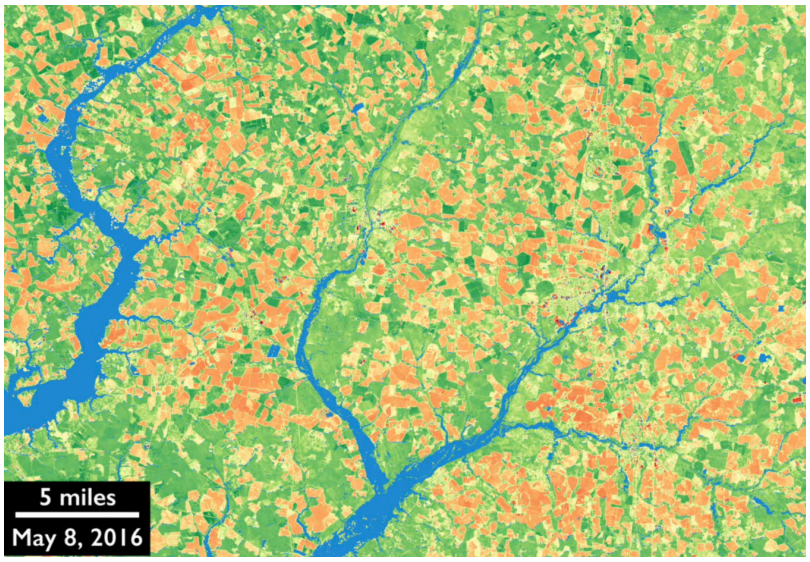
National Aeronautics and Space Administration

Harmonized Landsat and Sentinel-2 Imagery

Satellite Needs Working Group - Product Fact Sheet

The Harmonized Landsat and Sentinel-2 (HLS) product provides surface reflectance data from the Operational Land Imager (OLI) aboard the joint NASA/USGS Landsat-8/9 satellites and the MultiSpectral Instrument (MSI) aboard the European Union's Copernicus Sentinel-2A/B satellites. The combined measurements enable global observations every 2-3 days, and products are gridded to the same resolution and Military Grid Reference System (MGRS) to expedite downstream processing and analysis.

The harmonization of Landsat and Sentinel data can be used to gather information about vegetative health. This HLS-derived Normalized Difference Vegetation Index data of the Choptank and Nanticoke Rivers shows that healthy vegetation (green) dominated bare soil (red) in this area during May 2016. The HLS archive can be used to extrapolate this analysis even further.



Credit: NASA's Goddard Space Flight Center

Data Benefits

- Provides cloud-optimized observations of global land surfaces (excluding Antarctica) at 30-m resolution every 2-3 days to facilitate ease of use
- Harmonizes data from USGS and ESA into analysis ready products that are temporally dense
- Co-registers imagery to a common grid to allow stacking of products for time-series analysis
- Improves land-surface change monitoring and vegetation health monitoring
- Increases temporal frequency of rapid and long-term surface change detection

Harmonized Landsat and Sentinel-2 Imagery

HLS Product	HLSL30	HLSS30
Platform	Landsat 8/9	Sentinel-2A/B
Instrument	Operational Land Imager (OLI)	Multi-Spectral Instrument (MSI)
Processing Level	3	
Temporal Coverage	April 11, 2013 - Present	November 28, 2015 - Present
Temporal Resolution	2-3 days	
Latency	2 days	
Spatial Coverage	Global Land (excludes Antarctica)	
Spatial Resolution	30 m	
Data Format	Cloud-Optimized GeoTIFF	
Data Bands	Coastal Aerosol, Blue, Green, Red, NIR Narrow, SWIR 1 & 2, Cirrus, and Thermal Infrared 1 & 2	Coastal Aerosol, Blue, Green, Red, Red-Edge 1-3, NIR Broad, NIR Narrow, SWIR 1 & 2, Water Vapor, and Cirrus

How do I access this data?

The HLS archive is maintained by NASA's LP DAAC, including algorithm technical details and data access for all HLS products.

HLSL30

HLSS30

Where can I find more information?

NASA SNWG and community-contributed materials are available on the Stakeholder Engagement Program (SEP) webpage.

SEP Webpage

Background Image Credit: Joshua Stevens, NASA Earth Observatory

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