Soils Test

Total of 50 points

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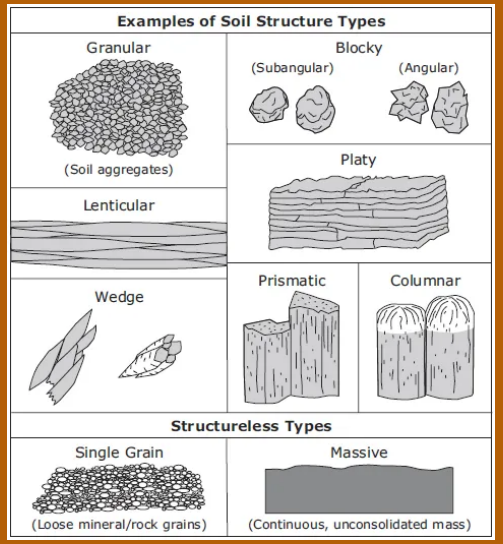
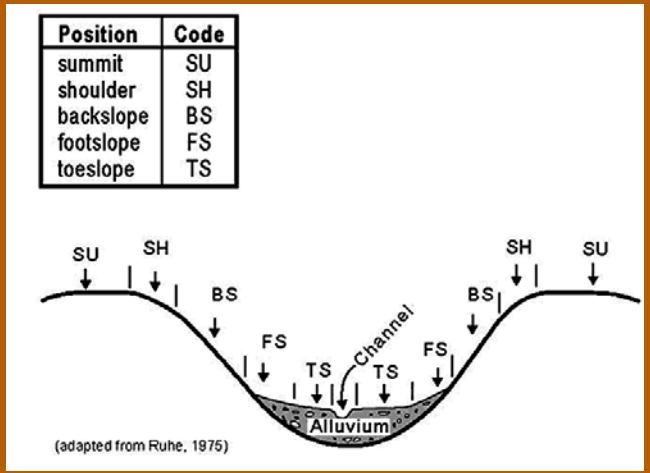
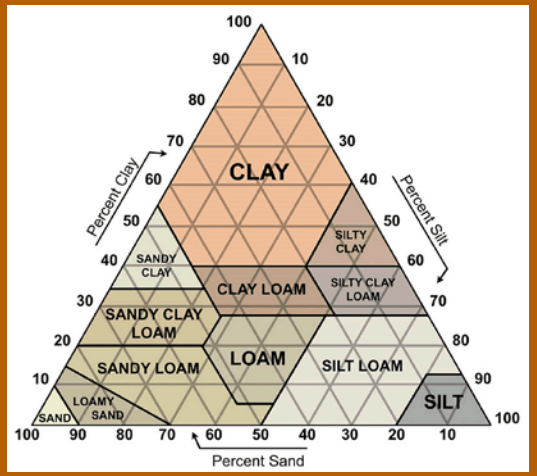
Here’s a link to the Soil and Land Use resources

https://www.oregonenvirothon.org/soil-and-land-use

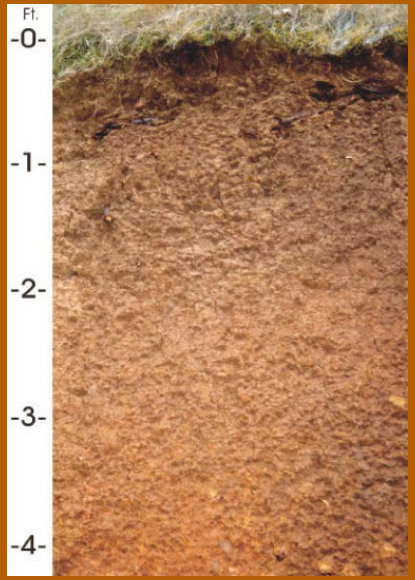
You’ll find the Soil and Land Use test manual, soil texturing guide, and other links

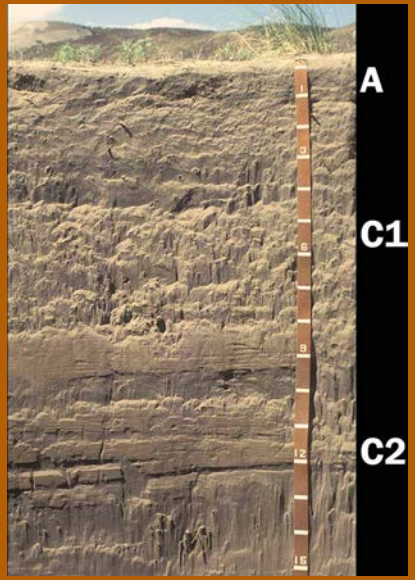






Which soil would drain faster after a rainstorm?



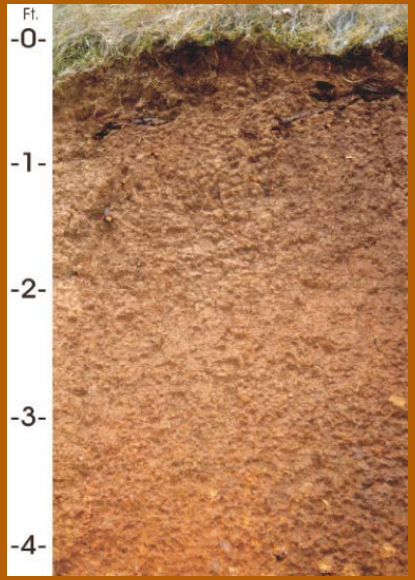


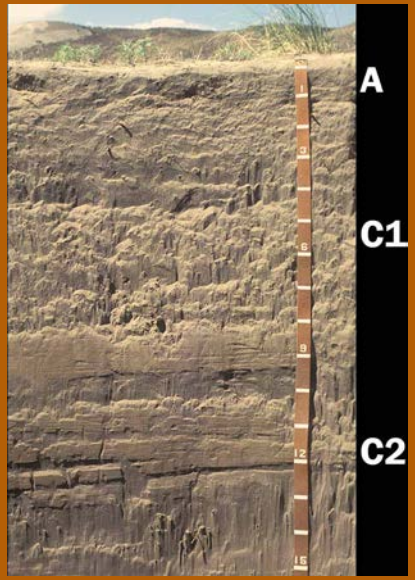
A) Ultisol (Jory), silty clay loam texture

B) Entisol (Quincy), fine sand texture

Answer: **B, Entisol with a fine sand texture, (2 points)**

Which soil would be easier to compact when wet?





A) Ultisol (Jory), silty clay loam texture

B) Entisol (Quincy), fine sand texture

Answer: **A, and ultisol with silty clay loam texture, (2 points)**

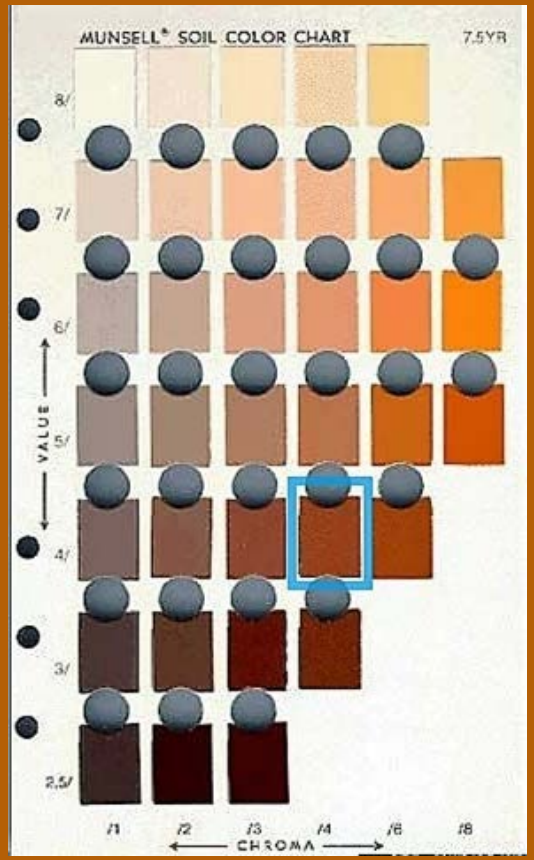
Watch this 4 minute video to learn about soil color

https://youtu.be/N6doCSP8T7I

(Hint: page 16 here)

What is the Munsell color of the chip outlined in blue to the right?

Answer: **7.5YR 4/4, (2 points)**



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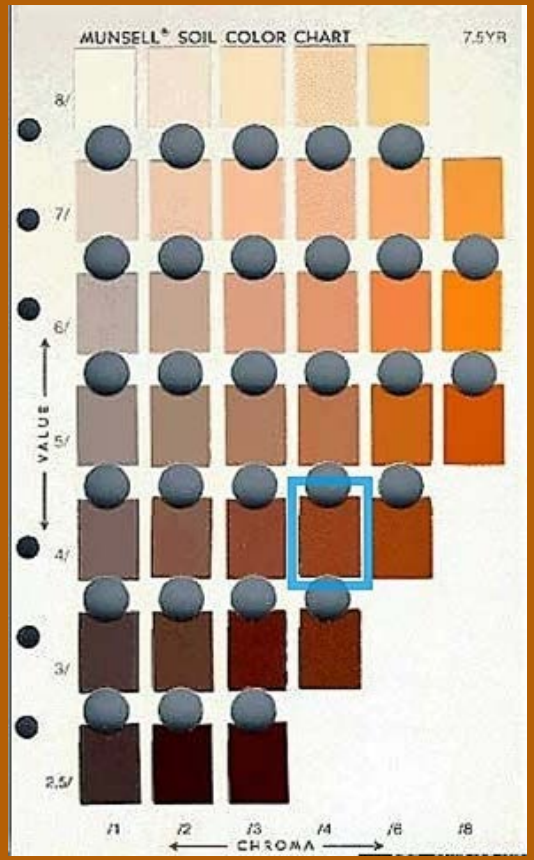
(Hint: page 16 here)

What do soils with lower values (darker soils) generally indicate about organic matter content?

Answer: **darker soils typically have higher organic matter content compared to lighter soils, (4 points)**



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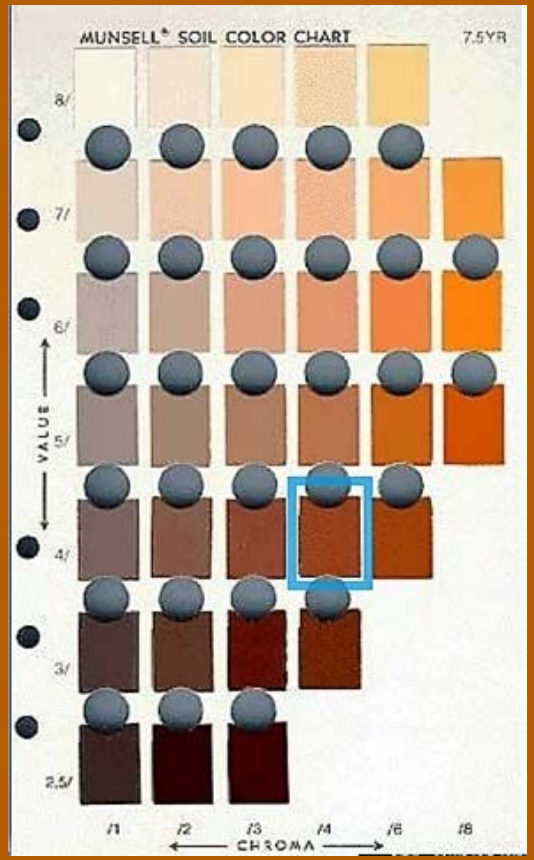
(Hint: page 16 here)

What strong influences soil color? (2 points)

Answer: Minerals in the parent material strongly influence soil color.



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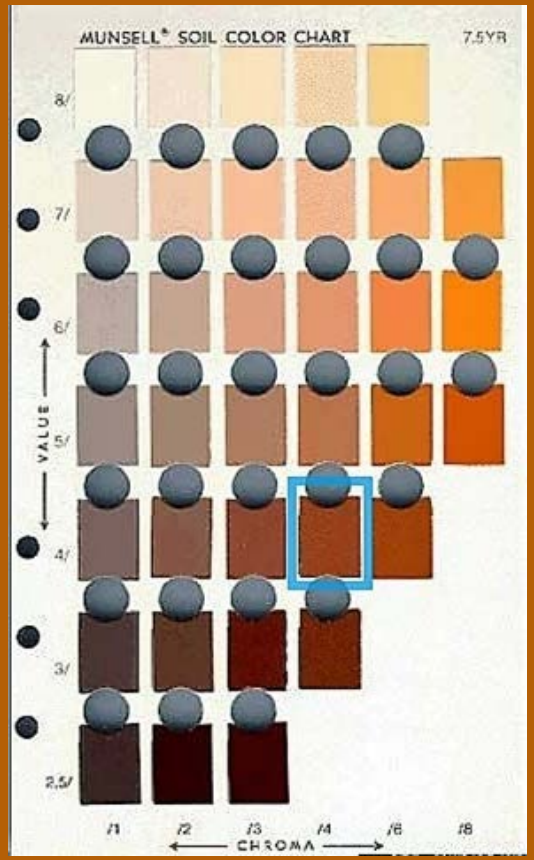
(Hint: page 16 here)

Name two parent materials in Oregon. (2 points)

Answer: bedrock, human-altered material, volcanic deposits, wind-blown loess, organic matter, stream-deposited alluvium, cataclysmic lacustrine deposits, Ash, glacial deposits, marine deposits, residuum, and urban



Watch this 3 minute video to learn about permafrost

https://www.youtube.com/watch?v=wxABO84gol8

Why is it important to understand what happens when permafrost thaws?

Answer: **Thawing permafrost is important to climate change because it might release additional greenhouse gases (GHGs). (4 points)**

Watch this 3 minute video to learn about permafrost

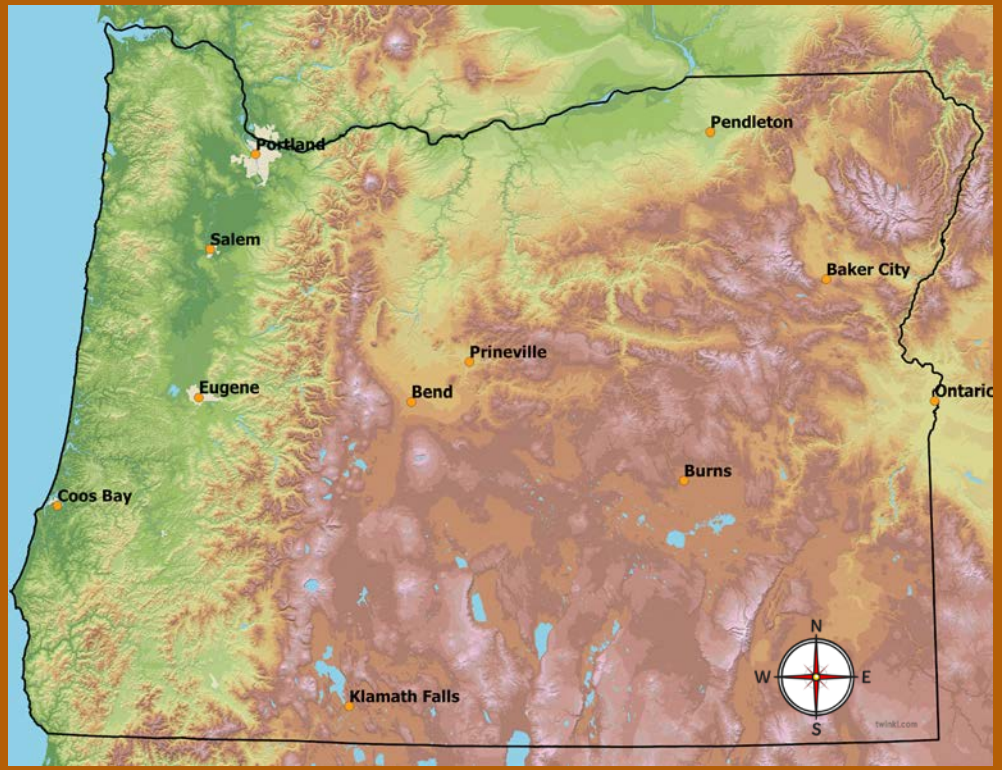
https://www.youtube.com/watch?v=wxABO84gol8

In the video they mention if the permafrost thaws there may be increased plant growth. How does growing plants on the surface affect the carbon balance in the ecosystem? (2 points)

Answer: **As plants grow they will take in some of the carbon dioxide that will be released from the thawing soil.**

Which cardinal direction has the lowest elevation in Oregon?

A) North
B) South
C) East
D) West

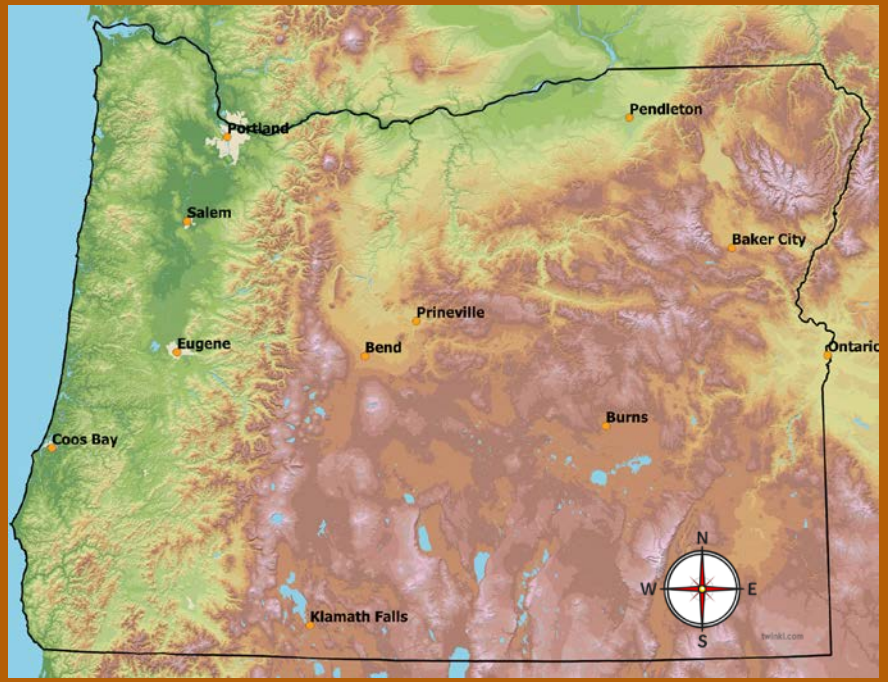


Answer: **West (2 points)**

Mountainous regions may have different soil types depending on cardinal direction (aspect). What is the difference between south-facing and north aspects?(4 points)

(Hint: see page 8 here)

Answer: **south-facing aspects receive more sunlight and are drier and warmer than north aspects, which hold snow longer into the spring because they are wetter and cooler. This causes north aspects to have deeper soils due to higher vegetation productivity and reduced erosion.**

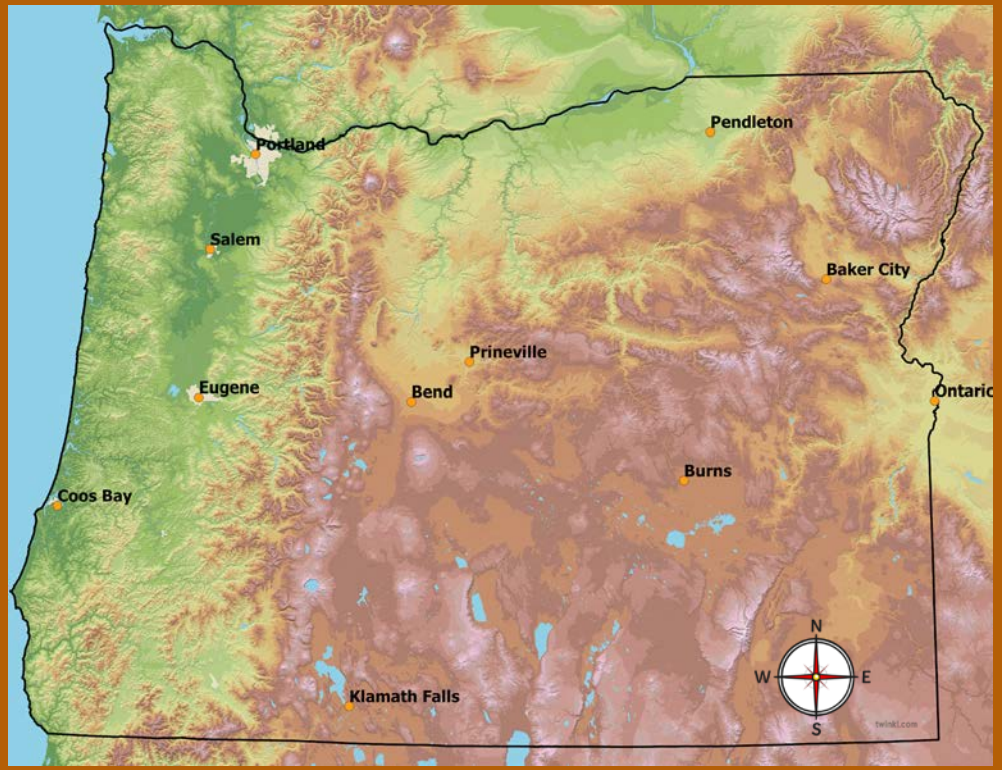


Which soil-forming factor is represented by this map?

(Hint: see page 5 here)

A) CLimate
B) Organism
C) Relief
D) Parent material
E) Time

Answer: **Relief (2 points)**

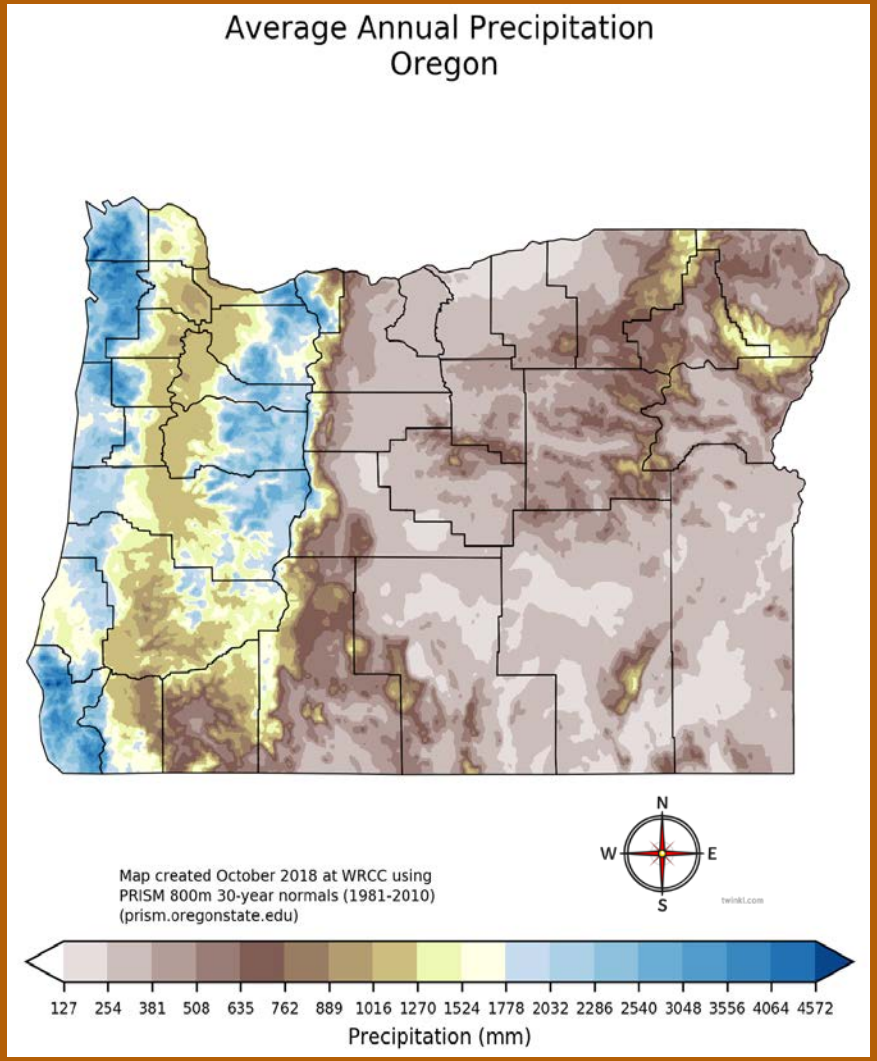


Which cardinal direction has the lowest rainfall?

(Hint: see page 5 to 6 here)

A) North
B) South
C) East
D) West

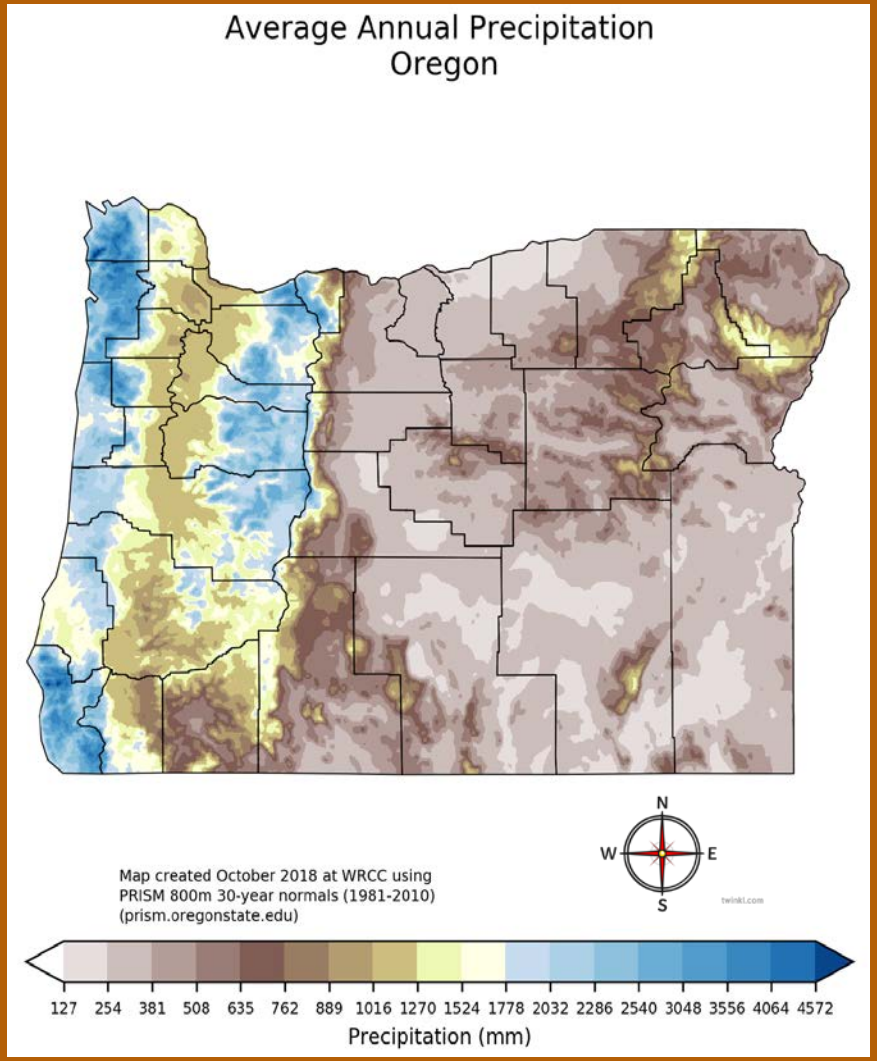
Answer: **East (2 points)**



How does rainfall affect soil properties?

(Hint: see page 5 to 6 here)

Answer: **Rainfall can affect a soil's pH, organic matter content, biological activity, and salt content (4 points for any of these answers)**

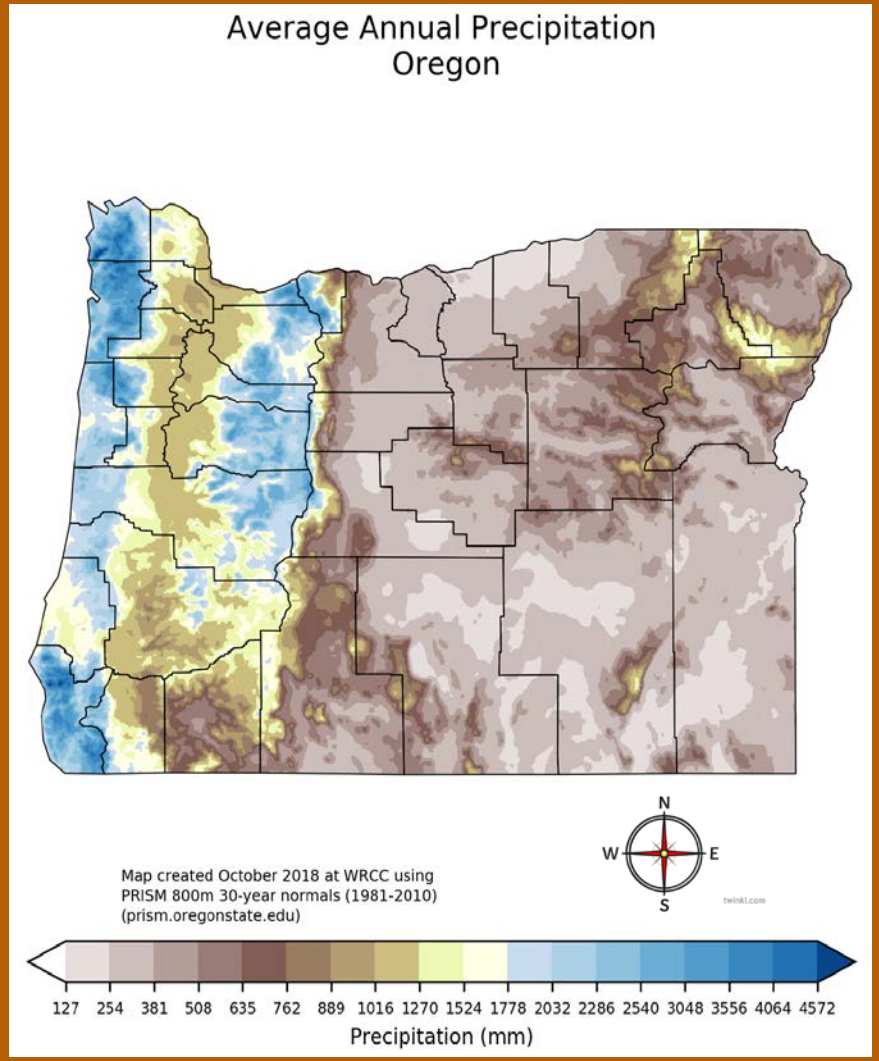


Which soil-forming factor is represented by this map?

(Hint: see page 5 here)

A) CLimate
B) Organism
C) Relief
D) Parent material
E) Time

Answer: **A) Climate (2 points)**



14. The climate in Oregon differs depending mainly on elevation, topography, and the orographic (rain shadow) effect of the Cascade Range. The five soil temperature regimes recognized in the state for soil mapping are:

(5 points) (Hint: see page 6 here)

1. Mesic
2. Cryic
3. Frigid
4. Isomesic
5. Isofrigid

Watch this video to learn about soil structure

https://www.youtube.com/watch?v=UKT9RBIkeKc

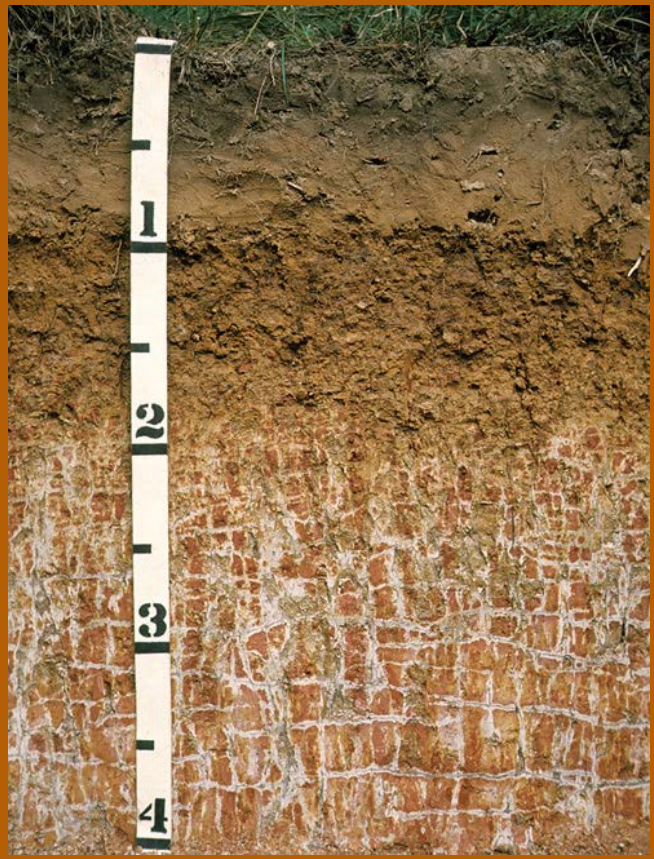
What is the soil structure type in this soil pit at 3 units deep? (Hint: see page 15 here)

A) Platy

B) Granular

C) Massive

Answer: **A) Platy (2 points)**

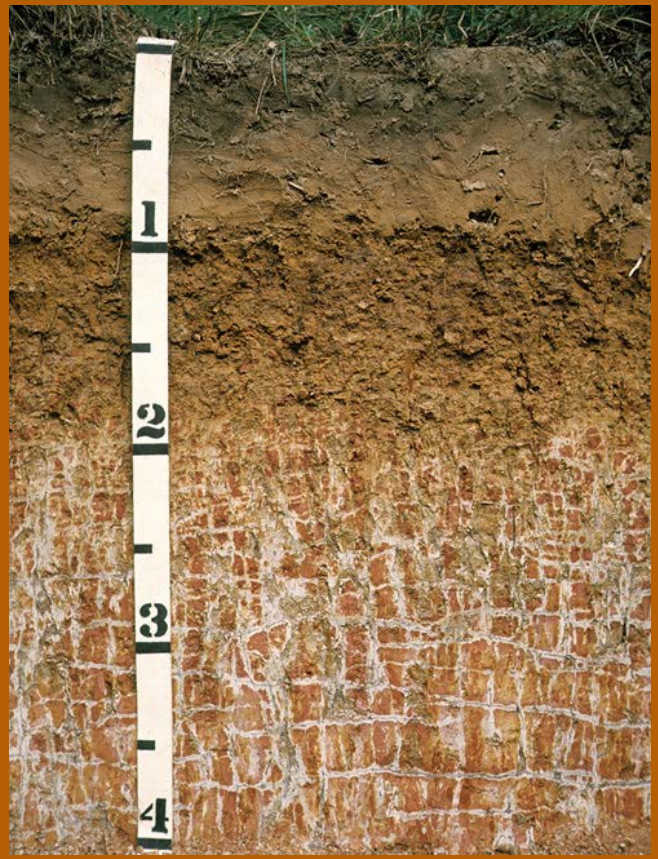


What soil tool might help detect a dense layer present in this soil pit?

(Hint: see page 24 here)

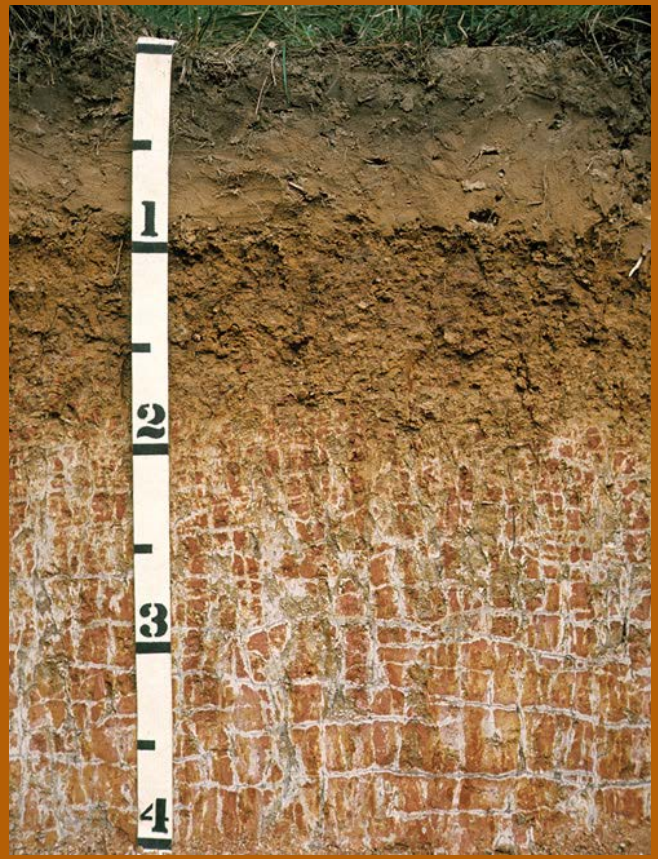
A) clinometer
B) knife
C) pump

Answer: **B) knife (2 points)**



What does a dense layer mean for rainwater falling on the profile?

Answer: **A dense layer can restrict water flowing down through a soil profile. This can lead to runoff and/or erosion instead of infiltration into and percolation down the soil profile (4 points for mention of infiltration, percolation, erosion, or runoff)**

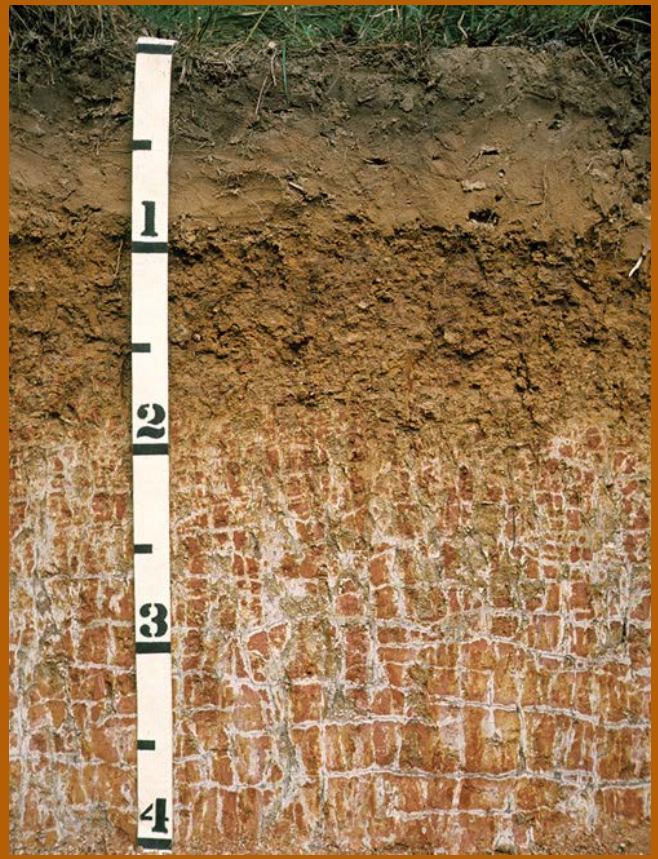


What soil process might have lead to this dense layer?

(Hint: see page 4 here)

A) Addition
B) Loss
C) Translocation
D) Transformation

Answer: **translocation- the white substance is likely calcium carbonate or salt that has moved down the profile (5 points)**



End of Soils Test!

Team total _____/ 50 points

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