



DAAC
for biogeochemical dynamics
DISTRIBUTED ACTIVE ARCHIVE CENTER Oak Ridge National Laboratory



The ORNL Distributed Active Archive Center (DAAC) is a NASA-sponsored source for biogeochemical and ecological data and services useful in environmental research. The ORNL DAAC currently archives and distributes more than 780 products categorized as Field Campaign, Land Validation, Regional and Global, or Model Archive.

Please visit us online at <http://daac.ornl.gov> for a comprehensive description of data, services, and tools available from the ORNL DAAC. Archived news items can be found at <http://daac.ornl.gov/news.shtml>.

Contents:

- LBA-ECO Data Sets
- DAAC WebGIS
- FLUXNET Web Cameras
- NASA survey

ORNL DAAC News

SUMMER 2008

Nine LBA-ECO Data Sets Released

The ORNL DAAC recently released nine Carbon Dynamics data sets associated with the LBA-ECO, NASA's component of the Large Scale Biosphere-Atmosphere Experiment in Amazonia (LBA). These studies involved quantification of the carbon pools in vegetation and the rates of carbon exchange among the atmosphere, vegetation, and soils in a primary tropical forest in central Amazonia. Ecosystem carbon balance was investigated using an approach that integrated long-term eddy covariance flux measurements with comprehensive ecological characterization methods. These data are applicable for the investigation of the way in which ecosystem processes may be altered by natural and human disturbances.



Downward view from atop the Para Western (Santarem), Primary Forest Tower.



The Para Western (Santarem), Primary Forest Tower.

Studies took place in the old-growth upland forest at the Para Western (Santarem), Primary Forest Tower site located in the Tapajos National Forest in north central Brazil. The studies were conducted by a team of investigators led by Plínio Barbosa de Camargo (Universidade de Sao Paulo), Volker Kirchhoff (INPE - Instituto Nacional de Pesquisas Espaciais), Antonio Donato Nobre (INPA - Instituto Nacional de pesquisas na Amazonia), and Steven Wofsy (Harvard University).

LBA is an international research initiative under the leadership of Brazil. The project focuses on the climatological, ecological, biogeochemical, and hydrological functions of Amazonia; the

(continued on p. 2)

Nine LBA-ECO Data Sets (continued)

impact of land use change on these functions; and the interactions between Amazonia and the Earth system. The LBA-ECO component, with support primarily from NASA and the Brazilian Ministry of Science and Technology, focuses on the question: “How do tropical forest conversion, regrowth, and selective logging influence carbon storage, nutrient dynamics, trace gas fluxes, and the prospect for sustainable land use in Amazonia?”

See the LBA Project page (<http://daac.ornl.gov/LBA/lba.html>) for further information about the study and to access data products maintained by the ORNL DAAC.

Climate-controlled instrument shelter at the Para Western (Santarem), Primary Forest Tower site.



DAAC WebGIS

The ORNL DAAC WebGIS is an Internet based technology that enables users to browse, query, and display spatial data using a standard web browser. Users can interrogate map features and extract and download selected map features including map layers (shape files).

The WebGIS interface is user friendly, and does not require any GIS skills. To reproduce the map and download the data displayed within the figure below, simply follow these steps:

1. Open the following URL in any web browser: <http://webmap.ornl.gov/webgis/viewer.htm?instance=global>.

Rec	Site Name	DATA LINK	MODIS Site	Country	State	Landunit	Lat	Long	Cluster
1	Braganca (Para)	MODIS Data	Site Info	Brazil	South America	-0.723708	-48.508007		
2	Rond.- Faz. Nossa Senhora-Ji Parana-pasture	MODIS Data	Site Info	Brazil	South America	-10.761806	-62.257222		
3	Rond.- Rebio Jaru Ji Parana- Tower A	MODIS Data	Site Info	Brazil	South America	-10.083194	-61.930903		
4	Rond.- Rebio Jaru Ji Parana- Tower B	MODIS Data	Site Info	Brazil	South America	-10.078056	-61.933007		

Screen capture of the ORNL DAAC WebGIS Interface.

2. Click on the underlined Elevation link in the layer list on the right-hand side of the page.
3. Click in the check box for “Elevation (GTOPO30)” in the layer list, which appears directly under the Elevation link.
4. Click the check box next to “MODIS Collection 4 Sites” in the layer list.
5. To select and download the “MODIS Collection 4 Sites” in Brazil, use the “Select by Rectangle Tool” to draw a box around the sites, then select Extract from the Download Menu.

(continued on p. 3)

DAAC WebGIS (continued)

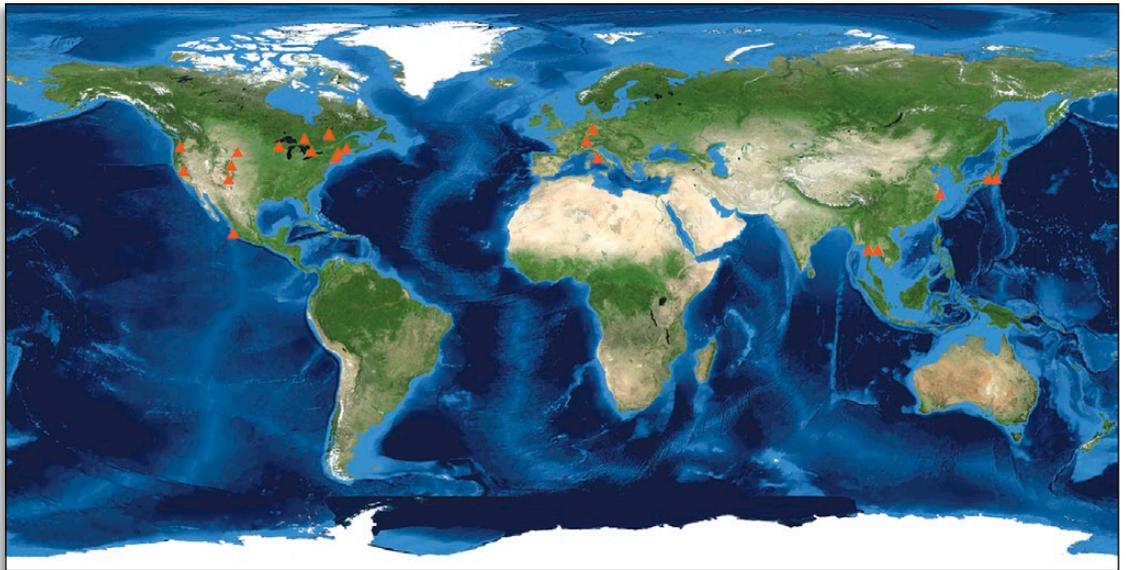
Data exploration with the WebGIS is performed through tools that allow you to Navigate, Query, Select, Measure, Print, and Download. These tools are located both vertically on the left hand side of the application as buttons on a tool bar, and horizontally across the top of the application through a drop down menu. While the drop-down menu provides a description of the buttons on the toolbar, a description can also be seen when you hover your mouse over the button.

Additionally a complete tutorial is available at:
http://daac.ornl.gov/WebGIS_Tutorial_2008.ppt

The ORNL DAAC WebGIS also supports Open Geospatial Consortium (OGC) standards for data delivery. The OGC standards currently supported are Web Map Service (WMS) version 1.1.1, and Web Coverage Service (WCS) version 1.0.0. The WMS standard delivers map-like views of the WebGIS data that can be combined with similar map-like views from other remote or local sources. The WCS standard delivers the actual data underlying the map-like views with support for subset creation, reprojection, resampling, and data format conversion. WebGIS also delivers data through the Print tool that creates map-layouts of the WebGIS images.

FLUXNET Web Cameras

In an effort to gain a better understanding of the relationships between CO₂ fluxes and canopy development and senescence, a number of flux tower investigators have turned to digital Web cameras. The Web cameras can quantitatively document the phenology—the times of recurring natural phenomena—of the ecosystem around the tower. The relationship between CO₂ fluxes at the tower



FLUXNET sites with operational Web cameras.

and the variation in phenology of the surrounding ecosystem will provide insights into controlling environmental factors. Ultimately this information will provide a functional or mechanistic understanding of relationships of phenology to seasonal patterns of carbon, water, and energy fluxes.

The ORNL DAAC has added information about flux tower webcams to the FLUXNET Web site (<http://>

www.fluxnet.ornl.gov/fluxnet/index.cfm) and also to the WebGIS (<http://webmap.ornl.gov/webgis/viewer.htm?instance=global>). The WebGIS provides a spatial view of the Web cameras, as well as a variety of land cover, biophysical, elevation, and geopolitical layers. Users can interrogate the map features and be directed to additional site information and webcam pictures.

Please Participate in the NASA Customer Satisfaction Survey



During mid-August and early September, 2008, ORNL DAAC users will receive an e-mail to participate in a Web-based survey about the quality and utility of ORNL DAAC products and services. The survey is approximately 30 questions

long, will take you about 10 minutes or less to complete, and is anonymous.

Please Participate! Your feedback affects our future performance. ORNL DAAC is one of twelve NASA Earth Observing System Data and Information System (EOSDIS) data centers. NASA uses this survey to evaluate each data center's success and to determine where improvements are needed.

ACCESSING ORNL DAAC DATA

Web-based interface:
<http://daac.ornl.gov/>

Advanced data search:
<http://mercury.ornl.gov/ornldaac/>

Anonymous FTP browsing:
<ftp://daac.ornl.gov/data/>

DAAC-WebGIS:
<http://daac.ornl.gov/mapserver.shtml>

LBA Project:
<http://daac.ornl.gov/LBA/lba.html>

DAAC-FLUXNET Project:
<http://daac.ornl.gov/FLUXNET/fluxnet.html>

All data from the DAAC are free and are available electronically.

National Aeronautics and Space Administration:
<http://www.nasa.gov>



ORNL Distributed Active Archive Center
P.O. Box 2008, MS 6407
Oak Ridge National Laboratory
Oak Ridge, TN 37831-6407