



Color Balancing High Resolution Satellite Imagery in ArcMap 9.x and ArcMap 10.x

High resolution imagery is often delivered to you in a format that is not ready to be used right 'out-of-the-box.' One of the biggest challenges can be setting the color balance of the data if it is delivered in 16-bit depth format, particularly when working with ArcGIS. In ArcMap 9 and 10, the process of setting a color balance is not straight forward. Hence, we have put together this primer to give our valued Apollo Mapping clients a helping hand in this process.

1. Add your high resolution data (usually a TIFF file) to ArcMap by pressing the ADD DATA button. The Add Date button is the black plus icon with yellow below which is located at the top of the program window by default.

USER TIP: When you add this imagery, be sure to only click on the file name once as double-clicking gives you the option to add only a single spectral band at a time. You need three spectral bands (i.e. red, green and blue) to create a natural color image.

2. As the imagery loads you will be asked if you want to BUILD PYRAMIDS, we suggest selecting YES here.

USER TIP: By building pyramids, you will be able to zoom in and out as well as pan across the imagery more rapidly.

3. When your imagery is finished loading, RIGHT CLICK on the layer in the Table of Contents and select PROPERTIES.

4. In the Layer Properties pop-up window, navigate to the SYMBOLOGY tab.

5. Half-way down the pop-up window is a pull-down menu labeled, TYPE. Select CUSTOM in the pull-down menu and then push the HISTOGRAMS button to the right which will now be active.

USER TIP: Building histograms can take a while particularly for large imagery datasets.

6. After the histograms are built, press OK on the second pop-up window that appears.

7. Now that the histograms are built, you are able to experiment with the predefined stretches built into ArcGIS. We have had the best luck with the standard deviations stretch. This can be applied by selecting STANDARD DEVIATIONS in the TYPE pull-down menu.

USER TIP: We have found that an 'n' value between 1.5 and 2.5 is appropriate for most high resolution imagery. You should experiment with your specific imagery to find the 'n' value that works the best. As you change the 'n' value below the TYPE pull-down menu, press APPLY to see the results of the changes you have made.

8. Once you have found a stretch that creates natural looking colors, press OK.

USER TIP: Depending on the source of your imagery, you may need to change the Red, Green and Blue CHANNEL settings to a different BAND to achieve natural looking colors. This is done with the pull down menus at the top of the pop-up Layer Properties window. In our experience with imagery, we have seen these two band combinations for Red, Green, Blue imagery: Band 1 - Red, Band 2 - Green, Band 3 - Blue; or Band 1 - Blue, Band 2 - Green and Band 3 - Red.