

Hawaii Inter-Island Cable Planning & Ocean Floor Survey

A Case Study of (a partial) CMSP

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- Desktop Study

 - Input Proposed Cable Landing Sites

 - Identify Existing Relevant Data & Gaps

 - Suggest Alternative Cable Routes for Detailed Surveys

- Seafloor Data Collection & Synthesis

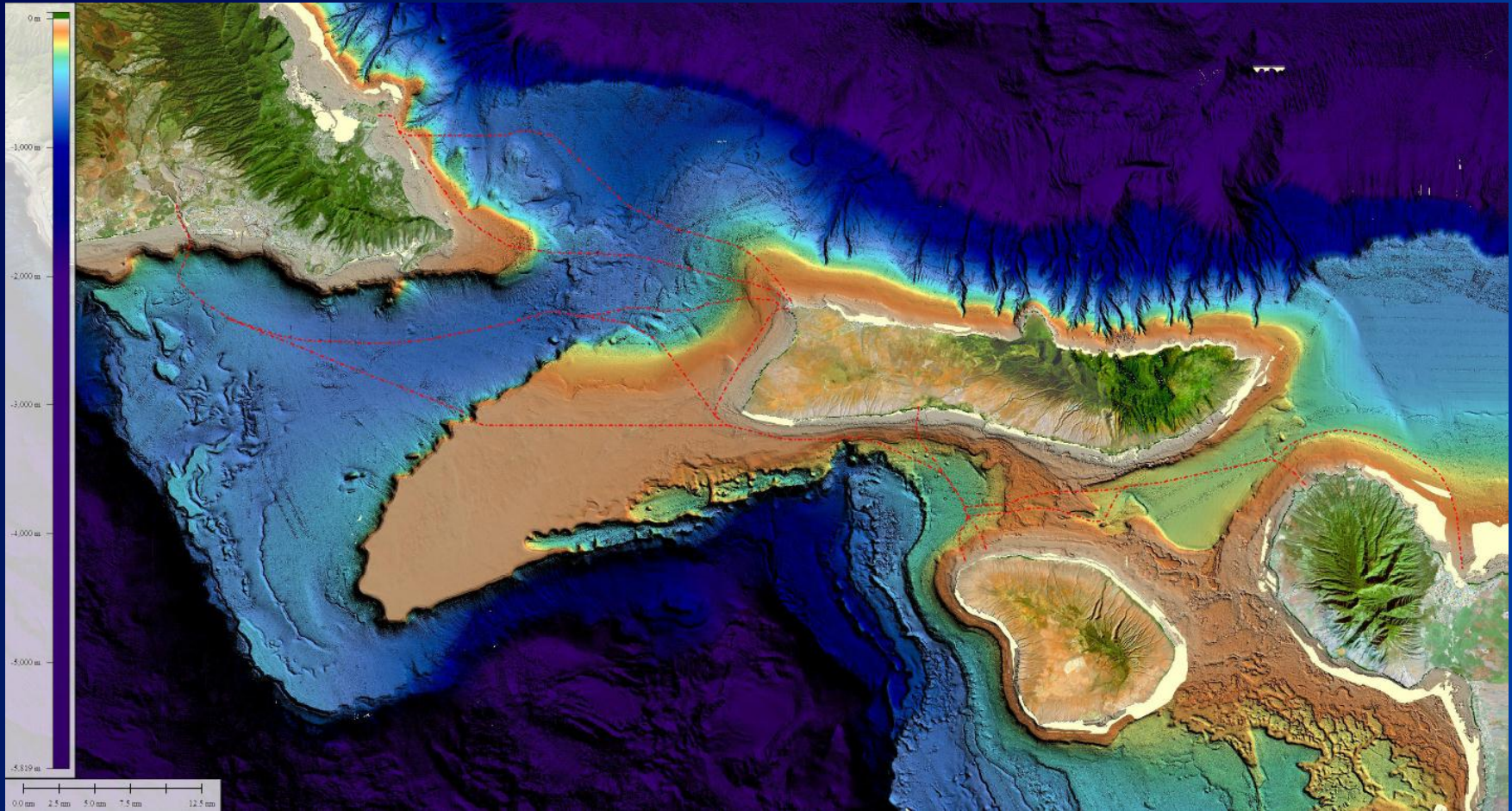
 - Bathymetry, Sidescan, Sub-bottom profiles, Video, Samples . . .

- Integrated Data Interpretation & Analysis

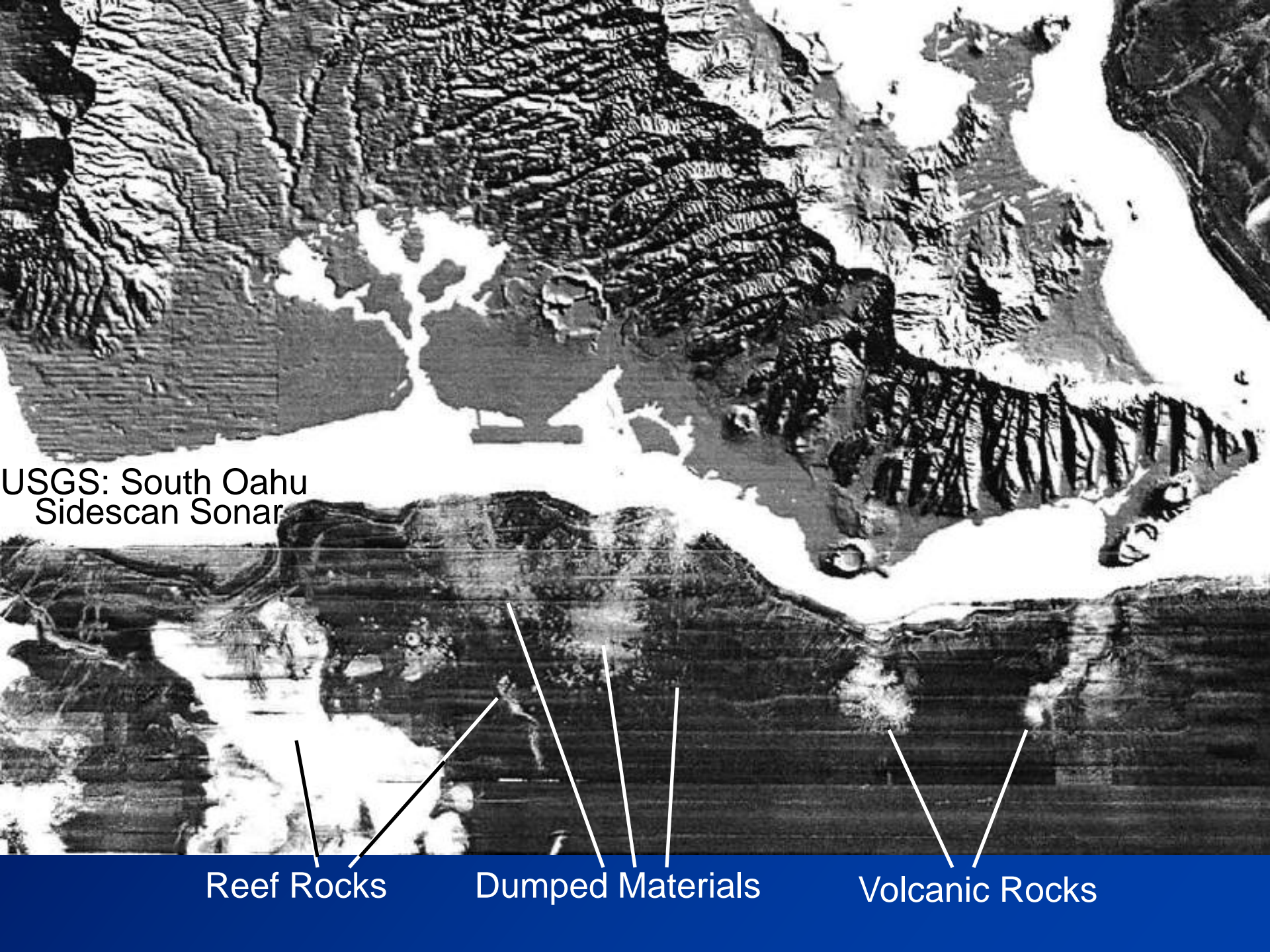
 - Recommend technically viable ocean floor routes

 - Iterate with other (e.g., land) constraints

SOEST Seafloor Bathymetry Data Synthesis



Submarine canyons & slides north of Molokai - no viable route
Steep edges of Penguin Bank & Oahu approaches
Coral reefs fringing islands and between Lanai and Maui
Deep reef rocks in inter-island channels



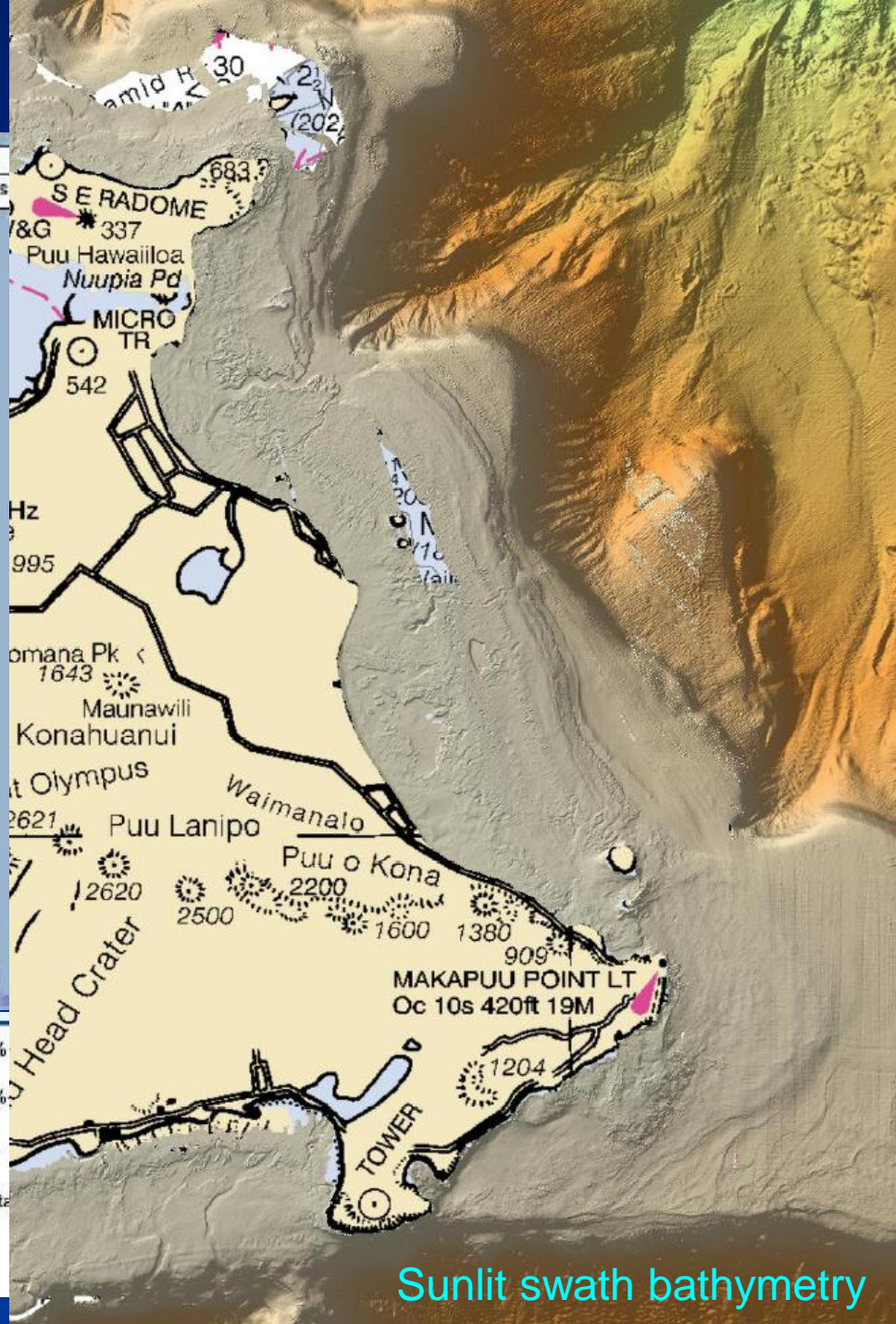
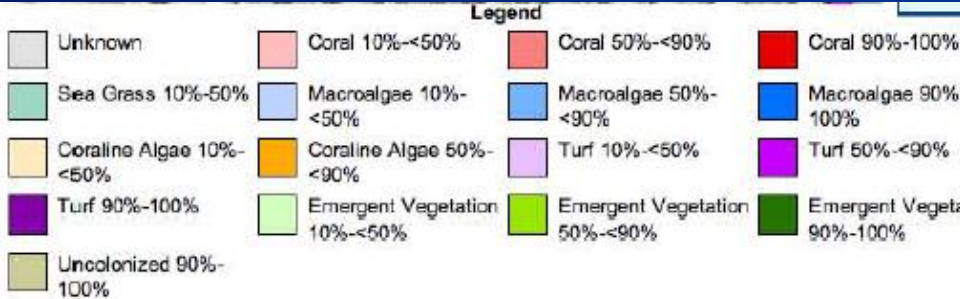
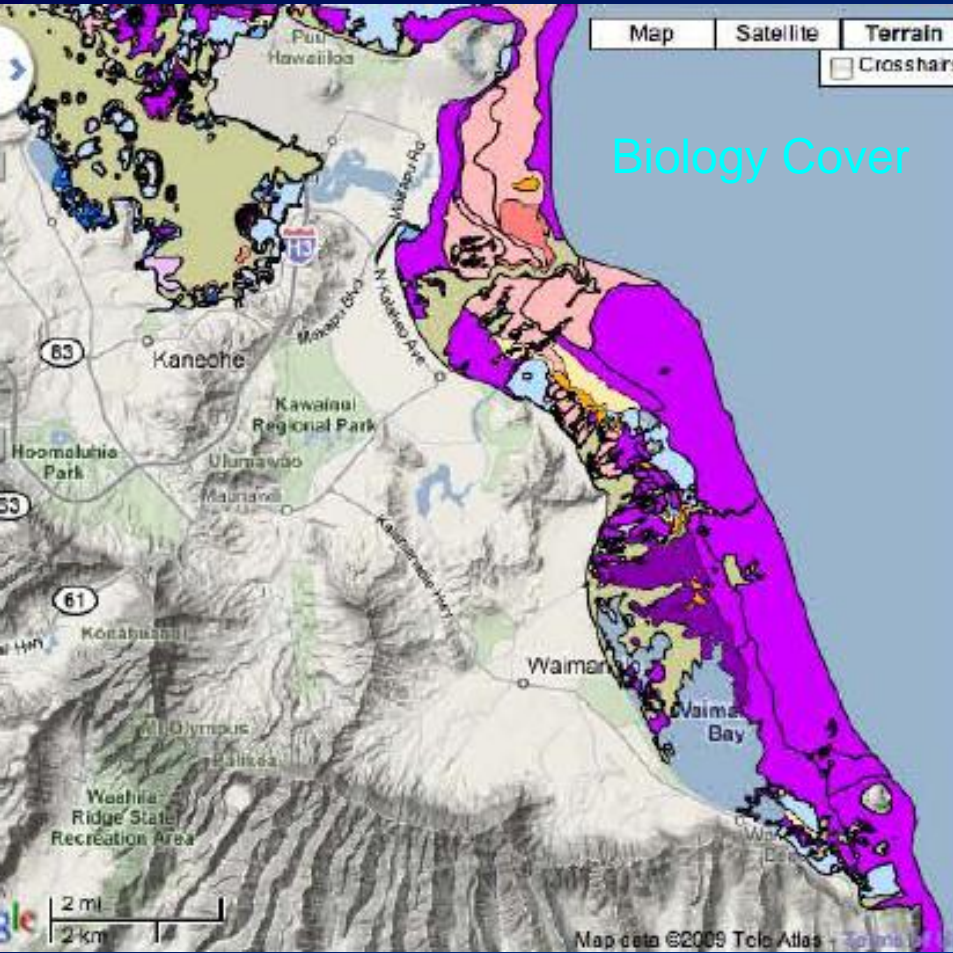
USGS: South Oahu
Sidescan Sonar

Reef Rocks

Dumped Materials

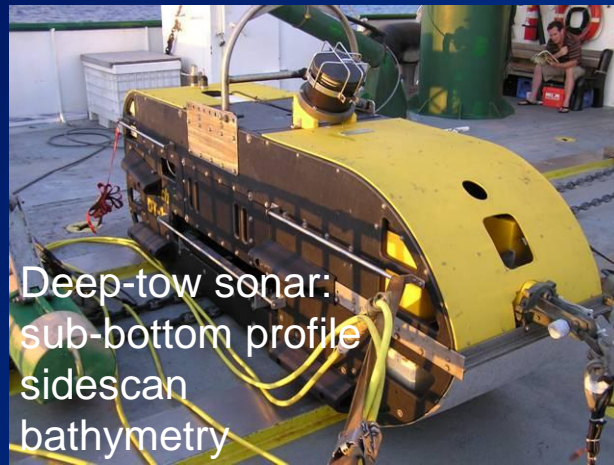
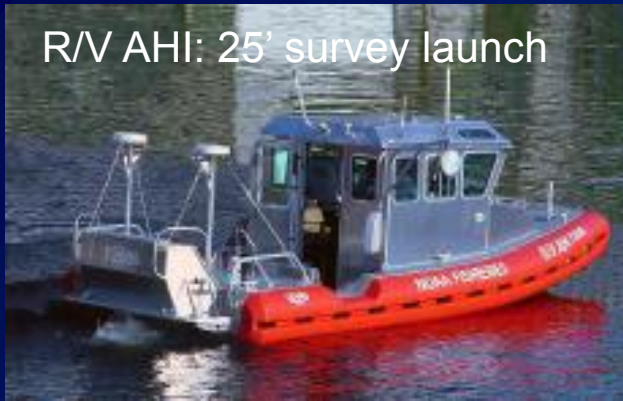
Volcanic Rocks

Shallow Water Benthic Habitats:



Assets Mobilized

R/V AHI: 25' survey launch



Deep-tow sonar:
sub-bottom profile
sidescan
bathymetry



Lab watch

R/V KOK: 223', 2000T



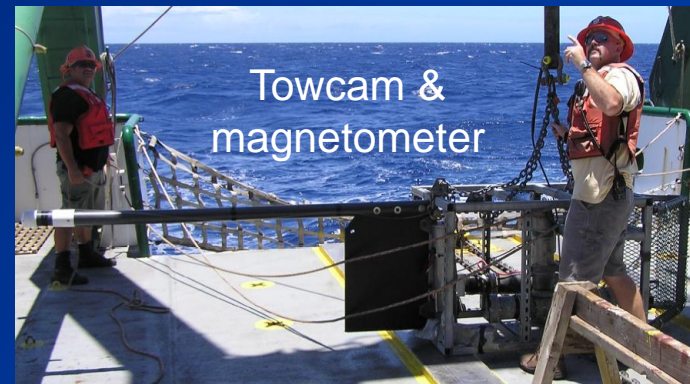
Surveying off Makapuu



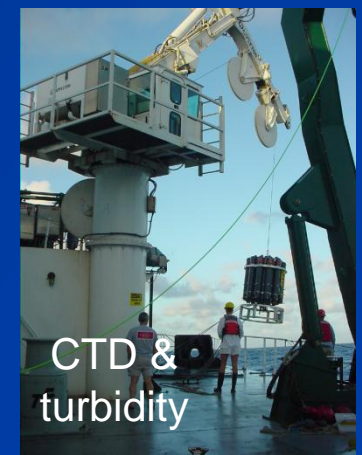
ROV videocam



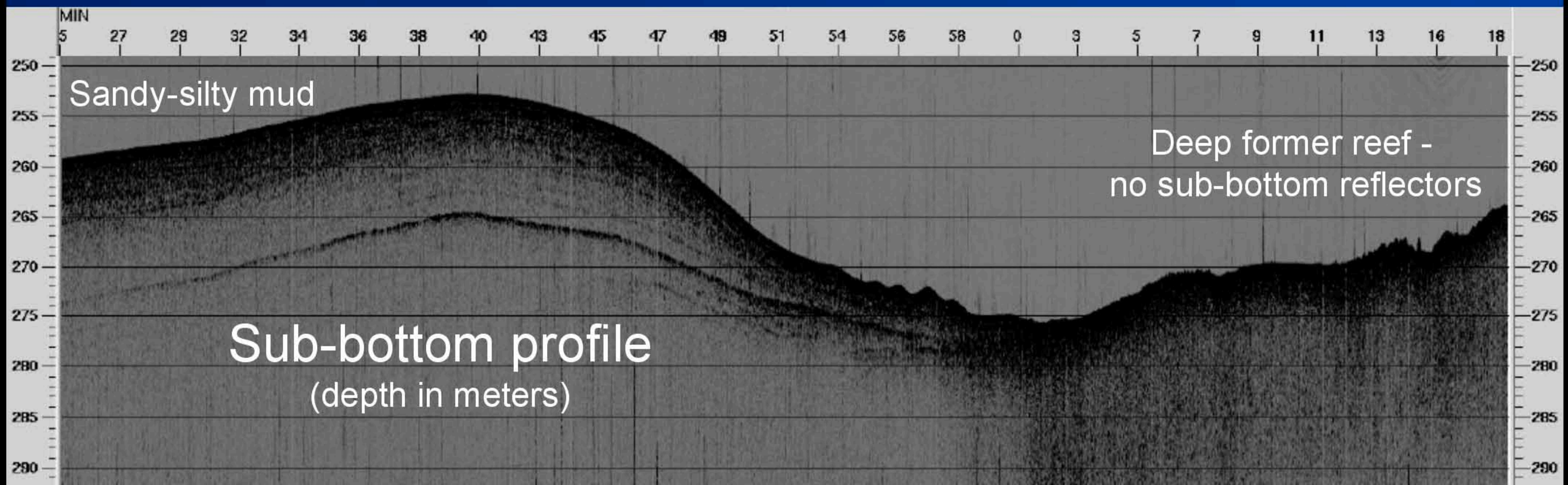
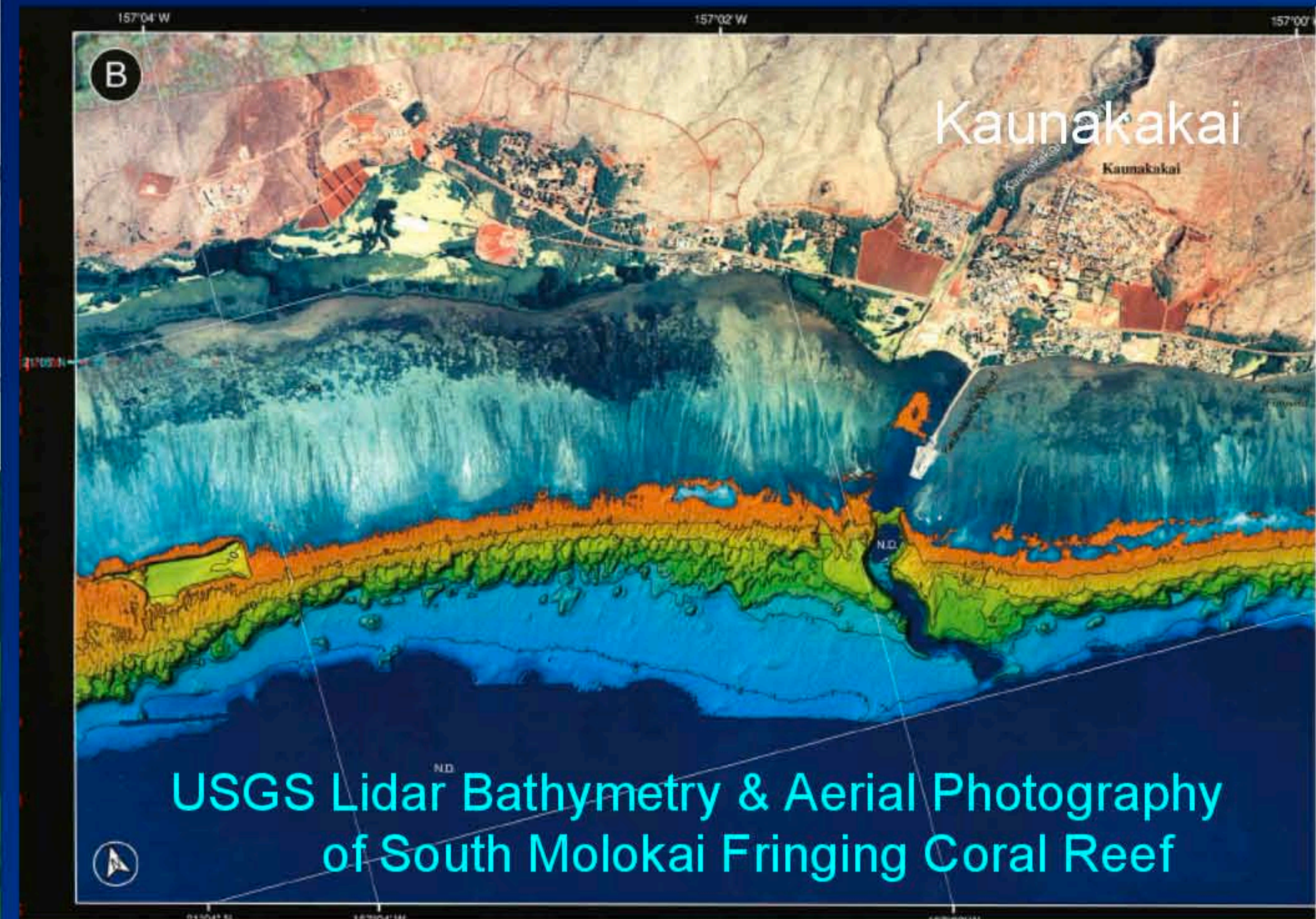
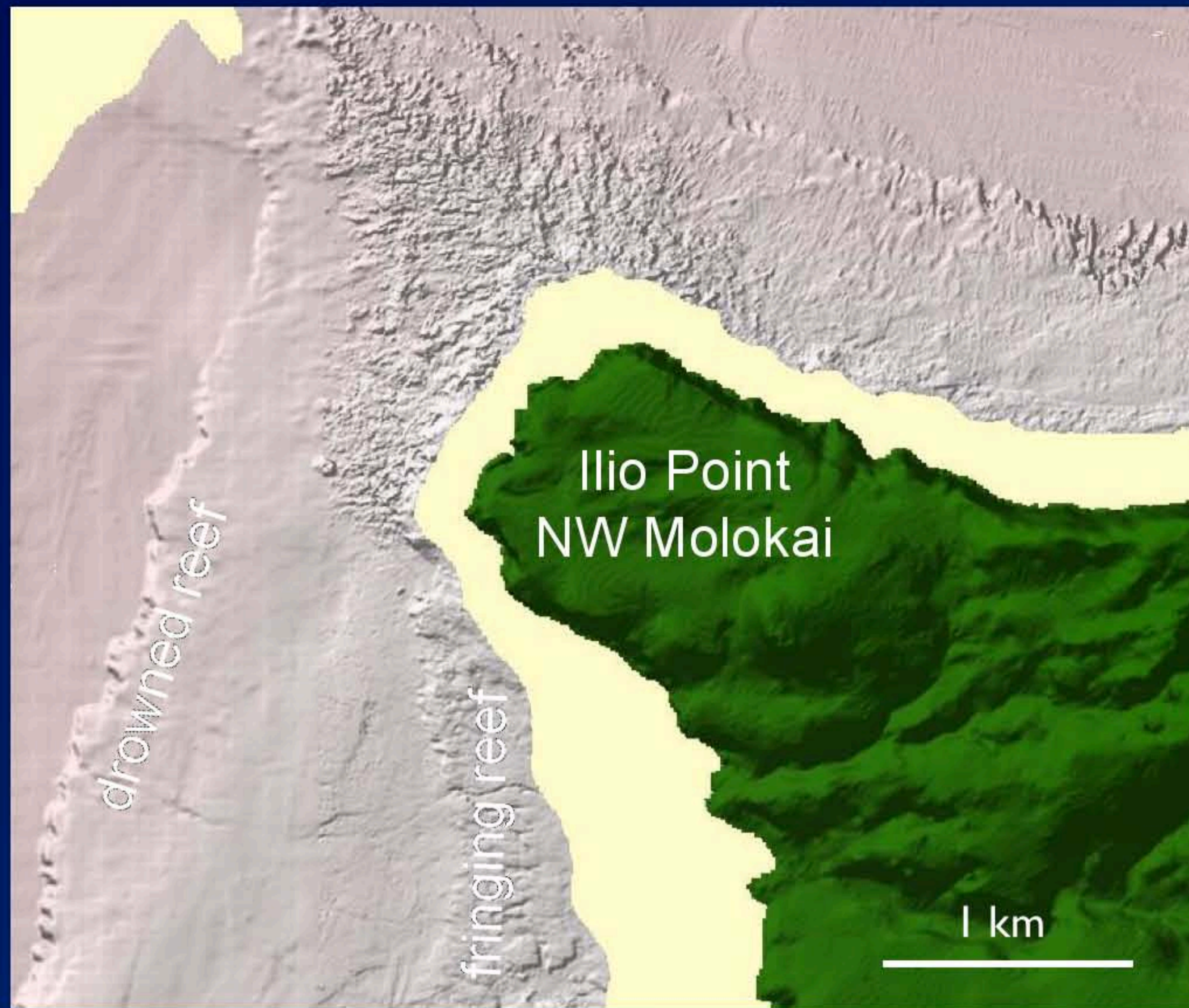
R/V Kilo Moana: 186', 2550T



Towcam &
magnetometer



CTD &
turbidity



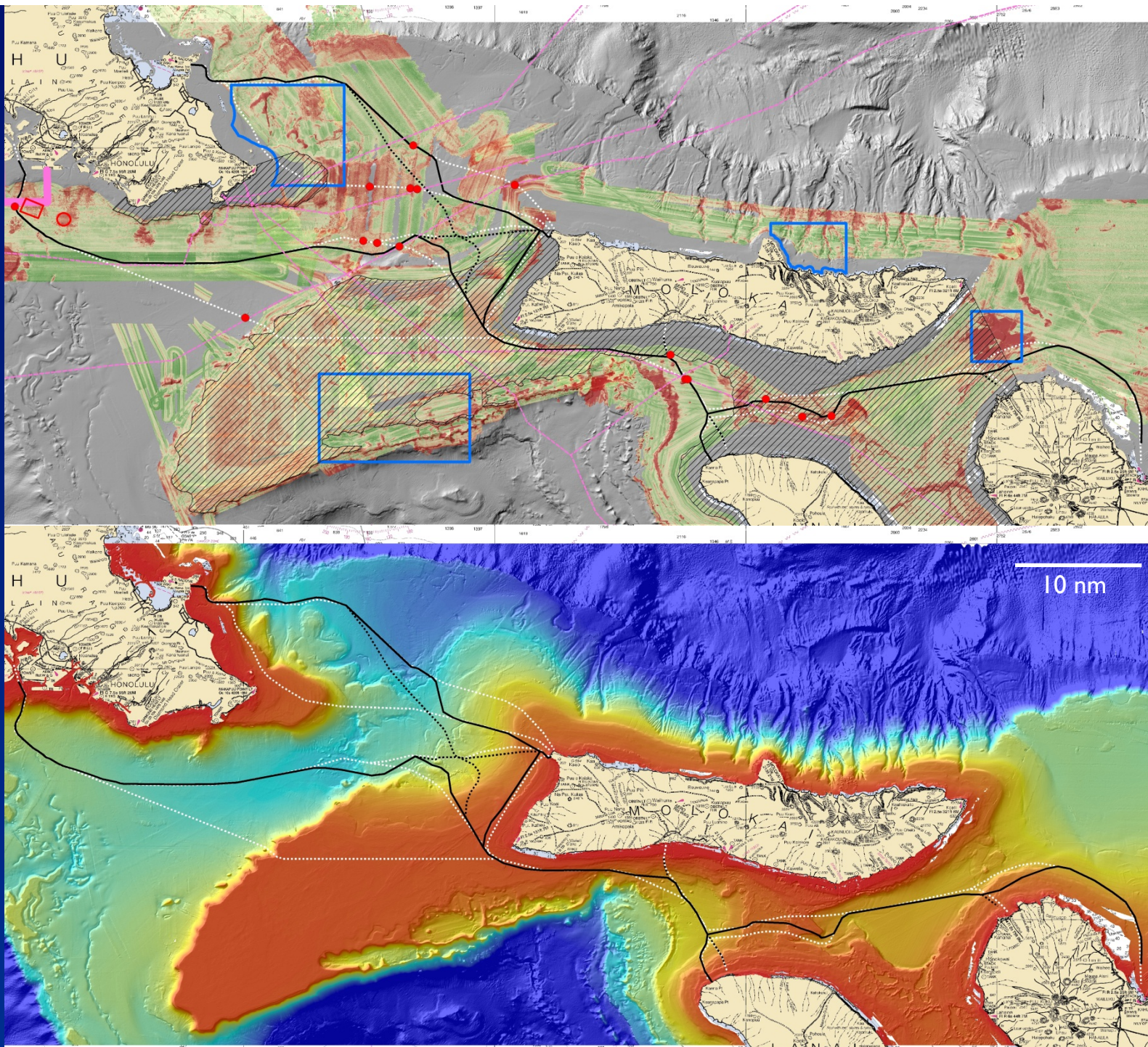
Variety of marine life on mostly barren rippled sediment

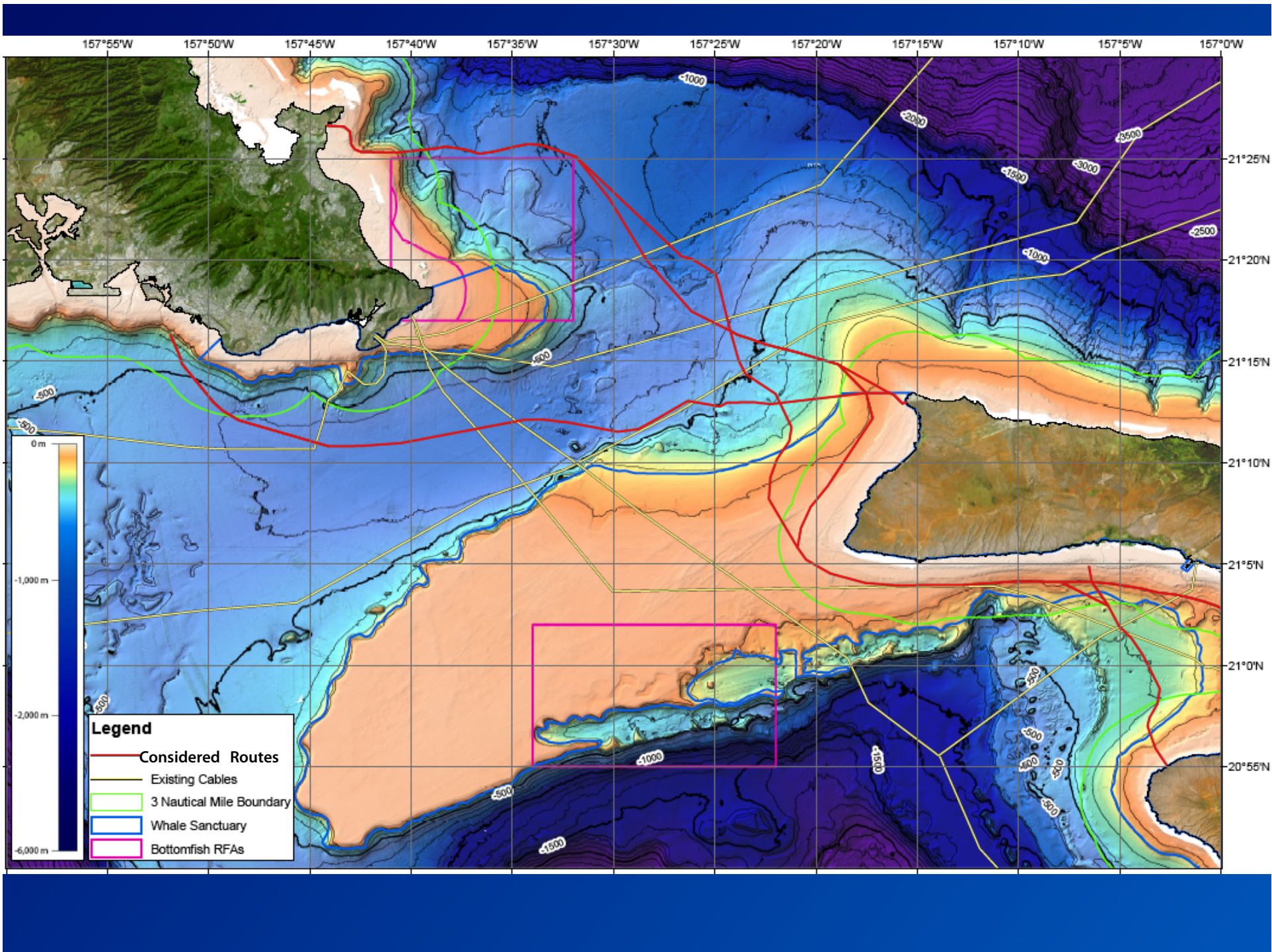


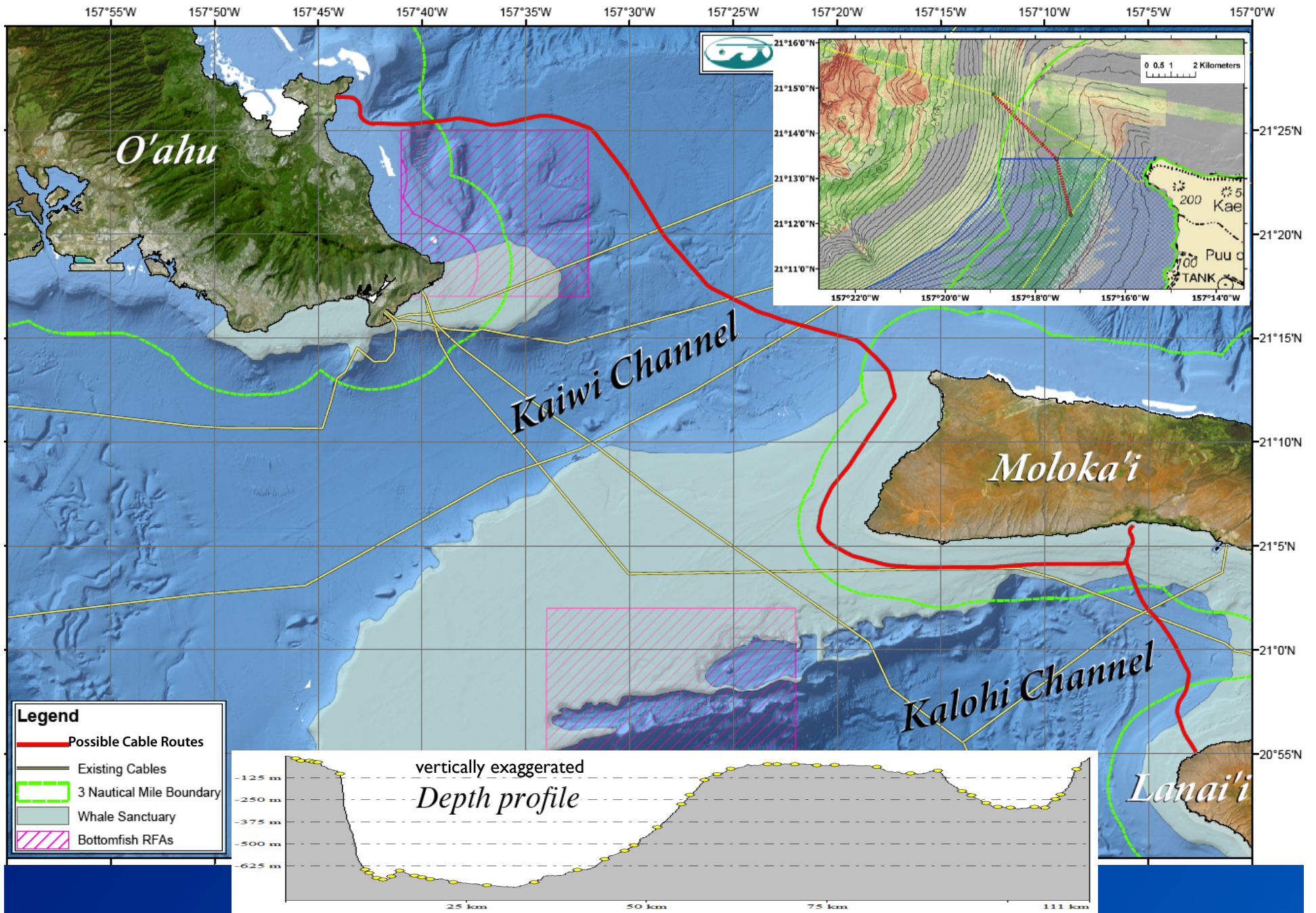
Laser dots 2 inches apart

Possible (black) and alternate (dashed) cable routes, other routes surveyed (white dashed), on sunlit bathymetry (gray) and seafloor acoustic imagery (red = strong, green = weak). Pink = existing cable routes; Red dot = observed cable crossing Blue box = bottom fish refuge; Red box/circle = dump areas Ruled area = humpback whale sanctuary

Depth (m)







route from Kaneohe to Lanai that avoids the federal waters of the HIHWNMS