



The new chart is the most precise yet of the Southern Ocean British Antarctic Survey

An international team of scientists and cartographers has released the most detailed map ever of the

seafloor of the Southern Ocean surrounding Antarctica. It covers 48 million km<sup>2</sup> (19 million miles<sup>2</sup>) and

includes the deepest spot yet found in the region.

Despite intense efforts, beginning with the voyage of *HMS Challenger* in 1873, the seafloor of the world's

oceans still remains largely a mystery. According to the National Oceanic and Atmospheric Administration

(NOAA), only 10 percent of the bottom of the ocean has been mapped using modern sonar methods and

the ocean maps that one sees in various places hide the fact that these are based on very incomplete

, low-resolution data.

This isn't surprising because the Earth's surface is three-quarters water and reaches depths of up to

10,984 m (36,037 ft). Worse, the ocean floor is highly dynamic and changes with surprising speed,

so organizations like NOAA and the Royal Navy must constantly dispatch survey ships to make sure

navigational charts are kept up to date.

This means that the sort of comprehensive maps we have of the land masses, for all their faults,

simply aren't practical. As a result, bathymetric surveys conducted by ships like the British

Antarctic Survey's RRS James Clark Ross have to be supplemented by depth soundings

from commercial and research vessels as they go about their business.

Called the International Bathymetric Chart of the Southern Ocean (IBSCO), the latest map

will not only help ships navigate the waters safely, but will also provide scientists with a valuable

research tool to better understand the environment, weather, and climate in the region. It extends

the range of the previous map by 10 degrees north and covers a 2.4 times larger area. Divided into

500-m (1,640-ft) grid squares, 23 percent of these map squares have at least one modern sonar

depth measurement.

Of particular interest is the new map's inclusion of the Factorian Deep, which is the deepest point

known in the Southern Ocean. Bottoming out at 7,432 m (24,380 ft), it's located in the South Sandwich

Trench, which lies about 100 km (62 miles) east of the South Sandwich Islands. It was discovered in

2019 by the crewed submersible DSV *Limiting Factor* after which it was named at the suggestion of

the expedition leader [Victor Vescovo](#) .

"This map has huge implications for scientific research" said Rob Larer, Geophysicist at BAS and

co-author of the map. "It will help us understand how the shape of the seafloor is affecting the paths

of major ocean currents and the way the ocean water mixes, which affects how it transports heat and t

hen influences temperatures around the world. This is a hugely important element for predicting climate change."

The IBSCO can be downloaded at the [project website](#) and the research was published in [Pangea](#)

.

Source: [British Antarctic Survey](#)

