



# DEM Update - NTHMP & NWS

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# DEM Development At NCEI

- For 10 years, NCEI has been building integrated bathymetric-topographic digital elevation models (DEMs) in support of the TWCs and PMEL, and also the NTHMP.
- The DEMs are used to support tsunami forecasting and modeling efforts at the NCTR/PMEL and are part of the tsunami forecast system SIFT (Short-term Inundation Forecasting for Tsunamis) developed by PMEL for the NOAA TWCs, and are used in the MOST model to simulate tsunami generation, propagation, and inundation.
- The DEMs support individual coastal States as part of the NTHMP's efforts to improve community preparedness and hazard mitigation.
- Priorities are based on:
  - ***NOAA forecast modeling requirements***
  - ***State modeling needs***
  - ***data availability***

# DEM Development - Status

## NOAA NWS/PMEL FY16

- Galapagos Islands (completed)
- Niue (completed)
- Port Alberni and Barkley Sound, BC (completed)
- Oahu (completed)

## NTHMP CY16

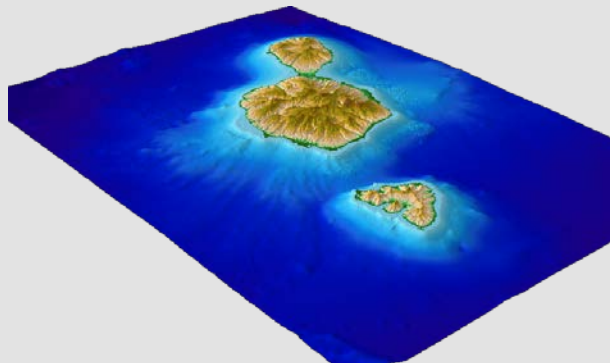
- Key Largo, FL (completed - tiled)
- Destin, FL (completed)
- False Pass, AK (completed)
- Port Lions, AK (completed)
- Larsen Bay, AK (completed)

## NOAA NWS/PMEL FY17

- Marquesas, French Polynesia (completed)
- Society Islands, FP (completed)
- Rarotonga, Cook Islands (completed)
- Easter Island (completed)

## NTHMP CY17

- Atka, AK & Adak, AK (completed, additional NTHMP funded)
- Bristol Bay, AK (completed)
- Bellingham Bay, WA (completed)
- SW Florida (completed - tiled)
- Puerto Rico (developing 4 to 6 smaller high resolution, 1 meter DEMs on north shore, *in progress*)

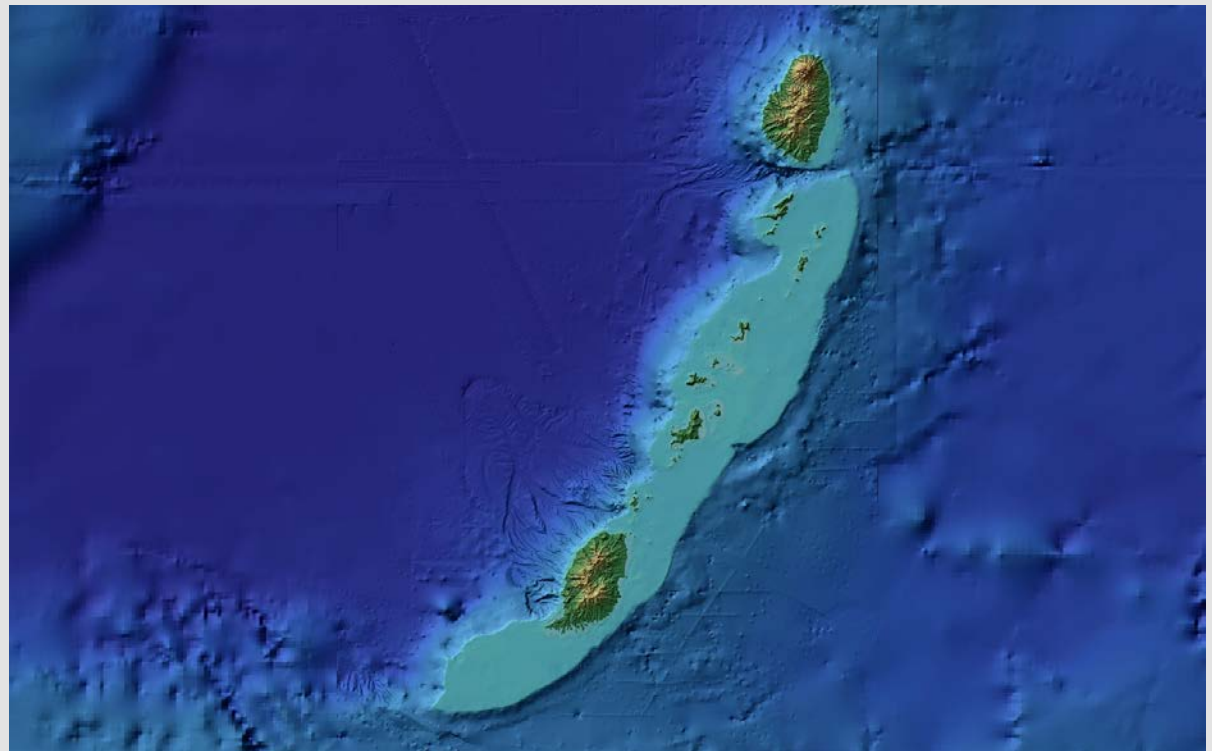


Society Islands DEM perspective

# DEM Development - Status

## Additional

- Grenada DEM developed for Grenada and a follow-on ComMIT workshop for tsunami modeling and evacuation mapping.



Grenada DEM

# DEM Access Changes

**Why?** We are following NOAA Data Access Technical Recommendations as stated by NOAA's Environmental Data Management (EDM) Framework <https://nosc.noaa.gov/EDMC/framework.php>

**Main NCEI DEM web page** - <https://www.ngdc.noaa.gov/mgg/coastal/coastal.html>

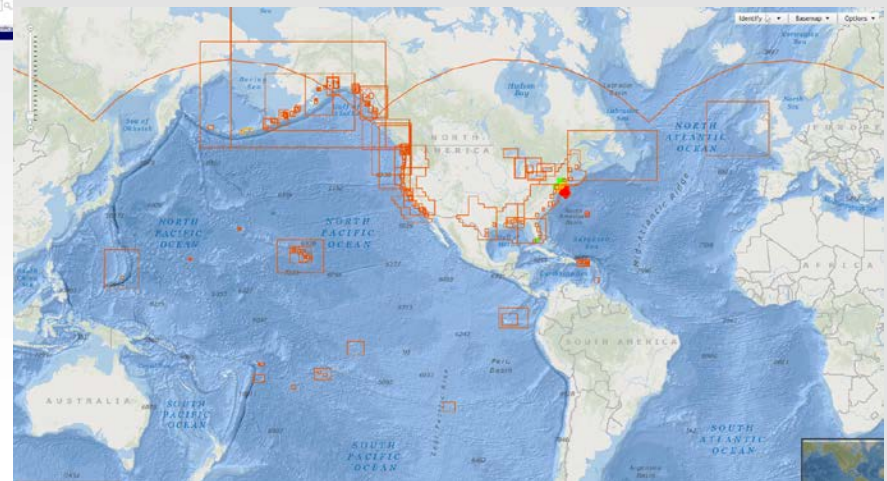
**Map search** - <https://maps.ngdc.noaa.gov/viewers/bathymetry/?layers=dem>

**Thredds Catalog** - <https://www.ngdc.noaa.gov/thredds/demCatalog.html>

Name	Year	Vertical Datum	Horizontal Datum	Spatial Resolution	Status	Access Data
Alaska	2009	Mean High Water	WGS84	1 arc-second	Complete	Data / Details
Alaska	2017	Mean Higher High Water	WGS84	8/15 arc-second	Complete	Data / Details
Alaska	2008	Mean Higher High Water	WGS84	8/15 arc-second	Complete	Data / Details
Alaska	2008	Mean Higher High Water	WGS84	8/15 arc-second	Complete	Data / Details
Alaska	2009	Mean Higher High Water	WGS84	8 arc-seconds	Complete	Data / Details
Alaska	2007	Mean High Water	WGS84	1/3 arc-second	Complete	Data / Details
Alaska	2008	Mean High Water	WGS84	1/3 arc-second	Complete	Data / Details
Alaska	2010	Mean High Water	WGS84	1 arc-second	Complete	Data / Details
Alaska	2017	Mean Higher High Water	WGS84	8/15 arc-second	Complete	Data / Details
Alaska	2007	Mean High Water	WGS84	1/3 arc-second	Complete	Data / Details
Alaska	2011	North American Vertical Datum of 1988	WGS84	1/3 arc-second	Complete	Data / Details
Bahamas	2016	North American Vertical Datum of 1988	WGS84	1 arc-second	Complete	Data / Details
Bellingham	2017	North American Vertical Datum of 1988	NAD83	1/3 arc-second	In Progress	
Bermuda	2013	Mean Sea Level	WGS84	1 arc-second	Complete	Data / Details
Bermuda	2013	Mean Sea Level	WGS84	3 arc-seconds	Complete	Data / Details
Biloxi	2007	Mean High Water	WGS84	1/3 arc-second	Complete	Data / Details
British Columbia	2013	Mean Sea Level	WGS84	3 arc-seconds	Complete	Data / Details
Case Institute	2006	Mean High Water	WGS84	1/3 arc-second	Complete	Data / Details
Central California	2010	North American Vertical Datum of 1988	WGS84	1 arc-second	Complete	Data / Details
Central Florida	2014	North American Vertical Datum of 1988	WGS84	1/3 arc-second	Complete	Data / Details
Central Oregon Coast	2016	North American Vertical Datum of 1988	WGS84	1/3 arc-second	Complete	Data / Details
Central Washington	2015	North American Vertical Datum of 1988	WGS84	1/3 arc-second	Complete	Data / Details
Chicago	2011	Mean Higher High Water	WGS84	8/15 arc-second	Complete	Data / Details
Chicago	2014	Mean Higher High Water	WGS84	1/3 arc-second	Complete	Data / Details
Chicago	2014	Mean Higher High Water	WGS84	1 arc-second	Complete	Data / Details

NOAA builds and distributes high-resolution, coastal digital elevation models (DEMs) that integrate ocean bathymetry and land topography supporting NOAA's mission to understand and predict changes in Earth's environment, and conserve and manage coastal and marine resources to meet our nation's economic, social, and environmental needs. DEMs are used for coastal process modeling (storm surge inundation, storm surge, sea-level rise, contaminant dispersal, etc.), ecosystems management and habitat research, coastal and marine spatial planning, and hazard mitigation and community preparedness.

Data sources: NOAA Institute for Coastal Science, U.S. Geological Survey, U.S. Army Corps of Engineers, Federal Emergency Management Agency, and other government agencies, academic institutions, and private companies. DEMs are referenced to a variety of horizontal and vertical datums, which are defined by specific project requirements; spatial resolution ranges from 1/3 arc-second (<1 meter) to 3 arc-seconds (>90 meters).





# Future Plans

## NOAA NWS/PMEL FY18

- Funding was eliminated for NWS DEMs in FY18

## NTHMP [CY18](#)

- Montauk up to RI and Narragansett Bay - gap
- Washington (Corina to provide)
- Port Alexander, AK
- Wrangell, AK

## DEM [Priority List](#)