

# Online Sources of LiDAR Data

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*2009 GSA LiDAR Short Course*

- Online access to LiDAR varies significantly:
  - *High-end*: Interactive systems offering access to point cloud data (user defined areas) + tools to generate custom products
    - DEMs, contours, browse images/Google Earth files)
  - Interactive maps (web or Google Earth-based) serving tiled DEMs or LAS tiles
  - *Basic*: FTP servers offering tiled data
- File formats (pts & grids) vary by source
  - Points:
    - ASCII formats (.xyz, .txt) or LAS binary (.las)
  - DEMs in various GIS-compatible formats:
    - ASCII grids (.asc), ESRI binary (Arc/INFO) grids, .grd, .flt, GeoTIFF
- Central clearinghouse for national public domain LiDAR data does not exist.

# OpenTopography Portal

www.opentopography.org

<http://www.opentopography.org/index.php/resources/links>

|       |                  |           |                  |           |           |            |
|-------|------------------|-----------|------------------|-----------|-----------|------------|
| Home  | About            | Data      | <b>Resources</b> | CloudStor | Blog      | Forums     |
| Tools | Metadata & Files | Documents | Tutorials        | Links     | Education | myOpenTopo |

## Links

### LiDAR Data Sources:

Online LiDAR data sources other than the OpenTopography Portal – see the [Data tab](#) above for data hosted by OpenTopography

- [USGS CLICK](#) (Center for LIDAR Information Coordination and Knowledge) – a large collection of LiDAR point cloud data mostly in LAS format.
- [National Center for Airborne Laser Mapping \(NCALM\) Data Distribution Center](#) – high-resolution LiDAR DEM data collected by NCALM for National Science Foundation-funded research projects.
- [Puget Sound LiDAR Consortium](#) – high-resolution LiDAR data for western Washington.
- [USGS Decision Support for Coastal Science and Management](#) – LiDAR data of coastal and marine environments acquired by the USGS Coastal and Marine Geology Program. Data includes coverage of many coastal National Parks, Monuments, Recreation Areas, and Historic Sites.
- NOAA [LiDAR Data Retrieval Tool \(LDART\)](#) – LiDAR coverage in narrow coastal swaths acquired mostly for topographic change mapping. Point clouds and custom DEMs available.

### State Data Collections:

- Idaho: [LiDAR Data for Idaho](#)
- Iowa: [Iowa LiDAR Mapping Project](#)
- Louisiana: [Atlas LiDAR Downloader](#)
- North Carolina: [NC Floodplain Mapping Program](#)
- Ohio: [Ohio Statewide Imagery Program](#)
- Oregon: [Oregon LiDAR Consortium](#)
- Pennsylvania: [PAMAP Elevation Data](#)
- Utah: [Utah GIS Portal](#)

### Other Topographic Data Sources:

- [USGS National Elevation Dataset](#) (NED) – 1 arc-second (~30 meters), 1/3 arc-second (~10 meters), and some 1/9 arc-second (~3 meters) digital elevation model data via the [USGS National Map Seamless Server](#).
- [Shuttle Radar Topography Mission \(SRTM\)](#) – 90 m DEM data available via [CGIAR-CI](#). 30 and 90m SRTM data are also available via the [USGS Seamless site](#)
- [ASTER Global Digital Elevation Map](#) (GDEM) – 30 meter digital elevation model data created by stereo-correlation of [ASTER](#) VNIR images.
- NOAA National Geophysical Data Center [Global Land 1 km Base DEM](#) – “A 30-arc-second (1-km) gridded, quality-controlled global Digital Elevation Model

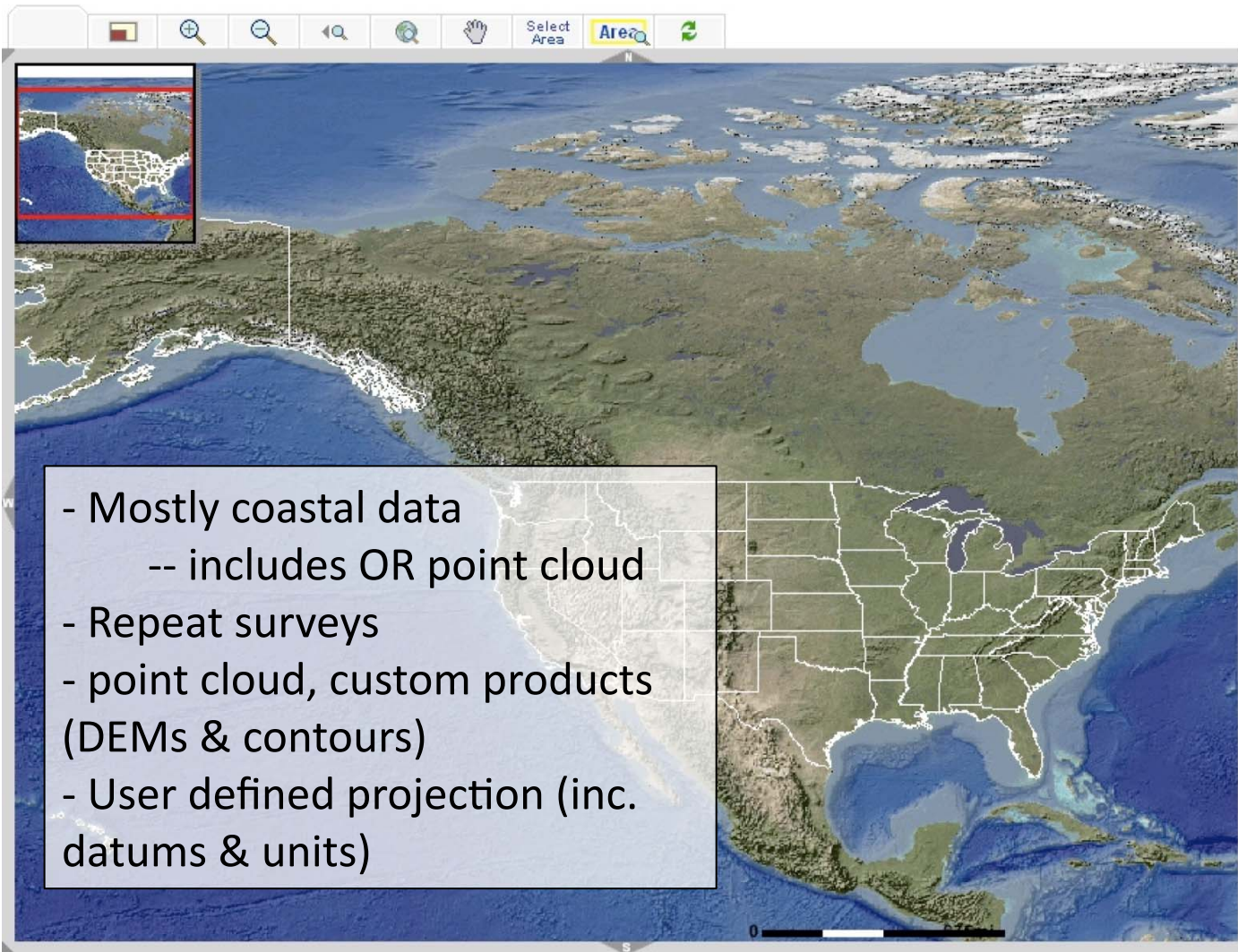


# NOAA Digital Coasts:

<http://www.csc.noaa.gov/digitalcoast/index.html>

DIGITAL COAST

Digital Coast : Data Access Viewer



- Mostly coastal data
  - includes OR point cloud
- Repeat surveys
- point cloud, custom products (DEMs & contours)
- User defined projection (inc. datums & units)

Data Search Results Help

## Location Search ▼

Click and drag a box on the map to search for data.

Area

(Optional) Limit by keywords\*: ?

lidar

☒ Match ANY ☐ Match ALL

## State Search ▼

Find data in: Select State

(Optional) Limit by keywords\*: ?

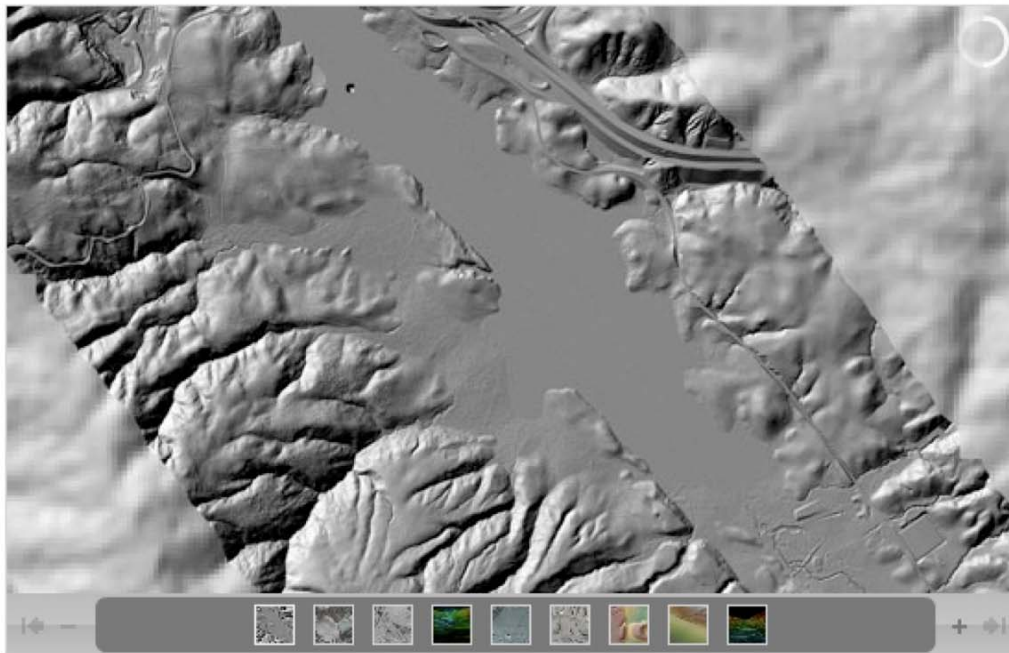
lidar

☒ Match ANY ☐ Match ALL

Search

[Enter Search Coordinates ►](#)





The OpenTopography Portal provides integrated access to high-resolution topographic data and web-based processing tools as well as enables its user community to share knowledge, resources and build science collaborations.



- Mostly active faults (and associated landforms) in western US
- point cloud, custom products (DEMs), data handling, digital elevation model (DEM) production, data analysis including fault trace
- Other resources including tutorials, short course materials, links, etc.

## Available Data





[http://lidar.cr.usgs.gov/LIDAR\\_Viewer/](http://lidar.cr.usgs.gov/LIDAR_Viewer/)

**USGS**  
**Light Detection and Ranging (LIDAR)** [Go to viewer Intro](#) [Back to CLICK Webpage](#)

**Zoom**  
[Icons for zoom in, zoom out, and pan]  
XY

**Query**  
[Icons for query and layer selection]

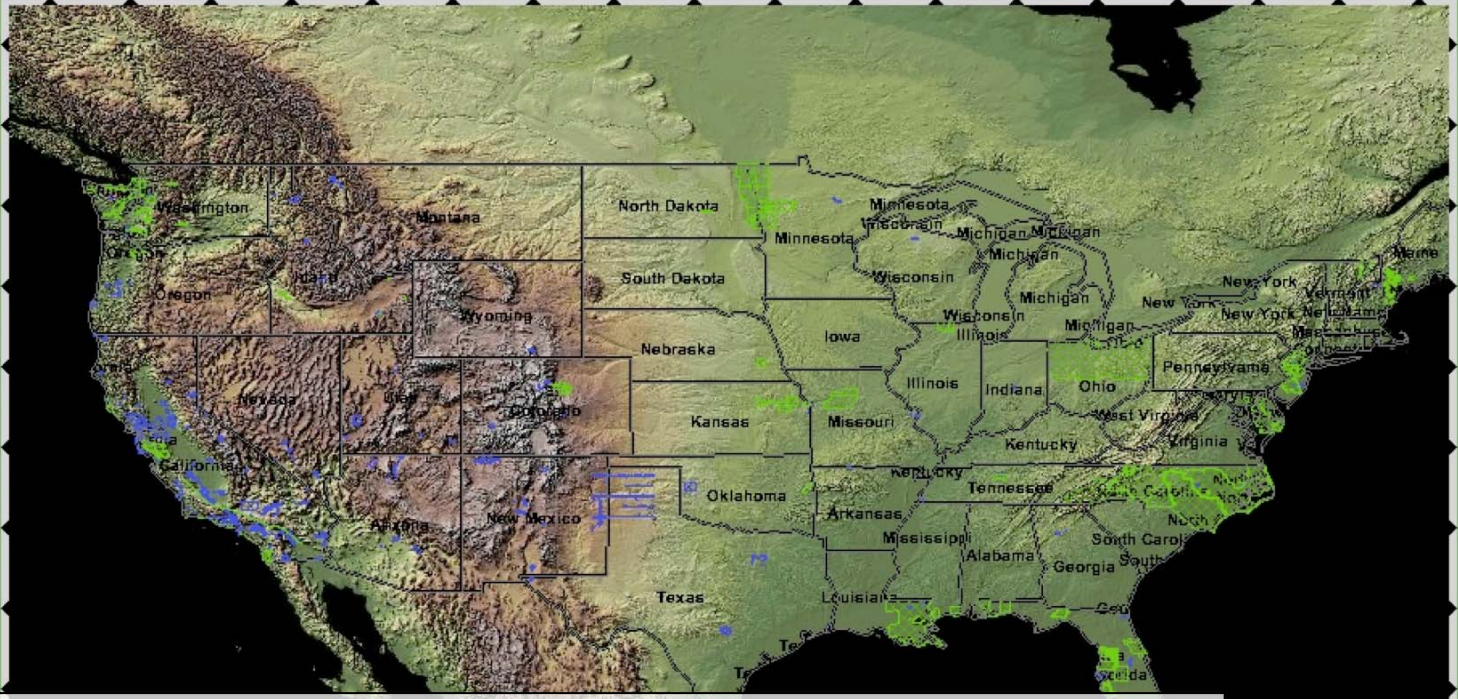
**Tools**  
[Icons for various map tools]

**Downloads**  
[Icons for downloading data]

**Documents**  
[Icons for document management]

**Scale Information**  
Out In  
Scale ~ 1:28,521,193

**Layers**  
▶ **Transportation**  
▶ **Boundaries**  
▶ **Hydrography**  
▶ **Orthoimagery**  
▶ **Land Cover**  
▶ **Elevation**



- LAS binary point cloud data in tile format only
- Often unclassified
- Large amount of data, although often available in other formats elsewhere (e.g. via state data portals)
- Bare earth data in CLICK becomes 1/9 arc second (~3m) DEM data in NED.
- Excellent LiDAR discussion forum also hosted by CLICK

U.S. Department of the Interior  
URL: /Lidar\_viewer/ | Last Update: May 4, 2004 | [Maintainer](#) | [Comments and Suggestions](#) | [Disclaimer](#)





# NCALM

LIDAR DATA  
DISTRIBUTION CENTER



The National Center for Airborne Laser Mapping

Welcome to the NSF Supported NCALM Data Distribution Center  
For the main NCALM website please visit [www.ncalm.org](http://www.ncalm.org)

<http://calm.geo.berkeley.edu/ncalm/ddc.html>

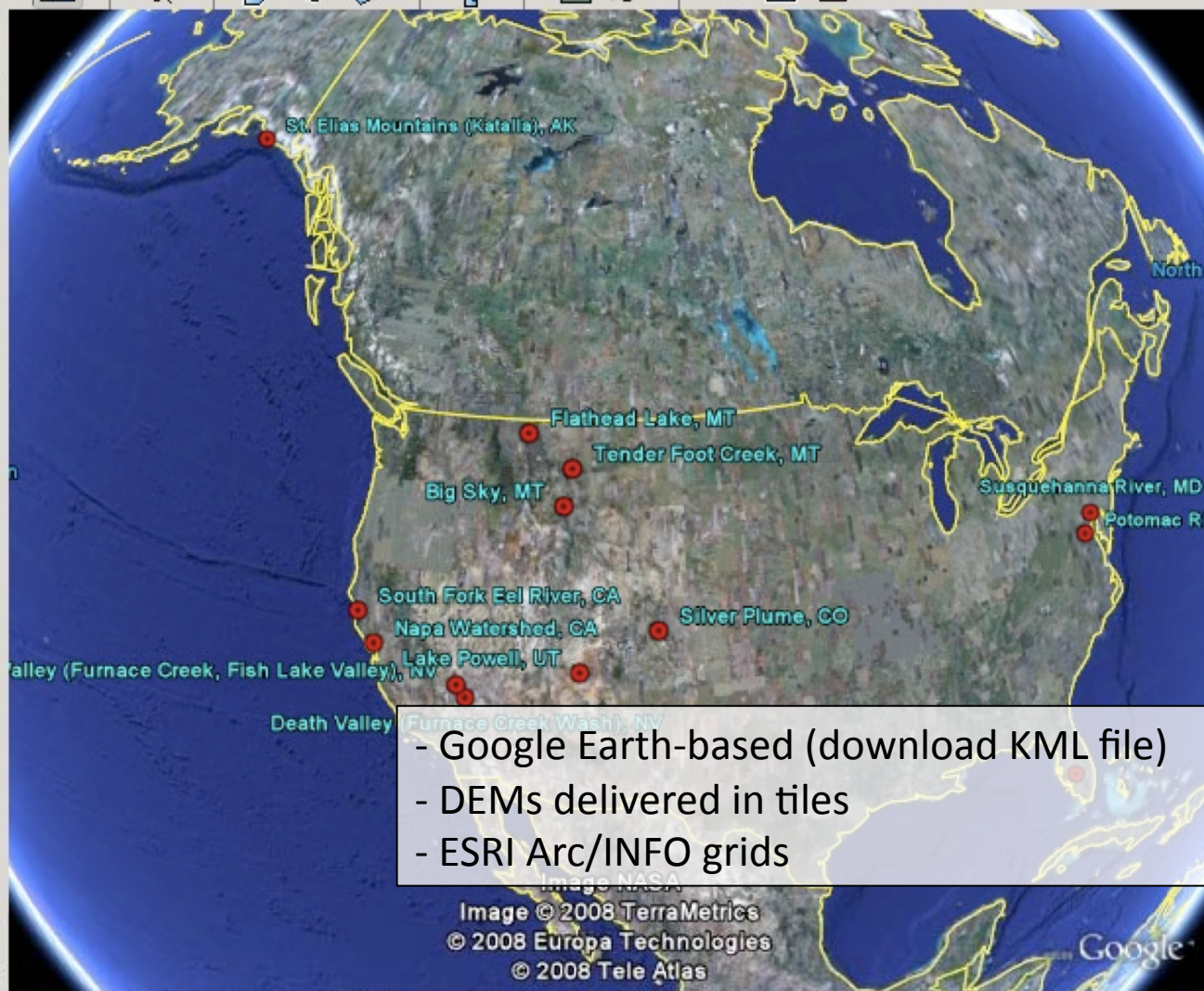
Google Earth

File Edit View Tools Add Help

Search

Places

- ☐ My Places
- ☐ Sightseeing
  - Select this folder and click on the 'Play' button below, to start
- ☒ Temporary Places
  - ☒ NCALM LiDAR Data
    - ☒ Napa Watershed, CA
    - ☒ Tender Foot Creek, MT
    - ☒ South Fork Eel River, CA
    - ☒ Dragon's Back Ridge (Sa...
    - ☒ Big Sky, MT
    - ☒ Archibald Station, FL
    - ☒ Susquehanna River, MD
    - ☒ Potomac River, MD
    - ☒ Silver Plume, CO
    - ☒ St. Elias Mountains (Katal...
    - ☒ Lake Powell, UT
    - ☒ Death Valley (Furnace Cr...
    - ☒ Flathead Lake, MT
    - ☒ Death Valley (Furnace Cr...
  - ☐ logo



- Google Earth-based (download KML file)
- DEMs delivered in tiles
- ESRI Arc/INFO grids



# Puget Sound Lidar Consortium

*public-domain high-resolution topography for western Washington*

<http://pugetsoundlidar.ess.washington.edu/>

[Data!](#)

[About  
LiDAR](#)

[About  
the  
PSLC](#)

[Uses of  
LiDAR  
Data](#)

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Us](#)

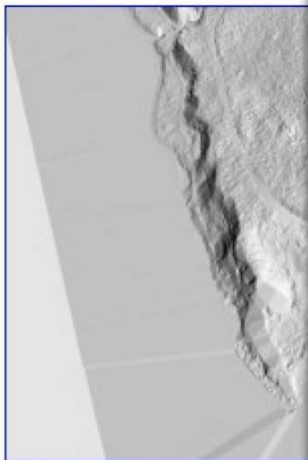


Seattle  
Public  
Utilities

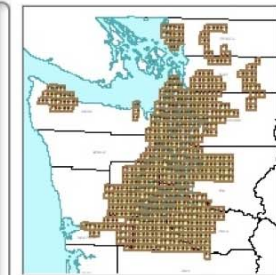
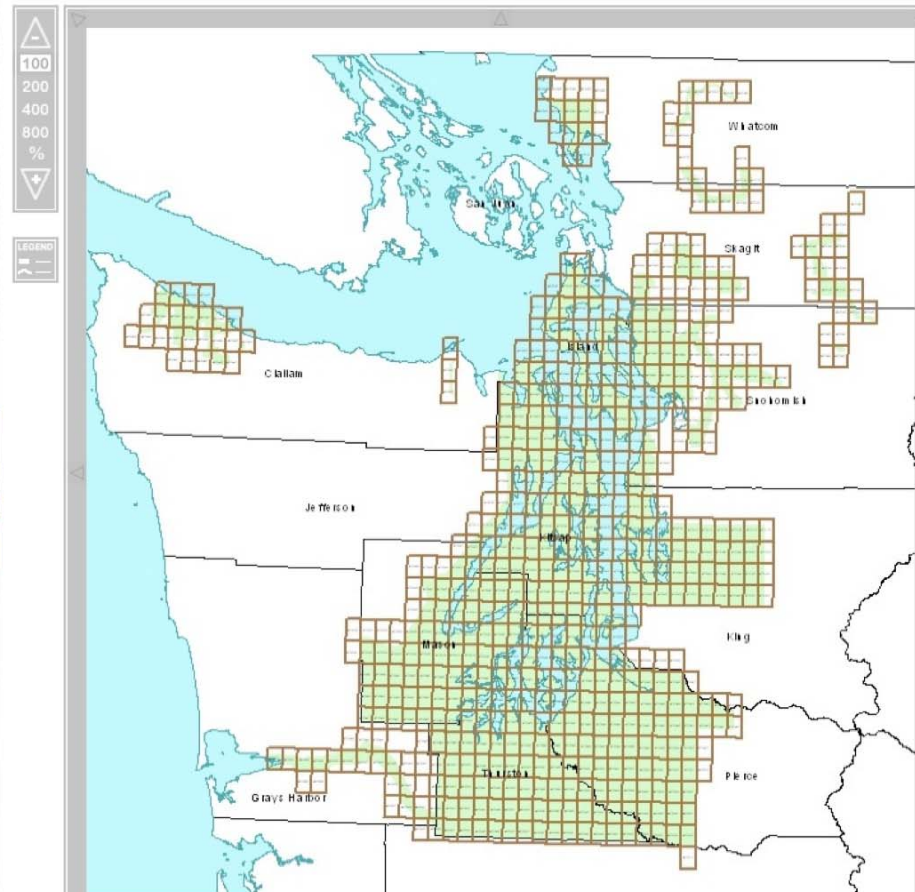


PRISM

Download Bare Earth 6-ft DEM - Washington State Plane North



Oblique view of south  
SE Bainb  
[More examples of](#)



**Zoom in and then Click** on the map on the left to download data for each quarter quad.

- Lots of data for w. Washington
- DEMs, ASCII point clouds, hillshade images, contours
- clickable maps and FTP



**Decision Support for Coastal Science and Management**

DSP Home

Technology

Mapping

Data

Publications

Outreach

Collaborators

Contact

Acronyms

*Decision Support for Coastal Science and Management*

**Data: View in Google Maps**

<http://ngom.usgs.gov/dsp/>

- [Assateague Island National Seashore](#)
- [Biscayne National Park](#)
- [Cape Cod National Seashore](#)
- [Colonial National Historic Site](#)
- [Dry Tortugas National Park](#)
- [Fire Island National Seashore](#)
- [Florida Keys](#)
- [Gateway National Recreation Area](#)
- [George Washington Birthplace National Monument](#)
- [Gulf Islands National Seashore](#)
- [Jean Lafitte National Historic Park and Preserve](#)
- [Natchez Trace Parkway](#)
- [Northeast Barrier Islands](#)
- [Northern Gulf of Mexico](#)
- [Padre Island National Seashore](#)
- [Sagamore Hill Historic Site](#)
- [Thomas Stone National Historic Site](#)
- [U.S. Virgin Islands](#)
- [Vicksburg National Military Park](#)



- Coastal and National Park/Monument emphasis
- Collected with Experimental Advanced Airborne Research Lidar (EAARL)
- DEMs, point clouds, hillshade images, Google Earth overlays
- links to USGS OFR and Data series
- Data not in CLICK...

# State Data Collections:

State collections with some form of data online (*list may be incomplete – if you know of others let me know*):

- Idaho - <http://inside.uidaho.edu/geodata/LiDAR/>
- Iowa - <http://www.geotree.uni.edu/lidarProject.aspx>
- Louisiana - <http://atlas.lsu.edu/lidar/>
- North Carolina - <http://www.ncfloodmaps.com/>
- Ohio - <http://ogrip.oit.ohio.gov/ProjectsInitiatives/StatewideImagery.aspx>
- Oregon - <http://www.oregongeology.org/sub/projects/olc/default.htm>
- Pennsylvania - <http://www.dcnr.state.pa.us/topogeo/pamap/elevation.aspx>
- Utah - <http://gis.utah.gov/elevation-terrain-data/2-meter-bare-earth-lidar>

List with URLs updated as I encounter new data sources at:

<http://www.opentopography.org/index.php/resources/links>



Interactive hillshade viewers:

- Web map or Google Earth based
- Make the data easy to access without GIS skills
- Excellent resource for education



State of Oregon

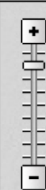
## DOGAMI Lidar Data Viewer

OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES (A MEMBER OF THE OREGON LIDAR CONSORTIUM)

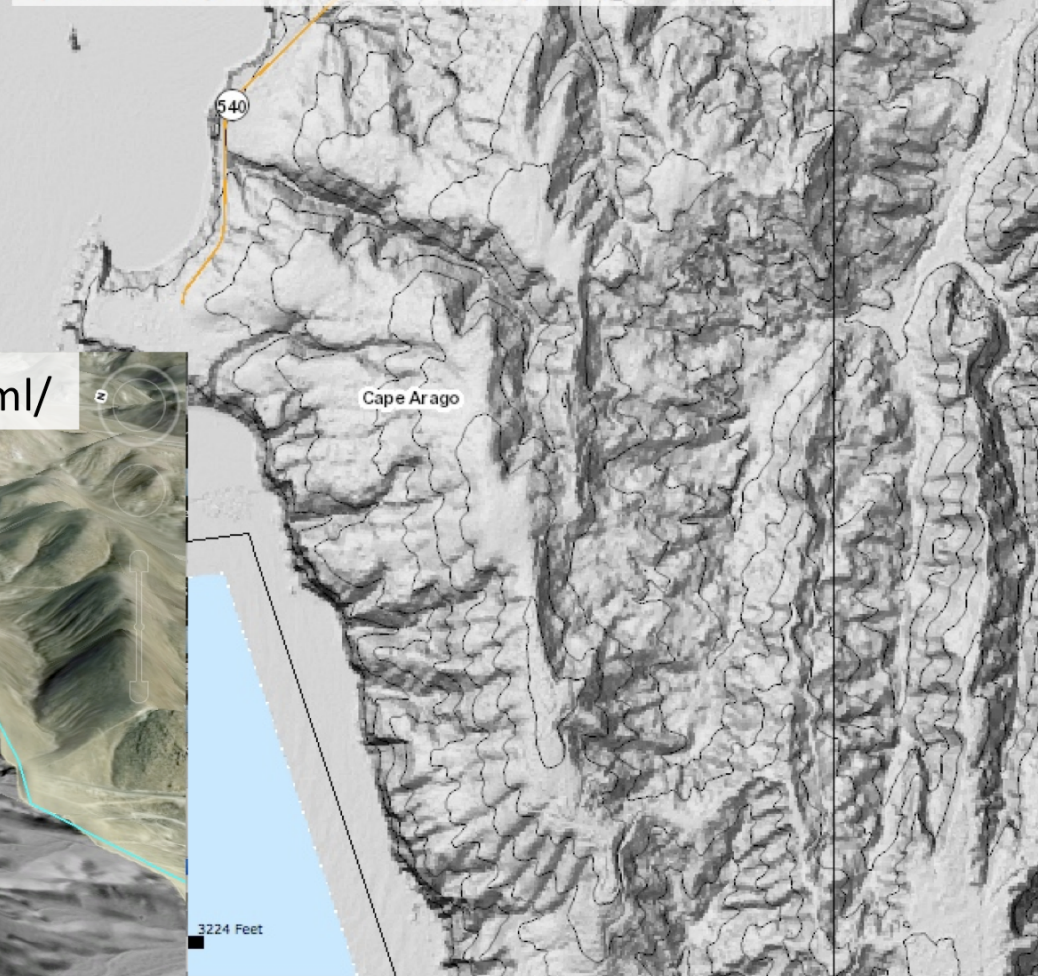
<http://www.oregongeology.org/interactivemaps/lidardataviewer/>



- ☒ Reference Features
- ☒ South Coast Project Area
- ☒ Camp Creek Project Area
- ☒ Ontario Project Area
- ☒ Regional Base Map



Map Data Credit: Oregon Lidar Consortium, DOGAMI, Oregon Geospatial Data Clearinghouse



earth  
scope  
GEON

<http://www.opentopography.org/kml/>

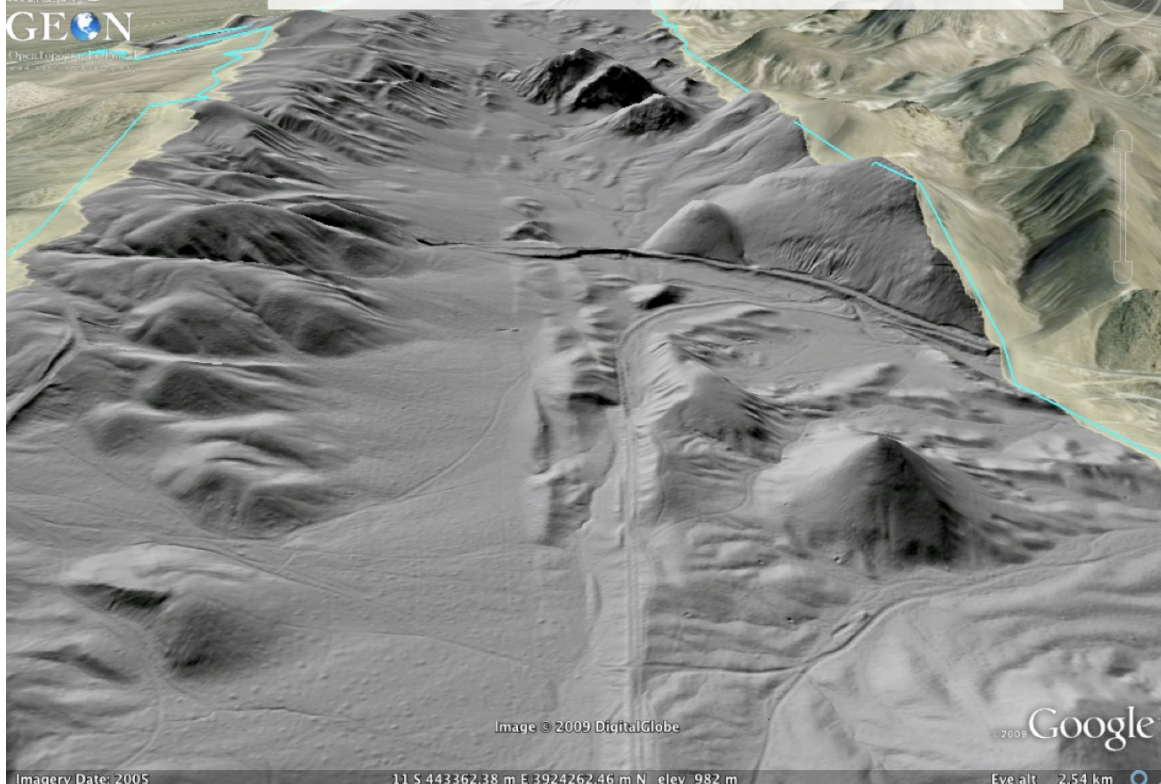


Image © 2009 DigitalGlobe

2009 Google

Imagery Date: 2005

11 S 443362.38 m E 3924262.46 m N elev 982 m

Eye alt 2.54 km



Towards a national LiDAR data inventory: NOAA regional topobathy inventories  
<http://www.csc.noaa.gov/topobathy>

## Topographic and Bathymetric Data Inventory

