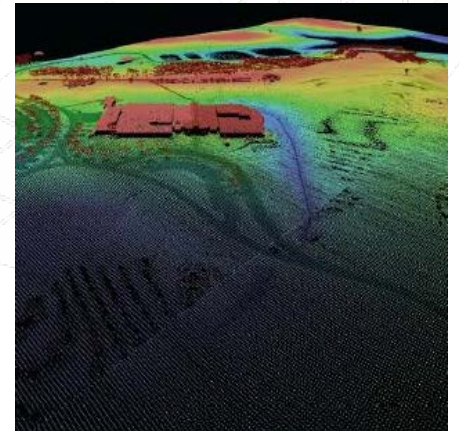
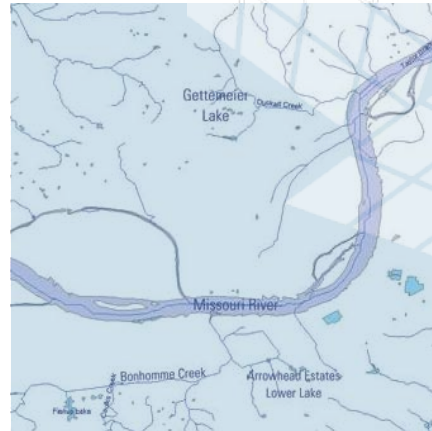
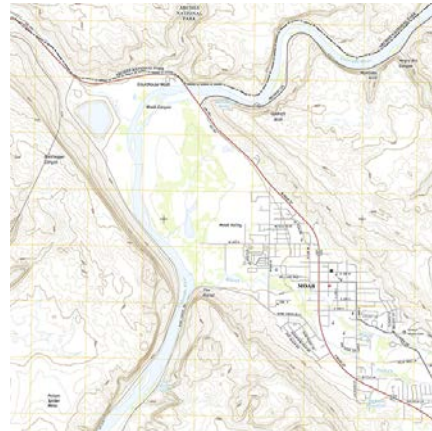


What's new in 2019 with the USGS National Geospatial Program



Claire DeVaughan
South Central Arc User Group Conference
Tulsa, Oklahoma
April 23, 2019

+ 3DEP Point Cloud as Amazon Public Dataset

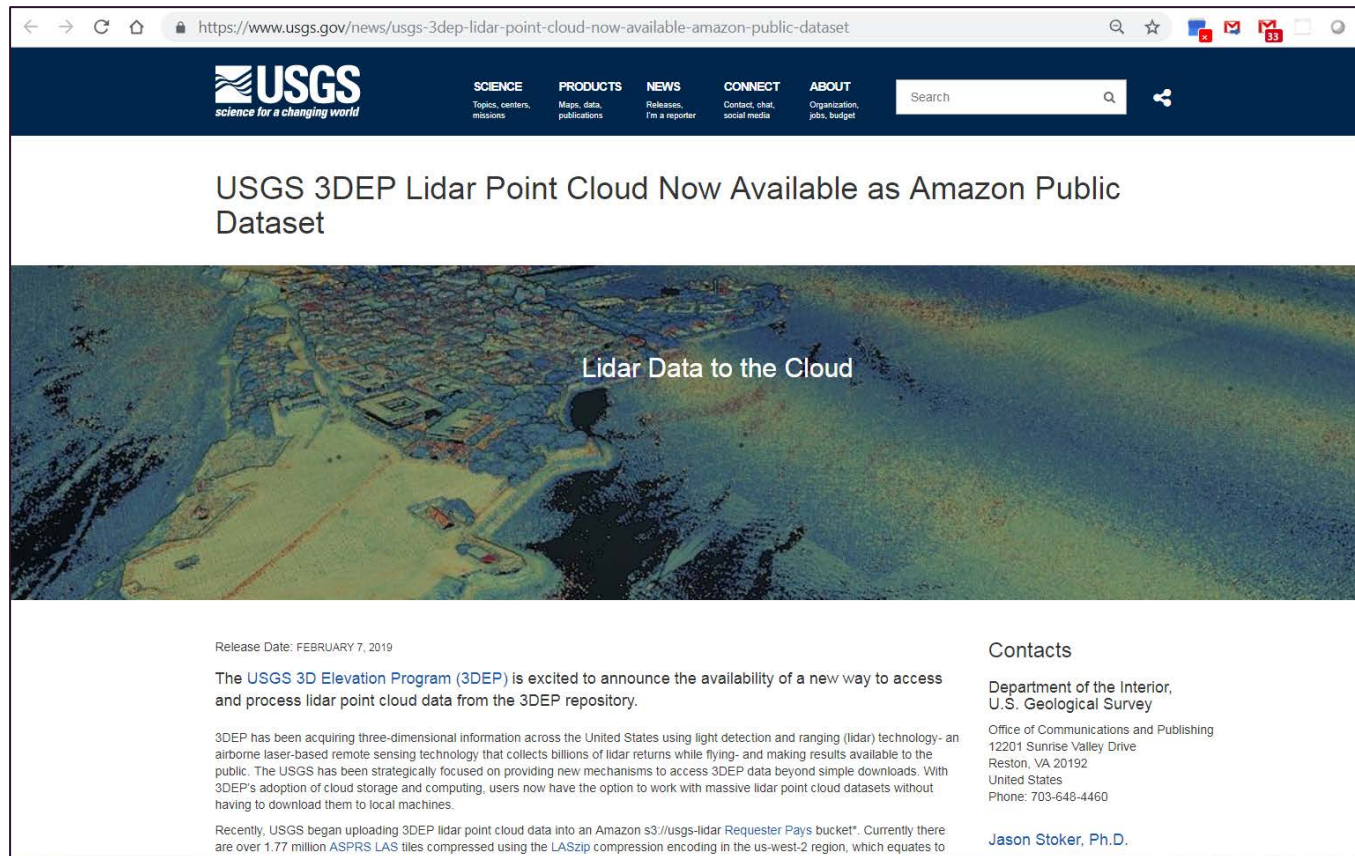
Point cloud via the cloud

- Users now have the option to work with massive lidar point cloud datasets without having to download them to local machines
- The data are now part of the Open Data registry provided by AWS, similar to the Landsat archive (in a 2-year period initially)
- USGS is now uploading 3DEP lidar point cloud data into an Amazon s3://usgs-lidar “Requester Pays” bucket
- Hobu, Inc. and USACE collaborated with the Amazon Web Services (AWS) Public Datasets team to organize these data as Entwine Point Tile (EPT) resources:
 - EPT enables 3D Visualization as well as optimized processing direct from the cloud
- Registry info: <https://registry.opendata.aws/usgs-lidar/>

+ 3DEP Point Cloud as Amazon Public Dataset

3

Visualization of USGS 3DEP Lidar Point Clouds as EPT with Potree and Plasio: <https://usgs.entwine.io/>



The screenshot shows a web browser displaying a USGS news article. The browser's address bar shows the URL: <https://www.usgs.gov/news/usgs-3dep-lidar-point-cloud-now-available-amazon-public-dataset>. The USGS logo is in the top left, and navigation links for Science, Products, News, Connect, and About are in the top right. The article title is "USGS 3DEP Lidar Point Cloud Now Available as Amazon Public Dataset". Below the title is a large image of a 3D point cloud visualization of a landscape, with the text "Lidar Data to the Cloud" overlaid. The article text below the image states: "Release Date: FEBRUARY 7, 2019. The USGS 3D Elevation Program (3DEP) is excited to announce the availability of a new way to access and process lidar point cloud data from the 3DEP repository. 3DEP has been acquiring three-dimensional information across the United States using light detection and ranging (lidar) technology - an airborne laser-based remote sensing technology that collects billions of lidar returns while flying - and making results available to the public. The USGS has been strategically focused on providing new mechanisms to access 3DEP data beyond simple downloads. With 3DEP's adoption of cloud storage and computing, users now have the option to work with massive lidar point cloud datasets without having to download them to local machines. Recently, USGS began uploading 3DEP lidar point cloud data into an Amazon s3://usgs-lidar Requester Pays bucket*. Currently there are over 1.77 million ASPRS LAS tiles compressed using the LASzip compression encoding in the us-west-2 region, which equates to". On the right side of the article, there is a "Contacts" section for the Department of the Interior, U.S. Geological Survey, Office of Communications and Publishing, 12201 Sunrise Valley Drive, Reston, VA 20192, United States, Phone: 703-648-4460, and Jason Stoker, Ph.D.

+ USGS LidarExplorer

4

<http://prd-tnm.s3.amazonaws.com/LidarExplorer/index.html#/>

The screenshot shows the USGS LidarExplorer web application. The browser address bar displays the URL `http://prd-tnm.s3.amazonaws.com/LidarExplorer/index.html#/`. The page features the USGS logo and the tagline "science for a changing world". The main heading is "LidarExplorer".

On the left side, there is a sidebar with the following elements:

- Which product are you interested in?** (This section is partially obscured by a zoomed-in inset on the left).
- POINT CLOUD** (selected)
- DEM** (selected)
- OTHER**
- ☒ Show where DEMs exist?
- Click on the map to retrieve information about a DEM project.*
- Hide Legend**
- More Info**
- ☐ Preview DEMs on map?
- ☐ Select DEMs for download?

The main content area includes a "Find a Place" search bar and a map of the United States. The map shows various locations with red markers indicating DEM projects. Major cities labeled on the map include Seattle, San Francisco, Los Angeles, Phoenix, Dallas, Houston, Atlanta, Miami, Minneapolis, Chicago, Detroit, New York, and Washington D.C. The map also shows the Gulf of Mexico and the Gulf of Saint Lawrence.

The zoomed-in inset on the left shows the "Which product are you interested in?" section more clearly, including the "POINT CLOUD" and "DEM" tabs, and the "Show where DEMs exist?" checkbox.

+ USGS National Hydrography Datasets

Hydrologic networks, units, catchments, and more...

National Hydrography Dataset (NHD)

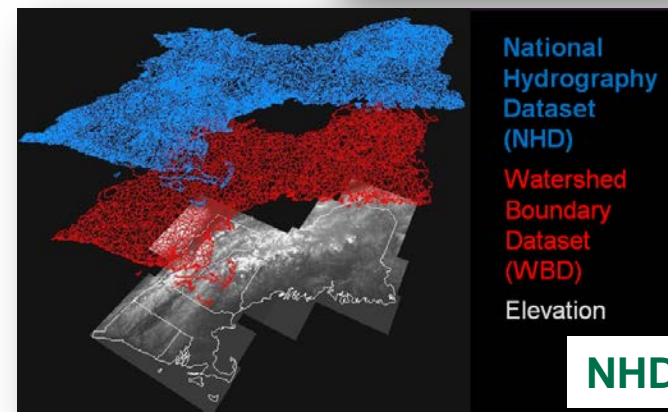
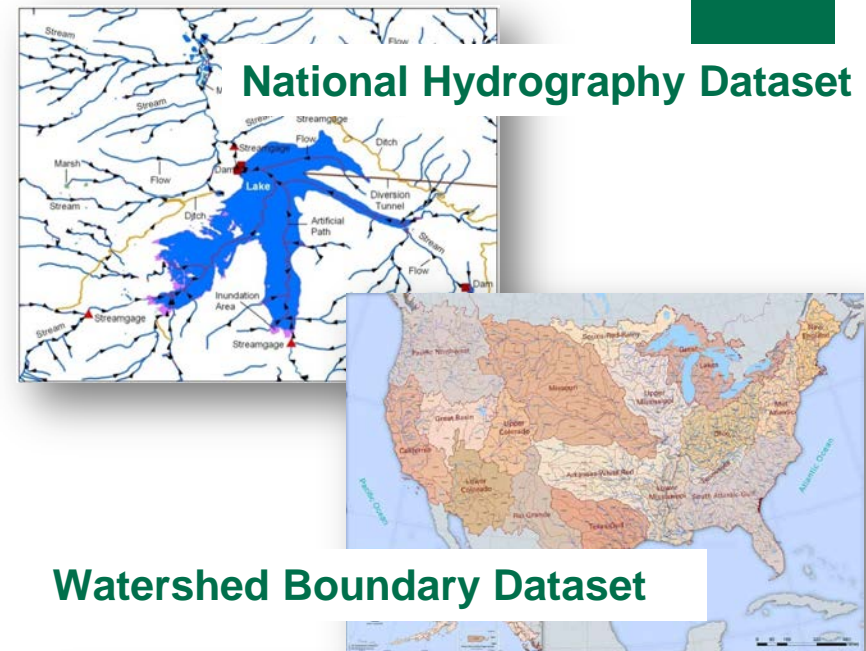
- The drainage network with features such as rivers, streams, canals, lakes, ponds, and stream gages.

Watershed Boundary Dataset (WBD)

- The drainage basins at 8 scales of a nested hierarchy; defines the areal extent of surface water drainage to a point

NHDPlus

- Incorporates many of the best features of the NHD, WBD and elevation data to enable estimates of flow volume and velocity

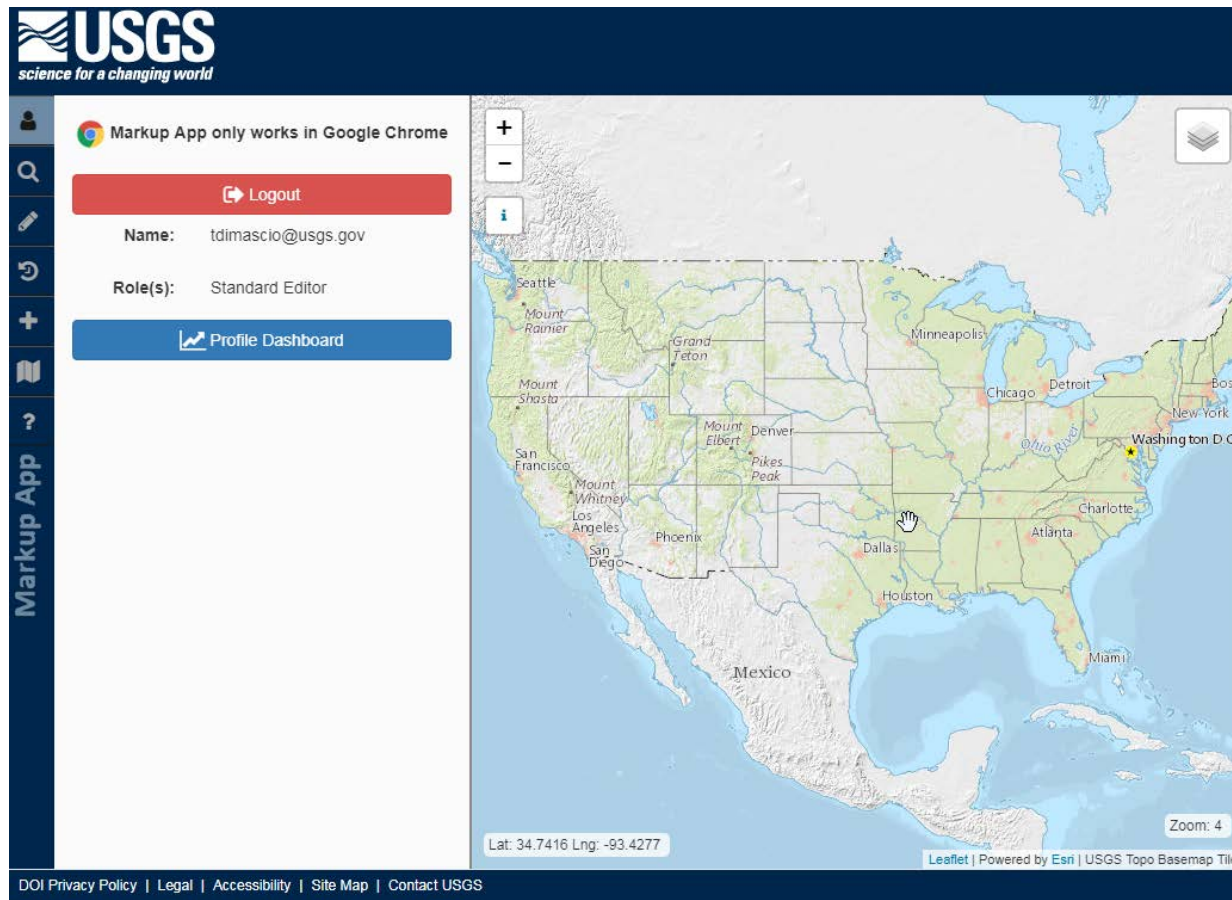


+ NHD Markup Application

6

<https://edits.nationalmap.gov/markup-app>

- Suggest edits to NHD, WBD, and NHDPlus HR
- Requirements: Gmail or AGOL account and Google Chrome



+ US Topo Status

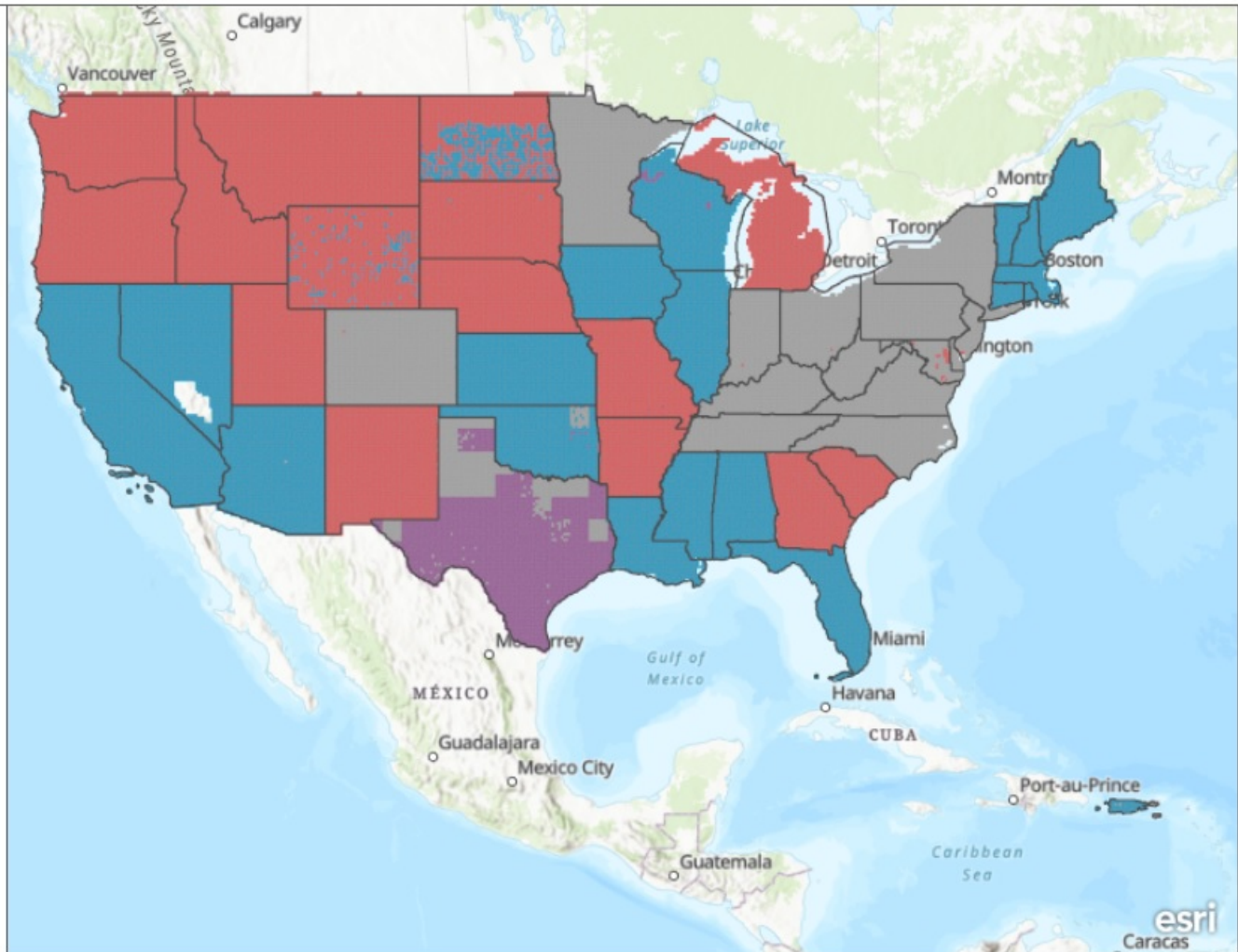
7

My Map

USTopoAvailability

Index of Available Maps

- Published 2019
- Published 2018
- Published 2017
- Published 2016 or earlier

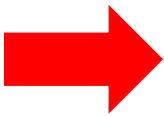


USGS TNM – US Topo. Data Refreshed Nightly. | Esri, USGS | Esri, HERE, Garmin, FAO, NOAA, USGS, EPA

+ US Topo Access

- Both the US Topo series and HTMC maps are offered as GeoPDFs through The National Map and the USGS Store. However, additional formats are now offered through topoView:

<https://ngmdb.usgs.gov/topoview/>

- 
- GeoTIFF – compressed, 300 dpi TIFF image format, with embedded georeferencing information so that the map can be used directly in a GIS. The GeoTIFFs are generated at true scale, allowing users to plot the map at the intended map scale in cases where a hard copy is needed.
 - JPEG – The high-resolution JPEGs, or 'Browse JPEG' format are useful for getting a quick view of the map in order to find place names or simply explore the map area without the need for downloading a large file.
 - KMZ – The KMZ format is a compressed form of the KML format which is used for displaying the maps in Google Earth.



+ National Map Training Videos

10

<https://www.usgs.gov/core-science-systems/national-geospatial-program/training>

Or google “national map training videos”

The image displays three overlapping screenshots of YouTube videos from the USGS National Map training series.

Leftmost video: Titled "3D Elevation Program: Mission Critical Applications". It features a 3D elevation model of a mountain range. Text overlays include "Natural Hazards: Identifying features in heavily forested and snow covered Glacier Peak" and "Water: Modeling flood inundation along the Upper Mississippi". The USGS logo is visible at the bottom.

Middle video: Titled "Hydro-Flattened (S) (Topographic S)". It shows a 3D model of a river network. Text overlays include "Stream" and "Waterbody". The USGS logo is visible at the bottom.

Rightmost video: Titled "Lesson 10b1: Intro to LAS Files in ArcGIS Pro". It shows the ArcGIS Pro interface with a 3D elevation model. The interface includes a Project pane, a Catalog pane, a Map pane, and a Symbolization pane. The Symbolization pane shows a legend for the 3D Elevation Program, including "Contours" and "Elevation".

+

Questions?

11

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