

Which biome is associated with Af climates?

Chaparral

****Broadleaf evergreen rainforest****

Grassland

Broadleaf deciduous forest

What does climate typically refer to?

Short-term events

Annual extremes

****Average conditions over decades****

Daily patterns

Which two variables are most commonly used in climate classification?

Humidity and wind speed

Temperature and altitude

****Precipitation and temperature****

Cloud cover and solar radiation

Which climate classification system is emphasized in this lecture?

Holdridge system

Thornthwaite system

Bergeron system

****Köppen system****

Which of the following is a Köppen tropical climate?

BWk

ET

****Af****

Cfb

What increases annual temperature range in D climates?

****Continentality****

Rainshadow effect

ITCZ

Tradewinds

What is a biome?

A specific weather event

****A regional vegetation type****

A geological structure

A type of soil

he rainshadow effect results in:

Consistent rainfall on coastlines

Rain never reaching the ground

****Dry and wet sides of mountain ranges****

Higher temperatures near oceans

Associated with transpiration:

Production of carbohydrates

Formation of clouds

Condensation on leaves

****Evaporative water loss****

Which is important for regulating gas exchange and transpiration in plants?

Xylem

Axillary buds

Apical meristem

****Stomates****

What is transpiration's cooling function for plants?

Roots absorb cool air

Heat radiates from apical meristem

Xylem absorbs water vapor

****Water evaporates from stomates****

What is phenology?

Nutrient balance of soils and plant biomass

Study of plant diseases

Soil nutrient movement through horizons

****Changes in plant physiology and appearance****

What is an adaptive trait of needle leaf growth forms?

Broad surface for light capture

****Low surface area to reduce water loss****

Use of sunlight to photosynthesize

High transpiration rates

Where are broad flat leaves most adaptive?

****Cfa****

H

ET

BWh

Why are tropical soils low in nutrients?

****High rates of nutrient leaching****

Low rates of photosynthesis

Extensive farming

Fertilization runoff from agriculture

What is bioturbation?

Formation of clay layers

****Mixing of soil by animals and roots****

Transport of water through phloem

Conversion of bedrock to regolith

What is eluviation?

Soil horizon formation caused by animal burrows

****Leaching of materials from upper soil horizons****

Accumulation of materials

Organic matter buildup

What is illuviation?

Soil horizons buried by colluvium

Soil surface hardening caused by wind erosion

Breakdown of parent material by tree roots

****Accumulation of leached materials in lower horizons****

Which soil is formed from volcanic ash?

Oxisols

Mollisols

****Andisols****

Aridisols

Which soil has little horizon development?

Mollisols

Histosols

****Entisols****

Ultisols

Which soil order is rich in organic matter and found in grasslands?

Entisols

Ultisols

****Mollisols****

Andisols

Where is the Af climate typically found?

Gobi Desert

****Amazon Basin****

Northwestern US

Siberia

What vegetation is associated with Aw climates?

Coniferous forest

Tundra and boreal forest

****Grasslands with drought-deciduous trees****

Evergreen rainforest

What is the dominant feature of Am climate?

Constant rainfall

High elevations

****Monsoonal flow****

Polar jet stream

What distinguishes BWk from BWh?

Higher elevations and windspeeds in BWk

Greater utilization of groundwater in BWk

****Cooler temperatures and higher latitude locations in BWk****

Locations on the east side of continents for BWk

Characteristic of BS climates:

Located on east coasts of continents

Broadleaf evergreen forest

****Semi-arid grasslands****

Wet season from ITCZ

Which soil order is typical in BS climates?

****Mollisols****

Ultisols

Entisols

Oxisols

What biome is associated with Cfa climates?

Rainforest

Chaparral

****Deciduous forest****

Tundra

What biome is associated with Cfb climate?

Polar desert

Evergreen rainforest

****Marine coniferous forest****

Steppe grassland

What characterizes the EF climate type?

****Low precipitation****

Influence of ITCZ

Tradewinds

Deciduous forests

What is a common biome in D climates?

****Coniferous boreal forest****

Tropical rainforest

Chaparral

Savanna

What are the main climatic influences on BWk deserts?

Monsoonal winds and the ITCZ

Tropical cyclone storm tracks

Position of the polar and subtropical jet streams

****STHP and rainshadow effects****

What defines H climates?

****Elevation****

Latitude

Longitude

Earth's tilt

Which Köppen climate type is characterized by year-round high temperatures and rainfall?

Aw

Am

****Af****

Cfa

California, Spain, southern coastal South Africa, southwestern coast of Australia

BWk

****Cs****

Aw

Cfa

Which North American desert is a BWh desert?

Sonoran Desert

Mojave Desert

Great Basin Desert

****Chihuahuan Desert****

Long grass and short grass prairie

Aw

Cfb

D

****BS****

France and England, New Zealand, Washington and the Canadian Pacific Coast

Cfa

****Cfb****

Cs

D

Material in a soil profile that has been eroded and transported to another location by wind, gravity, or water

Alluvium

****Colluvium****

Paleosol

Deflation lag

Soil that is low in nutrients because high rainfalls leach soil nutrients into lower horizons and evergreen plants hold much of the nutrients in their biomass

Mollisols

Inceptisols

Andisols

****Oxisols****

From surface to bedrock, what is the correct sequence of soil horizons?

A, O, E, D, R, C

O, R, A, C, B, E

****O, A, E, B, C, R****

O, A, E, B, C A

What soil horizon can be heavily leached of certain chemicals and light in color?

O

A

****E****

C

Least likely climate to find drought-deciduous leaves:

Aw

BWh

Am

****Cfb****

Which climate has the largest annual temperature range?

****D****

Af

E

Cfa

What subsurface soil horizon darkens from materials leached from above it?

O

R

E

****B****

Cfb, Cs are typically found where?

Interior of continents

****West coast of continents****

Near warm ocean currents

Near the ITCZ

How do you discriminate an Am climate type from Aw?

Am is wet all year

Am is located in the interior of continents

****Am dry and wet seasons are more extreme than Aw****

Am is found only in Asia

Not true of transpiration:

Helps to cool the plant

Can contribute to water stress

Helps pull water up from the soil into the plant

****Prevents gas exchange****

Which west coast climate has hot dry summers and mild wet winters?

****Cs****

ET

Af

Cfa

Where are BWh climates located?

On the equator

****Poleward of tropical climates****

On mountains

Near icecaps