

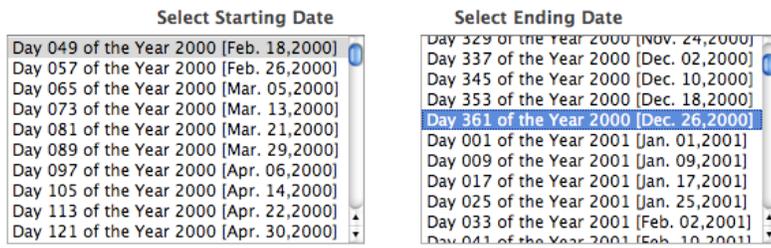
# ADVANCED INQUIRIES IN ALBEDO: PART 1

## INSTRUCTIONS FOR MODIS SUBSET QUERY

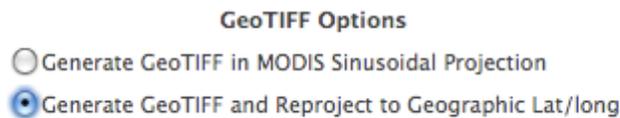
Looking at albedo or vegetation indices on a global scale can be very useful, but what if you want data more specific to your location? These instructions will help you download MODIS data at a finer resolution (a few kilometers) around your location of interest. In order to do this you will need a valid email address. Make sure that you are requesting the data subset in advance of when you will need it; depending on how many other data orders they are receiving at the time, it could take anywhere from a few minutes to a couple of days to process your request.

### Instructions for selecting and requesting your data:

1. Navigate to the ORNL DAAC website: <http://daac.ornl.gov/MODIS/modis.shtml>
2. Under 'Global Tool' on the right side of the screen, click 'Create Subset'
3. Choose the center pixel by clicking and dragging the balloon on the map or entering the latitude/longitude of the location of interest.
4. Click 
5. Choose the dataset of interest:  
For **albedo** data click: [MCD43A] MODIS/Terra+Aqua BRDF and Calculated Albedo  
For **vegetation indices** click: [MOD13Q1] Vegetation Indices (NDVI, EVI)
6. Choose the spatial coverage by specifying the number of kilometers around the center pixel. For example, if you type '1' in both boxes, it will return an approximately 2 km x 2 km square centered around your location of interest. If you type '0' in both boxes, you will only get the pixel at your location of interest.
7. Click 
8. If you are requesting **albedo** data, the next page will ask you for your specific aerosol optical depth or solar zenith angle. Unless you have specific information on these variables, leave the boxes as they are.
9. Next, it will ask you to choose the temporal coverage by highlighting a start and end date.



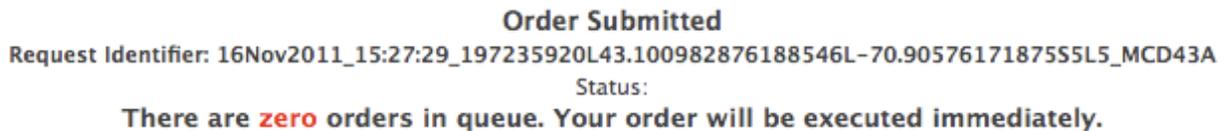
10. Under ‘GeoTIFF Options’ select: ‘Generate GeoTIFF and Reproject into Geographic Lat/Lon’ as below.



11. Enter an email address in the box and click [Continue](#)

12. The next screen asks you to verify your order. Check to make sure you have the correct area, time, and data product, and then click [Create Subset](#)

13. The Order Summary page should look like this and will give you an estimate of how long it should take. When the data is ready, you will be sent a link to retrieve it.



**Once you receive the email:**

1. The email will come from ‘MODIS\_Subsets’ and will contain a URL link to obtain your results. Click on the URL.

2. The Data Visualization and Download site provides:

- A series of graphical representations of the data.

For **albedo**, this includes plots of the visible (vis, 300-700 nm), near infrared (nir, 700-5000 nm), and shortwave (300-5000 nm) albedo over the time period you selected.

For the **vegetation indices**, this includes plots of the Normalized Difference Vegetation Index (NDVI) and the Enhanced Vegetation Index (EVI) over the time period you selected. NDVI and EVI are similar in that they both measure a vegetation signal; however, NDVI is more sensitive to chlorophyll, whereas EVI is more sensitive to canopy type and structure.



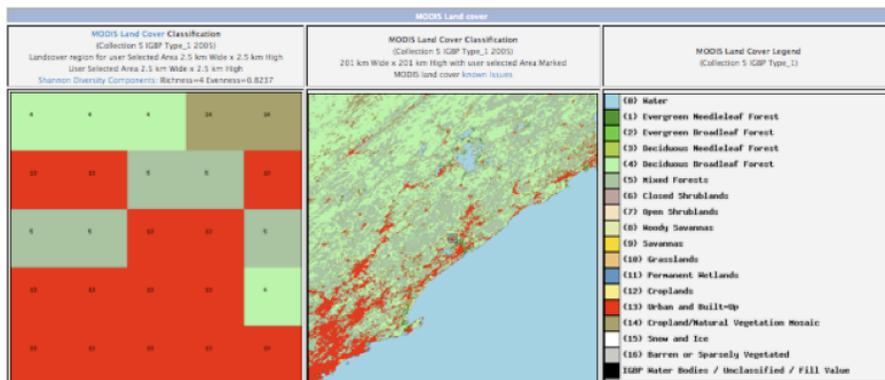
- Below this is the ‘Subset Data Download Details.’ Use these links to download the data onto your computer. If you want more information about the data product, click the  button. Three useful formats are:

**MODIS Land Product ASCII Data** – This file contains the actual data, stored as a csv file. This can be read into Excel or other spreadsheet software (*\*See Part I of Instructions\_MODISquery\_Excel.pdf for instructions on using the data in Excel*). However, if the subset is large, it may exceed the number of columns supported by some software (this is generally a problem in Excel).

**Statistical Data of the subset** – A csv file of summary statistics for your subset. Contains mean, min, max, standard deviation, etc. for each band. This can be read into Excel or another spreadsheet software (*\*See Part II of Instructions\_MODISquery\_Excel.pdf for instructions on using the data in Excel*).

**GeoTIFF subsets data** – This is a zip file (it must be extracted before you can open it) of geolocated image files that can be opened with GIS or image processing software. However, each band is stored as a separate file. The data is also not scaled, so you will need to multiply the values by 0.001 to get the correct value.

- Below this is information about the land cover for both the exact area you selected (left panel) and a larger area around your location (middle panel).



- Lastly, the site provides information about the phenology of your site. The plot shows the date (expressed as day of year) that your site greened up (Incr), the date of maximum greenness (Max), the date it began to senesce (Decr), and the date of minimum greenness (Min).

3. At the bottom of the screen there are links that will:

Allow you start over:

[Restart this Visualization](#)

Subset your data even further:

[Create subsets for this location](#)