Start with conceptual model

- Conceptual model of how much water forests need and use
- Conceptual model of some forest management actions designed to alter:
  - streamflow/recharge
  - forest drought vulnerability
- Then select/design process-based models to improve understanding and reduce uncertainty in estimating how climate/land use change alters forest ecohydrology

Balance of supply and demand: Forest water use

Non-eco influences on demand

- Radiation (latitude, slope, aspect)
- Vapor pressure deficit (effected by temperature)

Non-eco influences on supply

- Precipitation (timing and magnitude)
- Surface characteristics (litter, soil) that influence infiltration
- Subsurface characteristics that influence subsurface storage

Eco influences on demand

- Leaves (number, distribution)
- Ecophysiologic controls on stomatal response
- Plant height
- Ecosystem composition (shading by neighbors)

Eco influences on supply

- Interception losses
- Shading impacts on snowmelt
- Roots!

Where does climate change come in?