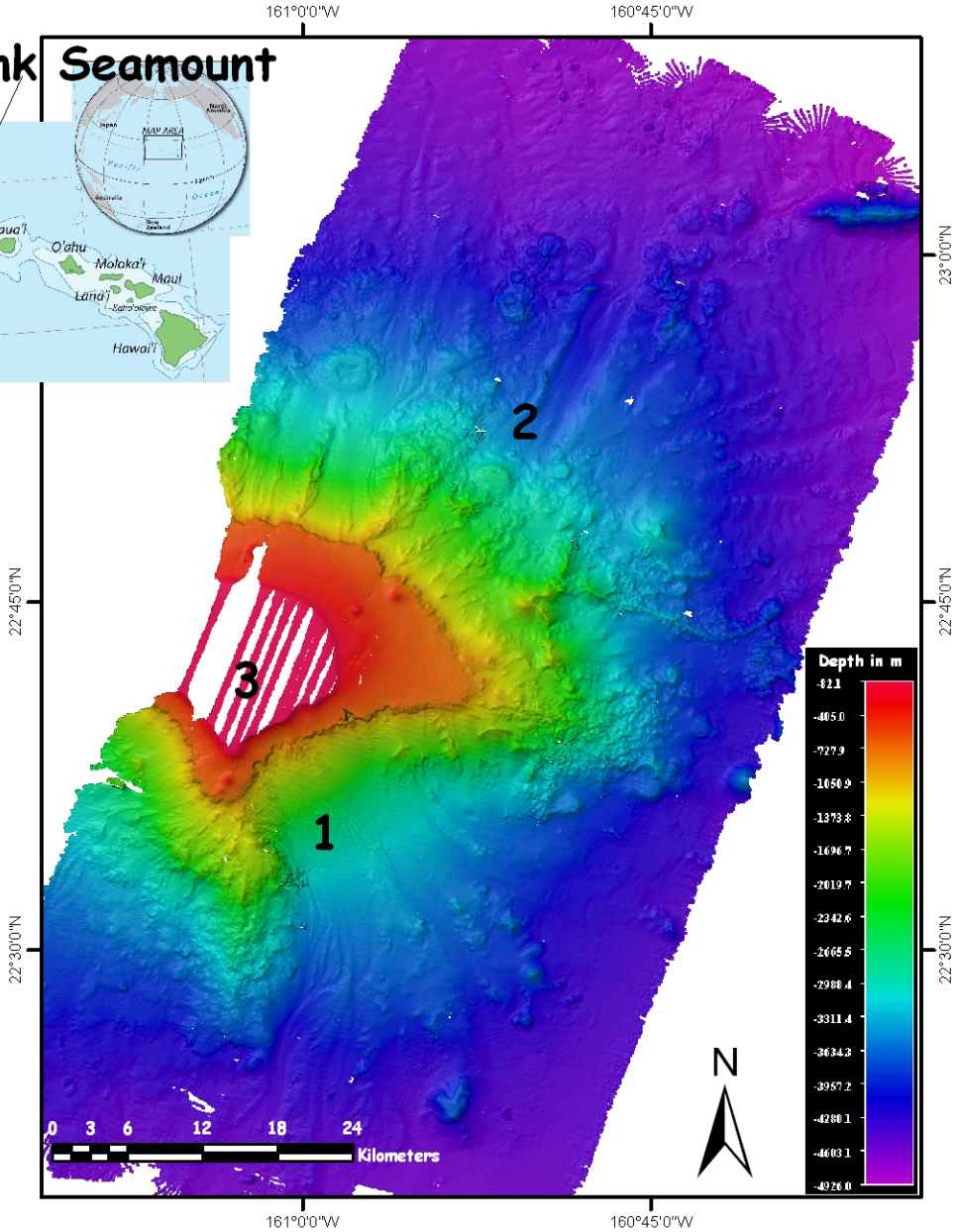
Mapping the Seafloor

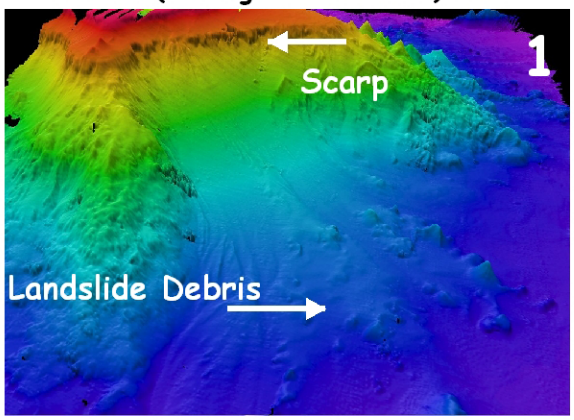
Middle Bank Seamount



The Okeanos Explorer is a NOAA ship that is specifically designed to explore and map the unknown regions of seafloor and bring the data back for scientists to use in future research.

Ocean explorers use sound to create images of the features on the ocean floor and put the images together to create a map. Seafloor maps are important because they help scientists get a better understanding of underwater systems, such as volcanoes and marine ecosystems. To the right is a seafloor map of Middle Bank Seamount. Middle Bank is located just southeast of the Papahanaumokuakea National Monument and was mapped during an Okeanos Explorer exploration cruise in October 2009.

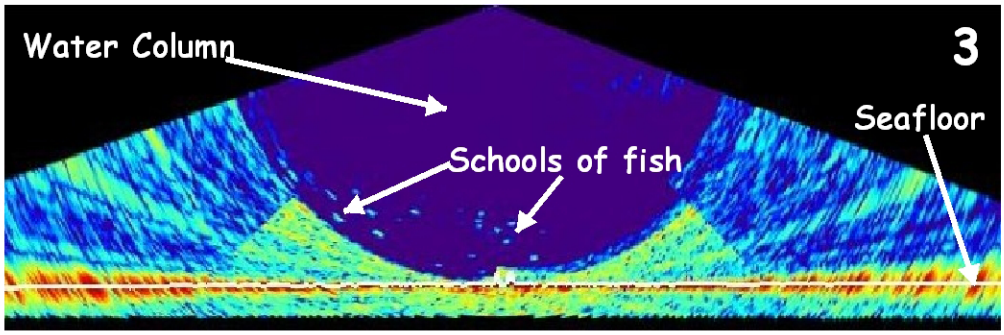
Seafloor maps are usually vary detailed and can clearly show features, such as the submarine landslide and lava ponds on Middle Bank (see figures 1 and 2*).



*The location of figures 1 and 2 can be found in the main seafloor map.

Sound can also be used to detect objects in the water column, or the water between the boat and the seafloor. Figure 3 is an image of the water column data over the shoals of Middle Bank in which schools of fish can be detected in the data.

In the figure, the red line is the seafloor and the dark blue area is the water column. The white dots in the water column are large schools of fish. This data can be very important to marine biologists who may want to study the ecosystems on seamounts or to conservationists who may want to incorporate this area in the Papahanaumokuakea Monumnent.



Multibeam data collected by NOAA Okeanos Explorer; Map and figures compiled by Melissa Meiner-Johnson