# FLUXNET Web Site and Data Standards

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# FLUXNET Web Site

#### Two web sites

- Fluxdata.org serves the most recent data releases
- Fluxnet.ornl.gov provided a listing of all the flux sites and older datasets

## • A quick tour of Fluxdata.org

- Data download information
- Data availability
- Site pages





## http://Fluxnet.fluxdata.org

fluxnet.fluxdata.org		C	Q dario papale tuscia → ☆ 自 ↓ ☆ ② ♥ ▼
Home About - Con	nmunity <del>-</del> Sites <del>-</del> Dat	a <del>-</del> Sign In	
record of ecosystem carbon, water, an	eep a sharper eye on land-air exchange Id energy fluxes, features improved data	Image: People J Young Scientist Profile – Angela J. Rigden         Image: People J Young Scientist Profile – Angela J. Rigden         Image: People J Young Scientist Profile – Angela J. Rigden, More         Image: People J Young Scientist Profile – San Joaquin River Delta	made routinely across a confederation of regional networks in North, Central and South America, Europe, Asia, Africa, and Australia, in a global network, called FLUXNET. Here you have entered the FLUXNET Data Portal—Fluxdata that serves as a vehicle to: 1) facilitate the communication and sharing of data and research ideas among members of the scientific community; 2) document the activities of the network; 3) foster the growth and evolution of the network; 3) foster the growth and evolution of the at the serve as a springboard, catalyst and facility for generating the next generation of knowledge about
package. More details below in the an	made available brings new features to th	team. Dear Fluxnetters, we are pleased	d to FLUXNET 2015





## Data Download Information

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LaThuile 2007	ownloads of	other datasets for CA	-Gro here:									
BASE												
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# **FLUXNET DOIs**

#### Do we want them?

#### DOI assignment Options

- One DOI per product
- One DOI per site and product

## Metadata options

- Seed the information from Site\_General\_Info
- Need to submit new information

Office of Science

- AmeriFlux
  - Seeded using Site\_General\_Info (e.g. PI = author)





## **FLUXNET Data Standards**

- Flux/Met (30 min) https://ameriflux.lbl.gov/data/aboutdata/data-variables/
  - Variable names and units
  - Time representation
  - Format for reporting
- Biological, Ancillary, Disturbance, and Metadata (BADM) http://ameriflux.lbl.gov/data/badm-data-templates/
  - Variable names, parameters, and units
  - Grouping into categories
  - Reporting formats
- AmeriFlux and ICOS/Ecosystem Thematic Center
  - Working on common standards to allow sharing of software and tools
  - Enable FLUXNET processing





## **FP** Standard

#### ( ) ( ) 🔒 https://ameriflux.lbl.gov/data/aboutdata/data-variables/

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Base names indicate fundamental quantities that are either measured or calculated / derived. They can also indicate quantified quality information.

Table 1. Base names for data variable labels

Name	Description	Units
TIMEKEEPING		
TIMESTAMP_END	ISO timestamp end of averaging period (up to a 12-digit integer as specified by the data's temporal resolution)	YYYYMMDDHHMM
TIMESTAMP_START	ISO timestamp start of averaging period (up to a 12-digit integer as specified by the data's temporal resolution)	YYYYMMDDHHMM
GASES		
CO2	Carbon Dioxide (CO2) mole fraction	µmolCO2 mol-1
H2O	Water (H2O) vapor mole fraction	mmolH2O mol-1
CH4	Methane (CH4) mole fraction	nmolCH4 mol-1
NO	Nitric oxide (NO) mole fraction	nmolNO mol-1
NO2	Nitrogen dioxide (NO2) mole fraction	nmolNO2 mol-1
N2O	Nitrous Oxide (N2O) mole fraction	nmolN2O mol-1
03	Ozone (O3) mole fraction	nmolO3 mol-1
FC	Carbon Dioxide (CO2) turbulent flux (no storage correction)	µmolCO2 m-2 s-1
FCH4	Methane (CH4) turbulent flux (no storage correction)	nmolCH4 m-2 s-1
FNO	Nitric oxide (NO) turbulent flux (no storage correction)	nmolNO m-2 s-1
FNO2	Nitrogen dioxide (NO2) turbulent flux (no storage correction)	nmolNO2 m-2 s-1
FN2O	Nitrous oxide (N2O) turbulent flux (no storage correction)	nmolN2O m-2 s-1
E02	Ozono (O2) turbulant flux (no storage correction)	nmolO2 m 2 c 1







## **BADM Standard**

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	Home / Data / BADM Data Templates	Google (
	BADM Data Templates	DATA
	-	Data Pc
	The Biological, Ancillary, Disturbance and Metadata (BADM) protocol is standardized across AmeriFlux, ICOS,	
	Fluxnet and other networks. To learn more about BADM, check out these resources:	About [
	• B E Law, T Arkebauer, J L Campbell, J Chen, Osbert Sun, Mark Schwartz, Catharine van Ingen, Shashi	BADN
	Verma (2008). Terrestrial carbon observations: Protocols for vegetation sampling and data submission.	Data \
	Global Terrestrial Observing System, Rome.	Data F
	<ul> <li>An explanation of the BADM Data Product is available here</li> </ul>	Datar
	Templeter	Data Bl
	Templates	Data Ch
	Use these MS Excel spreadsheet templates to add or update BADM data for a site.	Data Da
		Data Do
	• To register a new AmeriFlux site, download the BADM templates below, enter current site information	How to
	(templates provide variable naming, units, descriptions and reporting conventions), and upload the completed template via the Upload Data page.	Uploa
	<ul> <li>To update the BADM for an existing AmeriFlux site, send your request to ameriflux-support@lbl.gov.</li> </ul>	Lister
	Specify the specific BADM spreadsheet(s) in the AmeriFlux database to be updated.	Half-H
		Data Av
	Download: BADM-Site_General_Info-Template	Downlo
	View (pdf) or download (MS Excel) an example of a completed Site-General-Info template.	
		Upload
	Download: BADM-Disturbance_and_Management-Template	BADM I
	Download: BADM-Instrument_Ops-Template	USEFUL
	Download: BADM-Instrument-Template	
		People
	Download: BADM-Soil-Template	Opportur
	New BADM soil data reporting interfaces are being tested now. Contact ameriflux-support@/bl.gov if you	Image Ga
	would like to try a new method of reporting your soil data.	Events
		Logos & J Tech Bloc
	The following templates are being updated. If you want to submit new or updated information using these	Data Blog







## Toward a Sustainable FLUXNET

- Open source data processing and data management tools
- Global participation and input on data standards development
- All networks and sites able to run all levels of the processing





## **Requests for Input**

## FLUXNET 'all sites' web site

- Do we need one?
- If so, who and where?

## Data standards and formats

Office of Science

People who are interested in participating in helping with development?

#### • Tools

- Are their people interested in sharing tools and working toward an interoperable library of tools?
- Other items?



