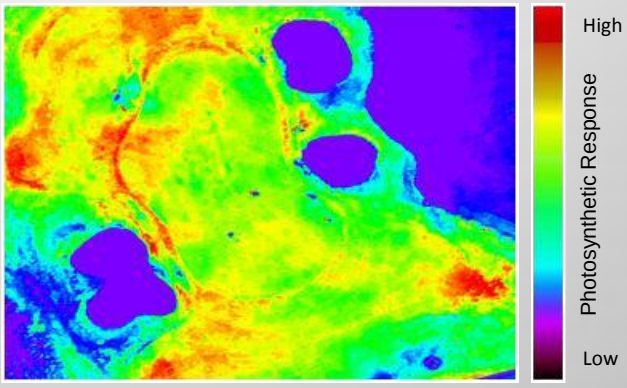
Creating Normalized Difference Vegetation Index (NDVI) From UAS - Color Infrared Imagery Using ENVI 4.8

Original CIR image collected at 400' from small UAS using Canon SX230 HS Powershot with IR Filter removed



Derived NDVI data layer with rainbow color palette

Procedures for Generating NDVI using ENVI (Ver. 4.8)

Display the UAS Color Infrared Image

Start ENVI…From the ENVI Main Menu…File…Open Image File…Select file.tif or .jpg…Open
Available Bands List Window…Toggle on RGB Color…Select each individual band from top
R – highlight R (Image.jpg)
G – highlight G (Image.jpg)
B – highlight B (Image.jpg)
Select Load RGB … three individual windows will display with the image at various scales

Generate the NDVI

From the ENVI Main Menu…Transform…NDVI
NDVI Calculation Input File Window…Select Input File
Highlight the image file (left side - memory)… populates File Information (right side)…OK
NDVI Calculation Parameters Window
Input File Type: Landsat TM
NDVI Bands: Red = 2 Near IR = 1
Output Result to: Toggle on File
Enter Ouput Filename: Choose…NDVI Filename…Open
Output Data Type: Floating Point

Display the NDVI Image

From the ENVI Main Menu…File…Open Image File…Select NDVI filename (ENVI format)…Open
Highlight the NDVI file…Toggle Gray Scale…Load Band (displays in gray scale)
From Display #1…Select Tools…Color Mapping…ENVI Color Tables…Select Color Table

Save NDVI Image to Output File

From Display #1…File…Save Image As…Image File
Resolution: 24-bit Color (BSQ), Full Scene, Resize Factor: 1.0, Output File Type: tif, jpg