

Harmonized Landsat and Sentinel-2 Product

Satellite Needs Working Group - Solution Fact Sheet

The Satellite Needs Working Group (SNWG)-2016 assessment identified the need for more frequent, global observations mapped to a common grid to support disaster response efforts as well as land and agricultural monitoring. In response, NASA's SNWG Implementation TEam (NSITE) produces the Harmonized Landsat and Sentinel-2 (HLS) product. HLS 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/C satellites. The combined measurements enable global observations every 1.6 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



Scientific & Societal Benefit

- Provides cloud-optimized observations of global land surfaces (excluding Antarctica) at 30 m resolution every 1.6 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

NASA's SNWG Implementation TEam (NSITE)

Harmonized Landsat and Sentinel-2 Product

| Data Characteristics | | |
|----------------------------|---|---|
| Products | HL30 | HLSS30 |
| Platform | Landsat 8/9 | Sentinel-2A/B/C |
| Instrument | Operational Land Imager (OLI) | MultiSpectral Instrument (MSI) |
| Processing Level | 3 | |
| Temporal Coverage | April 11, 2013 - Present | November 28, 2015 - Present |
| Temporal Resolution | 1.6 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 Earthdata archive, including algorithm technical details and data access for all HLS products.



HL30



HLSS30

Where can I find more information?

More information on the HLS products are available on the HLS Solutions webpage.



HLS Webpage