



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 810 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>.

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ORNL DAAC News

Twelve LBA Data Sets Released

The ORNL DAAC recently released 12 data sets associated with the LBA-ECO component of the Large Scale Biosphere-Atmosphere Experiment in Amazonia (LBA).

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 impact of land use change on these functions; and the interactions between Amazonia and the Earth system.

The LBA-ECO component 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?" Six of these data sets are from LBA-ECO and six are from the Pre-LBA data compilation effort.

Two LBA-ECO data sets contain fire data: ASTER-based data compiled by Wilfrid Schroeder and Jeff Morisette, and AVHRR-estimated fire occurrence data compiled by Eugenio Arima and colleagues.



Ground-based fire studies were used to validate remote sensing imagery from ASTER and AVHRR.

The other four LBA-ECO data sets may be used to determine the canopy damage following selective logging by two different methods (conventional and reduced-impact logging), and when combined with hyper-spectral data, can be applied to study how logging activity affects reflectance in multi- or hyper-spectral imagery. Imagery can also be used to detect changes in land cover based on the reflectance in the 200 reported spectral bands. These four data sets were compiled by Greg Asner and colleagues.

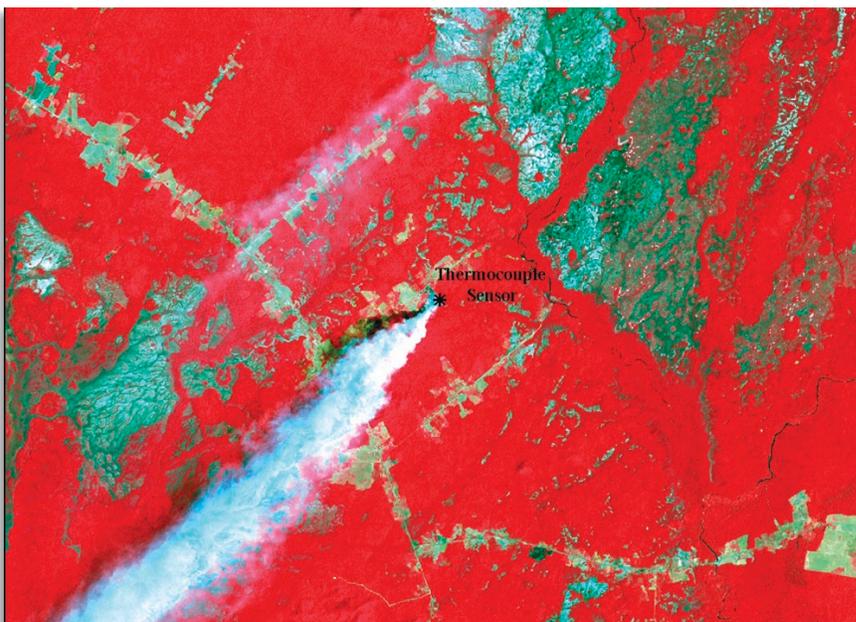
The DAAC released six Pre-LBA data sets associated with the Pre-LBA data compilation component of the LBA. These data were compiled as background information providing

Twelve LBA Data Sets (continued)

data collected in Amazonia during the 20 years prior to 1998. These data were originally distributed on a three volume CDROM set, but are now being archived as individual data sets. The first six available data sets in this series include data on aerosols, gas exchange, micrometeorological components, hydrology, water chemistry attributes, and a digital mosaic of the Amazon River flood plain. The remaining six data sets will be released within the next few months.

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.

ASTER Sensor Level-1B Satellite Imagery over Controlled Burn in Roraima, Brazil.



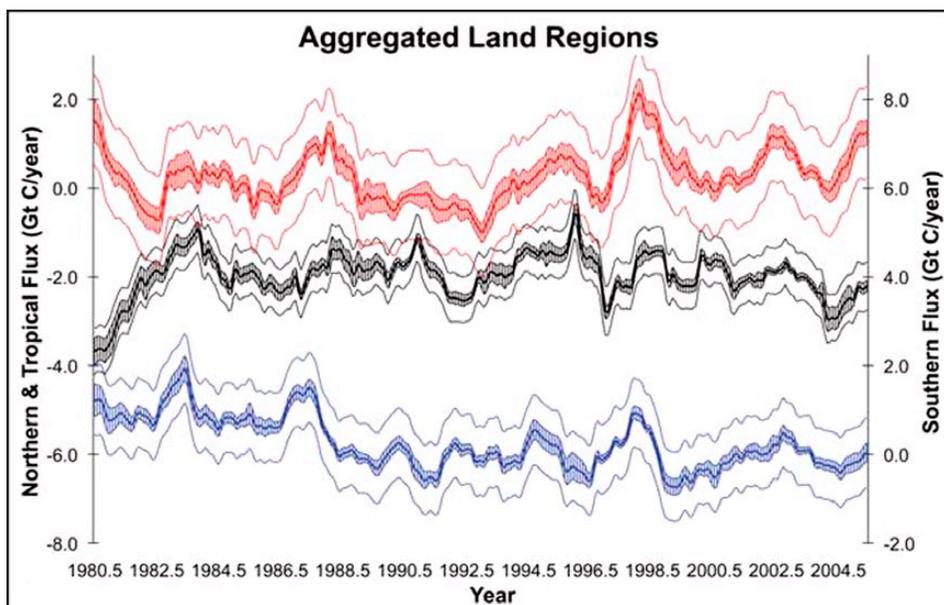
TransCom3 Data Set Released

The ORNL DAAC announces the release of “TransCom3: Annual Mean CO₂ Flux Estimates from Atmospheric Inversion (Level 1).” This data set provides input data for model simulations, model outputs from participating transport models, and annual mean CO₂ flux estimates

(inversion results) from the TransCom3, Level 1 inversion experiment. These surface-atmosphere CO₂ annual mean fluxes were estimated for the 1992-1996 time period from an intercomparison of 16 different atmospheric tracer transport models. A FORTRAN program

which writes the level 1 model output to standard netCDF format is also provided.

The Atmospheric Tracer Transport Model Intercomparison Project (TransCom) was created to quantify and diagnose the uncertainty in inversion calculations of the global carbon budget that results from errors in simulated atmospheric transport. All three phases of TransCom are complete. The Atmospheric Carbon Cycle Inversion Intercomparison (TransCom3) conducted a series of experiments in which 16 chemical tracer transport models were used to calculate the global carbon budget of the atmosphere. The TransCom project is



Carbon fluxes (Gt C/year) and uncertainty estimates for 1980 to 2005 produced by TransCom 3 Level 2 for northern hemisphere lands (black line), tropical lands (red line), and southern hemisphere lands (blue line). Source: Gurney et al., doi:10.1029/2007GB003082.

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TransCom3 Data Set (continued)

coordinated by Scott Denning, Colorado State University, and Kevin Gurney, Purdue University. Additional model output as well as the model source code from TransCom will be archived in the coming months.

See our TransCom Project page (<http://daac.ornl.gov/TRANSCOM/transcom.html>) for further information about the project and to access associated data and documentation maintained by the ORNL DAAC.

New BigFoot Data Set Available

The ORNL DAAC announces the release of “BigFoot Field Data for North American Sites, 1999-2003.”

This data set reports measurements of fraction of photosynthetically active radiation (FPAR), nitrogen content, allometric equations, root biomass, leaf area index (LAI), tree biomass, soil respiration, and net primary productivity (NPP) field data in comma-separated ASCII files for selected EOS Land Validation Sites in North America from 1999 to 2003. Additionally, derived landcover images and vegetation inventories are provided in GEOTIFF format.

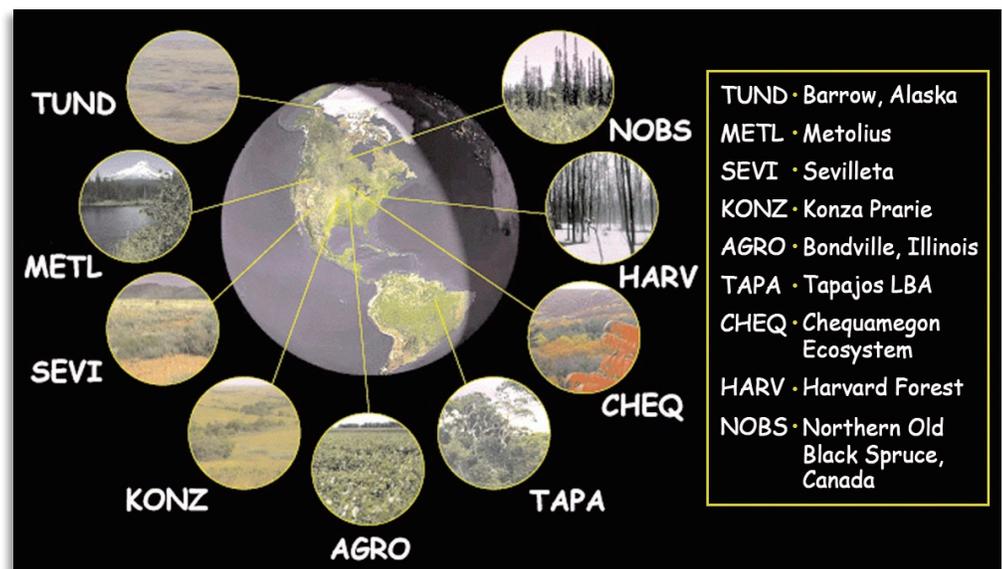
This final data set in the BigFoot collection was prepared by Tom Gower and Al Kirschbaum.

The study sites included in the data set are listed by site name and biome:

- BOREAS NSA, Canada (NOBS) - boreal forest
- Bondville, Illinois, USA (AGRO) - cropland
- Harvard Forest LTER, Massachusetts, USA (HARV) - temperate mixed forest
- Konza Prairie LTER, Kansas, USA (KONZ) - tallgrass prairie

- Sevilleta LTER, New Mexico, USA (SEVI) - desert
- Barrow, Alaska, USA (TUND) - Arctic tundra

The goal of the BigFoot project was to use in situ measurements, remote sensing, and models to validate Moderate Resolution Imaging Spectrometer (MODIS) products from NASA's Earth Observing System (EOS) Terra and Aqua satellites. See our Bigfoot Project page (http://daac.ornl.gov/BIGFOOT_VAL/bigfoot.html) for further information.



BigFoot study sites.

Citations to Archived Data Include Digital Object Identifiers

The ORNL DAAC is a permanent data archive that enables users to search for, access, and download published data sets. The finalized and published data sets

can be cited, giving the data producers credit. Citations to these published data sets enable a student or a researcher to

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Digital Object Identifiers (continued)

obtain the actual published data files from the archive to reproduce the results from papers or to conduct further analyses.

The ORNL DAAC has recently started adding Digital Object Identifiers (DOIs) to our data set citations. For example, the citation for the Asner et al. data set from p. 1 of this newsletter has the DOI 10.3334/ORNLDAAC/889:

Asner, G.P., K.M. Carlson, and D.E. Knapp. 2008. LBA-ECO LC-18 Hyperion 30-m Surface Reflectance, Mato Grosso, Brazil: July 2004. Data set. Available online (<http://daac.ornl.gov>) from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAC/889.

The use of DOIs facilitates the ability of authors to cite data in refereed journals and elsewhere. Many journal publishers now require the use of DOIs when citing online material. DOIs enable users to locate published data set regardless of where it is stored. This immutable identifier is part of the DOI system and the Asner et al. data set can be found by searching for the DOI (10.3334/ORNLDAAC/889) or by searching at the DOI System's Web site: <http://dx.doi.org/10.3334/ORNLDAAC/889>.

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>



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