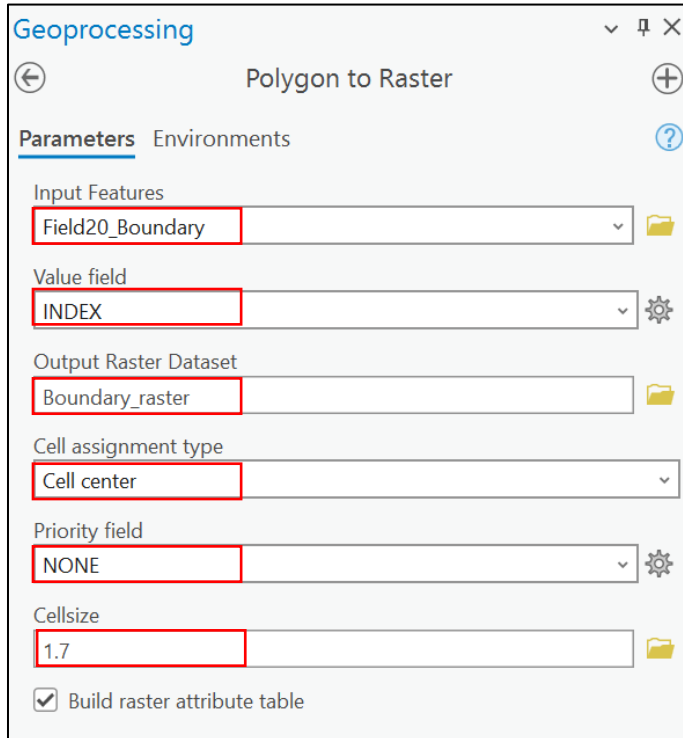## Lesson 4.2: NDVI Calculation

Data Source: *dataset5.zip*

NDVI is used to quantify vegetation greenness and is useful in understanding vegetation density and assessing changes in plant health.

1. Open ArcGIS Pro and add *Dataset5* to your folder connections. Add all the files in *Dataset5* to your map.
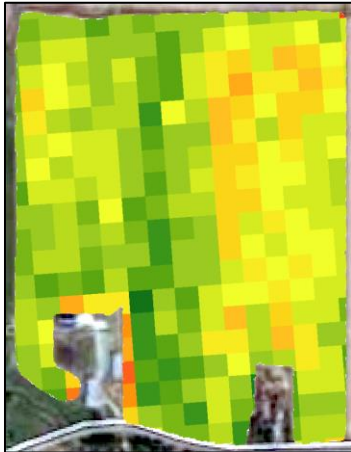2. Search **Polygon to Raster.** Convert Field20_boundary into a raster.

3. Search **Raster Calculator (Spatial Analysis).**
4. In the parameters tab, input **"RED.TIF" * "Boundary_raster".**
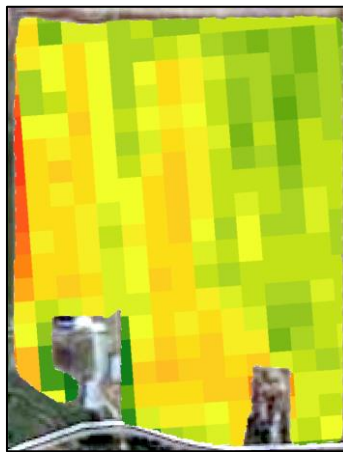5. In the environments tab, select **Minimum Inputs** under **Cell Size.** Hit **Run**.
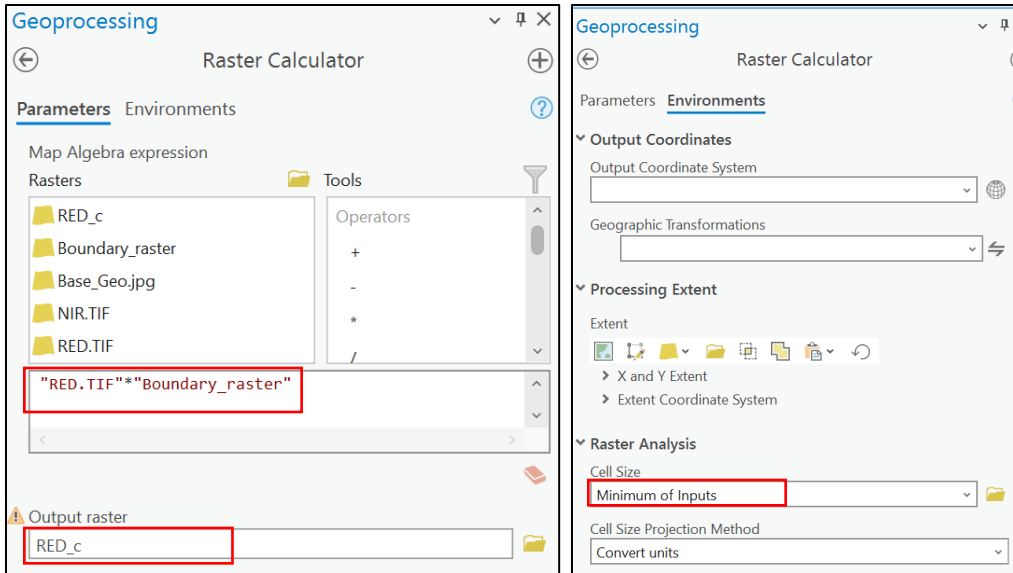
6. Repeat steps 3-5 for *NIR.TIF.*
7. Your resultant maps should look like the two below. Change the colors in **Symbology**.

RED_c   **NIR_c**

8. The equation for calculation NDVI is as follows:

$$\text{NDVI} = \frac{(\text{NIR} - \text{RED})}{(\text{NIR} + \text{RED})}$$

9. Search **Raster Calculator.**
10. Input the equation, the same as the one above: **(Float("NIR_c")- Float("RED_c"))/(Float("NIR_c") + Float("RED_c"))** and name your new raster **NDVI**.
11. Save you map.