



Normalized Difference in Vegetation Index

A Tutorial



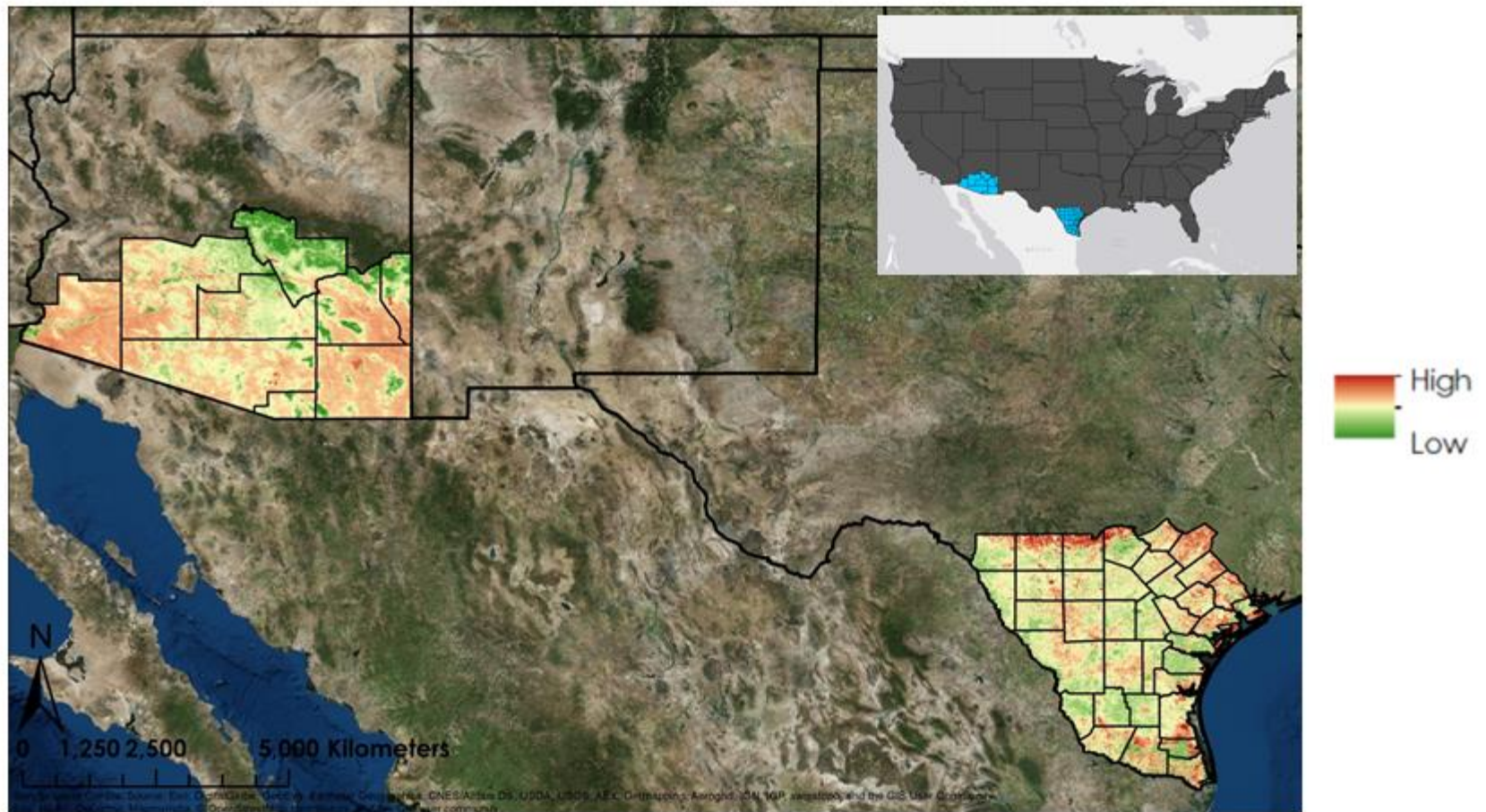
Daryl Ann Winstead (Project Lead)

Kaushik Narasimhan

Christina Fischer

Amberle Keith

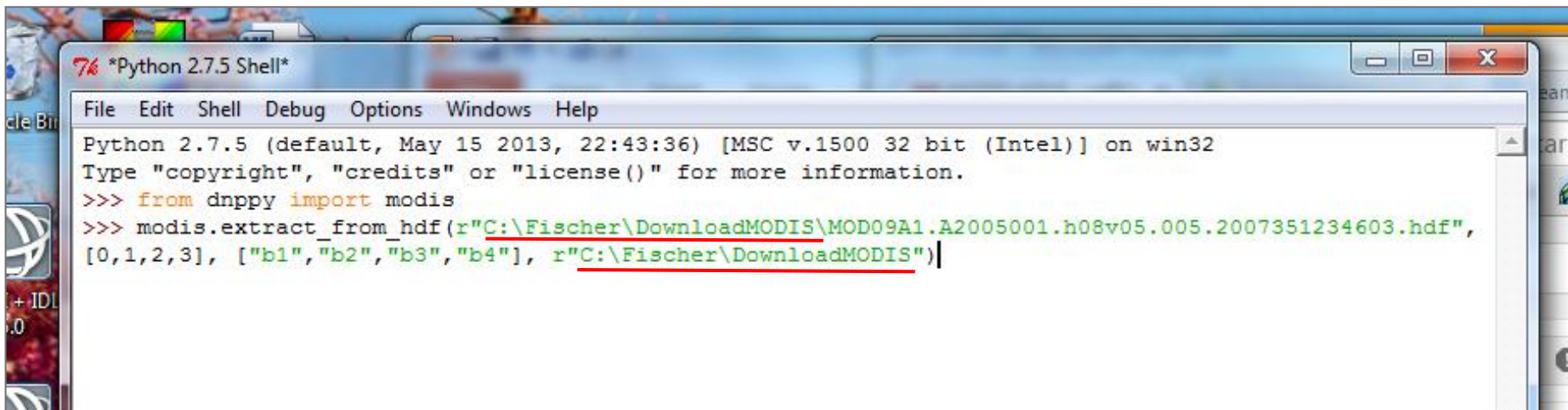
An NDVI is a graphical representation of vegetation health derived from remote sensing data. Data are normalized from 1 to -1, with the higher values representing healthier vegetation.



Data Acquisition

A python script was executed with the Dnppy code from DEVELOP. This will populate your selected folder with .tiff files that can be imported into ArcMap.

Note: Be sure to change the input and output file pathways accordingly, underlined below.

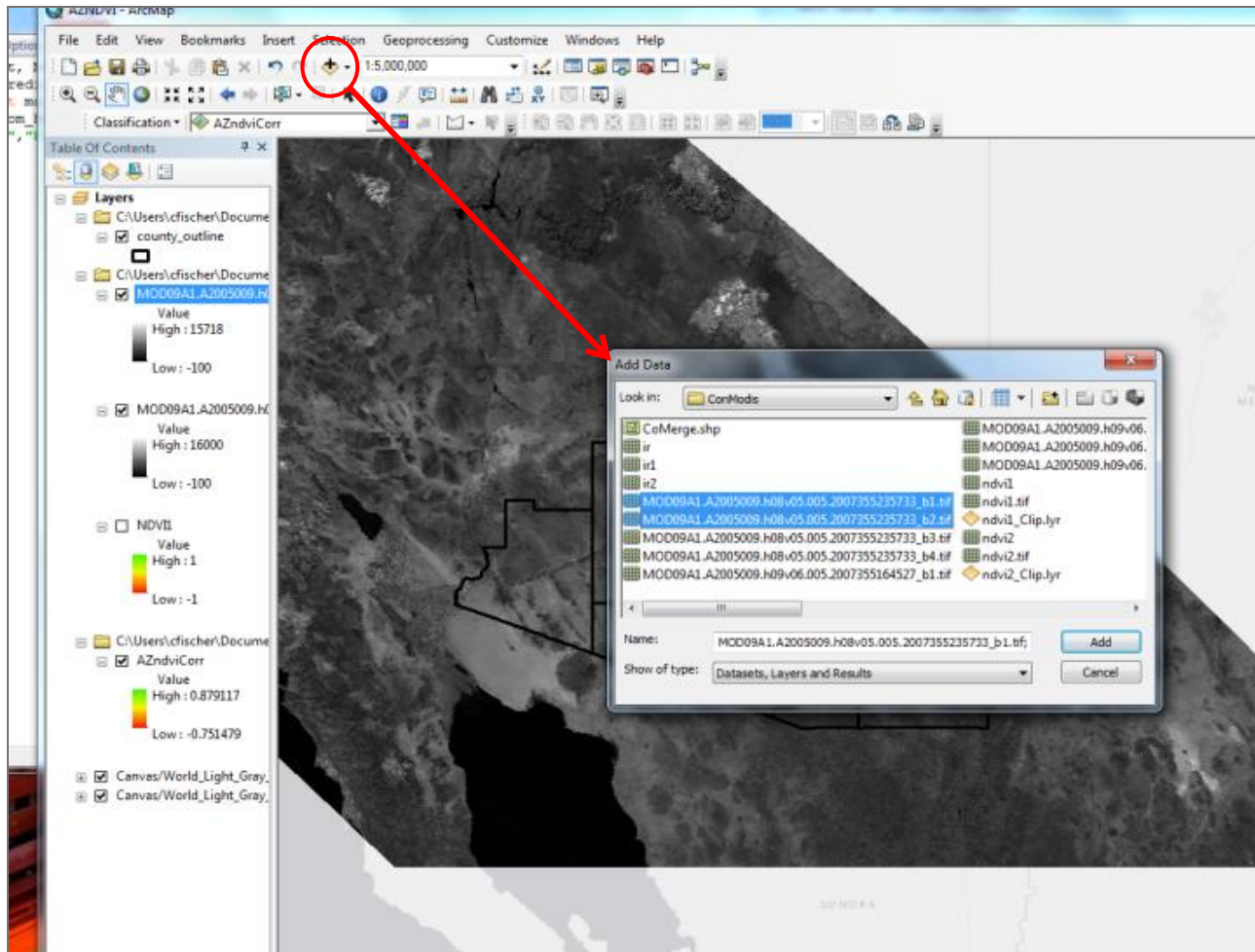
A screenshot of a Windows desktop with a Python 2.7.5 Shell window open. The window has a menu bar with 'File', 'Edit', 'Shell', 'Debug', 'Options', 'Windows', and 'Help'. The title bar reads '*Python 2.7.5 Shell*'. The shell displays the following text:

```
Python 2.7.5 (default, May 15 2013, 22:43:36) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> from dnppy import modis
>>> modis.extract_from_hdf(r"C:\Fischer\DownloadMODIS\MOD09A1.A2005001.h08v05.005.2007351234603.hdf",
[0,1,2,3], ["b1","b2","b3","b4"], r"C:\Fischer\DownloadMODIS")|
```

The file paths in the code are underlined in red in the original image.

Con Tool

Add the Band 1 and Band 2 data into ArcMap

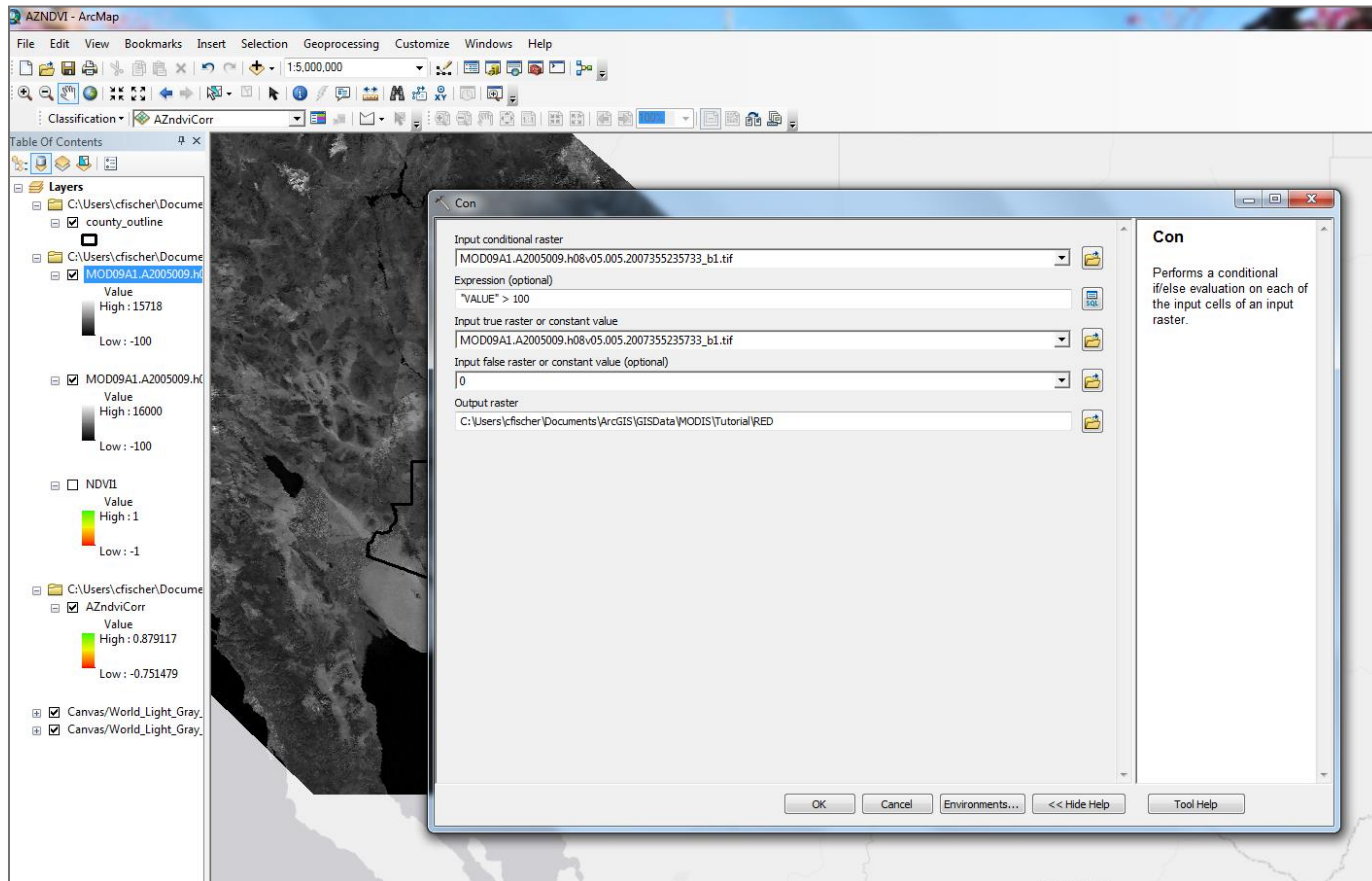


Con Tool (cont.)

Run the Con (Spatial Analyst) tool with the inputs shown for both bands

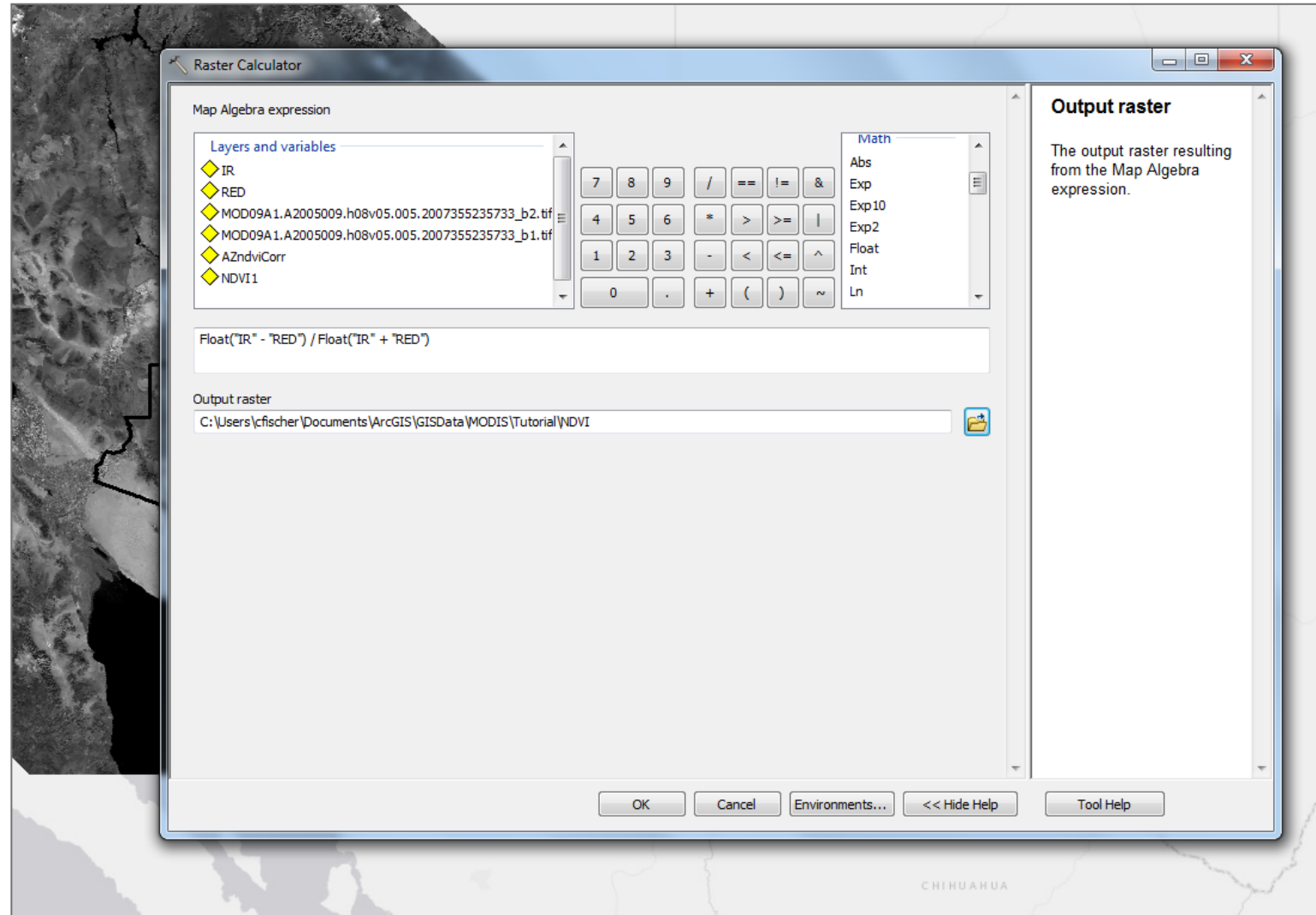
Band 1 = Red

Band 2 = Infrared



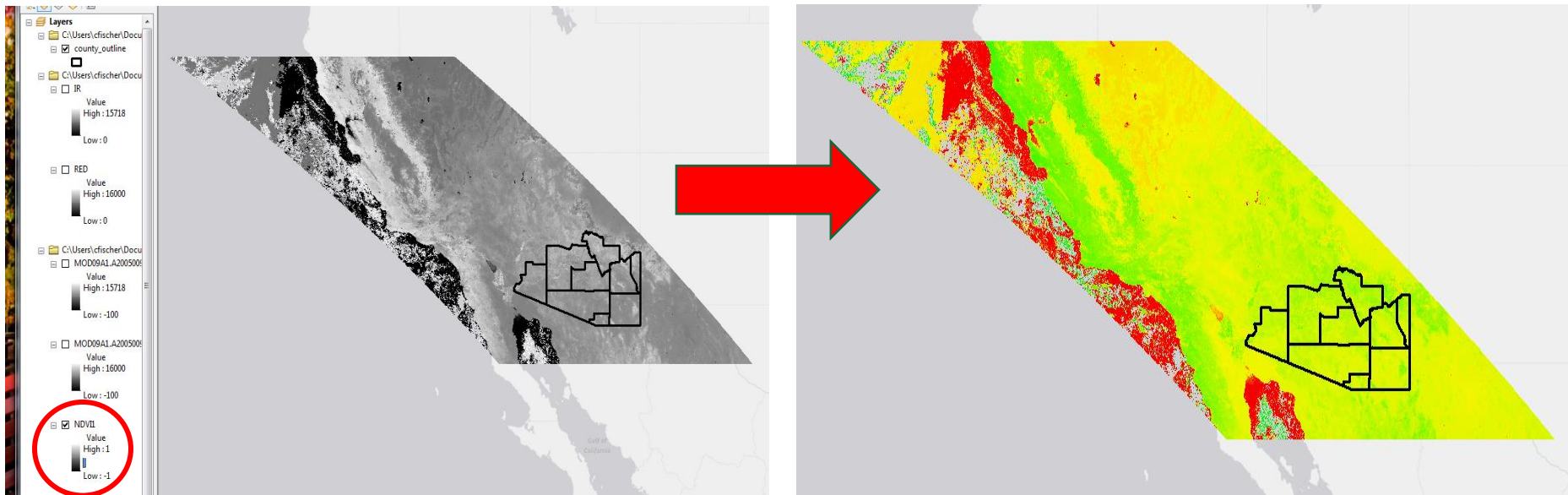
Raster Calculator Tool

Run the Raster Calculator (Spatial Analyst) tool using the equation shown below



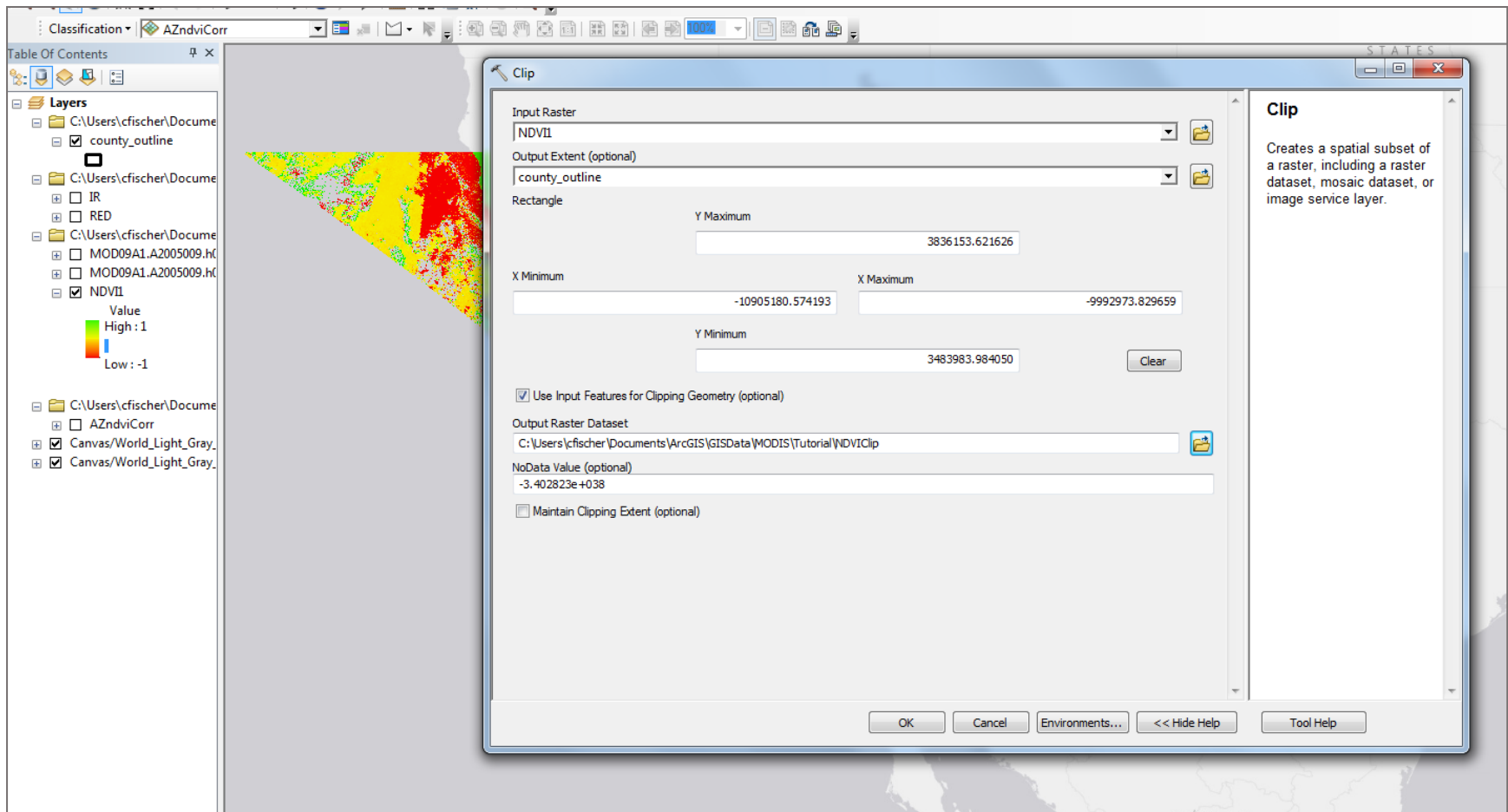
Output

Shown below is the output raster. Changing the color ramp to Red-Green will show the traditional scale, with green indicating vegetation.



Clip Tool

Run the Clip (Data Management) tool, as shown to clip the NDVI to the study area



Final Product

This is what the final output should look like

