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Commentary

Avoiding the misuse of other effective area-based conservation measures in the wake of the blue economy

Joachim Claudet,[1,*] Natalie C. Ban,[2] Jessica Blythe,[3] Johnny Briggs,[4] Emily Darling,[5] Georgina G. Gurney,[6] James E. Palardy,[7] Elizabeth P. Pike,[8] Vera N. Agostini,[9] Gabby N. Ahmadia,[10] Stuart J. Campbell,[11] Graham Epstein,[12] Estradivari,[13] David Gill,[14] Amber Himes-Cornell,[9] Harry D. Jonas,[10] Stacy D. Jupiter,[15] Sangeeta Mangubhai,[16] and Lance Morgan[8]

[1]National Center for Scientific Research, PSL Université Paris, CRIOBE, CNRS-EPHE-UPVD, Maison de l'Océan, 195 rue Saint-Jacques, 75005 Paris, France
[2]School of Environmental Studies, University of Victoria, PO Box 1700 STN CSC Victoria, BC V8W 2Y2, Canada
[3]Environmental Sustainability Research Centre, Brock University, 1812 Sir Isaac Brock Way, St. Catharines, ON, L2S 3A1, Canada
[4]The Pew Bertarelli Ocean Legacy Project, 901 E St NW, Washington, DC 20004, USA
[5]Marine Program, Wildlife Conservation Society, 2300 Southern Boulevard, Bronx, NY 10460, USA
[6]Australian Research Council Center of Excellence for Coral Reef Studies, James Cook University, QLD 4810, Australia
[7]The Pew Charitable Trusts, 901 E St NW, Washington, DC 20004, USA
[8]Marine Conservation Institute, 1914 N 34th St, Suite 400, Seattle, WA 98103-9090, USA
[9]Fisheries and Aquaculture Division of the Food and Agriculture Organization, Rome, Italy
[10]World Wildlife Fund, 1250 24th St. NW, Washington, DC 20037, USA
[11]Rare Indonesia, Jl. Cikurai No. 4, Kota Bogor, Jawa Barat, 16153, Indonesia
[12]School of Environment, Resources and Sustainability, University of Waterloo, Waterloo, ON, Canada
[13]Leibniz Center for Tropical Marine Research (ZMT), Fahrenheitstraße 6, 28359 Bremen, Germany; Marine Ecology Department, University of Bremen, Bibliothekstraße 1, 28359 Bremen, Germany
[14]Duke University Marine Laboratory, Nicholas School of the Environment, Duke University, Beaufort, NC, USA
[15]Wildlife Conservation Society, Melanesia Regional Program, 11 Ma'afu Street, Suva, Fiji
[16]Talanoa Consulting, 28 Disraeli Road, Suva, Fiji
*Correspondence: joachim.claudet@cnrs.fr
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Other effective area-based conservation measures (OECMs) represent unique opportunities to help achieve the 2030 biodiversity conservation agenda. However, potential misuse by governments and economic sectors could compromise the outcome of these conservation efforts. Here, we propose three ways to ensure that the application of OECMs toward meeting biodiversity targets provide benefits for both people and nature.

To halt biodiversity loss, many Parties to the Convention on Biological Diversity (CBD) have proposed protecting at least 30% of lands and seas by 2030. This policy goal has gained significant global support and will encourage continued expansion of national and international area-based conservation targets and commitments. At the same time, the blue economy is growing faster than the global economy[1] and human use of the ocean for food, material, and space is expanding at a rapid and increasing pace.[2] It is now urgent to ensure that area-based marine conservation measures can co-exist with increasing and competing sectors of the blue economy (e.g., fishing, tourism, shipping, hydrocarbons, deep sea minerals, and renewables)[2] and can be designed to deliver a wide range of ecological, social, and economic benefits.[3]

Marine-protected areas (MPAs) are geographically defined areas recognized, dedicated, and managed to achieve the long-term conservation of nature (IUCN WCPA 2018). They represent over 99% of the global areal extent of marine conservation, currently standing at 8.22% (www.protectedplanet.net). However, in many places, limited funding and capacity has led to the proliferation of paper parks,[4] competing priorities and lack of political will to restrict the growth of economically important sectors has led to an overrepresentation of underprotected MPAs,[5] and poor alignment of biodiversity conservation objectives with local values, needs, and governance has led to social injustices or non-compliance.[6] In brief, many MPAs are falling short on achieving marine biodiversity conservation.

Other effective area-based conservation measures (OECMs) are geographically defined areas that might not have biodiversity conservation as a primary objective but are governed and managed in ways that achieve positive and sustained long-term *in situ* biodiversity conservation outcomes. They can promote the integration of meaningful conservation actions into sectors not typically associated with the protection of biodiversity such as "fisheries, […], mining, energy, tourism and transportation" (CBD Decision 14/8), and are expected to complement MPAs for several reasons. First, as OECMs may be governed by a diverse range of authorities and arrangements, from national and tribal governments to local communities, they can support management aligned with local social-ecological contexts (especially where there

are tensions between traditional rights holders, other levels of government, and private sectors). As such, they can foster equity and inclusion of diverse values, knowledge systems, and ways of achieving conservation.[7] Second, as OECMs can be well-aligned with the needs of multiple local economic sectors and governance frameworks, they have the potential to advance multi-sectoral collaborations that would manage a broad suite of threats to biodiversity. Additionally, by recognizing the biodiversity outcomes of in-place and enforced management activities, OECMs may avoid the funding and capacity limitations that have undermined the success of many MPAs.[4] In brief, OECMs provide an opportunity to advance sustained, effective, and equitable conservation.

Nevertheless, OECMs present their own risks. Since the main objective of OECMs is rarely biodiversity conservation, but they can be counted toward and used to contribute to international area-based conservation targets, governments and private sectors could misuse this tool in pursuing economic interests and create critical risks to conservation outcomes. However, if the blue economy develops sustainably and compatibly with area-based conservation targets, OECMs can contribute to meeting the goal of biodiversity conservation.

Risks arising from a misuse of OECMs

A primary risk associated with OECMs is "blue washing." As with greenwashing, OECMs could become a re-labeling exercise with no net-gain—or even losses—for biodiversity (e.g., oil extraction or industrial fishing areas might be wrongly classified as an OECM). Since both OECMs and MPAs can be used to meet international conservation area-based targets, countries and sectoral interests opposed to the creation of (or are not in a position to create) highly and fully protected MPAs (most effective, but most restrictive MPAs)[8] may attempt to recognize OECMs without considering their long-term biodiversity conservation outcomes. An analysis of the 193 OECMs reported to date in the World Database on Protected Areas (Table 1) suggest this is a common phenomenon (but declaring OECMs is only in its infancy with only very few countries having started to report OECMs). Declaring an existing managed area as an OECM cannot, in and of itself, result in positive biodiversity conservation outcomes per se.

A second risk is the compartmentalization of conservation. OECMs could result in a narrow focus on individual sectoral impacts that would neglect cumulative threats to biodiversity and therefore have limited impacts on overall biodiversity (e.g., single-species protections). They could also lead to the stratification of marine conservation (e.g., gear ban benefitting only one part of the water column). While an OECM label should recognize the positive benefits of a single-sector approach on biodiversity conservation, this recognition could ignore compounded or multi-sectoral threats to biodiversity. For example, a managed area can become an OECM to recognize the benefits accruing to single populations or species, as is often the case with fisheries management measures. However, this recognition could ignore the multiple negative impacts of an oil production field on biodiversity and fisheries within the perimeter of the managed area.[9] With the exception of Canadian OECMs, which would lose recognition as OECMs if oil or gas extraction were to take place within their boundaries, and potentially some Filipino OECMs also registered as MPAs, countries do not seem to account for multi-sectoral activities within OECMs that may threaten biodiversity (Table 1). This risk has been identified by the IUCN in its guiding framework to recognize and report OECMs (2019): "OECMs are expected to achieve the conservation of nature as a whole, rather than only selected elements of biodiversity. The CBD definitions of 'biodiversity' and '*in situ* conservation' clearly recognize that a single species can only exist *in situ* as part of an interconnected web with other species and the abiotic environment. Therefore, conservation measures targeting single species or subsets of biodiversity should not allow the broader ecosystem to be compromised." Alternatively, in vertically differentiated fisheries management areas, benthic closed areas are most likely to be counted as OECMs. However, if benthic protections are "counted" with no consideration of overlying pelagic threats to the local ecosystem, ecological connectivity across other dimensions of the water column[10] may be ignored. For instance, such benthic protections would not prevent potential negative cascading effects of pelagic fisheries on ecosystems.[11] In Canada, most OECMs are areas closed to bottom contact fisheries (trawl, traps, and longlines), but with no regulation of fishing in the water column (Table 1). A narrow focus on a limited number of species or parts of an ecosystem, with business as usual on other components of ecosystems, would limit and beg questions about the overall value of OECMs for comprehensive biodiversity conservation.

A third risk lies in the potentially perverse and counterproductive burden of proof to show long-term positive conservation outcomes of OECMs. If conditions (e.g., data needs, human or financial resources, time frame) make assessing the effectiveness of OECMs too onerous, there could be a shift toward assessing a subset of enabling conditions rather than determining if the OECM truly delivers positive and sustained long-term outcomes for the conservation of biodiversity. For instance, in Morocco, most reported OECMs are data deficient (Table 1). As rules can be highly diverse within OECMs, and ecological effectiveness is strongly dependent on complex contextual social-cultural conditions,[7] identifying an appropriate set of enabling conditions that would be common across OECMs and local contexts might prove difficult. Moreover, given that many proposed marine OECMs have been single-sectoral (Table 1), large uncertainties remain on how the impacts of other sectors operating in those areas should be considered when evaluating the effectiveness of these single-sector OECMs (but see Canada; Table 1). Finally, in the case of a sectoral or a community-based OECM, uncertainty remains on who should decide what constitutes "biodiversity," "conservation," and "effectiveness." Conflicting views and values among sectoral management bodies, members of a community, or various levels of government might prevent common grounds for such definitions.

The high-ambition coalition for nature and people (www.hacfornatureandpeople.org), supporting the global target to protect at least 30% of the planet's oceans by 2030, is now composed of more than 100 countries and will very

Table 1. Challenges associated with declared OECMs in the World Database on Protected Areas (WDPA)The WDPA, a joint project between the United Nations Environment Program (UNEP) and the International Union for Conservation of Nature (IUCN), which is managed by UNEP World Conservation Monitoring Center (UNEP-WCMC), is the most comprehensive global database on terrestrial and marine protected areas (www.protectedplanet.net). Progress against Aichi Target 11 of the Convention of Biological Diversity (CBD) is measured by the WDPA, as will any future area-based target (e.g., 30 by 30) within the Post-2020 Biodiversity Framework. As of July 22, 8.22% of the global ocean is recorded within the WDPA as being within marine-protected areas (MPAs) and other effective area-based conservation measures (OECMs)—of which 8.13% is within MPAs (99% of the area). However, as the Post-2020 Framework is being developed, the likely identification of OECMs in the marine environment is poised to increase significantly. Analyzed in July 2022, 193 OECMs were available for evaluation in the WDPA (of which 91 are reported as points without boundaries). Canada, Columbia, Guernsey (UK), Morocco, Philippines, and South Africa are the only countries to submit OECMs to the WDPA.

Country	Figures	Findings
Canada	58 reported OECMs, most could qualify as OECMs but are vertically zoned.	■ All currently reported OECMs come from Fisheries and Oceans Canada (DFO) and have an officially defined boundary. ■ Most are closed to bottom-contact fisheries (trawl, traps, and longlines), with no regulation of fishing in the water column. ■ The designating legal instrument is either a License Condition or a Variation Order that shall be in place for a minimum of 25 years. ■ Once an OECM is identified, future management will have to adhere to management and reporting criteria, or its status will be revoked in future reporting. ■ Measures will lose their OECM status if a new activity in the area is incompatible with biodiversity conservation and where the impacts of this new activity are not mitigated. ■ Ecological monitoring programs, surveillance, and enforcement activities will be undertaken to support management decisions within OECMs, as resources allow. ■ Although OECMs don't specifically forbid oil and gas exploration, no extraction is taking place and only one currently overlays with active leases: Northeast Newfoundland Slope Closure. If extraction were to take place, the area being extracted would no longer count as an OECM.
Colombia	Three reported OECMs, none appear to have implemented regulations as of July 2022.	■ Extensive supporting documentation was submitted. ■ No evidence was found that any of the OECMs have had any specific regulations implemented that make them different from adjoining waters. ■ Appear to be intended as buffers for existing MPAs.
Guernsey (UK)	Three reported OECMs, none are likely meeting OECM criteria.	■ Two OECMs were terrestrial. ■ None have any legal status aside from being listed as Ramsar Sites. ■ No publicly available protection measures or management documents implementing protection on the national or local level could be found.
Morocco	10 reported OECMs. Some Sites of Biological and Environmental Importance appear to meet OECM criteria.	■ OECMs reported to the WDPA are all designated as either Sites of Biological and Environmental Importance (SIBE) or Permanent Hunting Reserves. ■ Most sites are data deficient. ■ Most of the sites are partially terrestrial. ■ Fishing and hunting are permitted. ■ One of the sites seems to be a duplicate of another and in a second case, the last information found was the approval of real estate development in the site.
Philippines	117 reported OECMs. 91 are point features and 26 are polygon features. 24 of the polygon features are listed as MPA networks (Critical Habitat Areas, or Indigenous Peoples and Community Conserved Territories and Areas) and could potentially qualify as OECMs.	■ Locally managed MPAs (LMMPAs) established under the Fisheries Code or Local Government Code fall under OECMs, along with MPA Networks or MPA Alliances, Critical Habitat Areas, or Indigenous Peoples and Community Conserved Territories and Areas (ICCAs). ■ Of the 26 WDPA-reported marine OECMs reported with boundaries, one is listed as a Critical Habitat, one is listed as an ICCA, and the rest are listed as MPA networks. ■ There is no evidence supporting the implementation of regulations specific to the MPA Network waters specifically. ■ There are 91 additional LMMAs reported without boundaries and represented as point features. ■ None of the Philippine OECMs have supporting documentation submitted to the WDPA.

(*Continued on next page*)

Table 1. *Continued*

Country	Figures	Findings
South Africa	Two reported OECMs. One could be an OECM if the buffer waters have meaningful regulations, currently unimplemented.	■ The only marine OECM reported in South Africa is the Kogelberg Biosphere Reserve, which was designated as an UNESCO-MAB Biosphere Reserve in 1998. It includes Betty Bay MPA as its "marine core" and designates the surrounding waters (230 km2) as a buffer to that MPA. ■ There was also a formal strategy for the Biosphere Reserve Program (2016–2020), but there is no evidence that it has been completed. ■ The second OECM seems to be mis-coded as marine and is a Botanical Garden that is entirely terrestrial.

likely influence the global advance on this target within the CBD's post-2020 biodiversity policy agenda. Ongoing UN negotiations on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ) are close to their conclusion and may pave the way toward establishing area-based management tools in the high seas. Both will undoubtedly lead to increased declarations or endorsements of OECMs by governments (even if OECMs are currently just a CBD construct). However, with the exponential growth of the blue economy, there are almost no parts of the ocean that are not claimed by often competing sectoral interests for the natural resources, the mineral resources, or even the space (e.g., for communication cables) they can provide.[2] Many of the area-based tools used to manage these uses could be proposed as an OECM, making the risks arising from misuse of OECMs very high. Accordingly, identifying opportunities to overcome these risks is an urgent priority.

Opportunities to make the best use of OECMs

While OECMs present a host of potential challenges, they also offer unique opportunities for realizing effective and equitable conservation if implemented appropriately. In our view, there are three primary opportunities to help avoid the inherent risks of OECMs: (1) the prioritization of area-based management approaches to be proposed as OECMs, (2) the prediction of expected conservation impacts from OECMs, and (3) the adoption of a simplified cumulative impact assessment approach (Figure 1).

A sound prioritization of area-based management approaches proposed as OECMs could help countries select sites that would most benefit from OECM status, prevent blue washing, and ensure gains for biodiversity conservation (Figure 1). Two types of contexts are of particular interest. First, there is a high value in targeting area-based management approaches where OECM recognition could help secure local, fit-to-context forms of sustainable practices. This can be the case for sites managed by Indigenous Peoples or local communities where recognition as an OECM supports existing governance arrangements rather than facilites control by governments or external actors. Second, OECM recognition could be prioritized for area-based management tools where implementation or changes in existing rules or practices are recent, and focused at increasing sustainability, because these changes are most likely to provide net gains for biodiversity conservation. This could be the case in areas with recent implementation of well-designed rights-based or secure-access fisheries.[12]

Predicting expected conservation impacts[13]—the sum of avoided biodiversity loss and promoted recovery relative to outcomes without protection—on ecosystem services or on a range of nature's values that encompasses the richness of people's relationships with nature,[14] could help mainstream biodiversity in sectoral management of natural resources and help avoid compartmentalization of conservation (Figure 1). For instance, removing large-scale industrial activities (e.g., bottom trawling and oil and gas extraction) and promoting small-scale, sustainable practices (e.g., line fishing and unfed aquaculture) in an area, could be predicted to improve the instrumental value of nature through increasing fish biomass and catch, the intrinsic value of nature through a better recognition of the right of fish to exist, and the relational value of nature through health benefits to coastal communities. Confirming these benefits would require monitoring and evaluation to demonstrate that expected impacts are reached. Dedicated funding to support transdisciplinary work on demonstrating OECM effectiveness by sectoral agencies or governments should help ensure resources are not a barrier to recognition for already marginalized groups. Here, care should be given to setting the right incentives for protection, monitoring, and identifying who should be responsible for proving the evidence of effectiveness (e.g., OECM managers, who might be under-resourced; government agencies, who might be incentivized to meet protected area targets without changing much on the ground; or NGOs, who might have resources but may not be perceived as legitimate by OECM managers or governments). A transdisciplinary, co-produced approach to monitor effectiveness could help establish OECMs as both good for biodiversity and for the intended beneficiaries.

Measuring avoided threats to biodiversity through a simplified cumulative

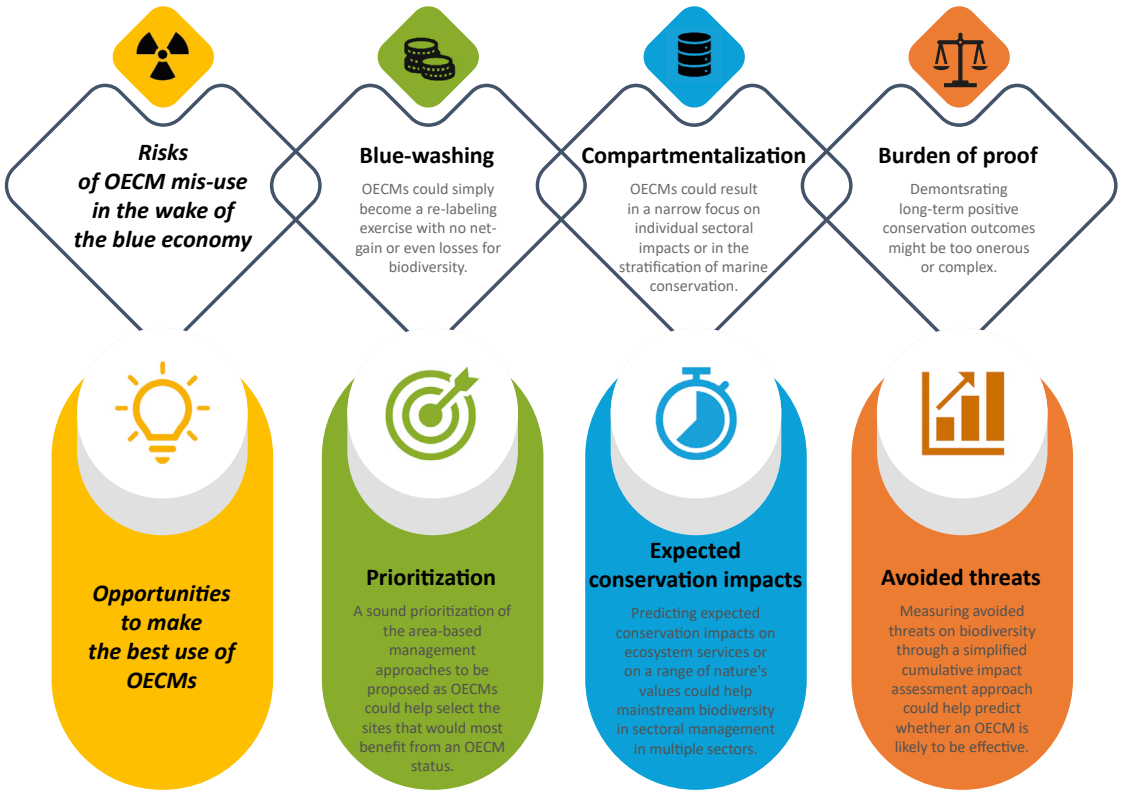

Figure 1. Risks and opportunities to avoid the misuse of other effective area-based conservation measures (OECMs) in the wake of the blue economy

impact assessment approach could help predict whether an OECM is likely to deliver long-term benefits to biodiversity (Figure 1). As has been shown for MPAs,[8] social-ecological effectiveness is directly related to the level of protection, or, in other words, to the nature of threats the protected ecosystem would otherwise be exposed to. A similar approach could be applied for OECMs, with simple metrics to assess how well OECMs curb local threats to biodiversity.[15] These assessments could rely on simple threat indices based on the reduction of anthropogenic extractive and non-extractive activities operating inside the OECM compared to before conservation measures are established and/or to outside the managed area[15] (e.g., change in cruise ships number per boat size, change in number of fishing boat per fishing category). Such an indirect approach based on avoided threats to biodiversity (i.e., not directly measuring the long-term biodiversity conservation outcomes of the area-based management) would avoid solely assessing whether enabling conditions are met, which is unlikely to capture the complexity of social-cultural settings in natural resources management.

The use of OECMs by governments and socioeconomic sectors to help meet internationally agreed area-based targets without meaningfully implementing measures to conserve biodiversity runs counter to the spirit of such targets, which is to support global biodiversity. Opportunities exist to make the best use of OECMs and avoid commonly associated risks. OECMs offer an opportunity to enhance the equity of marine protection, while mainstreaming conservation into numerous sectors. Over the coming months and years, as OECM guidance is published for various sectors (e.g., via the IUCN and FAO) and governments consider including OECMs as part of their marine conservation portfolio, it is critical that there is consistency of OECM standards, quality, and effectiveness. A well-coordinated effort, which ensures that OECMs from all sectors bring net-positive conservation benefits to marine ecosystems and the people who depend on them, is critical to the rejuvenation of the ocean and to secure the biodiversity benefits area-based conservation targets are intended to deliver. We argue that governments reporting on an OECM could include the reasons this area was prioritized, state its expected conservation impacts, and show evidence of threat reduction on biodiversity. We call for coalitions of states and private actors of the blue economy to pave the way to avoid false success through accounting, and instead realize genuine marine biodiversity outcomes.

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DECLARATION OF INTERESTS

The authors declare no competing interests.

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