

How is a shrub different from a tree ?

- Shrub
 - *Woody plant, many small stems, <10 feet tall*
- Tree
 - *Woody plant, one well defined stem (>2 inches in diameter), >10 feet tall*
- *If you can walk under it—it's a tree. If you have to walk around it—it's a shrub.*

Blackbrush shrubland

(*Coleogyne ramosissima*); Utah



Creosotebush

(*Larrea tridentata*); California



Rabbitbrush

(*Chrysothamnus nauseosus*); Utah



Chihuahuan desertscrub

Chihuahua, Mexico



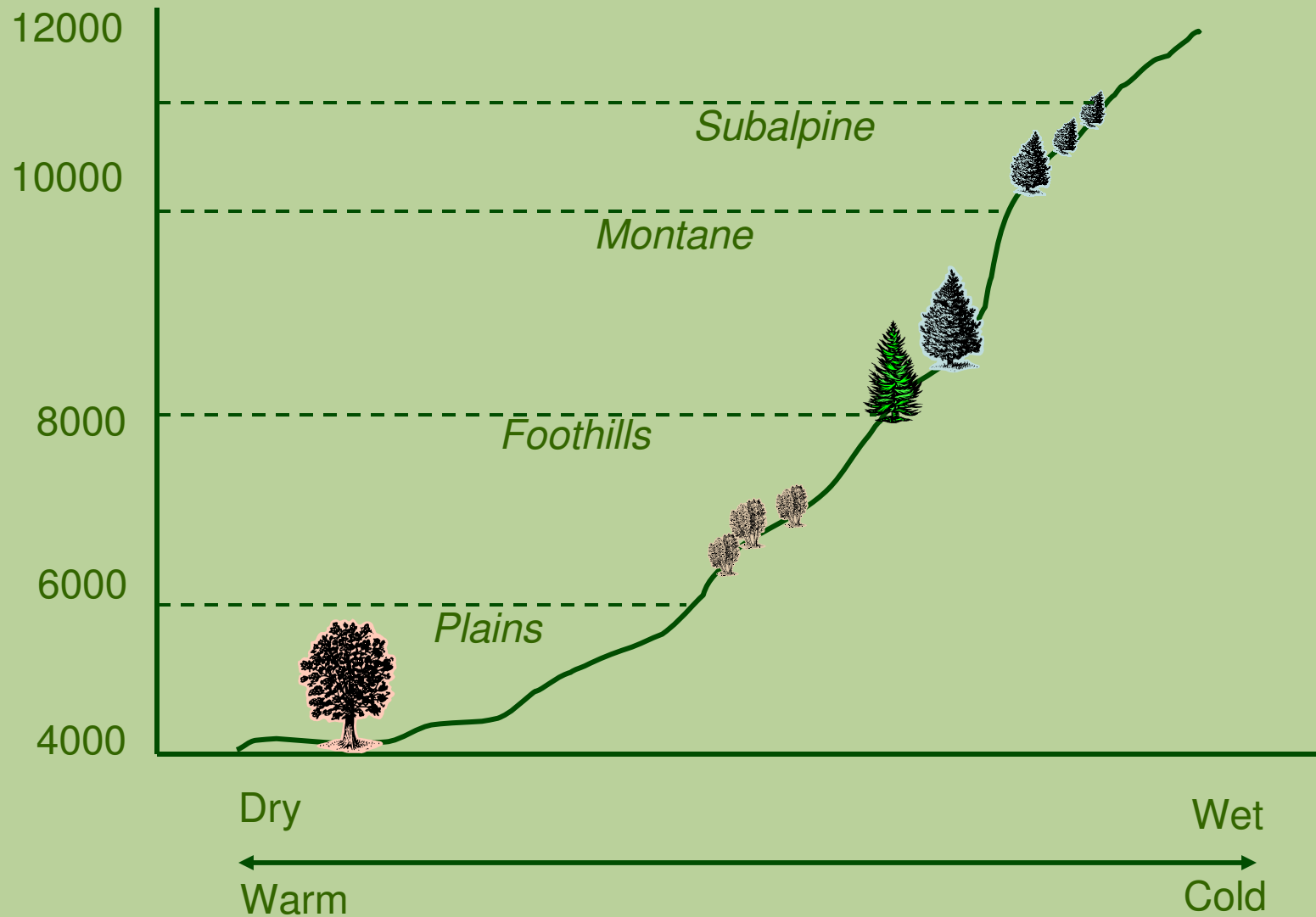
Shrubs

- Replace trees in cold and arid landscapes
- Adaptations include:
 - small leaves
 - hairy or waxy coverings
 - deciduous leaves
 - extensive or deep root systems
 - water storage in tissues

Plains and Front Range foothills



Life Zones



Aromatic sumac

(*Rhus trilobata*); Utah



Boulder raspberry

(*Rubus deliciosus*); Colorado



Chokecherry

(*Prunus virginiana*);
Colorado



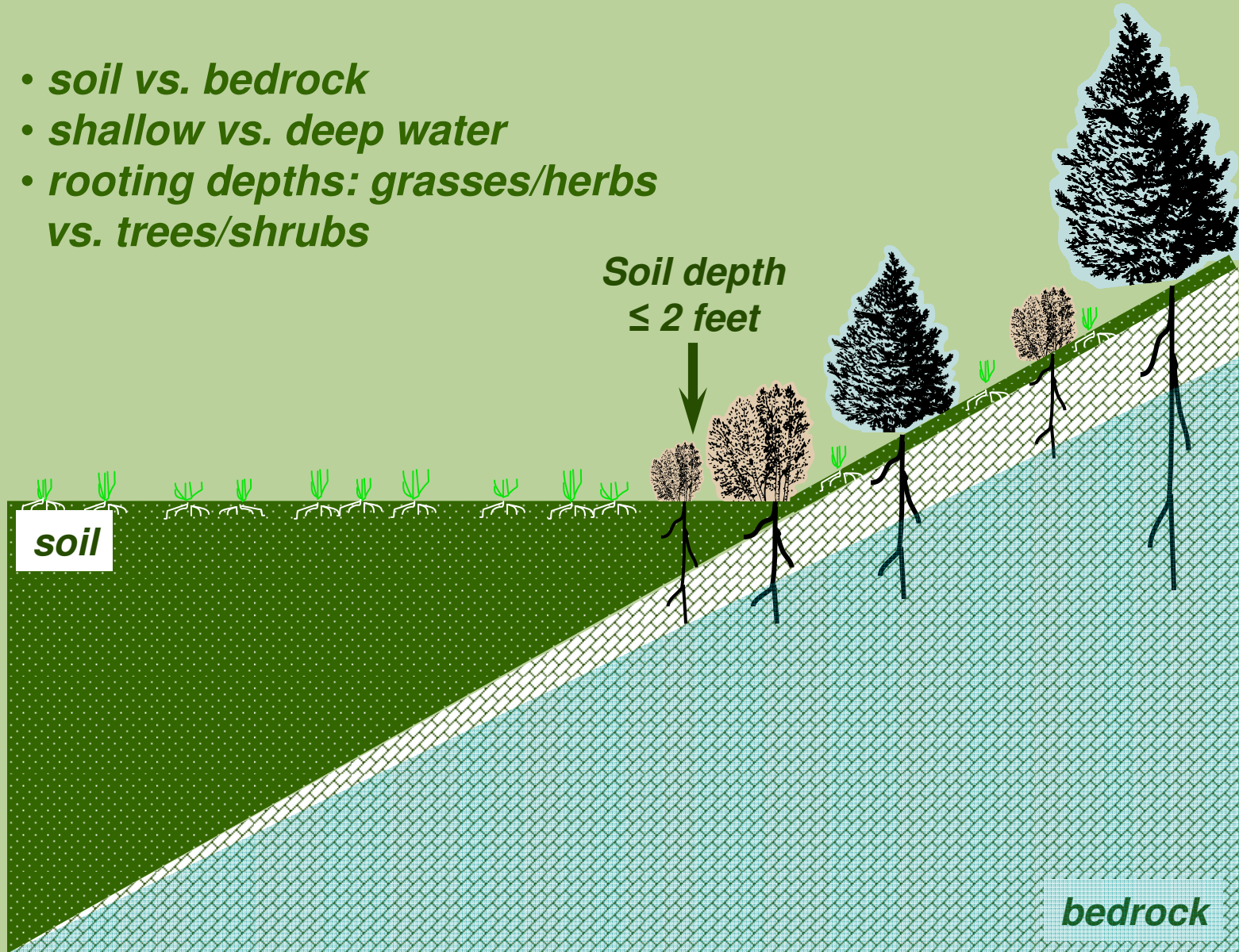
Foothills vegetation

Soil depth controls vegetation patterns



Soil depth & vegetation distribution

- *soil vs. bedrock*
- *shallow vs. deep water*
- *rooting depths: grasses/herbs vs. trees/shrubs*



Riparian forest

Arikaree River; Colorado

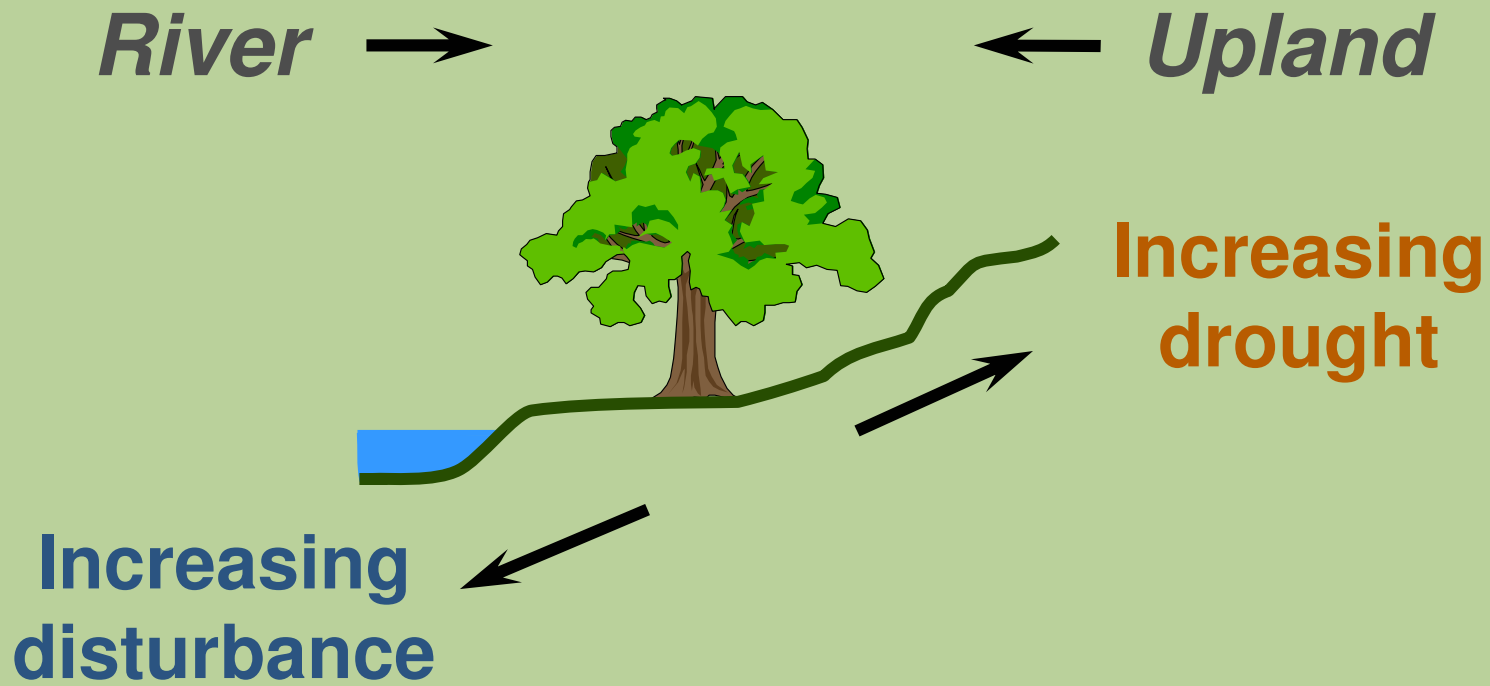


Riparian vegetation

Riparius [Latin] = Of the bank

Riparian = Growing or living
along the banks of a river or
stream

Riparian zone





Riparian cottonwood

Escalante River; Utah

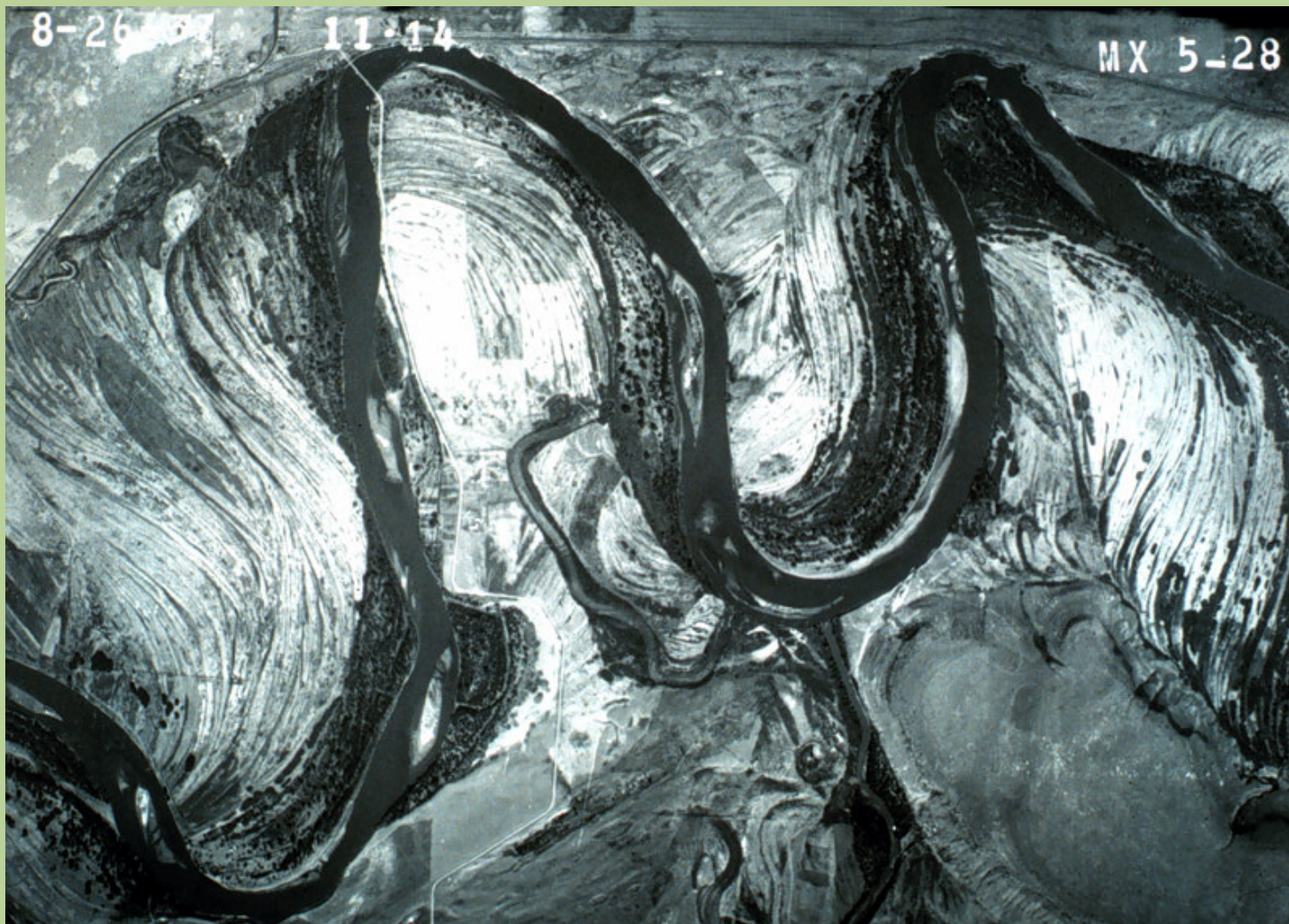
Riparian cottonwoods

Missouri River; North Dakota



Channel change

Missouri River; Montana

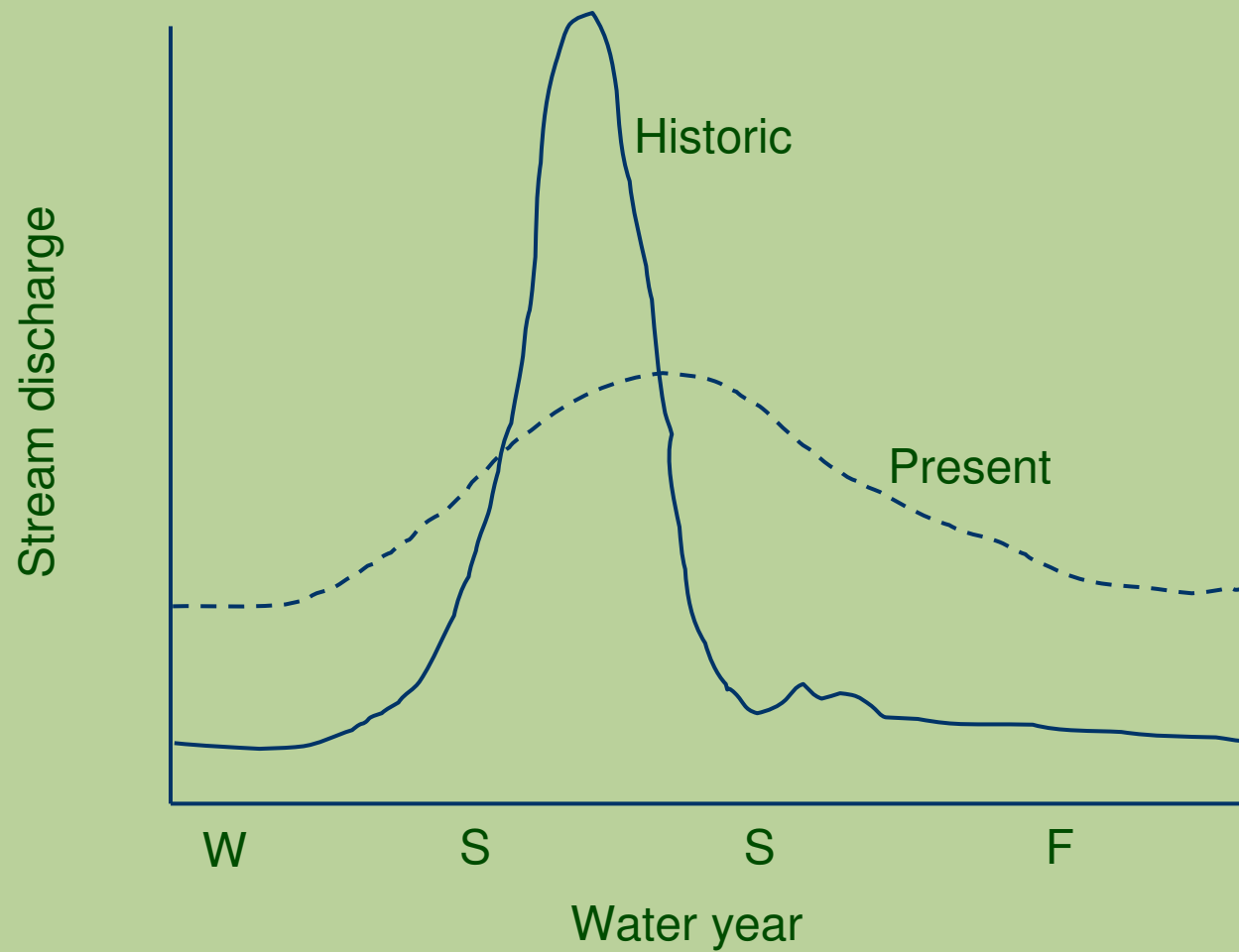


Flood pulses

Missouri River; Nebraska



Stream flow alteration



Channel stabilization

Poudre River; Colorado



Non-native species

Platte River; Nebraska



On the Cache la Poudre River, Colorado

Worthington Whittredge; 1871

