

Analyzing Digital Images Screencast Script

Hi, I'm Haley from the University of New Hampshire, and in this tutorial you will learn how to use the Analyzing Digital Images software to calculate a simple vegetation index from your own digital photographs.

The first step is to open the Analyzing Digital Images software.

Once it is open, click on the 'Spatial Analysis' button in the top left corner of the screen. In the 'open' window, choose the picture that you would like to open. I'm going to open a picture that I downloaded from the Picture Post website.

A window will pop up asking us if we want to trim the image. Choose 'No.' The next window asks us to "select a method to calibrate the pixel size." Because we don't know the pixel size, we will choose 'None.'

The image should now appear on the screen. Under the 'Select Measurement Tool' dropdown menu, we are going to choose the 'Rectangle Tool,' which allows us to select a small section of the picture. In order to calculate a vegetation index, we need to choose one feature in the picture to focus on. I am going to choose the shrub. Using the rectangle tool, click on the picture and hold the mouse down while dragging it across the screen to select a small area over the feature you chose. You don't need to encompass the whole feature in the rectangle; just a small section is enough!

It is a good idea to record the X and Y start and stop positions for your rectangle on paper in case you need to find the location again later.

Now that the rectangle is placed on the image, we can see the color intensities at the bottom left corner of the screen. Record the red, green, and blue color intensity in your data table. You will use these values later to calculate the vegetation index. You do not need to record the average color.

Once we are done analyzing this picture, we can open another picture from the same location, but a different time of year. Without moving the rectangle or clicking on the picture again, go to File → Open Picture, and choose a new picture from a different season. Click 'Open.' Again, choose 'No' in the pop-up window. The next window asks if you would like to keep the same settings. YES! Click Keep Settings. The new image will now appear with the SAME rectangle you already created. We can now record the red, green, and blue color intensities for this new picture in our data table.

We can then calculate a vegetation index, called the **greenness index** by dividing the green color intensity by the sum of the red, green, and blue color intensities.

For more information on vegetation indices, Picture Post, and image analysis, please visit the Student Climate Data and Picture Post websites.