

Cannabis Terroir

A Case for HB 3031

JOHN BERSHAW

*Assistant Professor
Geology Department
Portland State University*

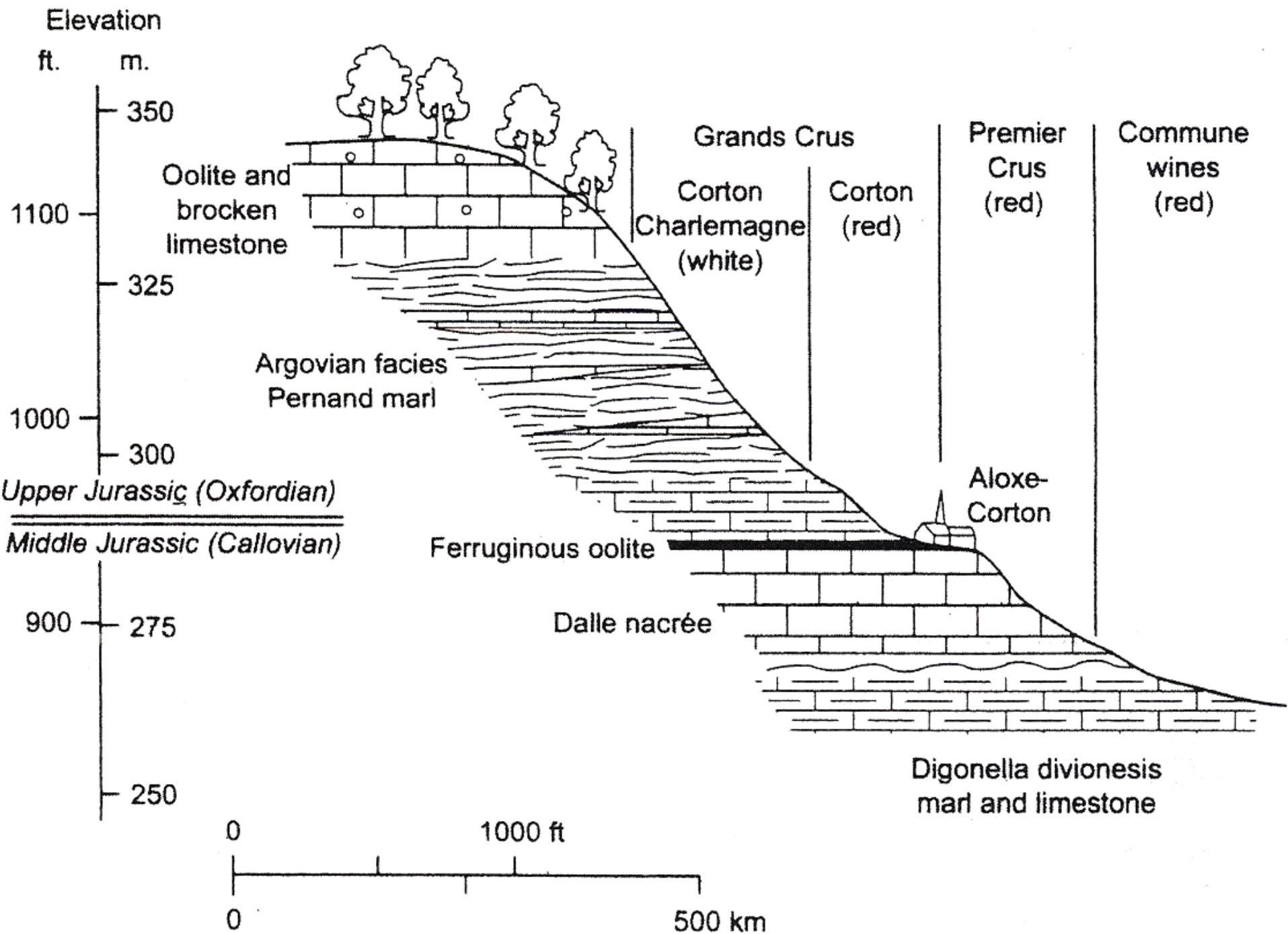
Why Terroir?

- Farmers want to know what makes their product unique
- Timing is right (legal environment)
- We have the expertise and precedence

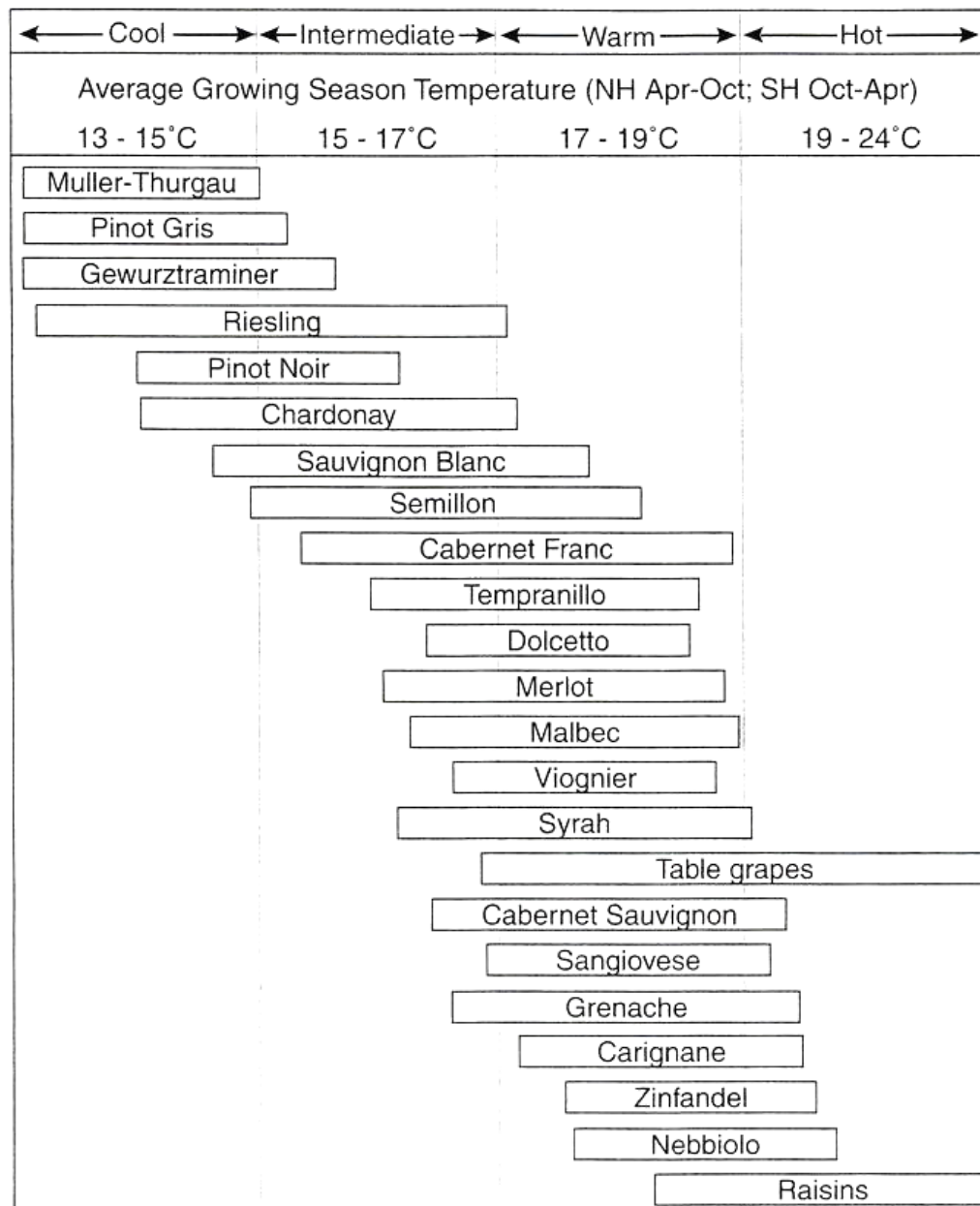


Terroir - “Taste of the place”

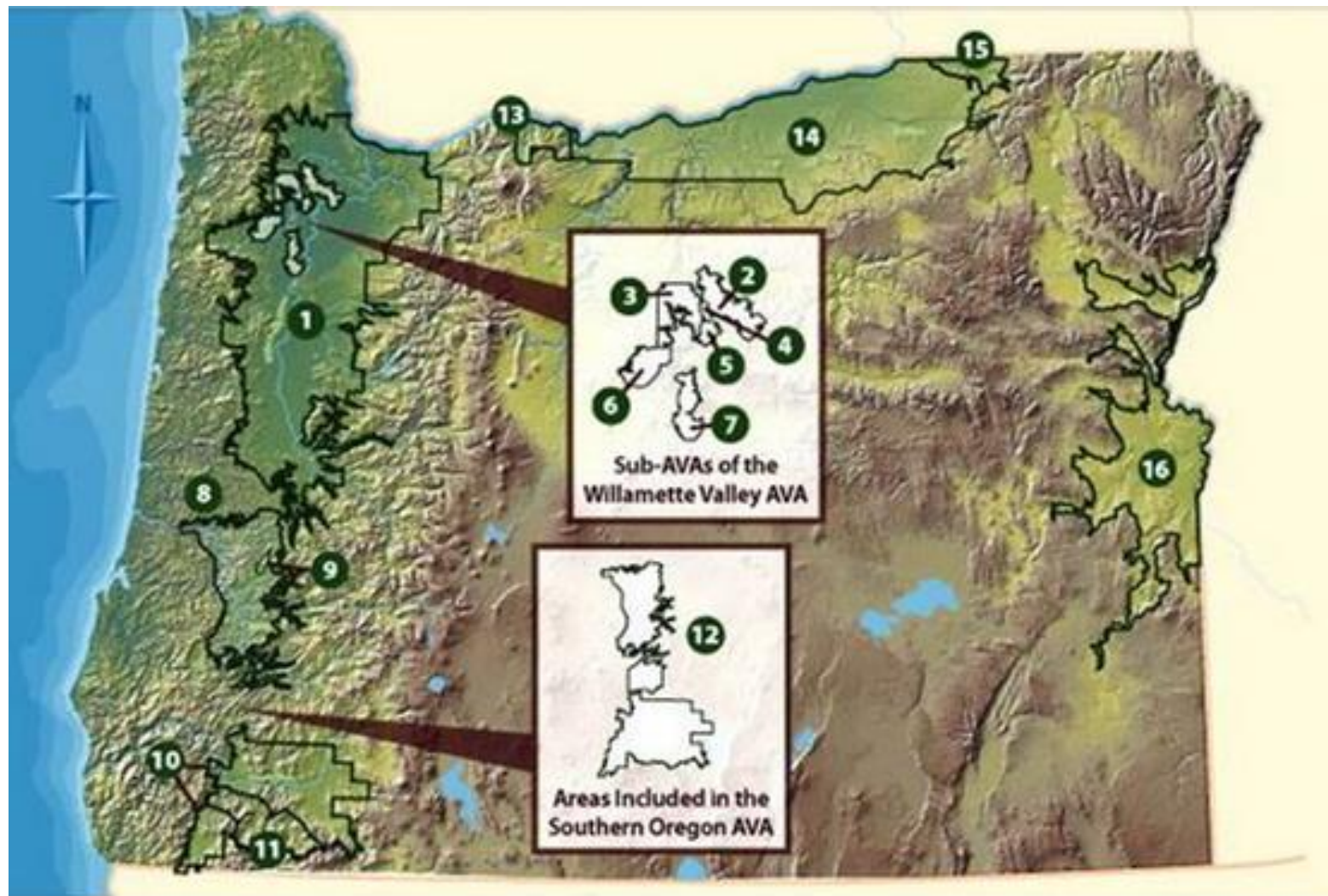
- “80% of quality character comes from vineyard, 20% from the winery” – *Dick Erath*
- Factors: geology, soil, biota, elevation, aspect, water, climate, etc.
- Terroir is critical for:
 - Coffee
 - Hops
 - Maple syrup
 - Cheeses
 - and soon...



Grapevine Climate/Maturity Groupings

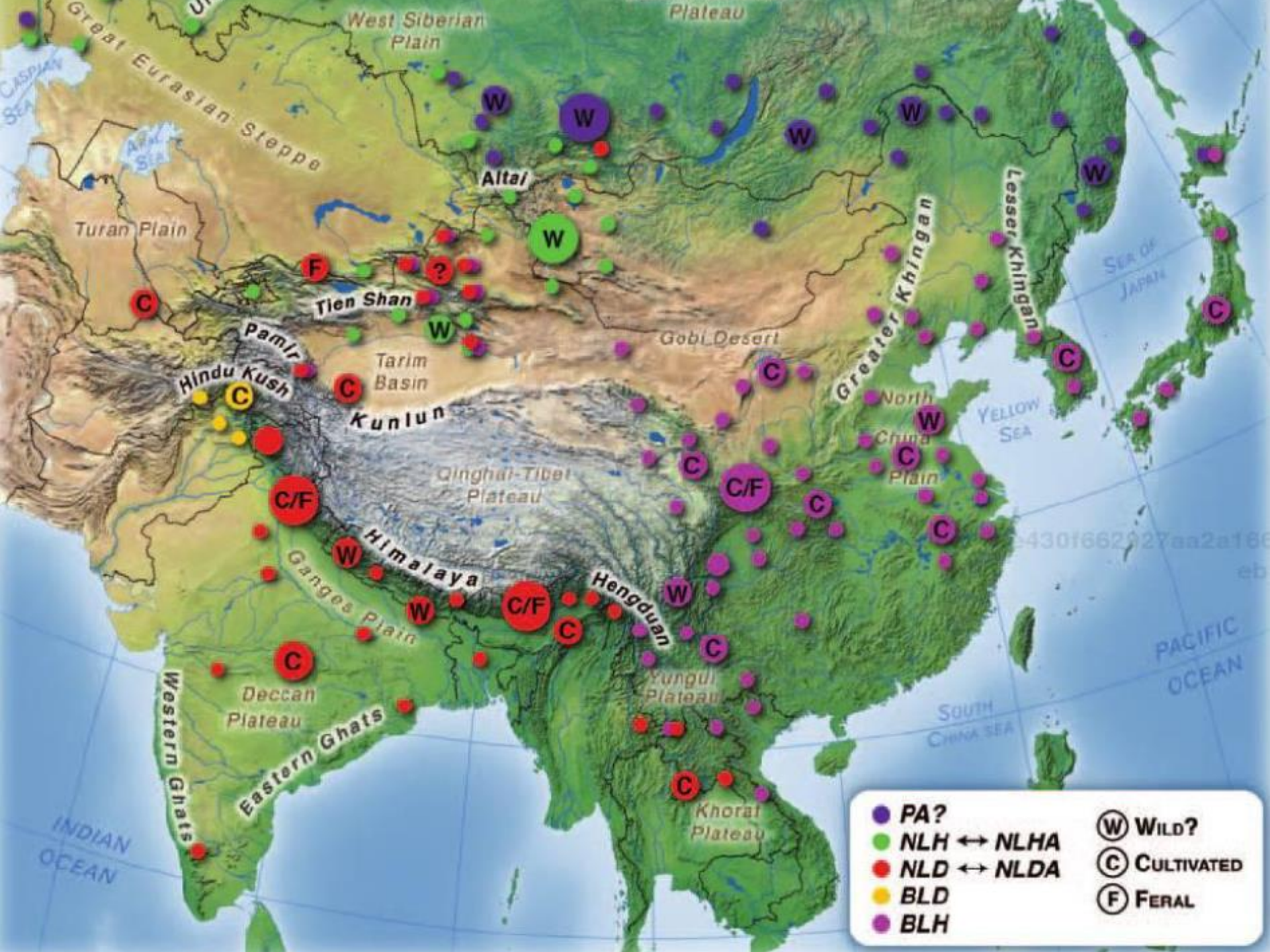


Length of rectangle indicates the estimated span of ripening for that varietal.

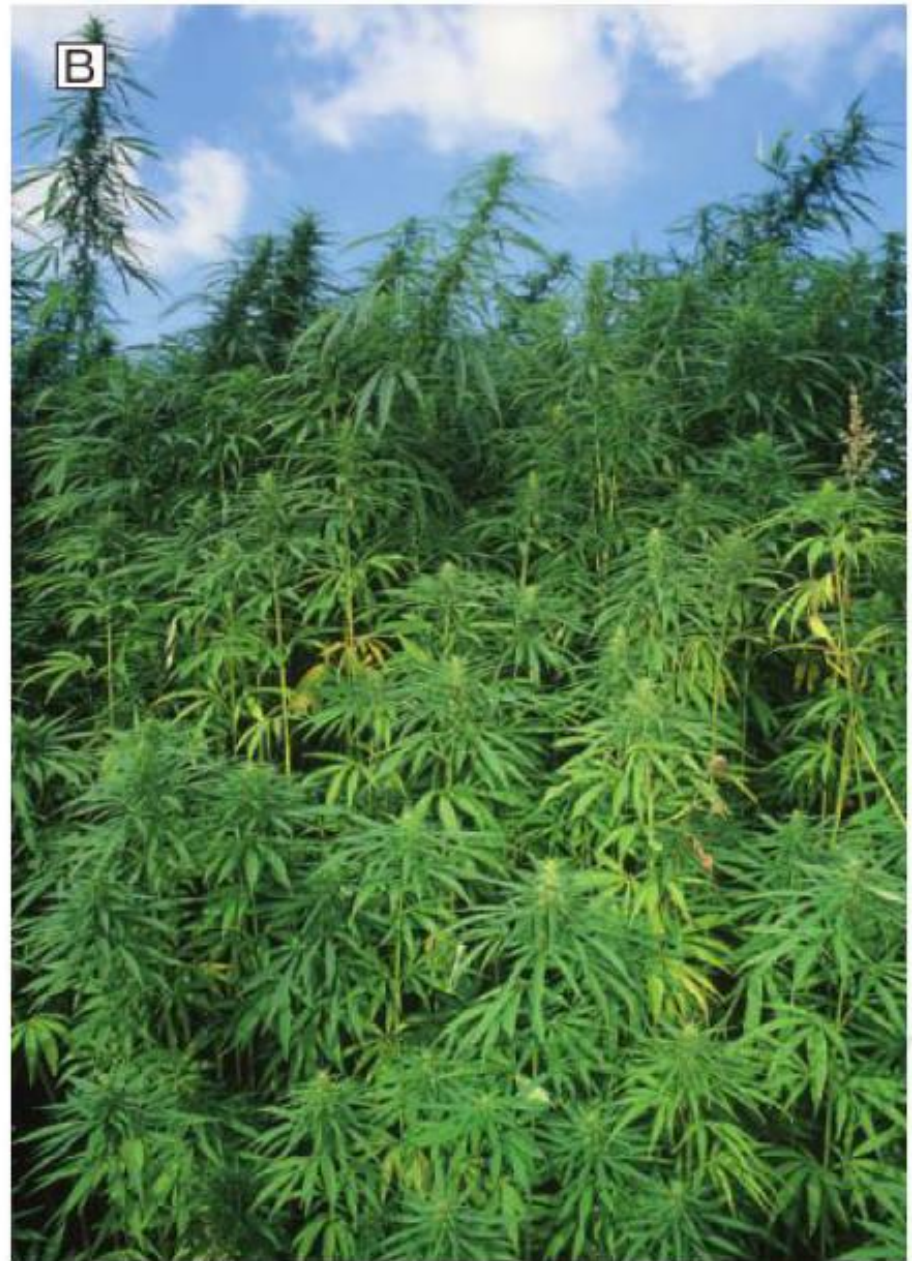


— AMERICAN VITICULTURAL AREAS OF OREGON —

1 Willamette Valley	5 Dundee Hills	9 Red Hills Douglas County	13 Columbia Gorge
2 Chehalem Mountains	6 McMinnville	10 Rogue Valley	14 Columbia Valley
3 Yamhill-Carlton District	7 Eola-Amity Hills	11 Applegate Valley	15 Walla Walla Valley
4 Ribbon Ridge	8 Umpqua Valley	12 Southern Oregon	16 Snake River Valley



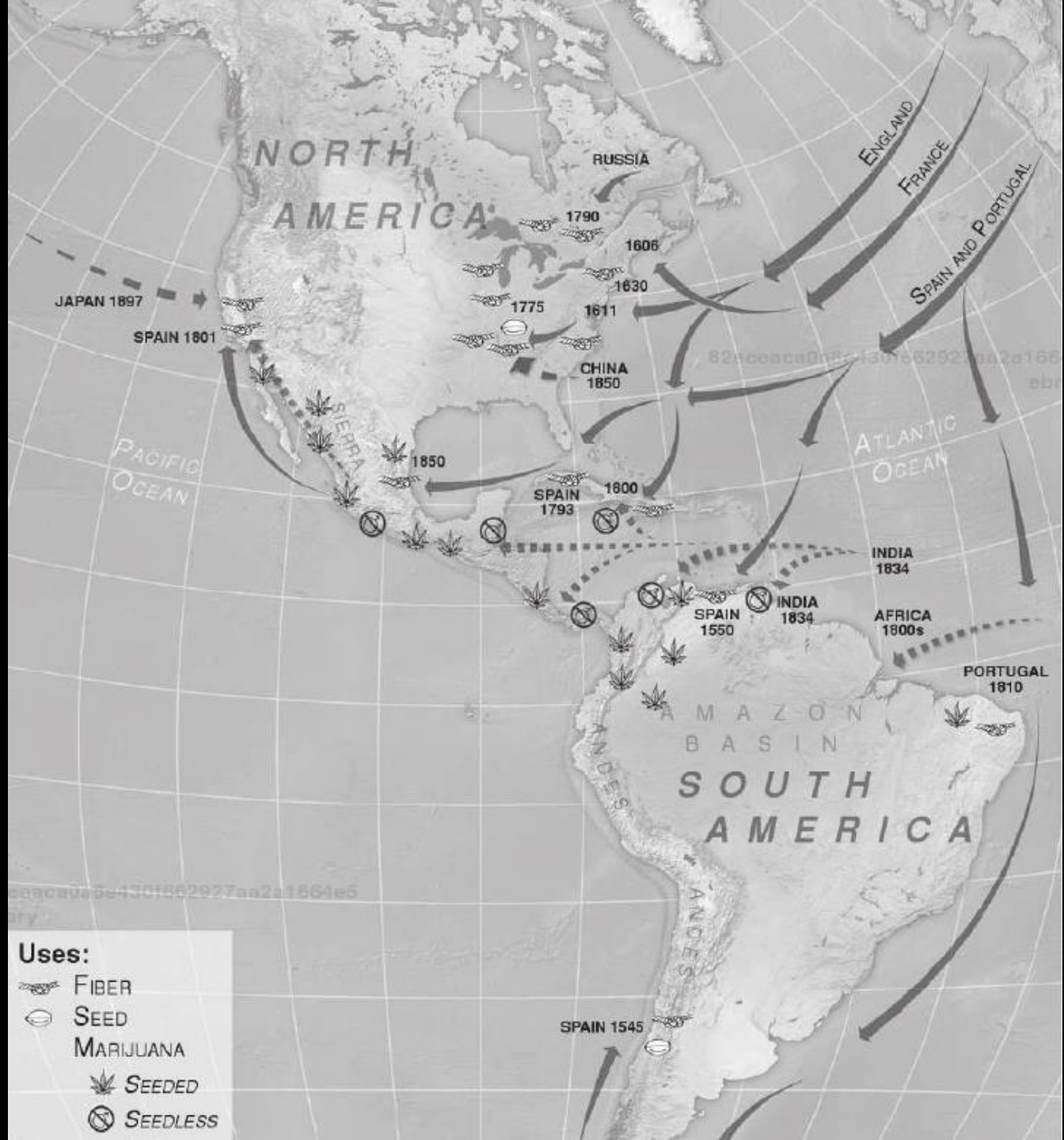
- PA?
- NLH ↔ NLHA
- NLD ↔ NLDA
- BLD
- BLH
- W WILD?
- C CULTIVATED
- F FERAL



*A: Central Asian NLHA (C. sativa spontanea); B: Netherlands NLH (C. sativa sativa)
C: Yunnan, China BLH (C. indica chinensis)*



FIGURE 14. Horses played a key role in the dispersal of both humans and *Cannabis* throughout Eurasia. The horse above is feeding on a large feral hemp plant in the Altai Mountains of eastern Central Asia (photo ©Shelly Benoit).



NORTH AMERICA

RUSSIA

ENGLAND

FRANCE

SPAIN AND PORTUGAL

JAPAN 1897

SPAIN 1801

1790

1606

1630

1775

1611

CHINA 1850

PACIFIC OCEAN

ATLANTIC OCEAN

1850

SPAIN 1793

1800

INDIA 1834

INDIA 1834

AFRICA 1800s

PORTUGAL 1810

AMAZON BASIN

SOUTH AMERICA

SPAIN 1545

Terroir Research

Driving questions:

- How does terroir affect the chemistry (and quality) of plants?
- Outdoor: What are the optimum locations for cultivation?
- Indoor: What are the optimal growing conditions (light, water, soil nutrients, etc.)?

Current project:

- Multiple farms (indoor and outdoor) in diverse environments with the same strain (clones)
- Analyze plant chemistry growth rates
- Establish scientific basis for appellations

Published, scientific research benefits everyone!