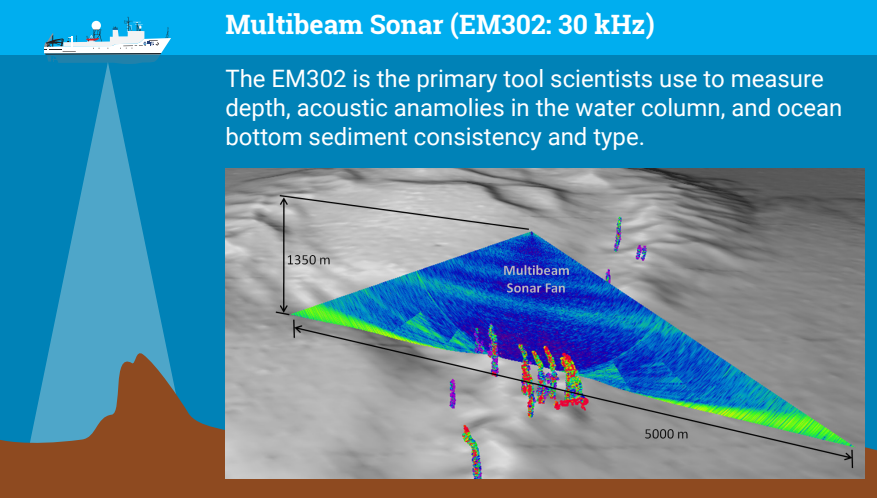


Okeanos Explorer Mapping Capabilities

NOAA Ship *Okeanos Explorer* collects several different types of observations to explore and characterize the seafloor, sub-seafloor, and the water column. These observations are made using hull-based and over-the-side sensors.

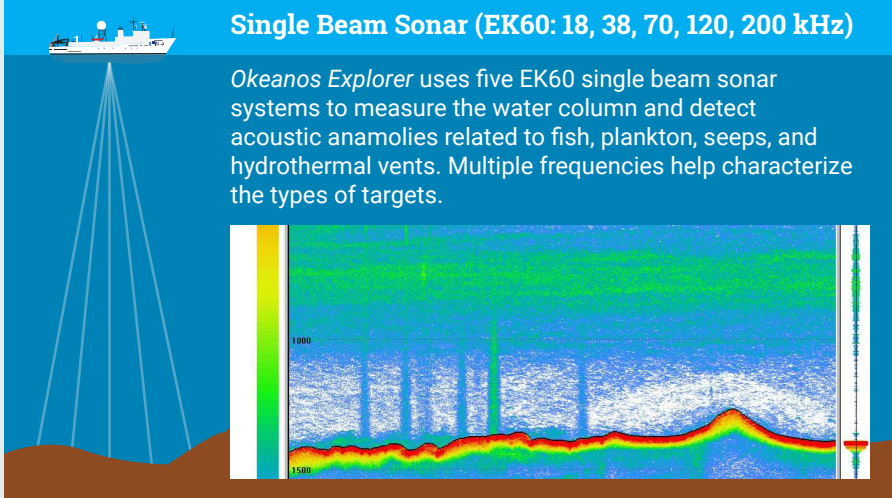
Multibeam Sonar (EM302: 30 kHz)

The EM302 is the primary tool scientists use to measure depth, acoustic anomalies in the water column, and ocean bottom sediment consistency and type.



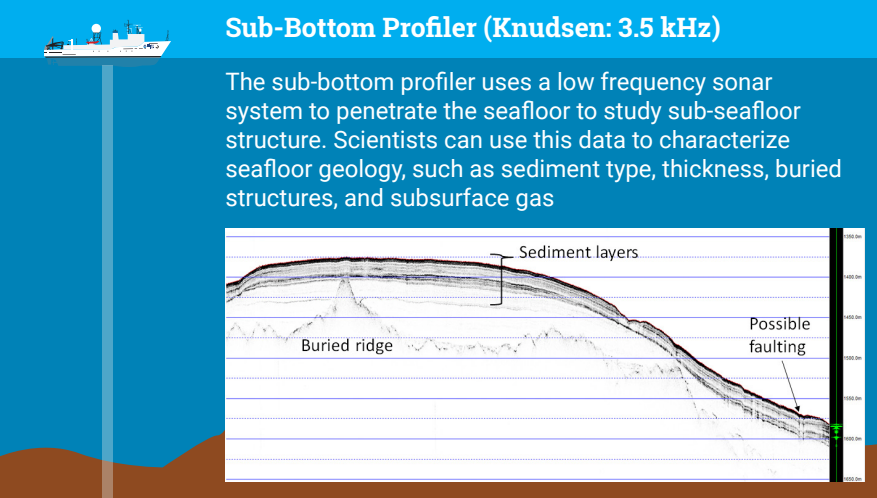
Single Beam Sonar (EK60: 18, 38, 70, 120, 200 kHz)

Okeanos Explorer uses five EK60 single beam sonar systems to measure the water column and detect acoustic anomalies related to fish, plankton, seeps, and hydrothermal vents. Multiple frequencies help characterize the types of targets.



Sub-Bottom Profiler (Knudsen: 3.5 kHz)

The sub-bottom profiler uses a low frequency sonar system to penetrate the seafloor to study sub-seafloor structure. Scientists can use this data to characterize seafloor geology, such as sediment type, thickness, buried structures, and subsurface gas.



Water Column Observation Systems

Okeanos Explorer uses several other oceanographic sensors such as an ADCP (acoustic Doppler current profiler) and a CTD (Conductivity Temperature and Depth sensor) to determine physical properties of the water column, for example temperature, salinity, dissolved oxygen, and direction and speed of currents.

