

## Atmospheric Circulation Affects Climate

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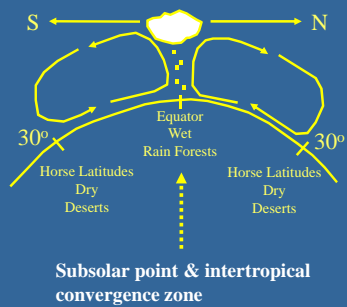
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## Tropical Hadley Cells




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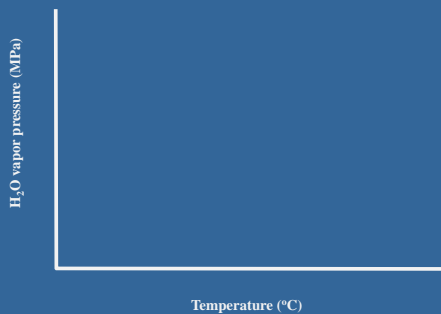
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**For a given amount of air:** Draw temperature vs. saturation vapor pressure  
What is the saturation vapor pressure ?  
What is the dew point temperature ?  
What is the relative humidity ?




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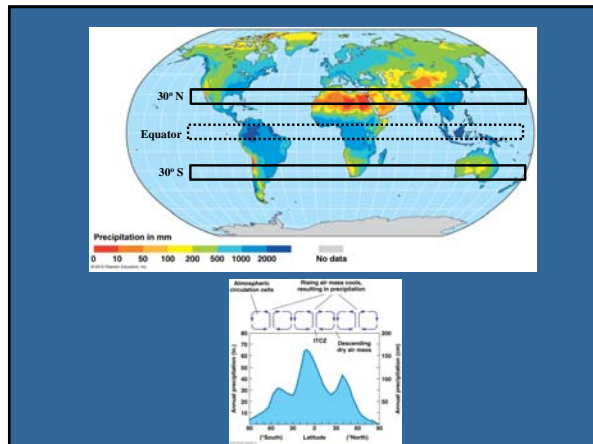
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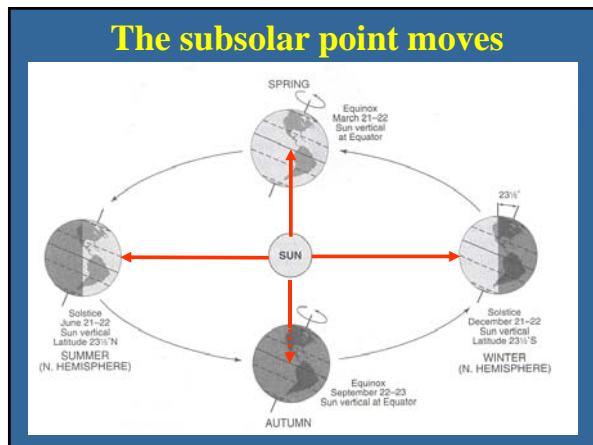
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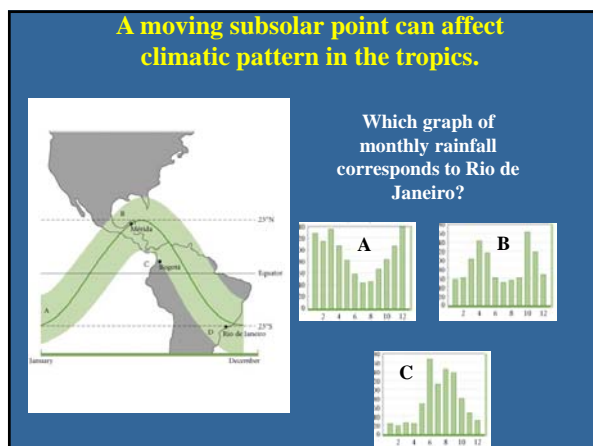
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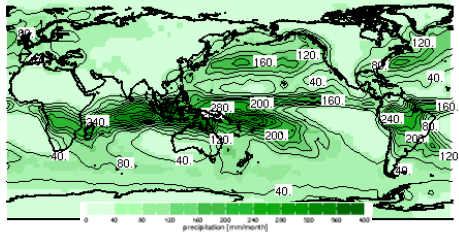
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**The ITCZ moves with the subsolar line.**  
*But often lags behind – especially over the ocean*



Jan

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**Pacific slope of Panama during dry season**  
**January through April**




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### Thought Question

If the angle between the orbital plane of the Earth around the Sun and the plane formed by the Earth's equator were to decrease (currently it's 23.5°), what effect would this have on the seasons in the N. Hemisphere?

If the angle were 0°, when would an equinox occur?

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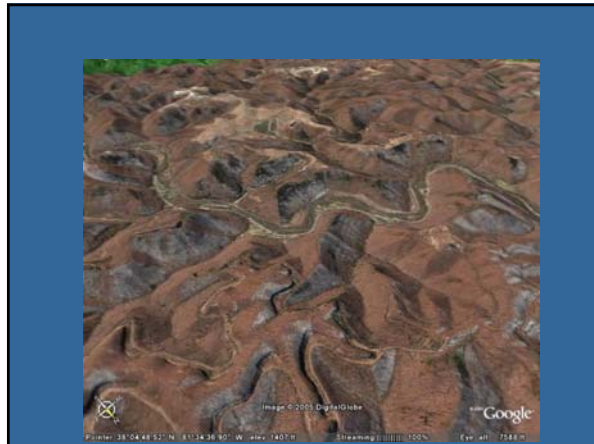
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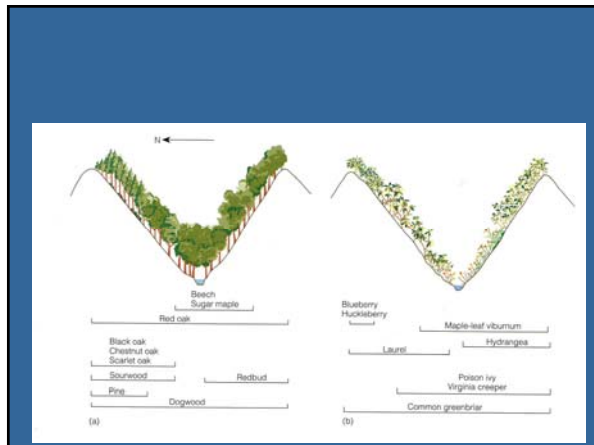
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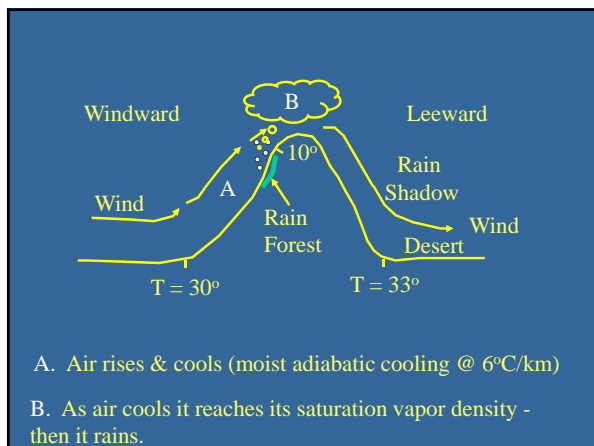
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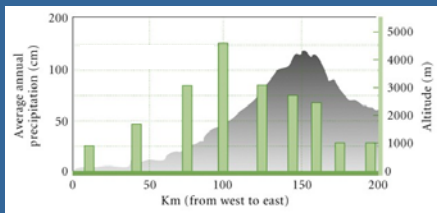
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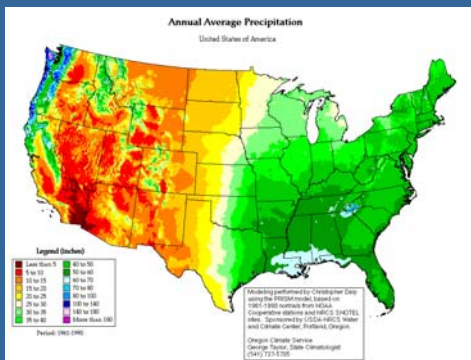
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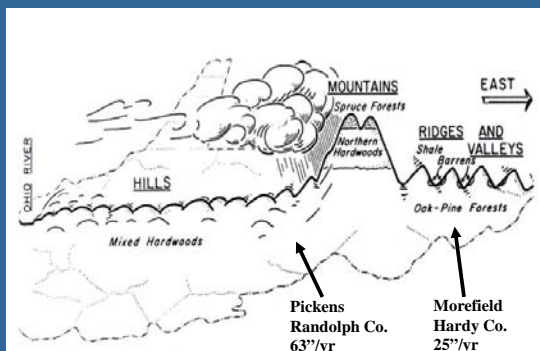
## Where might these mountains be found?



- A) 40° N latitude  
B) 10° N latitude  
C) 45° S latitude  
D) Both A & C



## Orographic Effect in WV



### Strausbaugh & Core 1970

## Ocean Circulation Can Affect:

- Regional climate.
- The price of fish.

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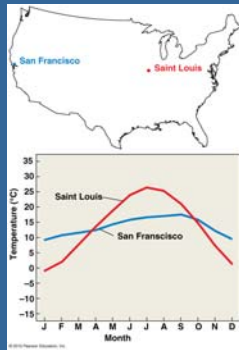
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## Large bodies of water heat up and cool down more slowly than land



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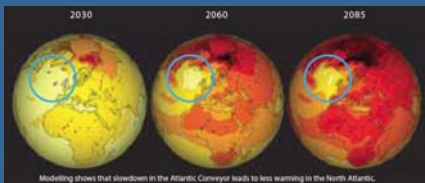
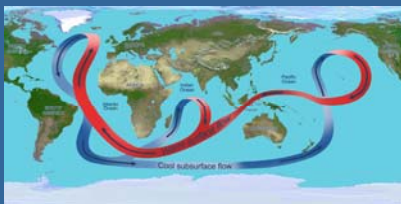
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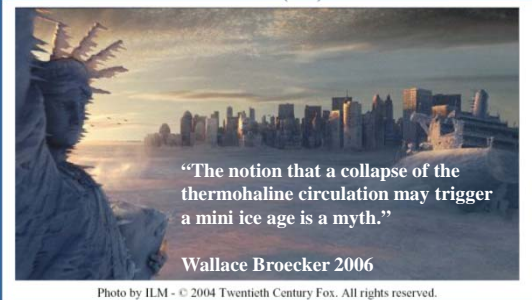
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## The Day After Tomorrow ?




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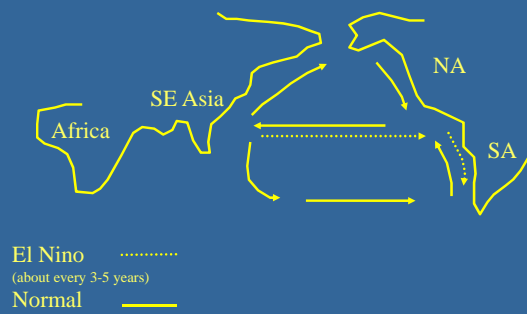
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## Effects of ocean currents on climate




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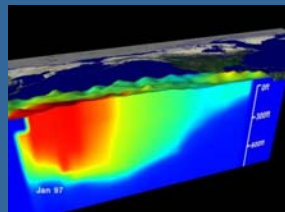
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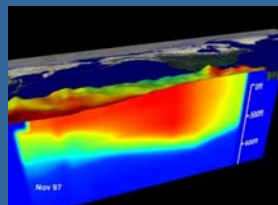
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## Normal



## El Nino



<http://www.pmel.noaa.gov/tao/el-nino/nino-home.html#>

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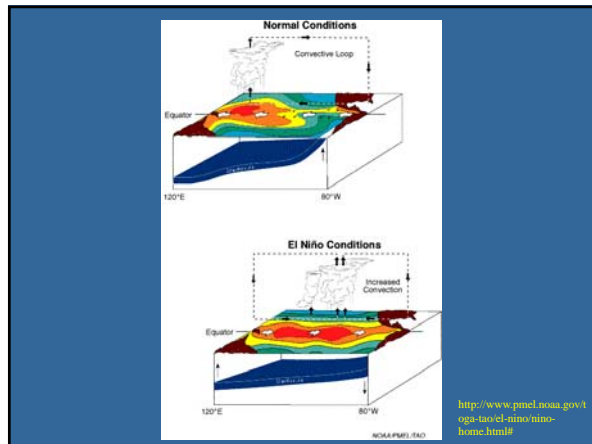
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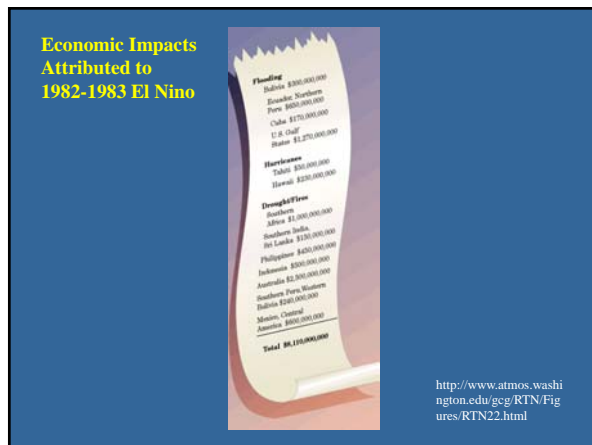
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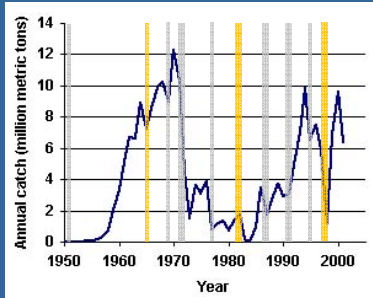
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Low catch for ~ 20 years  
Has improved but still sensitive



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