

Session 2: Accessing HLS in Various Environments

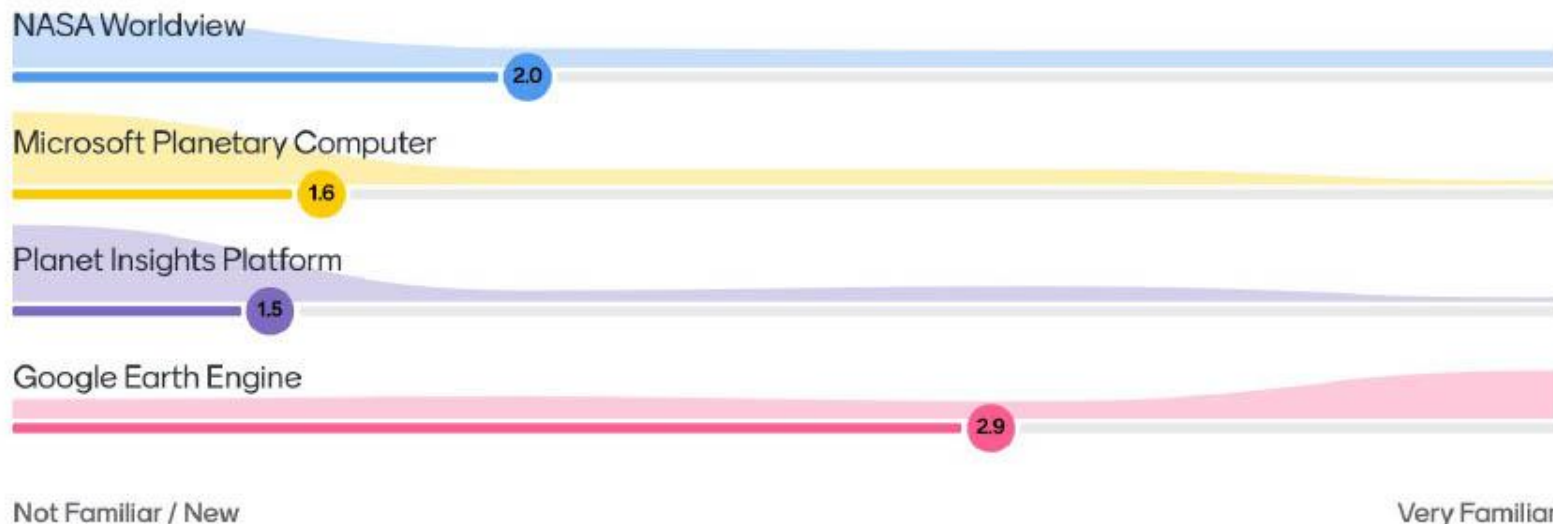
Goals:

- Demonstrate user-driven methods of discovery, download, visualization, and analysis of HLS productions.
- Discuss feedback about opportunities to explore using each environment.

Time (CDT)	Topics	Format	MC / Presenter
11:10 - 11:15 (5 min)	Introducing HLS in Various Environments	Presentation	Stephanie Jiménez, NSITE & UAH
11:15 - 12:15 (60 min)	NASA Worldview (+ Q&A)	Demo Presentation & Interactive 	Minnie Wong & Ryan Boller, ESDIS & Vantage Systems Inc.
12:15 - 1:15 (60 min)	Lunch		



(1/1) Rank how familiar you are working with HLS data in these environments



Session 2: Accessing HLS in Various Environments

Presenters



Grega Milcinski

Founder of Sinergise

Planet



Emil Cherrington

Ecosystem
Principal
Scientist

NASA MSFC,
EarthRISE, UAH



Kelsey Herndon

Senior Scientist

NASA MSFC,
EarthRISE, UAH



Paulo Arévalo

Postdoctoral
Associate

Boston University



Session 2: Accessing HLS in Various Environments

Presenters



Minnie Wong

Systems Engineer
NASA
Worldview

NASA ESDIS,
Vantage
Systems Inc.



Ryan Boller

Data
Visualization
Lead

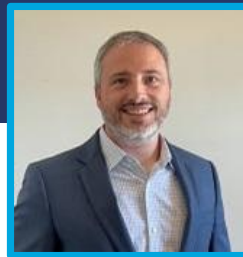
NASA ESDIS



Juan Carlos Lopez

Senior
Program
Manager

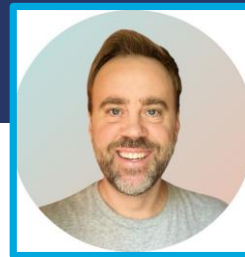
Microsoft



Adam Loverro

Principal PM
Manager

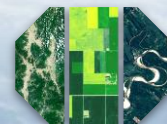
Microsoft



Alex Unger

AI Developer
Solution
Engineer

Microsoft



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EARTHDATA

HLS in NASA Worldview and the Global Imagery Browse Services

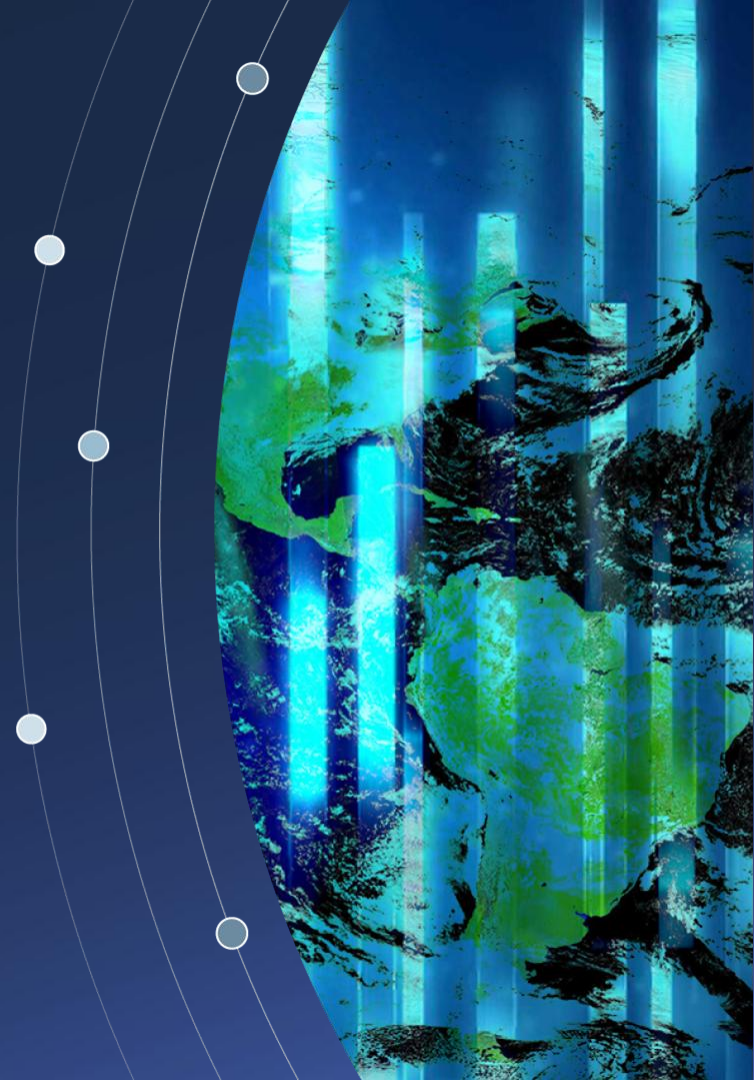
Ryan Boller and Minnie Wong
NASA ESDIS and Vantage Systems, Inc.

Presentation Date 05/13/2026



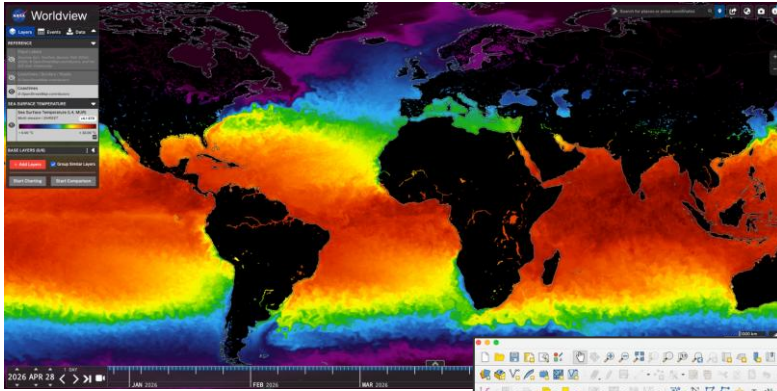
What is GIBS and Worldview?

GIBS and Worldview provide a visual-first approach to finding and using NASA Earth science observations.

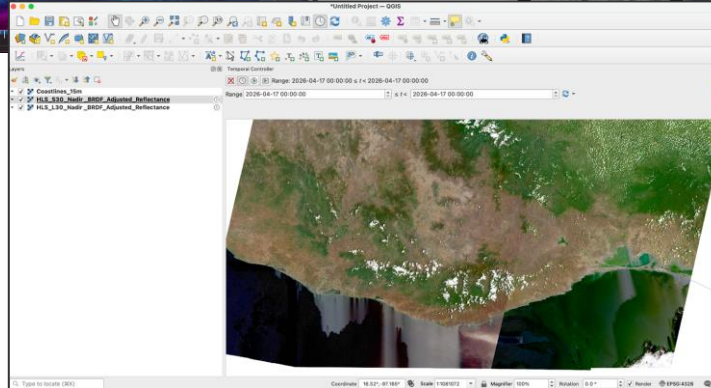
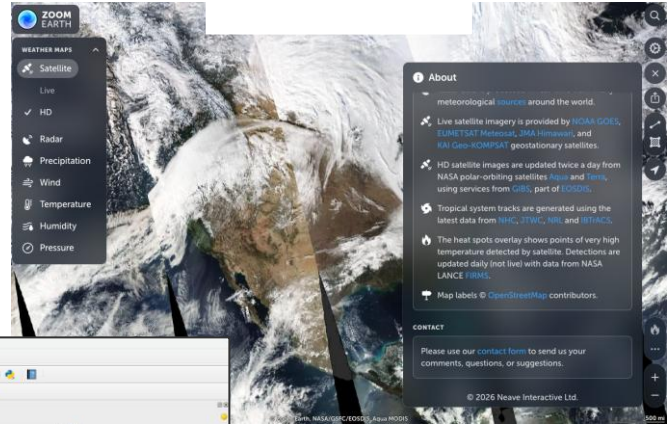


Visual First Approach

Science use of GIBS imagery in Worldview



Commercial use of GIBS imagery in <https://zoom.earth>



Accessing imagery in GIBS via Geographic Information System (GIS) Clients like QGIS and ArcGIS Pro



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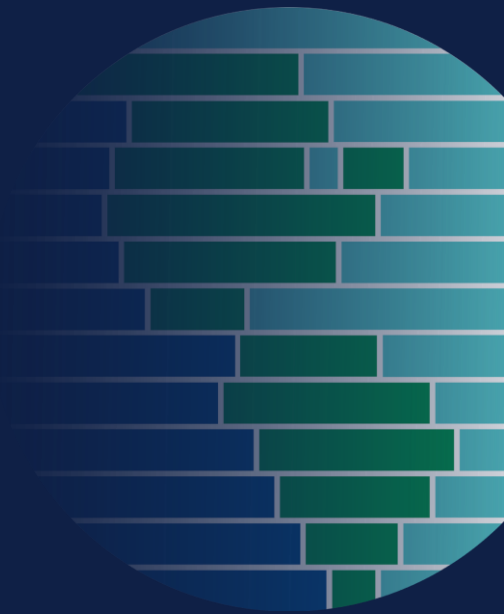
Global Imagery Browse Services (GIBS)

- Standardized web services (APIs)
- Fast and open access to 1000+ global, full-resolution visualizations of NASA Earth Science observations.
- Many products (~200) are available within 3-5 hours after being observed.

earthdata.nasa.gov/gibs



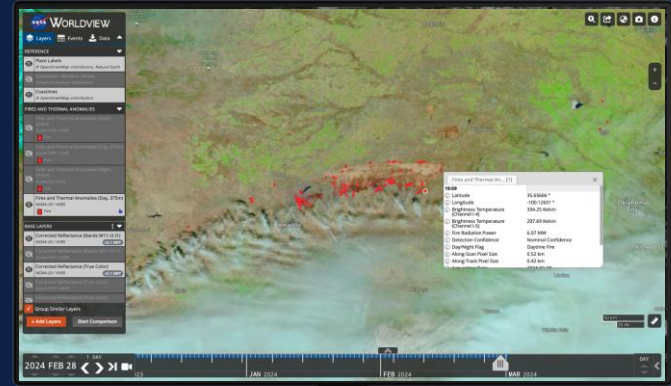
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Worldview

Open source, web-based tool for viewing over 1000 visualized Earth data products via GIBS and other sources.

- Browse imagery in full resolution from mission start to present, often within 3 hours of observation.
- Compare coincident data retrievals across missions and time.
- Create and share animations or image snapshots.
- Linkages to download data products via Earthdata Search.

worldview.earthdata.nasa.govNational Aeronautics and
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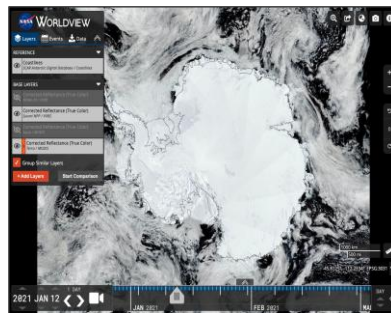
Overview of Available Visualizations



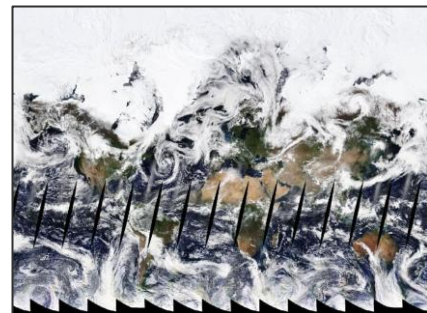
Geographic/Lat-Long (EPSG: 4326)



Arctic Polar Stereographic (EPSG: 3413)

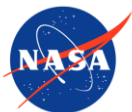


Antarctic Polar Stereographic (EPSG: 3031)



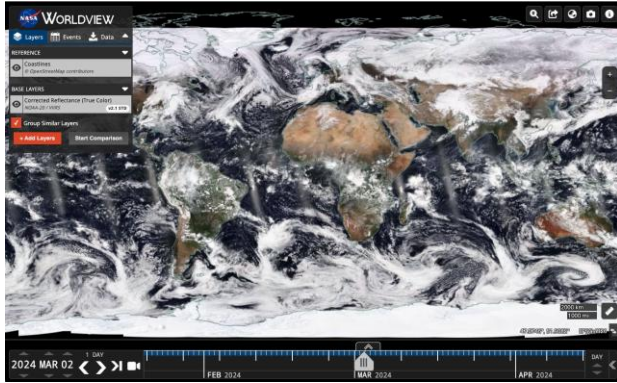
Web Mercator (EPSG: 3857)

- Visualizations in 4 map projections: Geographic, Arctic Polar Stereographic, Antarctic Polar Stereographic, Web Mercator (Web Mercator via GIBS API only)
- Visualization types: Raster imagery and vector data
- Spatial resolution: Ranging from 30 meter to 375 meter to 1 degree per pixel
- Temporal resolution: 6 minutes, daily, monthly, yearly (and others in between)
- Latency (from observation to availability): 40 mins for geostationary, 3 hours (“near real-time”) for many others, longer for everything else.
- GIBS and Worldview provide data visualizations, not the original / full-precision data.



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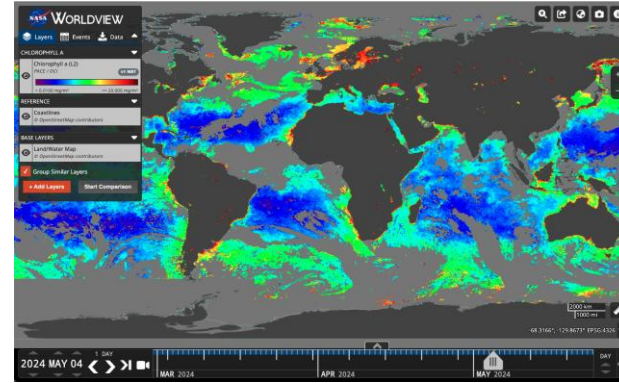
Raster Imagery Types



Corrected Reflectance (True Color), NOAA-20 / VIIRS

Opaque “Base Layers”

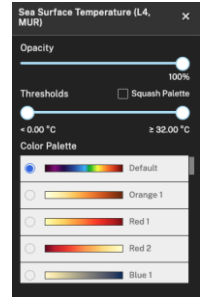
- RGB composite without a color bar.
- Interpreted “as is”.



Chlorophyll a, PACE / OCI

Transparent-capable “Overlays”

- Regularly displays a color bar that maps data values to RGB.
- Choice of alternate color palettes which can be adjusted/thresholded, etc.



Vector Data Types



Fires and Thermal Anomalies, NOAA-20 / VIIRS

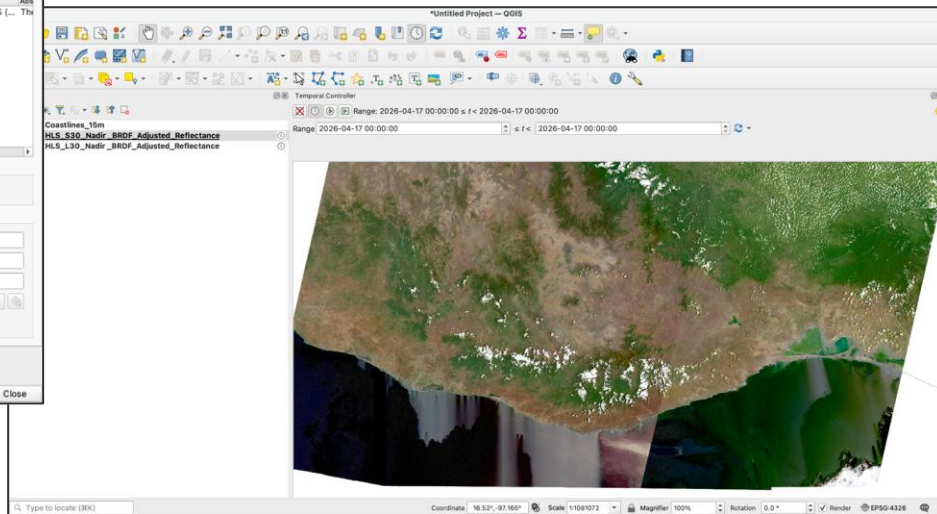
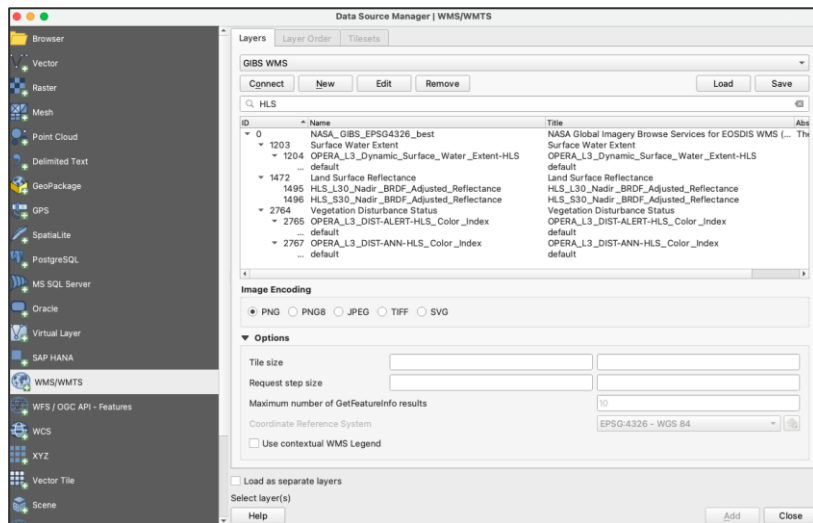
- Points, Lines, and Polygons supported.
- Associated metadata/attribute information included.



Geographic Information System (GIS)

access to GIBS

[GIBS WMS endpoints](#) for use directly in GIS clients like QGIS and ArcGIS Pro



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Other access methods

GIBS WMS / WMTS / XYZ endpoints for direct use

- Accessing via Map Libraries and GDAL Scripts
 - <https://nasa-gibs.github.io/gibs-api-docs/map-library-usage/>
- Accessing via Python
 - <https://nasa-gibs.github.io/gibs-api-docs/python-usage/>

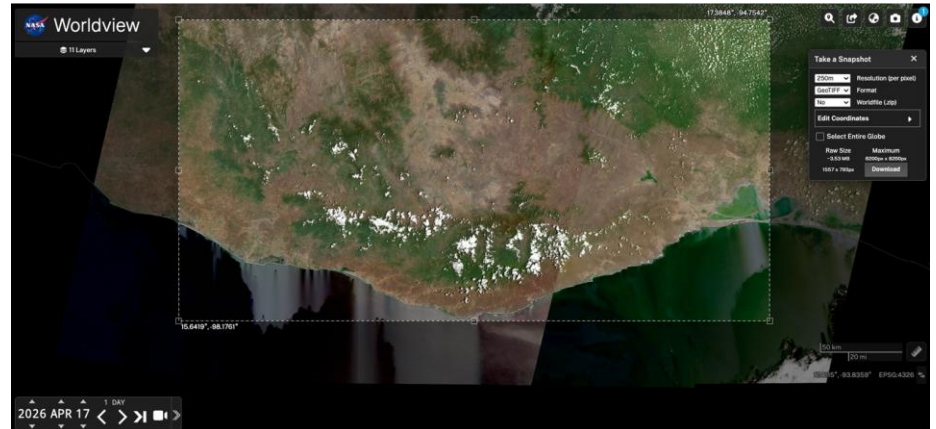


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Key Features of Worldview

Interactive web-based map to browse and view data visualizations from the past and present.

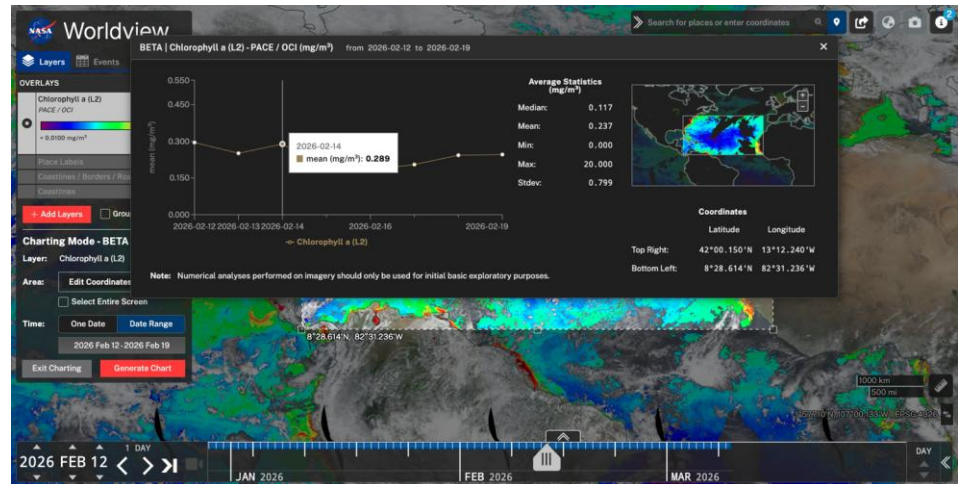
- Tour Stories: Learn how to use Worldview, how to visualize certain data visualizations, and explore interesting past natural events.
- Animation: Ability to create animations and export to animated GIFs
- Georeferenced image snapshots: Image snapshot options include JPG, PNG (with worldfile), GeoTIFF, KMZ for use in GIS clients
- Comparison: Allows users to compare data visualizations side by side
- Share and Embed: Allows users to embed Worldview onto their own webpage



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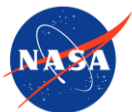
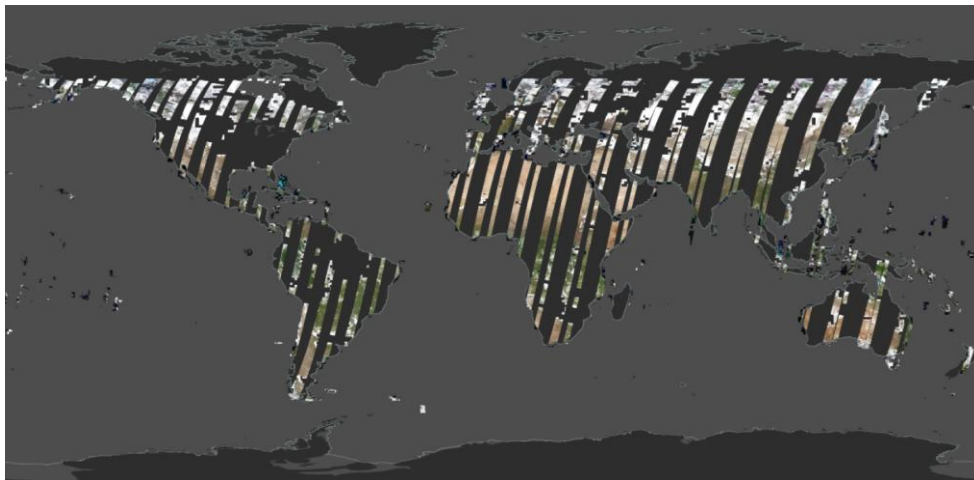
Key Features of Worldview (contd)

- Events: Provides a curated listing of events provided through the Earth Observatory Natural Event Tracker (EONET)
- Data Download: Download original, source data via Earthdata Search
- Charting mode (beta): Line charts for a date range showing change over time, and statistics for a single date (median, mean, minimum, maximum, and standard deviation) for an area of interest.
 - For initial basic exploratory purposes as it's based on imagery values, not full precision data.



HLS imagery in GIBS and Worldview: Pre-generated map tiles at global to local scale

- Landsat Reflectance (Nadir BRDF-Adjusted) - True color/natural color
 - Landsat 8: April 11, 2013 - Present
 - Landsat 9: May 31, 2022 - Present
- Sentinel-2 Reflectance (Nadir BRDF-Adjusted) - True color/natural color
 - Sentinel-2A: November 28, 2015 to January 22, 2025; March 14, 2025 to December 31, 2026
 - Sentinel-2B: September 18, 2017 - Present
 - Sentinel-2C: January 21, 2025 - Present



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HLS imagery in Worldview: Dynamically generated map tiles via TiTiler-CMR API at local scale

Landsat

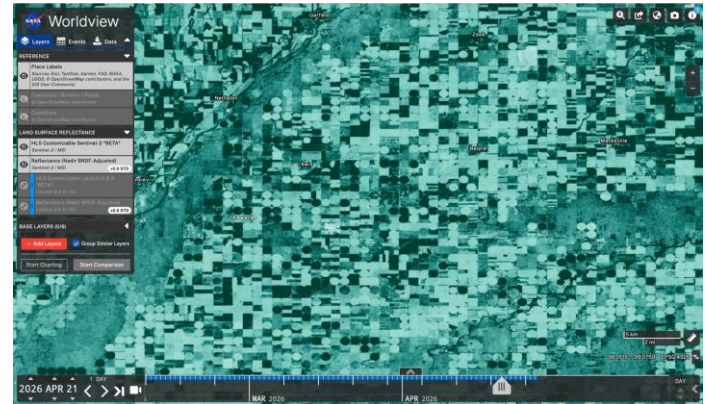
- HLS Customizable Landsat
- Reflectance (Color Infrared, Bands 5-4-3)
- Reflectance (Urban False Color, Bands 7-6-4)
- Reflectance (Vegetative Analysis False Color, Bands 6-5-4)
- Reflectance (Shortwave Infrared, Bands 7-5-4)

Sentinel-2

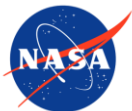
- HLS Customizable Sentinel
- Reflectance (Color Infrared, Bands 8-4-3)
- Reflectance (Urban False Color, Bands 12-11-4)
- Reflectance (Vegetative Analysis False Color, Bands 11-8A-4)
- Reflectance (Shortwave Infrared, Bands 12-8A-4)

Landsat and Sentinel-2 (beta)

- Vegetation Index (NDVI)
- Enhanced Vegetation Index (EVI)
- Soil Adjusted Vegetation Index (SAVI)
- Modified Soil Adjusted Vegetation Index (MSAVI)
- Water Index (NDWI)
- Snow Index (NDSI)
- Moisture Index (NDMI)
- Triangular Vegetation Index (TVI)
- Burn Ratio (NBR)
- Burn Ratio 2 (NBR2)



[HLS Sentinel-2 Enhanced Vegetation Index \(EVI\)](#)



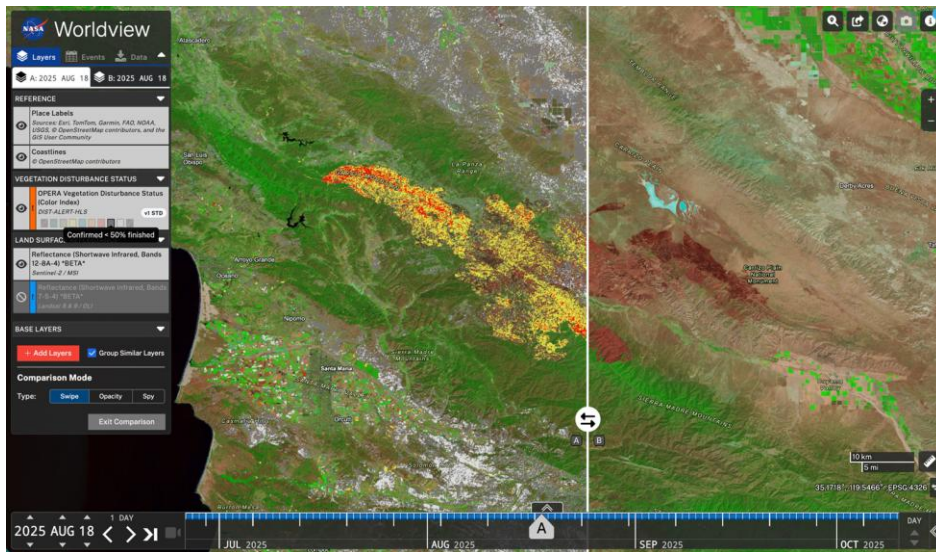
OPERA imagery in GIBS and Worldview

OPERA HLS visualizations

- OPERA Dynamic Surface Water Extent (L3) DSWx-HLS
- OPERA Vegetation Disturbance Status (Color Index) DIST-ALERT-HLS
- OPERA Vegetation Disturbance Status (Annual, Color Index) DIST-ANN-HLS

Other OPERA visualizations (Sentinel-1)

- OPERA Dynamic Surface Water Extent (L3) DSWx-S1
- OPERA Radiometric Terrain Corrected SAR Backscatter (False Color) RTC-S1/Sentinel-1



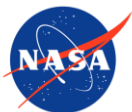
[OPERA vegetation disturbance status - Gifford Fire, CA](#)
([Worldview Image of the Week](#))



Demo

<https://worldview.earthdata.nasa.gov>

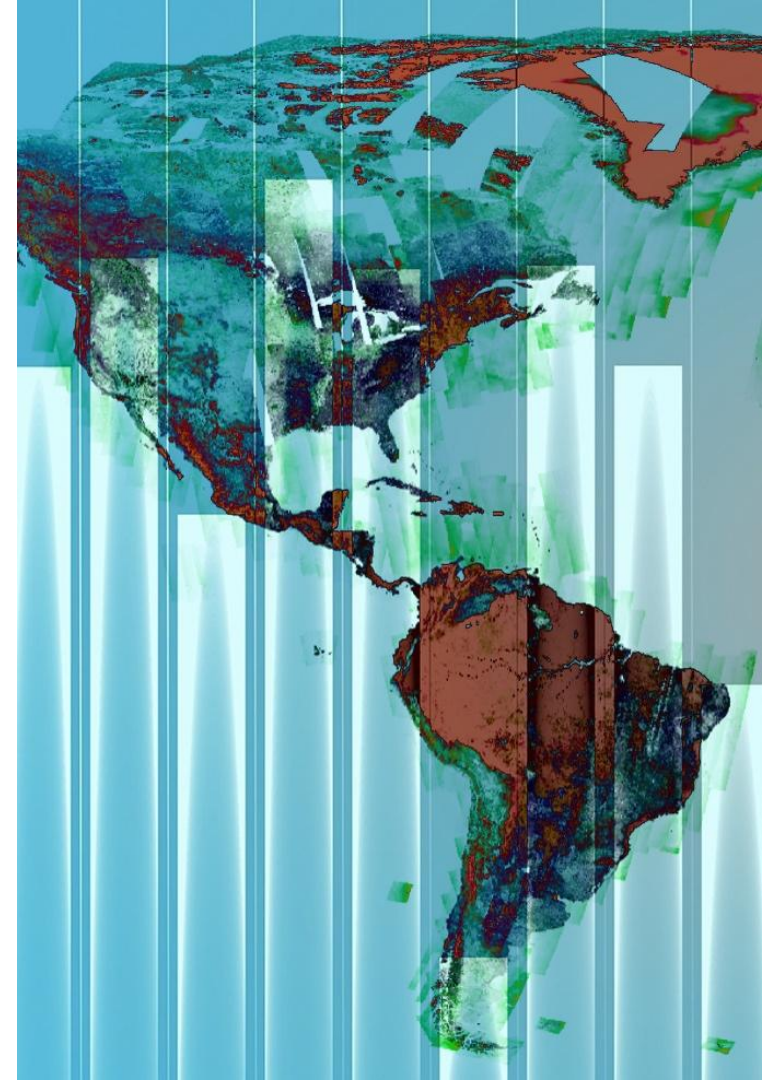
HLS Tour Story: <https://go.nasa.gov/4dqsWMx>



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Why use Worldview and GIBS?

- View and explore the Earth as it is “right now”.
- View changes on the Earth’s surface over time using daily, global imagery going back two decades.
- Fast and responsive maps that are highly interactive through space and time.
- Pick from 1000+ data visualizations that can all be viewed within the same interface.



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Science citations

Recent example use in science article

Sayedain, S. A., O'Neill, N. T., Ranjbar, K., Gauvin-Bourdon, P., Chang, R., Hayes, P. L., and King, J.: **Remote sensing of local-dust across the Canadian Arctic**, EGU sphere [preprint], <https://doi.org/10.5194/egusphere-2025-6037>, 2026.

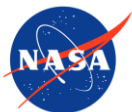
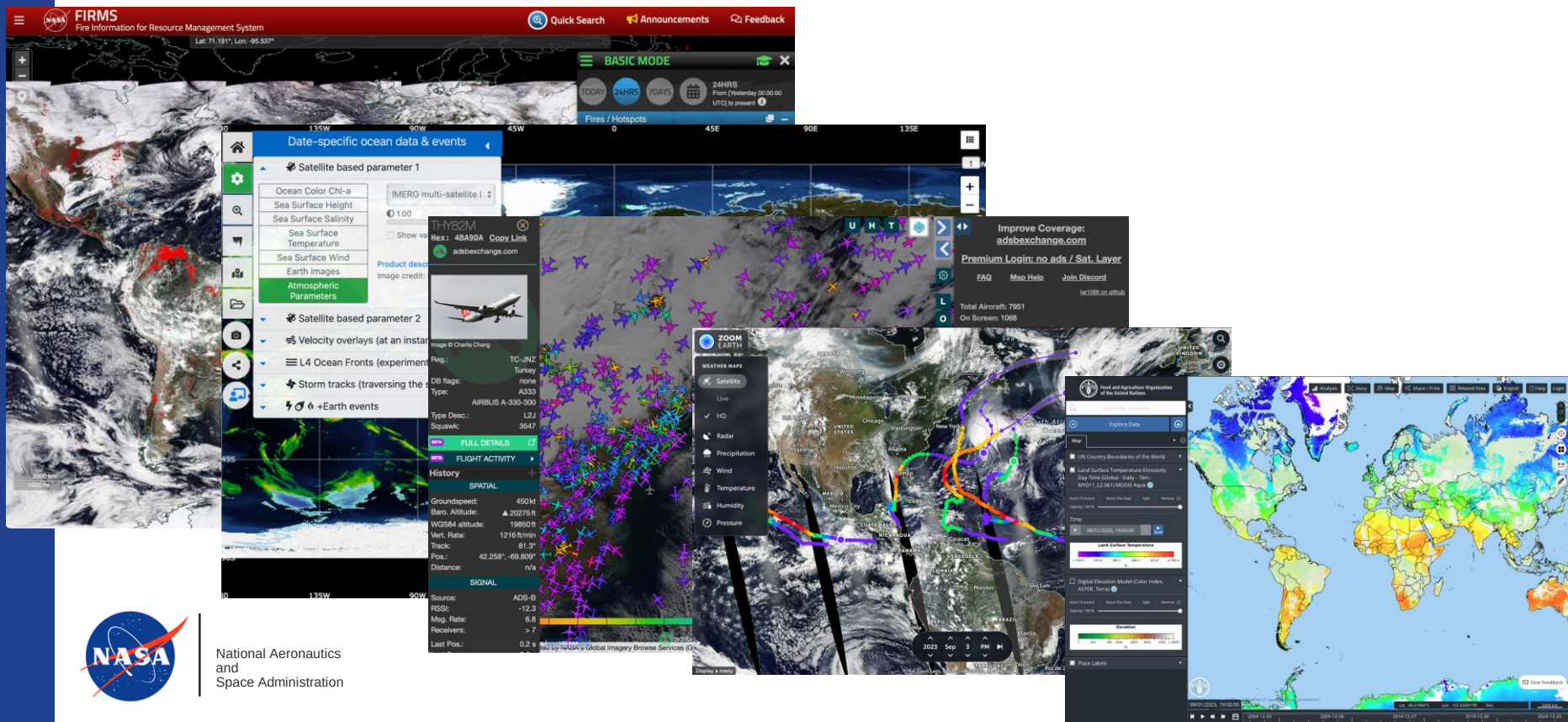
“MODIS satellite images along with their derived AOD products as well as MISR multi-view images and their AOD, plume height and plume speed products were employed to **investigate a variety of dust events using the contextualizing diversity of information layers available from the NASA Worldview application. High spatial resolution Sentinel-2 color images from the Copernicus Browser** were also employed on an as-needed basis: they often yielded physical and/or spatio-temporal insights into local dust behavior that was not obvious in the (comparatively) low-resolution MODIS imagery and products.”



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Sample GIBS Usage from 1000+ Non-Worldview Clients

E.g. NASA FIRMS, UN FAO Hand in Hand, ADS-B Exchange, etc



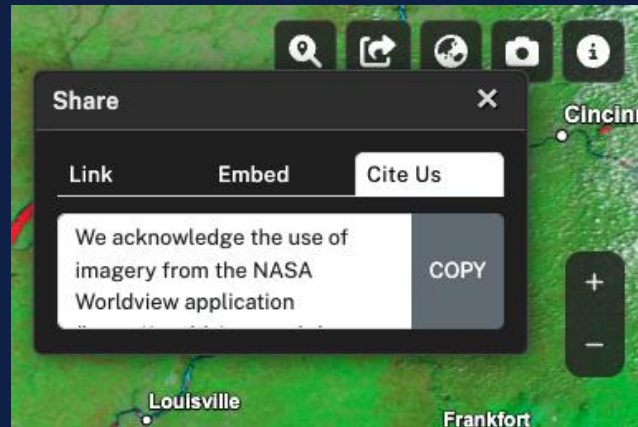
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Imagery Use Guidelines

NASA promotes full and open sharing of data and we encourage publication of imagery from Worldview; when doing so for image captions, please cite it as "NASA Worldview" and list the imagery products used, like Harmonized Landsat-Sentinel 2!

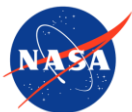
For acknowledgment in scientific journals, please use: "We acknowledge the use of imagery from the NASA Worldview application (<https://worldview.earthdata.nasa.gov>), part of the NASA Earth Science Data and Information System (ESDIS)."



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Helpful Links

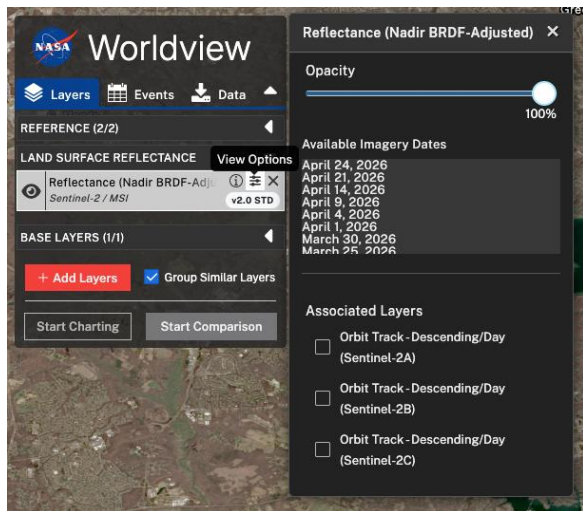
- Worldview: <https://worldview.earthdata.nasa.gov>
- Worldview on GitHub: <https://github.com/nasa-gibs/worldview>
- Worldview Snapshots: <https://wvs.earthdata.nasa.gov>
- GIBS: <https://earthdata.nasa.gov/gibs>
- GIBS API documentation: <https://nasa-gibs.github.io/gibs-api-docs/>
- Frequently Asked Questions: <https://go.nasa.gov/4j7Hlyz>
- Worldview Image of the Week: <https://www.earthdata.nasa.gov/news/worldview-image-archive>
- Embed Worldview: Send us an email at earthdata-support@nasa.gov with a short description of your website, and we will put it through an approval process before we can whitelist the domain.
- Embed article and instructions: <https://go.nasa.gov/3PN2gra>
- Sample embed usage: <https://bit.ly/4jwHoDZ>



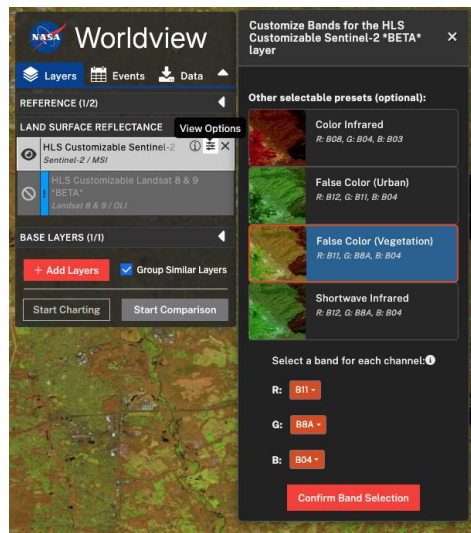
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Worldview Tutorials for HLS on Earthdata



[Find Landsat and Sentinel-2 Imagery by Area of Interest in Worldview](#)



[Customize HLS RGB Imagery Composites in Worldview](#)



Check out the new article! [Tailoring the View: TiTiler-CMR Customizes HLS Imagery in Worldview and FIRMS](#)



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Visit Us!

Visit: worldview.earthdata.nasa.gov

Contribute: github.com/nasa-gibs/worldview

Bring imagery into your own web application
or GIS client: earthdata.nasa.gov/gibs

Contact us:

ryan.a.boller@nasa.gov

min.m.wong@nasa.gov



Scan to access
Worldview

EARTHDATA

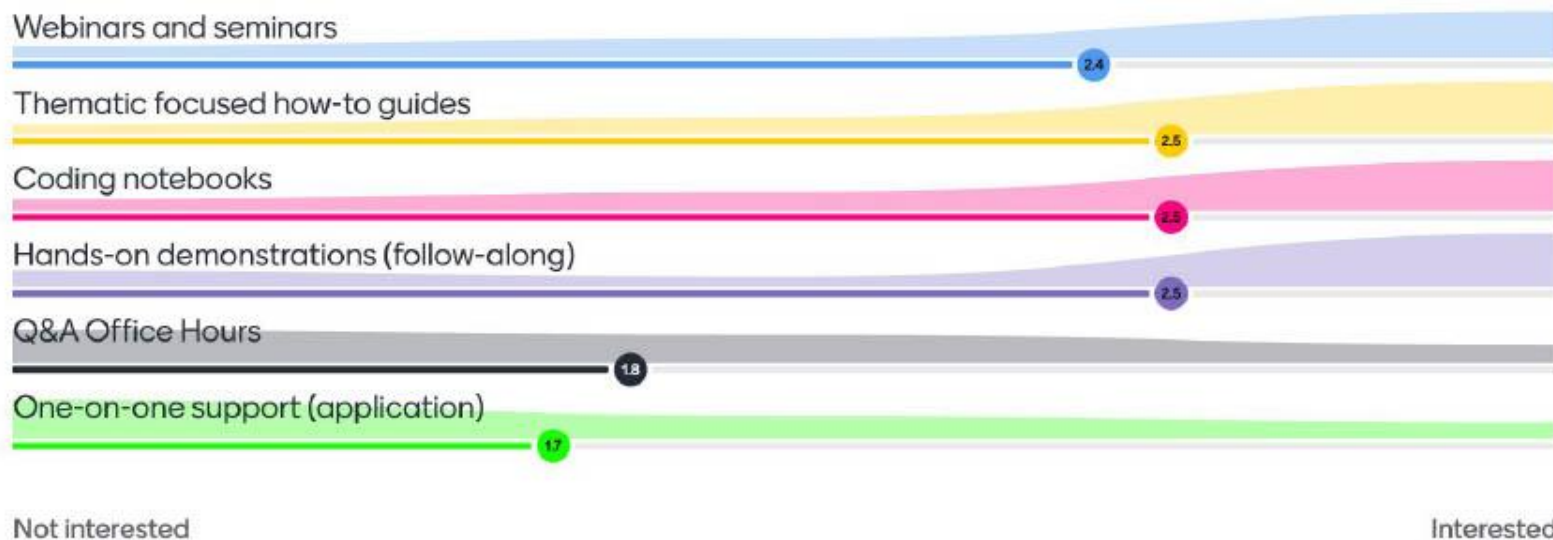
earthdata.nasa.gov

Thank You!

<https://worldview.earthdata.nasa.gov>

<https://earthdata.nasa.gov/gibs>

(1/2) Which type of support would you need to get started with HLS in NASA Worldview?





(2/2) What barriers might prevent you from using HLS in NASA Worldview tomorrow?

Resolution

I am yet to use

Programming challenge

no barriers

Skills/training

Tool cost

lack of skills

skills



(2/2) What barriers might prevent you from using HLS in NASA Worldview tomorrow?

mainly programming
challenges

Skills/training

Programming
challenges

none at the moment

skills/training

skills and some training

Time to explore a
different platform

No Barriers



(2/2) What barriers might prevent you from using HLS in NASA Worldview tomorrow?

Clouds

needs for skills and
training

Resolution

Updated links

No barriers. I already like
NASA Worldview and now I
will use it more.

None

Lack of accessibility
tools (alt test and stuff)

No barriers



(2/2) What barriers might prevent you from using HLS in NASA Worldview tomorrow?

Programming
challenges and costs

Clouds

Resolution

skill issue

Time and material in
spanish

Clouds

It's an easy to use tool!

Cluds. Gaps



(2/2) What barriers might prevent you from using HLS in NASA Worldview tomorrow?

No barriers.

Las barreras principales son la naturaleza puramente visual de la herramienta (falta de análisis numérico), la latencia de red para cargar teselas de alta resolución y la desconexión técnica entre la

Bands

Frequent

cost



HLS in Various Environments

Questions from the Audience

What other **questions do the participants have** that we haven't answered yet?

What else could the presenters help with?

Participants, please post your questions in the Webex Q&A

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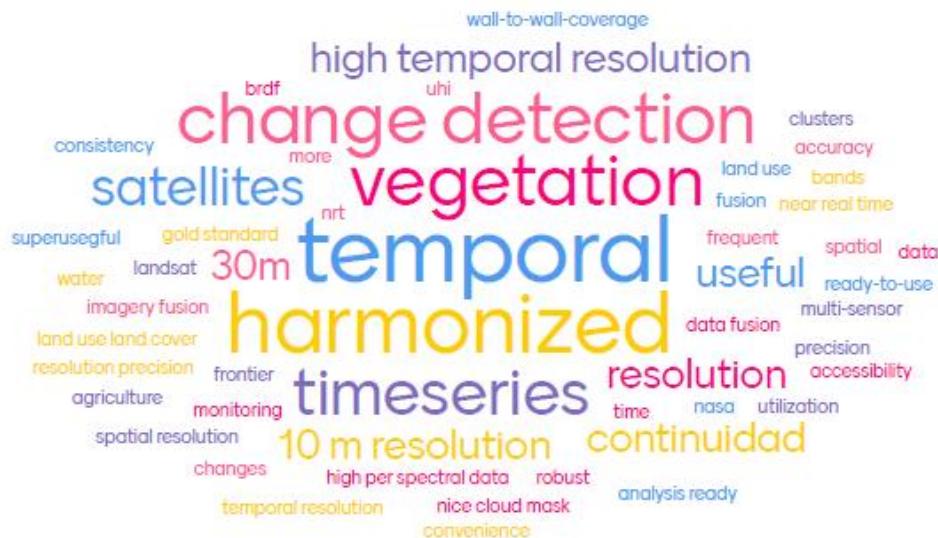


Wednesday May 13,
2026 break from
12:15 - 1:15 pm CDT

Lunch

2026 Harmonized Landsat and Sentinel-2 (HLS) Workshop

What word comes to mind when you think of any of the Harmonized Landsat Sentinel-2 (HLS) products? (One word, no articles)



cntd. *Session 2: Accessing HLS in Various Environments*

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Time (CDT)	Topics	Format	Speaker
1:15 - 2:15 (60 min)	AI-powered HLS Data Analysis with Microsoft Planetary Computer (+ Q&A)	Demo Presentation & Interactive 	Juan Carlos Lopez, Adam Loverro, & Alex Unger Microsoft
2:15 - 3:15 (60 min)	HLS within Planet Insights Platform (+ Q&A)	Demo Presentation & Interactive 	Grega Milcinski, Planet
3:15 - 3:25 (10 min)	Break		
3:25 - 4:40 (75 min)	Demonstration of HLS data in Google Earth Engine & Retrieving HLS Data Locally from GEE with computePixels (+ Q&A)	Demo Presentation & Interactive 	Emil Cherrington and Kelsey Herndon, NASA EarthRISE & UAH & Paulo Arevalo, Boston University





AI-powered HLS Data Analysis with Microsoft Planetary Computer

NASA's Harmonized Landsat and Sentinel-2 2026 Workshop
May 13th, 2026



Adam Loverro
Planetary Computer
adamloverro@microsoft.com



Alex Unger
Solution Engineer
alexunger@microsoft.com



Juan Carlos Lopez
Microsoft Azure
juanlopez@microsoft.com

Session Objectives

1. Provide an overview to **Microsoft Planetary Computer** & **Planetary Computer Pro**
2. Show how to **access HLS data** through the platform
3. Demonstrate the use of **AI tools** to explore data and accelerate analysis

Accessing data & technology

Microsoft Planetary Computer

- Explore HLS and other global datasets
- No **cost, open** to researchers and developers
- Access here:
<https://planetarycomputer.microsoft.com/>

Microsoft Azure (Cloud Compute, Data, AI)

- Run large-scale analysis, build pipelines, deploy AI
- Try Azure for free:
aka.ms/free
- Centralize organizational geospatial data with **Microsoft Planetary Computer Pro**
aka.ms/planetarycomputerpro
- Use AI with **GitHub Copilot** to explore and analyze data
- Sign up via Azure or here:
<https://github.com/features/copilot/plans>

Other Options

- For NASA: request Azure access via **NASA Science Cloud**, requires NASA funding (e.g. ROSES):
<https://sciencecloud.nasa.gov/overview/>
- Non-NASA: contact your **org IT/cloud team** for Microsoft Azure access

Microsoft Planetary Computer

Global GEOINT data for the public good



The Heritage of Microsoft Planetary Computer

45+ billion

Data requests monthly



At Microsoft, we believe artificial intelligence is a game changer. Our approach as a company is focused on democratizing AI so its features and capabilities can be put to use by individuals and organizations around the world to improve real-world outcomes.”

Brad Smith
Dec 11, 2017

As of January 2026

the Planetary Computer –

– hosts over **70 pb of data** across **146 different types** of data, including data from NASA, NOAA, and the European Space agency.

– is used by thousands of enterprises, researchers, non-profits, and governments **around the world.**

– is inspiring users to replicate the capabilities of the Planetary Computer **for private data sets.**

The Growth of Microsoft Planetary Computer

planetarycomputer.microsoft.com/catalog

140+

Data Collections

70+PB

Data hosted

7.3B

Assets

53Yrs

Imagery

143M

Searches

↑+20% YoY

42.6B

Data requests

↑+238% YoY

22.5PB

Data read

↑+465% YoY

5.8M

Visualization requests

↑+45% YoY

Sustained growth for over 5 Years

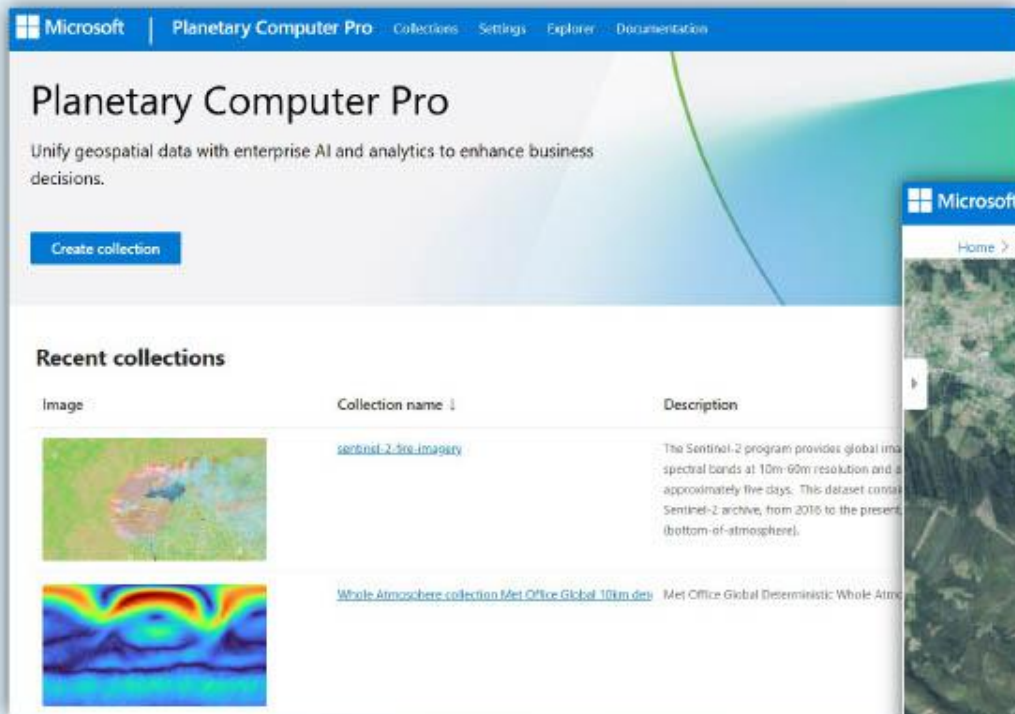
Driven by the rapid growth of Geospatial AI

Microsoft Planetary Computer Pro

**Cloud-Native Geospatial Data
Management with massive scale**

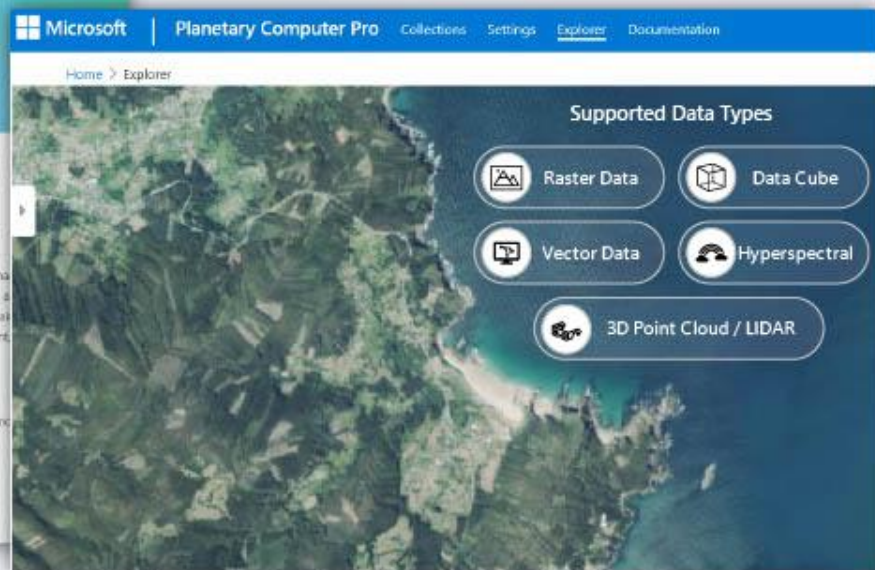
Microsoft Planetary Computer Pro

Azure-Based Geospatial Data Storage and Management Platform for Government & Enterprise



STAC Compliant API for Search & Discovery

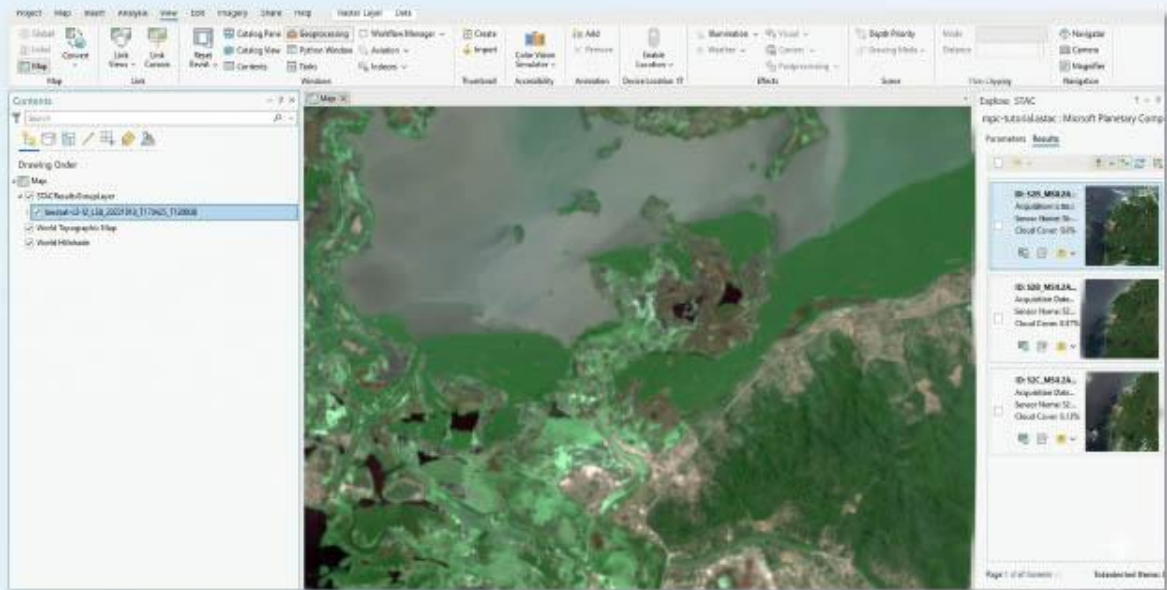
OGC Compliant API for Visualization



A Unified GEOINT Platform with MPC Pro



Deep Integration with ArcGIS



Discover, visualize, and
analyze data from MPC
Pro in ArcGIS Pro



Automate publishing
and analysis workflows
with ArcGIS Enterprise



April 2020

Microsoft Planetary Computer



July 2022

ArcGIS Pro +

Microsoft Planetary Computer



Feb 2026

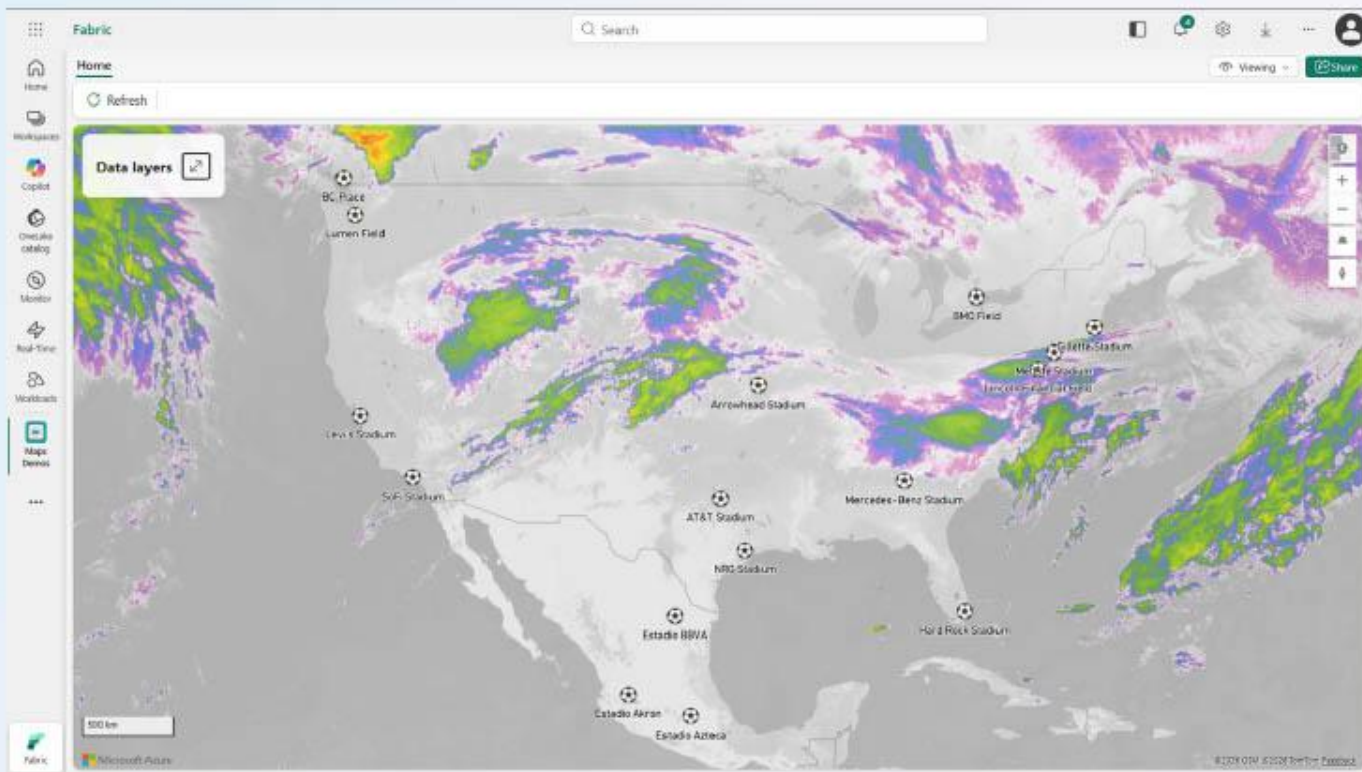
ArcGIS Pro & Enterprise +
Microsoft Planetary Computer Pro
now in USGov Virginia

Bringing Geospatial Data to Microsoft Fabric



Unify business and geospatial data analytics in Fabric Maps

Create and fuse multiple data layers in a single pane-of-glass



Space Intelligence

Deforestation, Reforestation, and Forest Management

Situation

- The Scaling Gap: Customers require maps of global forests at "audit-grade" accuracy to support nature-based climate solutions
- With 10% of the world's forests disappearing every decade, we face a massive "evidence gap" in providing the petabyte-scale satellite data required to prove deforestation-free supply chains for global markets.

Solution

- Space Intelligence utilized Microsoft Foundry & Azure Machine Learning to distinguish between biodiversity-rich ecosystems and disturbed forests with 99% accuracy.
- Microsoft Planetary Computer provides instant access to global environmental data and Microsoft Planetary Computer Pro serves as a private tiling engine to query high-resolution layers without downloading massive files.

Impact

- Global Scale at Speed: Successfully mapped over 3 billion hectares across 50+ countries in a single year—a feat that would have taken six years without the Microsoft Foundry and Planetary Computer ecosystem.



With Microsoft Foundry and Planetary Computer we've increased data production by 100 times, and our time for mapping has gone from six months to six weeks—a 75% reduction.”



**Space
Intelligence**

Planetary Computer with GenAI

From questions to geospatial discoveries with AI + MPC Pro

Solution Area
Data & AI

Industry
Civil Government

Situation

NASA collects over 100 petabytes of geospatial data from satellites, which are crucial for monitoring wildfires, tracking climate change, and supporting various industries. Navigating this vast and complex data requires technical expertise, limiting its accessibility to a small group of researchers and scientists. This inaccessibility extends beyond NASA, affecting sectors like agriculture, urban planning, and disaster response, where timely insights from spaceborne data could make a significant difference.

Solution

To address this challenge, NASA worked with Microsoft to develop Earth Copilot using Azure OpenAI Service and Microsoft Planetary Computer Pro. This AI-powered geospatial tool simplifies data access by allowing users to interact with NASA's data repository through plain language queries. With the data easily queryable with MPC Pro STAC APIs, users can ask questions like, "What was the impact of Hurricane Ian in Sanibel Island?" and the AI retrieves relevant datasets. The integration of cloud-based technologies like Azure OpenAI Service and MPC Pro with NASA VEDA makes it easier for users to search, discover, and analyze geospatial data.

Impact

The collaboration between NASA and Microsoft aligns with NASA's Open Science initiative, making scientific research more transparent, inclusive, and collaborative; it democratizes access to spaceborne data, enabling a broader range of users to engage with NASA's science data. Outside of NASA, other users can use VEDA to build real-world examples or make informed decisions like educators engaging students or policymakers working on critical issues like climate change and disaster preparedness.

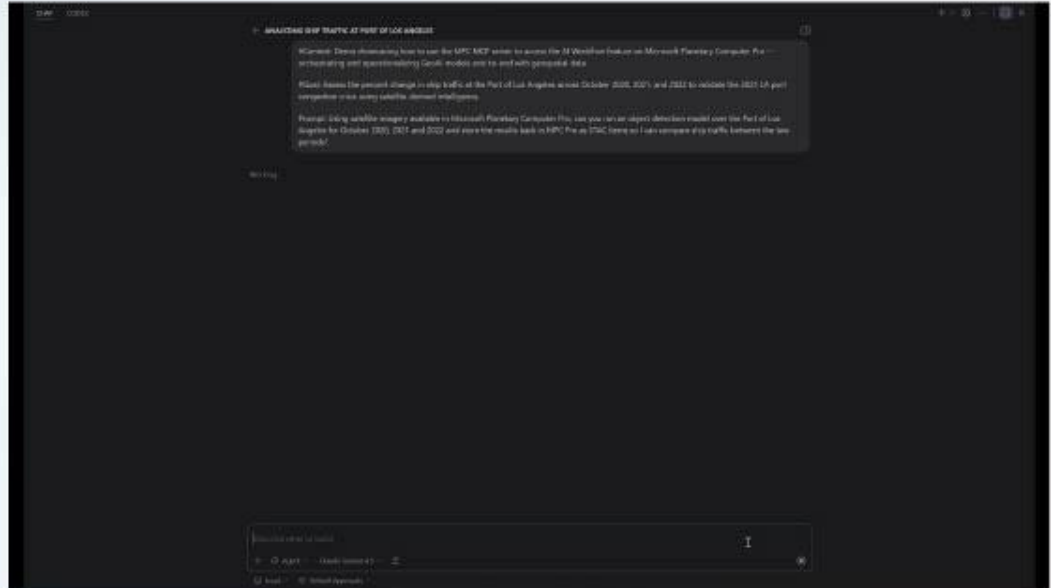


Earth CoPilot makes it possible for anyone to navigate all of [NASA Veda's] data using natural language for the first time."



Microsoft Planetary Computer | Model Context Protocol (MCP) Tools

1. **Available now on VS Code Marketplace** is an MCP Server-compatible service that exposes a set of tools for working with MPC using natural language prompts. Current tools include STAC search, Geo-Catalog management, data ingestion, and interactive map-based discovery.
2. **Video demo** highlights on-going work to integrate MCP Server with MPC Pro AI Workflow feature, enabling automation and agentic co-reasoning.



Microsoft Planetary Computer Pro MCP Tools - Visual Studio Marketplace

Join us on this journey.

Join Microsoft's geospatial community & help
shape the future of Planetary Computer to
better meet your goals.

Planetary Computer Pro for Enterprise

Microsoft Planetary Computer Pro — your portal to
next-generation geospatial intelligence and AI.

MPCPro@Microsoft.com

AI Demo:
HLS Analysis with GitHub Copilot
<https://github.com/microsoft/PlanetaryComputerExamples>

Resources:

Learn More:

- Planetary Computer: <https://planetarycomputer.microsoft.com/>
- Microsoft Planetary Computer Pro: <https://learn.microsoft.com/en-us/azure/planetary-computer/>
- HLS data with GitHub Copilot: <https://github.com/microsoft/HLS-PlanetaryComputer-Copilot>
- Navigate geospatial data with AI: <https://github.com/microsoft/Earth-Copilot>

Need Help?

- Planetary Computer: **MPCPro@Microsoft.com**
- Help or collaboration for Microsoft at NASA: **juanlopez@microsoft.com**

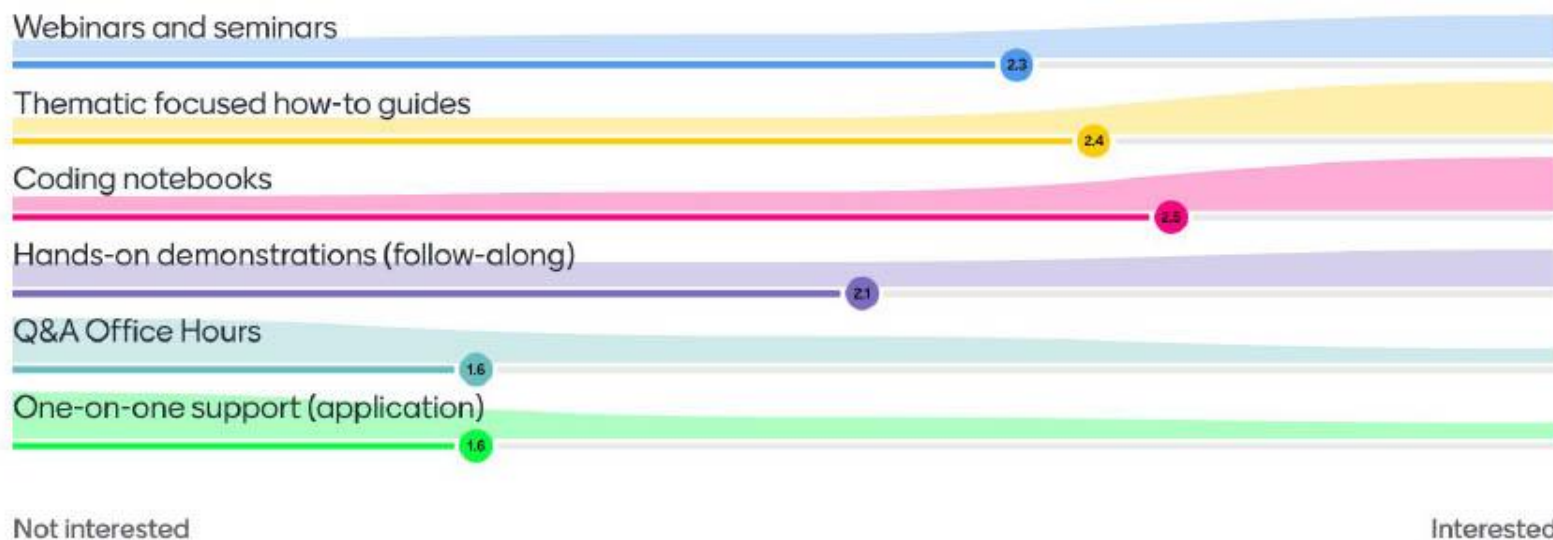
Q&A



Thank you



(1/2) Which type of support would you need to get started with HLS in Microsoft Planetary Computer?





(2/2) What barriers might prevent you from using HLS in Microsoft Planetary Computer tomorrow?

cost

I am yet to use

programming
challenges

Support for screen
readers

Learning the skills

No Barriers

Cost for large area
analysis

Tool cost



(2/2) What barriers might prevent you from using HLS in Microsoft Planetary Computer tomorrow?

Cost

cost

Cost

lack of skill

License Official
approval

Skills

Cost

Cost



(2/2) What barriers might prevent you from using HLS in Microsoft Planetary Computer tomorrow?

Las barreras principales son la posible falta de sincronización con el archivo oficial de la NASA, los costos de transferencia de datos (egress) si mi infraestructura no está en Azure, y la necesidad

Programming challenges

skills/training

Time needed to learn new platform

Security protocol

My understanding was limited but seems helpful and user friendly

lack of skill

skills/training



(2/2) What barriers might prevent you from using HLS in Microsoft Planetary Computer tomorrow?

Azure...

Computation power, is it
free

Cost

Cost

Skills/training

Security issues

Cost

Not free



(2/2) What barriers might prevent you from using HLS in Microsoft Planetary Computer tomorrow?

Cost

Cost

Cost of using "planetary
computer"?

Skills/training

skills/training

cost

programming
challenges



HLS in Various Environments

Questions from the Audience

What other **questions do the participants have** that we haven't answered yet?

What else could the presenters help with?

Participants, please post your questions in the Webex Q&A



cntd. Session 2: Accessing HLS in Various Environments

Goals:

- Demonstrate user-driven methods of discovery, download, visualization, and analysis of HLS productions.
- Discuss feedback about opportunities to explore using each environment.

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HLS within Planet Insights Platform





Planet Insights Platform

Create insights from daily Earth data



Cloud-hosted Imagery Platform

Access Planet and public imagery directly from the cloud - without building your own imagery management infrastructure



Configurable Analysis APIs

Create customized visualizations, spectral indices, and statistic calculations to extract insights from imagery in seconds



Imagery Streaming

Access full spatial resolution, bit depth, and spectral bands over the web after you order imagery



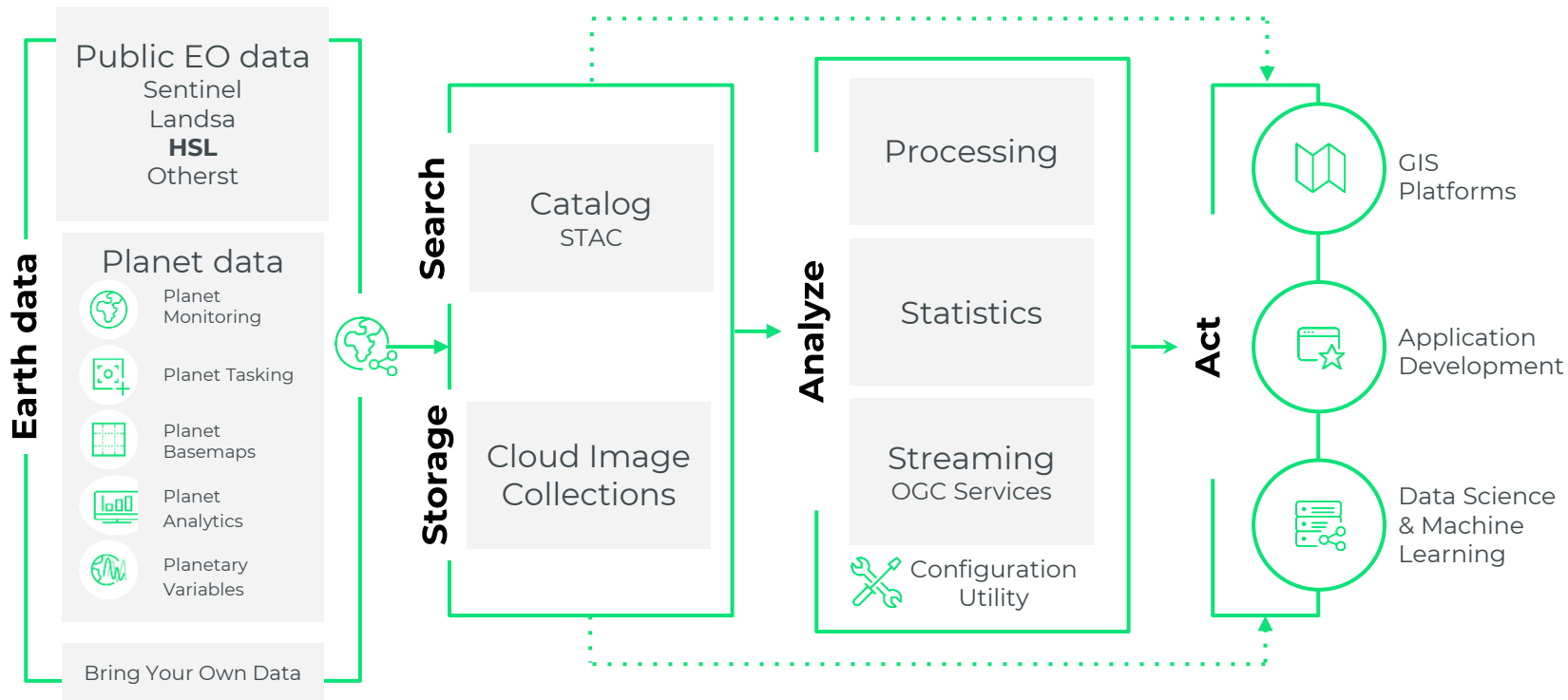
Integrate into any Workflow

Utilize serverless processing to integrate imagery into your custom application, data science workflow, or GIS through streaming APIs



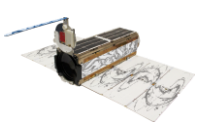
Planet Insights Platform

Access, analyze, and integrate Earth data into your workflows

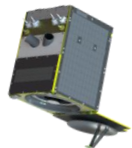


Access reliable datasets for diverse use-cases

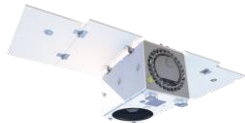
From raw imagery to analysis-ready derivatives



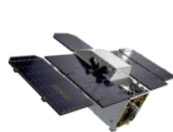
PLANETSCOPE



SKYSAT



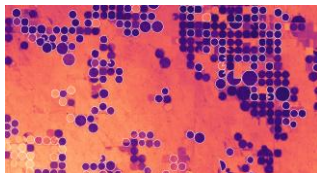
PELICAN



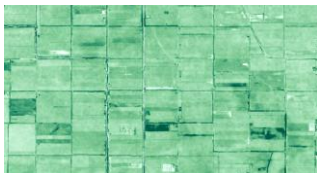
TANAGER



SOIL WATER
CONTENT



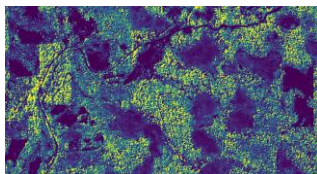
LAND SURFACE
TEMPERATURE



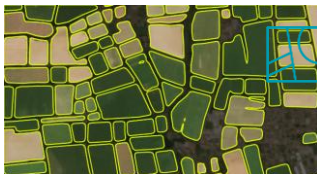
CROP
BIOMASS



FOREST
STRUCTURE



FOREST
CARBON



FIELD
BOUNDARIES



OPEN DATA



YOUR IMAGERY



Built with Open Standards

Designed for interoperability

- ✓ STAC metadata and search capabilities
- ✓ Register data in COG and ZARR formats from S3 object storage
- ✓ Build your own OGC services (WMS, WMTS)
- ✓ Native integrations with QGIS

Define your own analysis

Write custom evalscripts to analyze imagery however you need

Multitemporal Analysis. Combine observations to create composites or analyze change over time

Statistical Analysis. Calculate zonal statistics to summarize data over time.

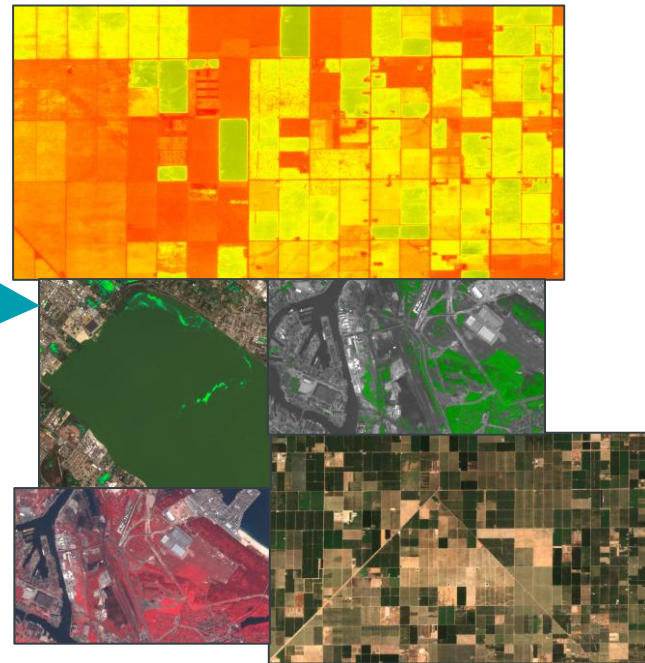
Data Fusion. Fuse multiple datasets together for advanced analysis.

Batch Analysis. Scale analysis to broad areas with asynchronous processing

Write your own functions

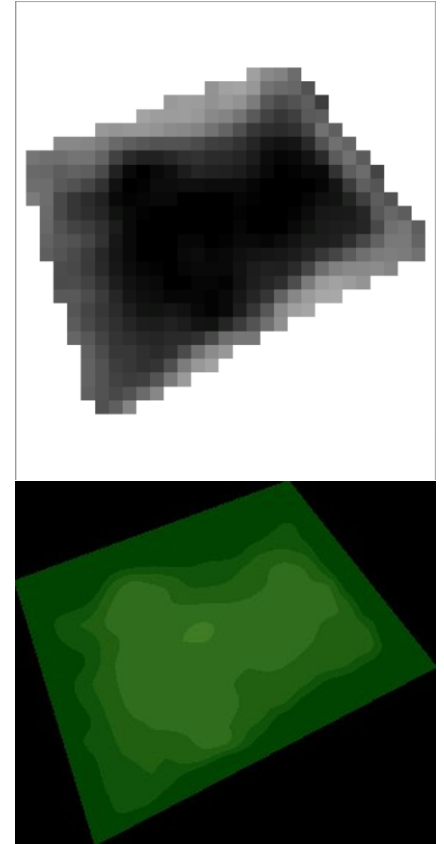
```
//PlanetScope NDRE
let ndre = index(nir, rededge);

return colorBlend(
  ndre,
  [0.0, 0.5, 1.0],
  [
    [1, 0, 0],
    [1, 1, 0],
    [0.1, 0.31, 0],
  ]
);
```



Real-time data analysis

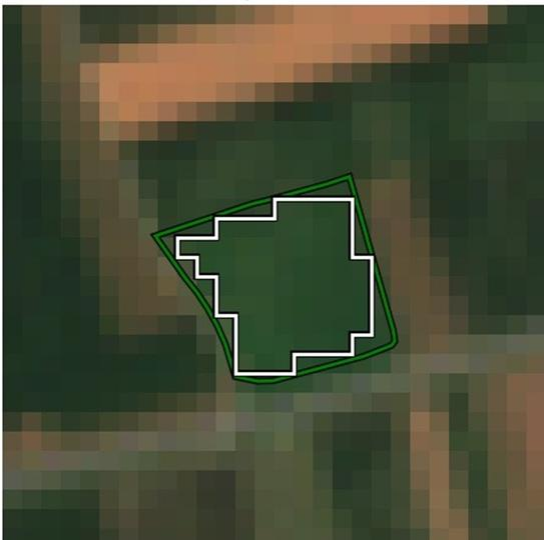
- Identify relevant scenes (sensor, time, AOI)
- Fetch data from S3
- Decode, reproject
- Interpolate
- Stitch, resolve overlaps
- (orthorectify, RTC)
- Execute processing script
- Encode and output



Statistical analysis

Time-series of data over a polygon

ID 4977343 | Date 2019-07-25



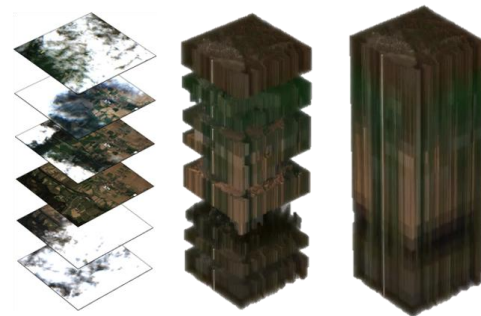
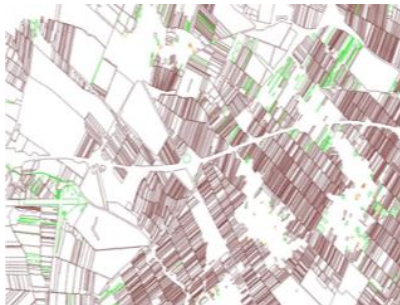
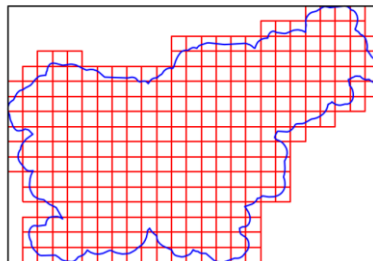
```
{'data': [{'interval': {'from': '2020-07-04T00:00:00Z',
  'to': '2020-07-05T00:00:00Z'},
  'outputs': {'output_B04': {'bands': {'B0': {'stats': {'min': 0.07970000058412552,
    'max': 0.30959999561309814,
    'mean': 0.11471141986778864,
    'stDev': 0.034298170449733226,
    'sampleCount': 3240,
    'noDataCount': 0,
    'percentiles': {'33.0': 0.09709999710321426,
      '50.0': 0.10360000282526016,
      '75.0': 0.11940000206232071,
      '90.0': 0.16040000319480896}},
    'histogram': {'bins': [{'lowEdge': 0.0, 'highEdge': 0.06, 'count': 0},
      {'lowEdge': 0.06, 'highEdge': 0.12, 'count': 2458},
      {'lowEdge': 0.12, 'highEdge': 0.18, 'count': 558},
      {'lowEdge': 0.18, 'highEdge': 0.24, 'count': 177},
      {'lowEdge': 0.24, 'highEdge': 0.3, 'count': 44}],
    'overflowCount': 0,
    'underflowCount': 3}}}}}],
  'status': 'OK'}
```



Large scale data analysis

Time-series of data over a polygon

```
evalscript = """
//VERSION=3
function setup() {
  return {
    input: [{bands: ["B04", "B08", "SCL", "dataMask"]}],
    output: [
      {id: "data", bands: 1},
      {id: "dataMask", bands: 1}]
    }
  }
function evaluatePixel(samples) {
  let ndvi = (samples.B08 - samples.B04)/(samples.B08 + samples.B04)
  var validNDVIMask = 1
  if (samples.B08 + samples.B04 == 0){
    validNDVIMask = 0
  }
  var noWaterMask = 1
  if (samples.SCL == 6 ){
    noWaterMask = 0
  }
  return {
    data: [ndvi],
    dataMask: [samples.dataMask * validNDVIMask * noWaterMask]
  }
}
"""
```

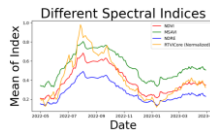


```
{
  "data": {
    "interval": {
      "from": "2020-01-01",
      "to": "2020-01-31",
      "outputs": {
        "data": {
          "bands": {
            "B04": {
              "mean": 0.43060772060075,
              "min": 0.424472554000026,
              "max": 0.432323232323232,
              "stddev": 0.05387409087421886,
              "sampleCount": 3806,
              "noDataCount": 1192333333
            },
            "B08": {
              "mean": 0.24534101010101,
              "min": 0.232323232323232,
              "max": 0.250000000000001,
              "stddev": 0.01082809431041,
              "sampleCount": 3806,
              "noDataCount": 1192333333
            }
          }
        },
        "dataMask": {
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          "min": 0.408210101010101,
          "max": 0.584831434000000,
          "stddev": 0.0576580770602254,
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        }
      }
    },
    "interval": {
      "from": "2020-02-01",
      "to": "2020-02-28",
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              "noDataCount": 1192333333
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              "min": 0.232323232323232,
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              "stddev": 0.01082809431041,
              "sampleCount": 3806,
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            }
          }
        },
        "dataMask": {
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          "noDataCount": 1192333333
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      }
    },
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          "bands": {
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              "max": 0.432323232323232,
              "stddev": 0.05387409087421886,
              "sampleCount": 3806,
              "noDataCount": 1192333333
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              "max": 0.250000000000001,
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          }
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              "mean": 0.43060772060075,
              "min": 0.424472554000026,
              "max": 0.432323232323232,
              "stddev": 0.05387409087421886,
              "sampleCount": 3806,
              "noDataCount": 1192333333
            },
            "B08": {
              "mean": 0.24534101010101,
              "min": 0.232323232323232,
              "max": 0.250000000000001,
              "stddev": 0.01082809431041,
              "sampleCount": 3806,
              "noDataCount": 1192333333
            }
          }
        },
        "dataMask": {
          "mean": 0.4236164721580026,
          "min": 0.408210101010101,
          "max": 0.584831434000000,
          "stddev": 0.0576580770602254,
          "sampleCount": 3806,
          "noDataCount": 1192333333
        }
      }
    }
  }
}
```

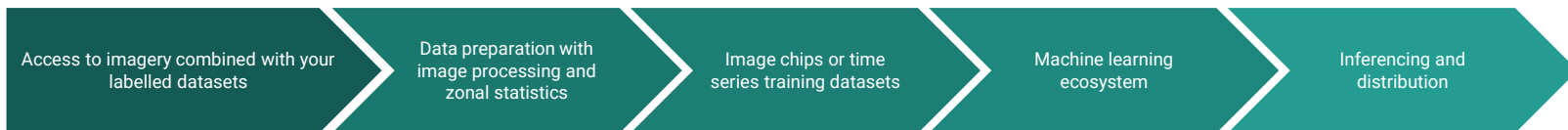
Analyze

Machine Learning

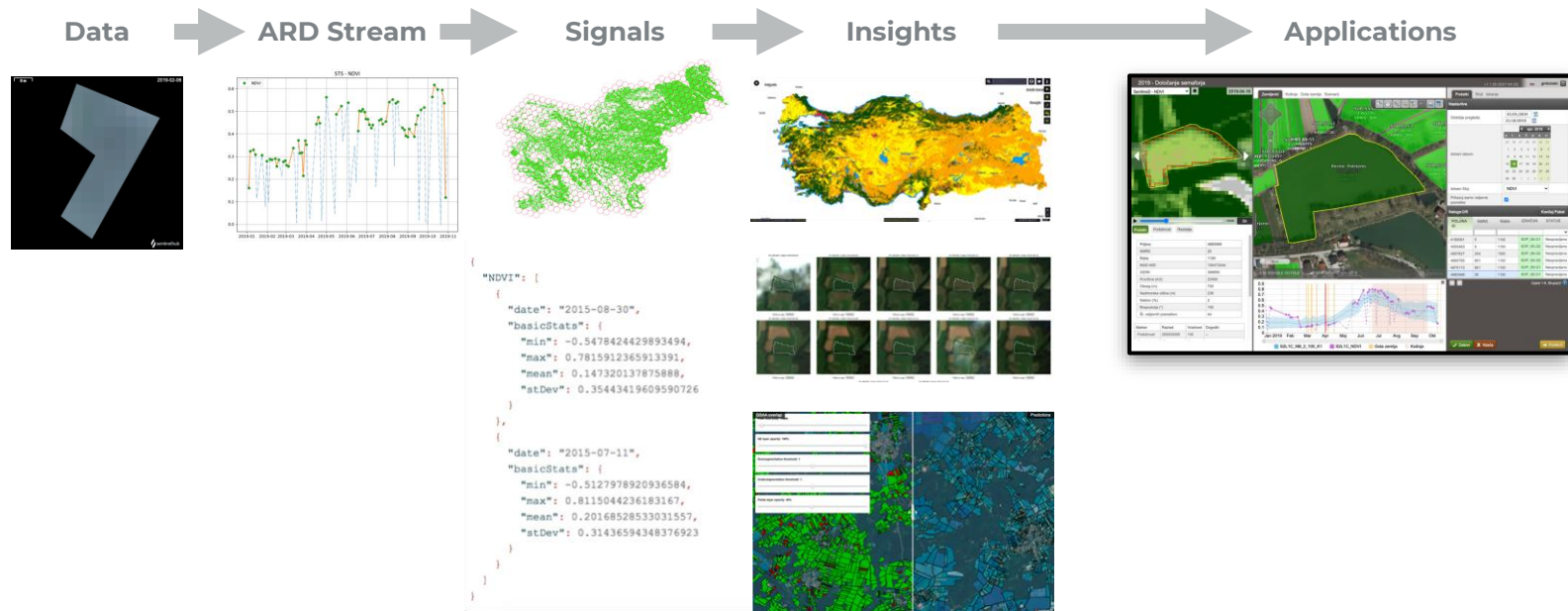
Data preparation and inferencing



Field ID	Date	NDVI	Label
0	2022-12-23	0.2	Bare Soil
1	2022-12-22	0.6	Green Cover
...	...	...	...
7000			



Extraction of insights



Onboarding of Harmonized Landsat Sentinel data



- STAC metadata



- COG in S3 object storage



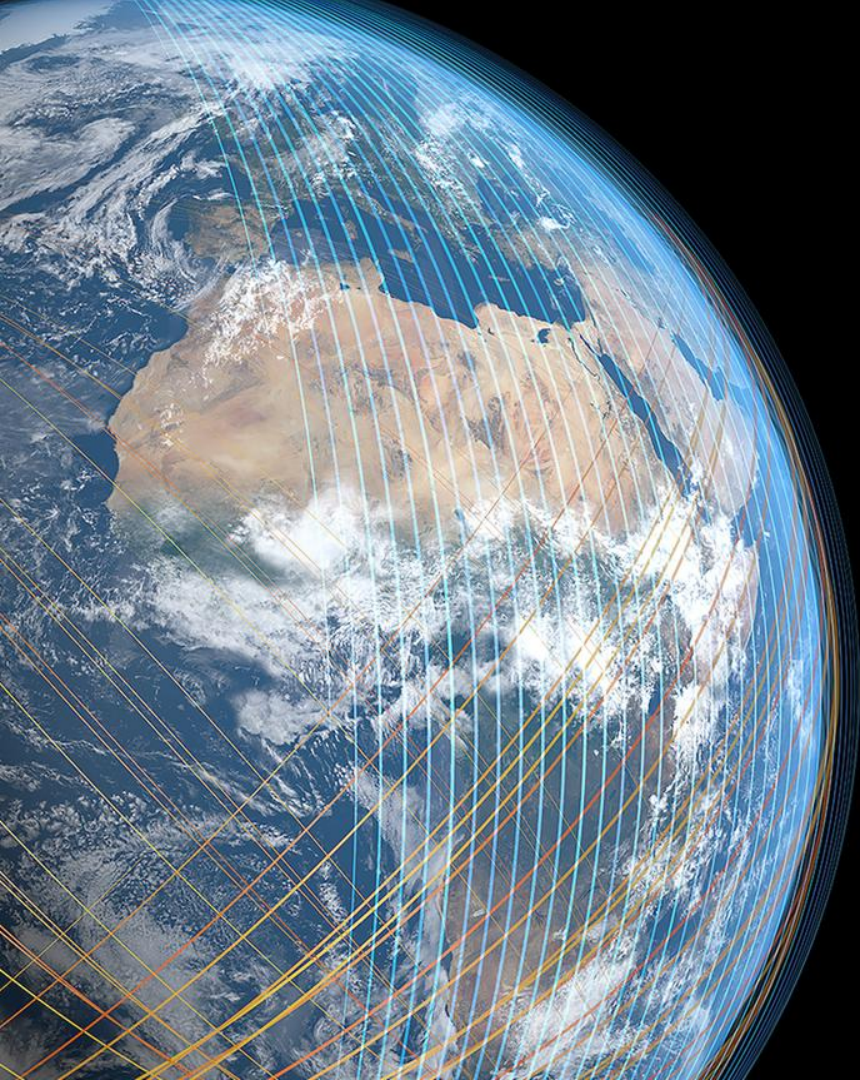
- Limited to us-west-2 region



- HLS-specific session topic



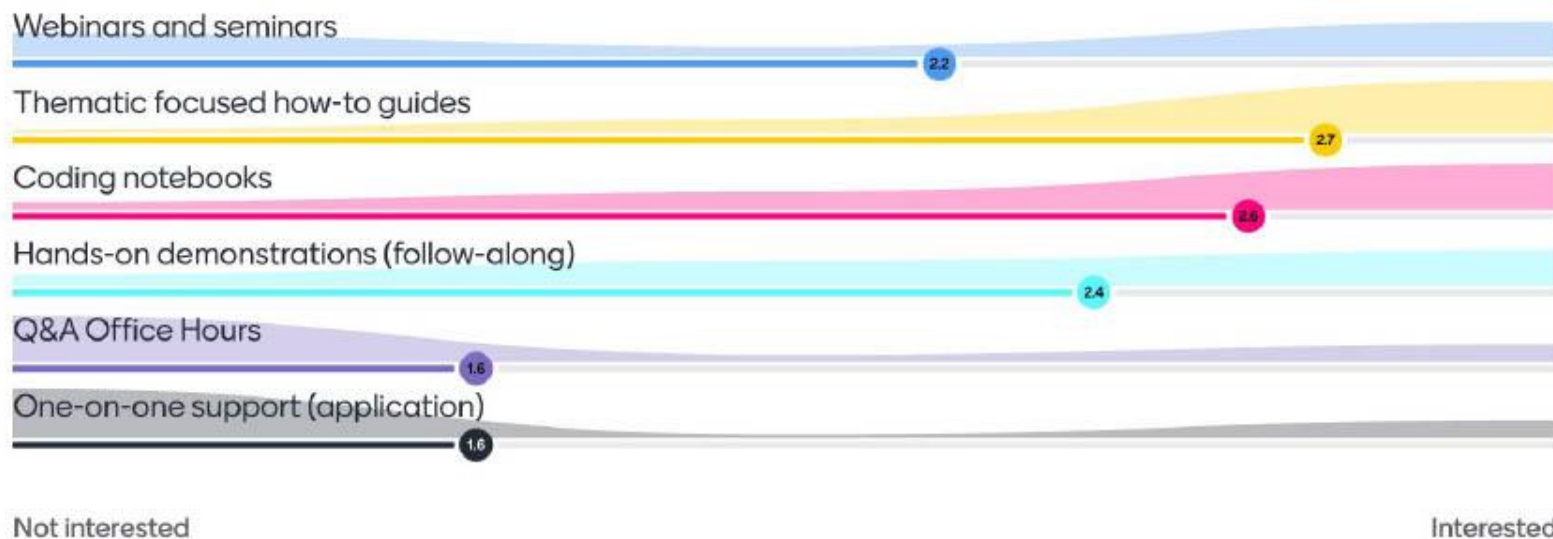
- Band inconsistency



Demo



(1/2) Which type of support would you need to get started with HLS in Planet?



(2/2) What barriers might prevent you from using HLS in Planet tomorrow?

lack of skills

cost

Cost

Programming
challenges

Costs

Cost

Cost

skills/training



(2/2) What barriers might prevent you from using HLS in Planet tomorrow?

Cost

skills/trainings

Cost of access to the
Planet Insights Platform

Information

Codt

Skills/training

Temporaly. Resolution

Cost



(2/2) What barriers might prevent you from using HLS in Planet tomorrow?

Cost

las barreras principales son la latencia de sincronización entre el archivo oficial y Planet, la gestión de credenciales S3 que expiran cada hora

Cost

Resolution

Lack of straight forward cost estimates (without contacting sales)



HLS in Various Environments

Questions from the Audience

What other **questions do the participants have** that we haven't answered yet?

What else could the presenters help with?

Participants, please post your questions in the Webex Q&A



cntd. Session 2: Accessing HLS in Various Environments

Goals:

- Demonstrate user-driven methods of discovery, download, visualization, and analysis of HLS productions.
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National Aeronautics and
Space Administration

Accessing and Analyzing HLS Data in Google Earth Engine (GEE)

Emil Cherrington
Kelsey Herndon

NASA EarthRISE
MSFC, Huntsville, AL

May 2026



Earth Resources for Industry and State Empowerment (EarthRISE)

NASA EarthRISE increases the efficiency and societal benefit of NASA Earth science through custom geospatial solutions and workforce development efforts that benefit communities and businesses.



EarthRISE Collaborators

State, territorial, local leaders

Tribal Nations

The private sector

Early career professionals

Fellow NASA teams



What We Do: Solution & Support



SHORTER-TERM, LAST-MILE SOLUTIONS

The interdisciplinary EarthRISE team is able to work with **partners** for targeted decisions and actions.



NASA EARTH INTEGRATION

EarthRISE **builds bridges** across NASA Earth to support Earth Action efficiency. If the best solution lies with another team, we help users make that connection.



LONGER-TERM CO-DEVELOPMENT

EarthRISE is experienced in **trust-building** and **co-developing user-centric solutions** that can be integrated into partner workflows and sustained long-term.



USER-DRIVEN INNOVATION

EarthRISE increases the utility of NASA data through innovative new tools, makes it easier to track NASA ESD impacts, and **integrates user feedback** into the next generation of gold standard NASA technology.



SCALING & REPLICATING

EarthRISE prioritizes **scalable and replicable** methods. Replicating and customizing trusted methods provides us with **agile, efficient responses** to user needs without sacrificing quality.



WORKFORCE DEVELOPMENT (USER READINESS & TRAINING)

EarthRISE leads workforce development, **supporting users to sustainably integrate solutions** into their own workflows.



Supporting Alabama's Mobile Bay



*Above: Fishing boat in Mobile Bay
(Credit: Billy Pope/USGS)*

*Below: Topobathymetric map of Mobile Bay
(Credit: USGS)*

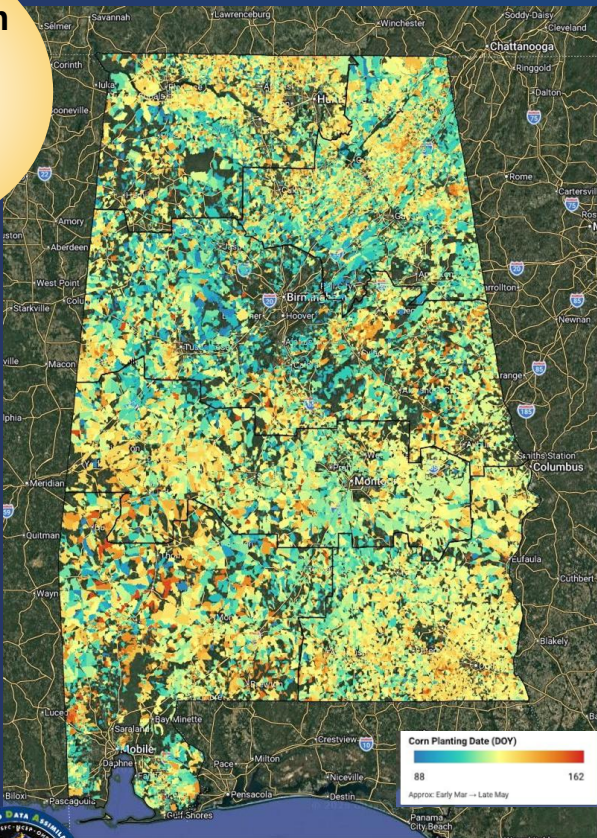
Mobile Bay is critical to Alabama's economy, including the \$98 billion dollar Port of Mobile and much of Alabama's seafood industry. The state wants to know if efforts to deepen shipping channels through dredging is causing turbidity, or water cloudiness, that could be disrupting seafood productivity and local ecosystems.

EarthRISE and the NASA Water Resources Program collaborated with the Alabama Water Institute, combining satellite imagery and buoy sensor data to determine that dredging could not solely account for increases in turbidity.

The team recommended combining the latest NASA satellite data with an increase in buoy and river sensors to more reliably track turbidity for informed management of the bay.

This is an example of EarthRISE's ability to add agile and collaborative capacity to other programs.

Long-Term
Co-Dev

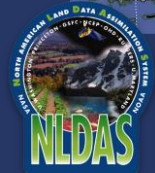


Protecting Alabama Farmers from Drought

The vast majority of Alabama's farmers rely on rainfall to water their crops. In 2024, drought destroyed over 30% of all crops, resulting in a loss of over \$300 million to farmers.

Alabama decision-makers partnered with NASA EarthRISE and other Earth Action programs (SPoRT, Water Resources Program) **to support \$50 million in state irrigation investments to prevent agricultural losses from drought.**

Connecting with other NASA Earth programs is core to EarthRISE's work. EarthRISE envisions scaling this project with the expertise of fellow Earth Action programs.



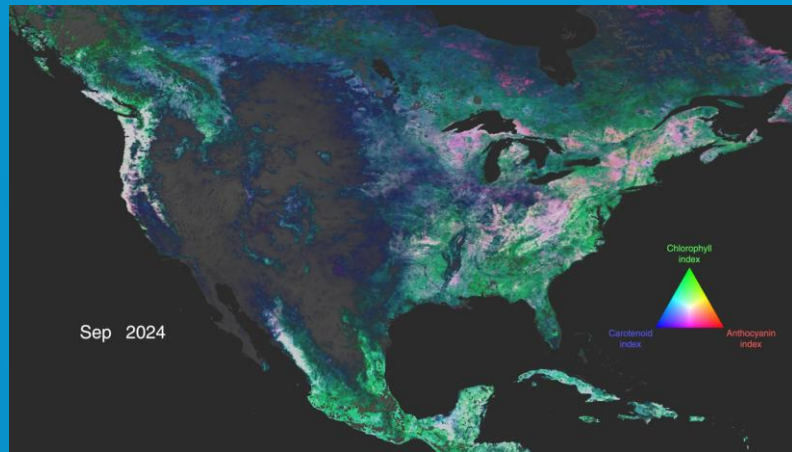


Getting Hyperspectral Data in the Hands of Decision-Makers

The Plankton, Aerosol, Cloud, and Ocean Ecosystem (PACE) Mission offers unprecedented levels of detailed hyperspectral data about land, water, and the atmosphere.

Hyperspectral data has strong demand from users to support precision agriculture, water quality monitoring, forestry, and fishery management, but many organizations don't have the technical expertise to take advantage of PACE.

In conjunction with the PACE Mission and early adopters, **EarthRISE is creating a cloud-based Hyperspectral Data Toolkit and facilitating user training to make this exciting new technology more accessible to decision-makers.**



A satellite image of a river delta, likely the Amazon, showing a complex network of blue water channels branching out into a green and brown landscape. A large, semi-transparent blue shape, resembling a stylized leaf or a map projection, is overlaid on the left side of the image. The text "Google Earth Engine (GEE)" is written in white on this blue background.

Google Earth Engine (GEE)



Google Earth Engine

Earth observation data and analytics platform



Data Catalog

More than 50 years of historical imagery and scientific data sets.

90PB and 1000+ curated geospatial datasets, including near-real-time satellite imagery.



Computation Platform

A powerful tool to analyze and visualize Earth data at scale.

Parallel processing for speed and scale, with machine learning built in.



Collaborative Ecosystem

91,000 sustainability-focused MAUs (and growing).

A rich user community focused on sustainability, social and environmental impact.



Google Cloud

source: Google (2025)

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Landsat

MODIS

Sentinel

Publisher

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Earth Engine Data Catalog

Page Summary

Earth Engine's public data catalog includes a variety of standard Earth science raster datasets. You can import these datasets into your script environment with a single click. You can also upload your own [raster data](#) or vector data for private use or sharing in your scripts.

Looking for another dataset not in Earth Engine yet? Let us know by [suggesting a dataset](#).

Filter list of datasets

2000 Greenland Mosaic - Greenland Ice Mapping Project (GIMP)

This dataset provides a complete 15 m resolution image mosaic of the Greenland ice sheet derived from Landsat 7 ETM+ and RADARSAT-1 SAR imagery from the years 1999 to 2002. The methods include a combination of image cloud masking, pan sharpening,

AG100: ASTER Global Emissivity Dataset 100-meter V003

The Advanced Spaceborne Thermal Emission and Reflection Radiometer Global Emissivity Database (ASTER-GEOD) was developed by the National Aeronautics and Space Administration's (NASA) Jet Propulsion Laboratory (JPL), California

AHN Netherlands 0.5m DEM, Interpolated

The AHN DEM is a 0.5m DEM covering the Netherlands. It was generated from LIDAR data taken in the spring between 2007 and 2012. It contains ground level samples with all other items above ground (such as buildings, bridges, trees etc.) removed.

Earth Engine Data Catalog

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Earth Engine Data Catalog

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HLS

Dynamic Surface Water Extent from Harmonized Landsat Sentinel-2 (DSWx-HLS) V1

This dataset contains Level-3 Dynamic OPERA surface water extent product version 1. The data are validated surface water extent observations beginning April 2023. Known issues and caveats on usage are described in the product documentation. The input

HLSL30: HLS-2 Landsat Operational Land Imager Surface Reflectance and TOA

The Harmonized Landsat Sentinel-2 (HLS) project provides consistent surface reflectance (SR) and top of atmosphere (TOA) brightness data from a virtual constellation of satellite sensors. The Operational Land Imager (OLI) is housed aboard the joint

HLSS30: HLS Sentinel-2 Multi-spectral Instrument Surface Reflectance Daily Global 30m

The Harmonized Landsat Sentinel-2 (HLS) project provides consistent surface reflectance data from the Operational Land Imager (OLI) aboard the joint NASA/USGS Landsat 8 satellite and the Multi-Spectral Instrument (MSI) aboard Europe's

Earth Engine Data Catalog
Search
/
English

HL30: HLS-2 Landsat Operational Land Imager Surface Reflectance and TOA Brightness Daily Global 30m

Page Summary



Dataset Availability
2013-04-11T00:00:00Z–2026-05-10T23:59:01Z

Dataset Producer
NASA LP DAAC

Earth Engine Snippet

```
ee.ImageCollection("NASA/HLS/HL30/v002")
```

Tags
landsat nasa
satellite-imagery sentinel
usgs

Description **Bands** Image Properties Terms of Use Citations DOIs

Bands

Pixel size: 30 meters (all bands)

Name	Units	Pixel Size	Description
B1		30 meters	Coastal Aerosol
B2		30 meters	Blue
B3		30 meters	Green
B4		30 meters	Red
B5		30 meters	NIR
B6		30 meters	SWIR1

Earth Engine Data Catalog
Search
/
English

HLSS30: HLS Sentinel-2 Multi-spectral Instrument Surface Reflectance Daily Global 30m

Page Summary



Dataset Availability
2015-11-28T00:00:00Z–2026-05-10T23:46:21Z

Dataset Producer
NASA LP DAAC

Earth Engine Snippet

```
ee.ImageCollection("NASA/HLS/HLSS30/v002")
```

Tags
landsat nasa
satellite-imagery sentinel
usgs

Description **Bands** Image Properties Terms of Use Citations DOIs

Bands

Pixel size: 30 meters (all bands)

Name	Units	Pixel Size	Description
B1		30 meters	Coastal Aerosol
B2		30 meters	Blue
B3		30 meters	Green
B4		30 meters	Red
B5		30 meters	Red-Edge 1
B6		30 meters	Red-Edge 2
B7		30 meters	Red-Edge 3

Demo Outline

1.

How to **access** HLS data in Google Earth Engine

2.

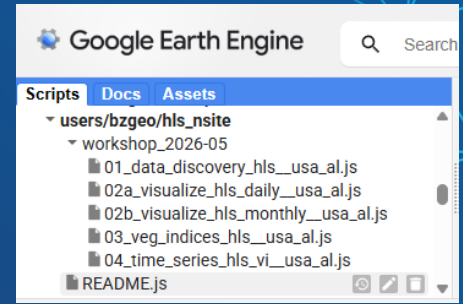
How to **visualize** HLS data in Google Earth Engine

3.

How to calculate **vegetation indices** in Google Earth Engine

4.

How to generate HLS **time series** data in GEE



Access the GEE repository here:



bit.ly/gee_repo_hls

Live Demo

bit.ly/gee_repo_hls



Feedback



bit.ly/hls_vi_feedback

cntd. *Session 2: Accessing HLS in Various Environments*

Goals:

- Demonstrate user-driven methods of discovery, download, visualization, and analysis of HLS productions.
- Discuss feedback about opportunities to explore using each environment.

Time (CDT)	Topics	Format	Speaker
1:15 - 2:15 (60 min)	AI-powered HLS Data Analysis with Microsoft Planetary Computer (+ Q&A)	Demo Presentation &  Interactive	Juan Carlos Lopez, Microsoft
2:15 - 3:15 (60 min)	HLS within Planet Insights Platform (+ Q&A)	Demo Presentation &  Interactive	Grega Milcinski, Planet
3:15 - 3:25 (10 min)	Break		
3:25 - 4:40 (75 min)	Demonstration of HLS data in Google Earth Engine & Retrieving HLS Data Locally from GEE with computePixels (+ Q&A)	Demo Presentation & Interactive 	Emil Cherrington and Kelsey Herndon, NASA EarthRISE & UAH & Paulo Arevalo, Boston University

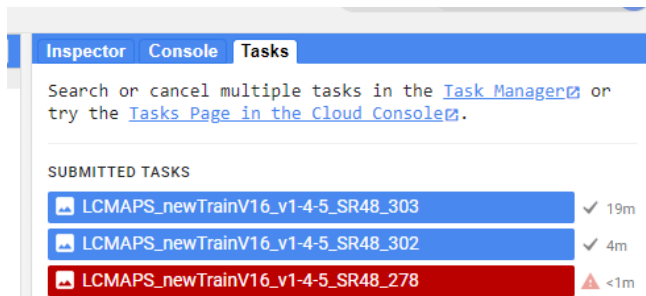


Retrieving HLS data locally from GEE (with computePixels)

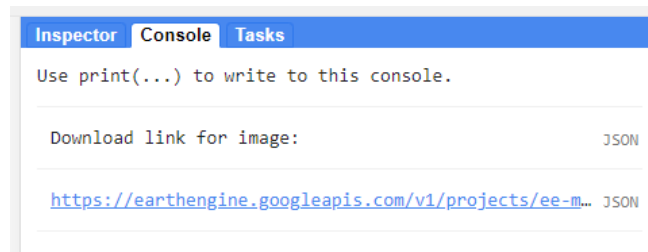
Paulo Arévalo
Boston University

We need to take the data out of GEE. What are our options?

1. Export



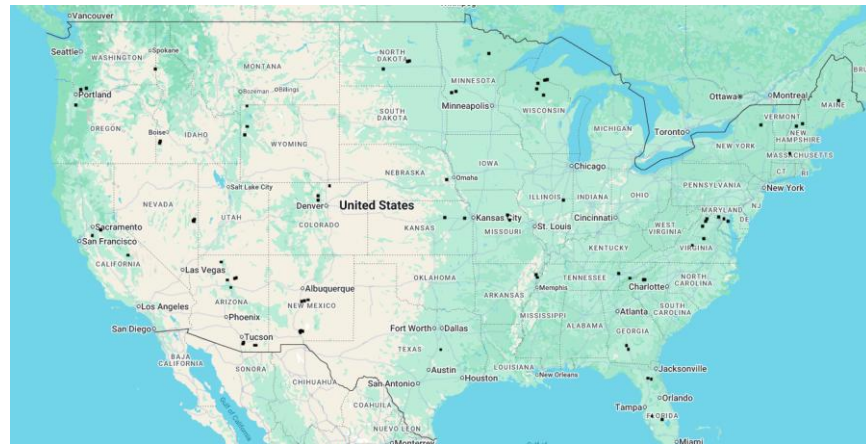
2. Get Download URL



3. computePixels



Optimal strategies



Export.image.toDrive



getDownloadURL



computePixels



Once and done

computePixels



Export.image.toDrive



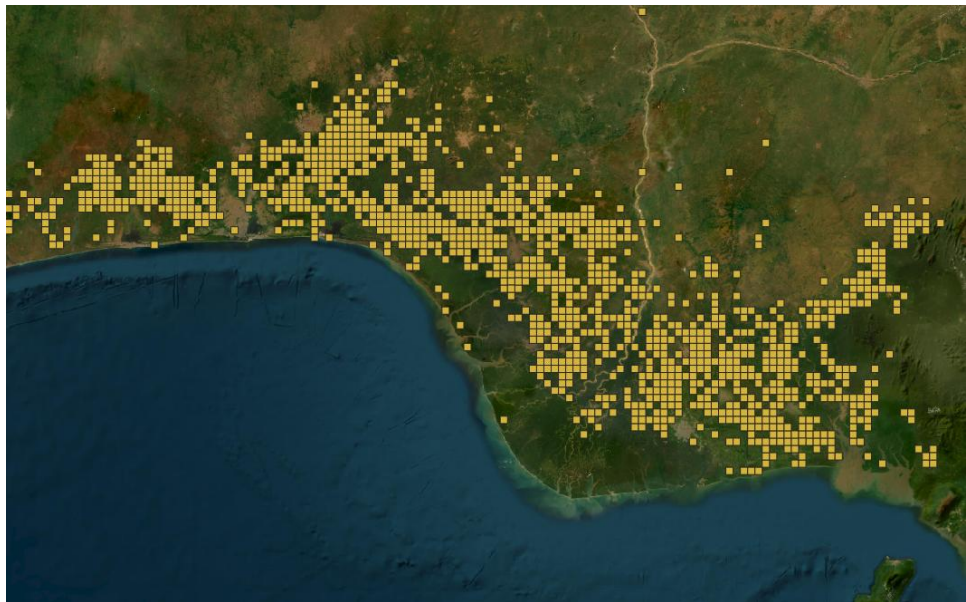
getDownloadURL



Automate / operational

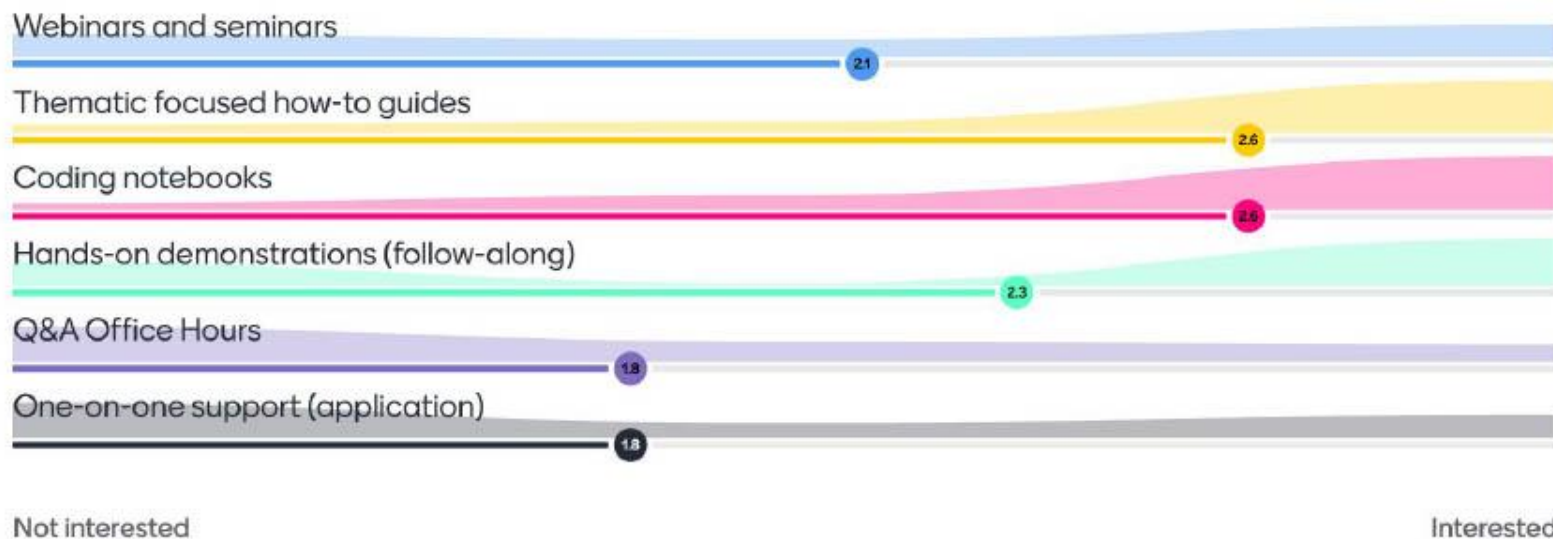
Our scenario

- Need to retrieve image patches (“chips”) to train a machine learning model (e.g. with Prithvi)
- We have the chip boundaries stored in feature collection
- The image patches will be monthly median HLS composites
- We want to automate the operation



Demo time!

(1/2) Which type of support would you need to get started with HLS in Google Earth Engine?





(2/2) What barriers might prevent you from using HLS in Google Earth Engine tomorrow?

Don't say cost!

Quota limits

skills/training

It's not free anymore

None

quotas limits

Coding, data filtering
and Analysis

Graduating from
university soon. Losing
education access :(



(2/2) What barriers might prevent you from using HLS in Google Earth Engine tomorrow?

computation timeout
and user memory
exceeded errors

It's not free anymore

time

quota limits

Quota limits

Coding

memory limits when
processing

Time and permissions



(2/2) What barriers might prevent you from using HLS in Google Earth Engine tomorrow?

I like all of my data
stored locally.

learning javascript

not free

Quota limits

Unintuitive error
mesages

javascript is annoying, need
to spend time learning to
use it in Python

community tier blues

permissions and
bandwidth



(2/2) What barriers might prevent you from using HLS in Google Earth Engine tomorrow?

permissions and
bandwidth

programming javascript



HLS in Various Environments

Questions from the Audience

What other **questions do the participants have** that we haven't answered yet?

What else could the presenters help with?

Participants, please post your questions in the Webex Q&A



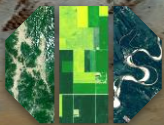
Wednesday May 13, 2026 starting at 4:40 pm CDT

Session 3: From Access to Impact, Feedback, & Next Steps

Goals:

- Discuss about how HLS could enable your applied work.
- Summarize worksop
- Identify post workshop opportunities for co-design and feedback.

Time (CDT)	Topics	Format	Speaker
4:40 - 4:50 (10 min)	How Increased Access Will Enable New Applications	Interactive 	Natasha Sadoff, NASA HQ
4:50 - 4:55 (5 min)	Summary, Feedback, Next Steps, & Closeout	Presentation & Interactive 	Stephanie Jiménez, NSITE & UAH



Getting Ready to Work with HLS Data

A Checklist

1. Understanding Data



Know what challenges different **HLS data** help solve



Navigate known uncertainties and **limitations** of the data



Envision valuable or **innovative** uses of HLS in **research and operations**

4. Analyzing Data



Choose appropriate **software** to visualize and **analyze** the data within your workflow needs



Understand uses for common or experimental **data manipulation**

2. Accessing Data



Choose an appropriate NASA or other platform **for your workflow**



Stay **updated** on functionalities and **improvements**



Continue to **learn** how to use **tools**

3. Handling Data



Choose appropriate **hardware** or Cloud space for data processing and storage



Review metadata and documentation for data formatting

5. Applying Knowledge



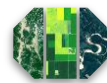
Conduct research or **professional use** of HLS data or derived information



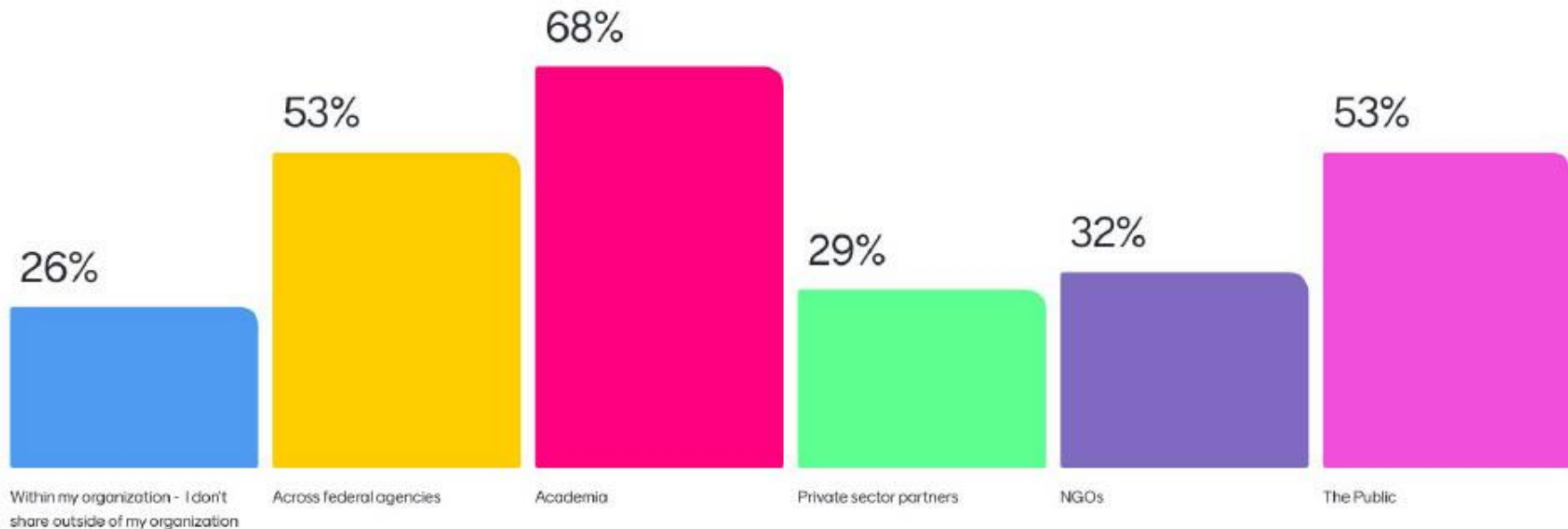
Share or publish **results**, products, analysis ready data with the remote sensing **community**



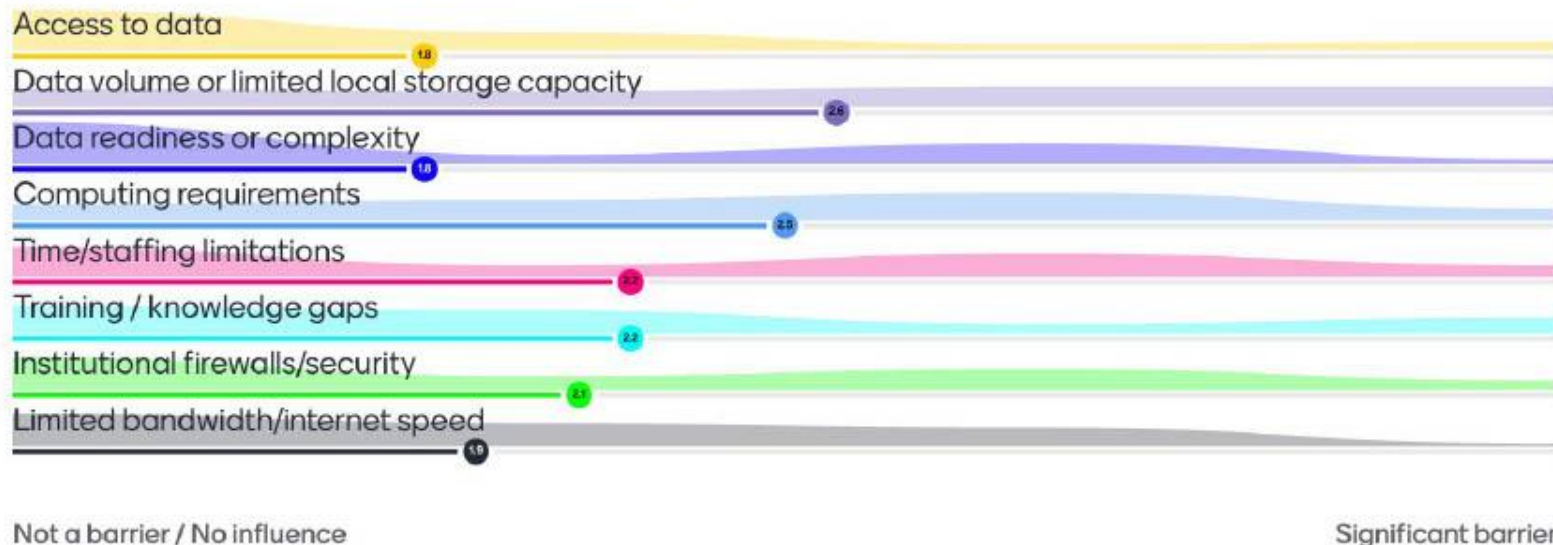
Provide trial based **feedback** on what worked or not



(1/3) Who is your end user, or who do/would you primarily share HLS-based information with?



(2/3) What are, or are likely to be, your biggest barriers to using HLS?





(3/3) What is your biggest takeaway from this workshop and how will you apply that takeaway in your work?

Code

Possibilities are almost
endless with HLS data.

HLS is an amazing
resource!

New resources

Inspiration

there are a lot of ways to
access HLS data

HLS is really useful for
more things

Knowledge and
reflection



(3/3) What is your biggest takeaway from this workshop and how will you apply that takeaway in your work?

Different platforms to access HLS

Need to explore different platforms and methods to access data. Currently use MODIS/VIIRS & want to move to HLS.

HLS is an amazing resource!

HLS imagery for GeoAI applications

That there is big interest in learning more

News resources

My biggest learning experience is the leap towards native cloud operations through the HLS ecosystem.

Lots of tools and platforms I hadn't thought about

(3/3) What is your biggest takeaway from this workshop and how will you apply that takeaway in your work?

Using large-scale historical data from Landsat and Sentinel for ecosystem transformation and how this intersects with land administration and management.

That there are many different ways to access, preview and interact with HLS data depending on needs.

Use HLS to analyse Indices

Best utilize power of HLS.

A lot of new resources and code

It was great to see all the different options for access.

i would like a similar 2 day event but specific to walking through either our work or a group example setting

HLS is a great data. All presentations yesterday and today are also amazing. Thanks all. I already have some ideas for my next projects.

(3/3) What is your biggest takeaway from this workshop and how will you apply that takeaway in your work?

new knowledge, a lot of tools to try

Usar productos armonizados para cuantificar cambios en territorios de áreas naturales protegidas

HLS is ready to be included into operational workflows

So many different uses for HLS

looking for more applications of the data

New indices apart from NDVI and commonly known ones

I don't feel that it meets my resolution requirements, but the tools are awesome.

HLS can leverage collaboration with partners



Day 2: Enabling Access to Impact

(3/3) What is your biggest takeaway from this workshop and how will you apply that takeaway in your work?

Acces des différentes
plateformes pour choisir
la plus adapter

The direction of the
technology.

Wednesday May 13, 2026 starting at 4:40 pm CDT

Session 3: From Access to Impact, Feedback, & Next Steps

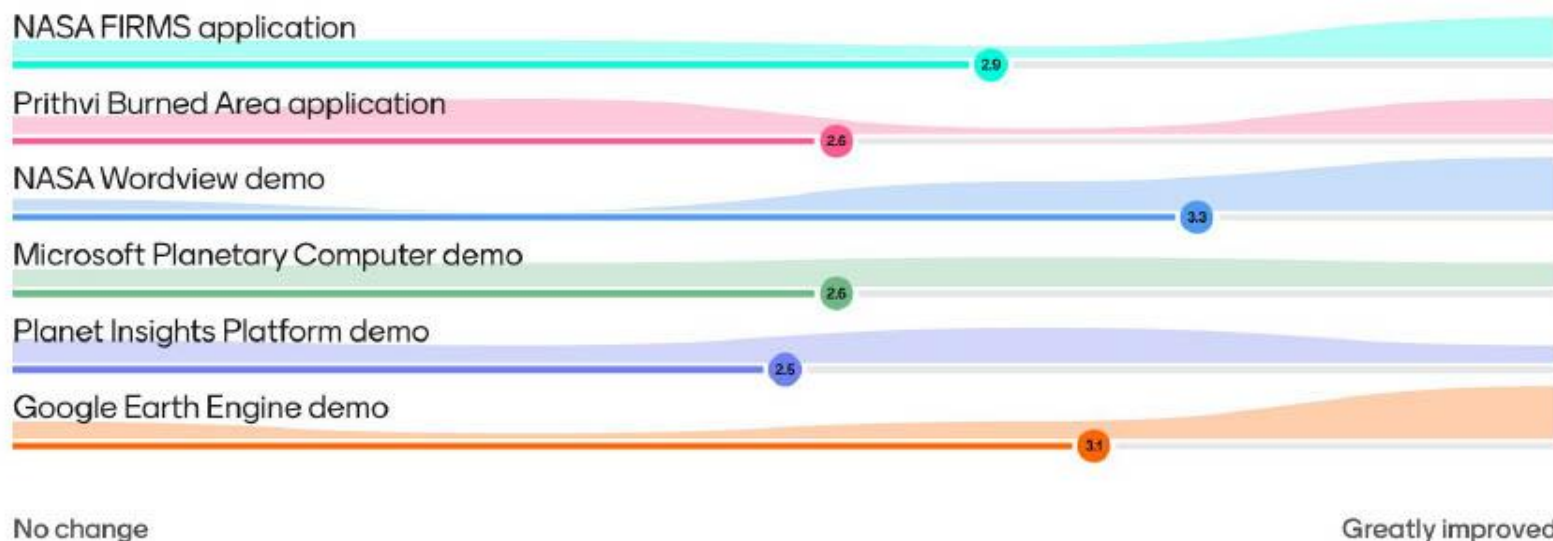
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(1/1) Rank how today's sessions influenced your access or further use of HLS



Demonstrating meeting community needs and expanding on functionalities and collaborations

Access & Distribution

Research, Analyses, & Application

Impact & Feedback

NSITE &
Solution
Teams

Microsoft
Planetary
Computer

Google
Earth
Engine

USDA
ARS

NASA
Worldview

NASA
LANCE /
FIRMS

ESRI
Suite

Planet
Insights
Platform

LP
DAAC

QGIS
Plugins

Prithvi
Foundation
Model
(ODSI)

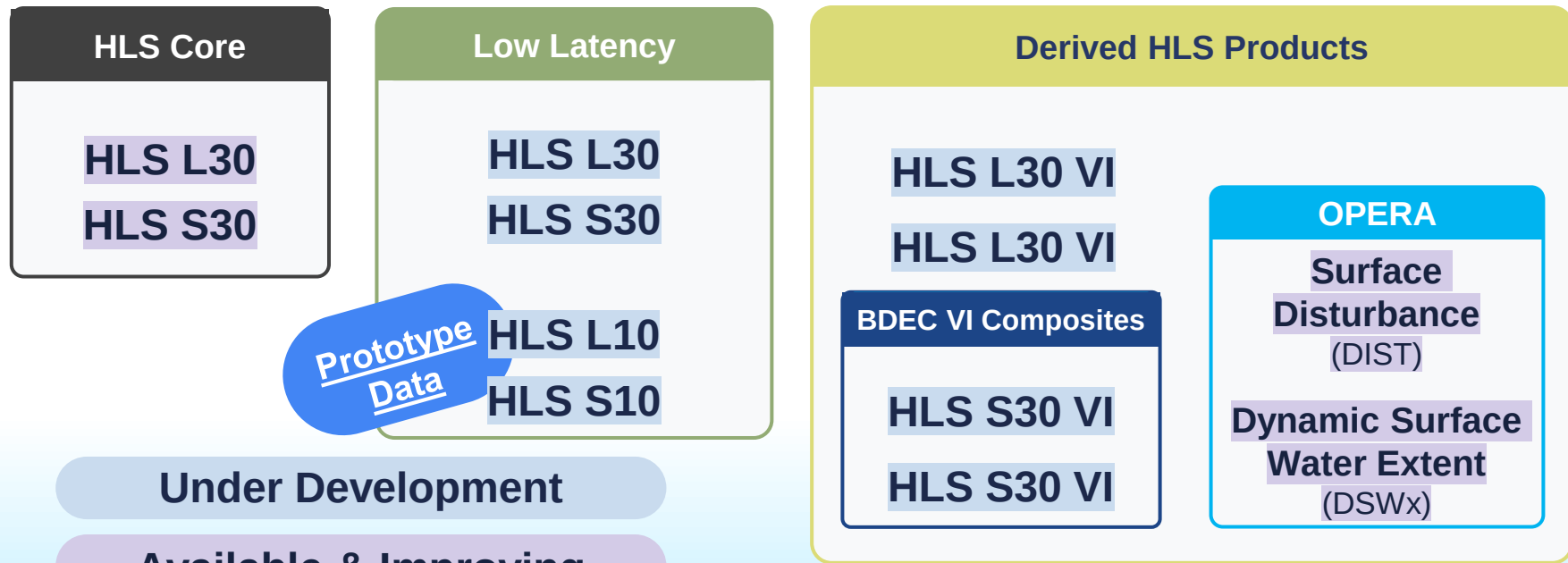


Post-Evaluation to help us guide follow-up activities based on your interests!

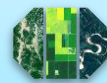
<https://forms.gle/ni2L3KYqoL8MYMpZ8>



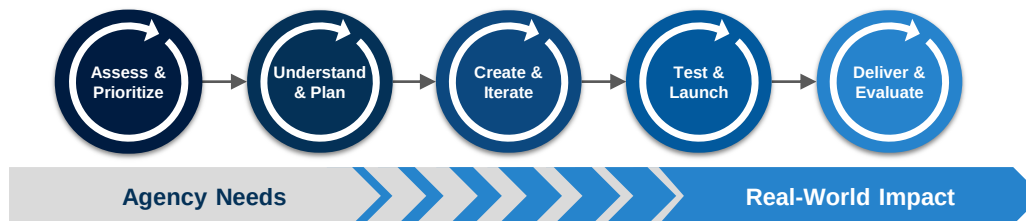
Summary of HLS Related Products



Products under development are open to iterative feedback and co-design with users.



Types of Co-design / Feedback Opportunities to Look Out For



Collaboration / Co-Design

Become more involved in the scientific process

- Beta testing **prototype** data ([link to 10 m prototype](#))
- Best testing data **system** (operational) versioning
- **Working groups** / Early Adopters Programs
- **Interviews**
- **Direct** communication



Feedback

Your quick feedback has influence

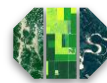
- Community **forums**
- **Interviews**
- **Questionnaires** / feedback discussions (e.g. live polls, open discussion, panels)



Knowledge sharing

Stay tuned in

- Technical trainings, hack-a-thons
- Scientific workshops, training, courses
- Documentation, metadata, ATBDs, user guides
- Journal publications
- White papers, fact sheets
- News or blog articles
- Conferences and events
- Newsletters



HLS Workshop Closeout

What to Look Out For:

Revisit the workshop

Review materials

- **Post Questionnaire**
- **Answered Q&A**
- **Transcripts**
- **Slides**
- **Recordings** uploaded to NASA Earth Youtube

Future activities as targeted support

based on your feedback

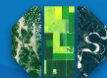
- More **workshops** about products or features
- Technical or scientific **trainings**
- **Beta-testing** opportunities or groups
- Showcasing your impactful applications (**interviews, articles**)
- Feedback **dialogue**

Co-design opportunities. . .

. . .are always open

- [HLS 10 m](#)
- HLS 30m VI **Composites**
- OPERA (DSWx & DIST)
- *and more!*

Operation: Access or analysis features developed on various environments and platforms



Stay Connected to HLS Developers and the Community

Information Exchange and Reciprocal Communication

Community Forums

[EarthData Forum](#) | [Google Earth Engine Developers Group](#) | [Planet Insights Platform \(community page\)](#) | [ESRI Living Atlas of the World community](#) | [Microsoft Planetary Computer \(discussions\)](#)



Stay Connected About HLS

[Sign-up](#) for occasional HLS related emails

Direct Contact

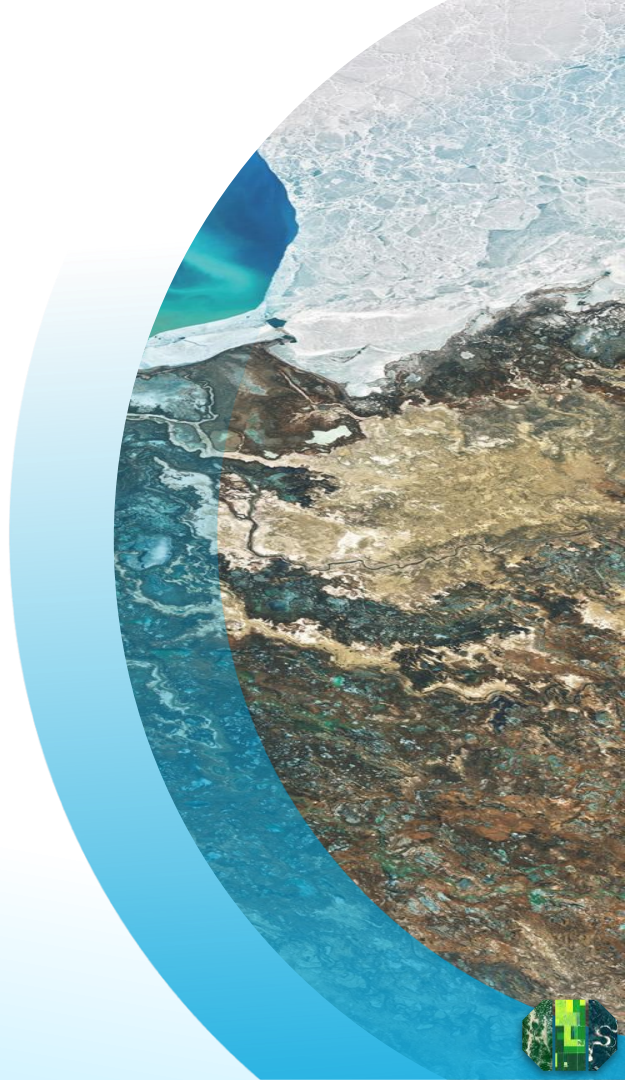
About HLS (meet the team) page on [Earthdata website](#)



NSITE Newsletter

[Sign-up](#) for NSITE's quarterly email newsletter

<https://bit.ly/4uBbuvz>





*Post-Evaluation
(~3 min)*

NASA Earth | *Thank you!*