Wine Making, Weather, Geology, Climate Change



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Earth Science Professor, Clark College, Vancouver, WA

EOC3 Zoom meeting/Lecture, October 27, 2026

CLARK COLLEGE
EST. 1933

INTEREST IN WINE…START EARLY!







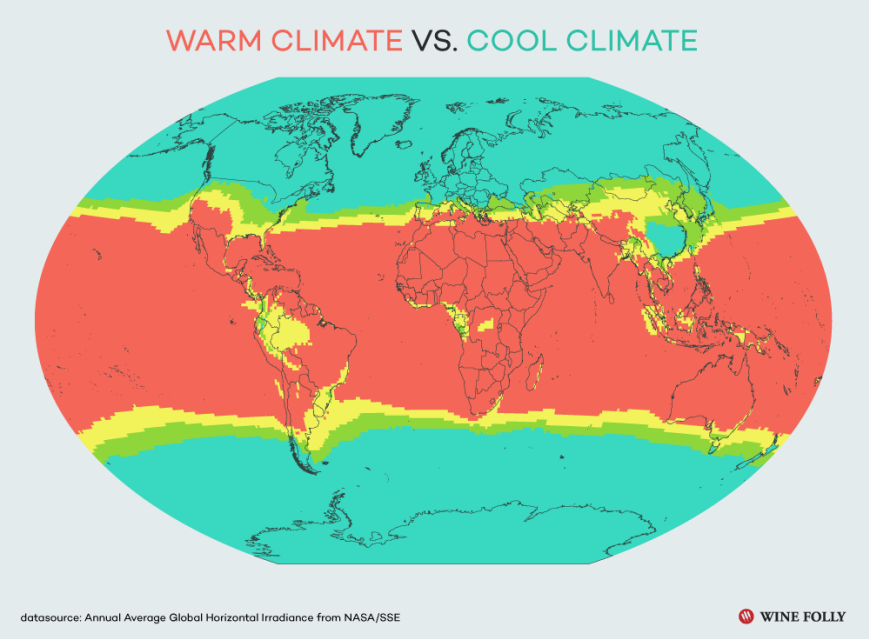
Thanks, Mom! - a.k.a., "Mama Wizard"

WINE-MAKING…THE PROCESS:



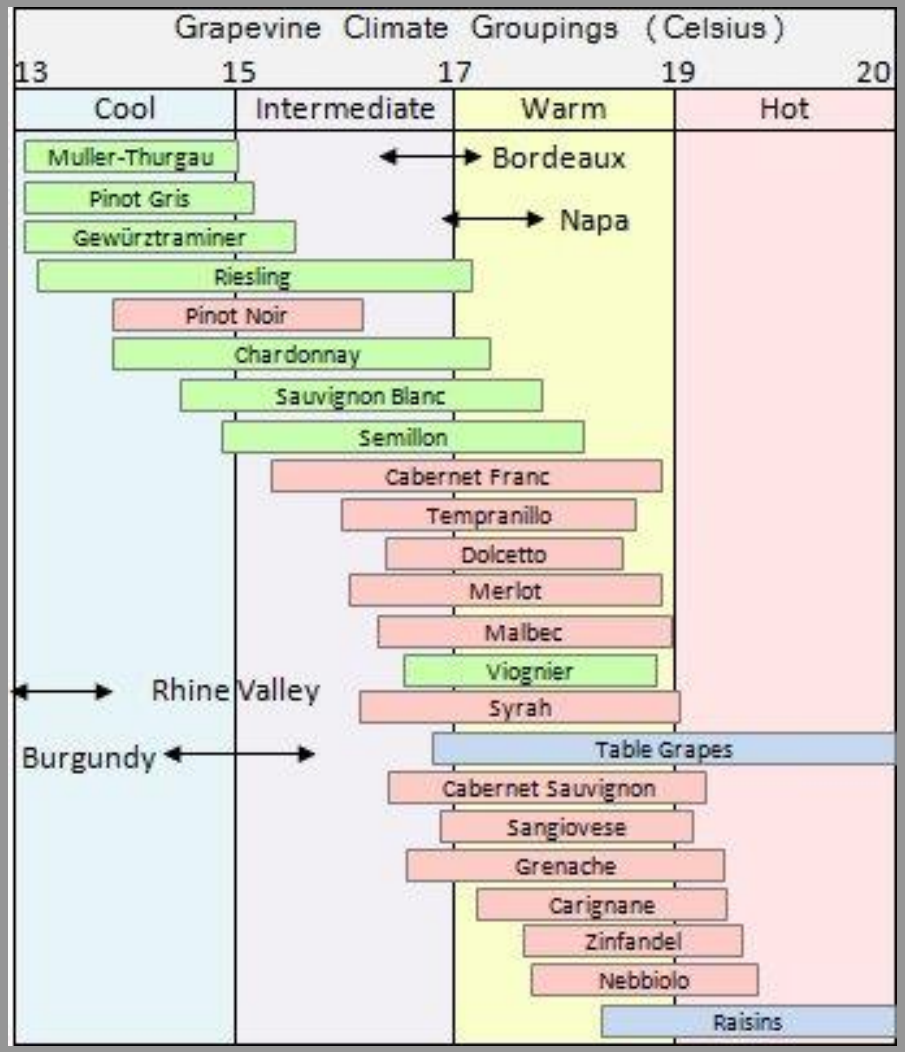
What are the strengths and weaknesses of the process?

WINE-MAKING…THE WEATHER:





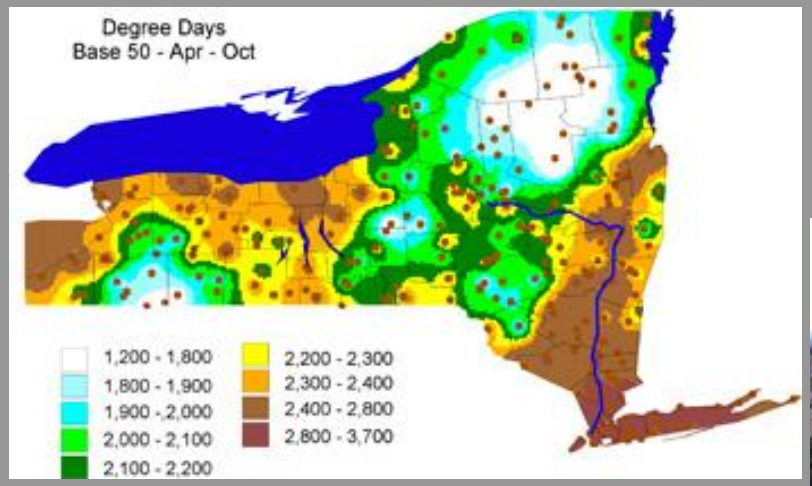


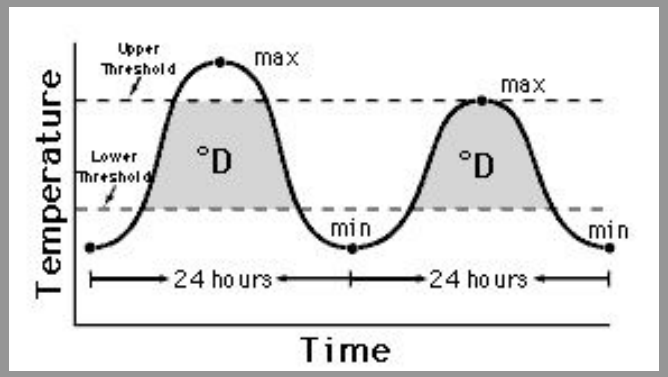


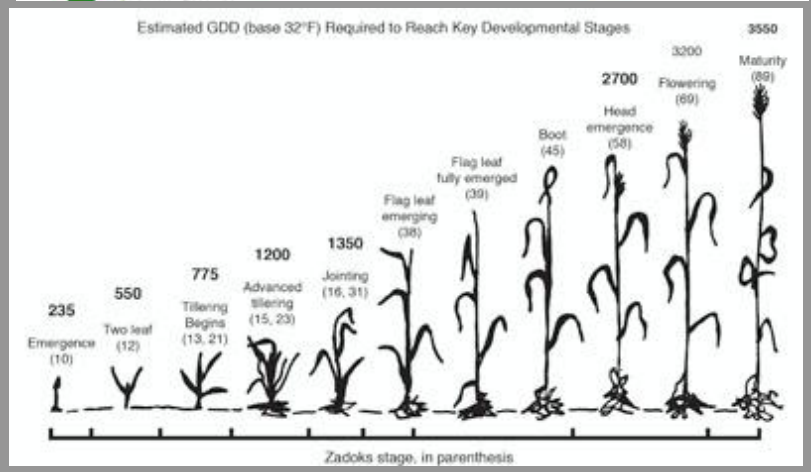
Why is Temperature important for grapes?

WINE-MAKING…THE WEATHER:





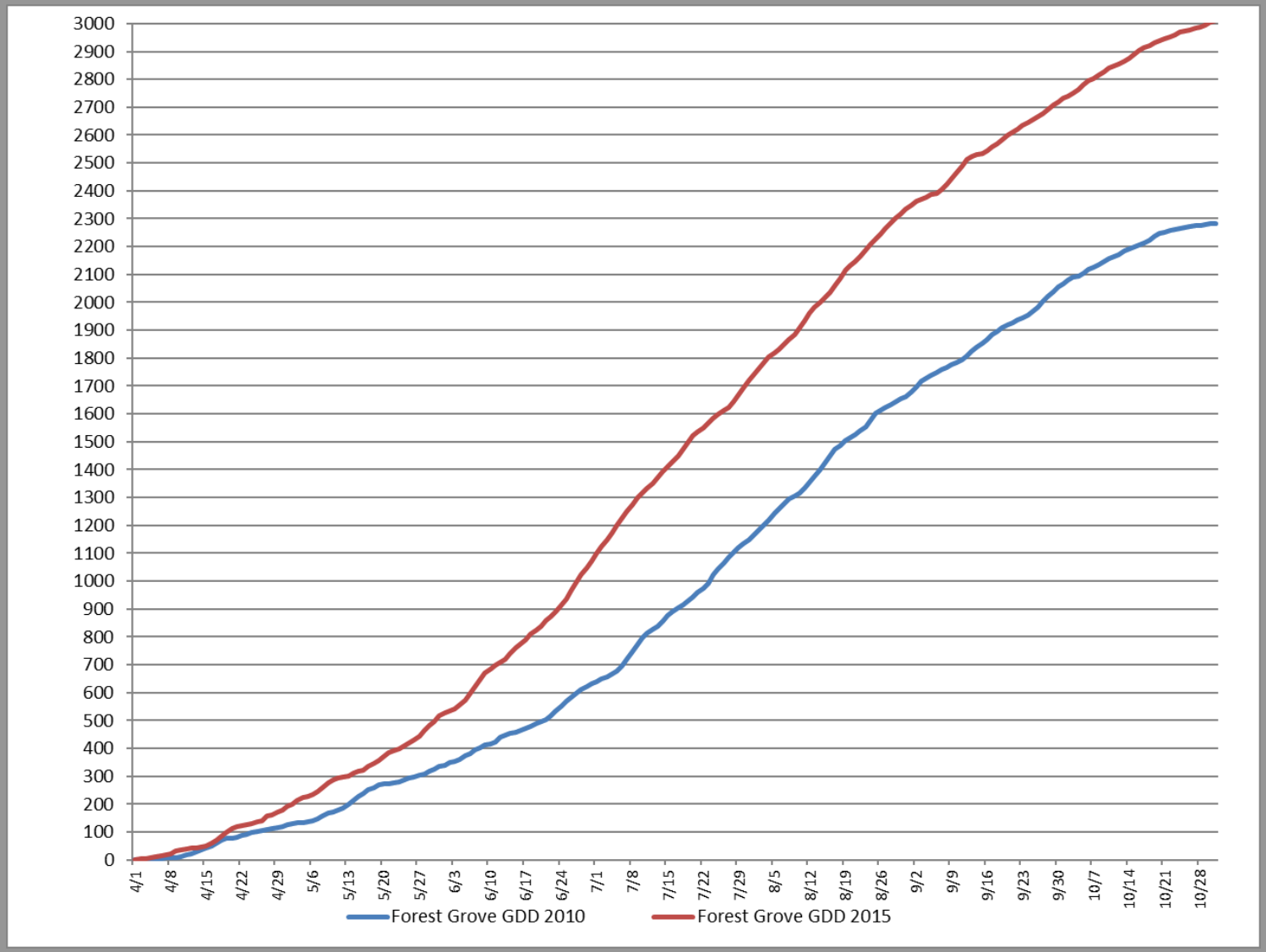






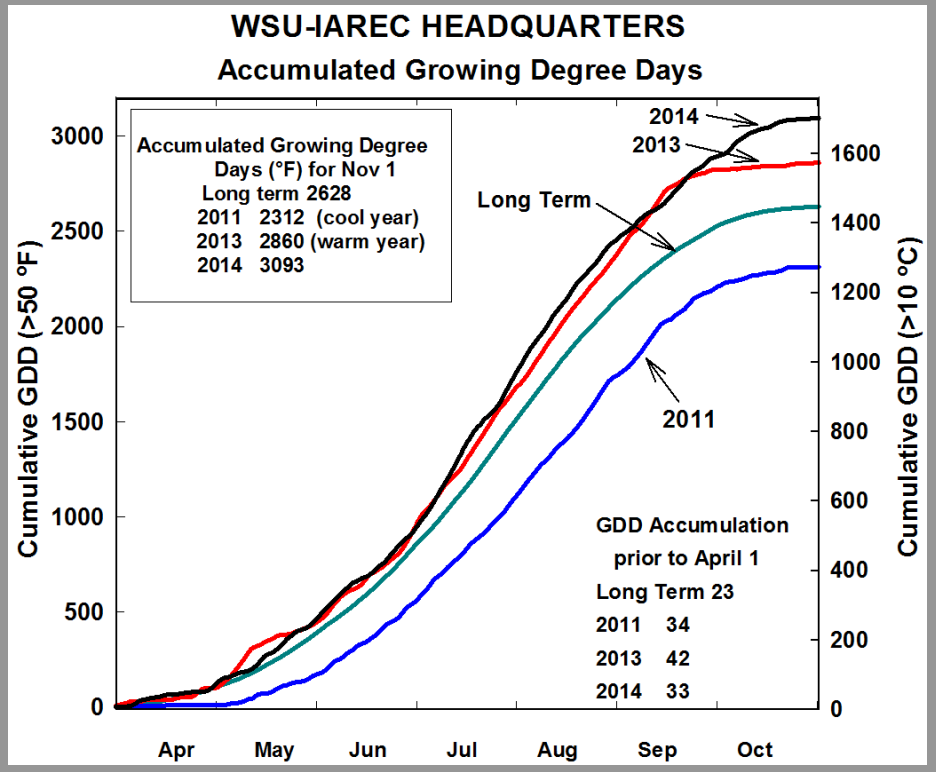
How can GDD be used to test grape quality?

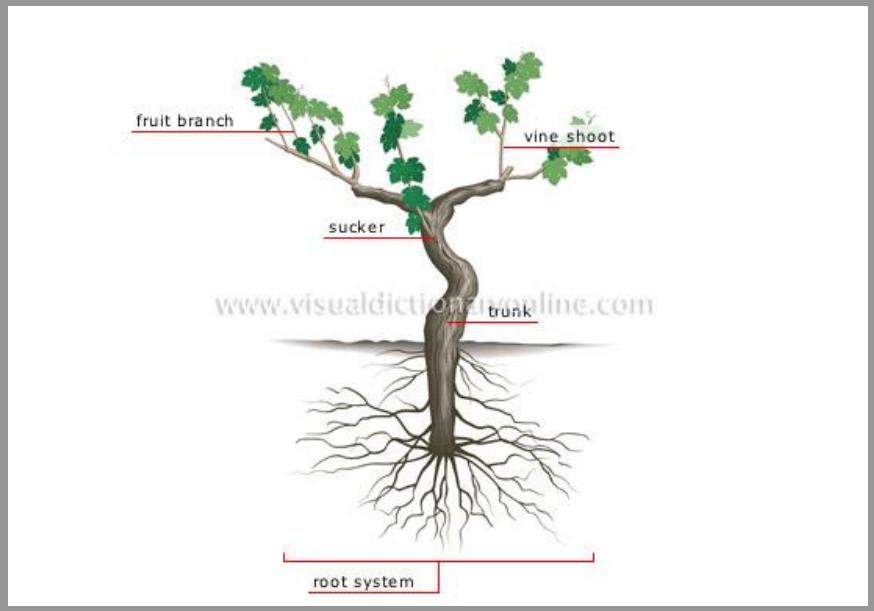
WINE-MAKING…THE WEATHER:



Seasonal accumulated GDD – year to year variability. Cause?

WINE-MAKING…THE HARVEST:







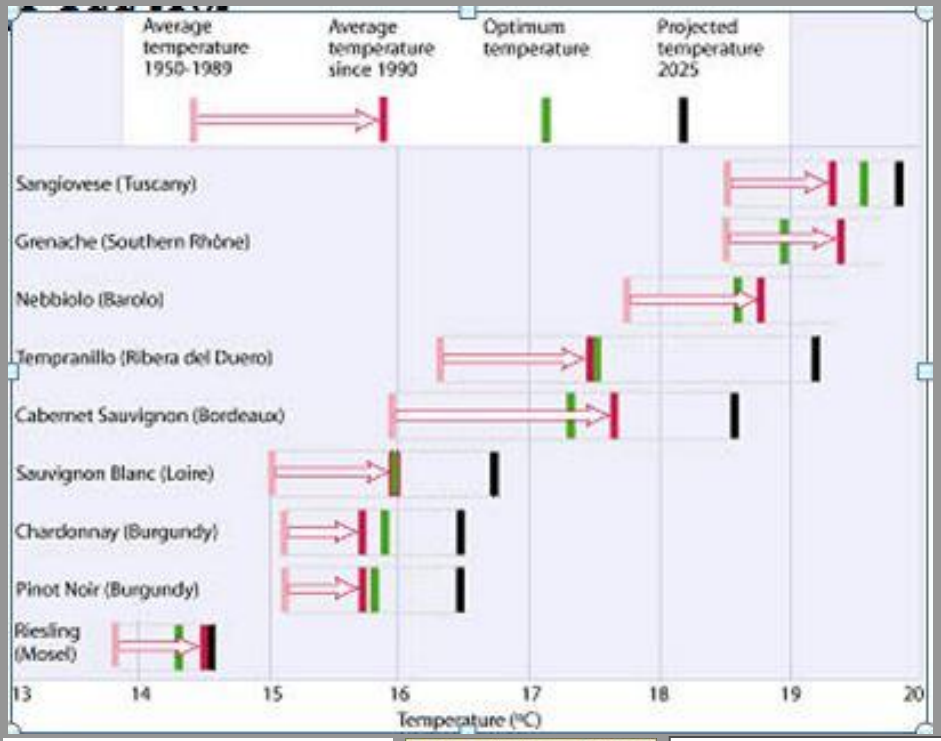




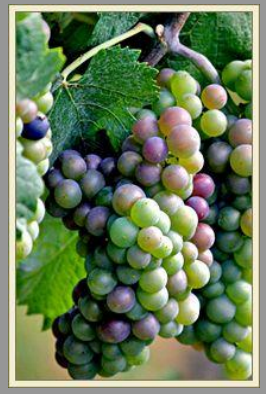
How and when can GDD be used to predict grape harvest?

GDD and harvest: 1800-1900 Chardonnay, 2000-2100 Pinot Gris, 2300-2600 Pinot Noir

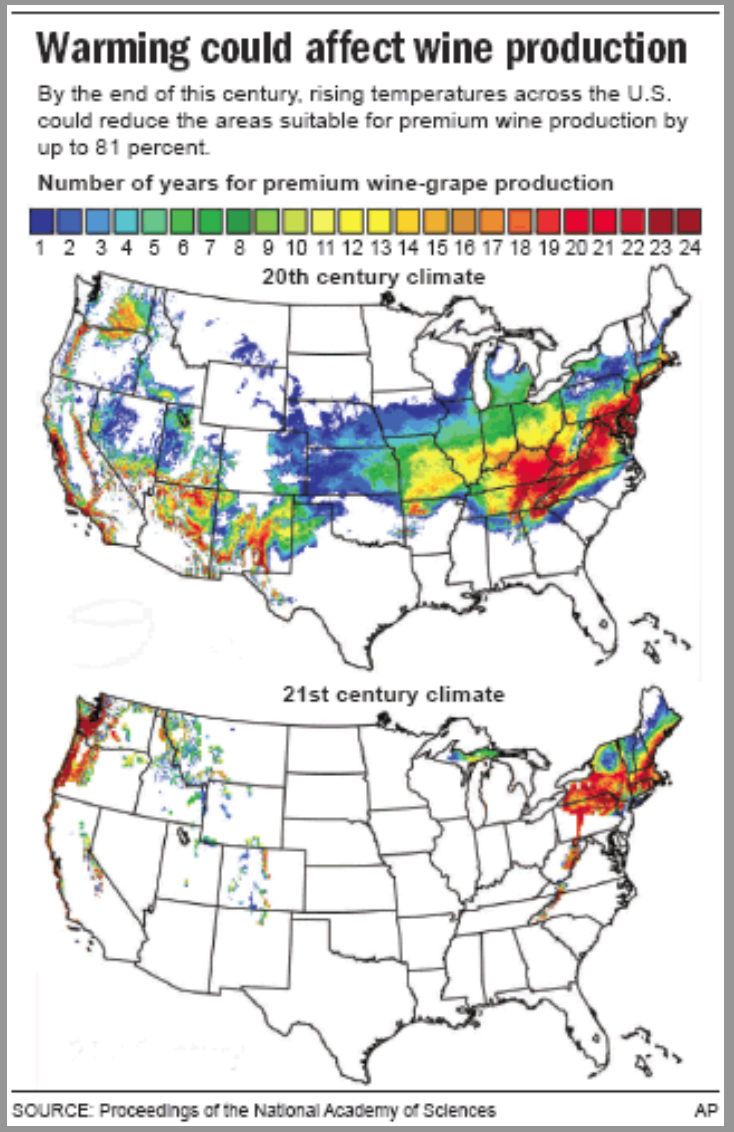
WINE-MAKING…CLIMATE CHANGE:







How will CC impact future wine grape production?

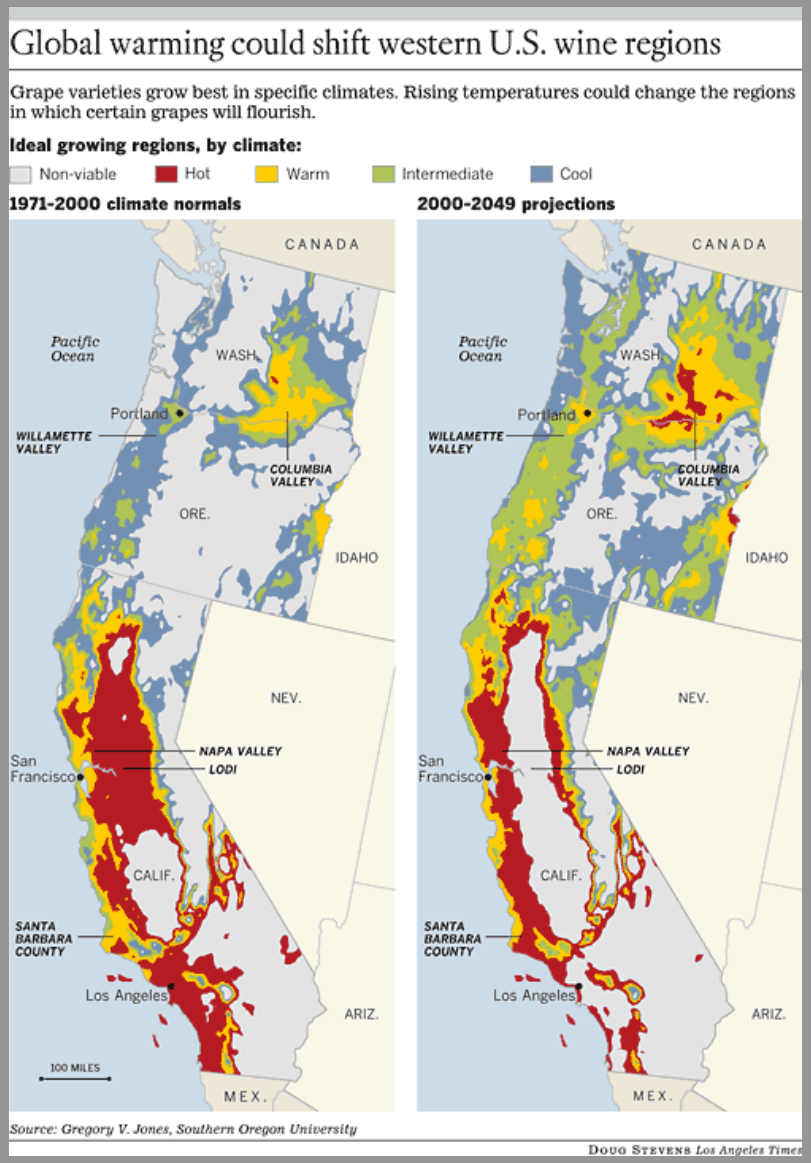


Prof. Jones: https://www.abacela.com/About-Us/Our-Team/Greg-Jones; https://www.climateofwine.com/about-me

WINE-MAKING…CLIMATE CHANGE:





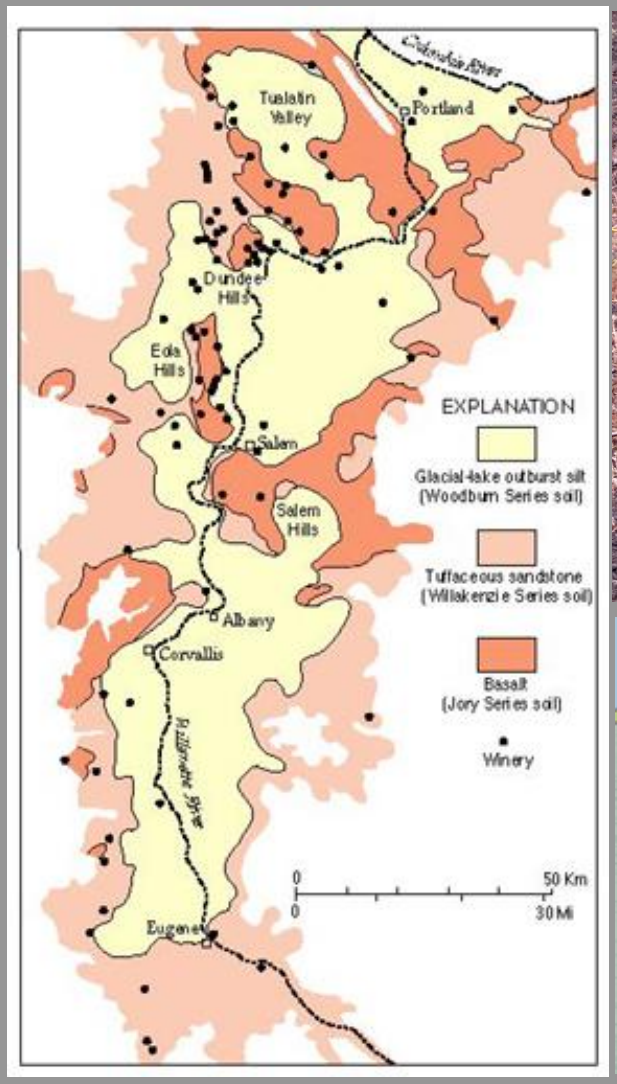






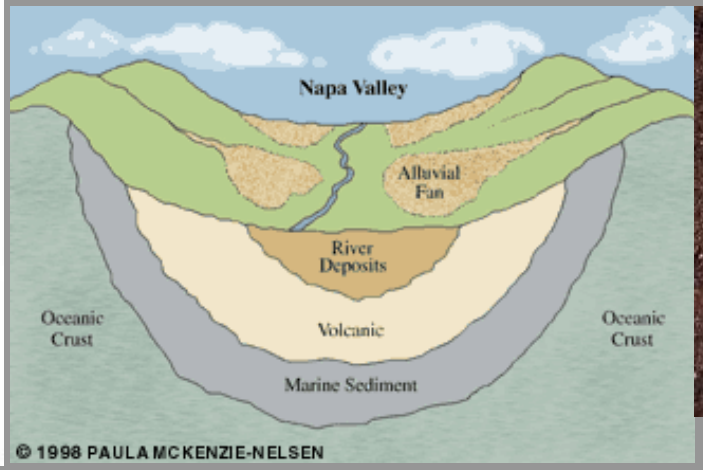
https://wineeconomist.com/2007/10/16/chateau-al-gore

WINE-MAKING…GEOLOGY…SOILS:











How does soil-type affect the grape quality?

WINE-MAKING…GEOGRAPHY:







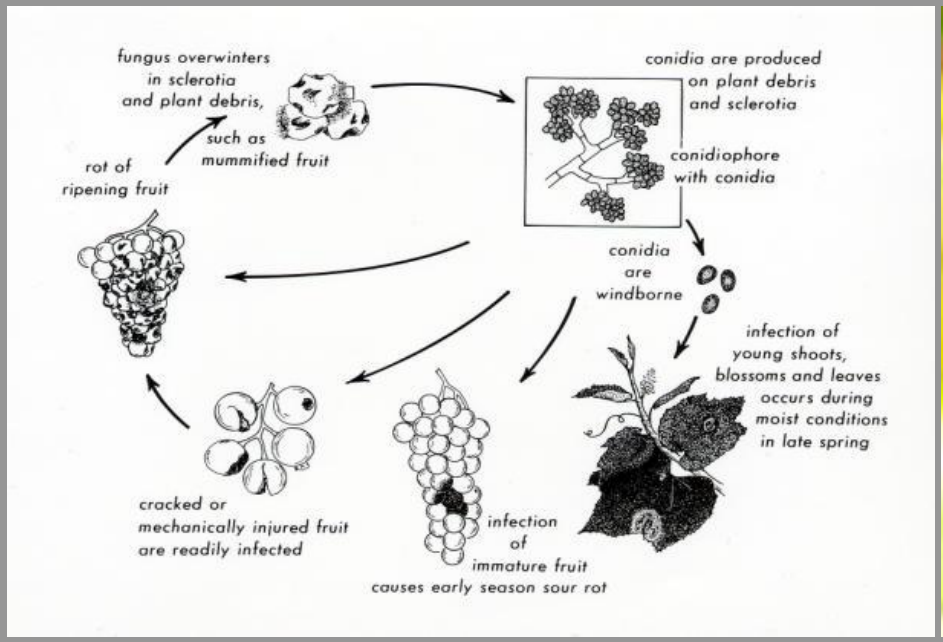






What is "Terroir" effect and is it real?

WINE-MAKING…THE HAZARDS:







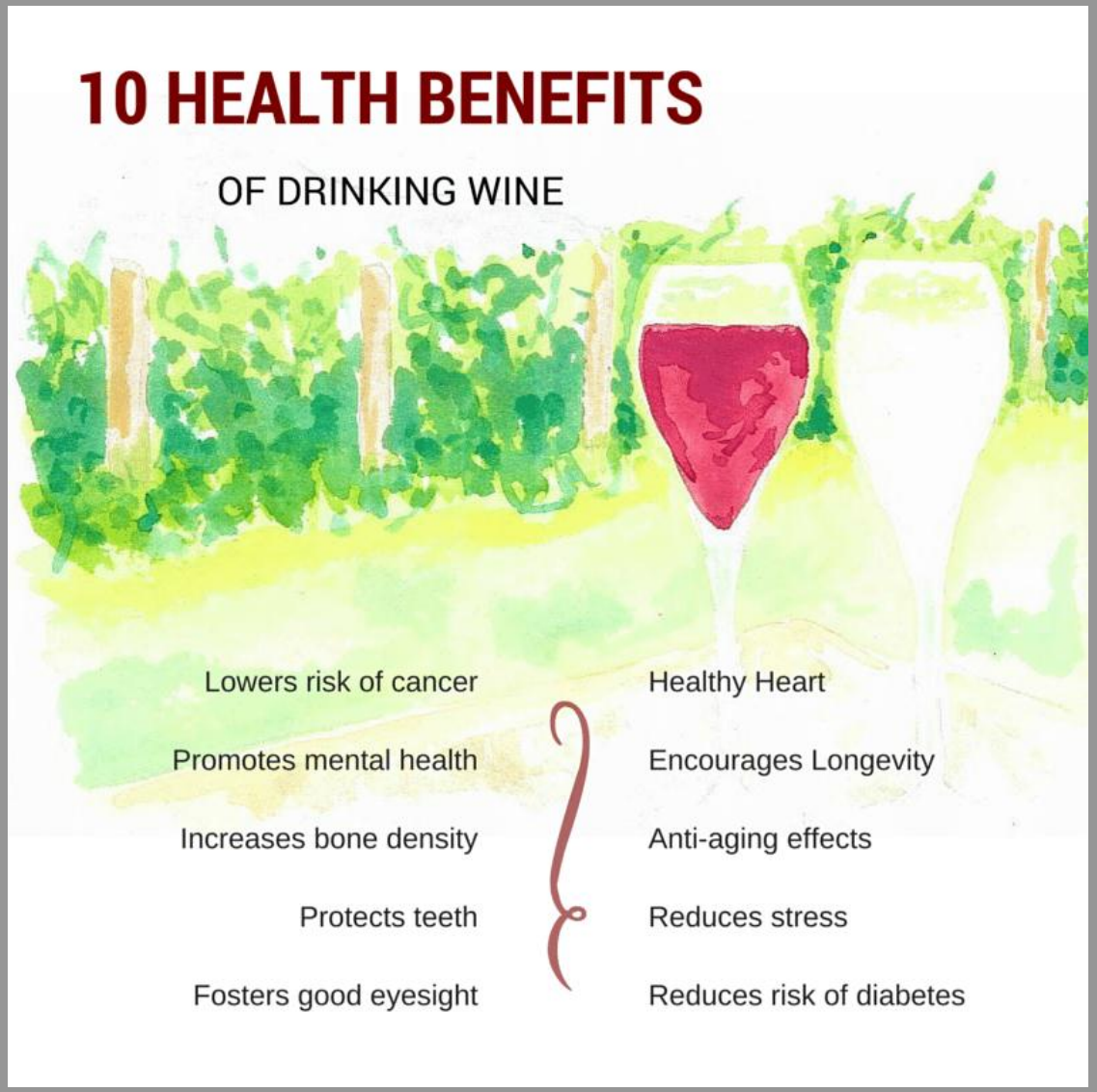






Which hazard(s) is/are the top concern(s) for local vineyards?

OREGON WINE…HEALTH BENEFITS





https://www.austwinetourco.com.au/10-health-benefits-of-drinking-wine/

OREGON WINE…WHY IT MATTERS

SPARKY SAYS: "TIME FOR A POP QUIZ! "

"WHAT ARE ECONOMIC IMPACTS OF OREGON WINE SALES?"

(A) $50 million per year

(B) $250 million per year

(C) $830 million per year

(D) $2 billion per year

(E) $956 billion per year

(E) **$956 billion** per year (2022)

Wow, wow!! ☺



Oregon's wine regions

https://en.wikipedia.org/wiki/Oregon_wine

WASHINGTON WINE…WHY IT MATTERS

SPARKY SAYS: "TIME FOR ONE MORE POP QUIZ! " 😱

"WHAT RANK IS WASHINGTON ON NATIONAL WINE PRODUCTION?"

(A) 2nd place

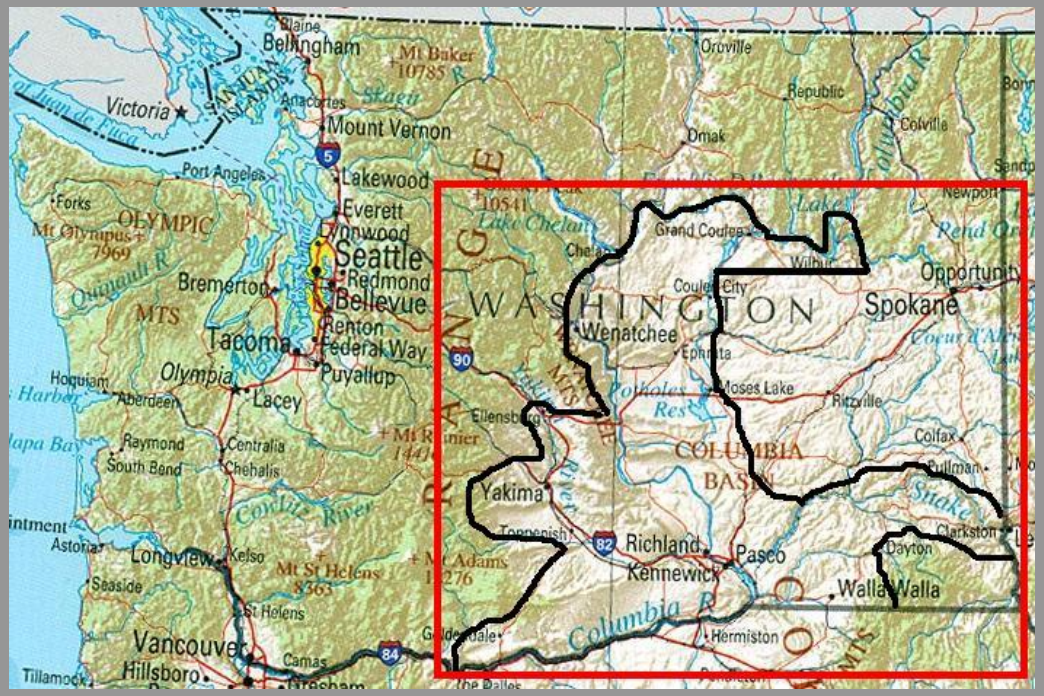
(B) 3rd place

(C) 4th place

(D) 5th place

(B) **3rd place** (2025)

Only California and New York exceed Washington – wow!! ☺



Washington's wine regions

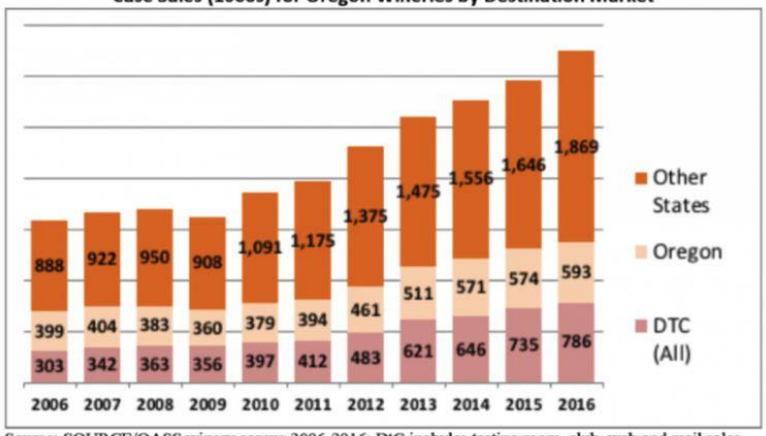
https://en.wikipedia.org/wiki/Washington_wine

OREGON WINE…WHY IT MATTERS

Higher DtC sales margins responsible for half of total revenue at Oregon wineries

March 20, 2018 | Filed under Daily Data | Posted by Lewis Perdue

Case Sales (1000s) for Oregon Wineries by Destination Market



Source: SOURCE/OASS winery census 2006-2016; DtC includes tasting room, club, web and mail sales

Source: Oregon Economic Impact Study 2016 (PDF)

"Oregon wineries sold 23% of their bottled wine direct to consumers, via tasting rooms, wine clubs, events, catalog/mail or website sales. Slightly more than 1/5th of all club and mailed sales go to out of state consumers.

"In addition, and unknown but substantial portion of tasting room sales go to tourists from other states. Direct sales realize higher prices for wineries than sales to distributors, due both to capturing the retail margin and the greater demand for wineries' high-end wines in this channel. Therefore they account for over half of total revenue from wine sales at Oregon wineries."

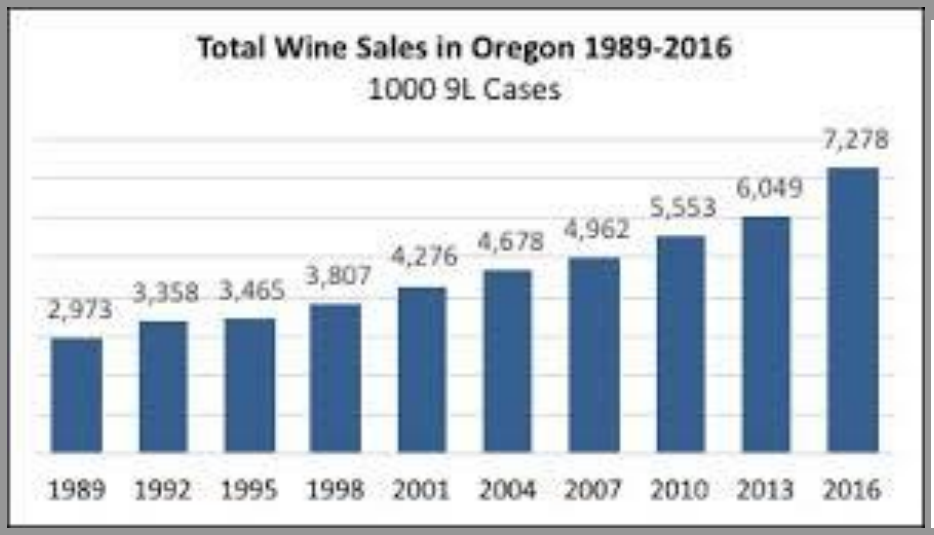


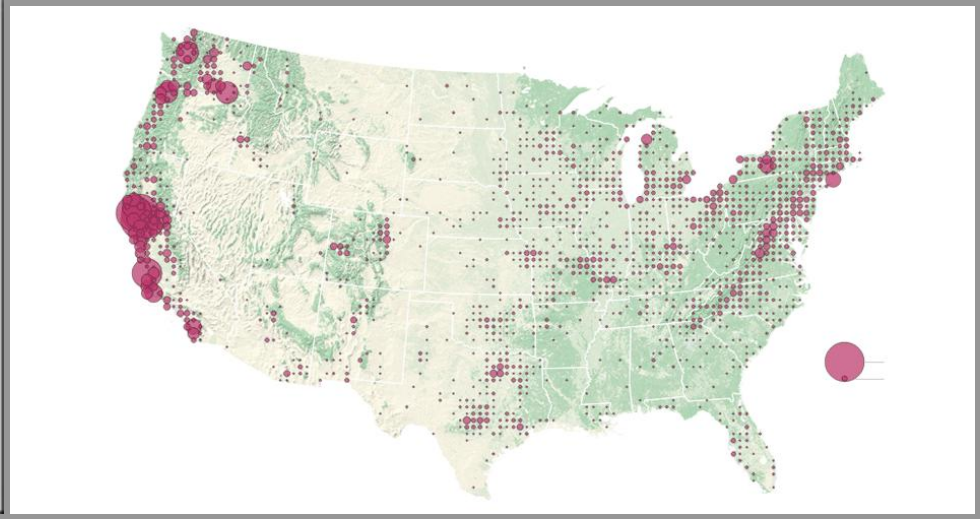


OREGON WINE INDUSTRY'S IMPACT GROWS

	2010	2013	2016
Total Economic Impact	$2.7 billion	$3.35 billion	$5.76 billion
Winery Revenues	$252 million	$363 million	$529 million
Wine Tourism	$158.5 million	$207.5 million	$787 million
Winery employment	2,048	2,437	2,993
Vineyard employment	571	749	1,053

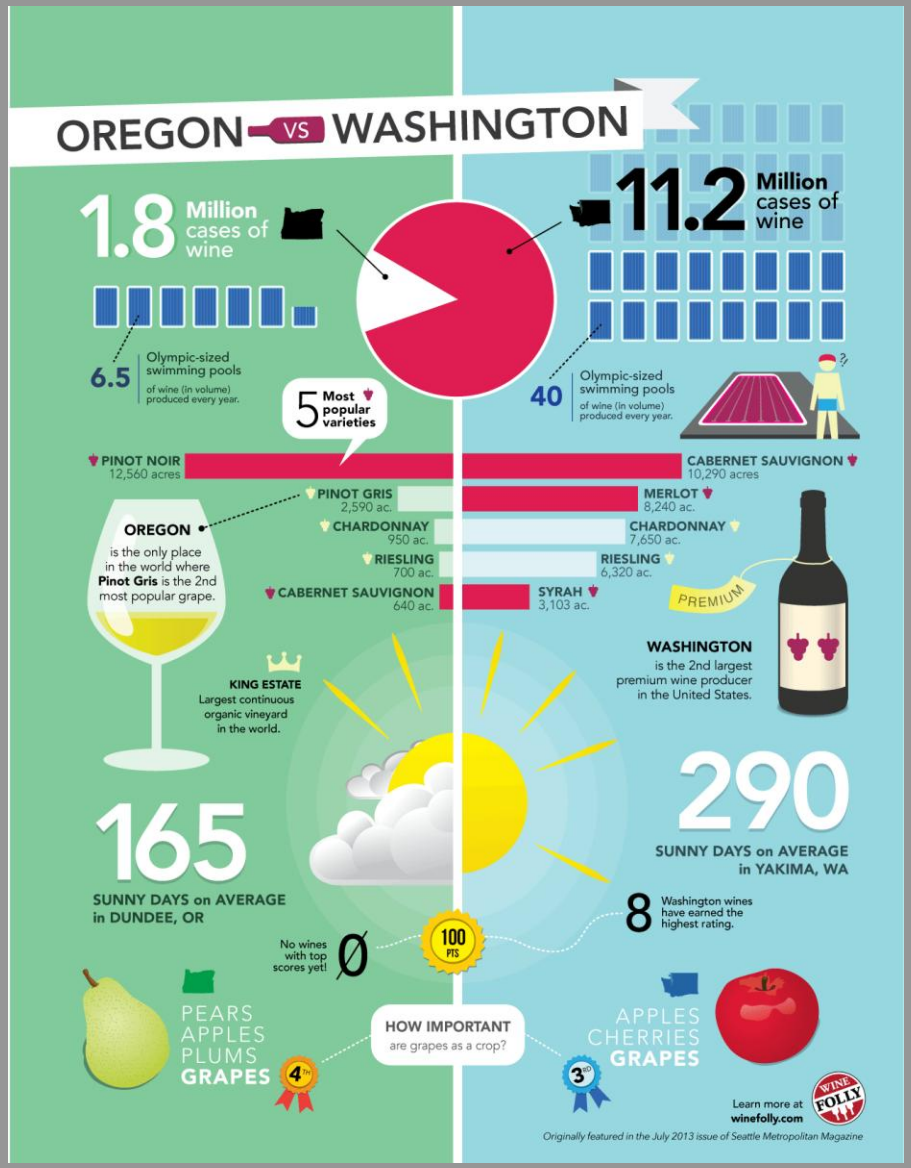
Source: Full Glass Research





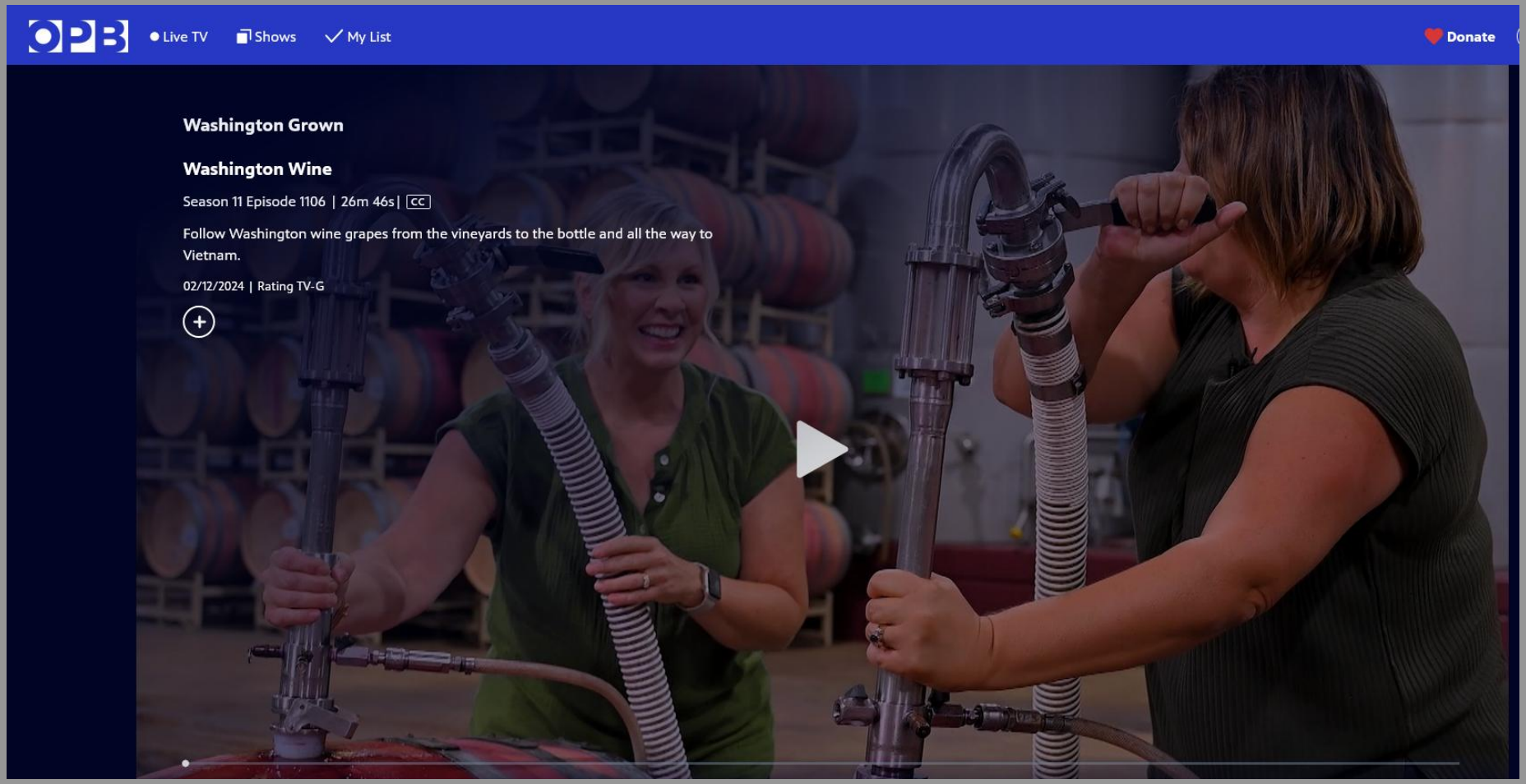
2018 report: https://industry.oregonwine.org/wp-content/uploads/OR-Econ-Impact-2018-FINAL-Report-3-19-18.pdf

OREGON vs. WASHINGTON WINE



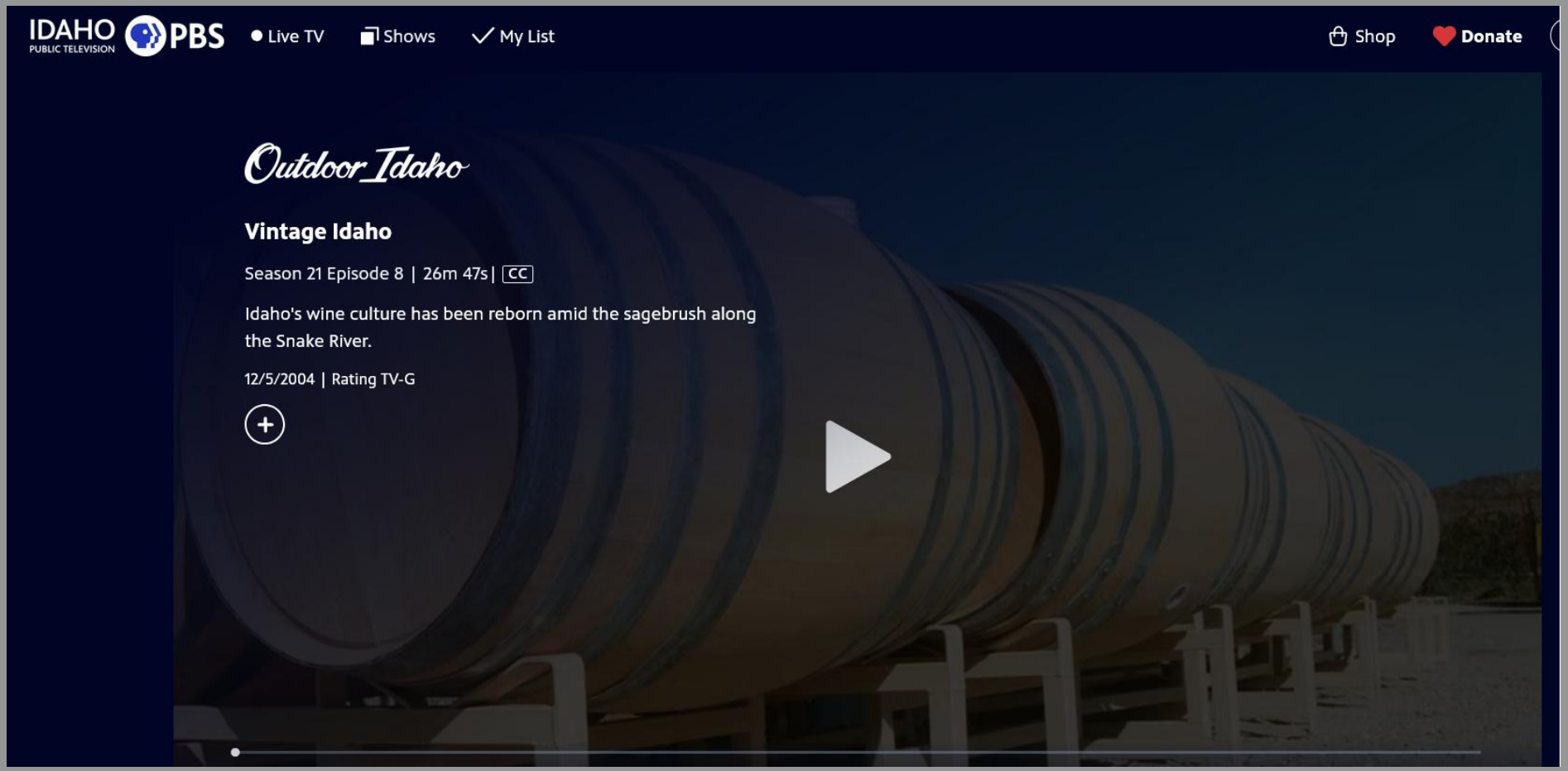
SOURCE: https://winefolly.com/update/washington-vs-oregon-wine-infographic/

WASHINGTON WINE



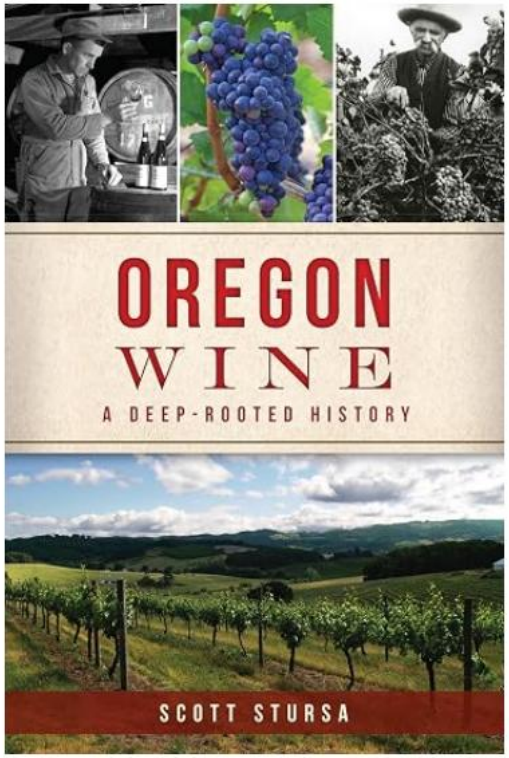
SOURCE: https://watch.opb.org/video/washington-wine-8otvzv/

IDAHO WINE



SOURCE: https://video.idahoptv.org/video/outdoor-idaho-vintage-idaho/

HISTORY OF OREGON WINE: BOOK



Oregon Wine: A Deep Rooted History (American Palate)

by Scott Stursa (Author) | Format: Paperback

4.6 ★★★★½ (30)

Part of: American Palate (137 books)

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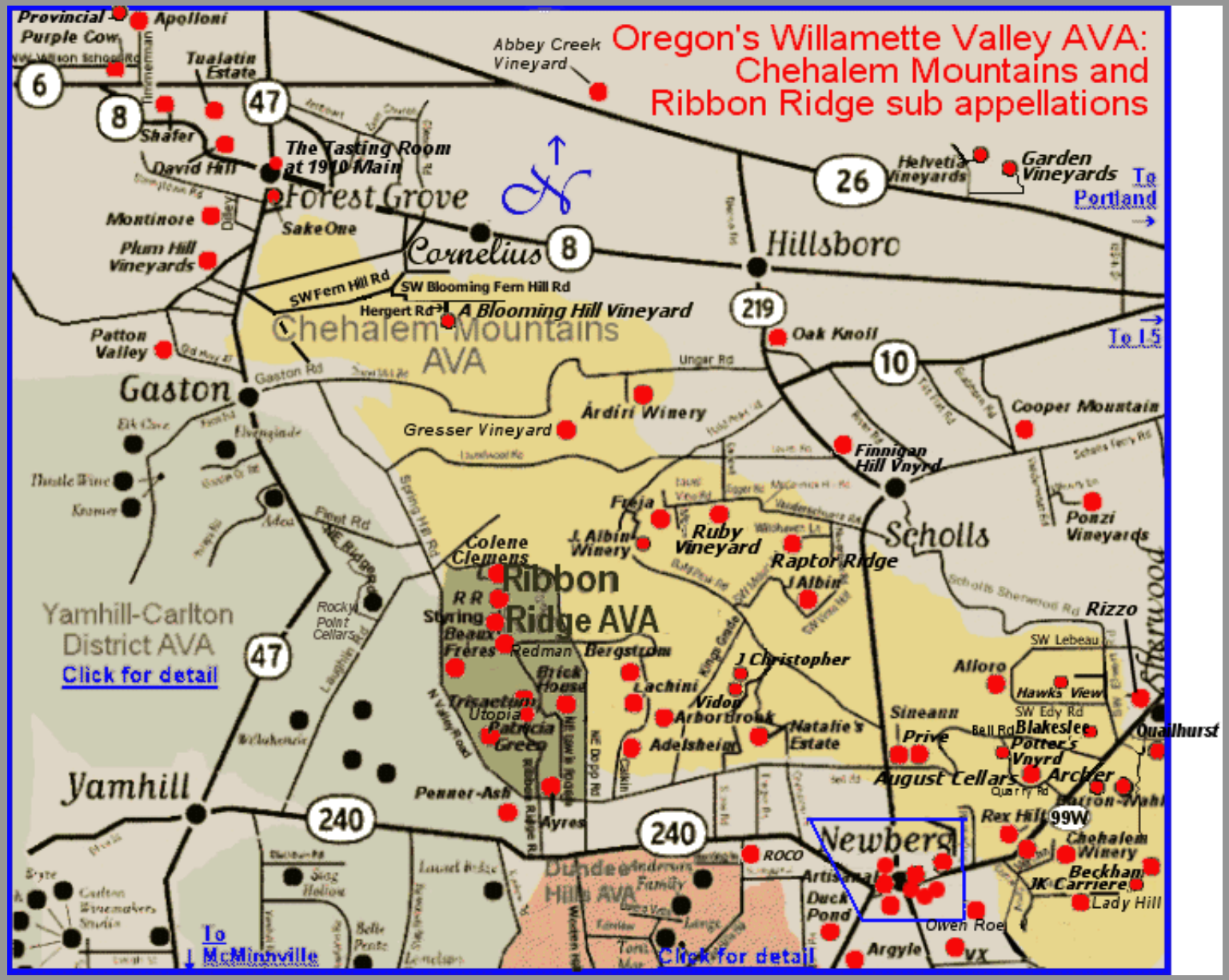
The history of winemaking in Oregon is steeped in legends so well known they've become gospel, but reality is even more fascinating. Discover the truth about who opened the state's first commercial winery and the real origin of Willamette Valley's famed Pinot Noir. Learn about Portland's daring Italian Americans, who kept home wineries during Prohibition, and the flourishing agriculture that contributed to the popularity of fruit wine. From the nineteenth-century winemakers through the modern industry that now includes more than seven hundred wineries, places like HillCrest and The Eyrie have been serving Oregonians for a half century. Uncover the forgotten roots of Oregon wine with author Scott Stursa and raise a glass to its prosperous future.

"One of the best Wine books of all time" - BookAuthority

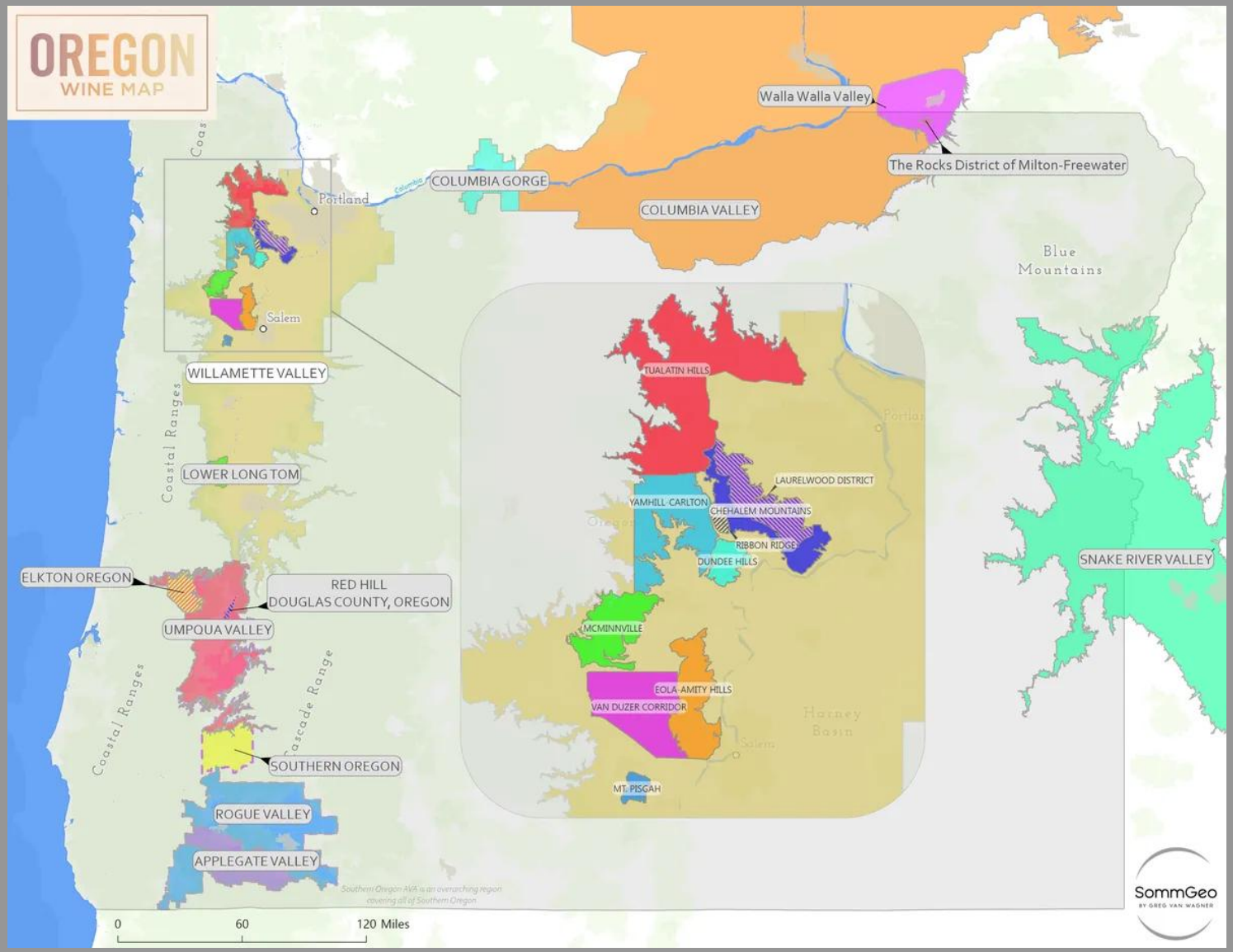
SOURCE: https://www.amazon.com/Oregon-Wine-Rooted-History-American/dp/1467140538

HISTORY/TIME-LINE: https://www.oregonwine.org/discover/oregon-wine-history/

TAKE A TOUR…THE OREGON WINERIES:



TAKE A TOUR…THE OREGON WINERIES:



SOURCE: https://sommgeo.com/wine-maps/oregon-wine-map/

WINE-MAKING…THE WINES:



















Please visit an Oregon winery: "FIGHT CC – DRINK OREGON WINE!" ☺

Thank you – what are your questions? ☺