


**Distributed Active Archive Center for  
Biogeochemical Dynamics**

WINTER 2012

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 900 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, and tools available from the ORNL DAAC. Archived news can be found at <http://daac.ornl.gov/news.shtml>.

### Contents:

- 2 NACP Data Sets Published
- 13 LBA Data Sets Published
- 4 ISLSCP II Data Sets Published
- NASA Customer Satisfaction Survey

<http://www.nasa.gov>

# ORNL DAAC News

## NACP Data Sets Released

The ORNL DAAC is pleased to announce the release of two data sets associated with The North American Carbon Program (NACP).

### **ECHIDNA Lidar Campaigns: Forest Canopy Imagery and Field Data U.S.A., 2007-2009.**

This data set contains forest canopy scan data from the ECHIDNA Validation Instrument and field measurements data from three campaigns conducted in the United States: 2007 New England Campaign; 2008 Sierra National Forest Campaign; and 2009 New England Campaign. The New England field sites were located in Harvard Forest (Massachusetts), Howland Research Forest (Maine), and the Bartlett Experimental Forest (New Hampshire). The objective of the research was to evaluate the ability of the ECHIDNA ground-based, scanning near-infrared lidar to retrieve stem diameter, stem count density, stand height, leaf area index, foliage profile, foliage area volume density, and other useful forest structural parameters rapidly and accurately.



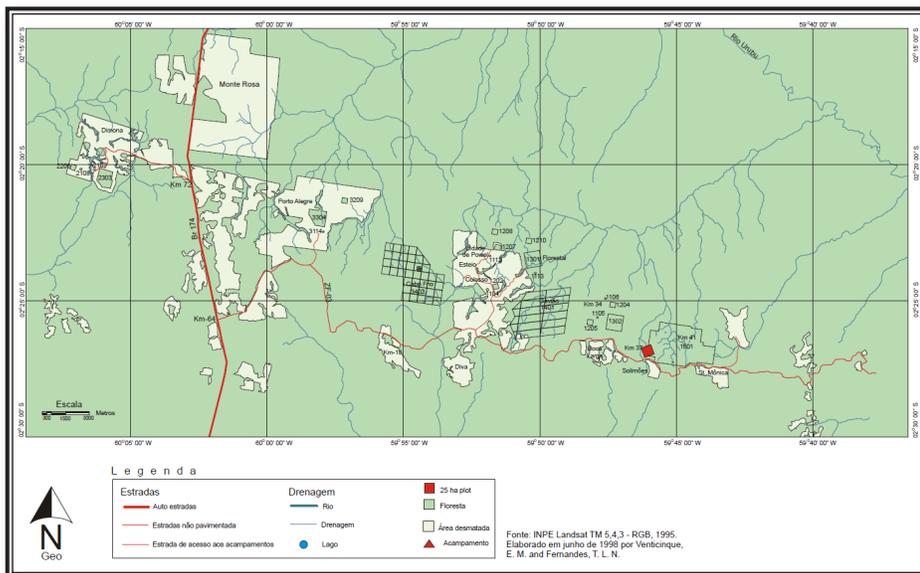
*Example of ECHIDNA data for Bartlett Experimental Forest. (From ECHIDNA data set.)*

**NACP New England and Sierra National Forests Biophysical Measurements: 2008-2010.** This data set includes plot-level biophysical measurements collected in 2008 at one site in the Sierra National Forest, California, in 2009 at five New England sites: Bartlett Experimental Forest, Harvard Forest, Howland Research Forest, Hubbard Brook Experimental Forest, and the Penobscot Experimental Forest. Selected Howland plots were revisited in 2010. Plot-level biomass was calculated with allometric equations using measurement results.

# Thirteen LBA Data Sets Published

Thirteen data sets were recently published, associated with the LBA-ECO component of the Large Scale Biosphere-Atmosphere Experiment in Amazonia (LBA), an international research initiative under the leadership of Brazil.

Three of the data sets come from the Nutrient Dynamics and Surface Water Chemistry team (ND-07). The first data set reports on dissolved nutrient concentrations, as well as dissolved oxygen, alkalinity, conductivity, turbidity, and pH measured in water samples collected from different sites in the state of Brasilia, Brazil. The second data set reports the microbial biomass in soil samples collected from the Cerrado, a woodlands-savannah area, in Brasilia. The third data set reports on soil-atmosphere fluxes of trace carbon dioxide, carbon monoxide, nitrous oxide, and nitric oxide under various natural and manipulated land use conditions near Brasilia, Brazil.



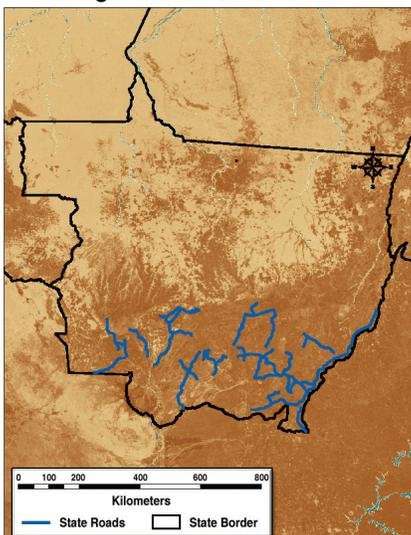
Map showing locations of plots, roads, water features and forested and deforested areas in Amazonas, Brazil.

Two LC-24 data sets include a digitized map of the land parcel information of the original properties of the Uruara colonization site, Para, Brazil, acquired from the Instituto de Colonizacao e Reforma Agraria, (INCRA) and ESRI shapefiles of historical federal and state roads in nine Brazilian states for the Legal Amazon.

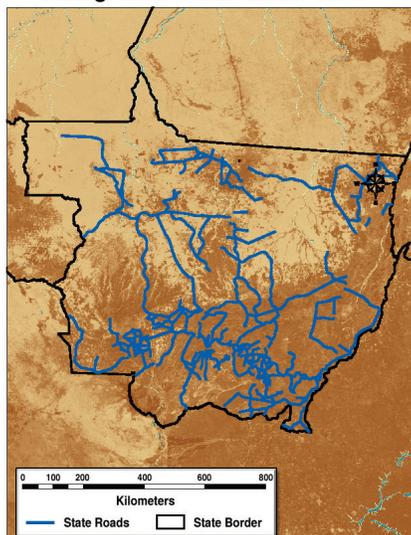
One of two LC-15 data sets contains two image mosaics of L-band radar backscatter and two images of derived first order texture collected by the Japanese Earth Resources Satellite-1 (JERS-1) Synthetic Aperture Radar (SAR) over

the Amazon River Basin as part of the Global Rainforest Mapping Project (GRMP). The second of the LC-15 data sets contains images of proportional estimates of woody vegetation, herbaceous vegetation, and bare ground over the Amazon Basin. These products were derived from all seven bands of the Moderate-resolution Imaging Spectroradiometer (MODIS) sensor onboard NASA's Terra satellite.

Matogrosso State Roads 1975



Matogrosso State Roads 1985



From LBA-ECO LC-24 Historical Roads of the Legal Amazon: Matto Grosso state roads in 1975 and 1985.

An LC-02 data set provides hot pixel data, as an indicator of fires, that were detected by various satellites in the tri-national MAP region (Madre de Dios-Peru, Acre-Brazil, and Pando-Bolivia) in 2003, 2004, 2005, and 2006. Data were compiled from NOAA, GOES, AQUA, and TERRA satellites/instruments.

An LC-05 data set reports plot-level summaries for total aboveground dry biomass from 1997 to 2001, as well as soil chemical and physical characteristics within the Biological Dynamics of Forest Fragments Project (BDFFP) study area, an experimentally fragmented landscape north of Manaus, Amazonas, Brazil.

## Thirteen LBA Data Sets Published (continued)

One of two CD-04 data sets reports the results of a survey of logging damage in an 18-ha plot east of the eddy flux tower at the km 83 logged tower site in Tapajos National Forest, Para, Brazil. Data includes type of damage, snap height, and log dimensions, as well as calculated biomass of stems and canopy either damaged or removed during logging. The second data set reports on the flux of carbon dioxide from selectively-logged forest soils near the eddy flux tower at the km 83 site, Tapajos National Forest, Para, Brazil.

Another data set is from the CD-08 team and contains carbon isotope signatures of soil organic matter, roots, and soil gas collected from undisturbed and secondary growth forest sites, and degraded and managed pasture sites in the states of Amazonas and Para.

The last of the thirteen data sets is from the TG-07 team and presents data on trace gas flux measurements of carbon dioxide, methane, nitrous oxide, and nitric oxide from surface soils. The measurements were made

manually in an undisturbed forest at the Tapajos National Forest Seca-Floresta Site, which is within the foot-print of the km 67 eddy flux tower.



*BDFFP experimentally fragmented landscape during initial forest clearing 1981-1987.*

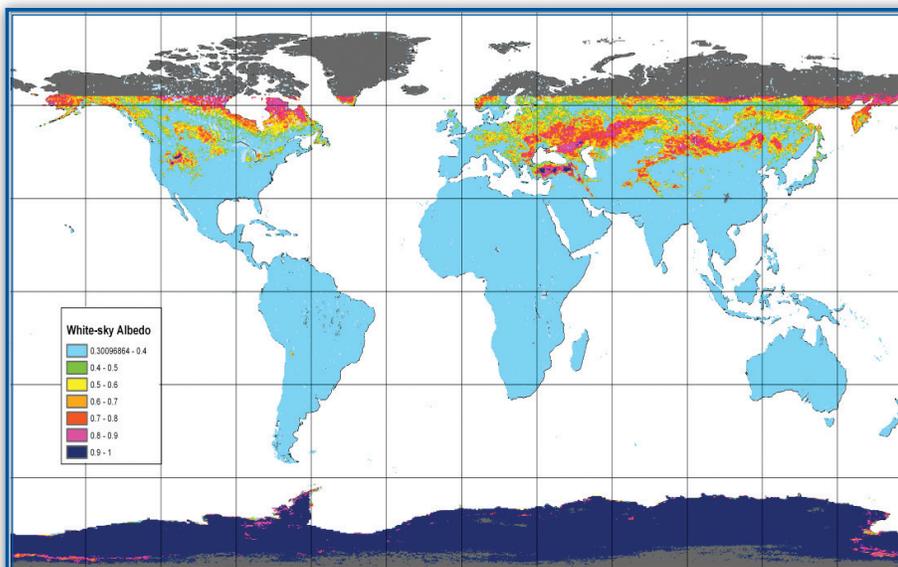
## ISLSCP II Data Sets Released

The ORNL DAAC also released four data sets from the Carbon category of the International Satellite Land-Surface Climatology Project (ISLSCP) Initiative II.

ISLSCP II Global River Fluxes of Carbon and Sediments to the Oceans represents estimates for the riverine export of carbon and of sediments and that are discharged

to the oceans by rivers for each coastal grid point that receives river inputs.

ISLSCP II Carbon Dioxide Flux at Harvard Forest and Northern BOREAS Sites contains carbon dioxide flux and meteorological data for the Harvard Forest, MA (1992-95) and BOREAS Northern Study Area, Old Black Spruce (Alberta, Canada; 1994-95).



ISLSCP II GPPDI, Net Primary Productivity (NPP) Class B Point Data. This data set contains documented field measurements of NPP for global terrestrial sites compiled from published literature and other extant data sources. It contains Class B point data of above-ground, below-ground, and total NPP in  $\text{gC m}^{-2} \text{yr}^{-1}$  for 2,363 point measurements compiled from the literature with associated ancillary information.

ISLSCP II IGBP NPP Output from Terrestrial Biogeochemistry Models. This data set contains modeled annual net primary production (NPP) for the land biosphere from seventeen different global terrestrial biogeochemistry models for use in inter-comparison studies.



ORNL Distributed Active Archive Center  
P.O. Box 2008, MS 6301  
Oak Ridge National Laboratory  
Oak Ridge, TN 37831-6407

# NASA Customer Satisfaction Survey Results Announced!



During August and early September 2011, ORNL DAAC users received an email invitation from Claes Fornell International (CFI) Group on behalf of NASA to participate in a Web-based survey about the quality and utility of ORNL DAAC products and services. Your participation was much appreciated! ORNL DAAC received a composite customer satisfaction score of 75, with a customer support score of 89. We are currently reviewing the comments and suggestions that were provided and examining CFI Group's detailed performance analysis.

ORNL DAAC wishes to extend a special "Thank You" to all those who participated in this annual survey. Your feed-back affects our future performance and helps us to identify science needs. ORNL DAAC is one of twelve NASA Earth Observing System Data and Information System (EOSDIS) data centers evaluated by this survey.

## 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.shtml>

DAAC FLUXNET Project:

<http://daac.ornl.gov/FLUXNET/fluxnet.shtml>

DAAC SDAT:

<http://webmap.ornl.gov/wcsdown>

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

National Aeronautics and Space Administration:

<http://www.nasa.gov>