

NOAA OFFICE FOR COASTAL MANAGEMENT

NOAA #OceanAndCoasts50: Geospatial Data for Then, Now, and Beyond

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Lynker Technologies on Contract to NOAA Office for Coastal Management

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50 Years of Ocean and Coastal Conservation

1972 to 2022









Coastal Zone Management Act (CZMA) National Marine Sanctuaries Act (NMSA) Marine Mammals Protection Act (MMPA)

Clean Water Act (CWA)



NOAA Milestones

OCEAN & COASTAL

CONSERVATION

	• Banner Ocean and Coastal Legislation 1972: CZMA, NMSA, MMPA, CWA Acts passed					Marine Debris Act 2006: Marine Debris Program established			Digital Coast Act 2019: Digital Coast approach codified			2021 to 2030: Decade of Ocean Science participation	
1970	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025		
Hawai'i CZM Act 1977: Hawai'i Coastal Zone Management law passed			Hawaiian Islands Humpback Whale National Marine Sanctuary 1992: Sanctuary designated		Pacific Services Center 2001: Pacific Services Center formed			PSC -> OCM Papahānaumokuākea Marine National Monument 2006: Monument designated		He'eia Reserve 2017: He'eia Research Reserve designated			

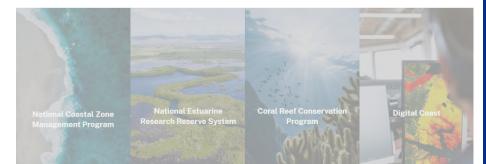
NOAA OFFICE FOR COASTAL MANAGEMENT

United

"Ocean

NOAA Office for Coastal Management

Connecting coastal communities to geospatial tools and services





How does the OCM use geospatial to support resilient ecosystems, communities, and economies?







Ocean-to-Orbit Observation

- Distributed observation networks
 - Satellite constellations
 - o Local, in-situ
 - Aircraft, ships, ground assets
 - Uncrewed and remote systems









Data Sets in Acquisition

- NOS/NOAA Fisheries ocean mapping and reef surveys in Guam and the Mariana Islands
- High-resolution bathymetric data
- Ridge-to-reef model
- Seabed habitat characterization









Data Sets in Acquisition

• Upcoming Lidar data sets:

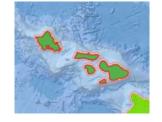


2018 Hawaiʻi Island lidar





2019 Kauaʻi topobathy/ lidar topobathy





2020 Oʻahu & Maui County lidar

2021 Northwestern Hawaiian Islands topobathy

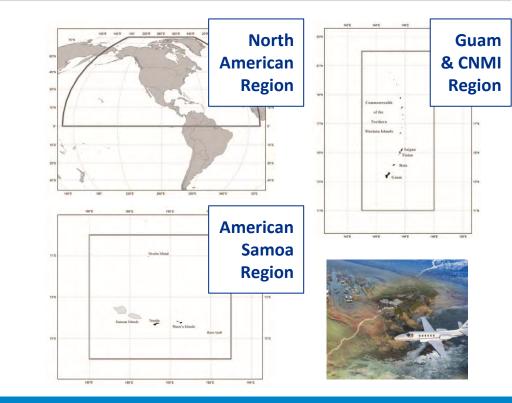


OBSERVATIONAL INFRASTRUCTURE



Geodesy updates

- National Geodetic Survey redefining vertical and geodetic datums
 - o PATRF2022/MATRF2022
 - **GEOID2022**
- Gravity for the Redefinition of the American Vertical Datum (GRAV-D) project





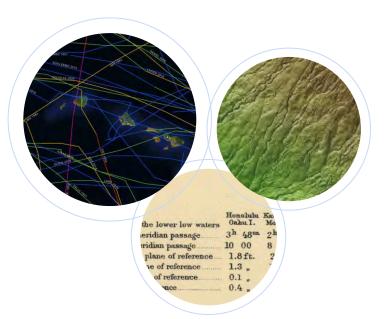




OCM Data Holdings

• Digital Coast at a glance

- 80+ terabytes of elevation, land cover, and imagery data
- 200+ web mapping services
- 190+ learning resources
- 70+ decision-support and visualization tools
- o 120+ stories from the field



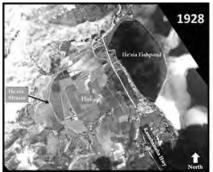




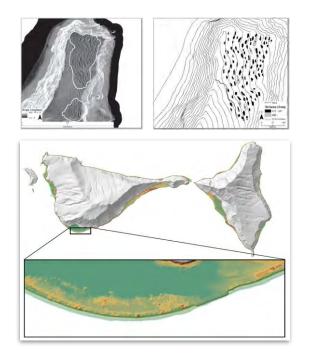


Insights from the Past

Biocultural restoration at ahupua'a of He'eia







Archeological findings in American

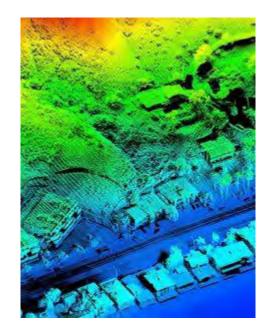






Innovating for the Future

- Understand -> Predict -> Share -> Manage
- Artificial intelligence and machine learning
- Big data and cloud computing
- State-of-the-science and community approaches in concert with each other

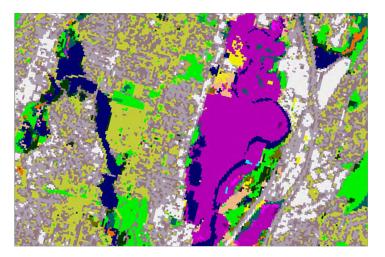








AI-Powered Image Processing





DORR OCEAN & COA CONSERVAT

NOAA C-CAP 30 meters

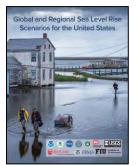
NOAA C-CAP 1 meter



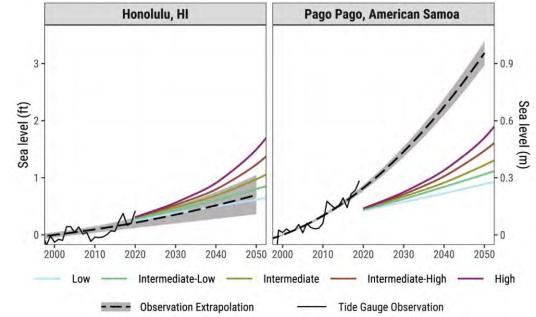


Sea Level Rise

• 2022 Sea Level Rise Technical Report and Application Guide







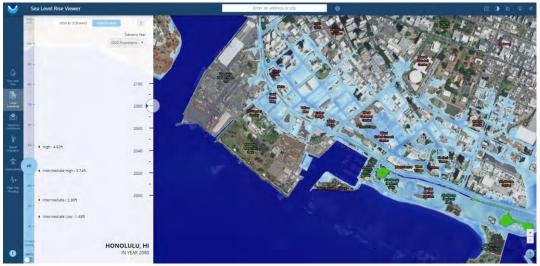




SERVICE DELIVERY & DECISION-SUPPORT TOOLS



Planning for Sea Level Rise

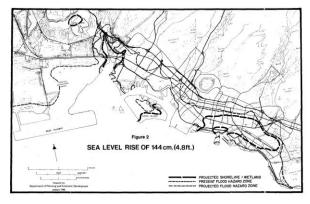






Credit: Fox Weather, Isabella Sloan

Credit: Honolulu Star-Advertiser



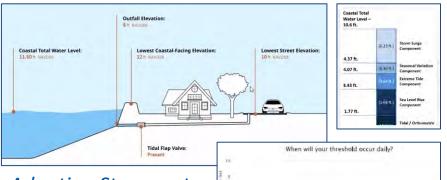


Sea Level Rise Viewer



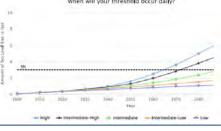


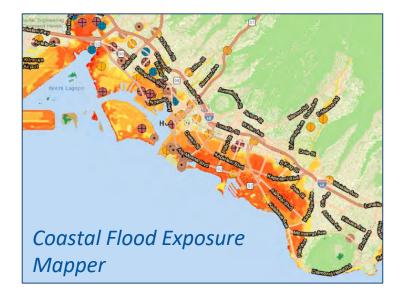
Planning for Sea Level Rise



Adapting Stormwater Management for Coastal Floods











Partnership in Action



University of Hawai'i Sea Grant Program

50 YEARS O

Hawai'i Sea Level **Rise Viewer**





Connect with the Digital Coast



https://coast.noaa.gov/digitalcoast/



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