

# COASTAL DATA EXCHANGE

# 2013 TOPO/ BATHY LIDAR SURVEY OF HAWAIIAN ISLANDS



®

US Army Corps of Engineers  
**BUILDING STRONG**®

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**Civil Works Technical Branch**

**USACE Honolulu District**

# Data Collection – Fall 2013

- Collected as part of USACE National Coastal Mapping Program
- Joint Airborne LiDAR Bathymetry Technical Center of Expertise (JALBTCX)
- Flights over 90 days (Sept – Dec 2013), approx. 8740 flight line miles
- Simultaneous LiDAR, true color imagery and hyperspectral imagery collection
- Targeted a swath 300m inland and offshore to the 50m depth contour



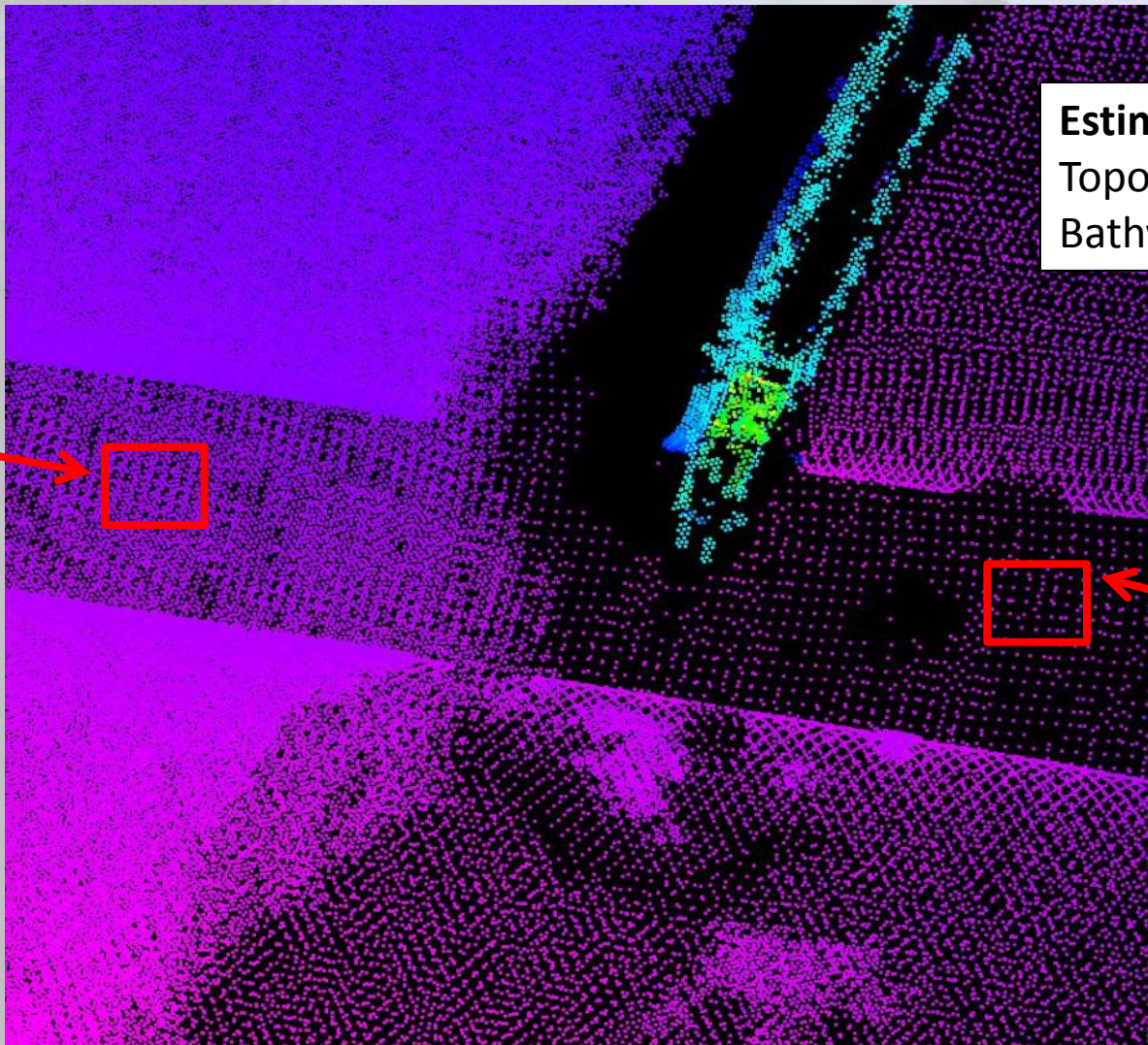
# Data Collection – Fall 2013





# Density and Accuracy

0.70 m  
spot spacing



**Estimated Accuracy**

Topo: +/- 15cm

Bathy : +/- 30cm

2 m  
spot spacing

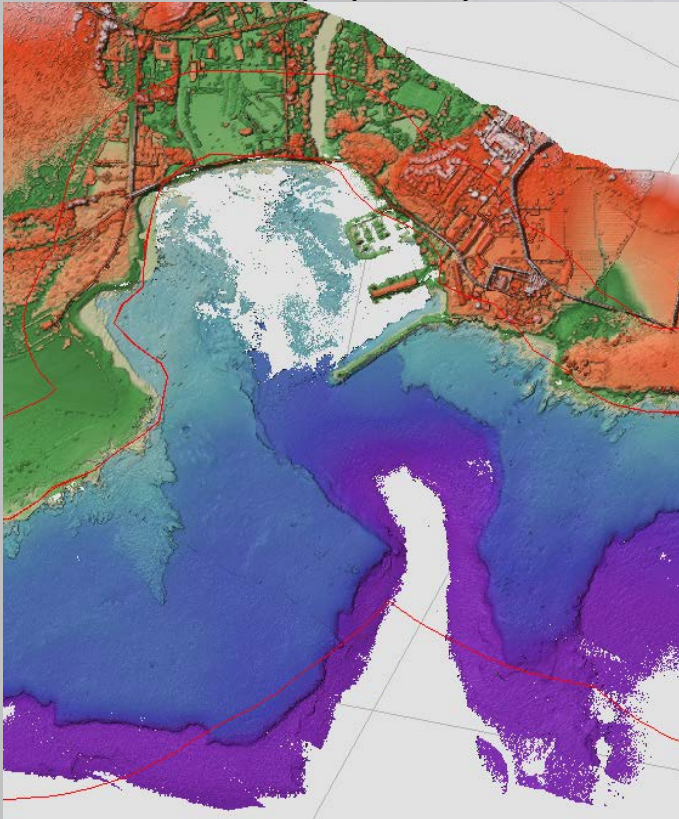




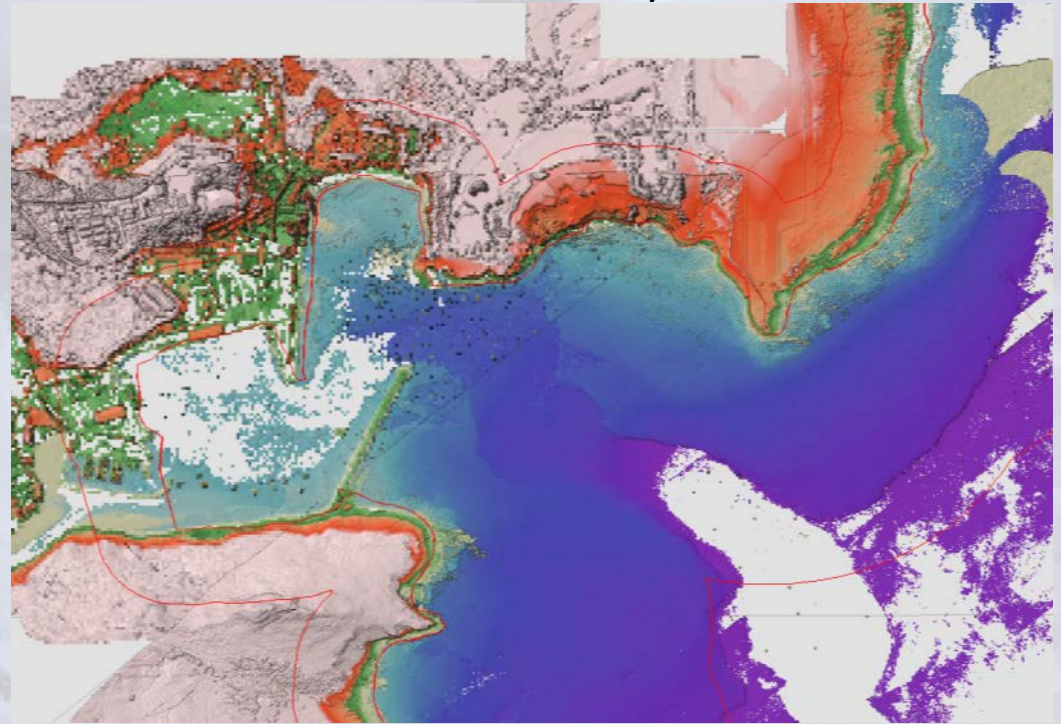
# Coverage Maps - Kauai

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Hanapepe Bay



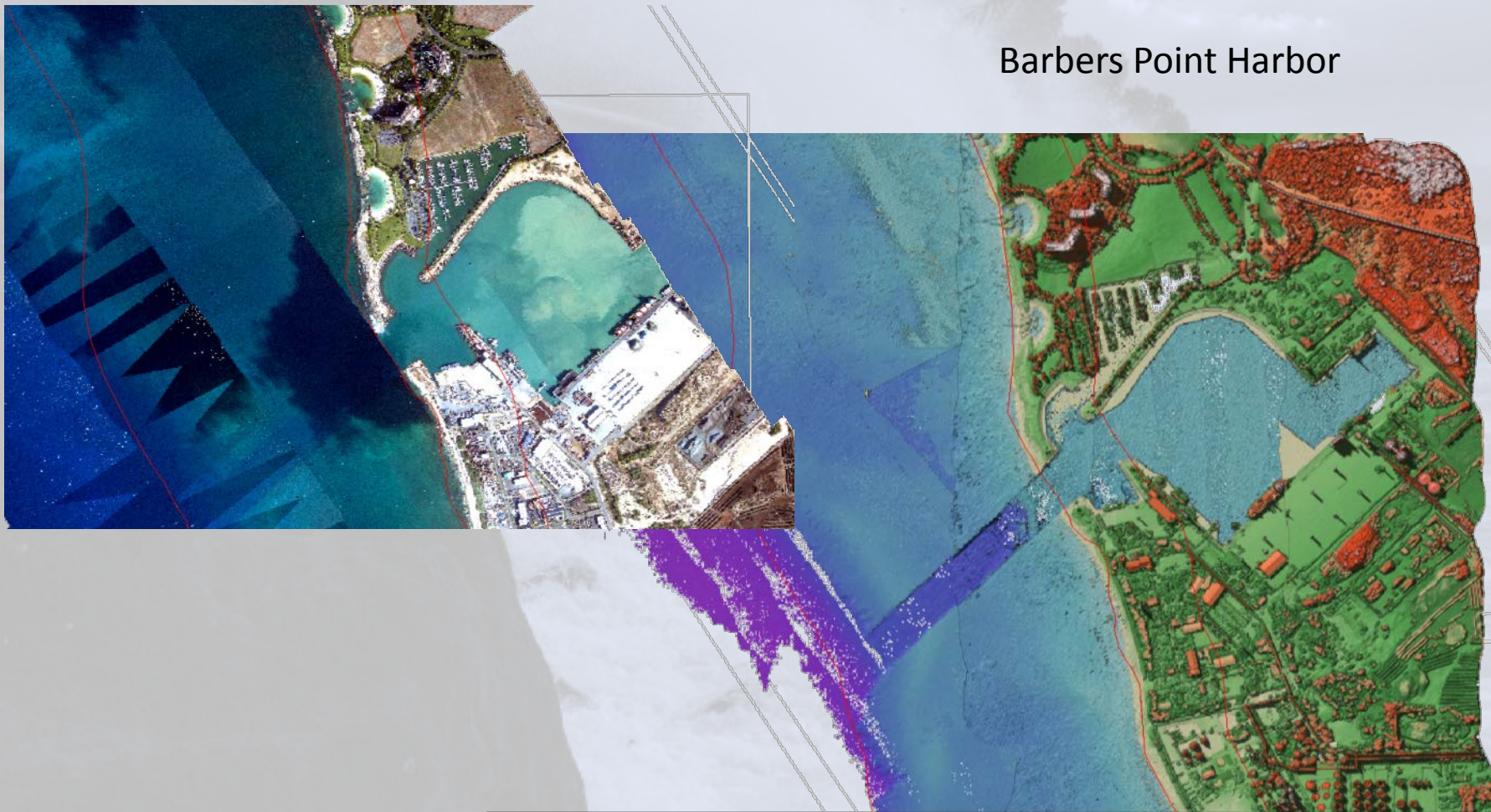
Nawiliwili Bay





# Coverage Maps - Oahu

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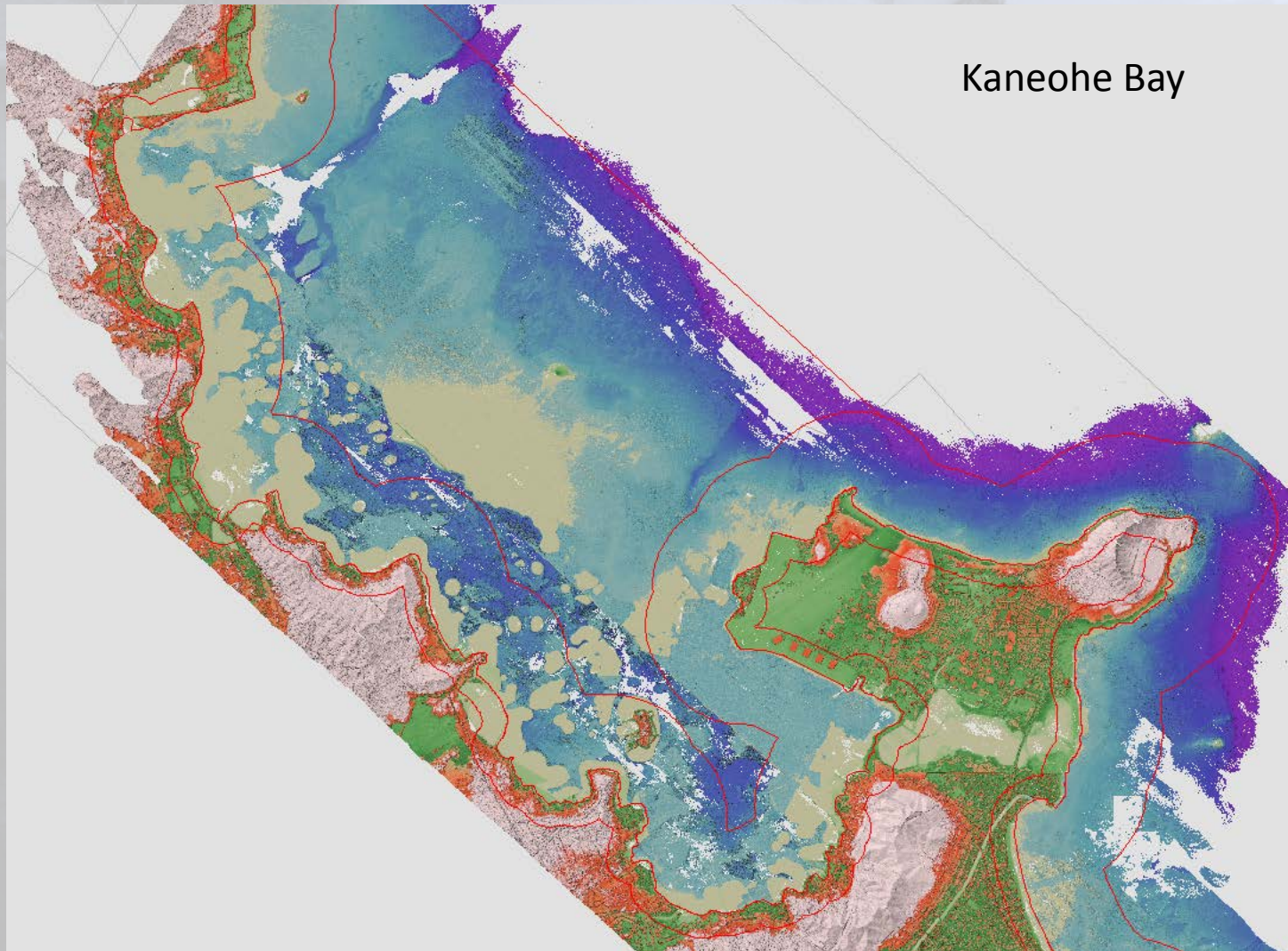


Barbers Point Harbor



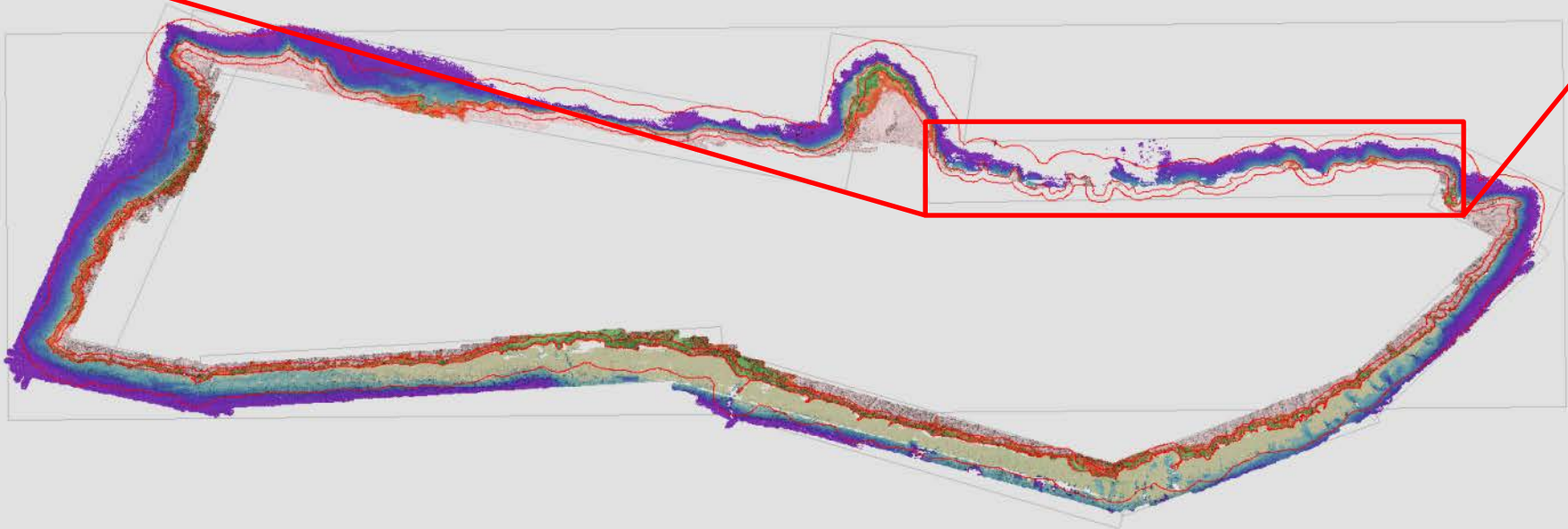
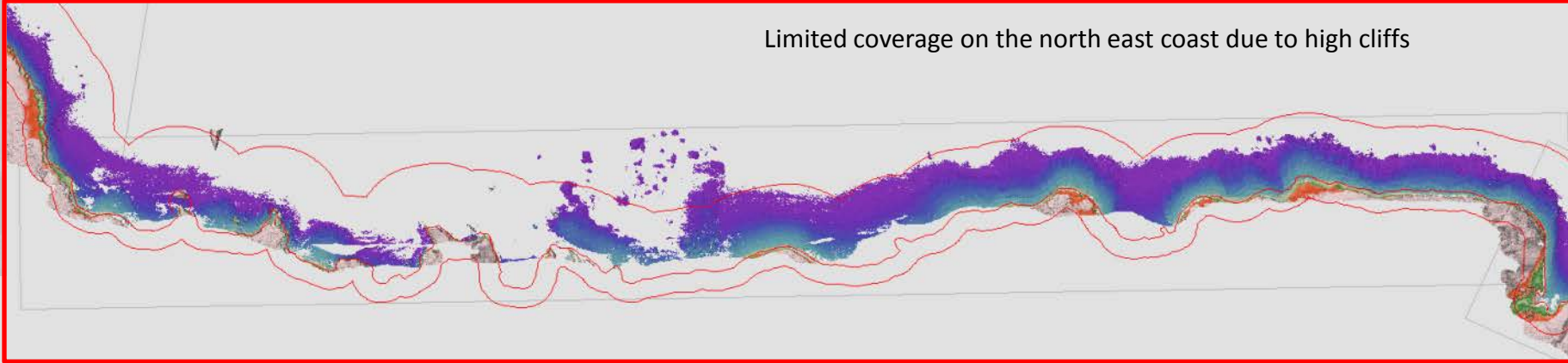
# Coverage Maps - Oahu

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# Coverage Maps - Molokai

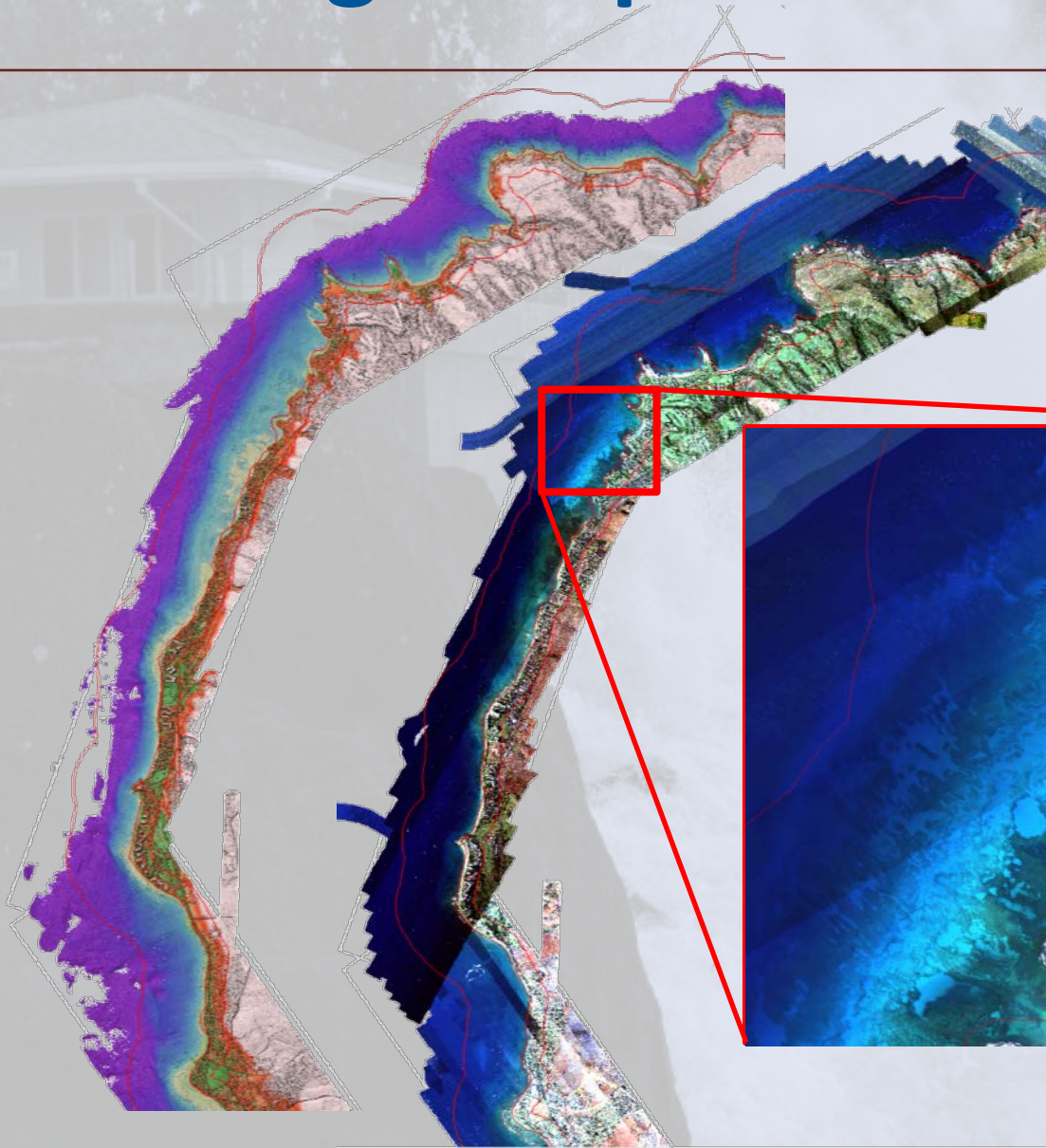
Limited coverage on the north east coast due to high cliffs





# Coverage Maps - Maui

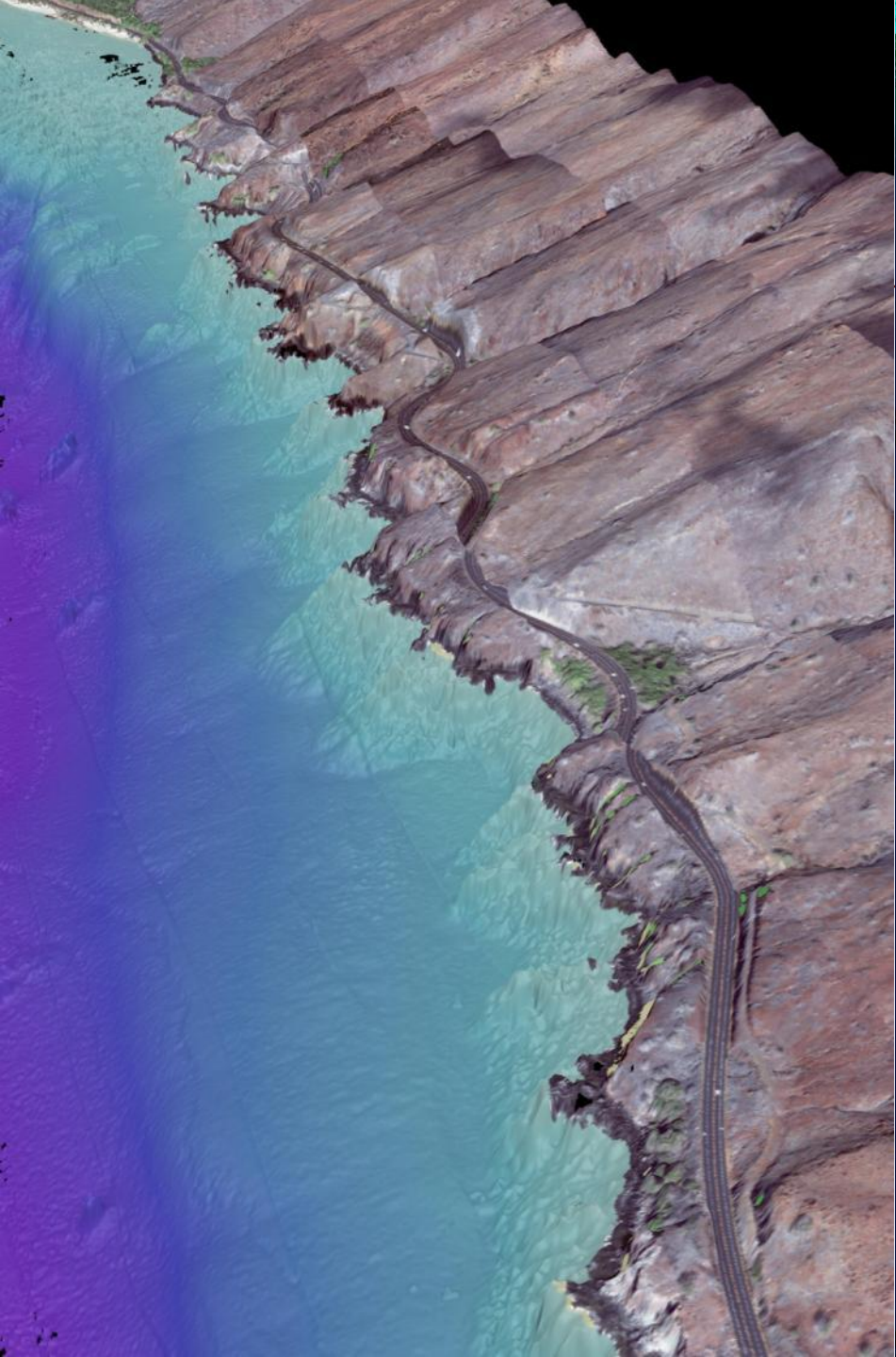
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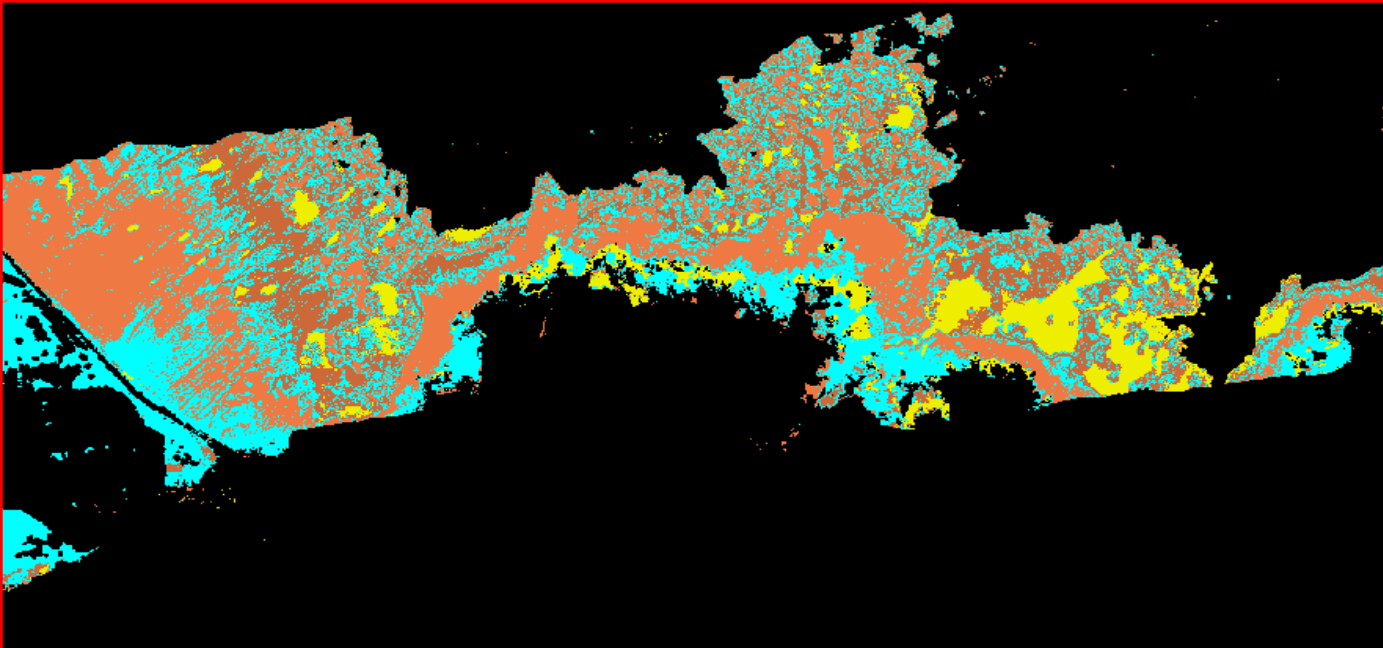
West Maui (Ka'anapali)



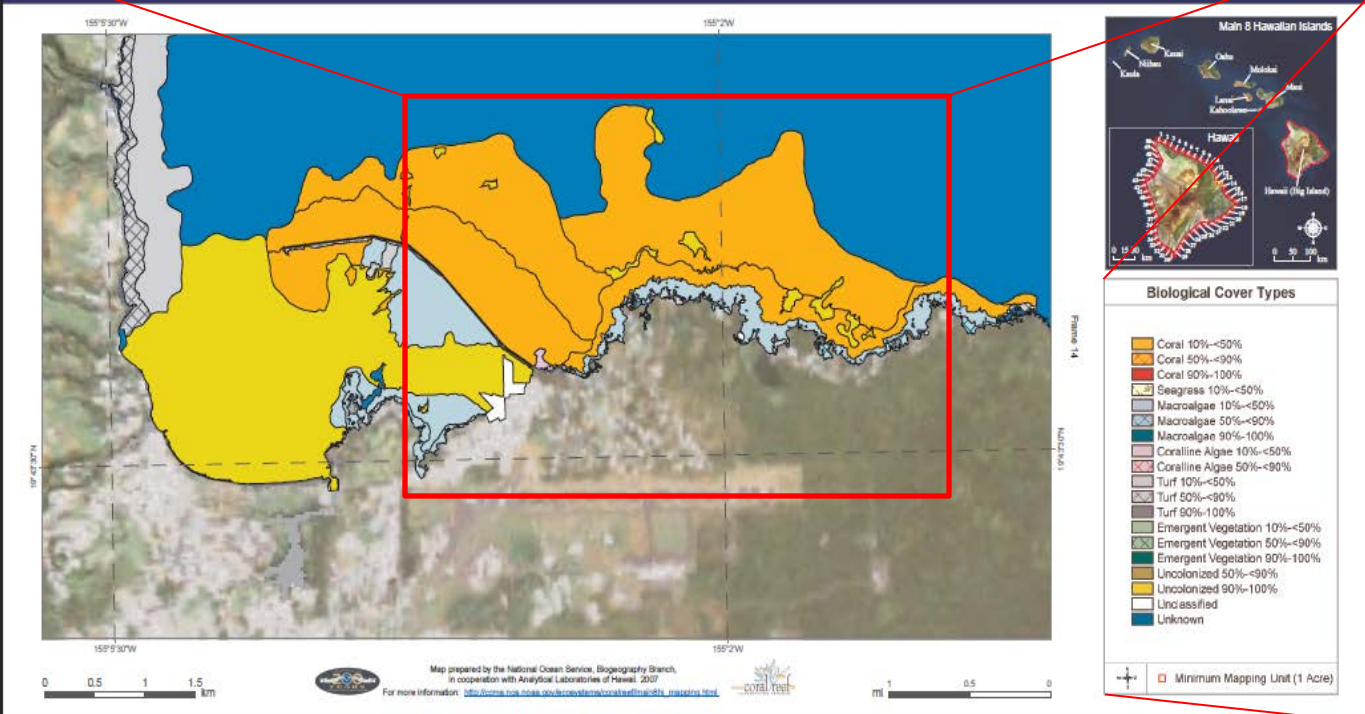








### Main 8 Hawaiian Islands (Hawaii) : Shallow-water Benthic Habitats (Frame 13)



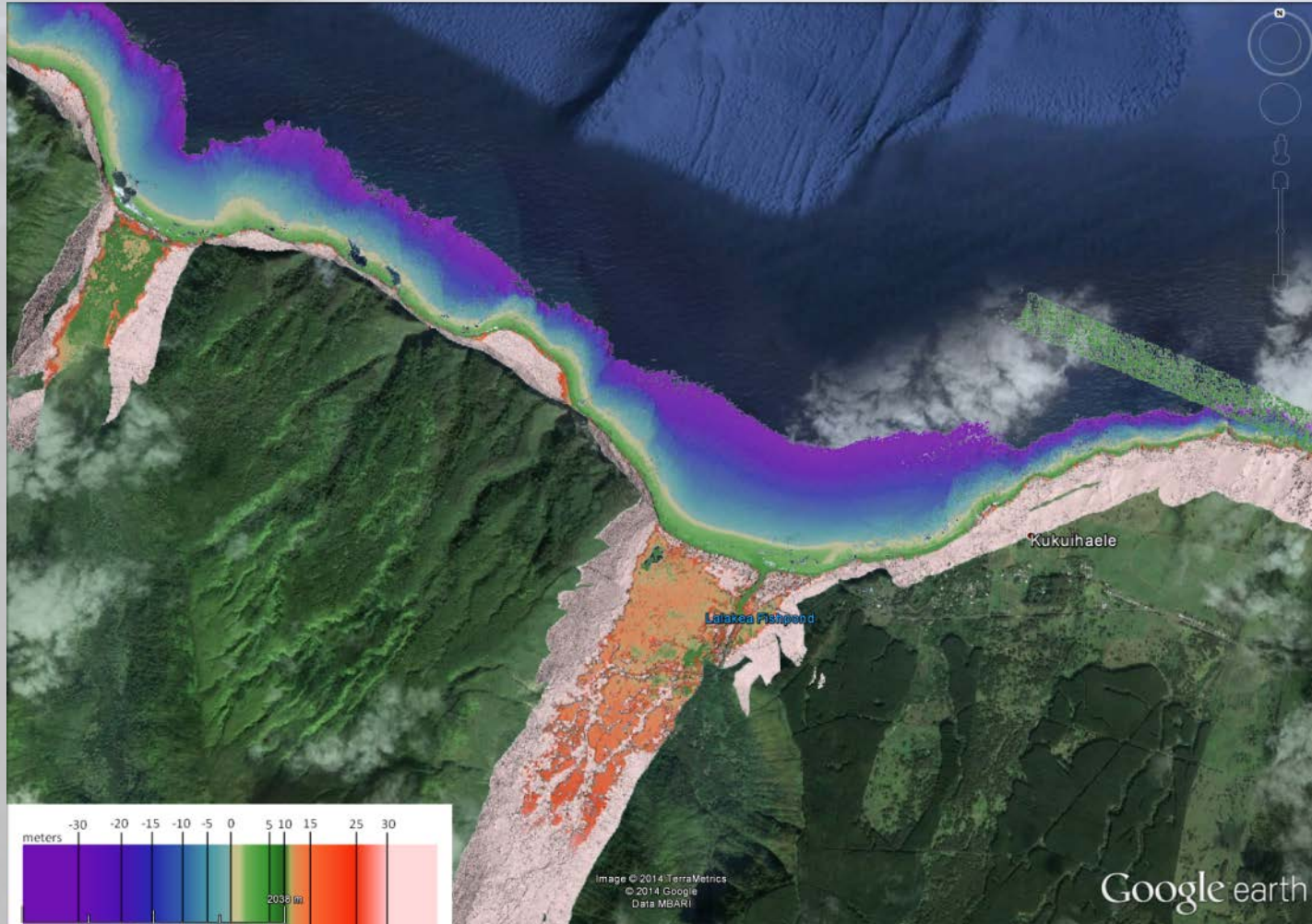
### Biological Cover Types

- Coral 10%–<50%
- Coral 50%–<90%
- Coral 90%–100%
- Seagrass 10%–<50%
- Macroalgae 10%–<50%
- Macroalgae 50%–<90%
- Macroalgae 90%–100%
- Coralline Algae 10%–<50%
- Coralline Algae 50%–<90%
- Turf 10%–<50%
- Turf 50%–<90%
- Turf 90%–100%
- Emergent Vegetation 10%–<50%
- Emergent Vegetation 50%–<90%
- Emergent Vegetation 90%–100%
- Uncolonized 50%–<90%
- Uncolonized 90%–100%
- Unclassified
- Unknown

Minimum Mapping Unit (1 Acre)

# Coverage Maps – Big Island

## Waimea Valley





# Data Products (Summer 2014)

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- *ASCII XYZ*
- *LAS files*
- *1-meter bathy/topo DEM (bare earth and first return)*
- *Zero Contour (MSL)*
- *Aerial Photos*
- *Aerial Photo Mosaics*
- *Hyperspectral Image Mosaics*
- *Laser reflectance Images*
- *Basic Landcover Classifications*
- *Shoreline Volume Changes*



# Planners use my data for

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- County Plans
- General Plans
- Conservation District Use Permits
- Setbacks
- Shoreline Certification
- Shoreline Permits
- Building Permits
- Special Area Management Permits
- Flood Zones
- Shoreline Change Calculations*





# Data Access (and other LiDAR data)

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- LAS files (and RGB imagery?) will be posted on NOAA Digital Coast (July 2014)
- Hyperspectral Imagery, DEMs, etc. available upon request
- Interagency Elevation Inventory  
<http://www.csc.noaa.gov/inventory/>
- Digital Coast  
<http://www.csc.noaa.gov/digitalcoast/>



# Questions?

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