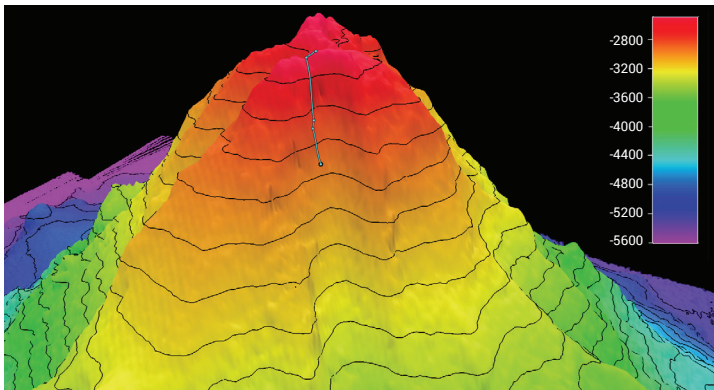


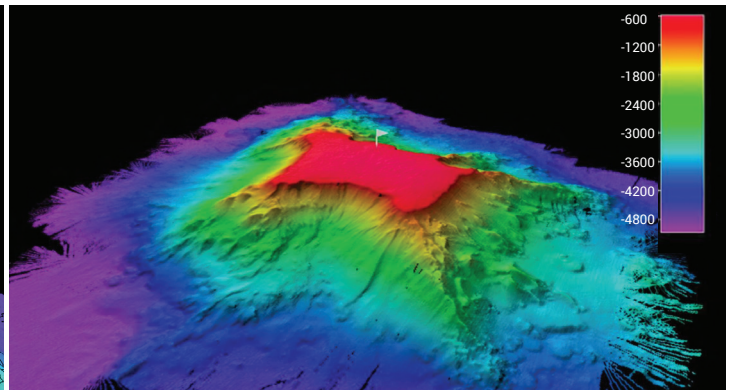


What is a Seamount?

Most seamounts are remnants of extinct volcanoes, while others are actively erupting and growing. Typically, they are cone shaped, but often have other prominent features such as craters and linear ridges. One type, called a **guyot** (*gē'-ō*), has a large, flat summit. To be classified as a seamount, the feature must rise at least 1,000 meters (3,300 feet) above the surrounding seafloor.

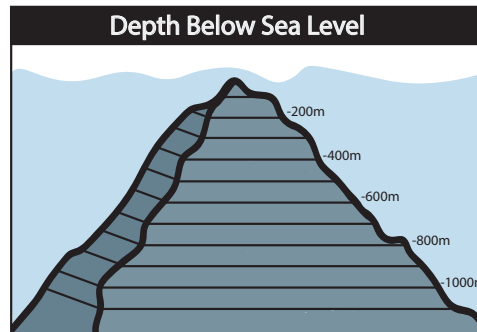


False color map of Congress Seamount, found in the Atlantic Ocean. Contour lines show depth below sea level. *Image courtesy of NOAA Ocean Exploration.*

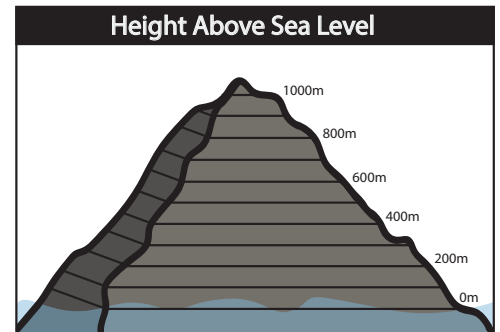


False color map of King George Seamount, a guyot, or flat topped seamount, in Papahānaumokuākea Marine National Monument. *Image courtesy of Ocean Exploration Trust.*

Scientists indicate the height of seamounts on maps using contour lines. In the ocean, contour lines are imaginary lines connecting points of the same depth. A contour interval is the set difference between any two contour lines. Seamount heights are measured from their shallowest point to their deepest point and depths are often noted with a negative symbol (-) to show distance below sea level. This is the opposite of how mountains are measured on land.



A basic seamount illustration with contour lines. Scientists measure seamount heights from sea level down. The first labeled depth is 200 meters below sea level. *Illustration courtesy of NOAA Ocean Exploration.*

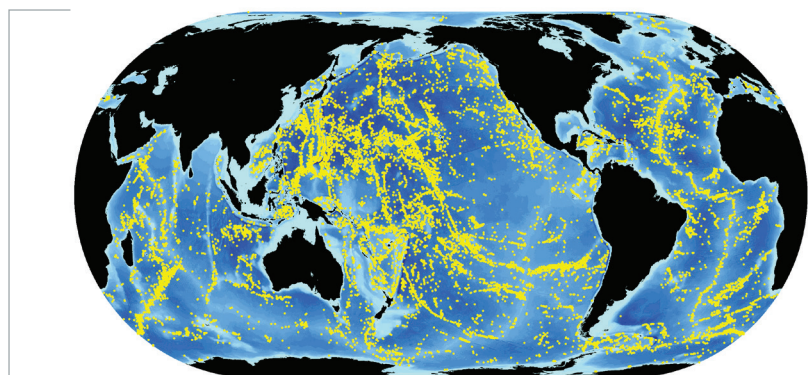


A basic illustration of a mountain with contour lines. Scientists measure mountain heights from sea level up. The bottom horizontal line is at sea level (0 meters). *Illustration courtesy of NOAA Ocean Exploration.*

Where are Seamounts Found?

Seamounts are found in every ocean basin. It is not known exactly how many seamounts there are, but based on satellite data and mapping data obtained from survey ships, there are thought to be tens of thousands. Despite their abundance, the vast majority are unexplored.

Visualization of the distribution of 14,285 seamounts based on the database of Kitchingman and Lai. *Map by L. Watling, University of Hawai'i.*

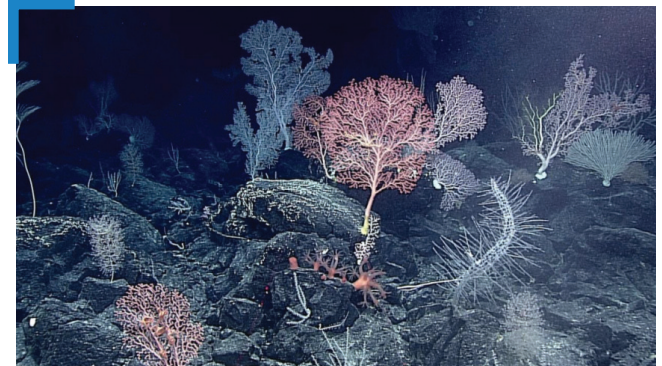


What is a Seamount?

Why are Seamounts Important to Explore?

Scientists are eager to learn more about seamounts because they:

- Are sites that support diverse life forms, some completely new to science. Seamounts are known as “[oases of life](#)” because so many marine species are found on and near them.
- Are formed through different [geological processes](#). They can reveal important information about plate tectonics and submarine volcanic activity.
- Can support vulnerable habitats or contain minerals important to economies around the world. Exploration data collected on seamounts can be used to help inform future management decisions.



Many coral species have been found on seamounts in the Papahānaumokuākea Marine National Monument of Hawai'i. Deep-sea corals can live for hundreds of years, with some colonies living over 4,000 years. They grow slowly and are vulnerable to human impact. *Image courtesy of Ocean Exploration Trust.*



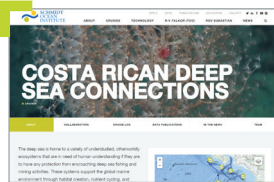
Davidson Seamount, located in the Monterey Bay National Marine Sanctuary off the central California coast, is known as an “Octopus Garden.” The octopuses pictured here are in a brooding position, with their eight arms facing out to cover their bodies and protect their eggs. *Image courtesy of Ocean Exploration Trust.*

Learn more about these seamount expeditions:

[Costa Rican Deep-Sea Connections \(2019\)](#)

RESEARCH HIGHLIGHTS:

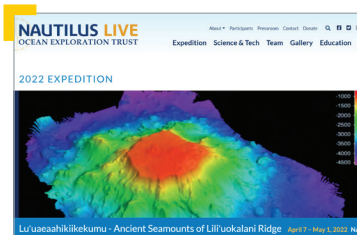
Schmidt Ocean Institute's *R/V Falkor* explored seamounts off the Pacific coast of Costa Rica, studying the water chemistry, geology and biology of the area. Using a remotely operated vehicle, they filmed in different habitats and collected rock and animal samples. New species of coral, shrimp, worms, and mussels were discovered!



[Lu'uaeahikiiekumu - Ancient Seamounts \(2022\)](#)

RESEARCH HIGHLIGHTS:

Ocean Exploration Trust sailed to a portion of the Papahānaumokuākea Marine National Monument near Hawai'i on the E/V *Nautilus* to make investigate a puzzling split in the trail of this hotspot volcano chain. Scientists collected samples from these seamounts to learn more about the geological processes that created them.



LEARN MORE

Lu'uaeahikiiekumu is a Hawaiian word referring to the journey and work in the deep blue ocean (kai lipilipo). The name reflects the birth of collaborative ways of practice that are inclusive of the Kānaka (Native Hawaiian) worldview. [Learn more about this important work.](#)

- Guyot (webpage): <https://oceanexplorer.noaa.gov/oceanos/explorations/ex1606/background/guyots-bio/welcome.html>
Congress Seamount (false color map): <https://oceanexplorer.noaa.gov/oceanos/explorations/ex2104/dives/dive02/media/dive02-dive-track-hires.jpg>
King George Seamount (false color map): <https://nautiluslive.org/blog/2021/11/23/ev-nautilus-field-guide-deep-sea-geological-features>
Seamount (illustration): <https://oceanexplorer.noaa.gov/edu/materials/seamount-contour-lines-illustration.jpg>
Mountain (illustration): <https://oceanexplorer.noaa.gov/edu/materials/mountain-contour-lines-illustration.jpg>
Seamount visualization (map): <https://oceanexplorer.noaa.gov/edu/materials/global-seamount-distribution-watling.jpg>
Oases of Life (factsheet): <https://oceanexplorer.noaa.gov/edu/materials/seamounts-oases-of-life-fact-sheet.pdf>
Seamount Formation (factsheet): <https://oceanexplorer.noaa.gov/edu/materials/how-seamounts-form-fact-sheet.pdf>
Papahānaumokuākea (image): <https://nautiluslive.org/blog/2021/11/13/lu'uaeahikiiekumu-searching-deep-sea-corals-among-ancient-volcanoes>
Octopus Garden (image): <https://nautiluslive.org/blog/2019/10/13/return-octopus-garden-monterey-bay-national-marine-sanctuary>
Costa Rican Deep-Sea Connections (2019) (webpage): <https://schmidtocean.org/cruise/costa-rican-deep-sea-connections/>
Lu'uaeahikiiekumu - Ancient Seamounts (webpage): <https://nautiluslive.org/cruise/na138>
Lu'uaeahikiiekumu (webpage): <https://nautiluslive.org/blog/2022/04/08/whats-expedition-name-building-relationships-between-people-and-place-through-olelo>