

1



2

# What trees

Evergreen (mostly)

Grow straight & tall

Little branching until  
reaching the canopy



3

# What trees



Buttress Roots



Stilt Roots

Photo by Rob and Stenhanie Levy (CC BY 2.0)

Photo by Vileskogen (CC BY-NC 2.0)

4

# What

## trees

The biggest  
ones are...  
very big



5



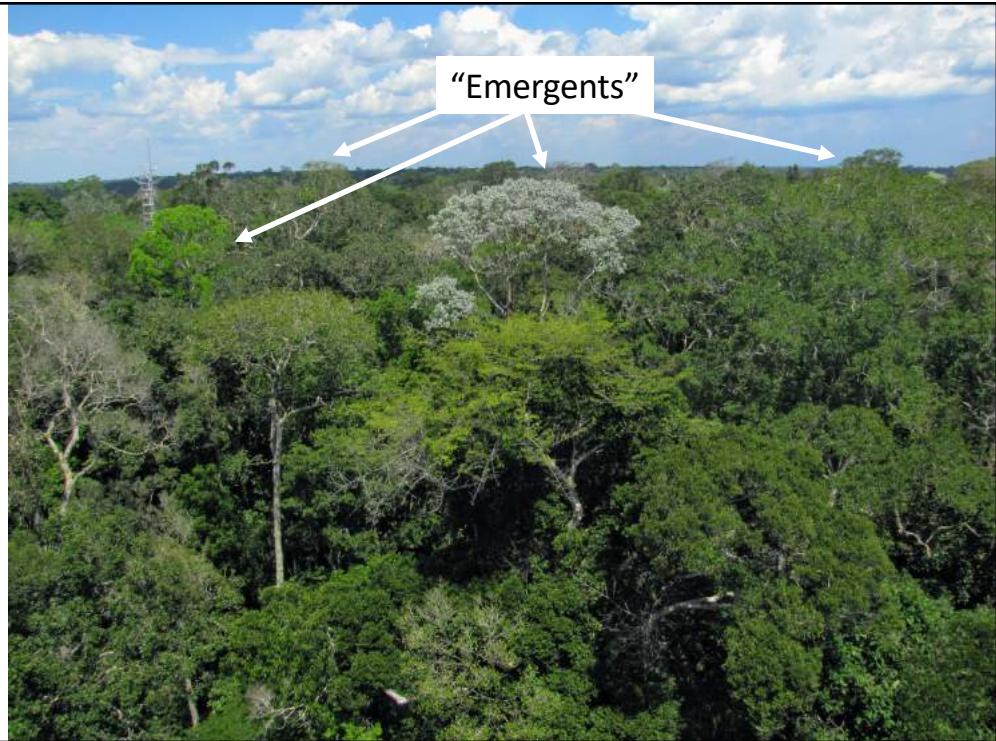
6

# What

## Layers (aka "strata")

### 1. Canopy

Central Amazonia, Brazil  
Photo by E. Bruna



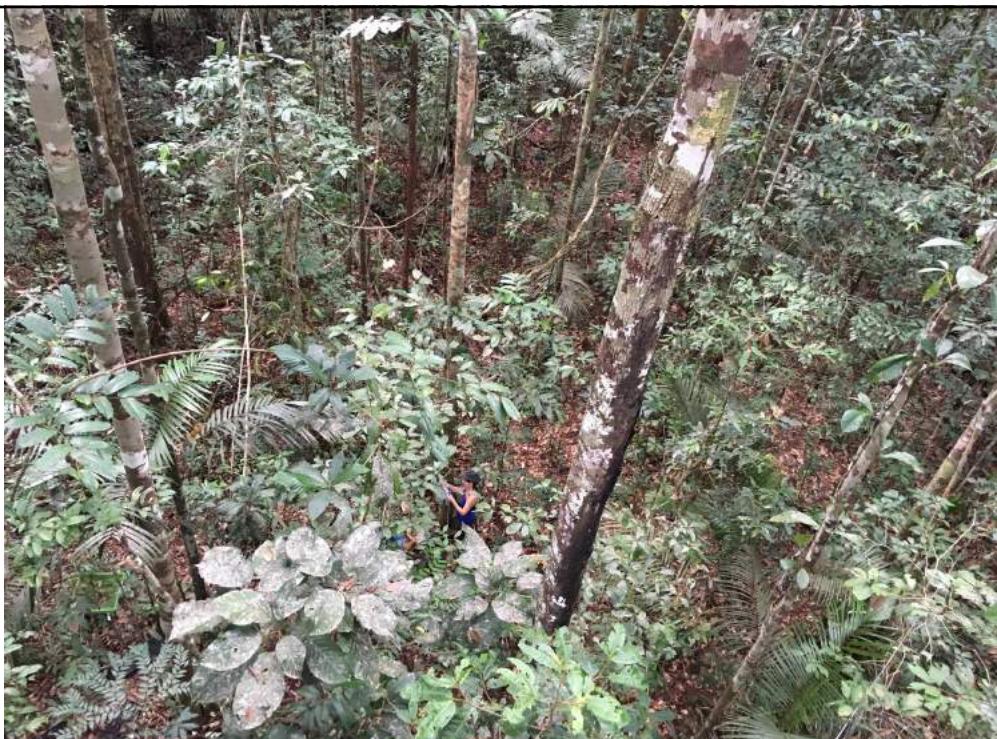
7

# What

## layers

### 2. Subcanopy (aka midcanopy)

Central Amazonia, Brazil  
Photo by E. Bruna



8

4

# What

## layers

- 3. Understory
- 4. Forest Floor

Central Amazonia, Brazil  
Photo by E. Bruna



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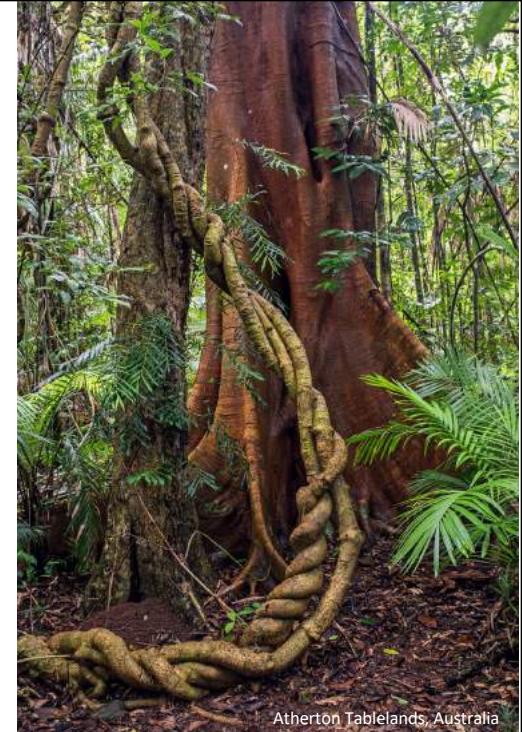
# What

## variety

- Trees
- Treelets
- Shrubs
- Lianas  
*(woody vines)*
- Herbs
- Palms

Danum Valley,  
Borneo, Malaysia  
by [Jeremy Bezanger](#)

Atherton  
Tablelands,  
Australia

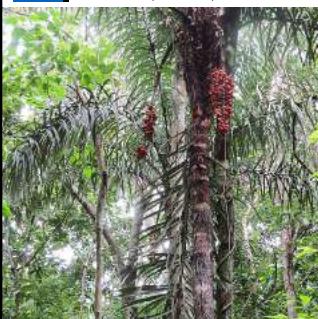


Atherton Tablelands, Australia

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# What variety

Herbs      Bamboo  
 Palms      Herbs  
 Epiphytes (*orchids, bromeliads*)

Brewbooks: *Heliconia rostrata* (CC BY-SA 2.0)Sunochi:  
*Cymbidium lancifolium*  
(CC BY 2.0)

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# What

## dark

Central Amazonia, Brazil  
Time: 3:06 pm



12

What

dark

Central Amazonia, Brazil  
Time: 4:02 pm



13



14



Sunflecks

15

There are actually many different types of **Tropical Rain Forest**

16



17



18

## Mangroves



19

## Cloud Forest

Photo: A. Davey (CC BY-NC-ND 2.0)



20

## Regenerating Forest *Secondary Forest*



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## What's Missing?

22

Rain

Heat

Biodiversity

23



24



25



26

Question 1:

How Tall is  
Century Tower  
in meters?

- $\pm 2.5$  m: 5 pts
- $\pm 2.6\text{-}5$  m: 3 pts
- $\pm 5$  m: 1 pt



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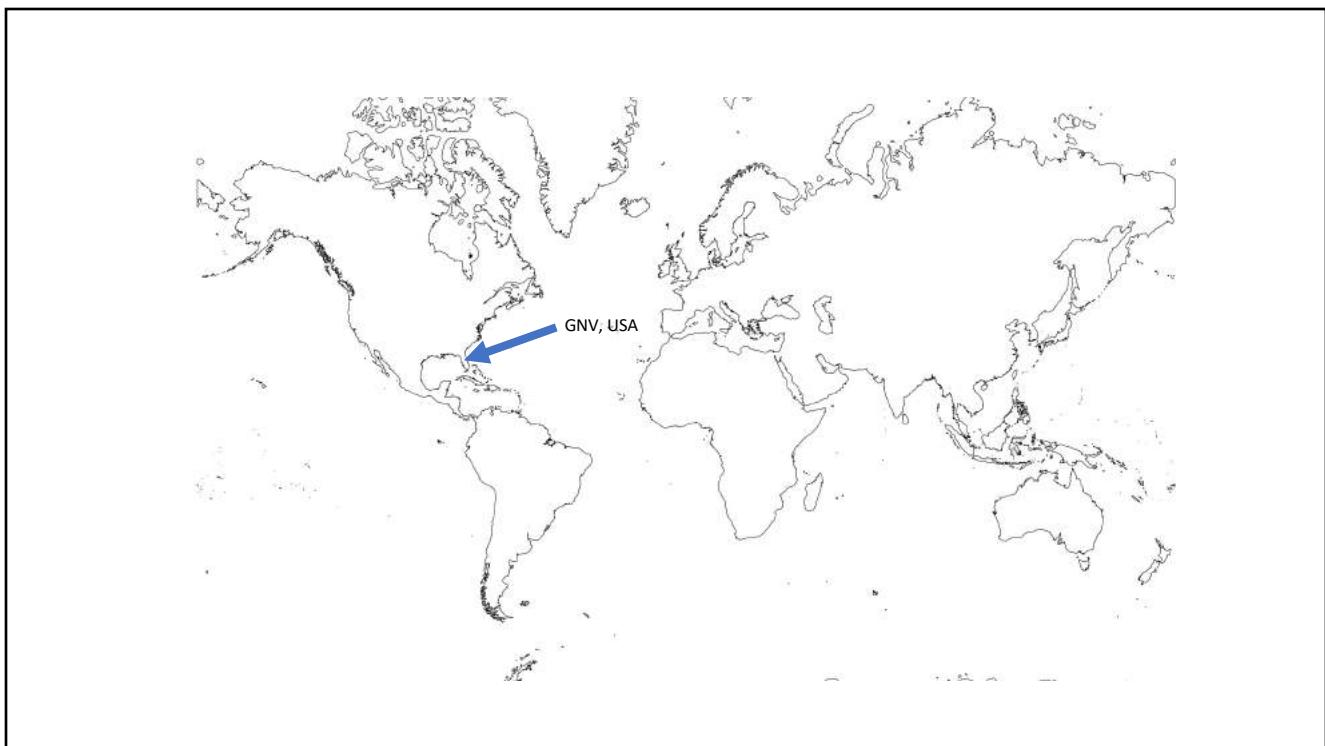


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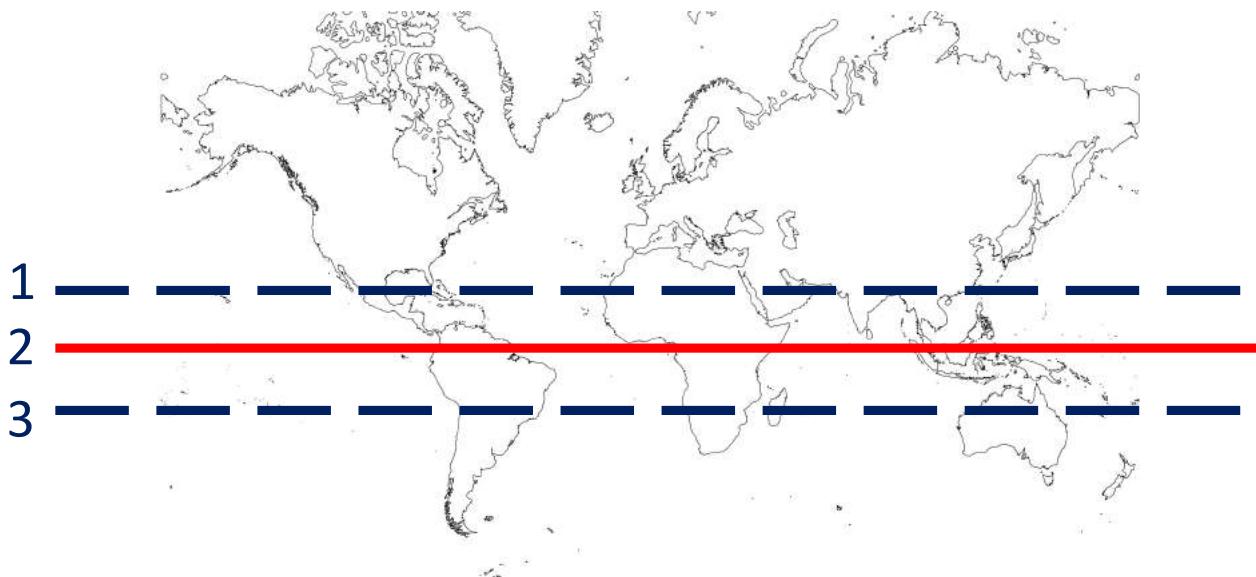


UF Photo: Kate Haskell  
Uakari: Paul Schlarman (CC BY 2.0)  
Howler: Michael Klotz (CC BY-NC 2.0)

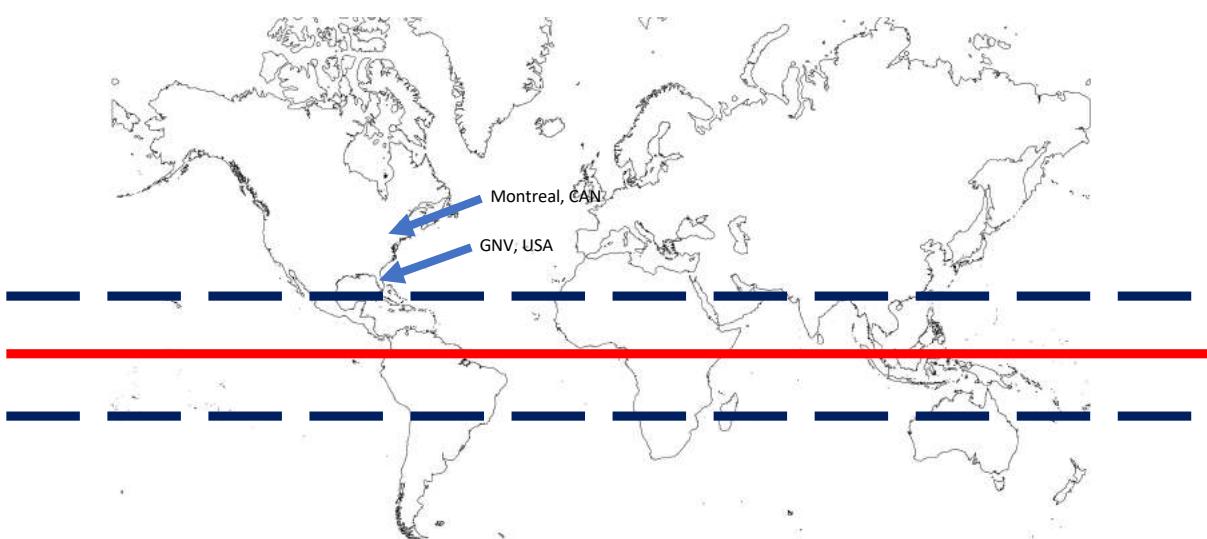
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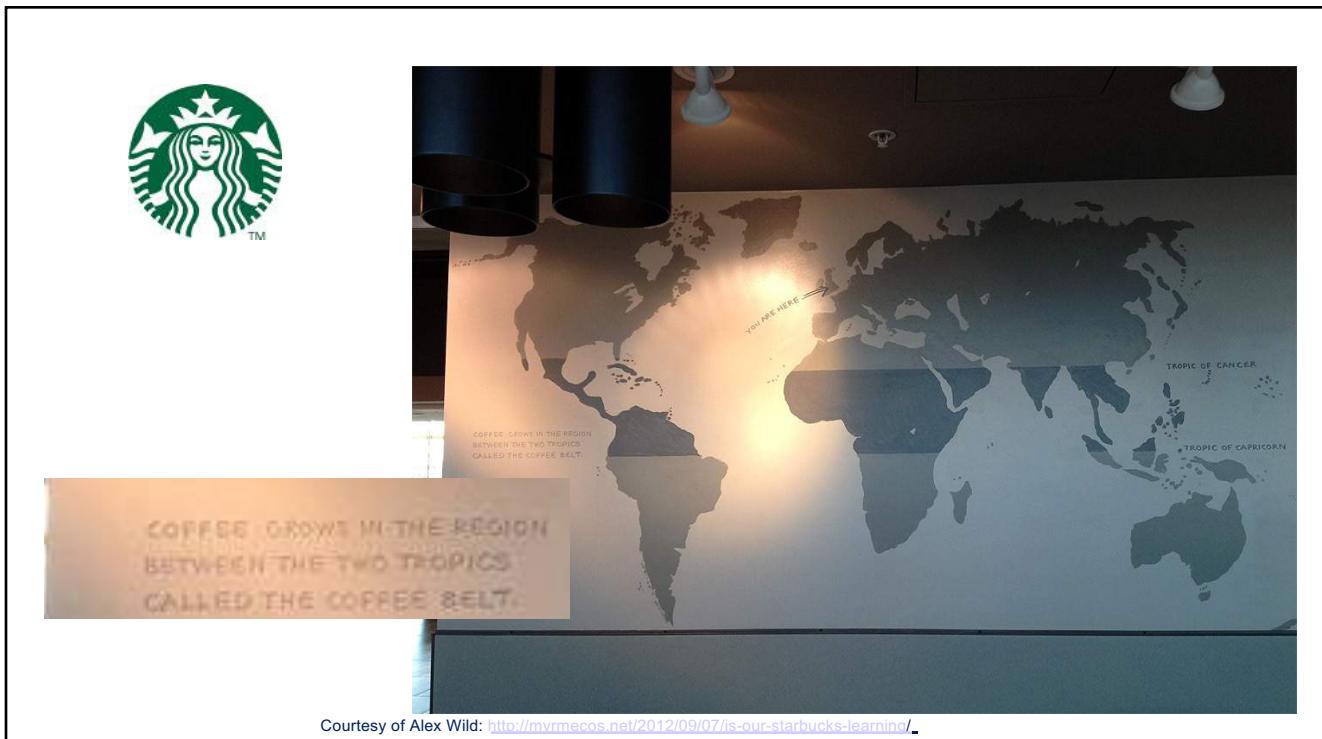
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**Question 2:**

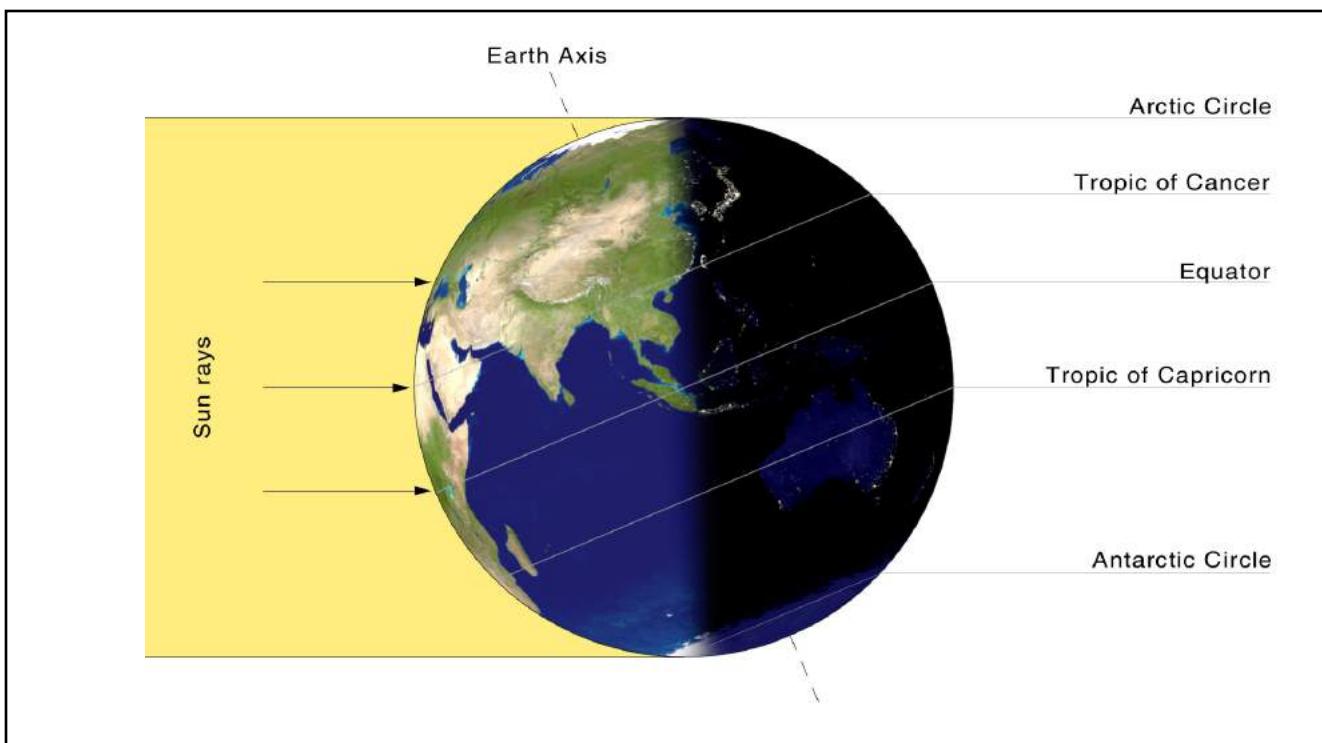
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32



33



34

### Question 3: Gainesville

1. What is the average annual rainfall?
2. What month gets the *most* rain:
3. What month gets the *least* rain

± 3 inches: 5 pts  
± 3-5 inches: 3 pts



35

### Question 4:

1. What is the average temperature during the HOTTEST month?

2. What is the average temperature during the COLDEST month?

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Question 5:

1. What is the area of a hectare in m<sup>2</sup>?



5 points each (correct values only)

37

Question 5:

2. Approx. how many (American) football fields are in a hectare?

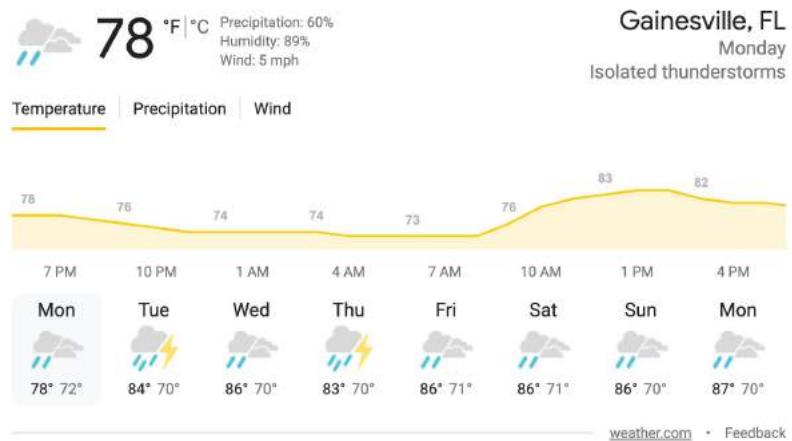


5 points each (correct values only)

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# Weather vs. Climate

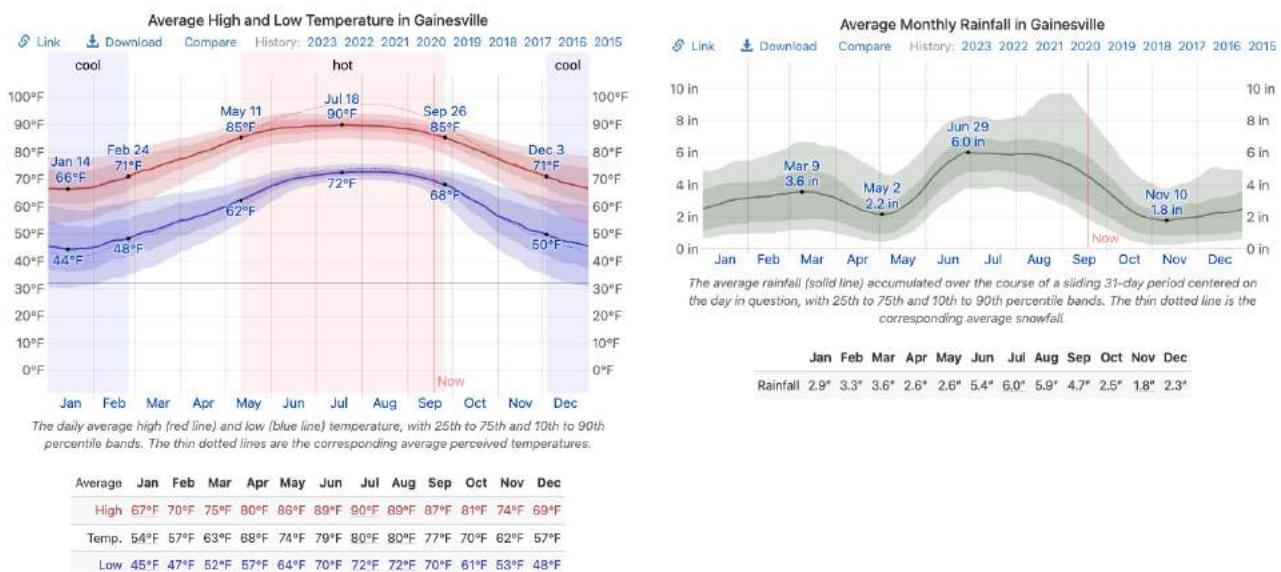
**Weather:** present conditions at a site (and short-term variation in these conditions)



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# Weather vs. Climate

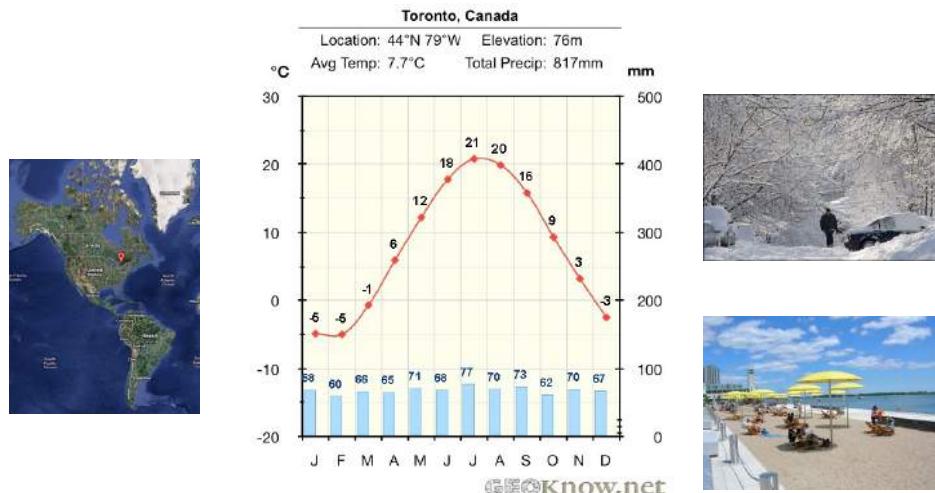
**Climate:** avg. conditions in a location over longer time scales (e.g., 30 yr. avg.)



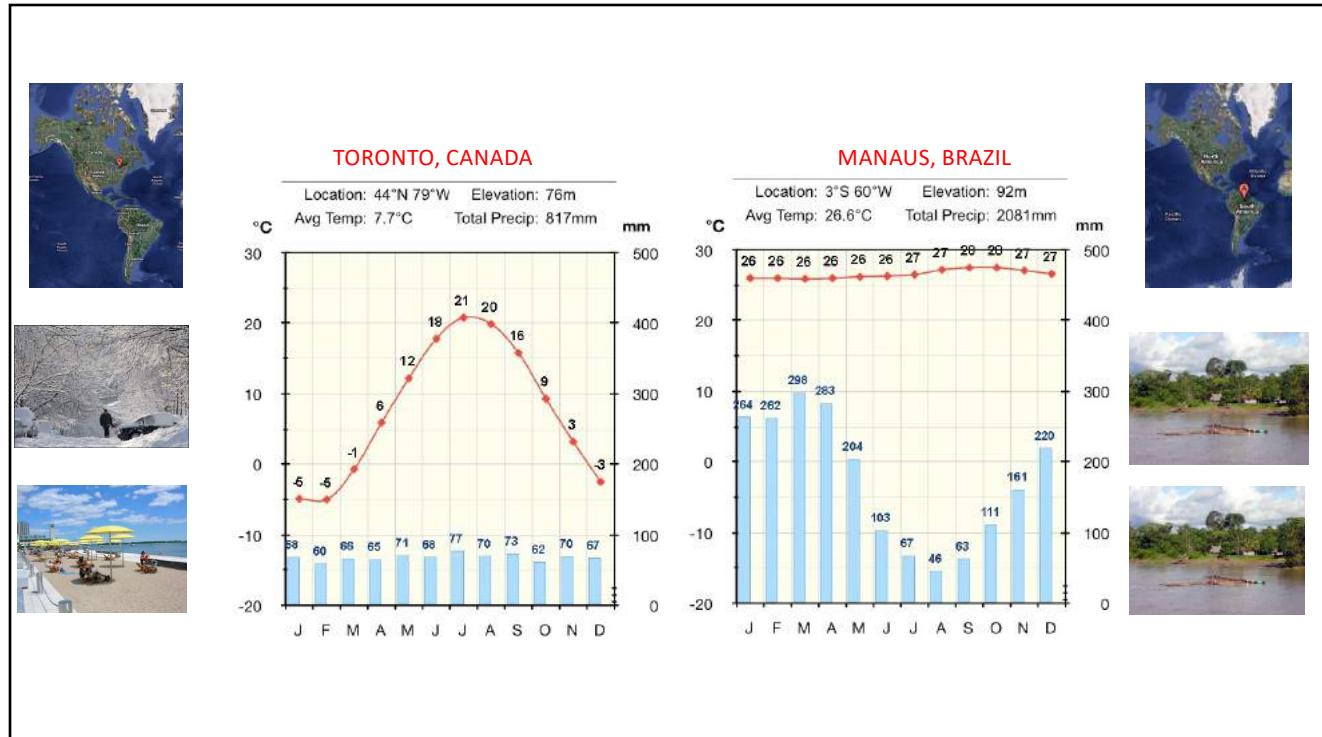
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# Weather vs. Climate

**Climate:** avg. conditions in a location over longer time scales (e.g., 30 yr. avg.)

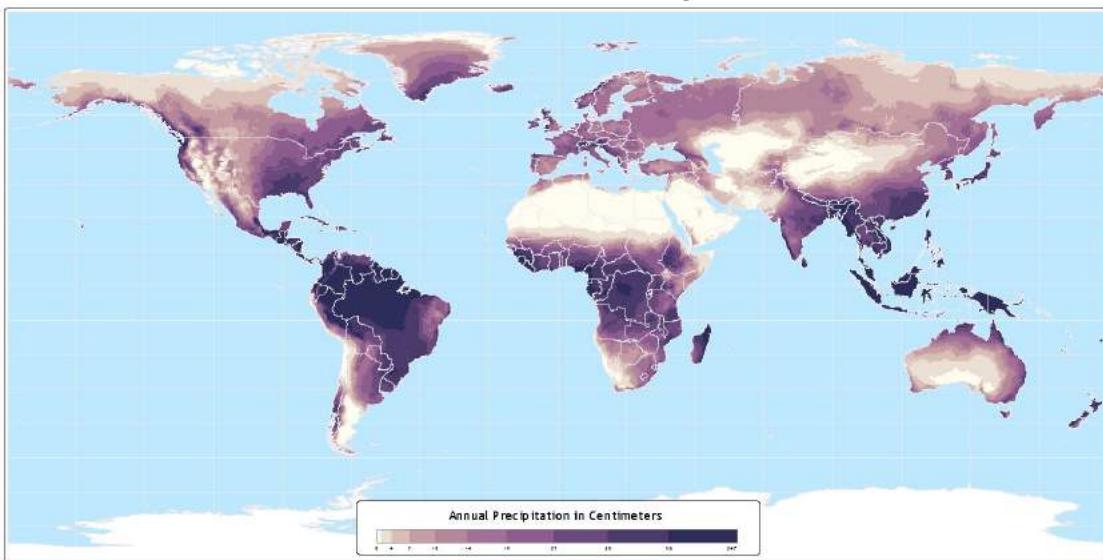


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## Annual Total Precipitation



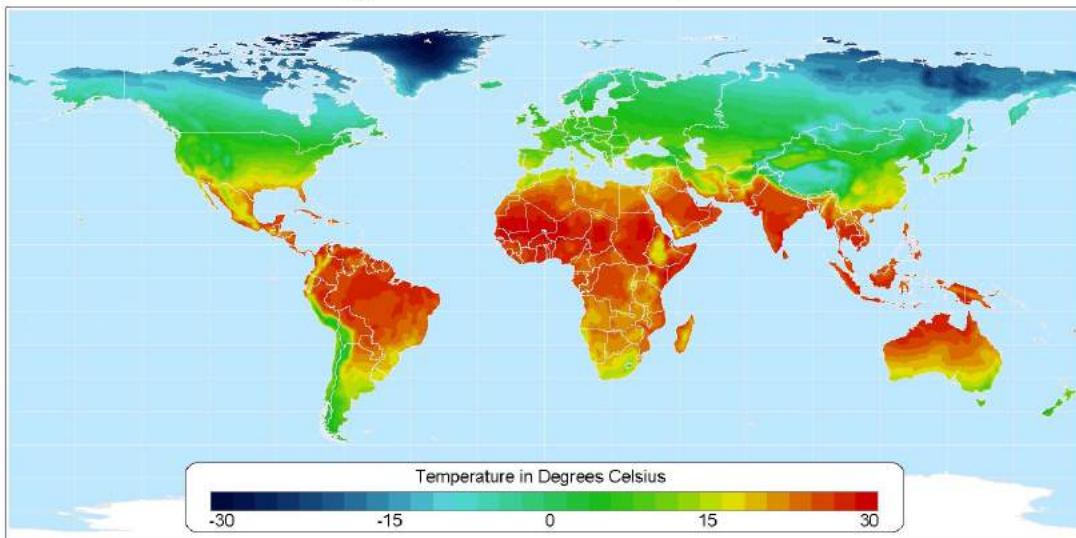
Data taken from: CRU 0.5 Degree Dataset (New et al.)

**Atlas of the Biosphere**

Center for Sustainability and the Global Environment  
University of Wisconsin - Madison

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## Average Annual Temperature



Data taken from: CRU 0.5 Degree Dataset (New, et al.)

**Atlas of the Biosphere**

Center for Sustainability and the Global Environment  
University of Wisconsin - Madison

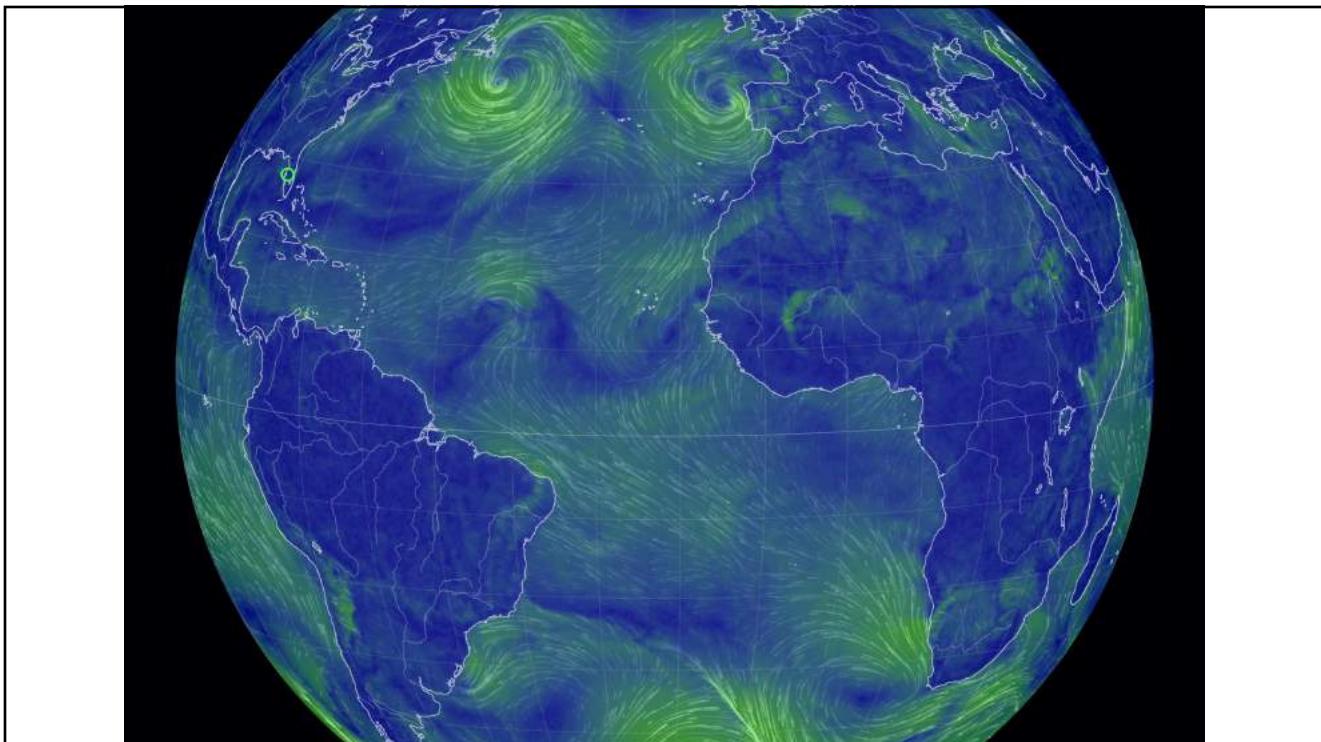
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If lots of other places are hot or rainy, why are the world's rain forests found here?

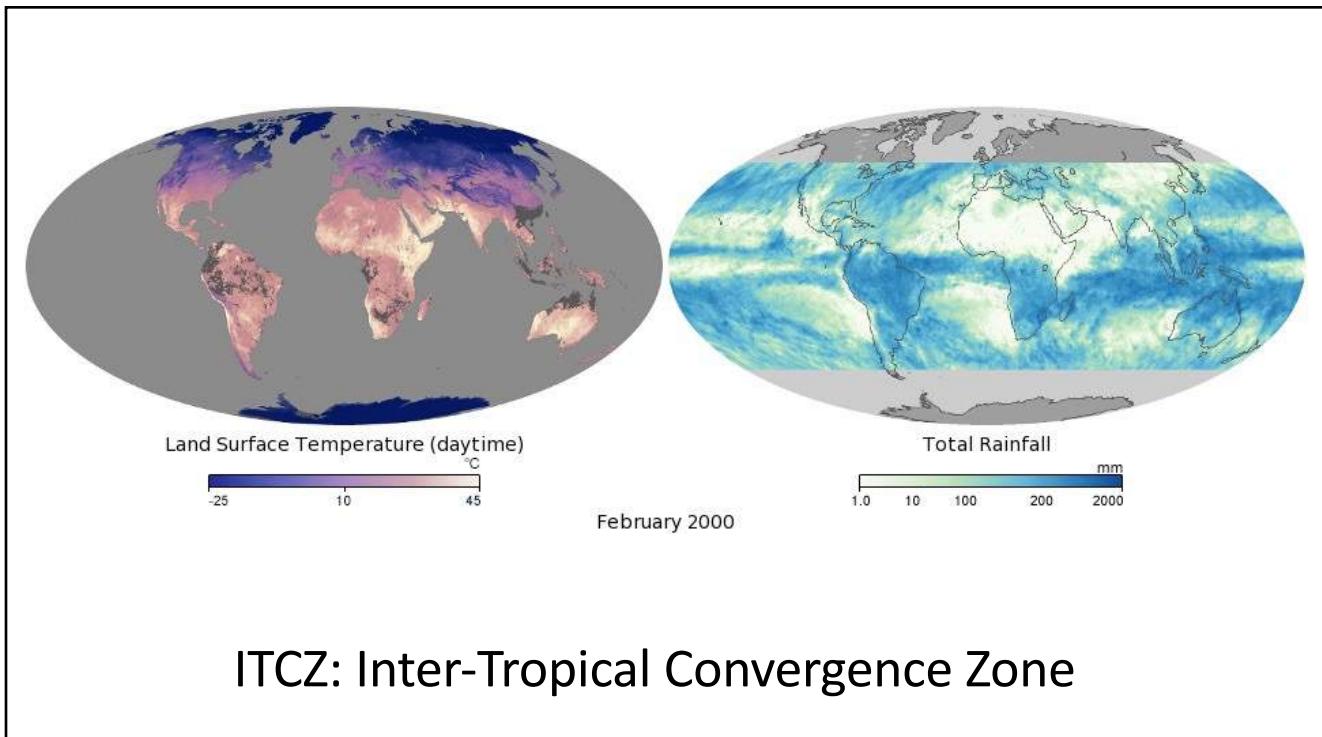


Put another way, what limits their distribution?

45

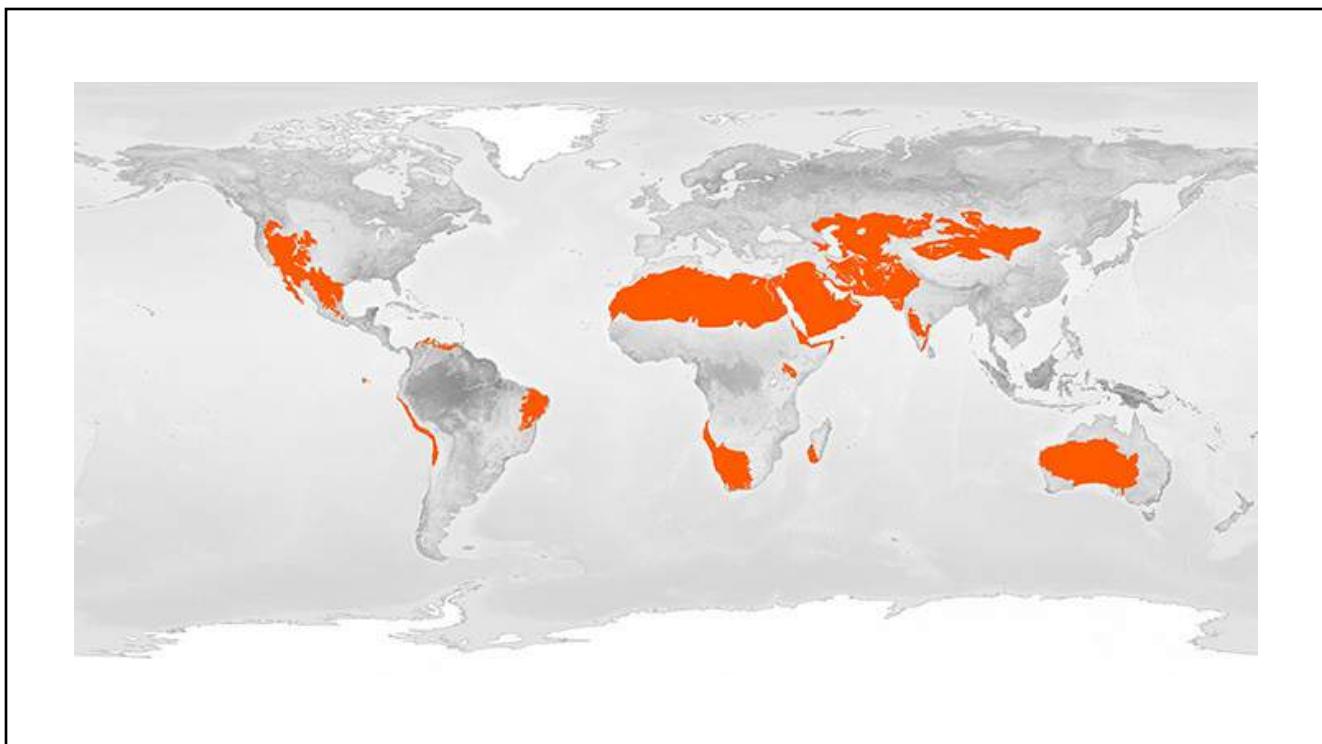


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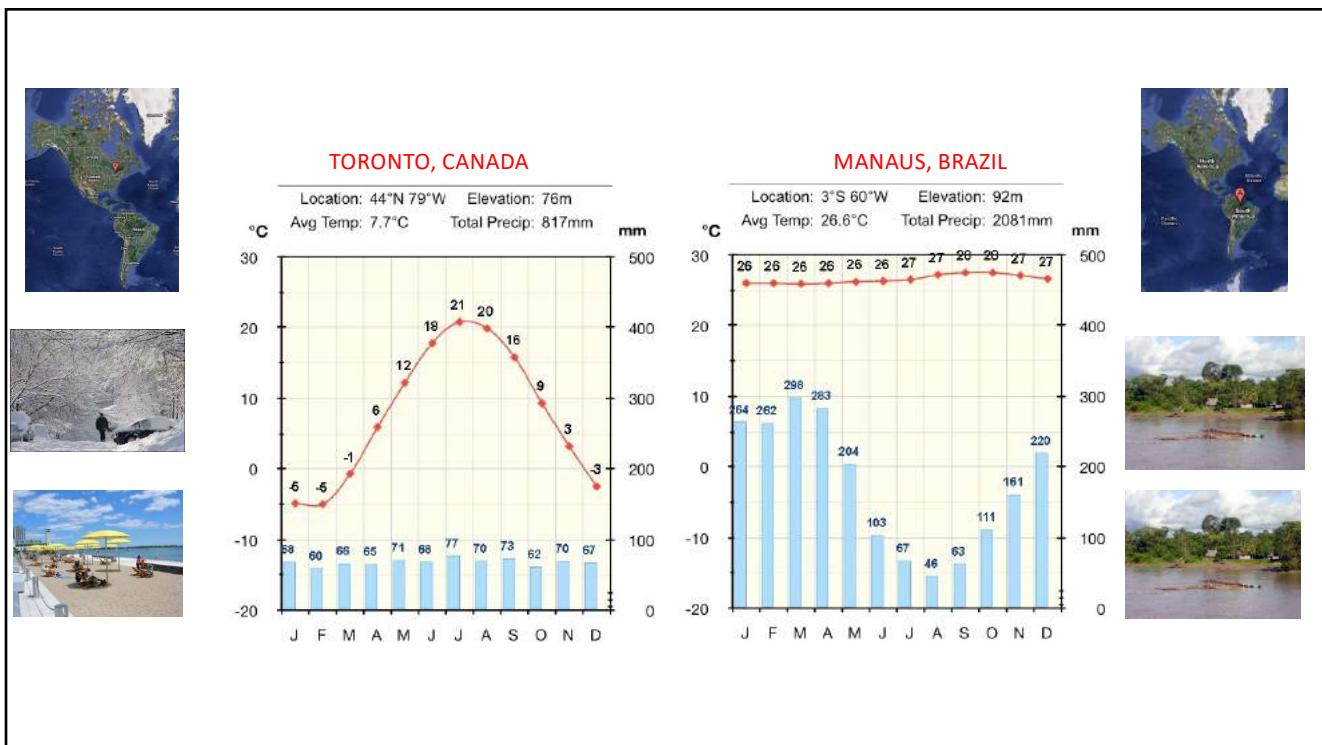


## ITCZ: Inter-Tropical Convergence Zone

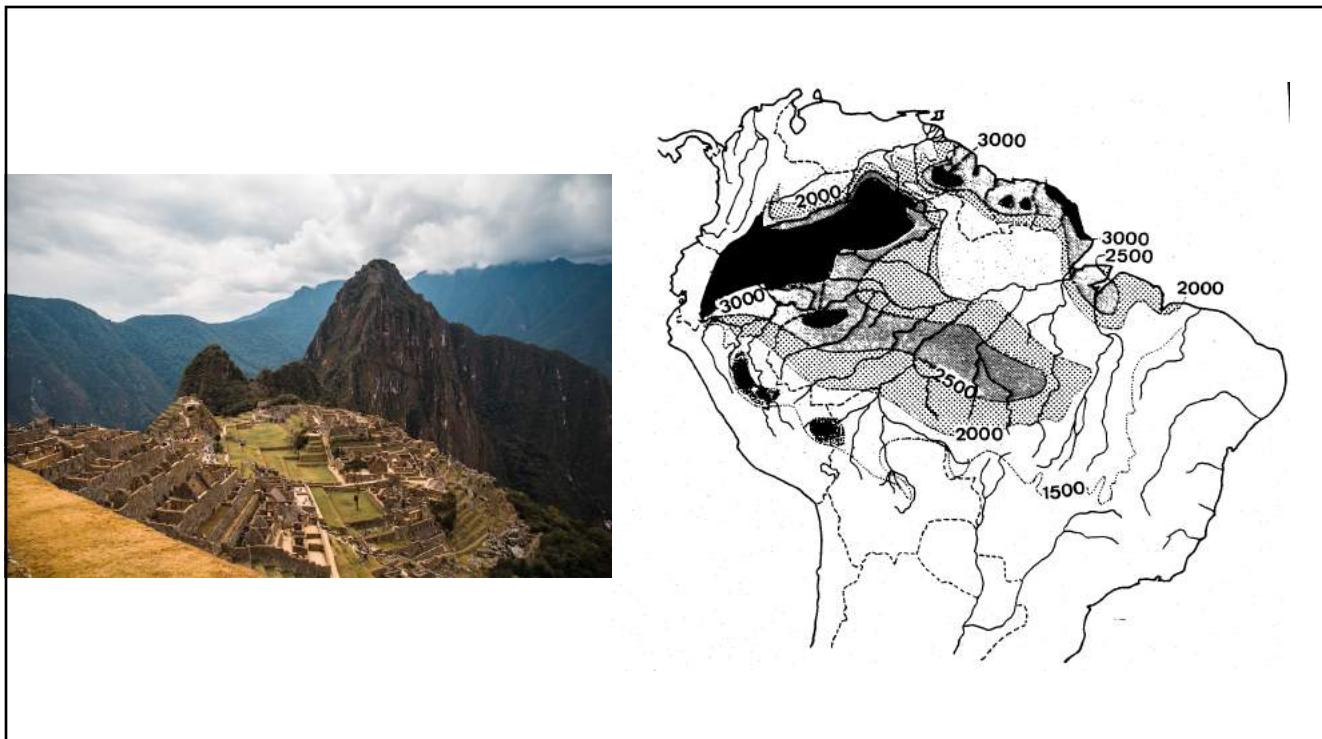
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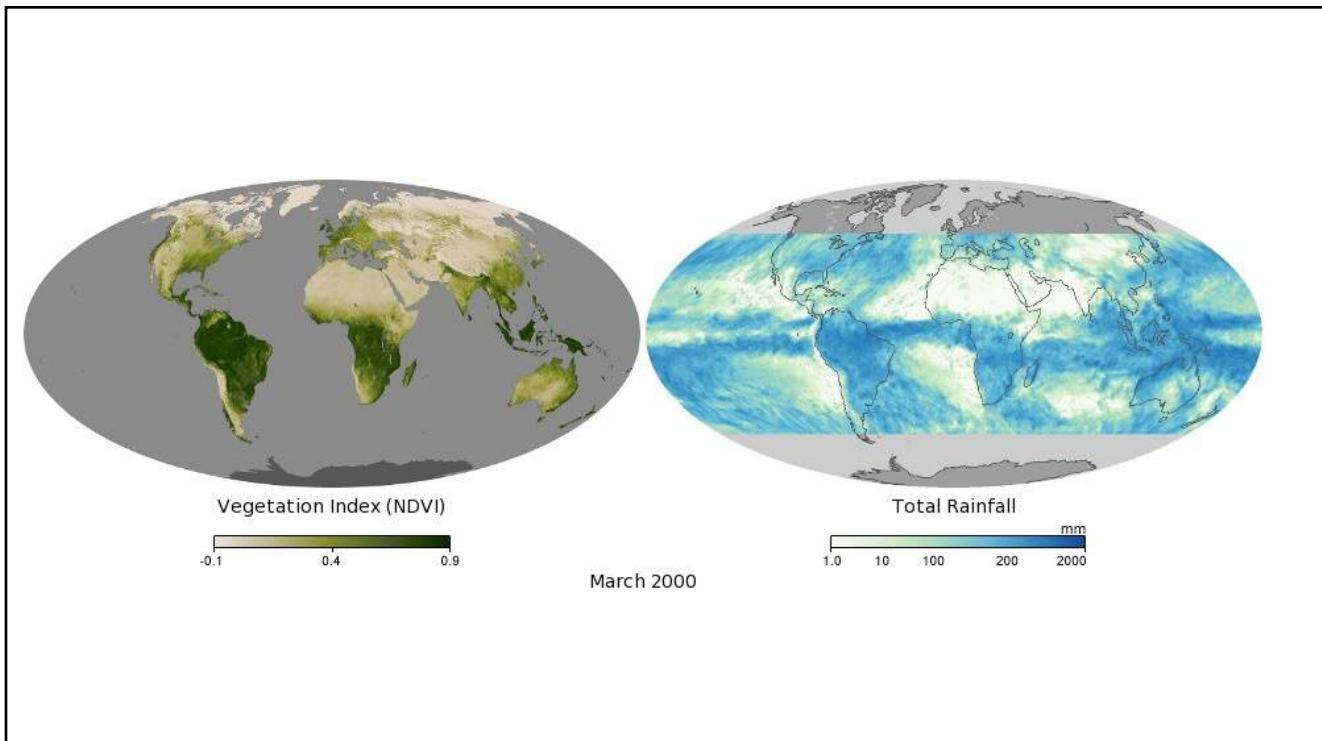
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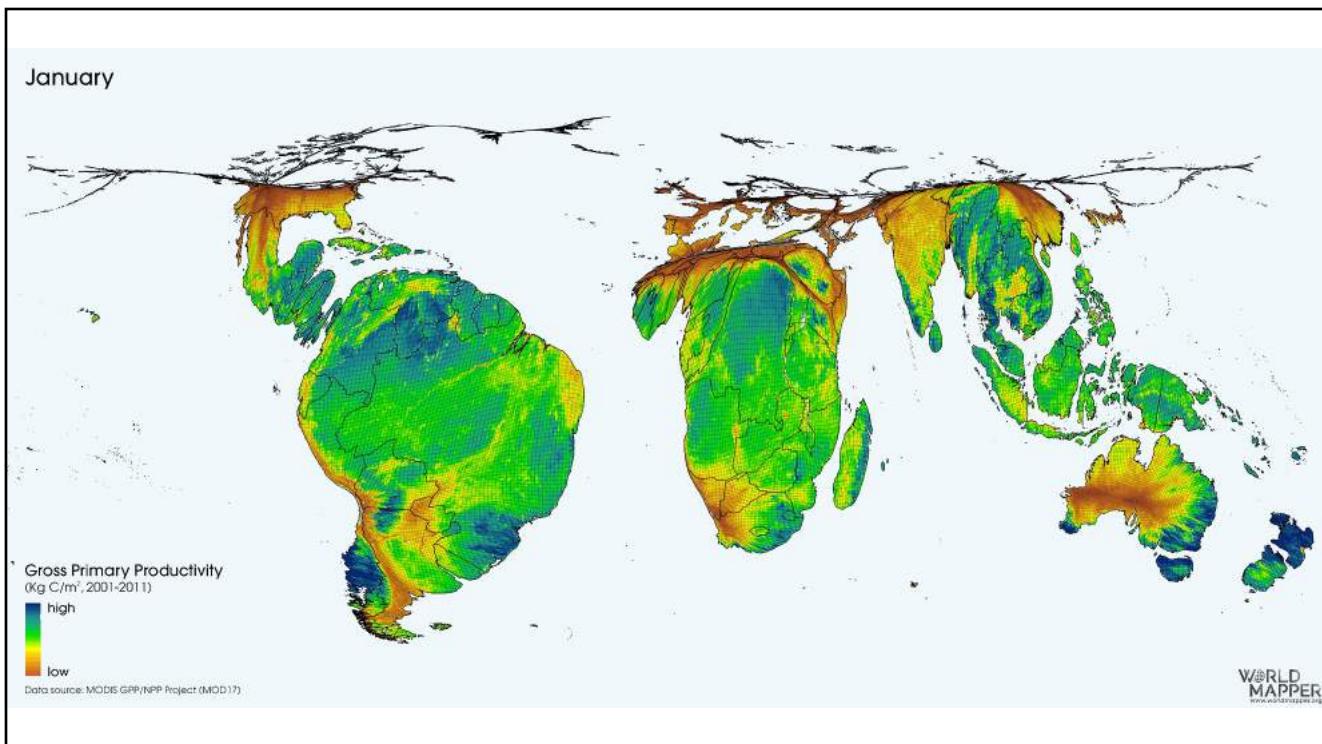
49



50



51



52

**Question 6:**

What is the area of the state of  
Florida?  
(may respond in ha, mi<sup>2</sup>, or km<sup>2</sup>)



5 points (must be ± 5%)

53

**Question 7: Tie-Breaker**

What is the area of the  
Continental USA?  
(may respond in ha, mi<sup>2</sup>, or km<sup>2</sup>)



1. Winner: Closest Score

54

# How much rain forest is there in the world?

1.84 billion hectares

18.4 million km<sup>2</sup>

132.48 Floridas

2.27x the Continental USA



55

**12%**

of Earth's land surface

**50%**

of Terrestrial Biodiversity

56



57



58

29

Rain

Heat

Biodiversity