



# Create a Green Tint Image



## Remote Sensing For Ranger Districts Using Image Analysis For ArcGIS

Document Updated: June, 2005

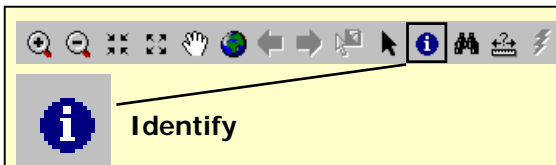


### *Assumptions of Creating a Green Tint Image:*

- **A basic understanding of vegetation indices.** *The ability to distinguish spectral characteristics of forest versus non-forest pixels from multispectral imagery.*
- **A basic understanding of image processing.**
- **Green tint images (or maps) are primarily used for hard copy map production.**



*Ensure that the Image Analysis extension and toolbar are enabled. To enable the Image Analysis extension in ArcMap click **Tools** / **Extension** and place a check next to **Image Analysis**. To enable the Image Analysis toolbar, click: **View** | **Toolbars** | **Image Analysis**.*



*These graphics illustrate the **Identify** button and the **Identify** button's location on **ArcMap's Tools** toolbar.*

### Objective

- To create a green tint image from a single Landsat TM (Thematic Mapper) band.

### Required Data

- A Landsat TM image.

### Introduction and Overview of Procedure Steps

A green tint image is a single band image used to assist vegetation feature discrimination. This document focuses on creating a green tint image from a single band of a Landsat TM image. The topics include:

1. Image Preparation
2. Determining the Forest and Non-Forest Thresholds
3. Coloring the Image

### I. Image Preparation

1. Launch **ArcMap** from the **Start** menu (**Start** | **Programs** | **ArcGIS** | **ArcMap**).
2. Select the **Add Data** button from **ArcMap's Standard** toolbar.
3. Navigate to and select a **Landsat TM Image**.
4. Select **Add** to load the **Landsat TM Image** into **ArcMap's Table of Contents**.
5. Ensure the **Image Analysis** toolbar is visible and active (see note to left).
6. Select **Image Analysis** | **Data Preparation** | **Subset Image** from the **Image Analysis** toolbar to open the **Subset Image** dialog. Set the following parameters in the **Subset Image** dialog:
  - **Input Image:** *your Landsat TM Image*
  - **Select Desired Band Numbers (comma separated):** *3 (3 usually works the best)*
  - **Output Image:** *select the yellow folder button, navigate to an appropriate output directory, set the **Save As Type** to **ESRI GRID**, type in the **Output File Name**, and select **Save**.*
  - Select **OK** to run the process. Your **Band 3 Image** will automatically display in the **Data View** once finished.

### II. Determining the Forest and Non-Forest Thresholds

1. Inspect your **Band 3 Image**.
2. Select the **Zoom-In** button from **ArcMap's Tools** toolbar.
3. Left-click (and hold) and drag the cursor around an area of interest in the **Data View** over your **Band 3 Image**. Zoom in close enough so you can start to see the individual pixel extents.
4. Select the **Identify** button from **ArcMap's Tools** toolbar and click on a pixel in the **Data View**.



## Create a Green Tint Image



There are no specific rules to apply a color scheme to an image when creating a green tint image. This procedure can be considered more of an art than a science. Feel free to experiment with different hue combinations—the purpose of the “Coloring the Image” section is just to get you started.



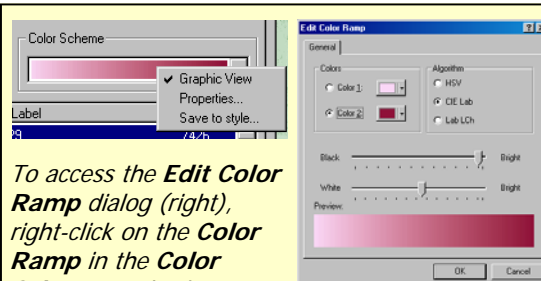
A **monochromatic color ramp** is one with different hues of one color.



**R, G, B** stands for **Red, Green, and Blue**.

Symbol	<VALUE>	Label	Count
	29	29	7426
	30	30	15047
	31	31	25250
	32	32	35201
	33	33	42135
	34	34	46748
	35	35	49609
	36	36	50786
	37	37	51429

This graphic illustrates the highlighted **Forest** pixels from the table of values in the **Symbology** tab.



To access the **Edit Color Ramp** dialog (right), right-click on the **Color Ramp** in the **Color Scheme** and select **Properties** (left).

- Set the **Layer** to your **Band 3 Image** in the **Identify Results** dialog.
- Inspect the **Identify Results** dialog. You should see two values—one for the **Stretch Value**, and the other for the **Pixel Value**. You will concern yourself with the **Pixel Value**. *What is the **Pixel Value** in the **Identify Results** dialog that you have open?*
- Toggle off your **Band 3 Image** in the **Table of Contents** to display your **Landsat TM Image** in the **Data View**
- Zoom-In** and **Zoom-Out** on your **Landsat TM Image** as needed to locate known forest pixels.
- Toggle back on your **Band 3 Image**
- Select the **Identify** button from **ArcMap's Tools** toolbar.
- Click on pixels that you know are **Forest** (they will typically be dark). *What is the range of **Forested Pixel Values**?*
- Click on pixels that you know are **Non-Forest** (they will typically be light-colored). *What is the range of **Non-Forested Pixel Values**?* For the purposes of this document, we will say that **Pixel Values** equal to or less than **35** are considered **Forest**, and **Pixel Values** greater than **35** are considered **Non-Forest** (see comment to the left).

### III. Coloring the Image

- Double-click on your **Band 3 Image** in the **Table of Contents**.
- Select the **Symbology** tab in the **Layer Properties** dialog.
- Select **Unique Values** in the **Show** section of the **Symbology** tab.
- Select any monochromatic color ramp from the **Color Scheme** pulldown menu.
- Single-click the **Color Box** associated with the lowest value in the table.
- Press and hold the **Shift Key** (on the keyboard).
- Scroll down the table and single-click on the **Color Box** associated with the value of **35**.
- Release the **Shift Key**. All values equal to or less than 35 should be highlighted.
- Right-click on the **Color Ramp** from the **Color Scheme** pulldown menu.
- Select **Properties** to open the **Edit Color Ramp** dialog (see graphic to the left).
- Ensure **Color 1** and **CIE Lab** are enabled.
- Select the pulldown arrow from **Color 1's** associated **Color Box**.
- Click **More Colors** to bring up the **Color Selector** dialog.
- Set the following parameters in the **Color Selector** dialog:
  - Ensure the **Color** tab is selected
  - R: 70**
  - G: 125**
  - B: 71**
  - Select **OK**
- Enable **Color 2** from the **Edit Color Ramp** dialog.
- Select the pulldown arrow from **Color 2's** associated **Color Box**.



## Create a Green Tint Image



21. Click **More Colors** to bring up the **Color Selector** dialog.
22. Set the following parameters in the **Color Selector** dialog:
  23. Ensure the **Color** tab is selected.
  24. **R: 193**
  25. **G: 220**
  26. **B: 193**
  27. Select **OK**
28. Select **OK** in the **Edit Color Ramp** dialog (Note the new customized color scheme you have just created for your Forested pixels).
29. Single-click the **Color Box** associated with the value of **36** in the table.
30. Press and hold the **Shift Key**.
31. Scroll down the table and single-click on the **Color Box** associated with the highest value.
32. Release the **Shift Key**. All values greater than 35 should be highlighted.
33. Right-click on the **Color Ramp** from the **Color Scheme** pulldown menu.
34. Select **Properties** to open the **Edit Color Ramp** dialog.
35. Enable **Color 1** and ensure **CIE Lab** is enabled.
36. Select the pulldown arrow from **Color 1's** associated **Color Box**.
37. Click **More Colors** to bring up the **Color Selector** dialog.
38. Set the following parameters in the **Color Selector** dialog:
  39. Ensure the **Color** tab is selected.
  40. **R: 255**
  41. **G: 255**
  42. **B: 255**
  43. Select **OK**
44. Select **OK** in the **Edit Color Ramp** dialog.
45. Select **Apply** and then **OK** to close the **Layer Properties** dialog.
46. Your completed green tint image should be displayed in the **Data View**. *Does it appear as it should?*
47. See resource topic **#14—Map Composition in ArcMap**—for ideas on how to integrate your green tint image into a map.