Harmonized Landsat and Sentinel-2 (HLS)

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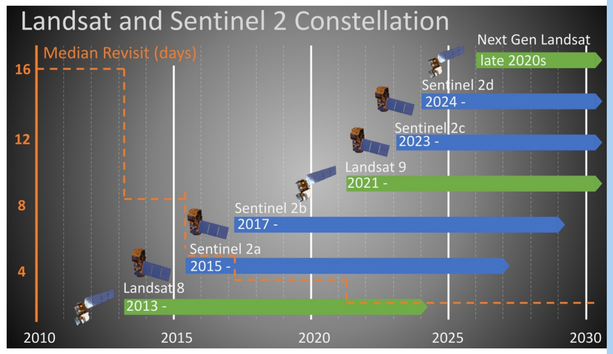
IMPACT
Interagency Implementation and Advanced Concepts Team

What is *Data Harmonization*?

Harmonization refers to normalizing common characteristics of multiple datasets to a single standard so that they can be used interchangeably. Scientific processing algorithms can then be applied seamlessly across all datasets.

Satellite Data Harmonization

- Creates denser timeseries datasets
- Reduces user processing time and cost
- Enables open science and facilitates collaboration across user communities



The HLS constellation has an average revisit of 2-4 days, compared to 5 days for the Sentinel-2 and 16 days for Landsat.

Contact

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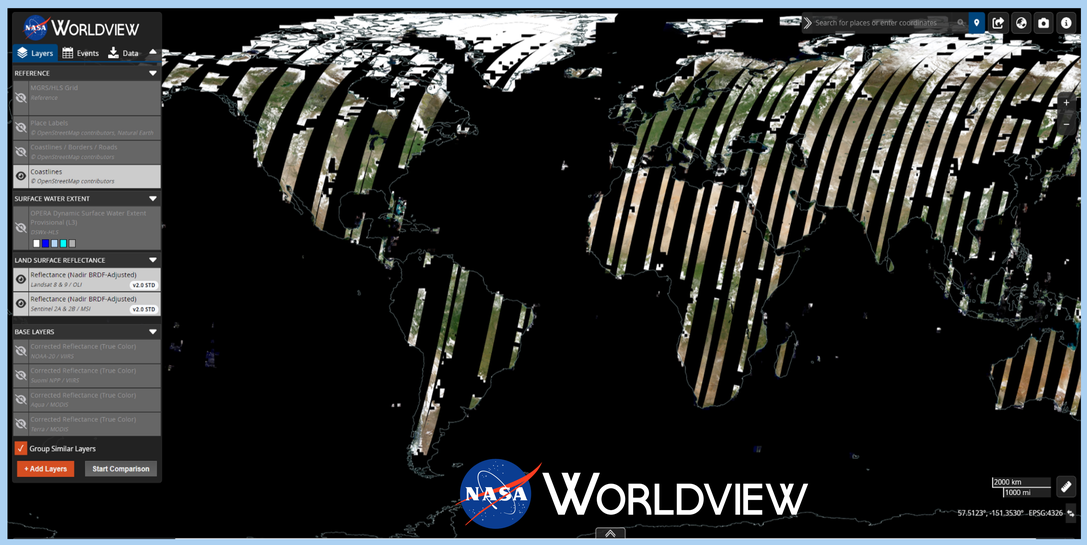
Creating analysis-ready combined surface reflectance products using Landsat (NASA) and Sentinel-2 (ESA) remote sensing satellites



Key Characteristics of the HLS Dataset

- Near global coverage at 30 m spatial resolution
- Latency of 2–4 days
- 5 PB archive as of 2023

Interactively explore HLS data on NASA WorldView



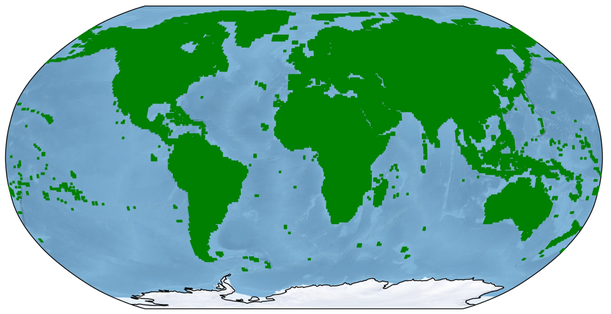
HLS codebase is open source and is available on GitHub.

SCAN ME

HLS Dataset Characteristics

Characteristic	Value
Resolution	30 meters
Spatial Coverage	Global Land (excluding Antarctica)
Latency	2 - 4 days
Data Format	Cloud Optimized GeoTiff (COG)
Granule Structure (all delivered individually)	10 (L30) /13 (S30) data bands 4 angle bands 1 quality assurance band
Data Distributor	Land Processes (LP) DAAC
S30 Temporal Coverage	December 2015 - Present
L30 Temporal Coverage	June 2013 - Present

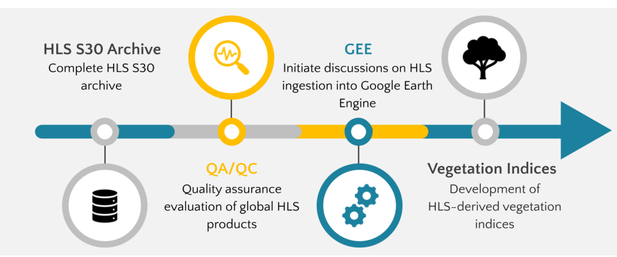
Global Coverage Area for HLS Products



HLS Derived Data Products

- Surface water monitoring (DSWx-HLS)
- Surface deformation detection (DIST-HLS)
- Suite of Spectral Indices (2024)

Going Forward



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