

Beyond TIGER Files: Federal Government Geospatial Data Sources to Support GIS Research Needs

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DLC Meeting & FDL Conference

October 17, 2016



Overview

- GIS Overview
- GIS Data Types
- Federal GIS Data Sources & Map Viewers
- Example State & Local Data Sources
- Esri + Government Data
- Citizen Science
- Questions & Answers



GIS Overview



Geospatial Data

- Geospatial data is data that is associated with a particular location.
- It has a spatial component – like an address, latitude & longitude, country, state, county, place, zip code, etc.



Geographic Information Systems

Definition

GIS refers to a system where geographic information is stored in layers and integrated with geographic software programs so that spatial information can be created, stored, manipulated, analyzed, and visualized (mapped).

Dempsey, C. (2014). What is the difference between GIS and geospatial? Retrieved from <https://www.gislounge.com/difference-gis-geospatial/>



Maps + Tabular Data + Analysis Capabilities



Image by [The National Atlas](#).

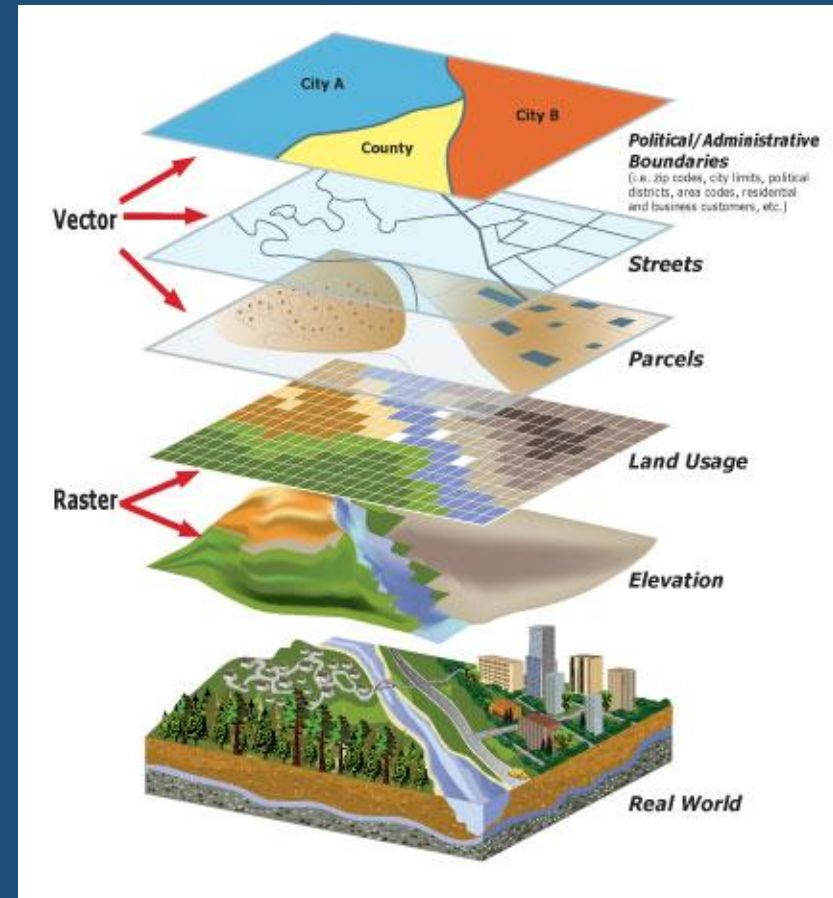


Image by [GNOME icon artists](#). CC BY-SA 3.0

Layers

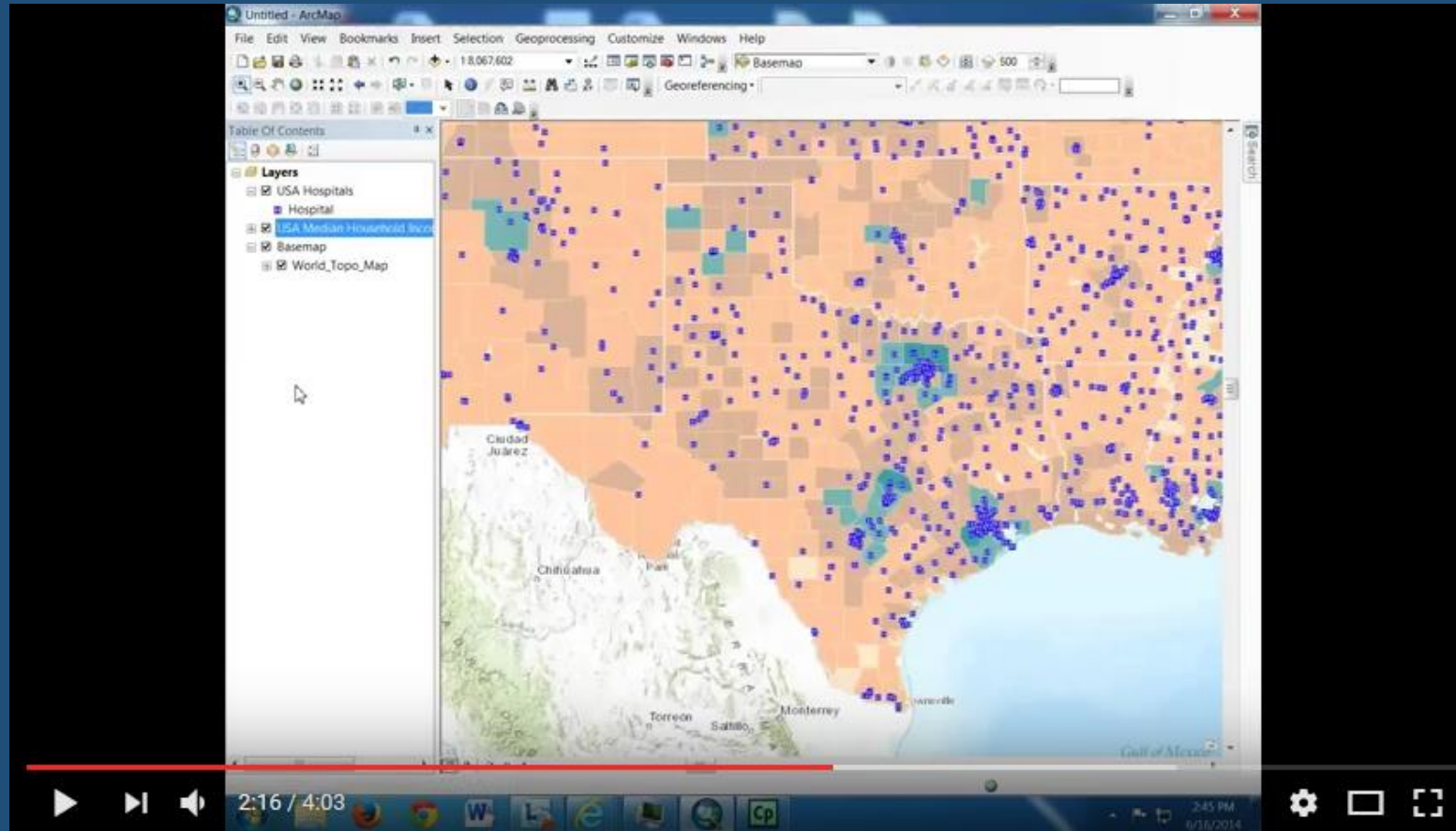
Geographic Information Systems allow data to be overlaid in layers.

This data can be analyzed – and relationships between the data can be investigated.



ArcGIS Informational Model <https://doc.arcgis.com/en/arcgis-online/reference/geo-info.htm>

ArcMap Demonstration



ArcMap demonstration by Rory Elliott <https://www.youtube.com/watch?v=E-B5E4OCYYU>

GIS & Government Information

- Government bodies produce an enormous amount of statistics & geographical information.
- If the data has a spatial component, it can be used in a GIS.
- GIS allows the library user to get more from the data we have historically provided.



Types of GIS Data

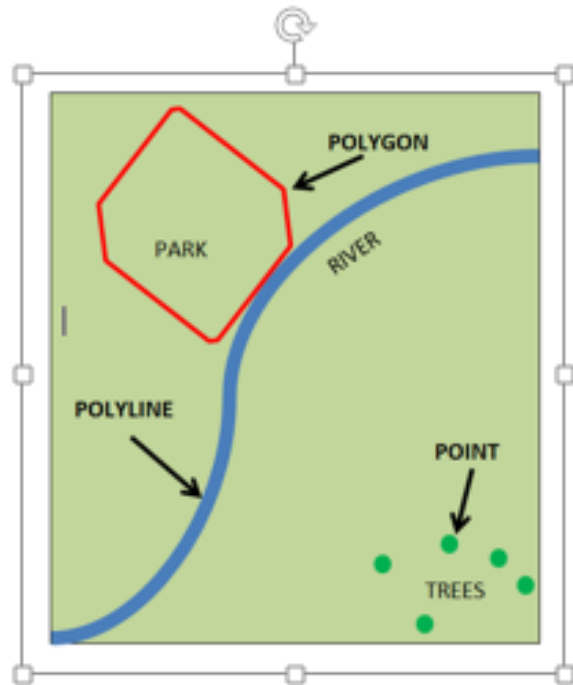
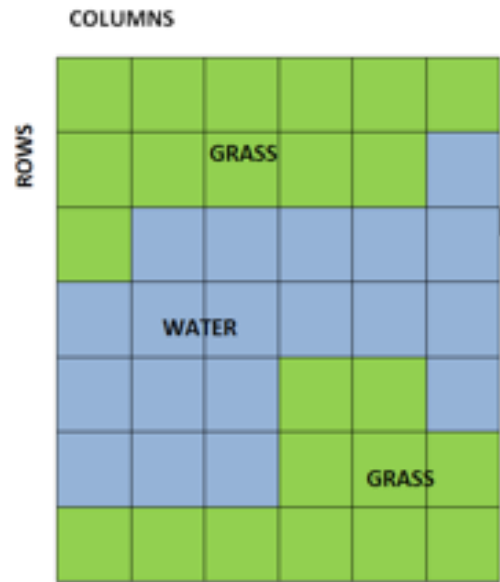


GIS Data

- **Spatial Data:** Identifies the geographic location of features. It includes coordinates and projection information. It is the 'Where'
 - Vector: Points, lines, polygons, Shapefiles, KML
 - Raster: Images
- **Attribute Data:** Describes and classifies the features. It is the 'What, Where, and Why'
 - Tabular: tables, Excel, CSV, txt



Spatial Data

Vector	Raster
Points, Polylines, and Polygons	Cells in a grid; Pixels in an image
Definite <u>x,y</u> coordinates	<u>Georeferenced</u> to a coordinate system.
File Types: <u>Geodatabases</u> , <u>Shapefiles</u> , KML	File Types: .JPG, .PNG, .TIFF
	

Vector Data

The screenshot displays the QGIS desktop environment. The main map window shows a grayscale map of Austin, Texas, with a network of blue lines representing trails. Labels for 'Cedar Park', 'Round Rock', and 'Austin' are visible on the map. The 'Table of Contents' panel on the left shows the project structure, including a folder 'E:\FDLP 2016\Urban Trails' and a layer 'geo_export_1f616858-7bd4-42f2-af03-68b12e31d2e2'. The 'Layers' panel below it shows checked options for 'World Light Gray Reference' and 'World Light Gray Canvas Basemap'. A floating window titled 'Table' displays the attribute table for the selected layer, showing columns for FID, Shape, build_stat, width, urban_tr_3, and trail_surf. A file explorer window is also open, showing a list of files with names starting with 'geo_export_1f...', including DBF, PRJ, SHP, LOCK, and SHX files.

Name	Date modified	Type	Size
geo_export_1f...	9/28/2016 5:56 AM	DBF File	1,191 KB
geo_export_1f...	9/28/2016 5:56 AM	PRJ File	1 KB
geo_export_1f...	9/28/2016 5:56 AM	SHP File	579 KB
geo_export_1f...	9/28/2016 12:57 AM	LOCK File	0 KB
geo_export_1f...	9/28/2016 5:56 AM	SHX File	4 KB

FID	Shape	build_stat	width	urban_tr_3	trail_surf
0	Polyline	PROPOSED	12	RED LINE TRAIL	Concrete
1	Polyline	PROPOSED	12	VIOLET CROWN TRAIL	Concrete
2	Polyline	PROPOSED	12	SLAUGHTER CREEK TRAIL	Concrete
3	Polyline	PROPOSED	12	MARY MOORE SEARIGHT PARK TRAIL	Concrete
4	Polyline	PROPOSED	12	WATCHFUL TO GRIZZLY OAK CONNECTOR	Concrete
5	Polyline	PROPOSED	12	ONION CREEK TRAIL	Concrete
6	Polyline	PROPOSED	12	ONION CREEK TRAIL	Concrete
7	Polyline	PROPOSED	12	NORTHSTAR GREENBELT TRAIL	Concrete
8	Polyline	PROPOSED	12	REDSHAW TRAIL	Concrete

Shapefile of
Austin, TX trails

Attribute Data

- Attribute data describes and classifies the features.
- It is the 'What, Where, and Why.'
- Attributes are often in the tabular formats.

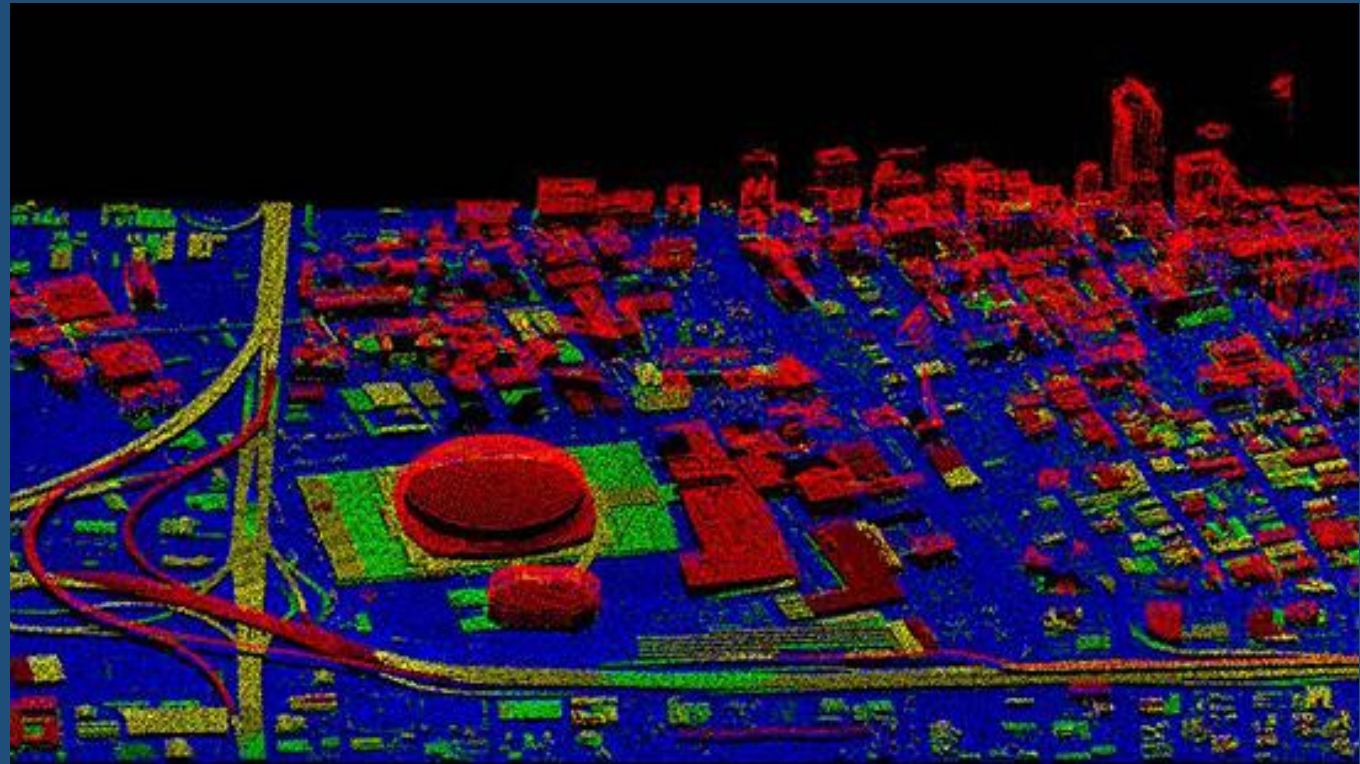
Table

geo_export_1f616858-7bd4-42f2-af03-68b12e31d2e2

urban_tr_3	location	objectid	priority	urban_tr_4	length_mil
RED LINE TRAIL	ALONG_ROADWAY	196	TIER I	DENSON DR TO ALEXANDER AVE	3.1
VIOLET CROWN TRAIL	NEIGHBORHOOD_CO	197	TIER II	JONES RD	0.27
SLAUGHTER CREEK TRAIL	WITHIN_PARKS	198	TIER II	CIRCLE C RANCH METRO PARK	0.86
MARY MOORE SEARIGHT PARK TRAIL	WITHIN_PARKS	199	TIER II	MARY MOORE SEARIGHT PARK TRAIL	1.15
WATCHFUL TO GRIZZLY OAK CONNECTOR	ALONG_CREEK	200	TIER II	ALICE MAE LN TO SOUTH PARK MEADOWS GREENBELT	0.27
ONION CREEK TRAIL	WITHIN_PARKS	201	TIER II	ONION CREEK TRAIL CONNECTOR	0.14
ONION CREEK TRAIL	ALONG_CREEK	202	TIER II	ONION CREEK TRAIL TO SLAUGHTER LN	0.18
NORTHSTAR GREENBELT TRAIL	WITHIN_PARKS	266	TIER II	NORTHSTAR TO NORTHERN WALNUT CREEK TRAIL CONNECTOR	0.24
REDSHINE TO ALL	ALONG_ROADWAY	267	TIER II	DENVER AVE TO MANOR RD	0.24

Point Cloud Data

- LiDAR:
 - Light + Radar or
Light Detection And
Ranging
- Uses green visible light, ultraviolet light, or near infrared light to collect x,y,z measurements.
- Creates accurate 3D models of surface and structures.



Source: Earth Resources Observation and Science (EROS)
<http://eros.usgs.gov/topographic-research/structures>

Raster Data

Can include thematic data, continuous data, & pictures.

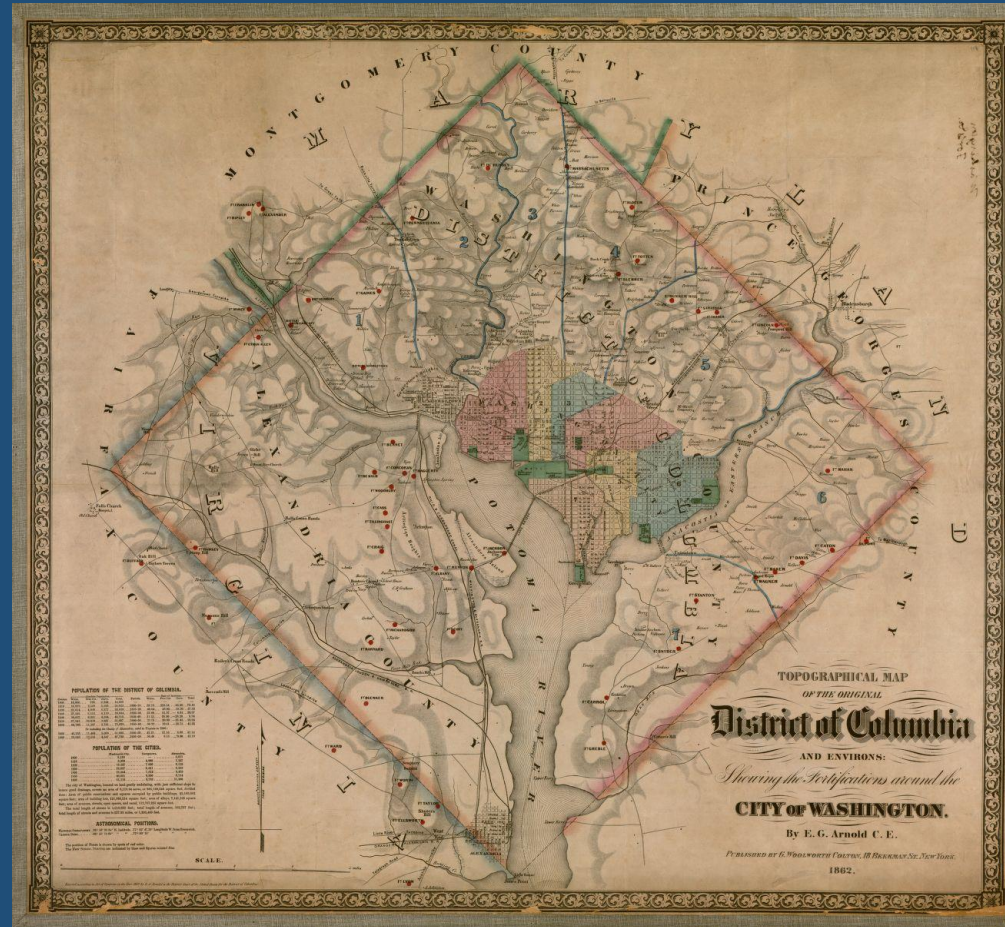
Common types of Raster Data:

- Orthoimages
- Multispectral Images
- Digital Elevation Models
- Scanned Maps



Scanned Maps

Scanned maps can be georeferenced to a particular location on Earth.

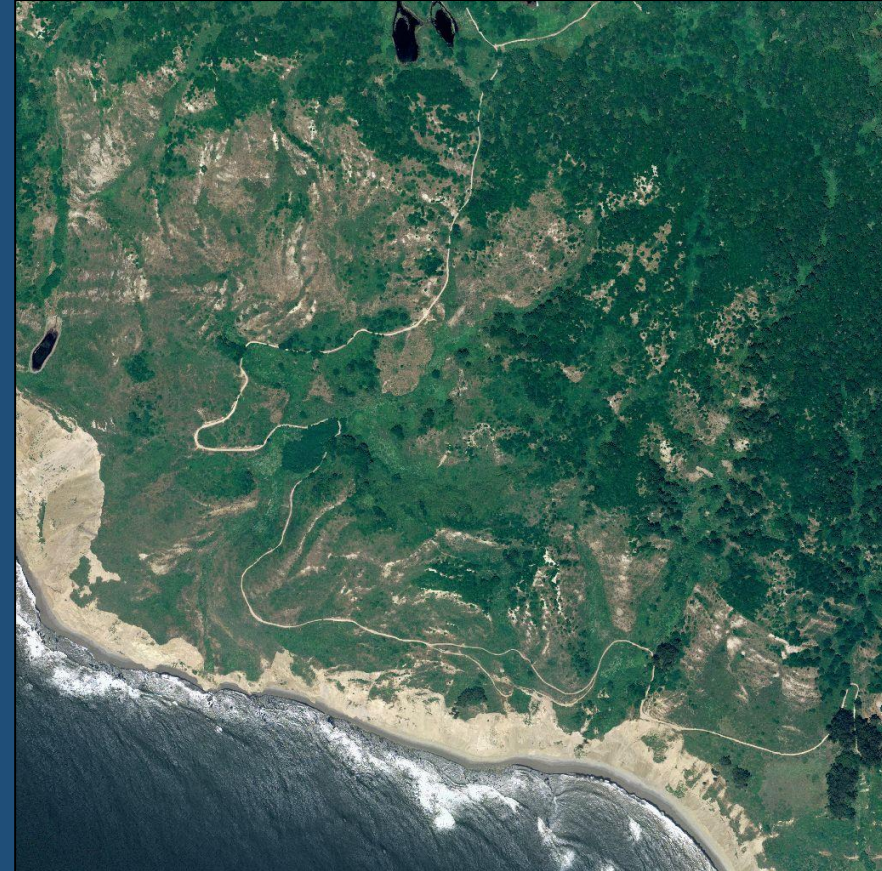


Arnold, E. G. & Colton, G. W. (1862) *Topographical map of the original District of Columbia and environs showing the fortifications around the city of Washington*. New York: G. Woolworth Colton. [Map] Retrieved from the Library of Congress, <https://www.loc.gov/item/88690604/>

Orthoimagery

Orthoimages: high resolution aerial images that combine the visual attributes of an aerial photograph with the spatial accuracy and reliability of a planimetric map.

Source: The National Map: <http://nationalmap.gov/ortho.html>



Orthoimagery from www.sciencebase.gov



Multispectral Imagery

Multispectral Imagery includes satellite imagery at various wavelengths of the electromagnetic spectrum captured by a multispectral scanning radiometer.

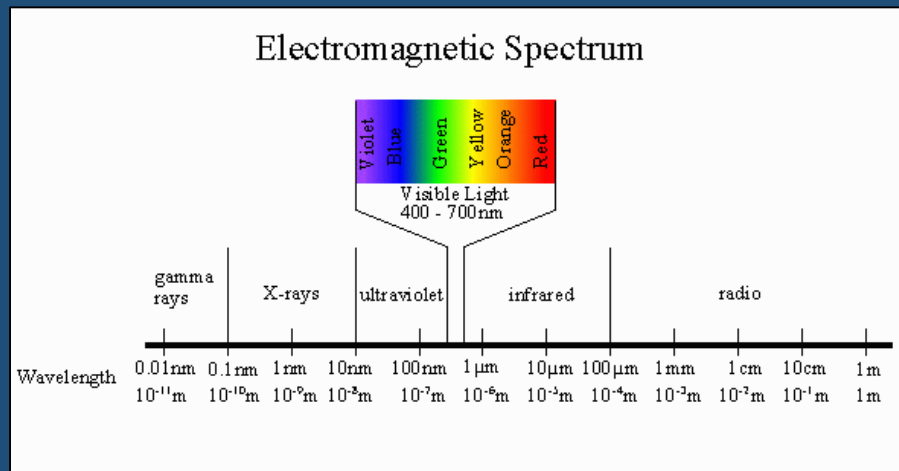


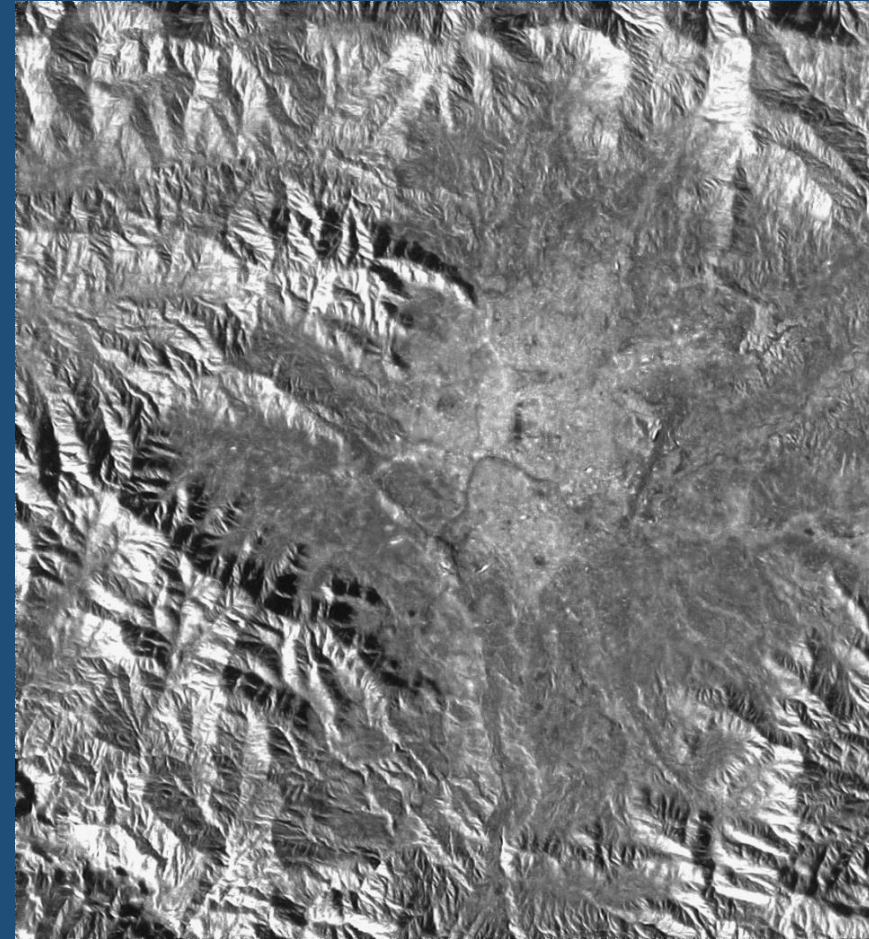
Image from NOAA's [Solar Calculator Glossary](#)



Landsat Infrared imagery of Mount Vernon. Source: Earthshots by USGS <http://earthshots.usgs.gov/earthshots/about#ad-image-6>

DEM – Digital Elevation Models

- Gridded arrays of elevation
- Mostly derived from LiDAR
- Each cell has elevation data
- Types of DEM include:
 - DSM – Digital Surface Models
 - DTM – Digital Terrain Models



Elevation Map of Kathmandu, Nepal. Source: Earth Observatory by NASA
<http://earthobservatory.nasa.gov/IOTD/view.php?id=1872>

Terrain Extraction & Segmentation

Video shows items being extracted from LiDAR.

What would be a Digital Surface Model will be transformed into a Digital Terrain Model.



Source: Terrain Extraction & Segmentation Demo by Geospatial Laser Applications & Measurements at Applied Research Laboratories. <http://www.arlut.utexas.edu/glam/index.html>

Spatial Data Gathering Technology

Global Positioning System Receivers (GPS)



Remote Sensing

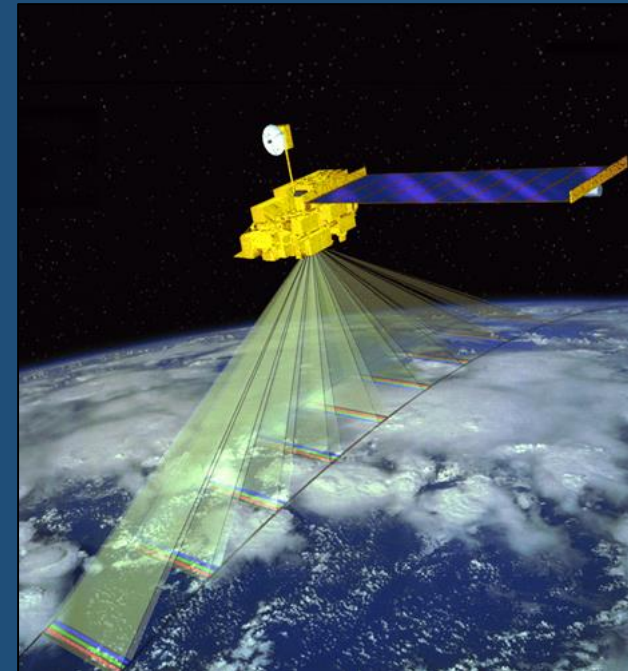
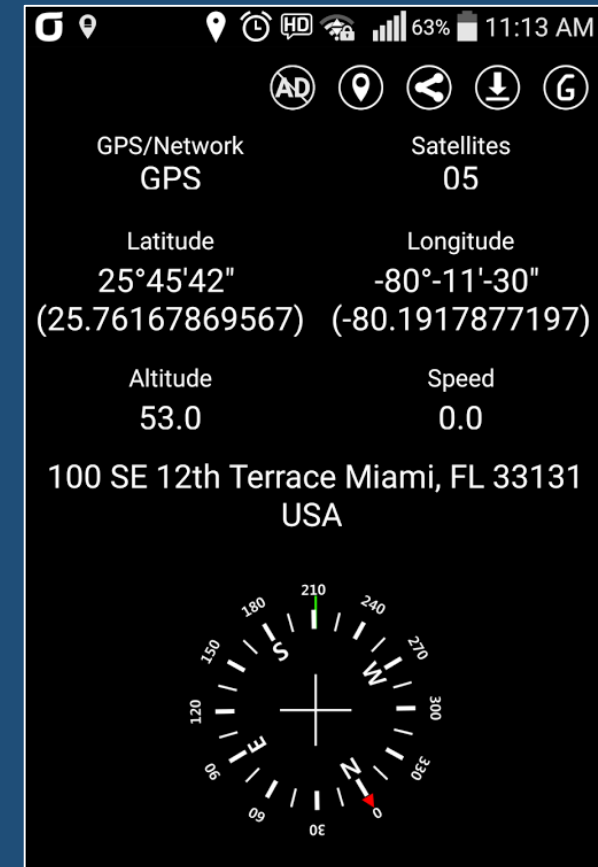


Image: [TERRA Satellite](#) from USGS EROS Virtual Tour

Global Positioning Systems (GPS)

- GPS receivers record coordinates, as well as collect attribute data (e.g. text, time stamps, images, etc.).
- There are GPS apps, but standalone GPS receivers are currently more powerful.
- GPS is operated and maintained by the U.S. Air Force.



[Simple GIS Coordinate Display app for Android](#)

HOW GPS WORKS



GPS

IS A CONSTELLATION OF 24 OR MORE SATELLITES FLYING 20,350 KM ABOVE THE SURFACE OF THE EARTH. EACH ONE CIRCLES THE PLANET TWICE A DAY IN ONE OF SIX ORBITS TO PROVIDE CONTINUOUS, WORLDWIDE COVERAGE.

1 GPS satellites broadcast radio signals providing their locations, status, and precise time $\{t_1\}$ from on-board atomic clocks.

2 The GPS radio signals travel through space at the speed of light $\{c\}$, more than 299,792 km/second.

3 A GPS device receives the radio signals, noting their exact time of arrival $\{t_2\}$, and uses these to calculate its distance from each satellite in view.

To calculate its distance from a satellite, a GPS device applies this formula to the satellite's signal:

$$\text{distance} = \text{rate} \times \text{time}$$

where **rate** is $\{c\}$ and **time** is how long the signal traveled through space.

The signal's travel **time** is the difference between the time broadcast by the satellite $\{t_1\}$ and the time the signal is received $\{t_2\}$.

4 Once a GPS device knows its distance from at least four satellites, it can use geometry to determine its location on Earth in three dimensions.



The GPS Master Control Station tracks the satellites via a global monitoring network and manages their health on a daily basis.

Ground antennas around the world send data updates and operational commands to the satellites.



The Air Force launches new satellites to replace aging ones when needed. The new satellites offer upgraded accuracy and reliability.

How does GPS help farmers? Learn more about the Global Positioning System and its many applications at

WWW.GPS.GOV

This poster is a product of the National Coordinator Office for Space-Based Positioning, Navigation, and Timing, an official body of the United States Government. Poster design courtesy of NASA.

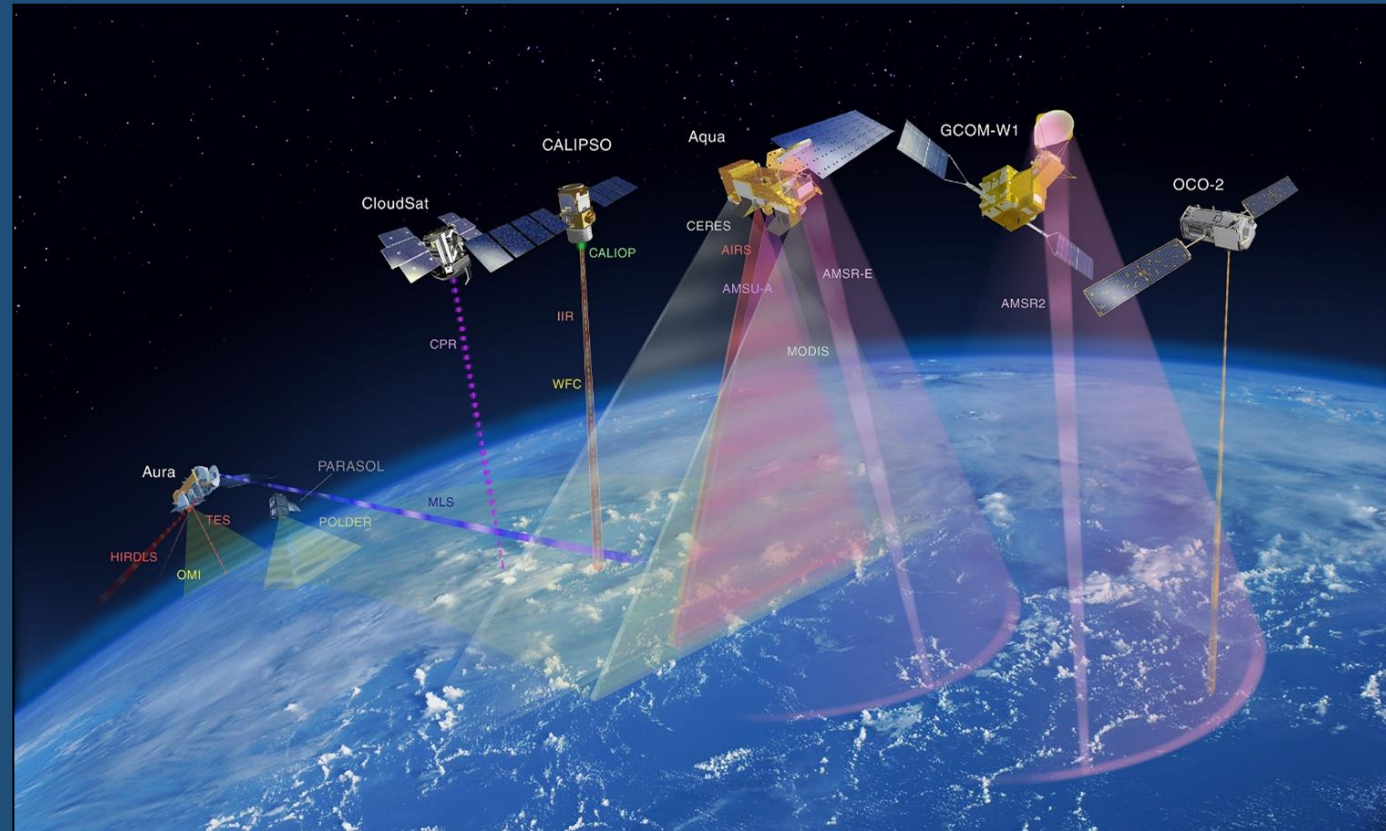
Remote Sensing

Remote Sensing:
information is obtained
from a distance

Planes or satellites
gather information from
the earth's surface,
such as:

- Aerial Photographs
- Infrared
- RADAR
- LiDAR

"The Afternoon Constellation" of satellites



<http://atrain.nasa.gov>

Federal GIS Data Sources



Geospatial Data Powerhouses

- Census
- USGS
- NASA
- NOAA



TIGER Products by U.S. Census

<https://www.census.gov/geo/maps-data/data/tiger.html>

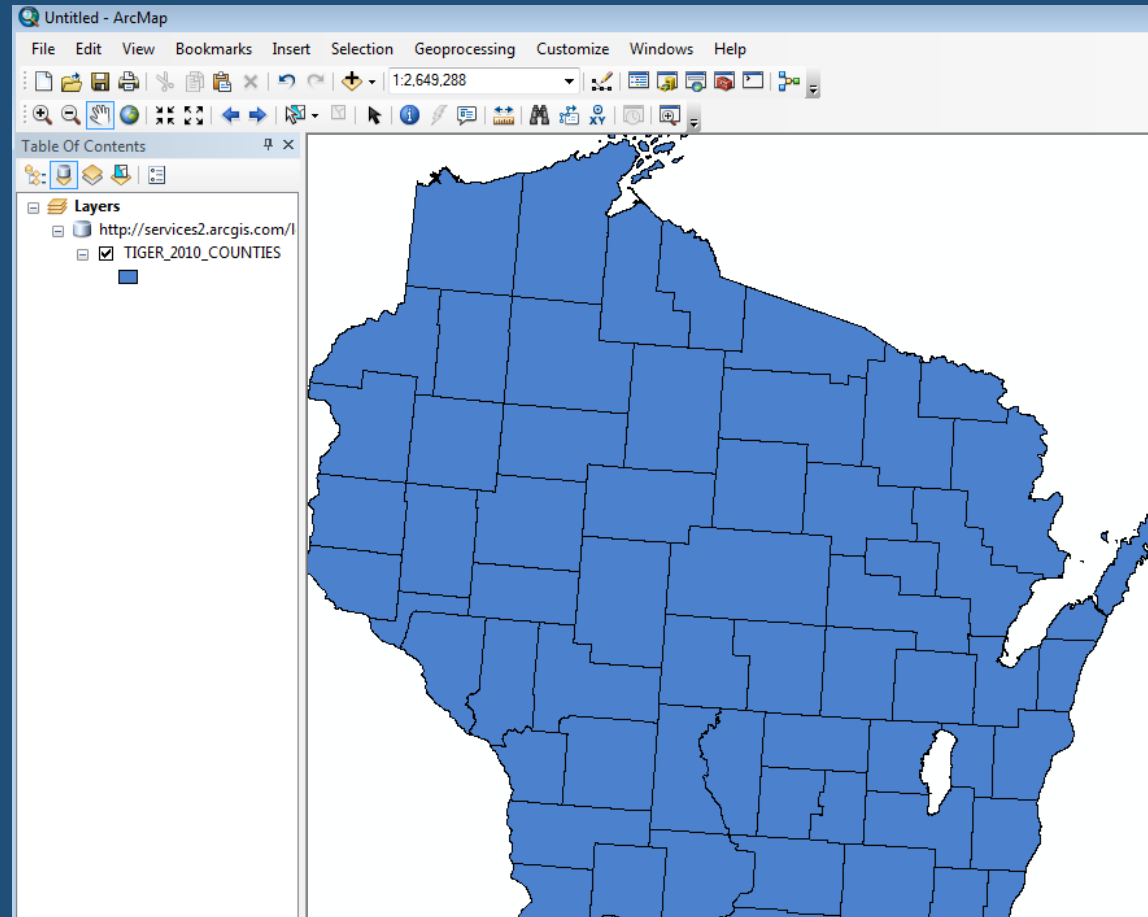
- TIGER (Topologically Integrated Geographic Encoding and Referencing) products:

vector files of features such as roads, railroads, hydrography, statistical boundaries (such as census tracts), government boundaries (such as counties), and administrative boundaries (such as school districts).

- These files are very helpful for creating thematic maps.
- GeoIDs in TIGER files can be used to link to the Census Bureau's demographic data found in American Factfinder



TIGER Shapefiles

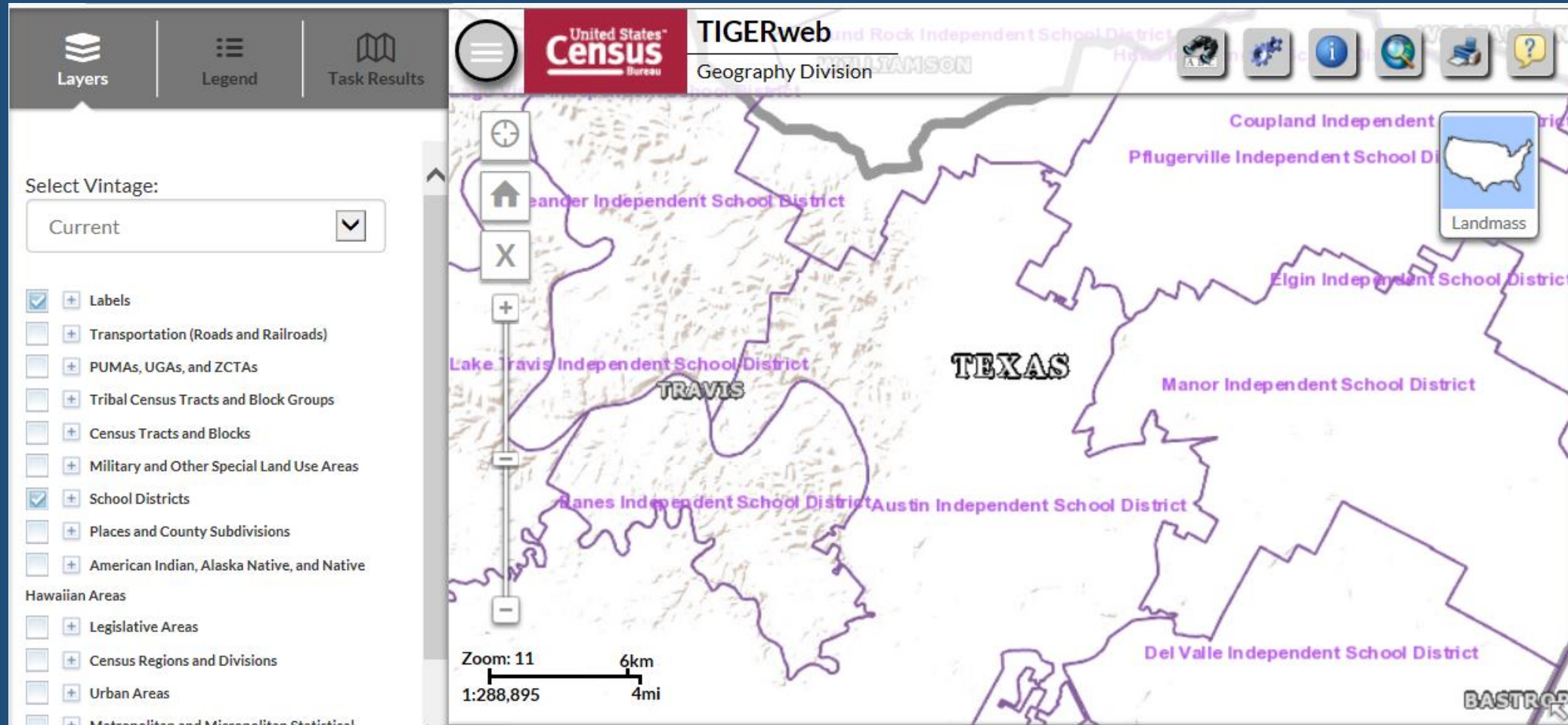


Shapefile of the counties of Wisconsin



TIGERweb

<https://tigerweb.geo.census.gov/>



American FactFinder by U.S. Census

<https://factfinder.census.gov>

- Find demographic, economic, and social characteristics of United States
- Data from various Census sources:
 - Decennial Census
 - American Community Survey
 - Puerto Rico Community Survey
 - Economic Census
 - Population Estimates Program
 - Annual Economic Surveys
- Has GeoIDs to easily join with spatial boundary files



Download Center - A step-by-step guide to downloading data

1 Start 2 Dataset 3 Geographies 4 Search Results

Select geographies to add to Your Selections. Click **Next**.

The download center allows you to select from groups of geographies, such as all counties in a state. To select from all available geographies, use [Advanced Search](#).

Select a geographic type:
..... County - 050

Select a state:
Wisconsin

Select one or more geographic areas and click **Add to Your Selections**:
All Counties within Wisconsin

ADD TO YOUR SELECTIONS

Your Selections

Search using...

Dataset:
2010 ACS 5-year estimates

County
All Counties within Wisconsin

Tables matching your selections: 909

PREVIOUS

NEXT

CANCEL

GEO.id	GEO.id2	GEO.display-label	HC01_EST_VC	HC01_MOE_VC01	HC02_EST	HC02_MOE_VC	HC03_EST
Id	Id2	Geography	Total; Estim	Total; Margin of Er	Male; Esti	Male; Margin c	Female; E
0500000US	55001	Adams County, Wisconsin	1229	49	683	38	546
0500000US	55003	Ashland County, Wisconsin	1646	78	846	52	800
0500000US	55005	Barron County, Wisconsin	3545	86	1876	51	1669
0500000US	55007	Bayfield County, Wisconsin	826	43	478	20	348
0500000US	55009	Brown County, Wisconsin	24820	170	12172	138	12648
0500000US	55011	Buffalo County, Wisconsin	997	18	528	8	469
0500000US	55013	Burnett County, Wisconsin	821	52	404	38	417

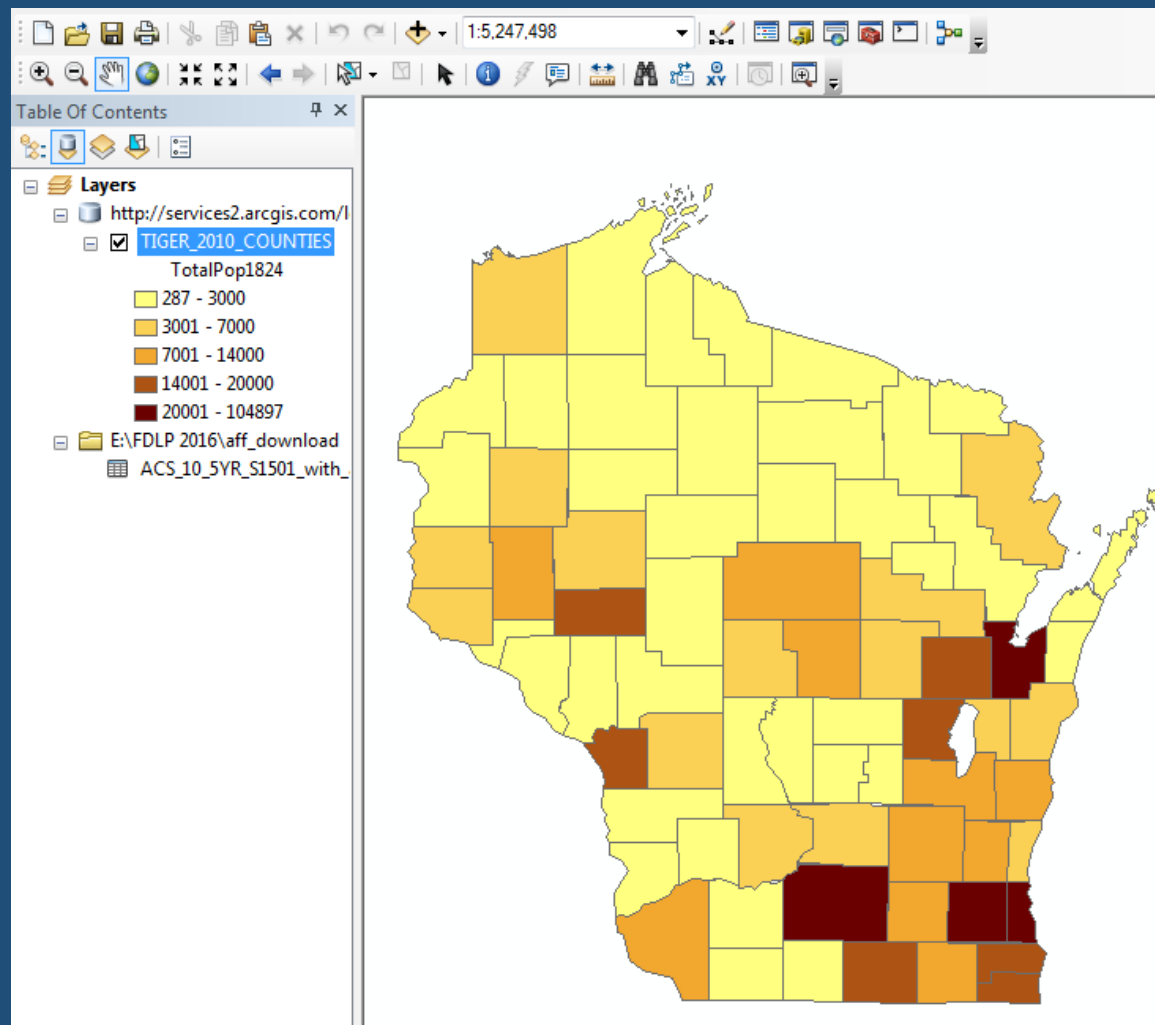
Geographic Identifiers (GEOIDs)

<https://www.census.gov/geo/reference/geoidentifiers.html>

- **Federal Information Processing Series (FIPS) codes**
“States, counties, core based statistical areas, places, county subdivisions, consolidated cities and all types of American Indian, Alaska Native, and Native Hawaiian (AIANNH) areas”
- **Geographic Names Information System (GNIS) codes**
“Most types of physical and cultural geographic features, both current and historical. Does not include road and highway features.”



Joined TIGER & AFF Data



Population of 18-24 year-olds in Wisconsin in 2010.

Inputting Tabular Data

- Data with a spatial component can be input into a GIS!
- Easier if has coordinates information or geographic identifiers (GEOIDs)
- May need to clean up the data – even from AFF.
 - Make sure only one column header.
 - Remove spaces between words in column header.
 - Remove special characters.
 - Check for missing data.
 - See “Importing Data from Excel Spreadsheets” for more info:
<http://www.esri.com/news/arcuser/0312/files/excelmagic.pdf>



Geocoding

- Geocoding is converting addresses and other geographic data to geographic coordinates, such as latitude and longitude.

300 Army Navy Drive
Arlington, Virginia 22202-2891



38.863785, -77.052683

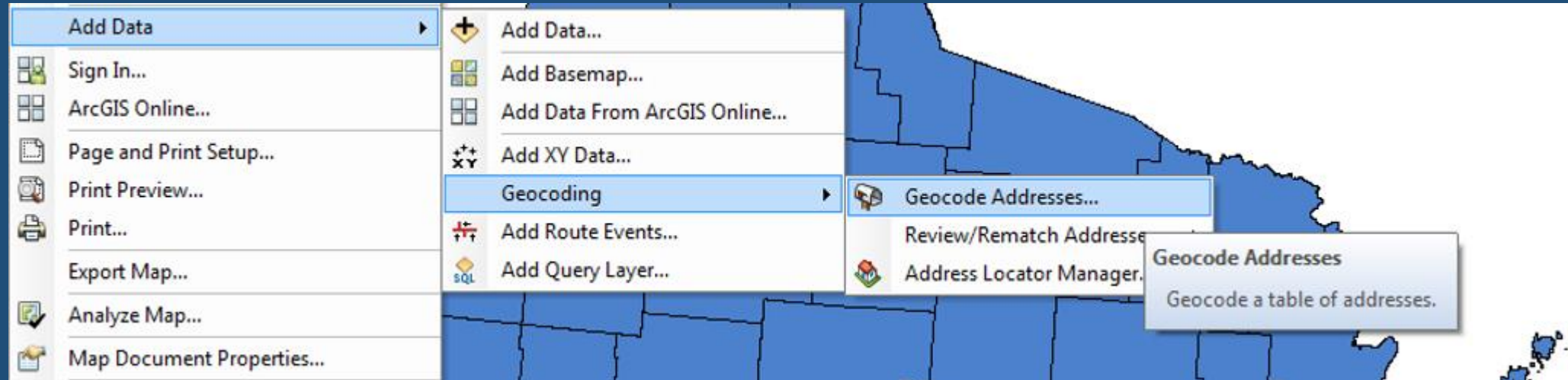


Geocoders

- ArcGIS Online Geocoding Service
- Census Geocoder

<http://geocoding.geo.census.gov/geocoder/>

- Texas A&M's Geocoder List <https://geoservices.tamu.edu/Services/Geocode/OtherGeocoders/>



Data.Gov

<https://www.data.gov/>

- A repository of government data with >185,000 as of Sept. 2016
- Filter options include location, organization, topic, tags, file formats, & more.

Dataset Type Clear All

A-Z 1-9

non-geospatial (10154)

geospatial (3047)

The screenshot shows the Data.Gov website interface. At the top is the navigation bar with the Data.Gov logo and links for DATA, TOPICS, IMPACT, APPLICATIONS, DEVELOPERS, and CONTACT. Below this is the 'DATA CATALOG' header with links to / Datasets, Organizations, and a help icon. A search bar is present with the placeholder text 'Search datasets...'. To the right of the search bar is an 'Order by:' dropdown menu with the option 'Select an option'. Below the search bar, it says 'Datasets ordered by Popular'. On the left side, there is a 'Filter by location' section with a map of the United States and a text input field for 'Enter location...'. Below the map, it says 'Map tiles & Data by OpenStreetMap, under CC BY SA'. There is also a 'Topics' section with 'A-Z' and '1-9' filters and a 'Clear All' button. The main content area displays '186,459 datasets found'. Three datasets are highlighted: 'National Stock Number Extract' (1405 recent views) from the General Services Administration, 'Consumer Complaint Database' (1274 recent views) from the Consumer Financial Protection Bureau, and 'Demographic Statistics By Zip Code' (1017 recent views) from the City of New York. Each dataset entry includes a description, a download button (Excel, CSV, JSON, XML, API), and a label indicating the government level (Federal, City).

Data.Gov File Formats

Formats		Clear All
A-Z	1-9	
HTML (76046)		
XML (43663)		
PDF (36501)		
originator data format (26105)		
ZIP (17791)		
TIFF (13662)		
CSV (13212)		
MrSID (12884)		
WMS (11716)		
JSON (11410)		
XYZ (7957)		

RDF (7935)
WCS (5628)
Esri REST (5591)
JPG (5570)
TXT (4832)
NetCDF (4419)
application/octet-s... (3740)
iwxmm-us (3560)
JPEG (3223)
Excel (3168)
application/vnd.lot... (3109)
KML (2758)
WFS (2710)

gml (2402)
tif (1907)
hdf (1749)
esri shapefile (1665)
application/vnd.goo... (1012)
fema-dcs-hydrology (960)
opendap (954)
application/vnd.goo... (951)
fema-dcs-hydraulics (919)
arce (911)
TAR (841)
fema-dcs-terrain (804)
geotiff (800)

XLS (738)
ascii (679)
api (509)
xlsx (407)
fema-dcs-survey (336)
application/unknown (317)
shapefile (314)
web page (302)
export (297)
geojson (292)
ngdc created iso me... (256)
erdas compressed wa... (247)

Geoplatform.gov

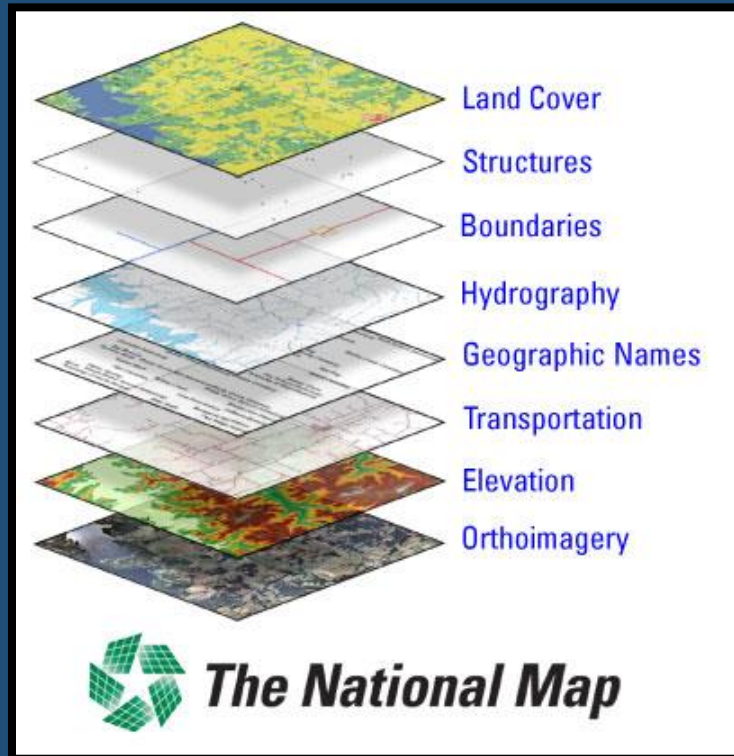
<https://www.geoplatform.gov/>

- Data maintained by Data.gov, but data coordinated by Federal Geographic Data Committee.

The screenshot displays the GeoPlatform Map Viewer interface. At the top, the title "GeoPlatform Map Viewer" is visible along with "Help" and "Sign In" links. The main section is titled "Browse Layers" and is divided into three columns. The left column contains a "Search Layers" section with a search bar, a "Sort Layers" section with dropdowns for "Name" and "Ascending", and two lists: "Layer sources" and "Layer types". The middle column, titled "Available Layers", shows a list of 17,472 results with pagination controls (1-5) and a list of layer categories including "1 Meter", "1 arc-second", and "1 meter", each with a description and a red star icon. The right column, titled "Preview", shows a map of the United States and Mexico with a "Preview" button and a "Constrain the list of layers using geographic extents or named places" section. Below the map, there is a "Previewed Layers" section with a list of layers and an "Apply" button.

National Map by USGS

<http://nationalmap.gov/>



TNM Datasets

The National Map

Data Download and Visualization Services

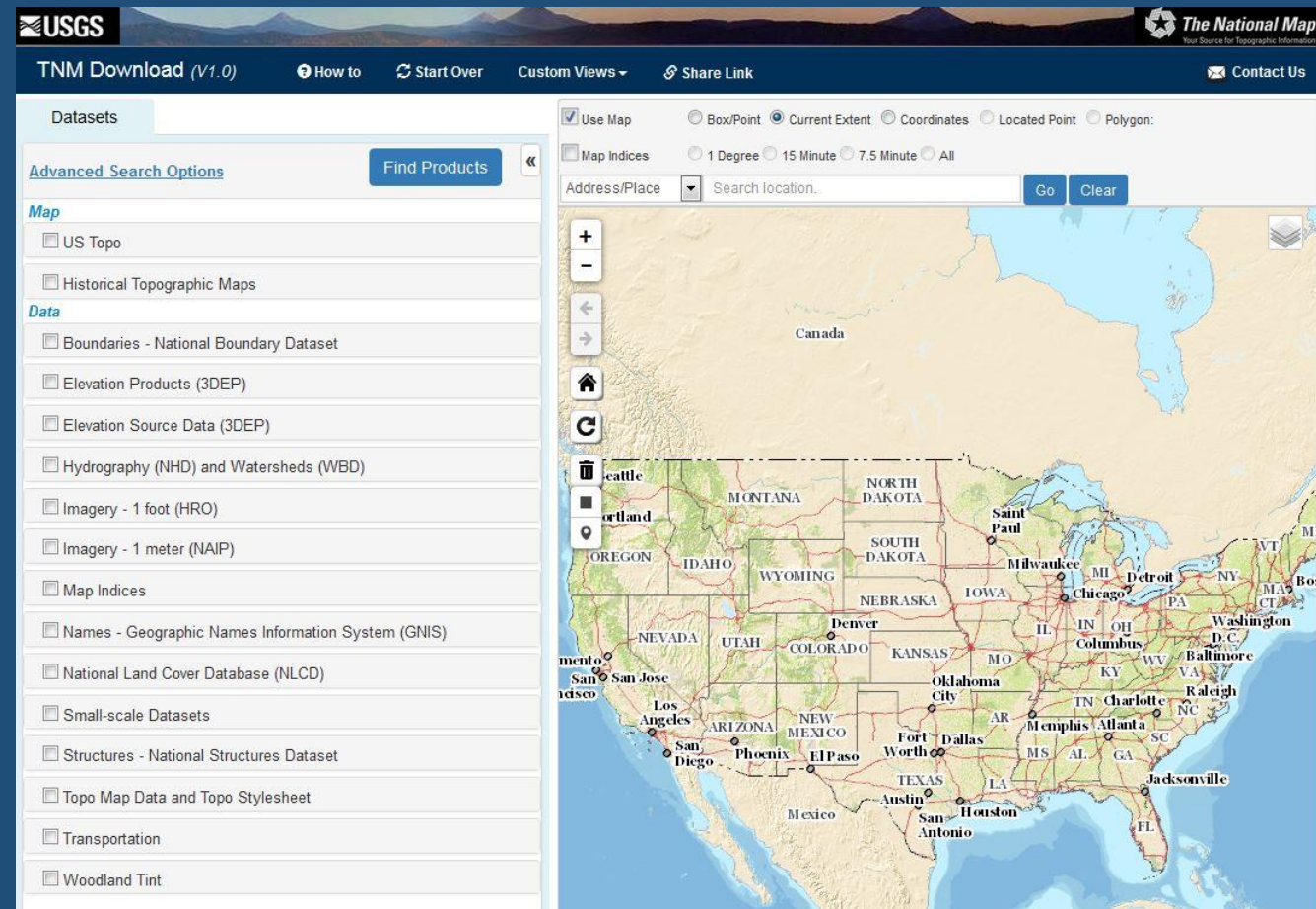
Maps	GIS Data	Visualization
<ul style="list-style-type: none">Download MapsExplore Historical Topo Maps and DownloadBuy a Printed MapCSV of Map Products	<ul style="list-style-type: none">Download GIS DataCloud BrowseFTP AccessSmall-scale DataHistorical Data ArchivesHazards Events	<ul style="list-style-type: none">TNM Viewer (legacy)List of Map ServicesHow to Use Map ServicesMap Service StatusViewer Prototypes
Applications	Tools	More Information
<ul style="list-style-type: none">TNM Download ClientTNM Download ManagerTNM MobileUSGS StreamerApplication List	<ul style="list-style-type: none">Elevation ToolsPoint Query Service (PQS)Raster Conversion ToolsTopo TNM Style TemplateOther API Example Demos	<ul style="list-style-type: none">How To VideosFAQsList of DatasetsTNMAccess APITNM MetricsContact Us

The National Map (TNM) Download by USGS

<https://viewer.nationalmap.gov/basic/>

View a variety of datasets in the interactive map viewer & easily download the data for import into a more robust GIS for further analysis.

Data includes elevation data from the new 3DEP incorporating NED (National Elevation Dataset).



3D Elevation Program (3DEP) by USGS

3DEP View (v1.0) [How to](#) [Start Over](#) [Custom Views](#) [Share Link](#)

Datasets **Products**

[Advanced Search Options](#) [Find Products](#)

Keyword(s) e.g. Maps ☐ Date Range

Product Search Filter

- ☐ All Subcategories
- ☐ 1 arc-second DEM [Show Availability](#)
- ☐ 1 meter DEM [Show Availability](#)
- ☐ 1/3 arc-second DEM [Show Availability](#)
- ☐ 1/9 arc-second DEM [Show Availability](#)
- ☐ 2 arc-second DEM - Alaska [Show Availability](#)
- ☐ 5 meter DEM (Alaska only) [Show Availability](#)
- ☐ Contours (1:24,000-scale) [Show Preview](#)

[Availability legend](#)

☒ Elevation Source Data (3DEP)

Product Search Filter

- ☒ All Subcategories
- ☒ DEM Source (OPR) [Show Availability](#)
- ☒ Ifsar Digital Surface Model (DSM) [Show Availability](#)

[Description](#)

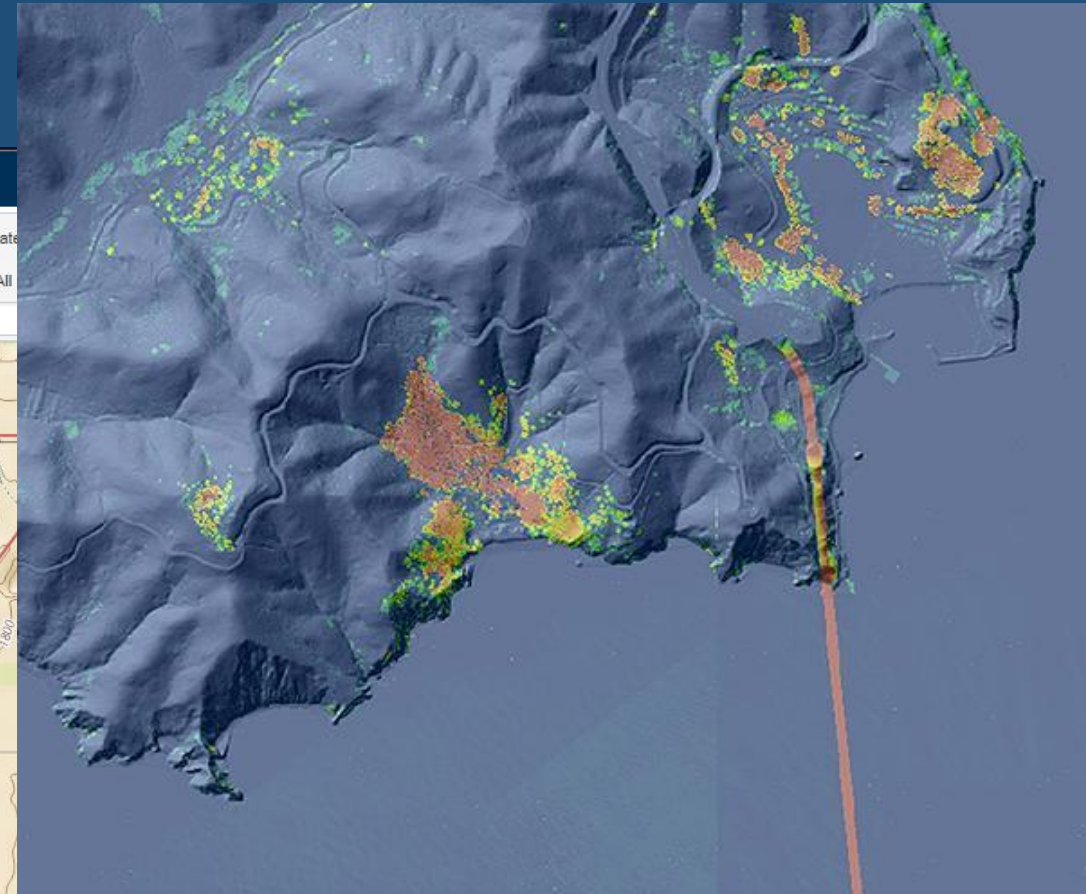


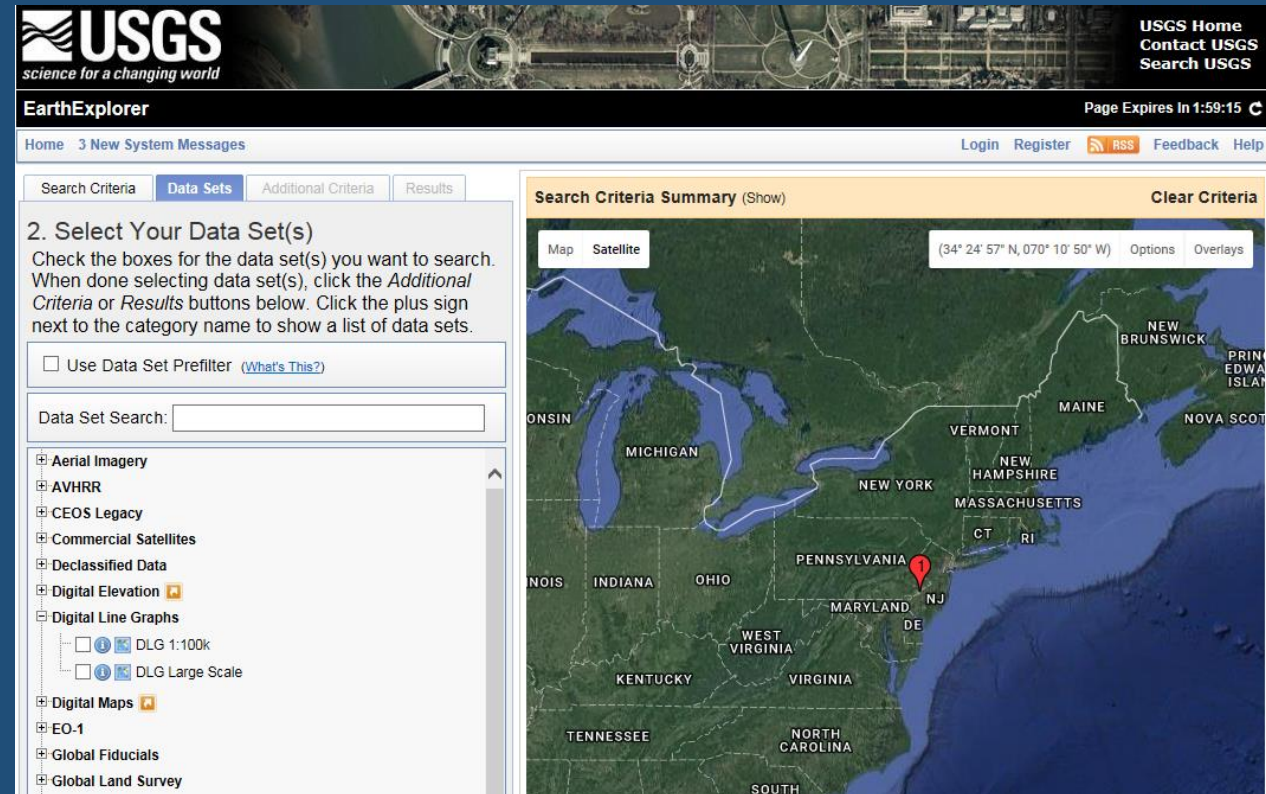
Image from [3DEP Transition webpage](#).

EarthExplorer by USGS

<http://earthexplorer.usgs.gov/>

Interactive map from USGS with an enormous selection of remote sensing data including:

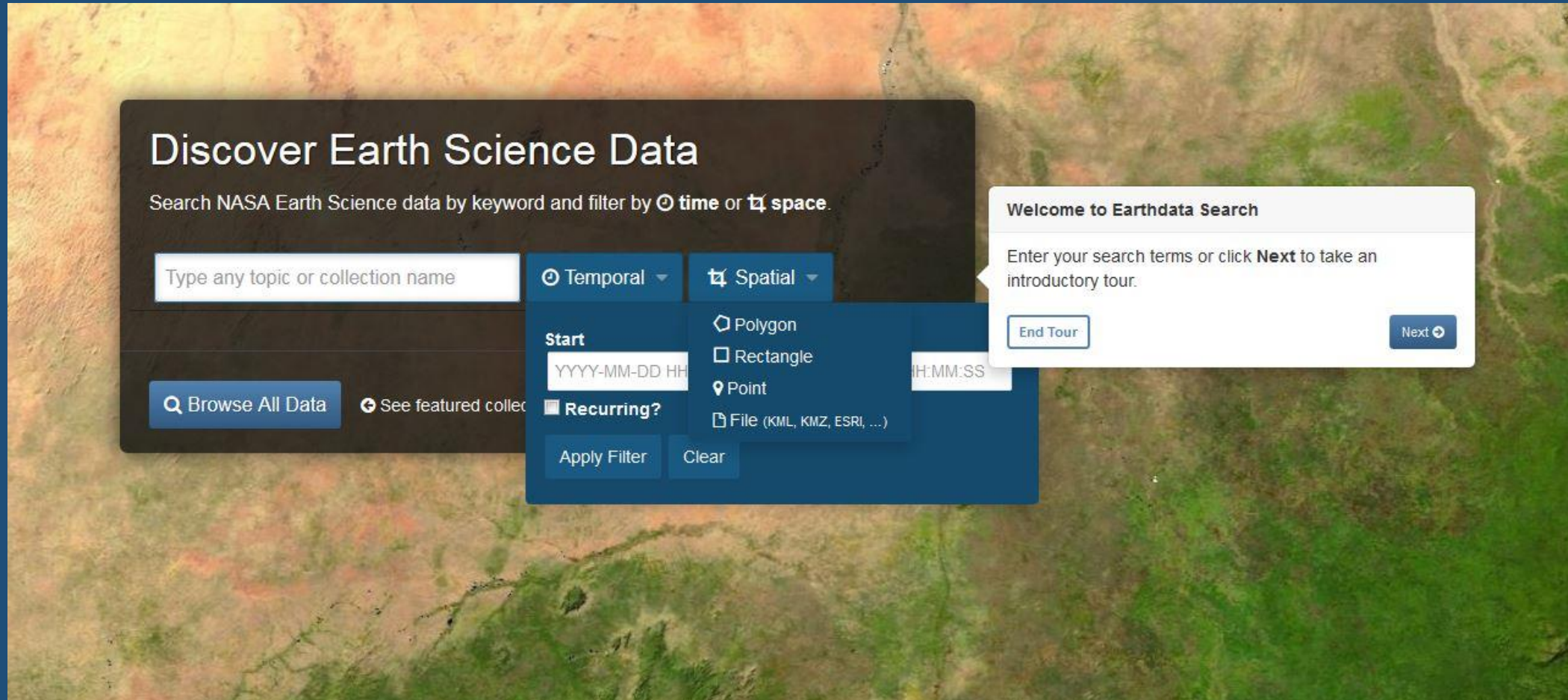
- DEMs (Digital Elevation Models)
- NAIP (National Agriculture Imagery Program)
- Landsat
- & more!



Including declassified reconnaissance images from Corona!

Earthdata by NASA

<https://earthdata.nasa.gov/>



Earthdata Search

The screenshot displays the Earthdata Search web application interface. At the top, there is a search bar with the text "Type any topic or collection name" and buttons for "Temporal", "Spatial", and "Clear Filters". A "Feedback" link is located in the top right corner.

On the left side, there is a "Browse Collections" sidebar with a list of categories and their respective counts:

- Agriculture: 1893
- Atmosphere: 7630
- Atmosphere-Biosphere Interactions: 1
- Biological Classification: 4214
- Biomass: 1
- Biosphere: 7008
- Climate Indicators: 545
- Cryosphere: 3038
- Glaciers/Ice Sheets: 1
- Human Dimensions: 3855
- Hydrosphere: 105
- Land Surface: 5388
- Models: 1
- Oceans: 10553
- Paleoclimate: 1577
- Solid Earth: 3143
- Spectral Engineering: 2
- Spectral/Engineering: 2479

The main content area shows "32284 Matching Collections". Below this, there is a section for "Recent and Featured" collections, which includes:

- MODIS/Aqua Near Real Time (NRT) Aerosol 5-Min L2 Swath 10km**
MYD04_L2 v6NRT - NASA/GSFC/EOS/ESDIS/LANCEMODIS
2015-12-06 ongoing | 1549 Granules
- MODIS/Aqua Near Real Time (NRT) Snow Cover 5-Min L2 Swath 500m, Version 006**
MYD10_L2 v6NRT - NASA/GSFC/EOS/ESDIS/LANCEMODIS
2002-05-04 ongoing | 1576 Granules

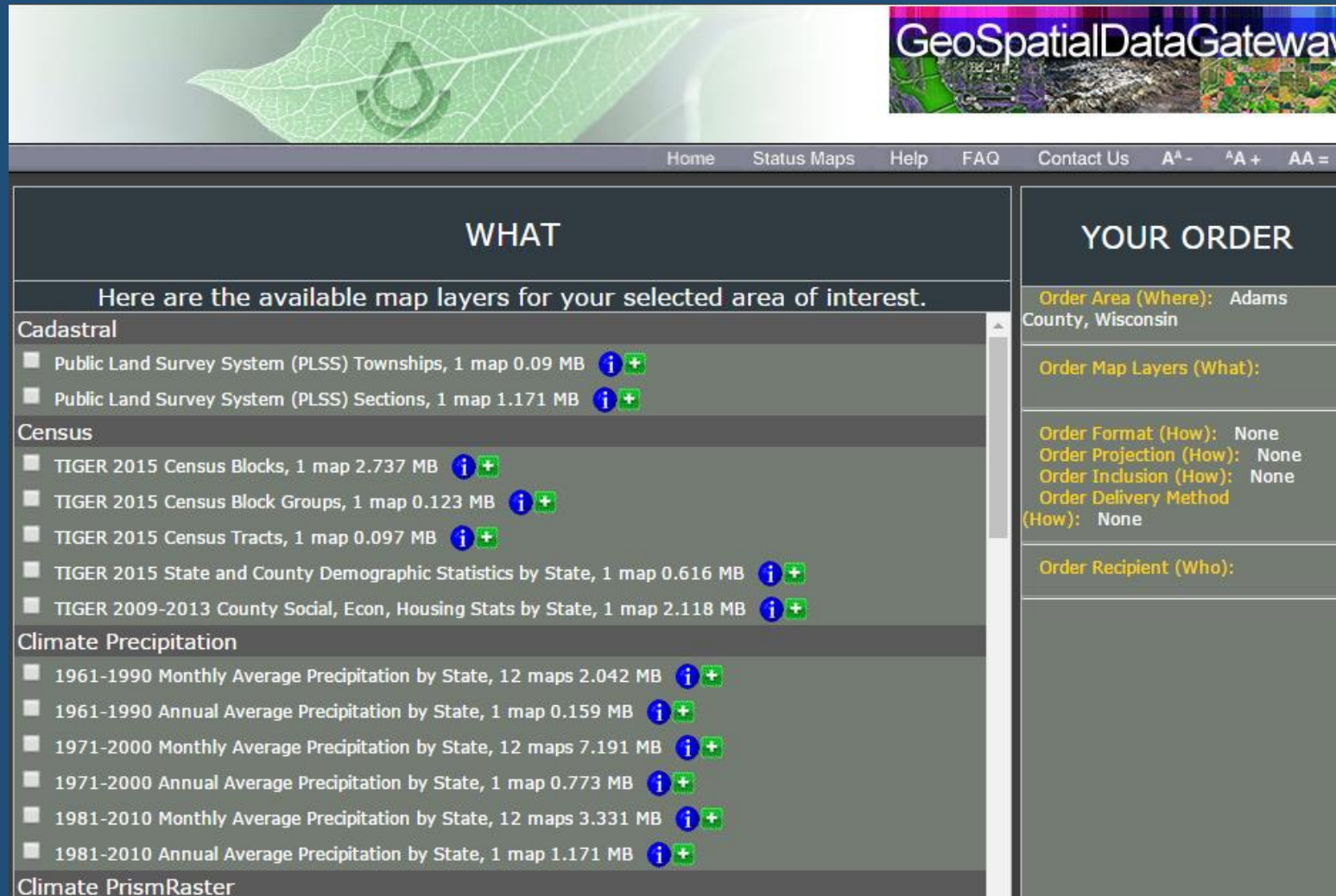
Below the featured collections, there is a "More Collections" section with:

- 15 Minute Stream Flow Data: USGS (FIFE)**
doi:10.3334/ORNLDAAAC/1 v1 - ORNL_DAAC
1984-12-25 to 1988-03-04 | 39 Granules
- 30 Minute Rainfall Data (FIFE)**
doi:10.3334/ORNLDAAAC/2 v1 - ORNL_DAAC
1987-05-29 to 1987-10-26 | 117 Granules
- A Compilation of Global Soil Microbial Biomass Carbon, Nitrogen, and Phosphorus Data**

On the right side of the interface, there is a map showing the Middle East region, including countries like Iraq, Iran, Saudi Arabia, and others. The map is overlaid with a grid of red lines and dots, likely representing data points or collection boundaries.

Geospatial Data Gateway by USDA

<https://gdg.sc.egov.usda.gov/>







The screenshot shows the GeoSpatial Data Gateway website. The header features a green leaf graphic on the left and the site title 'GeoSpatialDataGateway' on the right. A navigation bar includes links for Home, Status Maps, Help, FAQ, Contact Us, and font size controls (A⁻, A⁺, AA⁼). The main content is divided into two columns: 'WHAT' and 'YOUR ORDER'.











WHAT

Here are the available map layers for your selected area of interest.













Cadastral

- ☐ Public Land Survey System (PLSS) Townships, 1 map 0.09 MB  
- ☐ Public Land Survey System (PLSS) Sections, 1 map 1.171 MB  

Census

- ☐ TIGER 2015 Census Blocks, 1 map 2.737 MB  
- ☐ TIGER 2015 Census Block Groups, 1 map 0.123 MB  
- ☐ TIGER 2015 Census Tracts, 1 map 0.097 MB  
- ☐ TIGER 2015 State and County Demographic Statistics by State, 1 map 0.616 MB  
- ☐ TIGER 2009-2013 County Social, Econ, Housing Stats by State, 1 map 2.118 MB  

Climate Precipitation

- ☐ 1961-1990 Monthly Average Precipitation by State, 12 maps 2.042 MB  
- ☐ 1961-1990 Annual Average Precipitation by State, 1 map 0.159 MB  
- ☐ 1971-2000 Monthly Average Precipitation by State, 12 maps 7.191 MB  
- ☐ 1971-2000 Annual Average Precipitation by State, 1 map 0.773 MB  
- ☐ 1981-2010 Monthly Average Precipitation by State, 12 maps 3.331 MB  
- ☐ 1981-2010 Annual Average Precipitation by State, 1 map 1.171 MB  

Climate PrismRaster

YOUR ORDER

Order Area (Where): Adams County, Wisconsin

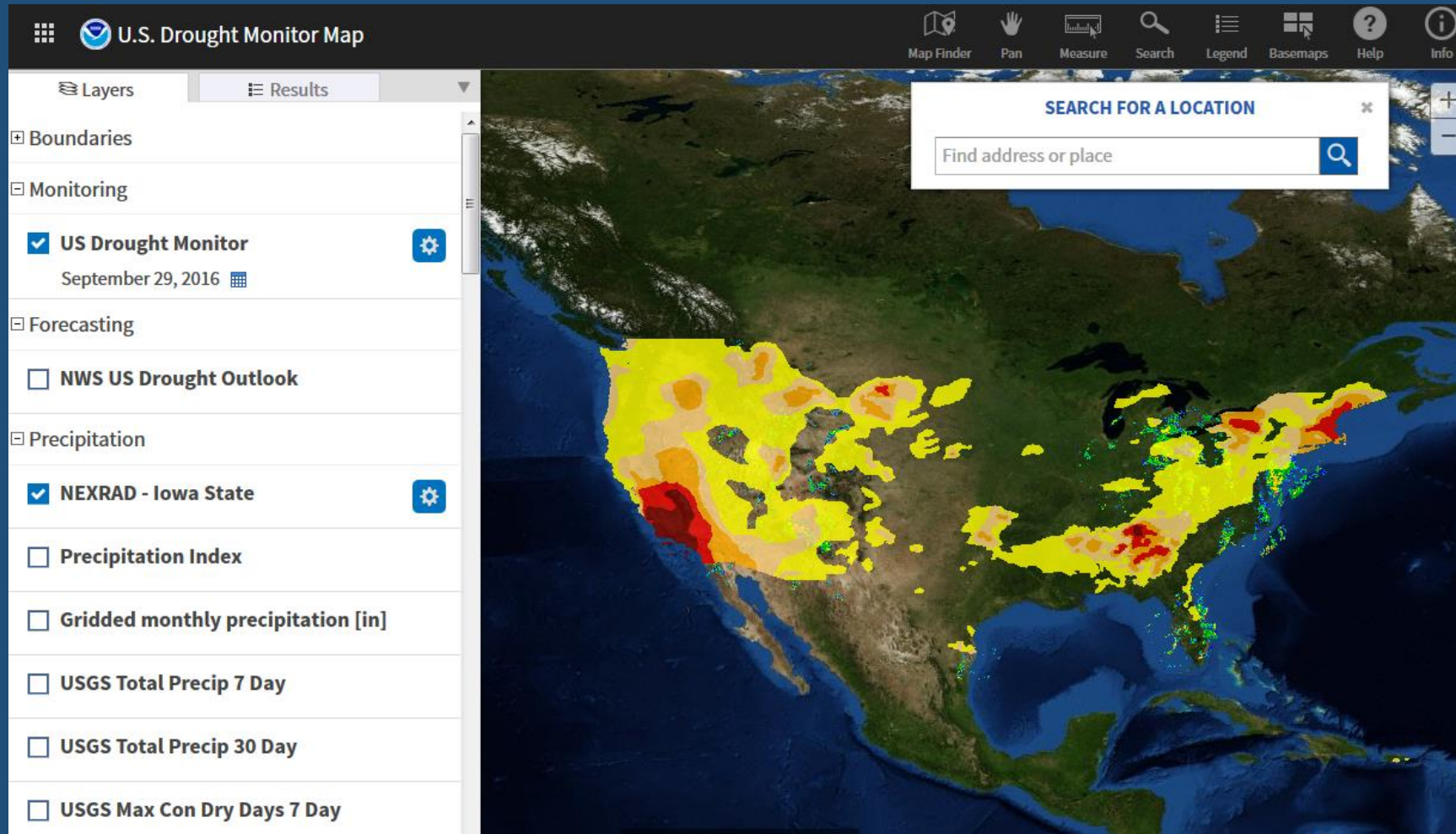
Order Map Layers (What):

Order Format (How): None
Order Projection (How): None
Order Inclusion (How): None
Order Delivery Method (How): None

Order Recipient (Who):

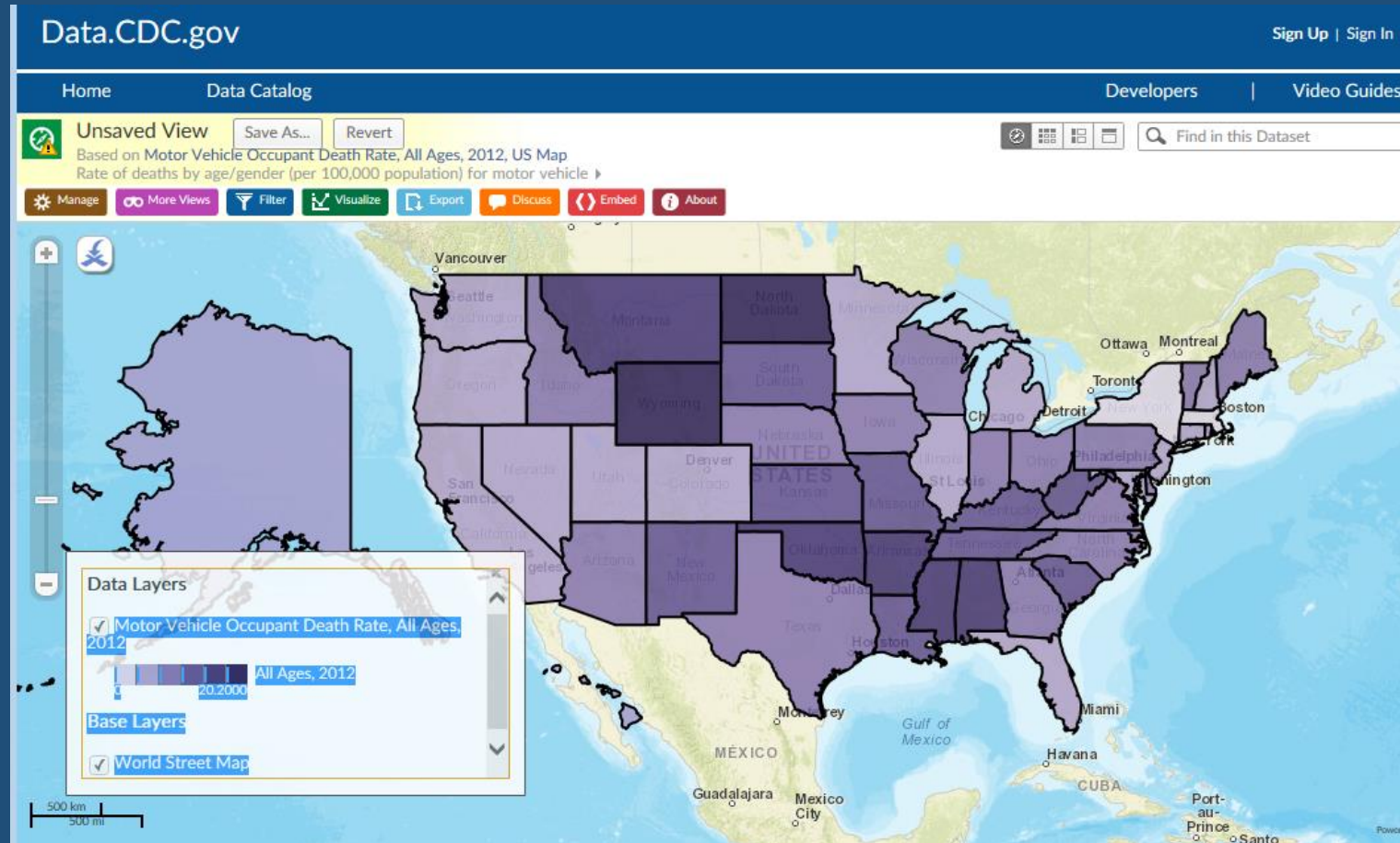
NCEI Map Viewer by NOAA

<https://gis.ncdc.noaa.gov/maps/ncei/>



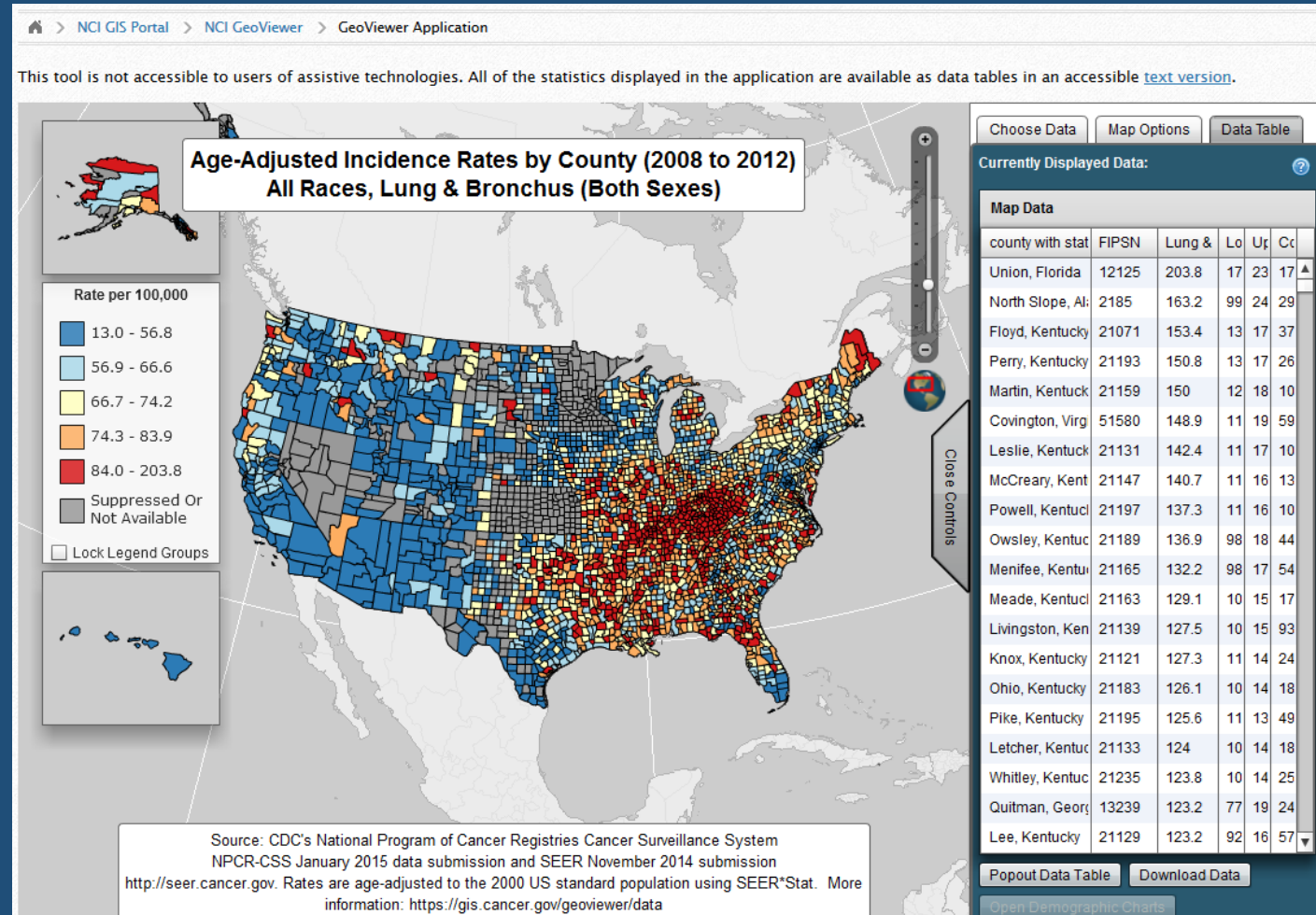
Data.CDC.Gov by Centers for Disease Control & Prevention

<https://data.cdc.gov/>



NCI Geoviewer by National Cancer Institute

<https://gis.cancer.gov/geoviewer/app/>



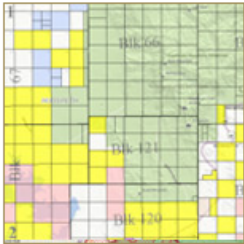
Example State & Local Government Geospatial Data Sources



Texas General Land Office

<http://www.glo.texas.gov/land/land-management/gis/index.html>

GIS MAP VIEWERS



GISWEB Viewer

The GISWEB, an interactive mapping application, provides access to vast collections of land and energy related data at the Texas General Land Office. The GISWEB display upland and submerged Original Texas Land Survey boundaries, Permanent School Fund land, upland and coastal leases, oil and gas well locations, and current imagery.

[Launch GLO - GISWEB Viewer](#)



Texas Beach Watch

The goal of the Texas Beach Watch program is to provide the public with information about water quality at selected recreational beaches along the Texas coast.

[Launch Texas Beach Watch](#)



Texas Coasts

Find Your Perfect Beach. From fishing and boat ramps, to camping and BBQ—the Texas Coast provides a wealth of resources to all visitors. The GLO is proud to offer this free resource to help you explore all that our shores have to offer.

[Launch Texas Coasts](#)

Texas Parks & Wildlife

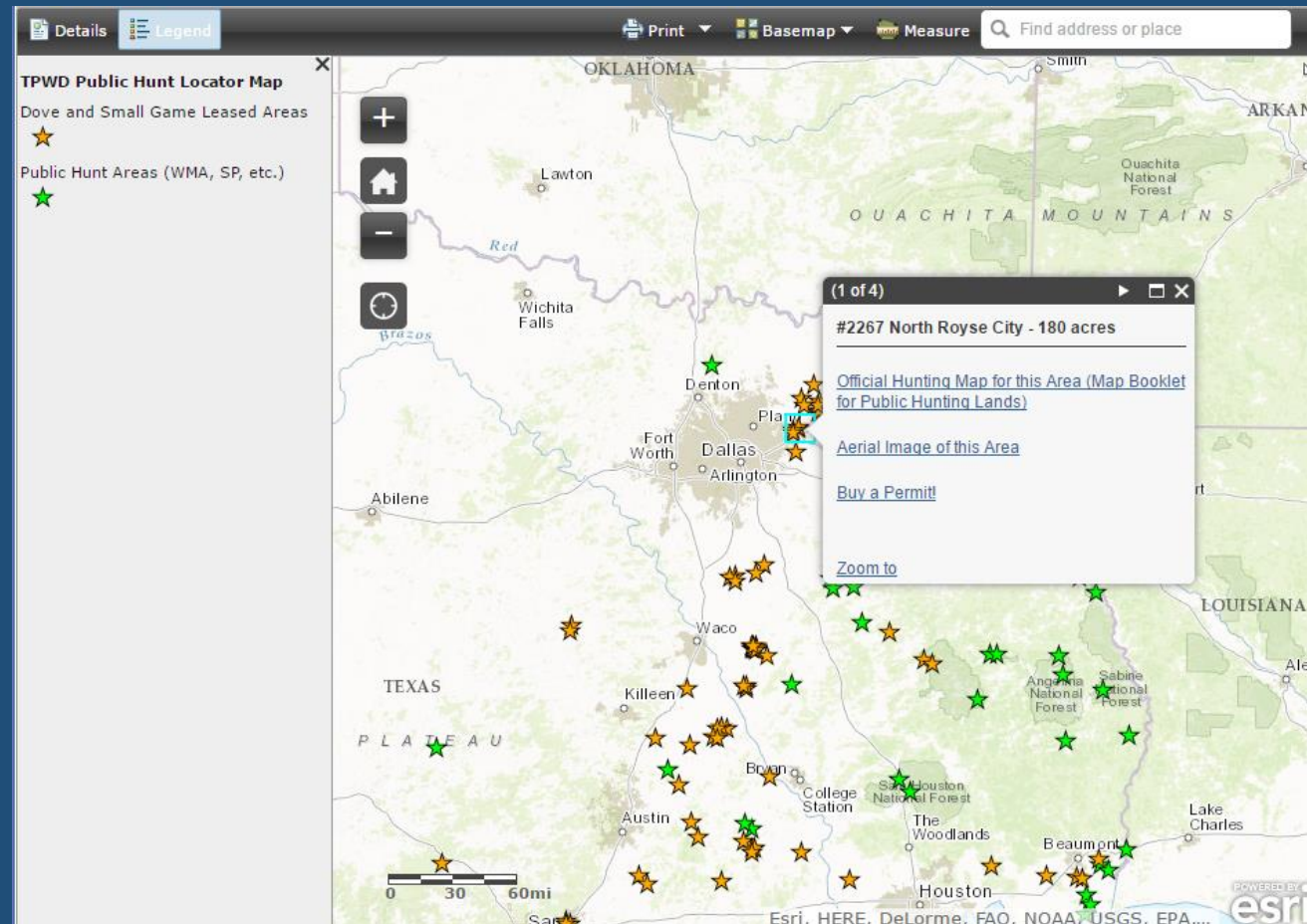
<http://tpwd.texas.gov/gis/data/downloads>

Boundaries

- [Counties](#)
- [State Plane Zones](#)
- [Texas-Louisiana Boundary Line - 1976](#)
- [Texas-Louisiana Boundary Points - 1976](#)
- [Quads - 24K](#)
- [City Points](#)
- [Wildlife Management Areas](#)
- [State Park Boundaries](#)

Ecological Mapping Systems of Texas

- [Omernik Ecoregions Level III Map](#)
- [Texas Ecological Systems Data by Ecoregion](#)
- [Texas Ecological Mapping Systems Statewide \(Raster\)](#)
- [Supporting Documents](#)



TNRIS: Texas Natural Resources Information System

<https://tnris.org/>

Data Catalog



Browse through the TNRIS datasets and map products to find out what is hosted online or available for order.

[Browse the Catalog](#)

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TNRIS is a division of the Texas Water Development Board

City of Austin

ftp://ftp.ci.austin.tx.us/GIS-Data/Regional/coa_gis.html & <https://data.austintexas.gov/>

Description	Metadata	Feature Type	Updated
ABIA Planimetrics	metadata	Line	01/25/2013
Address Points	metadata	Point	Monthly
Aerial Photo Index Grid 2003 and 2006	metadata	Polygon	08/27/2007
Austin 200' City Grid	metadata	Polygon	06/11/1999
Austin Water Utility Service Area	metadata	Polygon	07/27/2015
Building Footprints 2003	metadata	Polygon	09/24/2007
Building Footprints 2013	metadata	Polygon	7/02/2014
Combining and Overlay Zoning Districts	metadata	Line/Polygon	11/18/2013
Community Registries	metadata	Polygon	Monthly
Core Transit Corridors	metadata	Line	09/06/2007
County Boundary	metadata	Polygon	12/15/1999
Creek Lines	metadata	Line	Monthly
Decks 2013	metadata	Polygon	7/02/2014
Edwards Aquifer Contributing Zones	metadata	Polygon	07/13/2015
Electric Service Area	metadata	Polygon	03/22/2012
Future Land Use Map	metadata	Polygon	Monthly
GPS Monuments	metadata	Point	12/05/2008
Imagine Austin Centers	metadata	Polygon	Monthly



Esri + Government Data



Federal Data in ArcGIS Online

<https://www.arcgis.com/home>

The screenshot shows the ArcGIS Online interface with a search for 'owner:USGS_TNM_Services'. The search results are arranged by Relevance and show 10 results. The visible results are:

- USGS - National Hydrography Dataset (NHD)**
Map Service by USGS_TNM_Services 12/16/2015 Details Add
- USGS - Governmental Unit Boundaries WMS**
Governmental Unit Boundaries Data from The National Map
Map Service by USGS_TNM_Services 4/3/2012 Details Add
- USGS Transportation from The National Map**
Transportation data from The National Map
Map Service by USGS_TNM_Services 6/19/2014 Details Add
- USGS - Geographic Names Information System**
Map Service by USGS_TNM_Services 1/11/2012 Details Add
- USGS - Large Scale Shaded Relief WMS from T**
Map Service by USGS_TNM_Services 1/11/2012 Details Add
- USGS - National Landcover Database (NLCD) 2**
Map Service by USGS_TNM_Services 12/2/2011 Details Add
- USGS Orthoimagery from The National Map**
Map Service by USGS_TNM_Services 8/28/2014 Details Add
- USGS Structures from The National Map**
Structures data from The National Map
Map Service by USGS_TNM_Services 6/18/2014 Details Add
- USGS Topo Large Base Map from The National**
- USGS Elevation Contours**

Story Maps

<http://storymaps.arcgis.com/en/gallery>

marinecadastr...
f t e
BOEM
Bureau of Ocean Energy Management
NOAA

MAPPING

Human Uses of the Ocean

The ocean is a busy place, and it is getting busier every day. Understanding the many ways we use the ocean is essential to making sound and effective coastal management decisions.

The participatory mapping process developed by the National Oceanic and Atmospheric Administration (NOAA) fills critical data needs for marine planning by engaging ocean use communities in documenting their expert knowledge about ocean use activities.




[Mapping Human Uses of the Ocean by NOAA](#)

Citizen Science



Did You Feel It? by USGS

<http://earthquake.usgs.gov/data/dyfi/>

Menu

Did You Feel It?

Did You Feel It? (DYFI) collects information from people who felt an earthquake and creates maps that show what people experienced and the extent of damage.

Report it Here - Tell Us!

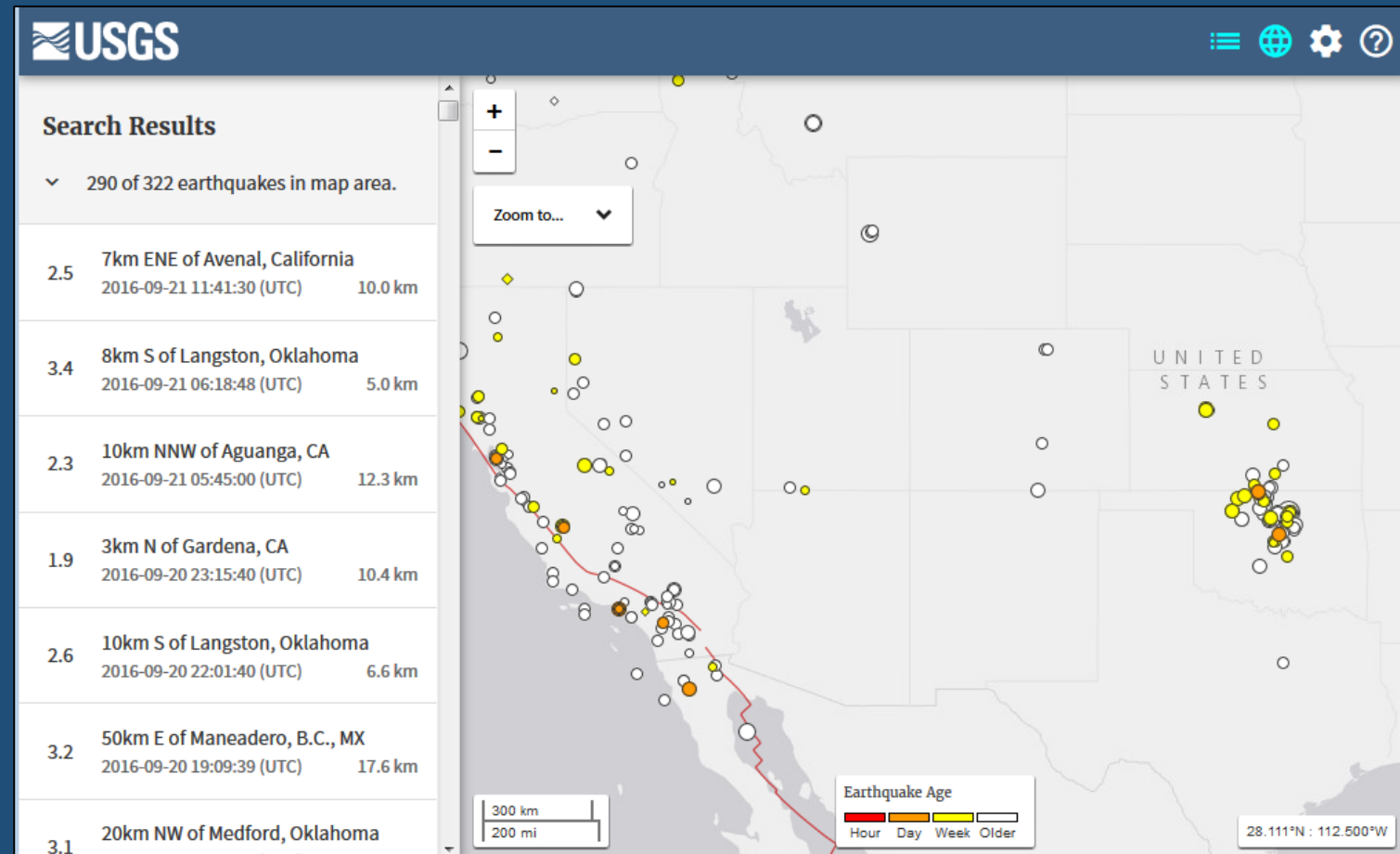
Find the earthquake you felt, and then tell us about it. Not in the list?

[Report an Unknown Event](#)

DYFI, Past 24 Hours

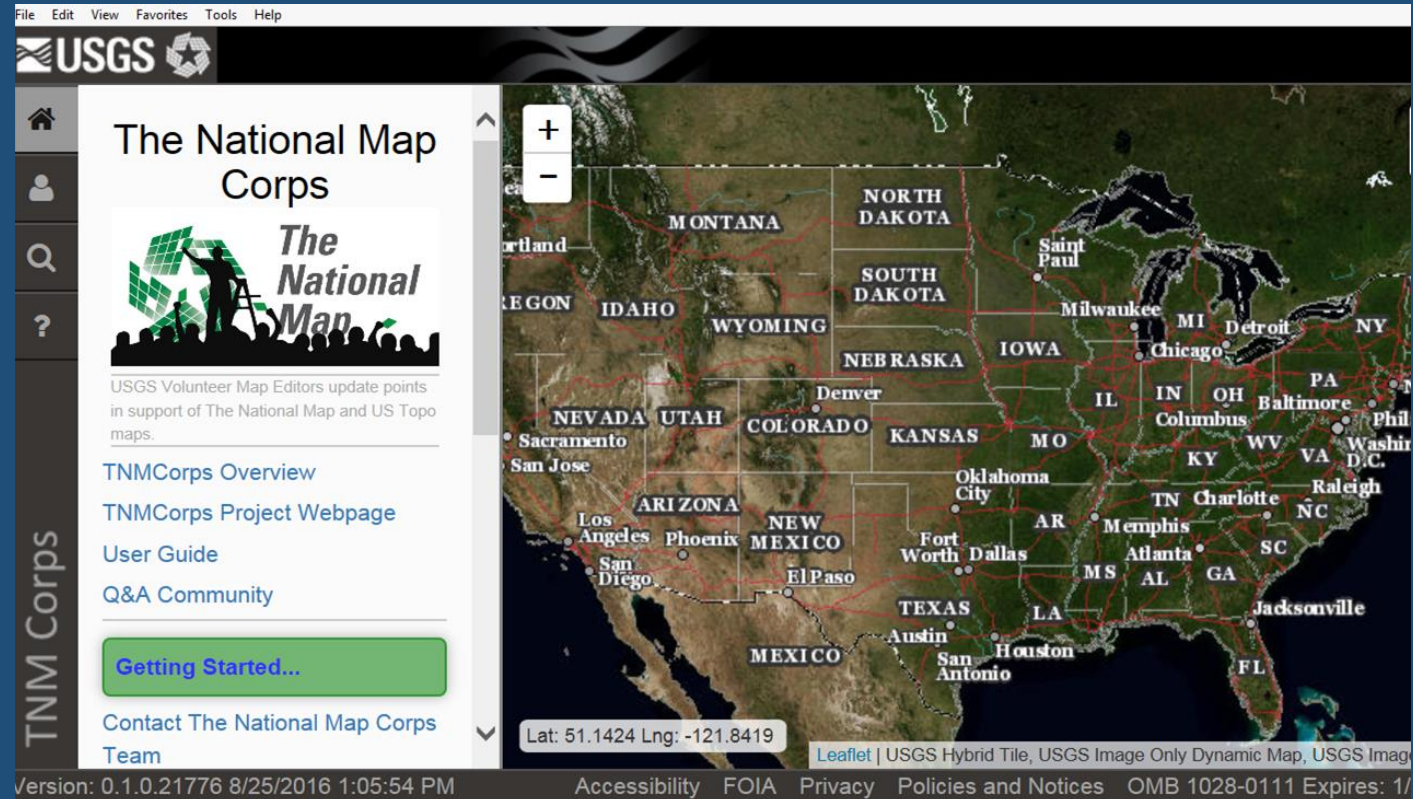
II

[M 2.2 - 4km SE of Calistoga, Califo...](#)
2016-09-21 15:20:31 UTC 1 respo...



The National Map Corps Mapping Challenge by USGS

The National Map Corps is enlisting help from volunteers in confirming locations of structures such as schools, hospitals, post offices, police stations, and other important public buildings.



GLOBE Observer^{by} NASA & NSF

<http://www.globe.gov/>

GLOBE Observer app allows people to gather cloud data and submit it. This data can be downloaded from the GLOBE website.

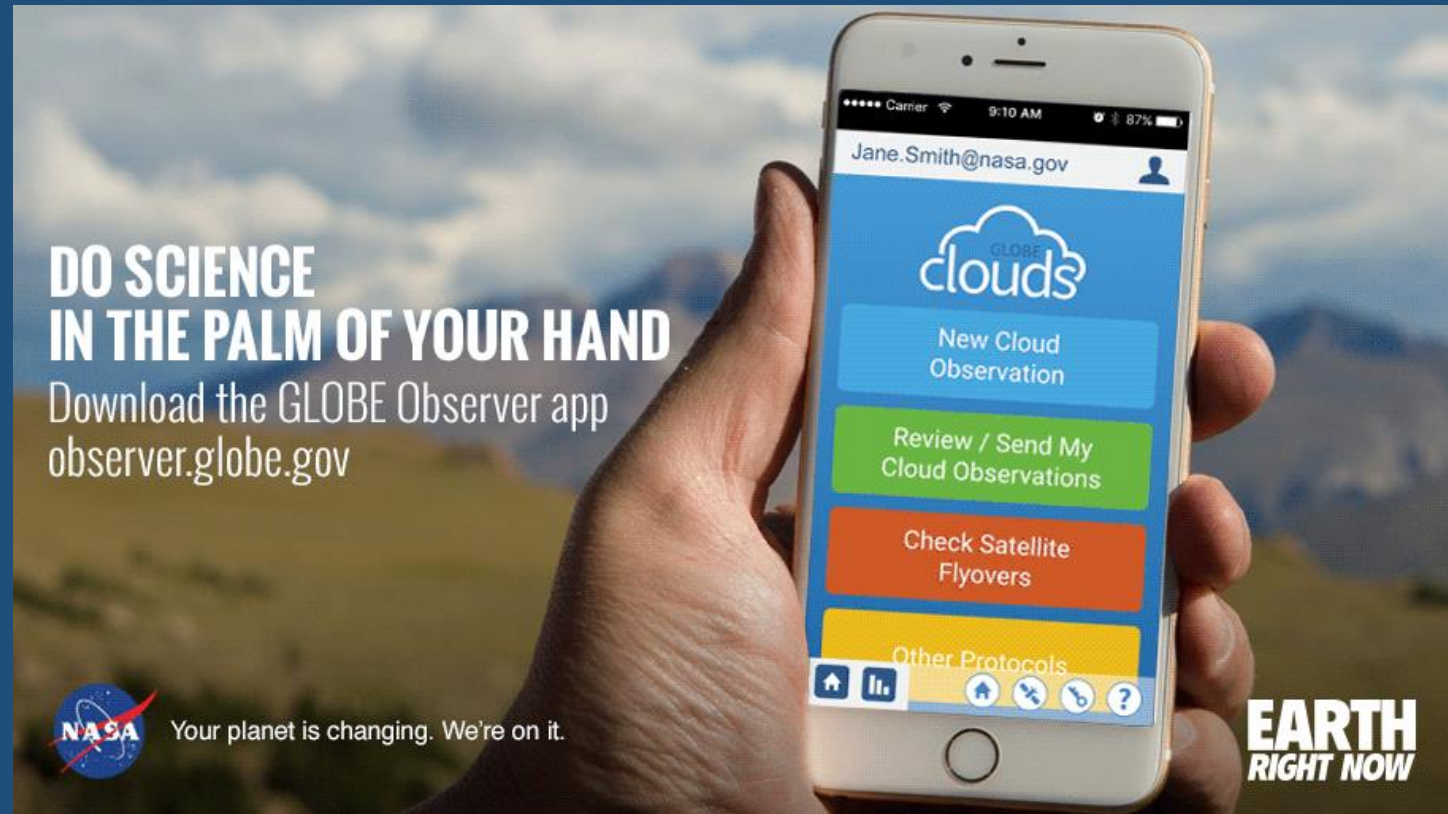


Image Source: <http://www.jpl.nasa.gov/edu/news/2016/8/31/nasa-earth-science-app-wants-you/>

Additional Resources

List of additional resources & references:

<http://guides.library.txstate.edu/BeyondTIGERFiles>



Questions?



Contact Information

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