



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



SUMMER 2007

# ORNL DAAC News

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 760 data sets categorized as Field Campaign, Land Validation, Regional and Global Data, 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 can be found at <http://daac.ornl.gov/news.shtml>

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## New Regional and Global Products

Two new regional and global products, vegetation collections data sets are now available.

“Global Fire Emissions Database, Version 2.1 (GFEDv2.1)” is a global 1 degree by 1 degree gridded data set containing monthly burned area, fuel loads, combustion completeness, and fire emissions from January 1997 through December 2005. Fire emissions are provided for carbon (C), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), non-methane hydrocarbons (NMHC), molecular hydrogen (H<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), nitrous oxide (N<sub>2</sub>O), particulate matter (PM<sub>2.5</sub>), total particulate matter (TPM), total carbon (TC), organic carbon (OC), and black carbon (BC). This data set is intended for use in large-scale modeling studies, and it supersedes and replaces previously published GFEDv1.0 and GFEDv2.0 published in 2005 and 2006 respectively.

“Characteristics of African Savanna Biomes for Determining Woody Cover” is a collection of soil and vegetation characteristics, herbivore estimates, and precipitation measurements for 854 sites across Africa. The data provided were described, analyzed, and published by M. Sankara et al. 2005 in “Determinates of Woody Cover in African Savannas” in *Nature* 438 (7069):846-849.

## Best Practices for Preparing Environmental Data Sets to Share and Archive

At the request of several field researchers, investigators, GIS and image specialists, and data managers, the ORNL DAAC has prepared a set of guidelines for preparing environmental data for archiving. These concise guidelines inform data providers about what is expected from them for data archiving and documentation. Examples, reference tables, and checklists are provided.

### *Improving the usability of archived data*

Historically, data users have often had a difficult time finding, accessing, and using existing data and data products. For example, the critical information about the data

## Best Practices (continued)

may not have been provided - collection and analysis methods, units used in reporting the data, or even the format of the data file. Data providers are encouraged to consider the needs of future data users and assign descriptive data file and data set names, use consistent data organization and stable generic data file formats, quality assure the data products, and thoroughly define and document their data.

*Updated June 2007*

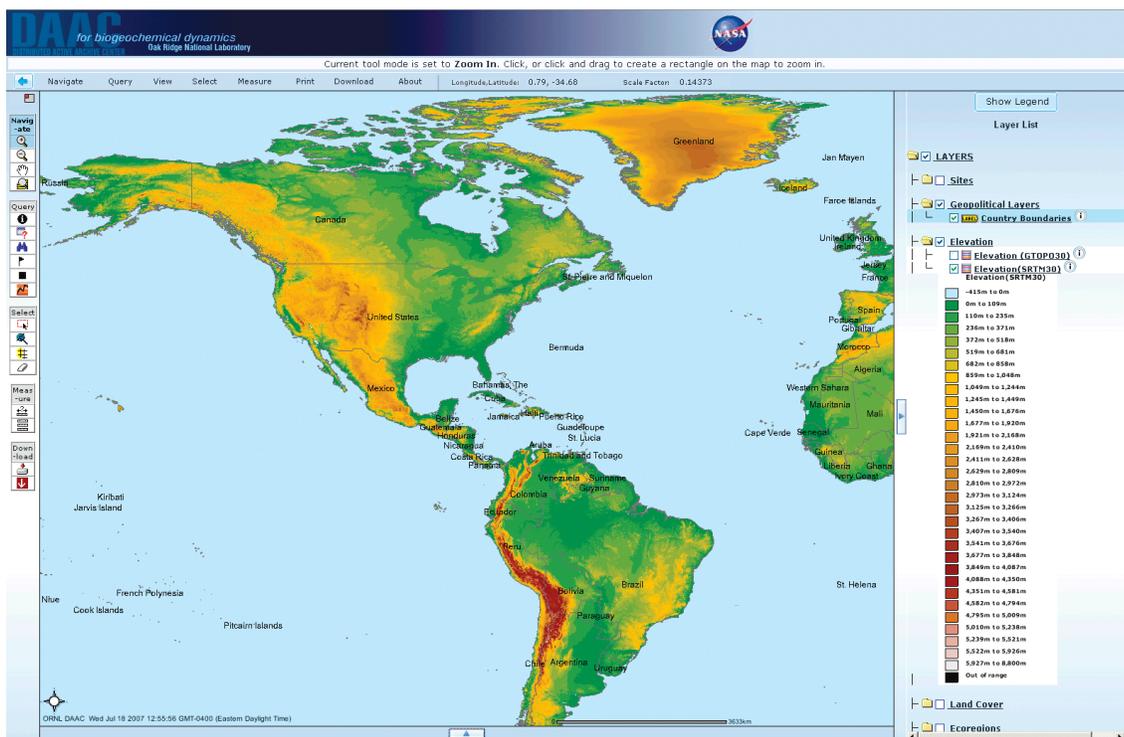
The ORNL DAAC has updated the “**Best Practices for Preparing Environmental Data Sets to Share and**

**Archive**”. The best practices are guidelines for the data management steps that data collectors should follow to archive their data and to improve the usability of their shared data sets. This guidance is provided for those who perform environmental measurements and spatial/image data analyses, although many of the practices may be useful for other data collection and archiving activities.

We would welcome your comments on the updated guidelines. The **Best Practices** document is located on the Data Provider Information Web page [http://www.daac.ornl.gov/PI/pi\\_info.html](http://www.daac.ornl.gov/PI/pi_info.html).

# Redesigned WebGIS with New User-friendly Interface

The ORNL DAAC has made substantial improvements to its WebGIS tool. The current changes have been aimed at improving the user experience working with this tool and enabling the display and dissemination of a broader collection of data. Some new features added to the WebGIS are a menu driven interface with interactive tool help, organization of data layers into categories, feedback to users on tool operation and toolsets organized by functionality.



*New WebGIS menu-driven interface.*

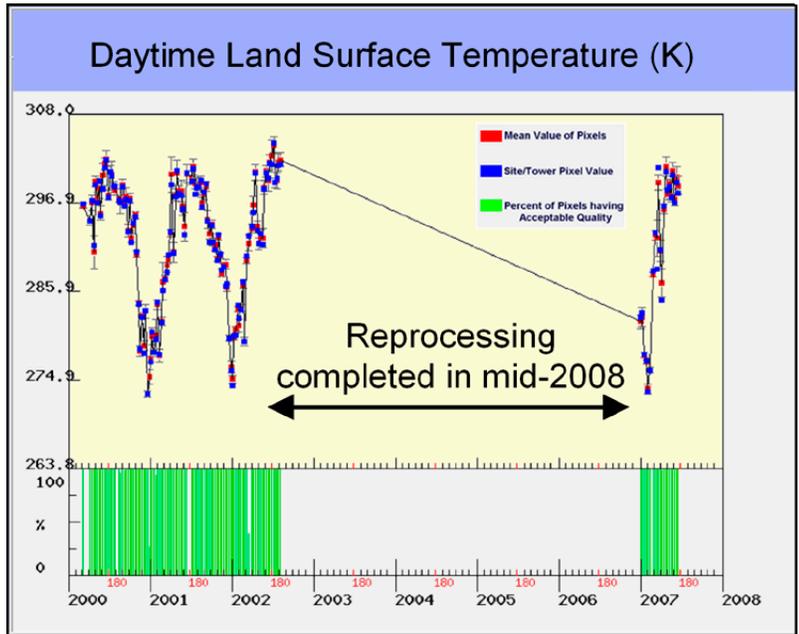
New data sets have been added to the WebGIS. Some examples include: USGS Land Resource Regions, FIA forest type groups, MODIS land water mask, Northern and Mid-Latitude Soil Database. Global and North American versions of the WebGIS are available with region specific data sets. The ORNL DAAC WebGIS supports Web Map Service (WMS) and Web Coverage Service (WCS) OpenGIS protocols. The WebGIS could be accessed from our Web site: <http://daac.ornl.gov/mapserver.shtml>.

# MODIS Land Product Subsets

ORNL DAAC offers the latest version of MODIS land product subsets for ~1050 field sites across the globe in ASCII and GeoTIFF formats. To help facilitate data analysis and interpretation of the MODIS subsets, the ORNL DAAC has enhanced the subsets with updated visualization tools. The visualization tools provide users the capability to analyze time series or individual time periods of data along with offering the ASCII and GeoTIFF formatted files for download. Some of the salient features of the new visualization tools include:

- User defined quality criteria for data filtering
- Map links to Google Map, Google Earth, MODIS tile mapper
- Webpage describing the geography of subsets
- Capability to bookmark visualization pages
- Statistics (mean, standard deviation etc.) of parameters across the subset

ORNL DAAC is also in the process of preparing visualization of the MODIS land products through its WebGIS. Users will be provided the capability to load MODIS subsets across all sites into a WebGIS and analyze the data in the context of other relevant GIS layers including land cover, elevation, soil type etc. The MODIS land product



MODIS Subset Time Series visualization example.

subsets can be accessed from our Web site: <http://daac.ornl.gov/MODIS/modis.html>.

ORNL DAAC is also working on a tool that will enable users to create subsets from any site on the earth. This tool would allow users the capability to create user-selected subsets up to 201 x 201 km. A beta version of the tool will be released in September 2007.

## New Servers and Web Site for the DAAC

Every few years, the ORNL DAAC replaces the servers we use to run our operations. This spring, we went through the process of planning and procuring the servers and disk space we will need for the archive and upcoming projects. The operating environment we have chosen uses Virtual Machine ([http://en.wikipedia.org/wiki/Virtual\\_machine](http://en.wikipedia.org/wiki/Virtual_machine)) and Storage Area Network ([http://en.wikipedia.org/wiki/Storage\\_area\\_network](http://en.wikipedia.org/wiki/Storage_area_network)) (SAN) technologies to reduce the risk of system failures.

In conjunction with the hardware refresh, the ORNL DAAC is just beginning the process of revamping the Web site. The goals for this work will be to make the Web site quicker and easier to use, make it easier to get to the vari-

ous tools that we offer, provide a more consistent look and feel across our site and tools, improve the documentation and help available to users, and provide some new tools for working with the DAAC's data.

These Web site changes will be made over the next several months, with feedback and testing from members of the DAAC's User Working Group. We're also interested in hearing from other DAAC users. If you have examples of Web sites that provide good tools for getting to and using data, please send us that information. If you have comments about the existing Web site - both things that work well and things you'd like to see improved, send us those comments as well. Send all comments and suggestions to [uso@daac.ornl.gov](mailto:uso@daac.ornl.gov).

Watch the Hot News on the DAAC Web site for announcements of the hardware replacement and the new Web site.

# Please Participate in a Brief NASA Customer Satisfaction Survey



During mid August and early September of 2007, 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 only ~ 40 questions long, will take you about 10 minutes or less to complete, and is anonymous.

Please participate! Your feedback affects our future performance. The more users who participate, the more valid the results. NASA uses this survey to evaluate each DAAC's success and to determine where improvements are needed. In turn, a roll up of the survey results for all the DAACs is used to evaluate the success of the NASA Earth Observing System Data and Information System (ESDIS), the sponsor of all nine NASA DAACs.

## 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/>

EOSDIS Data Gateway: search all DAACs at

<http://eos.nasa.gov/imswelcome>

User Services Office: [ornldaac@ornl.gov](mailto:ornldaac@ornl.gov)

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