

## Atmospheric Circulation Affects Climate

- Influences the location of rain forests & deserts.
- Can influence seasonal rainfall patterns in the tropics.
- Can interact with surface topography to create rain shadows.

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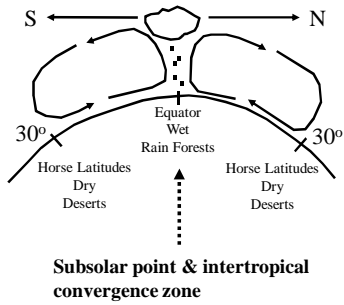
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## Tropical Hadley Cells



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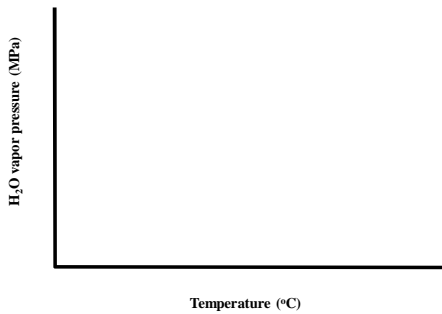
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**For a given amount of air:** Draw temperature vs. saturation vapor pressure  
What is the saturation vapor pressure ?  
What is the dew point temperature ?  
What is the relative humidity ?



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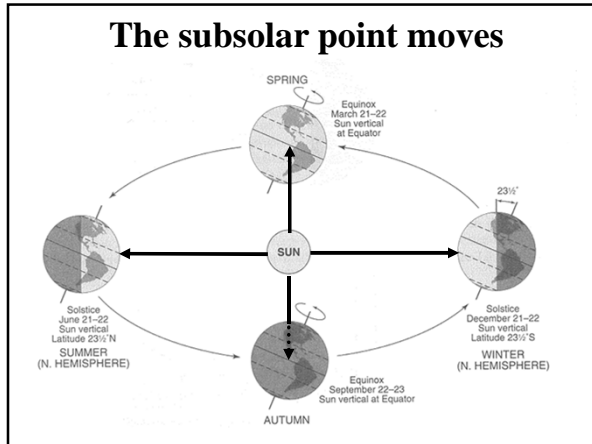
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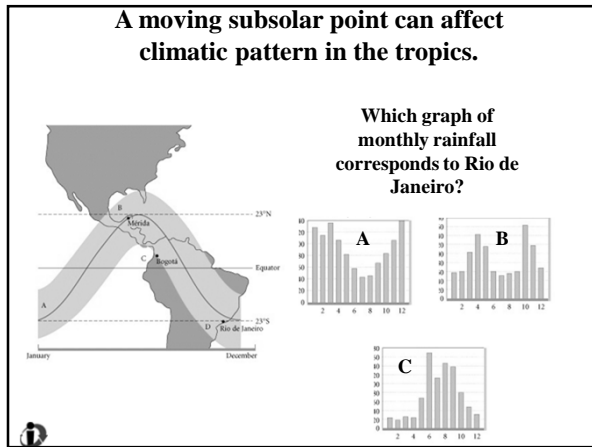
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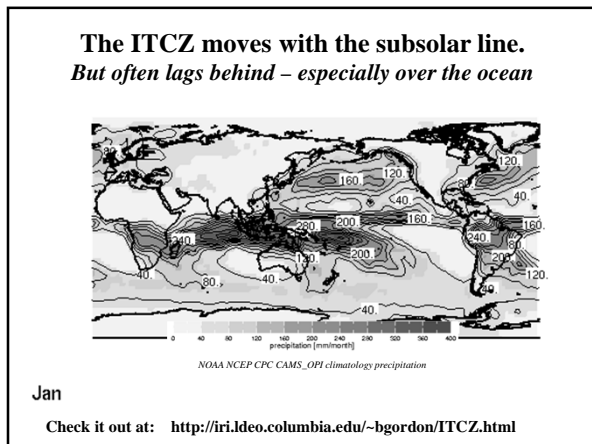
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**Pacific slope of Panama during dry season  
January through April**



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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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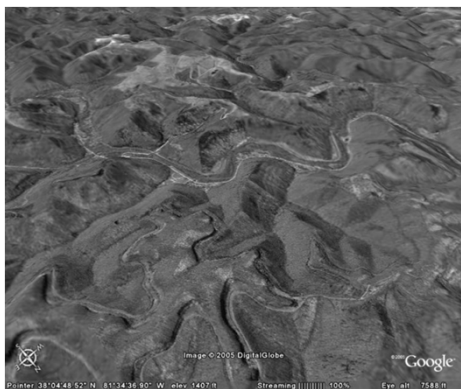
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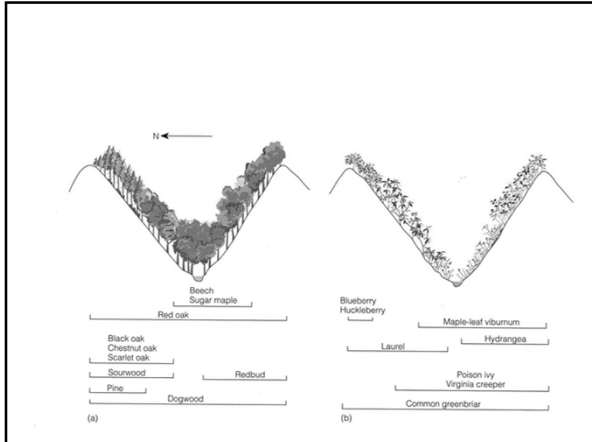
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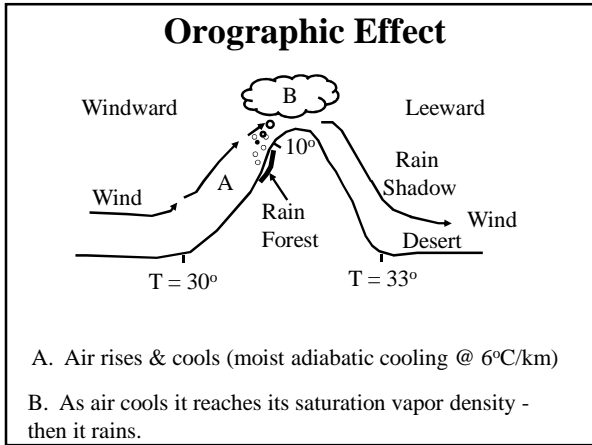
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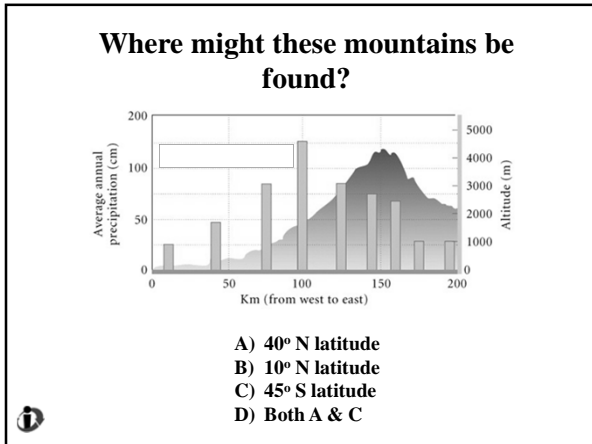
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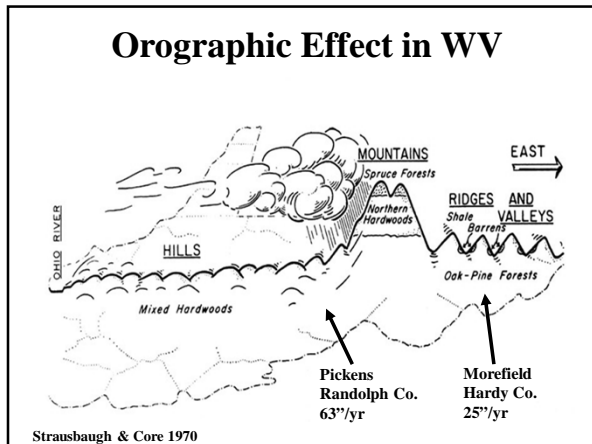
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### Ocean Circulation Can Affect:

- Regional climate.
- The price of fish.

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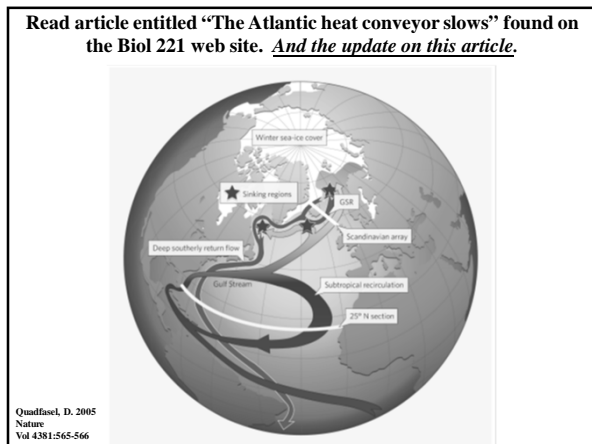
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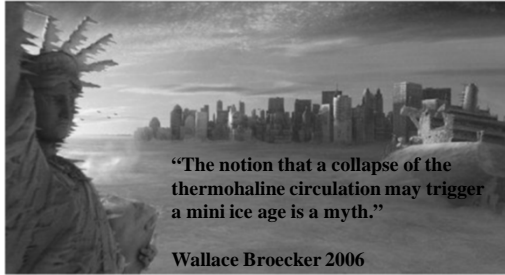
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### The Day After Tomorrow ?



“The notion that a collapse of the thermohaline circulation may trigger a mini ice age is a myth.”

Wallace Broecker 2006

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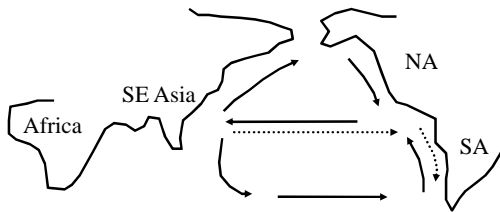
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### Effects of ocean currents on climate



El Nino .....  
(about every 3-5 years)  
Normal ———

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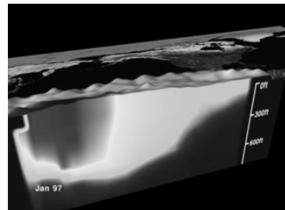
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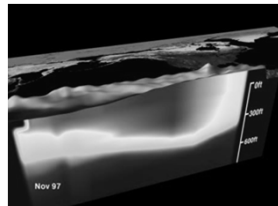
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Normal



El Nino



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

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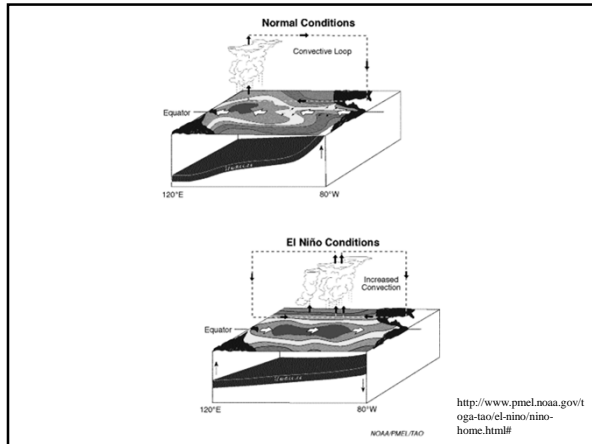
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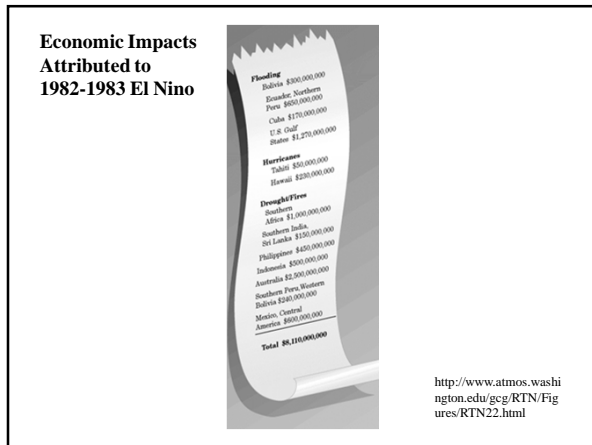
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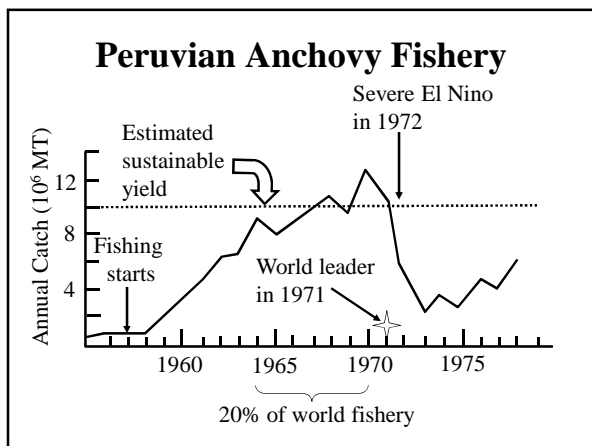
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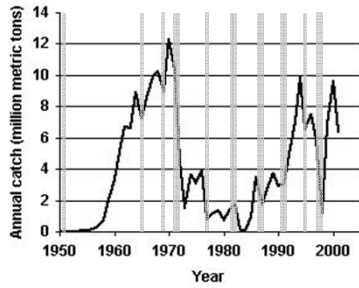
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**Low catch for ~ 20 years  
Has improved but still sensitive**



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