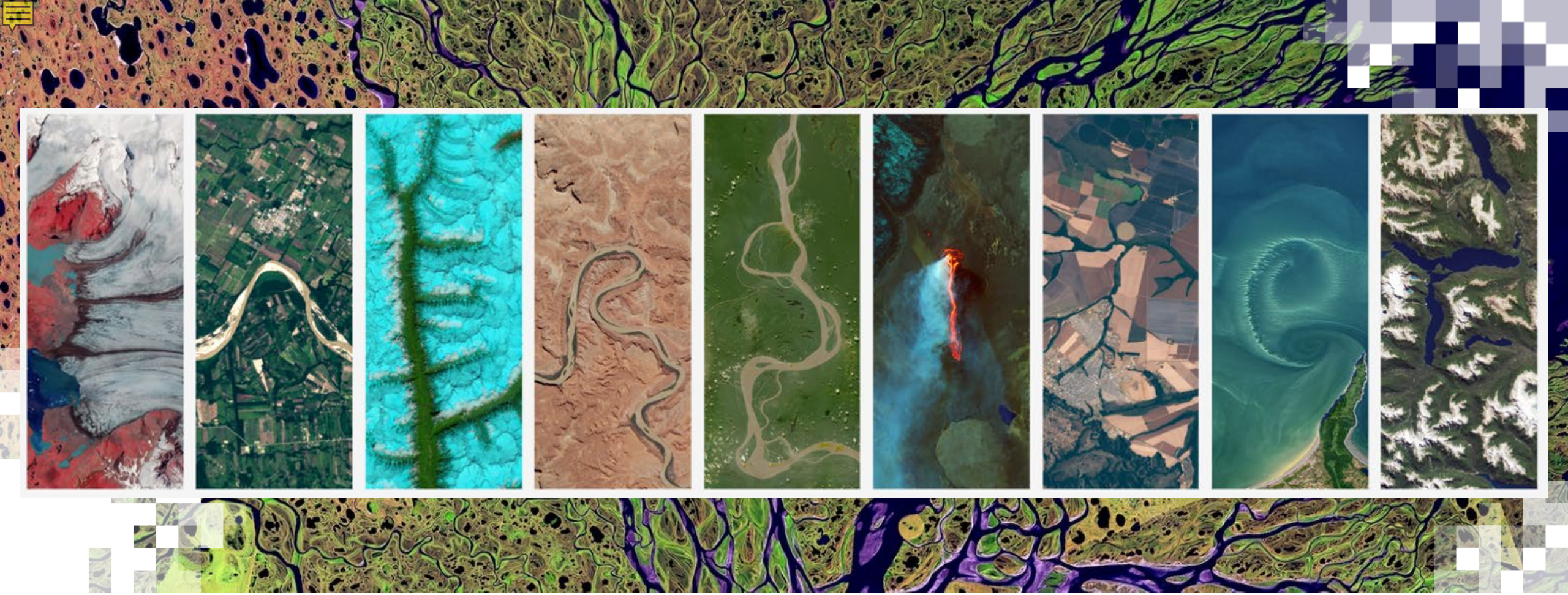


Monitoring Disasters

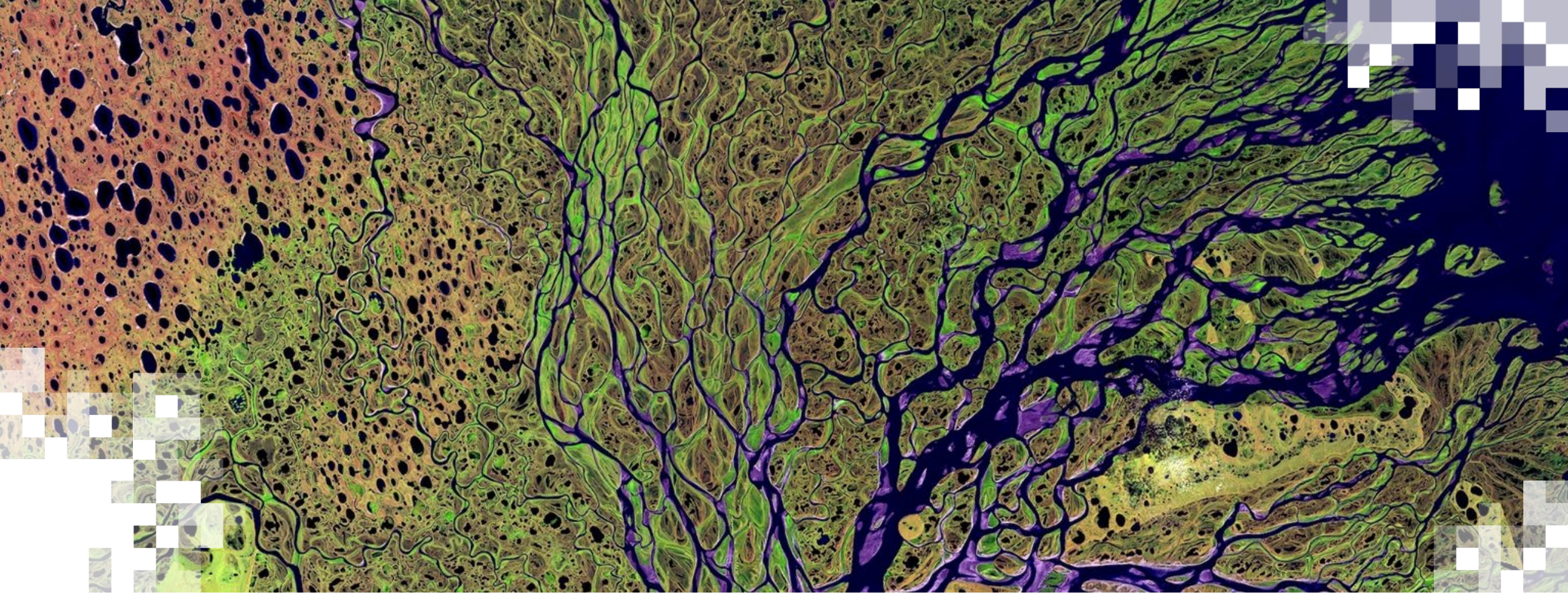
NASA Datasets for Understanding Population, Fires, Floods, & Heat

Katie Baynes (NASA Earth Data Officer)

October 28, 2024



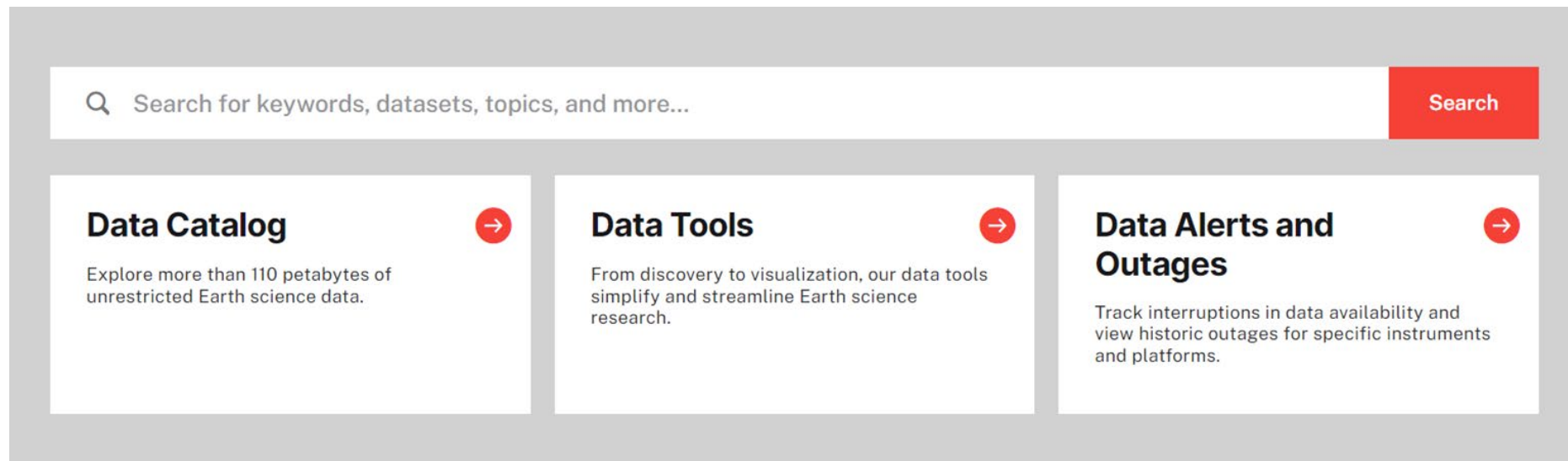
[Your Name in Landsat !\[\]\(529949c2c3dadbaa4e538e8c643454bc_img.jpg\) \(nasa.gov\)](#)



Data Search

NASA Earthdata

- The Earth Science Data Systems (ESDS) Program provides **open access** to NASA's archive of Earth science data, empowering researchers and decision makers **to better understand and protect our home planet**.
- earthdata.nasa.gov is your one stop shop for all of NASA's Earthdata, featuring datasets, tools, and important information on use and application.



Earthdata Search

- In the [Data Catalog](#), you can search by topic, format, type, and other technical characteristics.
- Below is an example of an available dataset found searching within “Human Dimensions” + “Climate Indicators”


DAAC Home > Get Data > NASA Projects > Arctic-Boreal Vulnerability Experiment (ABoVE) > Landing page

ABoVE: Environmental Conditions and Subsistence Resource Access, Alaska, 2016-2017

Overview

DOI	https://doi.org/10.3334/ORNLDAAC/1705
Version	1
Project	ABoVE
Published	2019-08-26
Usage	390 downloads

[Download Data](#) 405.0 MB
 [User Guide](#)



Spatial Coverage

Bounding rectangle
N: 67.08 S: 61.70 E: -141.27 W: -160.72

Temporal Coverage

2016-02-15 to 2017-06-22

Description

This dataset provides descriptions and photos of environmental conditions that impacted availability to subsistence resources by residents in nine rural communities within the Yukon River basin of Interior Alaska. The data (photos) were collected by citizens (harvesters) residing in the communities while engaged in subsistence harvesting activities. The data include descriptions of the environmental condition captured in the photo, photo date, an explanation of how the condition influenced travel and access to resources, the subsistence activity when the photo was taken, effects of the environmental condition on the participant's safety, and the participant's observations regarding frequency and extent of the condition. A sensitivity metric was derived that incorporated the adaptive capacity of the participants to environmental conditions. The observations are for the period February 2016 - June 2017.

FILTERS

Topics ^

- Agriculture (188)
- Atmosphere (4393)
- Biological Classification (67)
- Biosphere (1443)
- Climate Indicators (142)

[Show all topics](#) ^

Observation Method ^

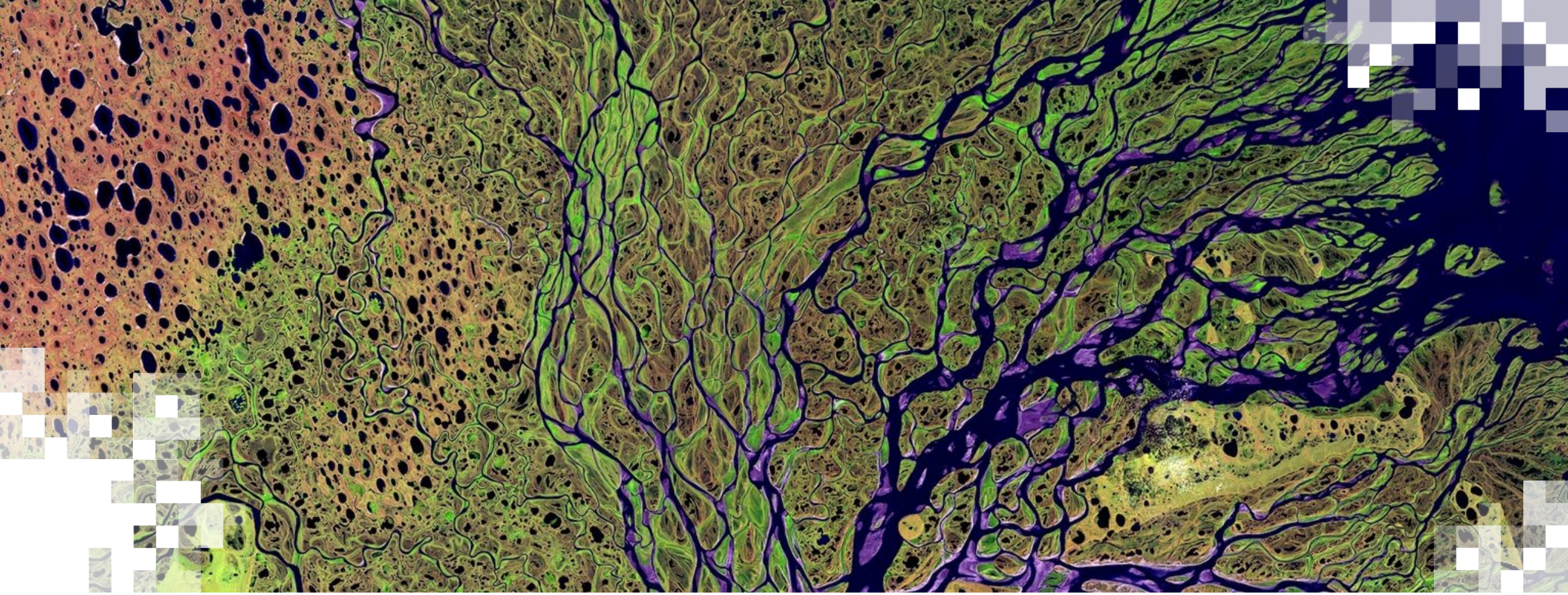
Temporal ^

Spatial ^

Data Format ^

Data Processing Level ^





Where to Begin

Data Pathfinders

- Data Pathfinders are starting guides to available Earthdata, organized topically. Within a pathfinder, you can find information
- All the Pathfinders are hyperlinked below, but let's walk through together the [Human Dimensions Pathfinder](#). Can you find...
 - a sub-topic related to an area you cover?
 - a tool that shows demographic data over multiple decades?
 - news on a Human Dimensions data workshop in a non-English language?
 - a space to submit questions?



Atmosphere



Biosphere



Climate Indicators



Cryosphere



Human Dimensions



Land Surface



Ocean



Solid Earth

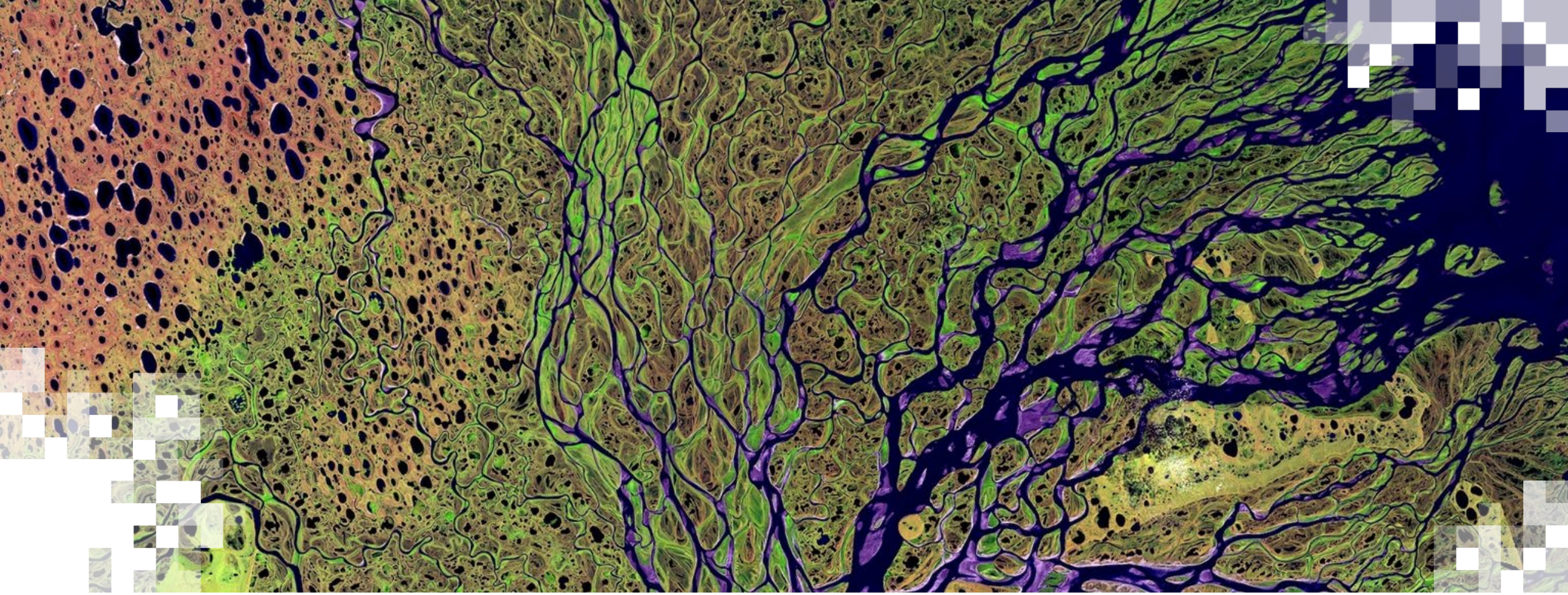


Sun-Earth Interactions



Terrestrial Hydrosphere





Applicable Datasets

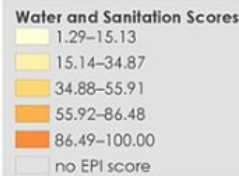
Socio-Economic Data

- [NASA's Socioeconomic Data and Applications Center \(SEDAC\)](#) focuses on archiving and distributing data related to human interactions in the environment.
- For ready-made geospatial products, the [SEDAC Map Gallery](#) shows complete visualizations of human activity and environmental interaction data.

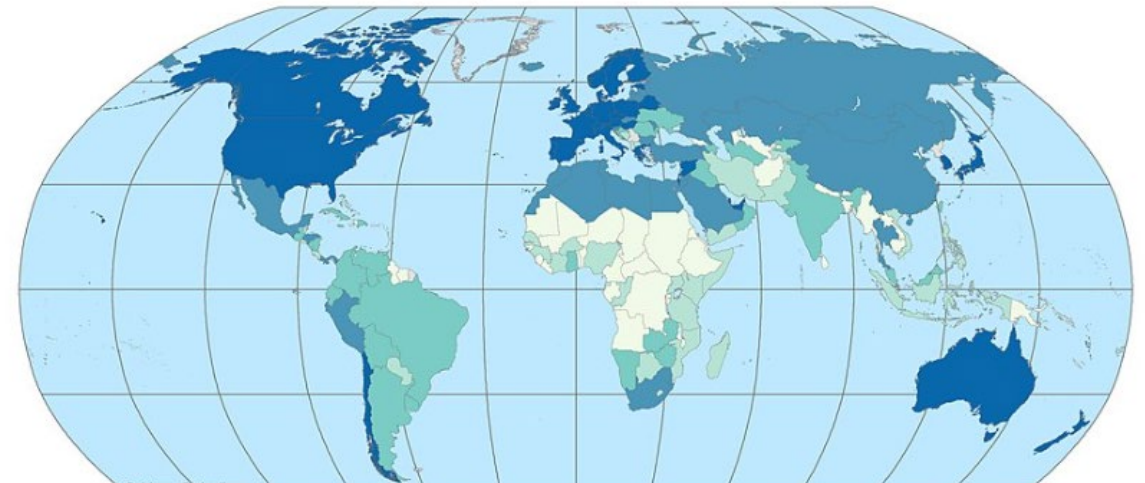
2014 EPI: Environmental Health Objective – Water and Sanitation Environmental Performance Index (EPI)



The 2014 EPI builds on measures relevant to the goal of improving environmental health which are grouped in three policy categories. The water and sanitation category includes the following indicators: access to drinking water and access to sanitation. All indicators and composite indices in the EPI are normalized as a 0–100 proximity-to-target score, with 100 representing "at target" and 0 being furthest from the target.



2014 EPI: Ecosystem Vitality Objective – Water Resources Environmental Performance Index (EPI)

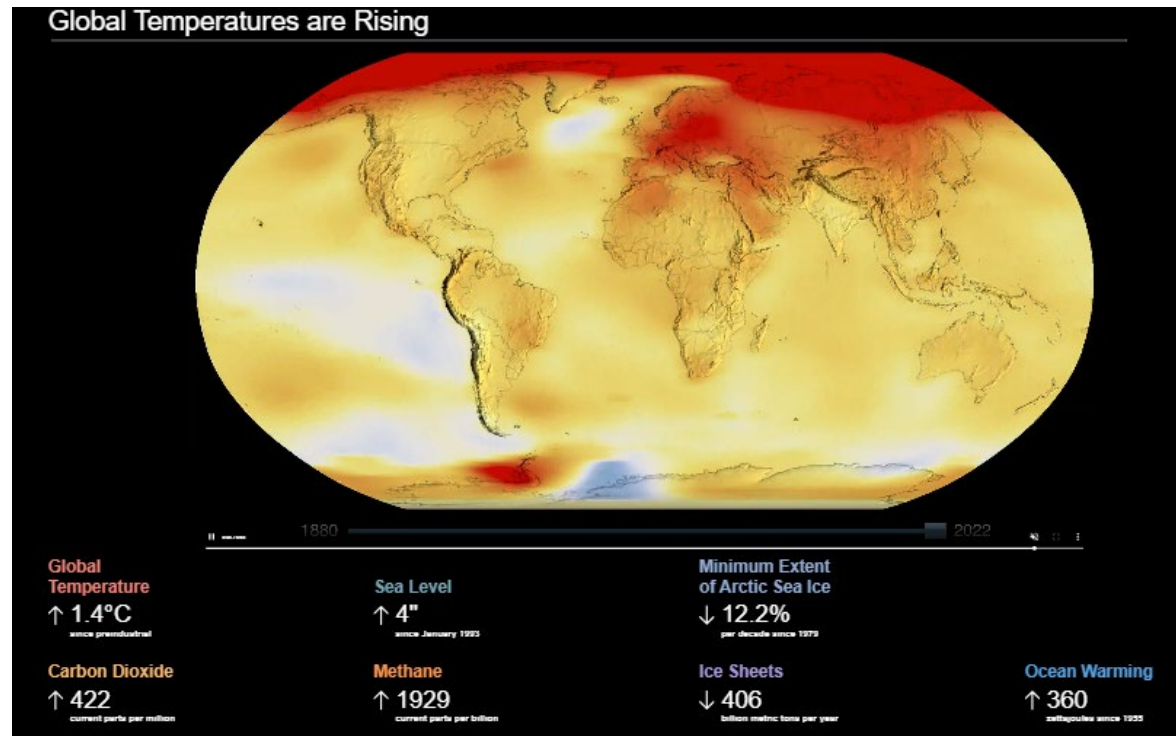


The 2014 EPI builds on measures relevant to the goal of improving ecosystem vitality which are grouped in six policy categories. The water resources category includes the wastewater treatment indicator. All indicators and composite indices in the EPI are normalized as a 0–100 proximity-to-target score, with 100 representing "at target" and 0 being furthest from the target.



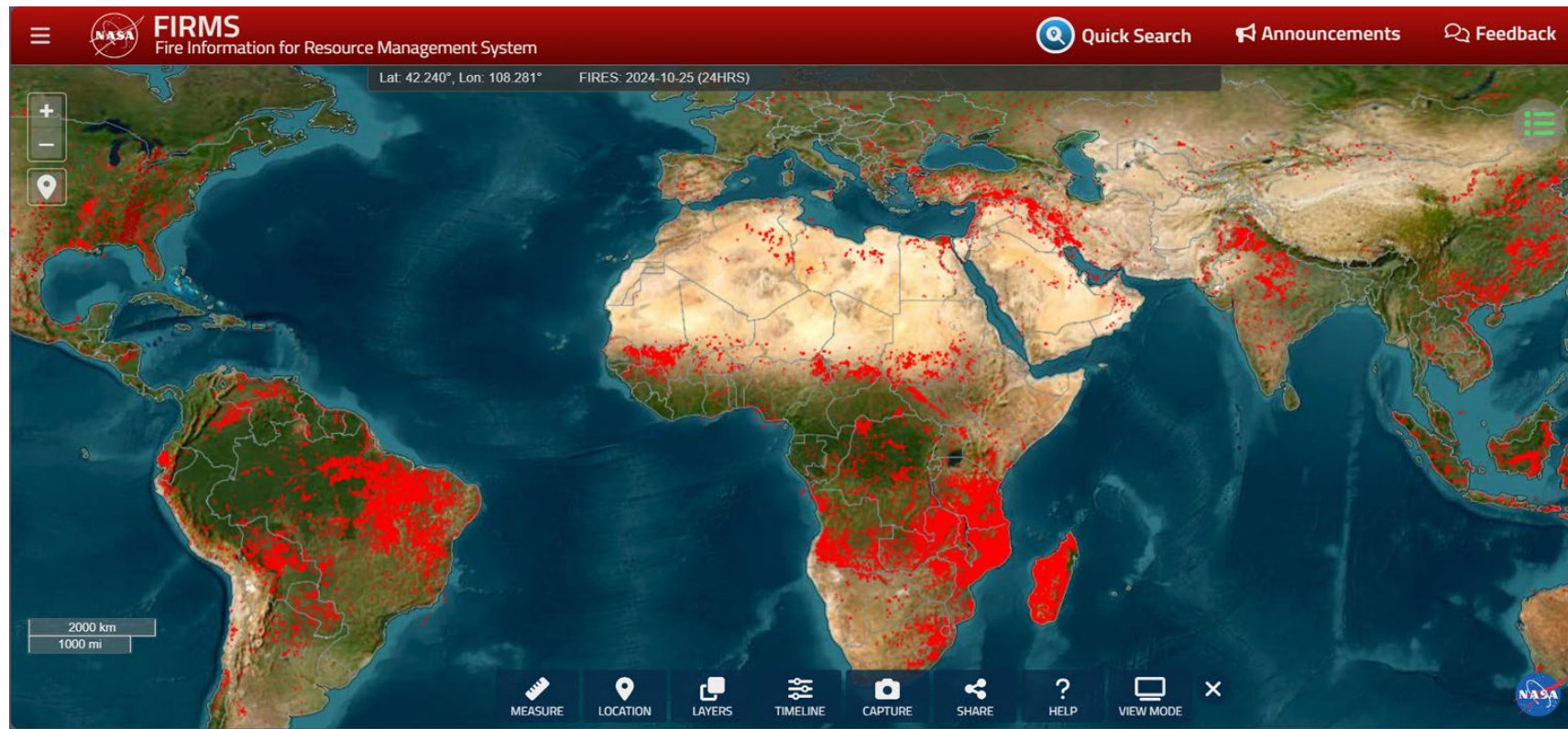
Extreme Heat

- NASA Earthdata on Extreme Heat is one of the most important indicators in tracking the planet's climate vital signs; use datasets like the [Global High Resolution Extreme Heat Estimates](#).
- To showcase accessible visualizations of the impact of extreme heat on climate, NASA's Earth Information Center ([earth.gov](#)) is a publicly accessible website with multiple visualization options.



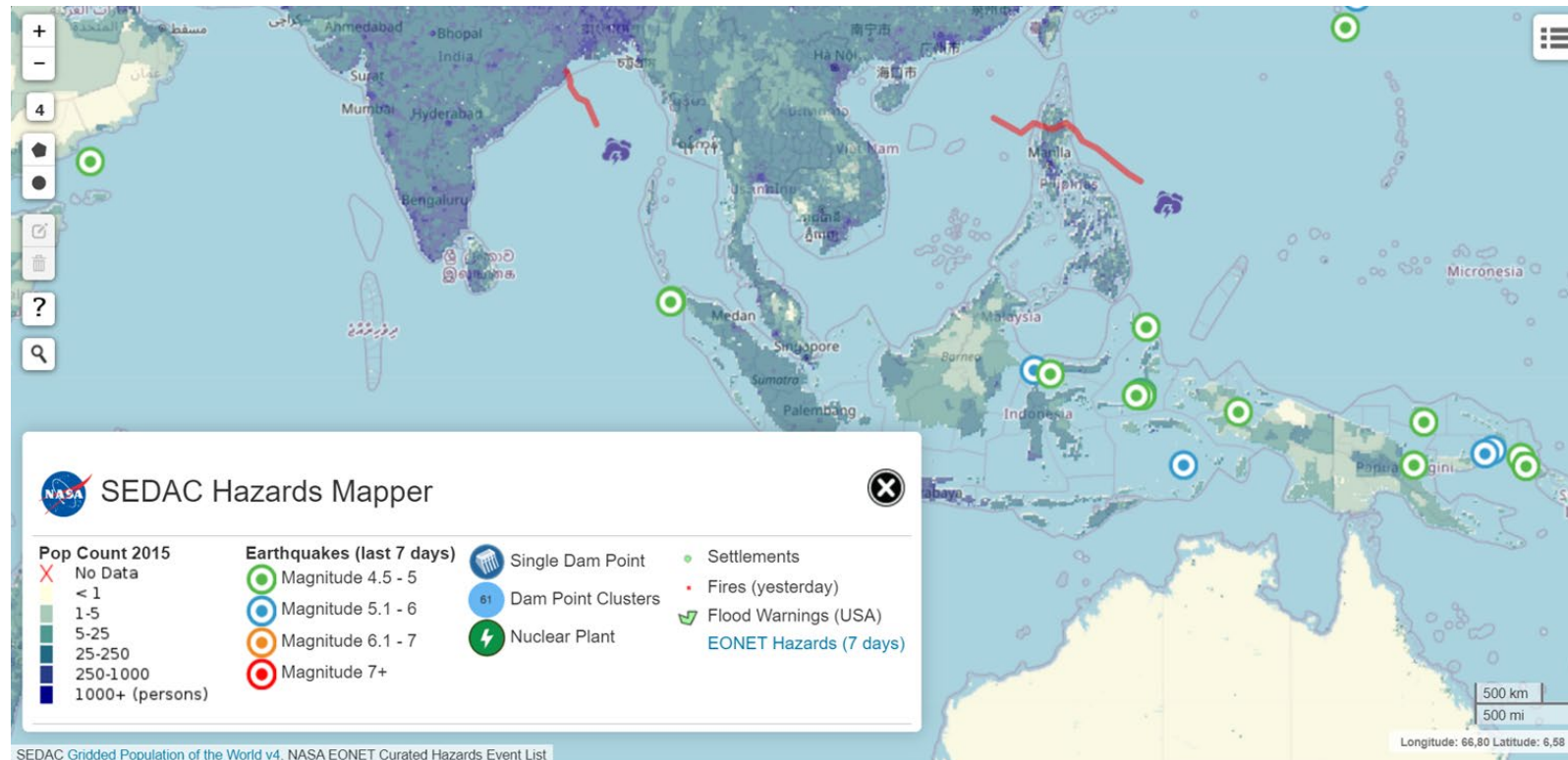
Fire Management

- NASA's [Fire Information for Resource Management System \(FIRMS\)](#) distributes global near real-time (NRT) active fire data from Earth-observing satellites, and provides enhanced interactive tools to help predict, prevent, and manage wildfires.
- FIRMS and fire data can also be used [to map human-made fire in conflict zones](#), such as Ukraine.



Floods and Risk Mapping

- [Near real-time flood data](#) is provided by NASA's [Land, Atmosphere Near real-time Capability for Earth observation \(LANCE\)](#).
- The Hazards Mapper displays near-real time data on US flood warnings and estimations on the population in proximity to disasters, in addition to warnings on fire, air quality, earthquakes, and tornadoes.



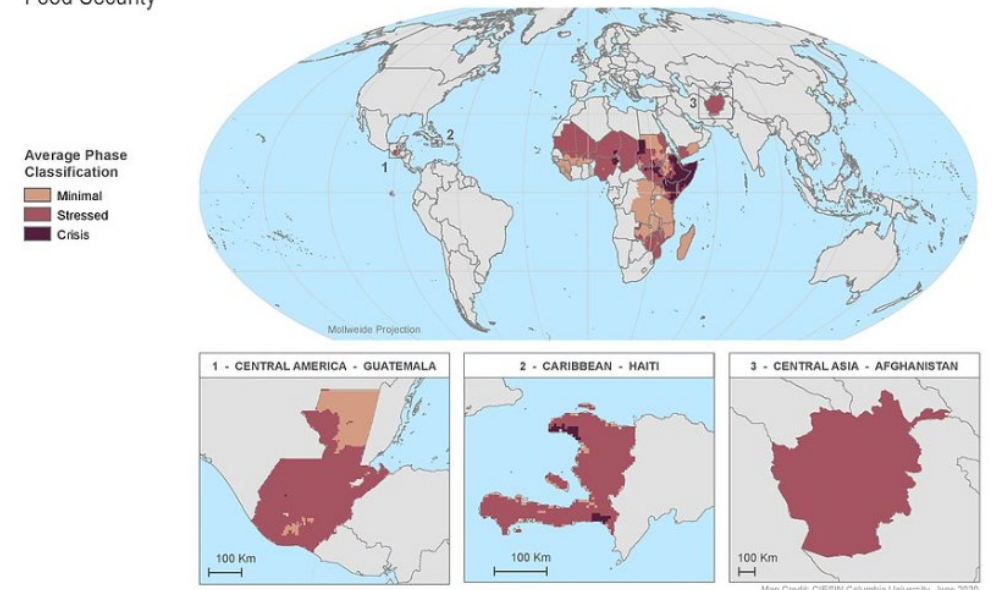
Environmental Justice (EJ) Data Search

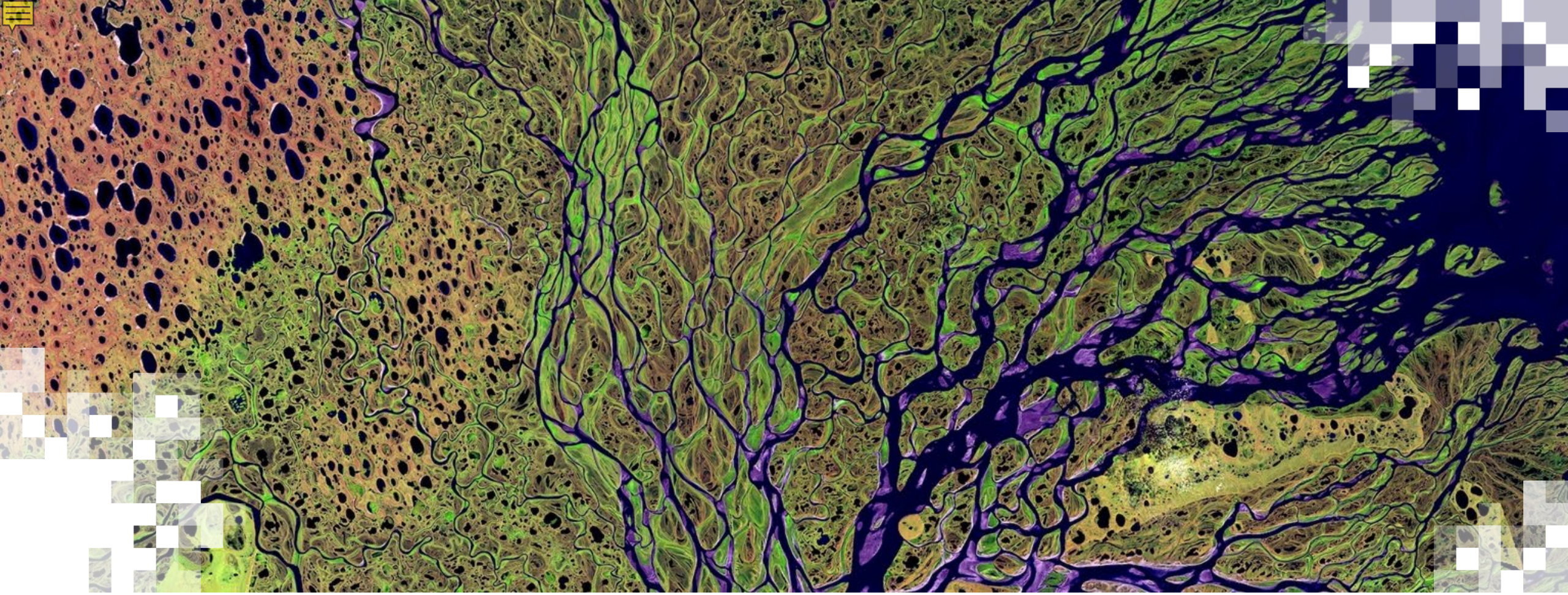
- The [Environmental Justice Data Search Interface](#) searches Earthdata data and tools with a focus on resources with an environmental justice focus.
 - Search by topic: Climate Change, Disasters, Extreme Heat, Food Availability, Human Dimensions, Health & Air Quality, Urban Flooding, and Water Availability
- Here's an example shown below for the [Food Insecurities Hotspot Dataset](#).

Main Attributes	Metadata Attributes
Strengths of Dataset ⁱ 10-year temporal extent	Project ⁱ FOOD - Food Security Data Collection
Limitations of Dataset ⁱ Limited geographic coverage	Geographic Coverage ⁱ Central America; Caribbean Islands; Central Asia; East Africa; Southern Africa; West Africa.
	Spatial Resolution ⁱ 1 kilometer
	Temporal Extent ⁱ 2009-01-01 to 2019-12-31
	Scientific Focus Earth Science
	Format ⁱ GeoTIFF
	Temporal Resolution ⁱ -
	Latency ⁱ -

Food Insecurity Hotspots Data Set, v1 (2009–2019)

Food Security





Activity

Visit [Earthdata](https://earthdata.nasa.gov) and take it for a spin! Search for interesting datasets, and our trainers will float around the room to answer and questions.



Thank You!

