**Explanation of input and output variables for Basin Characterization Model at 270-m**

These are 14 variables processed.

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| Variable | Code | Creation Method | Units | Equation/model | Description |
| Maximum Temperature | tmax | downscaled | degree C | Model input | The maximum monthly temperature averaged annually |
| Minimum Temperature | tmin | downscaled | degree C | Model input | The minimum monthly temperature averaged annually |
| Precipitation | ppt | downscaled | mm | Model input | Total monthly precipitation (rain or snow) summed annually |
| Potential Evapotranspiration | pet | Modeled/ pre-processing input for BCM | mm | Modeled\* on an hourly basis from solar radiation that is modeled using topographic shading, corrected for cloudiness, and partitioned on the basis of vegetation cover to represent bare-soil evaporation and evapotranspiration due to vegetation | Total amount of water that can evaporate from the ground surface or be transpired by plants summed annually |
| Runoff | run | BCM | mm | Amount of water that exceeds total soil storage + rejected recharge | Amount of water that becomes stream flow, summed annually |
| Recharge | rch | BCM | mm | Amount of water exceeding field capacity that enters bedrock, occurs at a rate determined by the hydraulic conductivity of the underlying materials, excess water (rejected recharge) is added to runoff | Amount of water that penetrates below the root zone, summed annually |
| Climatic Water Deficit | cwd | BCM | mm | pet-aet | Annual evaporative demand that exceeds available water, summed annually |
| Actual Evapotranspiration | aet | BCM | mm | pet calculated\* when soil water content is above wilting point | Amount of water that evaporates from the surface and is transpired by plants if the total amount of water is not limited, summed annually |
| Sublimation | subl | BCM | mm | Calculated\*, applied to pck | Amount of snow lost to sublimation (snow to water vapor) summed annually |
| Soil Water Storage | stor | BCM | mm | ppt + melt – aet – rch - run | Average amount of water stored in the soil annually |
| Snowfall | snow | BCM | mm | precipitation if air temperature below 1.5 degrees C (calibrated) | Amount of snow that fell summed annually |
| Snowpack | pck | BCM | mm | Prior month pck + snow – subl - melt | Amount of snow that accumulated per month summed annually (if divided by 12 would be average monthly snowpack) |
| Snowmelt | melt | BCM | mm | Calculated\*, applied to pck | Amount of snow that melted summed annually (snow to liquid water) |
| Excess Water | exc | BCM | mm | ppt – pet | Amount of water that remains in the system, assuming evapotranspiration consumes the maximum possible amount of water, summed annually for positive months only |

**Table 1** – Description of the 14 variables available

\*the equation or model for these variables is available from the following publications:

Flint, A.L., Flint, L.E., Hevesi, J.A., and Blainey, J.M., 2004, Fundamental concepts of recharge in the Desert Southwest: a regional modeling perspective, in *Groundwater Recharge in a Desert Environment: The Southwestern United States,* edited by J.F. Hogan, F.M. Phillips, and B.R. Scanlon, Water Science and Applications Series, vol. 9, American Geophysical Union, Washington, D.C., 159-184.   
  
Flint, L.E., and Flint, A.L., 2007, Regional analysis of ground-water recharge, *in* Stonestrom, D.A., Constantz, J., Ferré, T.P.A., and Leake, S.A., eds., Ground-water recharge in the arid and semiarid southwestern United States: U.S. Geological Survey Professional Paper 1703, p. 29-59. <http://pubs.usgs.gov/pp/pp1703/> <http://pubs.usgs.gov/pp/pp1703/b/>   
  
Flint, A.L., and Flint, L.E., 2007, Application of the basin characterization model to estimate in-place recharge and runoff potential in the Basin and Range carbonate-rock aquifer system, White Pine County, Nevada, and adjacent areas in Nevada and Utah: U.S. Geological Survey Scientific Investigations Report 2007-5099, 20 p. <http://pubs.usgs.gov/sir/2007/5099/>