OREGON WINE

SOUTHERN OREGON GEOLOGY & SOILS

OREGON WINE BOARD

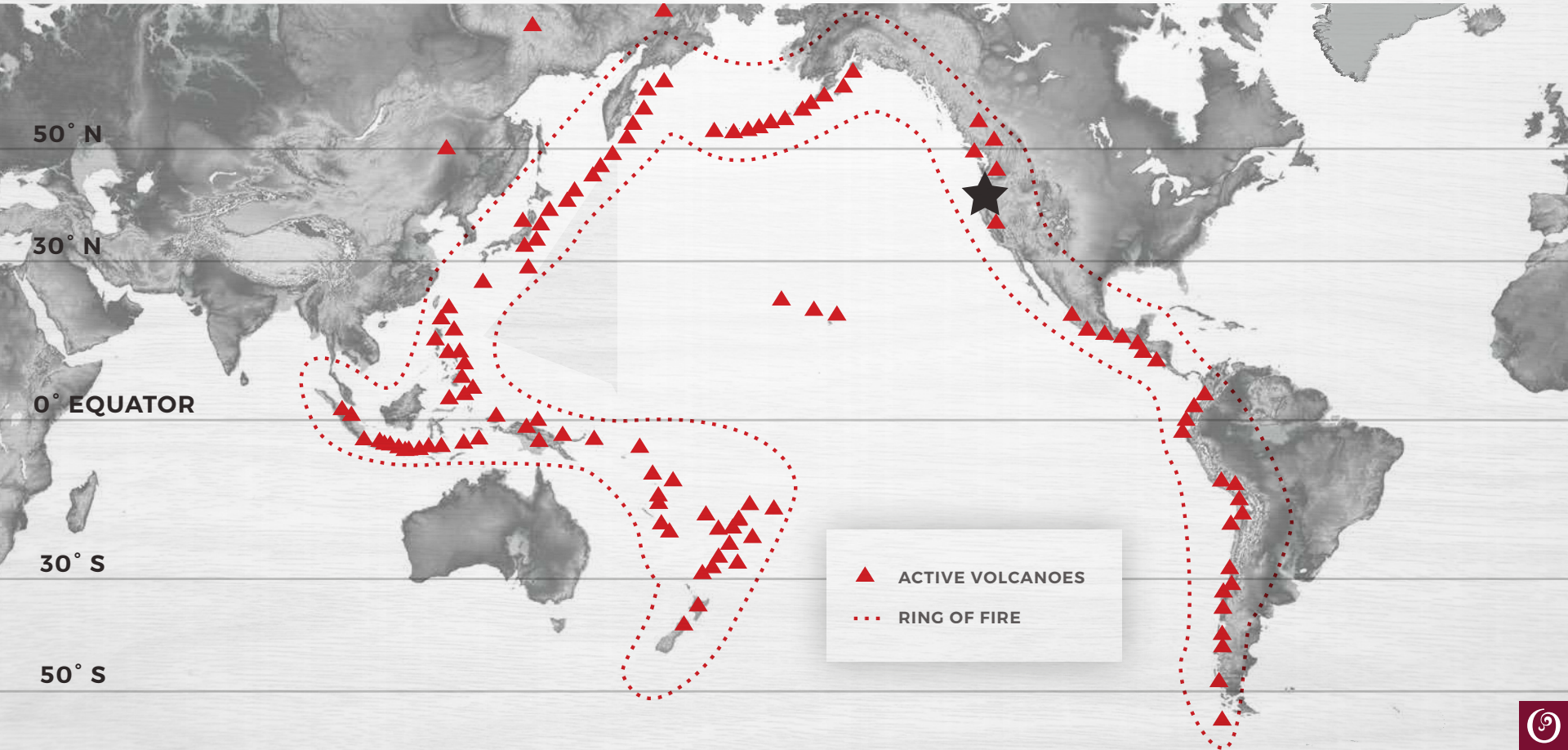
UPDATED 4.1.17

OPEN A BOTTLE OF OREGON WINE AND TASTE A 200-MILLION-YEAR-OLD STORY.

Quite a feat for humble grapes that fought for existence in infertile soils. But in Oregon, we've always thought that struggle builds character, and our wines have that in spades.

SETTING THE SCENE

Oregon resides in the “Ring of Fire,” an area in the basin of the Pacific Ocean that is home to 75% of the world's volcanoes and 90% of the world's earthquakes.



DRAMATIC EVENTS FORM SPECTACULAR LAND

Oregon's position in the "Ring of Fire" has made for a magnificent, violent geological history that has carved dramatic landscapes and yielded some of the most diverse growing regions in the world.

CRATER LAKE NATIONAL PARK

Image: Travel Oregon

SMITH ROCK STATE PARK

Image: Christian Heeb

COLUMBIA RIVER GORGE

Image: Satoshi Eto

PAINTED HILLS, JOHN DAY FOSSIL BEDS NATIONAL MONUMENT

Image: Christian Heeb

Southern Oregon's predominant grapegrowing soils are the result of millions of years of geological history.

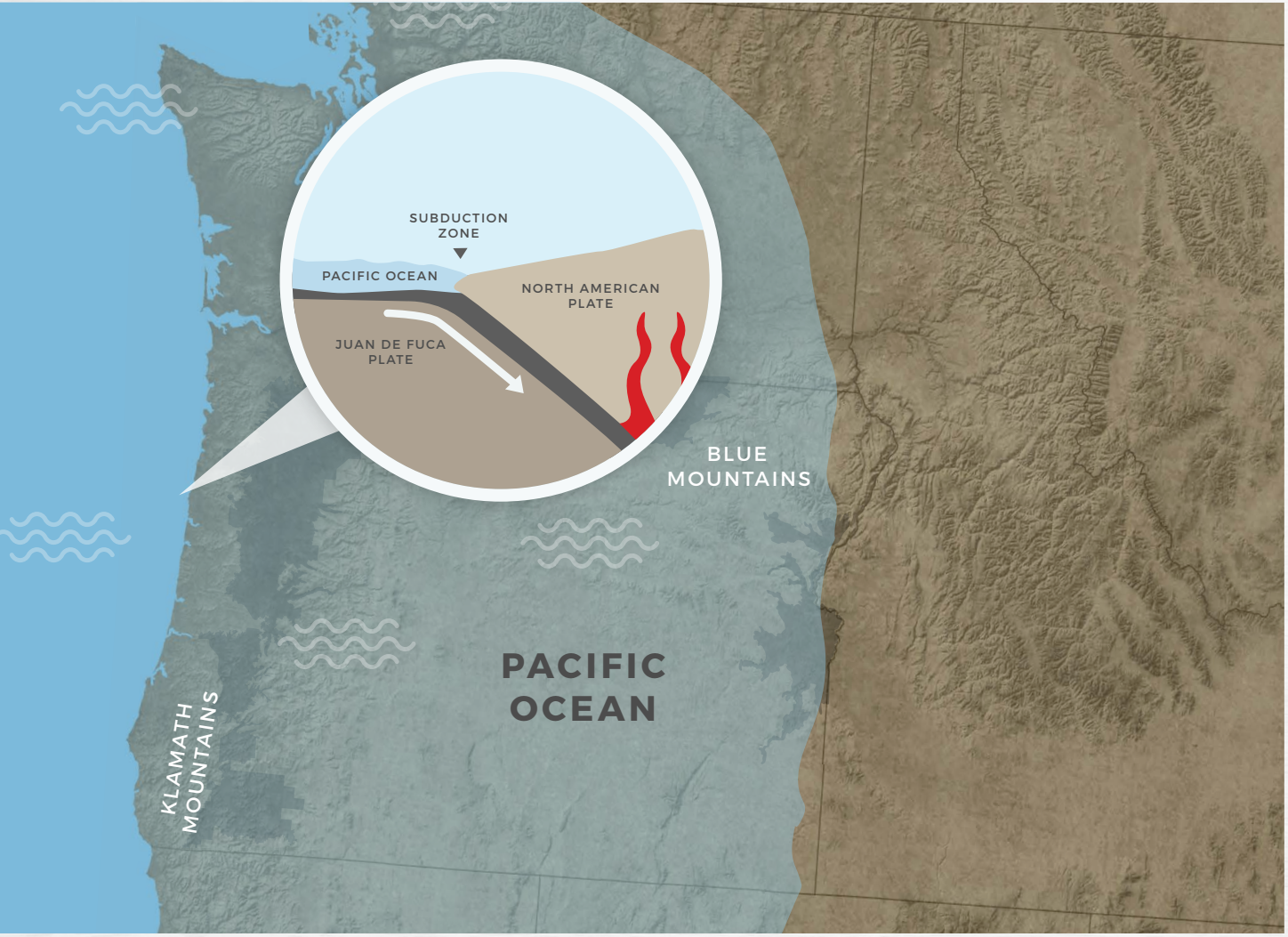
Marine Sedimentary Bedrock

Volcanic

- Cascade Mountain Sediments
- Silezia Terrane

Stream Sediments

Images: Oregon Wine Press



200 MILLION YEARS AGO

PACIFIC OCEAN COAST REACHES IDAHO

- The Juan de Fuca tectonic plate begins to gradually subduct under the North American tectonic plate
- Ocean islands and pieces of the ocean bottom are "stuck" onto the West Coast as accreted terrane, creating Oregon's oldest mountains and gradually adding land mass to what is now Oregon

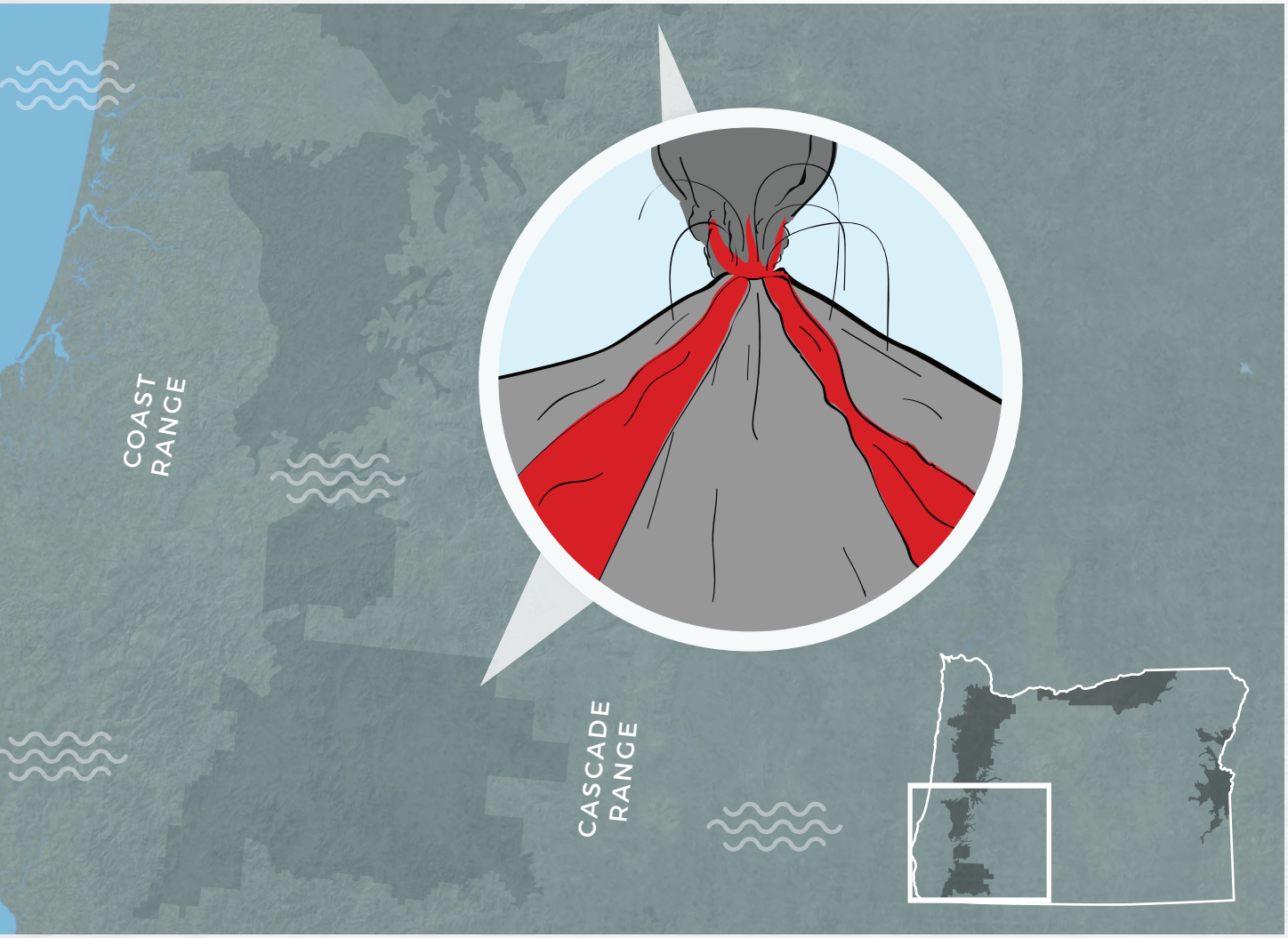
MARINE SEDIMENTARY BEDROCK

Produced from ocean islands and pieces of ocean "stuck" onto West Coast as tectonic plates subducted

Higher clay content than marine sedimentary soil, resulting in a deeper red hue

Clay composition requires vines to struggle and grow very deep to reach the water table

Image: Oregon Wine Press



50-10 MILLION YEARS AGO

VOLCANIC ERUPTIONS IN THE CASCADE MOUNTAINS

- Volcanoes in the Cascade Mountain Range erupt
- Lava covers the mountains and weathers into rich volcanic soil in what is now the northern Rogue Valley

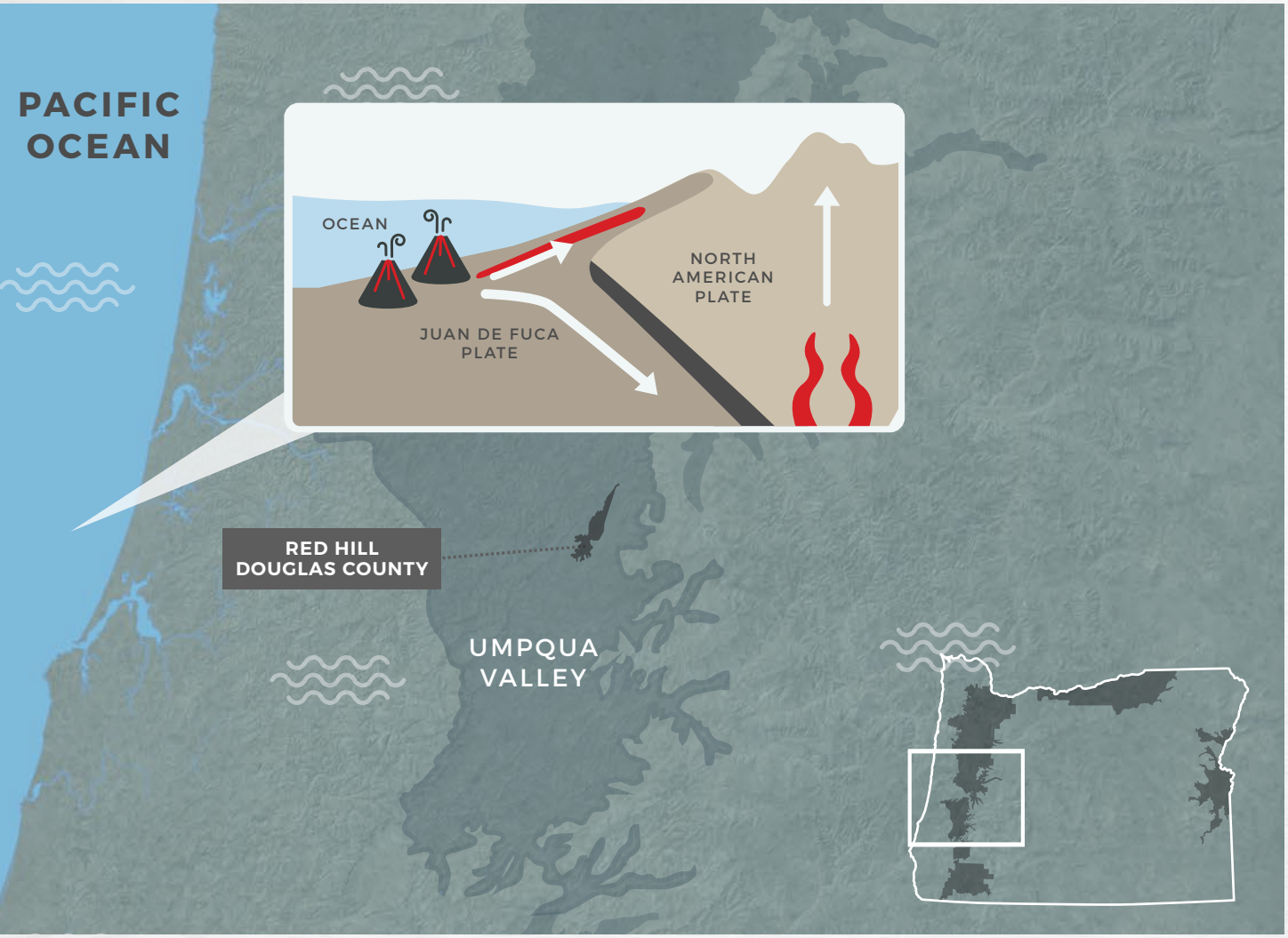
VOLCANIC SOIL: CASCADE MOUNTAIN SEDIMENTS

Produced from the weathering of volcanic soil from the eruption of the Cascade Mountains

Soil is less red than other volcanic soil in Southern Oregon

Very clay-rich and retains a lot of water

Image: Oregon Wine Press



45-35 MILLION YEARS AGO

VOLCANIC SOIL UPLIFTS IN THE UMPQUA VALLEY

- Volcanic sediment from an underwater eruption uplifts over time due to plate subduction
- Creates a pocket of volcanic soil called Silezia Terrane, defining what is now the Red Hill Douglas County AVA

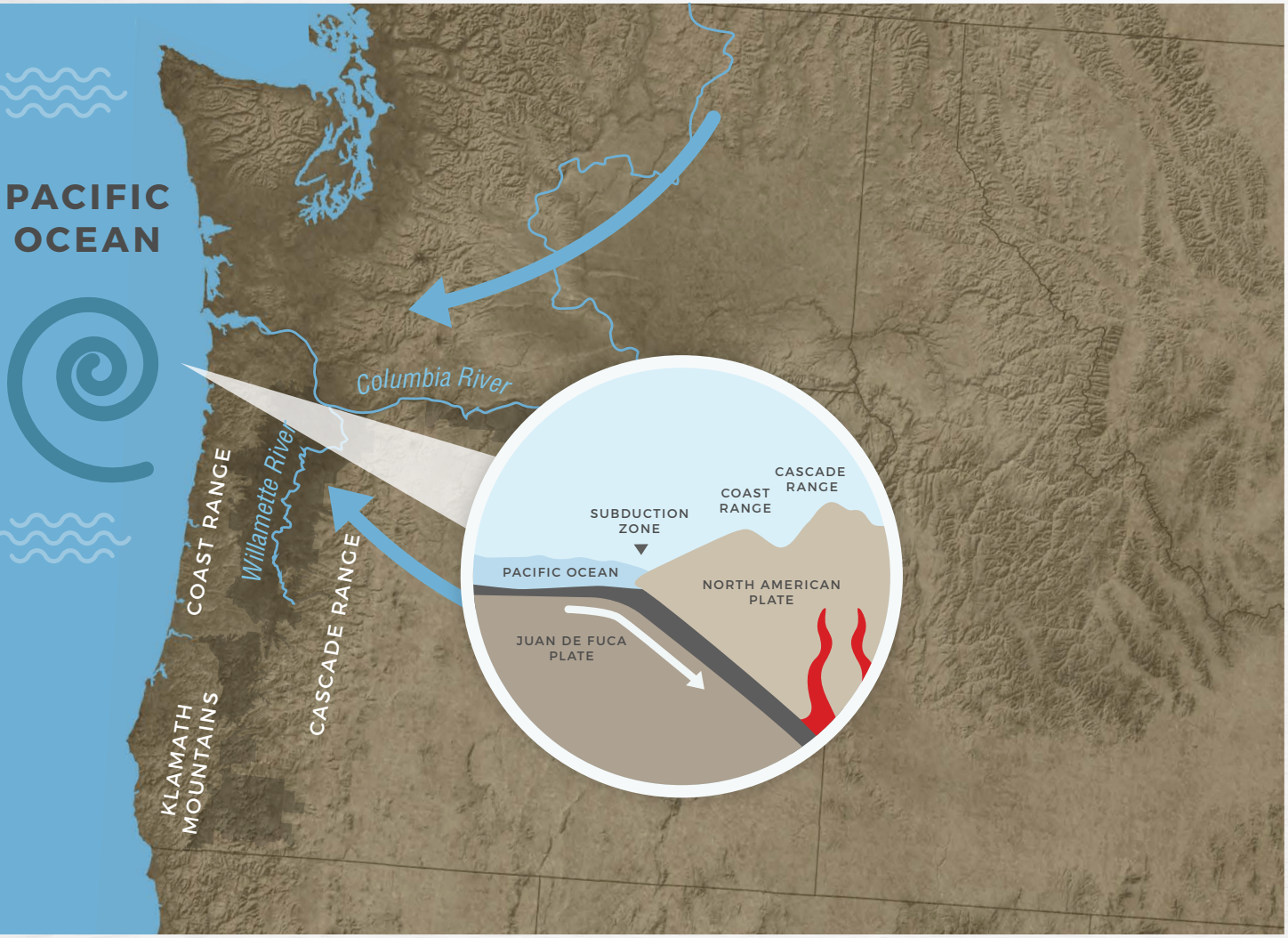
VOLCANIC SOIL: SILEZIA TERRANE

Produced in Southern Oregon from ancient underwater volcanic basalt being uplifted due to plate subduction

High in clay content and iron, resulting in a very distinguishable red hue

Offers fewer nutrients than marine sedimentary soil

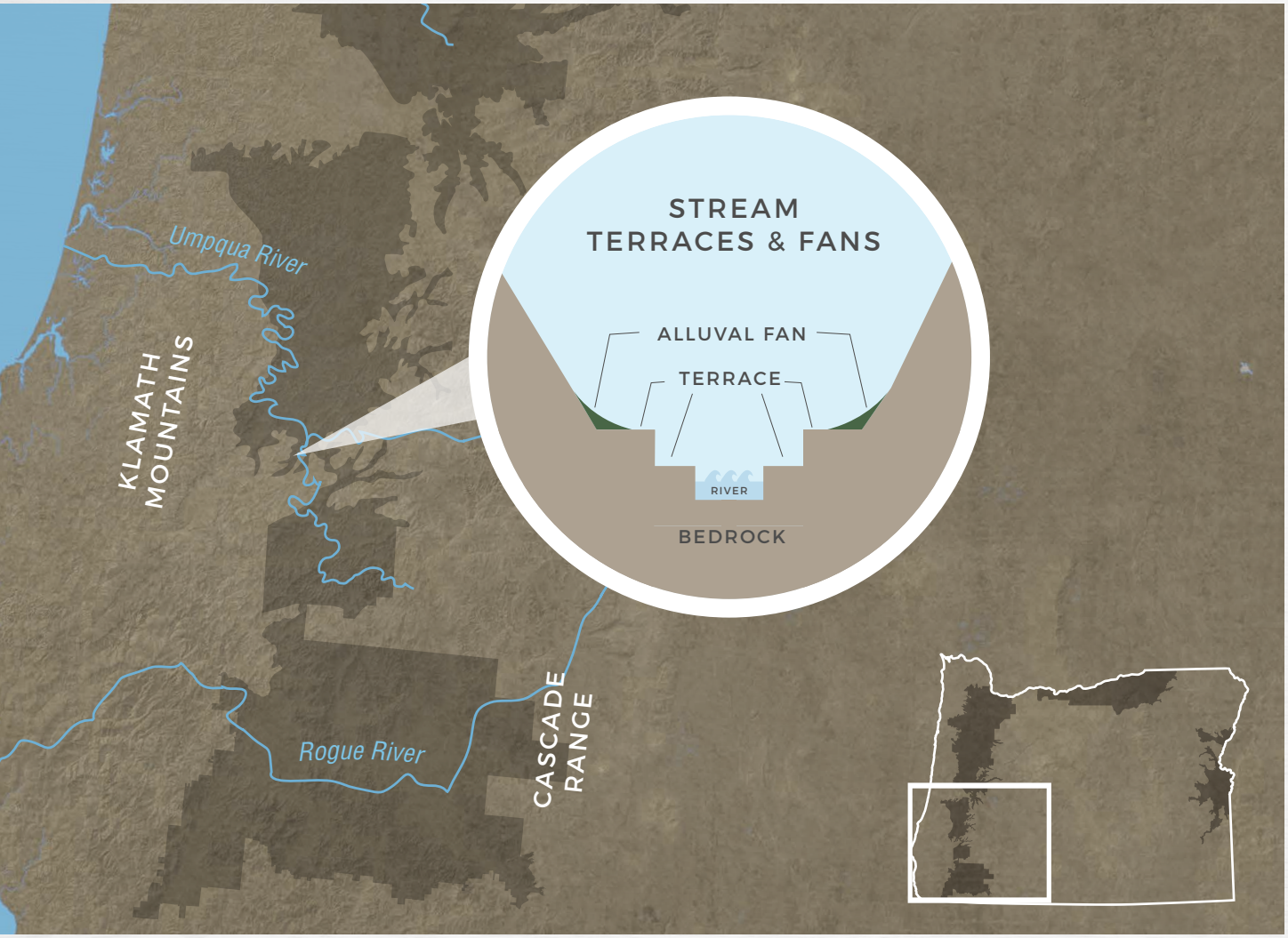
Image: Oregon Wine Press



16-10 MILLION YEARS AGO

TECTONIC PLATES SHIFT

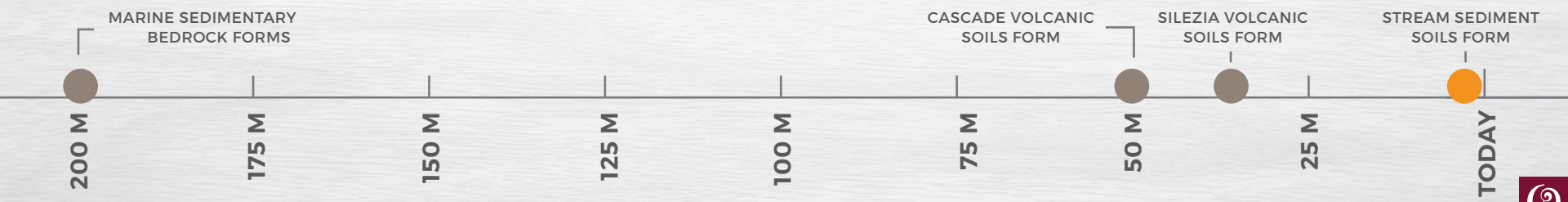
- The Juan de Fuca tectonic plate continues to subduct under the North American plate, uplifting coastal sediments to form the Coast Range above water
- Cascade Mountain Range forms inland above water from the accumulation of volcanic rock
- Oregon accumulates enough landmass due to accreted terrane to be completely above water



2 MILLION YEARS AGO

STREAM TERRACES AND ALLUVIAL FANS BEGIN TO FORM

- Ancient rivers shift and alter their paths often, leaving flat, weathered surfaces behind called stream terraces
- Alluvial fans begin forming around major rivers as sediments from former hillside streams move down the hillside and deposit on river terraces



STREAM SEDIMENTS

Composed of silt, sand and gravel

Sediments are sorted by the velocity of the former stream; faster-moving water leaves behind larger sediments such as gravel

Soil drains very well

Image: Oregon Wine Press