Section 14: Topographic Relief

Section Objective

This section is intended to introduce users to the various relief methods in imagine such as shaded relief, painted relief and level slicing.

Class Notes

Task 1: Shaded Relief

1. From the Terrain tab, click **Shaded Relief**.

   The Shaded Relief dialog displays.

2. Use **Yosemite_DEM.tif** as the input file; name the Output file: **relief.img**
3. Set the **Solar Azimuth at 315**, accept the default for Solar Elevation and Ambient Light.

Solar Azimuth *is the location of the light source.*

Solar Elevation *controls the shadow length. The lower the value the longer the shadows.*

Ambient Light *controls the amount of light you want to use for the background.*

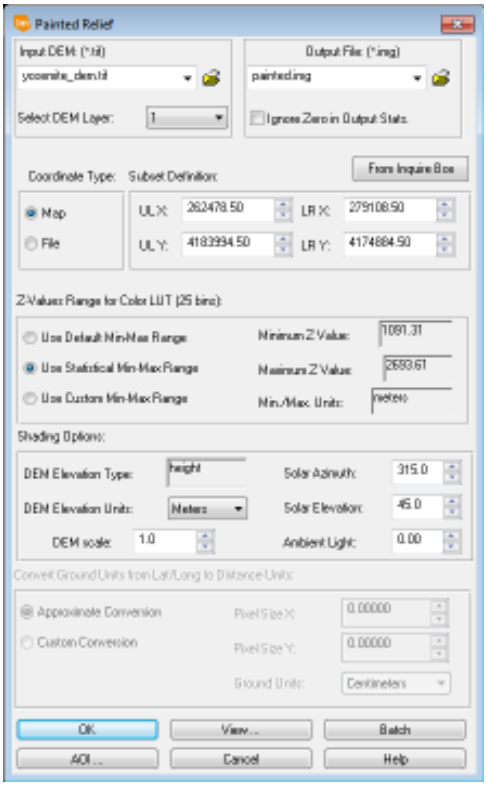
4. Click **OK** to create the output file, then **display the Output file** in a View

Task 2: Painted Relief

There are two methods for creating a painted relief with color. The first method is automated in image and the colors are default. The second method allows you to customize the colors.

1. Click the Terrain tab > **Painted Relief**.

   The Painted Relief dialog box appears.



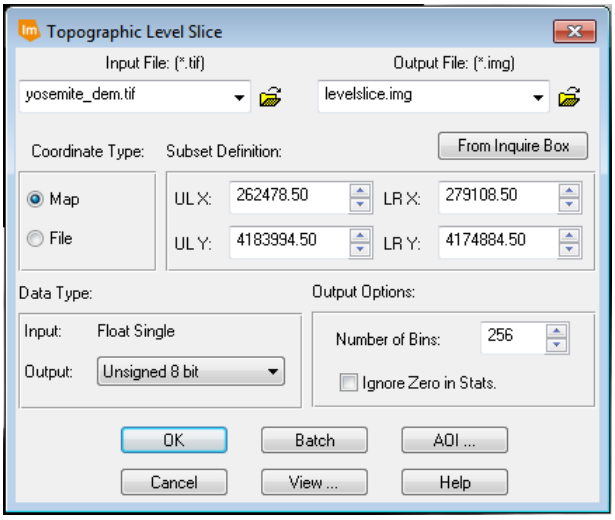
2. Use **Yosemite_DEM.tif** as the input and name the Output File: **painted.img.**
3. For the Z-Values Range for Colour LUT, click the Use **Statistical Min-Max Range radio button.**
4. Change the **Solar Azimuth** to **315** and the DEM Elevation Units to **Meters**.
5. Click **OK** to begin the process.
6. **Open the file in a View** using a 3,2,1 band combination.

Task 3: Level Slice

Using a level slices we can create an overlay for a relief image. This allows us the use of imagery or the customization of the colors for the various elevations values.

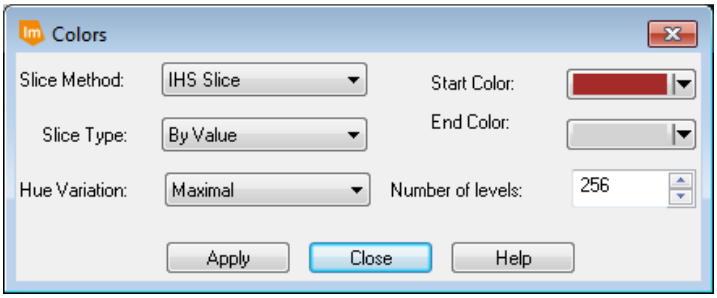
1. From the Terrain tab > select **Level Slice**.

   The Topographic Level Slice dialog displays



2. Select **Yosemite_DEM.tif** as the **Input File** and name the Output File: **levelslice.img**
3. Set the number of bins at **256**, accept all other defaults and click **OK**.
4. Using **Pseudo Color**, display the new image in a 2D View.
5. **Right-Click** on image in the Contents Panel select **Display Attribute Table**
6. Select Table tab > Query group > **Colors**.

   The Colors dialog displays



7. Change the **Start Color** to **Brown** and the **End Color** to **Light Grey**.
8. Assess the result
9. Clear the contents from the View. Save the changes and select Yes to any other dialogs.

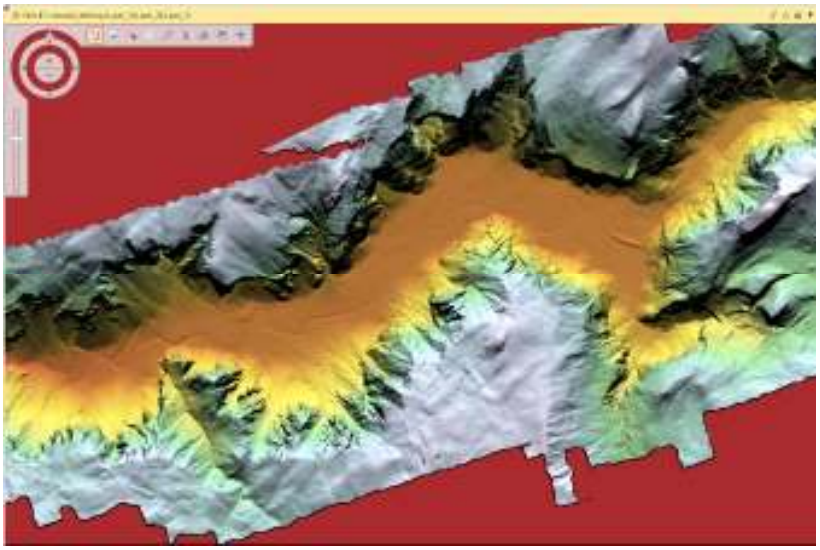
Task 4: Shaded Relied with Level Slice Overlay

By knowing the topography of a geographic region and the position of the sun, it is possible to create an image which represents the amount of light reflected to a position directly above the scene.

1. From the Terrain tab > select **Shaded Relief**.

   The Shaded Relief dialog displays.

2. Use **Yosemite_DEM.img** as the Input DEM and enable **Use Overlay in Relief**
3. Select **levelslice.img** as the Input Overlay and ensure the Overlay Type is set to **Pseudocolour**.
4. Set the **Solar Azimuth** to a value of **315**, then name the Output file **coloured_relief.img** and click **OK**.
5. Click the Open Layer icon
6. Select **coloured_relief.img** and then click the Raster Options tab.
7. Enable the **No Stretch** checkbox and click **OK**.



How does this image appear?

Could you also use a Multispectral Satellite Image as an Overlay?

8. Clear all open Views and close dialogs.

Class Notes

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