**ESCI 197C INTRODUCTION TO FIELD RESEARCH**

# Reading Forest History

Clues to forest history

Vertical distribution of branches
- wolf trees (branches throughout vertical dimension)
- branches restricted to canopy

Radial distribution of branches, crown geometry
- lack of branches in a given direction indicates tree(s) formerly adjacent

Canopy gaps (look for logs or stumps or fire scars nearby)

Pillows, cradles, and linear mounds of soil
- live trees create pillows (as roots decay, drop attached soil); dead trees not (no/small roots)
- extent and depth of cradle indicates distribution of large roots

Groups of trees
- lines of trees (nurse logs)
- circles of trees [nurse stumps (potentially different spp), or stump sprouts (same spp)]
- coppiced trees smaller diameter than individual trunks bc multiple trunks share same root syst.

Age discontinuity

Tree species composition and environmental tolerances
- shade tolerant vs. intolerant species
- drought tolerant vs. species requiring mesic soil conditions
- vulnerability to forest pathogens

Snags
- consider agent of mortality
- decay status (height, bark, branches, cavities) indicates time since tree death

Logs
- consider direction of fall relative to landform, edges, and other trees
- pay special attention to multiple logs
- root ball present? Consider root extent relative to tree size
- log decay status (bark, branches, internal structure, rigidity) indicates time in place
- consider agent of mortality
  e.g., storms, inundation, fire, avalanche, pathogenic fungi, insect outbreak, soil erosion

Fire scars
- location relative to slope
- height above ground
- location relative to forest, edges, potential ignition sources

Topography
- river benches and terraces
- landslides, erosion

Bark: texture reveals growth rate or age, relative to species (smooth=rapid; rough=slower)