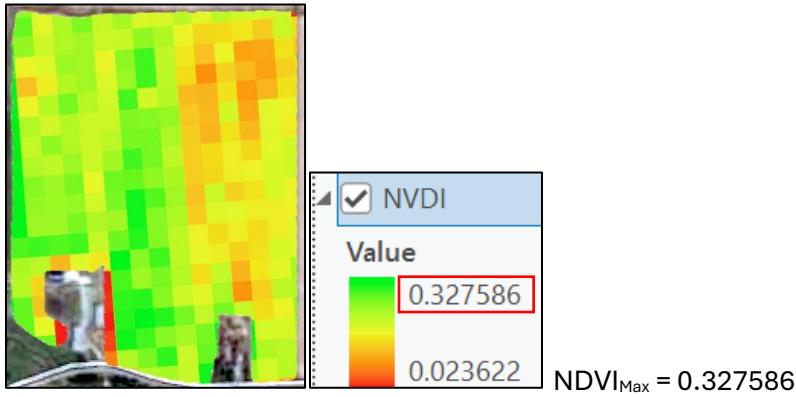


Lesson 4.3: Nitrogen Application based on NDVI

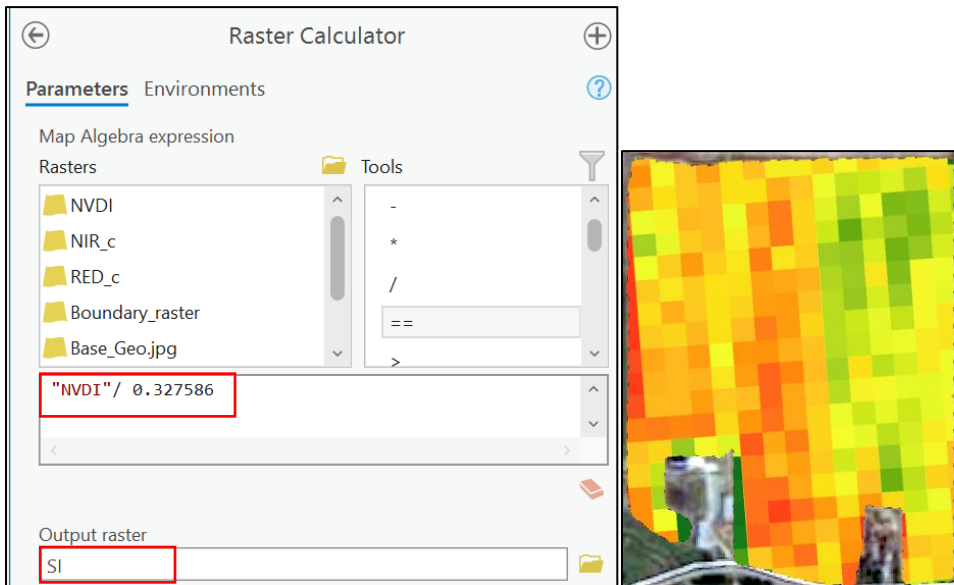
Data Source: *dataset5.zip*

Part 1: Calculating sufficient index (SI).

1. To calculate SI, use the following formula: $SI = \frac{NDVI}{NDVI_{Max}}$
2. Observe the NDVI map from Lesson 4.2. Note down the maximum NDVI value.



3. Search **Raster Calculator**. Input the following information and hit run.

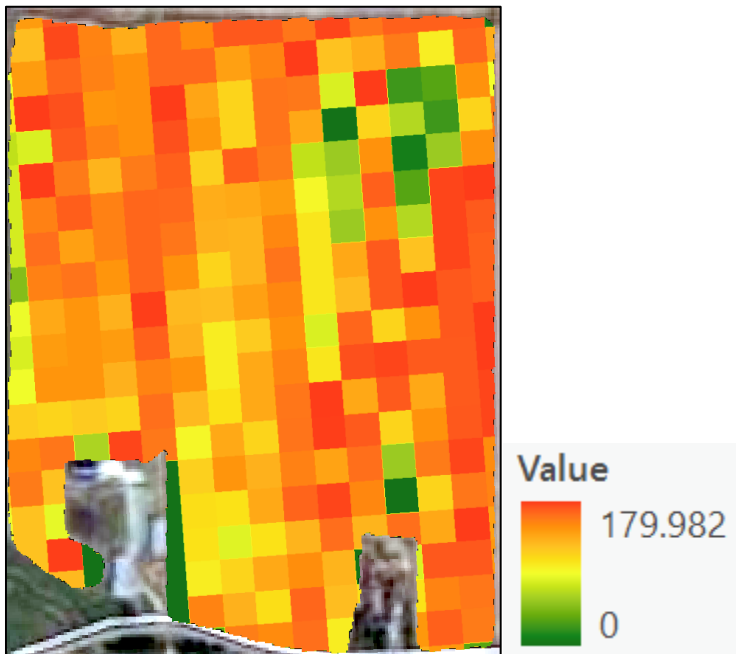
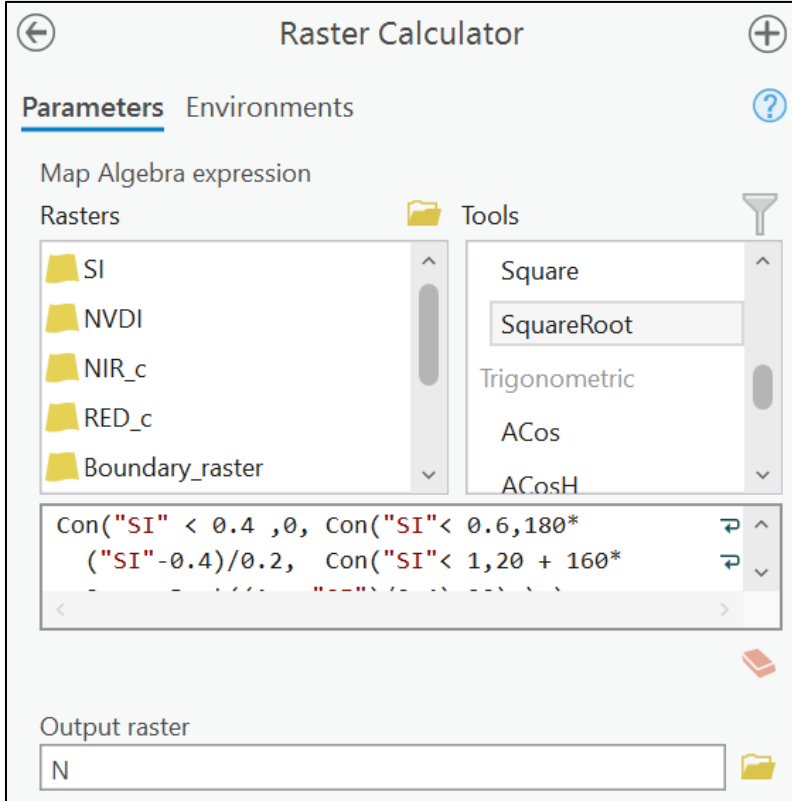


Part 2: Generating a Nitrogen Application Map.

1. The following formulas use SI to determine the required nitrogen application.

$$N = \begin{cases} 0, & \text{if } SI < 0.4 \\ 180 \times \left(\frac{SI - 0.4}{0.2} \right), & \text{if } 0.4 \leq SI < 0.6 \\ 20 + 160 \times \sqrt{\frac{1 - SI}{0.4}}, & \text{if } 0.6 \leq SI < 1 \\ 20, & \text{if } SI \geq 1 \end{cases}$$

2. Search **Raster Calculator**. Input the following equation:
Con("SI" < 0.4 ,0, Con("SI"< 0.6,180*("SI"-0.4)/0.2, Con("SI"< 1,20 + 160* SquareRoot((1 - "SI")/0.4),20)))
And name your file: **N**



This is your final map! Save your project.