



# Biomes and Biodiversity

# **What is a biome?**

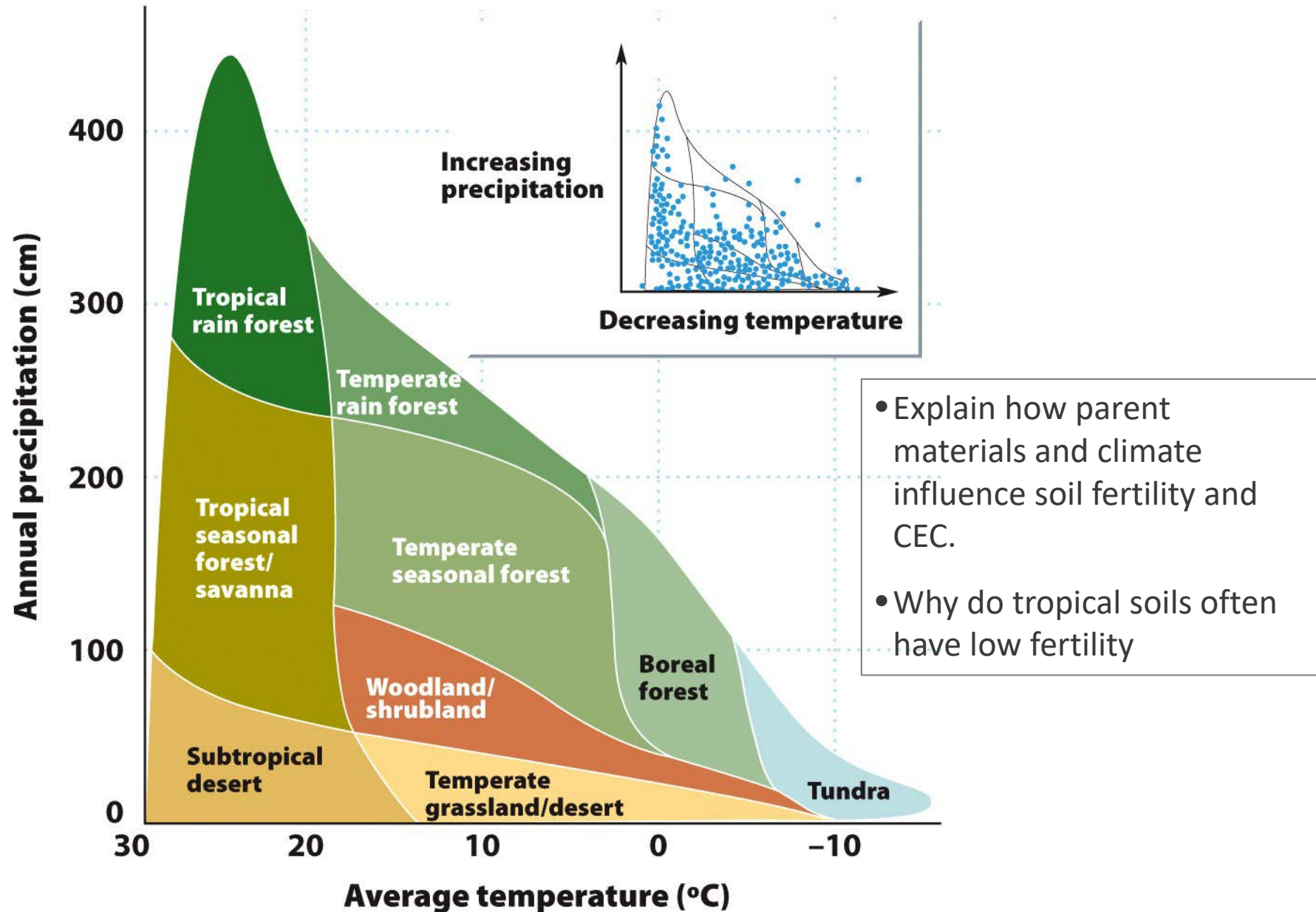
# Biomes

- A biome is a community of plants and animals that have common characteristics for the environment they exist in. They can be found over a range of continents.

**How is this different from an ecosystem?**

# **What determines a biome?**

# Biomes are determined by climate



# Biomes have characteristic soil composition

- weathering of parent materials (rocks)
- impact of climate and vegetation

Do tropical forests have deep soils?

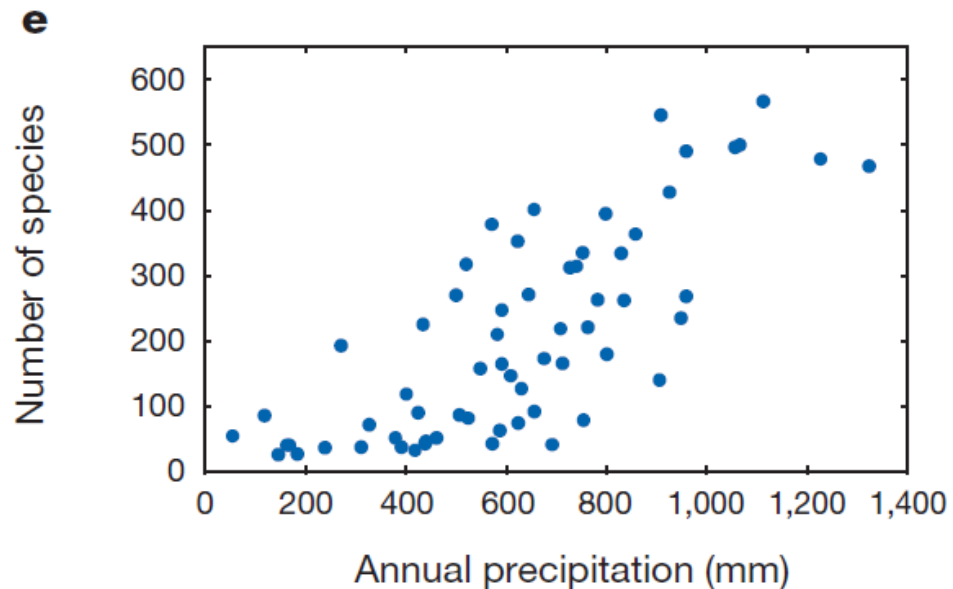
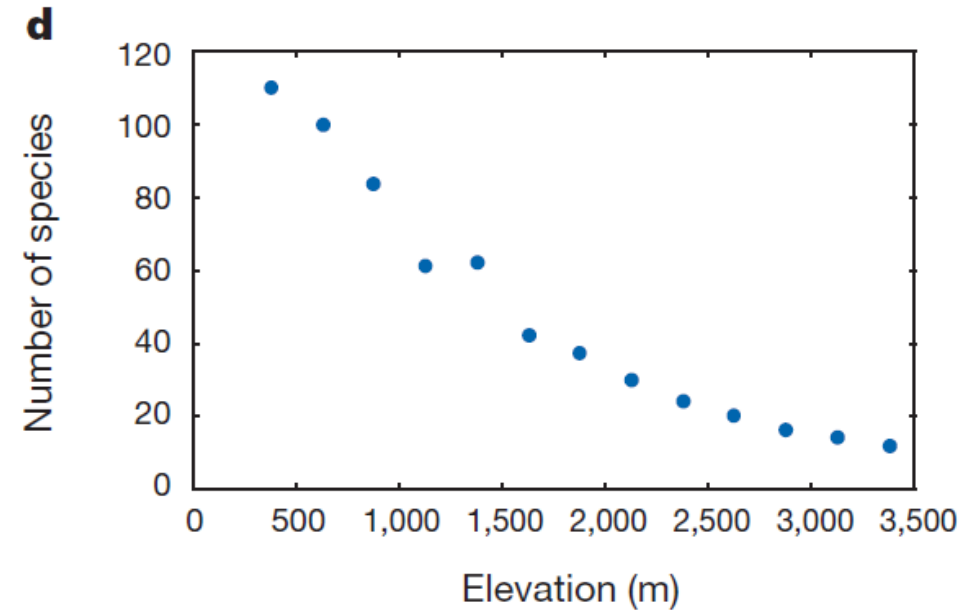
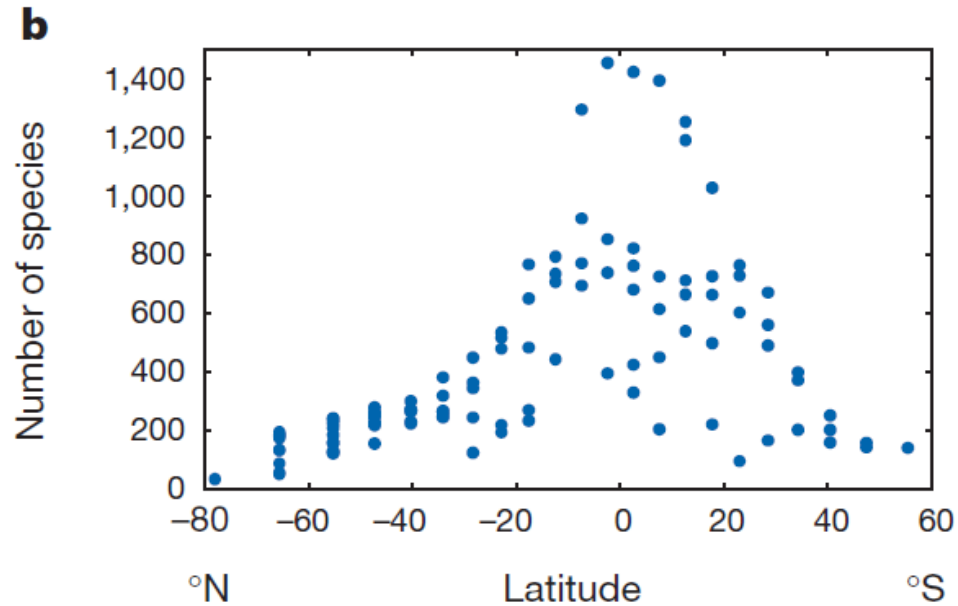
**What is biodiversity?**

**Does it matter if species go extinct?**

**How do we measure biodiversity?**

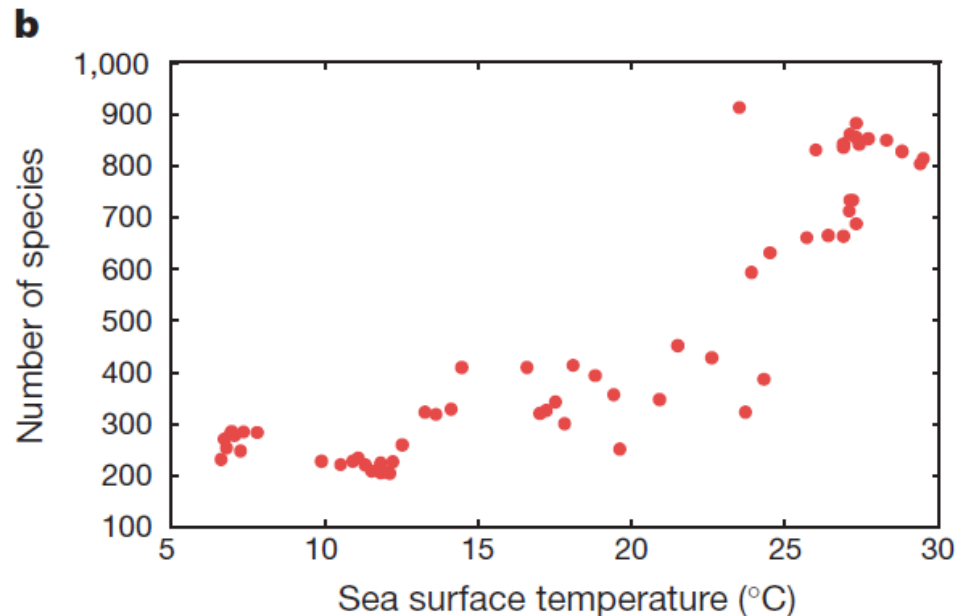
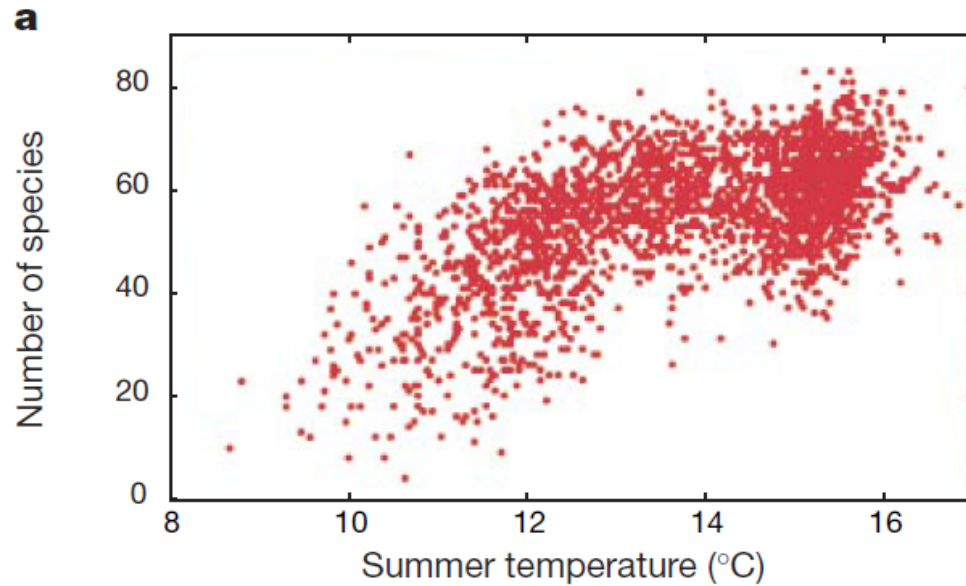


# What are global patterns in biodiversity?



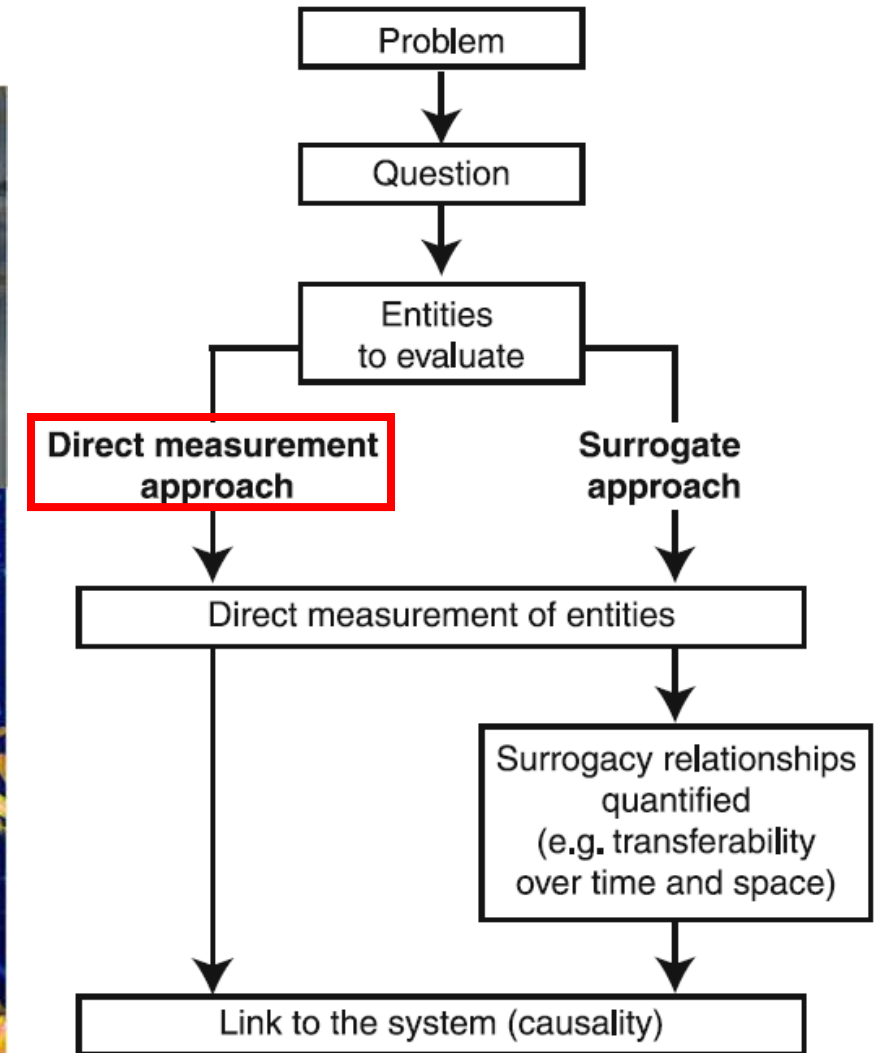
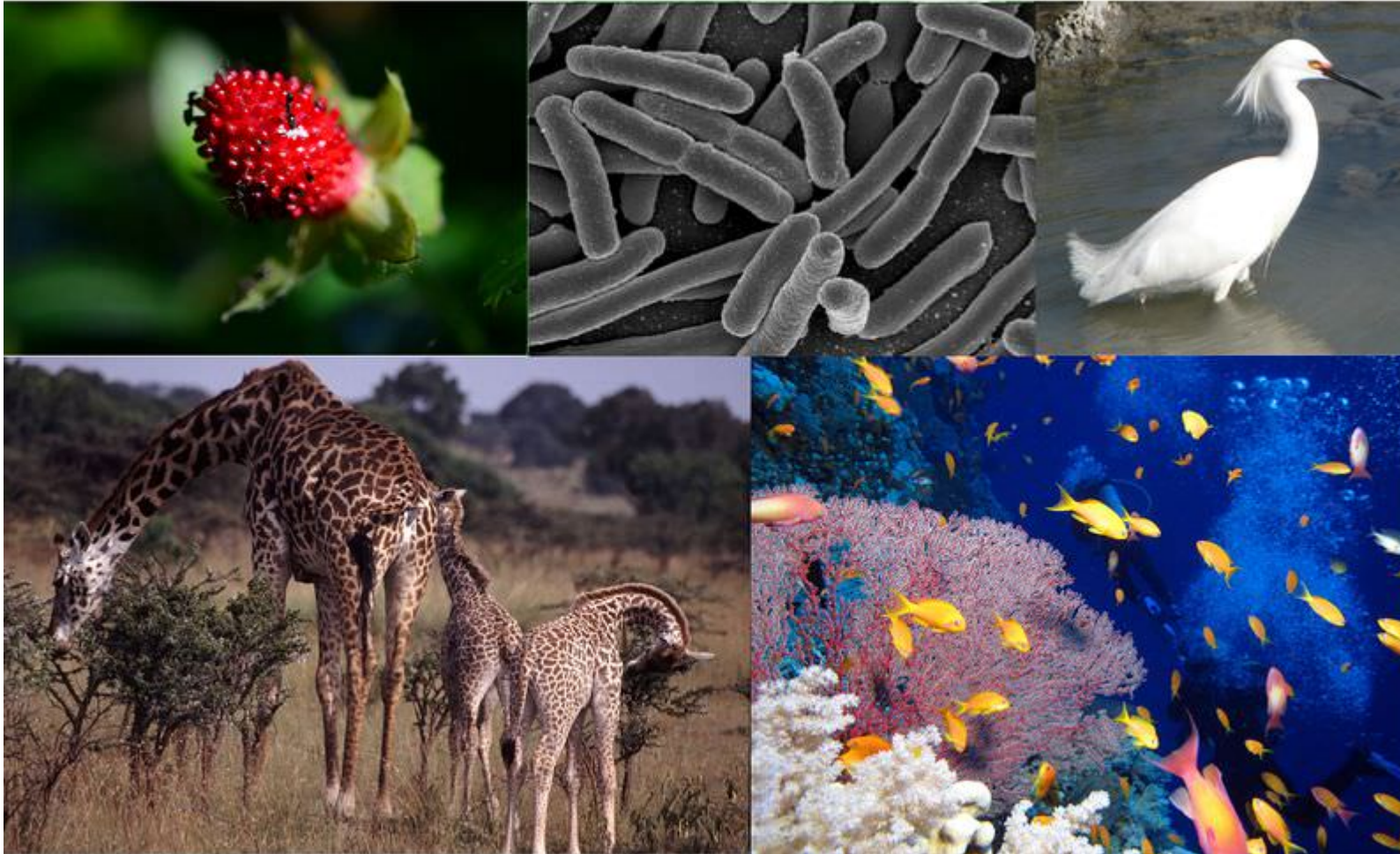
Gaston *Nature* 2000

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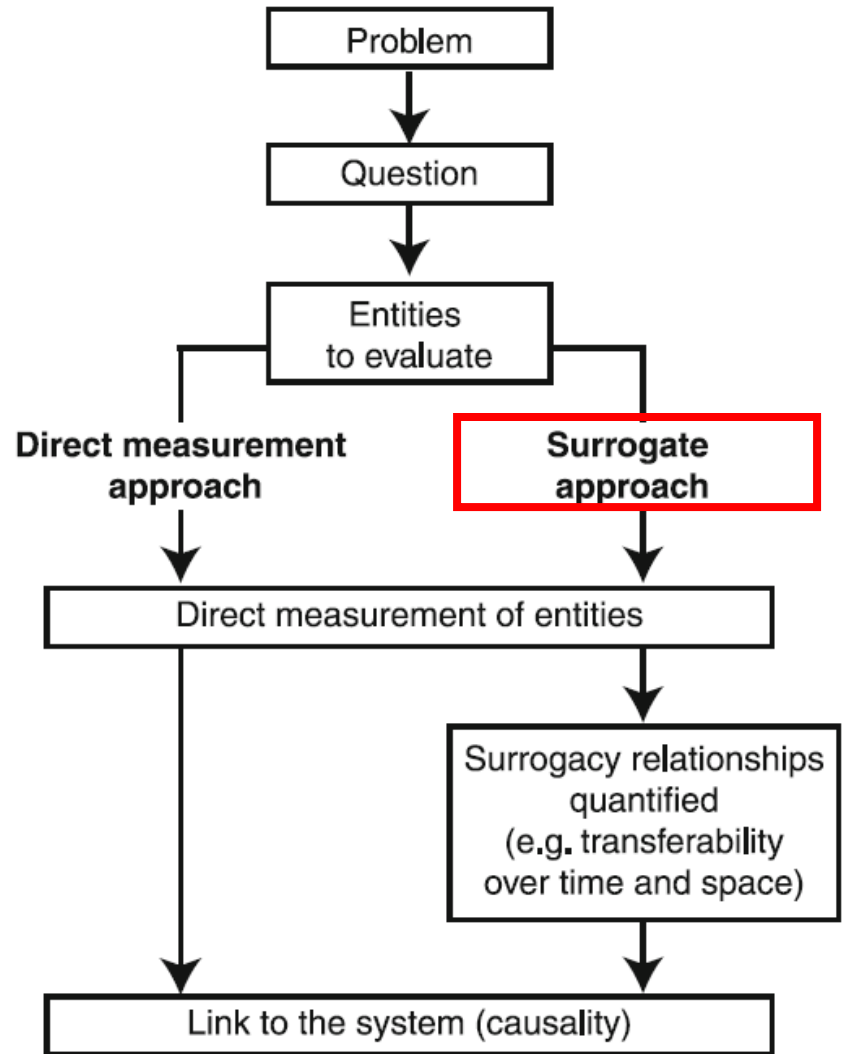


Gaston *Nature* 2000

# Measuring biodiversity



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# Measuring biodiversity

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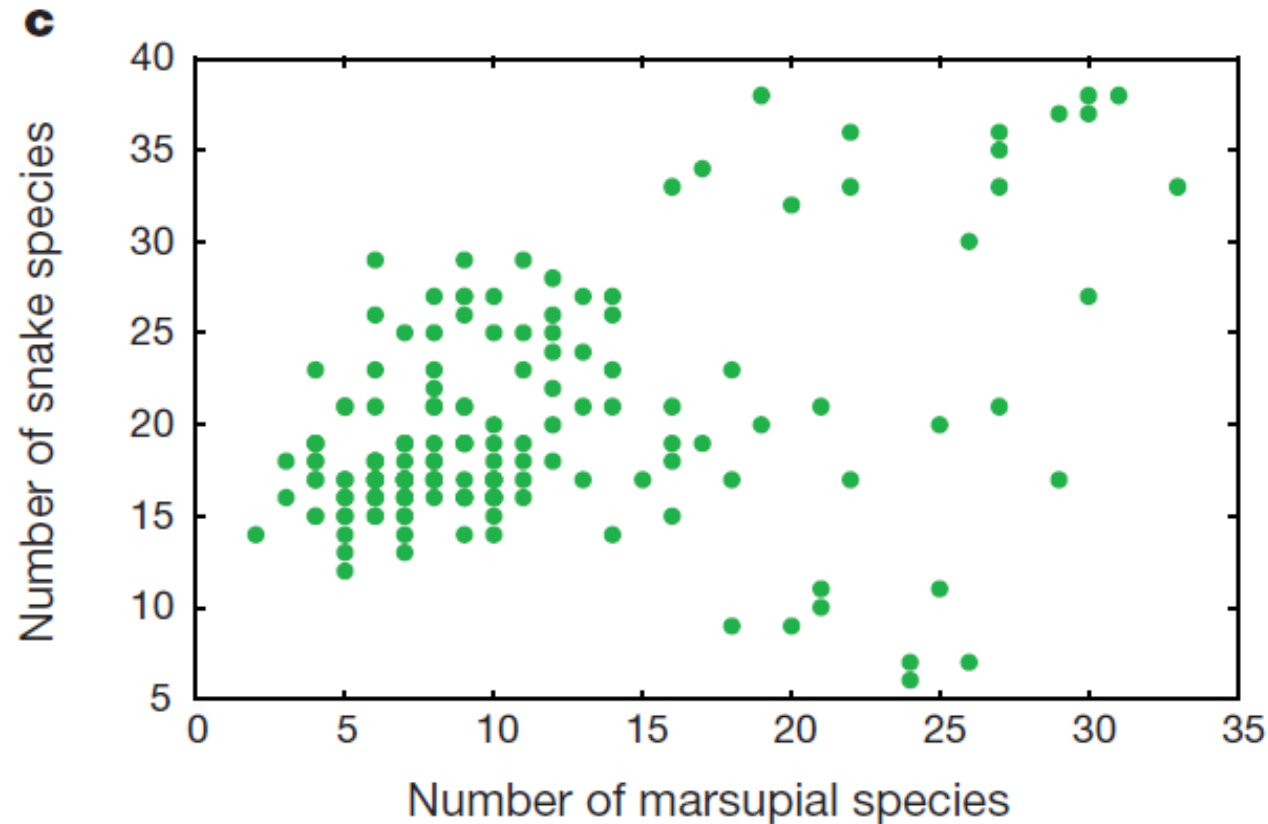
Potential advantages	Potential disadvantages
Direct measurement	
Indicator species approach	

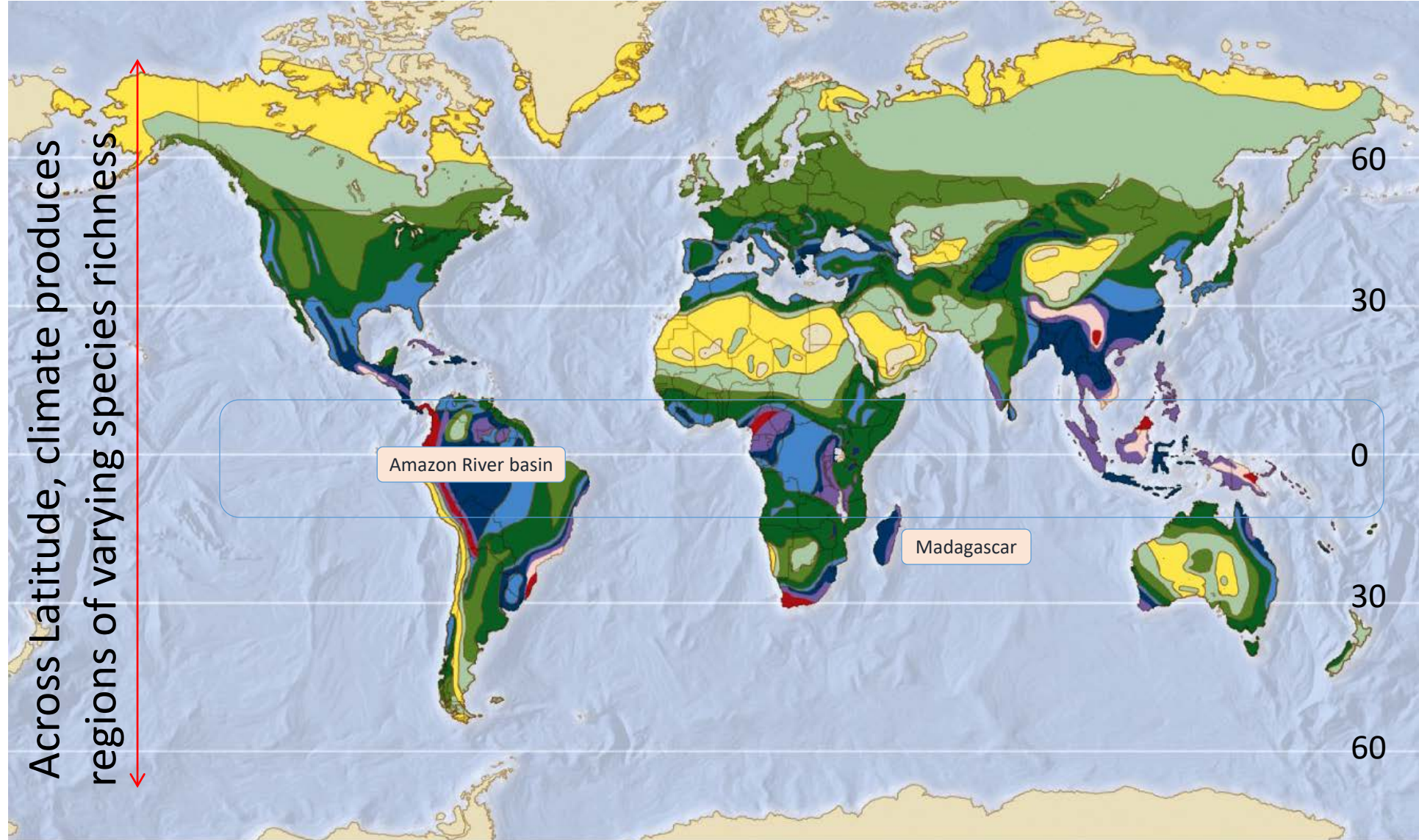
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# Measuring biodiversity

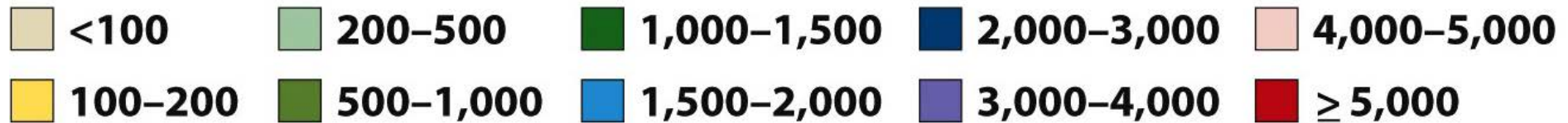
	Potential advantages	Potential disadvantages
Direct measurement	High level of transparency Potential understanding of causal relationships Predictive ability	Reductionist, many other species/processes ignored Risk that targeted entities may not be measured accurately Risk of selecting incorrect entities for direct measurement
Indicator species approach	More efficient—major savings in time and effort if robust indicator species can be identified Ease of communication with policy makers and the public	Low level of transparency Large effort to quantify causality Large effort to quantify and establish surrogacy relationships Large effort to confirm indicator suitability in space and over time Risk of circularity

# Does diversity in one group tell us about other groups?

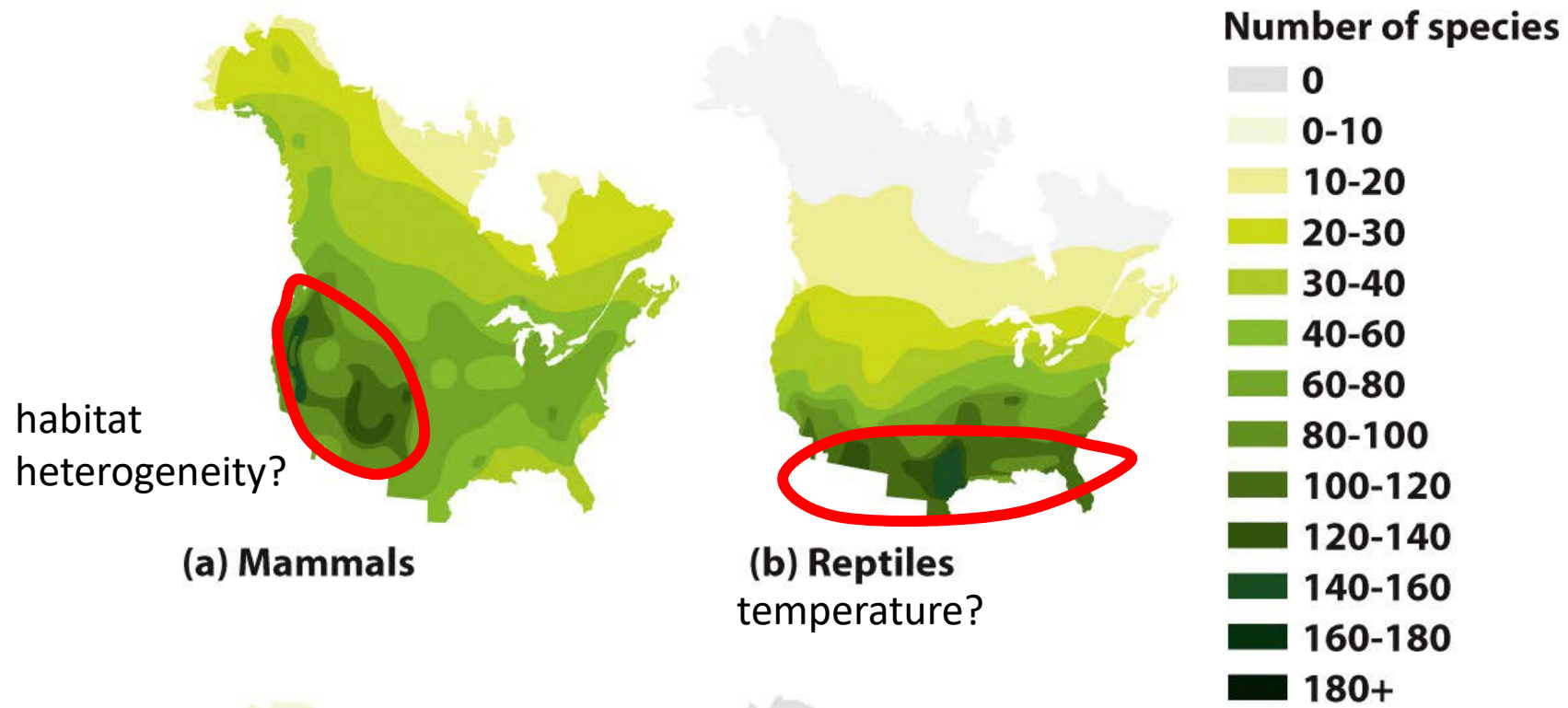




**Number of species per 10,000 km<sup>2</sup>**







(c) Trees

(d) Amphibians