Standard Data Details

Data Origin
Our standard weather data are derived from National Oceanic and Atmospheric Administration (NOAA) data. This dataset includes COOP Cooperative Observer network and WBAN Weather-Bureau-Army-Navy stations from 1-1950 to 6-2006. Including DS3200 and DS3210 daily surface data. These data contain quality control information from both the observer and NOAA. We use these data flags to determine which observations are included, and those that are interpolated. Daily precipitation, minimum temperature, and maximum temperatures are included in the standard data set.

Interpolation Method
We use an inverse distance weighted interpolation algorithm. When data at a station are missing, we analyze data from surrounding stations. Data from the nearest 5 are used in the interpolation. The exact 5 stations used varies day by data as there are frequently missing data at the surrounding stations as well. On very rare occasions all stations in a large area will be missing data, and thus no interpolation is possible and we are forced to include a missing data value flag of "-99.0". Otherwise the data are generally 99.99% complete.

Accuracy Estimation
Our accuracy estimate is based on the percent completeness and a correlation coefficient. We interpolate estimates everyday at a station, even if we have good observed data during the period at the site. We judge the accuracy of the interpolated data by comparing it with real data at that site during the same period. If our interpolated data closely matches the real data at a site we can be confident that the interpolated estimates are sound. A correlation coefficient is calculated between the measured data and interpolated estimates. This calculation uses a 3-day running mean because COOP daily total are measured from 7 am to 7 am at some sites and 7 pm to 7 pm at others. One storm dumping identical rainfall amount at 2 different sites may record as having occurred on different days for this reason.

Data Format
Data are delivered in multiple formats. One set is SWAT 2000 format rainfall and temperature data. The file name convention is given below:

Where:

X indicates station type C for Cooperative Observer network and W for Weather-Bureau-Army-Navy stations,

YYYY is the station number,

TTTT is the data element,

AAA is the file extension TXT and DBF for SWAT format data, REF for comma delimited data and QAL for quality control information.

Stat_Table.txt
Contains summary statistics about each station, including an estimate of the accuracy of data provided at this station and monthly data averages.

SWAT Format Data
These files are ready for seamless integration into your SWAT Model. Just place all TXT and DBF files into your user data directory and specify the proper DBF files in the weather dialog.

REF Files
These files contain the same seamless data as the SWAT format files in comma delimited form.

QAL Files
These files contain the original measured data, the interpolated estimate and quality control flags about the original data in comma-delimited format.