

# Water Resources 101

## Surface Water Resources

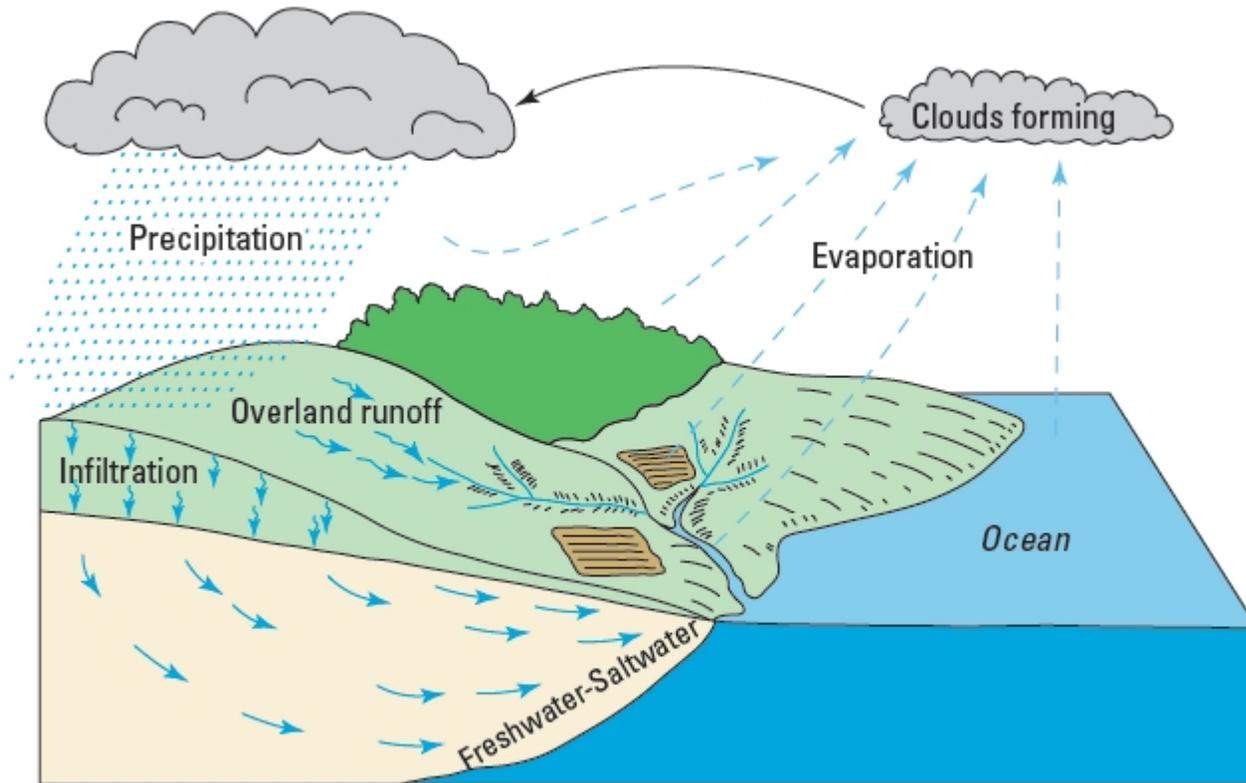
Tom Fransen  
River Basin Management Section  
March 5, 2008



# Glossary of Terms

- **acre-foot (acre-ft)**--the volume of water required to cover 1 acre of land (43,560 square feet) to a depth of 1 foot. Equal to 325,851 gallons.
- **base flow**--sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharges.
- **consumptive use**--that part of water withdrawn that is evaporated, transpired by plants, incorporated into products or crops, consumed by humans or livestock, or otherwise removed from the immediate water environment. Also referred to as water consumed.
- **cubic feet per second (cfs)**--a rate of the flow, in streams and rivers, for example. It is equal to a volume of water one foot high and one foot wide flowing a distance of one foot in one second. One "cfs" is equal to 7.48 gallons of water flowing each second, or 449 gallons per minute.
- **million gallons per day (Mgd)**--a rate of flow of water equal to 133,680.56 cubic feet per day, or 1.5472 cubic feet per second, or 3.0689 acre-feet per day, or 694 gallons per minute. A flow of one million gallons per day for one year equals 1,120 acre-feet (365 million gallons).

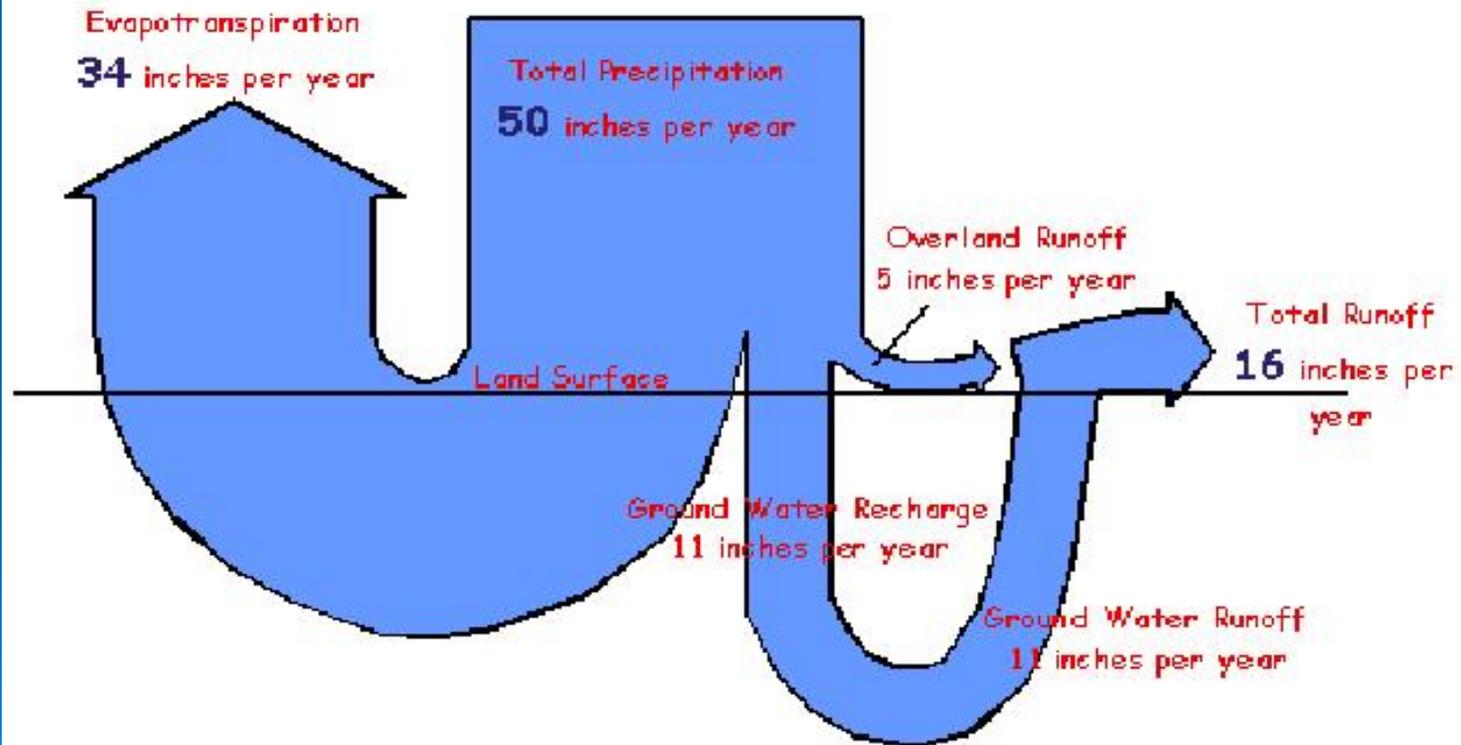
# Hydrologic Cycle



**Figure 2.** The hydrologic cycle depicts the movement of water through the hydrologic system (adapted from Heath, 1983).

# Water Budget

Typical Water Budget for the North Carolina  
Piedmont or Mountains



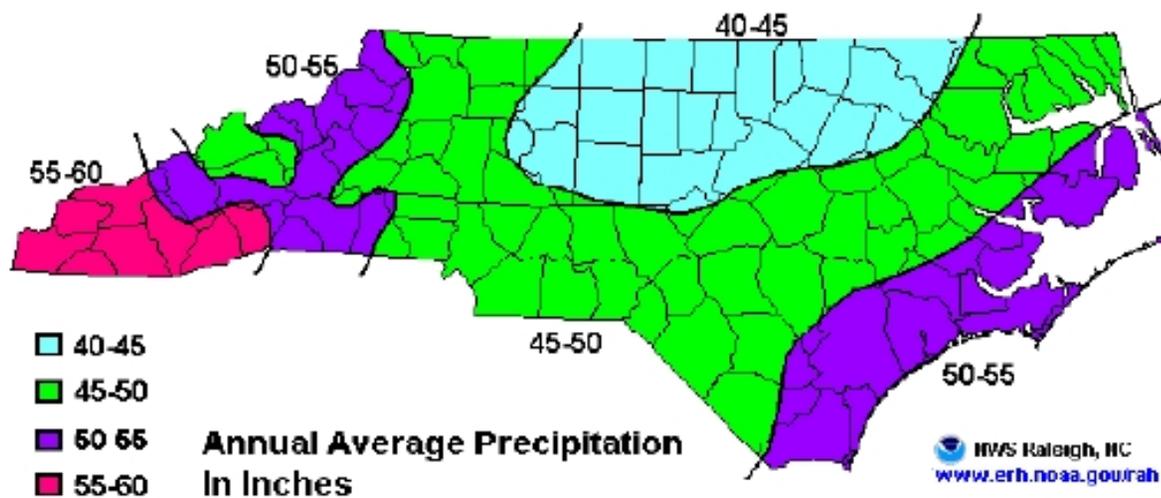
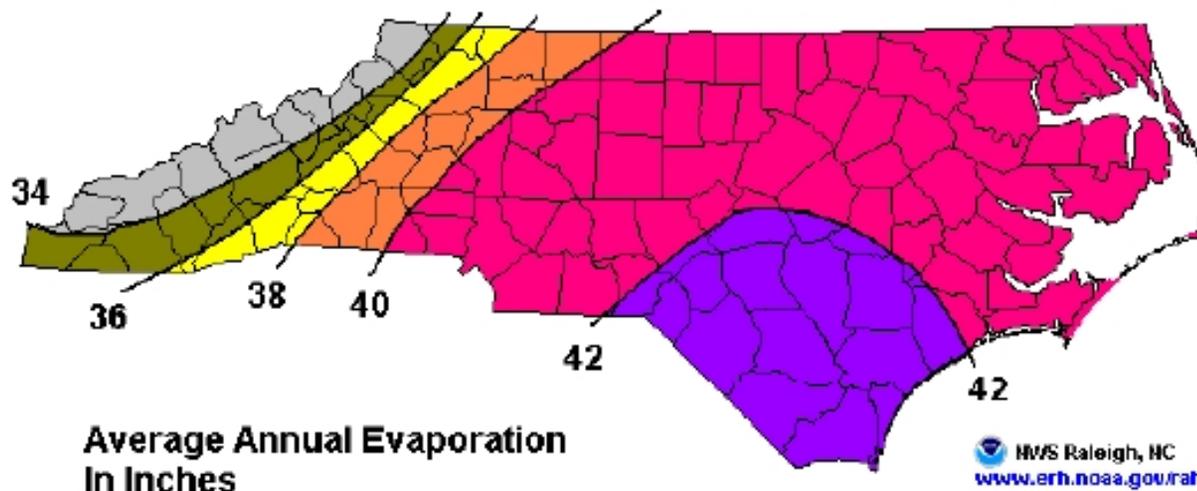


Figure 12. Annual average pan evaporation (top) and annual average rainfall (bottom). Graphic created by the Raleigh National Weather Service Office.

# Data

North Carolina Department of Environment and Natural Resources

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<http://www.nc-climate.ncsu.edu/cronosh2o>

State Climate Office of North Carolina: JET - Mozilla

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Chapel Hill, NC  
Orange County  
35.83 N 79.06 W  
Elevation: 509 ft

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Current Conditions  
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Dewpoint 48°F  
Winds N 3

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# River Basins



# Questions

