

Overview

Marine



Figure 1: do we need a caption?

South Africa has exceptional marine biodiversity with 163 marine ecosystem types and high marine endemism linked to the intersection of three oceans and two contrasting current systems interacting with a diverse topographic and geological setting. Our marine biodiversity underpins food and job security, an expanding ocean economy and is part of the deep cultural and spiritual values of South Africa's oceans. The 2025 National Biodiversity Assessment identified key marine ecosystems, species and benefits at risk and co-developed priority actions to safeguard ocean life and livelihoods and maintain the many benefits of South Africa's exceptional marine biodiversity.

45%
of 163 ecosystem types
Threatened

20%
of 163 ecosystem types
Well Protected

17%
of 163 ecosystem types
Not protected

36%
of 496 taxa assessed
Threatened



Marine Biodiversity Assessment

Figure 2: Caption to be added

Ecosystems

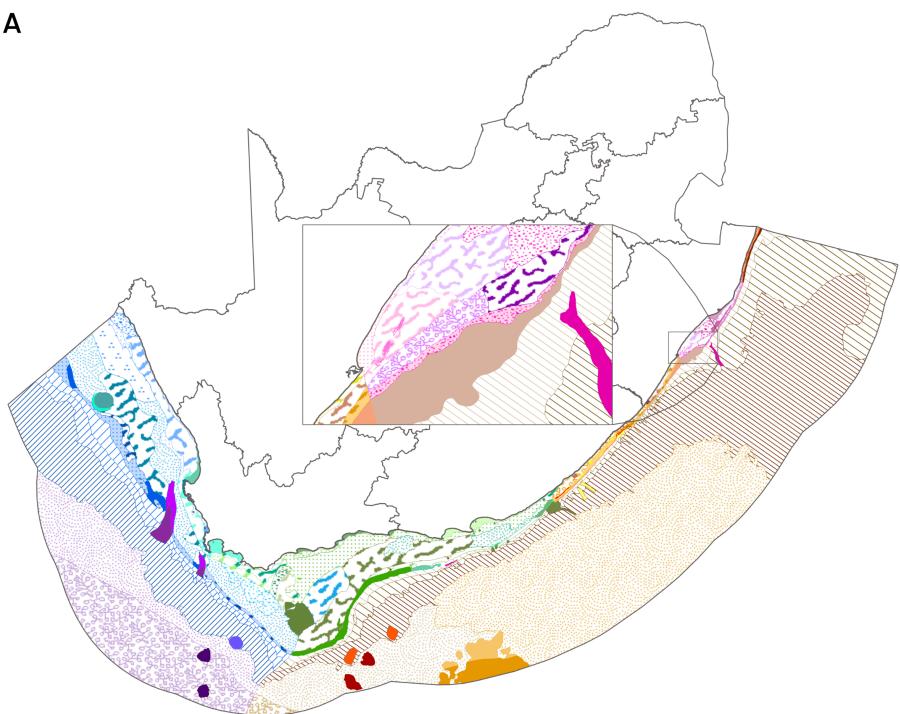
Of South Africa's 163 marine ecosystem types, 45% are threatened with ecosystems with restricted distributions and less extent at greater risk. Several small high value ecosystems, are at risk of ecosystem collapse which could compromise food, job and climate security (link to KMA2). Coastal and shelf

ecosystems are at higher risk of ecosystem collapse with bays, deepwater biogenic beds, muddy shelves and rocky ecosystems on the shelf comprising the most threatened ecosystem functional groups. Unless collaborative efforts are made to improve ecosystem condition in these functional groups, the services from these ecosystems are at risk (link to KMA2). More than 80% of South Africa's 163 marine ecosystem types now have some representation in the MPA network but only 20% are Well Protected (link to KMB4). Slopes, abyssal plains, muddy and rocky shelves and open oceans are the most poorly protected ecosystem functional group. Increasing extent of protection alone will not advance marine ecosystems to well protected. The condition of marine ecosystems in MPAs needs improvement (link to KMC2), and marine conservation needs to better consider and involve people (link to KMC1), diversify protection models and address issues that undermine legitimacy. In the marine realm, 17% of ecosystem types are both highly threatened and under protected (link to intersection of ets and epl ?) , prevalent on the West Coast, the western Agulhas Bank shelf edge, the inshore of the Agulhas Bank and parts of the Kwazulu-Natal Bight.

Species

Marine species status is considered in terms of stock status and IUCN red list status. There is increasing knowledge on stock status of resources (discuss word resources with Meg) with evidence of resource recovery for some species, linked to improved fisheries and spatial management (link to KMA5) showing that fish stocks can recover with effective collaborative management of effort, catch and area. However, some inshore resources are increasingly depleted and abalone and west coast rock lobster are Endangered with illegal fishing playing a key role in the poor status of these species (link to KMA6).

A



B

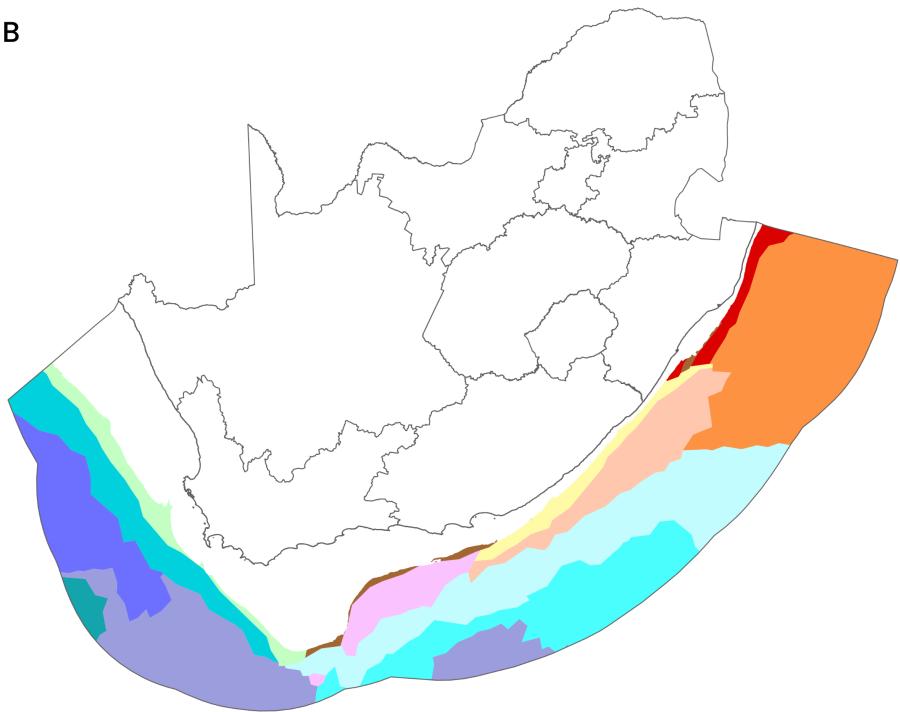


Figure 3: Map of the 163 marine ecosystem types in South Africa, including (A) 128 combined benthopelagic (shelf) and 22 deep-sea benthic (deep-sea) types and (B) 13 deep-sea pelagic types. The insert on A shows the transition between the Natal (warm colours) and Delagoa ecoregions (pink/purple colours). The map can be downloaded from [BGIS](#) and the key is available on the [Marine Ecosystems](#) page.



Of the 497 (update post corals) marine species assessed using the IUCN Red List criteria, 36% (update) are considered threatened ([link to KMB1](#)). However, this is not representative of the actual proportion of taxa threatened as there has been a focus on assessing at-risk species and economically important taxa and with few comprehensively assessed marine taxonomic groups leading to an inflation of threat. Marine species continue to have the highest levels of data deficiency across all realms signalling the need to address knowledge gaps and increase capacity for marine species red listing ([link to KMC3](#)). High levels of data deficiency compromise effective species and ecosystem management, spatial planning and decision-making. Sharks, rays and chimaeras are one of the most threatened groups across all realms with 41% being threatened ([link to shark page](#)). A re-assessment of South Africa's seabreams ([link to seabream page](#)) show 10 (24%) of the 42 assessed seabreams are threatened but three seabreams have improved in terms of threat status and 2 have become more threatened.

In the marine realm, increased risk to species is attributed to multiple pressures ([link to pressures?](#)) with overfishing; including by industrial, recreational and illegal fisheries; lethal shark control measures; coastal mining; estuarine degradation; flow reduction and pollution contributing to worsening species threat status.

Pressures and condition

There are many interacting pressures cumulatively affecting marine ecosystems and species. The main pressures impacting marine biodiversity include fishing, coastal development (including ports and harbours), pollution, shipping, freshwater flow reduction, lethal shark control and climate change. Fishing, petroleum activities and shipping are widespread sectors resulting in many pressures on multiple ecosystem components and species. Fishing, particularly industrial fishing, continues to exert the greatest pressures on marine biodiversity impacting ecosystems, species and genetic diversity ([link to KMB3](#)).

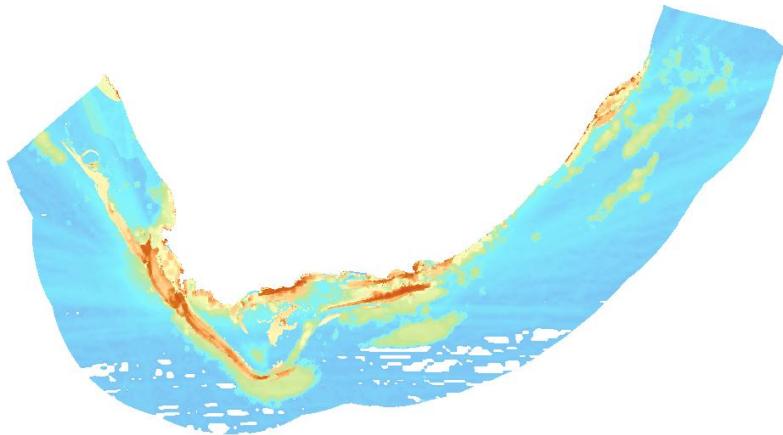


Figure 4: Map of cumulative pressure used in the NBA 2018.

Hotspots of degradation and cumulative impacts are often driven by the location of ports and harbours, which increase access for fishing, alter shorelines and circulation, increase pollution and facilitate the introduction and spread of invasive species. Pollution including chemical, agricultural, (sewage) and noise pollution are key escalating pressures. Seismic surveys to detect potential offshore oil and gas resources have been expanding into deeper waters and together with shipping and other sources of underwater noise, pose uncertain risks

to marine ecosystems. South African ocean activities are expanding and diversifying as South Africa develops its ocean economy. Emerging pressures include escalating pollution concerns including industrial and agricultural pollution, ocean noise and renewable energy installations.

The first groundtruthing of marine ecosystem condition shows that pressure mapping is an effective proxy at broad national scales, but that finer scale pressure mapping can improve condition estimates. Despite their importance in spatial planning, most marine pressure data are outdated leading to missing pressures, poor resolution of some pressures and underestimation of pressure impacts on ecosystem condition. Planning & management decisions based on broad scale cumulative impact scores could misrepresent the actual condition of the environment, especially at finer scales. Cumulative pressures warrant consideration at multiple scales particularly in evaluating impacts of expanding and diversifying ocean economy activities. Failure to account for indirect and cumulative impacts will mean that potential impacts are missed and poor spatial planning and decisions are likely with negative impacts on people and the environment.

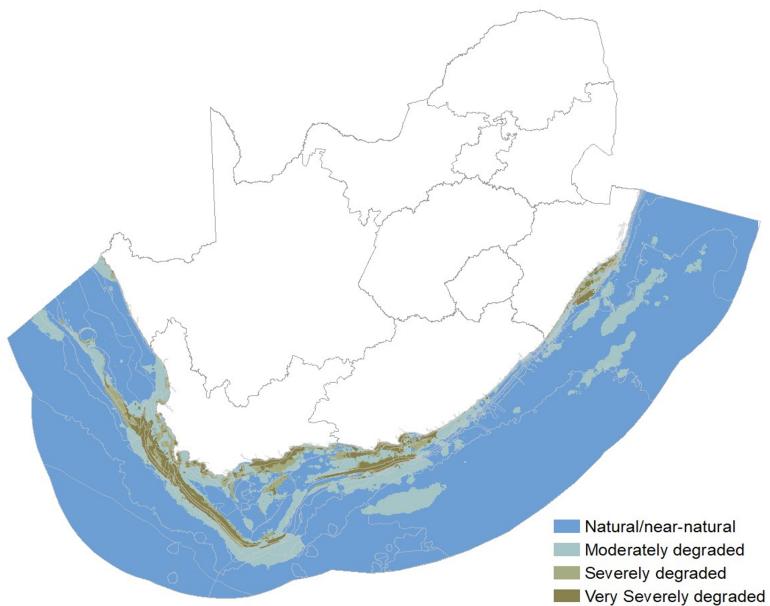


Figure 5: Map of ecosystem degradation showing the spatial distribution of marine areas in natural/near natural, moderately degraded, severely degraded or very severely degraded state.

Priority actions and areas

Drawing from the key findings of this assessment, a number of priority actions were co-developed to improve the state of marine ecosystems and species. Science-policy workshops and other engagements were held to bring researchers, decision makers and knowledge holders together to consider evidence and make joint recommendations to address findings. More than 70 (update) individual actions were advanced but these have been packaged into broad areas of action with several indicators developed to support the tracking of progress in terms of identified action to improve the state of marine biodiversity in South Africa. Priority areas to protect, restore and recover ecosystems and species have been identified and are being improved with increased participation, collaboration and technical innovation.



Figure 6: The Science to Policy Workshop November 2024. (c)
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Key publications

Sink, K.J., van der Bank, M., Majiedt, P.A., Harris, L., Atkinson, L. & Karenby, N., 2019. *National Biodiversity Assessment 2018: Technical Report Volume 4: Marine Realm*. Pretoria: South African National Biodiversity Institute.