Tuesday May 12, 2026 starting at 10 am CDT

Welcome to the

2026 Harmonized Landsat and Sentinel-2 (HLS) Workshop

Help us see where everyone is joining from. Locate yourself on the map.

35

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Tuesday May 12, 2026 starting at 10 am CDT

Session 1: History, Overview, & Future of HLS

Goals:

- Share NASA Earth Action and NSITE vision
- Summarize HLS history, current activities, and future developments

Time (CDT)	Topics	Format	Speaker
10:00 - 10:05 (5 min)	**Welcome & Logistics**	**Presentation**	**Stephanie Jiménez, NSITE & UAH**
10:05 - 10:20 (15 min)	Welcome from NASA HQ & SNWG Context	Presentation	Tom Wagner, NASA HQ & Natasha Sadoff, NASA HQ
10:20 - 11:20 (60 min)	HLS History and Developments, Science and Production Updates, and Future Outlooks	Presentation & Interactive 	Pontus Olofsson, NASA MSFC & NSITE & HLS Solution Implementation Team

NSITE Workshop Facilitation
Your MCs

Stephanie Jiménez

NSITE Stakeholder Engagement Liaison

NASA MSFC, ODSI, UAH

Rhea Bridgeland

NSITE Management Office Support

NASA MSFC, ODSI, UAH

BC Ray

NSITE Management Office Support

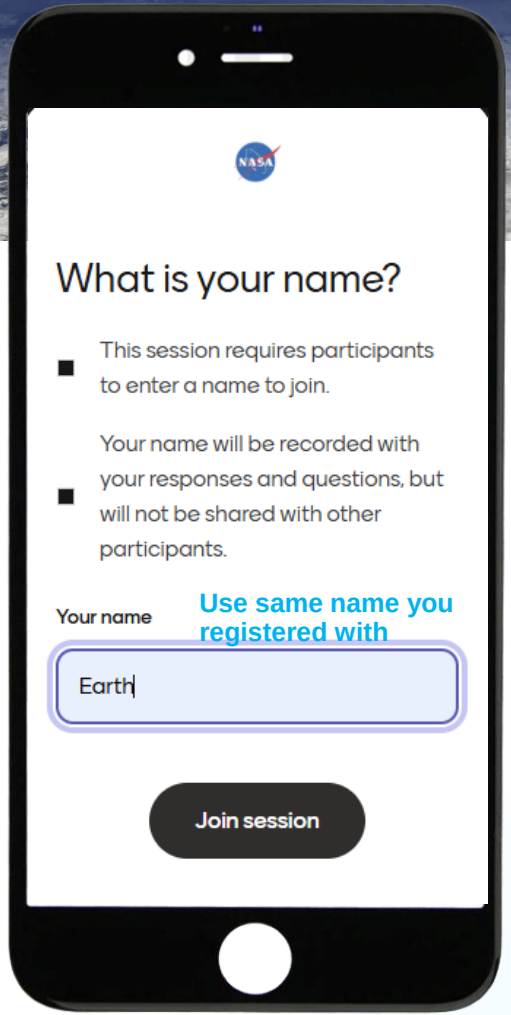
NASA MSFC, ODSI, UAH

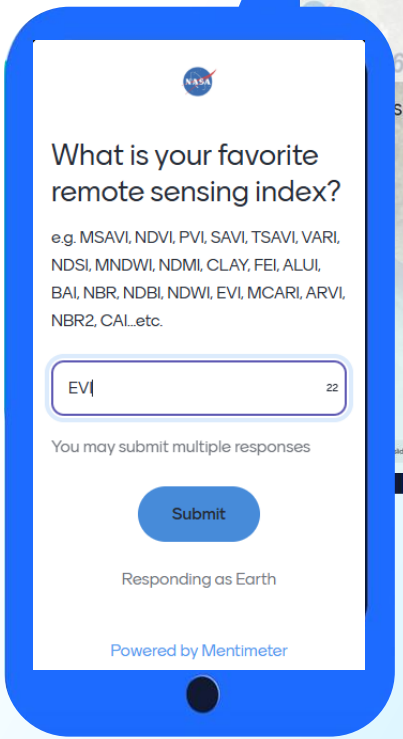
Essence Raphael

NSITE Management Office Support

NASA MSFC, ODSI, UAH

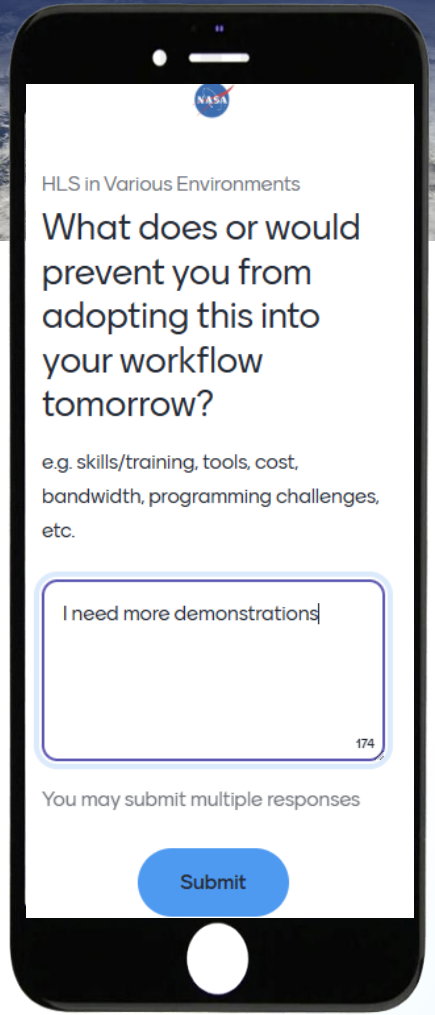
Mentimeter





Presenter's view

Interactive questions

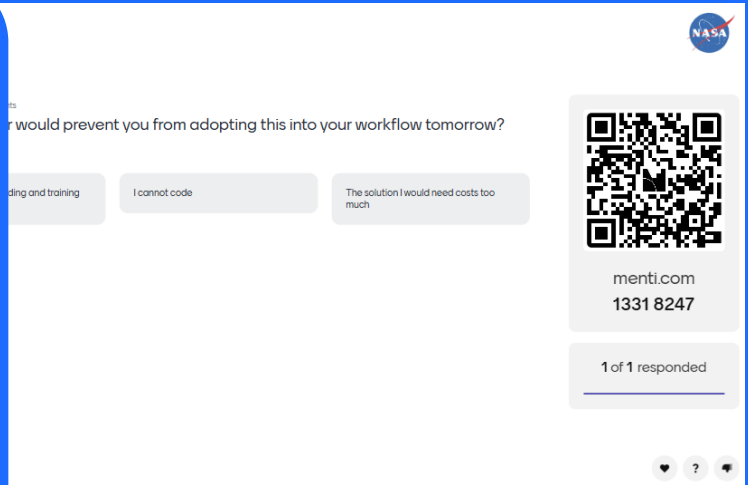


Mentimeter

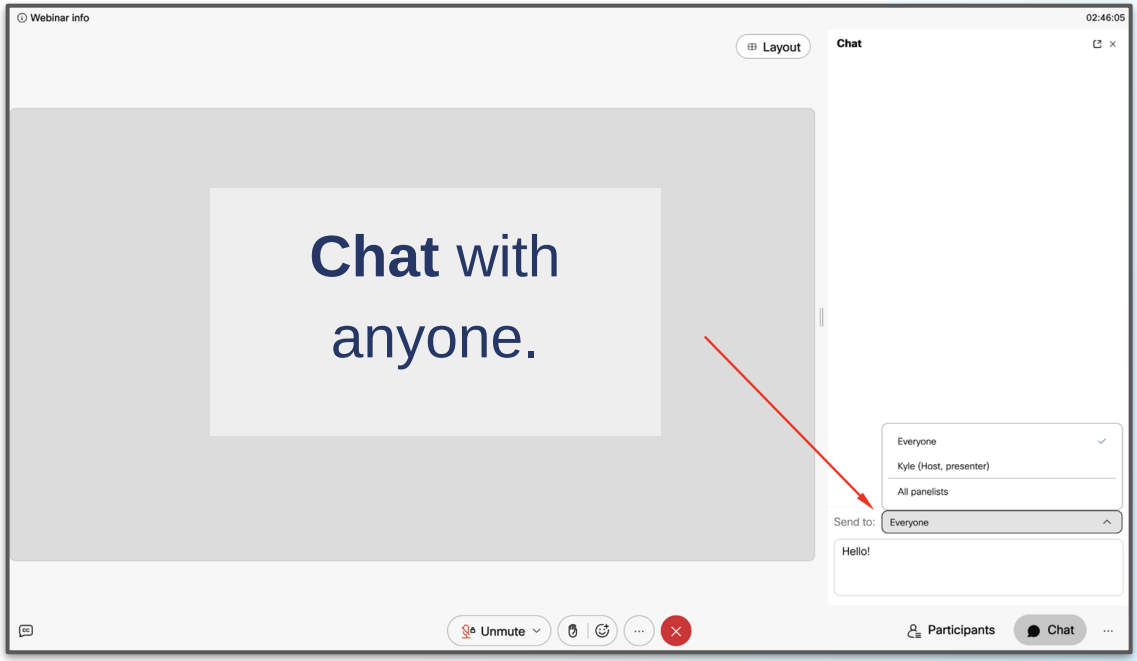
Presenter's slides

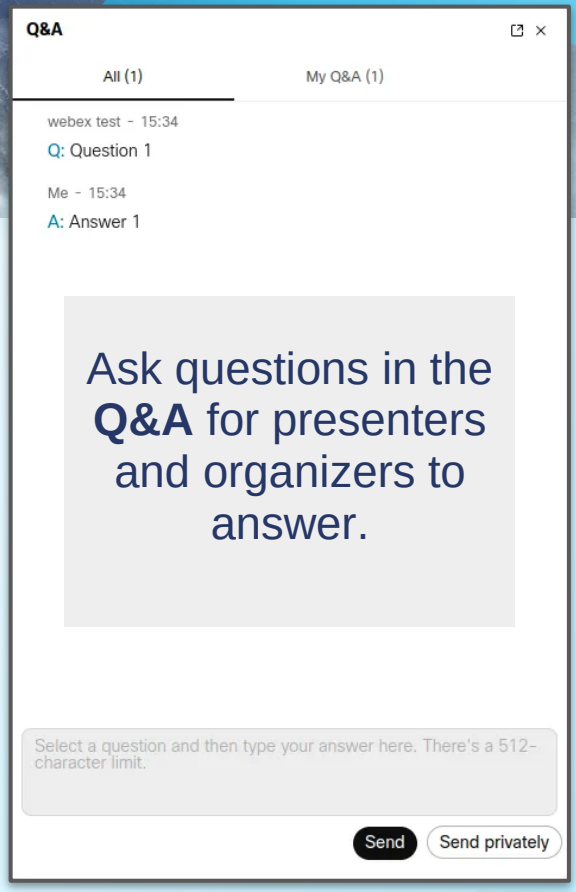
Questions for the Presenters

1. Do you have any advice or specific considerations (i.e. challenges you overcame, process tips) to share with participants looking to use HLS in a similar thematic area or application as you?
2. Your presentation mentioned why you chose HLS, how did you assess adopting HLS in your workflow compared to other datasets?
3. Would using either HLS 10m, HLS Vegetation Indices, or HLS Vegetation Index composites, something you'd be looking to



Open ended questions





On Webex: participant driven interaction

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Tell us about youself.

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Workshop Objectives

Communicate scientific updates and solicit feedback

Build HLS user community collaboration

Support real-world HLS adoption

Increase understanding of & innovation with HLS products

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What You'll Experience

Overview of HLS history, ongoing initiatives, and future work

Interactive Q&A and reflective discussions

Demonstrations of HLS access and analysis

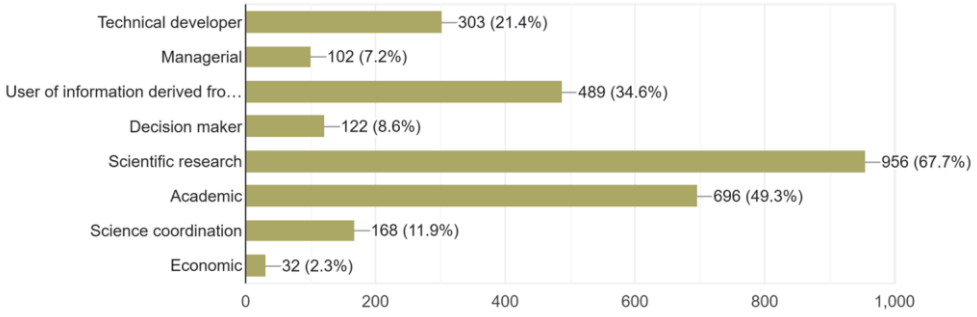
Examples of HLS in action across sectors

Just the beginning of more engagement amongst the HLS community

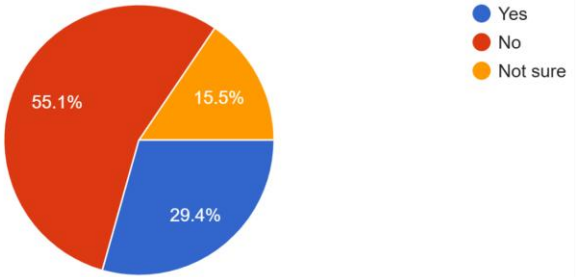
Attendees from public, government, NGO, private, and academic sectors are at all experience levels

Your diverse perspectives will highlight unique challenges and opportunities around HLS

What is your role (how it interacts with satellite remote sensing data). Check all that apply.
1,413 responses



Have you integrated an HLS product into a project or workflow?
1,413 responses



Your feedback helps us **improve products** and **develop** future community **activities** and **resources**

HLS Workshop Agenda, Slides, & Webpage

https://bit.ly/4t6xGN9

Visit the NSITE website to find more solutions

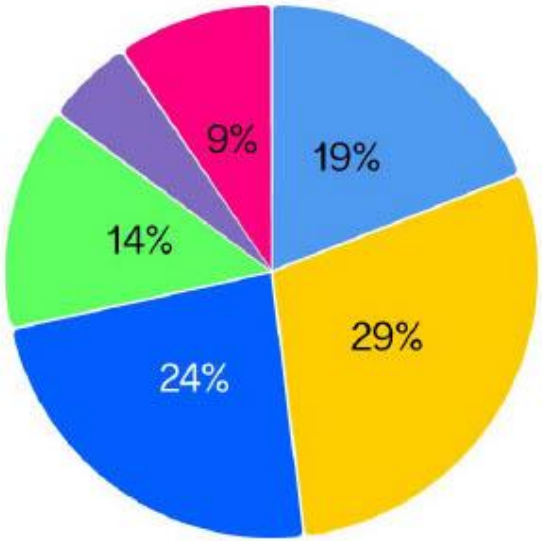
https://bit.ly/41NcHn9

Don't worry if we miss your question while live…

Each asset will be linked to the workshop page!

- Answered Q&A
- Transcripts
- Recordings
- Slides
- Questionnaire

(1/1) Which domains are most relevant to your work?



- 19% Agriculture
- 29% Land Cover or Change Detection
- 24% Hydrology and Water Resources
- 14% Disasters (fires, floods, etc.)
- 5% Atmospheric Studies
- 9% Other

Session 1: History, Overview and Future of HLS
Presenters

Tom Wagner

Associate Director for Earth Action

NASA Headquarters

Natasha Sadoff

Satellite Needs Program Manager

NASA Headquarters

Pontus Olofsson

NSITE Project Scientist

NASA MSFC

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National Aeronautics and Space Administration

HLS Workshop

NASA's Earth Science Division and Earth Action

Dr. Thomas Wagner
Associate Director for Earth Action
Earth Sciences Division, Science Mission Directorate
NASA HQ

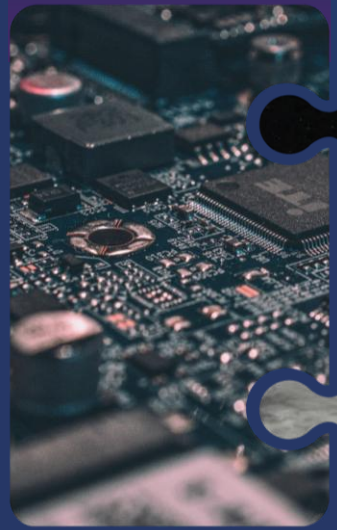
May 12, 2026


Earth science isn’t just something we all do.
It's built for people to use.


Reintroduced Beaver Area
No Beaver Area
Bough Creek Road

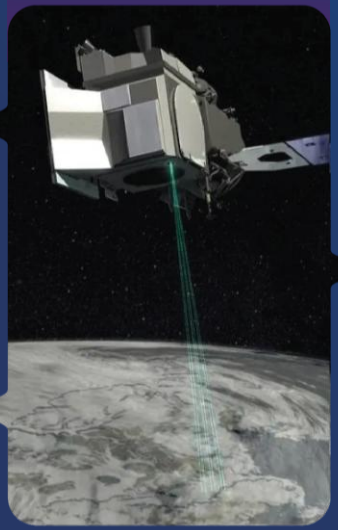
NASA's End-to-end
Earth System Science Capability

Technology



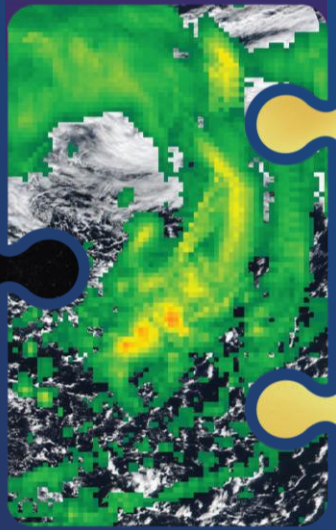
10 tech infusions/year

Flight



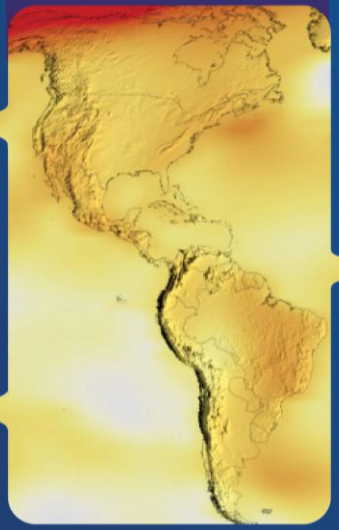
24 missions on orbit

Data and Modeling



Collect 160 TB/Day, serving 600 TB/Day, >10M users of world-class models

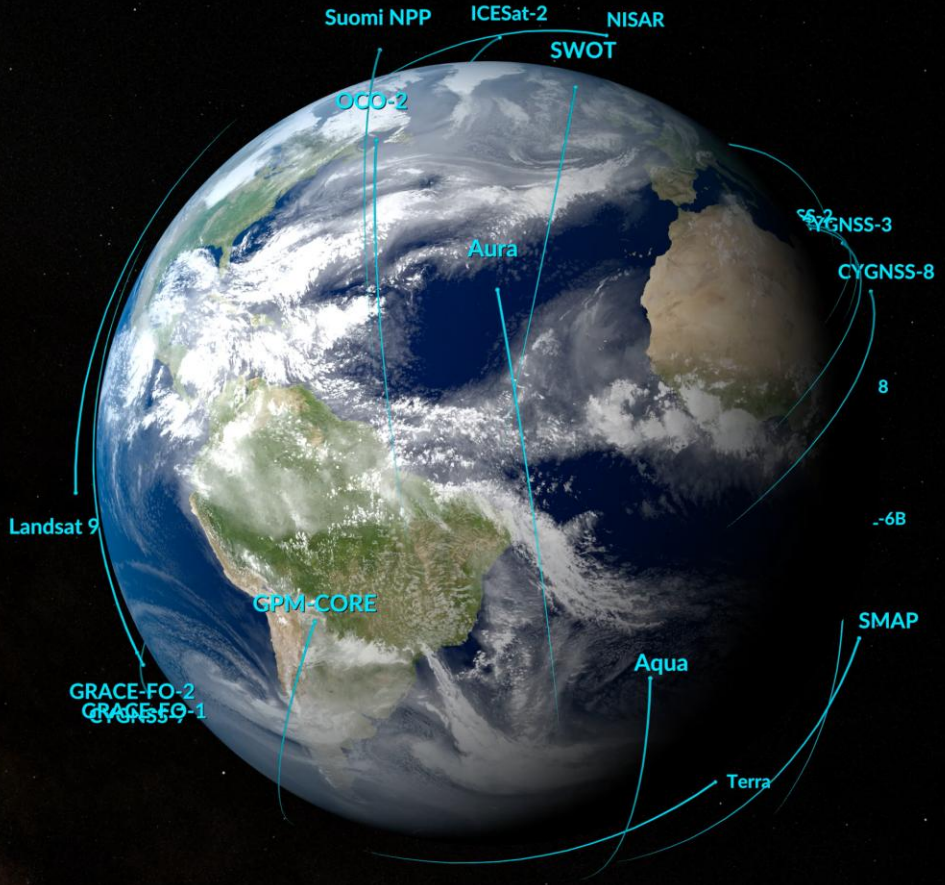
Research



Over 1,300 active research projects across the USA

Earth Action

Agriculture, Energy, Disasters, Wildfires, & more

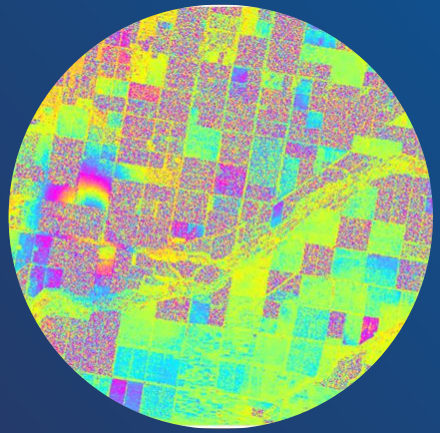
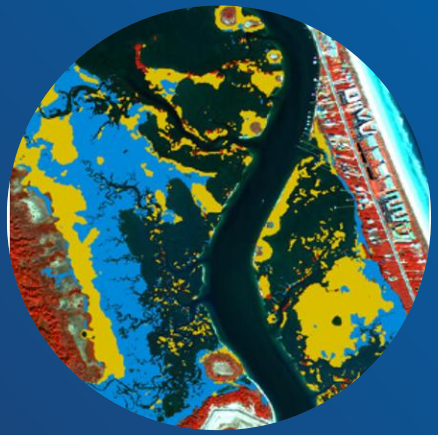

Suomi NPP
ICESat-2
NISAR
SWOT
OCO-2
Aura
CYGNSS-3
CYGNSS-8
8
-6B
Landsat 9
GPM-CORE
SMAP
Aqua
GRACE-FO-2
GRACE-FO-1
Terra
May 11 2026 16:48

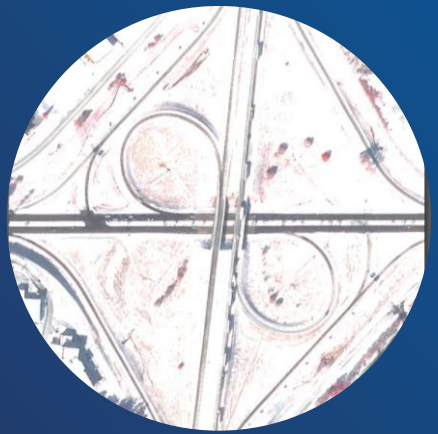
NASA's
Commercial Satellite Data Acquisition Program

NASA's missions provide the trusted, open foundation for understanding Earth.

Commercial satellite data extends that foundation by adding:

- Amazing data!
  - Higher resolution
  - Frequent observations
  - Unique and innovative instruments!
- Taskable observations
- Flexible, real-time, niche data services
- Cost-effective options for users



DATA ARCHIVE SUMMARY

End User Average Distribution Volume FY24
450.8 TB/Day

End User Distribution Files including from Cloud FY24
4.5 Billion

Total Archive Volume Including in Cloud (not incl. duplicates)
127.67 PB

Website Sessions (Google Analytics)
3.5 Million

Average Archive Growth
147.3 TB/Day*

EOSDIS Customer Satisfaction Index Score (2024)
78

Total Archive Volume in the Cloud
79 PB

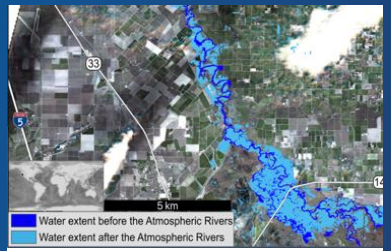
Total Number of Files Cataloged
Over 1.7 Billion

Unique Datasets
17,496
Collections in Cloud **5,595+**

Distinct Users of EOSDIS Data & Services (e.g., Worldview)
28.4 Million

*NISAR adds ~66TB day

Earth Action Portfolio
Core Competed Programs

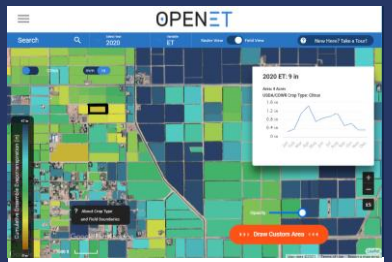


Application Innovation

- Core competed programs
- Water Resources, Health and Air Quality, Ecological Conservation
- Energy and Infrastructure

Disasters

- Disaster Response
- Competed Disaster program



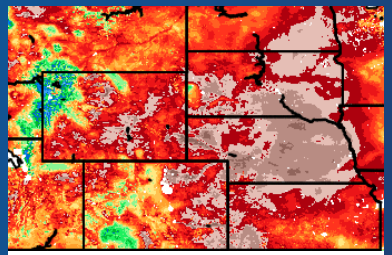
Agriculture

- Large consortia awards
- Domestic productivity
- International food security

Wildland Fires

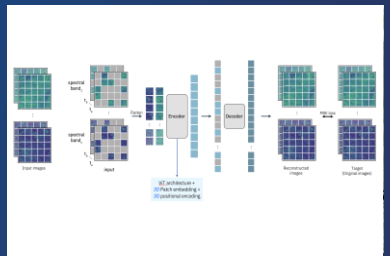
- Competed programs
- Field campaigns
- New technologies

Earth Action Portfolio
Tools and Services



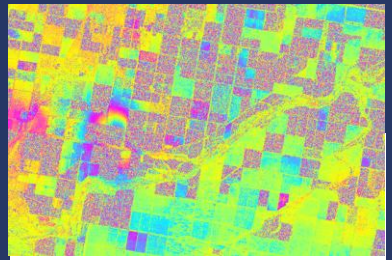
RSI Crosscutting

- ARSET, EarthRISE
- Earth Information Center
- Private Sector Engagement
- And more!



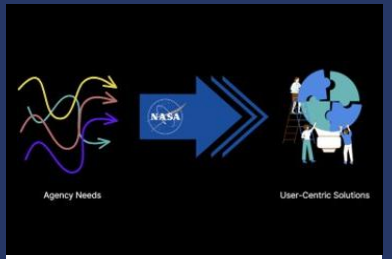
AI and Advanced Modeling Applications

- GeoAI to improve decision-making
- Other advanced modeling



Commercial Satellite Data Acquisition

- Data purchases to support ESD needs
- Sector support through product evals, cal-val, etc.



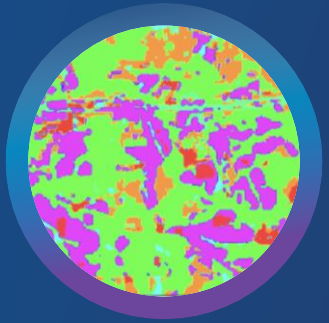
Interagency Satellite Observation Needs

- Assesses and fulfills needs identified by federal agencies
- Develops some of NASA's most used data products

Earth Action **Connects**

Drive U.S. Economic Growth

Help American businesses use Earth data to grow and compete, training workers, decision-makers, and turning data into real-world solutions.



Accelerate AI Use

Widen access to Earth information and scale-up the impact of using AI for Earth applications.

Equip Local Leaders to Act

Deliver trusted data and tools to state, local, tribal, and federal partners to increase resilience, security, and prosperity.

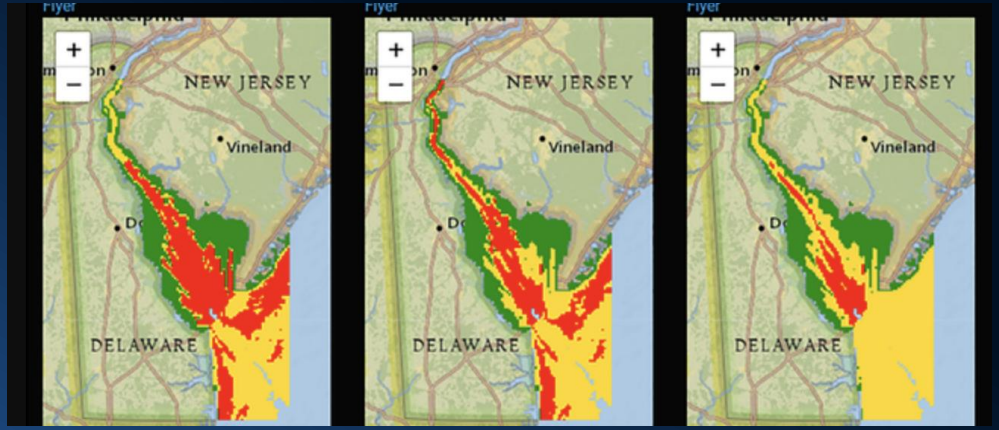
Strengthen American Resilience

Strengthen American resilience to hazards such as fires, floods, drought, heat, and health threats.

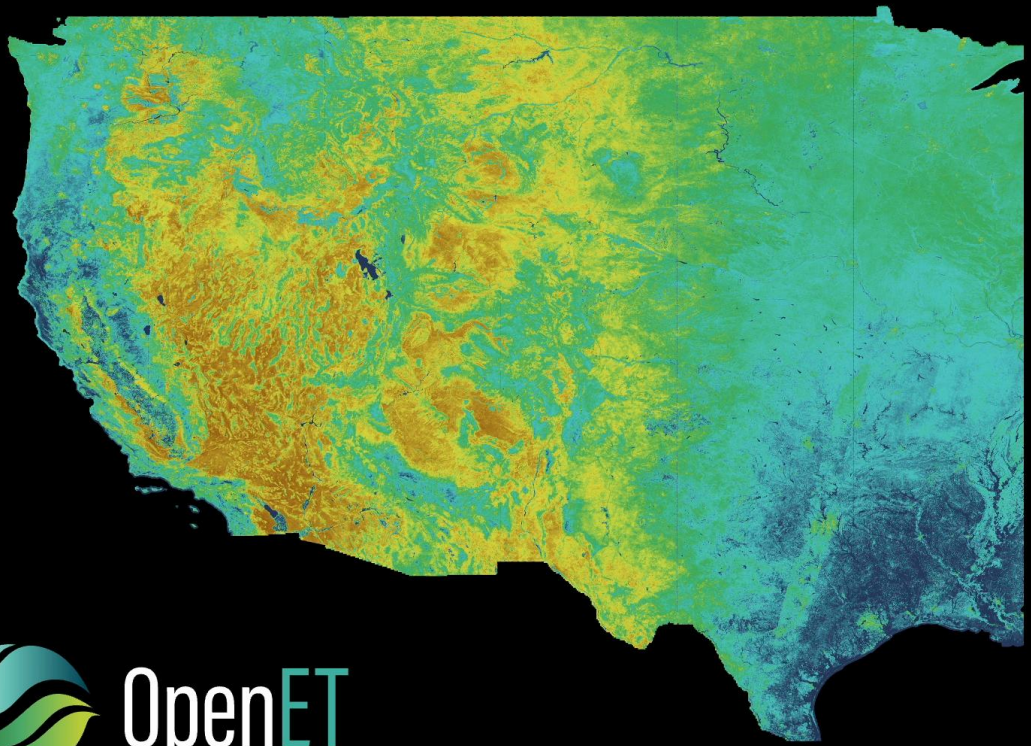
Fish Prediction Tool Reduces Bycatch, Streamlines Permitting

- Fishing fleets need guidance to avoid risks from catching fish they don't want, can't keep, and could damage their gear. One example is the Atlantic sturgeon, which is endangered.
- Scientists used NASA data on ocean temperature, depth, and color to build a forecast tool showing the likely location and distribution of sturgeon.
- State agencies in DE, NY, and SC, as well as NOAA, are using the tool to streamline permitting and aid conservation. (NJ and GA may add it, too.)
- New data from NASA's PACE satellite will make that tool more precise and allow fishery scientists to expand it to other species.
- Satellites give us the best tool to precisely and globally track marine life in ways that save the American fishing industry time and money and make it easier to sustainably manage fisheries.

Atlantic sturgeon, which can grow to 14-16 feet and 800 pounds, can cause serious damage to nets and gear and delays for fishermen.



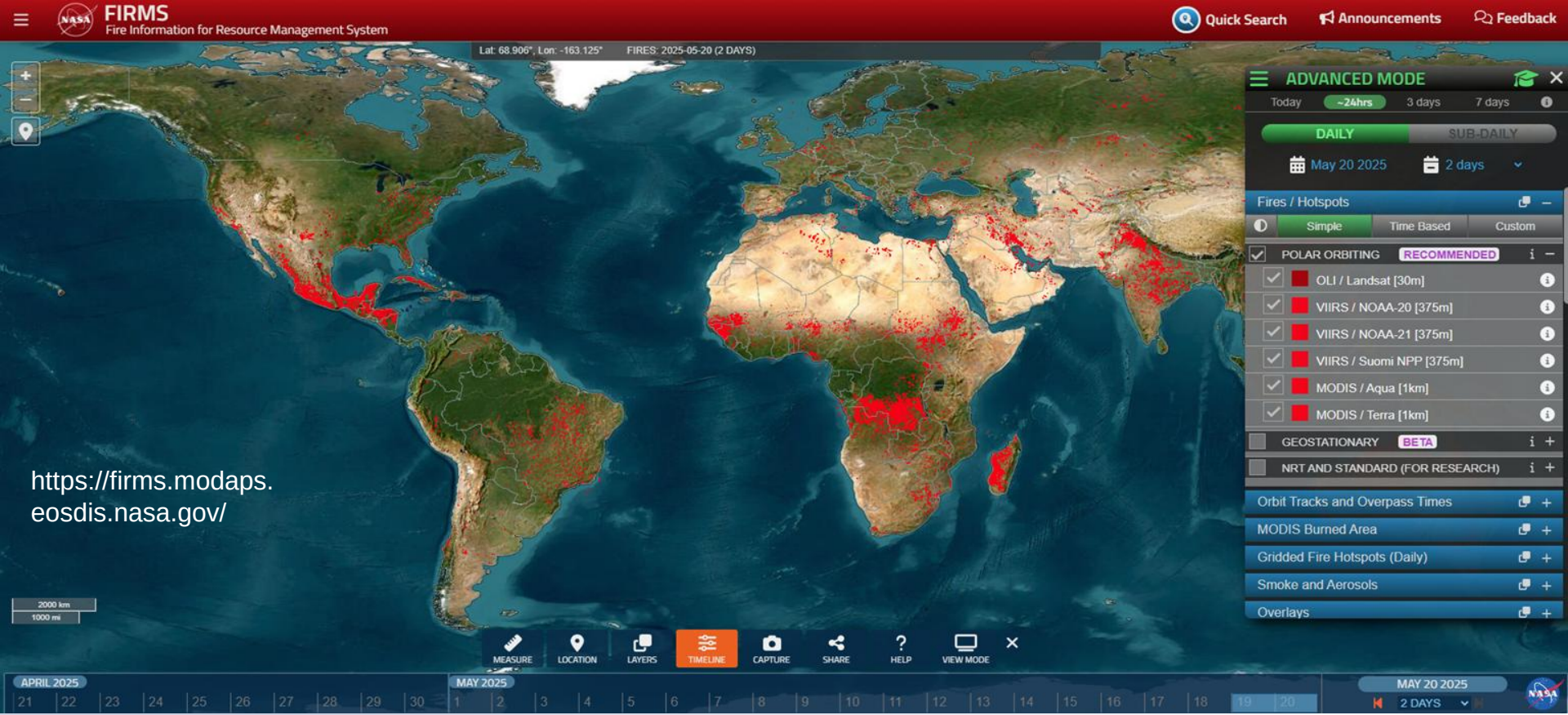
Maps from the sturgeon prediction tool show risk of sturgeon encounters in Delaware Bay: red = high risk, yellow = medium risk, green = low risk). Map courtesy of the University of Deleware.



OpenET

2021 Total Annual Evapotranspiration (mm)

0 1200

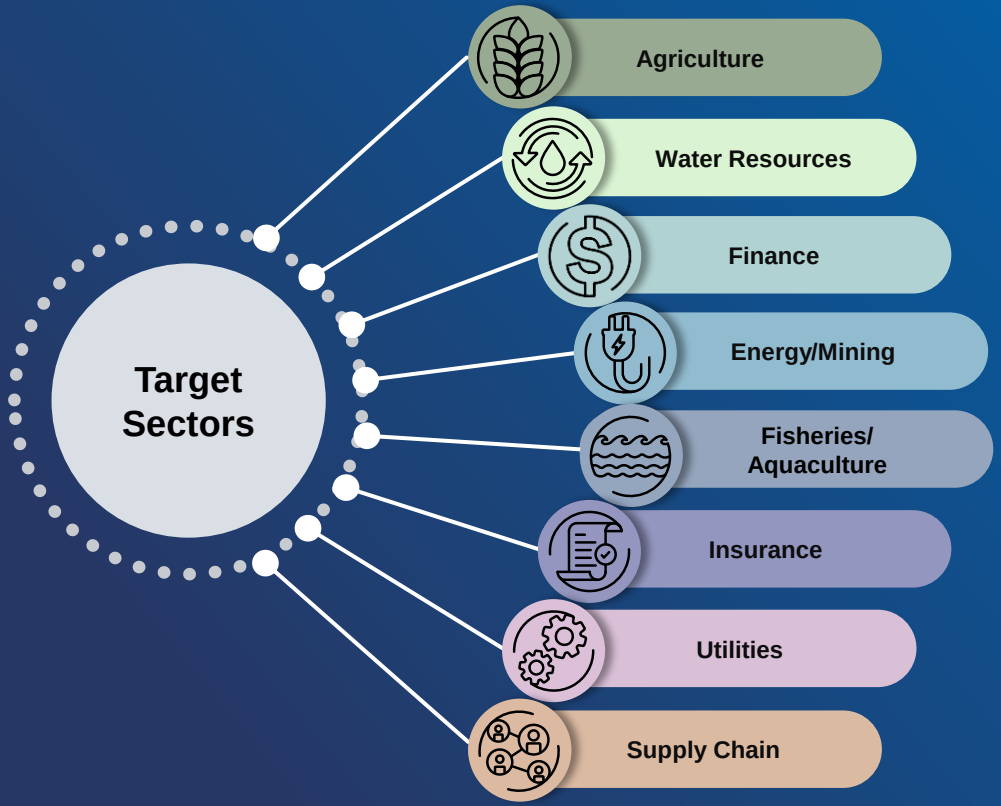


FIRMS provides satellite-based **near real-time fire detections** and **burned area** within 3 hours of satellite overpasses globally, and less than 60 seconds for the continental US

Used by electrical utilities, paper companies, communications infrastructure, and other industries.

Earth Action's Private Sector Engagement

- **We learned 74 of the Fortune 100** use NASA Earth data, supporting **$100M+ private-sector workflows**
- Built a dedicated engagement program to better understand and support industry use
- Have engaged 80+ companies through targeted conversations and 30+ companies via sector roundtables
- What works: open data, continuity, and trusted NASA expertise
- What's next: easier access, validated use cases, AI-ready data



NASA's **Applied Remote Sensing Training Program (ARSET)**

Free, Accessible Training: No-cost, online, and in-person training.

Diverse Application Areas: Trainings cover various thematic areas, including air quality, disasters, land management, water resources, wildfire monitoring, and ecological conservation.

ARSET has trained over 14,000 participants worldwide.

www.earthdata.nasa.gov/data/projects/arset

Opportunities for the Community

INNOVATE (ROSES 2025)

An open solicitation to solve private sector challenges

- Solve complex challenges by codeveloping solutions with users
- Accelerate transition from research to operations
- De-risk, validate, and integrate into real-world workflows

Accelerating Earth Solutions (ROSES 2025, release TBD)

Commercial Data Cal/Val (ROSES 2026)

Energy and Infrastructure (ROSES 2026)

We are a part of an **ecosystem**

Users & Decision-makers
Fed, state & local gov, general public, private sector, and others

Private Sector AI, Value-added Data Services, Consultancies

Commercial Satellite Data Providers

Other public EO data providers

USGS science for a changing world

NOAA

esa

Copernicus Europe's eyes on Earth

Researchers

NASA Earth Science

NASA Earth

Your Home.
Our Mission.

science.nasa.gov/earth

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Satellite Needs Working Group (SNWG)

- An interagency, coordinated approach to **identify and communicate Federal satellite Earth observation needs** through a biannual survey and **develop solutions** to help federal agencies use Earth-observing satellite data products in their decision-making

- There have been five biennial cycles with **over 500 surveys submitted!**

- Over **30 solutions** have been developed as a result, addressing the needs of over **30 agencies** and increasing NASA data usability, functionality, and accessibility

The Satellite Needs Working Group

Intergovernmental Collaboration for Efficiency and Productivity

Addresses key government data needs related to weather events, agriculture, forestry, water resources, and human health and safety

Increasing data usability, functionality, and accessibility:

Making NASA data more actionable, such as improving data resolution, frequency, and latency.

Collaborating between agencies and the private sector:

Up to 30 different agencies share needs. NASA also collaborates with the private sector to host data on platforms like Google Earth Engine, Microsoft Planetary Computer, and ESRI Living Atlas

Ensuring data fit for decision-making purpose:

Developing tailored solutions that address agency-specific applications.

NASA's Satellite Needs Working Group Implementation TEam (NSITE)

Addresses federal agency Earth observation needs by:

Leading the assessment of survey responses from over 30 agencies

Formulating, prioritizing, and proposing solutions

Managing the implementation of over 30 solutions

Co-designing solutions with agencies to ensure impact

Information gathered during this process influences NASA's decisions on new data products, new research or applications tools or priorities, and new data delivery strategies

How Solutions Start:
SNWG Survey Cycle, Solution Selection, and Solution Implementation

Federal agency partners

Survey opens summer 2026:

SNWG Survey Website
https://calval.cr.usgs.gov/apps/snwg

Collect and Review Surveys

- Agency subject matter experts fill out surveys regarding their sustained and unmet satellite data needs for decision-making or research.
- Surveys are reviewed by agency leadership before transmission to NASA

Survey Assessment

An assessment team of NASA, NOAA, and USGS scientists

- evaluate the need
- conduct agency interviews
- propose solutions

Solutions Begin Development

- Science teams are contracted and begin work on the solutions.
- Agency end-users support solution co-design to ensure solutions are fit-for-purpose

Solution Implementation: NSITE's Paradigm for Co-Designing Earth Observation Solutions

Identify key agency partners. Understand decision-making needs. Gather feedback to propose solutions.

Refine and announce solutions with collaborating agencies, invite stakeholders, map roles, responsibilities, and expectations.

Collaboratively design solution prototypes with continuous agency feedback.

Deliver beta solution, conduct usability testing, and incorporate broader user feedback.

Support agencies with the training and resources needed to operationalize solutions and share and sustain impacts.

Agency Needs → **Real-World Impact**

Core Principles:

Partnership & Trust
Agencies are solution users & expert advisors in solution design

Continuous Feedback
Users are involved throughout solution development

User-Centered Design
Solutions are designed to fit operational workflows.

Measurable Impact
Mechanisms for evaluating solution use for decision-making.

Sean Gregory
Project Manager

Pontus Olofsson
Project Scientist

Katrina Virts
Deputy Project Scientist / Needs Assessment Lead

Cherrelle Tucker
Project Coordinator

Jenny Wood
Systems Engineer

Anita Leroy
Stakeholder Engagement Program Lead

Essence Raphael
Management Office Support

Emily Adams
Communications Lead

Kevin Horn
Project Management Support

Charley Haley
Stakeholder Engagement Support

Rhea Bridgeland
Management Office Support

Lena Pransky
Communications Support

Raymond French
Project Management Support

Stephanie Jiménez
Stakeholder Engagement Liaison

BC Ray
Management Office Support

Jacob Ramthun
Communications Support

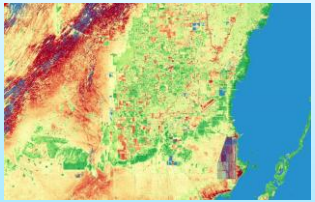
A Selection of SNWG Solutions - HLS is the basis of various!

Biosphere

- Harmonized Landsat Sentinel-2 (HLS) & Vegetation Indices, *Low Latency Products*
- OPERA Dynamic Surface Water Extent
- OPERA Surface Disturbance

Coming soon:

- *Global NISAR Soil Moisture Product*



Cryosphere

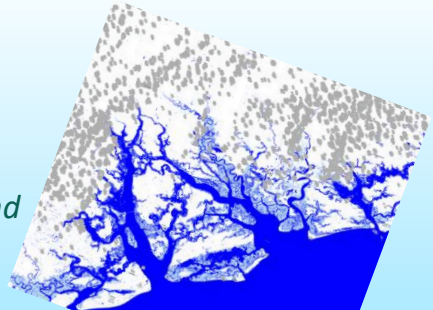
- Low Latency ICESat-2/ATLAS Products
- Sea Ice Mask

Geosphere

- OPERA Surface Displacement

Coming soon:

- *OPERA Vertical Land Motion*



Hydrosphere

- Ocean color data product

Coming soon:

- *Multi-Sensor Worldwide Ocean Winds Product*
- *Global Algal Blooms Assessment Network (GABAN)*

Atmosphere

- Historical Airborne Data Catalog
- Global Cloud Composites
- TEMPO Near Real-Time Air Quality Products (NO_2, HCHO, O_2-O_2, SO_2, aerosols)

Coming soon:

- *Air Quality Sensors and Forecasts*
- *Planetary Boundary Layer Height, Temperature, and Water Vapor*

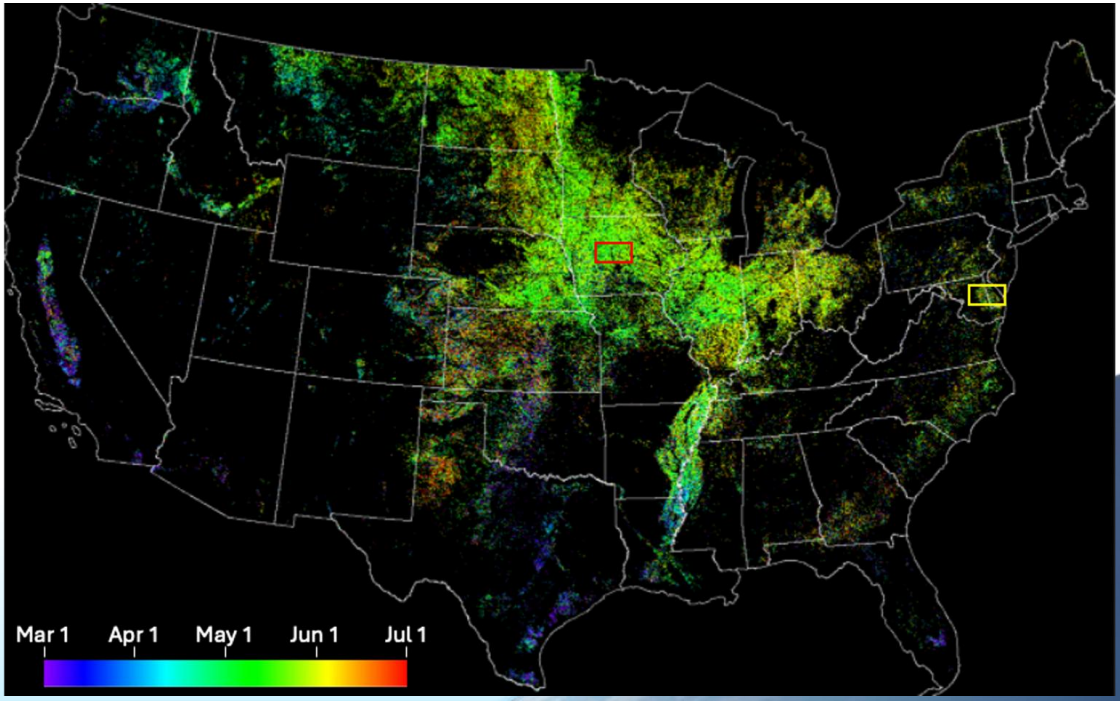
Use Case Example: Detecting crop emergence across the Continental United States

Innovative Monitoring for Agriculture and Economic Management

USDA needs timely information on planting, crop development, conditions, and harvesting to support weekly crop progress reports which inform potential agricultural interventions, supply and demand projections and economic outlooks

The Harmonized Landsat Sentinel-2 (HLS) dataset enables the mapping of crop emergence at field scale

Ensuring the **USDA** has up to date, accurate information on field conditions supports strong agricultural and economic growth.



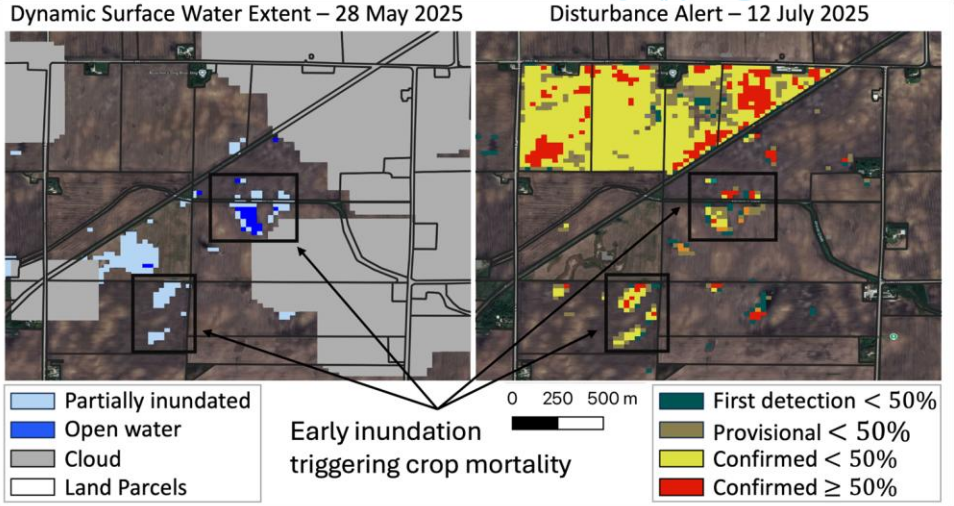
Green-up dates for multiple crops across CONUS (Gao et al., 2021)

Use Case Example: Monitoring crops and forecasting yields

“Filtering data products by the beginning and end date let us see fallow fields. This is helpful!” – USDA ARS staff

Early season flooding after planting prevents the development of healthy crops and causes billions of dollars in yield losses in corn and soybean crops across the U.S.

USDA Agricultural Research Service (ARS) can now use OPERA Dynamic Surface Water with HLS (DSWx-HLS) and Land Surface Disturbance (DIST-ALERT) products, available every 2-3 days, for early season inundation detection and to track the impacts on crop yields with greater precision. It allows **USDA-ARS** to forecast potential yields and project crop insurance claims more efficiently.



DSWx-HLS product from 28 May 2025 (left) detects early-season inundations in the Midwest. Long-lasting inundation can kill plant seedlings and suppress plant growth, which is detected in the DIST-ALERT product from 12 July 2025 (right) with moderate (< 50%) and severe (> 50%) disturbance recorded over those previously flooded fields. This information is critical for measuring the impact on crop yields.

Sign up for the NSITE newsletter

https://bit.ly/48unyX3

Visit the NSITE website to learn more about solutions

https://bit.ly/41NcHn9

As you listen to presentations over these two days…

- Get ready to **learn** a lot!
- Think about **how these data access mechanisms can help you be more efficient and impactful**
- **Share your thoughts and questions in the chat** and/or follow up with us later
- **Build community** - introduce yourselves in the chat and find partners!
- Stay in touch! Let us know **how you're accessing HLS** now. Send us your **HLS applications** so we can amplify them and celebrate with you!

Thank you!

Natasha Sadoff
natasha.sadoff@nasa.gov

Satellite Needs Program Manager and NASA SNWG Principal

NASA Headquarters

Tuesday May 12, 2026 starting at 10 am CDT

Session 1: History, Overview, & Future of HLS

Goals:

- Share NASA Earth Action and NSITE vision.
- Summarize HLS history, current activities, and future developments.

Time (CDT)	Topics	Format	Speaker
10:00 - 10:05 (5 min)	Welcome & Logistics	Presentation	Stephanie Jiménez, NSITE & UAH
10:05 - 10:20 (15 min)	Welcome from NASA HQ & SNWG Context	Presentation	Tom Wagner, NASA HQ & Natasha Sadoff, NASA HQ
10:20 - 11:20 (60 min)	**HLS History and Developments, Science and Production Updates, and Future Outlooks**	**Presentation & Interactive** 	**Pontus Olofsson, NASA MSFC & NSITE & HLS Solution Implementation Team**

National Aeronautics and Space Administration

History, Overview, and Future of HLS

Pontus Olofsson, PhD (NASA MSFC)
and the HLS team

History of HLS

- Jeff Masek et al., NASA Goddard, research that involved fusion, harmonization, correction of Landsat and other datasets (STARFM, LaSRC, LEDAPS)
- Landsat-8 launched 2013, Sentinel-2A launched 2015
- NASA LCLUC MuSLI
- Currently HLS is based on data from L-8 and -9, and S-2A, -2B and -2C

What does “harmonized” mean?

Claverie et al. (2018, p. 146)

- “Gridded to a common pixel resolution, map projection, and spatial extent
- Atmospherically corrected and cloud masked to surface reflectance using a common radiative transfer algorithm
- Normalized to a common nadir view geometry via Bi-directional Reflectance Distribution Function (BRDF) estimation
- Adjusted to represent the response from common spectral band-passes [S2 spectral bands are adjusted to replicate those of Landsat]”

History of HLS

- In 2016, the Satellite Needs Working Group (SNWG) identified HLS as a solution to meet the Earth observation needs of federal agencies across application areas such as agriculture, land use, and others. Under the management of NASA's SNWG Implementation Team (NSITE), GSFC (algorithm development) and MSFC (data production) began working together to scale HLS to global coverage with operational production.
- SNWG solutions are typically funded by NASA for five years. HLS will continue to receive funding given the ecosystem of related solutions and the importance to the community.
- New HLS-based solutions are being implemented
- NSITE support stakeholder engagement; co-design activities

History of HLS

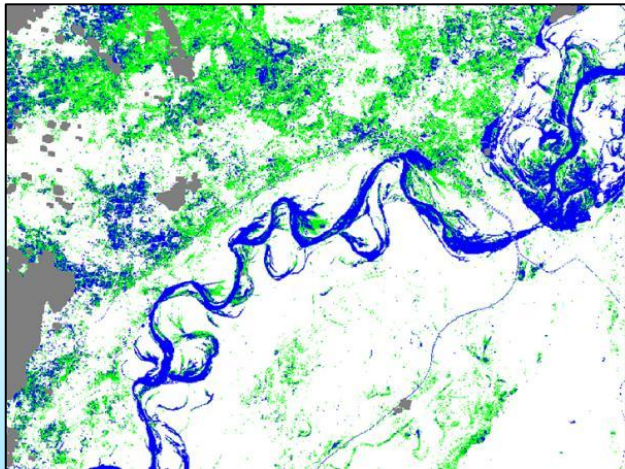
2015	2016	2018	2025	2026
HLS Research Project	SNWG Solution	HLS V1.0 Claverie et al.	HLS V2.0 Ju et al.	HLS VI Q. Zhou et al.
Jeffrey Masek (GSFC) leads a research project to find a way to harmonize Landsat data with other satellite data STARFM, LEDAPS	To meet the needs of agency stakeholders, HLS is funded to be operationalized – led by MSFC and GSFC and in partnership with many others	Produced a Virtual Constellation of surface reflectance data acquired by the Operational Land Imager and MultiSpectral Instrument aboard Landsat 8 and Sentinel-2 satellites	Extended to global coverage, improved atmospheric correction, BRDF and cloud detection algorithms	An additional SNWG solution identified 9 vegetation indices to support agency needs

HLS Products Overview

Solution	Technical Specifications	Data Access	Key Users	Status
HLS Core (2016)	Global at 30 m spatial resolution and 1.6 days median temporal resolution (latency of 2-3 days) • HLSL30 is available from April 2013 - present • HLSS30 is available from December 2015 - present	LP DAAC (GEE, Planet Insights, Platform, NASA Worldview, QGIS, ESRI, and MSFT PC)	Very large and diverse user group across sectors. HLS is the most downloaded NASA product from Earthdata	Operational
HLS Vegetation Indices (VI) (2020)	Same as Core; 10 and 30-day composites created by NASA's Biodiversity Virtual Center.	LP DAAC	The biodiversity community is the targeted user group	Operational (composites soon)
HLS Low Latency (LL) (2022)	Same as Core but will achieve six hour latency through LaSRC improvements.	LP DAAC	Core users but particularly those in low-latency operations; NASA Disasters and their key partners, BLM	Awaiting science team input to see if LL can replace Core
HLS 10 m (2024)	US only. Resampling TBD resulting in 10 m spatial resolution. Latency will depend on if LL becomes core.	LP DAAC	Similar to Core	Starting in mid/late 2026

Related SNWG solutions: OPERA products

- From the 2018 SNWG cycle, implemented at JPL:
  - vertical land motion and displacement (VLM, DISP),
  - dynamic surface water extent (DSWx),
  - land surface disturbance (DIST).
- Both DIST and DSWx contain HLS- and SAR-based versions
- HLS-based products operational, generating impact



https://www.jpl.nasa.gov/go/opera/
https://www.earthdata.nasa.gov/data/projects/opera

Upcoming HLS-related solutions

- SNWG-2024 solution: land surface temperature (LST) “within HLS” – agencies requested LST at same HLS resolutions but S2 lacks a thermal instrument – VIIRS data will be used instead – both the Landsat and the VIIRS thermal data will be resampled to achieve HLS spatial and temporal resolution
- Also SNWG-2024, global expansion of OpenET using the SNWG LST product – will be able to achieve ET estimates at HLS resolution

The HLS Team

NSITE Management Office

Pontus Olofsson (lead)
Sean Gregory
Katrina Virts, et al.

***NASA MSFC**. Manages the implementation and budget of SNWG solutions incl. HLS.*

HLS Science Team

Chris Neigh (lead)
Junchang Ju
Qiang Zhou, et al.

***NASA GSFC**. Responsible for the development of HLS algorithms.*

ISON Program

Natasha Sadoff (PM)

***NASA HQ (Earth Action)**. Provides leadership and guidance to ensure alignment with NASA HQ programmatic objectives.*

HLS Production Team

Madhu Sridhar (lead)
Sean Harkins
Chris Holden, et al.

***NASA MSFC**. Operates the algorithms developed by the science team for operational production.*

LP DAAC

Cole Krehbiel
Jared Beck
Matt Martens

***USGS**. Archives and distributes HLS data.*

LaSRC team

Eric Vermote (lead)
Sergei Skakun
Jim Ray

***NASA GSFC**. Develops and maintains the algorithm used to atmospherically correct HLS.*

Land Cover Science Project Office

Krishna Vadrevu (lead)

***NASA HQ (Research).** Supports select elements of HLS science, cal/val.*

FMask team

Zhe Zhu (lead)
Shi Qiu
Kexin Song

***University of Connecticut.** Develops and maintains the algorithm for screening cloud, cloud shadows, snow.*

SNWG: Satellite Needs Working Group
NSITE: NASA's SNWG Implementation Team
ISON: Interagency Satellite Observation Needs

LaSRC: Land Surface Reflectance Code (atmospheric correction)
LP DAAC: Land Processes Distributed Active Archive Center
FMask: Function of mask (cloud screening)

Chris Neigh
HLS Principal Investigator & Landsat 8/9 Project Scientist

Madhu Sridhar
HLS Production Lead

Junchang Ju
HLS Harmonization Lead

Qiang Zhou
HLS Lead Product Quality Evaluator

Sean Harkins
HLS Lead System Engineer

Christopher Holden
HLS Lead Cloud Engineer

Thuy Trang Vo
HLS Production Evaluation and Support

Lavanya Ashokkumar
HLS Operations Support

Margaret Wooten
HLS Science Applications Evaluation & Coordination

Rodrigo Leite
HLS Science Applications Evaluation

Eric Vermote
LaSRC Lead Algorithm Developer

Zhe Zhu
FMask Lead Algorithm Developer

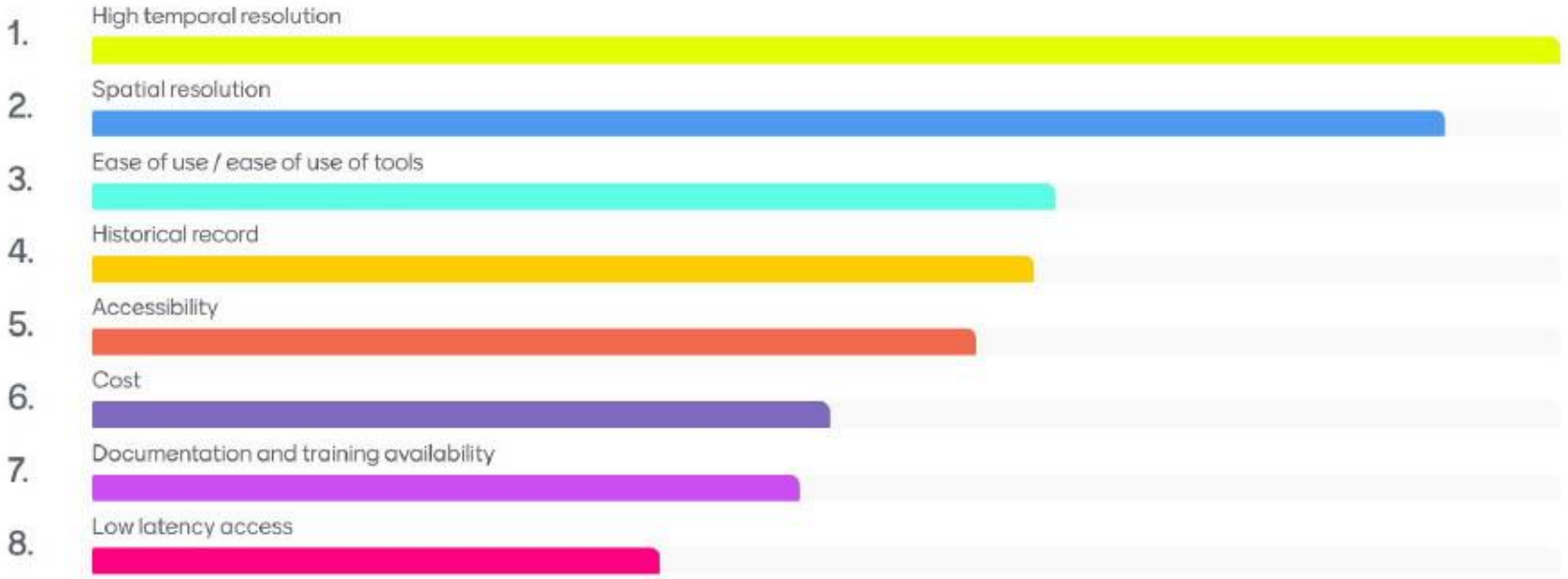
Shi Qiu
FMask Co-Developer

Ginger Butcher
Science Support Lead

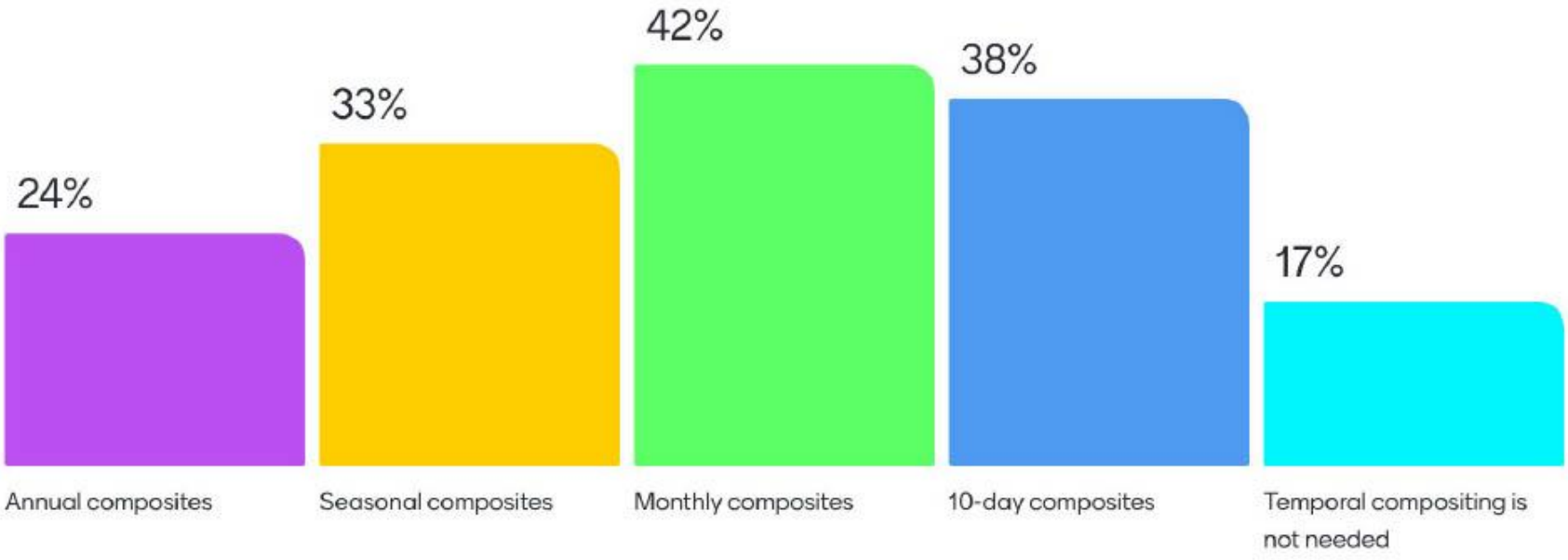
Ross Walter
Data Visualization and Web Developer

Allison Nussbaum
GIS and Remote Sensing Analyst

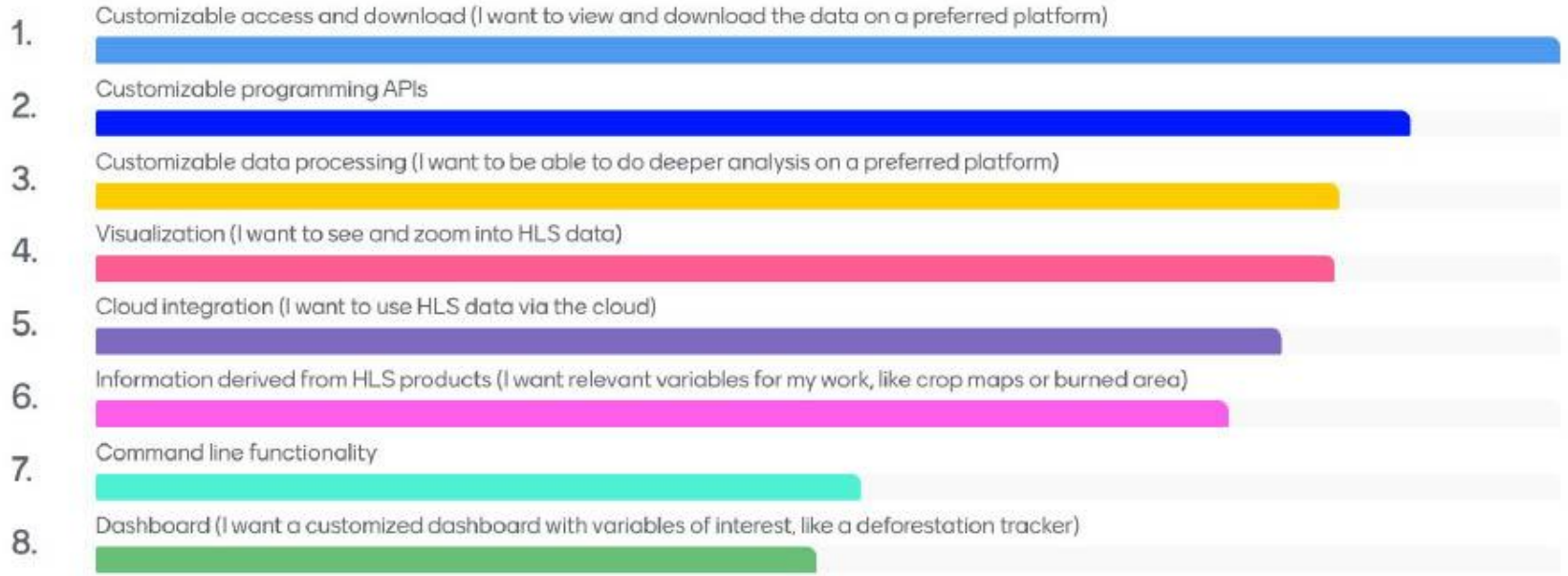
(1/6) What is most important to you when considering whether or not to integrate HLS into your workflows?



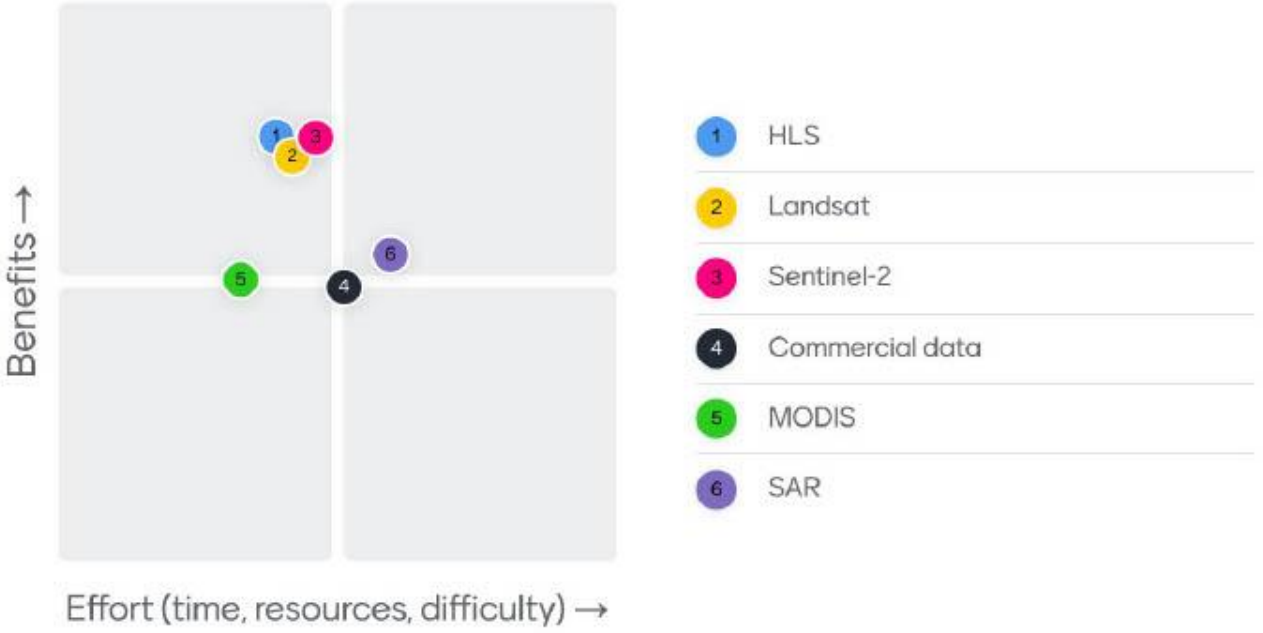
(2/6) HLS provides temporal composites, or combinations of imagery over a time period. What timespan would be most useful in your work?



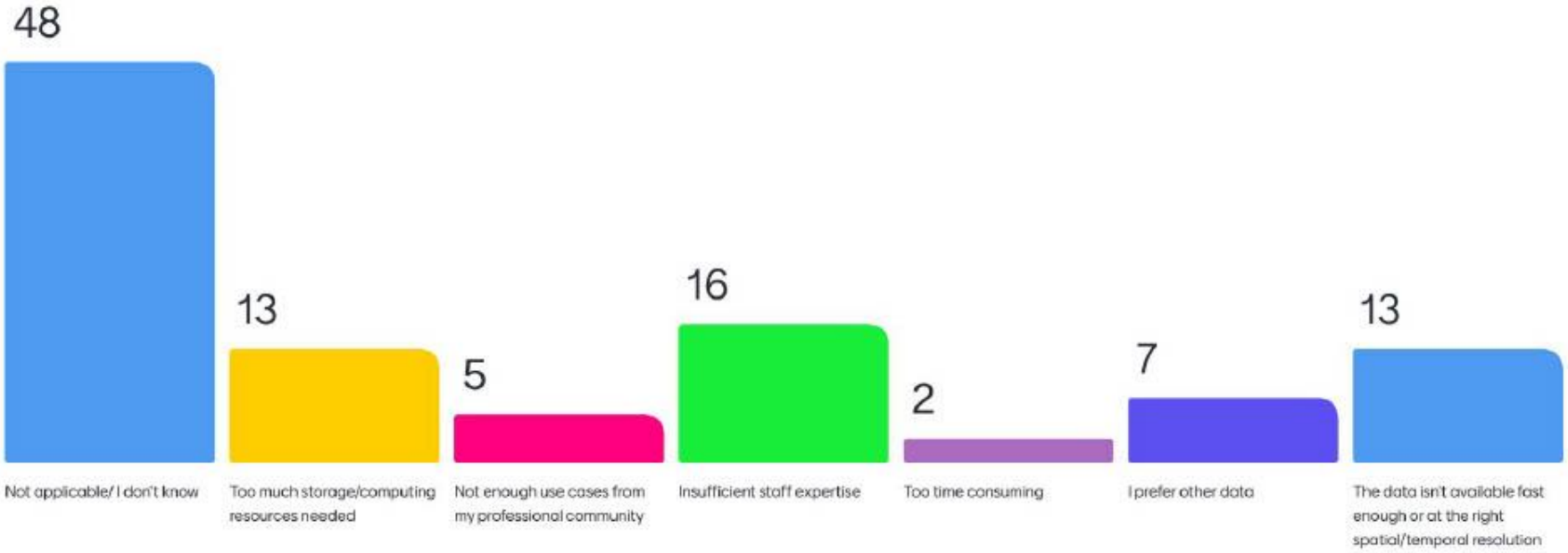
(3/6) Rank what would be most important to you for using HLS in your workflows.



(4/6) Rate the effort vs. benefits of using these satellite data products in your workflows.



(5/6) What are or could be barriers to using **HLS Vegetation Indices**?



(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

Not much

Looking at variation within smaller study areas

Tree-based orchard management

More detailed detection of deforestation and tree fall

Wetland plant mapping

Small agricultural field detection.

Snow dynamics at finer scales (e.g., winter roads)

Detection of smaller land features

(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

Working at the paddock level rather than the field or farm level.

Study restorations at a more details resolutions.

Better model training/calibration (with ground data).

Characterice a watersheed better

smaller scale agricultural monitoring - field scale conservation planning

Subfield scale variability for crop management

Better/higher quality temporal surface water monitoring

higher spatial resolution for urban heat island related studied focussing on small urban centres

(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

Sharpening surface temperature to 10m

I don't know more about 10 m HLS data

10 m data allows high-precision feature extraction for AI training, enabling better detection of small-scale infrastructure and improving satellite communication mapping that 30 m data misses.

identifying and classifying smaller wetlands

Fine-scale land surface change related to construction and urbanization

Not much since it will be a mere resampling

ET mapping at filed scale

UHI hotspot study

(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

Better distinction of forest different phenomena

Better algal bloom analysis. But to be honest I care about better temporal coverage (older yeras) with 30 m

Better crop mapping in small agricultural fields

Plot and subplot areas

Improved mapping of surface water, especially after flooding.

Resolve Geophysical characteristics

Enhanced spatial analysis

Smaller water body detection (river)

(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

identifying small forest disturbances

Make more accurate class maps for the CA delta in small channels <30m width for conservation/restoration management and monitoring

Mapping smaller landslides

Paleo archeological Sites

I can see significant benefits to estimating fire effects in low to moderate severity cases. Higher res patch dynamics would be beneficial

Assuming this is precise data rather than resampled, would help delineate volcanic eruption materials and thermal anomalies better.

match with Sentinel-1 datasets

less mixed pixel issues in Ag settings

(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

Better and more detailed delineation of fields and land use

Sometimes field-scale crop dates have mixed pixels in 30 m data

My study area is small so this will improve quality of my assessment

Much improved change detection in areas of smaller inland water & ice bodies, infrastructure, cities, fields,...

Differentiating riparian vegetation types

not much, but improved automation of fusion with higher resolution data for temporarily dense time series

fine-scale vegetation and biodiversity mapping

More detailed land use land cover analysis. Urbanisation trends. Economic trends.

(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

more robust soil mapping. lower uncertianty

Better capture of vegetation patterns in highly diverse or patchy landscapes like savannas

Better geotechnical monitoring for large spoils in coal mines

In my field in agriculture monitoring, it might solve some edging problem in 30 meter to improve the model accuracy.

More details for better analysis

Better training inputs for AI feature detection models and agents

10 m HLS would allow detection of fine-scale forest fragmentation, small clearings, selective logging and narrow canopy gaps that are not captured with 30 m data.

10m data enables precise AI-based feature extraction and detection of small infrastructure, which is much more accurate for my satellite communication research than 30m data.

(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

Running out of my compute faster

we could move from regional-scale monitoring to operational intelligence—enabling precise detection of small infrastructure, crop stress, localized floods, urban changes, and higher-accuracy analytic

Better detection of everything.

It would be easier to capture the vegetation in small lakes :)

Enhanced spatial analysis

With 10 m HLS data, I could perform much finer-scale mapping and monitoring data.

Municipal governments would use it more!

Possibly small groups or individual tree mortality

(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

Not much

I can detect ~ 30% more small wetlands in the prairies with 10m, compared to 30m

I could resolve smaller iceberg calving events and monitor smaller mountain glaciers.

riparian area and wetland mapping would benefit

High resolution monitoring.

River ice monitoring

small features in meters such as hot spots, oil spills

Enabling Urban studies

(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

Attending the workshop to start using the 30m HLS data. So no comments for now. I will say that will be good for detail analysis of crop status.

Detecting small-scale and ephemeral wetlands in grasslands.

Greater accuracy in detecting illegal mining operations in tropical rainforests .

Detect small ephemeral algal blooms along the coast of the Great Lakes.

Better resolution for mass graves detection in Mexico.

Tracking nutrient pollution to help identify sources

Track oil spills...

we could move from regional-scale monitoring to operational intelligence—enabling precise detection of small infrastructure, crop stress, localized floods, urban changes, and higher-accuracy analytic

(6/6) If you had **10 m** HLS data, what would be possible in your work that is not feasible with **30 m** HLS data?

If HLS 10 m uses the majority of L data, that is no diff than 30m

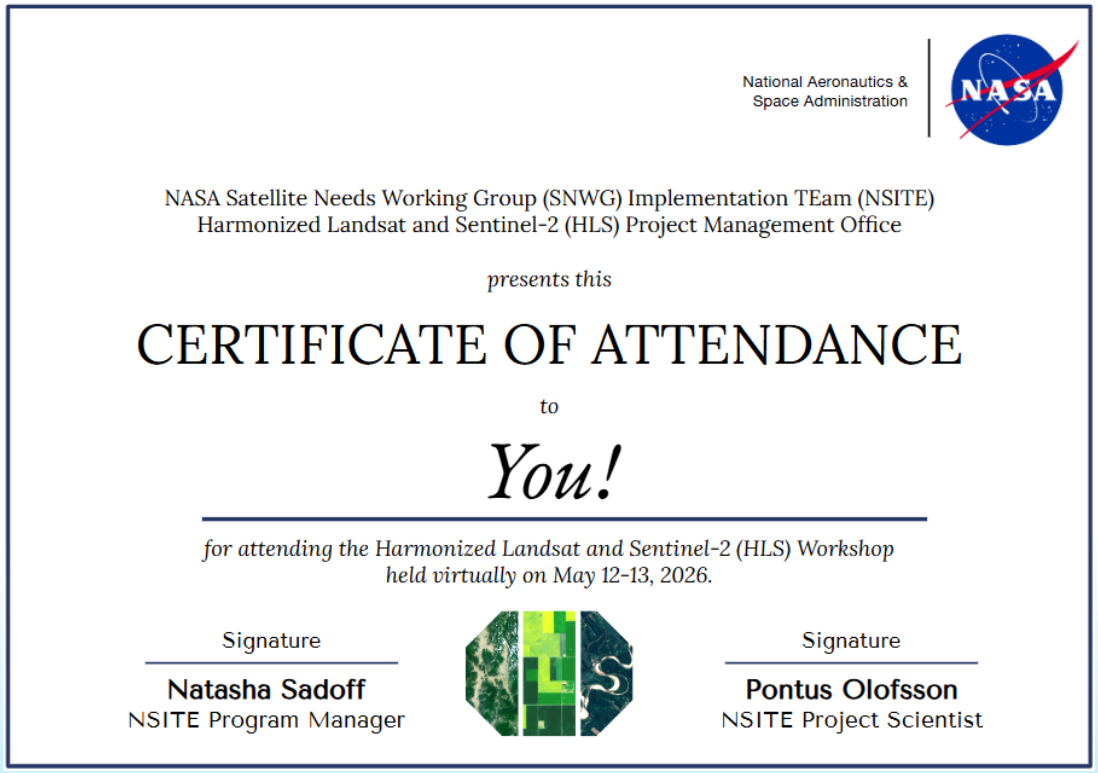
Channel change monitoring

10 m HLS data would enable better discrimination between planted forests and native Miombo woodland by capturing finer canopy structure, texture and small-scale spectral differences not resolved at 30

With 10 m HLS data, we could detect smaller vegetation and water changes that are currently lost within 30 m pixels, especially in narrow wetlands, lagoon edges, and fragmented vegetation patches.

Map small forest pest insect outbreaks.

Certificate of Attendance



National Aeronautics & Space Administration

NASA Satellite Needs Working Group (SNWG) Implementation TEam (NSITE)
Harmonized Landsat and Sentinel-2 (HLS) Project Management Office

presents this

CERTIFICATE OF ATTENDANCE

to

You!

for attending the Harmonized Landsat and Sentinel-2 (HLS) Workshop held virtually on May 12-13, 2026.

Signature
Natasha Sadoff
NSITE Program Manager

Signature
Pontus Olofsson
NSITE Project Scientist

You can request a **Certificate of Attendance** by emailing us after the workshop:

info@snwg-impact.net

Subject line:
Workshop certificate