

# MRTWeb: Enhanced MODIS data discovery and delivery services from the LP DAAC

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U.S. Department of the Interior  
U.S. Geological Survey



# Overview

- Background
  - MRTWeb Purpose and Approach
  - MRTWeb Development
- Early Look with Two Use Cases
  - Create Regional Mosaic
  - Subset Area from Time Series
- Schedule and User Feedback



# MRTWeb – Purpose and Approach

**Purpose:** Reduce data usability barriers related to the MODIS standard tile format by performing remote, user-specified processing

## One Approach

**Search & Order MODIS tiles**

**Download individual  
tiles in standard format**

**Conduct user-specified,  
local processing to create  
application-ready  
MODIS data**

**Use MODIS data**

## MRTWeb Approach

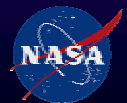
**Select MODIS tiles**

**Specify processing options**

**Initiate and monitor remote  
processing job**

**Download application –  
ready MODIS data**

**Use MODIS data**



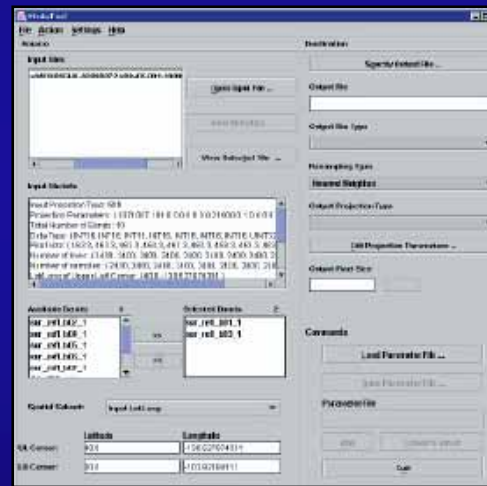
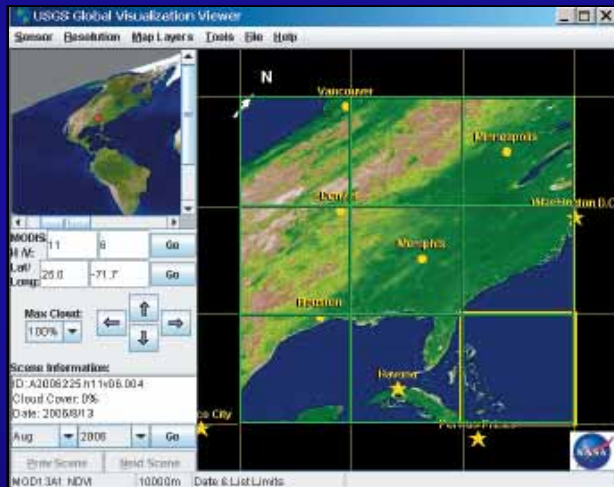
# MRTWeb - Development

Rapid development adapts and integrates two existing LP  
DAAC – USGS/EROS technologies to create MRTWeb

GloVis  
(Selection Interface)



MRT  
(Processing Tool)



Mosaic tiles

Subset an area from a  
tile, mosaic, or time  
series

Eliminate unwanted  
bands or layers

Define projection

Set resampling options

Choose file format

Rapidly visualize tiles within map context

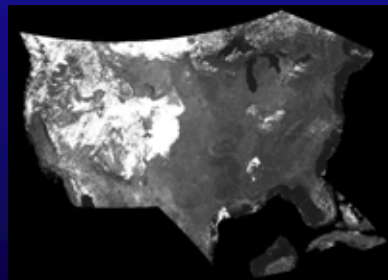
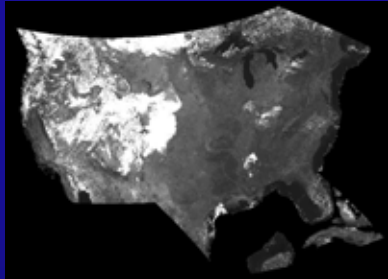
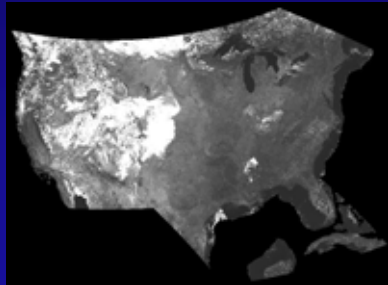
Navigate through time and space

Select tiles of interest for processing



# MRTWeb – Early Look with Use Cases

## Use Case #1 – Create Regional Mosaic



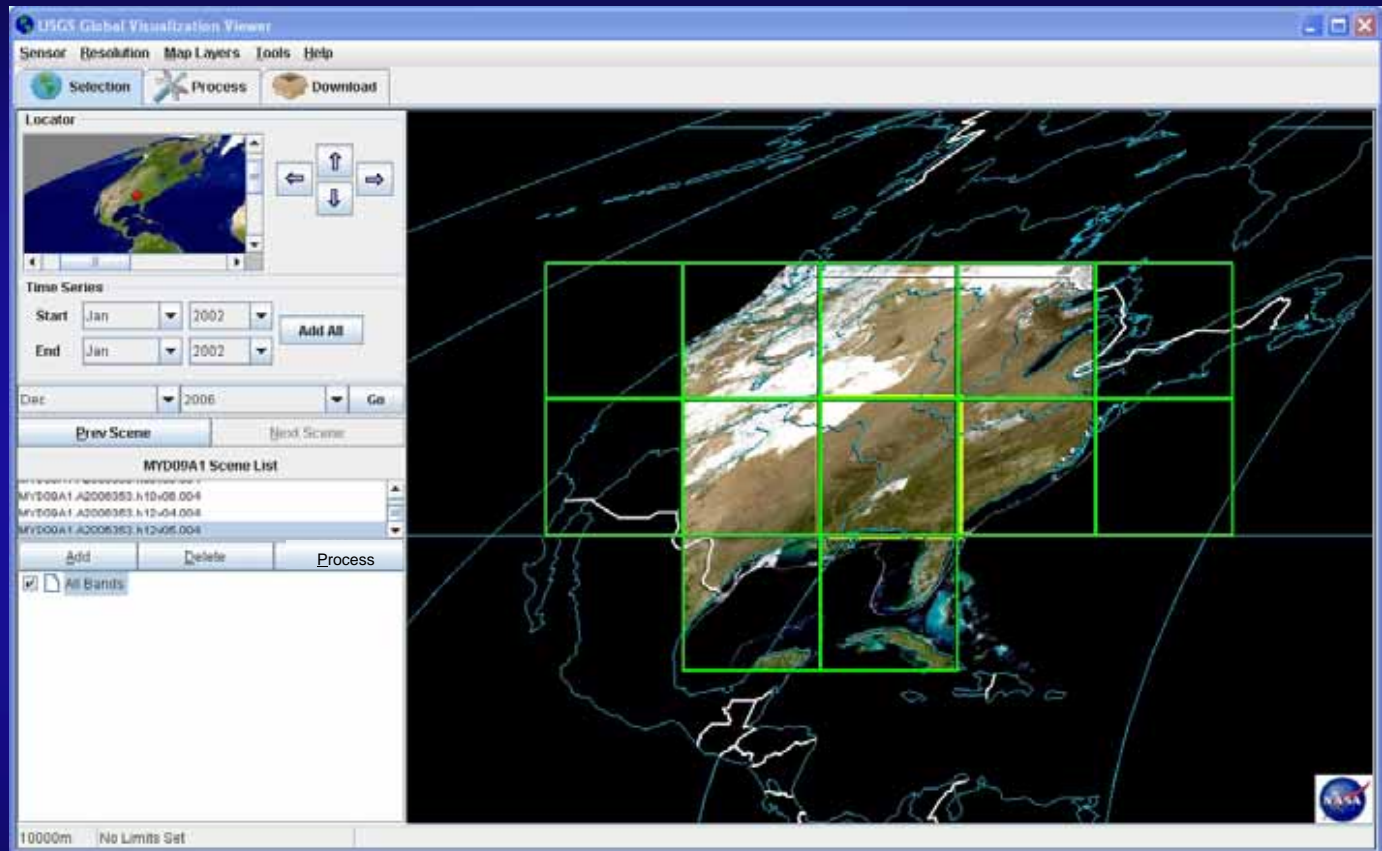
- MYD09A1 – Aqua MODIS 8-Day Surface Reflectance Composite
- Space - 12 tiles covering CONUS
- Time – December 19-26, 2006
- Eliminate all but bands 1, 3, and 4
- Reproject to Lambert Azimuthal Equal Area
- Download data in GeoTIFF format



# MRTWeb – Create Regional Mosaic

**Select**  
Product  
Tiles / Dates  
Bands

**Continue**  
to Process Tab





# MRTWeb – Create Regional Mosaic

Specify  
processing  
options...

Continue to  
Download Tab...

USGS Global Visualization Viewer

Sensor Resolution Map Layers Tools Help

Selection Process Download

**Spatial Subset**

Input Lat/Long

Upper Left   Latitude Longitude

Latitude Longitude Lower Right

**Resampling**

Type  Pixel Size  249.5 meters

**Projection**

Datum  NoDatum

Sphere  6370997

Center Lon  -111 Center Lat  38 FE  FN

**Output**

File Type  GEOTIFF

Reset Cancel Process



# MRTWeb – Create Regional Mosaic

## Download Features (any use case)

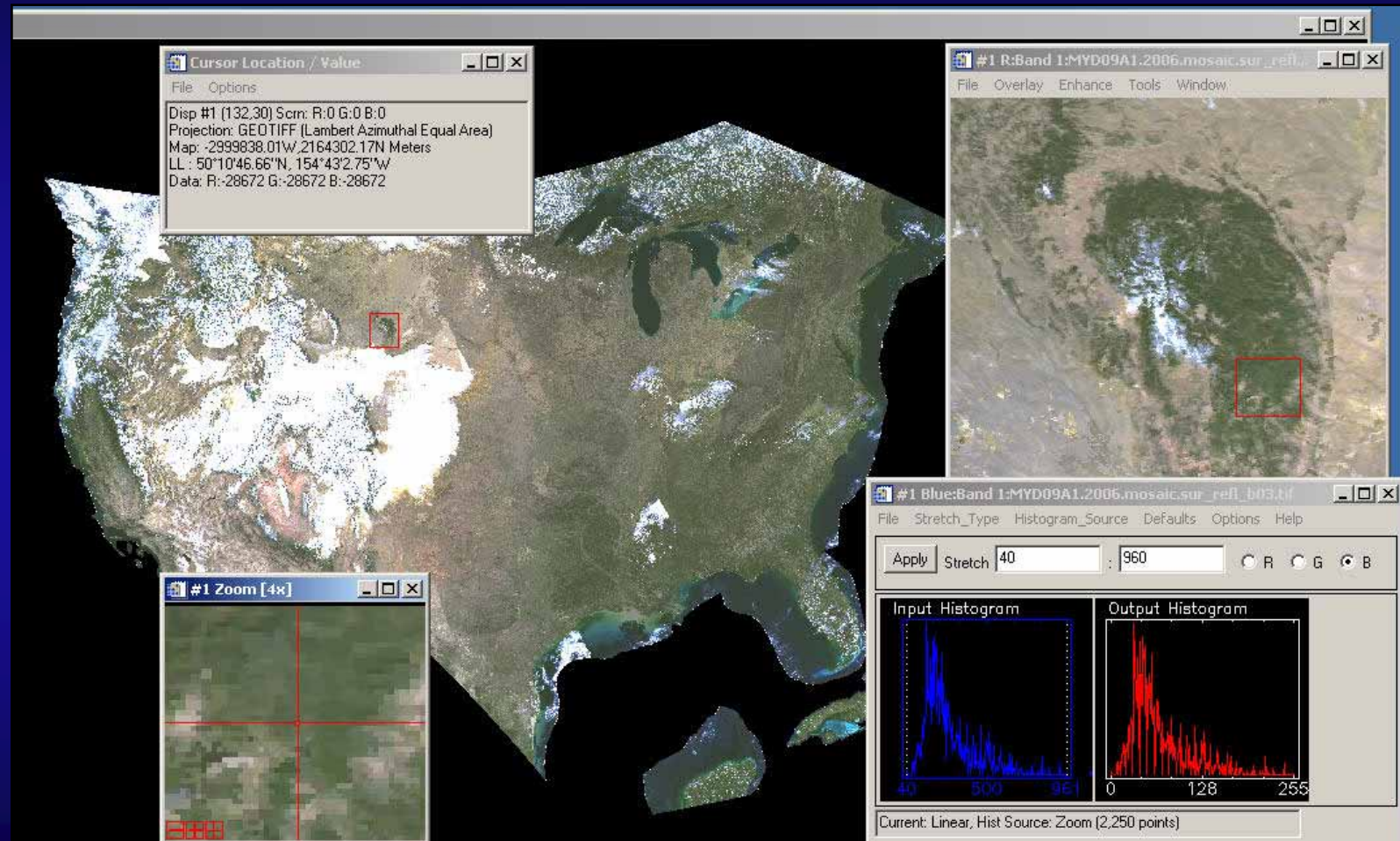
- After accepting options, MRTWeb will initiate the processing job
- On the Download Tab you will be able to see the status of the processing as it occurs
- When the processing is finished you will be able to download your processed data
- You won't need to stay logged into MRTWeb, you will be able to exit your browser and come back later to retrieve your finished data





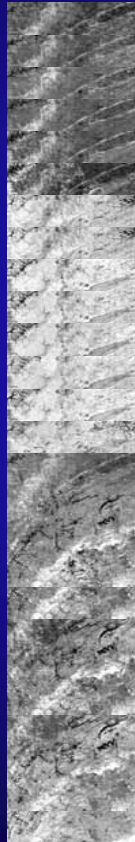
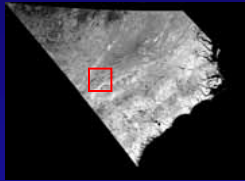
# MRTWeb – Create Regional Mosaic

## Use MODIS Data



# MRTWeb – Early Look with Use Cases

## Use Case #2 – Subset Area from Time Series



- MOD13A1 – Terra MODIS 16-day Vegetation Indices
- Space – LAT/LON UL= 37, -85, LR = 35, -83
- Time – Calendar year 2006
- Subset an area from a one-year time series (n = 23)
- Eliminate all but NDVI (band 1)
- Reproject to Lambert Azimuthal Equal Area
- Download data in GeoTIFF format



# MRTWeb – Subset Area from Time Series

USGS Global Visualization Viewer

Sensor Resolution Map Layers Tools Help

Selection Process Download

Locator

Time Series

Start Jan 2006 Add All

End Dec 2006 Go

Prev Scene Next Scene

MOD13A1 NDMI Scene List

MOD13A1.A2006321.h11v05.004
MOD13A1.A2006337.h11v05.004
MOD13A1.A2006353.h11v05.004

Select Product Tile Band Time Range

Continue to Process Tab

# MRTWeb – Subset Area from Time Series

**Specify**  
**Processing**  
Spatial Subset  
Resampling  
Projection  
Output File Type

**Continue**  
to Download Tab

The screenshot shows the 'USGS Global Visualization Viewer' window with the 'Process' tab selected. The interface includes a menu bar (Sensor, Resolution, Map Layers, Tools, Help) and a toolbar (Selection, Process, Download). The main configuration area is divided into several sections:

- Spatial Subset:** Includes a dropdown for 'Input Lat/Long' and a grid of input fields for 'Upper Left' and 'Lower Right' coordinates (Latitude and Longitude). The values shown are 37, -85 for the upper left and 36, -83 for the lower right.
- Resampling:** Includes a dropdown for 'Type' (set to 'Nearest Neighbor') and a 'Pixel Size' field (set to 249.5 meters).
- Projection:** Includes a dropdown for 'Projection' (set to 'Lambert Azimuthal'), a 'Datum' dropdown (set to 'NoDatum'), a 'Sphere' field (set to 6370997), and fields for 'Center Lon' (-84), 'Center Lat' (36), 'FE', and 'FN'.
- Output:** Includes a 'File Type' dropdown (set to 'GEOTIFF').

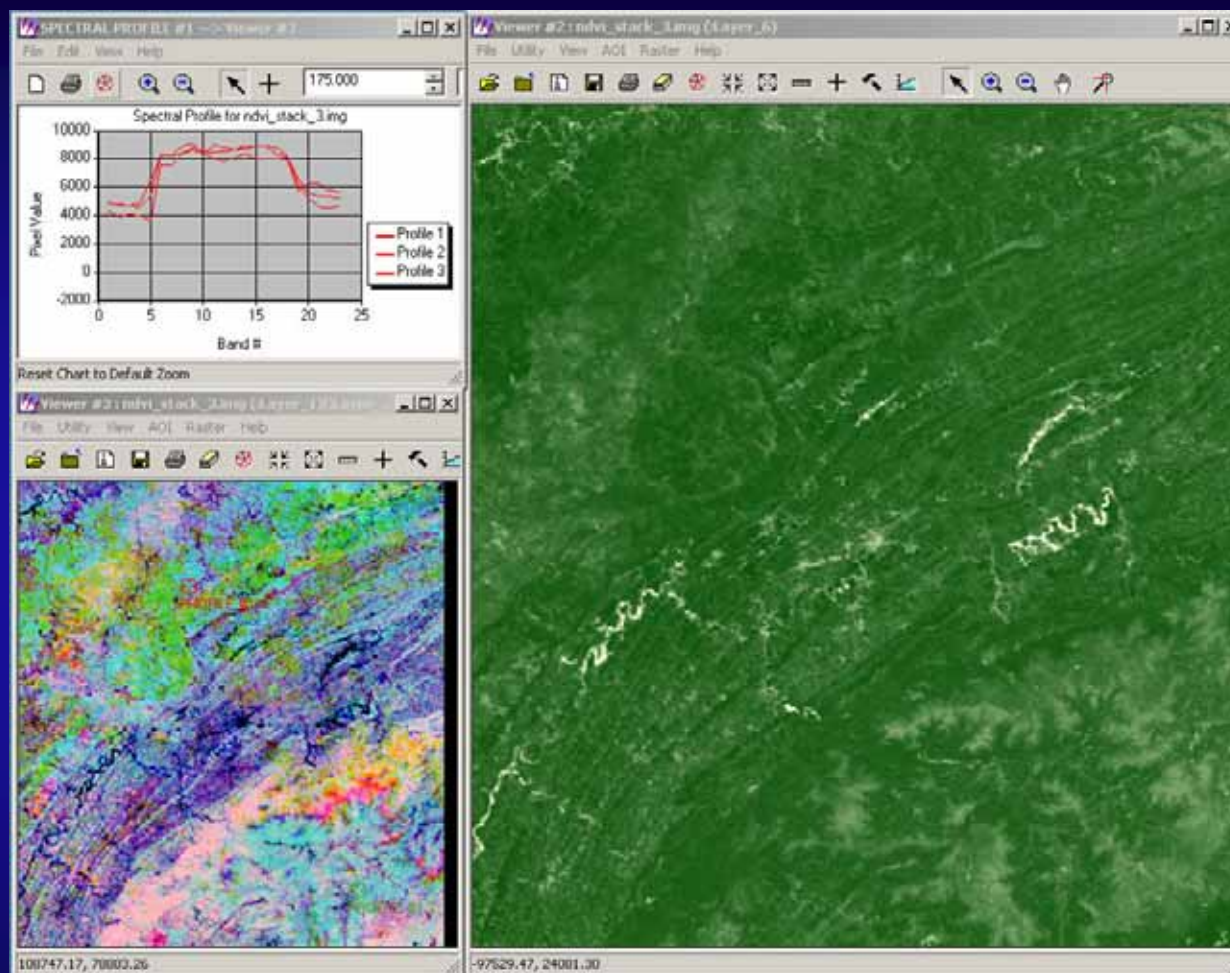
At the bottom right of the configuration area are three buttons: 'Reset', 'Cancel', and 'Process'.





# MRTWeb – Subset Area from Time Series

Download  
and Use  
MODIS Data



# MRTWeb - Schedule and User Feedback

## ■ Schedule

- Currently adapting and integrating the interface and processing components
- February – Internal testing
- March - User testing & feedback period
- UWG Demo
- Subsequent public release

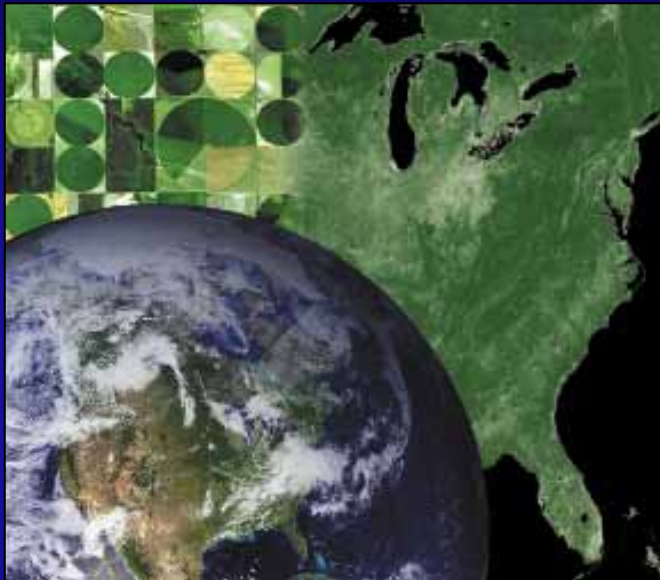
## ■ User Feedback

- Small group of Users / Use Cases
- Currently recruiting





# Questions?



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