

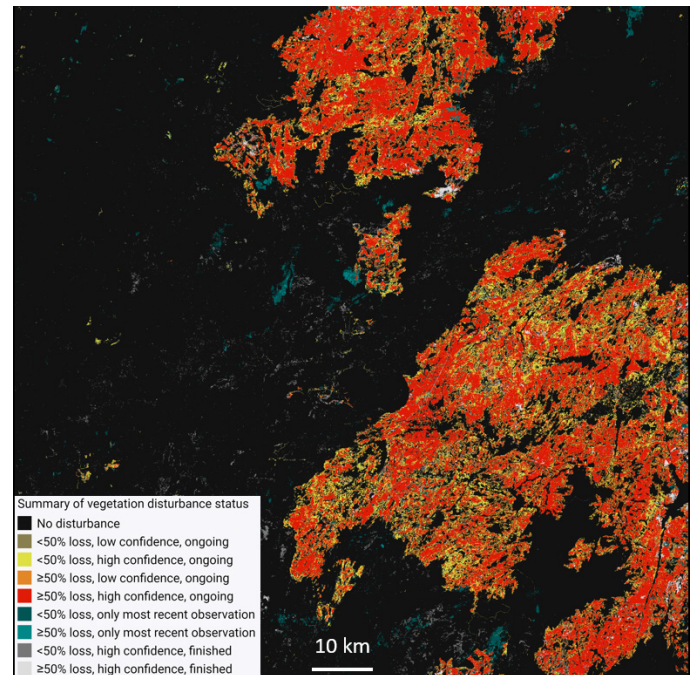
OPERA Land-Surface Disturbance Product Suite

Satellite Needs Working Group - Solution Fact Sheet

The Observational Products for End-Users from Remote Sensing Analysis (OPERA) project, managed by NASA's Jet Propulsion Laboratory (JPL), is developing a suite of near-global land Surface Disturbance (DIST) products. The suite includes a DIST-ALERT product generated using Harmonized Landsat and Sentinel-2 (HLS) optical imagery to provide expedited land-surface disturbance alerts every 2 to 4 days. The suite will also include a Sentinel-1A/C synthetic aperture radar (SAR) product (DIST-S1) that will provide SAR-based surface disturbance information (in development).

This DIST-ALERT disturbance map shows one of the largest fires of 2023 in Quebec, Canada. The disturbance map can track fire extent and monitor fire severity.

Credit: OPERA University of Maryland



Societal Benefit

- Provide near-global land-surface disturbance data at 30-m resolution
- Utilize the high temporal frequency of HLS to provide disturbance data for agile monitoring and operational decision making
- Combine the benefits of optical and SAR imagery to provide surface disturbance maps during cloudy conditions and at any time of day
- Detect land-cover changes at different magnitudes, spatial scales, and temporal scales
- Provide disturbance alerts for events that may require a rapid response
- Advance global ecosystems research by supplying detailed observations of surface disturbances



OPERA Land-Surface Disturbance Product Suite

OPERA DIST Product	DIST – ALERT - HLS	DIST-S1
Platform	Harmonized Landsat 8/9 Sentinel-2A/B (HLS)	Sentinel-1A/C
Processing Level	3	
Temporal Coverage	January 2023 - present	March 2026 -
Temporal Frequency	Sub-weekly	12 day revisit per satellite, 6 days for constellation
Spatial Coverage	Near-Global (all land masses except Antarctica)	
Spatial Resolution	30 m	
Data Format	Cloud-Optimized GeoTIFF	

How do I access this data?

OPERA DIST products are distributed by NASA's LP DAAC along with product documentation. The DIST-S1 product is currently in development with a tentative release date of March 2026.



LP DAAC

Where can I find more information?

More information on OPERA DIST products is available on this solution's webpage. The OPERA website provides further information on DIST and other OPERA products.



OPERA DIST
Webpage



OPERA
Website

Background Image Credit: Generated in QGIS using provisional DIST-ALERT products



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