Topo-Bathymetric LiDAR – Flash Talk

Alaska Coastal Mapping Summit

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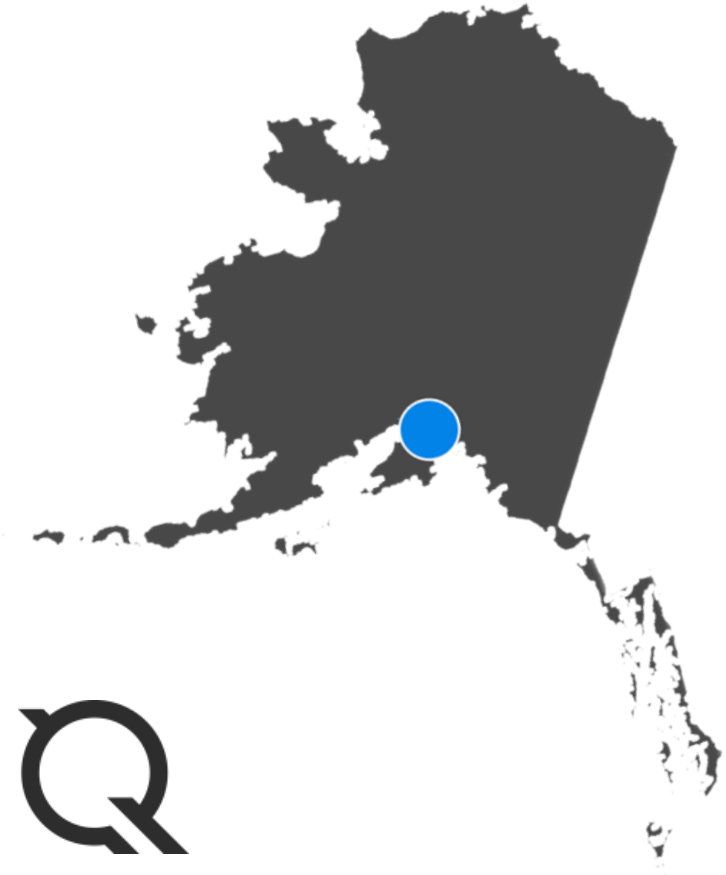
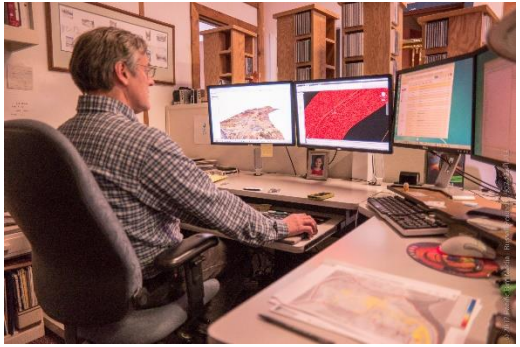
Friday, Feb 9, 2018

Who We Are

Mission: Deliver actionable intelligence & geospatial analytics to those who want to map, model and manage their world.



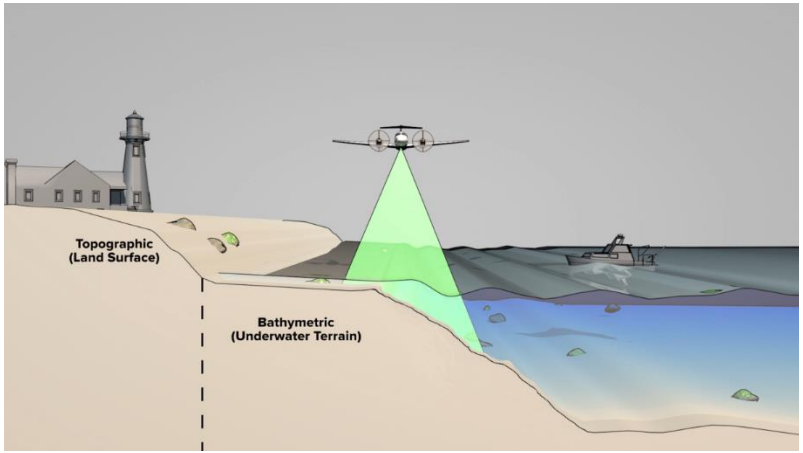


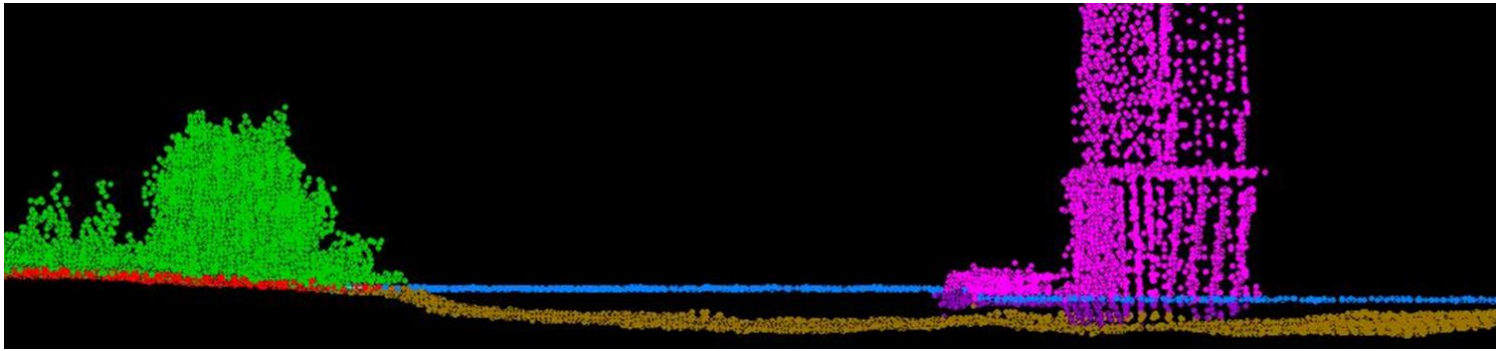
Topo-bathymetric LiDAR

Extending the Survey Under Water

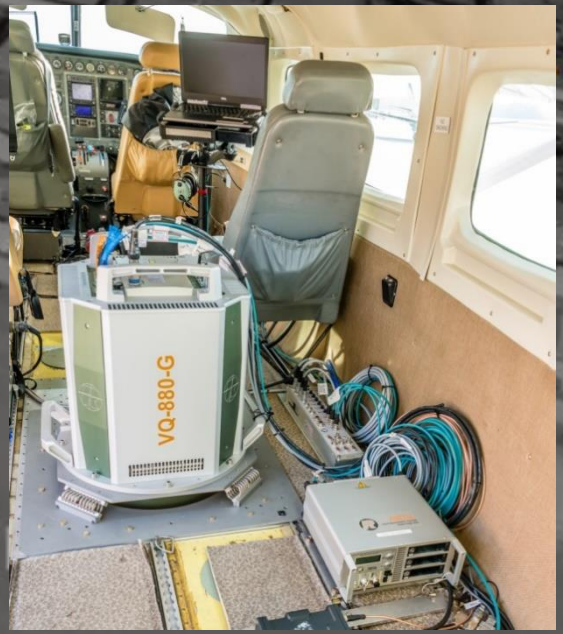
Green wavelength LiDAR

Captures both near shore terrain and shallow water environments





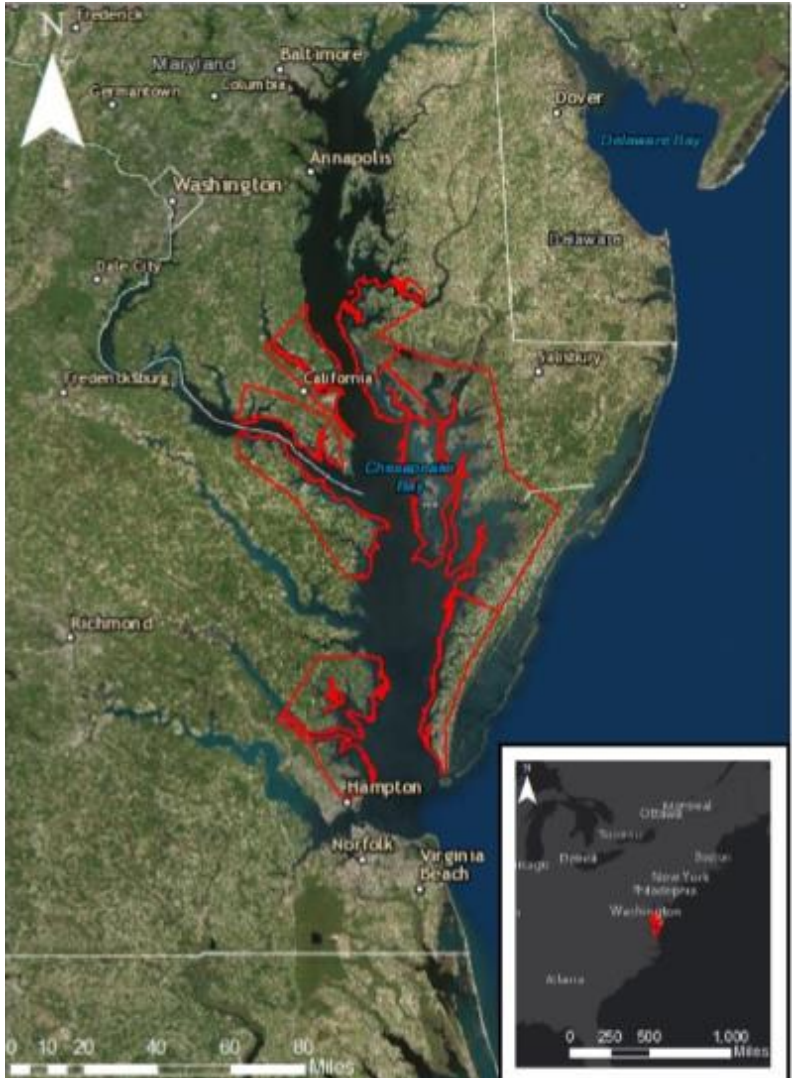
circular and li
scan pattern



- High Pulse Rate (up to 550 kHz)
- Full waveform w/ every pulse
- Online waveform digitizing
- 1.5 Secchi Depth “depth rating”
- Selectable beam divergence
- Short pulse length

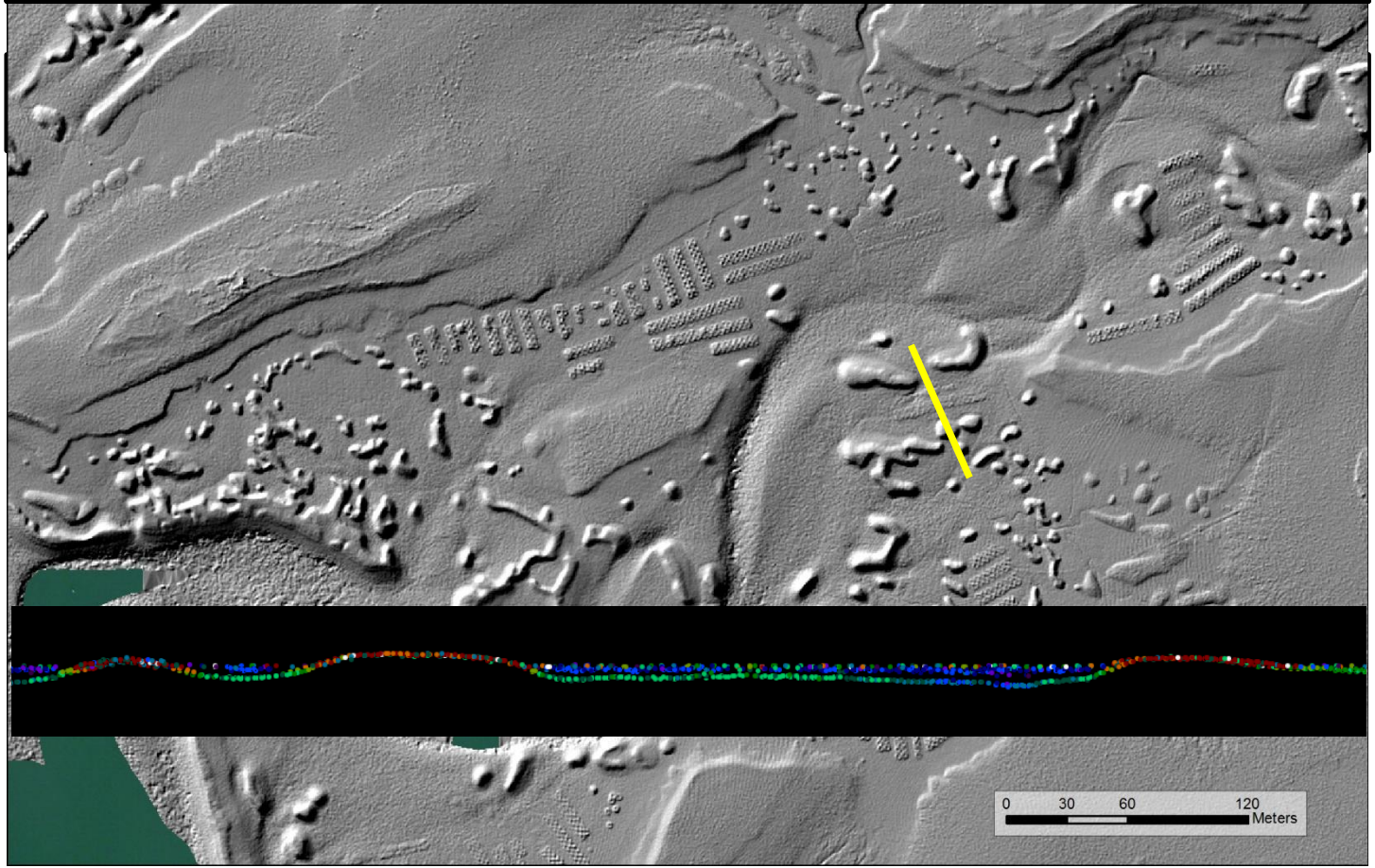
Coastal Mapping with Topo-bathymetric LiDAR

- Chesapeake Bay, MD - 450 sq. miles
  (NOAA 2018 – Phase I)
- Willamette River, OR – 170 sq. miles
  (JABLTCX 2017)
- Kootenai River, ID – 34 sq. miles
  (USGS CONED, 2017)
- Coastal South Carolina – 800 sq. miles
  (NOAA 2016/2017)
- Hurricane Sandy – 2,773 sq. miles
  (NOAA 2013/2014)



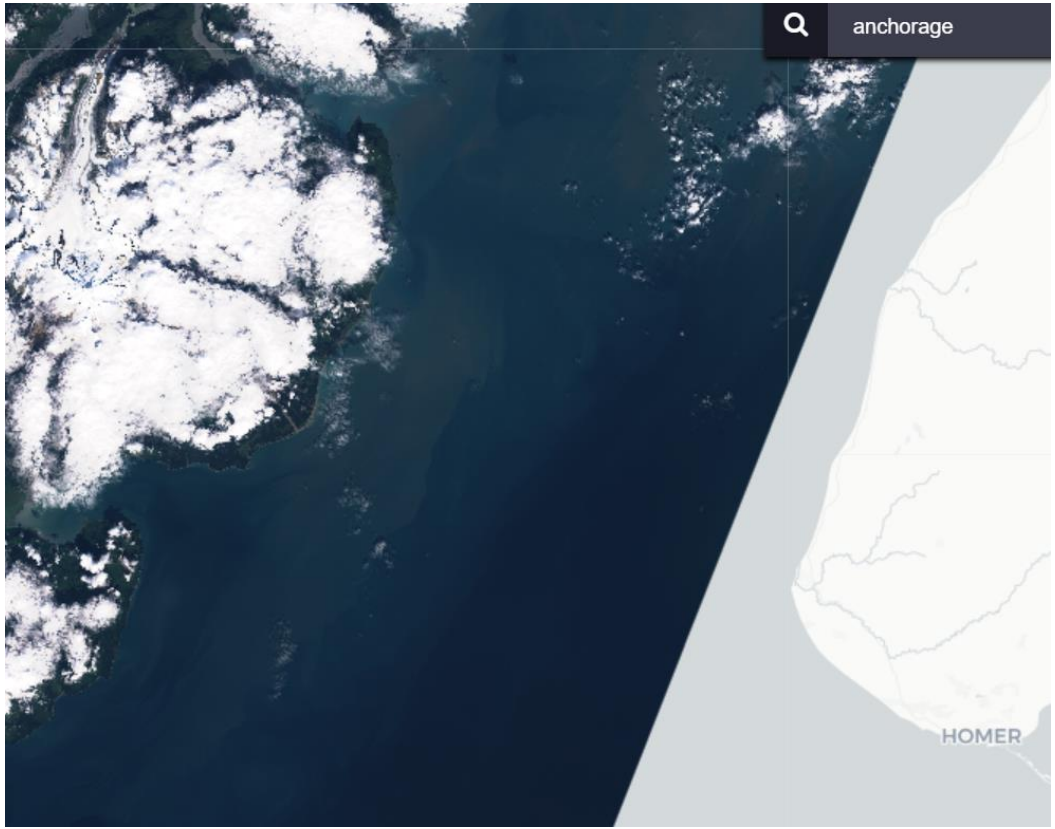
Back bay marshes and mudflats behind Kiawah Island, SC : **2016 NOAA NGS topobathy lidar**

Back bay marshes and mudflats behind Kiawah Island, SC : **2016 NOAA NGS topobathy lidar**



Alaska Considerations

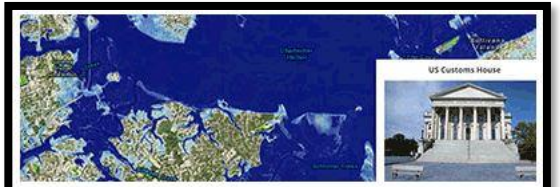
- 33,904 miles of diverse shoreline
- Short data collection season
- Variable water clarity conditions
- Fewer monitoring resources – including satellite data
- Remote locations and bad weather



How it helps

Safety of Navigation &

Foundation for sound decision making

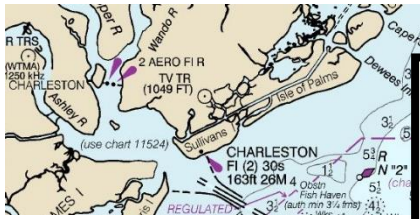


Sea Level Rise Viewer

View potential impacts of sea level rise along the coast

Contributing Partners

NOAA OCM



Safety of Navigation

Up-to-date Nautical Charts

Contributing Partners

NOAA NGS, NOAA OCS

Riverine Flood Inundation Maps

View riverine flood forecasts in a visual format

Contributing Partners

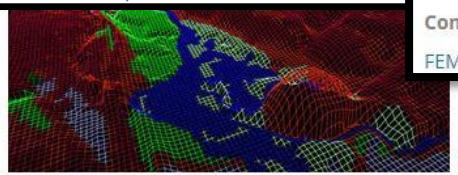
FEMA, NOAA NWS, NOAA OCM, USACE, USGS

Digital Shoreline Analysis System

Computes the rate of shoreline change using multiple historical shoreline positions

Contributing Partners

USGS

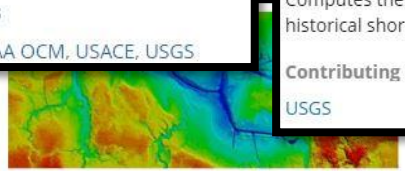


Sea Level Affecting Marshes Model

Simulates potential impacts on wetlands and shorelines from long-term sea level rise

Contributing Partners

EPA, Warren Pinnacle Consulting



VDatum

Vertically transforms geospatial data between a variety of tidal, orthometric, and ellipsoidal datums

Contributing Partners

NOAA CO-OPS, NOAA NGS, NOAA OCS

Thank You

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