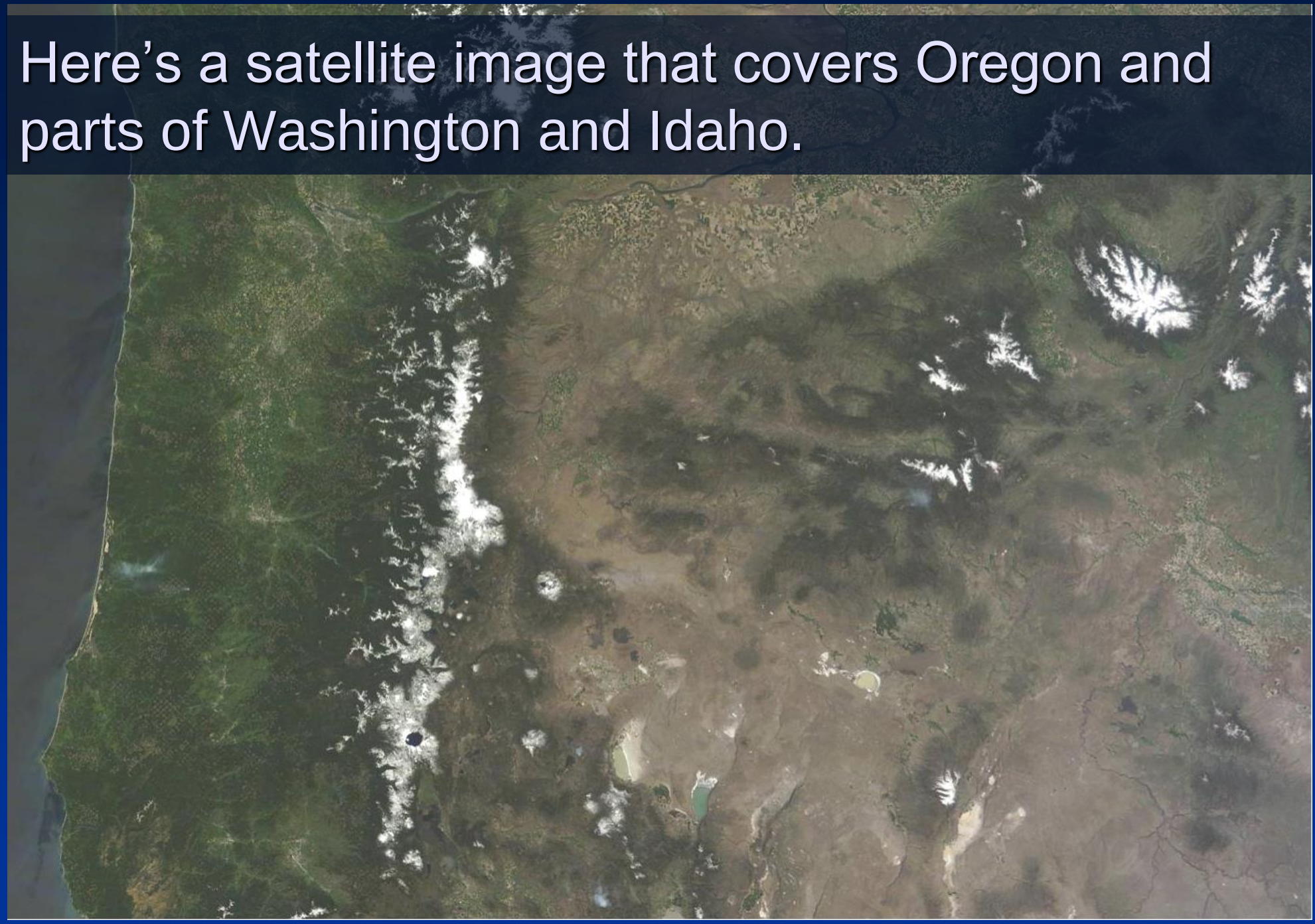
Lab 7: Weather – Oregon Climate

- This presentation will introduce the physiographic provinces of Oregon.
  - We will see that Oregon can be divided into physiographic zones based on topography, bedrock geology, and climate.
- We will also look at key features that influence Oregon's weather and climate.

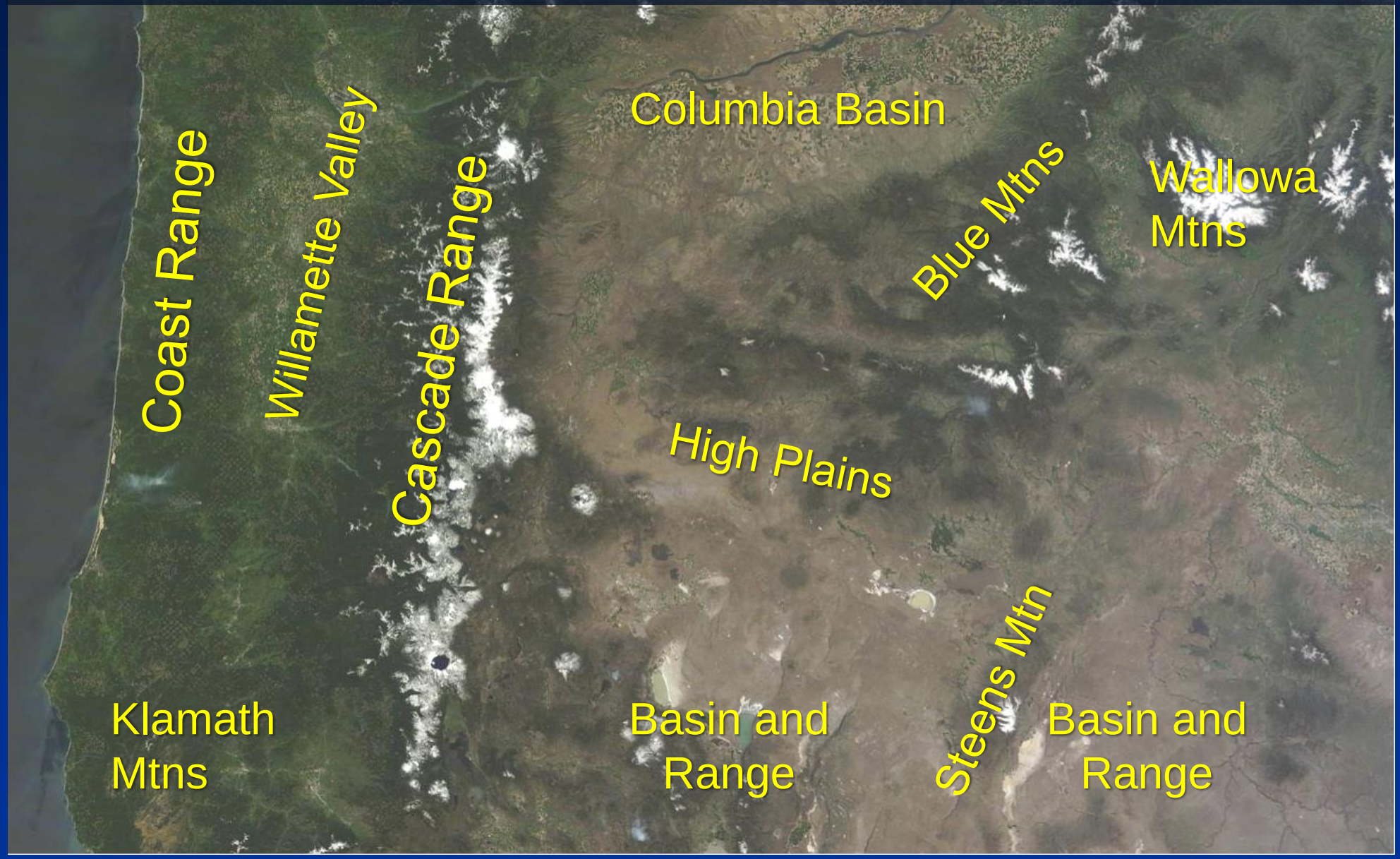
Here’s a satellite image that covers Oregon and parts of Washington and Idaho.

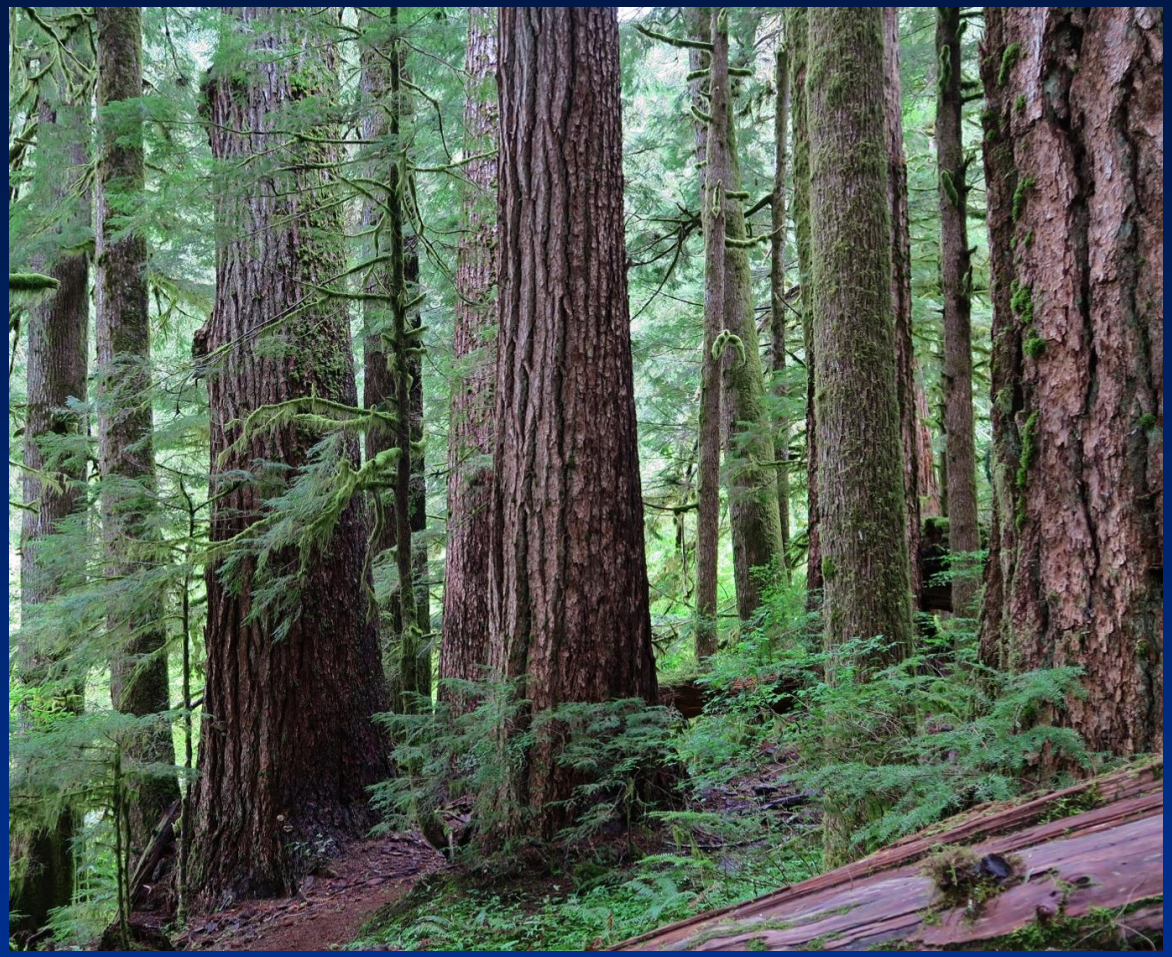


You can see that the snowy areas indicate higher topography.

Also make note on what areas of the state appear greener which indicates denser vegetation cover and greater annual rainfall.

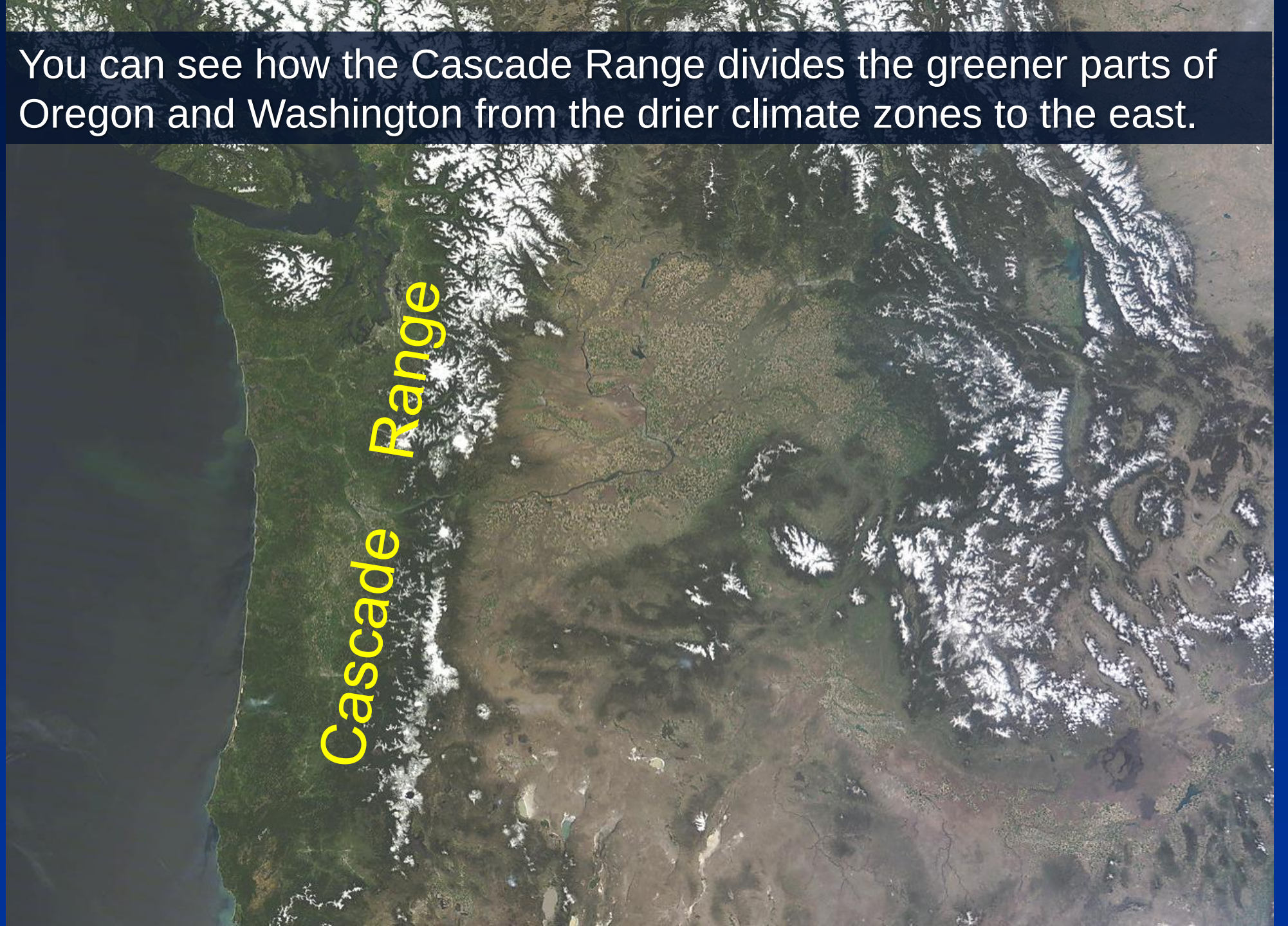
We will need to label the 10 major physiographic provinces of Oregon in order to complete Activity 1 in Part A.



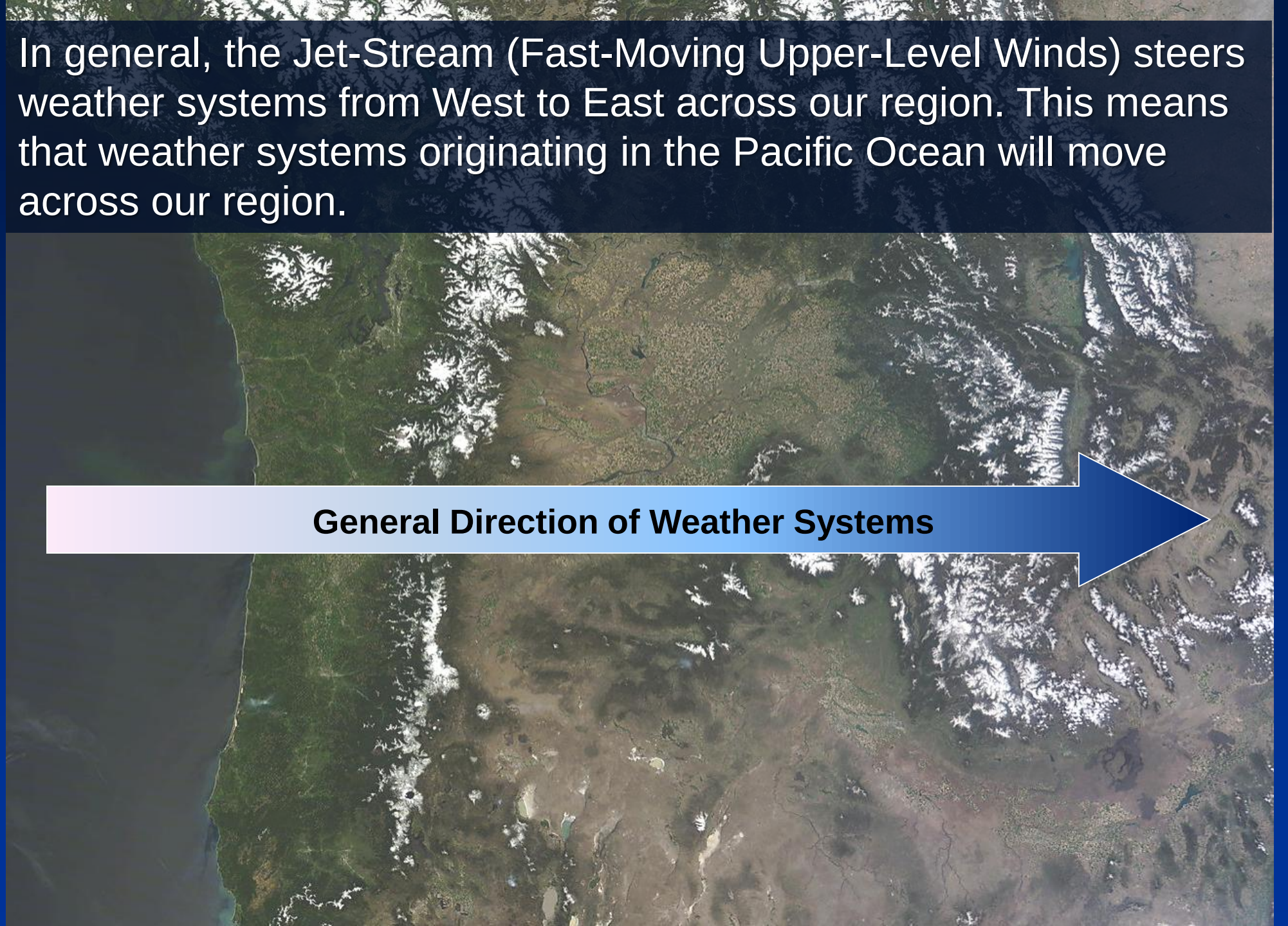


Here are two photos taken in Oregon. The photo on the left was taken in the Coast Range while the photo on the right was taken in the Basin and Range. Let’s take a look at why the climate can be so different between the physiographic provinces of Oregon.

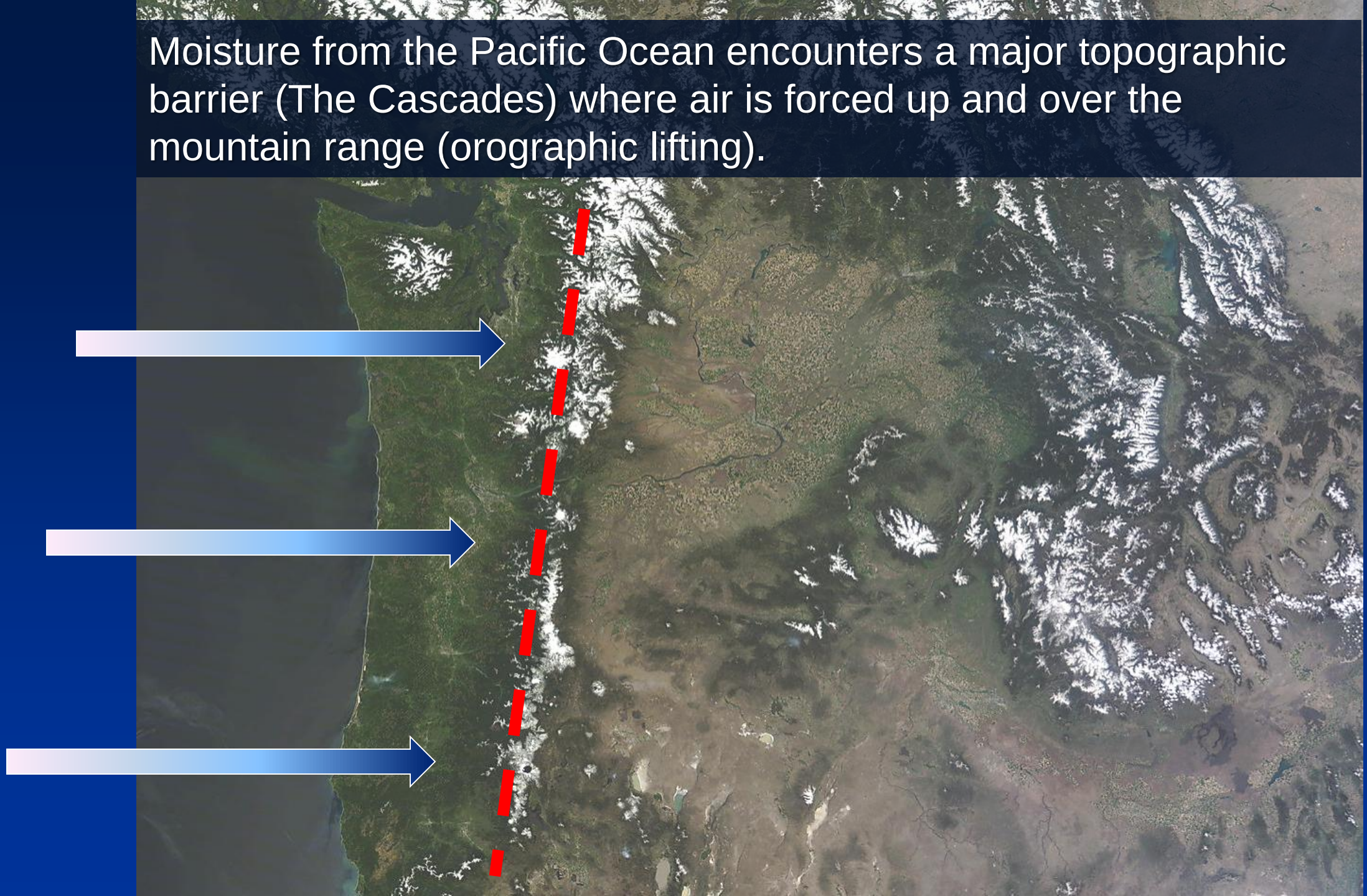
You can see how the Cascade Range divides the greener parts of Oregon and Washington from the drier climate zones to the east.



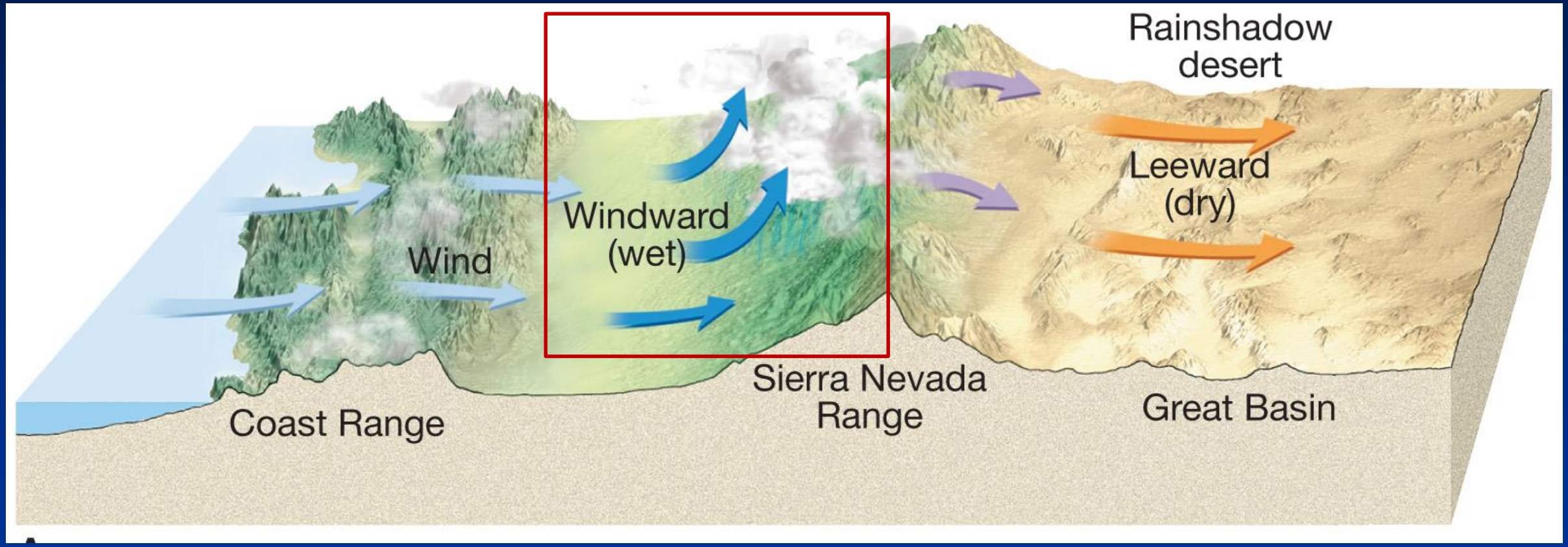
In general, the Jet-Stream (Fast-Moving Upper-Level Winds) steers weather systems from West to East across our region. This means that weather systems originating in the Pacific Ocean will move across our region.



Moisture from the Pacific Ocean encounters a major topographic barrier (The Cascades) where air is forced up and over the mountain range (orographic lifting).

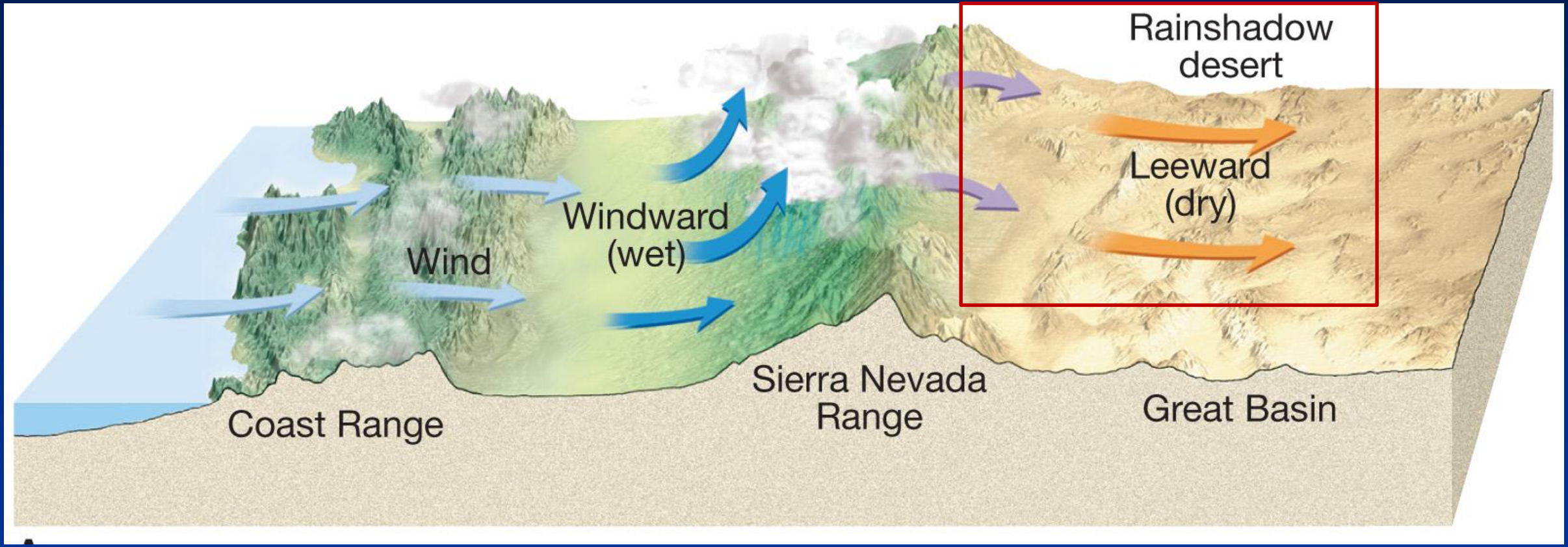


Here's a look at what happens to air as orographic lifting takes place when air is rising over the windward slopes of a mountain range.



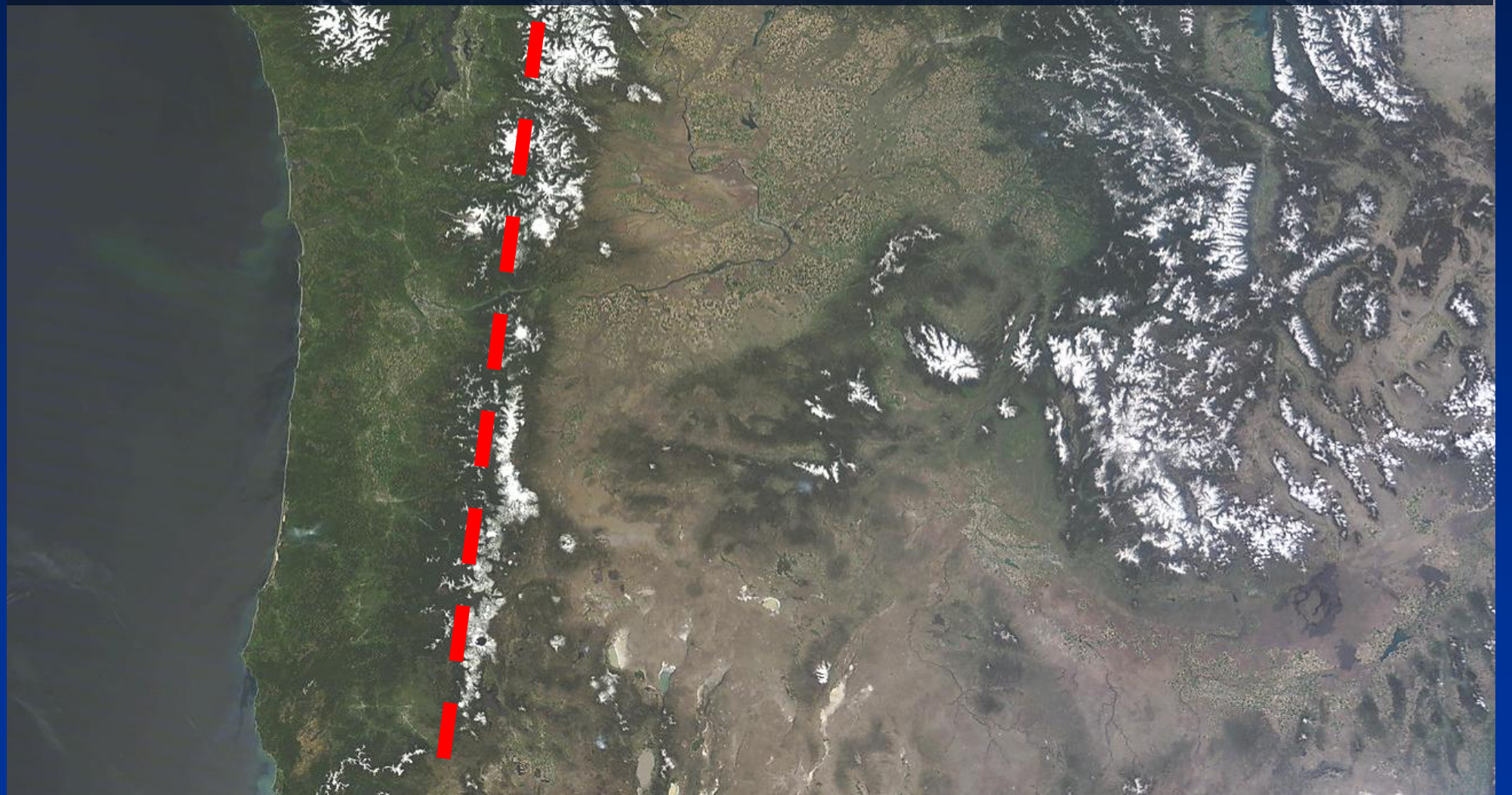
Rising Air = Expansion = Cooling = Greater Relative Humidity = Greater Rainfall on Windward Slopes of Mountain Ranges

And also a look at what happens to air as it sinks back down the leeward slopes of the mountain range forming a rainshadow desert.



Descending Air = Compression = Warming = Lower Relative Humidity = Drier Air and Less Rainfall on Leeward Slopes

Now we see why it is greener with more rainfall on the western side of the Cascade Range. This also explains why other mountains such as the Blue and Wallowa Mountains are greener than the surrounding areas because they cause orographic lifting.



Overall, the Cascade Range serves as a major barrier between two general climate zones.