

Readme for “Bridging the flux gap: sap flow measurements reveal species-specific patterns of water-use in a tallgrass prairie,” Kimberly O’Keefe, David M. Bell, Katherine A. McCulloh, & Jesse B. Nippert

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This readme file describes the variables within the .csv data files accompanying the above publication. Within each file, each row indicates an individual 30-minute time interval, and missing data indicated by “NA.” For any further queries please contact okeefe4@wisc.edu.

**Table 1.** List of files accompanying the above publication.

<b>Data: Main Category</b>	<b>Data: Sub-Category</b>	<b>File name</b>	<b>Description</b>
Model_Data	Environmental_data	PAR_2014.csv	Photosynthetically active radiation (PAR) measured in 2014
		SM_2014.csv	Soil moisture (SM) measured in 2014
		TA_2014.csv	Air temperature (TA) measured in 2014
		VPD_2014.csv	Vapor pressure deficit (VPD) measured in 2014
Model_Data	Species_data	BB_sapflux.csv	Sap flux data measured for big bluestem ( <i>Andropogon gerardii</i> ) in 2014
		BB_LAI.csv	Leaf area index (LAI) data measured for big bluestem ( <i>Andropogon gerardii</i> ) in 2014
		BB_CAI.csv	Conducting tissue area index (CAI) data measured for big bluestem ( <i>Andropogon gerardii</i> ) in 2014
		DW_sapflux.csv	Sap flux data measured for roughleaf dogwood ( <i>Cornus drummondii</i> ) in 2014
		DW_LAI.csv	Leaf area index (LAI) data measured for roughleaf dogwood ( <i>Cornus drummondii</i> ) in 2014
		DW_CAI.csv	Conducting tissue area index (CAI) data measured for roughleaf dogwood ( <i>Cornus drummondii</i> ) in 2014
		GR_sapflux.csv	Sap flux data measured for Canada goldenrod ( <i>Solidago canadensis</i> ) in 2014
		GR_LAI.csv	Leaf area index (LAI) data measured for Canada goldenrod ( <i>Solidago canadensis</i> ) in 2014
		GR_CAI.csv	Conducting tissue area index (CAI) data measured for Canada goldenrod ( <i>Solidago canadensis</i> ) in 2014
		IW_sapflux.csv	Sap flux data measured for Baldwin’s ironweed ( <i>Vernonia baldwinii</i> ) in 2014
		IW_LAI.csv	Leaf area index (LAI) data measured for Baldwin’s ironweed ( <i>Vernonia baldwinii</i> ) in 2014
		IW_CAI.csv	Conducting tissue area index (CAI) data measured for Baldwin’s ironweed ( <i>Vernonia baldwinii</i> ) in 2014
		LP_sapflux.csv	Sap flux data measured for leadplant ( <i>Amorpha canescens</i> ) in 2014
		LP_LAI.csv	Leaf area index (LAI) data measured for leadplant ( <i>Amorpha canescens</i> ) in 2014

		LP_CAI.csv	Conducting tissue area index (CAI) data measured for leadplant ( <i>Amorpha canescens</i> ) in 2014
		SG_sapflux.csv	Sap flux data measured for switchgrass ( <i>Panicum virgatum</i> ) in 2014
		SG_LAI.csv	Leaf area index (LAI) data measured for switchgrass ( <i>Panicum virgatum</i> ) in 2014
		SG_CAI.csv	Conducting tissue area index (CAI) data measured for switchgrass ( <i>Panicum virgatum</i> ) in 2014
		SS_sapflux.csv	Sap flux data measured for smooth sumac ( <i>Rhus glabra</i> ) in 2014
		SS_LAI.csv	Leaf area index (LAI) data measured for smooth sumac ( <i>Rhus glabra</i> ) in 2014
		SS_CAI.csv	Conducting tissue area index (CAI) data measured for smooth sumac ( <i>Rhus glabra</i> ) in 2014
Output_data	NA	BB_output_data.csv	Model output for big bluestem ( <i>Andropogon gerardii</i> )
		DW_output_data.csv	Model output for roughleaf dogwood ( <i>Cornus drummondii</i> )
		GR_output_data.csv	Model output for Canada goldenrod ( <i>Solidago canadensis</i> )
		IW_output_data.csv	Model output for Baldwin's ironweed ( <i>Vernonia baldwinii</i> )
		LP_output_data.csv	Model output for leadplant ( <i>Amorpha canescens</i> )
		SG_output_data.csv	Model output for switchgrass ( <i>Panicum virgatum</i> )
		SS_output_data.csv	Model output for smooth sumac ( <i>Rhus glabra</i> )

**Table 2.** List of variable names included in each file type.

<b>Data: Main Category</b>	<b>Data: Sub-Category</b>	<b>Variable name</b>	<b>Description</b>
All files		year	Year of data collection
		JDT	Julian date of time interval (unit = days)
		DOY	Day of year of time interval
		Time	time of day of time interval (unit = hours)
Model_Data	Environmental_data	PAR.site	Photosynthetically active radiation ( $\mu\text{mol m}^{-2} \text{s}^{-1}$ )
		SM.site	Soil moisture (%)
		Ta.site	Air temperature (degrees Celsius)
		VPD.site	Vapor pressure deficit (kPa)
Model_Data	Species_data	sensor1, sensor2... etc	sap flux data ( $\text{g m}^{-2}\text{s}^{-1}$ ), with each column representing one sap flux sensor (named sensor1, sensor2, etc...)
		sensor.site	Species-averaged LAI ( $\text{m}^2\text{m}^{-2}$ ) or CAI ( $\text{m}^2$ ) for the sampling site
Output_data	NA	Day_night	Day or night classification based on sunrise/sunset times
		Et	Transpiration per $\text{m}^2$ ground area ( $\text{kg m}^{-2}\text{s}^{-1}$ )
		Et_CI_low	Credible interval lower limit for transpiration per $\text{m}^2$ ground area
		Et_CI_high	Credible interval upper limit for transpiration per $\text{m}^2$ ground area
		EL	Transpiration per $\text{m}^2$ leaf area ( $\text{kg m}^{-2}\text{s}^{-1}$ )
		EL_CI_low	Credible interval lower limit for transpiration per $\text{m}^2$ leaf area
		EL_CI_high	Credible interval upper limit for transpiration per $\text{m}^2$ leaf area
		Gt	Canopy conductance ( $\text{mmol m}^{-2}\text{s}^{-1}$ )
		Gt_CI_low	Credible interval lower limit for canopy conductance
		Gt_CI_high	Credible interval upper limit for canopy conductance