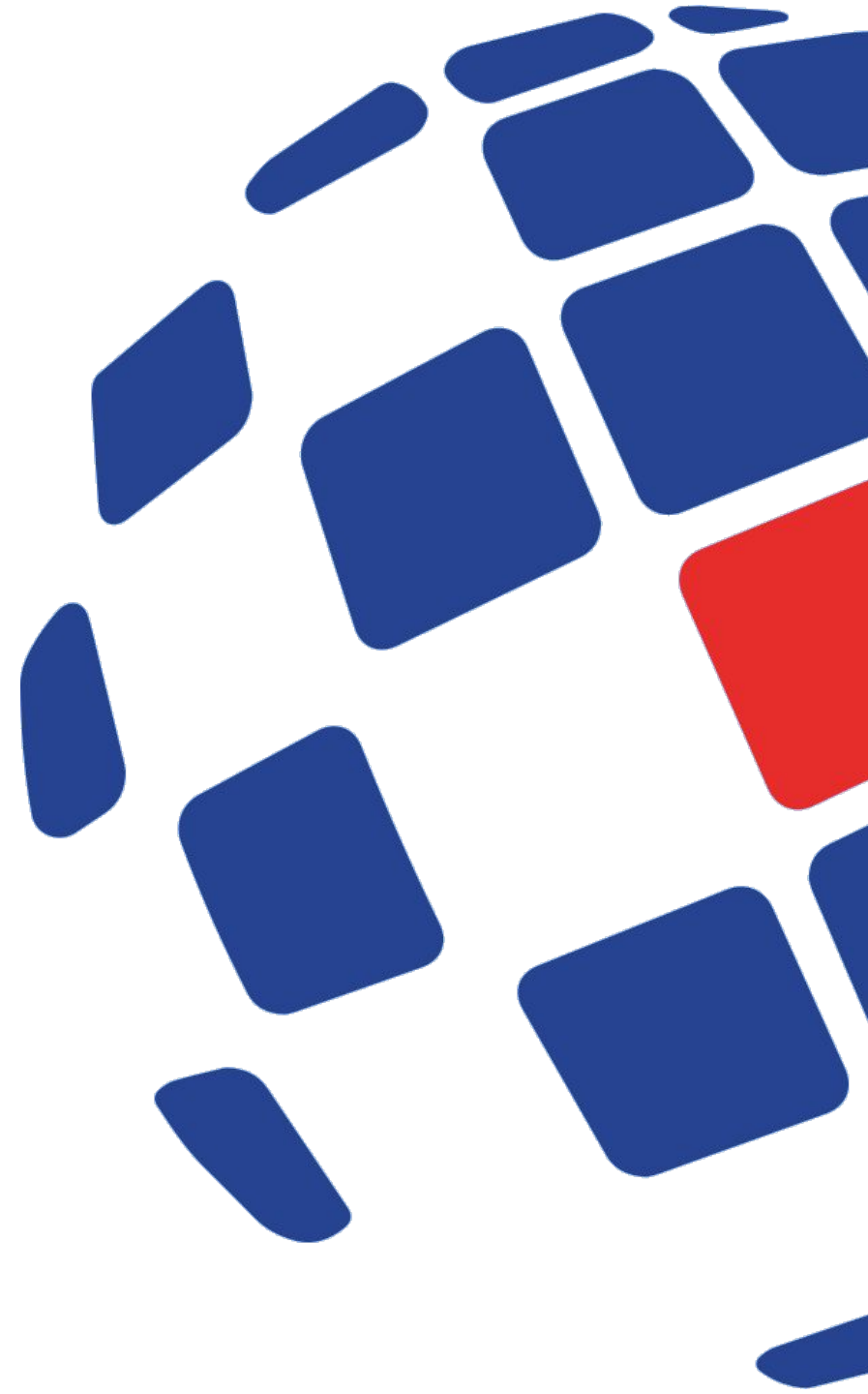




October 2023 - Dominica

# Where does data come from?



# Introduction

- GIS data can be expensive
- Increasingly free and open source data available
- Some sources might be closer than you think
- Some source are included just for your future reference
- What data can you use at work?
- We will look at example of both Vector and Raster data



# Data

## Primary Data

- Data collected directly in digital format for GIS use
- E.g. GPS, survey data, remote sensing images
- Factual and original

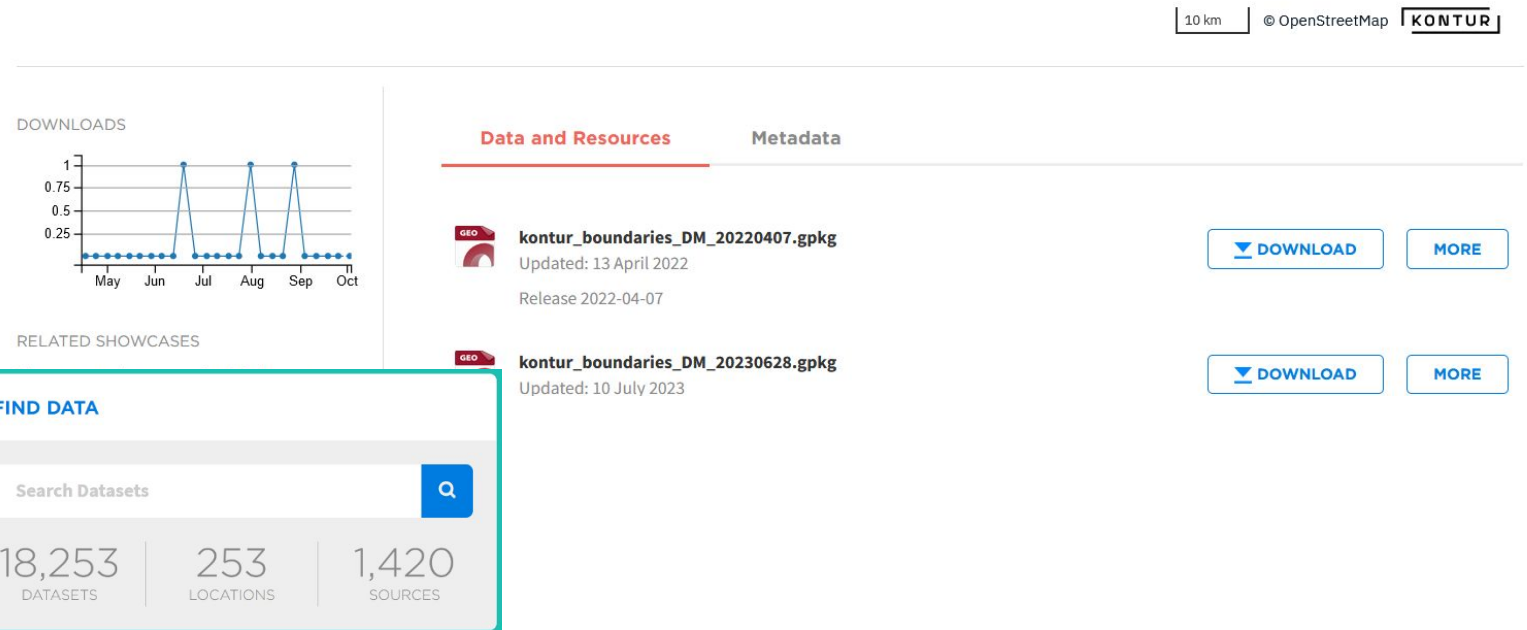
## Secondary Data

- Data either digital or analog, originally captured in another format
- Conversion is required from the original format to a GIS format, e.g. scanning, digitizing
- Analysis and interpretation of primary data

# Humanitarian Data Exchange



- HDX – data.humdata.org
- 18,000 data sets over 1,400 sources
- UN's Centre for Humanitarian Data



10 km © OpenStreetMap **KONTUR**

**DOWNLOADS**

Month	Downloads
May	0.05
Jun	0.05
Jul	1.0
Aug	0.05
Sep	1.0
Oct	0.05

**RELATED SHOWCASES**

**FIND DATA**

Search Datasets

18,253 DATASETS | 253 LOCATIONS | 1,420 SOURCES

**Data and Resources** Metadata

- kontur\_boundaries\_DM\_20220407.gpkg**  
Updated: 13 April 2022  
Release 2022-04-07  
[DOWNLOAD](#) [MORE](#)
- kontur\_boundaries\_DM\_20230628.gpkg**  
Updated: 10 July 2023  
[DOWNLOAD](#) [MORE](#)

# OpenStreetMap (OSM)

- Collaborative project for free editable map of the world
- Settlements and populated areas
- Transport and road networks
- [download.geofabrik.de](http://download.geofabrik.de)

GEOFABRIK  *downloads*

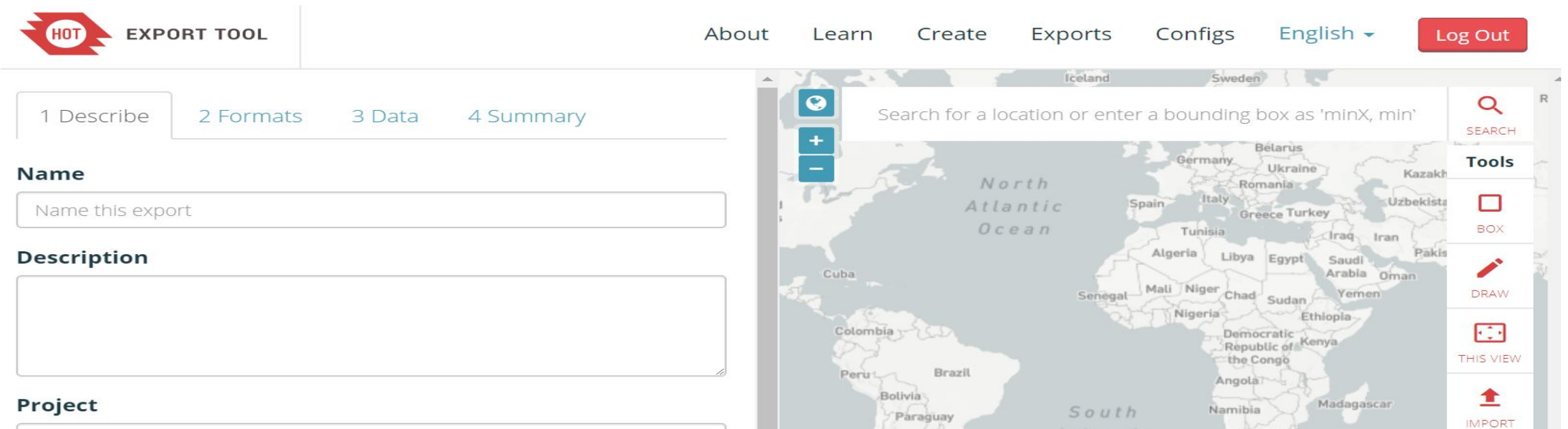
## OpenStreetMap Data Extracts

Welcome to Geofabrik's free download server. This server has data extracts from the [OpenStreetMap project](#) which are normally updated every day. Select your continent and then your country of interest from the list below. (If you have been directed to this page from elsewhere and are not familiar with OpenStreetMap, we highly recommend that you read up on OSM before you use the data.) This download service is offered for free by Geofabrik GmbH.



# HOT - Humanitarian OSM Team

- OSM Humanitarian team - export.hotosm.org
- Specialized areas and topics
- Requires registration



The screenshot shows the 'HOT EXPORT TOOL' interface. At the top left is the HOT logo and 'EXPORT TOOL' text. Navigation links include 'About', 'Learn', 'Create', 'Exports', 'Configs', 'English', and a 'Log Out' button. Below the navigation is a progress bar with four steps: '1 Describe', '2 Formats', '3 Data', and '4 Summary'. The 'Describe' step is active. It contains a 'Name' field with the placeholder 'Name this export', a 'Description' text area, and a 'Project' field. To the right is a map of the Atlantic Ocean region with a search bar and a 'Tools' sidebar containing options like 'BOX', 'DRAW', 'THIS VIEW', and 'IMPORT'.

# GADM

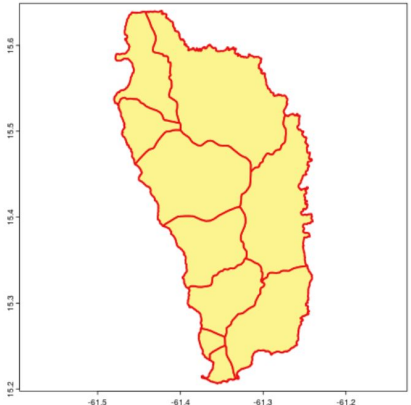
- GADM - Global Administrative Boundaries
- Preferable to use borders from HDX, if available
- gadm.org

GADM Maps Data About

### Download GADM data (version 4.1)

Country

[Geopackage](#)  
[Shapefile](#)  
[GeoJSON: level-0, level1](#)  
[KMZ: level-0, level1](#)



# Natural Earth

- Contains both vector and raster mapping data
- Most useful scale is 1:10M
- [naturalearthdata.com](http://naturalearthdata.com)



## Large scale data, 1:10m



[Cultural](#) [Physical](#) [Raster](#)

## Downloads

Data themes are available in three levels of detail. For each scale, themes are listed on Cultural, Physical, and Raster category pages.

**Stay up to date!** Know when a new version of Natural Earth is released by subscribing to our [announcement list](#).

**Overwhelmed?** The [Natural Earth quick start kit](#) (165 mb) provides a small sample of Natural Earth themes styled in an ArcMap .MXD document and in a QGIS document. Download all vector themes as [SHP](#) (279 mb) or as [SQLite](#) (222 mb).

Natural Earth is the creation of many [volunteers](#) and is supported by [NACIS](#). It is free for use in any type of project. [Full Terms of Use](#) »

## Large scale data, 1:10m



## Medium scale data, 1:50m



## Small scale data, 1:110m





# WorldPop

- Geospatial analysis to produce estimates of population
- Gridded raster population density layer
- <https://youtu.be/A1Aavgusj41Q?t=1217>



The banner features the WorldPop logo on the left, followed by navigation links: ABOUT OUR WORK, NEWS, DATA, and CONTACT. A search bar is located on the right. The main text reads: **WorldPop: High resolution age-structured population distribution maps**. The background is a world map with population density overlays in green and yellow.

# SRTM

- Shuttle Radar Topography Mission (NASA)
- 30 meters resolution - <https://dwtkns.com/srtm30m/>
- 90m – <https://cgiarcsi.community/data/srtm-90m-digital-elevation-database-v4-1/>



ABOUT ▾ BLOG DATA ▾ SHOWCASE EVENT ▾ SHAREPOINT



## SRTM 90m Digital Elevation

**30-Meter SRTM Tile Downloader**

This interface attempts to ease the pain of downloading 30-meter resolution elevation data from the Shuttle Radar Topography Mission.

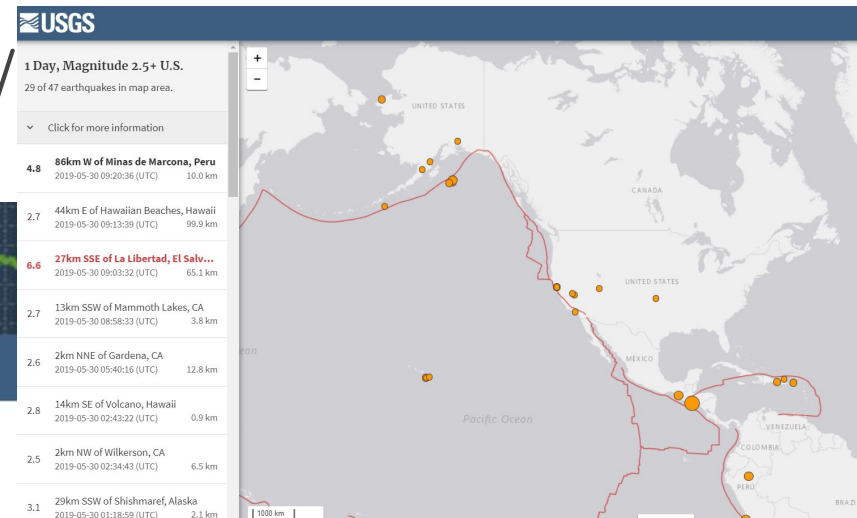
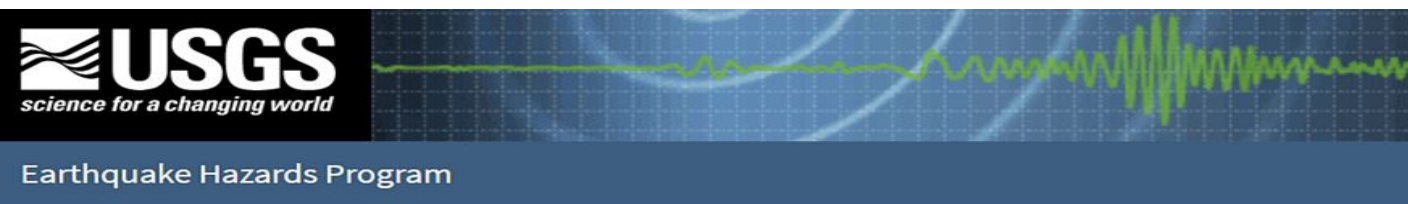
Click on **yellow tiles** to download their corresponding data.

Tiles come as zipped SRTMHGT files at 1-arcsecond resolution (3601x3601 pixels) in a latitude/longitude projection (EPSG:4326), downloaded from [NASA servers](#).

For the older and coarser 90-meter data, try [this downloader](#). For manual bulk downloads, a GeoJSON indexing DEM file names [lives here](#), use this base URL.

By Derek Watkins. Built with Mapbox GLJS. Tiles from CartoDB. Questions or comments to [dwtkns at gmail](mailto:dwtkns@gmail.com).

- Earthquakes: United States Geological Survey - usgs.gov
- earthquake.usgs.gov/earthquakes/
- earthquake.usgs.gov/earthquakes/search/



**USGS**

1 Day, Magnitude 2.5+ U.S.  
29 of 47 earthquakes in map area.

Click for more information

4.8	86km W of Minas de Marcona, Peru	2019-05-30 09:20:36 (UTC)	10.0 km
2.7	44km E of Hawaiian Beaches, Hawaii	2019-05-30 09:13:39 (UTC)	99.9 km
6.6	27km SSE of La Libertad, El Salv...	2019-05-30 09:03:32 (UTC)	65.1 km
2.7	13km SSW of Mammoth Lakes, CA	2019-05-30 08:58:33 (UTC)	3.8 km
2.6	2km NNE of Gardena, CA	2019-05-30 05:40:16 (UTC)	12.8 km
2.8	14km SE of Volcano, Hawaii	2019-05-30 02:43:22 (UTC)	0.9 km
2.5	2km NW of Wilkerson, CA	2019-05-30 02:34:43 (UTC)	6.5 km
3.1	29km SSW of Shishmaref, Alaska	2019-05-30 01:18:59 (UTC)	2.1 km

## Search Earthquake Catalog

Search results are limited to 20,000 events. To get URL for a search, click the search button, then copy the URL from the browser address bar.

- [Help](#)
- [ANSS Comprehensive Earthquake Catalog \(ComCat\) Documentation](#)
- [Developer's Corner - bulk access to catalog, tools for obtaining specific products](#)
- [Significant Earthquakes Archive](#)

# HydroSHEDS

- Rivers - HydroSheds: United States Geological Survey
- hydrosheds.org

**USGS**  
science for a changing world

## HydroSHEDS

Data Produced by:

**Home**  
**Overview**  
**Data Sources**  
**Data Set Development**  
**Quality Assessment**  
**Data Availability**  
**Data Formats**

### HydroSHEDS

(**H**ydrological data and maps based on **S**Huttle **E**levation **D**erivatives at multiple **S**cales)

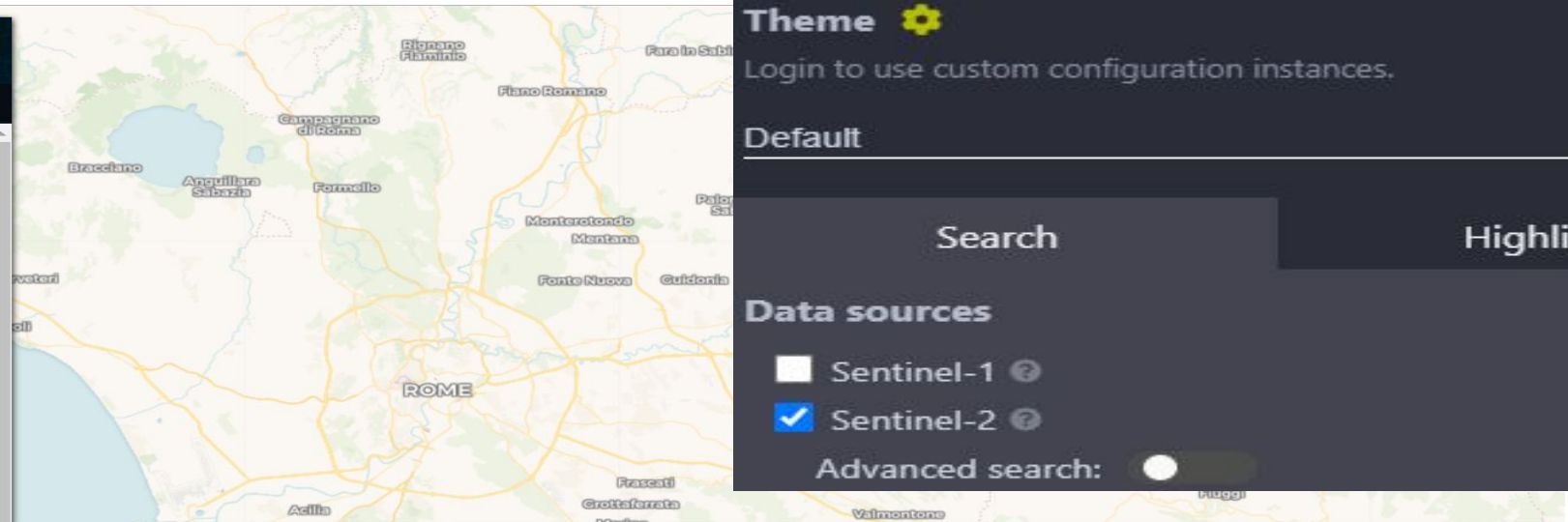
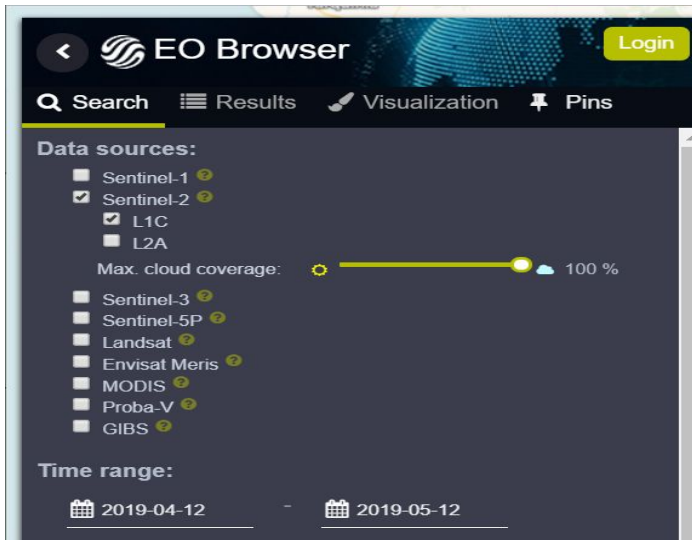
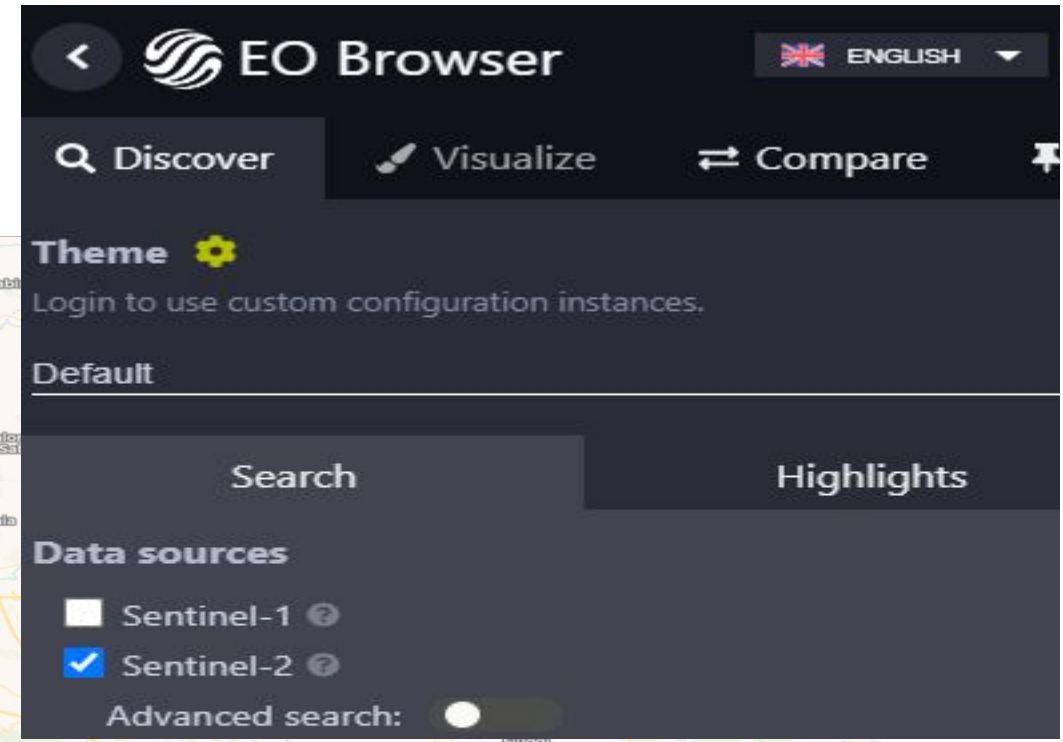
HydroSHEDS is a mapping product that provides hydrographic information for regional and global-scale applications in a consistent format. It offers a suite of geo-referenced data sets (vector and raster) at various scales, including river networks, watershed boundaries, drainage directions, and flow accumulations. HydroSHEDS is based on high-resolution elevation data obtained during a Space Shuttle flight for NASA's Shuttle Radar Topography Mission (SRTM).

**Amazon Basin**

Rivers derived at 500 m resolution  
0 500 1000  
Kilometers

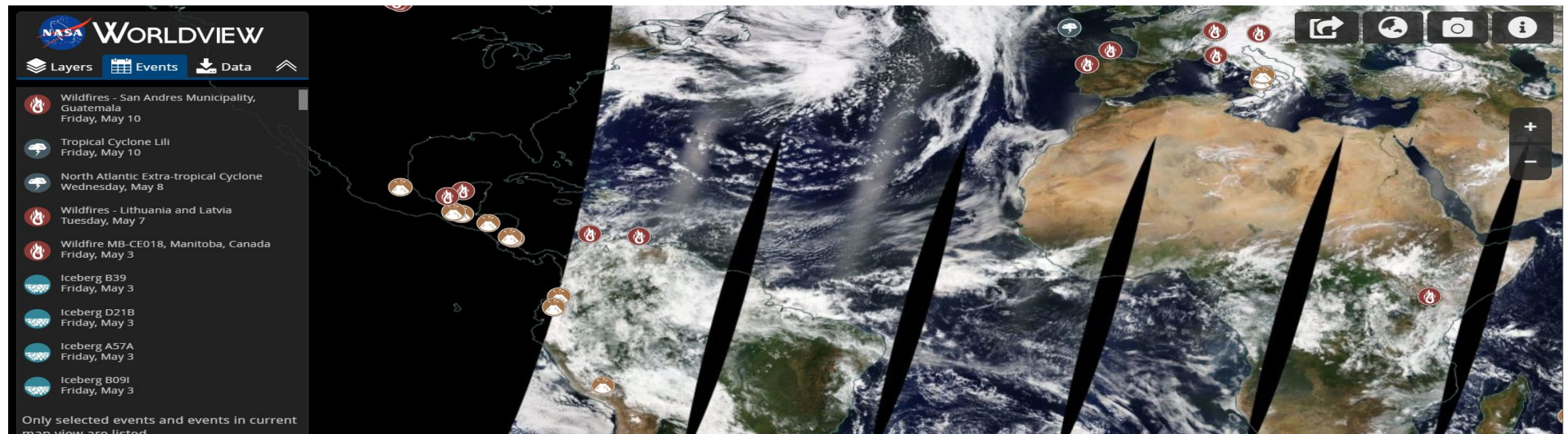
# EO Browser

- Sentinel and other satellite imagery
- Sentinel useful source of flood extent data
- <https://apps.sentinel-hub.com/eo-browser>



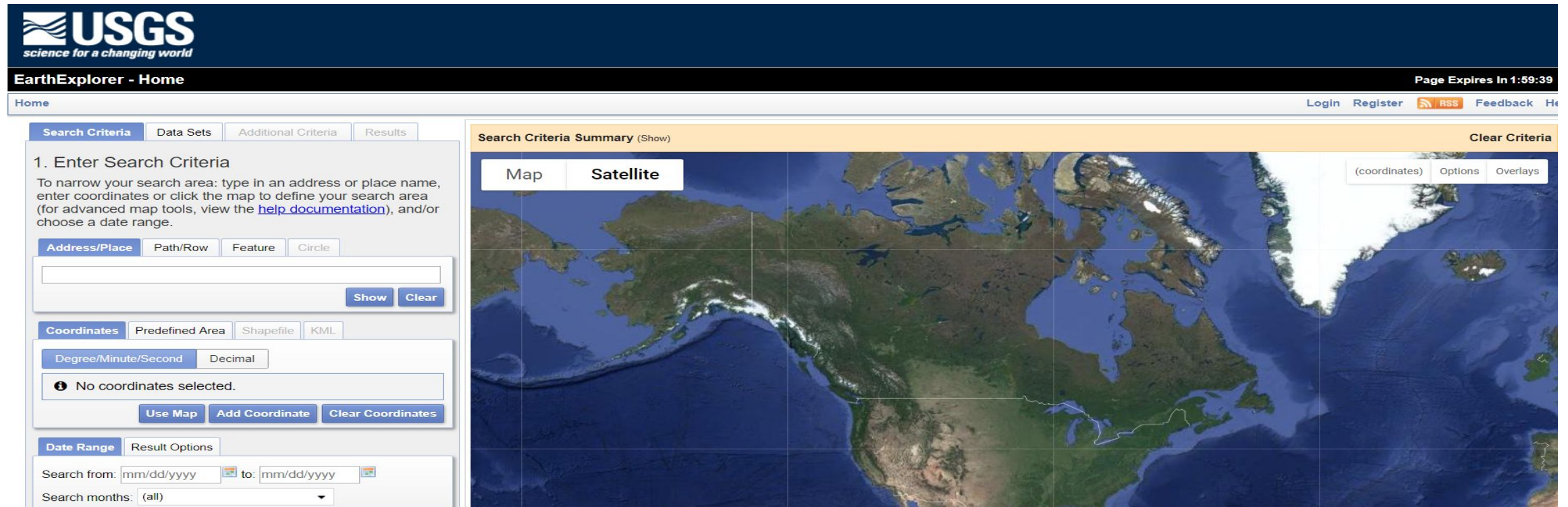
# EOSDIS Worldview

- NASA's Earth Observing System Data and Information System
- <https://worldview.earthdata.nasa.gov>
- <https://earthdata.nasa.gov/worldview>



# USGS EarthExplorer

- EarthExplorer: United States Geological Survey (USGS)
- <https://earthexplorer.usgs.gov>

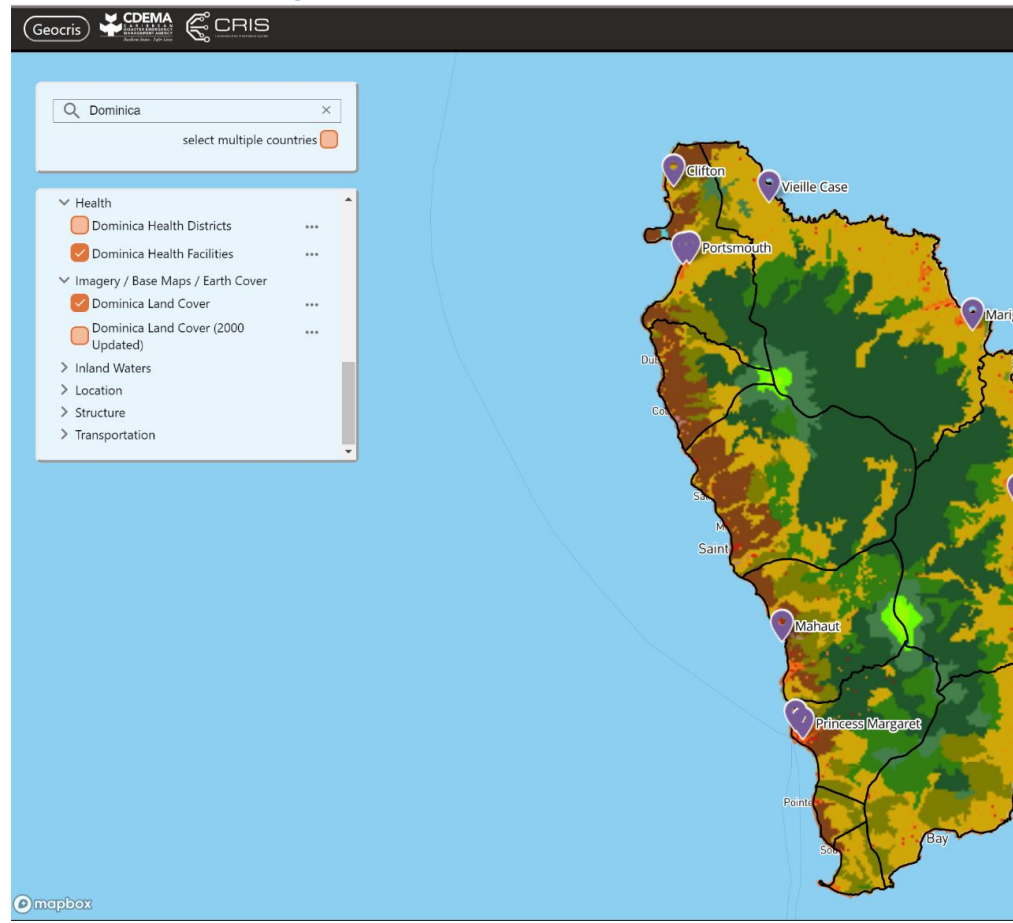


The screenshot shows the USGS EarthExplorer website. At the top left is the USGS logo with the tagline "science for a changing world". Below it is the page title "EarthExplorer - Home" and a "Page Expires In 1:59:39" timer. A navigation bar includes "Home", "Login", "Register", "RSS", "Feedback", and "Help". The main content area is divided into "Search Criteria" and "Search Criteria Summary (Show)". The "Search Criteria" section has four tabs: "Address/Place", "Path/Row", "Feature", and "Circle". Under "Address/Place", there is a text input field and "Show" and "Clear" buttons. Below that are tabs for "Coordinates", "Predefined Area", "Shapefile", and "KML". Under "Coordinates", there are tabs for "Degree/Minute/Second" and "Decimal", a message "No coordinates selected.", and "Use Map", "Add Coordinate", and "Clear Coordinates" buttons. At the bottom of the search criteria are "Date Range" and "Result Options" tabs, with input fields for "Search from: mm/dd/yyyy" and "to: mm/dd/yyyy", and a "Search months: (all)" dropdown. The "Search Criteria Summary" section shows a map of the world with "Map" and "Satellite" view options, and "Clear Criteria" button. The map is currently in "Satellite" view and shows the Americas.

# GEOCRIS

- CDEMA
- <https://geocris2.cdema.org/>

<https://geocris2.cdema.org/features/collections.html>

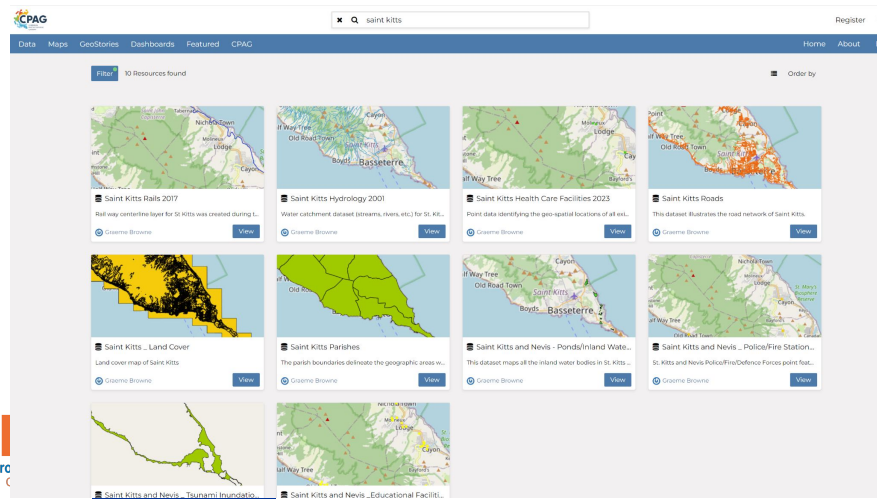


- [dma.dma\\_loc\\_poi\\_polygon](#) [JSON](#) [View](#)  
Data for table dma.dma\_loc\_poi\_polygon
- [dma.dma\\_loc\\_populated\\_places\\_points](#) [JSON](#) [View](#)  
Data for table dma.dma\_loc\_populated\_places\_points
- [dma.dma\\_loc\\_shelters\\_point](#) [JSON](#) [View](#)  
Data for table dma.dma\_loc\_shelters\_point
- [dma.dma\\_loc\\_towns\\_point](#) [JSON](#) [View](#)  
Data for table dma.dma\_loc\_towns\_point
- [dma.dma\\_str\\_buildings\\_point](#) [JSON](#) [View](#)  
Data for table dma.dma\_str\_buildings\_point
- [dma.dma\\_str\\_buildings\\_roseau\\_polygon](#) [JSON](#) [View](#)  
Data for table dma.dma\_str\_buildings\_roseau\_polygon
- [dma.dma\\_str\\_osm\\_buildings\\_polygon](#) [JSON](#) [View](#)  
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- [dma.dma\\_trn\\_roads\\_line](#) [JSON](#) [View](#)  
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- [dma.dma\\_trn\\_transportation\\_airports\\_polygon](#) [JSON](#) [View](#)  
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- [dma.dma\\_trn\\_transportation\\_bridges\\_point](#) [JSON](#) [View](#)  
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Data for table dma.dma\_trn\_transportation\_roads\_line
- [dma.dma\\_trn\\_transportation\\_trails\\_line](#) [JSON](#) [View](#)  
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- [dma.dma\\_wat\\_lakes\\_polygon](#) [JSON](#) [View](#)  
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- [dma.dma\\_wat\\_surge\\_susceptibility\\_polygon](#) [JSON](#) [View](#)  
Data for table dma.dma\_wat\_surge\_susceptibility\_polygon
- [dma.dma\\_wat\\_waterfall\\_point](#) [JSON](#) [View](#)  
Data for table dma.dma\_wat\_waterfall\_point



# OTHER REGIONAL RESOURCES

- GEONODES
- World Bank - some countries have a country specific portal for disaster risk reduction.
- Caribbean Protected Areas - some useful baseline info
- <https://geonode.thecpag.org>
- Caribbean Geoportal - [caribbeangeoportal.com](http://caribbeangeoportal.com)



# LOCAL DATA

- Who are data providers in your country? What can they give you?
- Survey Department
- Planning Department
- Bureau of Statistics
- Public Works Department
- Environment/Fisheries Departments
- Health ministry
- Public Health
- Education Department
- Telecoms Companies
- Utilities
- Community Mapper or groups

# Conclusion

- Key data sources
- Vector data - HDX, GADM and OSM
- Raster data - SRTM satellite and WorldPop
- Lots of data available online!
- Data might be sitting on a colleague's computer!



This programme is  
gratefully supported  
by



**USAID**  
FROM THE AMERICAN PEOPLE





# MAP ACTION

[mapaction.org](http://mapaction.org)