Chapter 2 Highlights

1. ***Blue water*** for human use can come from appropriating renewable flows (rivers and groundwater recharge) or from drawing down non-renewable stocks (lakes and aquifers).
2. Humanity also taps into the flow of ***green water*** (the ***transpiration*** of soil moisture by plants) by using it to grow ***rainfed*** crops.
3. Renewable flows generated by the global hydrologic cycle amount to about 46,000 km^3/yr of blue water (global ***runoff***) and 71,000 km^3/yr of green water (terrestrial ***ET***).
4. Water availability is highly variable spatially, and is determined by climate patterns and the flow of runoff within ***river basins***.
5. The temporal variability in runoff can be described using several hydrologic tools—largely rooted in assumptions of ***stationarity***—including ***hydrographs, flow duration curves, flood frequency analysis,*** and rainfall ***intensity-duration-frequency curves***.
6. Drought is a complex phenomenon that can devastate societies built around average conditions. ***Climate variability,*** land-atmosphere ***feedbacks,*** and ***climate forcing*** can each play a role in causing and perpetuating drought.
7. The impact of drought on society is determined by the physical ***hazard*** (magnitude and extent of drought), but also by societal ***exposure*** and ***vulnerability***. Societies are most vulnerable to drought when they push land and water to their limits, and in the process destroy natural resources (such as soils) that can help temper drought's worst effects.
8. ***Paleoclimatology*** has revealed the existence of historical ***megadroughts***, challenging assumptions of climate stationarity. ***Aridification***, rather than drought, is probably a better term for megadrought, since megadroughts are driven by climate forcing rather than just climate variability and demand deep societal change rather than short-term measures.