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The Big Picture: The continuing debate over the value of large vs. small MPAs, and what it means for the field

An opinion piece published in the New York Times in March 2018 – "Bigger Is Not Better for Ocean Conservation" – raised anew the issue of whether MPA designations should focus on large offshore sites or smaller inshore ones. The author, Luiz Rocha of the California Academy of Sciences, called the trend of designating large offshore MPAs disturbing, and recommended such protection should not come before coastal waters are secured.

This criticism of large offshore MPAs is not the first published, nor likely the last. The main criticism of large offshore MPAs is usually that they protect areas where current use levels and threats to biodiversity are relatively low – in other words, areas that are not in immediate need of protection. At MPA News we have heard this argument many times in the past decade, particularly as very large MPAs have grown more common.

However, if the world is to reach Aichi Target 11 under the UN Convention on Biological Diversity (that 10% of marine areas are effectively conserved by 2020) ... or Target 5 under the UN Sustainable Development Goal 14 (also 10% by 2020) … or, more ambitiously, the call by IUCN members for 30% of the ocean to be set aside in MPAs by 2030 – then large MPAs are a necessity.

According to the World Database on Protected Areas, MPA coverage is now 7% of the global ocean, and nearly all of that is from large offshore MPAs. The 20 largest sites make up 70% of global MPA coverage. Although there are thousands of inshore MPAs worldwide, their median size is less than 3 square kilometers each. If the world were to withhold designations of large offshore MPAs until coastal waters were all protected, we might never get to 10%. (All of this, of course, raises the issue of numerical targets, which are driving much of the designation of large offshore MPAs. Such targets have strengths and weaknesses as MPA News has covered, as far back as 2002.)

The opinion piece by Rocha drew support from several individuals in the MPA community, as can be seen in comments later in this article. But it also drew a range of public critiques:

- "Embracing Yes/Also: Marine Protected Areas Are Not An Either/Or Proposition" by Rick MacPherson
- "To Save the World's Coral Reefs, Bigger – and Smaller – Are Better" by 'Aulani Wilhelm
- "Palau's Ocean Protections" by Palau President Tommy Remengesau
- "Addressing Criticisms of Large-Scale Marine Protected Areas" by Bethan C. O'Leary et al. (This article was authored prior to the Rocha piece but was published in *Bioscience* journal after it, and effectively serves as a rebuttal.)

Assuming that a size range of MPAs is necessary – large offshore ones to help meet the global targets, represent offshore ecosystems, and provide other potential services*; and smaller inshore ones to protect areas that are under more immediate threat – the argument that one type is less worthy than the other may be counterproductive. A better question for the long term might be: How do we achieve both in ways that are successful ecologically, politically, and socioeconomically?

MPA News reporter Christina Reed asked several MPA experts – Rick MacPherson, Tundi Agardy, José Truda Palazzo, David Obura, Enric Sala, and Luiz Rocha – for their insights on the ongoing debate over MPA priorities. Their responses are below.

* For example, large offshore MPAs have been proposed to serve as essential climate change refugia by encompassing the range shifts of marine species that have been thermally displaced.

Rick MacPherson: "Establish MPAs where there is need, opportunity, and willingness"

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Editor's note: Rick is a marine ecologist, conservationist, and science writer, and is principal and founder of Pelagia Consulting. He has worked worldwide in field-based tropical marine science and coral reef conservation, MPA planning and management effectiveness, community-based conservation, and more.

On why the debate over large vs. small MPAs keeps happening

Look, we are working on trying to reverse ocean health trajectories that are declining in almost every way. People have invested their lives into their science or their conservation work and have strong attachments to the ecosystems. The stakes are very high, and the cost of losing is being measured in unimaginable losses to biodiversity, impacts to ocean function, and future livelihoods of people who are dependent on that healthy ocean. So I understand that arguments and passions will flare now and then.

On what MPA planning efforts should ideally look like

There is a lot of ocean out there in need of protection. And that's going to mean a lot of people, communities, organizations, and governments working on all levels along a continuum of MPA size and scale, near-shore to remote, as well as a diversity of habitats. The process should be guided by urgency that factors threats, community interest, and willingness, as well as what the science tells us.

But another calculus might also factor in the presence of political will for protection, or the lack of conflicting interests on use. I recognize that may play into the (incorrect) trope used by some critics that big MPAs are "easy" to create because they are established in areas with little conflict over restricting use or areas of little urgency. This is a false dichotomy of choices. The reality is that we need to establish MPAs where there is need, opportunity, and willingness. The creation of new MPAs should be motivated out of a reaction to existing threats, but MPA planning must also consider an anticipatory approach. Otherwise we are only playing defense. Our lists of where these characteristics are met may not match, but that should not stop the process of moving forward where we can on seeking protection.

Tundi Agardy: "I would be happy with a world in which no Aichi or other targets are met but 100% of the ocean is protected from direct and indirect degradation"

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Editor's note: Tundi is a marine conservationist and founder of Sound Seas. She is also Contributing Editor to Marine Ecosystems and Management newsletter.

On the large vs. small debate

I have pretty strong feelings that we urgently need to invest time and money in using spatial protections where they are *most needed*. So I agree with the idea that forsaking complicated coastal areas suffering from an onslaught of pressures in order to quickly establish flashy, large MPAs (that are often too big to manage) is not strategic. It can lead to animosity that has huge opportunity costs. And there are issues, too, with efficacy: with limited conservation funds and energy, we should be targeting the areas that are the most ecologically important to the wider set of ocean ecosystems. And these areas are predominantly coastal or estuarine.

I believe there could also be much broader support for MPAs in these coastal regions, especially if they are pitched as a means to protect current and future values that broad groups of stakeholders enjoy. I don't believe that large MPAs in remote areas, especially those quickly decreed by governments being pushed by donors, will ever garner the same broad support, since people do not see the connection between that kind of conservation and the quality of their own lives. In contrast, big MPAs like the Great Barrier Reef Marine Park, and small ones like Apo Island in the Philippines, have solid support because the benefits of protection are widely understood.

So to be really strategic, I would advocate identifying where the critical areas are, identifying which of those are under the most threat, determining the precise nature of those threats (because this will inform what kind of MPA can provide a solution), and *then* finding opportunities where MPAs can realistically be implemented in a successful manner. Maybe that will lead to large MPAs offshore or in remote archipelagos, or maybe that will lead to small coastal MPAs. I don't think it has to be an either/or. But I do think we need to be honest about what an MPA can and cannot achieve, and we absolutely cannot tolerate paper parks.

On numerical targets for MPA coverage

Targets have become a necessary evil. Necessary because we do need ways to know how we are faring with our collective investments in protection, and we need ways to hold countries accountable to the commitments they make in the heat of the moment. But evil because we see time and time again that targets are misused, with claims being made of "protection" when none exists, and where the rush to make targets means that mechanisms for building trust with communities and users are pushed aside as being too time-intensive.

I would be happy with a world in which no Aichi or other targets are met but 100% of the ocean is protected from direct and indirect degradation, with the broad support of wide swaths of society.

José Truda Palazzo: "I used to be a skeptic of numerical targets"

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Editor's note: José is a marine conservation consultant, activist, and writer in Brazil.

On how the large vs. small question plays out in Brazil

Over time I have worked to identify, write proposals for, and undertake the political lobbying to get MPAs designated in Brazil. The earliest and smallest MPA (0.5 sq. miles) was Ilha dos Lobos Wildlife Refuge, a rocky outcrop that harbors an important pinniped colony. Then the National Marine Park of Fernando de Noronha in 1988, in one of our oceanic archipelagos, with 109 km^2; the Environmental Protection Areas of Anhatomirim/Bay of Dolphins in 1992 and Right Whale in 2000, both coastal areas off Santa Catarina State with 44 km^2 and 1549 km^2 respectively. Then, last month, the two large oceanic archipelago and seamount mosaics of São Pedro & São Paulo and Trindade & Martin Vaz with over 900,000 km^2 combined, of which approximately 111,000 km^2 will be no-take zones.

In countries like Brazil you have two main hurdles to get MPAs established. One relates to the issue of inspiring people to do it. We face (as many other developing countries do) socio-economic and structural problems that make most of the population – and politicians – disregard biodiversity conservation as a priority, or its importance to sustain economic development and quality of life. The other is the fact that certain sectors, such as fisheries and mining (especially the oil industry), have a disproportionate influence within government bureaucracies and parliaments, doing what they can to impede any progress in marine conservation. As a result, it is difficult to get coastal MPAs established – with the exception of "extractive reserves", which are multiple-use areas designed for sustainable artisanal fishing but rarely managed to achieve it.

On numerical targets

I used to be a skeptic of numerical targets. But seeing how they influence the mindset of my own government bureaucrats towards the need to *do* something in a certain time frame, I revisited my skepticism and I have to admit that they do work.

And as someone who works also with the conservation of whales and sharks, I very much support the large oceanic MPAs. It is simply not true that they make coastal MPAs become neglected. We are now working towards bringing up several coastal MPAs for Brazil that are already in the government pipeline. Whether or not they are designated will have nothing to do with targets or the previous establishment of oceanic ones, but rather with our capacity to overcome the domestic political hurdles to their establishment, which is (and has always been) a step-by-step and case-by-case struggle.

David Obura: "We need to move toward the perspective that the right modes of protection are needed"

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Editor's note: David is the coordinator for Coastal Oceans Research and Development - Indian Ocean (CORDIO) East Africa, supporting activities in mainland Africa and Indian Ocean island states. The primary focus of CORDIO East Africa is the implications of threats to the health of coral reefs and their long-term prospects and provision of socio-economic benefits.

On the large vs. small debate

It is not that we shouldn't protect the least impacted sites, which may be large and offshore. But we have to develop a diverse portfolio. In the long run, 100% of the planet's surface will have to be managed somehow, and hopefully in all cases to improve condition (except where full transformation is unavoidable, e.g., a city or mine, etc.). Species need a size, type, and location of protection that is relevant to their life history, and in many cases this may not mean a large MPA in remote, not-impacted places.

We need to move toward the perspective that the right modes of protection are needed. In many cases a spatial tool such as a no-take zone is the most effective and practical, especially where there is high diversity and limited knowledge. But as knowledge increases, more and more nuanced management can be developed. Also, the scale of protection needs to match people: their awareness, use types, tenure, etc. In moderately to densely populated locations (which coastlines are increasingly becoming), this also means the size of no-take zones must necessarily be limited, so that an individual can access use zones with the relevant technology that they have access to.

What we don't know yet is if this requires 10% or 50% targets (or whatever) for no-take or highly restricted use.

On numerical targets

Targets are useful for motivating action, but they are arbitrary (certainly the timeframes). So meeting a 10% target by 2020 in which, say, only 1/4 or less of sites are effective could even be damaging, as the rancor in these debates suggests it could be. If better work would help us meet a longer-term goal more successfully, that would be a better outcome.

Luiz Rocha: "Every dollar we put in a large and ineffective MPA is a dollar we take from potentially effective conservation"

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Editor's note: Luiz is Associate Curator and Follett Chair of Ichthyology at the California Academy of Sciences. He is also an adjunct professor at the University of California Santa Cruz and San Francisco State University.

On numerical targets

I think the targets should be changed or removed entirely. If changed, they should not be based on area, but rather on other measures that reflect a biological outcome. For example, instead of protecting 10% of the oceans, we should be talking about improving the situation of endangered species. I do a lot of work for IUCN, mainly in the form of evaluating the extinction risk of coral reef fishes to assign them a Red List category (vulnerable, endangered, etc.). One of the groups I work on is groupers. Their status has to be evaluated every 10 years, and we (a group of about 20 biologists) did the first evaluation in 2006. We met again in 2017 to re-evaluate the groupers, and even with the creation of all of these large MPAs, not a single species had their status changed. About one-third of the groupers (30 species or so) remain in the same threatened category they were 10 years ago. Our current approach is not working.

On the large vs. small debate

We are losing the fight against the biodiversity crisis. We have limited resources. Every dollar we put in a large and ineffective MPA is a dollar we take from potentially effective conservation. With large offshore MPAs it is possible that we are protecting against future threats, but I would argue that our resources are much better used protecting areas from current threats, and there are many areas in desperate need of urgent protection.

This is not unique to marine ecosystems – the same thing is happening in the Amazon, for example. The protected areas there are as far from the edges of the forest as possible: we are "protecting" areas in inaccessible zones of the Amazon while letting deforestation continue unchecked along all of its edges. The end result of this will be 90% of the Amazon gone, and that's optimistic. I simply do not want this for the oceans. It is not good enough and will lead to many species going extinct.

The worst thing about large offshore MPAs is that they give the impression of protection without actually protecting anything (example: banning commercial fishing where commercial fishing never happened). Classic bluewashing. Everyone goes home thinking they did something good but species continue declining.

Enric Sala: "Arguing against large MPAs is a zero-sum-game view"

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Editor's note: Enric is a National Geographic Explorer-in-Residence. He founded and leads National Geographic's Pristine Seas, a project that combines exploration, research, and media to inspire country leaders to protect the last wild places in the ocean.

On large MPAs

Arguing against the creation of large MPAs is a zero-sum-game view of conservation. Academic wishes of optimality should not trump opportunity in the real world. We need more fully protected areas (at least 30% of the ocean), large and small, nearshore and offshore – and to manage fisheries much better. Would anyone seriously argue against the creation of large national parks on land? Let's not demonize current large no-take areas. They are not the problem; they are part of the solution.

- By Christina Reed, MPA News reporter

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