, but in second place, two-tenths of a point out of first, was Lett's 1975 Eyrie Vineyards South Block Reserve. Results of the tasting spread rapidly and brought Lett and Eyrie Vineyards instant recognition. Attention focused on them and on Oregon's wine industry as the New World's mecca for pinot noir.

Drouhin must have been impressed because in the summer of 1987, Lett and David Adelsheim, another prominent Oregon winegrower, helped arrange his purchase of 98.5 acres in the Dundee Hills. Drouhin has since purchased additional acreage and built the winery now known as Domaine Drouhin Oregon. His daughter Veronique, a French-trained enologist, is winemaker at Domaine Drouhin Oregon and continues to spend at least two months a year at the winery overseeing the winemaking.

Although there is little consistency in performance in its homeland, pinot noir has been transplanted to almost every one of the world's wine regions except the hottest, where it does not do as well. The vines planted in the cool climates of other regions of the world in recent years, such as Canada, Australia and New Zealand, are showing some promise. And Bainbridge Island Winery, a 30-minute ferry boat ride from Seattle, is producing a Puget Sound pinot.

Pinot noir is considered by some the most sensual and satisfying of all wines. Where merlot and

cabernet sauvignon are big, forceful and intense, a good pinot noir is subtle, smooth and elegant. The grapes are small, sweet, juicy and generally resistant to cold winter weather. Its early growth, however, exposes it more than others to spring frosts. There are many varieties of pinot noir, but the grower who opts for the best quality prefers the small pinot, despite its lower yield.

Pinot noir grapes seem to produce the best quality wine on limestone soils and in relatively cool climates where this early ripening vine matures slowly, keeping its aroma and acidity. All but one of the 12 Oregon winemakers interviewed for this story believe in holding the yield to less than three tons per acre. The exception is Scott Henry, developer of the Scott Henry Trellis System, who believes his trellis system at his vineyard allows him to grow six tons per acre. Vineyards around the world, and some in the Northwest, are using and experimenting with it.

Pinot noir is one of the most food-friendly wines and goes wonderfully with a wide range of food. It has a natural affinity for complex seafood dishes, veal, roast pork, mushrooms, mild sauces and light beef dishes.

Oregon pinot noir fame is such that most of Oregon's 120 wineries produce the pinot noir varietal, so there is a wide variety of styles from which to choose. Prices range from under $10 to $40, with some going much higher.

A tour of the wineries should begin with a copy of the Discover Oregon Wineries brochure, available at most of the wineries. A free copy is available by writing the Oregon Wine Advisory Board at 1200 N.W. Naito Parkway, Suite 400, Portland, OR, 97209. Its phone number is 800-242-2363, and its Web site is www.oregonwine.org

And Oregon pinot noir fits in nicely with my motto: "Life's too short to drink bad wine!"

Tasting notes

Current information from experts indicates the 1996 vintage is expected to be one of the best in recent years.

A private tasting with friends sampled five 1996 pinot noirs, two from Washington and three from

Oregon. We decided they all were well made, but the almost unanimous top choice was from Foris Vineyards (Cave Junction, Ore.), $12. Color: dark ruby. Aroma: dark red fruit. Taste: smooth and silky.

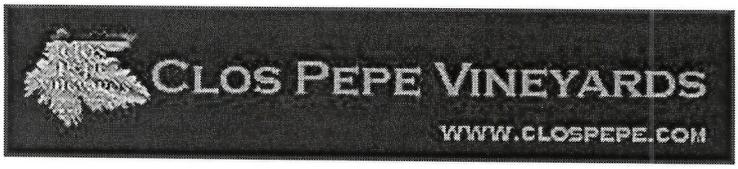
A close second was the Montinore Vineyards Winemakers Reserve (Forest Grove, Ore.), $13, from its estate vineyards. Color: medium garnet-ruby. Aroma: fruity-blackberry, raspberry, cherry, a touch of light oak. Taste: a blend of blackberry, raspberry, cherry and a lingering chocolaty finish that will get silkier with extended bottle age.

Elk Cove's "Roosevelt" (Gaston, Ore.), $40, and Columbia Winery (Woodinville, Wash.), $13 also were tasted and enjoyed. These were a bit more heavy-bodied and tannic. The consensus was that they had a lot of promise but needed more bottle time.

We tasted one of my favorites, a Salishan '94 pinot noir ($15). Joan and Linc Wolverton planted their estate vineyard in LaCenter, Wash., on a hillside above the East Fork of the Lewis River, just east of Interstate 5. Linc once told me he believes pinot noir is not as difficult to grow and produce as popular opinion would have us believe. Their pinots are medium-bodied, smooth and silky, with great aroma and taste. That's probably why they make the claim that theirs is "Washington's answer to Oregon pinot noir."

Nick Tomassi teaches wine appreciation at Olympic College in Bremerton, Wash., and writes a wine column for The (Bremerton) Sun.

Check out Nick Tomassi's Wine Cabinet



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OREGON WINES: (Wes recommends Pinot Noir and Pinot Gris)

Wes' Favorite Oregon Sites and Wines:

Bethel Heights Vineyard Eola Hills Pinot Noir, Pinot Blanc, Pinot Gris, Chardonnay. Winery and wines.

Duck Pond Cellars Willamette Pinot Noir, Chard., Merlot, Cabernet. Winery, tasting notes, ordering. Recommended.

Erath Vineyards Dundee Hills Pinot Noir. Winery and vineyard information, tasting notes, food and wine.

Oregon Wine Good overview and educational site. Oregon wine narrative, events, wines, wineries.

Rex Hill Winery, OR Yamhill (Willamette) Pinot Noir, Pinot Gris, Pinot Blanc, Chardonnay.

Raptor Ridge Wines Pinot Noir, Chardonnay, more. I love their label. Birds of prey are cheap employees!

Sokol Blosser Yamhill Pinot Noir, Pinot Gris, Chard, more. Winery details and info, tasting notes, awards, ordering. Nice.

The Best of the Rest (Oregon):

Airlie Winery Willamette Pinot Noir, Pinot Gris, Chard. and Alsacian Style. Winery and wines info.

Amity Vineyards Yamhill Pinot Noir, Pinot Blanc, Riesling, Gewurtz. Winery, tasting notes, winemaker profile.

Ashland Vineyards Southern Oregon Bordeaux varietals. Winery, tasting notes, news, serving temperatures, wine club.

Avalon of Oregon: wine descriptions, winery info, winemaker bios, viticultural info, NW wine news, and sell wine online.

Bethel Heights Vineyard Eola Hills PInot Noir, Pinot Blanc, Pinot Gris, Chardonnay. Winery and wines.

Bridgeview Vineyards & Winery Illinois Valley Pinot Noir, Pinot Gris, Merlot, Gewurtz, and Riesling. Vineyard info,ordering.

Callahan Ridge Winery Roseburg Cabernet, Zin, Pinot Noir, Merlot, Riesling. Winery, tasting notes, events.

Carabella Vineyard Wilsonville Pinot Noir, Pinot Gris, Chardonnay. Winery and vineyard information, wine and varietal notes.

C .teau Benoit Winery Yamhill Pinot Noir. Winery and wines.

Chehalem Wines Newburg Pinot Noir, Pinot Gris, Chardonnay. Winery, tasting notes, newsletter, events, awards, reviews.

Duck Pond Cellars Willamette Pinot Noir, Chard., Merlot, Cabernet. Winery, tasting notes, ordering. Recommended.

Erath Vineyards Dundee Hills Pinot Noir. Winery and vineyard information, tasting notes, food and wine.

an Vineyards Rickreall Chardonnay, Pinot Noir, Sparkling. Winery and vineyard information, tasting notes, winemaking.

Foris Vineyards Illinois River Val;ley Chard, Pinot Noir, Pinot Gris, Cab., Merlot.Winery & vineyard, ordering.

Henry Estate Umpqua Chard, Pinot Noir, Riesling, Cabernet, Gewurtz. Winery, tasting notes, viticulture, awards, wine club.

Helvetia Vineyards and Winery Tualatin Valley Pinot Noir, Chardonay, Pinot Gris. Wine list , news & events.

Hillcrest Vineyard Umpqua Valley Riesling, Chard, etc. Wines and winery details and info.

Hinman Vineyard/Silvan Ridge Eugene area Pinot Noir, Chardonnay Cabernet, Pinot Gris, Riesling. Wine notes, location.

Oregon Pinot Noir Club Ordering, availability, information, tasting notes, touring, sales.

Oregon Wine Good overview and educational site. Oregon wine narrative, events, wines, wineries.

Oregon Wine. org Learn all about Oregon's wine industry--past, present and fvuture.

Rex Hill Winery, OR Yamhill (Willamette) Pinot Noir, Pinot Gris, Pinot Blanc, Chardonnay.

Raptor Ridge Wines Pinot Noir, Chardonnay, more. I love their label. Birds of prey are cheap employees!

Secret House Vineyards Willamette Pinot Noir, Chardonay, Riesling and Sparkling. Winery and wines.

Serendipity Cellars Willamette Chenin Blanc and Zinfandel, winery details and info, tasting notes, storing and serving wine.

Shallon Winery Astoria fruit wines. Winery details and info, winemaker.

Sokol Blosser Yamhill Pinot Noir, Pinot Gris, Chard, more. Winery details and info, tasting notes, awards, ordering. Nice.

Springhill Cellars Willamette Pinot Noir, Pinot Gris, Chard., Riesling. Winery details and info, wine list with tasting notes.

Stangeland Vineyards & Winery Eola Hills Pinot Gris, Pinot Noir, Chard, Gewurtz, winery details and info, tasting notes.

Valley View Winery Applegate Valley Cabs, Merlot, Chardonnay, Syrah. Winery, tasting notes, news, corks, on-line ordering

Weisinger's Vineyard & Winery Rogue Cab Blanc, Gewurtz, Pinot Noir, Merlot. Winery tasting notes, news and events.

Whistling Ridge Vineyard Willamette Pinot Noir, Pinot Gris, Chardonnay, Cabs. Viticultural and growers' info, wines, more.

Willakenzie Estate Yamhill Pinot Noir, Pinot Gris, Pinot Meunier, Chardonnay. Information on Willakenzie wines and winery.

Willamette Valley Vineyards Pinot Noir, Chard., Cabs, Pinot Gris, Gewurtz. Winery, tasting notes, awards, winegrams.

Wine Country Farm Bed & Breakfast Going to Oregon wine country? You might need a nice place to stay.

Yamill Valley Vineyards Yamhill Pinot Noir, Pinot Gris, Chardonnay. Winery, tasting notes, ordering.

FULL HYPERLINK INDEX:

Click on one of the following subjects to see links. This page is still under construction.

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WILLAMETTE VALLEY

Beginning just north of Portland, the Willamette Valley traverses the state from north to south for 170 miles until it ends near Eugene. Classified as a Region I, it is Oregon's principal wine region and home to a majority of the wineries and vineyards. Most of the plantings are in the hills on the west side of the Willamette River, and as a rule the vineyards are located at elevations between 300 and 1,000 feet. The most extensive plantings fall within the central section from Salem to the Chehalem Mountains. In the foothills along the eastern side, the newly emerging Eola Hills region (a row of low hills stretching from just north of Amity 15 miles south to the Bethel gap) was the site of modest expansion in the 1980s. At the north end of the Eola Hills, just west of Amity, William Hill Winery purchased 200 acres in 1989. In the late-1980s the southern part of the Willamette near the town of Monroe was being viewed as yet another location suitable for establishing Pinot Noir acreage. Napa Valley's Steve Girard acquired land in this region in 1988 for the purpose of making Pinot Noir.

From the mid-1970s onward, Pinot Noir has been the leading variety in terms of acreage and performance. Chardonnay and Riesling are also widely planted. The Viticultural Area could undergo considerable expansion, with potential sites estimated to be in the neighborhood of 20,000 total acres, if demand continues to grow. Throughout the rough formative days and in the early glory era, Eyrie Vineyard has been recognized as the pioneer and the most influential local winery. Eyrie's Pinot Noirs were the first to win international recognition. Three producers noted for Pinot Noir-Eyrie, Sokol Blosser, and Knudsen Erath-own vineyards in the Dundee Hills, a subregion noted for its red soils and steep hillsides. Australian winemaker Brian Croser founded his Dundee Wine Co. in 1986 to produce sparkling wines under the Argyle label. In 1987, the influential Burgundy producer Robert Drouhin bought land in Dundee. Drouhin purchased additional land since then and now owns 180 acres. In 1989, Laurent-Perrier of Champagne acquired 80 acres in the Willamette Valley's Dundee Hills area for the purpose of making sparkling wine.

Overall, about 80% of Oregon's vineyard lands lie within the Willamette Valley. The current total of 6,300 acres planted there covers all of the varieties for which Oregon has become known, and while other areas are also expanding, it is the grapes and the wineries of the Willamette Valley to which the state's wine fame is chiefly due. Important plantings in this multi-county appellation include: Pinot Noir (2,800), Pinot Gris (1,000), Johannisberg (White) Riesling (600), Chardonnay (900), Cabernet Sauvignon (100), and Gewurztraminer (100).

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HOME
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« Northwest Weekend

Thursday, November 14, 2002 - 12:00 a.m. Pacific

Wine is the main course of this Thanksgiving celebration

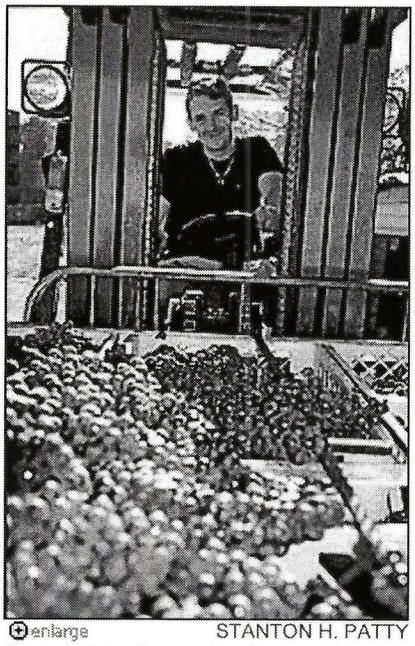
By Stanton H. Patty

DUNDEE, Ore. — It's going to be a Thanksgiving getaway with all the trimmings. Wine-lovers will pour into the northern Willamette Valley during Thanksgiving week for one of the Oregon wine industry's biggest events, the Thanksgiving Open House.

It is an annual trek, with almost all of the 75 or so wineries in the valley open for tastings Friday, Saturday and Sunday (Nov. 29-Dec. 1) of the long Thanksgiving weekend. The wineries will be closed Thanksgiving Day.

The bucolic wine country, southwest of Portland, is concentrated around the towns of Dundee, Dayton, Newberg and McMinnville. The roster of wineries scheduled to be open Thanksgiving weekend includes several that are regularly closed to drop-in visitors.

Vintners will uncork new releases and offer discounts on wine purchases during the three-day festival. Tasting rooms will offer food ranging from snacks to gourmet dishes. Some will feature live entertainment. There may be as many as 30,000 to 40,000 visitors roaming the wine country.


enlarge STANTON H. PATTY
On a visit to Oregon's wine country, meet the workers behind the labels such as forklift operator Corry Morris at Argyle Winery. Thanksgiving weekend is one of the area's biggest open-house events.

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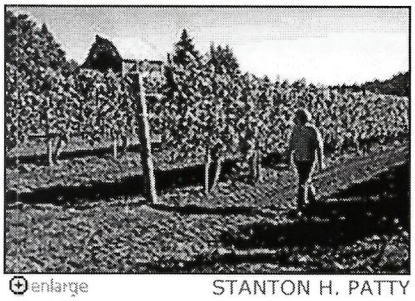
Winemakers say that almost half of the wine enthusiasts are expected from the Seattle area. Many Seattleites combine the wine tours with sales-tax-free Christmas shopping in Portland.

While the wineries and most of the area's restaurants are closed on Thanksgiving Day, travelers need not go hungry. McMenamins Hotel Oregon in downtown McMinnville will serve a traditional Thanksgiving dinner all day: oven-roasted turkey with nut-brown ale glaze, New England-style stuffing and holiday-seasoned cheesecakes and pumpkin pie for dessert ($18.75 for adults; $9.95 for children 6 to 12; free for kids 5 and younger). Reservations are recommended.

A taste of the tastings

We visited the valley for a preview. Winemakers told us that this is another banner year for pinot noir, Oregon's flagship red wine, and pinot gris, the state's major white varietal.



enlarge STANTON H. PATTY

An old barn among vineyards is part of the scene near Dundee, Ore.

South from Portland, we turned off Interstate 5 to Highway 99W and followed 99W through Tigard, King City, Tualatin and Sherwood to Dundee and beyond. Most of the wineries and other attractions on our day-trip itinerary bordered 99W. Helpful blue-and-white roadside signs mark the wineries.

First stop: Wine Country Farm Bed & Breakfast, a romantic inn atop Dundee's Red Hills, with a wide-angle view of the Willamette Valley and the Cascades. Joan Davenport, the innkeeper, offers seven elegant B&B units on a homestead site that dates to the 1860s. Amenities include a hot tub and sauna, and massage therapists on call. Her winery produces about 800 cases a year of chardonnay, pinot gris and riesling.

Dozens of wineries dot the area. We picked a few of the popular labels at random and stopped at Argyle, Duck Pond, Erath and Sokol Blosser:

• The Argyle Winery's tasting room is in a restored Victorian farmhouse alongside Highway 99W in downtown Dundee. The house, dating to 1896, used to be Dundee's city hall, and reputedly has a wine-friendly ghost named Lena. Argyle produces 40,000 cases a year, mostly pinot noir, followed by chardonnay and sparkling wines. For Thanksgiving weekend, Argyle will charge $5 a person to taste four wines. Visitors also can sample tastings directly from barrels. The winery's tasting room is open all year.

• Duck Pond Cellars, also in Dundee, welcomes visitors all year. For the holiday weekend, the winery will charge $5 for six standard tastings; $15 for tastings of new releases and reserves. Duck Pond produces 80,000 cases a year of both Oregon and Washington wines. Thanksgiving weekend at Duck Pond will feature live music by a blues band. The tasting room, just off Highway 99W, has generous parking.

• Erath Vineyards, high in the Dundee hills, is one of the Willamette Valley's pioneer wineries. Dick Erath began here in 1972, producing a few barrels of pinot noir and riesling. Annual production now totals about 35,000 cases, mostly pinot noir and pinot gris. Several new releases are planned Thanksgiving weekend for the winery's 30th anniversary. Visitors will be offered tastings of eight wines for a $5 fee that includes a souvenir wine glass. The Erath tasting room is open all year. The setting, framed with gently sloping vineyards, is spectacular.

• Sokol Blosser Winery in Dundee's Red Hills, founded in 1971, is one of the valley's most impressive. The environmentally minded winemakers plant wildflowers and other vegetation through their vineyards to attract beneficial insects that help protect grapes from harmful pests. Sokol Blosser also has a walk-through vineyard designed to teach visitors about various grape varieties and seasonal vineyard activities. New this year is an underground barrel cellar roofed with wildflowers. Visitors are welcome all year. Tasting fees for Thanksgiving weekend vary from $5 to $15, depending on which wines are selected. Sokol Blosser also will offer some of its "library" wines — "older wines that didn't make it to market, but are still drinkable and interesting," says Susan Sokol Blosser, the winery's president.

Time to eat

Wine buffs will want to pause for meals. Our choice for lunch was the Hotel Oregon, in McMinnville. The historic hotel is a gem, with good eats and whimsical art.

For dinner, we chose the Joel Palmer House in Dayton. The 1857-vintage house once belonged to an Oregon Trail pioneer, Joel Palmer (1810-1881). Jack and Heidi Czarnecki, today's proprietors, specialize in dinners featuring wild mushrooms.

"I'm a mushroom hunter who cooks," Jack Czarnecki says. "My fun is to hunt wild mushrooms and combine them with glorious wines. Where else but in Oregon could we do it better?"

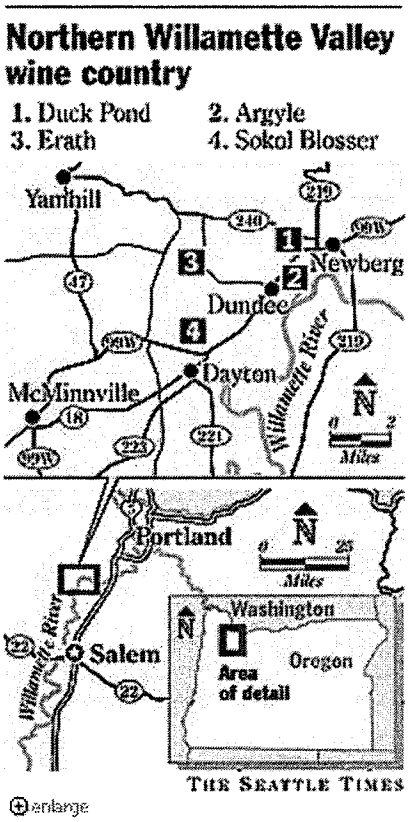
Recommendation: sautéed sea scallops with wild mushrooms and Creole pinot gris sauce. Definitely something to be thankful for after a busy day of wine touring.

Cheers!

IF YOU GO

Stop at an Oregon visitor center for a copy of the Oregon wine industry's free guide, **"Vintage Oregon."** Listings include winery hours, e-mail addresses, Web sites and map directions. For a free copy in the mail (allow 2-3 weeks for delivery), call Oregon Tourism, 800-547-7842.

For more information on Oregon wine country, call the **Oregon Wine Advisory Board**, 800-242-2363 or see www.oregonwine.org. **Yamhill County**, in the center of the northern Willamette Valley, has its own wine page on the Web: www.yamhillwine.com, including a good printer-friendly map.



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• Check for lodging information with the **Portland Oregon Visitors Association** (including winter specials called "The Portland Big Deal," at www.pova.com), the **Oregon Tourism Commission** (www.traveloregon.com) or the **Oregon Bed & Breakfast Guild** (www.obbg.org). The valley's bed-and-breakfast inns — some with their own wineries — usually book well in advance for the Thanksgiving weekend.

• **Organize a tour** of the wineries, using the "Vintage Oregon" winery maps and an Oregon highways map. Most of the wineries are clustered into zones that make for easy day trips. Example: Several top-rated wineries are grouped in a grape-growing area known as the Red Hills of Dundee, on hillsides above the town of Dundee.

• Expect to pay for tastings. Fees range from $2 to $10 or more, depending on which wines are sampled. Many of the wineries also charge for food.

• A designated driver is a good idea if you are planning to sample several wines.

Lodging idea: Wine Country Farm Bed & Breakfast, 6855 Breyman Orchards Road, Dayton, Ore.; 800-261-3446 or www.winecountryfarm.com.

Dining ideas:

• **McMenamins Hotel Oregon**, 310 N.E. Evans St., McMinnville; 888-472-8427 or www.mcmenamins.com/McHO

• **Joel Palmer House**, 600 Ferry St., Dayton, Ore.; 503-864-2995 or www.joelpalmerhouse.com.

Wineries we visited:

• **Argyle Winery**, 691 Hwy. 99W, Dundee; 888-4-ARGYLE or www.argylewinery.com.

• **Duck Pond Cellars**, 23145 Hwy. 99W, Dundee; 503-538-3199 or www.duckpondcellars.com.

• **Erath Vineyards**, 9009 N.E. Worden Hill Road, Dundee; 800-539-9463 or www.erath.com.

• **Sokol Blosser Winery**, 5000 Sokol Blosser Lane, Dundee; 800-582-6668 or www.sokolblosser.com.

Stanton H. Patty, a Vancouver, Wash., writer, is the retired assistant travel editor of The Seattle Times.

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Wine

Subjects

Wineries: US - Oregon

Guide picks

Oregon, with its temperate climate and warm ocean breezes, has been turning out a number of fine wines in the past decades.

Airlie Winery

Airlie Winery, established in 1986, overlooks Dunn Forest Vineyard. It focuses on producing estate varieties well suited to the coastal edge of Oregon's Willamette Valley.

Amity Vineyards

Started in 1976 and located in Amity, this winery not only makes a combination of 'traditional wines' but also an eco-friendly wine of organic grapes and sulfite-free.

« More Guide Picks Below »

More Guide picks

Argyle Winery

Established in 1987, Argyle is situated on 220 acres in the Dundee Hills area of the northern Willamette Valley. They proudce Sparkling Wines, Chardonnay, Pinot noir and Riesling.

Ashland Vineyards & Winery

Award winning Bordeaux for 10 years. Ashland Vineyards has Cabernet,

Torii Mor WINERY

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Vineyards

Torii Mor Winery produces Pinot Noir from five distinct regions of the Willamette Valley of Oregon.

Red Hills

Located in the northern Willamette Valley, and generally running north to south from Dundee, the Red Hills are believed by many to be the heart of Oregon Pinot country. A large number of the vineyards in this region are planted on slopes that emerge from the "spine" of the hills to the east. The soils on these slopes are typically composed of the hallmark red Jory series of silt, clay, and loam above a layer of clay resting on basaltic bedrock. These soils can be rather deep relative to other hillside soils, are typically well drained and are moderately fertile. Jory series soils have a water capacity ranging between 7 to 11 inches. The vineyards planted on the slopes emerging from the spine on the west are composed of primarily sedimentary soils in the Willakenzie series with some Jory series as well. The Willakenzie soils are well drained with lower water holding capacity (5 to 7.5 inches) than Jory soils.

Olson Vineyard

The Estate Vineyard of Torii Mor Planted in 1972 by the McDaniels and owned by the Olson family since 1985, this beautiful vineyard is one of the older vineyards in Yamhill County. Set high in the Dundee Hills at an average elevation of 800 feet, this site benefits from warm southern exposure and cool evening breezes. There are 5.3 acres of self-rooted Pommard clone Pinot noir along with some Wadensvil. In April 2002, 1.7 acres of Chardonnay were grafted to the Dijon 667 clone of Pinot noir and the small planting of Gamay was grafted to Dijon 114. Finally, nearly one acre is planted to Pinot gris. The vine spacing is 9 x 6. The soil is Jory. The vines are "v.s.p." (vertical shoot positioning) pruned in the "double Guyot" style (one cane from each side of the trunk head is trained onto the wire). Unless specified otherwise, the vineyards named below are v.s.p. and cane-pruned as described above. The Olson Vineyard is managed by Stirling Fox and his crew of Oregon Grape Management.

Bella Vida Vineyard

Steve and Allison Whiteside own and manage the upper 12 acres of this vineyard bordering the Maresh Vineyard above Dundee. They planted this portion of the vineyard between 1998 and 2000. The lower five acres of Bella Vida are owned by Jim Maresh and co-farmed with the Whitesides. Torii Mor receives Dijon 115 on 101-14 rootstock with 8 x 4 spacing, and Dijon 777 on

Getting to know Northwest wines

Note: This topic has been archived.
By Christina Kelly offline

Related Subject(s): Wine and wine making -- Northwest, Pacific (N.A.)
Dewey Code: 641.220979 (663.2009795)

< Previous Article

Old Fashion, Big Pinot Noir Wines Offered at Broadley Vineyards

Author: **Christina Kelly**
Published on: **January 22, 2002**

Related Subject(s): Not Indexed

Craig and Claudia Broadley find themselves at the end of the earth making Oregon Pinot Noir, outside the confines of areas known for the grape, such as the Dundee Hills, Newberg and Yamhill County.

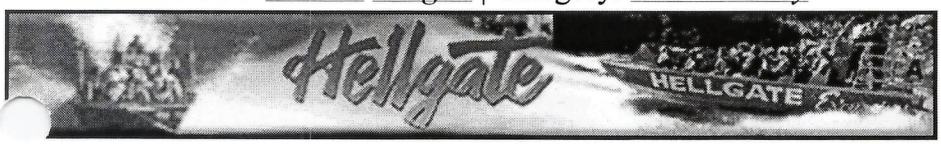
The Broadleys live in Monroe, OR, not exactly the heart of wine-making. Broadley Vineyards is small, producing about 3,200 cases of Pinot Noir yearly, and family-operated by Craig, Claudia, their son Morgan and his wife Jessica. (Claudia is hoping her young granddaughter Olivia may follow in the family business some day.)

Monroe is rural, and located south of Corvallis, in farming country. The winery is located in the shadow of Green Peak Mountain and surrounded by hills and grass fields as far as the eye can see. In the spring and summer, late afternoon winds tumble down the hills into the valley, offering gentle breezes or blustery bursts, along with fragrant wisps of spring flowers.

It is a far cry from San Francisco, where the Broadleys lived in the early 1970s, working for a book-publishing firm. It was a time of great excitement in the Bay Area, with explosions in cultural activities, food, wine and music.

On weekends, Craig and Claudia would wander through Napa Valley vineyards, tasting and learning about wine. The couple liked burgundy-styled wines, and wines with power and

Location: *Dundee Oregon* | Category: *Wine Country*



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www.ohwy.com

The Eyrie Vineyards

The Eyrie Vineyards (pronounced *eye-ree*) was established by David and Diana Lett in 1966. Yamhill County's pioneer vineyard produced the Willamette Valley's first Pinot noir and Chardonnay and the first Pinot gris in America. The vineyards located in the Dundee Hills, while the winery itself is in nearby McMinnville. Visitors are welcome on Thanksgiving and Memorial Day weekends and by appointment. The wines are also available for tasting at the Oregon Wine Tasting Room.

Find similar pages at Wine Country.

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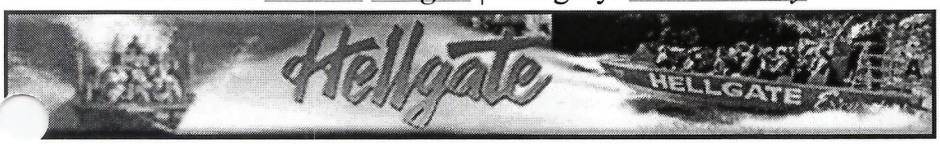

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www.ohwy.com

Erath Vineyards

Formerly Knudsen Erath

Dick Erath made his first vintage of Oregon Pinot noir nearly twenty-five years ago. Although the winery is known for its delicious, long-lived Pinot Noir, Dick also makes outstanding whites, such as Pinot Gris, Pinot Blanc, Chardonnay, and White Riesling. The winery and tasting room, only 45 minutes from Portland, are high in the Dundee Hills. It's a choice spot for picnicking.

Closed Easter, Thanksgiving, Christmas and New Year's Day.

Click to go to Erath Vineyards's own Web site. Find similar pages at Wine Country.

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9009 NE Worden Hill Road
Dundee OR 97115

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Winemaking : Bless You, Trappist Abbey

When we have to go to the warehouse to find a case of wine for you, many people are surprised to learn we head to a sprawling Trappist Monastery hidden in the woods on the backside of the Dundee Hills. Despite a lack of religious purity, I'm allowed onto the grounds.

The Trappist Abbey, secluded on the backside of the Dundee Hills, with signs pointing eternal and temporal activities.

The Trappist Monks of Guadalupe has had its abbey on 1,500 acres just outside of Layafette southwest of Newberg for 48 years, since the Order moved from Mexico. It is home to 37 residents, including monks and penitents, and five days a week a crew of 5-10 local residents who run a profitable business called the Abbey Wine Warehouse. The Abbey manages 194,000 cases of wine for 78 wineries. The Trappist Order works hard at agriculture, forestry, bookbinding, candymaking and, in the past, furniture making. They maintain the facility as much as possible without outside funds, so when the furniture business began to fade (they made largely church furniture) they looked for other growth businesses that might fit a cavernous manufacturing building. Over 10 years ago, they concluded there was a need for storage and consolidation of shipment services for Oregon wine in the northern Willamette Valley. Since their start, they have added labeling and packaging services with high-speed lines, as well as delivery and pickup services, and have expanded with a new building to store nearly a quarter million cases of wine with complete temperature control.

All of our wines are stored there, either bottled and unlabeled or fully packaged. Once-a-week shipments leave for distribution points in California, from which national distributors pickup wine. Few distributors take wine directly from Oregon warehouses at this point. Jerry, Lana, Shari, Chuck, Bill, Julie and Robin lead a team that quickly responds to requests—not only from on-high, but from us as well.

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Phone (503) 538-4700 • Fax (503) 537-0850
www.chehalemwines.com • harrypn@chehalemwines.com

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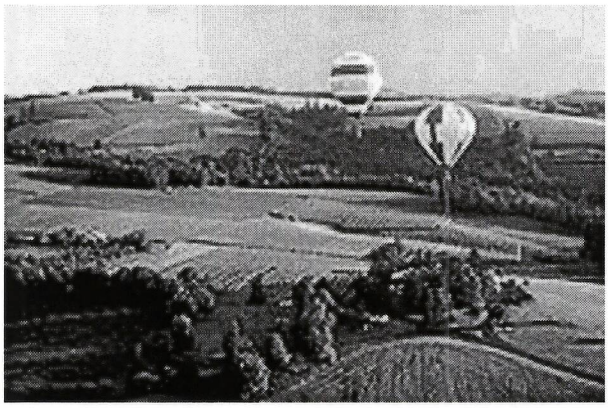

Willamette Valley

Willamette Valley nestles between the coastal range to the west and the Cascade Mountains to the east in Oregon's best grape-growing areas. It stretches for about 175 miles and is this state's main wine-producing area. The Dundee Hills area with its red soil and steep hills is regarded as one of the best sections, as is the Eola Hills area. Pinot Noir, Riesling, and Chardonnay are the most popular grape varieties, followed by Pinot Gris.

Fine Wines of the Region

Rex Hill - Pinot Gris
Rex Hill - Chardonnay
Rex Hill - Pinot Noir
Rex Hill - Reserve Pinot Noir
Rex Hill - Reserve Chardonnay
Kings Ridge - Pinot Gris
Kings Ridge - Chardonnay
Kings Ridge - Pinot Noir
Kings Ridge - White Riesling
Lange - Pinot Gris
Lange - Pinot Gris "Reserve"
Lange - Chadonnay
Lange - Chardonnay "Reserve"
Lange - Pinot Noir Three Hills Cuvee
Lange - Pinot Noir "Willamette"
Lange - Pinot Noir "Willamette" Reserve
Lange - Pinot Noir "Estate Bottled"

For more information, click here:

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MARTIN-SCOTT WINES

Oregon

Situated south of Portland and stretching for 100 miles to the university town of Eugene is the Willamette Valley. Pronounced *WILL AHM ETT*, the valley is the source of most of Oregon's winegrapes. The region is 50 miles east of the Pacific Ocean and is the coolest appellation in the state. Relatively warm and dry in the summer and mild in the winter, the valley is home to some of the finest Pinot Noir producers in the country.

In the late 1960's and early 1970's a few pinot pioneers began planting grapes in this region, reminiscent of Burgundy. Today , Oregon wineries number well over 100, produce $100 million in revenue for the state, and are internationally famous for their Pinot Noir. In fact, each July pinot lovers gather on a small college campus in the Willamette Valley town of McMinnville to celebrate what has been dubbed "the Woodstock of wine events". The annual International Pinot Noir Celebration (IPNC) is a three-day adult wine camp featuring food and wine tastings, seminars, and the opportunity to meet winemakers from around the world.

The three growing regions of the Valley are, first, the Dundee Hills where the vineyards were planted that began the modern wine industry in Oregon. The clay soil produces rich, emollient, red fruits with the flavors of strawberry, cherry and raspberry. These grapes are the last to ripen.

Next are the Eola Hills, which are shallower and less clayey, and were planted in the 70's and 80's. Fruits have the nose of black cherry, plum and cassis. High acid levels contribute to a sense of structure in the mouth. Grapes ripen a week earlier than Dundee.

The third area is Chehalem or the Yamhill foothills where the vineyards are the most recently planted. Sandy and shallow soils produce black fruits with added elements of cocoa, leather and earth. Acid level is low and wines are forward when young.

The Willamette Valley is barely 20 minutes from Portland, a progressive city which is well worth a visit and has attracted a crop of young chefs making news in the northwest. Touring the nearby wine country is relaxed and low key. Most wineries are family owned and run, friendly, rustic and educational.

GRAPE VARIETALS

Pinot Noir - Remember Burgundy? Considered one of the world's greatest, but most difficult grape varieties, Oregon has replicated the Burgundian pattern of growing Pinot Noir on warm sites in an inherently cool region. Drunk young, Oregon Pinot is a forward, lusciously fruity wine with black and red fruit flavors--think of black cherry, plum, and raspberry. With bottle age, Oregon Pinot develops complex flavors of earth, mushroom, leather and spice. It goes well with all red or white meats, as lamb, fowl or beef.

Pinot Gris - A white wine relative of the Pinot Noir, Pinot Gris has emerged as one of Oregon's specialty grape varieties. Sometimes regarded as the "winemaker's dream", Pinot Gris is appreciated for its relability and quality. Nearly non-existent in the rest of the States, Pinot Gris is mostly known in Europe, notably the Alsace region of France. It is also known as Pinot Grigio in Italy. Oregon Pinot Gris has earned an international reputation for quality, depth and substanc and its good acidity makes it an excellent match with food. It rests on the palate, adding flavor and nuance and has a balance of spice, citrus and mineral flavors. Try it with fowl or fish, especially salmon.

In addition to the Pinots, Oregon winemakers are also known for their other Burgundian and Alsacian varietals, as Chardonnay and Riesling.

For information on Oregon wine events, contact the Oregon Wine Newspaper 800-715-3458, for information about wineries contact the Oregon Wine Advisory Board 800-242-2363 and for tourism contact Oregon State Tourism Division 800-547-7842.

Photograph by Doreen L. Wynja

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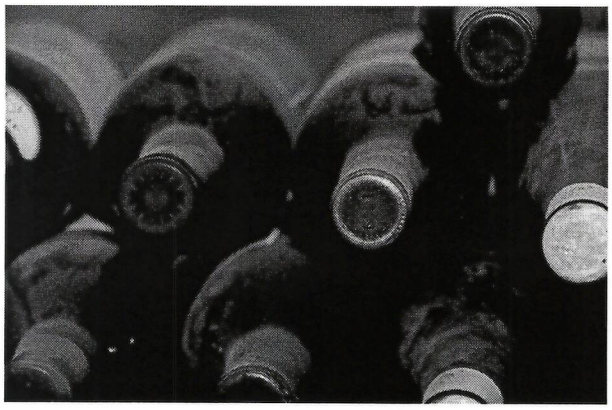
Wines



A look into the best of our wine cellar:

House Choices

Domaine Drouhin Laurene, Dundee Hills, Oregon, 1994
From the legendary Drouhin family of Burgundy, Robert Drouhin's daughter, Laurene, is making deep, rich, full-bodied pinot noir in the Red Hills region of Dundee, Oregon.

Babcock Vineyards Pinot Noir Santa Ynez Valley, California, 1994
Brian Babcock is an amazingly intense wine maker of extraordinary talents. His pinot noir is full throttle, meaty and intense enough to match his persona.

Robert Mondavi Pinot Noir Reserve, Napa, California, 1993
Mondavi is on a roll with their reserve wines. Serious aromas of black cherry, truffles and bacon fat are backed by smooth filling flavors of plums, Chinese spice and mushrooms.

Joseph Faiveley, Morey St. Denis, Grand Cru, Burgundy, France, 1990
Soft and feminine, grand cru burgundy from the fabulous 1990 vintage. Superbly crafted, refined and elegant.

Joseph Perrier "Cuvee Royale" Brut Champagne
An incredible value in champagne! Full of fruit and well-balanced. There is no better way to start a meal.

Chalone Vineyard Chardonnay, 1996 & 1997
The best chardonnays, back to back, that this historic property has ever produced. Exceptionally well balanced, rich and elegant with a long lasting, pure Chardonnay finish.

Pine Ridge "Crimson Creek" Merlot, 1996
Nancy and Greg Andrus, the gregarious proprietors of Pine Ridge Winery have been in

The Restaurant

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Wine Website Links

Wine Spectator

Wine Enthusiast

Napa long enough to understand that great Merlot comes from great sites. They've got a great one in "Crimson Creek!"

Edmond St. John "Durell Vineyard" Syrah, 1995
Syrah, I predict, will be the next most popular red wine varietal for American consumers. The wines have soft tannins and rich, full bodied flavors of brambleberry, bacon and leather. This Edmond St. Johns has been a consistent leader in American Syrah.

Charles Cmicky "Gnarled Vines Grenache," Barossa Valley Australia, 1997
Rich and fruity, this Australian Grenache from century old vines tastes like fresh squeezed raspberries. Absolutely delicious! Great for grilled meats and hearty stews.

Chef's Choices

Grove Mill
Marlborough Sauvignon Blanc 1997

Cloudy Bay Vineyards
Marlborough Sauvignon Blanc 1997

Nobilo Wines
Marlborough "Fall Harvest" Sauvignon Blanc

Chateau de Sancerre
Sancerre 1996

Conte Lafond
Sancerre 1996

Domaine Merlin-Cherrier
Sancerre 1996

Goldwater Estate
Marlborough Dog Point Sauvignon Blanc 1998

Jean-Claude Bessin
Chablis 1996

Michel Delhommeau Muscadet Sevre et Maine
Sur Lie "Cuvee Harmonie" 1996

Wairau River
Marlborough Dog Point Sauvignon Blanc 1997

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VINEYARD & WINERY MANAGEMENT

Vineyard Land Values Part 2:

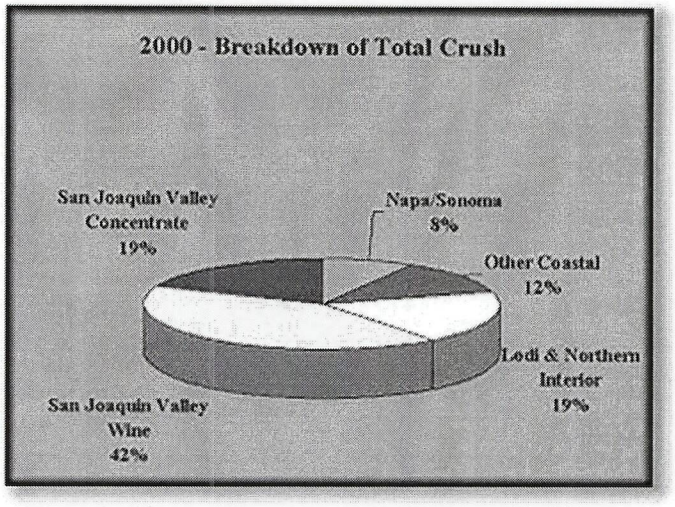
What's Happening Beyond the North Coast

Higher Prices for Producing Vineyards? Lower Prices from a GrapeGlut?

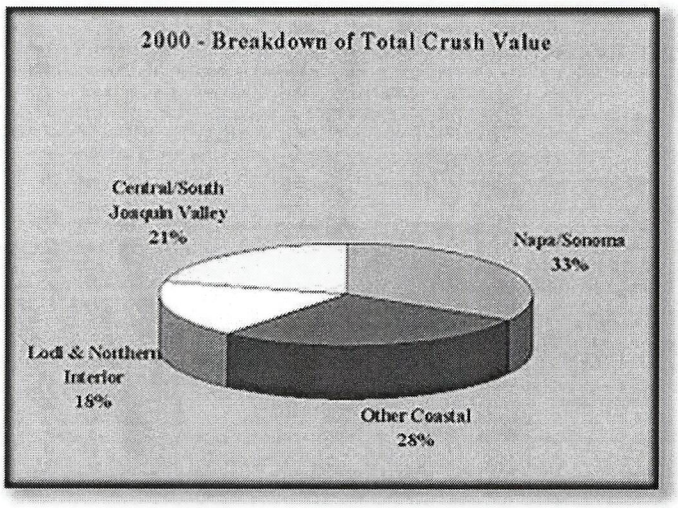
By: Marne Coggan

In the first of two articles on vineyard land values in the May-June 20001 issue, we examined the factors which influence vineyard land values and looked at the movement of vineyard values in California's premier North Coast growing areas. There, the trend was clear and consistent, values are going up! In this second article, we'll look at vineyard values in other viticultural areas in California and across the United States. This time, we'll see that the trend for values may be up, steady and unchanged, turning downward or (gulp) in free-fall toward zero.

California's Central Coast



Grape growing areas in Santa Barbara, San Luis Obispo and Monterey counties comprise California's Central Coast region. Bob Graham of Bob Graham Realty in Paso Robles, specializing in wine and viticultural properties in the Central Coast, has been watching vineyard value trends for a number of years. "Villa Mt Eden bought at the end of 1997. They were the first to crack the $5,000 per acre barrier. Now that's almost doubled for premium land east of town. The trend is still upward." We ought to be seeing a leveling off of prices, but we really haven't, because there's been kind of a shortage. We don't have a great deal of product on the market, there has been 4-5 years of really heavy buying, so we're looking at that old supply and demand factor. A good piece of ground usually sells within a week, and if it's a great piece of ground there's a full-price offer on it when it hits the books. About a week ago, something came on the market and I knew a buyer who would fit it quite well. She had it bought before she even got to see it. And I've had a number of similar transactions."



Graham notes that there have been changes in the market over the past year. Says Graham, "Some of the growers who were buying very aggressively a year or two ago are now nervous about buying a piece of land without a pre-plant contract. But while we're losing that portion of the market, there's still a great quantity of lifestyle buyers who want to grow wine grapes and make this land their home. Market conditions don't mean much to them, they have different motivations."

Tony Correia of Correia-Xavier Inc. notes that the Central Coast has been a very strong area with a tremendous amount of vineyard development. "Vineyard values on the Central Coast have been consistently increasing over the last five years. This steady upward trend of vineyard development and land values holds true in Monterey, San

Luis Obispo and Santa Barbara counties. We're now seeing values in the $30,000 per acre range, pushing toward $35,000 in the real premium areas there." Mark Clarke of Lend Lease Agri-Business notes that limited supply, strong demand, as well as significant urban pressures in Monterey county have steadily increased Central Coast land values for the last 30-40 years. Says Clarke, "The highest prices for vineyard lands in the Central Coast are in Santa Barbara county, with Monterey and San Luis Obispo counties about equal. Santa Barbara County is less than two hours from Los Angeles, which has similar economic characteristics to the San Francisco Bay Area. And Santa Barbara County has the same kind of cachet (to a certain extent) as Napa does."

Clarke thinks that the Central Coast may offer vineyard land investors outstanding appreciation potential. "If I were in the market for a vineyard today in a premium area of California, and concerned solely with the maximum return I could obtain, I believe the best future returns, not past returns, but future returns, would probably be in Santa Barbara County and the Edna Valley area of San Luis Obispo county. If you had money to invest, would you rather spend $150,000-$200,000 per acre in Napa or $30,000 - $35,000 per acre in Santa Barbara county?"

California's Lodi-Woodbridge and San Joaquin Valley

California's San Joaquin Valley is a vast region grows grapes for wine, table, raisins and grape juice concentrate. Most Valley vineyards strive for high yield quantity, although several adjacent growing areas, notably Lodi-Woodbridge, aim for quality differentiation. Nat DiBuduo, President of Allied Grape Growers, notes that in California's 3.95 million ton grape crush in 2000, the San Joaquin Valley produced 61% of the grapes, but these earned just 21% of the total crush value. (For comparison, Napa-Sonoma produced 8% of the grapes and earned 33% of the value. Lodi-Woodbridge produced 19% and earned 18%.) Says DiBuduo, "The year 2000 San Joaquin Valley crush saw severe market softness, producing price levels under $100 per ton. This meant that some grapes were left on the vine because of the transportation costs to get grapes to processors exceeded their crush value."

Richard Bambauer of Bambauer AgLand Appraisal agrees. "If you look at the crush returns for the 2000 crop year, undesirable varieties don't even cover cultural and harvest costs, much less covering any kind of debt service and return on investment on the property. In the case of raisin grapes, prices on a dried basis only covered cultural costs at best. This meant that growers were out of pocket for harvest costs and debt service, and had no return on investment."

Says Tony Correia, "Land prices in the Lodi-Woodbridge area have been relatively stable, with a lot less vineyard sales activity recently. The benchmark for vineyard values there is $20,000 per acre, plus or minus $2,000. The Central Valley is a different story entirely. The core of the problem there is dramatically increased production, resulting in prices for grapes falling dramatically. For example, the price paid for Chardonnay grapes grown in Kern County dropped about 50% in the past year. This means that winegrape vineyards in the southern San Joaquin Valley may be, well, 'priceless'. We know that there are real vineyard buyers out there, and they're not stepping to the plate yet. That tells us that they believe that vineyard land prices are going to drop further"

Correia also emphasizes the value of grape purchase contracts in valuing vineyard land. "We continue to see vineyard values closely tied to revenues, and revenues closely tied to contracts. Grape purchase contracts are increasingly critical to revenue stability, vineyard profitability and consequently to vineyard values. This is especially true in the non-premium areas like the Central Valley." Adds Bambauer, "The price and delivery protections contained in long-term grape growing contracts increasingly has been a factor in vineyard values. The details of those contracts are important, since many contracts are cancelable if the vineyard changes ownership. Uncontracted vineyards in the Central and Southern San Joaquin Valley may have no demand for the crops and/or will receive prices at levels which make the vineyards not economic to farm. Uncontracted vineyards thus may be very difficult, if not impossible, to receive financing from conventional sources. This will have a negative impact on the market values of vineyards."

Baumbauer continues, "Another trend that we're seeing is the value of water rights. There have been severe cutbacks in the federal and state surface water allocations for the 2001-02 water year, and they have started allowing grower-to-grower or grower-to-water agency transfers. Some growers are looking to buy open ground now not for what they can grow on it, but for the value of its the water supply and to where and at what price they can transfer that supply. There have been market sales of parcels with good, transferable surface water rights where the quality of the ground itself was not important, the value of the water rights exceeded the value of the land and its

potential crops. Growers are starting to analyze the value of transferable surface water supplies on a 'return per acre foot basis', where the precious limited resource can be maximized on the most profitable crops, on the most productive lands."

New York

There are three grape-growing areas in New York State. One is along the shore of Lake Erie and Lake Ontario. The second is the Finger Lakes in the west-central part of up-state New York. The third is along the Hudson River near New York City. Dick Edmunds of Edmunds Enterprises in Delevan, NY notes that New York State vineyard values have been fairly steady. "Vineyards in the western part of the state have held very consistent values over quite a few years. Our base land values don't go up or drop significantly over time. Existing vineyards are $2,000-$4,000 per acre. Open land values are very steady. With a little slope, good air drainage, you'll get $800-$1,000 per acre consistently. Asking more than that is for exceptional ground, or residential value, the best prices are earned by younger vineyards. If a vineyard is planted to a variety in demand (Concords, Niagras and the whites), if it is well trellised and it's going to be in production for a good time, that vineyard will carry a very strong value."

Donald Fisher of Pomeroy Appraisal Associates in Syracuse, NY concurs with the static price of vineyard lands in the Lakes areas. "We've seen no change, or only a very modest change at best, in the value of developed vineyards or land purchased for vineyards. The trend has been very flat, or slightly positive. A modest amount of land is being put into vineyards." But Fisher notes that Hudson Valley area vineyards are an entirely different case. "In the past few years, much of that vineyard land has become suburban housing developments. The prices of vineyard lands along the Hudson River are increasing not based on vineyard usage, but on their value for residential development."

Texas

Texas contains several diverse wine growing areas, including the 'hill country' near Austin and the high plains area around Lubbock. But now, according to James Vine of Vine and Associates in San Antonio, TX, the hill country isn't thought of for vineyard operations. "There have been almost no sales of existing vineyards. For open land however, the market has been just bizarre. Over the last four years, prices have gone from $1,000 per acre to $5,000 per acre. The purchase for vineyard development itself is a very small piece of that pie. Most of the smaller Texas vineyards, like those in the hill country, were developed as recreational properties, where the grapes were definitely not the primary economic reason for purchasing the land."

Wayne Groll of Eckmann, Groll, Runyan & Waters in San Antonio, TX echoes those observations. "The Texas hill country has always attracted gentleman farmers. With the prosperity in Austin, Dallas and Houston, successful people making money in computers and the stock market who want an estate home or maybe a weekend retreat look to buy a couple hundred acres in the hill country for a ranch. That land value has exploded over the last five years. For 4-5 acre parcels of undeveloped land next door to vineyards in the Texas hill country, you're talking about $3,000 - $4,000 per acre. And that's without water. With water, it's about $5,000 - $6,000 per acre. Five years ago, the values were half that much. But in the hill country, vineyards probably aren't the highest and best use. It's considered recreation land."

Sam Middleton of Charles S. Middleton & Son in Lubbock, TX has seen the rise, and fall of interest in vineyard development in the high plains and West Texas. "I don't think this vineyard deal has been quite as good as what we thought [it would be] 10-15 years ago. We've had some problems with freezes, and problems with fungus. I think we may have a little more vineyards than we have demand. So lately, when we have sold vineyards, they have been transitional properties, they were in close proximity to metropolitan areas and the properties were purchased for residential and commercial development."

Keith Fox, the Vineyard Manager for Cap Rock Winery in Lubbock, TX adds, "On the whole, vineyard land values in the 24-county area which makes up the which make up the South Plains have been stable for the past several years. But now, urban sprawl is boosting land prices in our immediate area. Also, large peanut companies are buying up open ground near the New Mexico border where some very good cabernet was being grown. That land had been $200-$800 per acre. It has now doubled or tripled in price."

Washington State

Michael St. John of Farm Credit Services in Yakima, WA is in the center of Washington State's increasingly active viticultural area. Says St. John, "The main area that the wine industry is developing now in Washington State is right here in the Yakima Valley, especially in the Alder Ridge area. This area was once known primarily for apples. We've had really depressed apple prices, so we have been expecting land values to come down. But we're just not seeing that. Instead, land values have remained virtually constant. A key reason for this is the interest in land for planting to wine grapes. We have had some pretty substantial purchases by vertically integrated concerns, plantings of 100+ acres by wineries, or with significant winery ownership and/or participation. We also have had some rural residential purchases, but unless an individual buyer is already involved in the wine industry, most of these home-estates don't plant vineyards. And we've had some purchases by institutional investors. These are virtually all of existing vineyards, not raw land, orchards, or other ag land for development to wine grapes. So, even in the face of sinking apple prices, it looks like the romance of the wine industry is keeping our land values steady."

Oregon

Of the 10,500 acres planted to vineyards in Oregon, only 8,100 is actually in production, showing the considerable development of new vineyard acreage in the past few years. Carl Stillman of Stillman & Associates Inc. in Independence, OR observes that as with other states, the market for vineyard land is very localized. "Different vineyard areas may have significantly different land values, even though they may only be a 30 minute drive apart. The premier Oregon wine growing area is called the Dundee Hills, about 30 miles southwest of Portland. That area of the North Willamette Valley has developed almost exclusively to vineyards and wineries, with a particularly large spurt in the last 10 years. Vacant land values in the Dundee Hills have climbed from $8,000 - $10,000 to $10,000-$15,000 per acre. But those prices drop dramatically as you head south toward Salem and the Polk County area, where values are probably half of the Dundee Hills levels."

Stillman continues, "Many Oregon vineyards are purchased by wineries or by wine industry people. With this vertical integration, yields of 1.5 to 2 tons per acre make economic sense because the returns ultimately are based on wine bottle price, not on grape sales by ton. Most of the ground that is being developed to vineyards now is open, forested land, although some small amount is being converted from filbert orchards or other non-irrigated crops. Vines contribute between $10,000 and $20,000 value per acre, depending on location, varietal and rootstock."

Stillman also notes that according to Oregon's statewide land use planning laws, vineyards have to be located within particular agricultural zones. "To build a house on these Exclusive Farm Use zones, a parcel must have a pre-existing dwelling, or you have to show gross farm income of $80,000-$100,000 annually for a period of 3-4 years before a residence permit will be issued. This means that a legal homesite adds significant value to a vineyard parcel. For example, in valuing a 20 acre parcel with an old, dilapidated farm house, the first acre with that homesite might contribute $150,000-$200,000 alone, meaning more than the total value contribution of the back 19 acres, because if that old house wasn't there, the new owner of the parcel would not have a legal right to build on it."

Summary - The Flight To Quality

As we discussed in the first article, vineyard land is priced based primarily on its ability to produce revenue. Most of the factors influencing vineyard land values do so because they impact the economics of vineyard operations. These factors include the presence and transferability of grape purchase contracts; the availability and cost of water, power and fuel; the arrival or evolution of new grape pests like the Glassy-Winged Sharpshooter; labor costs; and governmental regulations. For many of these issues, their effect on vineyard land value is the sum of their effects on the vineyards themselves and on the purchasers of grapes, wineries and concentrate producers.

But those factors pale in comparison to grape quality, the overwhelming determinant of vineyard land values. Tony Correia says it succinctly: "Vineyard values are a function of revenue, revenue is a function of grape prices, and grape prices are a function of grape quality." The highest prices will be paid for vineyard land where growers can produce grapes for the highest quality wine. When the fruit produced is of lesser quality, the vineyard land value will be reduced accordingly. At and below a minimal level of grape quality, the vineyard land value will be based on its use as something other than growing grapes, as an almond orchard, a peanut farm, a water source for another field,

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THE WINE LOVER'S COMPANION

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Willamette Valley AVA

This Oregon **viticultural area** is in the state's northern portion, starting north of Portland and stretching to just south of Eugene. The Willamette Valley AVA nestles between the coastal range to the west and the Cascade Mountains to the east in Oregon's best grape-growing areas. It stretches for about 175 miles and is this state's main wine-producing area. The Dundee Hills area with its red soil and steep hills is regarded as one of the best sections, as is the Eola Hills area. **pinot noir**, **riesling**, and **chardonnay** are the most popular grape varieties, followed by **pinot gris**. Other grapes, planted in small amounts, include **cabernet sauvignon**, **gewürztraminer**, **müller-thurgau**, **sémillon**, and **zinfandel**. Area wineries include Adelsheim, Amity, Bethel Heights, **domaine drouhin** (the Drouhins of Burgundy), Elk Cove, Eyrie Vineyard, Knudsen-Erath Winery, Montinore Vineyard, Panther Creek, Ponzoi, Rex Hill, Sokal Blosser Winery, Tualatin Vineyards, and Yamhill Valley Vineyards.

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Andrew Will

Archery Summit

Pine Ridge Winery's owner Gary Andrus, impressed by Oregon's prowess with Pinot Noir began looking for vineyard sites in the Dundee Hills, acquiring 77 acres adjacent to Domaine Drouhin in 1990. Completed in 1995, the state of the art facility, is like no other winery in Oregon (and California for that matter) with it's Burgundian-like closely spaced vineyard rows, caves for aging wines, and the fact that Archery Summit is the only TOTALLY gravity fed winery in the United States! No expense has been spared from the vineyard on up with techniques being similar to the great French Burgundy producers: yields over the past three years have averaged 1.5 tons/acre, the pinots are aged in 100% new French oak barrels, and all wines are bottled unfined and unfiltered ... Archery Summit now owns more than 100 acres comprising three estate vineyards: Archery Summit Estate, Red Hills Estate and Arcus Estate. Total production is 5,500 cases.

Argentine Wines

- ***BenMarco***
- ***Gusto***
- ***Luca***
- ***Susana Balbo***
- ***Tikal***

Babich Winery

Baystone Winery

Beaux Freres

OREGON COASTAL TOWNS ON PACIFIC COAST HIWAY

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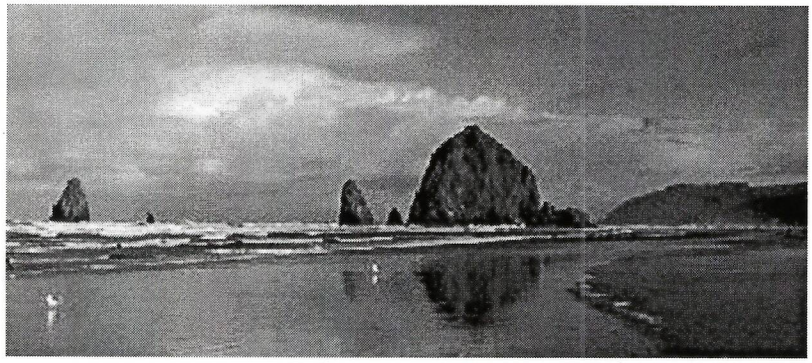


Shakespear Festival and Beaches:
Pacific Coast Hiway 101 will lead you to the Pacific rain forest country. Along the coastal towns there are list of places to visit such as: The Yaquina Head Lighthouse near Newport along the Oregon coast features tours. Haystack Rock at Cannon Beach is in the Oregon Islands National Wildlife Refuge and is home to gulls and puffins. One of the many lovely spots.

Sightseeing:
If you love nature and natural beauty environment, you will like the Pacific scenery in Oregon better than anywhere else on the West Coast. In the fog and rain, it is blissfully gorgeous. Whenever the sun does shine of course, makes it even better. The only place on earth with comparable sea stacks is the southcoast of Australia. Some of the most spectacular -and popular- vista spots are along the coast between Lincoln City and Florence, and the scenery is spectacular from 50 miles or so going north from California. Probably the best view on the whole coast is at the Cape Perpetu, a Scenic Area just south of the Yachats. The view takes in 150 miles of coastline.

Good restaurants:
Restaurants and bars or pubs in Oregon is right up there with California, especially in Pacific Rim and West Coast nouveau cuisine. The growing excellence of the

state's wineries, coupled with abundant supply of oceanic catches, means a chance to eat well while staring at all those gorgeous sea stacks.

Whales:
The cetacean freeway from Alaska to the Baja runs, as you may already know, past all the U.S. West Coast states. And all three claim to be the whale watching capitals of the earth. Oregon gets high marks because there are a ton of state parks and vista points high on the coast.

Lighthouses:
Oregon is famous for many of the lighthouses on the coast. Several of the lighthouses are still in use as navigational aids, and a few are open to the public. Most of the structures were built between 1870 and 1900 by the U.S. Lighthouse Board and are now operated by the Coast Guard. Regularly scheduled tours are available at Cape Blanco, Haceta Head, Umpqua River,Yaquina Bay and Yaquina Head. There are public display areas at Cape Mearesand Coquille River. The Tillamook Rock lighthouse, now privately owned, is used as a columbarium, a storage place for the ashes of the deceases, so there is no tour there.

For information about the structures, contact Oregon Chapter of the U.S.Lighthouse Society
P.O. Box 600
Lakeside, Ore. 97449
(541) 759-3920 or visit our link below.

Dune the beach:
No way can California- or anywhere else this side of the Sahara, for that matter- compete with the great stretches of coastal sanddunes in Oregon. You can hike, or you can hire a dune buggy. Winter is a good time to drive one the dunes because there are fewer vehicles. Although the sand is smoother in the summer, but the lack of vehicles more than make up for it. The highest of the sand dunes are located at Umpqua Dunes.

City escapes:
After travelling along PC Hiway 1 and 101 coast, any one can usually gets a chance to pick out his or her favorite spots, places to visit and come back again. In Northern California, it could be the Mendocino Headlands or Davenport or Eureka orwherever. Our favorites on the Oregon coast are Newport and Florence, but the choices are many. Newport is a swinging coastal settlement, big enough to have good food and accommodations, not so big to be too crowded.
If you're interested, call:
Portland Oregon Visitors Assoc.
(800) 962-3700
For reservations in the Portland area, call (888) 606-6363.

"Oregon's Wineries:

Route 99, the main road from Portland down to the vineyards in the Dundee Hills, is a succession of takeout joints and strip malls. If you are not careful, you will drive right out of wine country without having seen any vineyard. In fact, there are dozens of wineries along 99, beginning with one of the best, Ponzi Vineyards.
- Erath Vineyards, in Dundee, is one of the best-known.
- Big wineries such as Willamette Valley Vineyards, near Salem, produces 90,000 cases a year, and King Estate, near Eugene plans to produce 170,000 cases in the future.

Portland (Oregon), city in northwestern Oregon, the seat of Multnomah County and the largest city in the state. Portland is the business and transportation hub for much of the Pacific Northwest and a growing center for electronics

manufacturing. The city has a striking natural setting and rich cultural resources; it refers to itself as the City of Roses.

Portland lies on both banks of the Willamette River near where it empties into the Columbia River. Spring and summer weather is generally mild, and the city receives heavy rains in the late fall and winter. While heavy snow is rare, Portland occasionally suffers under ice storms brought about when frigid air from the state's interior passes through the gorge of the Columbia River and collides with the warmer, moist air of the coast. Average annual precipitation is 922 mm (36.3 in). In January the average high temperature is 7° C (45° F) and the average low 1° C (34° F); in July highs average 27° C (80° F) and lows 14° C (57° F).

Francis Pettygrove, one of the founders of Portland, named the city in 1845 after winning a coin toss with cofounder Asa Lovejoy. Pettygrove named it for his hometown of Portland, Maine; had Lovejoy won he intended to name it after his hometown of Boston, Massachusetts.

PORTLAND AND ITS METROPOLITAN AREA

The city of Portland covers a land area of 322.2 sq km (124.4 sq mi). The city is at the core of a metropolitan region covering five counties in Oregon (Multnomah, Washington, Clackamas, Yamhill, and Columbia) and one county (Clark) in the state of Washington north of the Columbia River. The region encompasses 13,022 sq km (5028 sq mi) of land. After Portland, the largest cities in the metropolitan area are Gresham, Beaverton, Hillsboro, and Lake Oswego in Oregon, and Vancouver in Washington. Portland began on the west bank of the Willamette River upstream from its confluence with the Columbia River. The area of first settlement remains the city's business and governmental center. Its best-known public building is the Portland Building (1982), built in the postmodern style. Over the entrance to the Portland Building is an 11-m (35-ft) hammered-copper statue of "Portlandia". Numerous fountains enliven the city core. The Ira Keller Fountain occupies a city block and reproduces the feel of a mountain stream. Downtown Portland is notable for its tree-lined streets and short blocks, making them convenient and pleasant for pedestrians. In recent years the central business district has spread to the east side of the Willamette. Eight bridges cross the river in the heart of the city, and a modern light-rail system connects the downtown with outlying suburbs.

West of downtown a number of prestigious neighborhoods occupy the steep ridge of the West Hills. In northwest Portland is a vibrant neighborhood of shops and restaurants, many in restored Victorian homes. The east side of the Willamette is occupied principally by residential areas.

The city lies at the foot of the fertile Willamette Valley. To the west are the mountains of the Coast Range, and to the east is the Cascade Range. Snow-capped Mount Hood, at 3426 m (11,239 ft), can be seen from most vantage points in the city.

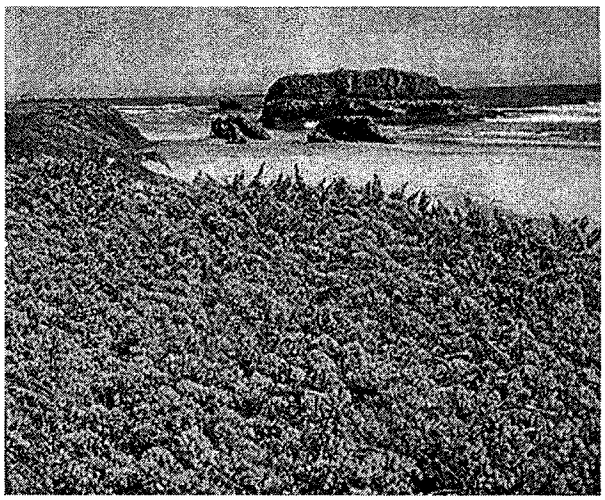
Oregon Lighthouses.

Bed and Breakfast.

Shopping

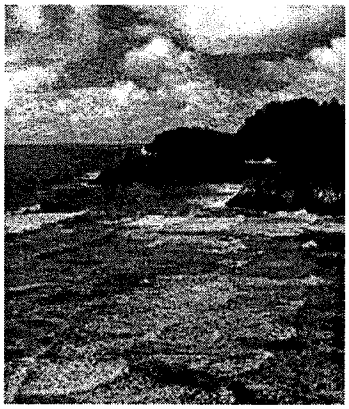
Best Beaches in Oregon

Oregon Restaurants



Oregon Links

Oregon Lodges



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ARTICLES

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Westrey Wine Company - A gem in Oregon's Dundee Hills (April 25, 2001)

I had lunch recently with winemaker David Autrey (the last four letters of whose last name join with partner Amy Wesselman's first three letters to spell out the winery name).

This is a small operation dedicated to making no more than 6,000-8,000 cases at their limit. They make Chardonnay, Pinot Gris and Pinot Noir and they're worth searching out.

Westrey Pinot Gris 2000: This wine is given a warm fermentation and is made without recourse to oak or malolactic fermentation. The result is a lovely crisp wine with a peachy, green nut nose; elegant and well balanced, the flavour is white peach which lingers long on the palate thanks to the lively acidity. A great food wine (**$19.95** ****)

Westrey Chardonnay 1999: "1999 is the best vintage I've ever seen working in Oregon for 13 vintages," says Autrey. Partially barrel fermented in french oak, the wine is light straw in colour with a greenish tint. Butter and vanilla on the nose and spicy apple flavours, quite sweet with lovely balance and length (**$21.95** *****)

Westrey Willamette Valley Pinot Noir 1999: Purple colour; vanilla, peppery black cherry nose; earthy with simple fruit flavours; hefty on the palate, tannic with a hot finish. A little ungainly. (**$27.15** ***1/2)

Westrey Pinot Noir Croft-Bailey Vineyard 1999: Pommard clone - deep purple colour; blackcurrant, black cherry, floral and mint bouquet; sweet black cherry fruit, elegant with a silky mouthfeel, quite soft and forward. (**$36.95** ****1/2)

Westrey Abbey Ridge Pinot Noir 1998: Quite forward, showing some maturity of colour; Burgundian nose, barnyard notes with sweet rhubarb; soft and spicy raspberry with a floral top note, good acidity and length, lovely structure. (**$50.00** *****)

Westrey Pinot Noir Temperence Hill 1999: Purple colour; spicy vanilla and caramel notes on the nose; sweet black cherry and plum flavours; firm and muscular with lively acidity and a tannic lift on the finish. Needs a couple of years to really show its paces. (**$36.95** *****)

These wines are available through Du Chasse Wines - 416-598-9859 or email: **doublehorn@sympatico.ca**.

Westrey's home page is at **http://www.cse.ogi.edu/~tito/westrey/**.

More Articles

Oregon Magazine

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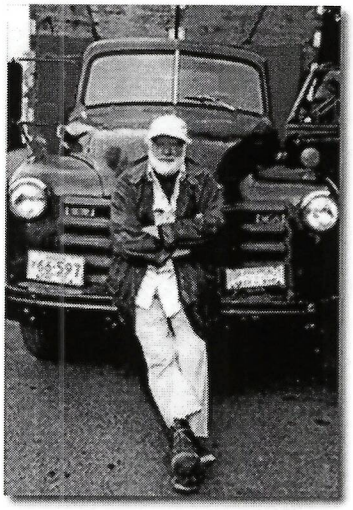
DECANTING WITH DELKIN

Papa Pinot Still Preaching Gospel That Created An Industry

by Fred Delkin

There were several Oregon wine industry pioneers that came from viticulture studies at the University of California Davis at the end of the Sixties. The first to arrive in the Willamette Valley, David Lett, has properly earned the sobriquet, 'Papa Pinot'. It was Lett who saw the cool climate valley as the place to test his post graduate theory that matching a grape varietal to its ideal growing conditions would produce wine perfection. Lett's studies of French vineyard production in Burgundy and Alsace, regions with climates similar to northern Oregon, convinced him that the temperamental Pinot grape family could succeed here.



Papa was right. He set about to prove his point with the planting upon he and wife Diana's arrival here in 1966 of Pinot Noir and its cousin, Pinot Gris, in the Dundee hills area. The Eyrie (EYE-rie--named after a family of hawks on the vineyard property) winery was bonded in 1970 in an old turkey processing plant near downtown McMinnville. By 1975, bottling of Eyrie estate-grown grapes had reached a world-class level that Papa Pinot had in mind.

Wine World Stunned

Burgundian distributors, eager to underscore the international superiority of their most prestigious varietal, staged a "Wine Olympics" in France. When Eyrie's 1975 Pinot Noir dominated all but a French Chambolle Musigny (and only that by a mere two-tenths of a point) in blind tastings, Oregon went on the wine world map. The Davis pioneers who had followed Lett to this promised land saw their hopes justified. To this day, Lett has been making Pinot Noir from a single estate vineyard longer than any other U.S. winemaker.

This grizzled visionary also produced the first U.S. Pinot Gris, bottled in 1970 from his own plantings and now a benchmark for an Oregon varietal wine lovers have begun embracing. Lett recalls what he terms "Three Musketeers marketing trips" with fellow Oregon wine industry pioneers David Adelsheim and Dick Ponzi in the 1980's to introduce major markets to Oregon Pinot Gris. When this columnist first tasted Eyrie Pinot Gris in the '70's, Papa

Pinot described it as "salmon wine" and it is ideal with that Northwest piscatorial champion.

Today Lett touts Pinot Gris as "a sensational grape, as versatile with food as Pinot Noir...growing in the right climate gives Willamette Valley Pinot Gris a unique flavor as the grapes struggle to ripen in our cool climate." He describes this varietal as "a fragile grape, just like its Pinot Noir cousin" and while admitting there is more consistency in Oregon winemaker styling, "there is still too much variance."

Papa preaches finesse

Lett's' wine styling for both Gris and Noir follows the precepts he came to Oregon to prove. His wines have a subtlety, a finesse. His Pinot Noir is a far cry from current California attempts with the grape. "We now see Pinot Noir all over the map in characteristics from the subtle complexities of Willamette Valley's finest fruit to the big, jammy Californians produced from overripe fruit in climate pockets that lack Oregon cool." The Oregon industry's sponsorship of the International Pinot Noir Conference, held annually in McMinnville, is credited by Lett for "showing the way to California, New Zealand and now Australia...but none of these areas have the equivalent to our Willamette Valley climate and are still learning from viticultural methods we've pioneered. French Burgundy producers also are represented at the Conference, and their products mirror what Papa Pinot came here to preach.

Lett declares that "getting people to embrace Pinot Noir has been a tough challenge...Americans like to be hit around the head and ears with big flavor, like Cabernet Sauvignon and California's oaky Chardonnays...they need to learn to savor softness and complexity."

European ethos missing here

Papa Pinot decries the average American's lack of appreciation for wines that enhance their food. "We need to get more civilized at the table, to sit back and enjoy flavors and ideal food and wine matches." A visit to any European wine region emphasizes what he means...local cuisine compliments wine stylings and the resulting taste blends are superb. Just what Papa Pinot had in mind when he dubbed his Pinot Gris "salmon wine." Dry and fruity are the desired characteristics for Pinot Gris...not the level of sweetness various Oregon vintners have created with this grape.

Lett's work with Pinot Gris is based upon Alsatian achievments with this grape. Alsace, on the French border that abuts France, turns out rich, dry white wines, most notably Pinot Gris, which was originally known as Tokay 'd Alsace, until this designation confused an export market too familiar with the lesser, sweeter Tokays produced in eastern Europe (primarily Hungary) from another varietal.

"Grigio" it's not

The American wine market is now inundated by "Pinot Grigio" from Italy...a light, very mild flavored and inexpensive wine produced from grapes that miss the climatic ministrations found only in Alsace and the Willamette Valley. Pinot Grigio has also recently found a home in California vineyards, where again the grape hasn't found growing challenges similar to France and Oregon. Regional climate has also not deterred what Lett terms a "major marketing plan" formulated by Washington wine industry giant Chateau Ste Michelle to push Pinot Gris soon to be vinified from large plantings of the varietal in eastern Washington...where the vineyard climate encourages volume production while not providing the cool climate challenge that

pushes Oregon and Alsatian Pinot Gris to perfection.

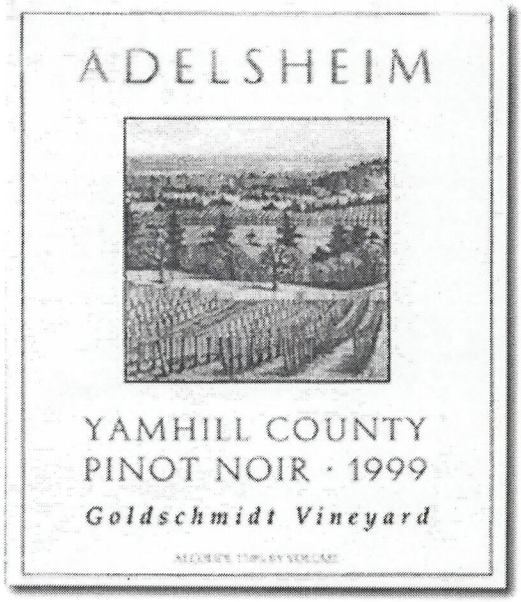
Papa Pinot's beard literally bristles when he takes on the topic of wineries who fail "to understand the value of fitting specific varietals to specific growing conditions in a given region, rather than planting varietals willy nilly." This was his premise when he first planted a flag for other Oregon wineries to follow, and made it his mission to convince winemakers who followed him here that there was no need to make wine the way it's made in California's warmer clime. Pinots are his passion, and when it comes to Noir, "I don't make dark color, high alcohol wines, and never have." Both Noir and Gris are food wines gracing the Eyrie label, to be enjoyed with a meal. They are not produced to win popularity tasting contests when sipped by themselves.

Justifying proper pricing

Papa Pinot's wines do have legs...the Pinot Noir's longevity in the bottle easily stands up for a decade, still tasting fresh and fruit-filled. And unlike many newer Oregon labels, Eyrie sustains complexity, sophistication and good old finesse as the proper standards for food wines that celebrate their European heritage. While many Oregon Pinot Noirs now are priced in the $40-50 range, capitalizing on the ideal conditions here for our most recent vintages, Lett says "I've kept my prices stable for years in the $20 range." He points out that his first bottles of Pinot Noir "sold at $2.65 and it took years to get my price up to $10." Volume is not an Eyrie goal, with annual production of only up to 8,000 cases per year from the winery's estate vineyards.

Quality rules the Lett roost. He admits to sponsoring some recent Pinot Noir plantings in the hills of northern Portugal, some 30 miles from the ocean, with three harvests to date..."but it's still early to tell the results, and while it looks more promising than similar regions in California, it still isn't the perfect Pinot climate of the Willamette Valley." The latter , according to Lett, "is an expensive place to grow grapes...our climate produces a low yield per acre, but fruit with a clear flavor message."

That message will be preserved by those who learn the gospel according to Papa Pinot, an icon for caring winemakers who understand the true potential of the Pinot clan.



Adelsheim
Pinot Noir 99
Goldschmidt Vnyd

25

$33.99

Robert Parker Top Rated

Parker rating 99 vintage 90 points

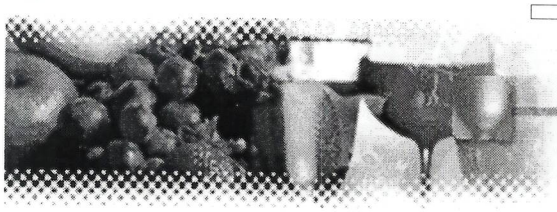
"The medium to dark ruby-colored 1999 Pinot Noir Bryan Creek Vineyard offers dark cherry aromas and an oily, glycerin-packed character. It is juicy, hugely ripe, yet well-structured. Loads of sweet red and black fruits can be found throughout its personality and its long, supple finish. Drink it between 2004 and 2010."- Pierre Rovani

This vineyard is owned by former Oregon governor Neil Goldschmidt and his wife Diana Snowden. They purchased the vineyard site in 1998 from John and Sally Bauers, who began planting their "Dundee Hills Vineyard" in 1974. Neil and Diana have worked closely with Adelsheim's vineyard manager Andy Humphrey to replant the site and graft new clones to maximize the vineyard's potential. Of particular importance to Neil and Diana has been the use of sustainable cultural techniques (primarily organic) to produce intensely flavored grapes, while minimizing the farming impact on their land.

The 99 Goldschmidt Vineyard Pinot noir offers a bouquet of cherries, raspberries, toast and chocolate. The luscious mouthfeel layers raspberries, black cherries, vanilla, and subtle new oak, and is balanced by soft, sweet tannins and a long complex finish. Age 4-10 years.

A lovely accompaniment tolamb, grilled salmon, pasta with red sauces, and chocolate torte. The label was drawn by Ginny Adelsheim. 3,168 bottles produced.

Quantity 1 Add to Cart



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Good living with...

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- Pascal Aussignac
- Max McCalman
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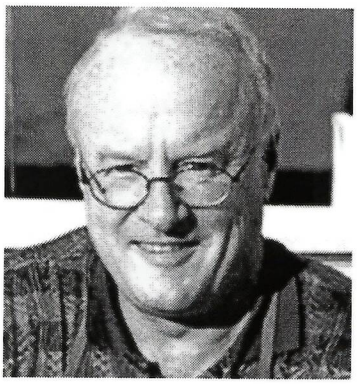
Dan McCarthy's favourite recipes

- Grilled strips of sirloin beef with a mustard-tarragon dipping sauce
- Pan-sautéed halibut with saffron onions

Dan McCarthy's favourite food and wine match

Washington salmon with a three-year-old Dundee Hills Pinot Noir from Oregon



Dan McCarthy

Dan McCarthy, 50, has spent his entire adult life in the wine trade, starting out as a salesman for a major Washington wine importer. In 1980 he set up his own company, McCarthy & Schiering, and has gone on to become one of Seattle's most highly acclaimed wine merchants.

McCarthy's first book, Pick the Right Wine, was the ideal platform to indulge his food and wine matching interests. More recent books – and a section of Oz Clarke's CD-ROM-format Wine Guide– have given him the opportunity to share his specialist knowledge of the wines of the Pacific Northwest with the world.

Where did you grow up?

I was the first baby boy born in Seattle's Northgate Hospital. I was the second individual to be delivered at the hospital, the first being a baby girl. I have no memory of this or I might have been jealous. Up until the age of eight, I lived in the View Ridge area of the city. My father was an accountant. Then the family was uprooted and landed in Straford, Pennsylvania. Curiously the street we lived on in Seattle was called Vassar, as was the street we lived on in Straford. Not much else was similar, though.

I learned to love Italian cooking as a kid. The Catholic church my family attended on Sundays was dominated by Italians. I may owe my gastronomical bent to Mrs Antonini, the mother of two twin brothers who were my pals, and perhaps the best cook I have ever encountered. I salivate when I think of her hand-made pasta.

At the age of 16, I was once again transplanted, this time to San Juan, Puerto Rico, where I surfed, snorkelled, lost weight and let my freckles laze in the Caribbean sun. It was here that I first encountered wine, Cubano sandwiches, arroz con pollo, pan de aqua and the sublime flavours the Caribbean has to offer.

I returned to Seattle to attend the University of Washington at the age of 20. It was the late 60s: Kent State shootings, hippies rocking out to the sounds of Jimmy Hendrix, tie-dye shirts and bell-bottom jeans. I studied communications when I wasn't trying to rebuild a Triumph Spitfire behind the fraternity house, where I rented a room. Eventually, I drove that Spitfire across the country to Pennsylvania, where I sold it and used the money to travel to Spain. After five months of backpacking, I returned to Seattle and my first job in the wine business.

Did your parents encourage you to try wine when you were a kid?

I remember once, as a teenager, being handed the wine list at fancy restaurant in Conestoga, Pennsylvania, by my father and I chose a bottle of Pouilly-Fuissé. The waiter looked a bit alarmed but, nevertheless, he brought the bottle. My parents liked the wine. I wasn't given a glass but I did get a sip! Now I'm the one trying to encourage my parents to drink a little wine with dinner.

What are your earliest wine memories?

I remember setting the alarm clock for 12:01 to have Champagne on New Year's Day. That's very early for wine. Truthfully, my earliest wine memories involve mass quantities of Gallo Rhine wine and Bali Hi Sangria. We drank these from paper buckets with lots of ice. Our purpose wasn't oenological enjoyment.

Are you a bit of a gourmet, as well as a wine connoisseur?

My friends call me a closet 'foodie'. I love to cook and am foolish enough to invite local chefs and food writers to dinner. I'm pretty sure they aren't just being polite when they praise the fare – I judge this by the amount left on plates as well as their rate of consumption. But I think that wine is an ingredient in a meal – not a meal in itself. Curiously, I have no interest in making wine. Bake a soufflé – no problem.

What made you go into the wine trade in the first place?

I went into a local wine shop to ask a question. Is Saint-Emilion a grape or a region? It was a very expensive visit as it changed my life. The somewhat harried owner appeared to need an assistant. I offered my services and, within two weeks, I was selling wines as a retailer. I was 21 – almost.

Why did you open your own company?

I worked for nearly a year as a retailer and then the lucrative money that the wholesale wine industry offered caught my attention. I became a street salesman for a local wholesale firm and eventually worked my way into a management position. At the age of 28 I was the general manager of a multimillion dollar wholesale wine business.
Ahead of my time, I found myself looking at wine as boxes rather than flavours, and the late 60s hippie in me caused me to quit a high-paying job and risk my life savings opening a retail shop. Somehow it worked and now, 20 years later, my partners and I have two shops, make good livings, and we still enjoy wine more than sales. Expansion will be the next challenge. The internet and wine bars have a certain attraction. But I'll know it is the next project when I apply for the liquor license.

Do you specialise in wines from any particular area?

The Pacific Northwest is my home and it's the most exciting region for wine in the world. It wasn't always. The process that began in the late 60s with The Eyrie Vineyard, Associated Vintners and Chateau Ste. Michelle has been slow in coming of age. I am a critic

and a wine writer as well as a retailer. I am fortunate enough to taste between 60 and 90 wines every week from every corner of the earth. I truly believe that Washington and Oregon wines can reach heights equivalent to the best in the world. There isn't space to write an entire piece on this subject, but it deserves it. I'd say Washington first, Oregon second, and then my partner and I love to vary our features to offer clients a tour of the worlds' best. Sources are important and we have access to many boutique Washington and Oregon wines.

Is there any chance that the wines of the Pacific Northwest will ever grow to rival those of California?

We have better natural material than most regions in California. Our growing regions must be taken one at a time.
Oregon's cool climate will one day be the home for Chardonnay in the USA – less total alcohol, more terroir in the soils, more natural acidity in the wines. They got off to a horrific start, but new clones and the irrigation of vines during the late summer months are just beginning to result in superior Chardonnays. Oregon Pinot Noirs need work. They don't deserve the prices being asked – yet! A handful of producers are forging ahead: Domaine Serene, Domaine Drouhin, McKinlay, Sineann, but many are just capitalising on the area's reputation. It's not unlike the history in the Côte d'Or.
Washington is a desert east of the Cascades and it's about time they planted Syrah. And how about some Grenache? We grow superior Cabernet Sauvignon and if you can find a producer who doesn't massacre their wines with toasted head barrels and acidulate their must (for what reason I do not know!), you can find wines that rank with finest from the Médoc. We're better than all but a handful of California producers. Washington's long hours of daylight and slower ripening offers growers more latitude to obtain late-harvest, complex flavours.
We need more time and vintages, but I feel that one day Washington may beat all contenders. Merlot? It is decent in this state. Andrew Will and Woodward Canyon will convince you, but there's a lot of mediocre juice masquerading as Merlot from Washington. We need to remember it's a blending grape, just like Cabernet Franc. Just because people can easily ask for it as a variety is no reason to make it an icon for the state. Our blends are important to the future of Washington reds. Take Col Solare (the Antinori project) or Matthews Cellar Reserve Red and you begin to see that we offer serious competition to Colgin, Screaming Eagle and Araujo from California. Those wines are good but they are not great. Pahlmeyer, Bryant Family and Harlan Estate are still a big challenge: those are succulent wines.
Our Syrahs are showing promise right from the start. Take a McCrea Syrah from the Ciel du Cheval Vineyard, a Januik or a Cayuse 'Cobblestone Vineyard' and you see fruit that has only a few vintages under vine offering glorious complexity. Yes, I'd have to say the Northwest is where we plan to focus.

What's the weirdest thing you've ever eaten?

I've eaten many weird things but I'd have to say that overcooked lima beans rank at the top of my 'gag' list. The biggest surprise was a naturally farmed carrot with 21° Brix. I had no idea any carrot could be that tasty. I am adventuresome – however, I'm not big on bugs.

What are your favorite wine and food matches?

A five-year-old Meursault-Perriéres from Domaine des Comtes Lafon paired with fresh-cut capellini pasta, crème fraîche, French butter and freshly shelled Alaskan king crab is hard to beat. And it's simple to prepare.
We have a run of salmon from the Columbia River in Washington that yields salmon with an amazing fat content. With a touch of soy, garlic, ginger, white wine and coriander (cilantro) as a marinade, this may be grilled and served with a three-year-old Dundee Hills Pinot Noir from Oregon. The mint and menthol of the Pinot Noir sing with the spice and fat of the salmon.
An Andrew Will Merlot from the Klipsun Vineyard and Ellensberg lamb from Washington can enter into the sublime.

Do you have a favourite wine or wine style?

People who know me know that I think that the Côte d'Or is the strip of land God kept for himself. I adore the white wines from Rougeot, Chandon de Briailles, Domaine Leflaive, Domaine des Comtes Lafon, Arnaud Ante and the occasional Coche-Dury and Ramonet (the latter two I try before I buy). A red from Michel Gros, Patrice Rion or Hubert de Montille can cause me to gasp for air. I love Brunello di Montalcino, and a sizeable portion of my cellar is devoted to it. Barolo from Aldo Conterno and Luciano Sandrone abound in my stash. Those stand out, but it's the everyday tasting of unique and new wines that keeps me pumped. It's a new playing field every year and no one has a crystal ball!

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WILLAMETTE WEEK 25 YEARS

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EVENTS

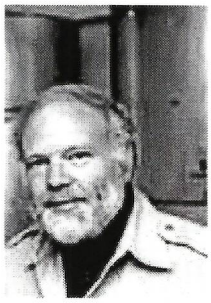
An **ice storm** closes the airport, fells trees and knocks out transformers, leaving 100,000 homes without heat electricity. The National Weather Service can't predict when the freeze will ease, because the storm cuts power to its Portland computers.

A **solar eclipse** darkens the Pacific Northwest for two minutes beginning at 8:13 on the morning of Feb. 26. Predictably, the skies over Portland are overcast, forcing most Portlanders to watch the event on TV instead.

inous signs of **economic trouble** on the horizon: Unemployment is

GRAPE EXPECTATIONS

BY MATT GIRAUD



As far as the rest of the world was concerned, the Oregon wine industry began in Paris, France, in 1979.

Of course, vineyards had been planted in southern Oregon 20 years earlier, and in the northern Willamette Valley since 1966, when a textbook salesman named David Lett edged the Eyrie Vineyards in among the fruit and nut orchards of the Dundee hills. But even though a hardy band of pioneers had been growing grapes and fermenting them quite successfully, that didn't mean they were making *fine wine*: To do that--in the '70s, at least--you needed a French address.

That all changed in 1979, when Lett entered his '75 South Block Pinot Noir in the "Olympics of the Wines of the World," a special tasting in France conducted by the prestigious food and wine magazine *Gault-Millau*. In those Eurocentric times, he could expect better odds sending a box of rocks. Nevertheless, he says now with curmudgeonly certitude, "I'd always thought that we could do better than Burgundy. This was my chance to give it a try."

Working in his favor was undoubtedly the fact that the wines were tasted "blind," so judges had no idea who produced them. Stunningly, Lett's wine finished third in a field of illustrious Burgundies from top vineyards, and the French whipped themselves into a mousse of outrage at the results. Here was an entry made--for all they knew--by savage cowboys clad in the skins of woodland creatures,

inching upward, gas prices are soaring, tourism is down, and inflation climbs 5 percent.

After 123 years of local ownership, the **Blitz-Weinhard brewery** at Northwest 11th Avenue and West Burnside Street is sold to Pabst Brewing of Milwaukee, Wisc. Things get blurry afterwards: Pabst will sell the brewery to G. Heileman Brewing, which will eventually merge with Stroh Brewery Co., which will, in turn, sell the Henry's brand to ...ier.

A new technology--the **color copier**--reenergizes a flagging art form: Xeroxing your naked body. *WW* views the resulting images, on display at Marylhurst's Mayer Gallery, with a certain disdain.

Retired painting contractor and carpet-layer Walter Powell teams up with his son Michael to set off a bookselling r...olution--...aposing new and used titles on the same shelf. From a derelict

and it had slipped past wines representing literally centuries of French expertise. Surely this was *un erreur*?

Robert Drouhin, scion of the powerhouse Burgundian *négociant* Joseph Drouhin, certainly had his doubts; he organized a rematch the following year in which he substituted his best wines for those he deemed inferior in the *Gault-Millau* tasting. "Drouhin felt that if his wines were shown, the honor of Burgundy would be preserved," Lett jokes.

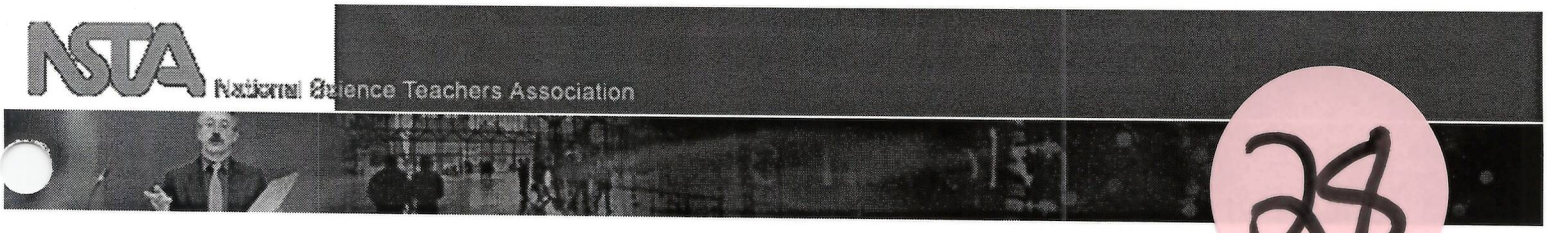
Naturally, the results were different, but probably not as the French had hoped: The Eyrie now came in second, a whisker behind Drouhin's redoubtable '59 Chambolle-Musigny.

Lett was still glowing from the '79 tasting when he heard the results of the event, which had been conducted without his knowledge. If the previous year's outcome signaled victory, this was the ticker-tape parade, triggering international press coverage and a sudden interest in wines from the west. "All of a sudden, Oregon got credibility," Lett remembers. "Before the tasting, I had to beg for distribution. Afterward, I not only got calls from individuals from around the world, but from distributors around the country, too."

Oregon is still feeling the aftershocks from these epicentral events. "What the *Gault-Millau* and Drouhin tastings did was set Oregon as a place where pinot noir could be produced in the U.S. that could rival Burgundy," Lett says. Winemakers immigrated to Oregon for a variety of reasons over the next 20 years, but the idea that this was even an option, to say nothing of a sound business move, was established in France in 1979 and '80.

One of those profoundly influenced by the outcome of the tastings turned out to be Drouhin himself. Even though he had visited Oregon before *Gault-Millau*, he now unequivocally understood the potential of the region, and his reaction in turn had a major influence on the growth to follow. By 1987, he'd established Domaine Drouhin Oregon just a few miles from Lett's vineyards. In a world where the French made Wine and everyone else made wine, this was an endorsement of incalculable value.

Since then, the number of Oregon wineries has exploded to 136 today, bringing an estimated $100 million into the state's economy each year. Oregon now attracts top winemaking talent from around the world, and well-heeled investors who see sound investment and prestige in its vineyards. Fine wine now comes from Oregon, and thanks to the French, the world knows it.



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Portland, OR

NSTA Northwestern Area Convention
November 14 - 16, 2002

Tours

Tour tickets may be purchased on Portland Advance Registration Form or when you register online.

Lewis and Clark Tour
$37 Advance $42 Onsite
Thurs., Nov. 14 (#T–1) 7:30 AM–5:00 PM
Limit: 55

Traveling along Highway 30, we'll pass through towns with names like Scappoose and Clatskanie that commemorate the importance of the Native American legacy as our tour guide will provides background on the Native American tribes of the area. Our first destination is the Columbia River Maritime Museum where we'll take a 45-minute guided tour. Later you'll have time to explore the new interactive exhibits, see a floating lighthouse, or revisit exhibits from the guided tour. The gift shop is well stocked with an extensive book selection. A box lunch will be provided while driving to our final destination, Fort Clatsop, where Lewis and Clark spent the winter. Tour the recreated buildings, spend time in the Visitors Center, and see a short video to gain an appreciation and understanding of the hardships this group faced. http://www.crmm.org

Portland City Tour
$30 Advance $30 Onsite
Thurs., Nov. 14 (#T–2) 9:00 AM–12 Noon
Sat., Nov. 16 (#S–1) 9:00 AM–12 Noon
Limit: 45

Come see some of the features that make Portland such a liveable, citizen-friendly city. Waterfront Park, which runs along the Willamette River, is an outdoor living room. Home to many festivals and celebrations, it also offers plenty of room for jogging, strolling, and enjoying the river view. We'll also visit Salmon Street Springs, a favorite cooling-off spot. Going down Burnside, we'll see some of the old architecture that gives Portland so much character and we'll pass Powell's Books, one of the largest bookstores in the country. Upon entering Washington Park we'll tour the Japanese Garden, place of serenity and classic Japanese beauty that invites contemplation and calmness of spirit. The last stop on our tour is a garden completely different in composition. The Chinese Classical Garden was painstakingly built by skilled Chinese craftsmen and artisans who spent months building this labor of love. More hardscape and symbolism than plant oriented, it offers a glimpse into the life of a wealthy urban Chinese businessman.

Columbia Gorge Tour
$40 Advance $45 Onsite
Thurs., Nov. 14 (#T–3) 9:30 AM–4:00 PM
Fri., Nov. 15 (#F–3) 9:30 AM–4:00 PM
Limit: 45

As we travel east to Troutdale our first stop is the Caswell Bronze Casting Gallery where we'll learn about the complicated and careful process necessary for creating these beautiful works of art. Next we'll begin our climb in the Gorge itself. Designated as a National Scenic Area, this is home to some of the most spectacular and interesting scenery in the country. As our guide explains the geological history of how the Gorge was formed, we'll stop at Women's Forum Overlook for a sweeping view with

the Columbia River weaving through the bottom like a shimmering ribbon. We'll see waterfalls large and small. Some have names, such as Latourelle, and others are delightful surprises. Finally we'll come to the crown jewel—Multnomah Falls. Cascading some 620 feet, it is a magnificent example of the power and beauty of nature. While enjoying a box lunch, we'll travel further east and over the Bridge of the Gods and see even more incredible views and learn how the bridge was named. Our next destination is the Columbia Gorge Interpretive Center. You've seen it, now learn about the various peoples who have called this region home. After a short video on how the Gorge was formed and why preservation of this area is so important, you'll have an opportunity to explore the exhibits. http://www.columbiagorge.org

Reed College Canyon Tour: An Urban Watershed
$12 Advance $17 Onsite
Fri., Nov. 15 (#F–1) 9:00–11:30 AM
Limit: 43

The Reed College campus was established on a tract of land known in 1910 as Crystal Springs Farm. In a parklike setting near the heart of the city, the rolling lawns and open spaces of Reed's 100-acre campus include some of the largest and finest specimen trees in the Portland area. At the center of the campus is a beautiful wooded upland surrounding a spring-fed lake. A walking trail around the lake provides numerous opportunities to observe migratory birds and other woodland wildlife. A fishway has recently been completed creating a passable link from the upper Reed Lake area to the Crystal Springs stream below. The Reed Canyon environment provides a unique opportunity to view all of the component elements of a vital urban watershed, including native plant management and restoration strategies for enhancing water quality. Wear outdoor shoes as the trail is rustic. Bring a camera and binoculars, if you have them. Dress appropriately for the weather—it rains occasionally in Portland and every month or so, it stops. http://web.reed.edu/canyon

Wine-tasting Tour
$53 Advance $53 Onsite
Fri., No. 15 (#F–2) 9:00 AM–5:00 PM
Limit: 45

Join us as we travel to Willamette Valley, recognized as one of the great Pinot regions in the world. Here climate, soil, and geography converge to form an almost perfect environment for wine. The first winery we'll visit is Chateau Benoit. As its name implies, this winery has a decidedly French ambiance. In fact its tasting room is patterned after a French chateau! Here you'll learn why pruning is so important as you taste Pinot noir, Riesling, and Muller-Thurgau. Before any more tasting, we'll enjoy lunch at the Hotel Oregon, an historic building with a rich history. Be sure to take a few minutes to view the old photos and read the captions. This is a slice of Oregon history not found in books. Our next stop is Erath Vineyards, home to very fine Pinot varieties and Riesling. Its tasting room is located high in the Dundee hills and offers spectacular views. Our last stop is Duck Pond Cellars, which features wines from Oregon and Washington. Fine Chardonnay wines are one of their most popular choices. You may even catch a glimpse of the llamas that live next door!

Willamette River Jet Boat Tour
$25 Advance $30 Onsite
Fri., Nov. 15 (#F–4) 1:00–4:00 PM
Limit: 43

The Willamette River, the waterway of Portland, travels through the Willamette Valley and is used for commerce, travel, recreation, industry, plants, animals, and people, and is part of Portland's watershed. This ride in a jet boat looks at the past, present, and future use of this river. The two-hour trip stops at many points of interest, from the large cargo ships to nesting eagles and herons. We'll observe vegetation, native and invasive, and see water treatment sites, wetlands, wild reserved areas, and carefully manicured parks. You're sure to enjoy this interesting exploration of a river, and you'll learn about its multiple uses, problems, and issues. Dress warmly as the boat, which has a cover, is open. Bring a camera and binoculars. The trip is partially sponsored through Clean Rivers and Environmental Education.

Tour of the World Headquarters of Vernier Software and Technology
$5 Advance $5 Onsite
Fri., Nov. 15 (#F–5) 1:00–4:00 PM
Limit: 50

Vernier Software and Technology, located in Beaverton, Oregon, has been a leader in the development of data collection tools and software for science educators since 1981. Vernier's products are highly regarded for their ease of use, reliability, and affordability. On this tour you will view demonstrations of

Vernier's newest products and visit Dave Vernier's personal museum of products past. Come meet the people you have talked with on the phone, as well as those behind-the-scenes individuals who design, produce, package, and otherwise support Vernier's efforts to bring you the best data collection equipment on the market. http://www.vernier.com

MARESH
RED HILLS VINEYARD RETREAT

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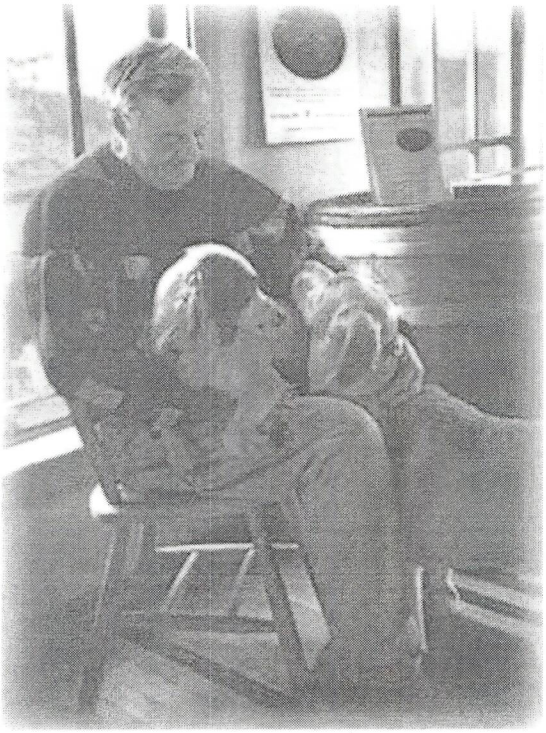
About the Maresh Red Barn Tasting Room



In the heart of Oregon wine country, from a pioneer in Oregon's wine industry.

While drinking a $20 bottle of pinot made from their grapes, Jim and Loie Maresh suddenly realized that the winery had paid them only $2 for the grapes used in that $20 bottle. Voila! Rather than sell the grapes to the winery for cash, they decided to take back custom-made wine for sale in their own tasting room and have fun doing it. So the tasting room was born.

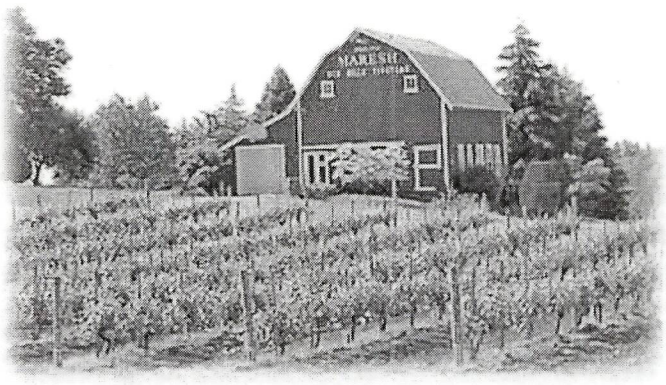
The greatest reward was not monetary, but rather the many enduring friendships that were formed over the ten years Jim and Loie ran the tasting room.

Taste some vintage Maresh pinot noir produced and bottled by three acclaimed Oregon wineries from Maresh vineyard grapes.

Open Friday - Sunday
March 1 through Thanksgiving
11:00 a.m. - 5:00 p.m.

The Maresh Red Barn is located in the Dundee Hills, the heart of Oregon's wine country, west of Hwy 99W at 9325 NE Worden Hill Road. See the Map & Directions page.

For more information, please call (503) 537-1098.



Maresh Red Hills Vineyard Retreat, P.O. Box 401, Dundee, Oregon 97115

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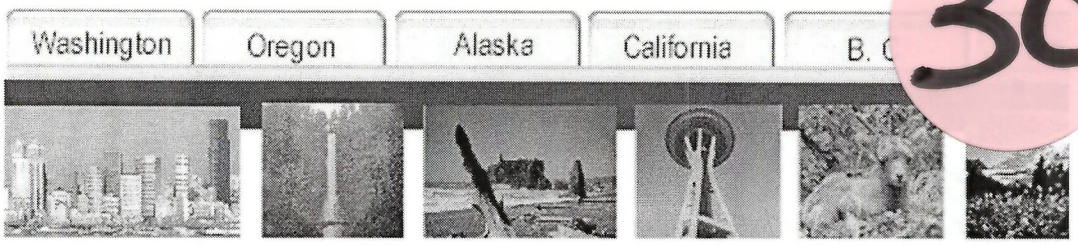
Uniquely Northwest



Portland Sit In Excursions

There are many activities in and around the Portland area. The following are examp some of the sit-in and private tours that we offer our guests.

Currency Converter
Weather
Seattle Airport
Vancouver Airport
Directions & Maps

Quick Escapes Pacific Northwest
Marilyn McFarlane
Used $8.00!

Short Trips in the Pacific Northwest
Barry Anderson

Quick Escapes Pacific Northwest
Marilyn McFarlane

Seattle, City by the Sound
L. E. Bragg

Quick Escapes in the Pacific Northwest
Marilyn McFarlane

(Prices May Change)
Privacy Information

Downtown Walking Tour (2 1/2 hours)

Explore downtown Portland on foot, highlighting the art, architecture and history of the "City of Roses." Ordain the US's most livable cities, Portland enjoys a wide variety of gifts few cities its size know. On this walking tou visit the art galleries in the Pearl District, the historical Old Town, Chinatown, and the bustling financial di Pioneer Place and the up-scale Pioneer Place shopping mall. Your guide will inform you of the historical ba and current events of the city.

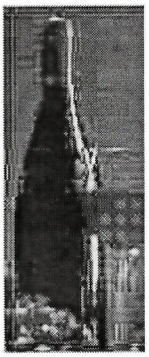
Mt. Hood, Timberline Lodge & Columbia River Gorge (8 1/2 hours)

Follow the historic "Barlow Road," part of the Oregon trail to the pristine forests of Mt. Hood. The second mos volcano in the world, Mt. Hood offers beautiful views of the Willamette Valley from the elegant Timberline Lo the lodge and enjoy its' charm and craftsmanship. Then you are off to the scenic Hood River Valley and M Falls. You finish your tour at Crown Point where you have a 35 mile long panoramic view. Tours depart downtown Portland May to October.

Oregon Coast Lodge (9 hours)

Enjoy a nine-hour round-trip drive to the beautiful Oregon coast. Drive through the lovely farm country befor the Douglas Fir forests of the coastal range. Stop in Seaside to visit one of Oregon's most popular seaside Seaside you will view the end of the Lewis and Clark trail and marvel at the splendor of the magnificent Departs daily year-round from downtown Portland.

Oregon Wine Country Tour (7 hours)



You will be picked up at your hotel at 10:30 and driven to the scenic Willamette Valley and Dundee Hills area where Oregon wineries abound! At the first winery, enjoy appetizers in addition to your wine-tasting experience. A gourmet picnic-style lunch will be served at the second winery, while a small dessert accompanies the wine at the third winery. Learn about Oregon's burgeoning wine industry from your knowledgeable and personable guides. Return to your hotel at 5:30 p.m. Max. 10 passengers. Available Saturdays & Sundays March - October. Half day tours also available Thursdays and Fridays. Please inquire.

Uniquely Northwest
4241 21st Avenue W, Suite 310
Seattle, WA 98199 USA
PH: 206-352-9020 FAX: 206-352-9021
E-mail: us@uniquelynorthwest.com

GRAPE VARIETIES

Chardonnay—I don't doubt for a minute that Oregon can make some wonderful Chardonnay, but far too many winemakers have left it too long in oak and have not chosen the best clones for their vineyards. Chardonnay is naturally high in acidity in Oregon, and therein lies the principal difference between Chardonnay grown here and that grown in California. In California, the majority of Chardonnays must have tartaric acidity added to them for balance. In Oregon, the wines must be put through a secondary or malolactic fermentation, à la Burgundy, in order to lower their acids. The best Oregon Chardonnays will outlive anything made in California, but the winemakers have to be more judicious with the use of oak.

Pinot Gris—This is the hardest wine to find as virtually all of it is sold and drunk before it has a chance to leave Oregon. However, winery owners, knowing a hot item, are planting as much of it as they can get their hands on. Fruitier and creamier than Chardonnay, Pinot Gris, the world's most underrated white wine grape, can make a delicious, opulent, smoky wine with every bit as much character and even more aging potential than Chardonnay. To date, Eyrie, Ponzi, and Adelsheim had led the way with this grape.

Pinot Noir—As in Burgundy, the yield per acre, competence of the winemaker, and type of oak barrel used in aging this wine profoundly influence its taste, style, and character. The top Oregon Pinot Noirs have a wonderful purity of cherry, loganberry, and raspberry fruit, show the expansive, seductive, broad, lush palate that Pinot Noir offers, and have crisp acids for balance. Pinot Noir from the Dundee Hills, a subregion of the Willamette Valley, has a more herbaceous, bing-cherry fruitiness.

Other Grape Varieties—With respect to white wines, Gewürztraminer has generally proven no more successful in Oregon than in California. However, Oregon can make good Riesling, especially in the drier Alsace style, but the marketplace for Riesling is dead at the moment. I have also yet to see a good example of Sauvignon Blanc or Semillon, or for that matter decent sparkling wine. The Cabernet Sauvignon and Merlot to date have not been very special, although some made from vineyards in the southern part of the state have resulted in several good rather than exciting wines.

FLAVORS

Chardonnay—Compared with California Chardonnays, those of Oregon are noticeably higher in acidity, more oaky, and have less of a processed, manipulated taste than their siblings from California. In

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Pinot Noir—Red-berry
Noirs. Aromas and flavor
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Oregon.

AGING POTENTIAL

Chardonnay: 4–7 years
Pinot Gris: 2–6 years
Pinot Noir: 5–10 years

OVERALL QUALITY LEVEL

Bearing in mind th
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David Lett, Myron Re
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MOST IMPORTANT INF

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wines. However, son
the finest Pinot Noir

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ARGYLE

[1987]

Willamette Valley/Yamhill County, OR

Argyle is the brand name for the still and sparkling wines made by the Dundee Wine Company, the partnership of longtime Oregon grape grower Cal Knudsen and Australian sparkling-wine guru Brian Croser. Beginning in 1987, they launched a bold plan to make Oregon sparkling wines in large quantities—wines that might compete in quality with top-rated French Champagne. The partners made over 15,000 cases of Argyle in their first vintage, confident that Oregon's cool-climate, classic Burgundian grapes (they manage more than 250 acres of Dundee Hills–area vineyards) would translate into premium bubbly. In search of authenticity, winemaker Rollin Soles uses wild yeasts obtained from the French firm of Bollinger. Much as Domaine Drouhin has done with its Pinot Noirs, Argyle has clearly succeeded in significantly raising the standard for all Northwest sparkling wine. Its crisp, yeasty Brut—arguably the region's best—is a top seller and maintains a production level of more than 16,000 cases. Some 2500 cases of a rich, round, creamy Blanc de Blancs and an identical amount of a colorful, fruity Brut Rosé are also produced each year. In addition to the sparkling wines, Argyle makes a pair of rich, concentrated Chardonnays, an elegant dry Riesling, a balanced and appealing Pinot Gris, and a fine, medium-weight Pinot Noir. The reserve Pinot is good but expensive.

★★★ Blanc de Blancs 87 $$

[★★★★] Brut 87–89, 91 $$

★★ 1/2 Brut Rosé 87 $$

★★★ 1/2 Chardonnay "Reserve" 87, 88, 90 $$

[★★★] Chardonnay "Willamette Valley" 89–92 $

★★★★ Riesling "Dry Reserve" 88–91, 93–present $

★★★★ Riesling "Late Picked" 92 $

★★★★ Pinot Gris "Dry Reserve" 91–present $$

★★★ 1/2 Pinot Noir 92–present $$

★★★ 1/2 Pinot Noir "Reserve" 93–present $$$

founded Evesham Wood in '86, planting 8 acres in the Eola Hills to Gewürztraminer, Chardonnay, Pinot Gris, and Pinot Noir. In '93 2 more acres were planted, one each to Chardonnay and Pinot Noir. Additional grapes come from the Temperance Hill and Seven Springs vineyards. Evesham Wood's cellars are built into the hillside and naturally cooled. Raney makes lush, concentrated Chardonnays and rich, complex and tannic Pinot Noirs, with flavors running the gamut from cherry/berry fruit to exotic highlights of licorice, cinnamon, coffee, toffee, and smoke. Most of these wines are unfiltered and consequently have a long, textured, mouth-filling aftertaste. There are very small quantities of several different versions of each, along with a bit of a creamy, spicy, satisfying Pinot Gris and a fine Gewürztraminer.

★★★★ Chardonnay "Tête de Cuvée" 90 $$
★★★ 1/2 Chardonnay "Estate" 91–present $$
★★★ Chardonnay "Willamette Valley" 86–present $$
NR Chardonnay "Mahonia Vineyard" 93–present $$
NR Chardonnay "Seven Springs" 88, 89 $$
★★★ Gewürztraminer "Estate" 92 $
★★★★ Pinot Gris "Estate" 88–present $
★★★★ Pinot Noir "Cuvée J" 89–91 $$$
★★★★ Pinot Noir "Seven Springs" 89, 91 $$$
★★★ Pinot Noir "Willamette Valley" 86–present $$
NR Pinot Noir "Estate" 92–present $$

THE EYRIE VINEYARDS
[1970]

Willamette Valley/Yamhill County, OR

The Eyrie Vineyards celebrated its 25th year of production in 1995—a testament to the tenacity, creativity, and stubborn individuality of its owners, David and Diana Lett. In 1966, seeking the perfect place to grow Pinot Noir, they left warm, sunny California (where David studied viticulture at UC Davis) to find a cool-climate vineyard. They not only found a vineyard in Oregon's Dundee Hills,

Lisa Dupar
CATERING

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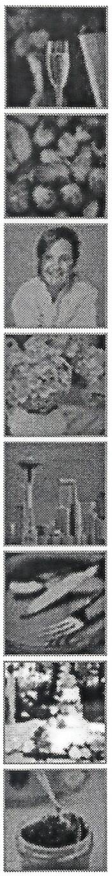

Simple Elegance ~ Argyle
Friday, October 25, 2002, 7-9 pm $45.00
The Tasting Room, Lisa Dupar Catering

Oregon's Dundee Hills outside of Portland are home to the Argyle Winery, named in the September 2000 Wine Spectator Magazine as Oregon's "premier winery". Chefs Lisa & Jonathan have created five dishes that match the simple elegance of the Argyle wines, from festive appetizers perfect for a holiday gathering to fall comfort food with a sophisticated twist. For starters, we'll pop the cork on an outstanding bubbly, the 1995 Brut Knudsen Vineyard "Millennium" , while sampling Paddlefish Caviar on Yellow-Finn Potato, then move on to the fabulous 2000 Chardonnay Reserve that holds its own with the Bandon Sharp Cheddar Grilled Cheese Sandwich & Tomato Basil Soup. Come celebrate with more outstanding wines from fabulous Oregon wine country.

1995 Brut Knudsen Vineyard 'Millennium'
Paddlefish caviar on Yellow-Finn Potato

2000 Chardonnay Reserve
Bandon Sharp Cheddar Grilled cheese sandwich with tomato-basil soup

2000 Chardonnay 'Nuthouse'
Girard & Dominique Smoked Salmon with fried capers, dill aioli and gaufrette potato

1999 Pinot Noir reserve &1999 Pinot Noir 'Nuthouse'
Seared Duck with Fennel Gratin

<-back to Wine Dinner index

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LIVES IN VINE

David Autrey & Amy Wesselman
Westrey Wine Company

David and Amy founded their wine enterprise in 1 wasn't until a few years later that they actually ha could call their own. Their winemaking philosophy intervention calls for traditional teqhniques such a indigenous yeast fermentation, hand punch downs and limited use of n

In 2001, David and Amy planted 10,000 Pinot Noir vines on a newly ac parcel of land in the Dundee Hills, which they've named Oracle. It's qu from their winery setting in industrial McMinnville, something they joke infrequent Open House invitations:

"Immerse yourself in the post-industrial vistas of McMinnville's winery bask in the splendor of the faux-chateaux, nestled amid a panorama o Winnebagos framed by cyclone fence topped with barbed wire and high foot cellular tower."

Comments about the site? Write us!

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425 NW 18th St McMvl 503 472-5279
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NE Welch Rd Nwbrg 503 538-4610
SSEL Edith Nwbrg 503 538-4926
onard H 503 474-0163
ichael 1539 NE Hoffman Dr McMvl 503 472-7743
SSER Chris & Kristi Nwbrg 503 554-0785
SSER Robert & Muriel 503 876-7307
VES Patrick & Theresa
NW Riesling Way McMvl 503 434-9244
W D McMvl 503 474-1352
nest 609 Oxford Nwbrg 503 538-6107
McMvl 503 472-3801
vin & Lana Amity 503 835-2036
ndra & Richard S
S 7th Dundee 503 538-3641
eve & Allison
120 SW 2nd St McMvl 503 472-6092
Y Richard & Lisa
College St Nwbrg 503 554-5756
YLR Vernon
NW McGarey Dr McMvl 503 435-0123
& Kristi McMvl 503 474-2955
KEY Nancy
NW 8th St McMvl 503 434-6870
KEY Kay 145 SW Hill Rd McMvl 503 434-8982
LI Julie 2610 N Evans McMvl 503 474-3838
ary 411 Nathan Dr Nwbrg 503 537-5381
NKWATER Gregg
Moores Vly Rd NW Yamhill 503 662-4378
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VETRAIN Specialties
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Woodland Hgts Rd SE Amity 503 864-3186
MGOOLE Gordan
Goodrich Rd NW Yamhill 503 662-3698
vin 848 SW Taft McMvl 503 435-1381
ERY C J 1604 Coffey Ln Nwbrg 503 538-1626
F McMvl 503 472-4948
in & Terrie 707 Getchell Amity 503 835-6027
McMvl 503 472-3310
RY Richard L 503 843-4271
Verna E
Alderman Rd Dayton 503 868-7650
AA&A Abuse – 24 Hour Action
line
Dial 1 & Then 800 364-4035
Abuse & Crisis Intervention
Dial 1 & Then 800 234-0246
Abuse Treatment Centers Yamhill
Dial 1 & Then 800 333-2294
LINER Larry & Barbara
NW Haun Dr McMvl 503 472-9788
MWOOD Apts
Dogwood Av McMvl 503 472-2904
RY Barbara
SW Shilo Wy McMvl 503 472-4398
SE J E 639 Birch McMvl 503 472-5502
SDALE Douglas McMvl 503 435-0388
NE'S Mobile Repair
Sawtell Rd Willamina 503 876-4445
RTE Jorge L 331 NE Hill St Shrdn 503 843-5238
RTE Michelle McMvl 503 472-0572
RTE Pedro & Rosareio
Yamhill St Shrdn 503 843-7897
RTE GUTIERREZ Leobardo
Villard McMvl 503 435-1753
G M 911 Angela Ct McMvl 503 472-5408
Jennifer & Raymond
Cowls Ct McMvl 503 474-3034
503 538-2080
Larry 275 NE 27th St McMvl 503 472-6200
Albert G Jr
NE Kings Grade Nwbrg 503 538-8044
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DUCK James Jr McMvl 503 472-1257
DUCK Pond Cellars
23145 N Hwy 99W Dundee 503 538-3199

DUCKETT GMAC REAL ESTATE
819 NE Hwy 99 W Suite C **503 472-2173**

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Denzel & Edith
13875 SE Foster Rd Dayton 503 864-2073
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DUERFELDT Adam & Emily
1545 NW Cabernet Ct McMvl 503 474-4603
Tim 1216 N Evans McMvl 503 472-4244
DUERST Jacob Mrs
215 S Evans McMvl 503 472-5365
DUEY Duane & Kim
3721 Ewert Dr Nwbrg 503 554-0414
DUFF A Salem 503 868-7544
Brandon
16801 SW Masonville Rd McMvl 503 434-6157
DUFF Darren & Rose Crltn 503 852-6379
DUFFIELD Elaine 503 435-2531
DUGAN Dennis Dayton 503 538-5335
John E & Mary L
11375 NE Parrett Mtn Rd Newberg 503 625-6043
DUGGAN Albert J
275 NE 27th McMvl 503 472-5649
Denver 1310 NE 27th St McMvl 503 434-6599
DUGGAN Jerry & Francis
25218 SW Beaver Ct Grand Ronde 503 879-5851
DUGGAN T Dundee 503 538-2034
DUGGER Randy & Kathy McMvl 503 435-2037
Regan 977 SW Dove Ct McMvl 503 472-4002
William E 250 SW Lekman McMvl 503 472-5869
William E Jr 240 SW Lekman McMvl 503 472-6018
DUHANCIK M & E Shrdn 503 843-4113
DUKE Dennis
1215 SW Tall Oaks Dr McMvl 503 472-7042
James & Lucita
22480 SW Peavine Rd McMvl 503 472-2839
Ralph Dayton 503 868-7743
DULANEY S C 325 SE Davis McMvl 503 472-5402
DULL Brian & Barbara Nwbrg 503 538-7773
DULL Randy & Donna 503 852-6978
DUMBROW Marvin & Rebecca
707 NW Bronco Ct McMvl 503 472-2877
DUMDI Roger A McMvl 503 434-6255
Steve 2551 Moores Vly Rd NW Ymhl 503 662-3390
DUMLER Dan Nwbrg 503 554-1599
David & Dawnie
501 Maple Ct Amity 503 835-8045
Dennis & Lois
12005 Oak Rd NW Salem 503 868-7320
DUMMER Douglas & Traci
377 S Smith St Crltn 503 852-7260
DUMMER Duane & Carla
10531 Mardell Rd NW Ymhl 503 662-4611
Francis Dytn 503 864-2637
DUMOND L 503 835-0286
DUNAWAY M Nwbrg 503 554-8489
S & G 901 Fresca Ct Nwbrg 503 537-6187
DUNBAR E M Crltn 503 662-3848
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J McMvl 503 434-6683
Janet 12400 SE Oak Rd Salem 503 868-7881
DUNCAN Laura
710 NE 5th St Willamina 503 876-2610
DUNCAN Suzann Nwbrg 503 538-4659
T Amity 503 835-0276
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1245 NW Birch St McMvl 503 472-1268

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Laurie 3505 Madrona Dr Nwbrg 503 554-0049
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35

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DUPREE Brenda F
21990 Hwy 47 Yamhill 503 662-4054
D L & C T 15301 Goose Av NW Ymhl 503 662-4682
Natalie 1300 Vittoria Way Nwbrg 503 538-6169
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785 NE C St Willamina 503 876-7285
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DUYCK Paul 242 SW Alpine St Dundee 503 538-7030
DUYN Carl & Jerry
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DUYN Joseph F 11475 Hwy 47 503 852-6174
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DVORAK A N 2210 Prospect Dr Nwbrg 503 538-4418
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EXPLORING *Wine*

36

The Culinary Institute of America's Complete Guide to Wines of the World

Steven Kolpan
*
Brian H. Smith
*
Michael A. Weiss

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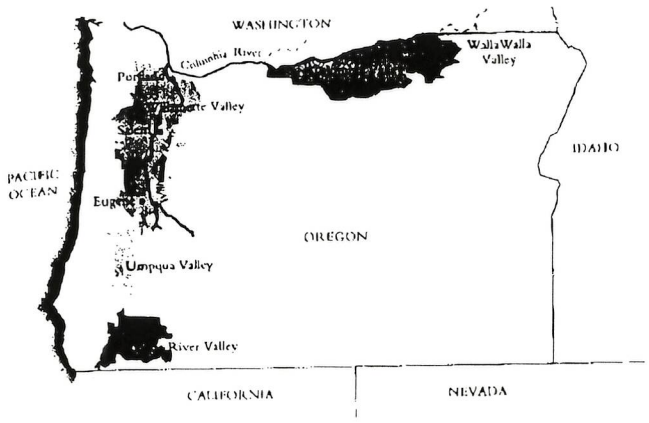
M VINEYARDS, OR

...full-time occupation, he led the ...ended universities in Berkeley, CA, ...ny. After earning a Bachelor of Arts ...worked in a bank, built musical in... Anybody who knows Adelsheim ...ne consumers owe David and his ...operate a vineyard and winery. ...rly 1970s, Adelsheim recalls that it ...thing knew limitless bounds. It was ...a business which would be verti... ...th the land and nature." Today, he ...sm came face-to-face with the re... ...dea of the complexity of the busi... ...keeping—the things that keep a ...quality product to sell, Adelsheim

...the overall direction of the vine... ...ize that even the finest technology ...ith his vineyard manager, he exer... ...with the Oregon State University ...led to the adoption of Burgundy ...he Willamette Valley than the Cal... ...ce of timing the picking. "In the ...eros District in California to taste ...what the sugar and acidity mea... ...they taste like Pinot Noir and ...and Chardonnay clones, and more ...on wines. ...ine-making philosophies. The la... ...ones, different vineyard sites, and ...al character. The Reserve and ...ir or Chardonnay from single ...te, and vineyard techniques from

...rants on the blended Oregon ap... ...first winery and plant their first ...the Adelsheims' own daughter

...Drouhin to buy property in the ...ition on Oregon as a producer ...n." For all the advances and im... ...d concern among United States ...w generation of wine lovers. We



Map 4.13 Oregon State AVAs.

In years with enough sun and warmth, Oregon's Pinot Noirs develop vibrant, purple hues and attractive cherry fruit aromas and flavors, while the Chardonnays can occasionally display a ripeness of fruit which is surprising. Both varieties maintain good acid levels in the cool climate, providing backbone and structure. In recent years, the style of the Pinot Noirs has become more defined, offering more suppleness and smooth texture as some of the developmental wine-making problems have been ironed out.

Regions. There are three AVAs lying entirely within Oregon, the Willamette Valley, the Umpqua Valley, and the Rogue River Valley. As the names imply, each one of the appellations takes advantage of climate and soil conditions provided by river valleys, with deeper and more complex soil profiles on the valley slopes, along with better sun exposure and frost and wind protection. Small portions of the Columbia Valley and Walla Walla appellations extend from Washington State into Oregon.

Willamette Valley. This, the largest and best-known Oregon AVA, is home to some of the state's finest wineries, such as Knudsen-Erath, Sokol-Blosser, Adelsheim, and Eyrie. Both Robert Drouhin of Burgundy and Laurent-Perrier of Champagne own property here, along with Brian Croser of Australia's Petaluma winery. The finest areas within the appellation are acknowledged to be the Dundee Hills, and the Eola Hills. Pinot Noir and Chardonnay remain the most widely planted varieties.

Umpqua Valley. Lying immediately south of Willamette Valley, the Umpqua Valley AVA has a slightly longer history of grape growing and was the site of Oregon's first winery, Hillcrest Vineyards. Hillcrest is still in operation and still produces some of the state's best Pinot Noir and Chardonnay.

Exploring Wine

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Yamhill River
OREGON

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topographic—bathyn

30 X 60 MINUTE QUADRANGLE
SHOWING

- Contours and elevations in meters
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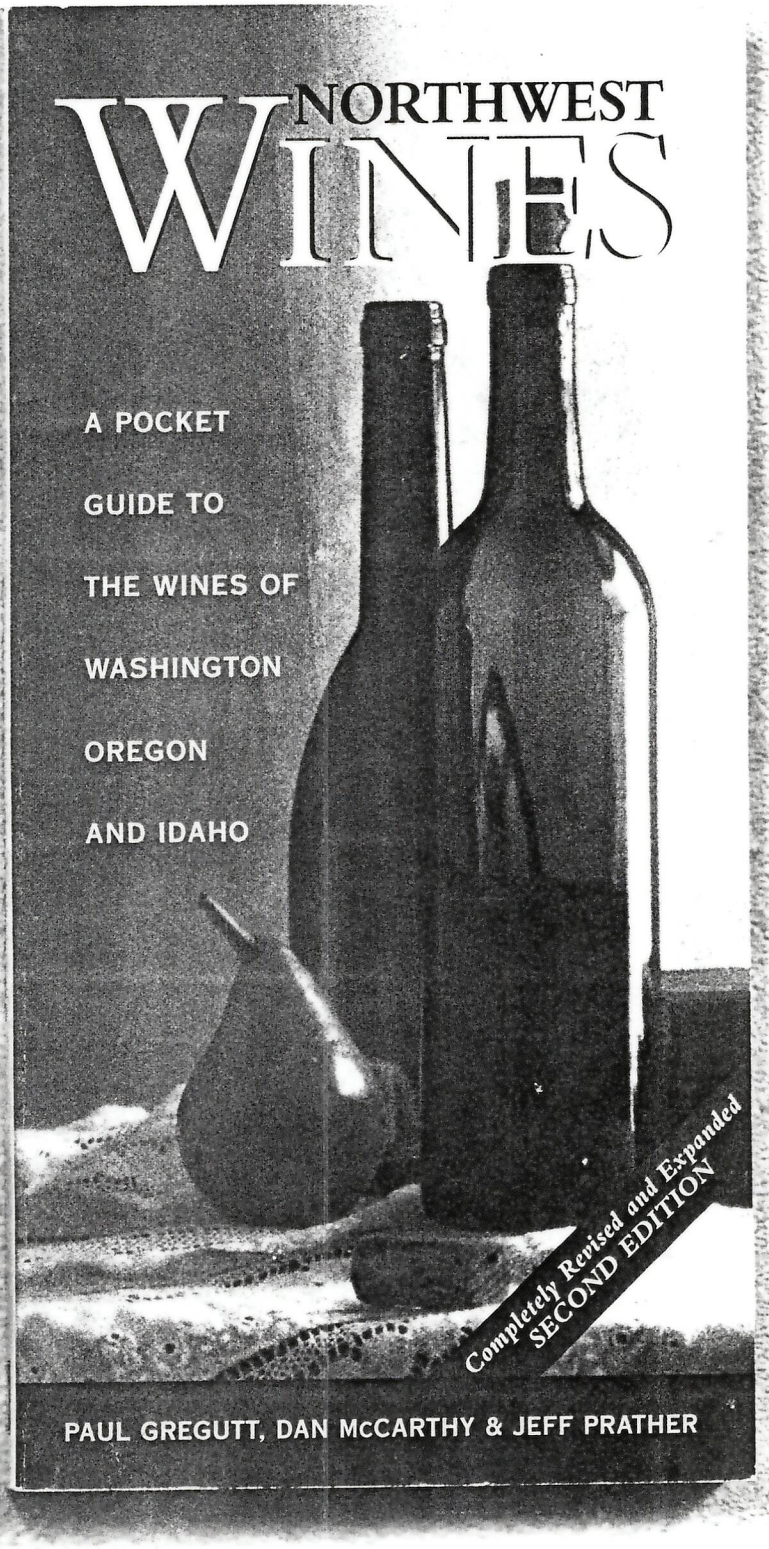
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On Wine—It sloweth age, it strengtheneth youth, it helpeth digestion, it abandoneth melancholie, it relisheth the heart, it lighteneth the mind, it quickeneth the spirits, it keepeth and preserveth the head from whirling, the eyes dazzling, the tongue from lisping, the mouth from ...ffling, the teeth from chattering and the throat from rattling; it keepeth the stomach from wambling, the heart from swelling, the hands from shivering, the sinews from shrinking, the veins from crumbling, the bones from aching, and the marrow from soaking.

—ANONYMOUS 13TH-CENTURY MANUSCRIPT

Printed in the United States of America.

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stratosphere. The Cabernet Sauvignon, massive without a blemish, can be deeper and denser than the Merlot in a year such as '92. The Select—50 percent Merlot, 40 percent Cabernet Sauvignon, 10 percent Cabernet Franc—is a stunning success: seamless, elegant, and strong, with a marvelous velvety richness running all the way through a long, focussed finish. One hopeful note: In addition to the 4 1/2-acre vineyard adjacent to the winery, Figgins recently purchased 19 more acres to be planted to Cabernet Sauvignon in '96–'97.

★★★★★ Cabernet Sauvignon 78–present $$$$
★★★★★ Cabernet Sauvignon "Reserve" 80, 83, 85 $$$$
★★★★★ Cabernet Sauvignon "Reserve—Seven Hills" 87, 89, 90 $$$$
★★★★★ Cabernet Sauvignon "Seven Hills Vineyard" 85, 88 $$$$
★★★★★ Merlot 83–present $$$$
NR Sangiovese 95 $$$$
★★★★★ Select Walla Walla Valley Red Table Wine 90, 92 $$$$

LOOKINGGLASS WINERY
[1988]
Umpqua Valley, OR

Bottling as Rizza Cellars, Lookingglass Winery limits production to 1000 cases of Pinot Noir and Cabernet Sauvignon from its 4-acre estate vineyard. Almost all of the production is sold out of the tasting room. Not rated.

LOPEZ ISLAND VINEYARDS
[1989]
Puget Sound Region, WA

Grape growing would seem to be a dubious venture in Washington's San Juan Islands, a cluster of green jewels strung across Puget Sound just south of the Canadian border. But parts of Lopez Island are in the rain shadow of the Olympic Mountains and receive an extra bonus of sunshine. In the winery's 4 1/2-acre vineyard (first planted in '86), Madeleine Angevine and Siegerrebe ripen into crisp, floral white wines. Chardonnay, Merlot, and a surprisingly rich Cabernet Sauvignon are also made from purchased Yakima Valley grapes.

★★★ Cabernet Sauvignon 89–present $$
★★ Chardonnay 90–present $$
★★★ Madeleine Angevine 90–present $
NR Merlot 94–present $$
★★★ Siegerrebe 90–present $

LOST MOUNTAIN WINERY
[1981]
Washington

A large assortment of rough-and-tumble red wines are made from purchased grapes, including some from California. Not rated.

MANFRED VIERTHALER WINERY
[1976]
Washington

A curious mix of white, red, and fortified wines are made and sold exclusively at this tourist-oriented winery in western Washington's Puyallup Valley. Some of the wines come from grapes grown right there in the valley, others from grapes trucked in all the way from California. In our experience, none of them rise above home-winemaking quality. Not rated.

MARESH RED HILLS VINEYARD
[1987]
Willamette Valley/Yamhill County, OR

Jim Maresh (pronounced "marsh") had a 200-acre prune orchard in the Red Hills of Dundee when Dick Erath knocked on his door in 1970 and convinced him to plant wine grapes. Today Maresh has ten blocks of exquisite Pinot Noir scattered over 100 well-groomed acres, along with smaller amounts of Chardonnay, Riesling (the second oldest in the state), Pinot Gris, and Sauvignon Blanc. Low yields and organic farming have always been the rule: Maresh dry-farms and has never used pesticides or herbicides. Currently all the vineyards are leased to Rex Hill, Erath, and Argyle. As partial compensation, Maresh has each winery produce and bottle a few hundred cases of wine for him

We're hoping that plans to resume production of sparkling wines under the DiStefano label will move forward and help return this eccentric but talented winery to its previous winning form.

★★★ Cabernet Sauvignon 91-present $$
★★ Fumé Blanc 90–present $

DOMAINE DROUHIN OREGON
[1988]
Willamette Valley/Yamhill County, OR

In 1987 Maison Joseph Drouhin, one of the oldest, largest, and most highly regarded *négociants* in Burgundy, purchased 180 acres of Yamhill County farmland and began making Oregon Pinot Noir. Pinot Noir is a notoriously difficult wine to make, and only in Burgundy does it (very occasionally) reach its ineffable pinnacle. Hints that Oregon might be a second place where the flighty grape could be coddled and cajoled into greatness had appeared sporadically over the years, principally among the wines of Eyrie, Ponzi, and Adelsheim. Drouhin's startling announcement was both a validation of past efforts and a brave new hope for the future. With seven vintages now on the market, it is apparent that something truly special is happening here. Whether it is genetic, prophetic, or simply copacetic, the magic that winemaker Veronique Drouhin has wrought cannot be disputed. The addition of an estate-bottled wine (named for Veronique's daughter Laurene) seems to have done the impossible—elevated these superb Pinots to a still higher level. These are not only the best Pinot Noirs in Oregon; they belong among the best in the world. With 58 acres now under cultivation, production has reached 10,000 cases annually, including 1700 of the "Laurene." Since '92 a few experimental barrels of Chardonnay have been bottled each year, unfortunately too little to offer for sale to the general public. However, with 5 acres of Chardonnay in the ground, one can dream of Oregon Puligny . . .

NR Chardonnay 92–present
★★★★★ Pinot Noir 88–present $$$$
★★★★★ Pinot Noir "Laurene" 92–present $$$$

DOMAINE STE. MICHELLE
[1987]
Columbia Valley, WA

In the past couple of years Domaine Ste. Michelle has become the fastest-growing producer of *méthode champenoise* sparkling wines in the country, and stands third in sales behind industry giants Korbel and Domaine Chandon. So why does the brand seem almost invisible? Perhaps because its clean, yeasty style, though refreshing and flavorful, lacks a defining hook on which to hang its hat. Or perhaps it's because the winery lacks a high-profile winemaker (in fact, at the moment, it lacks any winemaker at all, though the position is expected to be filled shortly). Among these well-made wines the Blanc de Noir—richer, toastier, and twice as costly as the rest—is the standout, though we should caution that the current vintage (1987) is nearing the end of its useful life. The Champagne Brut shows some nice apricot fruit; while the Blanc de Blanc is more delicate, clean, and crisp; and the Extra Dry—a blend of Chardonnay and Pinot Noir grapes—finishes with a hint of sugary sweetness. A "Tête de Cuvée" is in the works and will be released sometime in 1998.

★★ 1/2 Blanc de Blanc NV $
★★★ 1/2 Blanc de Noir 87 $$
★★ 1/2 Champagne Brut NV $
★★ Extra Dry NV $

DOMAINE SERENE
[1990]
Willamette Valley/Yamhill County, OR

Domaine Serene is the property of Ken and Grace Evenstad, who planted their 82-acre vineyard in the Red Hills of Dundee. Ken Wright consults, and the wines showcase his intense, high-wire winemaking act. Domaine Serene makes only Pinot Noir, in two different versions, both labeled "Reserve."

** Semillon "Dionysus Vineyard"
91–present $

ARCHERY SUMMIT WINERY
[1995]

Willamette Valley/Yamhill County, OR

This is the new Oregon property of Napa Valley's Andrus family, who also own the well-regarded Pine Ridge Winery. Gary Andrus oversees the winemaking at both properties. Archery Summit specializes in the production of Pinot Noir. Construction was completed in early 1996 on a new gravity-flow winery facility that is a real showplace in the Red Hills above Dundee, bordered on two sides by Domaine Drouhin. Other neighbors include Sokol Blosser, Cameron, and Erath Vineyards. This Dundee hillside neighborhood seems to be turning out some of the top Pinots in the state. Four vineyards totaling 70 acres are being developed. These include the Archibald vineyard (renamed Arcus—Latin for "bow") and part of the Maresh vineyard, both purchased from Rex Hill. Archery Summit's first release—a blend of estate-grown Pinot and purchased grapes—displays beautiful cherry fruit, rich body, and a rugged, earthy finish. There are also a pair of very limited reserves (200 bottles each!) labeled "Red Hills Estate" and "Arcus Estate"; and a single white wine, Vireton, which is primarily Pinot Gris with a bit of Pinot Blanc and Chardonnay. All the right pieces seem to be in place for this promising young winery, and the prices of these wines reflect the growing demand for limited-production Yamhill County Pinot.

**** Pinot Noir "Arcus Estate" 94 $$$$
**** Pinot Noir "Red Hills Estate" 94 $$$$
*** Pinot Noir "Premier Cuvée"
93–present $$$
NR Vireton 95 $$

The Underground
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ian Allman, Reader

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The Weather Giveth... and Taketh Away

by Tom Hyland

The entryway to Sokol-Blosser Winery © Tom Hyland

Vintners may agree about the research in the field, but when it comes to the question of oak and Pinot Noir, there is sharp disagreement

Pinot Noir in Oregon has always been something of a mystery. Over the span of 35 years, some great wines have been made in the occasional outstanding vintage, but more often than not, the wines have disappointed. Now the days of uncertainty may be over. Three recent excellent vintages have brought much attention to this area, and with it, the realization that Oregon can now consistently produce memorable Pinot Noirs.

It was in 1966 that David Lett at the Eyrie Vineyards planted the first Pinot Noir vines in Yamhill County, some 40 miles south of Portland. A few years later, David Adelsheim, Dick Erath and Susan Sokol-Blosser planted grapes in this county as well, and Oregon had taken the plunge with this most troublesome of varietals.

Early success led to more plantings, but Oregon had a problem that reared its ugly head in many years – the weather. Rain always plays a part in the growing season in Oregon – both spring rain just before bloom and late summer rain – just as the grapes are ready to be harvested. Could Oregon winemakers deal with the rain and make excellent wines year in and year out? That was the foremost question challenging vintners, but great Pinot Noir has so many more variables. Where were the best sites to plant Pinot Noir? What spacing trials should be used? Which clones would work best in this cool climate?

The Red Hills of Dundee

Today, almost half of the state's 10,000 acres planted to vines are Pinot Noir. While the grape is planted in several regions, Yamhill County is clearly the nexus of the plantings. Several districts in this county produce distinctive wines, with most of the attention focused on one area in particular – the Red Hills of Dundee.

The Red Hills of Dundee is a relatively small, but undeniably critical, area in Yamhill County. In this extended circle measuring about 5 miles in diameter, are located several of the state's finest producers while dozens more purchase grapes from here.

While a few local vintners saw the promise for this area early on, international attention arrived in 1987. That was the year that Robert Drouhin, director of the famed Burgundian *négociant*, Joseph Drouhin, came to the Red Hills to look for vineyard land for a New World foothold.

Drouhin recalls tasting many of the wines from the pioneers. "Some of them were not particularly good in 1987, but we felt there was potential," Drouhin says. "But some, such as David Lett's wine and David Adelsheim's wine, were really very good. It was as a joke, really, that I said, 'It would be fun to have a vineyard here.' Nine months later, David Adelsheim phoned me and said, 'There is a nice piece of land. Why don't you buy it?'"

More attention came in 1993 when Gary Andrus, founder and executive winemaker at Pine Ridge Winery in California's Napa Valley, arrived. Andrus, whose goal was (and still is) "to produce the great American Pinot Noir," believed Oregon was the place where this would happen. As Andrus could have planted Pinot Noir at his holdings in the Carneros District in southern Napa, he was sure of his convictions.

The Red Hills of Dundee are named for the distinctive color of their soils, primarily a clay loam known as Jory. The Eola Hills to the south also feature a clay loam soil known as Nekia, which is the shallower of the two. Lynn Penner-Ash, winemaker at Rex Hill Vineyards, located just north of the Red Hills, describes the differences in the wines from these two districts. "From the Eola Hills, the fruit tends to be more concentrated, more intense with more dark fruits. With the Dundee Hills, you tend to get more of a red raspberry fruit. The mouthfeel has a lot more sweetness in the mid-palate, but the fruit overall is more delicate, the pH tends to be higher and the tannins are silkier."

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McMvl 503 474-2898
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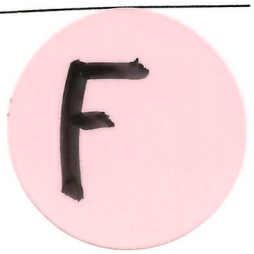
4537 NE Fremont 97213 503 335-7068
Red Green Of Scandinavia-Portland
437 NW 23d PTLD 97210 503 552-9130
Red Hawk Industries 8835 SW Canyon Ln 97225 503 297-7072
Red Head Auto Service 8418 SE Stark 97216 503 253-3838
Red Hills Electric & Tower Service Dundee 97115 503 554-8244
Red Hills Provincial Dining
276 Hwy 99W DUNDEE 97115 503 538-8224
Red Hot Oil Co 2500 NE Columbia Blvd PTLD 97211 503 281-4252

Business



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Grape Variety and Site Selection with an Emphasis on the Willamette Valley

Valley it produces a light and enjoyable wine of mild herbaceous quality. It is far less tannic than Cabernet Sauvignon, and can even make a likeable rosé which is more raspberry-like than herb-like. Yields are comparable to Cabernet Sauvignon.

Merlot (Period II)

Merlot is a very vigorous variety, but possibly due to clonal selection, or more probably, its sensitivity to cold damp weather during bloom, it often has failed to set any crop at all in the Willamette Valley. In France, from Bordeaux to the Midi, it is a very productive variety which gives a wine of lesser tannin than Cabernet Sauvignon. When grown in Bordeaux, Merlot can yield a wine of equal body to Cabernet Sauvignon, with milder aromas. It usually comprises part of Bordeaux blends, to soften and enhance body.

Malbec (Period I-late)

Malbec is a lightly Cabernet Sauvignon-fragranced wine, fairly high in tannin. It is often used in Bordeaux to add tannic "backbone" to otherwise soft vintages of other varieties. Production is somewhat less than Cabernet Sauvignon.

Sauvignon blanc (Period II)

Sauvignon blanc is the white counterpart to Cabernet Sauvignon, and has become well established in the viticulture of California and eastern Washington in the last ten years. It is very vigorous in growth, producing high tonnages (up to nine tons per acre in warmer climates and under irrigation). It produces a very herbaceous white wine. In the Bordeaux region, the wines tend to be more crisp and austere than eastern Washington or California examples.

Semillon (Period II)

This wine has less market penetration than Sauvignon blanc, but can yield some delightful wines. It is often used in the Graves region of Bordeaux to temper the somewhat overzealous Sauvignon blanc grown there. A more moderate producer than Sauvignon blanc.

Chenin blanc (Period II)

At least two producers in the Willamette Valley are making this wine and marketing it with good success, but with its late ripening of very large crops (with Godzilla-like clusters), its long-term potential would seem to lie in southwest Oregon or eastern Oregon where more consistent maturity could be achieved.

Vinifera American Hybrids

The number of Vinifera-X-American hybrids run into the thousands, and this does not seem the place to discuss them. Several hybrids are widely planted in the eastern United States. For an excellent discussion of many of these varieties, I refer the reader to Galet and Morton, reference [3] in the Bibliography.

Site Selection

Next to variety selection, the most important consideration for those interested in planting vinifera winegrapes in western Oregon is choice of site. First of all, hillside rather than valley floor locations are preferable in western Oregon, for the following reasons: first, the valley soils tend to be heavier and retain moisture later in the spring than hillside soils. This means that the root level of the vine will be colder later, and therefore the vines will begin growth later in the season than those on hillsides. Remember, this is a marginal climate.

Second, the valley floors tend to pool colder air in the critical frost periods at bud break in the spring, and at ripening time in the fall.

Third, the valley soils tend to be richer in nutrients and moisture availability later in the season, thus tending to encourage vegetative growth rather than fruit ripening. This, of course, means later grape maturity and unhardened-off wood.

Fourth, in this cool climate we have to optimize the amount of effective solar radiation. To illustrate this, let us assume the sun at 45° north latitude reaches its mid-day peak from the south horizon at 45° during the summer. At the same time of the year on the equator, the sun would be 90° to the horizon. The equatorial regions thus receive maximum solar energy. The Oregon equivalent of this (which is not to say that we can grow bananas) is a 45° slope facing due south, thus meeting the sun's rays at a 90° angle. A 45° slope would be difficult to work agriculturally, but every degree of south slope at a northern latitude will result in a proportionate increase of solar radiation, thus increasing the chance of ripening grapes.

In becomes obvious that the best sites for viticulture in western Oregon are hillsides, but even hillsides should be carefully selected for depth and type of soil, and exposure. The best exposure, without question, is a due south slope. Unfortunately, this facing has been subject to the greatest soil erosion for millenia. Our winter rains tend to blow in from the south or southwest. A look at road-cuts in a selected area can

give a general picture of the soil depths. The Soil Conservation Service maps and aerial photographs are useful, but in the final analysis, you'd best get an auger of some sort and drill some holes on your selected site to get a picture of the soil profile (with the owner's permission, of course). If you have found the right soil type and depth, but it is on a southeast or southwest exposure, all is not lost.

Due south means that you are receiving the most sunlight possible. Southeast or southwest will mean a proportionate reduction in total insolation. Southeast slopes will warm earlier in the day, but lose afternoon radiation to a greater or lesser extent, depending on the actual site. Southwest slopes, of course, are the opposite, and maximize the afternoon sunlight. During the growing season, western Oregon can often be covered by "scud," low clouds from the ocean, during the morning. These clouds usually burn off by afternoon, thus giving the southwest slope a slight advantage, especially during the critical ripening months of September and October. I should point out, however, that there are some very fine, well-established vineyards on southeast slopes in Oregon.

What is the optimum altitude for planting vinifera? Unfortunately, we have no comparative data at this time on the very critical question. At present, most Willamette Valley vineyards are planted between 300 and 1,000 feet above sea level. The problem with vineyards planted at the higher elevations is that the air temperature tends to be cooler during the days of the growing season, albeit warmer during the night. Those planted too low will likely be exposed to cooler nights and early-season frost hazards due to pooling of cooler air at lower elevations. Those planting a vineyard at the higher elevations should probably stick to early Period I or Very Early varieties.

A Final Thought

So there you have it...some of the many considerations to take into account before the adventure begins. There's probably no better counsel than the words of a long-time friend, Rodney Strong, of Rodney Strong Vineyards. These lines were penned many years ago, but they are as relevant today as they will be 20 years from now:

> "For the embryonic vineyardist, who envisions the life growing noble grapes by conjuring up this picture of himself revving his Ferrari slowly out through the main stone gate of the estate; beautiful maidens in peasant blouses looking up from their harvest toil, holding luscious clusters of grapes for his approval and cheerily waving him on his way into the village for a two-hour lunch — well, it's a little different folks.
>
> But do it anyway. The fact that your 1949 Studebaker pickup threw a rod on your way to the farm labor office, to see why the pickers didn't show up to pick the little fruit which escaped the frost, which is overdue to be picked and shriveling in the sun, being stripped by birds and eaten by deer, and cost more to harvest than you would get for the sale of the grapes — shouldn't deter you.
>
> The reality of the grapegrowing business lies in between these two pictures. Which way it tends to go is up to the individual abilities of the manager. Grape growing is not simple, nor is it forbiddingly difficult.
>
> It should be approached like a beautiful woman — with respect, some knowledge and great hopes."

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Strongly recommended reading for anyone interested in viticulture is Jancis Robinson's *Vines, Grapes and Wines* published by Knopf in 1986. Jancis' skill as a wine writer is universally recognized. This recognition has been established by her diligent research on all aspects of wine & grapes and her ability to convey that knowledge articulately.

Chapt. 10 Strategies for Frost Protection in Oregon Vineyards by David Sugar, et. al.

heat released at the dewpoint may provide sufficient heat to avoid reaching damaging temperatures, or at least delay the temperature fall and postpone the need for control measures. The higher the dewpoint, the more moisture in the air, and the more heat available for release. If the dewpoint is below the critical temperature, however, temperature falls will be rapid, since the low dewpoint indicates lack of moisture in the air to reflect heat lost from the ground, and there will be no condensation to help warm the air.

Advective Freezing

On rare occasions, a very cold air mass will move into a grape growing region during the time when new tissue is unfolding and susceptibility is high. "Advective" refers to the transfer of heat by the horizontal movement of an air mass. Under this condition, there is no formation of an inversion layer as in a radiation frost, dewpoints are very low, there may be wind, and consequently controlling the temperature may be beyond the capacity of available methods. Fortunately, while this situation is common in winter, it is unusual during the susceptible period of April-June in most fruit growing areas. Advective freezing can be more frequent in fall, late in the harvest period before canes have hardened-off.

Controlling Frost and Frost Damage

Cultural Methods

Site Selection and Management: Necessity of frost control may be reduced by locating the vineyard on a site which is not prone to frost. In general, these areas are on slopes and hillsides, from which cold air drains toward a valley floor. Since south-facing slopes offer the advantage of receiving the most concentrated solar radiation (more heat units), these slopes are the most desirable for vineyards in Oregon. If the slope is gentle, orienting the vine rows up and down the slope will facilitate cold air drainage. If, however, the slope is sufficiently steep so that soil erosion and accessibility of the vineyard would be compromised by this orientation, those considerations must take precedence. In either case, dense shrubbery, windbreaks, or buildings at the lower end of the vineyard should be avoided. No site is immune to frost, but location on a slope will make it easier to live with. Locations 50 feet above a valley floor are usually the best situated (see Chapter 24). Clean-cultivated vineyards are usually slightly warmer (1-2°F) than vineyards covered by sod or ground cover. Vegetation reduces the amount of heat absorbed by the ground during the day, and inhibits release of heat at night. Sod mowed close to the ground with a flail mower is nearly equivalent to a clean-cultivated vineyard floor. Mulches other than black plastic interfere with heat absorption and radiation. Maximum heat absorption and slow radiation are achieved by a moderately moist, smooth, firmly-packed soil free of ground cover. Water in the spaces between soil particles is much more effective than air in absorbing and storing heat.

Time of Bud Break: Bud break develops because of the response to air temperatures. Temperatures over 4°C (39°F) affect development and swelling of the bud, but budburst occurs when the mean temperature reaches 10°C (50°F), which coincides with apple bloom for such varieties as Red and Golden Delicious. As in other fruiting species, the variety influences the onset of budburst because of various base temperatures. Those varieties that develop early, such as Chardonnay, Müller-Thurgau, Gewürztraminer, and Pinot noir should not be planted in frost-prone sites.

Delayed and Double Pruning: Differences in time of bud break within an unpruned cane can be used to escape frost damage. Buds at the ends of canes develop shoots earlier than basal ones, regardless of the length of the cane. Delayed pruning until terminal buds have produced shoots 2-4 inches long can postpone bud break on the basal nodes by 1-2 weeks, without detrimental effects or delay in fruit maturity. The length of the delay in budbreak will vary with temperature, being shorter if temperatures are warm. Delaying the entire pruning operation to this point, however, is not convenient and does not take advantage of the time available for pruning during the long dormant season. The same amount of delay in budbreak may be achieved by pruning vines during the dormant season, but leaving those canes which are ultimately to become bearing canes or spurs at their full length, returning to cut them to the desired number of buds when the terminal buds have sprouted 2-4 inches.

Hardening-Off for Early Fall Frosts: Early fall frosts can injure canes which are actively growing or lack hardiness. Well exposed canes that have developed periderm (brown bark instead of green) are hardiest in the fall. Delay in cane hardiness is primarily due to excessive vigor and shading of the canopy in late summer and early fall. Helping a plant to harden-off promptly in the fall means avoiding excessive irrigation after mid-August in Oregon or preventing excessive soil moisture as harvest approaches. Sowing of a winter cover crop will speed evaporation and consumption of excess soil moisture. Ripe fruit is rarely injured by fall frosts. Early frost may injure the

NE of RED HILLS

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Monthly Averages and Records

Dundee, OR
Click a month to see the details for that month. The details for each day of the selected month are shown below.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. High	45°F	50°F	55°F	60°F	67°F	73°F	79°F	80°F	74°F	64°F	52°F	45°F
Avg. Low	32°F	34°F	36°F	38°F	43°F	49°F	51°F	51°F	46°F	40°F	36°F	33°F
Mean	39°F	43°F	46°F	50°F	55°F	61°F	66°F	66°F	61°F	52°F	45°F	39°F
Avg. Precip.	5.90 in	4.30 in	4.00 in	2.20 in	1.60 in	1.40 in	0.50 in	1.10 in	1.50 in	2.80 in	5.70 in	6.60 in
Record High	63°F (1953)	70°F (1988)	78°F (1994)	90°F (1998)	100°F (1983)	102°F (1992)	108°F (1956)	106°F (1977)	103°F (1988)	92°F (1952)	78°F (1959)	64°F (1980)
Record Low	-10°F (1950)	-9°F (1950)	18°F (1960)	25°F (1965)	25°F (1969)	34°F (1965)	38°F (1955)	37°F (1965)	29°F (1965)	21°F (1972)	8°F (1955)	-2°F (1972)

Daily Averages and Records

Yearly 37.6" avg

Dundee, OR
March
Sunrise and Sunset Times are in local time for 2002

	11	12	13	14	15	16	17	18	19	20	21	22
Sunrise	6:32 AM	6:30 AM	6:28 AM	6:26 AM	6:24 AM	6:22 AM	6:21 AM	6:19 AM	6:17 AM	6:15 AM	6:13 AM	6:11 AM
Sunset	6:13 PM	6:14 PM	6:15 PM	6:17 PM	6:18 PM	6:19 PM	6:20 PM	6:22 PM	6:23 PM	6:24 PM	6:26 PM	6:27 PM
Avg. High	55°F	55°F	55°F	55°F	55°F	55°F	55°F	56°F	56°F	56°F	56°F	56°F
Avg. Low	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F
Mean	46°F	46°F	46°F	46°F	46°F	46°F	46°F	46°F	47°F	47°F	47°F	47°F
Record High	70°F (1965)	71°F (1965)	70°F (1965)	68°F (1994)	71°F (1996)	74°F (1972)	72°F (1972)	73°F (1978)	72°F (1960)	74°F (1978)	72°F (1978)	71°F (1979)
Record Low	25°F (1956)	25°F (1956)	26°F (1969)	26°F (1954)	23°F (1951)	26°F (1955)	25°F (1955)	29°F (1965)	24°F (1965)	25°F (1955)	27°F (1952)	27°F (1952)

Show Previous 10 Days

Show Next 9 Days

Back to Previous Page

Temperature Converter
Enter a number and click on the "Calculate" button

[ ] °F = [ ] °C Calculate Reset

How Weather Affects Your Life

SOIL SURVEY OF

Yamhill Area, Oregon

United States Department of Agriculture
Soil Conservation Service
In cooperation with
Oregon Agricultural Experiment Station

Issued January 1974

SOIL ASSOCIATIONS

AREAS DOMINATED BY SOMEWHAT EXCESSIVELY DRAINED TO POORLY DRAINED, NEARLY LEVEL AND GENTLY SLOPING SOILS ON BOTTOM LANDS

1 Chehalis-Cloquato-Newberg association: Well-drained and somewhat excessively drained silty clay loams, silt loams, and fine sandy loams

2 Wapato-Cove association: Poorly drained silty clay loams and clays

AREAS DOMINATED BY WELL-DRAINED TO POORLY DRAINED, NEARLY LEVEL TO MODERATELY STEEP SOILS ON TERRACES

3 Woodburn-Willamette association: Moderately well drained and well drained, nearly level to moderately steep silt loams and silt loams over silty clay loam

4 Amity-Dayton association: Somewhat poorly drained and poorly drained, nearly level silt loams over silty clay loam and clay

AREAS DOMINATED BY WELL-DRAINED TO SOMEWHAT POORLY DRAINED, GENTLY SLOPING TO VERY STEEP SOILS ON LOW FOOTHILLS OF THE OREGON COAST RANGE

5 Laurelwood association: Well-drained, gently sloping to steep silt loams over silty clay loam; formed in mixed material

East

6 Jory-Yamhill-Nekia association: Well-drained, gently sloping to very steep, clay loams over clay and silt loams over silty clay; formed in basaltic colluvium

West

7 Willakenzie-Hazelair association: Well-drained and somewhat poorly drained, gently sloping to steep silty clay loams and silty clay loams over clay; formed over sedimentary rock

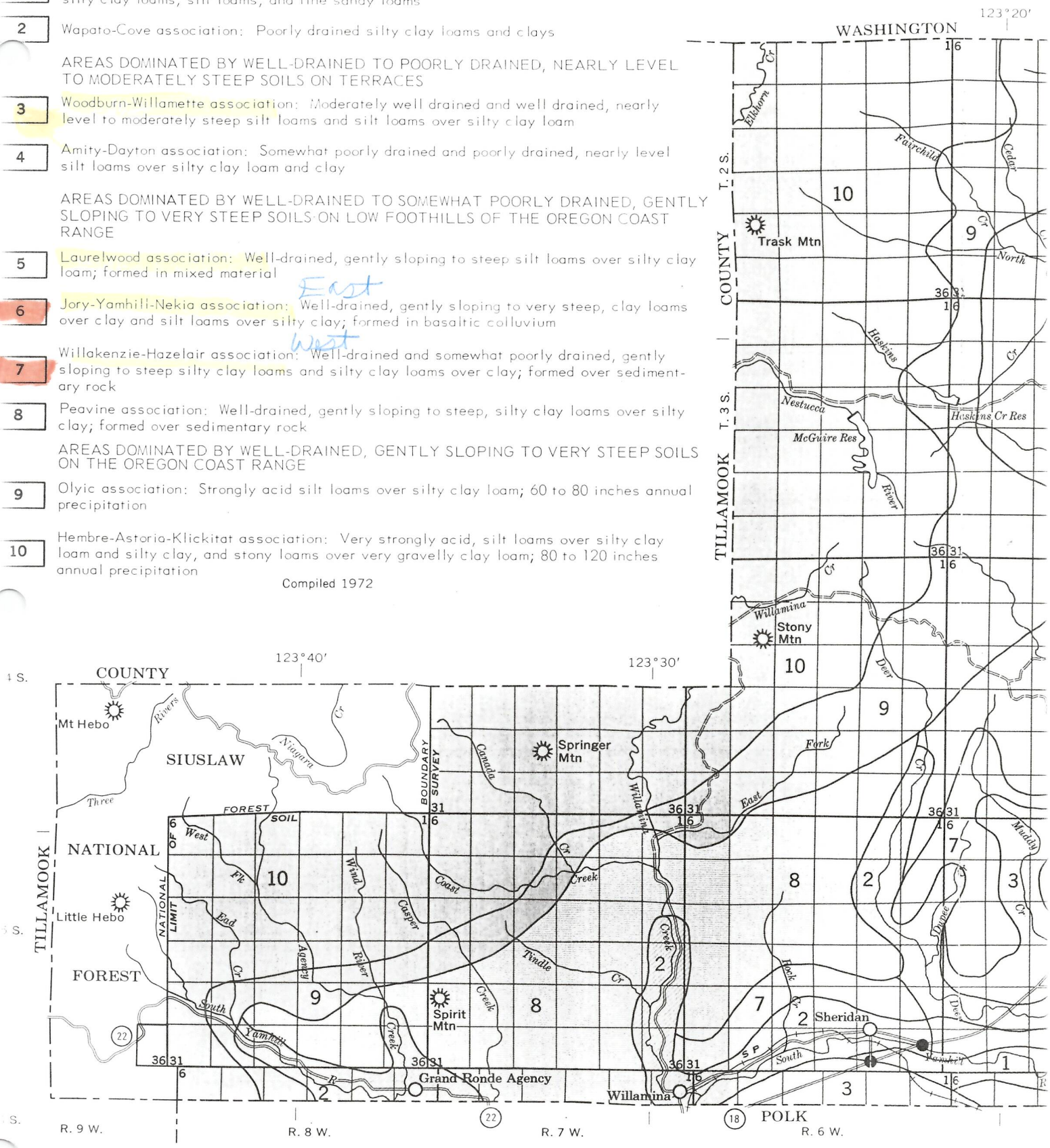
8 Peavine association: Well-drained, gently sloping to steep, silty clay loams over silty clay; formed over sedimentary rock

AREAS DOMINATED BY WELL-DRAINED, GENTLY SLOPING TO VERY STEEP SOILS ON THE OREGON COAST RANGE

9 Olyic association: Strongly acid silt loams over silty clay loam; 60 to 80 inches annual precipitation

10 Hembre-Astoria-Klickitat association: Very strongly acid, silt loams over silty clay loam and silty clay, and stony loams over very gravelly clay loam; 80 to 120 inches annual precipitation

Compiled 1972



U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

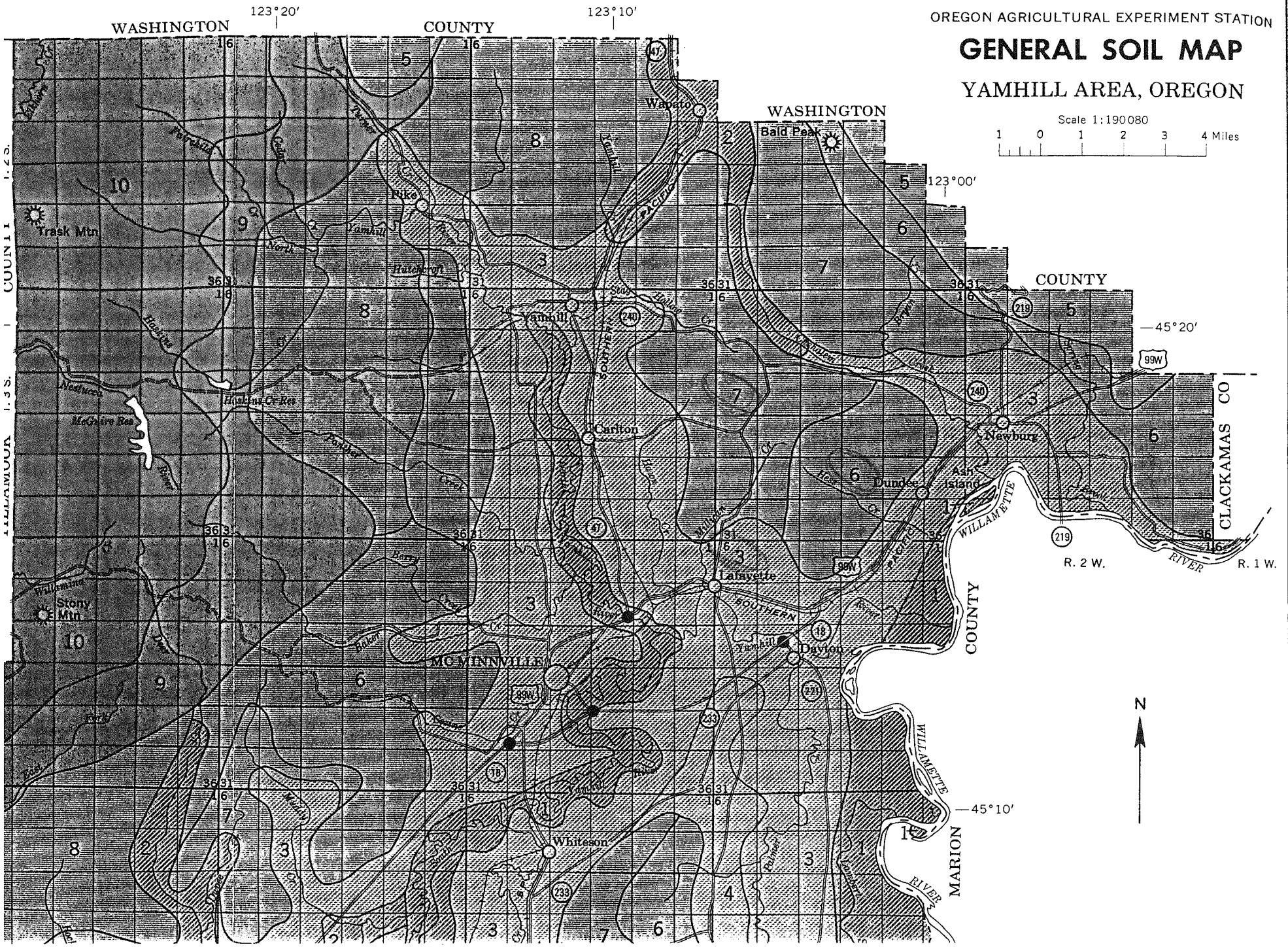
OREGON AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

YAMHILL AREA, OREGON

Scale 1:190080

1 0 1 2 3 4 Miles



B21g—16 to 22 inches, dark grayish-brown (10YR 4/2) silty clay loam, grayish brown (10YR 5/2) when dry; many, fine, distinct, dark reddish-brown (5YR 3/2) mottles; few, fine, black stains; moderate, medium and fine, subangular blocky structure; friable, hard, sticky, plastic; many very fine and few fine pores; few fine roots; medium acid (pH 5.8); clear, smooth boundary. (5 to 8 inches thick)

B22g—22 to 32 inches, dark grayish-brown to grayish-brown (10YR 4/2-5/2) silty clay loam; many, fine, distinct, dark reddish-brown (5YR 4/4) mottles; common, fine, black stains; moderate, medium, fine, subangular blocky structure; firm, hard, sticky, plastic; many very fine and few fine pores; medium acid (pH 5.8); clear, smooth boundary. (9 to 22 inches thick)

B3g—32 to 60 inches, grayish-brown (10YR 5/2) silty clay, light gray (10YR 7/2) when dry; many, fine, distinct, dark-brown (7.5YR 4/4) mottles; common, medium and fine, black stains; weak, subangular blocky structure; firm, very sticky, plastic; few fine pores; medium acid (pH 5.6).

The A horizon has moist values of 2 and 3, dry values of 4 or 5, and chromas of 2 or 3. In places, distinct mottles occur throughout the A horizon or only in the lower part. The A horizon is dominantly silty clay loam but is silt loam in places. The B2 horizon has moist values of 4 and 5 and chromas of 1 and 2; hue is 10YR to 2.5Y, and in places it is 5Y. Mottles are distinct to prominent. Texture is dominantly silty clay loam, but ranges to a silty clay in the lower part below a depth of 30 inches. A few waterworn pebbles are embedded in the solum. In places the solum is underlain by stratified layers that contain pebbles and stones below a depth of 40 inches.

Included with this soil in mapping are areas of Cove and Chehalis soils, narrow, steeper sided drainageways, and in the Sheridan area, some unnamed gravelly soils. These included areas are as much as an acre in size and make up less than 5 percent of the total acreage.

The Wapato soil is moderately slowly permeable to roots and water. During winter and early in spring, a temporary water table restricts root growth. The available water capacity is 10 to 12 inches. Tilth is moderately good, but seedbed preparation can be difficult if the soil is worked when too wet or too dry. Surface runoff is slow, and water ponds for short periods during winter. The erosion hazard is slight. This soil is subject to occasional to frequent overflow. Fertility is moderate.

Most of the acreage has been cleared for cultivation. Small grain, hay, and pasture plants are the principal crops. Corn, other late-planted vegetable crops, and grass and legumes for seed are also important. Drainage either by open ditches or tile is needed in order to lower the water table in spring. Because of the low-lying position of the soil, drainage outlets are often difficult to establish. Capability unit IIIw-5; not placed in a woodland group; wildlife group 2.

Willakenzie Series

The Willakenzie series consists of well-drained soils that are 20 to 40 inches deep over sedimentary rock. These soils are on low hills and have slopes of 2 to 45 percent. Elevations range from 250 to 800 feet. Annual precipitation is 40 to 50 inches, average annual air temperature is 53° F., and the frost-free period is 165 to 190 days. In areas that are not cultivated, the vegetation is oak, poison-oak, rosebush, and widely spaced Douglas-fir. Willakenzie soils are associated with Dupee, Clair, Panther, Nekia, and Carlton soils.

In a representative profile, the surface layer is dark-brown silty clay loam about 4 inches thick. The subsoil is friable to firm, dark-brown silty clay loam about 28 inches thick. The underlying material is yellowish-red loam. Fractured siltstone is at a depth of about 36 inches.

Willakenzie soils are used mainly for orchards, small grain, hay, and pasture. They are also used for timber, wildlife habitat, recreation, homesites, and water supply.

Willakenzie silty clay loam, 2 to 12 percent slopes (WeC).—This soil is on ridgetops and sides of low hills. Slopes are dominantly more than 5 percent. Depth to sedimentary rock is 30 to 40 inches.

Representative profile about 200 feet north of the Carlton-Panther Creek Road and about 600 feet east of road junction along the southern line of SE¼NW¼ SW¼ sec. 24, T. 3 S., R. 5 W.:

A1—0 to 4 inches, dark-brown (7.5YR 3/2) silty clay loam, brown (7.5YR 5/3) when dry; weak, medium and fine, subangular blocky structure; friable, hard, slightly sticky, slightly plastic; many very fine pores; many fine roots; very few fine concretions; medium acid (pH 6.0); clear, smooth boundary. (3 to 9 inches thick)

B1—4 to 12 inches, dark-brown (7.5YR 3/4) silty clay loam, strong brown (7.5YR 5/6) when dry; moderate, medium and fine, subangular blocky structure; friable, hard, sticky, plastic; many very fine pores; many fine roots; medium acid (pH 6.0); clear, wavy boundary. (7 to 10 inches thick)

B21t—12 to 18 inches, dark-brown (7.5YR 4/4) silty clay loam, strong brown (7.5YR 5/6) when dry; moderate, fine and very fine, subangular blocky structure; friable, hard, sticky, very plastic; common medium and fine pores; many fine roots; few thin clay films in pores and on some ped surfaces; medium acid (pH 6.0); clear, smooth boundary. (5 to 8 inches thick)

B22t—18 to 26 inches, dark-brown (7.5YR 4/4) silty clay loam, strong brown (7.5YR 5/6) when dry; weak, medium, subangular blocky that breaks to moderate, fine, subangular blocky structure; firm, hard, very sticky, very plastic; many very fine pores; common fine roots; few very thin clay films on ped surfaces; medium acid (pH 5.6); gradual, wavy boundary. (6 to 12 inches thick)

B23t—26 to 32 inches, dark-brown (7.5YR 4/4) silty clay loam, strong brown (7.5YR 5/6) when dry; weak, medium and fine that breaks to moderate, very fine, subangular blocky structure; firm, hard, very sticky, very plastic; many very fine pores; common fine roots; many thin clay films; strongly acid (pH 5.4); abrupt, wavy boundary. (5 to 7 inches thick)

IIC—32 to 36 inches, yellowish-red (5YR 4/6) loam; weak, fine, angular blocky structure; friable, sticky, plastic; few fine pores; few fine roots; common thick clay films on the coarse fragments; 80 percent strongly weathered siltstone fragments; very strongly acid (pH 4.7); abrupt, smooth boundary. (3 to 4 inches thick)

IIR—36 inches, hard, fractured siltstone bedrock.

The solum generally has hue of 7.5, but hue grades from 10YR in the A horizon to 5YR in the lower part of the B horizon. Soils that formed from siltstone have redder hues than soils that formed from sandstone. The A horizon has moist values of 2 and 3 and chromas of 2 or 3. Dry values are 5 or 6. Texture is loam to silty clay loam. The B horizon generally has chromas of 4 when moist, but in places chromas are 6 in the lower part. The B horizon ranges from clay loam to silty clay loam. The lower part of the Bt horizon is heavy silty clay loam or silty clay in some areas. The upper 20 inches of the Bt horizon is 27 to 35 percent clay. Strongly weathered rock fragments are commonly abundant below

460-643—73——4

depths of 24 to 30 inches, and a few are embedded throughout the solum where the rock is softer and more weathered.

Included with this soil in mapping are areas of Dupee Nekia, Peavine, Panther, Hazelair, and more steeply sloping Willakenzie soils. These included areas are less than 2 acres in size and occupy as much as 10 percent of some mapped areas.

This Willakenzie soil has moderately slow permeability. Roots can penetrate to depths of 30 to 40 inches. Tilth is moderate, and the soil can be cultivated most of the year, except during winter and early in spring. The available water capacity is 5 to 7.5 inches. Surface runoff is slow to medium, and erosion is a moderate hazard in unprotected areas during rainy periods. Fertility is moderate.

Most of the acreage has been cultivated. Orchard fruit, small grain, hay, and pasture plants are grown. Oak-grass land pasture is the principal use in uncleared areas. Capability unit IIIe-2; woodland group 2c1; wildlife group 3.

Willakenzie silty clay loam, 12 to 20 percent slopes (WeD).—On this soil, runoff is medium and the erosion hazard is severe in unprotected areas during rainy periods. The main crops are orchard fruit, small grain, hay, and pasture plants. Oak-grassland pasture is the principal use in uncleared areas. Capability unit IIIe-2; woodland group 2c1; wildlife group 3.

Willakenzie silty clay loam, 20 to 30 percent slopes (WeE).—This soil contains scattered basalt stones that rolled down from higher areas. Runoff is medium, and the erosion hazard is severe. The main crops are orchard fruit, small grain, hay, and pasture plants. Stripcropping, terraces, diversions, and other intensive management practices are required. Oak-grassland pasture is the principal use in uncleared areas. Douglas-fir also is grown. Capability unit IVe–2; woodland group 2c1; wildlife group 3.

Willakenzie silty clay loam, 30 to 45 percent slopes (WeF).—This soil contains basalt stones. Runoff is rapid in cleared areas, and the erosion hazard is severe. Oak-grassland pasture is the principal use, but Douglas-fir is grown in places. Management is moderately difficult. Capability unit VIe–5; woodland group 2r1; wildlife group 4.

Willakenzie silty clay loam, moderately shallow, 2 to 7 percent slopes (WkB).—This soil has a profile similar to that of Willakenzie silty clay loam, 2 to 12 percent slopes, except that depth to sedimentary rock is 20 to 30 inches. The available water capacity is 3 to 5 inches. Surface runoff is slow, and the erosion hazard is moderate in unprotected areas during rainy periods. This soil contains scattered basalt stones that rolled down from higher areas. Small grain, hay, and pasture plants are the principal crops. Uncultivated areas are in oak-grassland pasture. A few prune orchards are in production. Capability unit IIIe-4; woodland group 2c1; wildlife group 3.

Willakenzie silty clay loam, moderately shallow, 7 to 20 percent slopes (WkD).—This soil has a profile similar to that of Willakenzie silty clay loam, moderately shallow, 2 to 7 percent slopes, except that the rooting depth is 20 to 30 inches. Included in mapping are stony areas. The available water capacity is 3 to 5 inches. Surface runoff is slow to medium, and the erosion hazard is seve in unprotected areas during rainy periods. Small gra hay, and pasture plants are the principal crops. Unc tivated areas are in oak-grassland pasture. A few pru orchards are in production. Capability unit IVe-1; woo land group 2c1; wildlife group 3.

Willamette Series

The Willamette series consists of well-drained so that formed in old alluvium. These soils are on lo broad, valley terraces. Slopes are 0 to 20 percent. Ele tions range from 150 to 400 feet. Annual precipitation 40 to 50 inches, average annual air temperature is 5 F., and the frost-free season is 165 to 210 days. In ar that are not cultivated, the vegetation is grass, Oreg white oak, and Douglas-fir. Willamette soils are sociated with Woodburn, Amity, and Aloha soils.

In a representative profile, the surface layer is da brown silt loam about 14 inches thick. The subsoil dark-brown silt loam and light silty clay loam about inches thick. The substratum is dark-brown silty cl loam that extends to a depth of 60 inches or more.

Willamette soils are used mainly for vegetable cro berries, orchards, small grain, hay, and pasture. Th are also used for wildlife habitat, recreation, and hon sites.

Willamette silt loam, 0 to 3 percent slopes (WlA). This soil is in the community of Bellevue and near t race escarpments.

Representative profile in an orchard near Belle about 50 feet east of State Highway 18, northeast cor of SW¼NE¼SW¼ sec. 29, T. 5 S., R. 5 W.:

Ap—0 to 6 inches, dark-brown (10YR 3/3) silt loam, gray brown (10YR 5/2) when dry; weak, medium, s angular blocky structure; friable, slightly ha slightly sticky, slightly plastic; common fine roo many very fine tubular pores; trace of very da brown (10YR 2/2) coatings on ped surfaces; medi acid (pH 5.8); abrupt, smooth boundary. (5 t inches thick)

A1—6 to 14 inches, dark-brown (10YR 3/3) silt loam, gr ish brown (10YR 5/2) when dry; weak, medium a coarse, subangular blocky structure; firm, sligh hard, slightly sticky, slightly plastic; few fine roo many very fine tubular pores; trace of very da grayish-brown (10YR 3/2) coatings on some ped s faces; medium acid (pH 5.8); clear, smooth bou ary. (4.8 to 8 inches thick)

B1—14 to 23 inches, dark-brown (10YR 3/3) heavy silt loa brown (10YR 5/3) when dry; moderate, fine, s angular blocky structure; hard, firm, slightly stic plastic; trace of fine roots; many very fine tubu pores; few thin clay films in pores and on a few surfaces; few, fine, very dark grayish-brown (10 3/2) coatings; medium acid (pH 6.0); clear, smo boundary. (7 to 11 inches thick)

B21t—23 to 35 inches, dark-brown (10YR 3/3) light s clay loam, brown (10YR 5/3) when dry; moder fine, subangular blocky structure; firm, hard, stic plastic; trace of fine roots; many very fine tubu pores; few thin clay films in pores and on ped s faces; some fine black stains; medium acid (pH 6. clear, smooth boundary. (10 to 14 inches thick)

B22t—35 to 46 inches, dark-brown (10YR 4/3) light s clay loam, pale brown (10YR 6/3) when dry; w to moderate, fine, subangular blocky structure; fi hard, sticky, plastic; trace of fine roots; many v fine tubular pores; thin continuous clay films pores; few thin clay films on ped surfaces; sligh

silty clay loam about 32 inches thick. It is underlain by hard basalt bedrock at a depth of about 44 inches.

Hembre soils are used for timber, water supply, recreation, and wildlife habitat.

Hembre silt loam, 3 to 30 percent slopes (HBE).—This soil is rolling to steep. It is on ridgetops and on side slopes in the Coast Range.

Representative profile a quarter mile north of Neverstill junction with the Turner Creek Road, 50 feet east of road; NW¼SE¼SE¼ sec. 1, T. 2 S., R. 6 W.:

O—⅛ inch to 0, needles, twigs, leaves.

A1—0 to 5 inches, dark reddish-brown (5YR 3/2) silt loam, dark brown (7.5YR 4/4) when dry; strong, fine, granular structure; friable, soft, slightly sticky, slightly plastic; many fine roots; many very fine irregular pores; common very fine fragments of basalt; common very fine concretions (shot); strongly acid (pH 5.2); clear, smooth boundary. (4 to 6 inches thick)

A3—5 to 12 inches, dark reddish-brown (5YR 3/2) silt loam, brown (7.5YR 5/4) when dry; moderate, fine, subangular blocky structure; friable, soft, slightly sticky, slightly plastic; many fine roots; many very fine pores; common very fine fragments of basalt; common very fine concretions (shot); very strongly acid (pH 5.0); clear, smooth boundary. (6 to 8 inches thick)

B21—12 to 19 inches, dark reddish-brown (5YR 3/4) silty clay loam, reddish yellow (7.5YR 6/6) when dry; moderate, fine, subangular blocky structure; friable, slightly hard, slightly sticky, plastic; common fine roots; common very fine pores; few fine concretions (shot); very strongly acid (pH 4.8); clear, smooth boundary. (7 to 10 inches thick)

B22—19 to 30 inches, reddish-brown (5YR 4/4) silty clay loam, reddish yellow (7.5YR 6/6) when dry; moderate, fine, subangular blocky structure; friable, slightly hard, slightly sticky, plastic; few fine roots; common very fine pores; few fine fragments of basalt; few fine concretions (shot); very strongly acid (pH 4.8); clear, smooth boundary. (9 to 12 inches thick)

B3—30 to 44 inches, yellowish-red (5YR 4/6) gravelly silty clay loam, reddish yellow (5YR 6/6) when dry; weak, fine, subangular blocky structure; firm, hard, slightly sticky, plastic; few medium roots; common very fine pores; 40 percent coarse fragments of basalt; very strongly acid (pH 4.8); abrupt, wavy boundary. (14 to 16 inches thick)

R—44 inches, basalt bedrock that has a few fractures.

The A horizon has moist values of 2 and 3; chromas are 2 to 3 moist and 3 or 4 dry; hues are 7.5YR and 5YR. The B horizon has chromas of 4 and 6 in hues of 7.5YR and 5YR. Pebbles and cobblestones of basalt make up as much as 15 percent of the A and B2 horizons and up to 40 percent of the B3 horizon.

Included with this soil in mapping are areas of Klickitat soils and more steeply sloping Hembre soils of as much as 10 acres in size, and areas of Astoria and Kilchis soils of less than 5 acres. These areas make up less than 15 percent of the total acreage.

Hembre soils have moderate permeability. Roots can penetrate to bedrock. The available water capacity is 7 to 10 inches. Organic-matter content is moderately high, and fertility is moderate. Surface runoff is slow to medium, and the erosion hazard is moderate.

This soil is used primarily for timber. The important trees are Douglas-fir and hemlock in the cooler, more moist areas and noble fir at high elevations. Management can be intensive (fig. 9). Capability unit VIe-2; woodland group 2o2; wildlife group 5.

Hembre silt loam, 30 to 60 percent slopes (HBF).—This soil is on the Coast Range. Runoff is rapid in cleared areas, and the erosion hazard is severe. Douglas-fir and hemlock are the important trees. Management is moderately difficult. Capability unit VIe-3; woodland group 2r2; wildlife group 5.

Hembre silt loam, 60 to 90 percent slopes (HBG).—This soil is on the rough mountainous part of the Coast Range. Runoff is rapid in cleared areas, and the erosion hazard is severe.

Included with this soil in mapping are areas along the lower slopes that are deeper than normal, and other areas that are shallow and stony throughout. These inclusions range to 10 acres in size and occupy as much as 20 percent of the total acreage.

Douglas-fir and hemlock are the important trees. Management is very difficult. Capability unit VIIe-1; woodland group 2r3; wildlife group 5.

Jory Series

The Jory series consists of well-drained soils that formed in colluvium derived from basalt rock. These soils on low foothills and have slopes of 2 to 90 percent. Elevations range from 250 to 1,200 feet. Annual precepitation is 40 to 60 inches. Average annual air temperature is 52° to 54° F., and the frost-free period is 165 to 210 days. In areas that are not cultivated, the vegetation is Douglas-fir, oak, poison-oak, and grasses. Jory soils are associated with Nekia, Yamhill, Peavine, and Willakenzie soils.

In a representative profile, the surface layer is dark reddish-brown clay loam or silty clay loam about 21 inches thick. The subsoil is dark reddish-brown clay about 47 inches thick. Depth to basalt is more than 40 inches.

Jory soils are used mainly for orchards, berries, grain, hay, pasture, and timber. They are also used for wildlife habitat, water supply, recreation, and homesites.

Jory clay loam, 2 to 7 percent slopes (JrB).—This gently sloping soil is on smooth ridgetops.

Representative profile on the Dundee Hills about 60 feet northeast of road junction; NW¼NW¼SW¼ sec. 26, T. 3 S., R. 3 W.:

Ap—0 to 7 inches, dark reddish-brown (5YR 3/3) clay loam, reddish brown (5YR 4/3) when dry; moderate, fine, granular structure; friable, slightly hard, sticky, plastic; many fine roots; many very fine irregular pores; common fine and very fine concretions; medium acid (pH 5.8); abrupt, smooth boundary. (5 to 8 inches thick)

A1—7 to 15 inches, dark reddish-brown (5YR 3/3) silty clay loam, reddish brown (5YR 4/4) when dry; strong, fine, granular structure; friable, slightly hard, sticky, plastic; common fine roots; many very fine irregular pores; many fine concretions; medium acid (pH 5.8); clear, smooth boundary. (4 to 12 inches thick)

A3—15 to 21 inches, dark reddish-brown (5YR 3/3) heavy silty clay loam, reddish brown (5YR 4/4) when dry; strong, fine, granular and subangular blocky structure; friable, slightly hard, sticky, plastic; common fine roots; many very fine irregular pores; common fine concretions; medium acid (pH 5.6); clear, smooth boundary. (3 to 7 inches thick)

B21t—21 to 28 inches, dark reddish-brown (5YR 3/4) clay, reddish brown (5YR 4/4) when dry; moderate, fine, subangular blocky structure; very firm, very hard, very sticky, very plastic; common fine roots; many

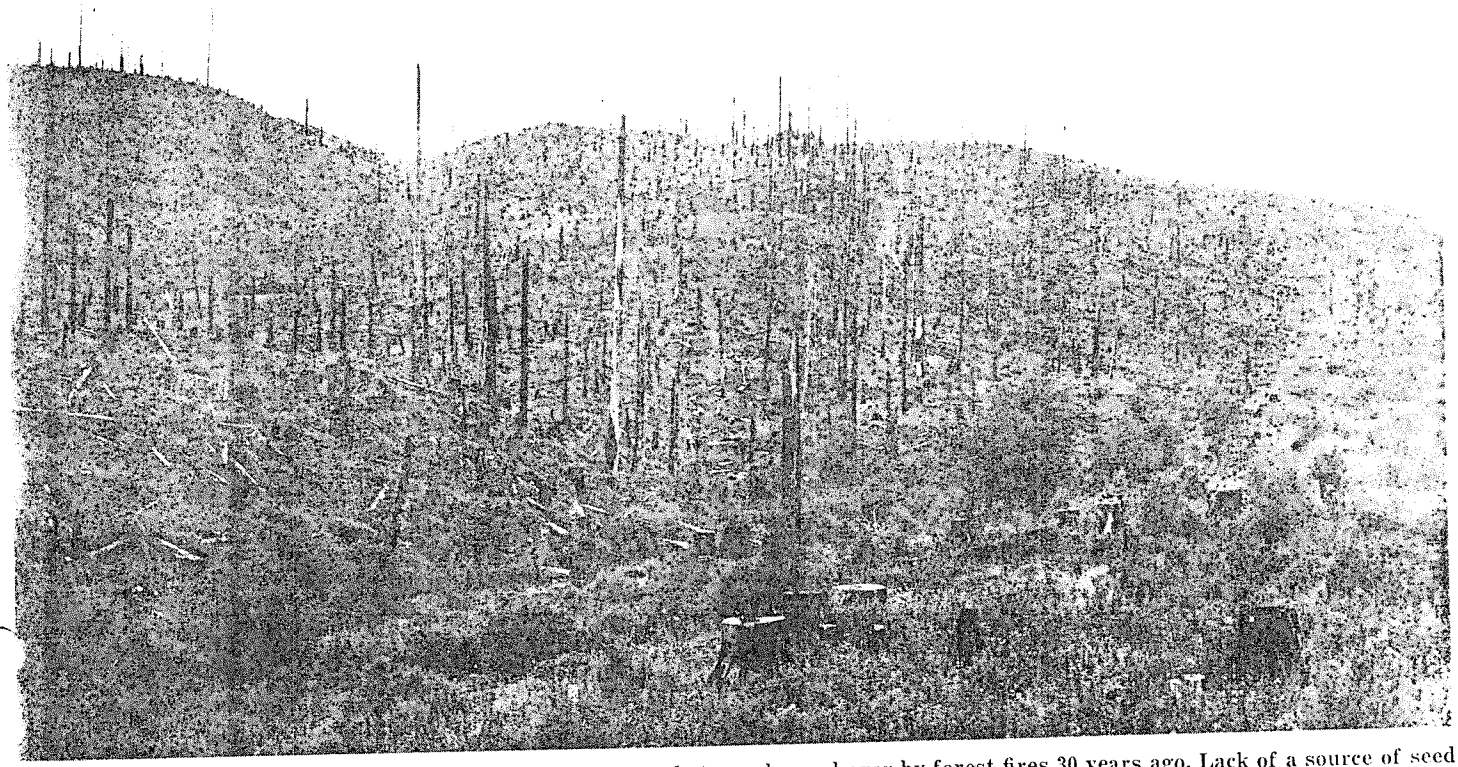


Figure 9.—Area of Hembre silt loam, 3 to 30 percent slopes, that was burned over by forest fires 30 years ago. Lack of a source of seed is largely responsible for the poor natural reforestation.

very fine pores; few thin clay films on ped surfaces and in pores; few fine concretions; strongly acid (pH 5.4); clear, smooth boundary. (6 to 15 inches thick)

B22t—28 to 39 inches, dark reddish-brown (2.5YR 3/4) clay, reddish brown (2.5YR 4/4) when dry; moderate, medium, subangular blocky structure; very firm, very hard, very sticky, very plastic; few fine roots; common fine pores; many, thin, black stains; many, thin and medium, patchy clay films on ped surfaces; few fine concretions; few fine fragments of basalt; strongly acid (pH 5.2); clear, smooth boundary. (10 to 20 inches thick)

B23t—39 to 56 inches, dark reddish-brown (2.5YR 3/4) clay, reddish brown (2.5YR 4/4) when dry; moderate, fine, subangular blocky structure; very firm, very hard, very sticky, very plastic; few fine roots; common very fine pores; thin and moderately thick continuous clay films on ped surfaces; many, fine and medium, black stains; few fine concretions; few fine fragments of basalt; very strongly acid (pH 5.0); gradual, smooth boundary. (12 to 36 inches thick)

B3—56 to 68 inches, dark reddish-brown (2.5YR 3/4) clay, reddish brown, (2.5YR 4/4) when dry; weak and moderate, fine, subangular blocky structure; very firm, very hard, very sticky, very plastic; common fine tubular pores; few thin clay films on ped surfaces and in pores; common, fine, black stains; about 3 percent fine fragments of basalt; strongly acid (pH 5.2).

In the upper part of the A horizon, moist values are 2 and 3, chromas are 3 and 4, and hue is 5YR. Dry chromas are 3 to 6. The B horizon, below a depth of 20 inches, has moist values of 3 and chromas of 4 and 6 in hues of 5YR and 2.5YR. In places the B3 horizon is absent and the B2 horizon is underlain directly by basalt. Depth to basalt is commonly more than 60 inches, but is as shallow as 40 inches in places. Stones and boulders are in the profile in some areas.

Included with this soil in mapping are areas of gently sloping Nekia soils that occupy about 10 percent of the acreage. More steeply sloping Jory and Nekia soils, and Yamhill and Willakenzie soils in areas less than 2 acres in size occupy less than 5 percent of the total acreage.

This Jory soil is well drained and has moderately slow permeability. Roots can penetrate to a depth of more than 40 inches. The available water capacity is 7 to 11 inches. Tilth is good, and the soil can be cultivated throughout the year except during storms in winter and spring. Surface runoff is slow, and erosion is a slight hazard in unprotected areas during rainy periods. Fertility is moderate.

Most of the acreage is cultivated. Orchard fruit, grain, hay, and pasture plants are the principal crops. Berries

and grass for seed are also grown. Capability unit IIe-3; woodland group 3c1; wildlife group 3.

Jory clay loam, 7 to 12 percent slopes (JrC).—This soil is used for crops similar to those grown on Jory clay loam, 2 to 7 percent slopes. Runoff is slow to medium, and the erosion hazard is moderate in unprotected areas during rainy periods. Capability unit IIIe-2; woodland group 3c1; wildlife group 3.

Jory clay loam, 12 to 20 percent slopes (JrD).—This soil is used for crops similar to those grown on Jory clay loam, 2 to 7 percent slopes. Runoff is medium, and the erosion hazard is moderate in unprotected areas during rainy periods. This soil is not well suited to houses that have septic tanks because seepage of effluent on the moderately steep slopes is a hazard. Capability unit IIIe-2; woodland group 3c1; wildlife group 3.

Jory clay loam, 20 to 30 percent slopes (JrE).—This soil is used for about the same crops as are grown on Jory clay loam, 2 to 7 percent slopes, except that berries are not grown. Runoff is medium, and the erosion hazard is severe during rainy periods. Capability unit IVe-2; woodland group 3c1; wildlife group 3.

Jory clay loam, 2 to 30 percent slopes (JRE).—This soil is mapped in woodland areas. Runoff is slow to medium, and the erosion hazard is slight to severe.

This soil is used mainly for timber but would be suitable for cultivation if cleared. Woodland can be managed intensively. Capability unit IVe-2; woodland group 3c1; wildlife group 4.

Jory clay loam, 30 to 60 percent slopes (JRF).—Some areas of this mapping unit are in the part of the survey area that was mapped at high intensity.

Included with this soil in mapping are areas of less steep Nekia and Jory soils and Stony land. These areas are as large as 5 acres in size and make up 15 percent of this mapping unit.

Runoff is medium, and the erosion hazard is severe in unprotected areas during rainy periods. This soil is used mainly for timber and pasture. Management is moderately difficult. Capability unit VIe-5; woodland group 3c2; wildlife group 4.

Jory clay loam, 60 to 90 percent slopes (JRG).—This soil is similar to Jory clay loam, 2 to 7 percent slopes, but it contains more stones and boulders and has very steep slopes.

Included with this soil in mapping are areas of less steep Nekia and Jory soils and Stony land. These areas are as large as 5 acres in size and occupy 15 percent of this mapping unit.

Runoff is rapid, and the erosion hazard is severe in unprotected areas during rainy periods. This soil is used mainly for timber. Management is very difficult. Capability unit VIIe-1; woodland group 3c2; wildlife group 4.

Kilchis Series

The Kilchis series consists of excessively drained soils that formed on basalt in the Coast Range. The topography is rough and mountainous. Elevations range from 500 to 3,000 feet. Annual precipitation is 80 to 120 inches, average annual air temperature is 49° F., and the frost-free period is 145 to 200 days. The vegetation is Douglas-fir, hemlock, alder, swordfern, and v maple. Kilchis soils are associated with Hembre, Klic tat, and Astoria soils.

In a representative profile, the surface layer is d reddish-brown stony loam about 7 inches thick. T subsoil is very friable, dark reddish-brown very grav loam about 7 inches thick. The substratum is reddi brown very gravelly loam about 5 inches thick. Ba rock is at a depth of about 19 inches.

Kilchis soils are used for timber, water supply, rec tion, and wildlife habitat.

Kilchis and Klickitat soils, 60 to 90 percent slo (KKG).—This undifferentiated unit consists of soils of Kilchis and Klickitat series that were too interming to be mapped separately. They are in rough mount ous areas. Kilchis soils occupy about 50 to 60 per of the total acreage, and Klickitat soils occupy al 40 percent. Hembre soils occupy as much as 10 per of some mapped areas. Kilchis soils are between esc ments or rock outcrops and areas of Klickitat soils representative profile of the Klickitat soils is descr under the heading "Klickitat series."

Representative profile of Kilchis stony loam abou eighth of a mile south of Camp One, 70 feet below on west aspect; SE¼SW¼NE¼ sec. 9, T. 2 S., R. 6

O—⅛ inch to 0, twigs, leaves, needles.

A1—0 to 7 inches, dark reddish-brown (5YR 2/2) loam, dark brown (7.5YR 4/2) when dry; mod fine, granular structure; very friable; soft, sticky, nonplastic; many fine roots; many very pores; 40 percent by volume fine, medium, and c basalt fragments and stones; strongly acid 5.2); clear, wavy boundary. (4 to 8 inches thic

B2—7 to 14 inches, dark reddish-brown (5YR 3/3) gravelly loam; reddish brown (5YR 4/3) when weak, fine, granular structure; very friable, nonsticky, nonplastic; common fine roots; very fine pores; 60 percent by volume fine, me and coarse basalt fragments and stones; very st ly acid (pH 5.0); clear, wavy boundary. (5 inches thick)

C—14 to 19 inches, reddish-brown (5YR 4/4) very gra loam; reddish brown (5YR 5/3) when dry; fine, granular structure; few fine roots; very fr soft, nonsticky, nonplastic; many very fine 75 percent by volume fine, medium, and basalt fragments and stones; very strongly (pH 4.8); abrupt, wavy boundary. (3 to 10 i thick)

IIR—19 inches, fractured basalt rock.

The A horizon has values of 2 or 3 when moist and when dry; chromas are 2 or 3. The B horizon has hues o or 7.5YR. The B2 horizon and horizons below are more 50 percent coarse fragments.

Included with these soils in mapping are area Hembre soils less than 5 acres in size that occupy than 10 percent of the total acreage.

The Kilchis soil has moderately rapid permeal Roots can penetrate to bedrock, which is at dept 12 to 20 inches. The available water capacity is less 3 inches. Runoff is rapid in cleared areas, and the er hazard is severe. Fertility is low.

These soils are used mainly for timber. Douglas the most important tree species. Management is difficult. Capability unit VIIs–1; woodland group wildlife group 5.

west of Eola Hills, valley floor

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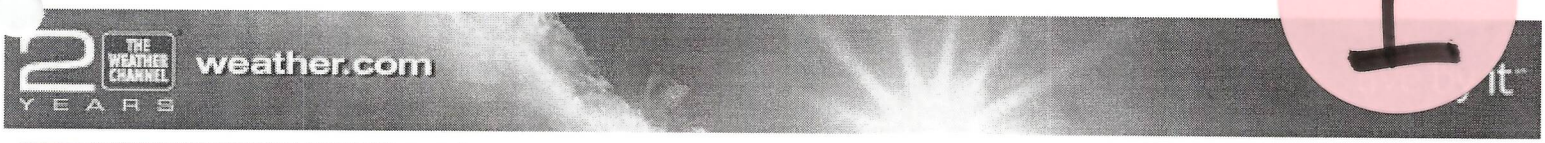

Monthly Averages and Records

Rickreall, OR
Click a month to see the details for that month. The details for each day of the selected month are shown below.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. High	46°F	51°F	55°F	61°F	68°F	75°F	82°F	82°F	77°F	65°F	52°F	45°F
Avg. Low	32°F	34°F	36°F	37°F	42°F	46°F	48°F	48°F	46°F	41°F	37°F	33°F
Mean	40°F	43°F	46°F	50°F	55°F	61°F	66°F	66°F	62°F	53°F	45°F	40°F
Avg. Precip.	8.10 in	6.00 in	5.60 in	2.70 in	1.90 in	1.20 in	0.50 in	0.70 in	1.60 in	3.30 in	7.70 in	9.10 in
Record High	65°F (1984)	71°F (1968)	90°F (1949)	88°F (1957)	98°F (1983)	102°F (1992)	106°F (1956)	106°F (1981)	104°F (1944)	91°F (1988)	76°F (1966)	66°F (1964)
Record Low	-11°F (1950)	-2°F (1950)	10°F (1971)	0°F (1952)	10°F (1950)	10°F (1951)	35°F (1962)	34°F (1985)	30°F (1971)	22°F (1971)	9°F (1955)	-2°F (1972)

Daily Averages and Records

year 48.4" avg

Rickreall, OR
March
Sunrise and Sunset Times are in local time for 2002

	11	12	13	14	15	16	17	18	19	20	21	22
Sunrise	6:33 AM	6:31 AM	6:29 AM	6:27 AM	6:25 AM	6:23 AM	6:21 AM	6:20 AM	6:18 AM	6:16 AM	6:14 AM	6:12 AM
Sunset	6:14 PM	6:15 PM	6:16 PM	6:18 PM	6:19 PM	6:20 PM	6:21 PM	6:23 PM	6:24 PM	6:25 PM	6:27 PM	6:28 PM
Avg. High	55°F	55°F	55°F	55°F	56°F	56°F	56°F	56°F	56°F	56°F	57°F	57°F
Avg. Low	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F
Mean	46°F	46°F	46°F	46°F	46°F	46°F	46°F	46°F	47°F	47°F	47°F	47°F
Record High	71°F (1965)	70°F (1965)	72°F (1979)	70°F (1979)	73°F (1947)	77°F (1947)	77°F (1947)	77°F (1947)	72°F (1978)	73°F (1978)	72°F (1940)	90°F (1949)
Record Low	24°F (1943)	24°F (1956)	25°F (1953)	23°F (1944)	24°F (1955)	24°F (1955)	27°F (1954)	24°F (1943)	25°F (1943)	22°F (1955)	25°F (1943)	20°F (1949)

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Show Next 9 Days

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Temperature Converter
Enter a number and click on the "Calculate" button

[ ] °F = [ ] °C Calculate Reset

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How Weather Affects Your Life

Station number: 359372 Station name: WILLAMINA 2 S

Element : DAILY PRECIPITATION Quantity : MONTHLY SUM Units : INCHES
a = 1 day missing, b = 2 days missing, c = 3 days, ..etc..,
z = 26 or more days missing, A = Accumulations present
Long-term means based on columns; thus, the monthly row may not sum (or average) to the long-term annual value.

Maximum allowable number of missing days : 5
99.99 = missing month 999.99 = incomplete year

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1925	12.88	10.95	2.75	3.49	1.68	2.37	0.00	0.67	1.15	0.12	7.72	7.54	51.32
1929	7.36	1.63	4.07	6.47	1.28	2.11	0.00	0.05	0.54	1.46	0.78	14.78	40.53
1930	5.25	9.19	2.71	3.64	3.05	1.02	0.00	0.00	1.44	2.13	5.55	5.54	39.52
1935	6.95	5.25	11.20	4.29	0.72	0.44	0.36	0.29	0.88	3.05	2.90	7.41	43.74
1936	13.58	6.09	3.57	1.09	4.09	2.05	0.73	0.00	1.22	0.16	0.36	7.59	40.53
1937	6.03	9.07	4.28	8.56	1.73	2.81	0.00	1.11	0.79	3.90	12.10	15.88	66.26
1938	5.74	9.07	8.88	1.62	0.76	0.27	0.14	0.04	0.82	3.80	5.76	4.77	41.67
1939	7.18	7.11	3.58	0.83	1.02	1.01	0.44	0.67	0.19	2.38	1.36	13.80	39.57
1940	7.20	14.58	6.38	3.23	2.70	0.12	0.27	0.01	1.87	5.09	5.74	8.31	55.50
1941	7.76	2.73	1.91	2.73	4.05	1.06	0.00	0.70	2.74	2.40	6.71	13.09	45.88
1942	5.22	5.84	2.57	1.93	2.55	1.11	0.89	0.16	0.00	1.84	16.61	12.82	51.54
1943	7.51	5.77	7.17	3.69	1.31	1.85	0.31	1.53	0.10	7.91	3.25	4.34	44.74
1944	5.32	3.22	3.28	4.61	1.00	1.41	0.39	0.32	1.29	2.15	5.87	3.42	32.28
1945	6.35	9.65	9.03	4.61	3.53	0.14	0.31	0.17	3.37	1.61	15.49	9.85	64.11
1946	10.20	8.46	6.49	2.53	1.75	1.34	0.45	0.00	1.33	5.77	10.15	6.81	55.28
1947	6.14	4.78	3.33	2.70	0.14	5.75	0.73	0.77	1.42	10.62	5.14	5.93	47.45
1948	9.50	8.19	5.49	5.88	4.22	0.42	0.83	0.62	2.86	3.39	9.63	11.18	62.21
1949	2.30	13.16	4.36	1.10	3.44	0.73	0.16	0.43	1.05	3.01	7.05	8.27	45.06
1950	99.99	99.99	99.99	99.99	99.99	99.99	0.46	0.61	1.61	9.53	12.16	8.76	999.99
1950	14.98	7.70	7.28	2.09	0.72	1.42	99.99	99.99	99.99	99.99	99.99	99.99	999.99
1951	12.82	7.29	7.22	1.46	2.16	0.02	0.23	0.58	1.18	8.17	7.83	12.00	60.96
1952	8.76	5.69	5.56	2.10	0.53	1.13	0.00	0.32	0.41	0.51	2.32	10.16	37.49
1953	14.66	5.29	7.07	3.41	3.06	0.78	0.07	1.18	1.19	3.19	8.62	10.19	58.71
1954	15.10	8.50	3.41	4.24	1.25	2.74	0.30	2.94	0.84	4.06	6.54	7.93	57.85
1955	5.06	3.64	7.38	5.32	0.89	0.97	0.81	0.00	2.94	5.38	9.58	16.46	58.43
1956	15.81	8.22	7.34	0.71	0.98	0.86	0.03	0.33	1.41	7.12	2.00	5.24	50.05
1957	3.61	8.57	6.83	3.13	2.63	0.66	0.14	0.28	0.42	2.51	4.86	9.63	43.27
1958	9.09	9.93	4.38	5.45	1.03	2.06	0.00	0.02	0.87	3.19	9.12	7.17	52.31
1959	13.27	4.04	5.89	1.42	1.79	1.89	0.52	0.06	3.84	1.91	4.08	3.92	42.63
1960	6.61	8.62	7.81	4.13	3.99	0.42	0.00	0.75	0.69	4.01	12.56	4.32	53.91
1961	6.64	12.27	10.82	2.55	2.50	0.30	0.38	0.33	0.82	4.26	6.06	7.96	54.89
1962	2.98	5.35	7.34	4.75	2.23	0.72	0.05	0.72	1.77	6.26	12.63	4.15	48.95

McMinnville Foothills

4

1963	2.41	6.41	8.18	5.33	3.57	0.92	0.93	1.18	2.01	3.64	9.38	5.40	49.36
1964	13.70	2.24	6.62	1.95	0.90	0.99	0.66	0.51	0.66	1.39	8.00	18.74	56.36
1965	11.76	4.81	0.98	2.94	1.95	0.73	0.14	0.84	0.07	2.24	10.50	11.30	48.26
1966	10.63	3.88	9.52	1.52	1.15	1.09	0.34	0.25	1.51	2.71	5.83	14.23	52.66
1967	11.80	3.01	9.75	3.62	0.88	0.39	0.00	0.00	0.81	7.15	4.28	7.99	49.68
1968	8.40	9.94	6.44	1.74	2.85	2.56	0.12	3.54	1.65	7.03	9.46	16.77	70.50
1969	12.64	6.89	2.37	2.90	1.79	1.44	0.02	0.07	2.39	4.53	4.89	13.79	53.72
1970	16.05	5.89	3.62	3.62	0.84	0.41	0.02	0.03	1.58	4.98	8.43	15.00	60.47
1971	12.20	5.50	9.97	4.14	2.13	1.42	0.08	0.21	3.62	3.73	8.91	14.05	65.96
1972	10.38	6.16	7.80	5.86	1.45	0.94	0.03	0.12	3.15	1.03	5.09	11.36	53.37
1973	6.76	2.28	4.26	2.09	0.70	1.13	0.00	0.55	3.79	3.24	19.49	13.53	57.82
1974	14.84	9.65	9.29	3.22	2.33	1.07	0.84	0.02	0.17	0.72	7.56	11.54	61.25
1975	8.84	8.42	7.67	2.99	2.24	0.86	0.87	1.38	0.03	7.98	6.52	9.21	57.01
1976	7.18	9.07	5.95	2.59	0.95	0.70	0.72	1.21	0.81	1.49	1.77	1.92	34.36
1977	1.26	3.21	8.16	0.62	3.64	0.73	1.01	1.65	3.42	3.07	9.32	11.21	47.30
1978	8.89	6.34	1.92	5.21	3.76	1.01	1.02	2.40	4.15	0.94	3.49	4.44	43.57
1979	3.55	9.78	3.14	3.44	3.01	0.69	0.62	0.82	2.08	7.26	4.93	10.29	49.61
1980	11.39	6.63	5.47	5.10	0.64	1.60	0.43	0.08	0.89	1.47	7.98	11.91	53.59
1981	2.84	4.75	4.48	4.11	3.13	3.98	0.14	0.08	2.60	6.56	7.40	14.64	54.71
1982	7.98	9.13	5.86	7.53	0.20	1.60	0.66	0.34	1.93	5.42	6.55	14.22	61.42
1983	9.68	13.09	11.98	2.72	2.78	1.50	1.40	0.88	0.43	1.05	13.43	8.80	67.74
1984	4.31	7.53	5.09	4.18	3.89	2.38	0.11	0.07	1.50	5.94	16.09	5.44	56.53
1985	0.38	4.20	4.92	2.03	0.75	4.21	0.28	0.45	2.37	4.07	5.28	4.07	33.01
1986	8.96	7.71	4.56	3.04	1.37	0.55	1.27	0.02	3.02	3.05	7.27	6.38	47.20
1987	8.07	7.69	8.83	1.53	2.05	0.19	2.39	2.16	0.31	0.12	3.18	13.69	50.21
1989	99.99	99.99	99.99	99.99	99.99	1.17	0.47	0.63	0.72	3.16	99.99	4.25	999.99
1990	13.41	99.99	99.99	99.99	99.99	99.99	99.99	99.99	99.99	3.92	4.90	3.74	999.99
1991	3.66	4.79	5.65	99.99	2.63	2.04	0.18	0.37	0.06	99.99	7.80	4.05	999.99
1992	5.93	6.07	1.22	5.74	0.00	0.60	0.28	0.42	1.63	3.28	6.96	8.64	40.77
1993	5.01	1.01	4.31	5.46	4.21	1.52	1.23	0.10	0.02	1.66	1.35	9.27	35.15
1994	5.51	99.99	3.92	2.67	0.93	2.18	0.01	0.00	1.36	5.28	10.86	9.94	999.99
1995	10.25	4.77	7.70	5.03	1.09	1.95	.07	.88	2.21	3.42	11.60	9.33	58.30
1996	10.99	14.32	3.25	7.85	4.05	.72	.53	.19	2.91	5.42	12.10	22.00	84.33
1997	8.88	2.82	7.75a	3.39a	2.89	2.13	0.24	0.93	2.88	6.65	7.11	4.73	50.40
1998	10.84	8.11	5.96	2.61	4.72	0.78	0.01	0.00	0.87	3.25	12.86	11.96	61.97
1999	10.62	17.61	6.15	1.28	3.46	0.87	0.11	0.21	0.32	2.65	13.18	7.87	64.33
2000	6.39	6.28	2.95	0.00z	2.72	1.38	0.15	0.00	0.59	2.41	3.67	5.05	31.59a
2001	2.22	3.10	2.47	1.98	1.80	1.35	0.20	0.58	0.00z	2.88	0.00z	0.00z	16.58c

WILLAMINA, OR PRECIPITATION AVG. (ANNUAL) = 51.57"

Sheridan, OR

Click a month to see the details for that month. The details for each day of the selected month are shown below.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. High	46°F	51°F	55°F	61°F	68°F	75°F	82°F	82°F	77°F	65°F	52°F	45°F
Avg. Low	32°F	34°F	36°F	37°F	42°F	46°F	48°F	48°F	46°F	41°F	37°F	33°F
Mean	40°F	43°F	46°F	50°F	55°F	61°F	66°F	66°F	62°F	53°F	45°F	40°F
Avg. Precip.	8.10 in	6.00 in	5.60 in	2.70 in	1.90 in	1.20 in	0.50 in	0.70 in	1.60 in	3.30 in	7.70 in	9.10 in

SHERIDAN OR PRECIPITATION AVG. (ANNUAL) = 48.4"

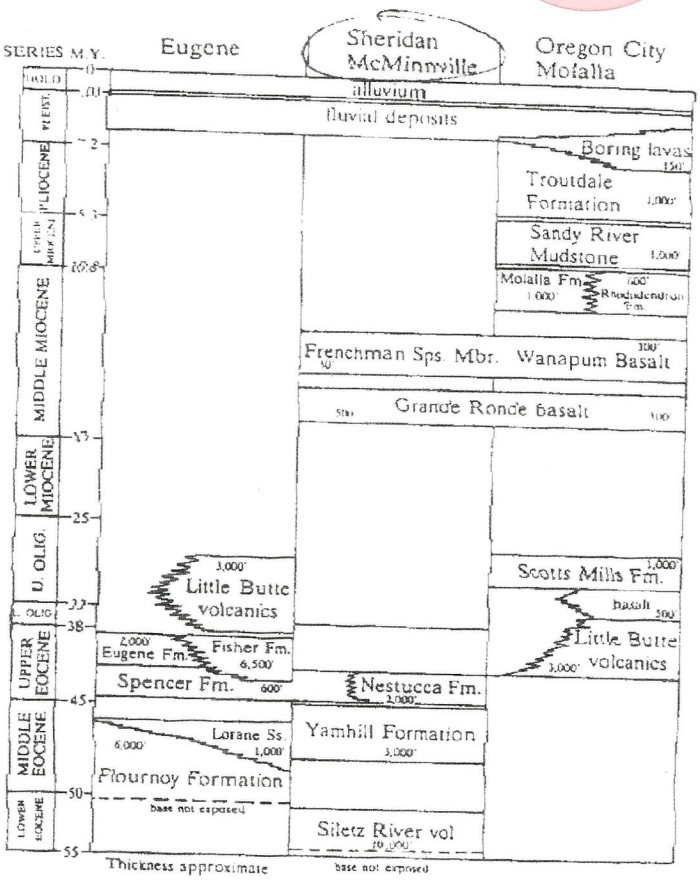
GEOLOGY OF OREGON; Elizabeth & William Orr, Ewart M. Baldwin; Kendall/Hunt Publishing Co., 1992

K

block was abandoned and a new one activated offshore to the west where it is today.

The slow subsidence of the block created a broad forearc trough along the western margin of North America. From Eocene through Pliocene time the basin was the recipient of deposits that blanketed the earlier volcanic platform. Rivers draining the Klamath Mountains and later the Idaho batholith provided abundant sediments that accumulated in the newly formed basin. During the early Eocene the eastern edge of the subsiding coastal block that was to become the Willamette Valley collected sandstones and siltstones of the Flournoy Formation near Lorane, Philomath, Falls City, the low hills around Camp Adair, and in the southern valley. Where Eocene rocks are exposed in the area north of Corvallis, rolling hills contrast sharply with the flat valley floor elsewhere that is covered with Pleistocene fill.

In the northern part of the valley these deposits were followed by middle Eocene Yamhill muds, sands, and silts, mixed with ash and lavas from the ancestral Cascades that were carried into the shallow seaway. Within the Yamhill, shoals of limestones around offshore banks formed the Rickreall and Buell limestones containing broken mollusc shells, foraminifera, and calcareous algae intermixed with volcanic debris. In the northern valley 2,000 feet of Nestucca Formation deposited in a deep water setting extended westward from McMinnville, while near-shore sands, silts, and muds of the shallow marine Spencer Formation produced deltas along the margin. Found along the western side of the valley from Eugene north to Gales Creek in Washington County, Spencer sands are covered by nonmarine tuffs and conglomerates of the late Eocene Fisher Formation. Fossil plants from the Fisher Formation southwest of Cottage Grove indicate a warm, moist tropical climate where broad leaf plants as the Aralia grew close to the shoreline. Beneath Eugene almost a mile of upper Eocene silts and sands of the Eugene Formation extend northward toward the Salem hills. Marine molluscs, crabs, and sharks in this formation suggest warm, semitropical seas. Sediments of the Spencer, Fisher, and Eugene formations were derived from the rapidly growing volcanics of the Western Cascades.



Willamette Valley stratigraphy (after COSUNA, 1983)

Oligocene

The Oligocene ocean in the Willamette Valley reached only as far south as Salem. The high-water mark on the western shoreline is recorded by marine sediments in the vicinity of Silverton and Scotts Mills in Marion and Clackamas counties. In the Scotts Mills Formation a transgressive, advancing seaway followed by a regressive, retreating ocean chronicles storm conditions, shallow water, and coastal swamps that gave rise to thin layers of low-grade coal. Coal beds at Wilhoit Springs and Butte Creek were deposited along the margins of the sea as it retreated. Prior to the arrival of the Columbia River lavas in the middle Miocene, the Scotts Mills sediments were tilted eastward and severely eroded.

doom of sliding back into the interior of the earth whence it came.

Of course the seafloor constantly receives sediments eroded from the continent and slowly carries them back to the continent and stuffs them into a coastal range. Were it not for the fact that new seafloor constantly forms while old seafloor constantly scrapes its sediments back onto the continent, the oceans would long since have filled with mud and the continents eroded to featureless plains. It is this constant creation and destruction of the restlessly moving seafloor that keeps our planet in business.

If the rift where the seafloor forms is not too far offshore, the sediments washing in from the continent will reach it and bury some of the lava flows almost as soon as they form. The result will be interlayered sediments and lava flows, something we often see in the Oregon Coast Range. Sometimes the molten basalt may not erupt onto the seafloor as a lava flow but instead inject itself between beds of sediment to make a sill — a layer of basalt sandwiched between layers of sediment. Some parts of the Coast Range are full of sills, many of them as much as several hundred feet thick.

The lava flows in the Coast Range erupted during Eocene time, perhaps 50 or 60 million years ago, so that must have been when this expanse of seafloor formed. Most of the dirty sandstones and mudstones that are interlayered in the seafloor lava flows and also deeply cover them in many parts of the Coast Range also date from Eocene time. Some parts of the Coast Range still contain younger Oligocene sediments deposited about 35 or 50 million years ago which presumably once blanketed the entire surface before erosion removed most of them.

It was near the middle of Oligocene time, about 35 million years ago, when the line of seafloor sinking jumped from its old course to its present one off the modern coastline. Evidently most of the Coast Range was jacked above sealevel very shortly thereafter because we find no sedimentary rocks deposited since then anywhere except in the Astoria and Tillamook areas. There we find mudstones deposited during Miocene time, some perhaps as recently as 20 million years ago, so evidently those areas remained submerged a few million years longer. Ever since middle Oligocene time, the seafloor sinking offshore has been jamming younger sedimentary rocks against and beneath the edge of the Coast Range slab.

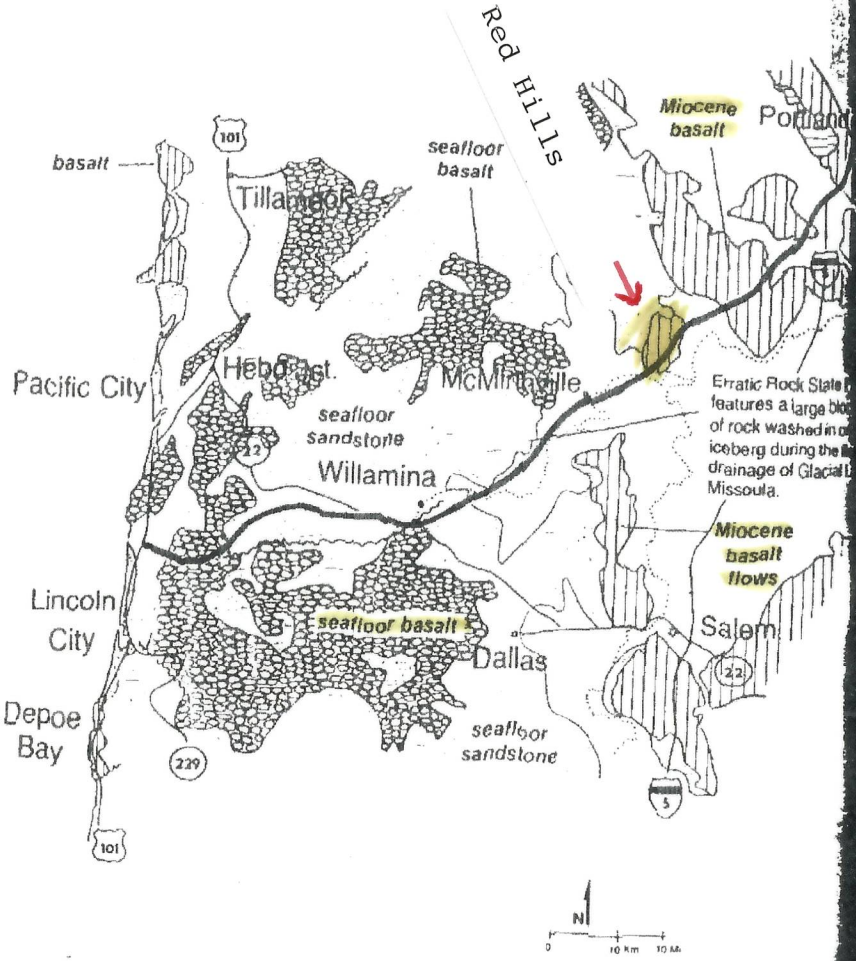
Those Miocene mudstones in the northern end of the Oregon Coast Range contain a large variety of distinctly tropical fossil seashells nearly identical to those of the same age in southernmost California. Obviously the water along the Oregon coast was much warmer during Miocene time than it is now. Those seashells lived while red tropical soils were forming over most of Oregon and leaves of tropical plants were being preserved in eastern Oregon lake beds. Oregon was truly tropical during Miocene time.

In most of the Coast Range, the older sedimentary rocks are the kind of dark gray mudstones and dirty sandstones that accumulate on deep-sea floor far from shore, the same kind of sediments that come up in most deep-sea cores cut by oceanographic research vessels. But things are different at the southern end of the Coast Range, in the vicinity of Coos Bay and Coquille. There the sedimentary pile is very thick, tightly crumpled, and contains rocks deposited along the shoreline as well as some that appear to have been laid down in deep water.

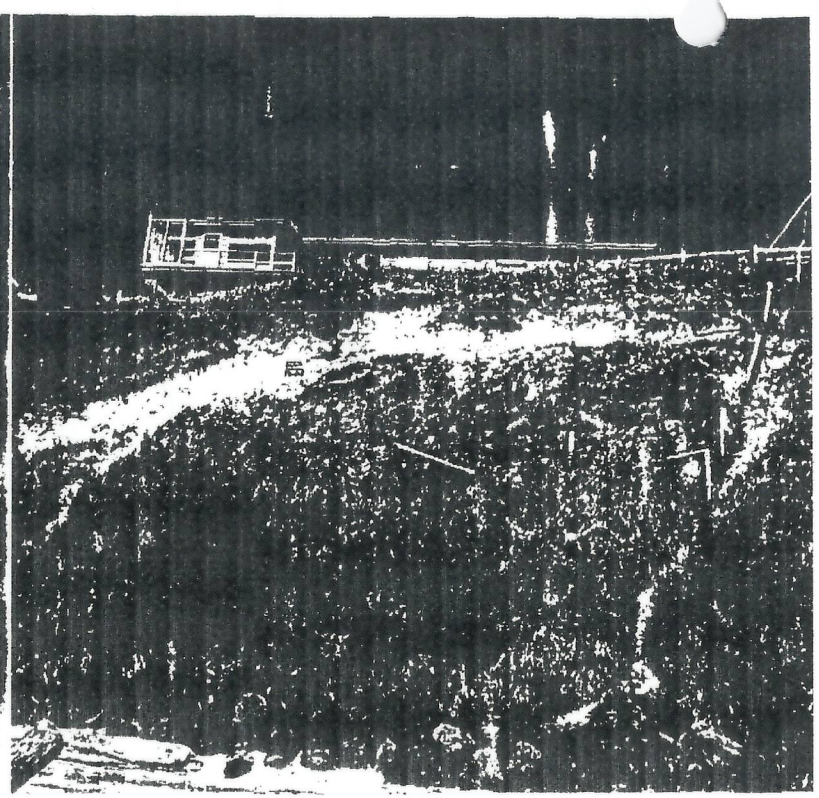
The region around Coos Bay and Coquille is at the narrow southern tip of the big slab of seafloor isolated between the old and new lines of seafloor sinking. And it is also adjacent to the Klamath Mountains. It is easy to imagine that the Klamaths may have been a source of abundant sediment back in Eocene time which would have dumped onto the nearby seafloor to build a large continental shelf and coastal plain. Along that seashore there must have been big coastal marshes filled with lush jungles because we find thick coal seams in the area today. It is probably quite reasonable to imagine genuinely tropical jungles growing along the Oregon coast then because there is abundant evidence in many parts of the world to indicate that

18
LINCOLN CITY — PORTLAND
(70 miles or 113 kilometers)

22
SALEM — HEBO JCT.
(55 miles or 89 kilometers)



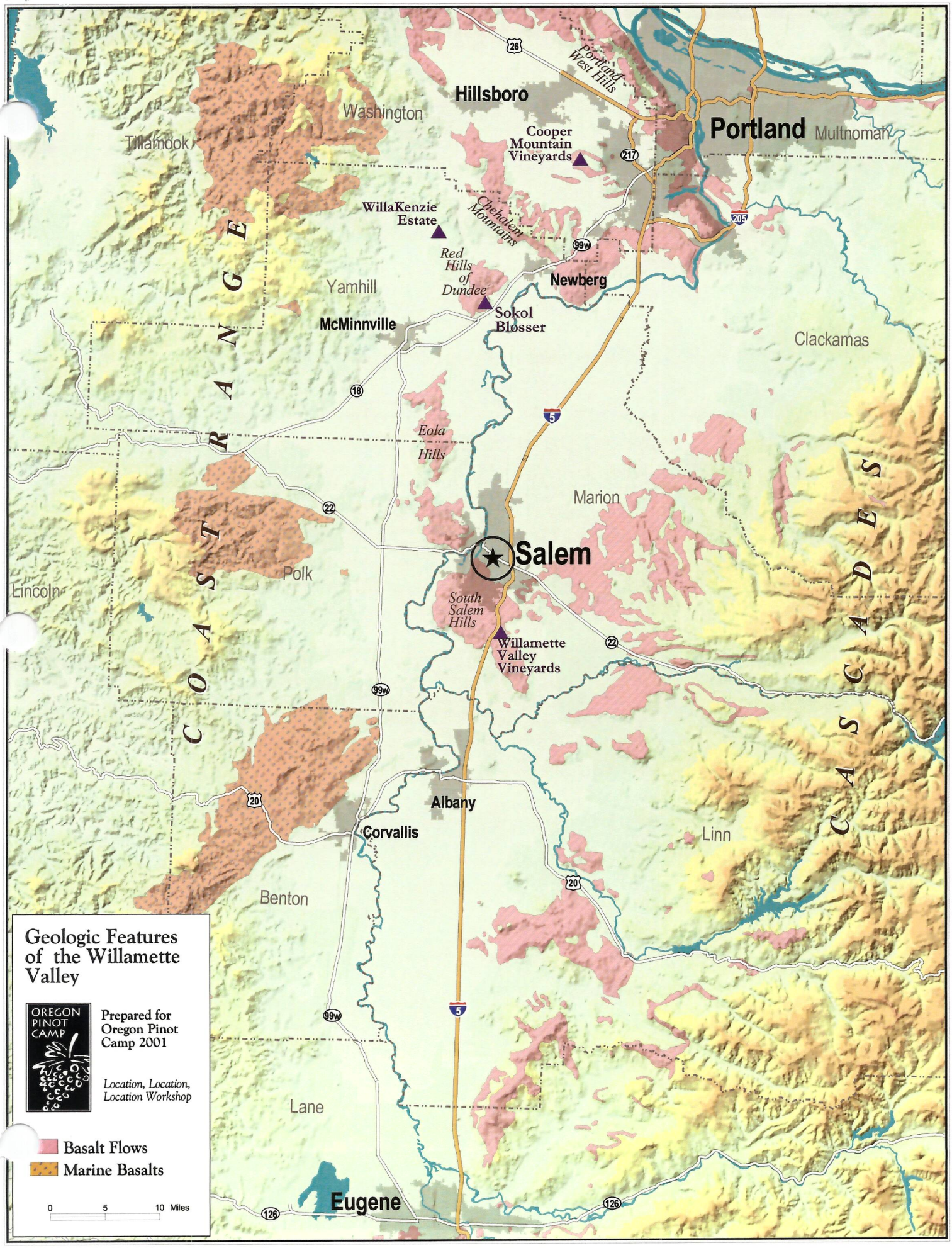
Roadside Geology of Oregon



A landslide in the wave-eroded edge of an old coastal terrace threatens homes in Lincoln City.

across a tract of low hills eroded on basalt lava flows which it follows into the outskirts of Portland. These basalt flows are the westernmost end of the Columbia Plateau; they poured all the way from northeastern Oregon down the Columbia River and onto the north ends of the Coast Range and Willamette Valley. Those eruptions happened during Miocene time, about 20 million years ago, so they are much younger than the rocks in the Coast Range.

The line of hills which runs just west of Portland through Sylvan, Oswego and West Linn is a chain of small volcanoes which were active during the last several million years. There are literally dozens of small volcanoes around Portland, grouped in clusters all around the town.


Hillsboro
Portland West Hills
Portland
Multnomah
Washington
Tillamook
Cooper Mountain Vineyards
WillaKenzie Estate
Chehalem Mountains
Red Hills of Dundee
Newberg
Yamhill
McMinnville
Sokol Blosser
Clackamas
COAST RANGE
Eola Hills
Marion
Salem
Polk
Lincoln
South Salem Hills
Willamette Valley Vineyards
CASCADES
Albany
Corvallis
Linn
Benton
Lane
Eugene
26
217
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126
Geologic Features of the Willamette Valley
OREGON PINOT CAMP
Prepared for Oregon Pinot Camp 2001
Location, Location, Location Workshop
Basalt Flows
Marine Basalts
0 5 10 Miles

NE of Red Hills

Monthly Averages and Records

Newberg, OR
Click a month to see the details for that month. The details for each day of the selected month are shown below.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. High	45°F	50°F	55°F	60°F	67°F	73°F	79°F	80°F	74°F	64°F	52°F	45°F
Avg. Low	32°F	34°F	36°F	38°F	43°F	49°F	51°F	51°F	46°F	40°F	36°F	33°F
Mean	39°F	43°F	46°F	50°F	55°F	61°F	66°F	66°F	61°F	52°F	45°F	39°F
Avg. Precip.	5.90 in	4.30 in	4.00 in	2.20 in	1.60 in	1.40 in	0.50 in	1.10 in	1.50 in	2.80 in	5.70 in	6.60 in
Record High	63°F (1953)	70°F (1988)	78°F (1994)	90°F (1998)	100°F (1983)	102°F (1992)	108°F (1956)	106°F (1977)	103°F (1988)	92°F (1952)	78°F (1959)	64°F (1980)
Record Low	-10°F (1950)	-9°F (1950)	18°F (1960)	25°F (1965)	25°F (1969)	34°F (1965)	38°F (1955)	37°F (1965)	29°F (1965)	21°F (1972)	8°F (1955)	-2°F (1972)

Daily Averages and Records

37.6" avg

Newberg, OR
March
Sunrise and Sunset Times are in local time for 2002

	11	12	13	14	15	16	17	18	19	20	21	22
Sunrise	6:32 AM	6:30 AM	6:28 AM	6:26 AM	6:24 AM	6:22 AM	6:20 AM	6:18 AM	6:17 AM	6:15 AM	6:13 AM	6:11 AM
Sunset	6:12 PM	6:14 PM	6:15 PM	6:16 PM	6:18 PM	6:19 PM	6:20 PM	6:22 PM	6:23 PM	6:24 PM	6:26 PM	6:27 PM
Avg. High	55°F	55°F	55°F	55°F	55°F	55°F	55°F	56°F	56°F	56°F	56°F	56°F
Avg. Low	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F	36°F
Mean	46°F	46°F	46°F	46°F	46°F	46°F	46°F	46°F	47°F	47°F	47°F	47°F
Record High	70°F (1965)	71°F (1965)	70°F (1965)	68°F (1994)	71°F (1996)	74°F (1972)	72°F (1972)	73°F (1978)	72°F (1960)	74°F (1978)	72°F (1978)	71°F (1979)
Record Low	25°F (1956)	25°F (1956)	26°F (1969)	26°F (1954)	23°F (1951)	26°F (1955)	25°F (1955)	29°F (1965)	24°F (1965)	25°F (1955)	27°F (1952)	27°F (1952)

Show Previous 10 Days

Show Next 9 Days

Back to Previous Page

Temperature Converter
Enter a number and click on the "Calculate" button

[ ] °F = [ ] °C Calculate Reset

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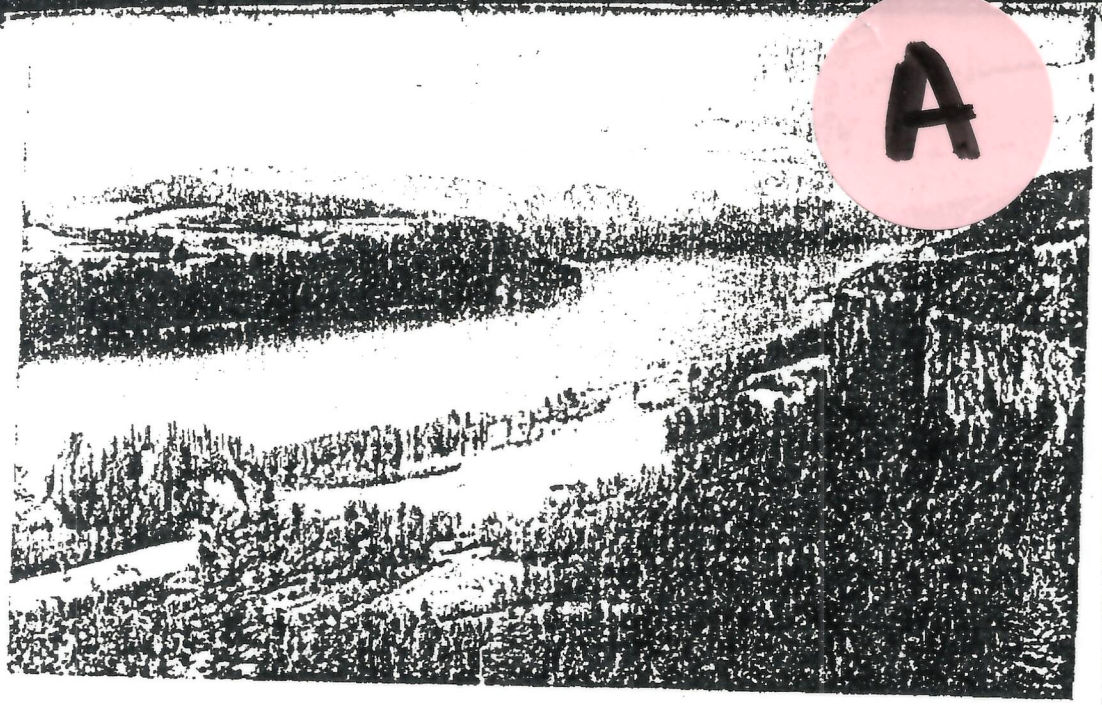
How Weather Affects Your Life



A

The Columbia Gorge Wind Funnel

HOWARD E. GRAHAM, *U. S. Weather Bureau, Portland, Oregon*

THROUGH a near sea-level channel in the Cascade Mountains the Columbia River affords an artery for easy communication between the vast interior of the continent and the narrow sea coast areas. The spectacular Gorge of the Columbia also provides a channel for atmospheric movements that bring rapid weather changes and diverse climate conditions. The scenery through the Gorge reflects the variety of climate from copious maritime rainfall at the western end to continental aridness at the eastern extremity.

The actual Gorge of the Columbia River is about 120 miles long, running from near Bridal Veil, Oregon, in a generally easterly direction, to near Arlington, Oregon. The walls of the Gorge are highest about 45 miles east of Portland, then lower to about 1,000 feet at The Dalles where the river takes a loop, and continue at about the same height for a little over 50 miles eastward. On either side of the Gorge massive mountains rise from near sea level to great heights. Mt. Adams reaches a peak of 12,307 feet only 30 miles to the north, and Mt. Hood stands 11,245 feet just 20 miles to the south. One tends to dwell too long on how big these mountains are, but most westerners will pay a premium if their house can face one of these majestic weather scenes.

The main barrier of the Cascade Mountains is orientated in a north-south direction about 110 miles inland and represents an important climatic control since it lies astride the path of the prevailing moisture-laden westerlies. As the air masses cross the mountains, they are materially modified: ascending air currents on the windward side lead to condensation and precipitation, while subsiding currents on the lee side result in evaporation and dissolution of clouds.

West of the mountains the precipitation reaches the high figure of 130 inches annually, and to the east it may amount to as little as eight inches annually. To illustrate:

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Portland, 20 miles to the west of the Gorge, has a yearly fall of 41.26 inches; The Dalles, well in the Gorge, has 15.49 inches; and at the extreme eastern end at Arlington the figure is only 9.05 inches. A traveller through the Gorge is aware of this rapid transition as he passes from a dense growth of conifers, Douglas fir, and cedars to only grass and sagebrush.

The Gorge forms an excellent laboratory for the meteorologist and climatologist, for here every day of the year the effects of small variations of temperature, humidity, and pressure make themselves felt in large-scale wind movements. To the synoptic forecaster the Gorge presents a never-ending challenge to anticipate pressure changes that will determine air flow conditions. When the east Pacific high moves toward the coast, there will be an accompanying west wind flow through the Gorge. The reverse occurs when a continental high forms inland over the Plateau. In the Gorge, itself, there can be only three types of air movement: easterly, westerly, or calm, which occurs infrequently.

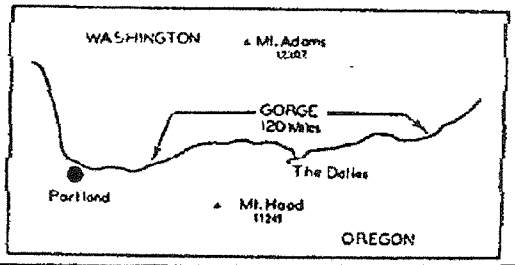
The pattern of wind flow has direct economic effects on all areas near the Gorge. When west winds prevail, mild maritime air flows into eastern Oregon and Washington to modify an otherwise continental type climate. Although the heavily populated industrial and agricultural areas at the west end of the Gorge are relatively little affected by west winds blowing into the Gorge, they are directly affected by east winds from the interior. Dry east winds can cause a fire hazard in all seasons of the year. In summer, strong parching winds with high temperatures dry out valuable forests and brushland, and in wintertime the same winds, now cold and dry, create a fire hazard from overheated furnaces. According to the Portland fire marshall, there is a surprising increase in flue and roof fires during spells of easterly winds.

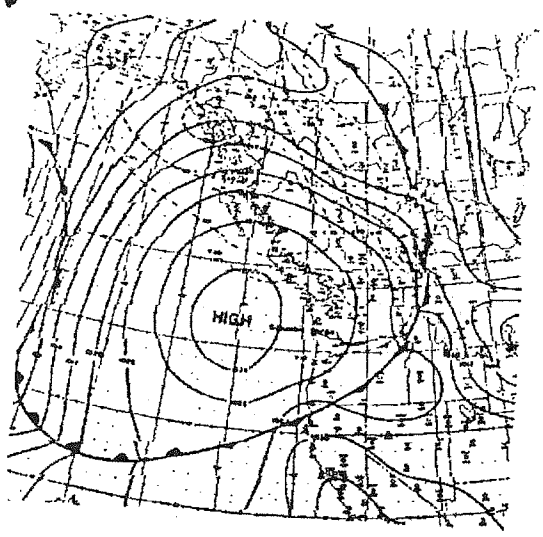
The prevalence of easterly winds in the Portland area has caused man to attempt to modify the local topography. Many tender truck crops in commercial and private gardens are subject to injury by the strong, desiccating winds. A number of elaborate wind breaks have been built or grown on the easterly side of fields to afford protection against unwelcome blasts.

Winter east winds give Portland and vicinity its severest weather, and the City of Roses is usually colder and windier than nearby cities to the immediate north and south. A temperature as low as — 2° F. has been experienced there under an easterly circulation. Freezing rain is another hazard in the Gorge. Cold air from the interior often clings to the surface while moisture-laden air rides aloft over it. All forms of frozen precipitation then result in this area, as the temperature balance near freezing varies according to elevation and distance from the sea. The great glaze- and snowstorm of 17–20 November 1921 at The Dalles deposited 54 inches of frozen precipitation on the ground and stopped all communication through the Gorge.

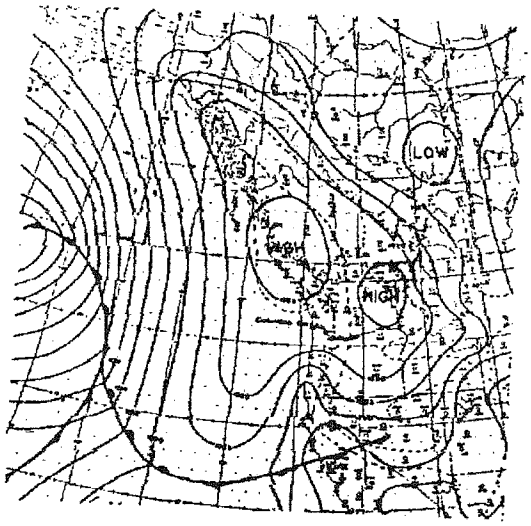
A direct economic effect of the Gorge wind regime is illustrated by the forecast problem at Bonneville Dam where a continued westerly flow lowers the head of water behind the dam, reducing the potential for electric power output. Conversely, east winds help to raise the head. Thus, a forecast of all wind movement is necessary for proper pool regulation.

A consideration of two typical synoptic conditions will illustrate the flow patterns existing under different wind regimes. During the summer relatively cool maritime air normally piles up against the Cascade Range causing a rather strong pressure gradient toward the warmer interior of eastern Oregon and Washington. The surface weather map for 1630 PST, 28 July 1951, is typical of this situation. A large high lies off the coast with low pressure between the Cascades and the Rocky Mountains. The interior low has intensified through heating and by the lee effect of west winds blowing over the barrier of the Cascade Range. During periods of sustained westerly flow, troughs, often quite deep, form east of the Rockies, and similar but less pronounced





0430 PST, 4 November 1951



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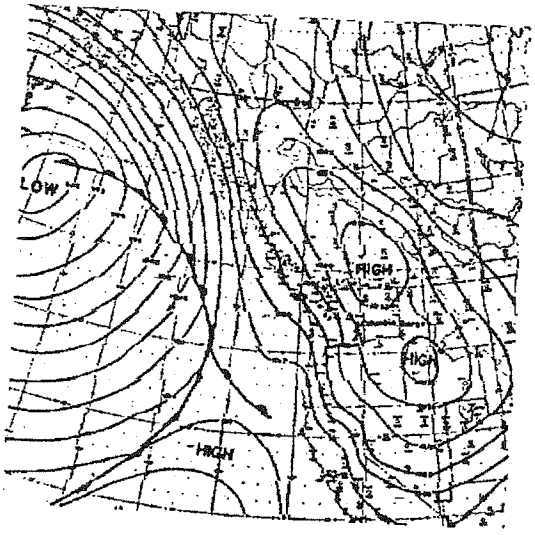

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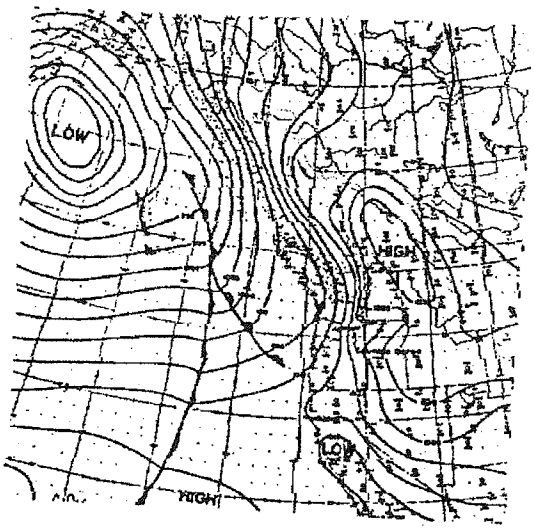

1630 PST, 5 November 1951

The sea-level weather maps for the Pacific Northwest area illustrate a case for the development of strong east winds through the Gorge.

oughs forth to the cades, too. On this sure gradient betwe Dalles, 87 miles apa the east, and the wind 1330 PST.

The reverse situati period of 4–5 Novem ries since violent east weather phenomena. 4 November 1951, a inland followed by ris portion of the east land. Note the center Juneau, Alaska. At gradient between Por 2.7 mb west to east, erly from 10–15 mpl definite clue as to wl nized at this stage—r ish Columbia indicate inland.

Twelve hours later moved into British C and Washington. Ri by the pressure chan the Cascades. The west to east, but ha and the wind has 3 mph.

During the followi came well establishec Strong nighttime radi the mountains, and th from 22° to 35° F. than those of the pi pressure gradient wi east to west, with a The wind at Troutdal at the western end, east with gusts to 34

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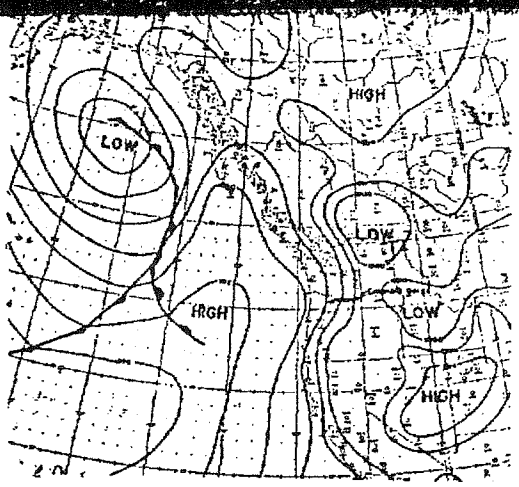
troughs form to the lee of east of the Cascades, too. On this particular day the pressure gradient between Portland and The Dalles, 87 miles apart, was 6.1 mb toward the east, and the wind was west at 29 mph at 1330 PST.

The reverse situation is illustrated by the period of 4–5 November 1951—a typical series since violent east winds are mostly a cold weather phenomena. On the map for 0430, 4 November 1951, a weak occlusion moved inland followed by rising pressure, as the main portion of the east Pacific high pushed inland. Note the center of pressure change over Juneau, Alaska. At this time the pressure gradient between Portland and The Dalles is 2.7 mb west to east, and the winds are westerly from 10–15 mph. Frequently the first definite clue as to what will follow is recognized at this stage—rising pressure over British Columbia indicates that a high is pushing inland.

Twelve hours later, at 1630, the high has moved into British Columbia, eastern Oregon and Washington. Rising pressure, as shown by the pressure change lines, is well east of the Cascades. The pressure gradient is still west to east, but has decreased to 0.3 mb, and the wind has now decreased to west 3 mph.

During the following 12 hours the high became well established over the Great Basin. Strong nighttime radiation took effect east of the mountains, and the morning temperatures from 22° to 35° F. were considerably lower than those of the preceding morning. The pressure gradient was now reversed, being east to west, with a differential of 5.8 mb. The wind at Troutdale, just outside the Gorge at the western end, was 24 mph from the east with gusts to 34 mph.

During the day at Stevenson in the Gorge the wind speed increased to a sustained peak of 58 mph and gusts to 67 mph. A second front moved close to the coast by 1630, bringing falling temperatures along the coast and increasing the pressure gradient between Portland and The Dalles to 7.8 mb. This sustained the easterly flow and brought some very dry air into the Portland area as is shown by the drop from 88 per cent relative humidity on the 4th to 34 per cent on the 5th. The



A case of typical west winds through the Gorge in summertime is illustrated by the sea-level chart for 1630 PST, 28 July 1951.

wind flow was directly across the isobars; this is typical of winds in mountainous terrain and especially for winds through gorges and mountain passes.

How do we forecast the Columbia Gorge winds? To answer this question in its entirety would be a big order. The main problem is the preparation of accurate prognostic maps. Since we have found that the Gorge wind is a function of the pressure difference from one end of the Gorge to the other, and that it always blows along the axis of the Gorge, our problem is to forecast the pressure at both ends. The pressure difference through the Gorge is ascertained from the expected large scale pressure pattern. Correlations between pressure difference and wind velocity have been computed to assist in the actual Gorge-wind forecast once the expected pressure difference has been determined.

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light traveling through it. Thus, the haze resulting from this scattering, as well as the decrease in the smoke's actual brightness, causes a tremendous loss in visibility distance, even under the most favorable conditions.

CONCLUSIONS

1. Small smoke columns can be seen farther when the *observer is looking* into a low sun than when the observer has the sun at his back. Trees, houses, and similar objects cannot be seen as far toward a low sun as they can away from the sun.

2. The *locus of the* position of a smoke column in sunlight at the maximum distance of visibility from an observation point is approximately a circle. The *observation point* is displaced from the center for light backgrounds, but moves nearer the center for dark backgrounds. The radii of such curves *increase as the brightness* of the background decreases.

3. The visibility distance does not change greatly with intrinsic *background brightness* in the direction of a low sun, because the haze in that direction is always many times brighter than any natural background.

4. *From* indirect measurements and theoretical considerations it appears that smoke columns can be seen farther on cloudy days than on clear days, *the difference* being much greater against light backgrounds than against dark backgrounds. Opaque objects such as trees cannot be seen as far on *cloudy days as on cloudless days.*

5. For all practical considerations, the safe visibility distance of smoke columns in shadows appears to be zero in the *direction of a low* sun.

6. Small changes in the size of a smoke body do not cause appreciable changes in its visibility distance.

7. *In* very clear weather small changes in atmospheric conditions will result in large changes in visibility distance.

DESTRUCTIVE EASTERLY GALES IN THE COLUMBIA RIVER GORGE, DECEMBER 1935

By D. C. CAMERON and ARCHER B. CARPENTER

[Weather Bureau, Portland, Oreg., August 1936]

Several times each winter the easterly winds in the Columbia River Gorge *reach gale force*, and continue at that velocity for a week or 10 days, and in some instances for nearly a month (1) (2). In December 1935 the easterly winds *reached such a force that* all wind instruments at Crown Point, Oreg., were completely carried away.

This tremendous flow of air is a result of *deepening of* nocturnally cooled air collected over the Columbia and Snake River Basins, which, like the water in these rivers, finds its way out through the *Columbia River Gorge*, a natural water-level route through the Cascade Range.

Any cessation of cyclonic activity in this large inland basin permits *rapid cooling*, by nocturnal radiation, of the polar Pacific air which normally is present. This cooling soon builds up a deep, cold layer, filled with low *stratus clouds and fog*; and the air flow westward through the gorge increases in proportion to the depth of the cold air (3) (4). Occasionally a small amount of transitional polar continental (N_{pc}) air which has spilled westward through *the passes in the* Rocky Mountains adds to this drainage. When this occurs a drop is noticed in the temperature and dew points in the gorge, and an *increase noted in the* wind velocities. Such a combination of drainage was sufficient on December 20, 1935, to cause considerable destruction at Crown Point, Oreg., and elsewhere in the western gorge area.

The *ratio between* the pressure gradient from Hood River to Portland, Oreg., and the easterly winds at Cascade locks and Crown Point is quite constant, *as may be seen from* figure 1. The top and bottom curves on the graph represent *easterly wind velocities above* the neutral lines, and *westerly* wind velocities *below*. The upper and lower curves are for Crown Point and Cascade locks, *respectively*. *The center* curve represents difference in pressure from Hood River to Portland, with plus values when the pressure gradient was directed from Hood *River toward Portland*, and minus values when the reverse occurred.

Pilots using this airway estimated *wind velocities at* 4,000 feet to be about 30 miles per hour when the surface velocities averaged about 50 miles per hour. The pilots did not fly in this *air stream, as it* was extremely turbulent; the estimate was based on the very rapid rate at which clouds, from the upper portion of the inland lake of cold *air just below* the inversion, were flowing westward over a 4,000-foot ridge. The pilots flying this route were amazed as they watched these clouds being carried violently into the gorge and dissipated. The top of the *stratus clouds east of the* Cascade Range was reported at a maximum of approximately 5,000 feet. This maximum was reached after the addition of the N_{pc} air. The *previous* top was usually between 3,300 and 4,500 feet.

Lowering of the cold air top east of the Cascade Range was partly counteracted by radiation cooling at the top of the cloud layer in the cold air, and by radiation cooling *on the mountain* slopes rising above the lake of cold air. Small additions of N_{pc} air coming westward through the passes in the Rocky Mountains temporarily increased the *depth* of the cold air, and increased the flow through the gorge.

A rough estimate of the magnitude of this flow may be made. The narrowest part of the gorge, near Cascade locks, has a cross section below 4,000 feet of about 4.1 square miles. Assuming an average velocity of 35 m. p. h. through this section, the discharge of air is 3,444 cubic miles per day.

This discharge would produce a lowering of approximately 73 feet per day over the 248,438 square miles east of the Cascade Range, drained by the Columbia and Snake Rivers. Volume has been used in the above estimates because the surface of the area exposed to radiation varies from nearly sea level to over 10,000 feet on some of the mountain slopes, making it difficult to arrive at anything more than a rough estimate. The magnitude of lowering necessary to counteract the additions of cold air is therefore conservative, since much of the radiation took place at elevations where the air was of less density than that which flowed out through the gorge.

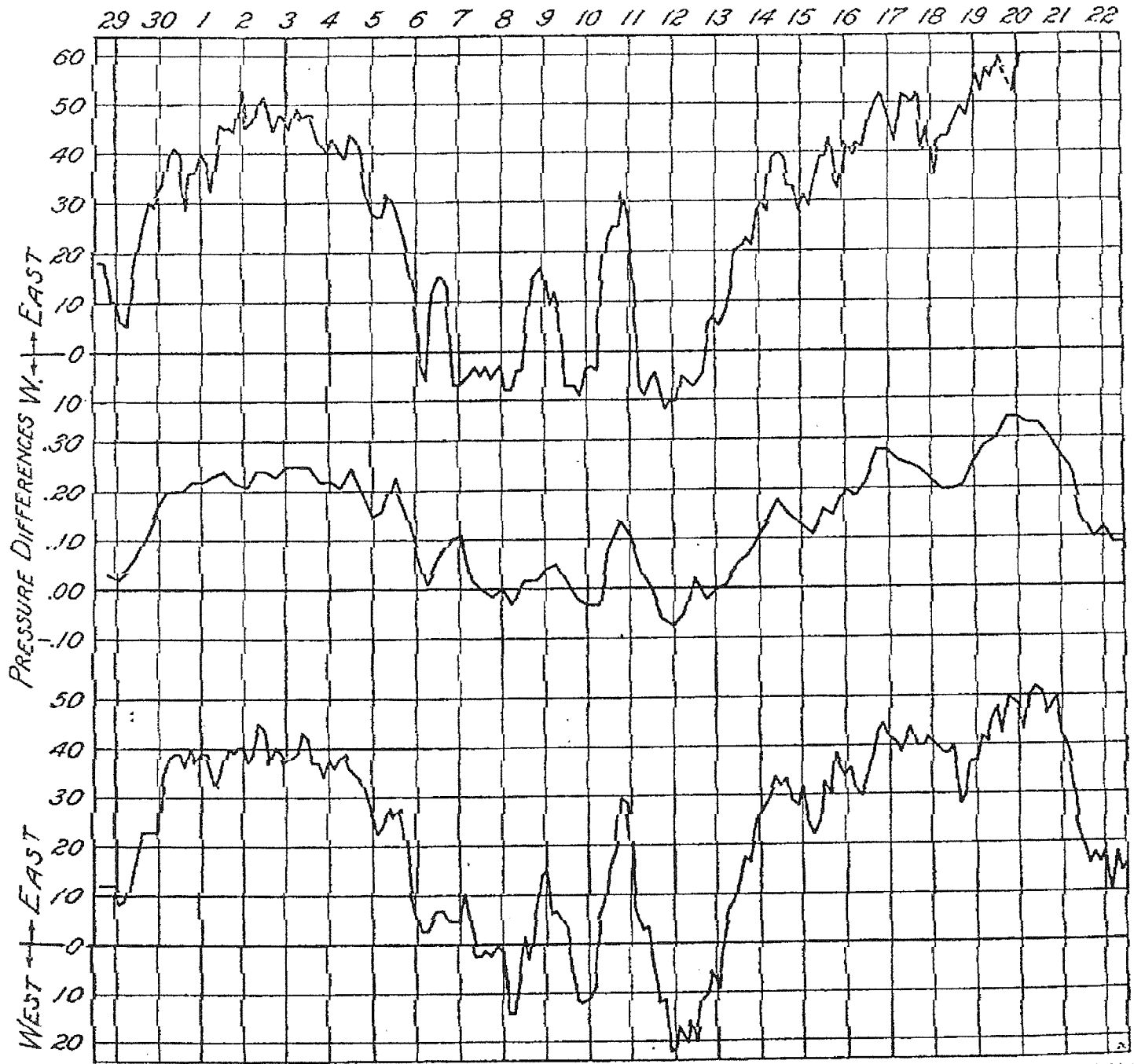

FIGURE 1.—*Upper curve: Crown Point, smoothed hourly velocities,* November 29, 1935, until destruction of anemometer at 3 p. m., December 20. The gorge winds are divided into easterly and westerly component values, the neutral line representing the shift in wind. Middle curve: Pressure differences, between Hood River and *Portland, Oreg.*, distance 50 miles. Positive values represent higher pressure at Hood River, negative values lower. Lower curve: Cascade locks, smoothed hourly velocities, November 29, 1935, to December 22, inclusive. Winds divided into easterly and westerly componeat values, similar to Crown Point. Pressure difference in hundredths of inches. Wind velocities in miles per hour.

The temperatures at Crown Point were between 30° F. and 34° F., and the specific humidities were between 2.9 and 3.5 parts per thousand during the period of easterly wind used in the calculations above. The constancy of the temperatures and specific humidities would indicate cooling and air drainage in one type of air without air added from other sources. It is reasonable to assume that the drainage air was actually cooled 10° to 15° each night, since any air from the Pacific Ocean would be that much warmer than the drainage air. The temperatures in the inversion above the lake of cold air were 15° to 26° higher than in the cold air below. Any addition of cold air from the continent, westward through the passes in the Rocky Mountains, is immediately detected in the lower temperatures and specific humidities through the Columbia River Gorge.

On December 18, pilots reported that mountain peaks in the inversion appeared to be 500 or 600 feet higher than they actually were, due to mirage effects. Several inversions were noted in the warm air above the stratus and fog layer. An inversion of 26° F. was reported over Pendleton on December 18, with a temperature of 20° F. at 3,000 feet in the cloud layer, and 46° F. at 5,700 feet, just above the stratus cloud top.

Active subsidence in the upper air east of the Cascades is indicated by the inversions discovered by the pilots. Further evidence is found in the temperature structure of the air east of Portland. The surface temperature at Portland at 6 p. m. on December 19 was 36°, at 1,000 feet it was 33°, at 4,000 feet it was 39°, and at 5,000 feet it was 42° F. The above temperatures were taken by a pilot on the Portland-Pendleton airway, with the last reading approximately over Cascade locks. The free air temperatures near Portland in a northerly direction, at the same time, were 47° at 1,800 feet, 64° at 3,000 feet, and 57° F. at 4,000 feet. The warm air in the upper levels was a part of the subsidence flow from above the cold lake of air. The higher temperatures over the Portland area, as compared with the temperatures above the gorge, level for level, indicate spreading as the air left the gorge. The warm air aloft was thus brought to lower levels over Portland. A temperature of 70° F. was reported at 2,000 feet over Portland at 10 p. m. on December 20.

On December 19 the lake-level of the cold air was increased by addition of N_w air coming westward into the basin through the passes in the Rocky Mountains. This was both colder and drier than that formerly flowing through the gorge, and the pressure differences from Hood River to Portland were correspondingly increased as indicated on figure 1. The average hourly velocities reached a peak of 57 miles per hour at Crown Point, and 48 miles per hour at Cascade locks. Gusts of 79 miles per hour were measured at Crown Point before the power lines were blown away and made it impossible to use the wind indicator. A further increase in the wind and in the gusts on December 20 finally carried away the wind vane and the anemometer.

The position of the house at Crown Point in relation to the contour of the rocky promontory is such that the wind flow is decidedly upward from the steep east and southeast slope, the severe gusts having as much as a 45° upward component where they pass through the anemometer. An area of approximately 17 square feet of the overhanging eaves at the northeast corner of the house catches the full force of these extreme gusts, and this portion gave way. Other adjacent portions of the roof followed, exposing the loft of the house, and it was necessary to chop a hole in the southwest portion of the roof to release the tremendous pressure head which at times caused the building to belly out under the strain. The observer estimated hurricane gusts of as high as 120 miles per hour during the period of maximum destruction.

Shingles from the roof were scattered over an area one-quarter mile wide, and one-half mile long. This whole area was carefully searched for parts of the missing wind instruments. The only part found was one of the anemometer cups, and it appeared to have been torn from the cup arm by sheer inertial force. The cup was found about one-third mile from the station. A furniture truck, loaded with kitchen stoves and other furniture, and another truck with a trailer, were blown over. On the following morning, two closed cars lost their tops; this quickly resulted when a window was opened toward the wind. The wind pressure inside the cars was sufficient to instantly blow off the tops. Such was the force produced by the wind that the tops were observed to be carried up into the air and over the edge of the cliff without even touching the ground. No doubt this type of damage would have been greater except for the highway patrolmen, who only allowed persons with heavy cars and urgent business to pass along the highway.

Another interesting feature of this period was the extreme dryness of the soil and all vegetation, revealed on the 23d, when a thorough search of the entire area to the south and west of the station was made in quest of the missing wind vane and anemometer. Dust was stirred up in the grass and leaves at each step, as the loose topsoil, previously frozen, had been dried by the persistent, penetrating easterly gales.

The airway beacons were behaving erratically on the evening of December 20, and many reports were received that the lights were out, or were functioning peculiarly. Several of the beacons were visible from Crown Point during the night. One of them was pointed at an odd angle into the sky, and was discovered next morning to have been blown off its base, and to be lying on the small platform atop the tower. Other revolving beacons were noticed to be flashing mostly down the gorge. The airway mechanician, who was in the gorge during the night, said that the lights would turn partly into the wind, and a gust would force the beacon backward, then another attempt into the wind would occur, and the beacon would again be pushed back by the force of the wind. These revolving beacons are turned by a clutch, and the clutch was not powerful enough to turn the beacons against the extreme gusts. From the lower end of the gorge the beacons were visible most of the time as the wind kept them straightened out in nearly one direction.

The average velocity of 38.2 miles per hour at Crown Point, for the period included in this study, is the highest of record for such periods since the station was established in 1929. The highest average velocity for a previous period of easterly winds was 35 miles per hour for 10 days in December 1934. Easterly gales also occur in connection with the movements of cyclones and anticyclones, but they are usually of shorter duration, and the average velocities are somewhat less.

All barometric data from standard mercurial barometers, reduced to sea level.

Distances (air-line): Portland–Crown Point, 24 miles.
Portland–Cascade locks, 45 miles.
Portland–Hood River, 59 miles.

Elevations: *Barometers above sea level:* Portland, 39 feet.
Hood River, 393 feet.

Anemometer above ground: Crown Point, 24 feet.
Cascade locks, 55 feet.

Anemometer above river (sea level): Crown Point, 761 feet.
Cascade locks, 250 feet.

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TROPICAL DISTURBANCES, AUGUST 1936

By WILLIS E. HURD

[Weather Bureau, Washington, September 1936]

Five tropical disturbances of the West Indian type occurred in the North Atlantic Ocean during August 1936. The earliest, that of the 9th–12th, which was of very slight intensity, was confined to the western Gulf of Mexico. The second, that of the 15th–19th, crossed the southern half of the Gulf, and locally developed some intensity during its westward passage. The third, that of the 20th–22d, originated east of the Bahamas, crossed northern Florida and thence, skirting the extreme northeastern Gulf coast, was of slight to moderate force only. The fourth disturbance, that of the 28th–30th, crossed the extreme lower portion of the Gulf, and was locally of considerable force on the 30th. Coincident with the final Gulf depression, reports were received on the 28th of a disturbance forming near 15° N., 45° W. This disturbance moved northwestward with rapid development. On the 31st, near 24° N., 56° W., winds of near hurricane force occurred. The storm thereafter moved into higher latitudes and on September 6–7 crossed the British Isles. A full description of this storm will appear in the September issue of the REVIEW.

Two tropical cyclones occurred off the west coast of Mexico this month. They are described on pp. 277–278.

The approximate tracks and positions of the centers of four disturbances are given in figure 1.

Disturbance of August 9–12.—The first definite signs of development of a cyclonic circulation, with light winds, appeared in the 7 *p. m. ship* reports of August 8 about 200 miles west-southwest of Port Eads. During the 9th the winds became somewhat more vigorous with forces of 4–5 (*Beaufort scale*), except that in one instance a moderate gale (force 7) from east occurred. This was radioed to the forecast centers by the S. S. *E. R. Kemp* (*barometer* 29.90) in 28.8° N., 92.1° W., and was the highest velocity reported during the life of the depression.

At 7 p. m. (e. s. t.) of the 9th the center of the disturbance was located near 28° N., 92° W., moving slowly in a westerly direction, accompanied by moderate to fresh winds. The center, with little apparent depression of the barometer, continued to move westward until the morning observation of the 10th, at which time it was located near 27½° N., 94° W. Thereafter, the course of the depression was south-southwest to southwest, unaccompanied by winds of known gale force, until, on the 12th, it entered the Mexican coast north of Tampico.

Beginning late on the 9th, and continuing until afternoon of the 12th, all interests were advised of the progress of the disturbance by advisories or bulletins issued at 6-hour intervals from the forecast center at New Orleans. Orders to hoist *small craft* warnings from Galveston to Corpus Christi were issued on August 10 at 3 a. m. (e. s. t.).

Disturbance of August 15–19.—This disturbance appears to have originated over the extreme northwestern part of the Caribbean Sea on the 14th, but available reports during the day showed only gentle winds and little depression of the barometer. On the 15th the disturbed condition had moved northwestward, and at 6 p. m. local time was centered in approximately 23° N., 88° W. A report received subsequently by mail showed that at this time the S. S. *Canto*, Tampico to Baltimore, 23°40′ N., 88°35′ W., experienced a north wind, force 5, barometer 29.73; at 6.50 p. m. (local time) the wind, of same force, had hauled to east, pressure 29.56. At 8 p. m., with rising barometer, the ship reported a southeast gale, force 9, thereafter diminishing.

The northwestward movement of the disturbance continued until the morning of the 16th with no increase in intensity so far as reports indicate. The highest wind during the day, according to mail reports, was of force 8, ESE., during squalls experienced by the S. S. *San Benito*

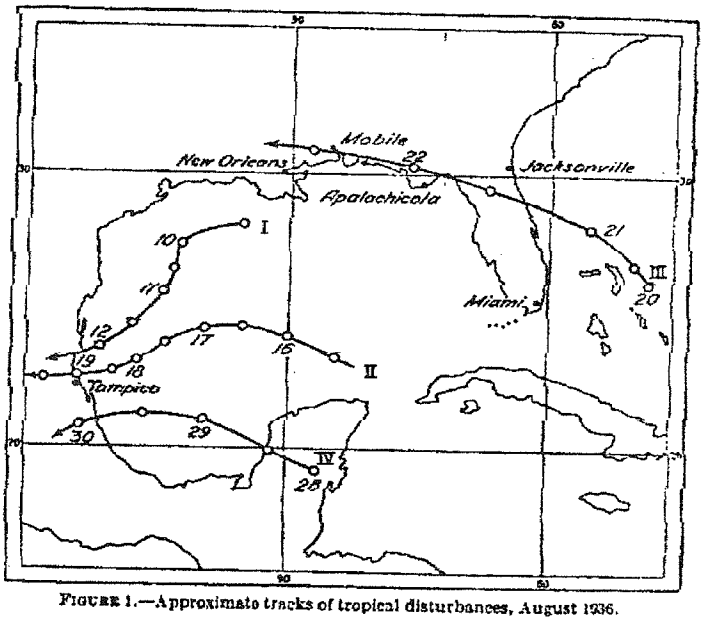

FIGURE 1.—Approximate tracks of tropical disturbances, August 1936.

between 4 and 7 a. m. (local time) near 24½° N., 90° W., lowest barometer 29.83.

The cyclone center, moving westward, was in approximately 24° N., 93° W., at 7 a. m. of the 17th, with winds of force 4–5 reported by ships at a considerable distance from the center. During the day the disturbance changed its course to southwesterly and at 7 p. m. (e. s. t.) was centered near 23½° N., 95° W. At this time the highest wind reported in connection with the disturbance was force 6, south, observed on the S. S. *Agwistar*, near 23° N., 94½° W.

The center continued to move southwestward until 7 a. m. of the 18th, at which time it was near 23° N., 96° W., and so far as reports indicate had meanwhile gathered energy. At this time the S. S. *San Ambrosio*, near

SUBSIDENCE IN MARITIME AIR OVER THE COLUMBIA AND SNAKE RIVER BASINS

By ARCHER B. CARPENTER

[Weather Bureau, Portland, Oreg., October 1935]

The Columbia and Snake River Basins are surrounded by the Rocky Mountains to the northeast, east, and southeast; a high plateau to the south; and the Cascade Range to the west. In addition to this almost continuous rim that surrounds the combined basins, there is the ridge of the Blue Mountains between them. The most notable and most effective outlet for this great area is the Columbia River Gorge.

The period covered in the present study extended from January 19 to February 10, 1935; and the problem investigated is that of subsidence in the maritime air associated with low stratus clouds and fog. This type of stagnation is not uncommon in the Columbia River Basin east of the Cascade Range, but it is less common for the effects of this stagnation to reach over into the Snake River Basin, and to be persistent for such a long period. These weather effects are easily seen on the short-period airway weather maps prepared at Portland, Oreg. This study is based on these maps in conjunction with the large Map A; airplane soundings at Seattle, Spokane, and Billings; "weather logs" from pilots of the air lines; and

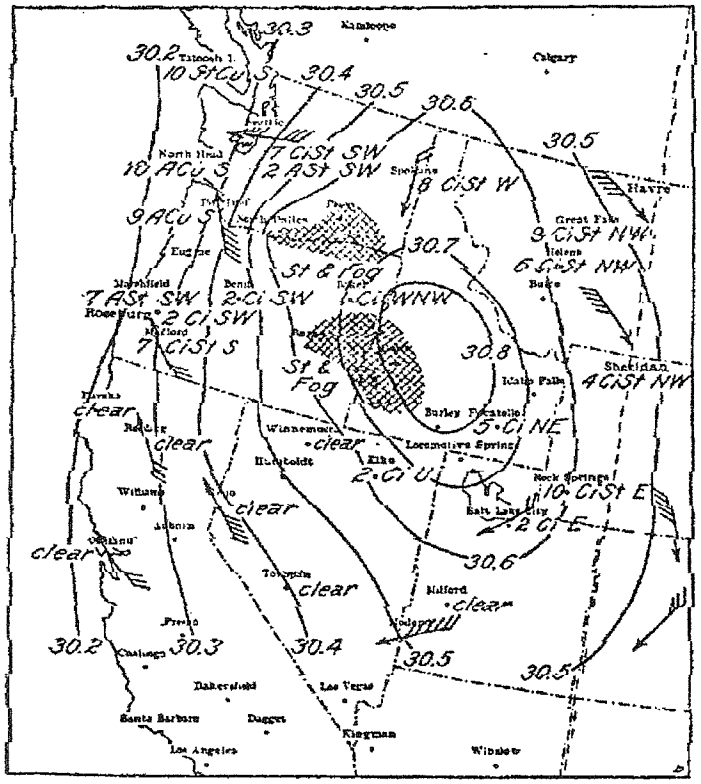

FIGURE 1.—February 2, 1935, 1 p. m. Mean sea-level isobars, winds at 8,000 feet, and high cloud movements.

associated data. The air-mass names are those used by Willett (1), and the references to subsidence are intended to follow the lines suggested by Namias (2).

The entire far western part of the United States received precipitation in the few days prior to January 19. By this time, the last of a series of disturbances had moved into Utah from the Oregon coast. This particular direction of movement is favorable to development of stagnation in the drainage areas of the Columbia and Snake Rivers. The air mass that followed was characteristically polar Pacific (*Pp*), with showers over Washington and parts of Oregon for several days. No airplane observations were available in this air mass to further identify it. Surface radiation and air drainage in the Columbia River Basin produced the first patches of fog and low clouds on the east slope of the Cascade Range on the morning of January 24. These fog patches increased

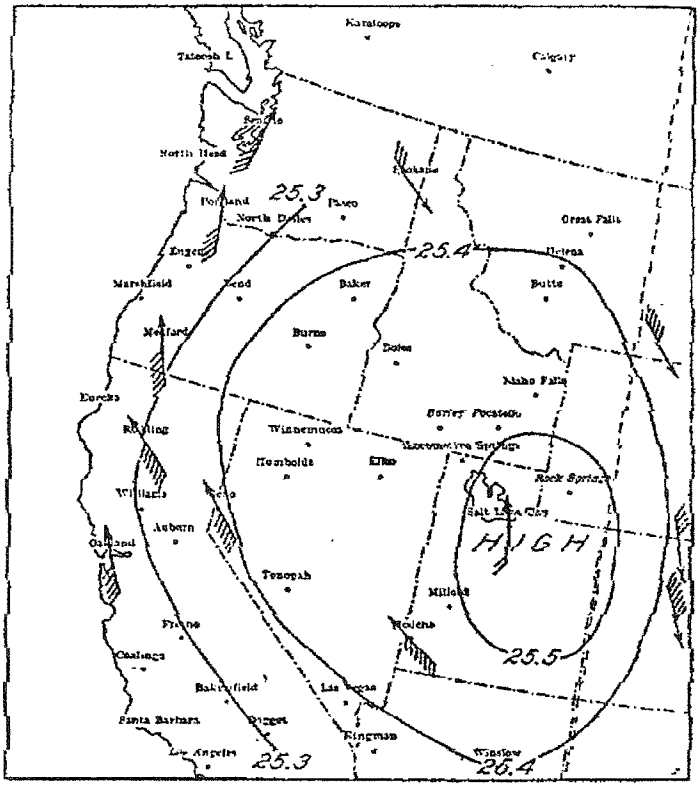

FIGURE 2.—February 2, 1935, 1 p. m. Isobars at the 5,000-foot level, and winds at 14,000 feet.

in size and duration on the succeeding mornings, with light fogs also forming in the Boise area on January 25 and 26, and with dense fog reported from Boise on the 27th. By January 28, the air mass over the Columbia and Snake River Basins had become sufficiently stable for dense valley fogs to continue throughout the day. Mixed local smoke and fog formed at Salt Lake City each evening, and became an increasing hazard to aviation in the days that followed.

It is difficult, without airplane soundings from Boise or Salt Lake City, to show subsidence in the air mass with its dome apparently located over this area. This location for the dome top is based on the relation between the sea-level pressures, with high pressure centered near Boise, and the 5,000-foot pressures with a center east of Salt Lake City. Upper air winds at 8,000 feet indicate the center just north of Salt Lake City, and the winds at 14,000 feet indicate the center between Salt Lake City and Rock Springs (figs. 1 and 2).

Since this study is necessarily based on data available at Portland, Oreg., an attempt will be made to prove subsidence in this air mass, with the information available. *On January 23*, a low inversion was evident over the Pendleton-Pasco area. This was apparently the beginning of subsidence. Radiation from the *surface, and air drainage* into this area, had already begun. From January 24 to 29, this cold surface layer, and the warm layer above, both became *deeper and deeper, as evidenced by* temperature reports from air-line pilots (fig. 3). On January 29, this warm layer became apparent in the low levels of the *Spokane sounding (fig. 4)*. The layer between 1.2 and 1.9 kilometer was both warmer and drier than on the previous day. The winds in this layer were light southeasterly, and were a part of a similar deepening layer of light southeasterly winds over Boise. The 9 a. m. balloon run for January 29 was the last available from Boise *until* 9 p. m. February 5, due to fog and low clouds. The winds at Spokane were moderate to fresh southwest to west except during periods *such as mentioned above* when air from subsidence layers flowed out in low levels over the Spokane area. These warm currents of air were most pronounced when cyclonic activity across Canada was at a minimum. The moderately steep lapse *rates in intermediate and high* levels over Spokane occurred in air that was traveling from the Pacific Ocean toward disturbances which were *moving across Canada*.

Closely associated with the above subsidence layer indicated at Spokane was the steady increase of easterly winds in the Columbia River Gorge, beginning with a total movement of 181 miles on January 24, and increasing *steadily to a maximum total movement of 940* miles

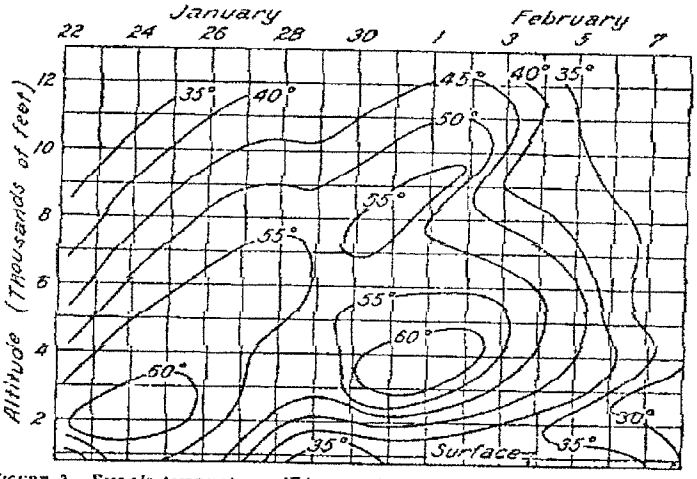

FIGURE 3.—*Free-air temperatures (F.) over the Pendleton-Pasco area, January 23-February 8, 1935.*

of easterly winds on January 29. This represents an average hourly velocity of 39.2 miles per hour for the Crown Point station (6) on the latter date. Strong easterly winds continued *uninterrupted at this station*

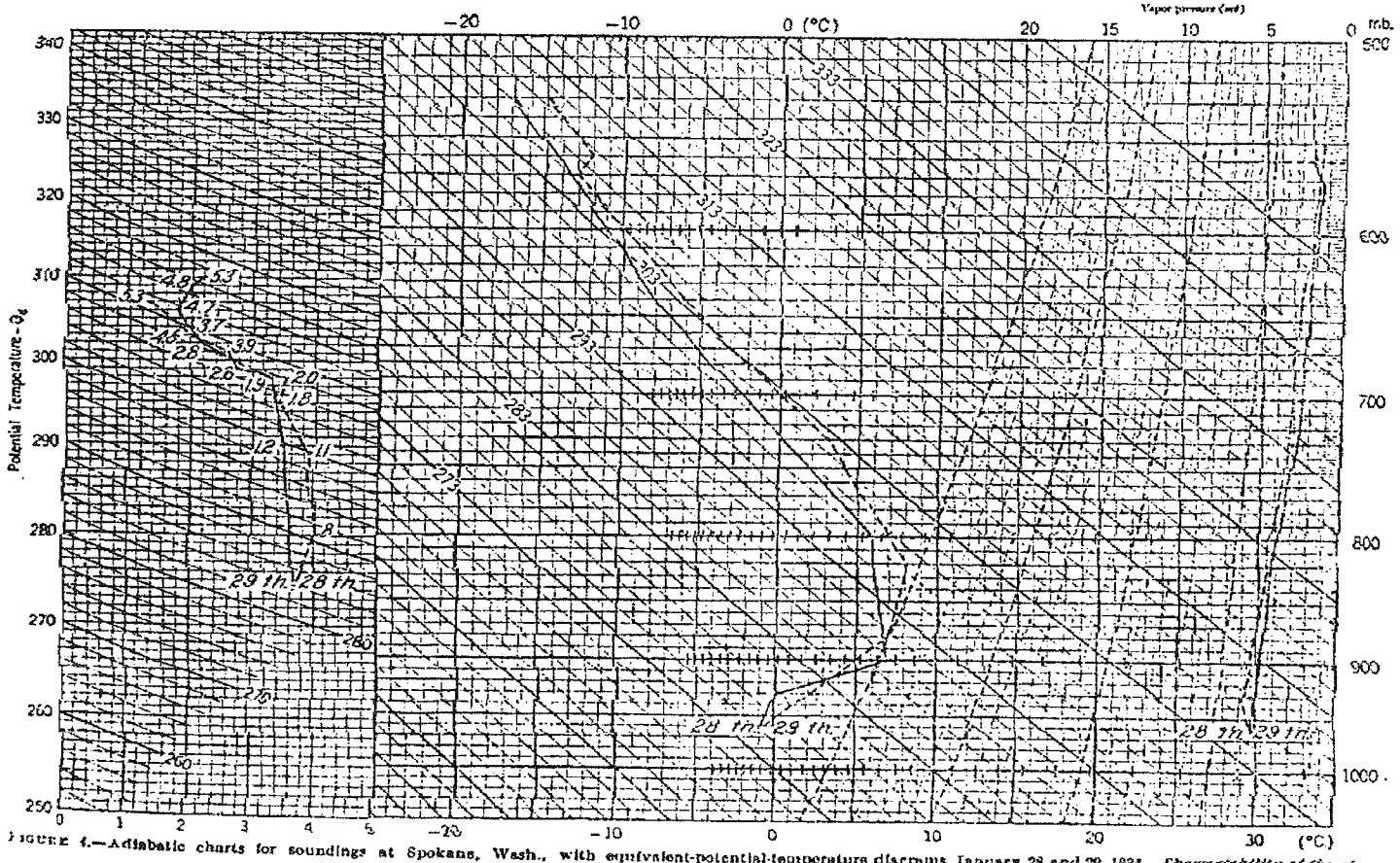

FIGURE 4.—*Adiabatic charts for soundings at Spokane, Wash., with equivalent-potential-temperature diagrams, January 28 and 29, 1935. Shows stability of the air, and the beginning of subsidence.*

until February 10. Total wind movement from the east was 10,673 miles for 18 days, or an average of 24.7 miles per hour. The average temperature in these easterly winds at Crown Point was approximately 40° F. (4.5° C.). This steady, strong flow of moderately warm easterly winds, for such a long period, was surely associated with subsidence in the air mass to the eastward.

On January 30, easterly winds set in at Government Camp and continued easterly until February 11, with light to moderate velocities. Government Camp is located on the south slope of Mount Hood in the Cascade Range, approximately 60 miles east-southeast of Portland, Oreg.

At Spokane on January 30, the southeast winds in the low levels had been entirely displaced by southwest winds with attendant lower temperatures. However, on January 31, the southeast winds from the subsiding air mass were again present, with higher temperatures and lower moisture content than on the previous days.

Evident at the top of the Spokane sounding for January 29, was an occluded front. This front was the only one of any consequence in this area of frontolysis to the south of Spokane. At Boise, pressure waves began with a maximum just before midnight a. m. January 29, and reached successive maxima at 4-hourly intervals, with the final maximum at 11 a. m. The pressure decreased 0.05 inch between each of the maxima. The winds were variable, with velocities from 3 to 5 miles per hour, but with no apparent relation to the pressure waves. Temperature changes were insignificant. Surface weather was dense fog until 7:30 a. m., then ground fog clearing slowly. Dense fog formed again in the evening under conditions identical with those of the previous evening, indicating no change in air mass at the surface or in the lower levels. The structure at intermediate levels appears to have been changed, with the beginning of two inversion layers instead of the one previously indicated by temperatures from air line pilots.

Evidence of the dome structure is found in the "weather logs" turned in by pilots of the air lines at the end of each trip. On February 3, the eastbound pilot reported the top of the fog layers at 3,000 feet (0.9 kilometer), in both the Columbia and Snake River Valleys. The next layer above the fog had a ceiling of 9,000 feet (2.7 kilometers) over Boise, and sloped down to a ceiling of 6,000 feet (1.8 kilometers) over Cascade Locks in the Columbia River Gorge. This upper layer was 1,000 to 2,000 feet thick, and the pilot reported an entire lack of turbulence in the clear layers. The temperatures reported by air line pilots over the Pendleton area indicate two inversions, one at approximately 5,000 feet (1.5 kilometers), and another at 11,000 feet (3.4 kilometers). In each case the cloud layers formed below the subsidence inversions. The upper inversion is evident in the Spokane sounding for February 3 (fig. 5).

A cloud layer did not form beneath the inversion at Spokane. The cloud layer over the Pendleton-Boise area indicates a sharper inversion, higher humidity in the cloud level, and a drop in humidity through the inversion just above the clouds. This inversion layer

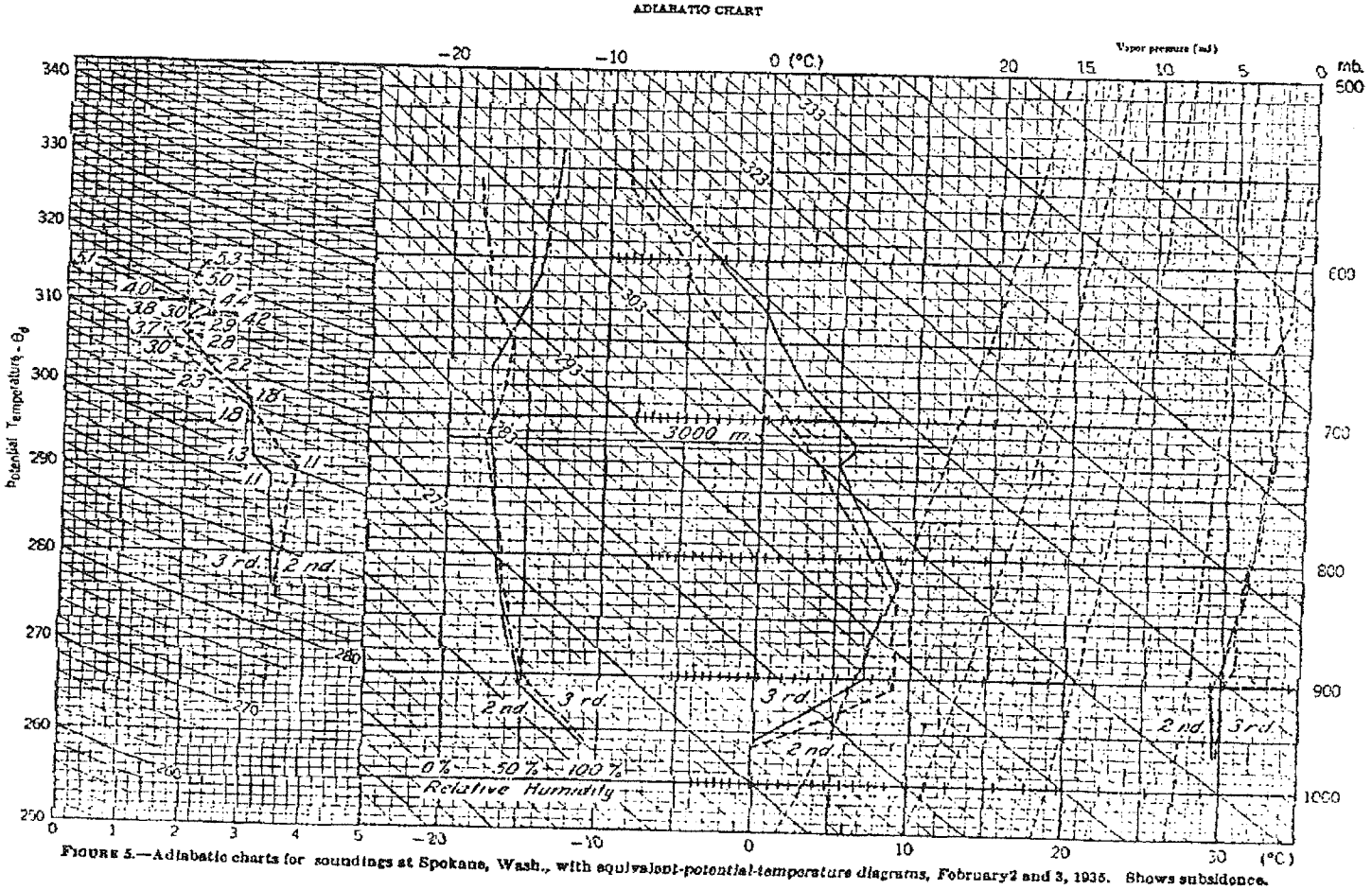

FIGURE 5.—Adiabatic charts for soundings at Spokane, Wash., with equivalent-potential-temperature diagrams, February 2 and 3, 1936. Shows subsidence.

s quite similar to one over Cleveland, Ohio, on October , 1932, described by Namias (2) as follows:

From the sharp drop in humidity through the upper inversion t is clear that the *Tp* air is certainly not actively ascending the rontal surface, and it is probable that the colder air below the *nversion is retreating at a faster* rate than the warm *Tp* air is dvancing. This velocity distribution characterizes the discon-inuity surface as a surface of subsidence, despite the fact that the liscontinuity separates two *different masses of air.*

The day and night continuation of fog and low stratus s a good indication of subsidence. Namias (2) states *hat*—

Subsidence inversions are generally of greater intensity than rdinary radiation inversions, and since some subsiding motion is *sually continuing, it* is manifest that these low subsidence inver-ions are not completely wiped out during the day. This is in ontrast to those due entirely to radiation.

The above is substantiated by the unchanging moderate o strong easterly winds in the Columbia River Gorge, and y the easterly winds passing over the Cascade Range rom warm subsidence layers. Very light changeable inds were *reported in the fog and stratus areas beneath* he inversion. Temperatures from air line pilots indicate he continuance of a decided inversion throughout the aytime hours (fig. 3).

The specific humidities *on January 31,* at *the stations* f Boise, Baker, Bend, Burns, Lakeview, Winnemucca, lko, Salt Lake City, Pocatello, and Helena were all *etween 3.2 and 4.1 grams per kilogram.* Seven of the 10 tations agreed within 0.4 grams per kilogram. This lose agreement of the specific humidities was notable om January 29 to February 5, indicating stagnation and ubsidence *in one large air mass.* Specific humidities in ie Columbia River Basin, and westward to Portland, nged from 4.5 to 4.8 grams per kilogram. This higher oisture content was no doubt due in part to evapora-on from the warm, moist soil, as suggested by Counts l) in a similar situation. The specific humidity at La rande was 4.2, at Pasco 4.5, at Hood River 4.7, and at *ortland 4.8 grams per* kilogram, indicating a continual crease in moisture content as the air flowed from La rande to Portland. Easterly winds prevailed in the olumbia River Gorge, and southeasterly winds pre-ailed in the La Grande area throughout the entire eriod. The winds through the Pasco *area and westward* the gorge were very light. No doubt the specific midity at Portland was lowered by mixing with a utheast *air flow coming directly over the Cascade Range* om an intermediate layer of the air mass.

The subsidence was very much slower than would be *pected in other* areas, where spreading could take place ore easily and rapidly. Here the subsidence from the ver layers had to depend on the slow flow through ountain passes, and across high plateaus. It will be ted that subsidence layers, when indicated in airplane ndings, were usually at low levels, because the air-ne stations were located around the periphery of the me. High pressure was usually centered over the ake River Basin in Southern Idaho.

Further evidence of subsidence in this *air mass is found* the general weather sequence for the northwestern sec-n of the United States including Idaho, Montana, oming, Colorado, Utah, Nevada, Oregon, and eastern shington. The above includes an area with a radius approximately 500 miles from the center of the sub-ing air mass. On January 28, at 5 a. m., generally udy weather prevailed over this *area. On the follow-* day, clear skies covered most of the area, except for fog and stratus areas in the Columbia and Snake River ins. This clearing *would be expected in a subsiding* air mass with no appreciable change in pressure distribution at the surface. By *January 30, clear skies prevailed* at nearly every station in the above area, and in the following 5 days clear weather also spread slowly eastward *across the United States. The clear* weather was no doubt a result of the combined subsidence and frontalysis.

Closely associated with the above, is the absence of precipitation over the same area. Twenty-four of the twenty-six regular Weather Bureau stations had no precipitation during the period from January 25 to February 5. The remaining two stations, on the western and northern extremities of the area, had a total of 0.09 inch. This precipitation *occurred before the stations were* affected by subsidence in the air mass under consideration.

At Spokane, it is interesting to note the fog layers which *formed beneath the lower inversion* on the mornings of February 4 and 5. These were the only occasions on which the deeper fog layer in the Columbia Basin spread that far to the northeast, and this was due to *increased diathermancy of the air mass above.*

On February 5, *Npp* air moved in over the Columbia River Basin above an elevation of 1.7 kilometers, as evidenced by airplane soundings at Spokane (fig. 6). *This same mass of Npp air was evident in the Seattle* sounding on the previous day. During the day, February 5, the fog layer at Pasco began to show signs of weak-*ening, probably* because of a small amount of mechanical mixing with the new layer above. Near midnight of the 5th, the cloud top at Pasco was 3,300 feet (1 kilometer) above sea level, and it was 1,800 feet (0.5 kilometer) *thick, with a ceiling of approximate y 1,100* feet (0.4 kilometer). The surface fog had dissipated.

February 6 brought a noticeable weakening of the low overcast, no doubt due to mixing with the new air mass above. In the meantime a disturbance had moved in over northern Nevada, on the south rim of the area being studied. The pressure at Winnemucca was 29.8 inches on the a. m. map. This storm produced a north-south pressure gradient. The first effect was to help draw out the stagnant air from the Columbia and Snake River Basins. This favored the importation of the *Npp* air previously mentioned over Washington. In the progress of the storm, *clouds were formed over the Snake River* Basin, thus reducing the diathermancy of the air to such an extent that the return radiation from above was too *great to permit further* continuance of the fog below.

La Grande, and Baker, Oreg., enjoyed persistently good flying weather during the southeast-northwest pressure gradient previous to the evening of February 5. Topography of the area seems to be the reason for the good weather. The Snake River Basin *is separated from the* Columbia River Basin by the ridge of the Blue Mountains, except for the narrow, deep gorge of the Snake River, which in itself is not sufficient to carry off any material volume of air flow.

This makes it necessary for the surface air flow to seek other channels, and it spills over into the valley sur-*rounding La Grande. From there it finds an exit through* the valley of the Grande Ronde River into the lower reaches of the Snake River, and finally flows out into the Columbia River Basin. The major subsidence taking place over the Snake River Basin *had to find a way out,* and La Grande benefited. Surface temperatures at La Grande were higher than those in the Snake River Valley, *due to turbulent mixing with the warmer air above.* Pilot logs with such reports as "Very rough vicinity La Grande, smooth otherwise", were indicative of conditions at this time. It has been noted that these southeast

surface winds at La Grande are sometimes a better indication of pressure gradient than are the sea-level isobars for this area.

Another noticeable effect of subsidence in the air mass with its main body over the Snake River Basin is the fair weather produced in the coastal valleys. From 1 p. m. January 24 until 9 p. m. February 10, *Portland, Oreg., had* only 0.02 inch precipitation. Average temperature at Portland from January 22 to February 11, inclusive, was 8.5° F. *above normal.* The cumulative departure was plus 178° F. Associated with this fair weather was the average pressure gradient of 0.31 inches directed from Boise toward Portland during the period. The normal pressure *gradient from Boise to Portland for the 3 winter* months is 0.06 inch.

The above findings lend support to the theory, advanced by B. S. Pague (4), that dynamic heating plays an important part in the warm climate of this area. These findings also agree with the following statement by Byers (5) in reference to weather of the Pacific coast: "Since nearly all the air which moves out over the ocean from the interior is a return current of maritime air and rarely continental, this kind of mountain modification is important in a study of coastal weather." The history of the air mass, the temperatures in the inversion layers, and the specific humidities, all indicate a previous maritime history as suggested by Byers in the above statement.

In summarizing this study it appears that the fairly common winter high-pressure area, centered over southern Idaho, is intensified by cooling in the lower levels of a large mass of stagnant maritime air. This cooling in the low levels is productive of low stratus clouds and fog in the Columbia River Basin, and later in the Snake River Basin, if the stagnation continues. Foehn-heated currents of air from intermediate subsidence inversions, flowing westward over the Cascade Range into the coastal valleys, play an important part in the warm climate of the Pacific coast.

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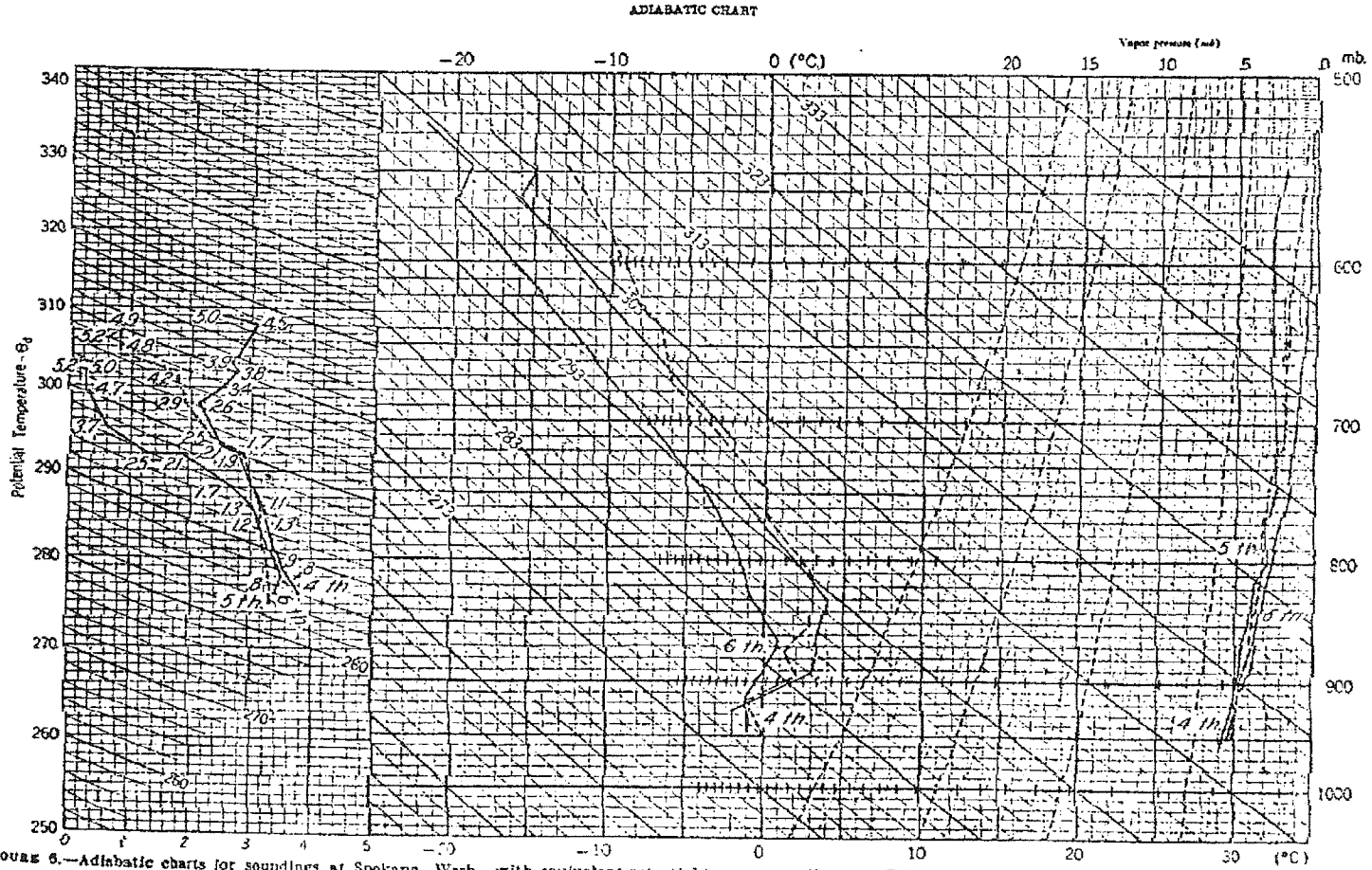


FIGURE 6.—Adiabatic charts for soundings at Spokane, Wash., with equivalent-potential-temperature diagrams, February 4, 5, and 6, 1935. Shows air-mass changes resulting in the breakdown of the system.

NOVEMBER, 1931 MONTHLY WEATHER REVIEW 411

EASTERLY GALES IN THE COLUMBIA RIVER GORGE DURING THE WINTER OF 1930-1931—SOME OF THEIR CAUSES AND EFFECTS

By DONALD C. CAMERON

[Weather Bureau, Portland, Oreg., June 6, 1931]

When Lewis and Clark explored down the Columbia River in 1805 they found a passageway from the great interior plains of comparative simplicity, with a few sections of rapids and narrows which required portage of their canoes and supplies. By a water-grade route they made their way through a mountain barrier which averages four to eight thousand feet in height, with peaks within 25 miles to the northward and southward rising to eleven and twelve thousand feet. The immediate slopes of this great gorge tower three and four thousand feet directly from the water's edge. While the river itself winds about to some extent, the general contour of the gorge is a gentle curve of 50 to 60 miles in length, the river running a little north of west from its eastern entrance, westward in the deepest section of the cut, and then slightly south of west into the open country of the north-south valley west of the Cascades.

The airplane finds here an easy passageway at normal flying levels through a mountain which at any other point north or south would require an ascent to at least four or five thousand feet to clear the lowest passes in safety. This latest mode of transportation has made possible and necessary the first intensive study of the meteorology of this important and extremely interesting stretch of territory.

Something should be said of the general climatic characteristics of the States of Oregon and Washington to bring out more clearly the marked contrasts which exist east and west of this narrow mountain chain. The coast range and western valley slopes are recipients of an abundant rainfall during the fall, winter, and spring months, averaging 40 to 80 inches a year, while immediately east of the mountains the rainfall averages less than 15 inches annually. Seasonal ranges in temperature west of the mountains are comparatively small, the winters being considerably warmer than is normal for the latitude and the summers cooler, while the interior sections have cold winters and warm summers.

Since there is a mountain barrier between these areas of marked climatic differences their proximity seems only natural, but when one considers a gigantic sea-level cut through this barrier the character of the weather which prevails within it can be better understood.

Geologically this gorge is unique and climatically also it must closely approach that distinction. From a place in the western portion where the annual rainfall amounts to 78¼ inches at the river level, the precipitation falls off so markedly with progress eastward that at a point only 18 miles away it is only 34 inches, another 18 miles divides that figure in two, while still farther eastward we find a normal rainfall of only 8 inches.

In October, 1929, a series of four airway stations of the Weather Bureau was opened through the gorge. These are: Crown Point, 24 miles from Portland; Cascade Locks, 45 miles; Hood River, 65 miles; and The Dalles, about 90 miles. During the first four months, or the winter of 1929–30, these stations were not equipped with instruments, but in February, 1930 3-cup anemometers, and vanes, thermometers, and barometers were supplied each. January, 1930, had been a remarkable month in the gorge, easterly winds and gales were almost constant, temperatures low, snows deep, and the month, generally, one of the stormiest and coldest in many years. During this period all the winds were estimated by the observers and it is now interesting to note that they never estimated current velocities to be over 50 miles an hour, while it is likely that winds of hurricane strength prevailed over the western portion. The strongest evidence of this is the fact that on the night of January 16–17, a Richfield beacon tower was bent and twisted to the ground by the force of the gale at Crown Point. Since the records of the winter 1930–31 have been compiled it is not difficult to realize that the total wind movement at Crown Point during that month would have approximated 25,000 miles, or an average velocity of 34 miles per hour.

Crown Point is one of the most exposed points along the entire western gorge. It juts out from the south wall at about 700 feet above the river and is very steep. The contour of the rocky formation is such that east and northeast winds are caught and forced upward over the summit, thereby accelerating the true velocity of the wind down the gorge and producing a gusty condition. The extent of this exaggerated condition is not definitely known since no records of wind velocity are available at any other point in the vicinity. At Cascade Locks, 20 miles eastward, the exposure was not entirely satisfactory and no continuous record was made. (NOTE.—The anemometer, recently removed to an excellent exposure on a rocky promintory in the center of the gorge, now indicates velocities equalling or exceeding those of Crown Point.)

The site at Crown Point was selected for a station because it commands a better view of a greater portion of the gorge than is obtainable from any other point and also because night and day service could be obtained at this place on call. The anemometer was exposed on a 12-foot support on the roof of a 1-story structure directly on the highway, so situated that the exposure eastward into the gorge is excellent. To the north the exposure is good, but due to the fact that the gorge runs east and west, cross winds are uncommon. Westward there is a slight obstruction in the form of some low trees across the highway, but the contour of the point in that direction is such as to ward off westerly winds which seldom exceed gentle to moderate velocities. Southeast, south, and southwest the exposure is unfavorable due to the hills which slope away from the crest of the point. Southwest winds occasionally reach moderate force during rainy periods when strong southerly winds prevail overhead and in the valleys to the west, but a wind velocity of 20 miles or more per hour has not been observed at Crown Point from any direction except east or northeast. On October 21, 1930, a single register for recording wind movement was installed and a continuous record commenced.

The only other records of continuous wind movement in the vicinity are those made at the regular Weather Bureau office in the customhouse in Portland, but the exposure is not satisfactory in all directions and does not represent a true picture of winds in the Portland area. The airport exposure is more satisfactory, there being no obstructions in the form of high buildings. It is low, however, when compared with surrounding hills and bluffs which are some distance from the instrument. Continuous wind movement was not available at this point but by making dial readings at midnight and using the daily total movement in connection with hourly current

localities a very satisfactory record of total movement was obtained which represents more nearly the average conditions in the immediate Willamette Valley than does the customhouse record. Finally, dial readings were commenced on the 3-cup anemometer exposed on the summit of Council Crest in Portland. This exposure is without parallel in the Pacific Northwest, being 1,200 feet above the Willamette River and 88 feet above ground at the summit. Access to this point by automobile is fairly easy and dial readings were made every four or five days. The record obtained, however, is only for total wind movement but it represents a record of unobstructed flow of wind from all directions above the Portland area.

November, 1930, was the first complete month of record at these points and the following is a table of the wind data:

	Total	Average	Prevailing direction	Maximum velocity and direction
	Miles	*M. p. h.*		
Crown Point	12,580	17.5	NE	70 NE.
Council Crest	18,711	14.9	NE	
Portland Airport	4,496	6.2	SE	
Customhouse	3,481	4.8	SE	20 E.

From the above table it can be seen that Crown Point's total is 3.6 times that of the customhouse, 2.8 times that of the airport, but only 1.1 times that of Council Crest. During this month, the wind at Crown Point blew from the northeast 37 per cent of the time and 71 per cent of the total mileage, while at the customhouse the wind blew from the northeast only 4 per cent of the time and 3 per cent of the total mileage. Southeast was the prevailing direction in the city, the customhouse showing 31 per cent of the time and 30 per cent of the mileage from that direction, the airport 32 per cent of the time and 40 per cent of the mileage. This is the direction which occurs at these two exposures most of the time that strong northeast and east winds prevail at Crown Point. Another very interesting feature of the Crown Point wind during November is that the northeast wind averaged 33.2 miles per hour, the east wind 14.1, while no other direction gave over 6.5. The most remarkable period was from the 22d to the 26th, inclusive, when the wind blew from the northeast every hour of the 120 of the period and averaged 40.1 miles per hour! Equally remarkable is the record from the 21st to the 30th, inclusive, when the wind averaged 33.6 miles per hour and blew from the northeast or east every one of the 240 hours. At the customhouse during the former period the wind averaged 5.6 miles per hour, and during the 10-day period, 5.1 miles, the airport averaging slightly higher than the customhouse. These differences are surprising when one considers that there is no marked barrier in the way of hills between Crown Point and downtown Portland.

November 23d was the windiest day at Crown Point, there being a total movement of 1,278 miles that day, an average of 53.2 miles per hour. The writer had the pleasure of being at the Point during a portion of the day, but not during the time of the maximum wind, which occurred during the morning. Observing the clock closely and counting the buzzes on the wind indicator during some of the heavier gusts, an extreme velocity of 70 miles an hour was noted. The tops of several automobiles were wrecked as they rounded the Point; one woman was thrown to the pavement by the gale and rolled against a stone abutment, suffering injuries which required hospital treatment.

The greatest total movements were recorded during December, 1930, but no unusually high maxima occurred. The following table is for December:

	Total	Average	Prevailing direction	Maximum velocity and direction
	Miles	*M. p. h.*		
Crown Point	17,135	23.0	NE	60 NE.
Council Crest	12,849	17.3	NE	
Portland Airport	5,520	7.4	SE	
Customhouse	4,071	5.5	E	30 E.

The total movement at Crown Point is unusually high and an inspection of the total movements at regular Weather Bureau stations since the installation of 3-cup anemometers in January, 1928, reveals that it has been exceeded at only two, namely, by 4 miles at Buffalo during January, 1928, and at Tatoosh Island, Wash., during January, 1930, when a total of 17,947 miles was recorded. It is interesting to note that during December, 1930, the total movement at Tatoosh was only 12,718 miles or 74 per cent of that at Crown Point. The wind movement at Crown Point during the month was over four times that recorded at the customhouse, over three times that at the airport, and 1.3 times that of Council Crest. 96 per cent of the Crown Point total movement was from the northeast or east, while it blew 71 per cent of the time from those directions. The northeast wind averaged 33.8 miles per hour, the east wind 15.6 miles per hour, but winds from other directions averaged only 6.5 miles per hour or less. In Portland the northeast wind as usual was negligible, while the southeast wind at the airport blew 54 per cent of the time, 68 per cent of the total mileage, and averaged 9.5 miles per hour. At the customhouse, east was the prevalent wind, blowing 34 per cent of the time, 49 per cent of the mileage, and averaging 7.7 miles per hour. The difference between the effects of these latter two exposures on east and southeast winds is almost wholly of topographical origin.

During January, 1931, large total movements were registered at the Point and at Council Crest, shown with the airport and customhouse figures in the following table:

	Total	Average	Prevailing direction	Maximum velocity and direction
	Miles	*M. p. h.*		
Crown Point	13,597	18.3	NE	54 NE.
Council Crest	12,530	16.8	SW	
Portland Aircraft	5,096	7.6	SE	
Customhouse	3,883	5.2	SE	30 S.

Comparisons during this month show approximately the same differences as during the two preceeding months, except that Council Crest's total approaches Crown Point's, due to the fact that southerly winds were more frequent over Portland than earlier in the winter.

February, 1931, is somewhat more striking in that the wind at Council Crest exceeds that at Crown Point for the first month since the study was commenced. The values for this month are shown in the table following.

	Total	Average	Prevailing direction	Maximum velocity and direction
	Miles	*M. p. h.*		
[illegible]own Point	10,496	15.6	NE	54 NE.
[illegible]ncil Crest	10,585	15.8	NE	
[illegible]rtland Airport	4,711	7.0	SE	
[illegible]stomhouse	3,508	5.2	E	24 SW.

Due to the shortness of the month, total movements are proportionately lower, but Council Crest exceeds Crown Point in total movement by approximately 100 miles.

In the following table a brief summary of the four months, November, 1930-February, 1931, inclusive, is *presented:*

	Total	Average	Prevailing direction	Maximum velocity and direction
	Miles	*M. p. h.*		
Crown Point	53,808	18.7	NE	70 NE.
Council Crest	46,675	16.2	NE	
Portland Airport	20,413	7.0	SE	
Customhouse	14,995	5.2	SE	30 S.

From this it can be seen that Crown Point's total was approximately 3.6 *times that at the customhouse, about* 2.6 times that at the airport, but only 1.2 times that of Council Crest. However, when one considers that *almost the entire mileage* at Crown Point was from only two directions, viz., northeast and east, compared with free wind movement from all points at Council Crest, the difference is even more remarkable.

The causes of the easterly gales are interesting and as would be expected are due principally to the fact that during the winter time higher pressure prevails over the *continent* and lower pressure over the sea. The Cascades form a natural barrier between these pressure differences and steep gradients occasionally occur along the range, It is at these times, of course, that winds at Crown Point are strongest, slackening as the gradient lessens, and disappearing almost entirely *when the pressure distribution* is reversed. However, other important factors contribute to the strength of the gales, principally temperature. *Colder weather accompanies high* pressure east of the mountains, while to the westward warm weather with southeast or southerly winds may prevail and this temperature gradient is frequently very strong over the mountains, while the pressure gradient may not be unusual. Strong winds are experienced under such conditions. With the movement inland of a low-pressure *area in British Columbia* a change of the pressure gradient occurs. Often the gradient over the range is reversed in a comparatively short period. At these times, a flow of colder air from the interior obtains and occasionally lasts for several hours before finally being overcome by the more powerful *pressure differences.* This *change* was observed frequently during the winter of 1930–31 and on a few occasions caused glaze deposits in the vicinity *of the Point when* subfreezing temperature prevailed in the easterly winds from the interior while westward and aloft relatively warm weather accompanied *by rain was occurring.*

The return of the easterly winds was always a slow and gradual process attending the passage of the oceanic high pressure areas inland over the Cascades, and during such times the temperature gradients were unimportant. The wind did not shift to easterly until the *center of the high* pressure definitely passed over the range, after which the increase in velocity was slow and steady. However, if a strong continental high had moved southward into the interior, the shift and increase in wind might have been abrupt and accompanied by a cold wave. *No such cases* occurred during the winter, but during the great wind and dust storm of April 21–24, 1931, a somewhat similar case did occur *and the wind at Crown Point rose abruptly* from 20 to 50 miles per hour with the arrival of the wind shift. (NOTE.—MONTHLY WEATHER REVIEW, May, 1931, p. 195.)

Conditions of pressure *and temperature during the* winter 1930-31 were decidedly abnormal, especially as regards the persistence of the plateau high over Idaho *and eastern Oregon. During a normal* winter such remarkably steady and prolonged gales would not be experienced, but quite likely some higher maximum velocities would occur. An ideal type for winds of hurricane strength would be a strong high moving southward into eastern Washington and Oregon from Canada and an oceanic low-pressure area off the central Oregon coast. Just such a pressure distribution occurred on the night of January 16–17th, 1930, when *the destruction of the* steel tower, described previously, took place.

Results of the easterly gales in the Columbia River *gorge are many and varied but* space does not permit their being discussed in detail. In general they are responsible for more uniformly low daytime temperatures at Portland and higher night temperatures during clear, winter weather, while northward and southward away from the effects of the gorge winds much larger ranges in temperature occur. Perhaps one of the most beneficial effects of the gorge winds in the Portland area is their reduction in the hours of ground fog as *compared with other sections* any distance north or south, where marked temperature inversions occur during clear, calm nights. The motion of the air in the Portland area and its relative dryness are the principal causes for *lack of fog. While* it must be admitted that the winter of 1930–31 was one of unusual fogginess in the valleys between the Cascades and *the Coast Range, due to persistence of high* pressure over the interior of the Northwestern States and resulting clear skies, the following table has been *prepared to show* the number of hours during the four month's period, November to February, with moderate or dense fog (visibility three-fourths mile or less):

	Number hours with moderate or dense fog				
	November	December	January	February	Total
Portland	96	57	47	29	229
Salem	162	180	173	65	580
Roseburg	189	125	141	80	514
Seattle	185	92	90	42	409

Salem, Roseburg, and Seattle were selected to make the comparison because they are all located in the valley country between the Cascades and Coast Range, although local topography is considerably varied, and because hourly records of fog were available.

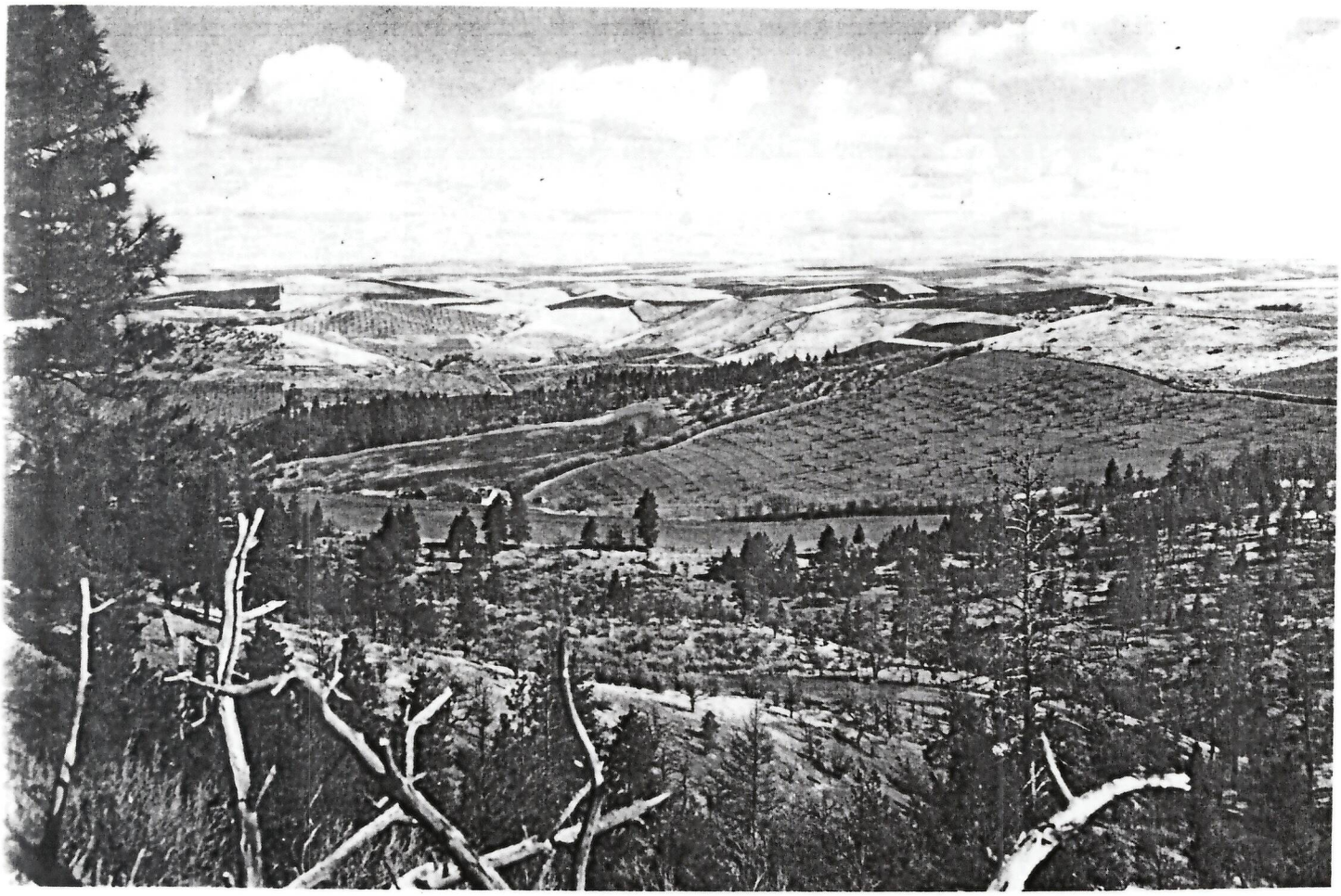
During each of the months Portland ranked lowest in the number of hours of fog, the difference being especially marked when compared with the record at Salem (50 miles south of Portland). *During December and January*, Salem had over three times as many hours with fog as Portland. On no single day during the period did fog *persist at Portland throughout the daylight hours, while* at Seattle this condition occurred on three days, and at Salem on four days.

In reviewing the record of the easterly gales during the winter of 1930–31 only one phase of the weather in this most unique section has been described.

C

SOIL SURVEY OF

Wasco County, Oregon Northern Part



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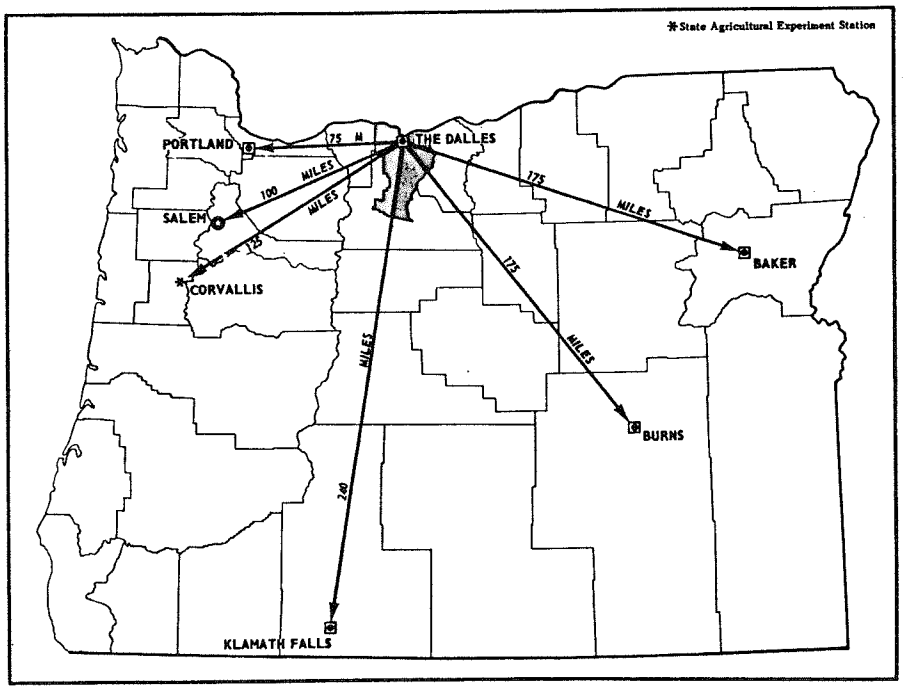

Location of Wasco County, Northern Part, in Oregon.

from the hot, dry, dusty trail. On the trail out of the canyon were Bakeoven, Shaniko, and Antelope. So much gold was coming out of the John Day-Canyon City Country that the U.S. Government started construction of a mint at The Dalles. However, the precious metal source dwindled before coins could be minted.

Major transportation along the Columbia River in the Pioneer Period was confined to steamboats. The sternwheelers paddled up and down the river in front of The Dalles from the 1850's to about 1915. Scows were used to transport lumber from sawmills down the Columbia River, such as the one at Mosier, up to The Dalles. Completion of The Dalles-Celilo Canal in 1915 greatly increased water traffic to the Inland Empire Region.

The Dalles-Celilo Portage Railroad started in 1863. In 1882 The Dalles was connected to Portland by rail and to Wallula in 1883. The first branch railroad to the southern part of Wasco County was started in 1898, and it extended from Biggs in Sherman County to Shaniko. In 1905 John Heimrich built the Great Southern Railroad to Dufur and extended it into Friend in 1913. The Great Southern Railroad opened up the small communities and whistlestops of Petersburg, Fairbanks, Fulton, Brookhouse, Freebridge, Neabeck, Emerson, Wrentham, Rice, Boyd, Dufur, and Friend to regular rail travel. In 1909 the Union Pacific Railroad and the Spokane, Portland & Seattle fought their way to Central Oregon up the Deschutes River. Maupin became an important part of Wasco County's economy because most goods on the Wapinitia Flat are funneled through Maupin to the Oregon Trunk Railroad.

Automobiles and modern highways have aided residents in getting to and from the market places. The routes used are virtually the same. Only the mode and speed has changed.

Farming became big business in Wasco County in the 1860's. Sheep and cattle raised in the central and southern parts of the county contributed to the stability of the economy. Shaniko was once one of the world's largest wool shipping points. Wool buyers from all over the world came to The Dalles and used the famed Umatilla House as their headquarters. Wheat and other grains gradually gained acreage in the eastern and northern parts of the county. Irrigation made possible several cuttings of alfalfa each year, which are either used by the grower or sold to users in the Pacific Northwest. The fruit industry of cherries, peaches, apricots, and apples find world markets. Large apple orchards at Dufur and Ortley failed miserably.

Attempts to diversify the economy of Wasco County have been initiated primarily by the construction of The Dalles Dam. Until the 1950's the economy was virtually stagnant. A major aluminum plant using electrical power was the first attempt at change. The economy is farm oriented, and goods and services concentrate on that segment of the economy.

Climate[7]

The survey area has very light annual total precipitation and somewhat extreme temperatures in both summer and winter. Records used in evaluating the temperature and precipitation were from Friend and Dufur for the Columbia Plateau area and from The Dalles located at the eastern end of the Columbia Gorge on the Columbia River flood plain.

Temperature

Marine air moving up through the Columbia Gorge and spreading into the inland Columbia Basin has a significant moderating effect on the more extreme temperatures of both summer and winter. The occasional low winter temperatures are the result of strong invasions of very cold continental air from the northeast. Excessively warm temperatures are similarly the result of occasional high pressure during the summer stagnating either over the inland Columbia or Great Basins.

Temperatures have ranged from –30° to 115° F above, both recorded at The Dalles. In most years temperature is not more than 107° or lower than –3° (table 19).

The dates of low temperatures in spring or before which they will occur in fall are given in table 20. These temperatures are significant to various crops. The number of days between the average spring and fall dates of 32° temperature is often referred to as the growing season (table 21).

Precipitation

The average annual precipitation ranges from nearly 10 inches on the eastern edge of the survey area to about 30 inches on the higher slopes of the western part. Between 70 and 80 percent of the annual precipitation occurs in November to March. Only 5 to 10 percent occurs in June to August. The rest is fairly evenly divided between April and May and September and October. While most of the precipitation is in the form of rain, there is substantial snowfall almost every winter, particularly in the higher reaches of the western part of the survey area. The greatest 3-day total ever recorded in Oregon, other than in high mountain areas, was 54 inches at The Dalles. Measurable precipitation can be expected on about 75 days a year.

In table 22 is a summary of certain monthly and annual precipitation data.

Sunshine and cloudiness

There are about 100 to 120 clear, 80 to 90 partly cloudy, and 165 to 185 cloudy days a year. Actual sunshine records have never been made in the survey area, but in a study in which records of cloudiness in the area and of sunshine at surrounding points were analyzed, it is estimated that the sun shines about 20 to 30 percent of the time in December and January; 55 to 65 percent in April, May, and June; 75 to 85 percent in July, August, and early in September. Then it gradually decreases to the winter average.

Relative humidity

In the early morning hours when the air temperature is the lowest, relative humidity of 90 to 100 percent occurs in the summer and is quite frequent almost

[7]By GILBERT L. STERNES, climatologist for Oregon, National Weather Service, U.S. Department of Commerce.

TABLE 19. — *Temperature*

THE DALLES

Month	Average daily maximum	Average daily minimum	Maximum equal to or higher than—	Minimum equal to or lower than—
	°F	°F	°F	°F
January	40	28	56	5
February	46	31	59	11
March	55	35	69	26
April	64	41	80	34
May	71	46	91	38
June	77	52	97	47
July	84	56	103	51
August	84	55	103	52
September	77	49	98	43
October	66	42	84	32
November	50	34	66	23
December	43	32	56	22
Annual	63	42	[1]107	[2]8

PLATEAU AREA (DUFUR AND FRIEND)

Month	Average daily maximum[3]	Average daily minimum[3]	Two years in 10 will have at least 4 days with—			
			Maximum equal to or higher than—		Minimum equal to or lower than—	
			at Dufur	at Friend	at Dufur	at Friend
	°F	°F	°F	°F	°F	°F
January	38	21	54	50	2	1
February	44	26	59	54	8	9
March	51	29	68	62	20	17
April	61	33	77	71	25	23
May	69	39	87	76	25	27
June	75	43	93	86	31	31
July	85	47	100	95	39	36
August	83	46	99	93	41	36
September	77	43	94	88	34	32
October	63	36	82	76	27	26
November	47	29	63	57	18	16
December	41	26	57	52	14	12
Annual	61	35	[1]102	[1]97	[2]—2	[2]—3

[1]Average annual maximum.
[2]Average annual minimum.
[3]Average of two stations. Neither station varied at most by more than 3° from average shown. Most temperatures varied by 2° or less.

any time of the day late in fall and in winter. In contrast, during the warmest part of the day in summer, it is not unusual to have a relative humidity of 10 to 20 percent. Occasionally it is even lower, although the average is 35 percent.

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TABLE 20. — *Probabilities of Occurence of Selected Freezing Temperatures in Spring and in Fall*

THE DALLES

Probability	Dates for given probability and temperature				
	16° F	20° F	24° F	28° F	32° F
Spring:					
1 year in 10 later than	February 19	February 23	March 16	March 28	April 22
2 years in 10 later than	February 11	February 15	March 8	March 20	April 15
5 years in 10 later than	January 24	January 28	February 18	March 6	April 3
Fall:					
1 year in 10 earlier than	(1)	(1)	November 10	October 27	October 12
2 years in 10 earlier than	(1)	(1)	November 19	November 1	October 18
5 years in 10 earlier than	(1)	(1)	December 8	November 11	October 29
PLATEAU AREA (DUFUR[2] AND FRIEND)					
Spring:					
1 year in 10 later than	March 13	March 26	April 28	May 18	June 8
	March 23	April 25	May 20	June 11	June 30
2 years in 10 later than	March 3	March 17	April 18	May 10	June 2
	March 12	April 13	May 11	June 2	June 22
5 years in 10 later than	February 10	February 27	March 28	April 25	May 20
	February 17	March 20	April 24	May 18	June 7
Fall:					
1 year in 10 earlier than	November 9	October 31	October 14	October 6	September 20
	November 3	October 26	October 5	September 8	August 2
2 years in 10 earlier than	November 18	November 9	October 23	October 12	September 25
	November 11	November 4	October 14	September 19	August 17
5 years in 10 earlier than	December 10	November 27	November 9	October 24	October 4
	December 12	November 17	November 2	October 10	September 14

[1]Temperature this low does not occur with this frequency between July 1 and December 31.

[2]Refer to upper set of dates in each case.

TABLE 21. — *Monthly Average Number of Growing Days*

[Temperature data adopted from *Climatological Handbook Columbia Basin States*, Vol. I, Part *B*]

Month	B. Plateau Area (Dufur)		
	40° Bases	50° Bases	60° Bases
January	15	0	0
February	31	0	0
March	113	7	0
April	270	58	2
May	484	194	35
June	640	340	97
July	849	539	238
August	823	513	214
September	626	330	89
October	348	98	5
November	77	3	0
December	25	0	0
Annual	4,301	2,082	680

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Glossary

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

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horizons and features. The horizons considered are those in which clay, iron, or humus has accumulated or those that have pans that interfere with root development or water movement. The features considered are the self-mulching properties of clays, soil temperature, the major differences in chemical composition (mainly calcium, magnesium, sodium, and potassium), and the like.

SUBGROUP.—Subgroups are subdivisions of great groups. They consist of the central (typic) segment or intergrades that have properties of one great group and also one or more properties of another great group, suborder, or order. Subgroups may also be made in those instances where soil properties intergrade outside the range of any other great group, suborder, or order.

FAMILY.—Families are established within a subgroup primarily on the basis of properties important to the growth of plants or the behavior of soils when used for engineering purposes. Among the properties considered are texture, mineralogy, reaction, soil temperature, permeability, thickness of horizons, and consistence.

SERIES.—The series is a group of soils that have major horizons that, except for texture of the surface layer, are similar in important characteristics and in arrangement in the profile.

Chemical and Physical Properties of the Soils

The chemical and physical properties of selected soils of the Hillsboro, Hesson, Hockinson, Lauren, Odne, Olympic, and Sara series are given in tables 11 and 12. The data in the two tables can be used to classify soils and to develop concepts of soil genesis. They can also be used to estimate available water capacity, fertility, tilth, and other factors related to soil management.

All of the soil samples analyzed were taken from carefully selected pits. The samples are considered representative of the soil material that is made up of particles less than 1 inch in diameter. The soil material was rolled, crushed, and sieved by hand to remove rock fragments more than 2 millimeters in diameter. Unless otherwise noted, all material that was analyzed passed the 2-millimeter sieve and was ovendry. Cation-exchange capacity was determined by sodium saturation, displacement with ammonium acetate, and determination of sodium displaced (*11*). Exchangeable hydrogen or exchangeable acidity was determined by displacement from soil with triethanolamine and barium chloride at pH 8.2 (*10*). Extractable sodium and potassium were determined by flame spectrophotometer (*5*). Organic carbon was determined by wet combustion in a modification of the Walkley-Black method (*10*). Total nitrogen was determined by the Kjeldahl method (*2*). Extractable iron was determined by titration of the extract obtained when the soil was treated with sodium dithiomite (*4, 6*). Soil reaction was measured with a glass electrode at a soil-water ratio of 1 to 1.

Particle-size analysis was made by the pipette method (*7, 8*). Bulk density was determined from core samples using a 4.7- by 3.5-centimeter tube and an Uhland-type core sampler (*15*). Moisture retained at 15 atmospheres was determined by pressure membrane apparatus using fragmented samples (*11*).

General Nature of the County

In this section the climate of Clark County is discussed. This is followed by a brief description of the water supply.

Climate [6]

Clark County, approximately 70 miles inland from the Pacific Ocean and west of the Cascade Mountains, has the predominantly temperate marine climate typical of the West Coast. It has a dry season and pleasant temperature in summer, a mild but rather rainy winter, and a narrow range in temperature. Some of the factors that influence the climate are terrain and distance and direction from the ocean. The coastal mountains protect this area from the more intense winter storms that move inland from the ocean, and the Cascade Range shields it from the higher summer and lower winter temperatures of eastern Washington. Cold air in winter and the occasionally hot air in summer flowing west through the Columbia River Gorge has a decided influence on the climate.

Late in spring and in summer large high-pressure centers over the north Pacific Ocean bring a prevailing flow of cool and comparatively dry air from a northwesterly direction. As the air moves inland, it becomes warmer and drier. As a result a dry season begins late in spring and reaches a peak in midsummer. In July and August, it is not unusual for 2 or 3 weeks to pass without measurable rainfall.

In fall and winter, low-pressure centers in the Gulf of Alaska intensify and high-pressure centers become smaller and move south. Circulation of air around these pressure centers in the north Pacific bring a prevailing flow of warm, moist air into this part of the State from a southwesterly direction. As a result, winter temperatures are mild and the rainy season begins in fall, reaches a peak in midwinter, and decreases in spring.

Table 13 gives probabilities of freezing temperatures in spring and fall, and tables 14 and 15 give temperature and precipitation data. The data in these tables are based on records kept at the weather stations at Vancouver and Battle Ground. Tables 16 and 17 give precipitation data based on records kept at Ariel Dam and Yacolt. The station at Yacolt is inactive.

In the warmest summer months, afternoon temperatures range from the middle seventies to the lower eighties, and nighttime temperatures are in the fifties. Maximum temperatures exceed 90° F. on 5 to 15 days each summer and reach 100° or slightly higher in one summer out of three. Temperatures in the foothills and higher elevations of the county are slightly lower than those recorded in the valleys. The hottest weather generally occurs when hot, dry, easterly winds reach the area. In this kind of weather, humidity is low and the risk of forest fires is high. Following 1 or 2 days of unusually warm weather, cooler air from the ocean moves inland and afternoon temperatures return to the seventies and eighties.

[6] By EARL PHILLIPS, climatologist for Washington, National Weather Service, U.S. Department of Commerce.

In the coldest months, afternoon temperatures range from the upper thirties to the middle forties, and nighttime readings from 25° to 35°. In most winters, a minimum temperature of below freezing occurs on 40 to 75 nights and a maximum temperature of freezing or below occurs on a few days. The coldest weather generally occurs when a high-pressure area develops over the Pacific Northwest and cold air from east of the Cascades reaches this area. The sky is frequently clear under these conditions; minimum temperatures range from 5° to 15° and maximum temperatures remain below freezing.

In an average year, the relative humidity ranges from about 50 percent in midafternoon to 85 percent at sunrise in the warmest and driest months and from 75 percent in midafternoon to 85 percent or higher early in the morning in winter.

The average annual precipitation, in inches, is shown in figure 18, which is an isohyetal, or equal rainfall, map of Clark County. As shown in this figure, the annual precipitation ranges from approximately 40 inches in the vicinity of Vancouver to between 75 and 110 inches along the foothills and higher elevations in the eastern part. Available records indicate that the heaviest precipitation probably occurs in the northeastern part of the county. The annual precipitation near Cougar, in the Lewis River valley, ranges from 72 to 172 inches. Rainfall of more than half an inch per hour can be expected once in 2 years. During the rainy season, precipitation is usually moderate in intensity and continuous over a period of time, rather than a downpour for a brief period. Rainfall of heavy intensity, however, occurs occasionally as the more intense weather systems move across the area. Precipitation amounting to 2 to 4 inches in a 24-hour period is recorded in the areas of heavier rainfall almost every year.

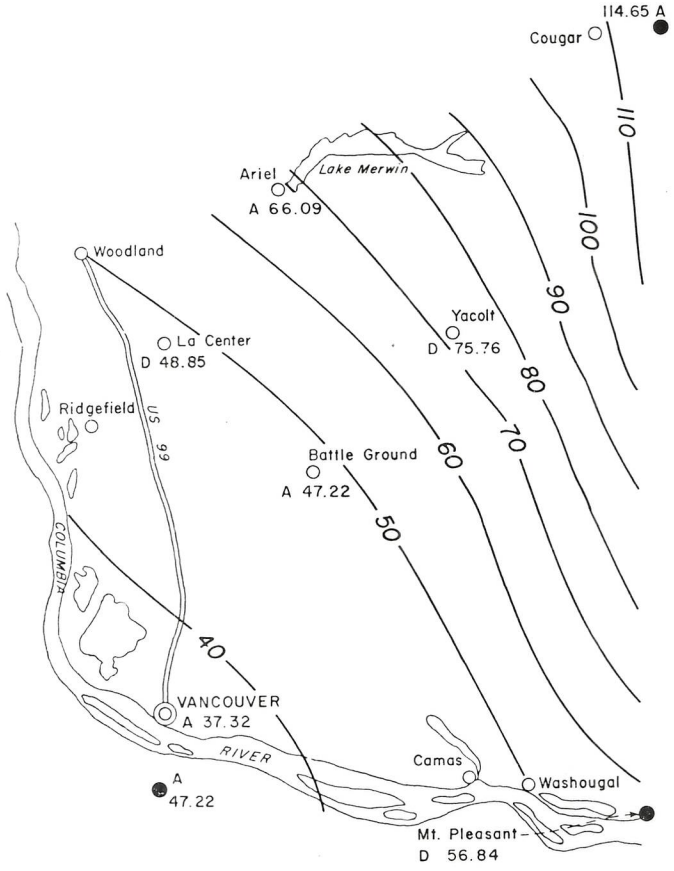


Figure 18.—**The average annual precipitation at various weather stations in Clark County. The stations at Yacolt, La Center, and Mt. Pleasant are inactive.**

Thunderstorms occur on 1 or 2 days each month from March through October and have been recorded in all months of the year. In midsummer, thunderstorms are often accompanied by very light precipitation and by forest fires that have been started by the lightning.

Snow sometimes falls as warmer, moist air moves in following an outbreak of cold air. Snowfall is light at the lower elevations of the county. It seldom remains on the ground longer than a few days or accumulates to a depth of more than 6 inches. The amount of snowfall and the accumulation on the ground can be expected to increase rapidly at elevations above 1,500 feet. A "silver thaw," or glaze of ice, formed by rain falling through cold air moving westward through the Columbia River Gorge, occurs a few times each winter. These ice storms sometimes extend across most of the southern part of the county. The weight of the ice often causes limbs to break off the trees.

The number of clear or only partly cloudy days ranges from 5 to 7 days each month in winter, and from 10 to 15 days each month in spring and fall, and the number is more than 20 days each month in midsummer. The amount of sunshine received is about 20 percent of the daylight hours in winter, 45 percent in spring, and nearly 70 percent in summer. The number of hours of possible sunshine each day at this latitude ranges from 8 in December to 16 in June.

The potential evapotranspiration has been computed from temperature and precipitation data recorded at Vancouver from 1931 to 1960. Techniques developed by Palmer-Havens for applying the Thornthwaite method (*13*) were used in making the estimates. The potential evapotranspiration for the growing season is 24.5 and 26.1 inches. These figures are based on the average dates of the last occurrence of 32° in spring and the first occurrence of 28° in fall. The following shows the rate of potential evapotranspiration for each month.

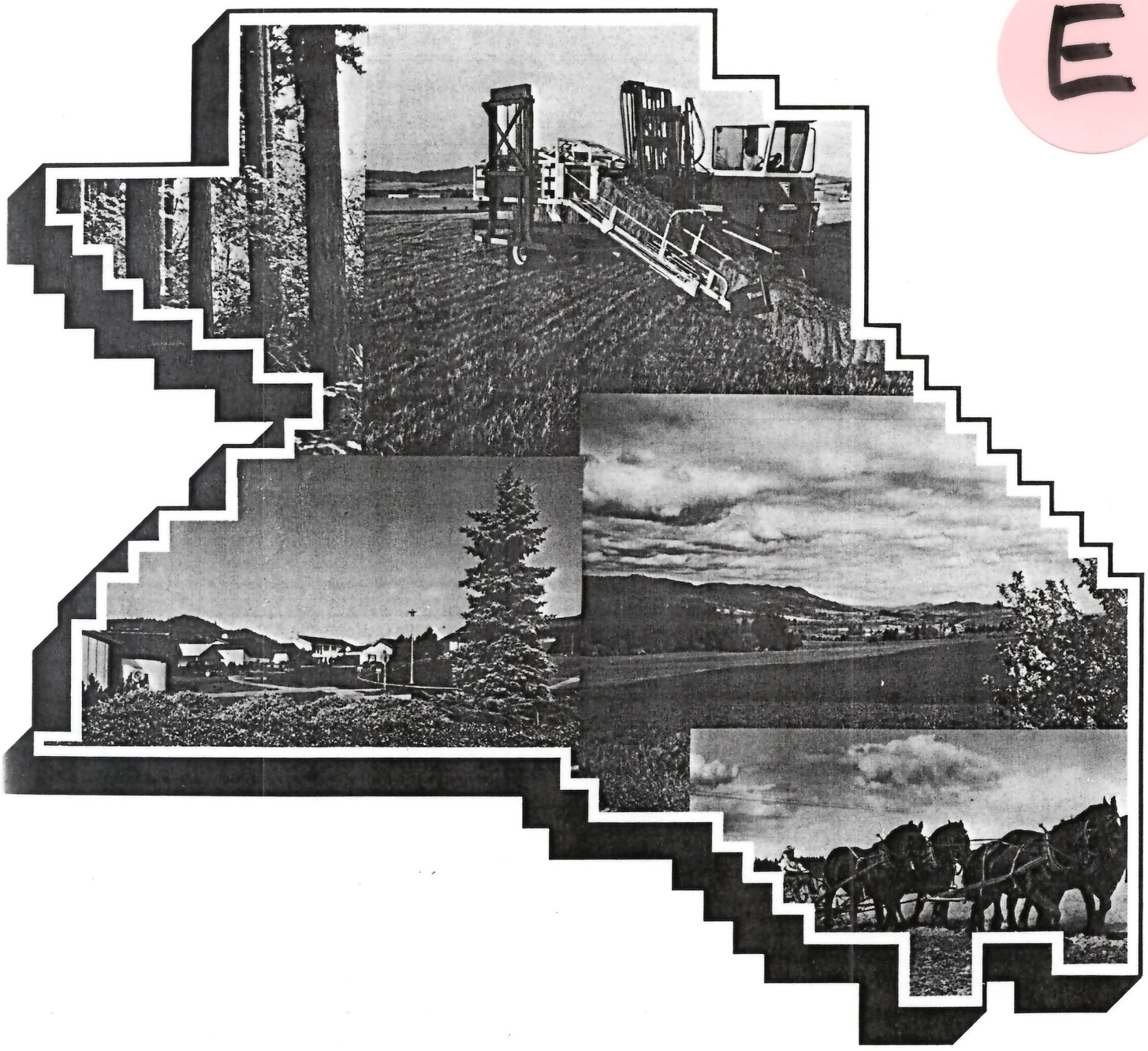
	Inches		*Inches*
January	0.4	July	4.7
February	.9	August	4.4
March	1.3	September	3.4
April	2.1	October	2.2
May	3.1	November	.9
June	3.9	December	.4
		Total	27.7

Water Supply

A report based on investigations by the Washington State Department of Conservation, Division of Water Resources, and the U.S. Geological Survey concluded that yields adequate for irrigation can be obtained from wells in most farmed areas of Clark County. The total available water is sufficient for all foreseeable irrigation needs.

SOIL SURVEY OF

Washington County, Oregon



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pores; 5 percent basalt pebbles and stones; pH 5.6; clear, smooth boundary.
IIC—36 to 44 inches, yellowish-red (5YR 4/6) silty clay; weak medium subangular blocky structure; hard, firm, sticky, plastic; common fine tubular pores; 15 percent basalt fragments, pebbles and stones; pH 5.6; abrupt, wavy boundary.
IIR—44 inches, dark-gray vesicular basalt.

General nature of the county[8]

This section is primarily for those who are not familiar with Washington County. It discusses physiography, relief, and drainage; climate; settlement and development; transportation and industries; and farming. Unless otherwise stated, statistics about farming are from records of the U. S. Bureau of the Census.

Physiography, relief, and drainage

Washington County is in the Lower Willamette and North Coast River basins. It extends from the summit of the Coast Range to the Tualatin Mountains. More than 90 percent of the area drains eastward through the forks of the Tualatin River, which originates in the Coast Range. The Tualatin meanders eastward through the central portion of Washington County and enters the Willamette River south of West Linn. The major tributaries flowing into the Tualatin River include Dairy Creek, Fanno Creek, Gales Creek, Rock Creek, and Scoggin Creek. The lowest point in the county is on the bottom land along the Tualatin River where it enters Clackamas County. The valley floor rises gradually from 120 feet elevation to more than 300 feet above sea level, surrounded by uplands that rise to higher elevations. Along the western side of the county, the Coast Range reaches an elevation of 3,461 feet on Saddle Mountain.

The county has three major physiographic areas: a mountainous area in the western and northern part, the lower uplands adjoining the mountains toward the east and on the northern, southern, and eastern edges of Washington County, and the smooth valley encompassed by the low uplands.

Ninety percent of the uplands drains into the Tualatin River and its tributaries. The remainder of the area drains through intermittent and perennial streams into the Nehalem River, North Fork of Trask River, Salmonberry River, and the Wilson River. Slopes are steep to very steep in the western part of the Coast Range and become more rounded and moderately steep toward the east and on the lower uplands.

The valley area is divided into four parts: terraces, alluvial fans, flood plains, and low foothills that rise out of the valley floor (fig. 16).

The terraces are made up of broad, nearly level alluvial and lacustrine material that has been partly dissected by stream channels.

The alluvial fans are gently sloping to strongly sloping and consist of material that has been deposited over terraces and flood plains at the mouths of side draws and canyons.

The flood plains lie along the Tualatin River and the lower portions of the major tributaries and are subject to occasional to frequent flooding during winter and spring. There are many meandering drainageways that carry much of the floodwater. Flood control structures on the Tualatin River and its tributaries have reduced the flood hazard along the river.

The rolling foothills are remnants of siltstone and sandstone formations and basalt flows that were eroded and truncated by streams. A large part of the rolling foothills are covered by loess deposits which tend to conform in a general way to the topography of the weathered surface of the underlying material. The thickness ranges from 4 feet to many feet, but in some areas the deposits were thin and have mixed with the underlying material. Alluvial and lacustrine material a few feet to 50 feet or more thick has been deposited in the old valleys to form the present valley floor that surrounds these gently sloping to steep foothills.

Climate[9]

Washington County, in the northwestern section of Oregon, encompasses the Tualatin River Basin, which drains southeastward and extends from the crest of the Coast Range on the west side to the Willamette Valley on the east side. Its agricultural lands and urban areas make up most of the southeastern half of the county. These gently rolling lands vary generally from 100 to 400 feet above sea level, but some benches are as high as 800 feet. Forested foothills surrounding the valley range in elevation from 1,300 to 2,200 feet, and Coast Range peaks are 2,900 feet to more than 3,500 feet high.

This county is only about 23 miles inland from the Pacific Ocean and has a modified marine climate. Prevailing airflow moving across this area from the ocean greatly moderates the colder temperatures of winter and the heat of summer. The occasionally more extreme temperatures are associated with outbreaks of dry continental air pushing westward through the Columbia Gorge and across the Cascade Mountains.

Like the rest of western Oregon, this county has a very definite winter rainfall climate. Seasonal characteristics are well defined, and changes between seasons are gradual. Average annual rainfall decreases from 110 inches along the western border of Washington County to 38 inches in the southeastern valley floor (table 17). Some 28 percent of the annual total is received in fall, 46 percent in winter, 20 percent in spring, and only 6 percent in summer. Extremes in rainfall for individual years have varied from 26.11 to 65.88 inches at Forest Grove and from 42.68 to 83.30 inches at Timber. Wet months with over 20 inches of moisture occur in 1 year out of 7 at the higher elevations. The record is 31.64 inches at Timber in December 1933. Annual snowfall averages 38 inches at Timber. The greatest depth observed was 58 inches on February 1 and 2, 1969. Forest Grove averages 14

[8] DUANE K. SETNESS, soil scientist, Soil Conservation Service, assisted in the preparation of this section.

[9] By STANLEY G. HOLBROOK, climatologist for Oregon, National Weather Service, U. S. Department of Commerce.

inches of snowfall annually and greatest depth of 22 inches.

Average daily high and low temperatures in winter for the Coast Range compare well with valley floor values given in table 18, but summer values average 3° to 5° cooler than valley temperatures. Daily range of temperature is 12° to 15° in winter and as much as 30° in summer, providing cool nights.

Record temperatures for the county range from −18° in 1950 to 108° in 1956. Hot afternoons of 90° and above number from 11 days a year at upper elevations to 17 days in the valley. Temperatures of 100° or more occur only about every other year, and those of 0° or lower can be expected about 1 year in 20 and more often on the higher slopes. Freezing temperatures occur on 65 to 70 days in the valley and on up to 105 days per year in the Coast Range.

Table 18 shows the probability of occurrence of various temperatures after indicated dates in spring and before indicated dates in fall. Date of the spring freeze has varied from March 10 to June 30 in the farming areas, and date of the first fall freeze has varied from September 17 to November 11. The average freeze-free season varies from 180 days in the valley to 145 days in the Coast Range.

Many weather elements are not recorded in Washington County, but reasonable climatological interpolations can be made from nearby stations. Prevailing winds are from the south, except for northwesterly winds during late summer. Windspeed averages 7.5 miles per hour for the year, ranging from 9.2 miles per hour in January to 6.2 miles per hour in September. Conditions are calm about 17 percent of the time. Windspeed can reach 65 miles per hour with gusts up to 85 miles per hour. Nighttime humidity averages 80 to 90 percent year around, and afternoon humidity ranges from 40 to 45 percent in July and from 75 to 80 percent in winter. There are about 6 to 8 thunderstorms per year. These cause some loss from lightning. Serious loss from small hail is rare. The three small tornadoes documented in the county caused no deaths or injuries, and some damage resulted from one. The area can expect 73 clear days a year, 72 partly cloudy days, and 220 cloudy days. The combined effects of wind, moisture, and heat result in an annual lake evaporation of 23 inches; 75 percent of this occurs from May through October. Potential evapotranspiration (PE) averages 26.7 inches per year at Forest Grove. Average precipitation (P) less PE equals an average cumulative moisture surplus of 33.1 inches from October through April. Likewise, the months of May through September show an average cumulative moisture deficit (PE−P) of 13.6 inches, so this period may require supplemental irrigation depending on soil characteristics and crop development.

Settlement and development

The major part of Washington County was known by early settlers as the Twality Plains. The first pioneers became permanent settlers in 1834. The great increase in population began after 1842. In 1849 Washington County was organized. As the population increased, agriculture developed rapidly. Hay, grain, and livestock were the major farm enterprises. Many timbered areas were gradually cleared and brought under cultivation.

On July 5, 1843, Hillsboro was founded as the county seat. Washington County had a population of 2,652 in 1850 and a population of 26,376 in 1920 according to the census. In recent years Washington County has been one of the most rapidly growing areas in the state. The population in 1950 was 61,269 and increased to 92,237 in 1960. In 1970, population was 157,920, and it increased to 189,400 by July 1, 1974. The eastern part of the county is becoming a part of the Portland metropolitan area.

Washington County has one State park, one Federal park, two State forest parks, one county park, and many city parks, recreation park areas, and different types of camps. Henry Hagg Lake is used for boating and fishing. Public golf courses are available.

Transportation and industries

Washington County is served by a branch line of a major railroad for freight and express service. Buslines offer passenger service.

Nearly all farms are served by paved or gravelled county roads that join the Federal and State highways. Graded roads extend to most parts of the mountainous areas, but many of these roads are not maintained throughout the year. Some of these roads are privately owned logging roads. Numerous spur and access roads branch off the main roads. Many of these have been abandoned or are not maintained.

Several truck lines provide freight service to the area, and air service by airplane and helicopter is available at the Hillsboro airport.

The industries in Washington County are related to the production of many agricultural products. Many industrial parks have been developed and more are planned for the future to meet the needs of the expanding Portland metropolitan area.

Farming

Washington County produces a wide variety of crops such as grains, berries, orchard crops, seed crops, pasture (fig. 17), hay, special crops (fig. 18), and woodland products.

The land in farms and the number of farms has decreased over the last few years due to the pressures of urbanization. In 1969 there were 1,976 farms, farm acreage totaled 172,055 acres, and the average size farm was 87 acres. There were 871 farms between 10 and 49 acres, and the number decreases rapidly as the acreage increases. There were 265 farms between 1 and 9 acres in size.

Following are the acreages of the principal crops grown in Washington County in 1974.

Crop	*Acres*	*Crop*	*Acres*
Alfalfa	6,000	Filberts	5,200
Apples	120	Oats	4,000
Barley	4,000	Potatoes	460
Blackberries	150	Prunes	1,500
Black rasberries	340	Red clover	7,500
Broccoli	340	Sour cherries	150
Bush beans	1,400	Squash	400
Clover and grass hay	9,000	Strawberries	2,800
Crimson clover	400	Sweet cherries	250
Cucumbers	700	Sweet corn (process)	650
Dry onions	420	Wheat	40,000

Archery Summit

NEWS 2

Spring/Summer 2001

New Releases: 1999 Pinot Noir, Red Hills Estate and 2000 Vireton, Blanc des Collines Rouges

1999 Red Hills Estate

With original 22-year-old plantings of the Pommard clone and newer Dijon clones, this densely planted estate vineyard is the quintessential Oregon Pinot Noir combining the science and techniques of the New World with Old World Burgundian tradition.

The 1999 Red Hills Estate has a complex and powerful nose with aromas of blackberries, black cherries and coffee. It quickly deepens to reveal marion berries, smoke, ripe raspberries and blue fruits. The flavors mirror the aromatics, but are buttressed by firm rich tannins, good balancing acidity and a very rich mid-palate which leads to a long classic finish.

Our Goal: Organic Farming at Archery Summit

At Archery Summit, we use the grapes grown and farmed by us from our four estate vineyards in our wines. We believe in nurturing our wine from the ground up. We have always had a hands-on approach in the vineyard from basic farming by hand in our meter-by-meter plantings to hand harvesting all of our grapes.

Since our inception we have used sustainable practices in our farming techniques, but have now taken it one step further towards our goal of total organic farming.

(Continued on page 2)

Greetings from Gary


Bud Break.

The buds are breaking, right on schedule, and in this exciting time in the vineyard we are pleased to release two of our favorite wines on May 1, 2001.

We are delighted to announce the release of our **1999 Red Hills Estate, Oregon Pinot Noir**, a wine that continues the history of excellence this single vineyard has produced since our first vintage in 1993. From our oldest vines of self-rooted Pommard clones and new densely planted and narrow spaced Dijon clones, the **Red Hills Estate** displays intense flavors and aromas of dark fruits and berries with spices that are characteristic of whole cluster fermentation. This wine is extremely limited with less than 800 cases produced.

Our **2000 Archery Summit Vireton, Blanc des Collines Rouges** is our unique proprietary blend of Pinot Gris, Chardonnay and Pinot Blanc blossoms with aromas of exotic fruits and offers layers of flavors. This vintage expresses an extraordinarily intense and deep flavor profile-more than any previous vintage.

We are extremely pleased with these wines and their success. We hope you have a chance to experience them before they sell out. The demand has been somewhat overwhelming.

We hope you enjoy summer with your favorite blend of Pinot Gris such as Vireton. It is perfect for the season.

Regards,

Gary Andrus

Inside:

(Organic continued)

This is farming without the use of herbicides, fungicides or pesticides that are harmful to the environment either through their production or use.

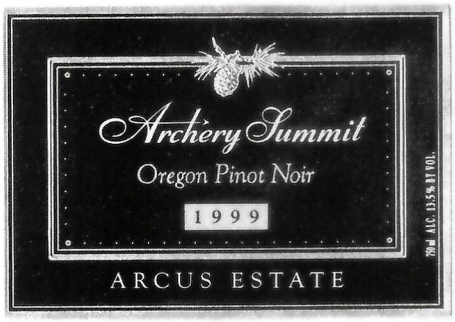
Another difference with organic farming is that it is very labor intensive, especially in controlling weeds. We believe organic methods enhance the growth quality of the vines and make for healthier soils, vines and fruit. Superior grape quality is also established with site-specific rootstock clonal selections.

Why bother with these practices with higher costs and more intensive methods involved? Sustainable agriculture protects our assets in the long term and helps the soil overall. And as we have found, especially with Pinot Noir, great wine begins with the soil.

One of our vineyard crews plants a new meter by meter block at our Red Hills Estate in Dundee.

1999 Arcus Estate Receives Highest Score in the "Oregon Report" from the Spectator

"Archery Summit, located in the Red Hills of Dundee, has set a standard for Oregon Pinot Noir with its 1998 and 1999 bottlings. In fact, the Arcus Estate 1999 rated 95 points on Wine Spectator's 100-point scale – the only wine in this report to earn a classic score." Harvey Steiman **Wine Spectator**



Archery Summit Science Travels Internationally

Gary recently visited Argentina and presented studies from our lab of the phenolic structures of Dijon Clones of Pinot Noir to the Research Institute in Mendoza. He tasted the first production in that country of Dijon Clones 777, 115, 113 and participated in the first harvest of clones 667 and 114 completed for the 2001 vintage.

He also managed to get in some exciting fishing excursions while he was in South America.

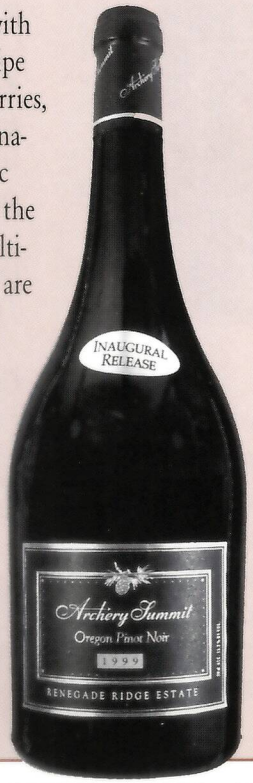
Introducing our New Estate Bottling: *Oregon Pinot Noir, Renegade Ridge*

Release Date: June 1, 2001

We are pleased to present this inaugural release of Oregon Pinot Noir with this new single vineyard estate bottling from our newest vineyard site Renegade Ridge Estate.

Adjacent to our Archery Summit Estate vineyard, which surrounds the winery, this vineyard was planted primarily in 1996 with Dijon clones 114, 667 and 777. The vines face primarily southeast in this site so the aromas and flavors are very different. The 1999 Renegade Ridge Estate expresses its individual vineyard specific terroir beautifully.

This wine opens with brilliant aromas of ripe raspberries, dark cherries, smoke, minerals, cinnamon and other exotic spices. In the mouth the wine is thick and multi-faceted. The tannins are supple, fine and well integrated while the texture is full and rich from the beautiful concentration of sweet fruit. Subtle, classic and long, this wine will stand proudly among our other Estate Selections.



Do you want to be Bad?

Become a member of our *Bad to the Beaune* Wine Club. Our wine club members receive lots of special attention and complimentary benefits that include fun events.

Members are shipped two bottles of each wine we release nationally and additional specialty wines we produce in limited amounts only available for our wine club. Members also receive special discounts on wine and private functions, complimentary tours and barrel tastings, free admission to our annual open house events and special "Members Only" events.

Calendar of Events:

VIP Preview Day - May 19, 2001

Bad to the Beaune Appreciation Day
July 15, 2001

All Wine Club and VIP events require reservations as they are limited.

Oregon Wine Marketing Coalition Wine & Food Experience

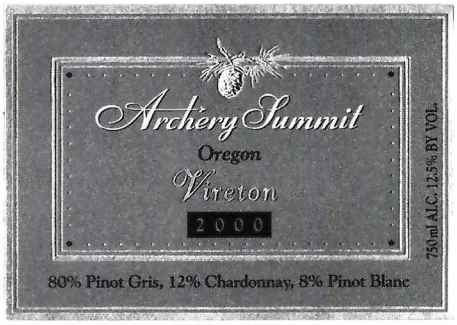
In May, forty Oregon wineries including Archery Summit Winery, joined the Governor of Oregon, John Kitzhaber, with the food commissions for Oregon Salmon, Albacore, Dungeness Crab, Hazelnuts and the Pear Bureau Northwest and traveled to Washington D.C. and New York City to promote Oregon food and wine. Chefs from the Wildwood Restaurant and Higgins Restaurant of Portland and the Joel Palmer House in Dayton conducted forums and chef demonstrations for the press and representatives from the trade in those regions.

In Washington D.C.the event was held at the prestigieous Capitol Hill Club. In addition to the trade and press events a VIP reception was held for the Congressional Wine Caucus and other dignitaries and a consumer tasting with the Tasting Society International, a web-based wine club.

These events were very well received with great attendance. It was a great opportunity for all to experience a "Taste of Oregon"on the East Coast. Look for the OWMC on the West Coast this fall, dates and places to be announced.

2000 Vireton, Blanc des Collines Rouges

All grapes for the 2000 Vireton were harvested with great ripeness in late September to early October 2000 from our narrow-spaced vineyards of our Red Hills Estate, Renegade Ridge Estate, Arcus Estate, and Archery Summit Estate. The grapes are hand sorted and then whole cluster pressed. Using our innovative scientific techniques and



creative artistic flair, we use traditional Alsatian oak ovals for depth, complexity, and balance and stainless steel to retain the crisp acidity and bright flavors. Colored bright gold with emerald highlights, the 2000 Vireton abounds with exotic aromas of citrus fruits and blossoms.

1999 Oregon Pinot Noir, Premier Cuvée

Our 1999 Premier Cuvée carries a history of excellence. This cuvée is handcrafted from Dijon clones from our more mature vines grown in our three single estate vineyards: Red Hills Estate, Arcus Estate, and Archery Summit Estate.

Flavors of ripe black fruits, flowers, cassis and oak all show a depth, elegance, and length that mark a classic Oregon Pinot Noir. Aromas and flavors of blackberries, blueberries, red currants, cinnamon, coffee and smoke emerge and deepen as they open up to include the smell of violets and carnations. All of the components, tannin, acid and fruit are very well balanced and combine to produce a concentrated, rich mid-palate, and long finish. This wine will improve and age gracefully for the next ten years.

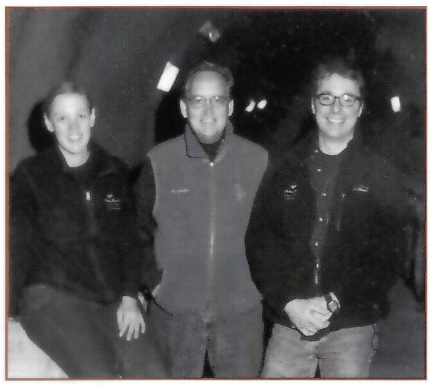
There is limited availability of this wine.

From the Cellar: Ongoing Barrel Experiment

From assistant winemaker, Anna Matzinger

One of the several experiments we are conducting this year in the cellar centers around 12 barrels from the French Rousseau Cooperage. The primary objectives of the study are to compare forest of origin and stave air-drying times with the aging of pinot noir. All 12 barrels have a homogenous toast level, the Rousseau house toast M+ (medium plus). Staves have been air dried for 12, 24, or 36 months, and the wood comes from four different forest regions in France. The barrels are labeled 1-12 so the results will not be known until after bottling in the fall.

We chose our Premier Cuvée lot with 25% whole clusters to fill these barrels. As an experimental control, we also have two stainless steel barrels containing the same wine.



Meet the Production Team: Anna Matzinger, Gary Andrus, Sam Tannahill. *Photo by Chris Ludwick*

Since barreling down in October, we continue to conduct basic and advanced chemical analysis on a bi-monthly basis.

Blind tastings are conducted every two months in a formal session here at the winery with our winemaking staff and members of the local winemaking community. We rank both intensity and complexity of wine characteristics, particularly those resulting from oak contact and aging.

With both the quantitative and qualitative data acquired in this study, we hope to construct a more detailed picture of the effects, both chemical and organoleptic, which result from first year oak contact using selected French oak and how air drying times play a role.

Announcing....

THE NEWEST EDITION TO ARCHERY SUMMIT AND THE ANDRUS FAMILY.

SOLENA CHRISTL MONTALIEU

BORN MARCH 1, 2001

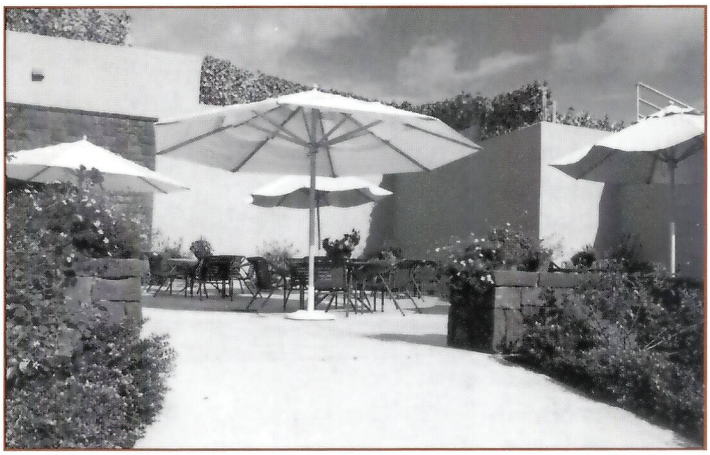
CONGRATULATIONS

DANIELLE AND LAURENT

FROM ALL THE STAFF AT ARCHERY SUMMIT AND PINE RIDGE WINERIES!

Regional Events in Oregon and Around the Country- Join Us!

May 26 & 27	Memorial Day Open House Archery Summit Winery (800) 732-8822
June 15-17	Aspen Food & Wine Classic Aspen, Colorado (877) 900-WINE
June 21	Wine Dinner with Nancy Andrus Albuquerque, NM
June 22-23	Albuquerque Fine Wine & Art Auction
June 29-July 1	Telluride Wine Festival Telluride, Colorado (800) 525-3455
July 15	Bad to Beaune Club Archery Summit Winery Member Appreciation Day - RSVP (800) 732-8822
July 17	Wine Dinner with Nancy Andrus Fleming's, Newport Beach
July 18	Wine Dinner with Nancy Andrus Fleming's, La Jolla
July 19	Wine Dinner at with Nancy Andrus Fleming's, Seattle
July 21	Oregon Wine & Art Auction Archery Summit Winery Benefit hosted by the McMinnville Rotary Club (503) 434-7954
July 26-29	International Pinot Noir Celebration McMinnville, Oregon (800) 775-4762
July 26-28	Sun Valley Wine Auction
July 31	Wine Dinner with Nancy Andrus Siena Casino, Reno
July 31	Meriweather Market Restaurant Wine Dinner Roanoke, VA (804) 384-3311
September 13	Wine Dinner with Nancy Andrus Bin 36, Chicago
September 25	Wine Dinner with Nancy Andrus Fleming's, Scottsdale
Sept 27-30	Santa Fe Wine & Chile Fiesta Santa Fe, NM (505) 466-8593



The Patio, overlooking the Willamette Valley with a magnificent view, is a spectacular location to greet guests as they arrive for dinner in the caves. *Photo by Chris Ludwick*

Looking for that Special Place?

Our winery, nestled in the Red Hills of Dundee, offers panoramic views and unique caves in a spectacular setting for private functions.

Indulge and experience fine cuisine paired with our award-winning Pinot Noir, described by Wine Spectator as one of America's finest.

Available for receptions, luncheons and dinners.
Tours and tastings by appointment only
Thursday - Sunday.

2000 Vintage Overview

Gary, Sam and Anna recently tasted the 2000 vintage from barrel and commented that these wines are showing the great strength of the vintage.

The 2000 vintage is a combination of the power and concentration of the 1998s and the balance, typicity and depth of the 1999s. This is the most concentrated and intense vintage with the darkest, opaque colors we have produced to date. They are showing great ripeness and firm tannins. This vintage is quite muscular and displays the essence of the terroir of the vineyards.

As our vineyards mature and we learn their individual characteristics we are better able to craft them to display the individuality of each specific vineyard sites.

We look forward to seeing them progress and to bottling them sometime this fall. In the meantime, we hope you have a chance to come taste them out of barrel with us.

For more detailed information about our wines, 100% gravity flow facility, clonal research, past and present accolades and much, much more, please visit our website at: www.archerysummit.com.

Sky Shots

Archery Summit Winery

Archery Summit Winery
18599 N.E. Archery Summit Road
Dayton, Oregon 97114
Phone: 503/864-4300 / Fax: 503/864-4038
www.archerysummit.com

6

Alex Sokol Blosser

From: John Paul [cameronwinery@imagina.com]
Sent: Tuesday, April 23, 2002 8:27 AM
To: Alex Sokol Blosser
Subject: Re: Update on our AVA

Alex,

I swear that I have no inside contacts at the BATF (with regard to requesting "Red Hills of Dundee") but, naturally, I am pleased at the request! Seriously though, the new name will be less generic.

Now for Cameron's vineyards: If you need this as a hard copy with Cameron letterhead just let me know and I can mail it to you. Otherwise here it is: Estate vineyard called "Clos Electrique", planted in 1984 to 2 acres of Pinot noir and 1.75 acres of Chardonnay. New planting on adjoining property of 2 acres planted in 2001 to mixed Pinot noir and various white varieties. Associated vineyard is Abbey Ridge Vineyard planted in 1976 to 5 acres of Pinot noir and 2 acres of Chardonnay. Subsequent plantings include 2.5 acres of Pinot bianco, 1 acre of Pinot grigio, 1 acre of Auxerrois, 3 acres of Chardonnay and 8 acres of Pinot noir.

Clos Electrique lies at approximately 300 ft elevation and Abbey Ridge at approx. 600 ft elevation.

Sincerely,
John Paul

Alex Sokol Blosser wrote:

Domaine Drouhin

OREGON

8

French Soul, Oregon Soil

"There is something truly special in these hills and what they represent. When I taste our wines, I know they could only come from one place, and that's the essence of my job, to reflect nature." - *Veronique Drouhin, Winemaker, DDO*

In 1961, French vintner Robert Drouhin first visited the coastal foothills of Oregon and was struck by the similarity to his native Burgundy. He had a dream that he could create wines with all the elegance and finesse of great Burgundy, but with their own distinctive Oregon touch. In 1988, his dream was realized in the debut vintage from Domaine Drouhin Oregon, with luscious wines hand-crafted by his winemaker daughter Véronique Drouhin-Boss.

At the very heart of Domaine Drouhin Oregon's 225-acre estate are the 85 acres of hillside vineyards in Oregon's Red Hills, which produce two acclaimed Pinot noir cuvées and a very limited amount of Chardonnay. These vineyards share a nearly identical climate, latitude, and aspect with the their counterparts in France.

Domaine Drouhin places an unusually demanding emphasis on viticulture, the art of vineyard management. These vineyards are unique – perhaps the most densely-planted vineyards in America, with the vines tightly-spaced in narrow rows. This is also one of the few vineyards in the country to cultivate its own rootstocks, and propagate all of its own plant materials – meaning that everything planted on the estate is unique to the estate.

The winery itself is a landmark, nestled deep into the slopes of the Red Hills. It is the first four-level gravity-flow winery built in Oregon, and in fact the first building built as a winery in Oregon. In the cellar it is Véronique's mission is to let the wines reveal the true character of the fruit. The goal is to produce wine naturally, treating it gently and with an absolute minimum of intervention or manipulation. The result is wines of superb structure and balance – sublime, elegant, and silky Pinot Noir, and Chardonnay that displays great complexity and depth.

The wines are never heavily oaked – less than 20% new French oak each year – allowing the wines to reveal the true nature of the terroir, the purity of the fruit, and the full expression of their innate qualities. Vintage after vintage, the Domaine Drouhin wines are greatly sought-after, and continue to be acclaimed by critics and enthusiasts worldwide.

Visit us online at **www.domainedrouhin.com**

POST OFFICE BOX 700 • DUNDEE, OREGON 97115 • TEL. (503) 864-2700 • FAX (503) 864-3377

Memorandum

12

To: Alex Sokol Blosser

CC: Dick Erath

From: Buck Corey

Date: 04/24/02

Re: Information for AVA

Alex –

Dick Erath asked that I forward the information requested in your e-mail dated 22 April. As you can see, some information came from our WEB site and some from printed sales/promotional material. Regarding the vineyard information you requested, the following is provided:

1.	Prince Hill Vineyard (owned)	33.3 Acres	Planted in 1983
2.	Neiderberger Vineyard (leased)	17.5 Acres	Planted in 1988
3.	Juliard Vineyard (leased)	6.5 Acres	Planted in 1986
4.	Knight's Gambit (leased)	19.4 Acres	Planted in 1988
5.	Fuqua Vineyards (leased)	9.4 Acres	Planted in 1984

We have other leased vineyards but not within the proposed AVA.

Please call me at 503-538-3318 if additional information is required.

Buck

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La Colina Vineyard

06/27/2001

Pommard	10.09 acres
115	6.51 acres
114	6.43 acres
Wadenswil	6.36 acres
777	10.14 acres