

Image Analysis for ArcGIS FAQs¹



Fall 2004

Remote Sensing Applications Center
<http://fsweb.rsac.fs.fed.us>

How Do I Apply a Histogram Equalization to My Image?

Use the Image Analysis extension to apply a Histogram Equalization to your image. A Histogram Equalization is a stretch useful for increasing the visual interpretability of features in an image. This document describes how to apply a Histogram Equalization to an image using Image Analysis for ArcGIS.

What You Will Need and Other Assumptions

- An image to be stretched for visual analysis (ERDAS Imagine format)

Overview of Steps

1. Use the Radiometric Enhancement tools of the Image Analysis extension in ArcMap to apply a Histogram Equalization to your image.

Step-by-Step Example

1. Start ArcMap from your Desktop, or on the Windows Taskbar click **Start | Programs | ArcGIS | ArcMap**. Ensure the Image Analysis extension is visible. If not, from ArcMap's main menu select: 1) **Tools | Extensions** and enable **Image Analysis**; and 2) **View | Toolbars** and enable **Image Analysis**.
2. Use the **Add Data** button on the main toolbar of ArcMap to add your image to the Data Frame.
3. Using the **Image Analysis** extension, click **Image Analysis | Radiometric Enhancement | Histogram Equalization**.
4. In the Histogram Equalization dialog, specify your **Input Image** (the image to be stretched), the **Number of Bins** for the stretch, and a location and filename for your new **Output Image**. Click **Save**, and then **OK**. *Note: you will probably have to experiment with the number of bins used for the stretch to achieve optimal results. Generally speaking, a Histogram Equalization will increase contrast in the peaks of the histogram of your original image, while decreasing contrast in the tails.*
5. Inspect your results.

Note: images that have undergone a Histogram Equalization and should not be used for further spectral analysis. The original spectral data have been modified and do not correspond to actual reflectance of ground features.

¹ Produced by the USDA Forest Service RSAC (<http://fsweb.rsac.fs.fed.us>). A Forest Service version of Image Analysis for ArcGIS was used to develop this reference document. No warranty is made as to completeness or accuracy.