National Aeronautics and Space Administration

A Quick Guide for SNWG Partners: Getting Started with NASA Data

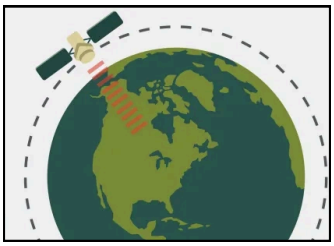
Summary

NASA has a multitude of Earth observation (EO) data available that can help users address environmental questions. To support the application of these data, NASA also offers many resources such as trainings and web tools.

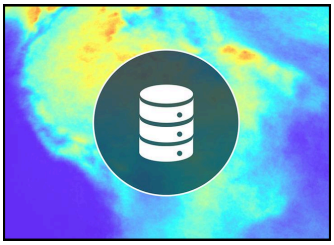
To help navigate this expansive ecosystem, **NASA's Satellite Needs Working Group (SNWG) Implementation TEam (NSITE)** has created this guide to highlight specific resources and support data users in response to identified needs from U.S. federal government partners.

Table of Contents

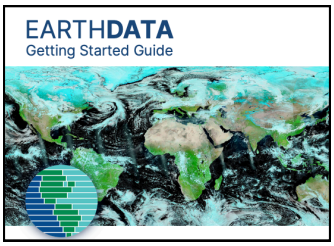
Where can I learn the basics of NASA data?



Fundamentals of Remote Sensing
A series of online, self-paced training, intended for professionals with no previous experience in remote sensing who wish to gain a basic understanding of NASA's satellites, sensors, data, tools, and applications. Includes a training on NASA's Earth Observing Fleet (i.e. sensors that collect data and their potential applications).



Earth Observation Data Basics
Learning resources to dive deep into the basics of NASA's Earth observation data from collection to visualization. Topics range from data formats and the data lifecycle to Synthetic Aperture Radar (SAR) image interpretation and cloud computing.



Earthdata Getting Started Guide
Beginner-friendly resource that describes methods for finding NASA data, tools for use, and ways to ask for help.

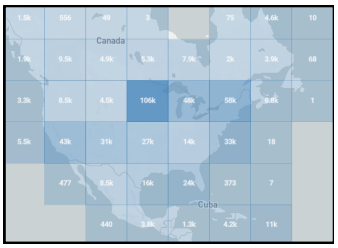
How do I access NASA data?

Data Tools
Online tools designed to help users make the most of NASA's Earth science data. Determine which tool is right for you using this chart.

Download Data for Individual Processing:

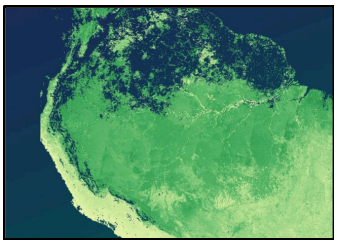
Earthdata Search

Enables data discovery, search, comparison, visualization, and access across NASA's Earth science data holdings. Earthdata Search is great for exploring and finding data which can be downloaded directly. Learn how to use Earthdata Search to discover and access Earth Science data.



CSDA Satellite Data Explorer

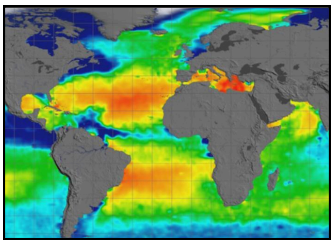
Search, discover, and access NASA-acquired commercial satellite data. Users can explore what commercial assets are available over regions of interest and submit requests.



Applications for Extracting and Exploring Analysis Ready Samples (AppEEARS)

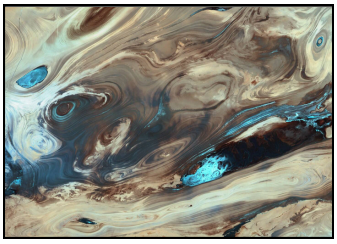
Offers a simple and efficient way to perform data access and transformation processes. Data can be downloaded directly in GIS-friendly outputs. An API is also available for AppEEARS.

Visualize Data:



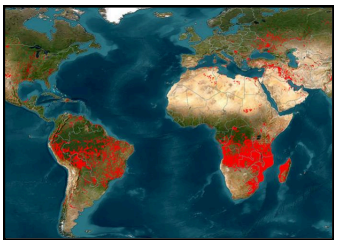
Earthdata GIS

Resource for distributing cloud-native, GIS analysis-ready NASA Earth science data and services, including over 200 raster and feature geospatial services as well as resources such as thematic applications and ArcGIS StoryMaps. Learn more by reviewing Earthdata GIS Resources, which covers topics such as how to prepare data, display certain file types, and leverage Python for visualizing and analyzing NASA data across GIS platforms.



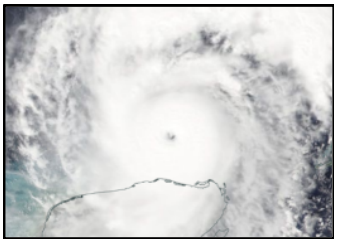
VEDA Dashboard

The Visualization, Exploration, and Data Analysis (VEDA) Dashboard stores Earth data in the cloud, enabling many different ways to interact with the data such as on-the-fly visual analysis, data exploration and localization, and data-driven stories that are exportable in multiple formats, including GIS-friendly outputs.



Fire Information for Resource Management System (FIRMS)

Provides active fire data for near-real time monitoring and applications. Users can explore and download GIS-friendly data directly and visualize and analyze data in-browser. An API is also available for FIRMS. Learn more about what FIRMS is and the web services it offers.

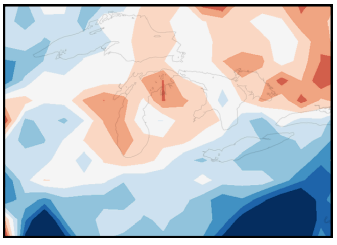


Disasters Mapping Portal

Interface for viewing, analyzing, and downloading near real-time and disaster-specific data products in GIS format. Topics include hurricanes and cyclones, floods, wildfires, severe and winter weather, etc. The portal contains decision-ready NASA products created for event response and other information to help interpret the data.

Worldview

Offers the capability to interactively browse over 1200 global, full-resolution satellite imagery layers and download the underlying data, providing GIS-friendly output/integration. Using this tool, data can be analyzed in-browser to create time series, detect change, or visualize primary variables. An API is also available for Worldview. Learn more about NASA Worldview's key features and functionalities in this webinar.



Giovanni

Allows users to rapidly create useful data visualizations, such as maps, time-series plots, profiles, and animations for select hydrological data sets, ocean color data, and atmospheric data products. Data can be analyzed in-browser or downloaded in GIS-friendly formats. Learn more about Giovanni from the tool's user guide and this webinar.

How do I use NASA data for my research or application?

Applied Remote Sensing Training (ARSET)
Offers online and in-person trainings for beginners and advanced practitioners alike. Trainings cover a range of NASA datasets, web portals, and analysis tools and their applications for health and air quality, agriculture, climate and resilience, disasters, ecological conservation, and water resources management.

Earthdata Learn Resources
Explore a catalog of learning resources including data recipes, tutorials, and webinars. Additional resources may be available through NASA Earthdata's Youtube.

Data Pathfinders
Topic-based, curated collections of datasets, tools, and related resources to assist users in finding and using Earth science data. Users can access the topics glossary to select and learn more about specific keywords and applications.

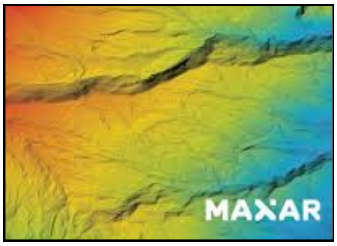
GIS at NASA Learning Resources
Access a range of tutorials, data recipes, and webinars for users interested in learning more about how to use Geographic Information Systems (GIS) with NASA Earth science data.

NASA's Short-term Prediction Research and Transition Center (SPoRT)
Offers training, jupyter notebooks, data viewers, and data via ftp for weather and land surface products to support the transition of NASA satellite products and capabilities to the operational weather community to improve short-term weather forecasting. SPoRT trainings are designed to be applications-oriented for a weather-savvy audience.

Earthdata Forum
Online forum that provides a space for users to browse thousands of FAQs about research needs, data, and data applications. Users can also submit new questions to receive tailored responses.

How do I learn more about commercial data?

Introduction to NASA's Commercial Satellite Data Acquisition (CSDA) Program
Awareness-building webinar that includes topics such as the status of existing contracts with data providers and data availability and access.



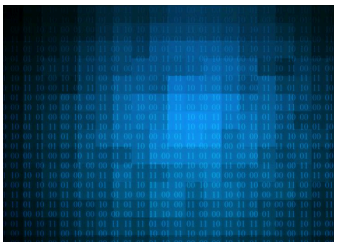
NASA CSDA Program Vendor Focus Webinars
Awareness-building webinars that introduce commercial vendors such as Maxar, BlackSky, GHGSat, and Planet to highlight the current and future capabilities and how they complement existing NASA Earth science data holdings.

CSDA FAQs
Frequently asked questions answered about accessing and requesting commercial satellite data such as "How do I get approved to access the commercial data?" and "What are the terms and conditions to use the data?"

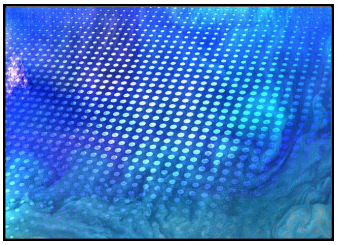
What NASA cloud resources exist?

Cloud Computing for Earth Scientists
Access webinars that introduce cloud-computing. Topics include how to cloud for earth scientists and community tools for analysis of NASA Earth Observation data in the cloud.

NASA Earthdata Cloud Cookbook
Beginner-friendly resource to support scientific researchers learn how to work with NASA Earthdata in the cloud.



NASA Earthdata Cloud Data Access Guide
Provides an overview of how to access data in Earthdata Cloud, covering direct cloud access and local download methods. The resource is tailored for NSIDC DAAC data, but it may be useful for other data users as well.



About Cloud Data
Beginner-friendly resource that introduces how to discover, access, and use NASA datasets in the cloud. The resource is tailored for PO.DAAC data, but it may be useful for other data users as well.

Contact NSITE

Looking for something more specific? Let us know what gaps or questions still exist, what tools interest you, and/or how you typically apply Earth science data. We are happy to connect you with more information and ongoing efforts to fill those gaps. Contact us at info@snwg-impact.net.