

Public Data Access from the LP DAAC

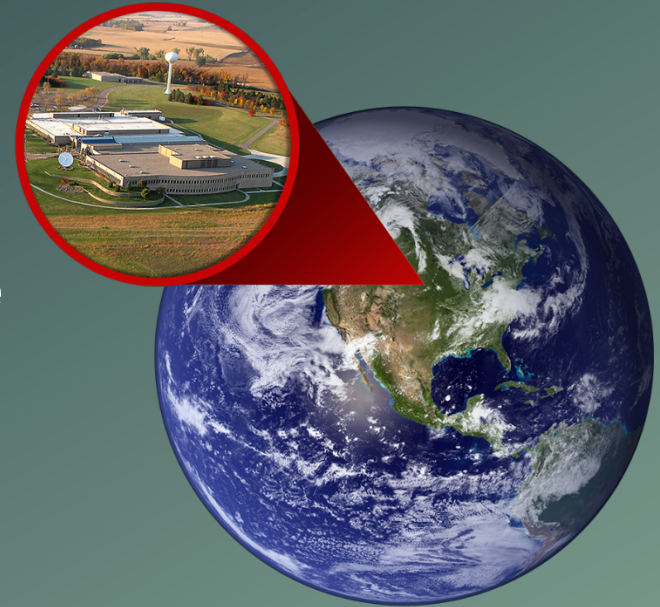
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*Work performed under USGS contract G15PD00766

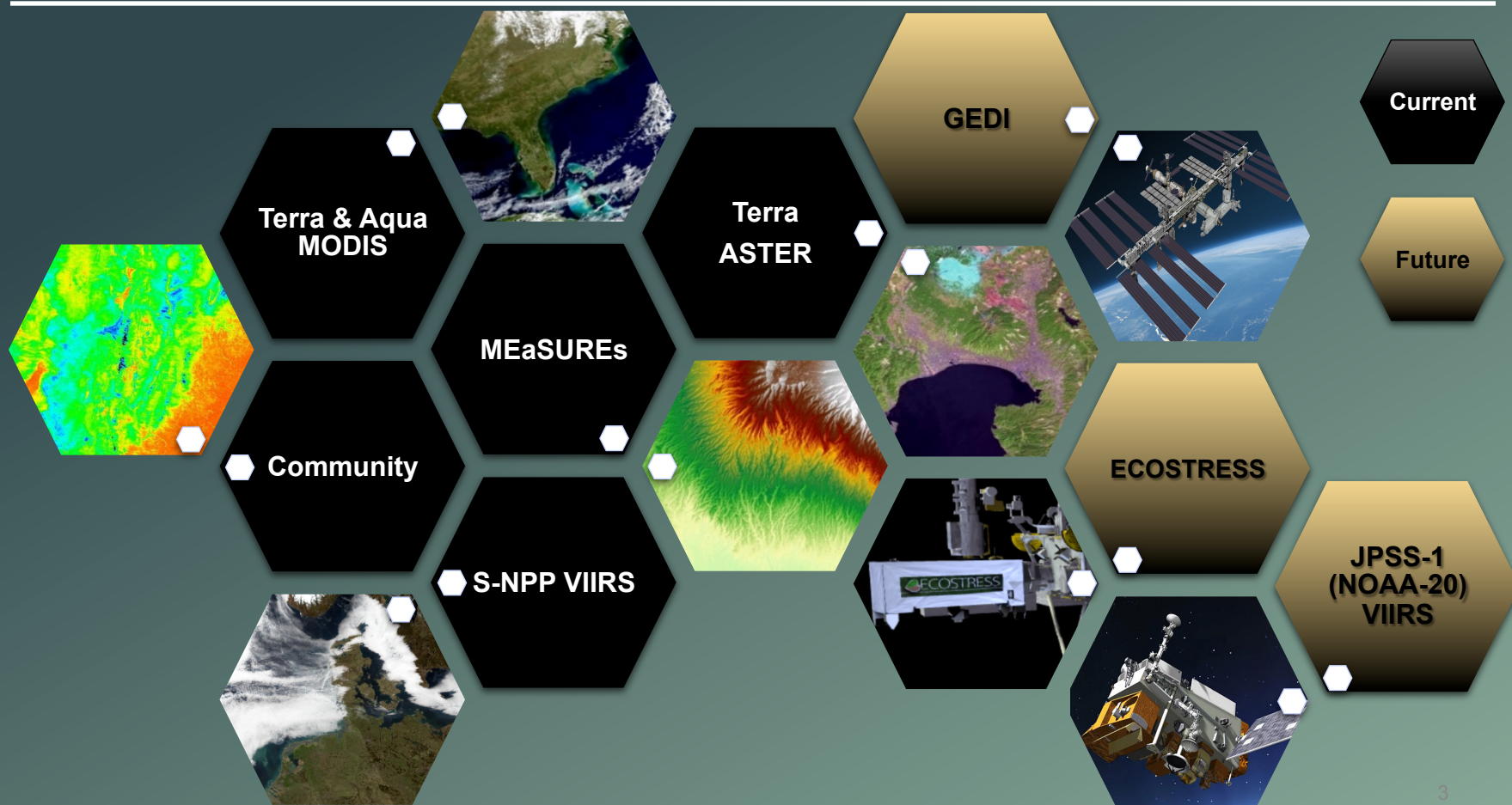
NASA's LP DAAC



- Land Processes (LP) Distributed Active Archive Center (DAAC)
 - <https://lpdaac.usgs.gov>
- Located in Sioux Falls, SD at the USGS Earth Resources Observation Science (EROS) Center



LP DAAC Distributed Data Products



Data Product Information

Dataset Discovery

https://lpdaac.usgs.gov/dataset_discovery



The screenshot displays the LP DAAC (Land Processes Distributed Active Archive Center) website interface. The header features the LP DAAC logo, NASA and USGS logos, and a navigation menu with links like Home, About, Dataset Discovery, Citing Our Data, Tools, User Resources, User Services, Data, Search, and Login with Earthdata. The breadcrumb trail indicates the current location: Home > Dataset Discovery > Vegetation Indices > Terra MODIS > 500.

On the left, a sidebar lists filter categories: Product (Vegetation Indices), Dataset (Terra MODIS), Dataset Version, Temporal Granularity, Pixel Size (500), Spatial Extent, Data Access, Temporal Range, and Decommissioned.




The main content area shows search results for the term 'MOD13A1'. Two results are displayed, each with a thumbnail image and a list of metadata:

- Result 1:** [MOD13A1](#)
Name: Vegetation Indices 16-Day L3 Global 500m
Product: Vegetation Indices
Dataset: Terra MODIS
Dataset Version: 5
Temporal Granularity: Composites
Pixel Size: 500
Spatial Extent: Global
Data Access: [Data Pool](#), [EarthExplorer](#), [GloVis](#), [MRTWeb](#), [Reverb](#), [AppEARS](#)
- Result 2:** [MOD13A1](#)
Name: MODIS/Terra Vegetation Indices 16-Day L3 Global 500m Grid SIN
Product: Vegetation Indices
Dataset: Terra MODIS
Dataset Version: 6
Temporal Granularity: Composites
Pixel Size: 500
Spatial Extent: Global
Data Access: [Data Pool](#), [EarthExplorer](#), [GloVis](#), [MRTWeb](#), [Reverb](#), [DAAC2Disk](#), [AppEARS](#), [Earthdata Search Client](#)

Data Product Information

DOI Landing page

- Product information page
- Provides access to documentation, dataset characteristics, citation information, data access tools, and more!



LAND PROCESSES DISTRIBUTED ACTIVE ARCHIVE CENTER

Home About Dataset Discovery Citing Our Data Tools User Resources User Services Site Search Login with Earthdata

Home > MODIS > MODIS Products Table > MOD09A1 V006

MOD09A1: MODIS/Terra Surface Reflectance 8-Day L3 Global 500m SIN Grid V006

Description

The MODIS Terra MOD09A1 Version 6 product provides an estimate of the surface spectral reflectance of Terra MODIS Bands 1-7 corrected for atmospheric conditions such as gasses, aerosols, and Rayleigh scattering. Along with the seven 500m reflectance bands is a Quality layer and four observation bands. For each pixel, a value is selected from all the acquisitions within the 8-day composite period. The criteria for the pixel choice include cloud and solar zenith. When several acquisitions meet the criteria the pixel with the minimum channel 3 (blue) value is used. Validation at stage 3 has been achieved for all MODIS Surface Reflectance products.

Improvements/Changes from Previous Versions

- Improvement to the aerosol retrieval and correction algorithm and use of new aerosol retrieval Look up Tables.
- Refinements to the internal snow, cloud, and cloud shadow detection algorithms. Uses BRDF database to better constraint the different threshold used.
- Processes ocean bands to create a new Surface Reflectance Ocean product and provide QA data sets for these bands.
- Improved discrimination of salt pans from cloud and snow and flag salt pan in QA band

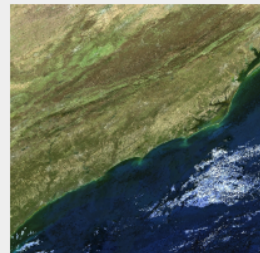
Citation

PI Name: Eric Vermote
DOI: 10.5067/MODIS/MOD09A1.006
[Citing Our Data](#)

Citation Generator

apa

E. Vermote. (2015). MOD09A1 MODIS/Terra Surface Reflectance 8-Day L3 Global 500m SIN Grid V006. NASA EOSDIS Land Processes DAAC. <https://doi.org/10.5067/MODIS/MOD09A1.006>



MOD09A1. Acquired October 15, 2004. Tile H1V05. Southeast US.

DOI 10.5067/MODIS/MOD09A1.006

Product	Reflectance
Dataset	Terra MODIS
Dataset Version	6
Pixel Size	500
Temporal Granularity	Composites
Spatial Extent	Global

[Data Access](#) [DAAC2Disk Data Pool](#)
[Earthdata Search Client](#)
[Reverb](#) [AppEEARS](#)

Basic Public Data Access

- **EOSDIS Common Metadata Repository (CMR)**
 - Searchable metadata repo for all NASA EOSDIS holdings that feeds many data access points
 - <https://cmr.earthdata.nasa.gov/search/>
- **LP DAAC Data Pool**
 - Direct data download via HTTP
 - https://lpdaac.usgs.gov/data_access/data_pool
- **NASA Earthdata Search**
 - Search, browse, order, download across all NASA EOSDIS holdings and a selection of USGS datasets
 - <https://search.earthdata.nasa.gov/>

Extended Public Data Access

- **USGS EarthExplorer**
 - Search and download across LP DAAC and USGS Long Term Archive holdings
 - <https://earthexplorer.usgs.gov/>
 - **Application for Extracting and Exploring Analysis Ready Data (AppEEARS)**
 - Extract and explore across multiple federal archives
 - <https://lpdaacsvc.cr.usgs.gov/appeears/>
 - **NASA Global Imagery Browse Services (GIBS)**
 - Web mapping services (WMS) of full resolution browse for a selection of NASA datasets
 - <https://wiki.earthdata.nasa.gov/display/GIBS/>
-

LP DAAC Data Pool

Home > Tools > Data Access > Data Pool

Data Pool

The Data Pool is the publicly available portion of the LP DAAC online holdings. Data Pool provides a direct way to access data product files. All Data Pool holdings are available at no cost to the user.

As of July 20, 2016, users are now required to use Pool direct access links, you will now be prompted for examples please see the [Command Line Ti](#)



Please note weekly maintenance is every Wednesday 0800-1200 Central Time.

U.S. GOVERNMENT COMPUTER

This US Government computer is for authorized users only. By accessing this system you are consenting to complete monitoring with no expectation of privacy. Unauthorized access or use may subject you to disciplinary action and criminal prosecution.

Attention user: You are downloading data from NASA's Land Processes Distributed Active Archive Center (LP DAAC) located at the USGS Earth Resources Observation and Science (EROS) Center.

Downloading these data requires a NASA Earthdata Login username and password. To obtain a NASA Earthdata Login account, please visit <https://urs.earthdata.nasa.gov/users/new/>.

For more information about the data you are downloading, including documentation and how to properly cite the data, please visit <https://lpdaac.usgs.gov/>.

Name	Last modified	Size	Description
Parent Directory		-	
MOD09A1.005/	2017-03-31 08:27	-	
MOD09A1.006/	2017-05-09 22:12	-	
MOD09CMG.005/	2017-04-01 01:56	-	
MOD09CMG.006/	2017-05-09 22:07	-	
MOD09GA.005/	2017-04-01 01:38	-	
MOD09GA.006/	2017-05-09 21:57	-	
MOD09GO.005/	2017-04-01 01:38	-	
MOD09GO.006/	2017-05-09 21:57	-	
MOD09Q1.005/	2017-03-31 08:27	-	

- Contains almost all of the LP DAAC's data holdings
- Provides HTTP Access
- Now requires Earthdata Login

https://lpdaac.usgs.gov/data_access/data_pool

DAAC2Disk

- Provides bulk download capabilities for entire granules from any record in CMR

Home > Tools > Data Access > DAAC2Disk

DAAC2Disk

The LP DAAC2Disk download manager will allow users to simplify the search and HTTP download process of the LP DAAC's data pool holdings. Users have the option of using a web-based interface or script to retrieve their data. [The web-based interface is available here.](#)

The LP DAAC2Disk utility is also available as a script that can be downloaded and executed from the command line. The script is available for various platforms and can be downloaded via the links below.

- [Windows](#) (md5: e2ad932b560c9426b959bde345a32d03)
- [Linux/Unix](#) (md5: f5785b1e749b14f2e060949bca4a3b82)
- [Ubuntu](#) (md5: 055647683dd17bdc858cc265219f47)
- [CentOS 7](#) (md5: 9d4b9fdd865120570c568490b36a155e)
- [Macintosh](#) (md5: 562a1e1ea5ff995878ae9c3d1a5c5bb9)

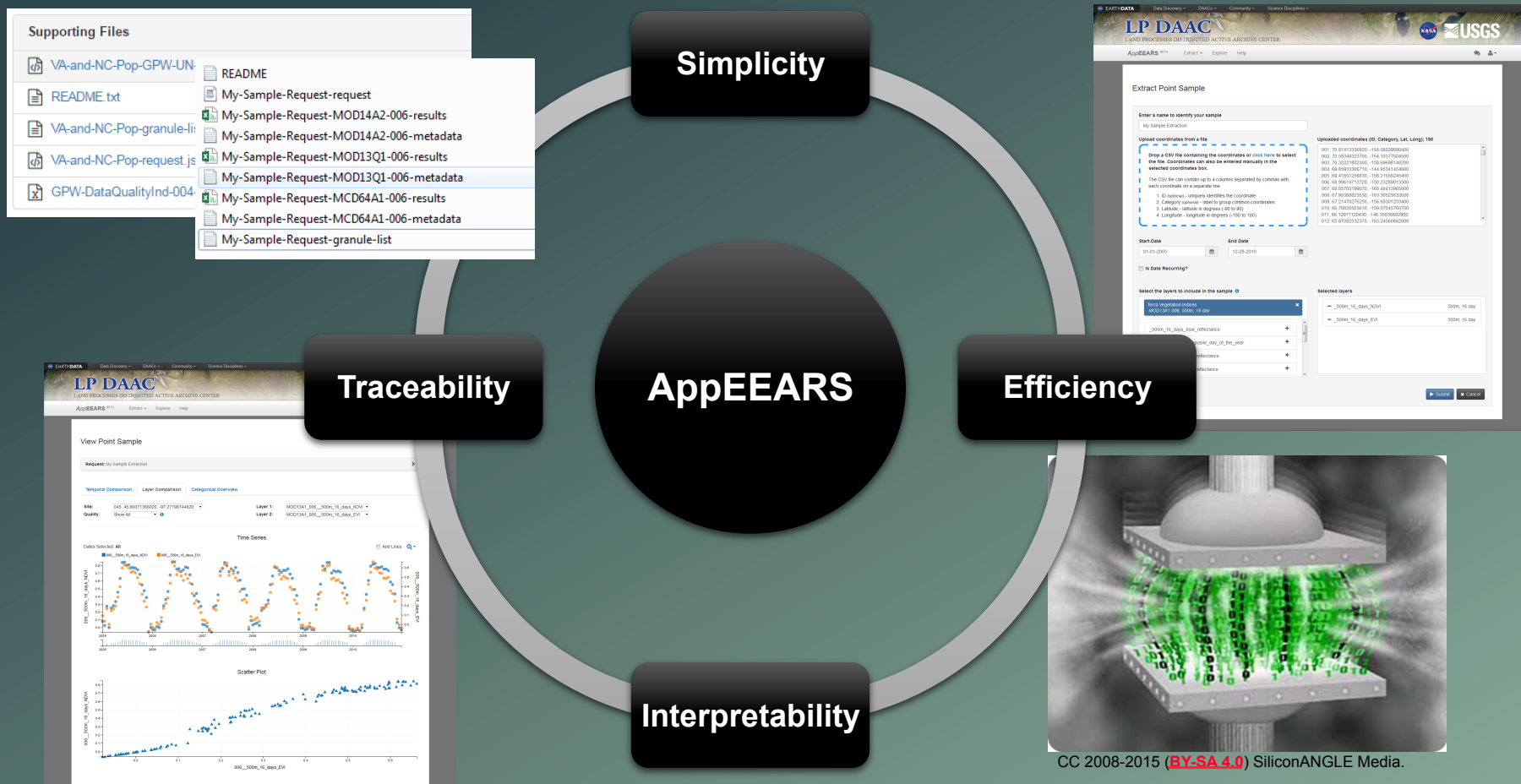
For more information please see the [user guide](#).

As of July 20, 2016, users are now required to log in with their [Earthdata login](#) credentials to obtain data. When accessing data via the Data Pool direct access links, you will now be prompted to enter your credentials. Script users should modify their code to reflect this change. For examples please see the [Command Line Tips](#) document.



https://lpdaac.usgs.gov/data_access/daac2disk

Application for Extracting and Exploring Analysis Ready Samples (AppEEARS)

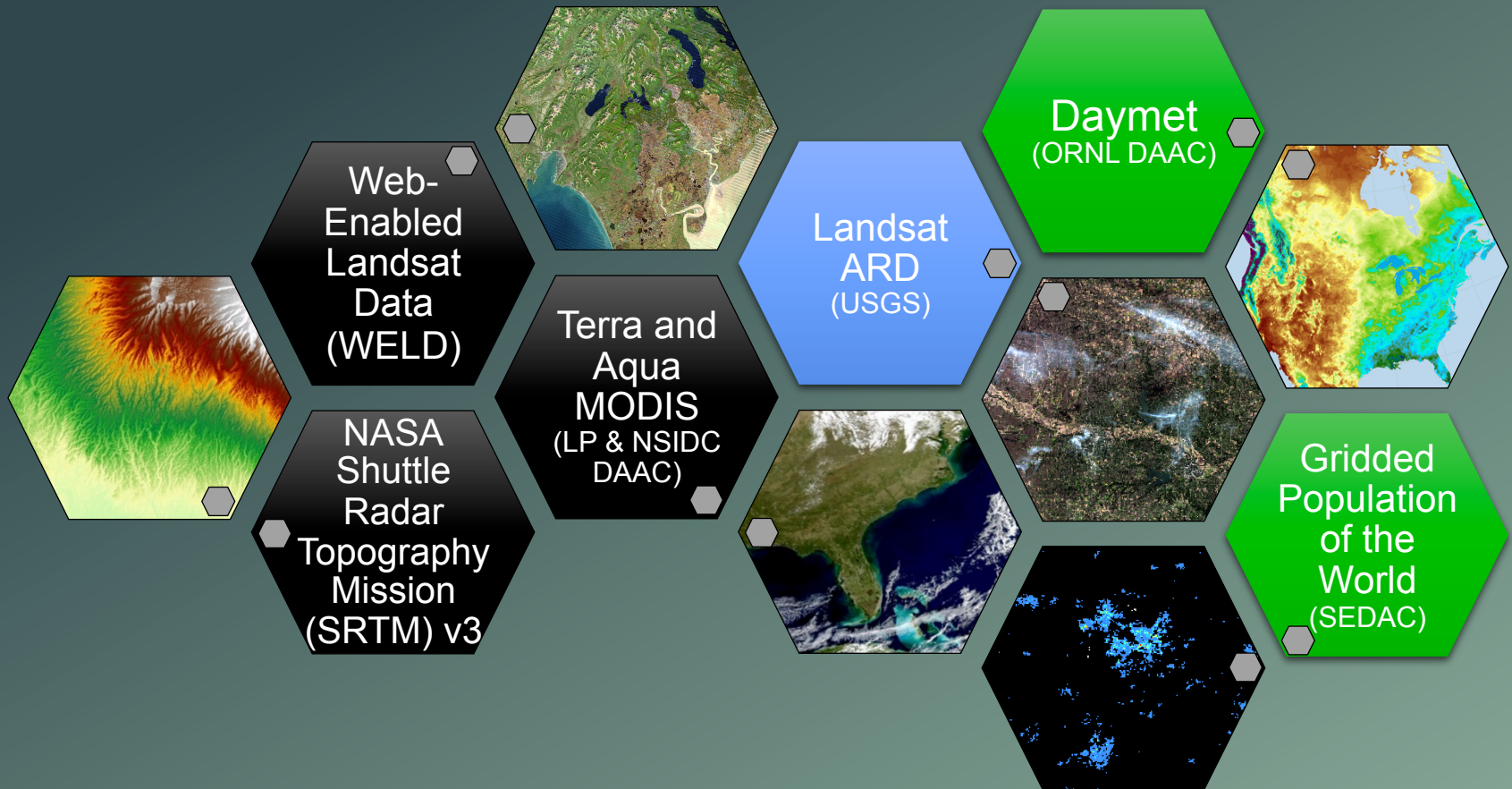


Why use AppEEARS?

- Quickly extract time series data from multiple datasets at multiple AOIs
- Reduce the amount of data needed to download
- Visualize output of sample results before download
- Receive just the data you want in an easy to analyze format (.csv, GeoTIFF, NetCDF on the way)
- Receive fully decoded MODIS and WELD quality information and SRTM source information

<https://lpdaacsvc.cr.usgs.gov/appeears/>

Data available in AppEEARS



AppEEARS – Point Extraction (Operational)

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AppEEARS Extract Explore Order Tracking Help

Extract Point Sample

Enter a name to identify your sample

JasperFire_Example

Upload coordinates from a file

Drop a CSV file containing the coordinates or [click here](#) to select the file. Coordinates can also be entered manually in the selected coordinates box.

The CSV file can contain up to 4 columns separated by commas with each coordinate on a separate line.
1. ID (optional) - uniquely identifies the coordinate
2. Category (optional) - label to group common coordinates
3. Latitude - latitude in decimal degrees (-90 to 90)
4. Longitude - longitude in decimal degrees (-180 to 180)

Uploaded coordinates (ID, Category, Lat, Long): 4

0, fire, 43.8558998, -103.8040009
1, fire, 43.8490982, -103.75
2, non-fire, 43.8620987, -103.9039993
3, non-fire, 43.9394989, -103.9749985

Start Date

01-01-2000

End Date

09-26-2016

☐ Is Date Recurring?

Select the layers to include in the sample

Search for a product

Selected layers

☒ _250m_16_days_NDVI

250m, 16 day

☒ LST_Day_1km

1000m, 8 day

☒ NDVI_TOA

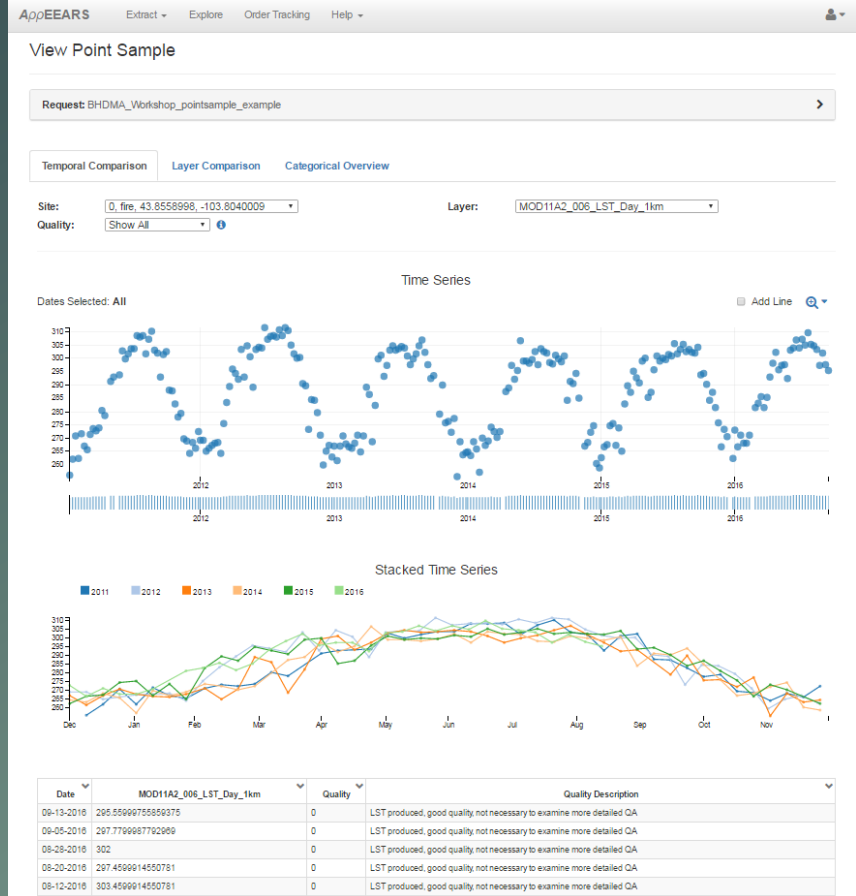
30m, Monthly

☒ FireMask

1000m, 6 day

Submit

Cancel



AppEEARS – Area Extraction (Alpha)

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AppEEARS Extract Explore Order Tracking Help

Extract Area Sample

Enter a name to identify your sample

Jasper_Fire_Area

Upload vector polygon file

Drop a vector polygon file containing the area feature(s) to extract or click here to select the file.

Supported file formats:

- ESRI Shapefile (.zip including .shp, .dbf, .prj, and .shx files)
- GeoJSON (.json or .geojson)

Start Date: 01-01-2000 End Date: 06-20-2012

Is Date Recurring?

Select the layers to include in the sample

Search for a product

Selected file (AppEEARS_Area)

Selected layers

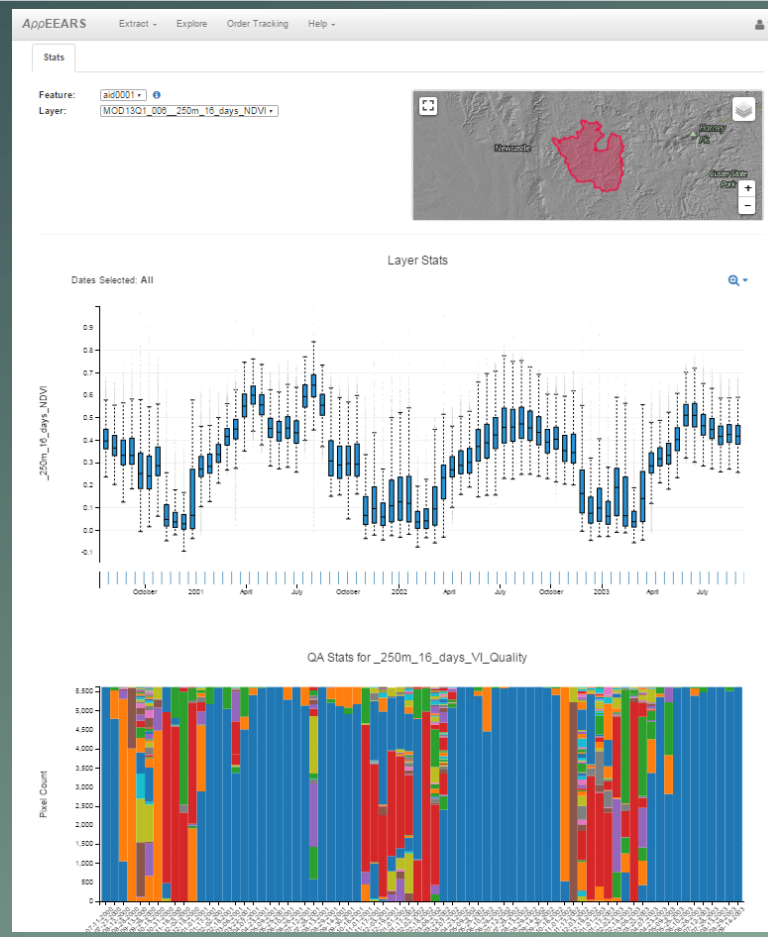
_250m_16_days_NDVI	250m, 16 day
LST_Day_1km	1000m, 8 day
LST_Night_1km	1000m, 8 day
NDVI_TOA	30m, Yearly
FireMask	1000m, 8 day

Output Options

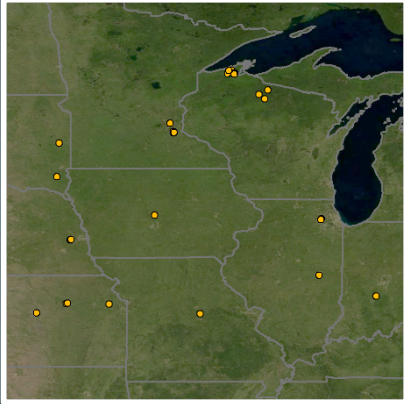
Projection: Native Projection

File Format: GeoTIFF

Submit Cancel



AppEEARS Point Example



Study Area

- AmeriFlux towers within the Mid-Continent Intensive
- 40 features total

Time Span

- 2010-2012

Output Format

- .csv file

Datasets

MODIS Daily Snow Cover (V6)

- Snow Cover

MODIS 4-Day LAI & FPAR

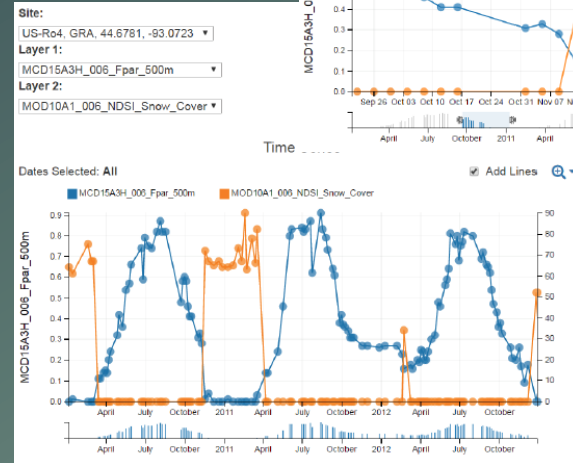
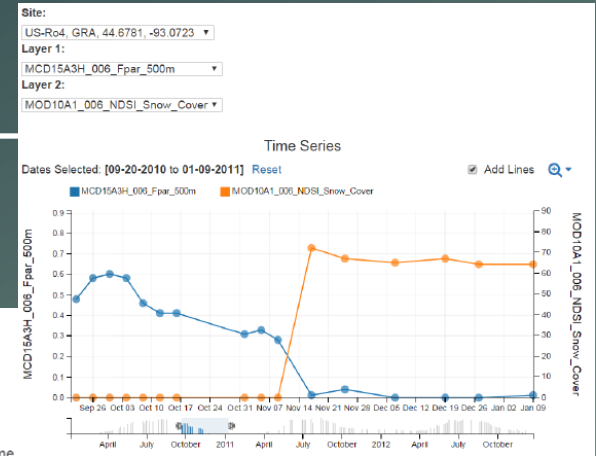
- FPAR

To process

- 5,473 files
- 26 GB

Output

- 1 bundle
- 320 KB



AppEEARS Area Example



Study Area

- Camp 32 Fire (Montana)
- School Fire (Washington)
- Warm Fire (Arizona)

Multi-feature shapefiles
25 features total

Time Span

- 2005-2006

Projection

- CONUS Albers EA

Datasets

WELD CONUS Weekly/30m

- (B4, B7, NDVI)

MODIS 8d/500m Surface Reflectance

- (B2, B7)

MODIS 16d/250m VI

- (NDVI)

Output Format

- GeoTIFF

To process

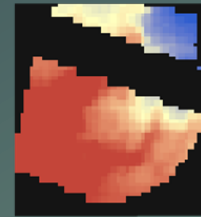
- 900 files
- 101 GB

After Wimberly et al. 2009. Assessing fuel treatment effectiveness using satellite imagery and spatial statistics.

Feature 1

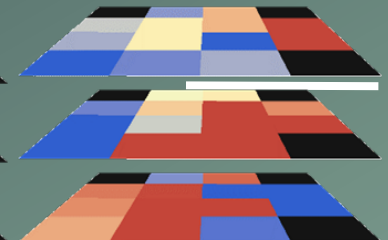
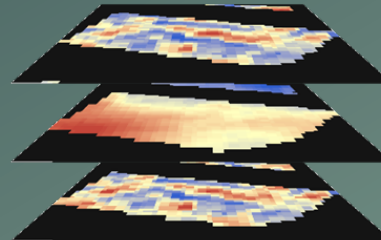
WELDUSWK V015

Band4_TOA_REF



MOD09A1.006

Surf_refl_b02



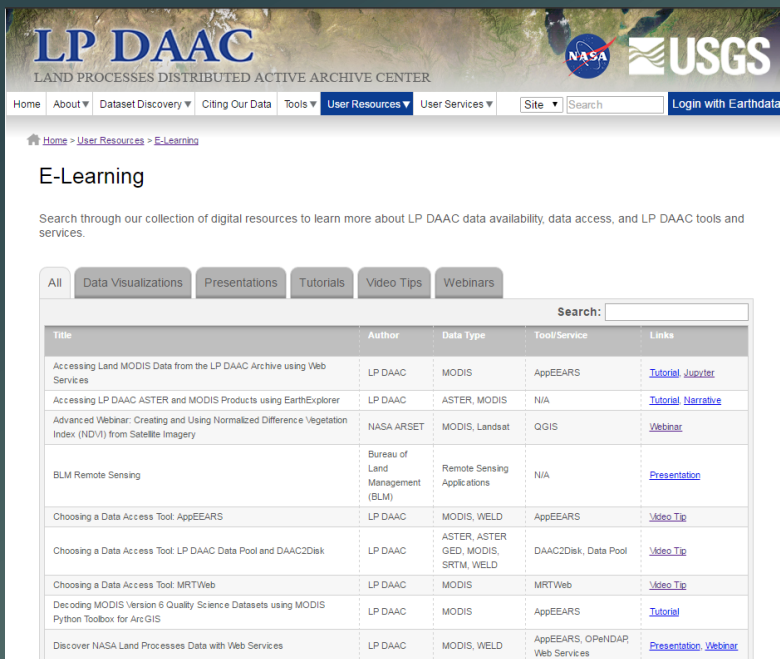
Output

- 23,000 files
- 0.02 GB

Plus many remaining
features & variables

Want to learn more?

Find tutorials, scripts, videos, and more!



The screenshot shows the LP DAAC (Land Processes Distributed Active Archive Center) website. The header includes the LP DAAC logo, NASA, and USGS logos. Navigation links include Home, About, Dataset Discovery, Citing Our Data, Tools, User Resources, User Services, Site, Search, and Login with Earthdata. The main content area is titled 'E-Learning' and contains a search bar and a table of digital resources.

Title	Author	Data Type	Tool/Service	Links
Accessing Land MODIS Data from the LP DAAC Archive using Web Services	LP DAAC	MODIS	AppEEARS	Tutorial Jupyter
Accessing LP DAAC ASTER and MODIS Products using EarthExplorer	LP DAAC	ASTER, MODIS	N/A	Tutorial Narrative
Advanced Webinar: Creating and Using Normalized Difference Vegetation Index (NDVI) from Satellite Imagery	NASA ARSET	MODIS, Landsat	QGIS	Webinar
BLM Remote Sensing	Bureau of Land Management (BLM)	Remote Sensing Applications	N/A	Presentation
Choosing a Data Access Tool: AppEEARS	LP DAAC	MODIS, WELD	AppEEARS	Video Tip
Choosing a Data Access Tool: LP DAAC Data Pool and DAAC2Disk	LP DAAC	ASTER, ASTER GED, MODIS, SRTM, WELD	DAAC2Disk, Data Pool	Video Tip
Choosing a Data Access Tool: MRTWeb	LP DAAC	MODIS	MRTWeb	Video Tip
Decoding MODIS Version 6 Quality Science Datasets using MODIS Python Toolbox for ArcGIS	LP DAAC	MODIS	AppEEARS	Tutorial
Discover NASA Land Processes Data with Web Services	LP DAAC	MODIS, WELD	AppEEARS, OPeNDAP Web Services	Presentation Webinar

https://lpdaac.usgs.gov/user_resources/e_learning

User Services

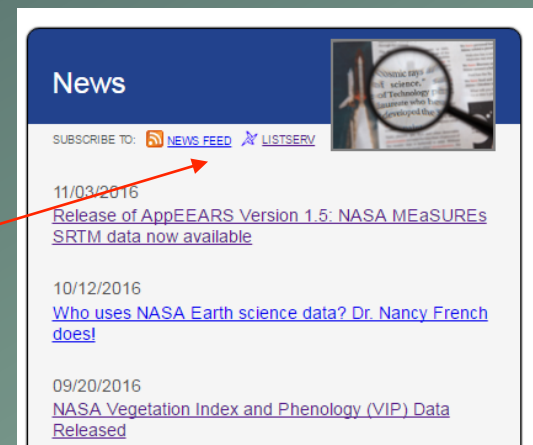
Voice: 605-594-6116

Toll Free: 866-573-3222 (866-LPE-DAAC)

E-mail: LPDAAC@usgs.gov

Web: <https://lpdaac.usgs.gov/>

Subscribe
for updates



The screenshot shows the LP DAAC News page. It features a 'News' header with a magnifying glass icon. Below the header, there are subscription options: 'SUBSCRIBE TO: NEWS FEED' and 'LISTSERV'. A red arrow points from the 'Subscribe for updates' text to the 'NEWS FEED' link. The main content area lists recent news items with dates and titles.

News

SUBSCRIBE TO: [NEWS FEED](#) [LISTSERV](#)

11/03/2016
[Release of AppEEARS Version 1.5: NASA MEaSUREs SRTM data now available](#)

10/12/2016
[Who uses NASA Earth science data? Dr. Nancy French does!](#)

09/20/2016
[NASA Vegetation Index and Phenology \(VIP\) Data Released](#)