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SEAMOUNT CONSERVATION

- Seamounts are underwater mountains of volcanic origin that rise from the seafloor. They are regarded as **hotspots of marine biodiversity** and are home to many **endemic species**.
- Seamount biodiversity and ecosystems face a number of threats including deep sea bottom fishing and deep sea mining.
- Damage to seamounts and their overexploitation can have widespread consequences on **ocean health, food security, medicine** and other benefits that oceans provide to humans.
- Many aspects of seamounts are poorly understood: **fewer than 300 out of 200,000 existing seamounts** have been explored so far.
- There is an urgent need to ensure seamount conservation through measures such as **marine protected areas**. Threats to seamount ecosystems need to be taken into account when developing **environmental impact assessments** of activities that may affect them. A clear set of rules is also needed for sample sharing and use of **genetic resources** derived from areas beyond national jurisdiction.

What is the issue?

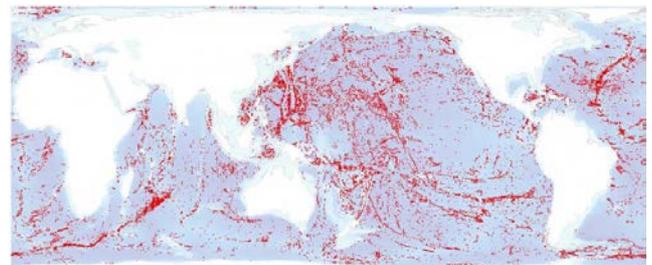
Seamounts are underwater mountains of volcanic origin that rise from the seafloor. Regarded as hotspots of biological diversity in the ocean, seamounts serve as spawning sites for many species. Marine mammals such as whales and dolphins and large predators such as sharks rely on them to feed and rest during migrations. Thanks to their isolation, seamounts can exhibit high levels of biological endemism, which means that many species that occur in or around seamounts cannot be found anywhere else on the planet.

However, many aspects of seamounts are poorly understood: fewer than 300 out of 200,000 existing seamounts have been explored so far.

Seamounts are mostly found in marine areas beyond national jurisdiction (ABNJ) – areas covered by fragmented legal frameworks which leave their biodiversity vulnerable to growing threats. Discussions to fill these legal gaps by creating an implementing agreement to the UN Convention on the Law of the Sea (UNCLOS) are currently underway.

Seamount biodiversity and ecosystems face a number of threats including deep sea bottom fishing and deep sea mining. Many seamount species grow and reproduce slowly and are therefore highly vulnerable to unsustainable fishing and mineral exploration, through potential overexploitation and habitat destruction. Seamount ecosystems have low ability to recover from such damage and no evidence of regrowth has been documented in these

ecosystems. Other threats include pollution, invasive alien species, ocean warming, deoxygenation and ocean acidification.



Global seamount distribution

© Yesson et al., 2011

Why is this important?

Seamounts play an important and only partially understood role in marine ecosystems, extending well beyond the seamounts themselves. Damage to seamounts and their overexploitation can have widespread consequences on ocean health, food security, medicine and other benefits that oceans provide to humans. Inversely, their conservation can help advance towards several Sustainable Development Goals (SDGs) including SDG2 – to end hunger and achieve food security, and SDG14 – to conserve and sustainably use the oceans.

Two-thirds of fish stocks in areas beyond national jurisdiction are being fished beyond sustainable limits and this is also affecting fish yields in exclusive economic zones (EEZs) – zones in which states have sovereign rights and duties related to the use and management of natural resources. Overfishing in the oceans threatens global food security as it disrupts

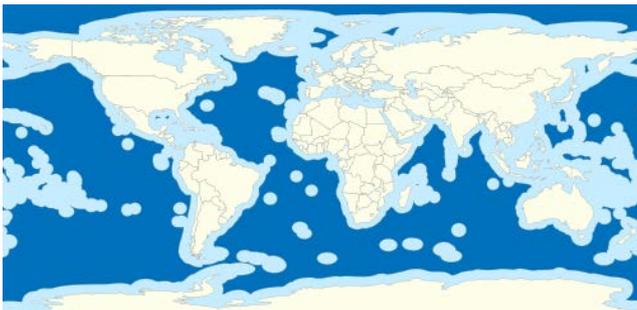
marine communities and creates an imbalance between species, with commercially-important fishes unable to replenish their stocks.

The high level of biological endemism of seamount ecosystems and the fact that seamounts remain largely unexplored mean that they may contain new genetic resources that could be used to develop new medicines.

What can be done?

Threats to seamounts and their associated biodiversity need to be taken into account in the development of schemes aimed at conserving marine biodiversity in ABNJ.

Improving global governance of ABNJ: The UN Convention on the Law of the Sea (UNCLOS) sets out the obligations of States to protect, conserve and manage the ocean, including ABNJ. However, it does not create comprehensive means for ensuring conservation, leaving most activities largely unchecked. Negotiations are underway to create an Implementing Agreement to UNCLOS, which would help close the existing ABNJ governance gap.



Areas beyond national jurisdiction (dark blue) represent 50% of the planet's surface © B1mbo CC BY-SA 3.0 CL

The agreement would complement existing regional and sectoral conservation measures by creating a set of common principles, criteria and standards. It would also help ensure the coordination of the various sectoral and regional bodies involved in ABNJ, and adopt mechanisms to establish globally recognised marine protected areas. A clear set of rules for sample sharing and use of genetic resources derived from ABNJ, promoting transparency and the involvement of users from all countries, is also needed.

Improving management of fish stocks in ABNJ, including monitoring and control of fishing activities by all states: This can involve long-term closures of vulnerable marine areas to fishing activities, ensuring fishing activities avoid contact with the seabed and precautionary catch limits to prevent overfishing, and a requirement for environmental assessments of activities that may adversely impact fish stocks and

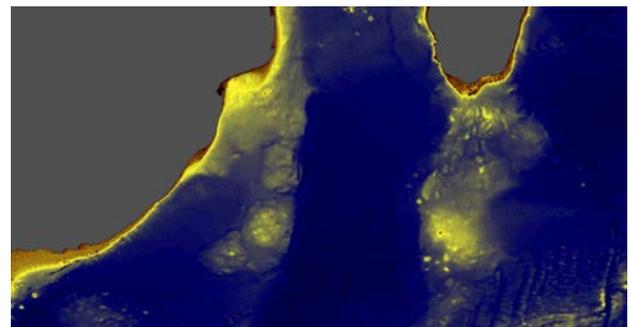
ecosystems. Coastal or flag states can also adopt measures to ensure deep sea fisheries adhere to international guidelines, and remove subsidies which encourage industrial fishing in ABNJ.

Increasing engagement of international and regional organisations:

For example, the International Seabed Authority (ISA), responsible for mineral resources of the deep seabed in ABNJ, and the International Maritime Organization (IMO), responsible for shipping activities, can limit their activities in areas designated as vulnerable to damage.

Networks of marine protected areas can also limit or ban human activities in ecologically or biologically significant areas, preventing environmental degradation.

An expedition exploring the Walters Shoal seamount south of Madagascar (23 April to 18 May 2017) is a key stage in an IUCN-led project aimed at improving the conservation and sustainable use of seamount ecosystems in the South West Indian Ocean.



Map of expedition study area showing ocean depth (South African coast to the left, Madagascar to the right) © IRD

Where can I get more information?

Information on seamount conservation can be found here: iucn.org/marine-and-polar/our-work/international-ocean-governance/conservation-seamounts-ecosystems

Information on the expedition to the Walters Shoal seamount can be found here: iucn.org/science4highseas