


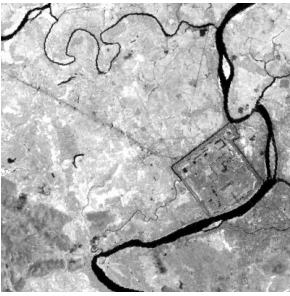

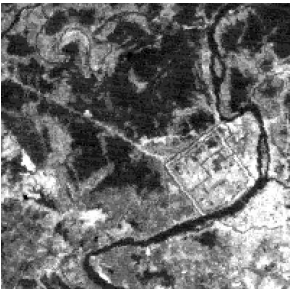



Landsat Spectral Band Information

Landsat images are composed of seven different bands, each representing a different portion of the electromagnetic spectrum. In order to work with Landsat band combinations (RGB composites of three bands) first we must understand the specifications of each band. Here is a list of the bands with some information about them.

	<p>Band 1 (0.45-0.52 μm, blue-green) Since this short wavelength of light penetrates better than the other bands it is often the band of choice for aquatic ecosystems. It is used to monitor sediment in water, mapping coral reefs, and water depth. Unfortunately this is the noisiest of the Landsat bands since short wavelength blue light is scattered more than the other bands. For this reason it is rarely used for "pretty picture" type images.</p>
	<p>Band 2 (0.52-0.60 μm, green) This has similar qualities to band 1 but not as extreme. The band was selected because it matches the wavelength for the green we see when looking at vegetation.</p>
	<p>Band 3 (0.63-0.69 μm, red) Since vegetation absorbs nearly all red light (it is sometimes called the chlorophyll absorption band) this band can be useful for distinguishing between vegetation and soil and in monitoring vegetation health.</p>

	<p>Band 4 (0.76-0.90 μm, near infrared) Since water absorbs nearly all light at this wavelength water bodies appear very dark. This contrasts with bright reflectance for soil and vegetation so it is a good band for defining the water/land interface.</p>
	<p>Band 5 (1.55-1.75 μm, mid-infrared) This band is very sensitive to moisture and is therefore used to monitor vegetation and soil moisture. It is also good at differentiating between clouds and snow.</p>
	<p>Band 6 (10.40-12.50 μm, thermal infrared) This is a thermal band, which means it can be used to measure surface temperature. This is primarily used for geological applications but it is sometime used to measure plant heat stress. This is also used to differentiate clouds from bright soils since clouds tend to be very cold. One other difference between this band and the other multispectral ETM bands is that the resolution is half of the other bands (60 m instead of 30 m).</p>
	<p>Band 7 (2.08-2.35 μm mid-infrared) This band is also used for vegetation moisture although generally band 5 is preferred for that application, as well as for soil and geology mapping.</p>