EOSDIS Update

Earth Science Data and Information System (ESDIS) Project

National Aeronautics and Space Administration

## NASA and CEOS Team Up to Provide New Data User Communities with COVERAGE
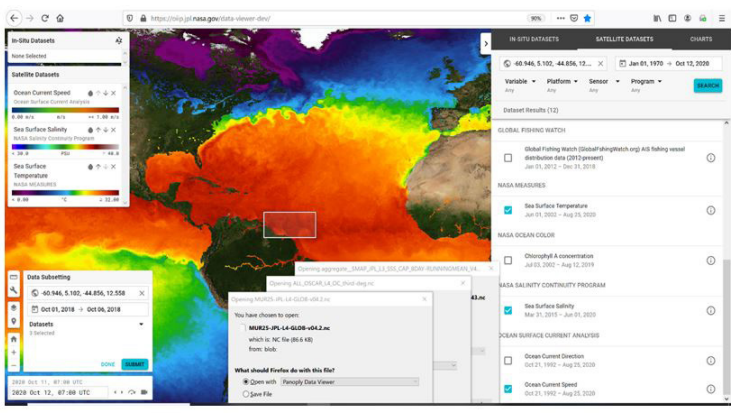
Output from the COVERAGE Viewer tool showing its integrated dataset search and filtering features, and its 'one-stop" dataset subsetting and download capability for both selected Satellite and In-situ datasets within the application.

The CEOS Ocean Variables Enabling Research an Applications for GEO (COVERAGE) initiative provides an online platform enabling open science and decision support making it easier for new users to find, visualize, and analyze remotely sensed and in-situ data on marine ecosystems.

IMPACTS Campaign Investigates the Processes Causing Snowfall in Winter Storms
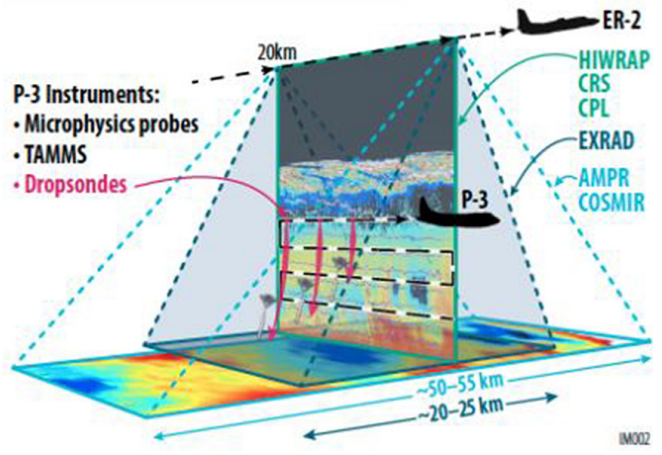
This graphic shows the how the ER-2 and P-3 planes fly in a near-vertical stacked formation during the IMPACTS field campaign. Credit: IMPACTS

NASA's Investigation of Microphysics and Precipitation for Atlantic Coast-Threatening Snowstorms (IMPACTS) field campaign—the first campaign to study intense East Coast snowstorms in the past 30 years—aims to give scientists a better understanding of what drives the processes that generate snowfall in the snowbands of intense storms.

ESDIS Team Members Ensure Users Can Access and Use the Ever-Growing Volumes of NASA Earth Science Data

The expertise and skill of the Earth Science Data and Information System (ESDIS) project's recent hires will help EOSDIS manage the growth of Earth Observing System Data and Information System collections and enhance users' experience.

*Top Left: Nicholas Doty, Development and Sustaining Engineer in the Science Systems Development Office; Top Right: Vincent Inverso, Computer Engineer; Bottom Left: Jay Herford, Information Technology Specialist; Bottom Right: Sara Lubkin, DAAC Engineer*

Urban Extreme Heat Dataset Offers Population Exposure Estimates for More Than 13,000 Urban Settlements Worldwide
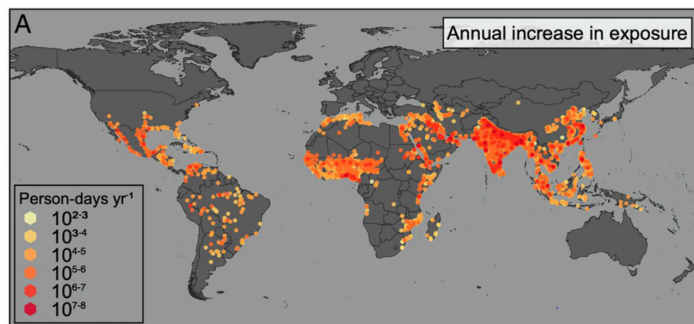
Annual municipality-level increases in the rate of urban population exposure to extreme heat, 1983–2016. Credit: CIESIN

A new Global High Resolution Daily Extreme Urban Heat Exposure (UHE-Daily) dataset at NASA's Socioeconomic Data and Applications Center (SEDAC) provides the most accurate record of how extreme heat in urban areas across the globe has changed in tandem with population growth.

Near Real-Time MODIS Global Flood Product Now Available from NASA's LANCE
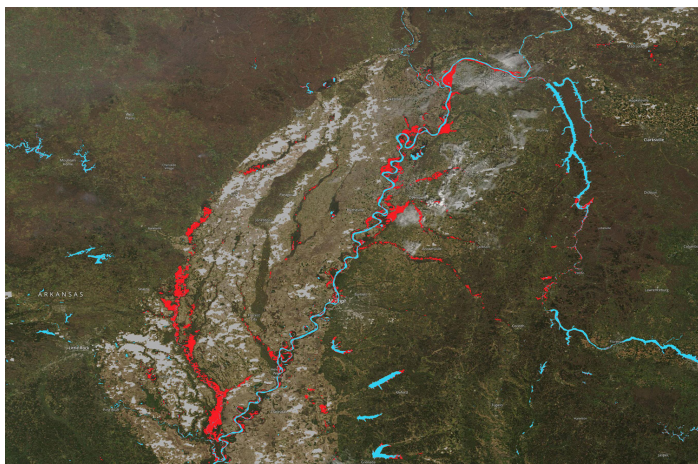
This MODIS image shows areas of flooding in south-central United States on April 4, 2021. Surface water is shown in cyan/blue and flood water in red. In this imagery, both the 2- and 3-day product layers are visible. Click the link to explore this image in Worldview.

A new Near Real-Time (NRT) Global Flood product from the Land Atmosphere Near real-time Capability for EOS (LANCE) will continue production of data critical for detecting floods around the globe.

DATA USER PROFILES & DATA CHATS

User Profile: Dr. Nadia Smith

Data from NASA's Goddard Earth Sciences Data and Information Services Center (GES DISC) helps scientists like Dr. Nadia Smith build and improve retrieval systems that provide important information to climate scientists and meteorologists around the globe.

Nadia Smith, Research Scientist, Science and Technology Corporation and affiliate at NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California.

User Profile: Dr. Anna Wilson

Data from NASA's Global Hydrometeorology Resource Center Distributed Active Archive Center (GHRC DAAC) helps scientists like Dr. Anna Wilson develop accurate representations of atmospheric rivers to increase forecast accuracy and improve weather model outputs.

Dr. Anna Wilson, Field Research Manager at the Center for Western Weather and Water Extremes, Scripps Institution of Oceanography, University of California San Diego.

User Profile: Dr. Margaret (Maggi) Glasscoe

Data from NASA's LANCE helps scientists like Dr. Maggi Glasscoe assess the risks of and facilitate the response to natural hazards on a global scale.

Dr. Margaret "Maggi" Glasscoe, Research Associate at the University of Alabama–Huntsville and Disasters Coordinator for NASA's Applied Sciences Disasters Program.
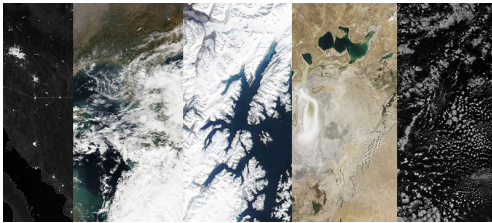
RECENT WEBINARS & TUTORIALS

Webinar: Learn How to Access and Acquire NASA Level-1 MODIS and VIIRS Data and Atmosphere Products from LAADS DAAC

September 22, 2021

This webinar shows users how to find and access level 1 Moderate Resolution Imaging Spectroradiometer (MODIS) and Visible Infrared Imaging Radiometer Suite (VIIRS) data, derived atmosphere products, services, and tools from NASA's Level-1 and Atmosphere Archive and Distribution System DAAC (LAADS DAAC).

Webinar: Explore GIS Efforts that Enable Earth Science at NASA's GES DISC

**October 27, 2021**
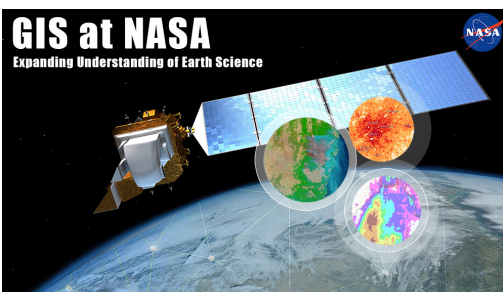
Explore how the NASA GES DISC works to increase access to NASA Earth science data through interoperable GIS image services, such as Web maps, StoryMaps, Web applications, and desktop applications including ArcGIS Pro or QGIS. We also illustrate how to access the image service through open science frameworks such as Jupyter Notebooks.

Script: Getting Started with Cloud-Native Harmonized Landsat Sentinel-2 (HLS) Data in R
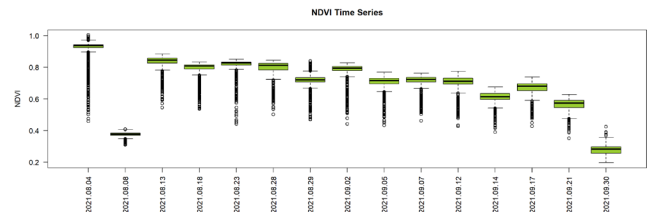
In this tutorial, learn how to process, visualize, and calculate statistics for an NDVI time series derived from HLS data over a region of interest. Use Case: Agricultural fields in the Central Valley of California, U.S.A.

## Script: Getting Started with NASA's CMR-STAC API in R

This tutorial will teach you how to navigate and explore NASA's Common Metadata Repository (CMR) SpatioTemporal Asset Catalog (STAC) to learn about the datasets available through the NASA Land Processes DAAC(LP DAAC) Cumulus cloud archive.

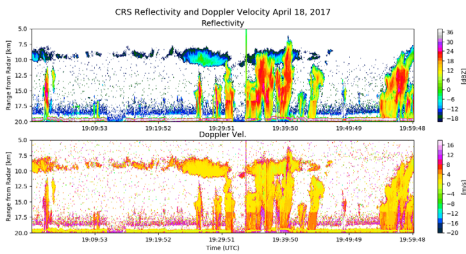## Script: Earthdata Cloud – Progress Toward Open & Efficient Science

This breakout session at the NASA Biodiversity & Ecological Forecasting Meeting provides several Python tutorials demonstrating how to get started with land processes data in the cloud.

Script: How to Convert LANCE NRT AMSR2 Data to GeoTIFF Format Using Python
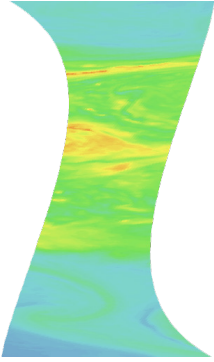
This data recipe shows you how to use Python to convert NASA's LANCE Advanced Microwave Scanning Radiometer (AMSR) data into the GeoTIFF format.

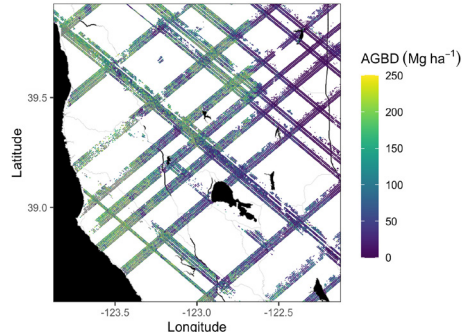## Exploring the GEDI Level 4A Data Structure

This tutorial will explore data structure, variables, and quality flags of the Global Ecosystem Dynamics Investigation (GEDI) L4A Footprint Level Aboveground Biomass Density (AGBD) dataset.

Script: Cloud Radar System (CRS) Reflectivity and Doppler Velocity Quick View

Developed for the Cloud Radar System (CRS) dataset holdings at the NASA GHRC DAAC, this data recipe enables users to generate time-height plots of the measured CRS radar reflectivity and Doppler velocity through a Python 3 plotting routine.

Script: PO.DAAC Data Subscriber

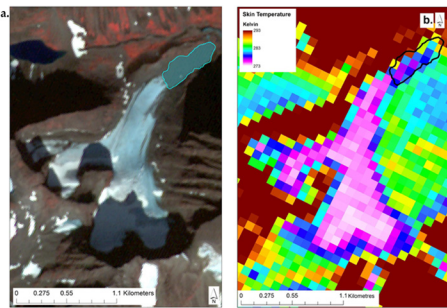This example script enables users to download physical oceanography data from the Physical Oceanography DAAC (PO.DAAC) data by using the data collection shortname.

New 'Data in Action' Stories

### Highlights from the Literature: July to September 2021

Proglacial lake 6 and the Kaskapakte Glacier, captured by Terra ASTER on August 8, 2014. a) Terra ASTER registered radiance at sensor (AST_L1B) data over the lake and glacier. b) Same area with the Terra ASTER surface kinetic temperature (AST08) data product. Image Credit: Dye and others (2021).

Data products distributed by the LP DAAC play an important role in modeling, detecting changes to the landscape, and assessing ecosystem variables, to name a few. Three of those applications, published between July and September 2021, are highlighted in this feature.

### Highlights from NASA DEVELOP National Program Spring 2021
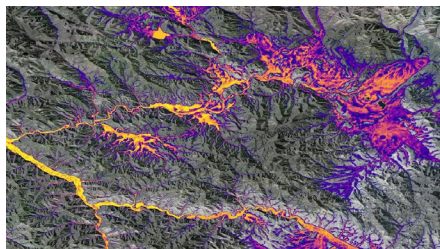
During the spring 2021 term of NASA's DEVELOP National Program, participants used geospatial data and technologies to investigate, analyze, and monitor ecological issues around the world. Explored topics included agriculture, air quality, climate change, extreme heat, ecosystems, floods, invasive species, urban planning, water quality, water resources, wildfires, and wildlife conservation.

Finding Dukono
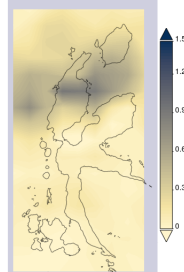
Sulfur dioxide concentrations acquired by OMI over Halmahera, averaged for the period April-June 2021.

The active Dukono volcano is located on a remote Indonesian island, but its general location can be determined from space by its sulfur dioxide (SO2) "signature." In this story, SO2 data from the Ozone Measuring Instrument (OMI) on NASA' Aura satellite has been visualized using the Giovanni system.

Monitoring Changes in the Arctic Using Saildrone, SMAP Satellite and Ocean Models Data
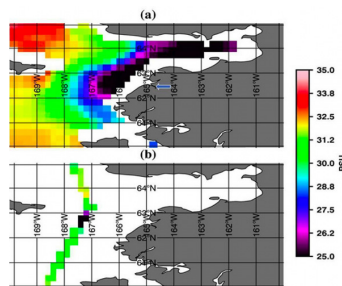

Yukon–Kuskokwim Delta off Alaska (a) mean sea surface salinity derived from NASA's SMAP Mission from April to October 2019. and (b) sea surface salinity derived from Saildrone along the deployment track. The salinity derived from Saildrone along the deployment track clearly shows the ocean waters freshening as it nears the Delta. White colors are indicative of missing data.

NASA-sponsored deployments of the Saildrone autonomous vehicle provide a unique opportunity to validate sea surface salinity (SSS) measurements from three data products that use data from NASA's Soil Moisture Active Passive (SMAP) satellite. The results of these tests were also compared with the measurements from the Estimating the Circulation and Climate of the Ocean (ECCO) model.

New Data Animations

Seasonal Changes to Vegetation Indices: Conterminous United States (July-October 2021)
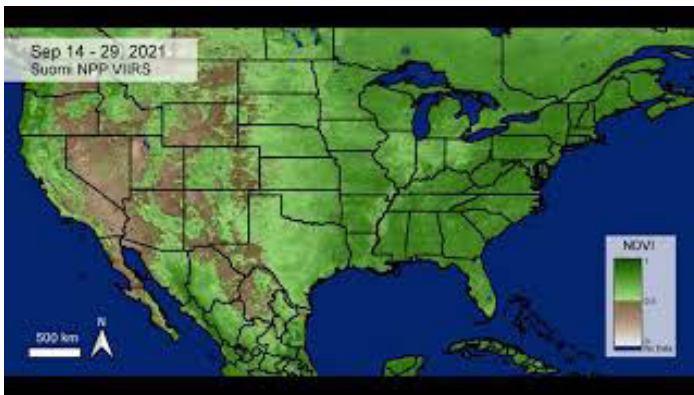

Observe seasonal changes in the Normalized Difference Vegetation Index (NDVI) data layer across the conterminous United States (CONUS) from late July through October 2021. The NDVI data layer comes from NASA's Suomi NPP VIIRS Vegetation Indices (VI) data products and can be used to measure vegetation greenness and health.

### Observing Sweet Potato Harvest Season in North Carolina with Harmonized Landsat Sentinel-2 Data

Watch how the sweet potato crop on this North Carolina farm changes from August to October of 2021 in this video of HLS imagery. Sweet potatoes are typically harvested in late September or early October before the area experiences its first frost.
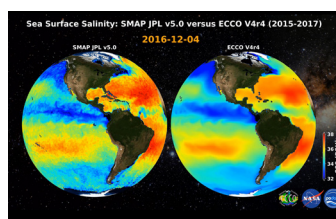
Three new PO.DAAC data animations show how satellite data can be used to examine changes in the global sea level, measure sea surface height anomalies, and evaluate changes in sea surface salinity.
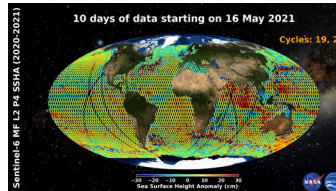
Along Track Sea Surface Height Anomaly from Sentinel-6 Michael Freilich (Dec.7, 2020 - Sept. 24, 2021)
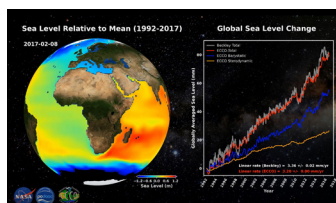
Global Sea Level Change from ECCO V4r4 (1992-2017)

Sea Surface Salinity Comparison from ECCO and SMAP JPL (2015-2017)

New Datasets and Tools

The webpages linked listed below offer access to and descriptions of the newest datasets added to the EOSDIS collection during the months of September, October, and November 2021. For older datasets, visit the EOSDIS Data News Archive to search by keyword, such as a DAAC, an instrument or mission, or scientific term.

EOSDIS New Datasets: September 2021

EOSDIS New Datasets: October 2021

EOSDIS New Datasets: November 2021

Release of Giovanni 4.36
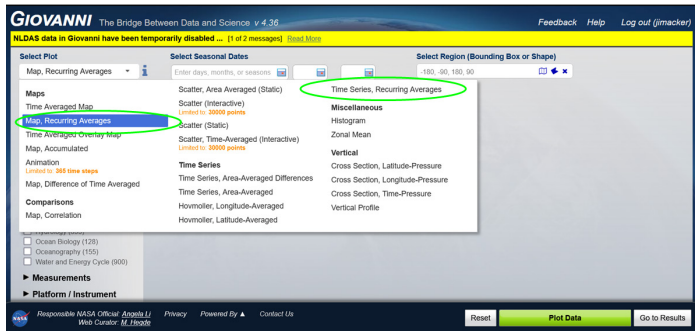
Giovanni Version 4.36 expands the Recurring Averages analysis options for maps and time series (circled in green) to include daily data.

NASA's [GES DISC](#) released of the newest version of the Geospatial Interactive Online Visualization ANd aNalysis Infrastructure ([Giovanni](#)), Version 4.36. The primary feature in this new release is the Recurring Averages analysis capability for maps and time series, which can now be applied to daily data. In previous versions, this feature could only be applied to monthly data.
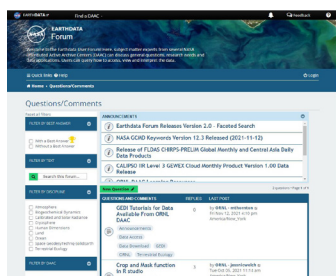
General

Global Surface Temperatures and Precipitation Assessments
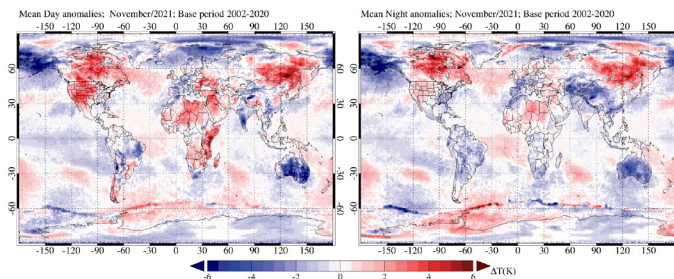
November 2021 Atmospheric Infrared Sounder (AIRS) surface air temperature anomalies at 95% confidence

[September 2021](#)   [October 2021](#)   [November 2021](#)

ORNL DAAC Joins NASA's EOSDIS Earthdata Forum

NASA's Oak Ridge National Laboratory DAAC ([ORNL DAAC](#)) has joined the Earthdata Forum, NASA's interactive online platform where data users can interact with subject matter experts from DAACs to discuss data applications and research needs, and get answers to specific questions about accessing, viewing, and manipulating NASA Earth observation data.

## Land Processes DAAC Publications Table Updated
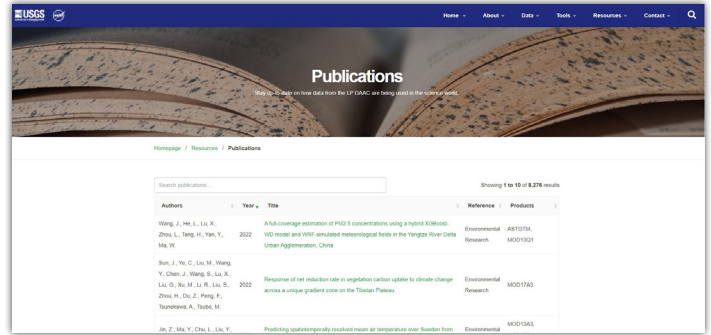
The LP DAAC website offers a Publication Table identifying recent publications that use the data the [LP DAAC](#) distributes. To see which recently published papers mention your favorite LP DAAC data product, visit the publications table or the product's DOI Landing Page.

2021 Cloud Hackathon
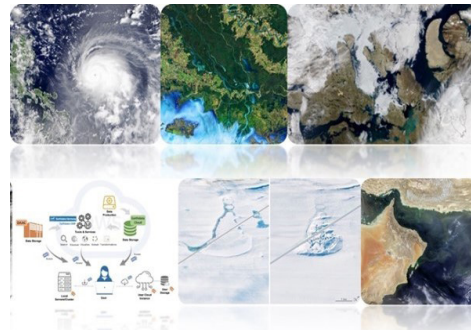
Five NASA DAACs, the Interagency Implementation and Advanced Concepts Team ([IMPACT](#)), and [Openscapes](#) collaborated for the 2021 Cloud Hackathon—a virtual 5-day inclusive Open Science event to help data users learn how to transition their Earth data workflows to the cloud. DAAC participants including the [PO.DAAC](#), [LP DAAC](#), National Snow and Ice Data Center DAAC ([NSIDC DAAC](#)), Atmospheric Science Data Center DAAC ([ASDC DAAC](#)) and the [GES DISC](#).

LEARNING RESOURCES
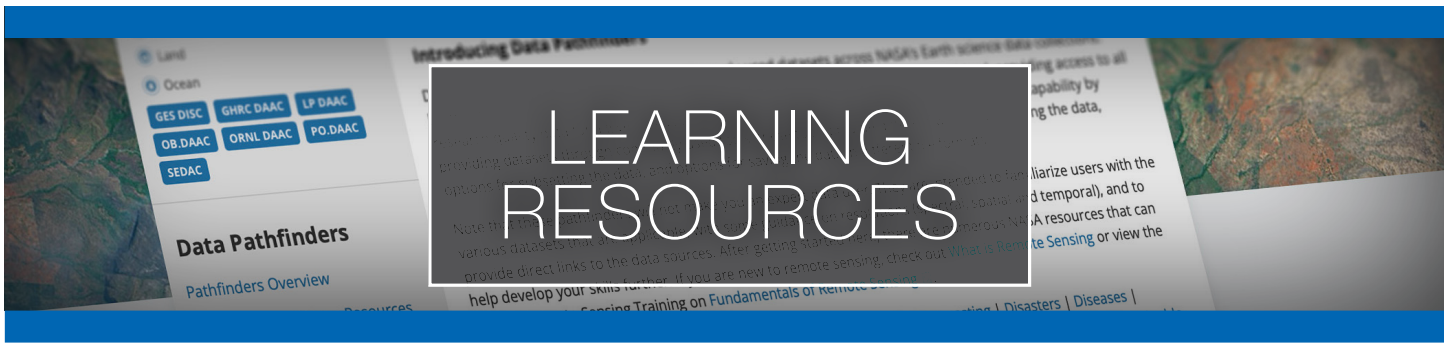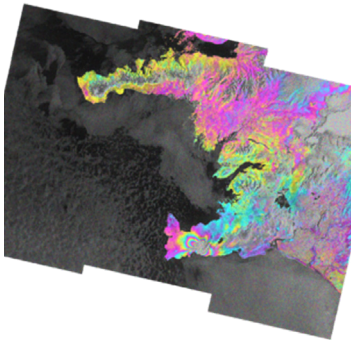
StoryMap

"Exploring Sentinel-1 InSAR- Getting to Know On-Demand InSAR Products from ASF," a new StoryMap available from the NASA Alaska Satellite Facility DAAC (ASF DAAC), highlights the contents of the ASF DAAC's InSAR product package and demonstrates techniques for interacting with and interpreting the data.

NEED HELP?

Need help with our data, services, or tools? Email Earthdata Support at support@earthdata.nasa.gov

Join the NASA Earthdata Forum: Interact with subject matter experts from several NASA Distributed Active Archive Centers (DAACs) to discuss general questions, research needs and data applications. Users can query how to access, view and interpret the data. https://forum.earthdata.nasa.gov

About NASA EOSDIS

Discover EOSDIS data, information, services, and tools. Tap into our resources! To learn more, visit our website: https://earthdata.nasa.gov

Connect with Us

Follow NASA Earthdata for Earth science data, services and tools, news, and updates on social media:

https://twitter.com/NASAEarthdata

https://www.facebook.com/NASAEarthdata

Subscribe to the EOSDIS Update

Send an e-mail to eosdis-news-join@lists.nasa.gov – leave the subject and body of the email blank

Webinars, Tutorials, and Recipes

Watch Earth science data discovery and data access webinars along with short data tutorials on YouTube: http://www.youtube.com/c/NASAEarthdata

View previous webinars and sign-up to receive webinar announcements.

EXPLORE EARTH
LEARN MORE: EARTHDATA.NASA.GOV