CREATING AND ACCESSING THE GLOBAL FLUXNET DATA SET

Marty Humphrey[j] (humphrey@cs.virginia.edu), Norm Beekwilder[j], Deb Agarwal[ach] (daagarwal@lbl.gov), Dennis Baldocchi[ah] (baldocchi@nature.berkeley.edu), Monte Goode[ach] (MMGoode@lbl.gov), Jayant Gupchup[b] (gupchup@jhu.edu), Catharine van Ingen[e] (vaningen@microsoft.com), Dario Papale[I] (darpap@labecomail.agraria.unitus.it), Markus Reichstein[d] (mreichstein@bgc-jena.mpg.de), Matthew Rodriguez[ac] (MKRodriguez@lbl.gov), Youngryel Ryu[ah] (yryu@nature.berkeley.edu), Rodrigo Vargas[h] (rvargas@nature.berkeley.edu) and Nolan Li[b] (nli@pha.jhu.edu)

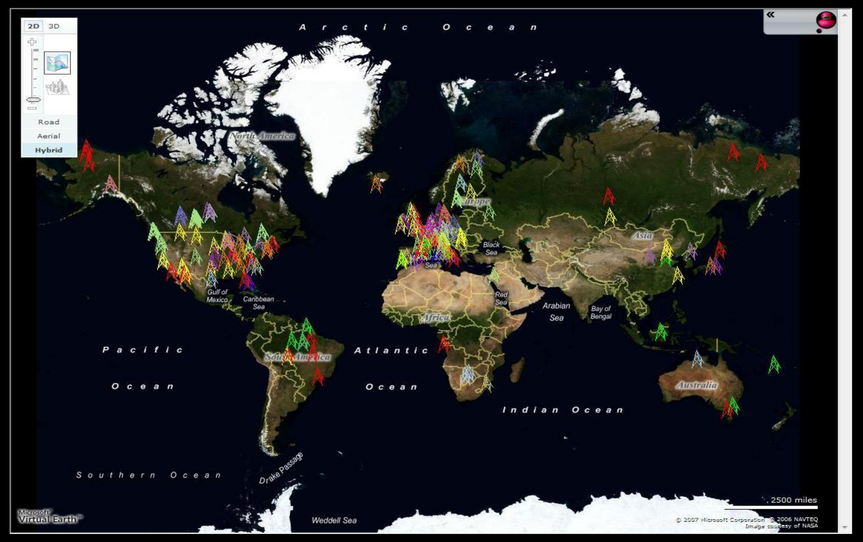
Berkeley Water Center[a]; John Hopkins University[b]; Lawrence Berkeley National Laboratory[c]; Max Planck Institute for Biogeochemistry, Germany[d]; Microsoft Research[e]; University of Bayreuth, Germany[g]; University of California, Berkeley[h]; University of Tuscia, Italy[i]; University of Virginia[j]

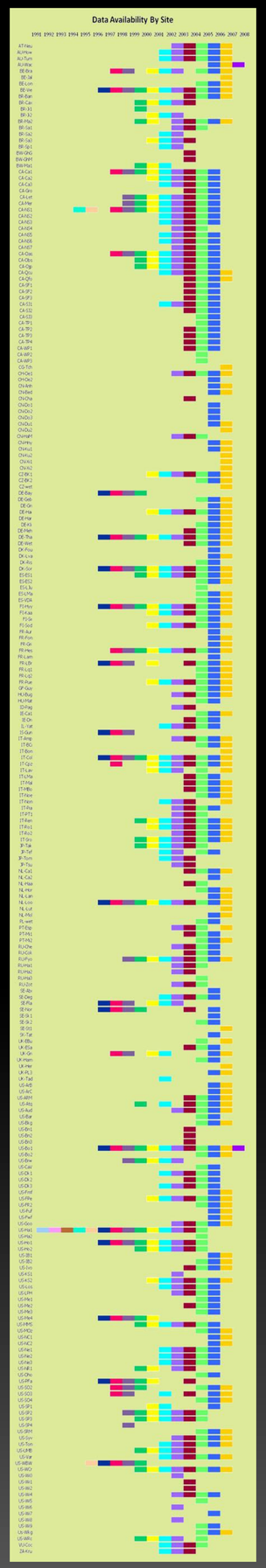
Abstract

The recently-gathered FLUXNET synthesis dataset contains over 900 site years of eddy covariance data from over 240 sites. Over the last year, the raw data supplied by individual tower investigators has been uniformly processed to produce a quality-assessed and gap-filled science data product. The dataset also contains associated site ancillary data such as site climate characteristics and soil parameters. The resulting collection is now being used by scientists world-wide.

The size of the dataset is such that data browsing is difficult. For instance, a search of the dataset for sites with particular meteorological or flux characteristics would require downloading the complete dataset and then running all of the data through a preliminary analysis. Using Microsoft SQL Server, we enable interactive data browsing as well as automated generation of data summaries for quick reference.

The use of the dataset is currently limited to FLUXNET scientists for cross-site synthesis analyses only. We have leveraged Microsoft Office SharePoint Server 2007 to both protect and simplify access. Since data cleaning will occur over time, the dataset will become more generally-available to other scientific communities.





This dataset was produced in association with the FLUXNET-TCO synthesis workshop held in LaThuile, Italy, from February 18 to 22, 2007. The aim of the workshop was to produce a new and extensive FLUXNET dataset and start first analyses. The workshop was attended by 60 scientists, who represented a cross section of younger and established scientists and were members of regional networks from around the world: CarboeuropeIP, Ameriflux, Fluxnet-Canada, LBA, Asiaflux, Chinaflux, USCCC, Ozflux, Carboafrica, Koflux, NECC, TCOS-Siberia and Afriflux.

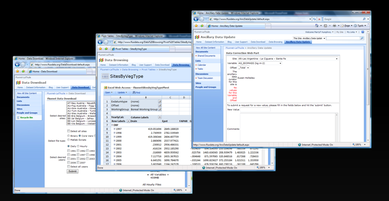
Fluxnet data server – www.fluxdata.org

- Common data repository capturing provenance information and common data processing
- Ancillary and biological data incorporated
- Data browsing, mining, and plotting capabilities
- Data repository that is easy to maintain, load with data, and expand capabilities
- Collaboration space to enable interaction between PIs and proposers and among proposal teams
- Data download and access (protected and tracked)

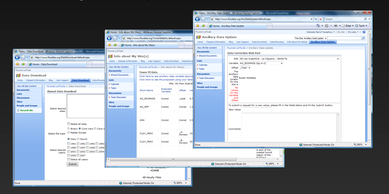
Reduce cut & paste manipulation of data

Dramatically increase the scale of the data that can be analyzed

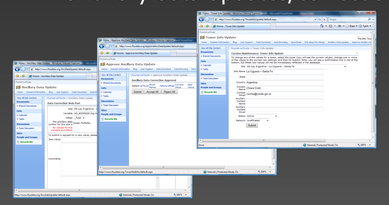
For the public: Dataset information, user support



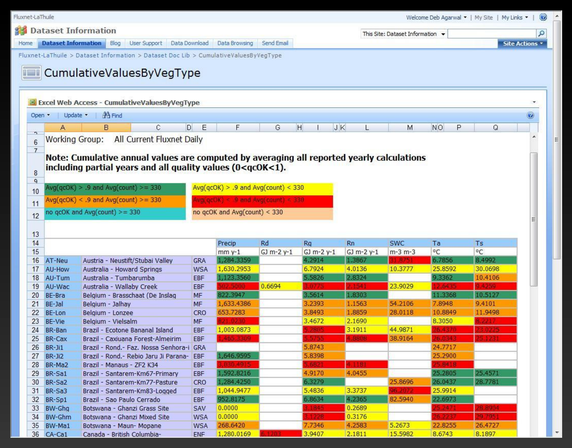
For the scientists analyzing the data: Download data, interactively explore data, provide ancillary data updates/corrections



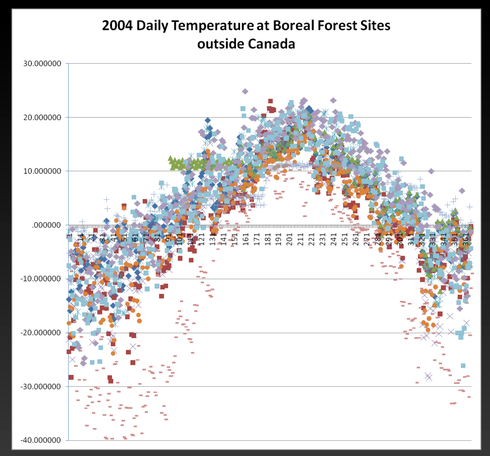
For the tower owners: Download curated tower data, review/update info about the tower, provide ancillary data updates/corrections



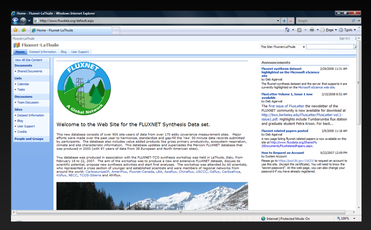
For the data curators: Download data, provide ancillary data updates/corrections, reject/accept proposed data updates/corrections



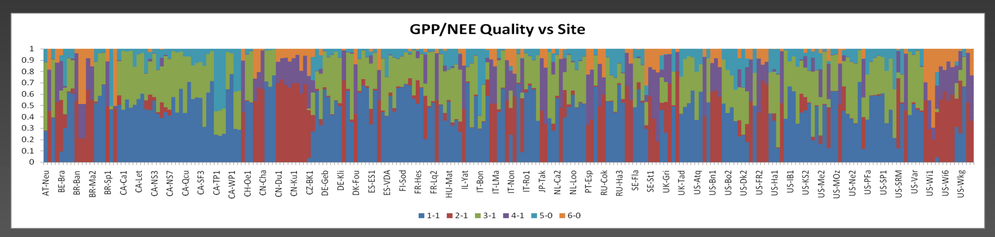
		Precip mm y-1	Rd GJ m-2 y-1	Rg GJ m-2 y-1	Rn GJ m-2 y-1	SWC m-3 m-3	Ta °C	Ts °C
AT-Neu	Austria - Neustift/Stubai Valley	GRA	1,034.5125		6.8144	4.3842	5.1333	5.7856	6.4991
AU-How	Australia - Howard Springs	WSA	1,630.2953		6.7924	4.0136	10.3777	25.8592	30.0698
AU-Tum	Australia - Tumbarumba	EBF	1,123.7569		5.5626	2.8324		9.3362	10.4106
AU-Wac	Australia - Wallaby Creek	EBF	1,000.2000	0.6694	5.8702	3.1581	23.9029	12.6455	8.4268
BE-Bra	Belgium - Brasschaat (De Inslag	MF	822.3947		3.5614	1.4003		11.3368	10.5127
BE-Jal	Belgium - Jalhay	MF	1,633.4386		3.2393	1.1563	54.2106	7.8948	9.4101
BE-Lon	Belgium - Lonzee	CRO	853.7283		3.8493	1.8859	28.0118	10.8849	11.9498
BE-Vie	Belgium - Vielsalm	MF	1,000.0000		3.4672	2.1690		8.2050	9.2651
BR-Ban	Brazil - Ecotone Bananal Island	EBF	1,003.0873		6.7906	3.1911	44.9871	26.8547	31.9505
BR-Cax	Brazil - Caxiuana Forest-Almeirim	EBF	1,000.0000		5.7096	3.1885	38.9164	26.4314	29.3701
BR-Ji1	Brazil - Rond.- Faz. Nossa Senhora-i	GRA	1,000.0000		5.8743			24.7717	
BR-Ji2	Brazil - Rond. - Rebio Jaru ja Parana	EBF	1,646.9595		5.8398			25.2900	
BR-Ma2	Brazil - Manaus - ZF2 K34	EBF	1,000.0000		6.4867	3.1185		25.9418	
BR-Sa1	Brazil - Santarem-Km67-Primary	EBF	1,992.8216		6.9170	4.0455	25.6696	25.2805	25.4371
BR-Sa2	Brazil - Santarem-Km77-Pasture	CRO	1,284.2490		6.9279		25.6696	26.0437	28.7781
BR-Sa3	Brazil - Santarem-Km83-Logged	EBF	1,044.9477		5.4836	3.3737	40.3442	25.9914	
BR-Sp1	Brazil - Sao Paulo Cerrado	EBF	1,000.0000		5.9693	3.2366	82.5940	22.8673	
BW-Ghg	Botswana - Ghanzi Grass Site	SAV	0.0000		6.1445	0.2689		25.2424	28.9924
BW-Ghm	Botswana - Ghanzi Mixed Site	WSA	0.0000		7.1294	0.3176		29.9235	28.7929
BW-Ma1	Botswana - Maun- Mopane	WSA	268.6420		7.2346	4.2583	5.2673	22.8255	26.4727
CA-Ca1	Canada - British Columbia-	ENF	1,280.0169		3.9407	2.1811	15.5982	8.6743	8.1897



Customizable views/functionality based on role(s)



Powered by Microsoft Office Sharepoint Server 2007



http://www.fluxdata.org/ **For further information e-mail: fluxdata-support@george.lbl.gov**