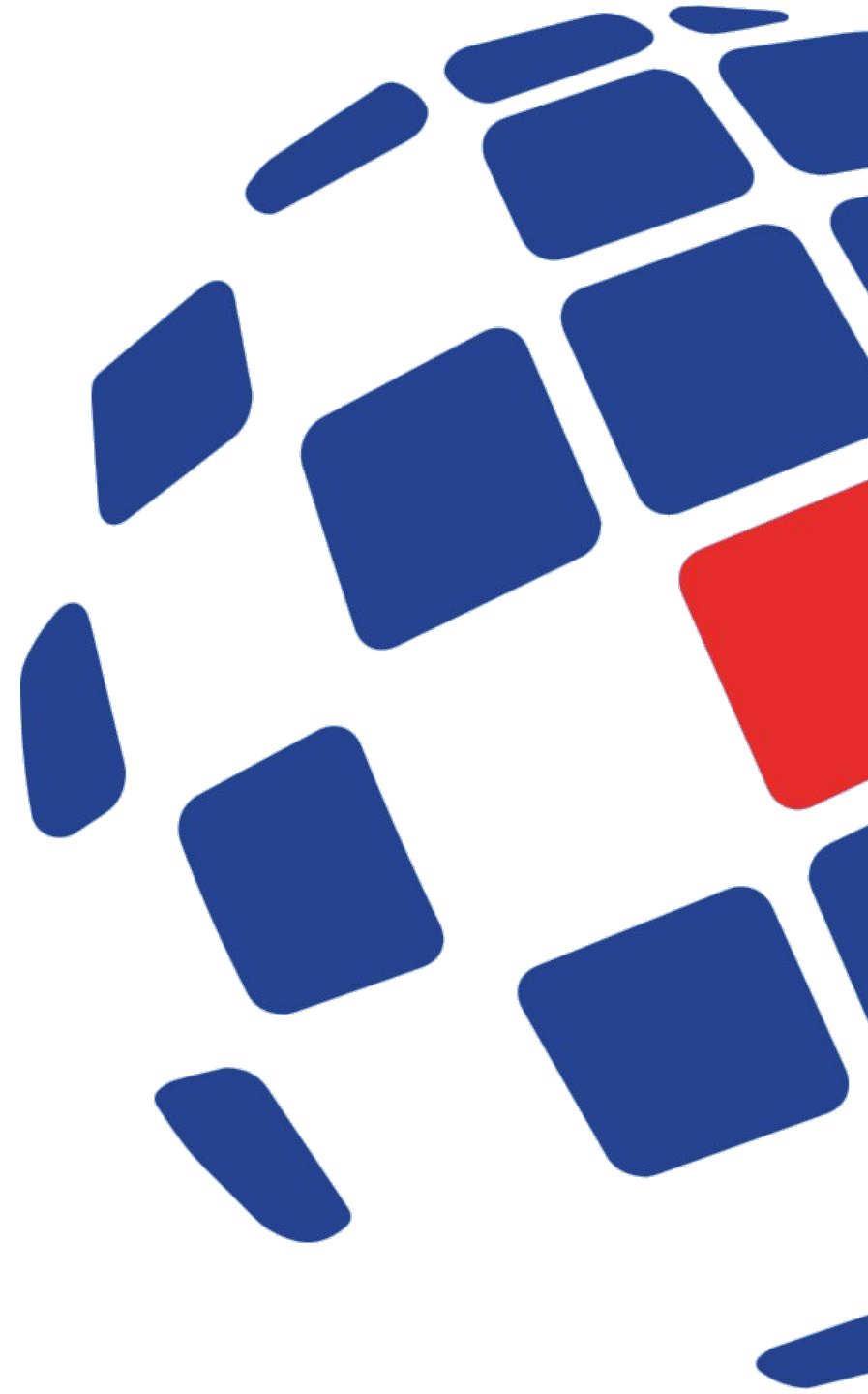




October 2023 - Grenada

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

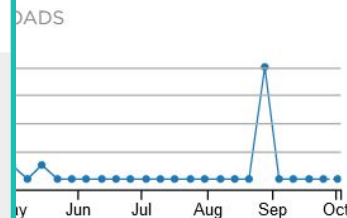
- HDX – data.humdata.org
- 18,000 data sets over 1,400 sources
- UN's Centre for Humanitarian Data



FIND DATA

Search Datasets

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



Data and Resources

Metadata



geoBoundaries-GRD-ADM0_simplified.geojson

Updated: Live

Simplified GeoJSON ADM0 boundaries for Grenada

OpenStreetMap (OSM)

- Collaborative project for free editable map of the world
- Settlements and populated areas
- Transport and road networks
- download.geofabrik.de

GEOFABRIK  *downloads*

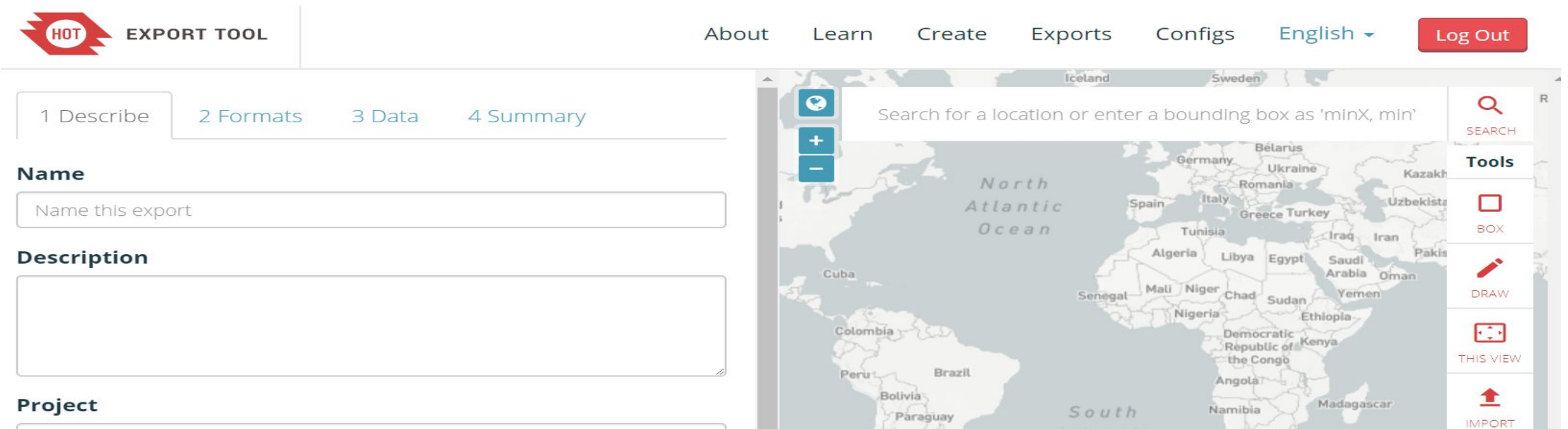
OpenStreetMap Data Extracts

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' (with a dropdown arrow), and a red '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. The form includes a 'Name' field with the placeholder 'Name this export', a 'Description' text area, and a 'Project' field. On the right, a map of the Atlantic Ocean region is displayed with a search bar and a 'Tools' sidebar containing options for 'BOX', 'DRAW', 'THIS VIEW', and 'IMPORT'.

GADM

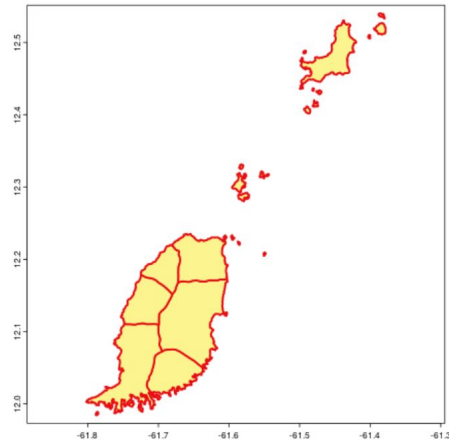
- GADM - Global Administrative Boundaries
- Preferable to use borders from HDX, if available
- gadm.org

GADM Maps Data About

Download GADM data (version 4.1)

Country
Grenada

Geopackage
Shapefile
GeoJSON: level-0, level1
KMZ: level-0, level1



The map displays the administrative boundaries of Grenada, including the main island and the smaller islands to the north and east. The boundaries are highlighted in red, and the landmasses are filled with a light yellow color. The map includes a coordinate grid with latitude values from 12.0 to 12.5 and longitude values from -61.8 to -61.3.

Natural Earth

- Contains both vector and raster mapping data
- Most useful scale is 1:10M
- 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>

world pop

ABOUT OUR WORK ▾ NEWS DATA ▾ CONTACT

Search

**WorldPop:
High resolution age-
structured population
distribution maps**

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.

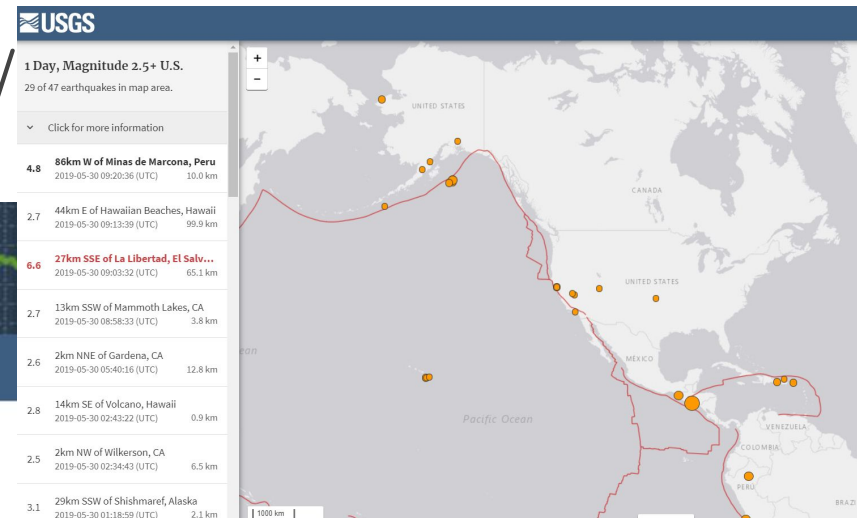
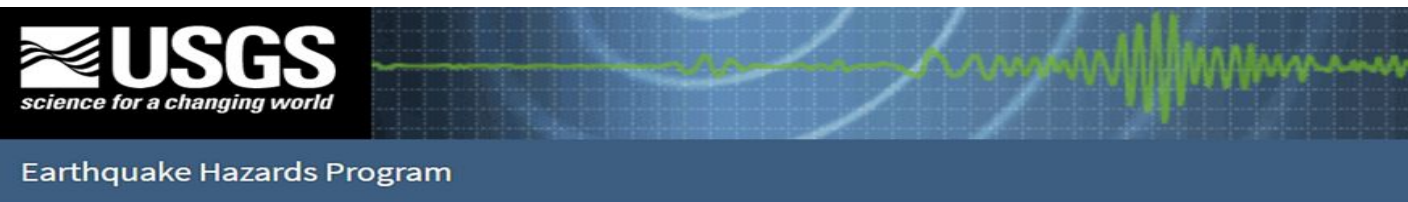
Click on **yellow tiles** to download their corresponding data.

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](#)

← Earthquakes

Latest Earthquakes

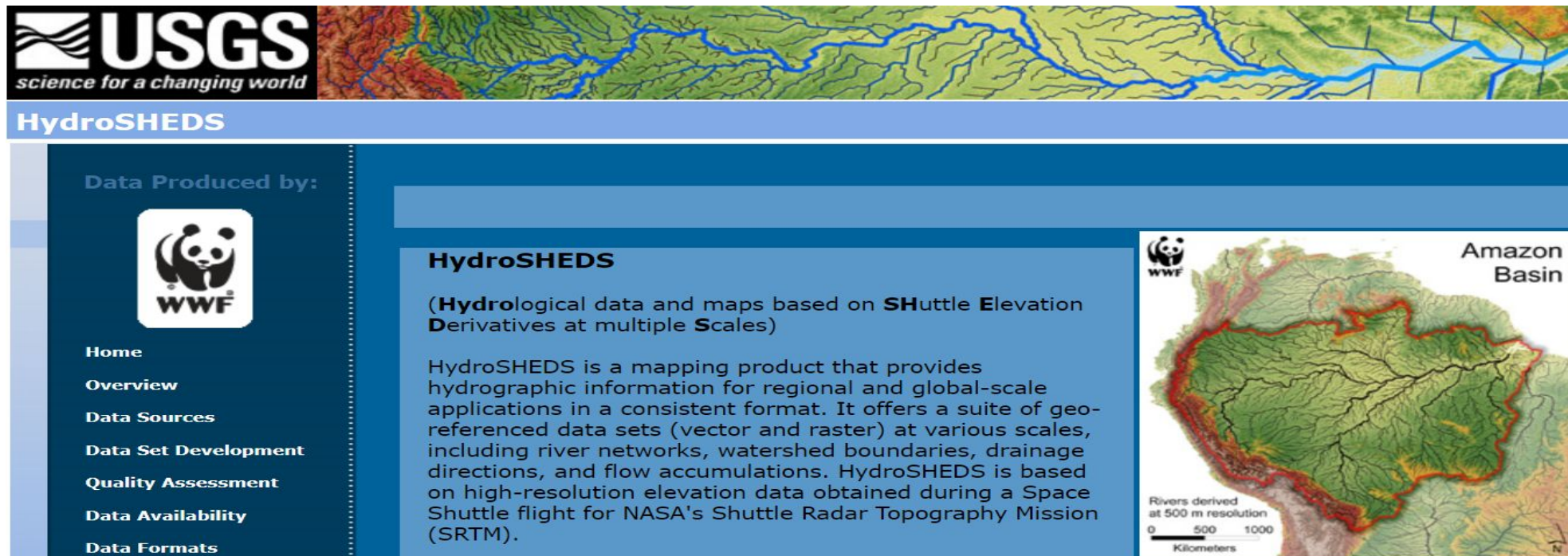
Earthquake Lists, Maps & Statistics

Search Earthquake Catalog

Real-time Feeds & Notifications

HydroSHEDS

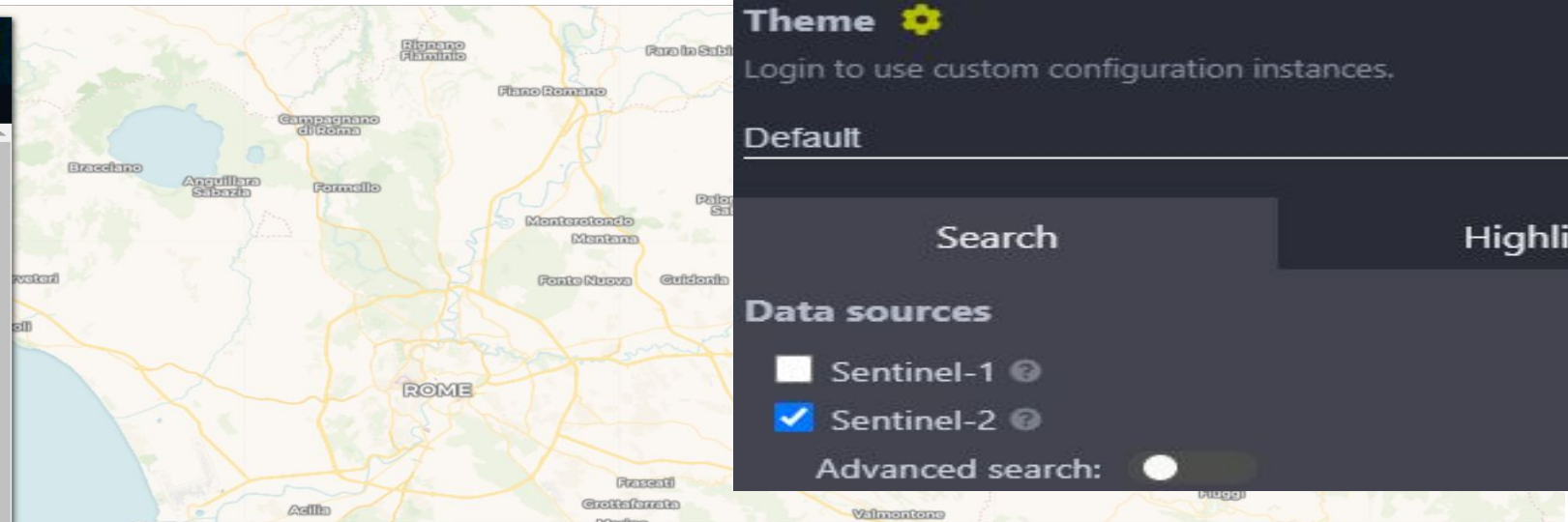
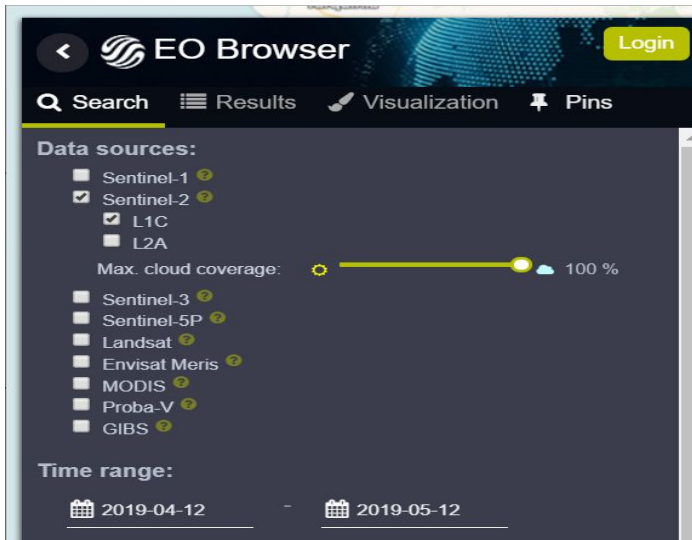
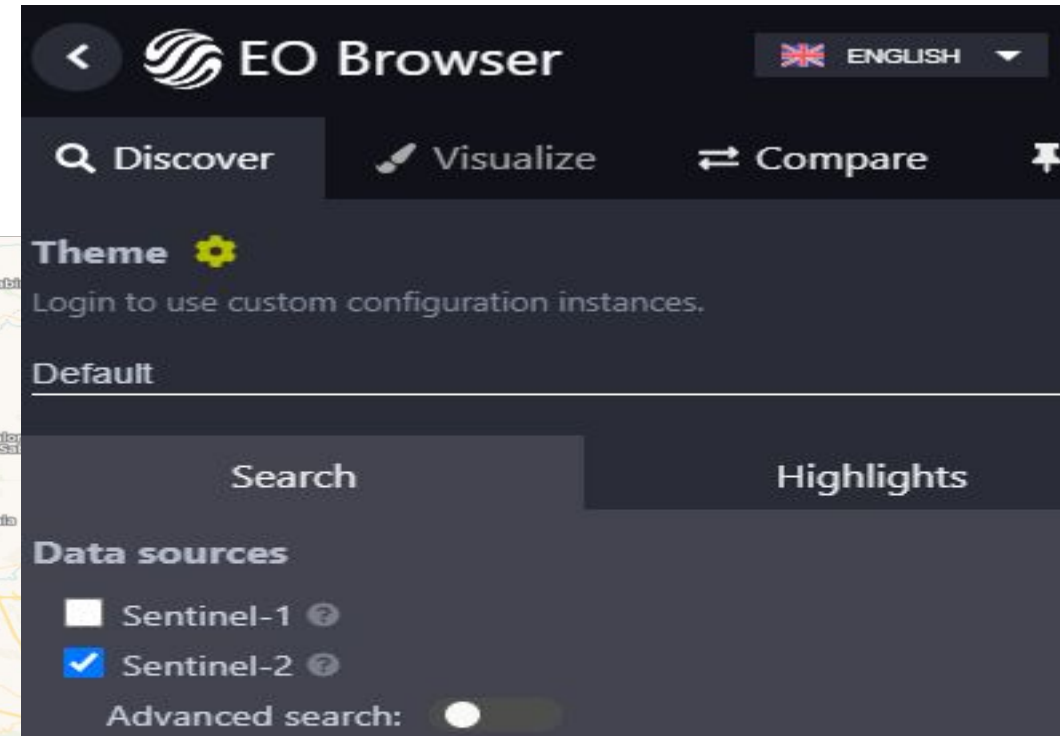
- Rivers - HydroSheds: United States Geological Survey
- hydrosheds.org



The screenshot shows the HydroSHEDS website interface. At the top left is the USGS logo with the tagline "science for a changing world". Below it is the "HydroSHEDS" title. A navigation menu on the left lists: Home, Overview, Data Sources, Data Set Development, Quality Assessment, Data Availability, and Data Formats. The main content area features the WWF logo and the text "Data Produced by:". Below this, it says "HydroSHEDS (Hydrological data and maps based on SHuttle Elevation Derivatives at multiple Scales)". A paragraph describes the product: "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)." To the right is a map of the Amazon Basin with a WWF logo and the text "Amazon Basin". Below the map is a scale bar: "Rivers derived at 500 m resolution 0 500 1000 Kilometers".

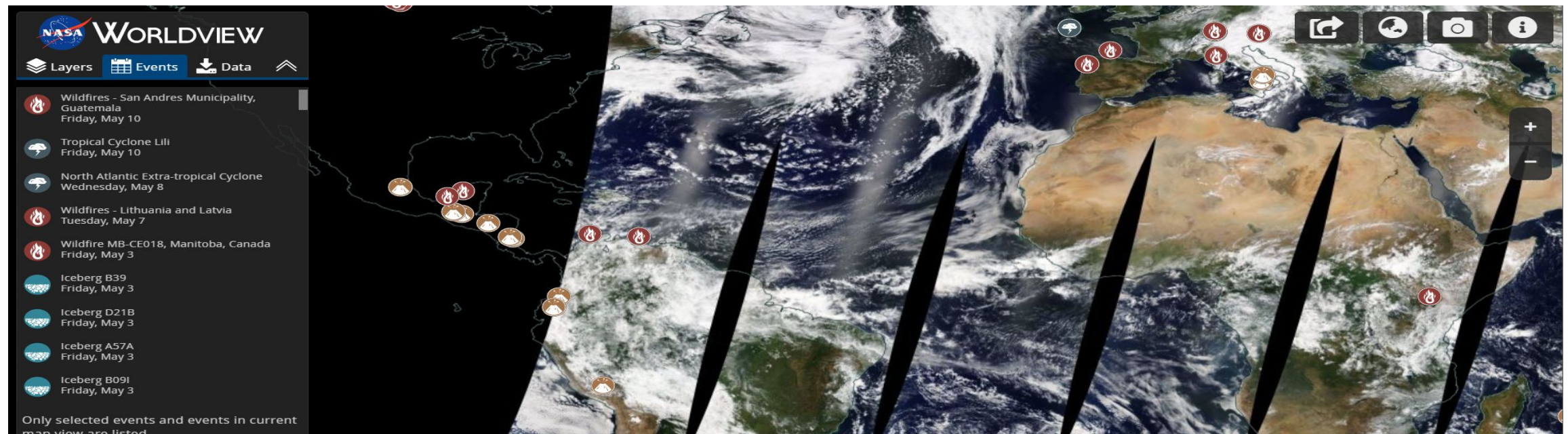
EO Browser

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



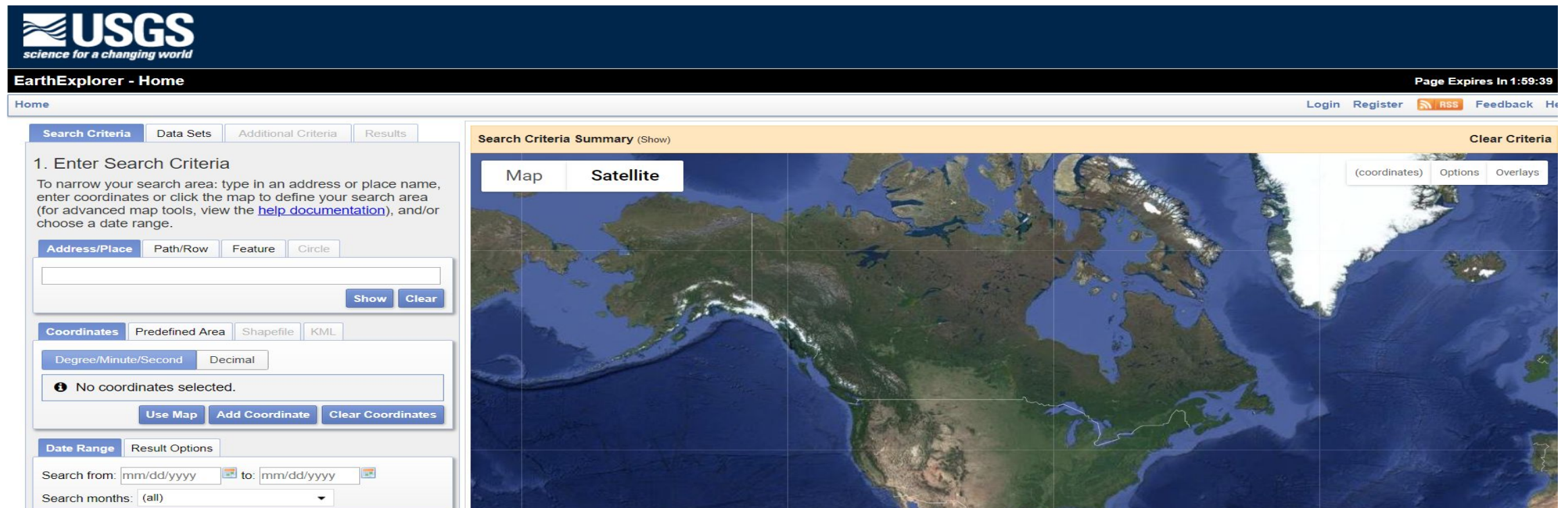
EOSDIS Worldview

- 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>



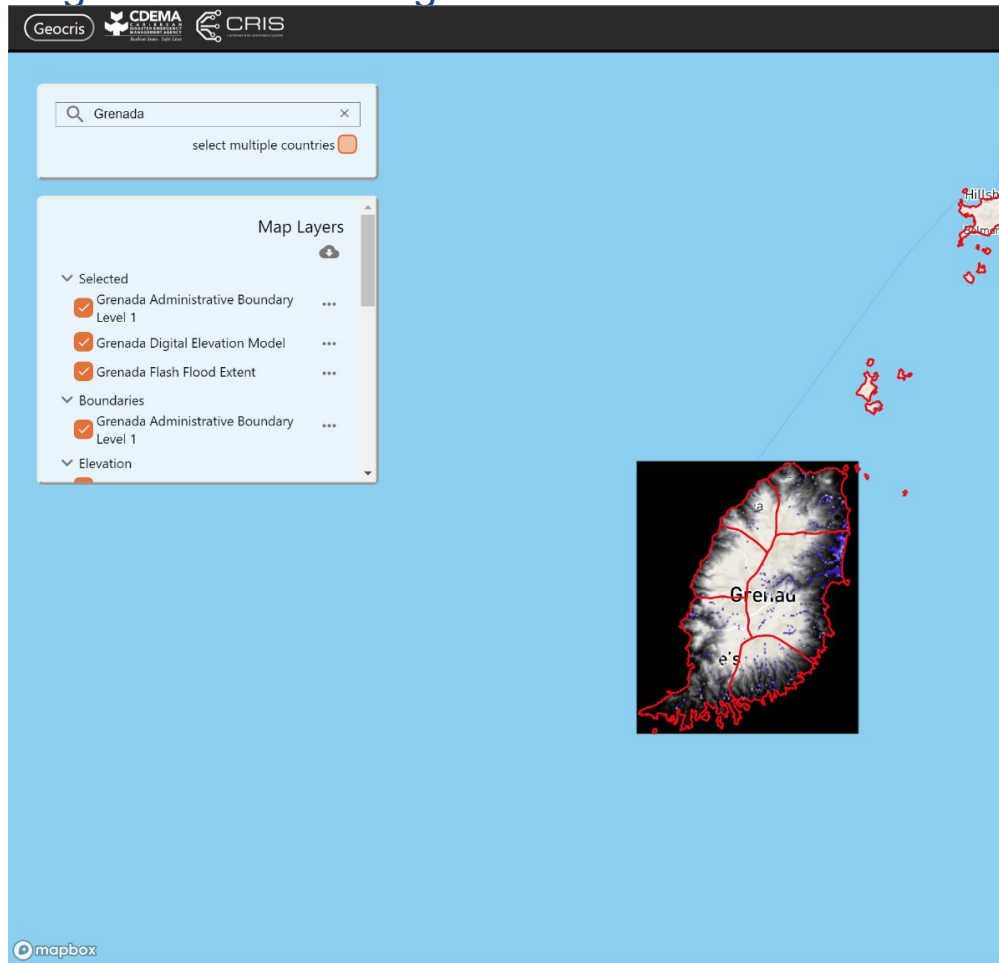
The screenshot shows the USGS EarthExplorer website interface. At the top left is the USGS logo with the tagline "science for a changing world". Below it is the "EarthExplorer - Home" header. On the right side of the header, there is a "Page Expires In 1:59:39" timer and navigation links for "Home", "Login", "Register", "RSS", "Feedback", and "Help".

The main content area is divided into two sections. On the left is the "Search Criteria" panel, which includes tabs for "Search Criteria", "Data Sets", "Additional Criteria", and "Results". Under "Search Criteria", there is a section titled "1. Enter Search Criteria" with instructions: "To narrow your search area: type in an address or place name, enter coordinates or click the map to define your search area (for advanced map tools, view the [help documentation](#)), and/or choose a date range." Below this are three input methods: "Address/Place" (with sub-tabs "Path/Row", "Feature", "Circle"), "Coordinates" (with sub-tabs "Predefined Area", "Shapefile", "KML"), and "Date Range" (with sub-tab "Result Options"). The "Address/Place" section has a text input field and "Show" and "Clear" buttons. The "Coordinates" section has radio buttons for "Degree/Minute/Second" and "Decimal", a message "No coordinates selected.", and "Use Map", "Add Coordinate", and "Clear Coordinates" buttons. The "Date Range" section has "Search from:" and "to:" fields with date pickers, and a "Search months:" dropdown menu.

On the right is the "Search Criteria Summary (Show)" panel, which contains a map viewer. The map is currently in "Satellite" view, showing a satellite image of North America and the surrounding oceans. There are "Map" and "Satellite" tabs at the top of the map viewer. On the right side of the map viewer, there are links for "(coordinates)", "Options", and "Overlays". A "Clear Criteria" link is located at the top right of the map viewer panel.

GEOCRIS

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



[grd.grd_env_soils_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_env_soils_polygon`

[grd.grd_geo_geomorphology_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_geo_geomorphology_polygon`

[grd.grd_geo_landslide_historical_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_geo_landslide_historical_polygon`

[grd.grd_geo_lineaments_line](#) [JSON](#) [View](#)

Data for table `grd.grd_geo_lineaments_line`

[grd.grd_geo_lithology_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_geo_lithology_polygon`

[grd.grd_geo_quarries_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_geo_quarries_polygon`

[grd.grd_loc_census_ed_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_loc_census_ed_polygon`

[grd.grd_loc_census_ed_pop_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_loc_census_ed_pop_polygon`

[grd.grd_loc_poi_point](#) [JSON](#) [View](#)

Data for table `grd.grd_loc_poi_point`

[grd.grd_loc_populated_places_point](#) [JSON](#) [View](#)

Data for table `grd.grd_loc_populated_places_point`

[grd.grd_loc_shelters_point](#) [JSON](#) [View](#)

Data for table `grd.grd_loc_shelters_point`

[grd.grd_str_buildings_polygon](#) [JSON](#) [View](#)

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[grd.grd_str_buildings_population_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_str_buildings_population_polygon`

[grd.grd_trn_transportation_airport_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_trn_transportation_airport_polygon`

[grd.grd_trn_transportation_airports_seaports_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_trn_transportation_airports_seaports_polygon`

[grd.grd_trn_transportation_roads_line](#) [JSON](#) [View](#)

Data for table `grd.grd_trn_transportation_roads_line`

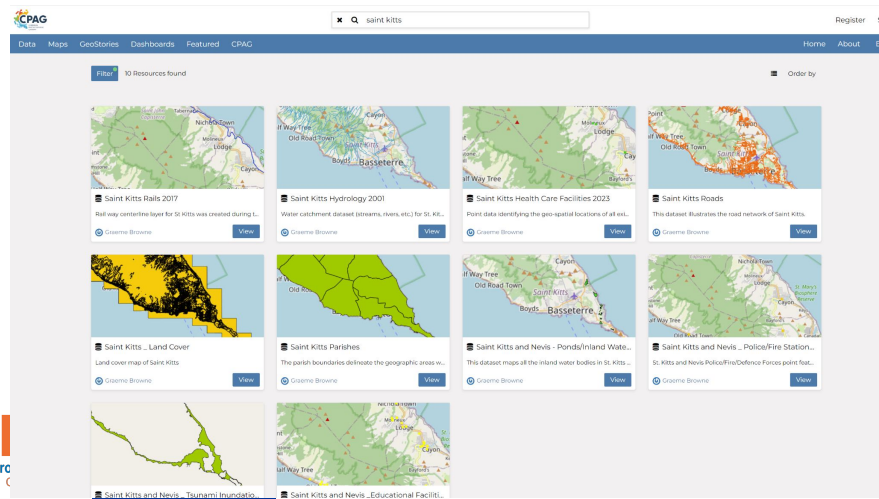
[grd.grd_trn_transportation_seaport_polygon](#) [JSON](#) [View](#)

Data for table `grd.grd_trn_transportation_seaport_polygon`

[grd.grd_wat_river_network_line](#) [JSON](#) [View](#)

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



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