A series of land surface state (e.g., soil moisture and surface temperature) and flux (e.g., evaporation and sensible heat flux) products simulated by land surface models (CLM, Mosaic, Noah, SAC and VIC) from the North American and Global Land Data Assimilation Systems (NLDAS and GLDAS) are now accessible at the Hydrology Data and Information Services Center (HDISC), a component of NASA Goddard Earth Sciences Data and Information Services Center (GES DISC).

Hydrology Data and Information Services Center (HDISC)

The Hydrology DISC currently supports the North American and Global Land Data Assimilation Systems (NLDAS and GLDAS, respectively) data products generated by GSFC’s Hydrological Sciences Branch. HDISC has the capability to support more hydrology data products and provide more advanced data access and visualization tools. The goal is to develop HDISC as a data and services portal that supports weather and climate forecast, and water and energy cycle research (http://hdisc.gsfc.nasa.gov/hydrology).

North American (NLDAS) and Global Land Data Assimilation Systems (GLDAS)

NLDAS and GLDAS integrate data from multiple space-based Earth observing systems using advanced land surface modeling and assimilation techniques. These products support weather and climate forecast experiments, water resources applications, and water and energy cycle research.

<table>
<thead>
<tr>
<th>NLDAS</th>
<th>GLDAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Water and energy budget data, forcing data</td>
</tr>
<tr>
<td>Spatial extent</td>
<td>Contiguous U.S., parts of southern Canada and northern Mexico</td>
</tr>
<tr>
<td>Spatial resolution</td>
<td>0.125°</td>
</tr>
<tr>
<td>Time period</td>
<td>Jan 1, 1979 to present for NLDAS-2 Oct 1, 1998 to Dec 31, 2007 for NLDAS-1 (to be released)</td>
</tr>
<tr>
<td>Forcing</td>
<td>Hourly and monthly Multiple data sets derived from satellite measurements, rain rate, precipitation gauges, and atmospheric analyses</td>
</tr>
<tr>
<td>Land surface models</td>
<td>Mosaic, Noah, SAC, VIC</td>
</tr>
<tr>
<td>Output format</td>
<td>HDF, netCDF, ASCII, and KMZ</td>
</tr>
<tr>
<td>Vegetation definition</td>
<td>University of Maryland, 1 km</td>
</tr>
</tbody>
</table>

Access HDISC Data

- Anonymous http and ftp data downloading
- Mirror – providing discovery of, and access to, a Google-like search and download tool, based on keywords

Online Visualization and Analysis (Giovanni)

Giovanni is a simple and intuitive way to visualize, analyze, and access Earth science remote sensing data online.

Online Visualization and Analysis (Giovanni)

HDISC Data Holdings

GrADS Data Server (GDS)

GDS provides submitting and analysis services across the Internet. GDS supports any operation that can be expressed in a single GRADS expression.

On-The-Fly Spatial and Parameter Subset for GLDAS

A. User selects data sets of interest

On-The-Fly Conversion to netCDF

A. Convert to netCDF service available for GLDAS data sets

Further Development

- Support additional NLDAS products and monthly products.
- Support Giovanni services for GLDAS and NLDAS products.
- Support GLDAS new processing with improved forcing data set.
- Support NLDAS products for EPA BASINS application.

Drought Monitoring With NLDAS Data

NLDAS-2 data are used in various combinations in a post-processor to generate different drought indices for the three main types of droughts to be investigated:

- Meteorological (primarily from precipitation deficit)
- Hydrological (primarily from streamflow/runoff deficit)
- Agricultural (primarily from soil moisture deficit)

The different drought indices and outputs from separate land surface models will be evaluated against historical and current drought observations.

NLDAS Drought Monitor: http://www.emc.ncep.noaa.gov/mmb/nldas/drought/

Parameters for GLDAS (Left), NLDAS-2 Forcing (Middle) and NLDAS-2 Mosaic output (Right)