Readme File

# Sherman Island CA USA

* **Latitude, decimal degrees:** 38.0373000
* **Longitude, decimal degrees:** -121.753650
* **Active Measurement Duration:** 2007 -
* **Website(s):** http://nature.berkeley.edu/~bmetdata/bmetdata/test/index.php
* **Data access (Project/PI):**
* **Data access (Network):** <http://nature.berkeley.edu/~bmetdata/public/index.php>
* **MODIS ASCII Data:** [Collection 5 Data Link](http://daac.ornl.gov/cgi-bin/MODIS/GR_col5_1/mod_viz.html?id=1065)
* **Other images:**

## Primary Investigator(s)

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Jaclyn Hatala (2009-present)

Technicians

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## Publications

Detto M, Baldocchi D, Katul GG (2010) Scaling Properties of Biologically Active Scalar Concentration Fluctuations in the Atmospheric Surface Layer over a Managed Peatland. Boundary-Layer Meteorology 136:407-430.

Teh Y, Silver W, Detto M, Sonnentag O, Kelly NM, Baldocchi DD (2010) Large greenhouse gas emissions from agricultural and restored peatlands driven by management. Ecosystems in press.

Sonnentag, O., M. Detto, B. Runkle, Y. Teh, W. Silver, M. Kelly, and D. D. Baldocchi (2011), Carbon dioxide exchange of a pepperweed (Lepidium latifolium L.) infestation: How do flowering and mowing affect canopy photosynthesis and autotrophic respiration?, J. Geophys. Res., doi:10.1029/2010JG001522, in press.

Sonnentag O, M D, R V, Y R, BRK R, M K, DD B (submitted) Tracking the structural and functional development of a perennial pepperweed (Lepidium latifolium L.) infestation using a multi-year archive of webcam imagery and eddy covariance measurements. Agricultural & Forest Meteorology

## Data Usage and Precautions

## The site is a pasture on a drained peatland. The site is very flat with extensive fetch to the west. It is critical to only use data from the proper wind direction, southwest to northwest. The tower is at the far eastern end of the paddock, that receives predominant winds from the west, as air is channeled through the Carquinez Straights of the San Francisco Bay Estuary. However winds from the east will pass across the Antioch Bridge, winds from the south pass through a network of power plants.

## The land is vegetated by an invasive herb, pepperweed, which experiences distinct and unique phenology from other herbaceous vegetation (Sonnentag et al).

## The pasture is heavily grazed by cattle. So caution is needed to remove excursions in CO2 concentration and effluxes when cattle were in the near-field diffusion zone. We have attempted to flag such conditions using covariances between methane and carbon dioxide and by inspecting web cam images in producing a gap-filled time series of CO2 exchange.

## The site experience mowing by the rancher in 2008, which caused a sudden change in leaf area index, as chronicled by Sonnentag et al. in press.

## Core Measurements and Instrumentation

| Parameter | Instruments | Model | Levels/Depths | Timeperiod | Comments |
| --- | --- | --- | --- | --- | --- |
| Air Temperature | Temperature/Humidity Probe | Vaisala HMP45C | 2.5 m |  |  |
| Carbon Dioxide and Water Vapor Concentrations | Infared Gas Analyzer | LI-COR LI-7500 | 2.8 m |  |  |
| Photosynthetically Active Radiation (PAR) | Photodiode Sensor | Kipp and Zonen PAR-LITE | 2.8 m |  |  |
| Radiation, global solar | Net Radiometer | Kipp and Zonen CNR1 | 2.8 m |  |  |
| Radiation, long-wave | Net Radiometer | Kipp and Zonen CNR1 | 2.8 m |  |  |
| Radiation, net | Net Radiometer | Kipp and Zonen NR-LITE | 2.8 m |  |  |
| Relative Humidity | Temperature/Humidity Probe | Vaisala HMP45C | 2.5 m |  |  |
| Wind Speed (u', v', w') and Sonic Temperature | 3-D Sonic Anemometer | Gill Windmaster Pro | 3.1 m |  |  |

## Data Summary

| Variable | Result | Comments | Source |
| --- | --- | --- | --- |
| Air temperature, average - LOCCLIM estimator | 15.6 °C |  |  |
| Air temperature, maximum - LOCCLIM estimator | 22.88 °C |  |  |
| Air temperature, minimum - LOCCLIM estimator | 8.42 °C |  |  |
| Canopy height | 0.8 m |  | Mobile Tower - AmeriFlux Site Intercomparison Documentation - Hongyan Luo |
| Elevation | 0 m |  | Mobile Tower - AmeriFlux Site Intercomparison Documentation - Hongyan Luo |
| Koeppen-Geiger Climate Type | Temperate/Dry\_Summer/Warm\_Summer |  | Koppen-Geiger Climate Classification, http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.html, resolution is .1 degree by .1 degree - By Tammy Beaty |
| Measured period | 2006 - |  | From Access database, June 2007 |
| Precipitation - LOCCLIM estimator |  |  |  |