MarXiv Summary

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Indicators for evaluating the protection of MPA networks.

Not all MPAs are created equal, in terms of biodiversity conservation. Many MPAs allow extractive uses like fishing or oil prospecting, while other “no-take” MPAs prohibit such uses. Some MPAs are isolated from other protected sites, while others utilize network effects to increase larval dispersal and survival of protected species. With the current Convention on Biological Diversity target of protecting 10% of marine and coastal areas by 2020, can size alone determine if an MPA is living up to its name? No. Therefore, the authors propose a set of indicators to measure the level of protection of MPA networks:

1. Trend in the number of MPAs
 - Are the number of MPAs in the network increasing or decreasing?
2. Trend in the total area protected
 - Including area protected by new MPAs, expansion of existing MPAs, shrinking existing MPAs, and removing MPAs.
3. Trend in size class distribution of MPAs
 - Larger MPAs are generally considered better at affording protection. MPAs were classified using a log-scale, i.e. $<1 \text{ km}^2$, $1\text{--}10 \text{ km}^2$, etc.
4. Trend in the level of protection for marine species
 - Includes both policy and zoning changes, i.e. were more extractive activities permitted?
5. Trend in biodiversity representation
 - Are more/less marine species afforded protection?
6. Trend in management effectiveness
 - Are these just “paper parks”?
7. Trend in level of connectivity
 - How well are MPAs connected to one another, according to the dispersal capabilities of protected species, oceanic currents, etc.?
8. Trends in pressures on the marine environment
 - Are MPAs located in areas that actually need protection?

The authors used Australia’s MPA network as a case study. Unfortunately, data on management effectiveness for Australia’s MPAs were not readily available for the entire network and were thus excluded from this case study. Results from this study show that while Australia’s MPA network has increased in size, it offers little actual protection.

This is a summary of:
Measuring progress in marine protection: A new set of metrics to evaluate the strength of marine protected area networks

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