Shift Your Landsat Projects into Overdrive

ArcGIS® technology makes working with Landsat data easy. ArcGIS is a comprehensive imagery management system that provides the advanced capabilities you need to access, analyze, and understand the information Landsat data includes.

ArcGIS provides the following:
- Advanced Landsat processing capabilities
- Online access to Landsat through image services
- Correction and enhancement of Landsat images

## Advanced Landsat Processing Capabilities

ArcGIS provides two specialized processing capabilities for Landsat, the apparent reflectance function and the tasseled cap transformation. Built-in access to this technology makes it easier to understand the information contained in Landsat data.

Apparent Reflectance

The apparent reflectance function in ArcGIS removes most of the radiometric distortions in Landsat imagery to display the true depiction of the scene. The function adjusts the images to a theoretically common illumination condition, resulting in less variation between scenes from different dates and different sensors. This is useful for image classification, color balancing, and mosaicking.


Before Applying Apparent Reflectance Function
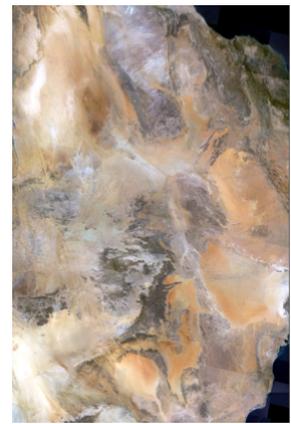
After Applying Apparent Reflectance Function

Tasseled Cap Services

ArcGIS has included support for the Kauth Thomas transformation by integrating tasseled cap services in the core products. The tasseled cap transformation is a conversion of the original bands of an image into a new set of bands with defined interpretations that are useful for vegetation monitoring and change mapping. The three most important components of the transformation are known as brightness, greenness, and wetness.

After applying the tasseled cap services to Landsat imagery, the rich content information contained in the imagery is easier to analyze and understand.
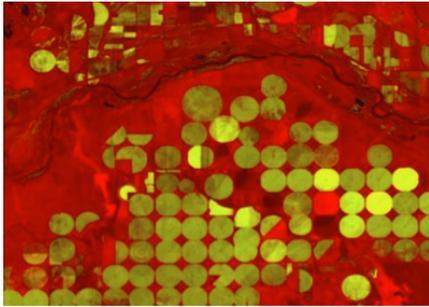
ArcGIS tasseled cap processing services enhance comprehensibility of the underlying data.

Online Access to Landsat GLS Data

ArcGIS provides online access to over 40 years of multitemporal, multispectral, worldwide Landsat Global Land Survey (GLS) data as dynamic image services. Image services simplify the management and use of large imagery collections, because they contain all the rich data content available in the imagery in an easy-to-consume format. Image services are so easy to use that both remote-sensing and non-remote-sensing experts will find value in accessing them to analyze and solve complex global, regional, and local problems.

Landsat Image Services

- Access a wealth of information using the longest continuous earth observation data source.
- Monitor and analyze coastal erosion, deforestation, animal habitats, snow and glacier changes, effects of urbanization, land-use planning and management, emergency response, and disaster relief.
- Develop a greater understanding of the earth and the impact on nature caused by prior generations.

Correction and Enhancement of Distorted Landsat Imagery

Landsat provides one of the best sources for understanding earth changes over the last four decades. Over time, technology has improved to enhance existing Landsat data and fix problems inherent in the data due to sensor malfunction. ArcGIS provides the tools to automatically correct some of the anomalies in Landsat.

Pseudo Color MSDS (1975 Epoch)

The Landsat 1–4 multispectral scanner (MSS) sensors did not have a blue band, which is helpful for bathymetric and vegetation mapping. In ArcGIS, raster functions can be applied on the fly to simulate the blue band, thereby producing a pseudo-colored rendition of a natural color product.

Destriping

In all Landsat 7 data after 2003, you may be familiar with the Scan Line Corrector (SLC) problem. ArcGIS has the ability to destripe those scenes and make them more visually appealing. This results in enhanced visualization scenes that look good for all epochs.

After

Applying Destriping

With SLC

Problem

For more information, visit
esri.com/landsat.