Geneva International Centre for Humanitarian Demining
Centre International de Déminage Humanitaire - Genève

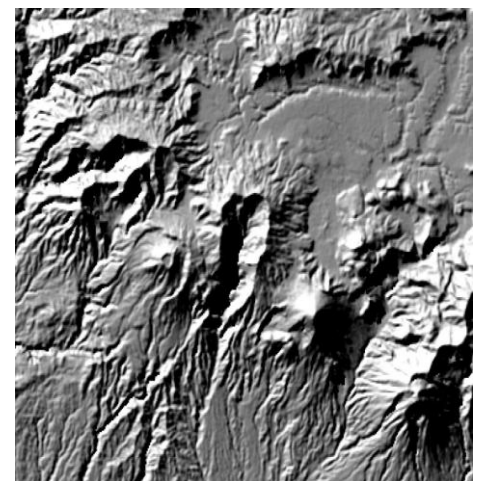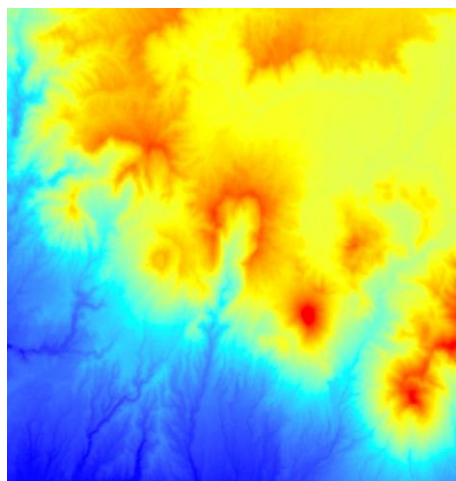# Hillshades

In This Fact Sheet

- ➢ Hillshades in Basemaps
- ➢ Origin of Hillshade images
- ➢ Operational recommendations

Key Tips:

- ➢ In ArcMap, place the Hillshade image *above* all other raster layers and *below* all other vector layers.
- ➢ Apply a stretched black and white color ramp to the Hillshade image.
- ➢ Set the *Transparency* of the Hillshade image. This setting can be found in the *Display tab* of the Hillshade Layer's properties.
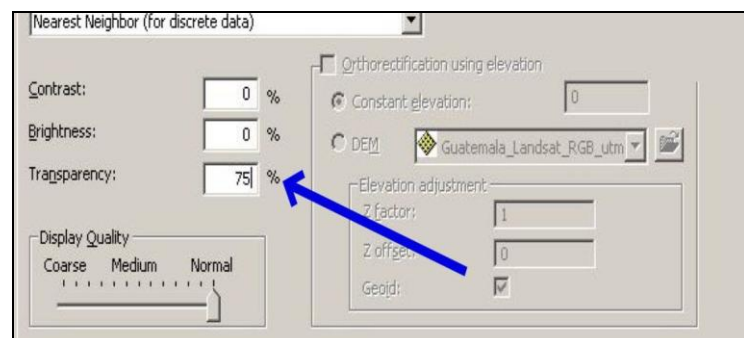
Hillshade Images in Base Maps

What are hillshade images? One way to improve the aesthetics of your IMSMA base maps is to use hillshades derived from digital elevation data. SRTM digital elevation data and hillshades are provided as part of the standard IMSMA datasets. Below are examples of the elevation data displayed as a stretched color image and as a hillshade. The hillshade is much more easily interpreted.

Operational Recommendations

How do I use the hillshade images?

- Once you have opened the hillshade in ArcMap, place it above all other raster images and below any vector layers.
- Right click on the title of the hillshade in the table of contents and select properties. Under the *Symbology* tab select *Stretched* and set the *Color Ramp* to black and white.
- Under the *Display* tab set *Transparency* to 75% (adjust this value to create the best looking map).
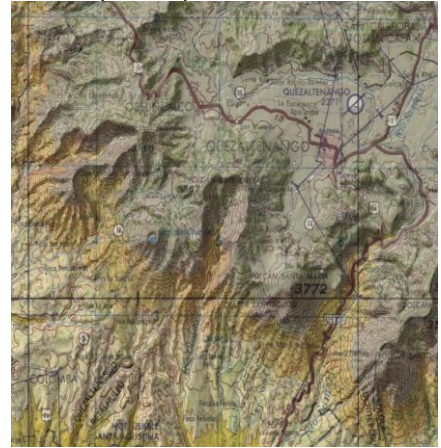
Examples of hillshade images in use:

Paper Map Without Hillshade
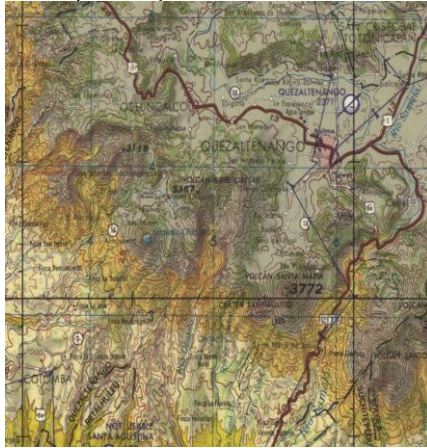
Paper Map With Hillshade

Satellite Image Without Hillshade

Satellite Image With Hillshade

Origin of Hillshade Images

How were the hillshade images created? The ArcMap Spatial Analyst toolbar has several surface analysis functions. Among them is a tool for creating hillshades. This tool is found by clicking the *Spatial Analyst > Surface Analysis > Hillshade* menu. We used this tool and the SRTM 90-meter resolution images to create the hillshades.
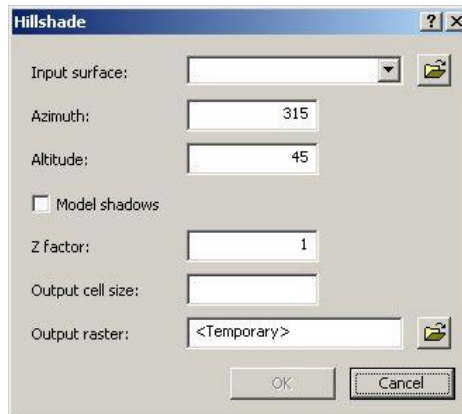
The Z factor required by the hillshade tool is not optional. The default is 1, which works perfectly if your elevation data is projected in a meter-based projection. If your imagery is in a geographic projection you need to calculate a new Z factor by converting the average degree distance in your image to meters. Use the equation on the left panel of the first page.