# CZO Metadata Worksheet

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| Data File Name | SH\_Sapflow\_2011.xls |
| Date Prepared | 6/6/14. |
| Descriptive Title | Shale Hills Susquehanna Critical Zone Observatory Sap Flow Data |
| Update Frequency | Annually if new data to report. |
| Abstract | Sap flow data includes data for May 2, 2011 to August 11, 2011. Data were collected using Granier-type heat dissipation probe, 2 pairs per tree, 2 cm into the sapwood. The difference in temperature between the upper and lower probes (in degrees Celsius) were reported as delta values. Delta values were collected once a minute and averaged every 10 minutes. Sapflux density can be calculated from the delta values, first by calculating k from the maximum daily delta values for each probe set: (dTmax- dT)/dT. In this method, the maximum daily delta is assumed to be the baseline, or point of zero flow.Then sapflux density, J, can be calculated as follows: Js (g/m2/s) = 119\*k^1.231Delta values that are negative or close to zero may indicate probe failure. **Additional information can be found here:** [**Sapflow Tree Metadata**](http://www.czo.psu.edu/downloads/Metadataworksheets/ShaleHills/ShaleHills_sapflow_trees_metadata.xls) |
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| Data Value Descriptions | * COL1: label=Date, calendar date, TimeZone=EST.
* COL2: label=DOY, day of year.
* COL3: label=Time, TimeZone=EST, Units=hh:mm:ss, TimeSupport=10 min, data type=average
* COL4: label= FTime, Units=d, fractional time, 0 is midnight, 0.5 is noon.
* COL5: label=Spp, tree species, codes: ACSA = *Acer saccharum*, CATO = *Carya tomentosa*, QUPR = *Quercus prinus*
* COL6: label=TreeID, tree identification number, additional tree information found in tree survey file.
* COL7: label=Side, T1 or T2 indicates the wiring location of that sensor with the data logger, each set of senors (upper and lower) wired to one port, 2 sets of sensors per tree are shown.
* COL8: label=Delta, Units=degrees C, temperature difference between heated and unheated probe. TimeSupport=10 min, DataType=Average.
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| Keywords | Sap flow, sap flux, transpiration, tree water, ecology, vegetation |
| Methods | * Granier-type heat dissipation probe. Similar probes available through Dynamax: <http://www.dynamax.com/>
* Campbell Scientific datalogger: http://www.campbellsci.com/dataloggers
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| Citation | The following acknowledgment should accompany any publication or citation of these data: Logistical support and/or data were provided by the NSF-supported Shale Hills Susquehanna Critical Zone Observatory. |
| Publications | Data not currently used for a publication. |
| Data Use Notes | The user of Shale Hills Susquehanna CZO data agrees to provide proper acknowledgment with each usage of the data. Citation of the name(s) of the investigator(s) responsible for the data set, in addition to the generic statement above, constitutes proper acknowledgment. Author(s) (including Shale Hills Susquehanna CZO investigators) of published material that makes use of previously unpublished Shale Hills Susquehanna CZO data agree to provide the Shale Hills Susquehanna CZO data manager with four (4) copies (preferably reprints) of that material for binding as soon as it becomes available. The user of Shale Hills Susquehanna CZO data agrees not to resell or redistribute shared data. The user of these data should be aware that, while efforts have been taken to ensure that these data are of the highest quality, there is no guarantee of perfection for the data contained herein and the possibility of errors exists. These data are defined as either public or private, such that a password may be required for access. |