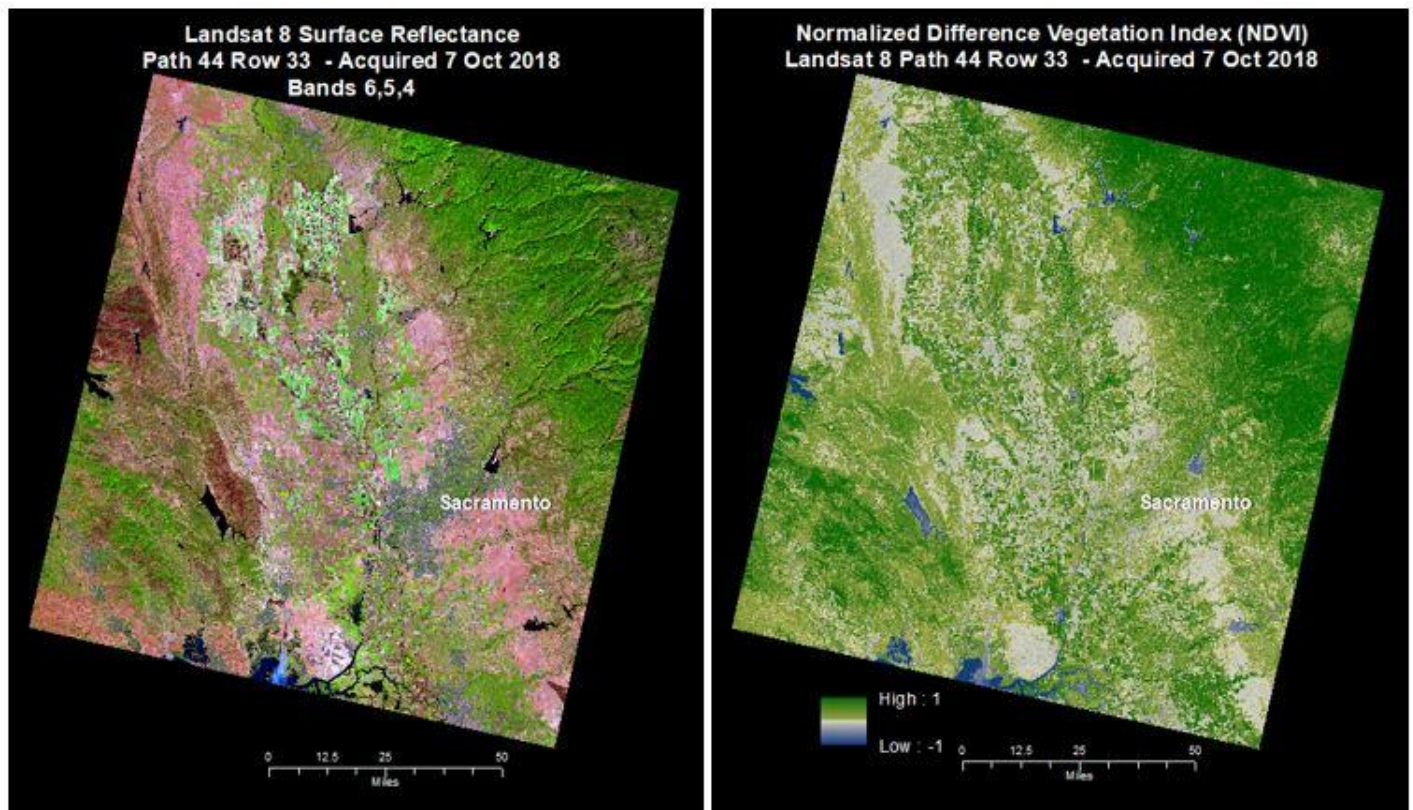




Landsat Surface Reflectance-derived Spectral Indices

Landsat Normalized Difference Vegetation Index

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This image displays a (left) Landsat 8 Surface Reflectance (SR) and (right) the SR-derived Landsat Surface Reflectance Normalized Difference Vegetation Index (NDVI).

Landsat Surface Reflectance-derived Normalized Difference Vegetation Index (NDVI) products are produced from Landsat 4–5 Thematic Mapper (TM), Landsat 7 Enhanced Thematic Mapper Plus (ETM+), and Landsat 8 Operational Land Imager (OLI)/Thermal Infrared Sensor (TIRS) Collection 1 and Collection 2 scenes that have been processed to [Landsat Level-2 Surface Reflectance](#) products.

NDVI is used to quantify vegetation greenness and is useful in understanding vegetation density and assessing changes in plant health. NDVI is calculated as a ratio between the red (R) and near infrared (NIR) values in

traditional fashion:

$$(NIR - R) / (NIR + R)$$

In Landsat 4-7, NDVI = (Band 4 – Band 3) / (Band 4 + Band 3).

In Landsat 8, NDVI = (Band 5 – Band 4) / (Band 5 + Band 4).

NDVI is delivered as a single band product, specified as shown in the table below.

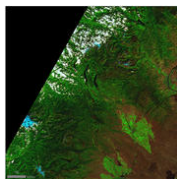
Landsat Surface Reflectance-derived Normalized Difference Vegetation Index (NDVI) Specifications	
Attribute	Value
Long Name	Normalized Difference Vegetation Index
Short Name	LC8NDVI, LE7NDVI, LT5NDVI, or LT4NDVI
File Name	*_sr_ndvi.tif
Data Type	Signed 16-bit Integer
Units	Spectral Index (Band Ratio)
Valid Range	-10,000 – 10,000
Fill Value	-9999
Saturate Value	20,000
Scale Factor	*0.0001

Data Access

Landsat Surface Reflectance-derived NDVI are produced on-demand, using the [USGS Earth Resources Observation and Science \(EROS\) Center Science Processing Architecture \(ESPA\) On Demand Interface](#).

Visit the [Landsat Surface Reflectance-derived Spectral Indices](#) page for information on product constraints, citation, and reference information.

Related Content



Landsat Surface Reflectance

Landsat Surface Reflectance measures the fraction of incoming solar radiation reflected from Earth's surface to the Landsat sensor.