

# GISGeography

ANALYSIS CAREER DATASETS MAPPING SATELLITES SOFTWARE

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## 10 Free GIS Data Sources: Best Global Raster and Vector Datasets (2017)



10 Free GIS Data Sources

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### HELPFUL RESOURCES



### 15 Free Satellite Imagery Data Sources

If you want free satellite imagery, there's no better way to do it then follow this incredibly useful guide. We rank the best sources of free satellite data.



### 100 Earth Shattering Remote Sensing Applications & Uses

This list of earth-shattering remote sensing applications will change the way you feel about how this

# Where can I find free GIS data?

In a perfect world, you'd be able to find all the **free GIS data** you need in a single website. Of course, it would have to be free, downloadable from an authoritative source.

But well, you know the drill. The world's not perfect, life's not fair.

AdChoices

GIS Data Map

Download Free Now

So that's why we've put together this list to turbo-charge your search for free GIS data.

Here is a list of 10 free, downloadable global GIS data sets from highly reputable sources.

## 1 Natural Earth Data

**Natural Earth Data** is number 1 on the list because it does an amazing job to suit the needs of cartographers. By and large, all the key cultural and physical vector GIS datasets are at a global scale conveniently for you to use. The raster datasets also provide beautiful hillshade relief for your map.

The best part is Natural Earth Data is in public domain. You have the right to disseminate and modify the data in any manner.

From a cartography standpoint, it's a no-brainer. Download Natural Earth Data now.

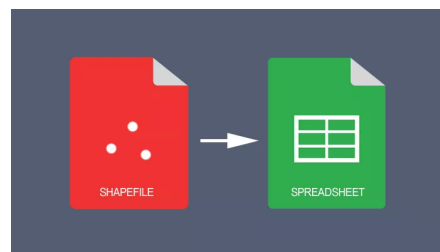
Advantages	Data Types
<ul style="list-style-type: none"> <li>Download global free GIS data in public domain</li> </ul>	<ul style="list-style-type: none"> <li>Cultural, physical and raster (basemap) data.</li> </ul>

industry is changing our world and the way we think.

## GIS Dictionary – Geospatial Definition Glossary

From A to Z, we deliver stunning visualizations and meanings with the GIS Dictionary – Definition Glossary. Sharpen your skills with new GIS terminology.

### LATEST POSTS



## How to Export a Shapefile Table to Excel Spreadsheet in ArcGIS

If you use ArcGIS 10.2 and above, you can use the "Table to Excel" tool to convert a shapefile table to Excel spreadsheet & export field aliases / subtypes

- **To Geofence or Not to Geofence. That is the Question**
- **How to Download USGS Topo Maps for Free**
- **Geodesy: The Mathematics of "Where"**

- Supported by the North American Cartographic Information Society (NACIS).

- ILWIS – Integrated Land and Water Information Management

POPULAR POSTS



Natural Earth Data



## 27 Differences Between ArcGIS and QGIS – The Most Epic GIS Software Battle in GIS History

It's a head-to-head GIS software showdown with the star-studded lineup in the GIS industry- ArcGIS vs QGIS. Discover the differences between ArcGIS and QGIS

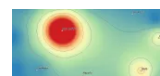
## 2 Esri Open Data

In 2017, **Esri Open Data** is the hidden gold mine of free GIS data that lets you explore 67,310 open data sets from 4,092 organizations worldwide. For this reason, we have it at the top of our list of free GIS data.

In some cases, you'll have to sift through piles of data and merge your downloads into one. Despite this bit of extra work, this is arguably your best chance to find exactly what you're looking for.

In any case, the search is convenient with a map preview of the extent and table. Alternatively, you can search by topic or location and download data in multiple formats. Ultimately, there is nothing more thorough for GIS data than Esri Open Data.

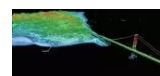
Advantages	Data Types
<ul style="list-style-type: none"> <li>▪ As of 2017, it has 67,310 open data sets from 4,092 organizations worldwide</li> </ul>	<ul style="list-style-type: none"> <li>▪ Download formats are in spreadsheet, KML, shapefile and API's are OGC WMS, GeoJSON and GeoService.</li> </ul>



**Mapping Out the GIS Software Landscape**



**13 Free GIS Software Options: Map the World in Open Source**

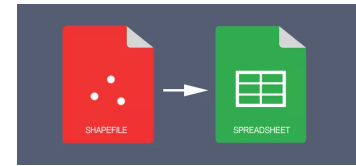


**Top 6 Free LiDAR Data Sources**



**Adding Excel Lat Long Coordinates into ArcGIS**

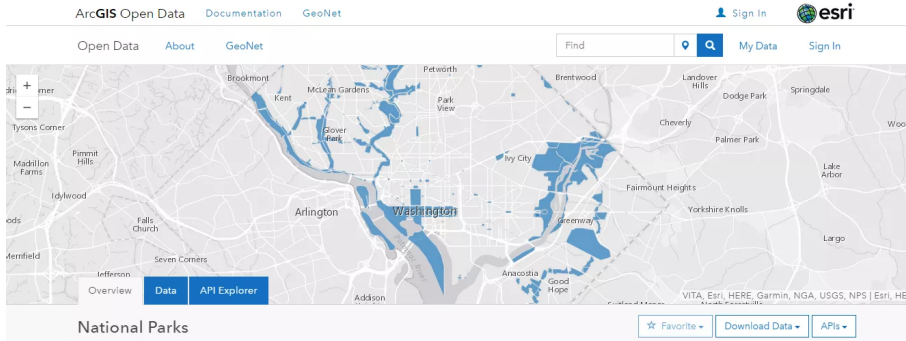
- Managed by the largest commercial GIS organization in the world.



## How to Export a Shapefile Table to Excel Spreadsheet in ArcGIS

by GISGeography in GIS Analysis

If you use ArcGIS 10.2 and above, you can use the “Table to Excel” tool to convert a shapefile table to Excel spreadsheet & export field aliases / subtypes



### 3 USGS Earth Explorer

For Earth observers seeking remotely sensed data, the **USGS Earth Explorer** is your sole destination.



We all know that the USGS’s Earth Explorer gives you access to one of the largest databases of satellite and aerial imagery. But I bet you didn’t know you can download data outside of the United States.

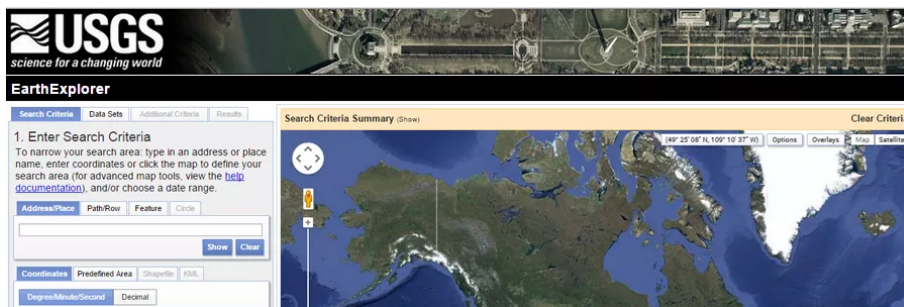
A friendly user-interface makes accessing remote sensing data simple. Actually, it even has a bulk download application if you need to download a several data sets. Register for a free account because this is the ultimate database for free remote sensing data. And if you’re looking for satellite data from other providers, here is the ultimate list of **15 free satellite imagery sources**.

Advantages	Data Types
<ul style="list-style-type: none"> <li>Search for remote sensing data with a</li> </ul>	<ul style="list-style-type: none"> <li>Remote sensing data (Landsat, global land cover...)</li> </ul>

user-friendly state-of-the-art interface

- Filter searches by time and sensors and set region of interests in map

Also try: USGS Earth Resources Observation and Science (EROS) Center, USGS GloVIS, USGS GTOPO30, USGS Earthquake Hazards Program



USGS Earth Explorer

## 4 OpenStreetMap

GIS users are harnessing the power of **OpenStreetMap (OSM)** as a means to crowdsource data from multiple users.

AdChoices

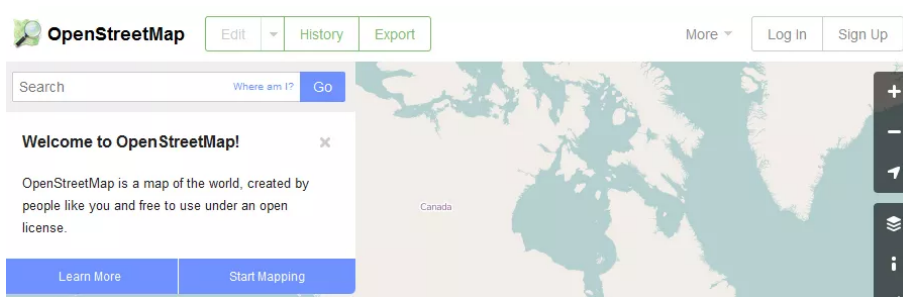
Free Data Software

Download Vector

The result of crowdsourcing is highly detailed data. I say detailed with cautious optimism. OSM is open to the public and created by the public. This means that accuracy varies based on the creator. From my experience, the accuracy looked very good. And people like you and me are working on completeness every day.

For GIS analysts seeking high spatial resolution detail, OpenStreetMap data is exactly what you are looking for. How much data is being created every second into OpenStreetMap? There's a map for that – **OSM Show Me The Way**.

Advantages	Data Types
<ul style="list-style-type: none"> <li>Obtain highly detailed free GIS data with different levels of accuracy and completeness</li> </ul>	<ul style="list-style-type: none"> <li>High spatial resolution cultural vector data. (buildings, land use, railroads, roads, waterways)</li> </ul>



## 5 NASA's Socioeconomic Data and Applications Center (SEDAC)

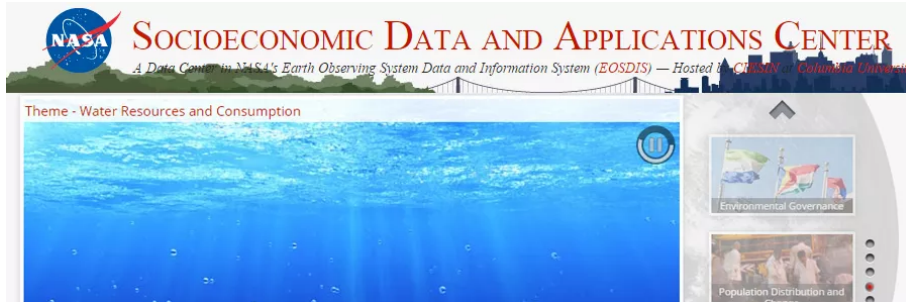
NASA's **Socioeconomic Data and Applications Center (SEDAC)** provides valuable geographic information to learn about human interactions in the environment.

SEDAC had a wide variety of coarse global free GIS data – from fertilizer applications in agriculture to global infant mortality rate by state/province.

Another neat thing about SEDAC is the map viewer. You can select GIS data themes and view thematic maps of the socioeconomic data. If you want to massage the data yourself, there's that option too.

Advantages	Data Types
<ul style="list-style-type: none"> <li>Retrieve global socioeconomic data from 15 different themes.</li> </ul>	<ul style="list-style-type: none"> <li>Socioeconomic data (agriculture, climate, conservation, governance, hazards, health, infrastructure, land use, marine and</li> </ul>

coastal, population,  
poverty, remote  
sensing, sustainability,  
urban and water)



NASA SEDAC GIS Data

## 6 Open Topography

**Open Topography** provides a portal to high spatial resolution topographic data and tools.

If you gave me a 5 second countdown to choose one GIS data type to work with for the rest of my life.... I'd probably start screaming LIDAAARRRRR! Yes, I'd be all dramatic because you gave me a 5 second countdown to respond.

We all know that **LiDAR Data** is a rare, precious GIS resource. This is why Open Topography is so useful. It answers the question: "Where can we find LiDAR data?". But if you're looking for satellite-derived elevation data a bit more coarse, these **free global Digital Elevation Models data sources** will certainly help.

Advantages	Data Types
<ul style="list-style-type: none"> <li>▪ Select regions in the world and search available LiDAR data.</li> </ul>	<ul style="list-style-type: none"> <li>▪ LiDAR (90% United States, Canada, Australia, Brazil, Haiti, Mexico and Puerto Rico)</li> </ul>



### Open Topography LiDAR GIS Data

## 7 UNEP Environmental Data Explorer

The **United Nations Environmental Data Explorer's online database** holds more than 500 different variables.

I must admit. I found it a bit difficult to explore the GIS data. The interfaces takes awhile to get used to, but it's all here covering themes like climate, disasters and ecosystems.

Quick tip: Click advanced. Select "Geospatial Data Sets". Now, only GIS data will be filtered.

Advantages	Data Types
<ul style="list-style-type: none"> <li>Contains a lot of spatial and non-spatial data on a variety of themes.</li> </ul>	<ul style="list-style-type: none"> <li>Freshwater, population, forests, emissions, climate, disasters, health and GDP spatial and non-spatial data.</li> </ul>



### UNEP Explorer Free GIS Data

## 9 NASA Earth Observations (NEO)

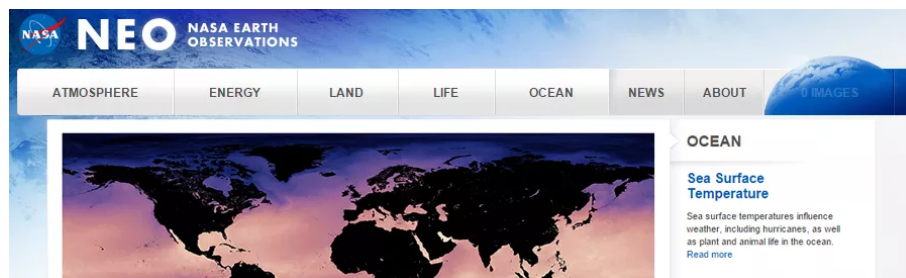


**NASA's Earth Observations (NEO)** is focused on providing global satellite imagery as accessible as possible.

Imagine seeing daily snapshots of climate and environmental conditions of Earth. Over 50 different global datasets are represented with NASA's Earth observations. They are accessible in JPEG, PNG, Google Earth and GeoTIFF formats.

You can't live without NASA's GIS data when it comes understanding our global environment from space.

Advantages	Data Types
<ul style="list-style-type: none"> <li>▪ Updated constantly ensuring timely information of our globe.</li> <li>▪ Accessible in different formats.</li> </ul>	<ul style="list-style-type: none"> <li>▪ All raster grids: atmosphere, energy, land, life and ocean GIS data.</li> </ul>



NASA Earth Observations NEO Free GIS Data

## 9 Sentinel Satellite Data

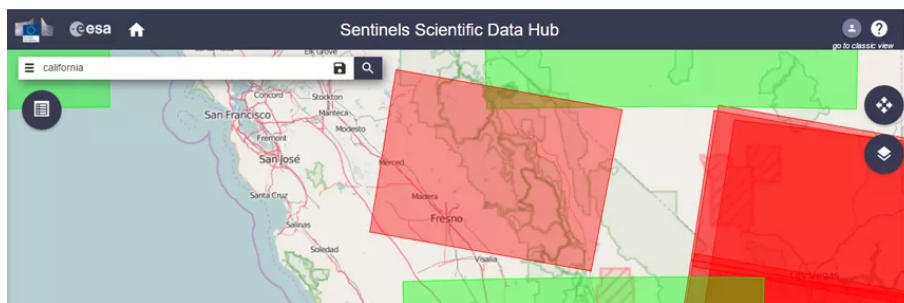
The European Space Agency's Sentinel satellite is now the highest spatial resolution available to the public for free. One scene after the other, data has been rolling out on a user interface called the **Sentinels Scientific Data Hub**.

You'll have to register. But it's worth the time. For ortho basemaps, it doesn't get any better than the global coverage that the Sentinel 2 satellites provide...

...And you can even obtain synthetic aperture radar data at no cost from Sentinel-1.

**READ MORE:** [How to Download Sentinel Satellite Data for Free](#)

Advantages	Data Types
<ul style="list-style-type: none"> <li>▪ 10-meter resolution satellite data readily available at your fingertips.</li> <li>▪ Sentinel 2 data has 11 spectral bands including red, green, blue, near-infrared</li> </ul>	<ul style="list-style-type: none"> <li>▪ Raster data – 11 channels from Sentinel-2. Synthetic aperture radar from Sentinel-1.</li> </ul>



## 10 Terra Populus

**Terra Populus** (TerraPop for short) is the only system that incorporates and integrates both census data from over 160 countries around the world, as well as environmental data describing land cover, land use, and climate. The census data in TerraPop include individual- and household-level records from more than 80 countries around the world and aggregate data from another 80 countries and spans up to six decades, from the 1960s to the present.

The unique thing about it is how it can be used to explore temporal and spatial changes. Not only researchers, but everyone now has a tool to obtain and investigate

transformative changes in the human-environment system in geographic space.

Advantages	Data Types
<ul style="list-style-type: none"> <li>▪ User-friendly interface with customized, relevant, multi-temporal data delivery.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Area-level, micro-data &amp; environmental data describing land cover, land use, and climate.</li> </ul>

TERRA POPULUS
Give us feedback | Home | Login | Sign up | About | Contact Us | User Forum

**Select Desired Data Output Type**

**Microdata Output**  
characteristics of individual people with attached contextual variables derived from area-level and/or raster data  
[Read more](#)

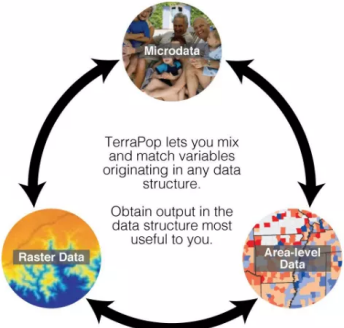
Start Extract

**Area-level Output**  
characteristics of geographic units including aggregate population data and/or summaries from raster data  
[Read more](#)

Start Extract

**Raster Data Output**  
data in spatial grids potentially derived from area-level data  
[Read more](#)

Start Extract



TerraPop lets you mix and match variables originating in any data structure.

Obtain output in the data structure most useful to you.

## 11 FAO GeoNetwork

We're going over 10 free data source here so a bit of a bonus. Well, it's another United Nations global GIS dataset. If you're craving for agriculture and fisheries related GIS data, keep the Food and Agriculture Organization of the United Nations (FAO) in mind.

**FAO GeoNetwork** provides satellite imagery and spatial data to support sustainable development in agriculture, fisheries and food security. The GIS Gateway is where you can find data organized categorically.

Advantages	Data Types
<ul style="list-style-type: none"> <li>▪ Search wide range of categories and filter by country.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Agriculture, fisheries, land resource GIS data.</li> </ul>

<http://gisgeography.com/best-free-gis-data-sources-raster-vector/>

11/14



**FAO GeoNetwork Free GIS Data**

## 12 ISCGM Global Map

It's time to look at what the **International Steering Committee for Global Mapping website** has to offer.

Admittedly, not the prettiest website of the bunch, Global Map still packs some serious punch with their free GIS data. Global land cover and percent tree cover are the two pivotal datasets here. But that's not all. Cultural and natural vector datasets are here too.

Registration is required. But not that painful for getting ISCGM free GIS data.

Advantages	Data Types
<ul style="list-style-type: none"> <li>▪ Download global land cover and tree percent by selecting map tiles.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Boundaries, drainage, transportation, population centers, elevation, land cover, land use and vegetation.</li> </ul>



**ISCGM Data**

## Download Free GIS Data

We live in the information age. We get blasted by truckloads of information each day. In terms of GIS data sources, it seems never-ending.

While some other lists have everything including the kitchen sink, we've thoroughly researched what is the best.

In GIS, high quality, free GIS data always seems to be a challenge that many people in the industry have troubles wrestling with.

Using this list, you have instantly become more knowledgeable with these 10 free GIS data sources.

**Haven't found what you're looking for?** Here are more free GIS data sources to superpower your mapping needs:

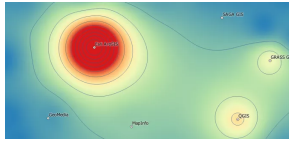
- [15 Free Satellite Imagery Data Sources](#)
- [Free Global DEM Data Sources – Digital Elevation Models](#)
- [Top 6 Free LiDAR Data Sources](#)

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2 COMMENTS



**Jon says:**

MARCH 27, 2017 AT 8:16 PM

Geospatial Data Gateway <https://gdg.sc.egov.usda.gov/>



**Will says:**

JUNE 28, 2017 AT 9:48 AM

Most people in PA know about this one because it's a huge source for us locally...

<http://www.pasda.psu.edu/>

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