



Band Combinations Cheat Sheet

Valuable information can be obtained from aerial and satellite imagery. We can leverage the power of multispectral sensors to view new and unique information from the electromagnetic spectrum, normally not visible to humans. This sheet describes some of useful band combinations for NAIP, Sentinel 2, Worldview and Landsat imagery. This is not an exhaustive guide but rather a starting point for exploring band combinations.

NAIP

NAIP (National Agriculture Imagery Program) imagery is collected by state every three years. Recent NAIP collections are 60cm resolution.



Band Number	Band Name
1	Red
2	Green
3	Blue
4	NIR


Name	R, G, B	Use	Example
Natural Color	1, 2, 3	Replicates how humans naturally see. Healthy vegetation appears green. Conifer trees are dark green, and deciduous trees are lighter green.	
Color Infrared	4, 1, 2	Highlights healthy vegetation. The NIR band is reflected in healthy vegetation. Healthy vegetation appears bright red while dead or damaged vegetation appears grey.	

Worldview 2/3 Multispectral Sensor

The Worldview 2 multispectral sensor is 1.85 m resolution and the Worldview 3 multispectral sensor is 1.24 m resolution.

Band Number	Band Name
1	Coastal Blue
2	Blue
3	Green
4	Yellow
5	Red
6	Red Edge
7	NIR1
8	NIR2

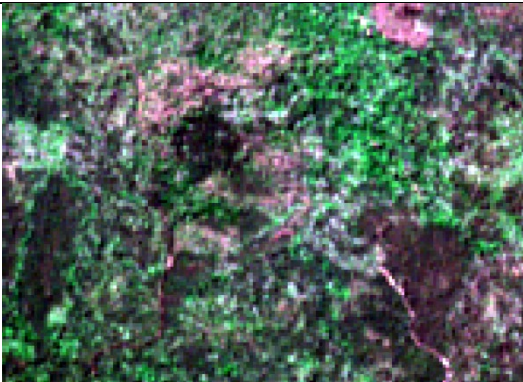
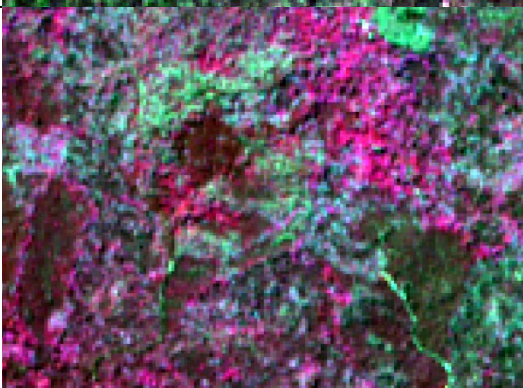

Name	R, G, B	Use	Example
Natural Color	5,3,2	Replicates how humans naturally see. Healthy vegetation appears green.	
Color Infrared	8,5,3	Useful for analyzing vegetation. Worldview has two NIR bands. Healthy vegetation appears bright red while dead or damaged vegetation appears grey or blue.	

Yellow Composite	5,4,1	Utilizes the yellow band. Useful for interpreting recent mortality in Southern Pine Beetle outbreaks when crowns are yellow.	
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Sentinel 2

Sentinel 2, collected by the European Space Agency, is available freely. It is collected every five days by one of two satellites. Bands are collected at varying resolutions.

Band Number	Band Name	Resolution (m)
1	Coastal aerosol	60
2	Blue	10
3	Green	10
4	Red	10
5	Vegetation Red Edge	20
6	Vegetation Red Edge	20
7	Vegetation Red Edge	20
8	NIR	10
8a	Vegetation Red Edge	20
9	Water vapor	60
10	SWIR - Cirrus	60
11	SWIR	20
12	SWIR	20


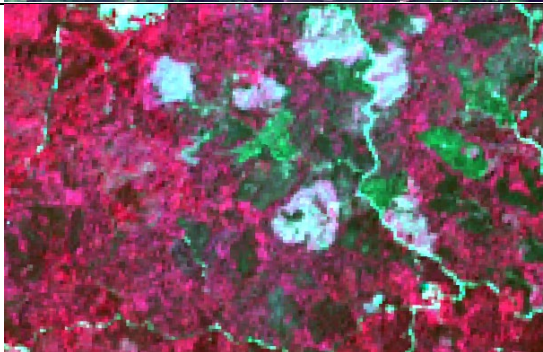
Name	R, G, B	Use	Example
Natural Color	4,3,2	Replicates how humans naturally see. Healthy vegetation appears green.	
Color Infrared	8,4,3	Useful for analyzing vegetation. Chlorophyll in healthy green vegetation reflects the NIR band. Healthy green vegetation appears bright red while dead or damaged vegetation appears grey or green.	
SWIR (Short Wave Infrared)	12,8a,4	Short wave infrared bands are sensitive to moisture. Healthy vegetation appears bright green while moisture stressed vegetation appears paler.	

Landsat 8 OLI

The Landsat 8 OLI (Operational Land Image) sensor collects nine bands including a panchromatic band. The satellite has a 16-day revisit time.

Band Number	Band Name	Resolution (m)
1	Costal Aerosol	30
2	Blue	30

3	Green	30
4	Red	30
5	Near Infrared	30
6	SWIR 1	30
7	SWIR 2	30
8	Panchromatic	15
9	Cirrus	30

Name	R, G, B	Use	Example
Natural Color	4,3,2	Replicates how humans naturally see. Healthy vegetation appears green.	
Color Infrared	5,4,3	Useful for analyzing vegetation. Chlorophyll in healthy green vegetation reflects the NIR band. Healthy green vegetation appears bright red while dead or damaged vegetation appears less bright or green.	
SWIR (Short Wave Infrared)	7,5,4	Short wave infrared bands are sensitive to moisture. Healthy vegetation appears bright green while moisture stressed, or dead vegetation appears paler green or grey.	