

THE REPORT OF
OCEAN
EXPLORATION
2020
A NATIONAL FORUM



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aquariumofpacific.org/ocean_exploration_2020_report
<http://oceanexplorer.noaa.gov/oceanexploration2020/nationalframework.html>

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Ocean Exploration

Being territorial animals, we instinctively explore. In the struggle for existence we scout for both threat and opportunity. Territory implies land, but most of the unexplored earth is ocean. The Census of Marine Life (2000-2010) collected tens of millions of observations of marine species from old and new expeditions. We organized data on more than 200,000 forms of marine life. We mapped the known and thus also defined the blank spaces, the unknown.

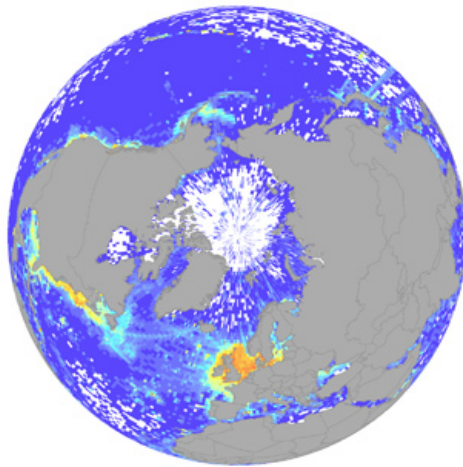


Figure 1

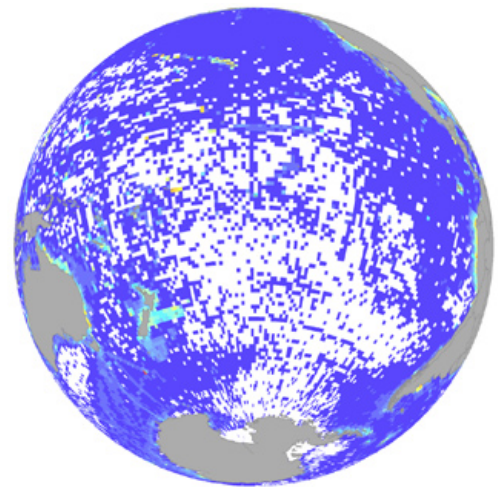


Figure 2

When we mapped from above the seas, we found, for example, that even our huge database had no reliable records of marine life in most of the Arctic (*Figure 1*) or the eastern and southern Pacific (*Figure 2*).

When we mapped over the ship's side, we found that our huge database recorded almost entirely near the shore, surface, and seafloor (*Figure 3*). The largest habitat on Earth, the vast mid-waters, had almost no observations.

Moreover, between about half a million and two million marine species that would earn a Latin binomial like *homo sapiens* surely remain to be discovered. And inspire us with the wonder of creation.

Census researchers mapped the unexplored oceans for life. Marine historians and archaeologists could try to map the one million or more shipwrecks on the sea floor and put pins on the few that have been visited.

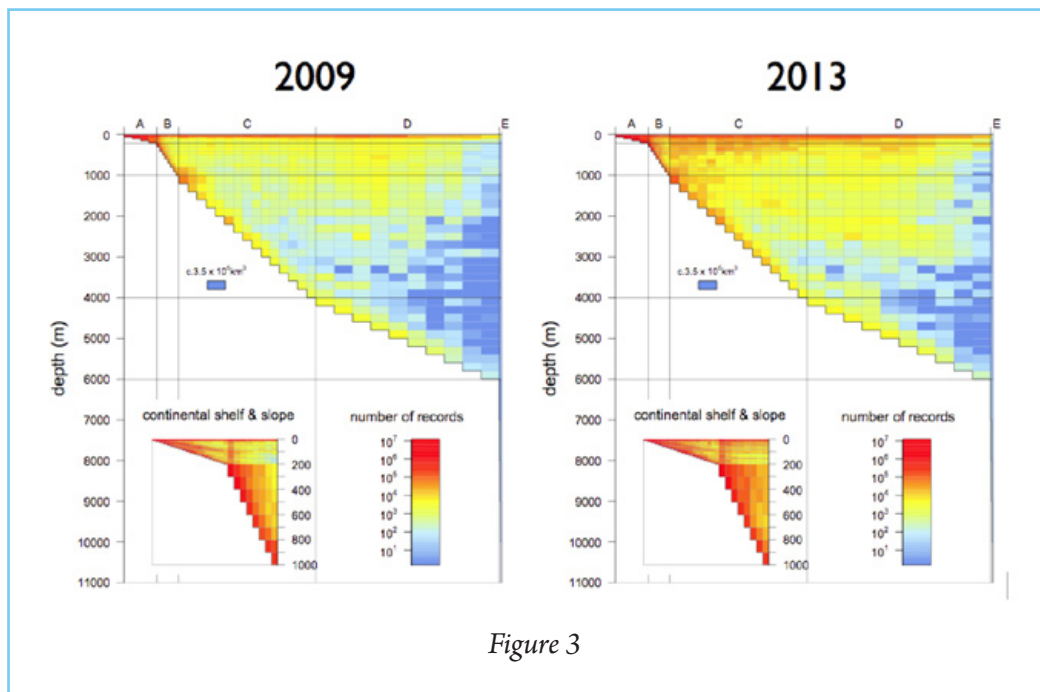


Figure 3

But, of course, we do not know what we do not know, except that surprises await. Maybe giant plumes of methane occasionally stream from the seafloor and sometimes reach the atmosphere and cause an airplane to crash, or erupt in a great bubble that causes a tsunami. And hint at unexpected resource abundance.

The unexplored ocean offers both threat and opportunity. Let's follow our instinct, expand exploration, reduce threat, and seize opportunities, both practical and amazing.

Jesse Ausubel

Rockefeller University and
Co-founder, The Census of Marine Life

Records in the Ocean Biogeographical Information System (OBIS) per 1 degree cell, 2013. Red indicates numerous records, white none.

The density of taxonomically reliable observations of marine species according to water depth. The 2013 chart has around 20 million records, 2.7 times 2009.

Source: OBIS, Ward Appeltans.