

DAAC for Biogeochemical Dynamics

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Project End Date: September 30, 2014 (The ORNL DAAC is in its fourth 5-year interagency agreement.)

SPONSOR: National Aeronautics and Space Administration (NASA)

PARTNERS: The ORNL DAAC is one of the 12 science-focused data centers in the NASA Earth Observing System Data and Information System (EOSDIS).

Project Website: <http://daac.ornl.gov>

PROJECT DESCRIPTION

The mission of the ORNL DAAC is to assemble, distribute, and provide data services for a comprehensive archive of terrestrial biogeochemistry and ecological dynamics observations and models to facilitate research, education, and policy formulation in support of NASA's Earth sciences. This archive is used principally by researchers for studying global environmental change but is also used by a variety of other scientists. The archive includes both ground-based and remote-sensing measurements related to biogeochemical and ecosystem processes. Sources of data include NASA-funded field campaigns, selected relevant measurements from EOS satellites, and other biogeochemical dynamics data useful to the global change research community. The use of ground-based measurements is a key part of understanding the significance of EOS satellite data. Data from NASA and other sources archived at the ORNL DAAC are used to validate remote sensing data and to parameterize and validate models of local-, regional-, and global-scale processes for projecting changes in the Earth's ecosystems.

The ORNL DAAC is one of 12 science-focused data centers operating as part of the NASA EOSDIS (<http://esdis.eosdis.nasa.gov/dataaccess/datacenters.html>). The ORNL DAAC manages the data from NASA-funded field campaigns and serves as the science focus for terrestrial ecology for EOSDIS.

SIGNIFICANCE

Having reliable and easy access to data about the climate and the terrestrial ecosystem is critical for understanding climate change, improving models, and understanding impacts and vulnerabilities. The ORNL DAAC plays a key role in this effort, particularly as a bridge between the terrestrial ecology, remote sensing, and modeling communities.

INTERESTING FINDINGS

The ORNL DAAC hosts a number of different tools for accessing and delivering data, such as the MODIS (Moderate Resolution Imaging Spectroradiometer) subsetting tool (<http://daac.ornl.gov/MODIS/>), which allows users to get MODIS land product data for small areas (up to 100 km x 100 km) and in easy-to-use formats (ASCII and GeoTIFF). Some ORNL DAAC data is available using Open Geospatial Consortium (OGC) web services (<http://webmap.ornl.gov/wcsdown/index.jsp>) and using a browser-based Geospatial Information Systems (GIS) tool (<http://webmap.ornl.gov/webgis/viewer.htm?instance=global>).

