Penman- Monteith

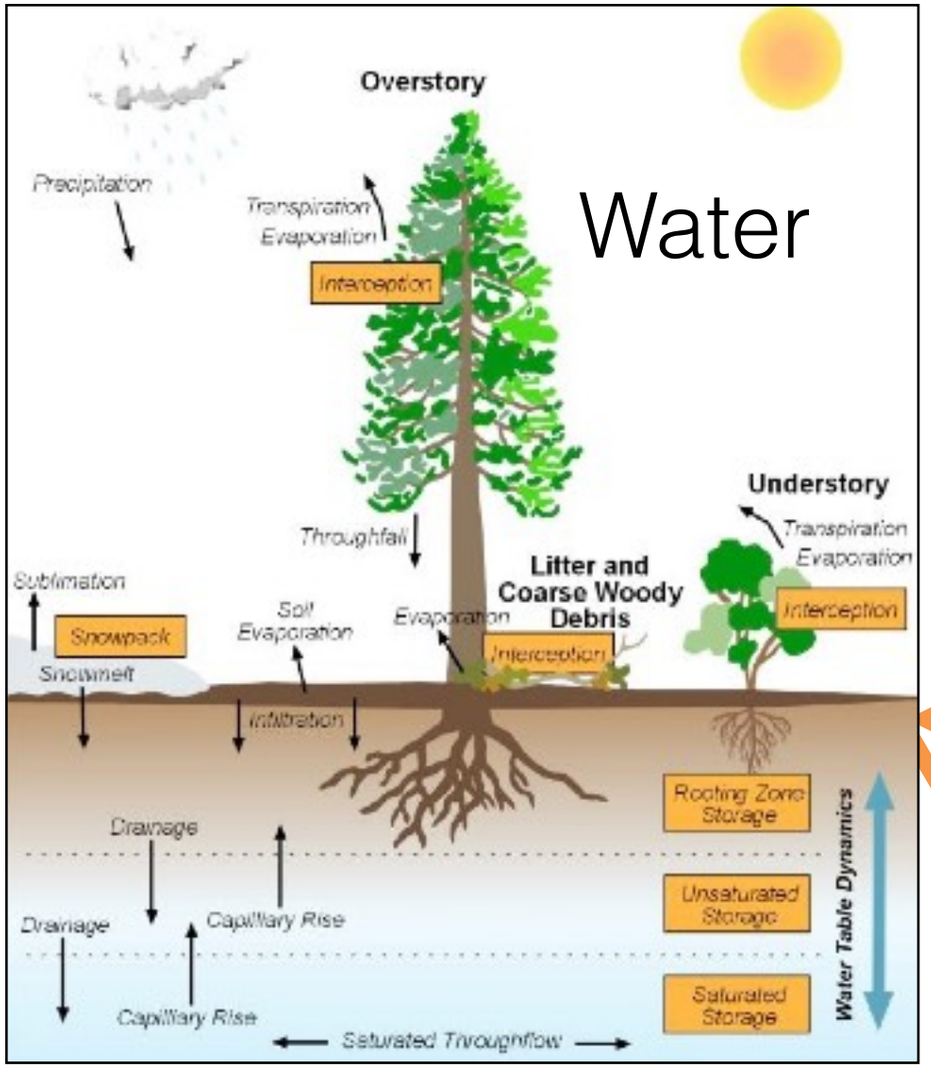
Penman

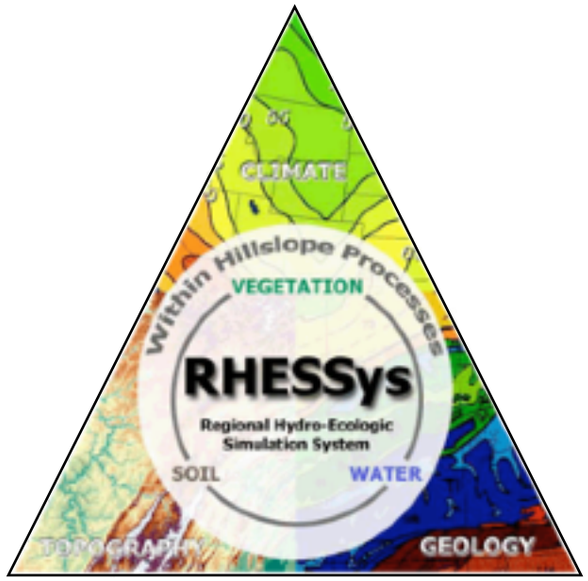
- $$E = \frac{s\,R_N + \rho_a\, c_p\, Ca\, [e_s(T_a) - e_a]}{[s + \gamma[1 + Ca/Ccan]\,\lambda_v}$$

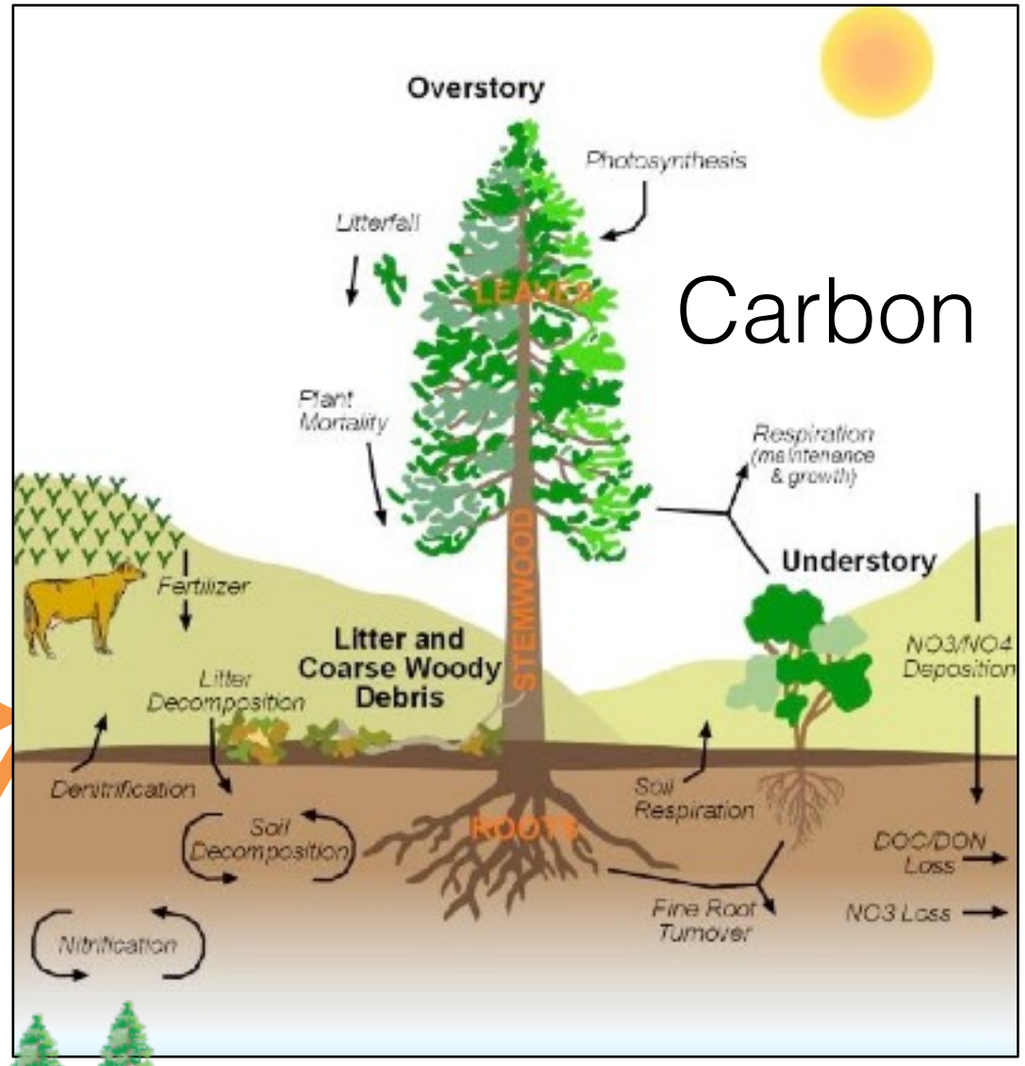
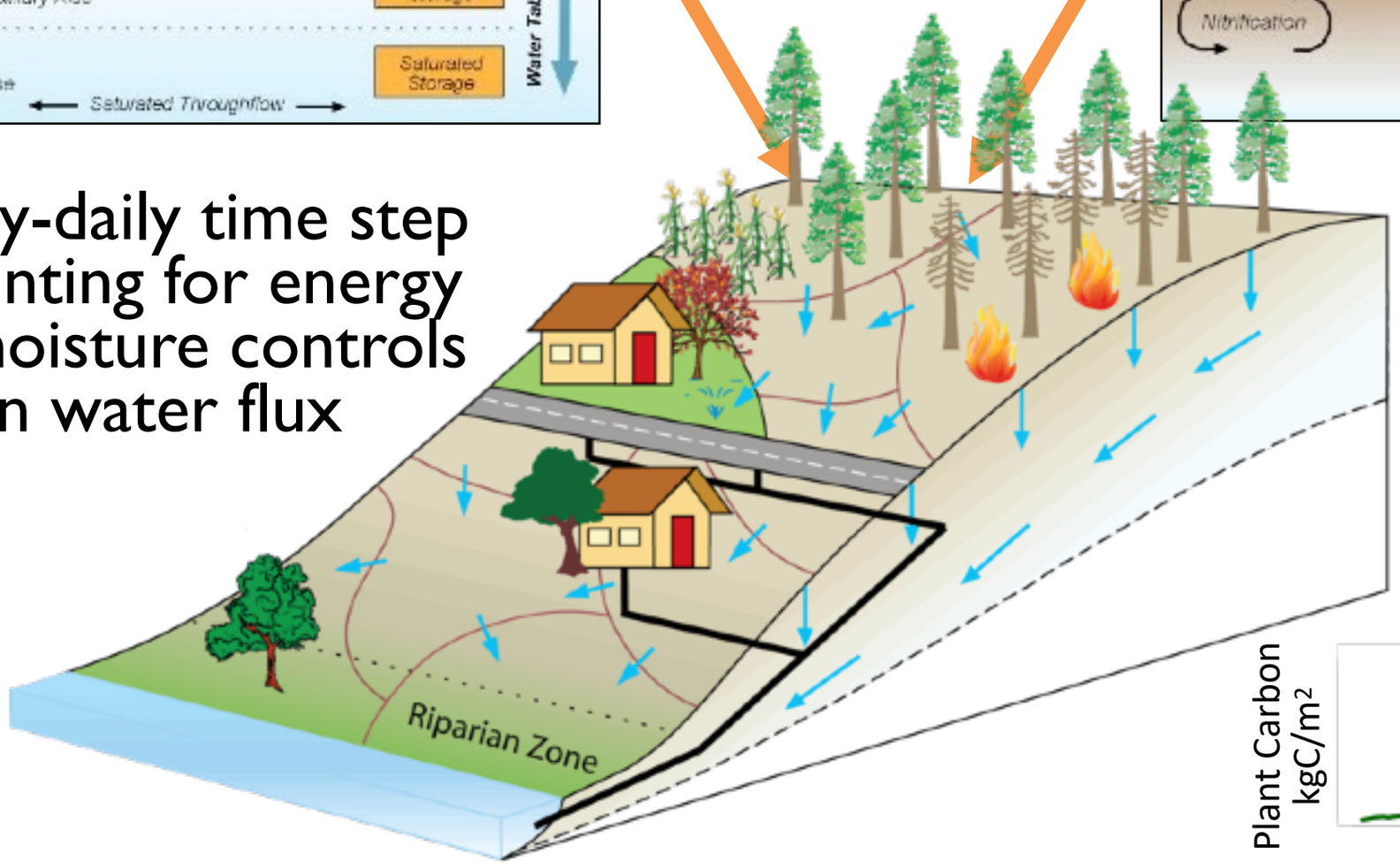
(Radiation + VPD) / availability

- s is slope of saturation vapor pressure deficit curve (Pa K−1)
- R - net radiation (W m-2)
- pa - density of the air (kg m-3)
- cp - heat capacity of the air (J kg−1 K−1)
- γ - psychrometric constant (Pa K−1)
- u - wind speed m/2
- Ca - aerodynamic conductance (m s-1) often f(windspeed)
- Ccan - canopy conductance (plant regulation of water loss)
- es, ea - vapor pressure (saturated and actual) could write as (1-relative humidity)*es
- λ_v latent heat of vaporization (MJ kg-1)

Instantaneous!!







Hourly-daily time step accounting for energy and moisture controls on water flux