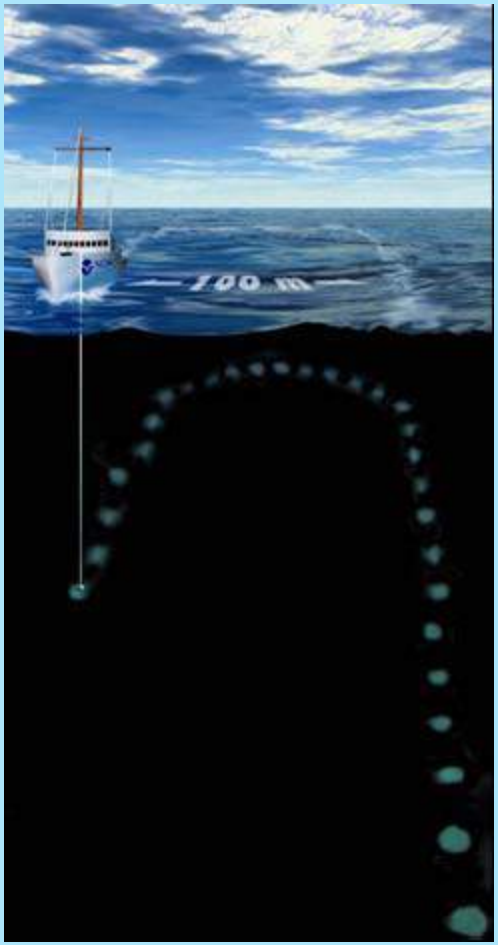
Multibeam Mapping

The Evolution of Mapping the Ocean

Lead line mapping



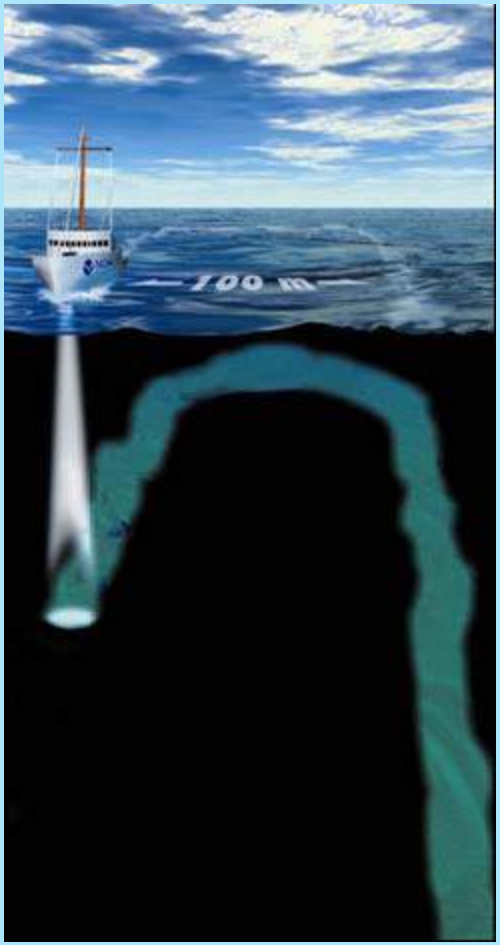
Lead line mapping was the earliest form of seafloor mapping; this technique was used in ancient Egypt.

A rope with a weight on the bottom was marked at different “fathoms” and dropped overboard until it hit the sea floor.

Look at this picture.

What are some weaknesses of lead line mapping?

Single beam sonar mapping



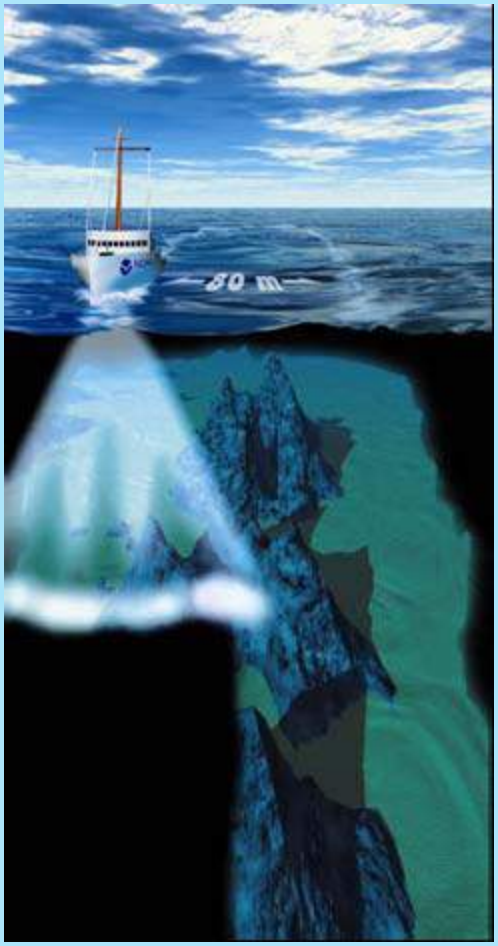
Single beam sonar mapping sends sound waves straight below the ship. The sound waves hit the sea floor and bounce straight back up to the ship.

Look at this picture.

Why is single beam sonar mapping better than lead line mapping?

What are some weaknesses of single beam sonar mapping?

Multibeam sonar mapping



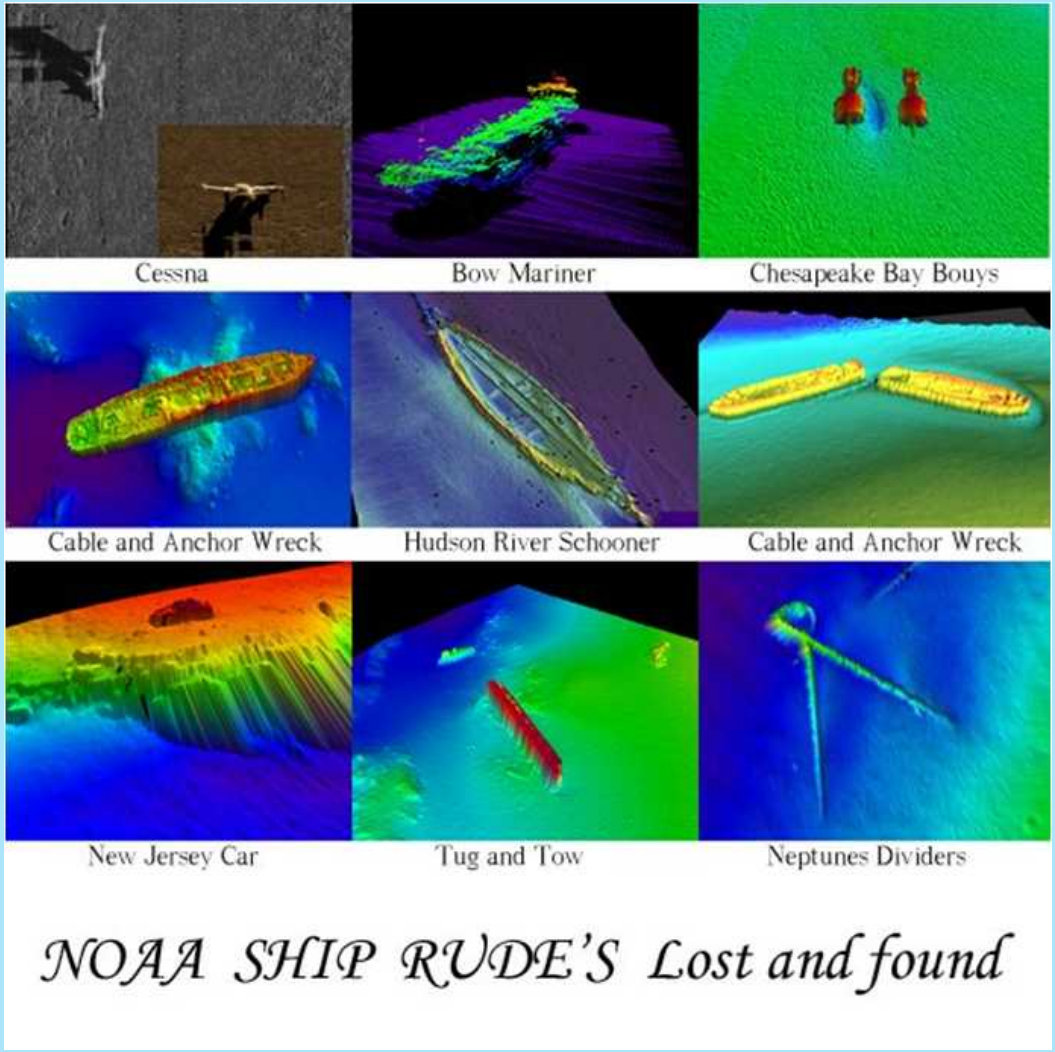
Multibeam sonar mapping sends sound waves in a sweep across the ocean floor. The sound waves hit the bottom and return to the ship.

Look at this picture.

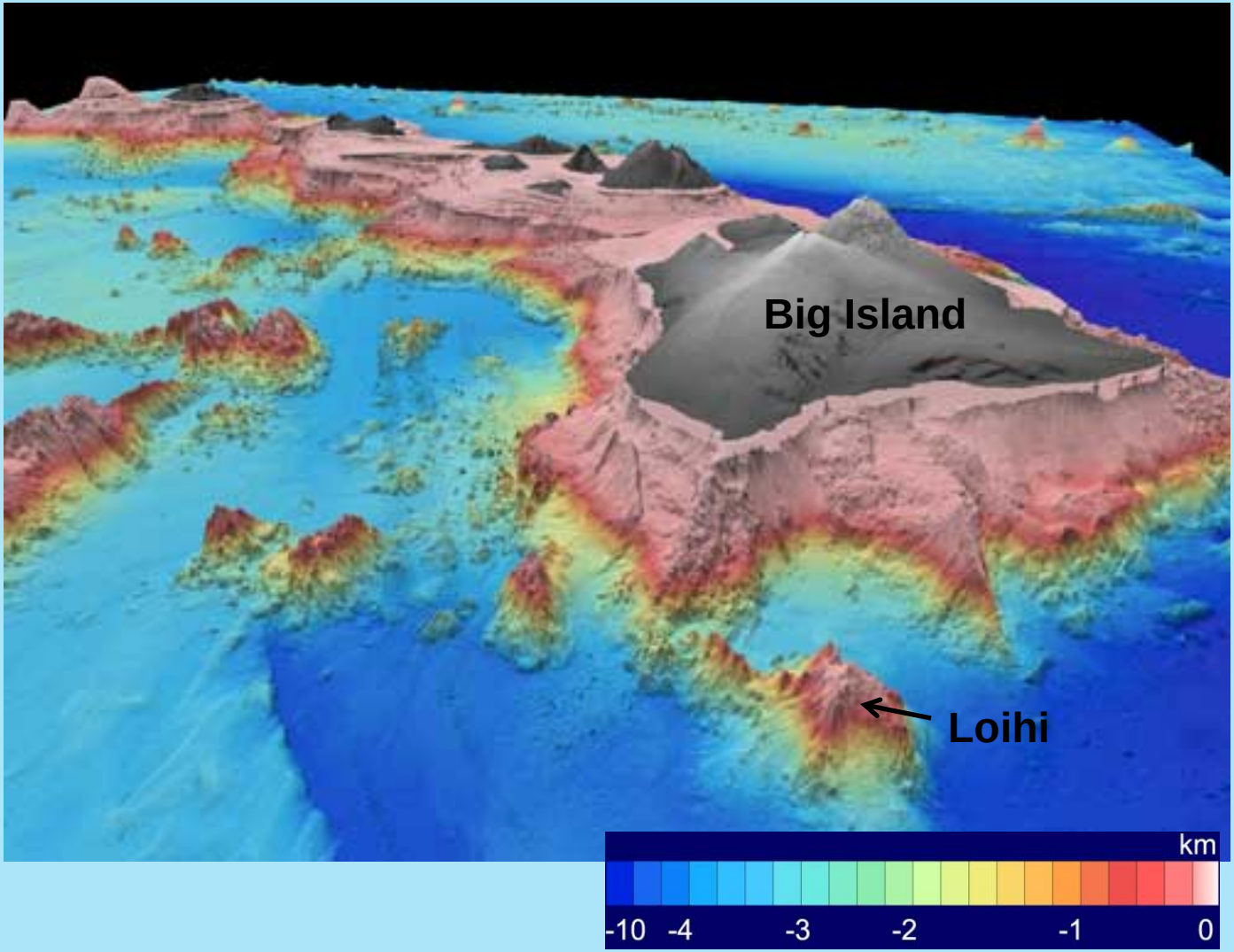
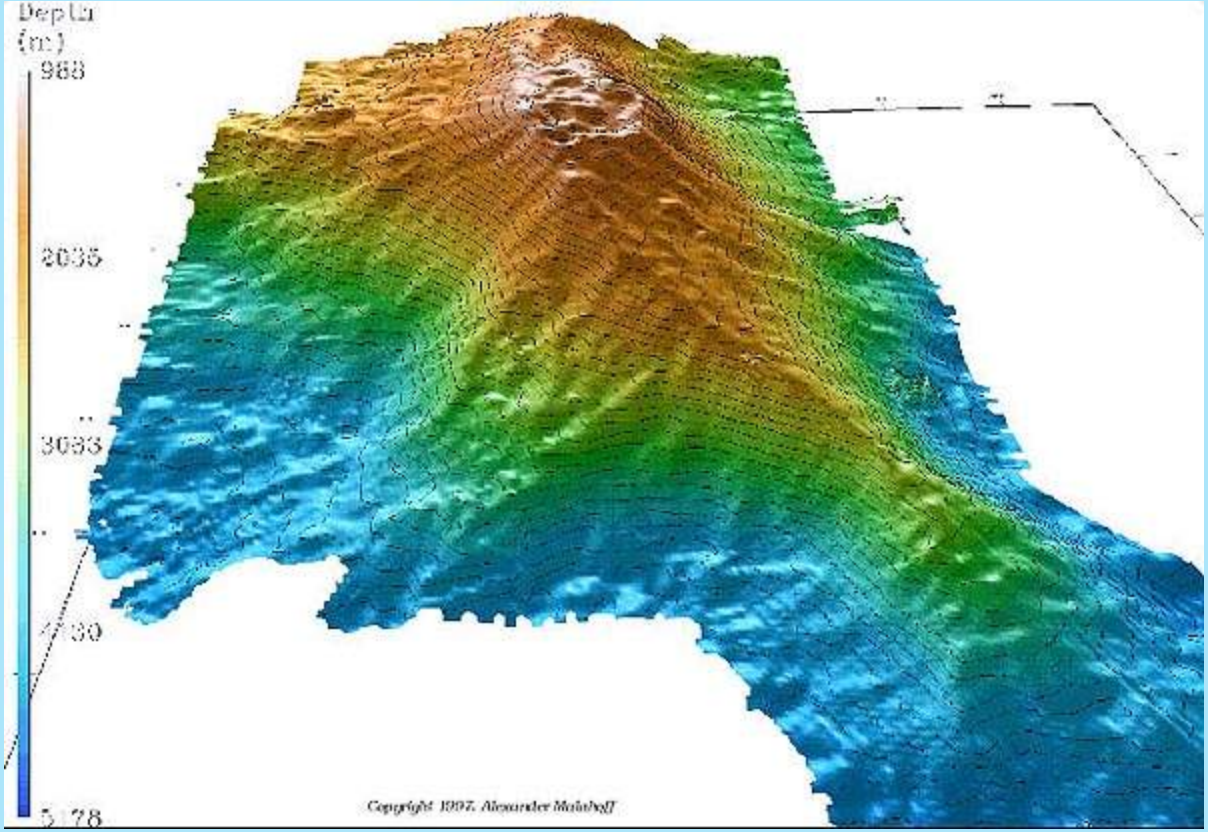
Why is multibeam sonar mapping better than single beam sonar mapping?

Watch how multibeam mapping works

What does a sonar echo look like?



Water near the Hawaiian Islands



Loihi Seamount - upclose