

grassland soils much influenced by **climate** and **growth habits** of **grasses**

- l eaves, roots & stems die & drop **all growing year** under periodic droughts
- i ncorporated quickly & continuously
- l ight rains: do not leach out nutrients
- l ate summer dry + winter cold halts decomposition - no acid accumulation
- r ich soil biota - good aeration + mixing

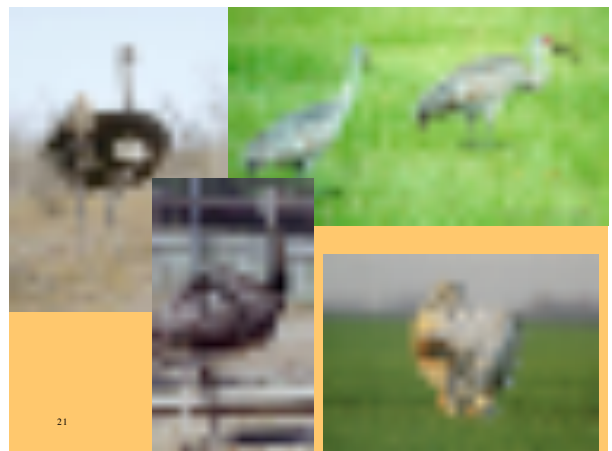
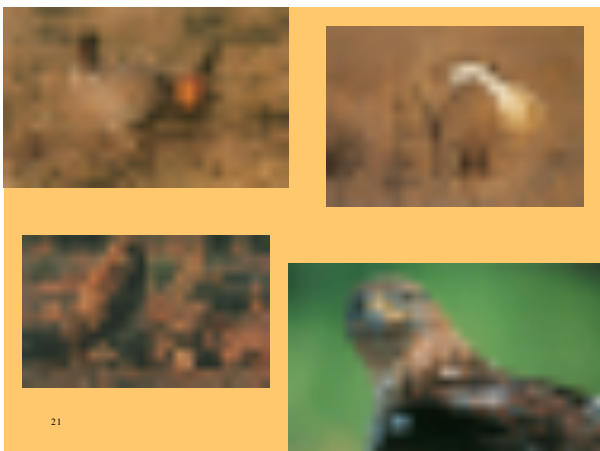
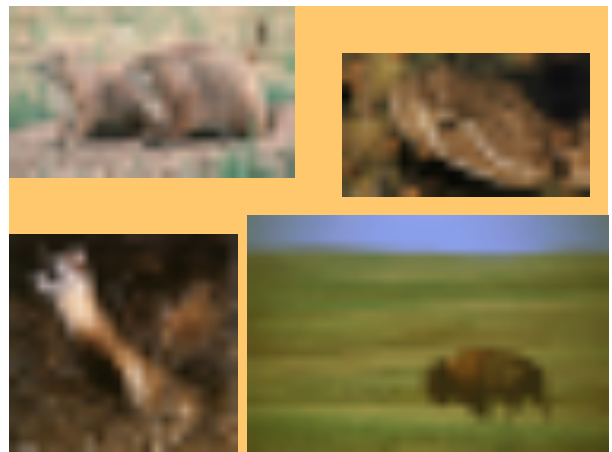
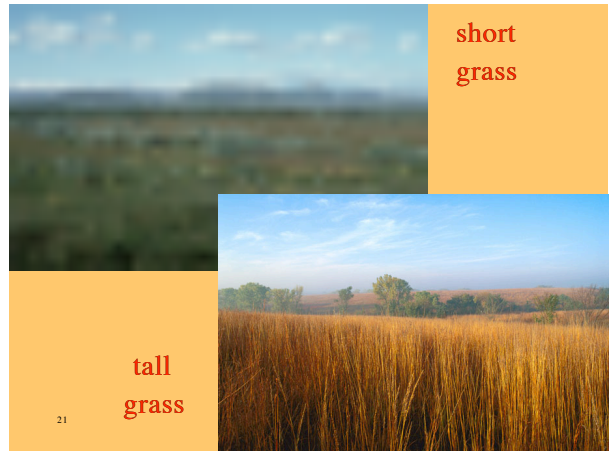
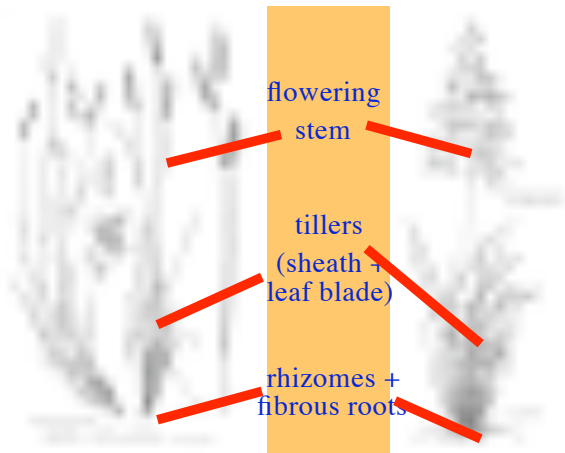
grasses found worldwide - **dominate here**

their dominance depends on their great resistance to fire, frost & desiccation

they also regenerate very rapidly after trampling and herbivory

- t rue stem at or near ground
  - s heaths + leaves (tiller)
- t rue stem elongates only at flowering
- c reeping rhizomes; fibrous roots
- S ILICA - grazing coevolution

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grasslands are the home of our species,  
of agriculture, and of "civilization"

nearly all major food plants are grasses

**maize barley rice wheat**  
**oats rye millet sorghum**

~ all domestic animals are from grasslands

**horse goat llama + alpaca**  
**cattle sheep Asian camels**

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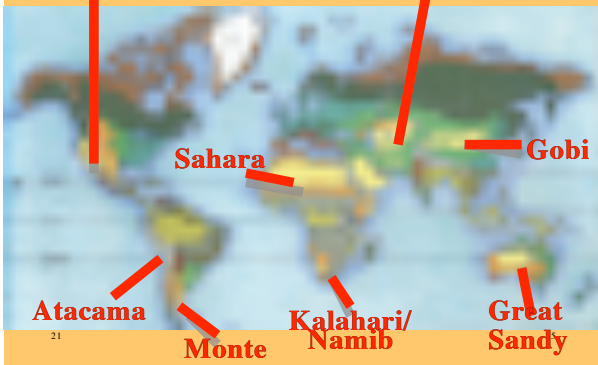
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## DESERTS



N. Am. system

Turkestan



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deserts largely defined on **water-deficit**

**cool/cold** to **hot**, depending on precipitation

warm deserts usually **<200mm** annually;  
seasonality varies greatly

rainfall highly irregular;  
great daily variation in temperature  
through lack of cloud & moisture

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## AFRICA

Sahara

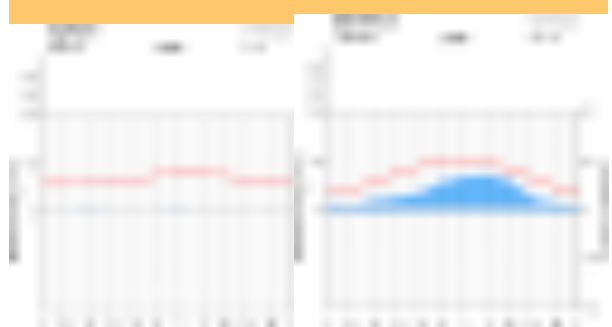
Namib



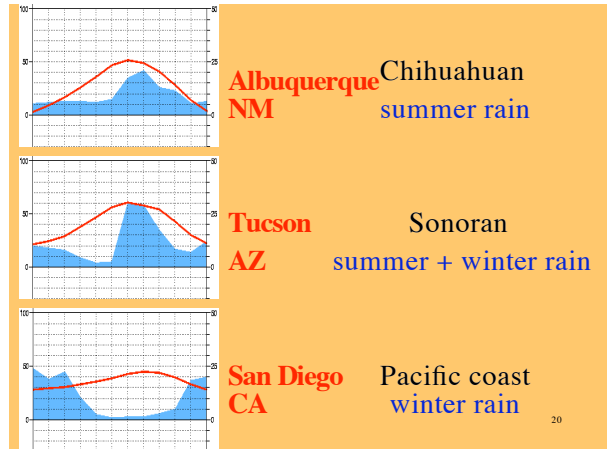
## SOUTH AMERICA

Atacama

Monte



<http://instruct.uwo.ca/biology/320y/namdes.html>



**poorly developed soils - why?**

**aridity =>**

- low productivity => low debris accumulation
- low decomposition rate => low incorporation

**high winds =>**

- removal of much debris

**high evaporation =>**

- deposition of salts

**downhill erosional cline in soil types**

- effects on vegetation types



**Great basin desert - intermontane west**



cool; >1200m.; even precipitation; snow; hard frosts; +/- all low shrubs

**Mojave desert - subtropical rainshadow**



warm/hot; 6-1200m.; winter + spring rains; some frosts; +/- all low shrubs

## Sonoran d esert - subtropical



warm/hot; < 600m. ; winter + summer rains;  
no frosts; highly diverse vegetation

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## Chihuahuan d esert - subtropical



cool/hot; 1000+m.; mostly summer rains;  
frosts; mostly shrubs

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much fauna is  
nocturnal

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