

High-profile international commitments for ocean protection: Empty promises or meaningful progress?

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ABSTRACT

As 2020 approaches, countries are accelerating their commitments to protect 10% of the ocean by establishing and expanding marine protected areas (MPAs) and other area-based protections. Since it began in 2014, the Our Ocean Conference (OOC) has become a high-profile platform to announce ocean commitments. To evaluate the impact of these promises, this analysis asked: (1) What are the MPA commitments? (2) Who is making them? (3) Have these announcements been followed by action? and (4) Have they contributed significantly to ocean protection? A systematic review of the 143 MPA announcements made at the four OOCs between 2014 and 2017 (and the 202 individual actions they encompassed) concluded that the numbers and sectors of announcers, as well as the types of actions, increased over time. Fifty-two countries and 52 other organizations made OOC commitments, 46% of which have been completed and 56% of which are still incomplete. Thirteen countries and 17 organizations have completed all of their actions. All organizations and 48 out of 52 countries have made some progress on their actions, but no evidence of progress could be found for actions from four countries. OOC announcements have promised to protect 3.4% of the ocean (12,279,931 km²). To date, 43% of that promised area has been implemented, with another 57% yet to be implemented. Based on these findings, a number of actions are recommended to improve the clarity and traceability of OOC announcements, facilitate the monitoring of outcomes, and deliver on the promise of accountability emphasized at the OOCs.

1. Introduction

Addressing threats to ocean ecosystems and the people who depend on them requires collaborative action across global communities. Increased attention to climate change, ocean acidification, unsustainable and illegal fisheries, pollution, and habitat destruction has translated into international agreements such as the Paris Agreement, the UN Sustainable Development Goals (SDGs), the Convention on Biological Diversity's (CBD) Aichi Targets, the FAO's Port State Measures Agreement, and more. Parallel commitments and targets for ocean protection are also in place or under development at regional, national, and local levels.

Central to this suite of actions is a focus on marine protected areas (MPAs) – areas of the ocean that are managed with the long term, primary goal of achieving the conservation of nature and its associated ecosystem services and cultural benefits [1,2]. The CBD Aichi Target 11 and UN SDG 14.5 both call for protecting 10% of the ocean by 2020 in

MPAs and 'Other Effective Area-based Conservation Measures' (OECMs). Additional calls for protecting larger fractions (20–50%) of the ocean are increasing [2–6].

Numerous authors have noted that achieving the stated goals of biodiversity conservation will require more than just a focus on numerical targets. Indeed, realizing the goals will also require good design (location, size, spacing, connectivity, adequate representation of biodiversity, etc.), appropriate process (clear goals, community engagement, consideration of social and economic impacts and benefits), strong compliance and enforcement, adequate governance (including funding and staffing), adaptive management (ongoing monitoring, evaluation, adjustment), as well as effective management and sustainable use of areas outside MPAs and OECMs e.g., Refs. [7–19].

The nature of OECMs has recently been clarified by the CBD: these areas have clear conservation outcomes but their primary purpose is something other than the conservation of nature [15,17]. An example is a military zone that restricts access or extractive activities. Now that a

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formal definition of OECMs has been adopted by the CBD, the next step is development of guidelines for OECMs e.g., Ref. [20]. A global tally of the total area protected within OECMs does not yet exist.

However, it is possible to track the significant increases in the number, size, and total area of the ocean in MPAs over the last few decades [6,8,21], increases that are in part due to the looming 2020 target date for achieving 10% coverage. Yet the exact numbers for ocean area protected in MPAs differ depending on the criteria used [13,22]. Some tallies (e.g., Marine Conservation Institute's Atlas of Marine Protection, MPAtlas.org) include only MPAs that have been implemented (i.e. “in force” on the water), while other tallies (World Database on Protected Areas [WDPA], protectedplanet.net) include not only implemented MPAs but also those that have been legally designated but not yet implemented. In addition, because there are many different kinds of MPAs, there is confusion about likely conservation outcomes that could be expected from any particular type of MPA.

The well known IUCN categories are commonly used to distinguish MPAs according to their management objectives and governance arrangements [1], but they do not consistently indicate the level of protection within an MPA or what outcomes might be expected based on that protection level. This ambiguity can be resolved if the level of protection within an MPA is clearly and consistently specified (e.g., in categories such as the four used in the analysis reported below: Fully Protected, Highly Protected, Lightly Protected, or Minimally Protected). In addition, controversies about the amount of area protected could be minimized if the stage of MPA establishment was clearly articulated (e.g., the four stages of establishment used in the analysis below: Announced, Designated, Implemented, or Actively Managed). Similar clarity is needed for OECMs along with the development of guidelines. In the absence of global information about the number, size, and total area of OECMs and the categories they represent, the analyses in this paper focus only on MPAs.

Many countries choose to share their new MPA commitments publicly through high-level announcements [23]. One of the leading venues for announcements has become the Our Ocean Conference (OOC), an annual meeting that brings together heads of state, foreign ministers, CEOs, and other leaders to make public commitments to ocean protection and to report on the progress of previous commitments. To date, the OOCs have been hosted by the United States (2014 & 2016), the Republic of Chile (2015), the European Union (2017), and the Republic of Indonesia (2018). Speakers are invited to announce major commitments in six thematic areas: marine protected areas, climate change, sustainable fisheries, marine pollution, sustainable blue economy, and maritime security (there has been no OECM theme thus far). OOC hosts have consistently articulated their strong expectation of accountability for all announcements. Those making announcements are expected to report back on their progress in subsequent years.

Over the first four OOCs, 437 announcements were made across all six thematic categories, involving almost \$18 billion (USD) in financial support (<https://ourocean2018.org/>, accessed 30 September 2018). These high-profile OOC commitments have the potential to positively impact both the quantity and quality of meaningful ocean protection. They also have the potential to create empty promises that substitute splashy announcements for true progress. The promise of these announcements and their implications for the health of the ocean prompted the following questions: (1) *What were the MPA commitments?* (2) *Who made them?* (3) *Have the commitments turned out to be empty promises or have they resulted in real action?* and (4) *Have the resulting actions contributed significantly to meaningful progress in ocean protection?*

Recognizing the importance of accountability, later OOC host countries included a form on their registration websites for organizations to report progress in achieving commitments made in previous years. However, only some who had made earlier commitments reported on their progress, and much of that was difficult to interpret due to lack of guidance about what to report. The resulting inconsistencies across the entries precluded answering any of the questions posed

above. Thus, this paper presents an independent analysis, separate from the OOC process, of all MPA commitments made at the first four OOCs.

Each of the four OOCs (2014–2017) included a session devoted to MPA commitments. In total, 143 MPA announcements were made in those four conferences. Examples of announcements include establishing a new MPA, expanding an existing MPA, creating a new MPA policy, providing funding for an MPA, or providing technical assistance or partnerships to facilitate planning and implementation of an MPA. To answer the questions posed above, the status of each announcement was investigated and evaluated. The results of this analysis and the status of these commitments are reported below, along with a discussion of the effectiveness of fora such as the OOC and their impact on ocean protection. The paper ends with recommendations that could be taken to increase the clarity and transparency of future announcements and subsequent progress reports.

2. Methods

2.1. Tracking types of announcements and who is making them

OOC commitments were identified using the official list provided on each annual conference website from 2014 to 2017 (e.g., http://ourocean2017.org/sites/default/files/ooc-2017-list-of-commitments_en.pdf). The OOC uses the terms ‘commitment’ and ‘announcement’ interchangeably; for the purposes of this analysis, these are collectively termed ‘announcements’. All 143 announcements listed under the categories ‘Protecting Ocean Areas’ (2014–2016) and ‘Marine Protected Areas’ (2017) were evaluated. Because some announcements included multiple individual actions (e.g., creation of a new protected area and a new partnership), all applicable announcements were split into their individual ‘actions’. There were 202 total MPA actions. The characteristics of all individual actions were recorded and tallied using 34 identifiers (Appendix A, Table A1), such as the organization and sector making the announcement, type of announcement, and intended year of completion, if it was specified.

The groups making announcements were divided into the following sectors: academic institution, philanthropic foundation, government, intergovernmental organization, industry, or non-governmental organization (NGO). If multiple groups contributed to a single action, an equal percent contribution was allocated to each organization. If one country or NGO partnered with another country or organization, each partner received credit for the action even though the action itself was only counted once. Although there were undoubtedly different percent contributions by some actors, it was not possible to rigorously and consistently allocate percent effort of actors across different actions. Thus, the results do not discuss the contributions of actors within an action; they do give credit to each actor for participating in an action. Each announcement was also assigned to one of the following nine types: new MPA, additional area for an existing MPA, financial commitment, new policy, partnership, meeting, education initiative, research, or infrastructure.

2.2. Tracking evidence of progress

Beginning in January 2018, an extensive online search was conducted to find verifiable evidence of progress toward, or completion of, all MPA actions announced at OOCs using key terms relevant to each action (e.g., location, type of action, country or organization, the name of the announcer or contact person). Governmental and organizational webpages, local news sites, press releases, and any other source that discussed the actions were examined. If an announcement promised to create or expand an MPA, any existing MPA-specific data were obtained from the World Database on Protected Areas [WDPA, protectedplanet.net, a joint project of the United Nations Environment Programme (UNEP) and the International Union for the Conservation of Nature (IUCN)] and from the Atlas of Marine Protection (Marine Conservation

Institute, [MPAtlas.org](https://www.mpaatlas.org), which vets and catalogues data from WDPA).

If no online updates were found, or if information about an announcement was difficult to obtain due to language differences or other challenges, key officials or regional experts were contacted and an update on the status of the announcement was requested. OOC organizers provided additional contact information for various countries and organizations. Contacted individuals often suggested additional names of experts who could provide current updates on previous announcements. Emails were sent to every contact or additional contact suggested. If the contact did not respond, at least one follow-up email was sent. If information was still lacking after 8 + months and repeated attempts, the evidence for that announcement was categorized as ‘no evidence of progress’. Even with this methodological due diligence, however, it is likely that some progress was missed simply due to changes in governmental personnel, differences in language, insufficient time for organizations to make information publicly available, etc. Hopefully this effort encourages those with relevant data or updates to share progress (perhaps with updates provided to the OOC website – see recommendations below).

Explicit steps were taken to ensure objectivity and consistency in categorizing information. Two authors independently assessed the information for each announcement. Each pair of authors then compared their preliminary findings, and any variation in their independent assessments was subsequently discussed and resolved by three or more authors to ensure consistency across the dataset.

The extent of progress was then determined for each action according to one of three categories:

1. If an extensive search by multiple authors found no evidence of any progress (i.e., progress is unknown), the action was assigned to level 1 = no evidence of progress.
2. If the search revealed evidence of some progress, the action was assigned to level 2 = evidence of some progress.
3. If the search found concrete, verifiable evidence that the commitment had been completed, the action was assigned to level 3 = evidence exists that the action has been completed.

Thus, each individual action was given a progress score of 1, 2, or 3. If an announced action was a reaffirmation of the same announcement made at a previous OOC, the most recent evidence of progress was used.

If specified in the announcement, the intended year of completion was noted for each action. If an action lacked evidence of completion but the deadline was in the future or no deadline was set, this was noted in the analyses.

The collated evidence of progress was analyzed by year, type of action, and sector. The number of actions was mapped by country along with the progress on each action. The same procedure was used to evaluate progress on actions made by organizations from non-government sectors.

2.3. Tracking MPA stage of establishment

In many cases, a number of years may elapse between the time when a government or other official body announces its intent to create an MPA and the point at which the MPA is actually implemented and actively managed on the water. Three stages of establishment were recorded in this analysis: Stage 1 ‘Announced’ - the intent to create an MPA is publicly declared. This stage is a public signal that action will be taken to create an MPA, but no action has yet transpired. (All OOC MPA creation or expansion announcements were automatically categorized as Stage 1 unless the announcement specified that the MPA had reached Stage 2 or 3). Stage 2 ‘Designated’ - an MPA is specifically codified or dedicated through legally recognized means or authoritative rule. At this stage, the MPA exists in law and on paper, but no management changes have yet occurred on the water. This stage reflects a legally binding commitment to advance to the next stage. Stage 3 ‘Implemented’

- an MPA goes from being a paper park (existing only on paper) to being ‘in force’ on the water with defined boundaries, objectives, and management strategies that reflect conservation goals, as per IUCN MPA Standards [2]. This is the stage at which activities on or in the water change in order to achieve the conservation goals. Although each stage is important, biodiversity and habitats are not protected within an MPA until it is implemented and enforced [11,24]. In the analysis presented here, a promise to create or expand an MPA (i.e., Stage 1 or 2) was not considered ‘completed’ until the MPA had reached Stage 3 (i.e., it was implemented). There was insufficient information available in the analysis to clearly identify the fourth stage in this sequence (Stage 4 ‘Actively Managed’ - an MPA has ongoing and effective compliance, enforcement, monitoring, and adaptive management), thus it was not included.

2.4. Tracking MPA protection level

For each new or expanded MPA, the expected or actual level of protection within the MPA was tracked using information provided in the announcement, associated documents and updates, and additional information from WDPA and the Atlas of Marine Protection. The level of protection provides key information about the outcomes that can be reasonably expected from an MPA, thus helping alleviate some of the confusion around the all-encompassing term ‘MPA’ and other commonly used labels (such as ‘marine reserves’, ‘marine parks’, ‘marine sanctuaries’, and ‘no-take areas’) that may have different meanings in different languages or regions. This analysis utilizes the following terms to specify level of protection [8,13,22]: 1) ‘Fully Protected’ - no extractive or destructive activities are allowed and all impacts are minimized. Specifically, no commercial, recreational, or artisanal fishing, no mining, and no exploration for or extraction of oil or gas is allowed. This category includes MPAs that also restrict entry (often called ‘no-go’ areas) as well as ‘no-take’ areas that do allow access, provided it is not extractive. 2) ‘Highly Protected’ - only very light extractive activities and impacts are allowed. For example, these sites might allow very minimal subsistence or recreational fishing but prohibit all industrial fishing, mining, and drilling. And 3) ‘Lightly or Minimally Protected’ - significant to extensive extraction and other impacts are allowed. In most cases, it was impossible to distinguish ‘lightly’ from ‘minimally’ based only on the information provided in announcements or updates, so these two protection levels were combined for this analysis. Examples of ‘Lightly or Minimally Protected’ MPAs are those where fishing is prohibited for only a single species but is allowed for all other species; areas where fossil fuel exploration and extraction are forbidden but all forms of fishing are allowed; or areas where bottom trawling is prohibited but water-column commercial fishing is permitted, or vice versa. This category includes many different combinations of extractive or destructive activities and some light or minimal conservation.

In cases where there were multiple levels of protection within different zones of a single MPA, the MPA was categorized as either ‘Multiple-Level Protection’ or ‘Multiple-Level Protection Including Fully Protected Area(s)’, depending on the zoning. The latter category was included because the conservation outcomes of multiple-level MPAs with at least some fully protected areas are likely different from those with no fully protected areas [25].

2.5. Tracking the percent of the ocean protected as a result of OOC MPA announcements

If the size of an MPA announced at OOC was included in the announcement, recorded in WDPA or the Atlas of Marine Protection, or reported online or verified by an in-country source, that area (in square kilometers) was used in the analysis. The total area that is, or would be, protected by OOC announcements was tallied using the three stages of establishment (Stage 1 *Announced*, Stage 2 *Designated*, and Stage 3 *Implemented*) and the categories of protection level (*Fully Protected*,

Highly Protected, Lightly or Minimally Protected, and Multiple Levels of Protection, both with and without *Fully Protected Areas*) described above. This allowed calculation of the total area of the ocean from OOC announcements in each stage of establishment and for each level of protection. If the area of the MPA was given but the protection level was not specified and could not be determined from online sources or contacts, these MPAs were classified as ‘Unspecified Protection Level’ and included in the total area of the ocean protected (i.e., all protection levels combined).

To evaluate the contribution of OOC actions to the global area of the ocean in protected areas, the analysis tracked the area and percent of the ocean (1) that is currently protected because it has reached Stage 3 *Implemented*, and (2) that *would be* protected if all announced MPAs were completed (i.e., they reached Stage 3 *Implemented*). These numbers were compared to the total percent of the ocean currently protected in all implemented MPAs (including those not announced at an OOC), as catalogued in the Atlas of Marine Protection (using vetted WDPA data). This total area was then compared to the 10% global target that countries are striving to meet. As noted earlier, because MPAs and not OECMs have been the focus of the OOCs, the analysis included only MPA numbers.

3. Results

Across all four OOCs, 143 announcements comprising 202 actions in the ‘Protecting Ocean Areas’ and ‘Marine Protected Areas’ thematic areas were made by 52 countries and 52 other organizations across a total of six sectors. The number of actions announced at least doubled each year (Fig. 1). This represents a greater than 15-fold increase between 2014 and 2017. As of September 2018, 46% of these MPA actions are completed, 49% show some evidence of progress, and the fate of the remaining 5% is unknown (i.e., there was insufficient information to evaluate progress).

Overinflation of progress could be an issue if evidence relied only on verbal reports from those individuals responsible for the action. The analyses reported in this paper relied on independent and demonstrable evidence for 93% of the announcements (Examples include an MPA management plan or a newly constructed building). For the remaining 7% (15) of the actions, no independent information could be identified, so the analysis relied solely on personal communication of progress from a responsible individual, agency, or local expert.

OOC announcements have promised to create new MPAs or expand existing MPAs that would total 3.4% of the ocean (12,279,931 km²). As of September 2018, 43% of that promised area has reached Stage 3 *Implemented*. Thus, 57% of the promised area is yet to be implemented.

3.1. What are the MPA commitments?

The types of MPA actions in the OOC announcements became more diverse through time. The 2014 announcements covered four types of actions; by 2017 there were nine types (Fig. 1a, Table 1). Across all four years, the four largest categories of action totaled 85% of all actions types: new protected areas (86 actions, 43%), financial commitments (48, 24%), policies (22, 11%), and addition of area to an existing MPA (15, 7%).

3.2. Who is making MPA announcements?

The number of sectors making announcements tripled over the first four years, from two sectors in 2014 to six in 2017 (Table 1). In 2014, multiple governments and a single foundation announced MPA actions; by 2017, academia, industry, NGOs, and intergovernmental groups also made commitments (Table 1, Fig. 1b). Not surprisingly, since the conference was initiated by governments (and governments have the primary authority to establish or expand MPAs), the largest sector announcing MPA commitments was governments, contributing 86% of all MPA-themed actions (174 out of 202). Nonetheless, the intergovernmental, industry, philanthropic, NGO, and academic sectors have steadily increased their announced contributions to MPAs (Fig. 1) through financial, technical, and personnel resources and infrastructure.

Overall, 52 countries and territories announced 174 MPA actions across the four OOCs (Appendix A, Table A2). European countries accounted for 29% of the actions (59 out of 174), followed by North American countries (28 actions), Asian countries (26 actions), Australia and Oceania countries (18 actions), South American countries (18 actions), Middle Eastern countries (9 actions), African countries (8 actions), and Central American countries (8 actions; Fig. 2). Of the 52 countries making announcements, five are G7 countries and 21 are developing countries according to the World Economic Outlook Database (WEO Groups and Aggregates Information, April 2018. <http://www.imf.org/external/pubs/ft/weo/2018/01/weodata/groups.htm>; Retrieved 8 June 2018).

Of the 52 countries, 18 announced a single action (35%), and 34 announced two or more actions (65%). Canada promised the greatest number of actions (17 since 2014). Eleven of the 15 countries with the largest EEZs in the world made OOC MPA commitments. They include (in decreasing order of EEZ size): United States, France, Australia, United Kingdom, Indonesia, Canada, New Zealand, Chile, Kiribati, Mexico, and the Federated States of Micronesia.

The majority of organizations from other sectors committed to a

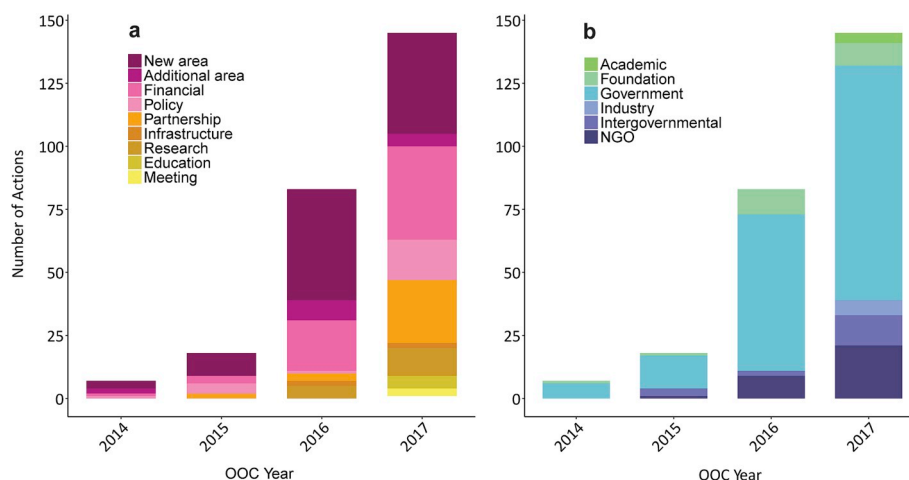


Fig. 1. Actions announced at the 2014–2017 Our Ocean Conferences in the MPA theme. a) 202 actions grouped by action type, and b) 202 actions grouped by sector making the commitment.

Table 1

Types of MPA actions announced by organizations across six sectors at the 2014–2017 Our Ocean Conferences.

Year announced	Announcement type	Academic	Foundation	Government	Industry	Intergovernmental	NGO
2014	Additional area	0	0	2	0	0	0
	Financial	0	1	0	0	0	0
	New area	0	0	3	0	0	0
	Policy	0	0	1	0	0	0
2015	Financial	0	1	2	0	0	0
	New area	0	0	8	0	1	0
	Partnership	0	0	2	0	0	0
	Policy	0	0	1	0	2	1
2016	Additional area	0	0	8	0	0	0
	Financial	0	8	7	0	1	4
	Infrastructure	0	0	2	0	0	0
	New area	0	1	41	0	1	1
	Partnership	0	0	2	0	0	1
	Policy	0	0	1	0	0	0
	Research	0	1	1	0	0	3
2017	Additional area	0	0	5	0	0	0
	Education	0	0	2	0	1	2
	Financial	2	5	17	4	4	6
	Infrastructure	0	0	0	1	0	1
	Meeting	0	0	3	0	0	0
	New area	0	1	35	0	1	3
	Partnership	1	3	8	0	5	8
	Policy	0	0	16	0	0	0
	Research	1	0	7	1	1	1
<i>Total</i>		4	21	174	6	17	31

single action (41 out of 52 organizations, 79%, [Appendix A, Table A3](#)), while 21% announced two or more actions (11 out of 52 organizations).

3.3. Have the promised MPA actions been completed?

Not surprisingly, a larger percentage of actions announced in earlier

years is complete compared to actions announced in later years. Of the actions committed in 2014, 86% are complete (6 out of 7), compared to 43% (48 out of 111) of the actions committed in 2017. However, 102 of the 111 actions announced in 2017 have not reached their intended year of completion or no date was given.

Some actions have not yet reached their intended year of

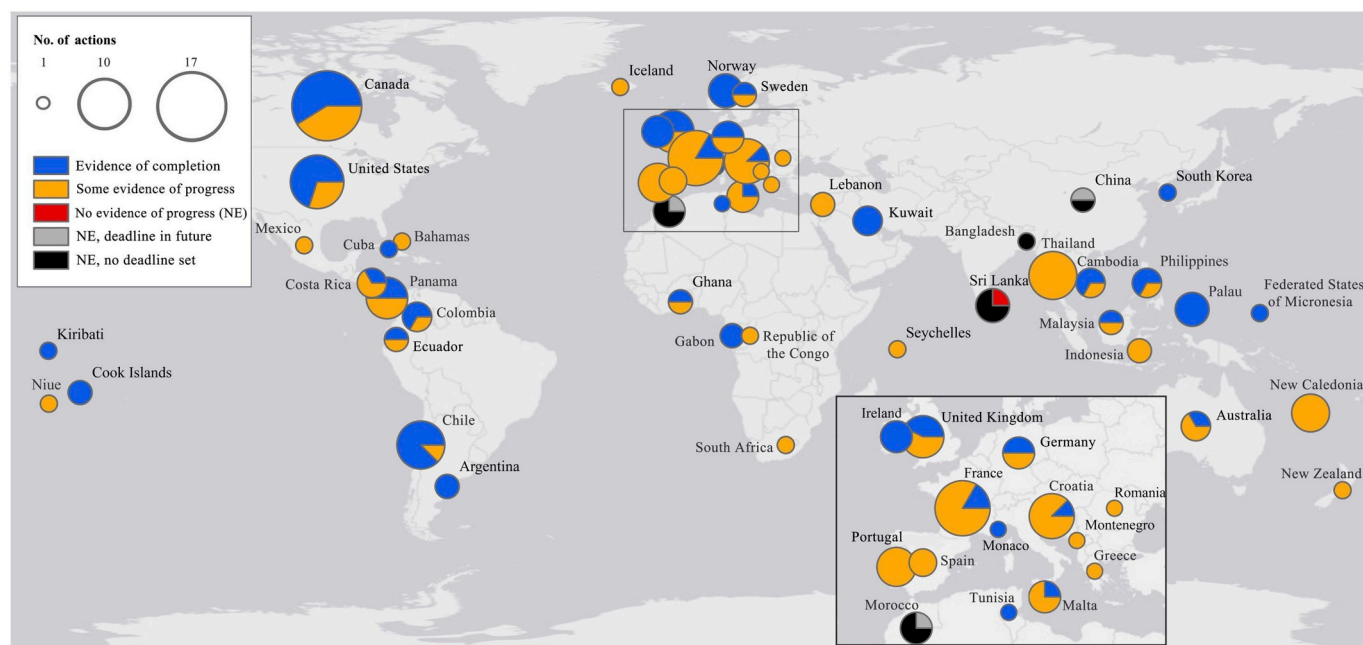


Fig. 2. Status of progress made on the 202 MPA actions announced by countries at the 2014–2017 Our Ocean Conferences. One of five categories was assigned to each action based on the evidence of progress found for that action. Some actions had evidence of completion (blue) and others showed some evidence of progress (yellow). Some actions had passed their intended date of completion and there was no evidence of progress (red). Some actions had no evidence of progress but their intended date of completion was in the future (grey). Some actions did not give an intended date of completion and there was no evidence of progress (black). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

Table 2

Progress on MPA actions announced at the 2014–2017 Our Ocean Conferences by intended date of completion. a) Actions for which the intended date of completion had passed (due date: 2014–2017), b) actions for which the intended date of completion was in the future (due date: 2018–2030+), and c) actions for which no due date was given.

a) Due date 2014–2017	No evidence of progress	Some evidence of progress	Evidence of completion	Total actions
Education			2	2
Financial		3	8	11
Infrastructure	1	1		2
Meeting			1	1
New area		9	3	12
Policy			3	3
Total	1	13	17	31

b) Due date 2018–2030+	No evidence of progress	Some evidence of progress	Evidence of completion	Total actions
Additional area		1		1
Education		1	1	2
Financial		15	8	23
Infrastructure		1		1
Meeting		1	1	2
New area	1	18	3	22
Partnership		5	1	6
Policy	1	8	2	11
Research		5	1	6
Total	2	55	17	74

c) No due date	No evidence of progress	Some evidence of progress	Evidence of completion	Total actions
Additional area	1	3	10	14
Financial		8	6	14
New area	5	17	30	52
Partnership		2	3	5
Policy	2	1	5	8
Research			4	4
Total	8	31	58	97

completion, others have been completed ahead of schedule, and still others did not specify an intended year of completion. Of the 202 total actions, 37% (74) had intended completion dates in the future. An additional 48% (97) of announced actions did not specify an intended year of completion, yet 29% of those announcements without a target date are complete. The intended year of completion has passed for 31 actions, and 45% of those (14 actions) are not complete (Table 2). Only one of those 14 post-deadline actions shows no evidence of progress; the other 13 actions are all progressing.

3.4. Who has completed their MPA commitments?

Progress has been made on promised actions from all six sectors (Fig. 3). All organizations and 48 of 52 (93%) countries have made at least some progress on their actions. Across all government actions, 43% are complete (75 out of 174), 51% (88) show some evidence of progress, and 6% (11) lack evidence of progress. Seventeen other organizations have completed all of their actions.

Thirteen governments (25%) have completed all of the actions they announced [Ireland – 4, Norway – 4, Palau – 4, Kuwait – 3, Argentina – 2, Cook Islands – 2, Gabon – 2, Monaco – 1, Cuba – 1, Federated States of Micronesia – 1, Kiribati – 1, South Korea – 1, Tunisia – 1 (Fig. 2)]. Although 48 of 52 governments have at least made some progress on all of their actions, no evidence of progress was found for the remaining four countries, despite diligent searches and numerous attempts to

contact individuals in each of these countries. However, the year of completion for actions announced by two of those four countries has not yet passed and one country did not specify an intended date of completion.

Government was the sector with the largest number of actions that did not provide an intended date of completion (95 out of 174 actions, 55%). Of the largest-EEZ countries listed above, 50% of those whose intended date of completion has passed have completed their 2014–2017 commitments on schedule (2 out of 4), and all 11 of those countries have made progress on their promised actions.

All other sectors are making progress on their actions, and many of their actions are complete. NGOs have completed almost half of their promised actions (14 of 31), and just more than half of their actions are still underway and show evidence of progress (17 out of 31). Of those, 14 actions had not passed their intended year of completion, and the other three actions did not specify a deadline (Fig. 3). Most foundations have actions with expected completion dates in the future or with no intended date of completion (19 out of 21, 91%). Nonetheless, 37% (7 out of 19) of those actions have been completed ahead of schedule and the rest show evidence of progress. Two actions were completed on schedule for a total of nine completed actions overall. Intergovernmental organizations show evidence of progress on all their commitments, with almost equal numbers of completed actions (8 out of 17) and actions with evidence of progress (9 out of 17). The academic sector's promised actions include three that have been completed and one for which the deadline has not passed but progress has been made. All industry actions showed evidence of progress. Industry completed some of their actions (2 out of 6, 33%), and the remaining actions were in progress with completion dates in the future (4 out of 6, 67%).

3.5. How have OOC MPA commitments contributed to the protected area of the ocean?

Almost half of all OOC MPA actions (93 out of 202) promised to create new MPAs or expand existing MPAs (7 actions were reaffirmations of actions announced at previous OOCs). In total, these 93 actions promised to protect an additional 12,279,931 km² or 3.4% of the surface area of the ocean. OOC announcements to create or expand MPAs included the Galapagos Islands Marine Reserve, the Cook Islands Marine Park, and the U.S. Papahānaumokuākea Marine National Monument, among others (Appendix A, Table A.4).

As of September 2018, 22 of these promised MPAs had been *Implemented*. As a direct result of these OOC announcements, 1.4% of the surface area of the ocean or 5,034,772 km² has been protected through *implemented* MPAs (Table 3; Fig. 4a). For context, the Atlas of Marine Protection records 3.7% of the ocean as currently protected in *implemented* MPAs. Thus, OOC-announced MPAs represent between one-third and one-half of the area of the ocean in *implemented* MPAs. Looking only at the area protected in *implemented* MPAs, the OOCs have already made a significant contribution.

Important progress has been made on an additional 20 OOC-announced MPAs through government actions that legally codified new MPAs or expanded existing MPAs according to each country's laws. This Stage 2 *Designation* is a critical step that builds upon the intent signaled by the original announcement by giving it legally recognized standing, or the equivalent. The next step for these MPAs is Stage 3 *Implementation*, with on-the-water changes in management. Once Stage 3 *Implementation* has been achieved, the action announced at a previous OOC will be complete. Ongoing attention to compliance, enforcement, monitoring, funding, and adaptive management is required for any *implemented* MPA to achieve the conservation goals for which it was created. However, the evidence obtained for the *implemented* MPAs was insufficient to evaluate whether they were all actively managed.

To date, 71 MPA-creating actions that were promised are incomplete (7,035,001 km²; 1.9% of the ocean) because the MPAs are not yet *Implemented* (20 *Designated* and 51 *Announced*). Of those MPAs, 13%

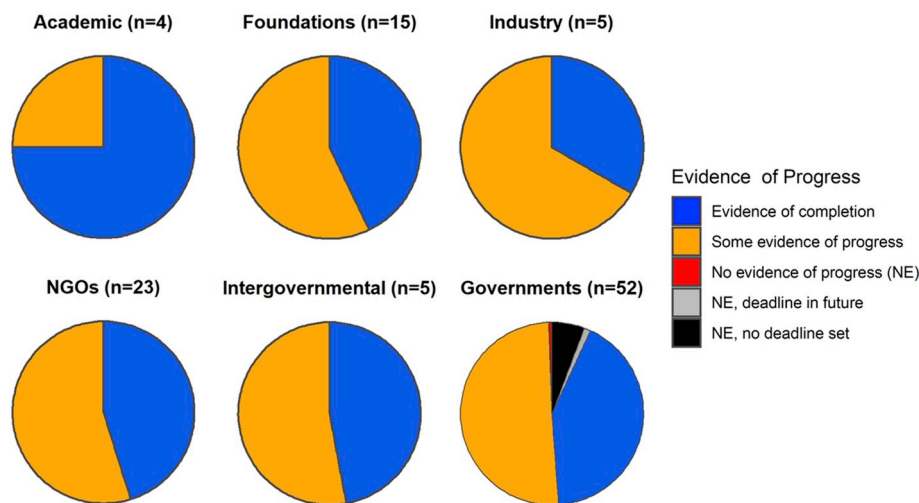


Fig. 3. The status of progress made on the 202 actions announced by sector at the 2014–2017 Our Ocean Conferences. One of five progress categories was assigned to each action based on the evidence found for that action.

are past their intended year of completion (9 out of 71 actions). The majority of the actions that committed to establish new MPAs or expand existing MPAs did not specify an intended year of completion (63%, 59 out of 93). Of those, 32% (19 out of 59) have been implemented. Of the MPA announcements that did specify an intended year of completion, the majority set 2020 as their target for completion (Fig. 4a). Two of the MPAs with a 2020 completion date have already been implemented and the others (13 out of 15) show evidence of progress.

If the additional 1.9% of the ocean in announced or designated OOC MPAs was in fact implemented and added to the current 3.7% of the ocean in implemented MPAs, the total MPA-protected area of the ocean would rise to 5.6% (Fig. 5). If that occurred, only an additional 4.4% of the ocean would need protection to achieve the 10% goal laid out by Aichi Target 11 and SDG 14.5. Since the 10% target is to be achieved through a combination of MPAs and OECMs, a global tally of the area covered by OECMs is needed to evaluate whether that target is in reach.

OOC MPA commitments were made across all levels of protection categories. The largest new or additional area committed was in the category of ‘Multiple-Level Protection Including Fully Protected Area(s)’ (3,351,035 km²; 0.9% of the ocean; 11 out of 93 actions; Fig. 4b), followed by ‘Highly Protected’ (2,410,253 km²; 0.7% of the ocean; 11 actions) and ‘Multiple-Level Protection Without Fully Protected Area(s)’ (2,383,056 km²; 0.7% of the ocean; 8 actions). ‘Fully Protected Areas’ were committed by 11% of the actions (1,126,000 km²; 0.3% of the ocean; 10 actions), and 22% to ‘Lightly or Minimally Protected’ (671,051 km²; 0.2% of the ocean; 20 actions). However, over one-third (35%; 2,338,536 km²) of the announcements did not specify a level of protection or even indicate what activities would be allowed or restricted (which would suggest a certain level of protection). As a result, those 33 actions cannot be tallied according to level of protection.

Table 3

Status of actions to create new MPAs or expand existing MPAs that were announced at the 2014–2017 Our Ocean Conferences, grouped by due date. Either the intended date of completion had passed (due date: 2014–2017), the intended date of completion was in the future (due date: 2018–2030+), or no due date was given in the announcement. ‘Implemented’ = protected areas that are operational, with management in place in or on the water, but not yet implemented; ‘Designated’ = protected areas with approved legislation or other legally approved action; ‘Announced’ = there was a commitment to create or expand a protected area, but there is no evidence that this intent was followed by legislation or other legally binding action.

	Implemented			Designated			Announced		
	No. actions	Area (km ²)	% of ocean	No. actions	Area (km ²)	% of ocean	No. actions	Area (km ²)	% of ocean
Due date 2014–2017	3	50,771	0.014	2	8,846	0.002	7	109,000	0.030
Due date 2018–2030+	0	0		3	716,663	0.198	19	2,869,439	0.793
No due date	19	5,194,158	1.435	15	2,289,875	0.633	25	1,041,178	0.288

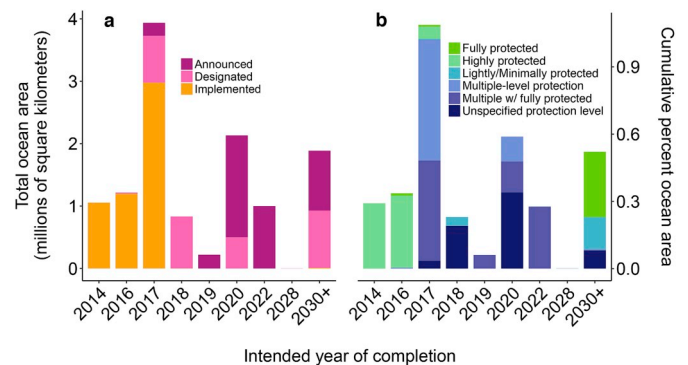


Fig. 4. a) Current implementation level of 93 area-based actions (both new and expanded MPAs) from the Our Ocean Conferences to date (2014–2017) by their intended completion year. ‘Implemented’ = protected areas that are operational, with management in place in or on the water; ‘Designated’ = protected areas with approved legislation or other legally approved action but not yet implemented; ‘Announced’ = there was a commitment to create or expand a protected area, but there is no evidence that this intent was followed by legislation or other legally binding action. b) Current protection level of 93 OOC area announcements by their intended completion year. ‘Fully protected’ areas = completely protected from all extractive activities, ‘Highly protected’ areas = exclude most but not all extractive activities, ‘Lightly/minimally protected’ areas = some restrictions but only a small subset of extractive activities exist, ‘Multiple-level protection’ areas = multiple levels of protection without no-take areas, ‘Multiple with fully protected’ areas = multiple levels of protection with at least one no-take area, and ‘Unspecified protection level’ areas = no found information about protection level. If intended completion year was not stated in the announcement, area estimates were binned in the year they were completed or in ‘2018–2030+’.

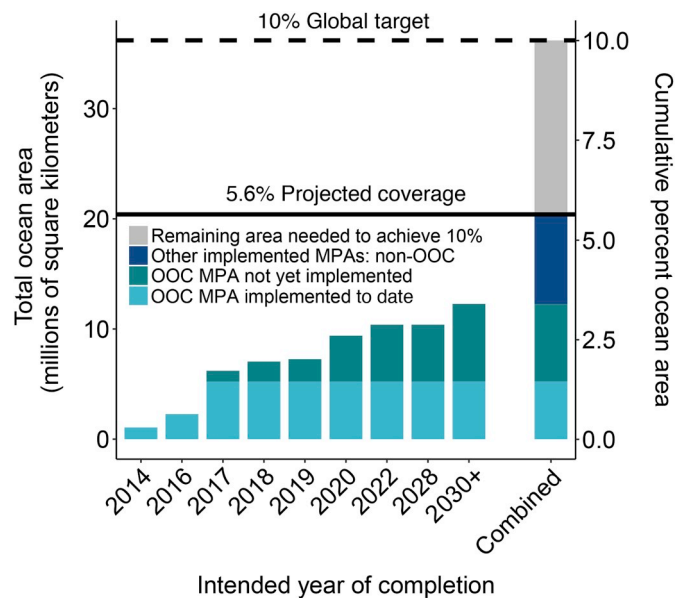


Fig. 5. Cumulative percent area of the ocean protected if Our Ocean Conference (OOC) announcements were implemented by their intended year of completion. The ‘Combined’ column includes the total OOC protected area not yet implemented and implemented to date, the global area of the ocean protected by non-OOC implemented MPAs, and the remaining area needed to achieve the 10% global target. If intended completion year was not stated in the announcement, area estimates were binned in the year they were completed or in ‘2018–2030 +’.

Importantly, ocean protection is about more than implemented, enforced, and actively managed MPAs. Many of the other MPA actions pledged at the four OOCs provide critical components to support education and awareness of MPAs and to design, fund, monitor, study, and ensure compliance with and enforcement of MPAs. The outcomes of these parallel, complementary actions are essential yet more difficult to quantify. Moreover, the other thematic areas of the OOCs address critically important problems in the ocean. Evaluation of the impact of the OOCs on those areas will require additional investigation.

4. Discussion

4.1. Findings

This analysis shows that in a very short period, the OOC has become a popular and desirable opportunity to highlight ocean problems and pledge ocean action. The OOC has inspired a growing group of governments and other organizations to make more and increasingly diverse types of commitments to protect the ocean and its resources. Other venues for such commitments—such as the United Nations General Assembly meetings, UN Ocean Conferences, and the Convention on Biological Diversity’s Conferences of the Parties—have also played key roles in highlighting ocean action. A comparable analysis of their contributions would be valuable. Across all of these platforms, leadership from heads of state and influential ministers has elevated the ocean on the international diplomacy radar screen, and resulted in significant positive action toward protecting ocean ecosystems and the benefits they provide to people. Social norms among at least some political leaders around ocean protection, sustainable use, and management tools seem to be changing.

Although putting ocean protection in the spotlight is useful, the real test of impact is the extent to which words are followed by meaningful action. One-third of all OOC announcements focused on MPAs. This analysis showed that nearly half (46%) of the MPA promised actions have been completed (some even ahead of schedule) and most of the

rest (49%) are in some stage of progress.

This paper concludes that there has been verifiable outcomes as a result of the OOC MPA commitments. Through these OOC announcements, 22 new or expanded MPAs have added over 5 million km² or 1.4% of the ocean in implemented MPAs. This total new area almost doubles the amount of implemented MPAs worldwide. Around half of the new area is in *Fully* or *Highly Protected* MPAs.

This analysis also identifies the even greater area that would be protected if the remainder of the commitments are completed. If all of the MPAs promised at the first four OOCs were implemented, that would total over 12 million km² or 3.4% of the ocean. One percent of that area would be in *Fully* or *Highly Protected* status. If all of those MPAs were enforced, funded, and actively managed, that would have a large impact on conservation goals. Here, then, are two opportunities – to deliver on promises already made and to ensure that the new or expanded MPAs actually achieve the conservation goals for which they were created.

The focus on total area and the fraction of the ocean that is protected should not detract from the other key elements or tools that are necessary to achieve meaningful ocean protection. There is a developing understanding of how OECMs can contribute to global ocean protection. Equally important is ensuring that fisheries, aquaculture, and other extractive uses minimize impacts to biodiversity and are sustainable. Minimizing impacts from land-based activities (agriculture, energy production, land-use more broadly, water provisioning, waste disposal, etc.) will be critical to reduce existing and escalating impacts on the ocean.

Greater attention to the processes used to create, fund, evaluate, and manage MPAs is increasingly important. Establishment of MPAs that provide the desired benefits requires a clear identification of goals; engagement of relevant communities and stakeholders; consideration of impacts to livelihoods and consequences of displaced activities; plans for funding, enforcement, monitoring, evaluation, and adaptive management; and relevant design criteria – size, location, connectivity, representativeness, level of protection and activities allowed/disallowed, etc. e.g., Refs. [26–31]. In addition, the system of protected areas should facilitate connectivity among protected areas, representativeness and replication within and across biogeographic regions, resilience to climate and other environmental changes, interactions with land-based sources of pollution, and other key considerations [e.g., Refs. [7,19,32,33]; the GLORES refuge system: <https://globaloceanrefuge.org/>]. Once an MPA is established, attention to adequate management, funding, staffing, enforcement, monitoring, and adaptive adjustment as needed are essential e.g., Refs. [2,9,12,18,19,34].

4.2. Recommendations

Despite the considerable success and progress that have resulted from the four OOCs analyzed, some simple improvements would enhance the utility and effectiveness of future OOCs and indeed all similar conferences. Upcoming OOCs provide a golden opportunity to put in place specific mechanisms to facilitate clear and consistent announcements, enable subsequent reporting that is informative, and ensure the results are shared broadly [23]. Because the OOC and many similar convenings rely on voluntary commitments made in a collegial atmosphere, it is important to avoid an overly exhaustive system of pledges and reports. Simple adjustments such as greater uniformity and specificity of announcements and a mechanism for routine and informative reporting would greatly enhance the effectiveness of the OOCs. Specifically, three actions are suggested: (1) OOC hosts should provide and encourage use of a template for announcements to facilitate greater specificity in a commitment, (2) OOC hosts should provide a simple but informative, easily accessible, living reporting tool for tracking meaningful progress on an ongoing basis (complete with a mechanism to provide links to documents that can independently verify the progress

made), and (3) OOC hosts should reinforce the overarching message of sustained accountability across OOCs and through social norms. Each of these suggestions is detailed below.

- (1) A TEMPLATE TO FACILITATE CLEAR AND SPECIFIC ANNOUNCEMENTS. A simple template for announcements and requirement that those making a commitment follow the format would greatly facilitate inclusion of key information that is currently absent from many announcements. Announcements from the first four OOCs consisted of a wide range of formats and included inconsistent types of information. For example, some were quite specific about an action but did not mention a timeframe, while others lacked any detail at all. Lack of information about the intended date of completion and point of contact (POC) significantly impaired the ability to obtain and evaluate progress toward the announced goal. Forty-eight percent of OOC commitments for area-based protection (97 out of 202) did not include an intended date of completion or a timeline for evaluating progress.

The goal of inviting announcements that will verifiably contribute to ocean conservation would be enhanced if those announcements were both clear and specific. Announcements should include critical details about the action, an intended date of completion, and a POC for further information. For example, announcements of a new or expanded MPA should specify the level of intended protection within the MPA (whether it is *Fully*, *Highly*, *Lightly* or *Minimally Protected*, or, if it is zoned for multiple levels, the area in each level), the stage of establishment (*Announced*, *Designated*, *Implemented*, or *Actively Managed*), and the size and location of the area. If some information is not available at the time of the announcement, it should be added to the living OOC platform (see Item 2 below) as soon as possible. Similar specificity could be developed for the other OOC thematic categories (e.g., fisheries, pollution, climate change).

- (2) AN EFFECTIVE AND FUNCTIONAL MECHANISM FOR REPORTING ON PROGRESS. One clear conclusion from this study and related work [23] is that a mechanism is needed for those making announcements at OOCs (and other related conferences) to report their progress and achievements. This mechanism should be a living, electronic platform that is easily accessible and strategically organized to collect consistent information that is appropriate to each commitment and the broader themes and categories. The site needs to be designed to specifically ensure the information collected is useful for the goal of tracking and evaluating meaningful progress and that it is useable for those who are reporting on the commitments. This online mechanism should provide a means for validating progress through the ability to attach supporting documents (e.g., legal designation, list of regulations, management plan, etc.).

For example, based on the challenges encountered during this data collection and analysis, the MPA portion of a reporting registry should contain information about the 1) level of protection, 2) intended date of completion, 3) stage of establishment, 4) size and location of the area, and 5) POC for additional information or questions. Information specific to other thematic areas would need to be developed for those reporting mechanisms. Care should be taken to ensure the website is easy to use, readily accessible from all countries, and that it provides meaningful information that can inform rigorous evaluation of progress in completing commitments as well as the outcomes of the actions taken. A functional website would require ongoing maintenance and attention.

- (3) REINFORCED EXPECTATION OF ACCOUNTABILITY THROUGH SOCIAL NORMS. A tone of accountability for a voluntary event such as the OOC is set and reinforced through social norms [35,36]. In addition to making announcements clearer and making it easier for attendees to report on their progress in a uniform fashion, the strong signals sent by OOC leaders and hosts (past, present, and

future) are critical for creating a climate of expectation, and public recognition, for delivering on promises. A specific mechanism for reviewing progress across all categories would be helpful, but the emphasis should be on collegiality, collective achievement, commendation for those who deliver, and possible offers of assistance to those who have struggled to deliver on their promises. To support this, for example, there could be a 'How are we doing?' report issued at each OOC to take collective stock of progress and reinforce the commitment to accountability.

4.3. Additional considerations

While this study evaluated all accessible information about progress on OOC commitments, tracking the progress for each action often proved quite challenging. The status of financial commitments was particularly difficult to verify, since many philanthropies and other funding bodies do not make their grants public, or they lump together a suite of grants by category, which precludes tracing specific commitments. Inviting each organization that makes a commitment to report back on their promises in a simple and uniform fashion would alleviate this problem. Supporting evidence (e.g., a link to the building updates for a new ocean outreach centre, a list of the projects supported by committed funding, etc.) would provide strong accountability and enhance the transparency needed for evaluating outcomes. Clarity and transparency in reporting would further the public image of the OOCs, provide confidence within the marine conservation community and the public, and incentivize other organizations to make and deliver on their own commitments.

There were significant challenges in tracking progress on announcements from countries or groups with limited financial or technical resources. Diverse languages and/or turnover of contacts at agencies and organizations exacerbate the challenges. Reporting back on progress is likely more of an administrative burden for some countries and organizations than for others. The fact that 40% of the groups making OOC MPA announcements are in developing countries underscores the need for easy-to-access and simple reporting mechanisms. However, targeted assistance with reporting would also help immensely. Clearly, leaders in these countries are contributing to global ocean protection, but some of their efforts may go unrecognized if they are not reported in a consistent and public way. The growing number of announcements that represent multiple partners provides one pathway for achieving the goal, through technical or financial assistance with reporting as well as implementation of the action. For example, Gabon is partnering with the NGO National Geographic Society's Pristine Seas program and the philanthropic foundation Vulcan, Inc. to improve enforcement capacity for MPAs. The efforts to track progress were facilitated by these partner groups. As more foundations, academic institutions, and other groups join these efforts, they increase the available resources and the potential for success.

As with any politically influenced dialogue, when groups are making public announcements and addressing global targets with impending deadlines there is a strong push to announce commitments and to show that progress has been made. Yet promises should not be conflated with achievements. There are multiple examples of promises to create an MPA that have remained just that – a promise – with no action to show despite the ambitious goals or bold words. Furthermore, the range from "some progress" to "completed" can be a vast. Although it was impossible to evaluate fine scale progress in the "some progress" category, repeated reports on OOC commitments would ensure that this category still encompasses achievement from year to year until completion. Groups may be less likely to let their commitments sit in the "some progress" category if they knew continual progress was expected and scrutinized.

Myriad studies show that significant effort is needed to create a successful MPA and that its eventual success is a direct result of a suite of conditions, including a high level of stakeholder participation,

explicit objectives, MPA design based on scientific guidelines, strong communication and leadership, enforceable rules, and high compliance with those rules [11,12,37]. For example, MPAs that are adequately staffed show 2.9x greater ecological outcomes than those that lacked adequate staff and resources [11]. Furthermore, MPAs alone are not sufficient to achieve global ocean protection. MPAs should be incorporated as one key tool in a diverse strategy to support human use and protection of biodiversity and ecosystem services.

5. Conclusion

A hallmark of the Our Ocean Conferences (OOCs) has been a strong commitment to accountability for announcements made at the conference. One-third of the commitments made at the 2014–2017 OOCs focused on MPAs. The analysis presented above suggests that this commitment has resulted in verifiable and significant progress toward ocean protection: 22 new or expanded MPAs have added over 5 million km² or 1.4% of the ocean in implemented MPAs, almost doubling the amount of implemented MPAs worldwide. The analysis further suggests that even greater impact is possible if the remainder of OOC commitments are completed. If all of the MPAs promised at the first four OOCs were implemented, over 12 million km² or 3.4% of the ocean would be in OOC-announced MPAs. Clearly, simply creating MPAs is insufficient to achieve protection of biodiversity and ecosystem services, but it is a good beginning. The actions evaluated above need to be complemented by adequate attention to enforcement, funding, and adaptive management of those MPAs in addition to other actions to help ensure sustainable use of the rest of the ocean that is not in MPAs.

A growing number and diversity of governments, organizations, and citizens are committing to protect a greater area of the ocean in order to conserve its biodiversity and sustain the resources and ecosystem services on which humans rely. The OOCs represent only one venue for making these commitments, yet this forum alone has already made a considerable contribution. It has even greater potential to make substantial future contributions to global ocean protection if evaluations of progress (such as this study) are incorporated into OOC's routine practices and policies. This study analyzed progress on OOC MPA commitments to date and identified three clear steps that can be taken to ensure the OOC delivers on its promises. The ability to evaluate progress can be improved significantly with transparent reporting and the regular submission of updated information. Support at all levels is needed for countries that rise to make announcements in the face of limited resources. It is vital to consider what is needed to achieve true ocean protection and how OOC commitments can contribute to that goal. Actions need to go beyond MPAs and the MPA-related announcements at the OOCs to achieve that protection. Nevertheless, MPAs are key pieces of the portfolio if they are implemented at a protection level that is commensurate with their goals, if they are actively managed to meet those goals, and if they are combined with attention to making activities outside the MPA sustainable. These MPAs can also contribute to international targets. Incorporating aspects that

significantly influence MPA success—particularly stakeholder involvement, scientific design principles for MPA planning, and a balance between top-down and bottom-up processes to establish MPAs—into the announcement and designation stages is crucial for achieving true progress. Folding these considerations into the process of making and achieving high-level commitments can help to ensure that the opportunity to make true progress in ocean protection is not lost.

Thus, it is clear that the OOC has provided a high-profile platform for announcements of ocean action. It has also provided a way to track how global leaders take action and see those actions through. It has raised the visibility of the ocean in the international diplomacy world. It led to MPA and other announcements that were likely influenced by both the megaphone of the OOC and the example of other leaders. It appears to be contributing to a change in social norms among leaders of countries and others that makes it desirable and commendable to take action. Care must be taken to translate this energy into meaningful and durable action with due diligence, appropriate and equitable processes, and an ongoing attention to accountability. Only then will the OOC commitments bring significant benefit to the ocean and the people who depend upon it.

Conflicts of interest

We confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome. Support to study authors KGC, VC, JSS, and JL was provided by the Ocean Science Innovation Fund at Oregon State University.

We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed.

We further confirm that the order of authors listed in the manuscript has been approved by all authors.

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Appendix B. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.marpol.2019.04.003>.

Appendix A

Table A1

Thirty-four identifiers used to record and tally characteristics of all 202 individual actions announced at the Our Ocean Conferences from 2014 to 2017.

Identifier	Description
Announcement_ID	Unique identifier for each announcement
Action_ID	Unique identifier for each action within an Announcement ID
Actor_ID	Unique identifier for each action within an Action ID within an Announcement ID

(continued on next page)

Table A1 (continued)

Identifier	Description
Year_announced	Year the announcement was made
Country	Country, if applicable. If not, = 0.
Entity	Who made the announcement, if not a country. If not applicable, = 0.
Sector	Government, NGO, Foundation, Industry, Academic
Announcer	Person physically making the announcement at OOC. If unknown, = NA.
Announcer_position	e.g., President, Secretary of State, Minister of Finance
Category	Choose one: New area, Additional area, Financial, Fishing, Policy, Partnerships, Infrastructure
Site	If an announcement had multiple actions within a SINGLE announcement, this section describes the physical site. If no site, = NA.
Reaffirmed by later OOC announcement?	If announced at a later OOC, 1. If new or previously announced at OOC, 0.
Fully_0/1/NA	Refers to areas that are completely protected from all extractive activities. Commercial, recreational, artisanal fishing; fishing, mining, and oil and gas exploration and extraction are all forbidden. The terms marine reserve and no take MPA are used interchangeably with fully protected. If not an area, = NA.
Highly_0/1/NA	Almost all – but not all – extractive activities are forbidden. For example, only very minimal recreational fishing is allowed, but all other extractive uses (commercial fishing, mining, drilling) are prohibited. Highly protected is used interchangeably with strongly protected. If not an area, = NA.
Lightly_0/1/NA	Refers to an area where restrictions exist only on a small subset of extractive activities. Examples are (i) an area where fishing is banned only for a single species, but allowed for all other species or uses or (ii) an area where fossil fuel exploration and extraction as well as mining are forbidden, but regulated fishing is allowed. If not an area, = NA.
Multi_0/1/NA	There are multiple levels of protection within the same area, but no parts are no-take. If not an area, = NA.
Multi_NoTake_0/1/NA	There are multiple levels of protection within the same area, and one part is no-take. If not an area, = NA.
Unknown_0/1/NA	1 = the status of the single MPA is known, or if the commitment specifies a blanket percentage or area covered. 0 = the level if unknown
Intended_completion_date	Date of intended completion given at announcement – if a range, put end of range. If not applicable, = NA.
Progress_2015	Description of progress in 2015
Progress_2016	Description of progress in 2016
Progress_2017	Description of progress in 2017
Progress_2018	Description of progress in 2018
Progress_evidence_todate	1 = no evidence of any progress; 2 = evidence of some progress; 3 = evidence that commitment is complete.
Year_completed	Year the announcement was completed. If not completed yet, type NA.
Announced_0/1/NA	Refers to the current status of the area, i.e. each area will only get a 1 in one of these status categories. If not an area, put NA.
Designated_0/1/NA	Refers to the current status of the area, i.e. each area will only get a 1 in one of these status categories. If not an area, put NA. e.g., bill only
Implemented_0/1/NA	Refers to the current status of the area, i.e. each area will only get a 1 in one of these status categories. e.g., if it has a management plan or evidence of management. If not an area, = NA.
Self_reported_0/1	Self-reported evidence exists.
Independently_confirmed_0/1	Independently confirmed evidence exists.
Source_confidence	0 = no info at all; 1 = not confident (e.g. blog, personal opinion); 2 = somewhat confident (e.g. local or other news source); 3 = confident (e.g. legislation or bill where applicable, or has concrete facts)
Evidence_bill/legislation	Link to bill/legislation
Evidence_managementplan	Link to management plan or other on-the-ground tool for management
Evidence_other	Link to other evidence (e.g. self-reported)

Table A2

Actions announced by countries and territories at the Our Ocean Conferences between 2014–2017 in the MPA theme.

Country	Year announced	Category	Total
Argentina	2017	Additional area	1
		New area	1
Australia	2016	Financial	1
	2017	New area	1
		Policy	1
Bangladesh	2017	Policy	1
Cambodia	2016	New area	1
	2017	New area	2
Canada	2016	New area	5
	2017	Financial	2
		Meeting	2
		New area	6
		Policy	1
		Research	1
Chile	2015	New area	2
	2016	New area	1
		Research	1
	2017	New area	3
		Policy	1
China	2017	Policy	2
Colombia	2016	Additional area	1
	2017	Additional area	1
		Partnership	1
Cook Islands	2014	Additional area	1
	2017	New area	1
Costa Rica	2015	Policy	1

(continued on next page)

Table A2 (continued)

Country	Year announced	Category	Total
Croatia	2016	Additional area	1
	2017	Partnership	1
	2017	Additional area	1
		Financial	3
		New area	1
		Partnership	1
		Policy	1
Cuba		Research	1
Ecuador	2015	Partnership	1
	2016	Additional area	1
Federated States of Micronesia	2017	Partnership	1
	2016	Additional area	1
France	2016	Additional area	1
		Financial	1
		New area	1
		Policy	1
	2017	Additional area	1
		Financial	3
		New area	2
		Policy	2
	2015	New area	1
	2017	Partnership	1
Germany	2017	Financial	1
		Meeting	1
Ghana		Partnership	2
	2017	New area	1
		Research	1
Greece	2017	New area	1
Iceland	2017	Research	1
Indonesia	2017	New area	1
		Policy	1
Ireland	2017	Education	1
		Financial	3
Kiribati	2014	Policy	1
Kuwait	2016	New area	3
Lebanon	2016	New area	2
Malaysia	2016	New area	1
		Partnership	1
Malta	2016	New area	1
	2017	Education	1
		New area	1
		Policy	1
Mexico	2017	New area	1
Monaco	2016	Financial	1
Montenegro	2017	New area	1
Morocco	2016	New area	4
New Caledonia	2016	New area	5
New Zealand	2015	New area	1
Niue	2017	New area	1
Norway	2016	New area	4
Palau	2014	New area	1
	2016	New area	1
	2017	New area	1
		Policy	1
Panama	2015	Financial	2
		New area	2
	2016	Financial	1
	2017	Partnership	1
Philippines	2017	New area	1
		Policy	2
Portugal	2017	Financial	2
		New area	1
		Policy	1
		Research	2
Republic of Congo	2016	New area	1
Romania	2017	Policy	1
Seychelles	2016	New area	1
South Africa	2016	New area	1
South Korea	2016	New area	1
Spain	2017	Additional area	1
		New area	2
Sri Lanka	2016	Additional area	1
		Infrastructure	1
		New area	2

(continued on next page)

Table A2 (continued)

Country	Year announced	Category	Total
Sweden	2017	Financial	2
Thailand	2016	Infrastructure	1
		New area	2
	2017	New area	5
The Bahamas	2014	New area	1
Tunisia	2016	Financial	1
UK	2014	New area	1
	2016	Additional area	1
		Financial	1
		New area	3
	2017	Financial	1
USA	2014	Additional area	1
	2015	New area	2
		Partnership	1
	2016	Additional area	1
		Financial	1
		New area	1
		Partnership	1
	2017	New area	1
		Research	1
<i>Total</i>			174

Table A3

Actions announced by organizations at the Our Ocean Conferences between 2014–2017 in the MPA theme.

Organization	Year announced	Category	Total
Aker BioMarine	2017	Financial	1
Bertarelli Foundation	2016	Financial	1
Biotherm	2017	Financial	1
Birdlife International	2017	Partnership	1
Blue Moon Fund	2016	Financial	1
Conservation International	2016	Financial	1
Dive Together Crete	2017	Financial	1
		Infrastructure	1
EU	2015	New area	1
		Policy	2
	2016	Financial	1
	2017	Financial	2
		New area	1
		Partnership	2
		Research	1
Global Environment Facility	2016	Financial	1
Institute for Advanced Sustainability Studies	2017	Partnership	1
Institute for Sustainable Development and International Relations	2017	Partnership	1
International Eco Schools	2017	Education	1
International Ocean Institute - Southern Africa	2017	Partnership	1
Legambiente	2017	Financial	1
Leibniz-Centre of Tropical Marine Research (ZMT)	2017	Research	1
Leonardo DiCaprio Foundation	2014	Financial	1
Marche's Polytechnic University	2017	Financial	1
MARE Mundi	2017	Financial	1
		Infrastructure	1
Marevivo	2017	Financial	1
Marine Conservation Institute	2016	Financial	1
MAVA Foundation	2017	Financial	1
MedReAct	2017	Financial	1
Mission Blue	2017	Financial	1
National Geographic Pristine Seas	2016	Research	1
	2017	New area	1
		Partnership	1
Nekton Oxford Deep Ocean Research Institute	2017	Partnership	1
		Research	1
Niue Ridge to Reef Project	2017	New area	1
Oceana	2016	Research	1
Oceans 5	2015	Financial	1
	2017	New area	1
PACIFICO	2017	Partnership	1
Paris Club	2016	New area	1
PEW	2016	Financial	1
Prince Albert II of Monaco Foundation	2017	Financial	2
Rare	2015	Policy	1

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Table A3 (continued)

Organization	Year_announced	Category	Total
Saildrone	2017	Research	1
Secretariat of the Abidjan Convention	2017	Partnership	1
Secretariat of the Comisión Permanente del Pacífico Sur	2017	Partnership	1
Sociedade Francisco Manuel dos Santos	2017	Financial	1
Stanford University	2017	Financial	1
The Nature Conservancy	2016	Financial	1
		New area	1
The Oceano Azul Foundation	2017	Financial	1
The Sea Ranger Foundation	2017	Partnership	1
The Tiffany & Co. Foundation	2016	Financial	1
Tofia Niue	2017	New area	1
UNESCO IOC	2017	Education	1
		Financial	2
		Partnership	1
Universidad Católica del Norte	2017	Partnership	1
Vulcan Inc.	2017	Partnership	1
Waitt Foundation	2016	Financial	2
		New area	1
		Research	1
	2017	Financial	1
Walton Family Foundation	2016	Financial	1
WildAid	2016	Partnership	1
Wildlife Conservation Society	2016	Financial	1
		Research	1
	2017	Education	1
		Financial	1
WWF Colombia	2017	Partnership	1
WWF Germany	2017	Partnership	1
<i>Total</i>			79

Table A4

Marine protected areas (MPAs) that were promised at the Our Ocean Conferences between 2014 and 2017 and have been *Implemented* (i.e., protected areas that are operational, with management in place in or on the water).

Country	Site	Area (km ²)
Canada	Anguniaqvia niqiqyuam Marine Protected Area in Canada's western Arctic	2361
	Hecate Strait/Queen Charlotte Sound Marine Protected Area	2410
	Miramichi Bay	1553
	Western/Emerald Banks Conservation Area	10234
Cook Islands	Cook Islands Marine Park	3800000
Croatia	Jabuka/Pomo Pit	2000
Ecuador	Galapagos Islands Marine Reserve	40000
Federated States of Micronesia	Un-named	184948
Gabon	Un-named	46000
Kuwait	Garouh	0.05
	Kubar Island	0.05
	Um-Al-Maradim Islands	0.05
Malaysia	Tun Mustapha Park marine protected area	10000
Norway	"an estuary"	Unknown
	"Inshore coral reef"	170.00
	"rich and diverse open coastal area in the counties Rogaland and Sør-Trøndelag"	Unknown
	"ten additional marine protected areas to protect cold water corals"	Unknown
UK	Pitcairn Islands	1661600
USA	Northeast Canyons and Seamounts Marine National Monument	12725
	Pacific Remote Islands Marine National Monument	1054125
	Papahānaumokuākea Marine National Monument	1146798

References

- [1] J. Day, N. Dudley, M.T. Hockings, G. Holmes, D. Laffoley, S. Stolton, S. Wells, *Guidelines for Applying the IUCN Protected Area Management Categories to Marine Protected Areas*, IUCN, Gland, Switzerland, 2012.
- [2] IUCN, WCPA, *Applying IUCN's Global Conservation Standards to Marine Protected Areas (MPAs). Delivering Effective Conservation Action through MPAs, to Secure Ocean Health & Sustainable Development. Version 1.0.*, Gland, Switzerland, (2018).
- [3] R.L. Hill, Scientists call for protecting oceans, *Oregonian* (18 Feb. 1997).
- [4] J. Bohnsack, B. Causey, M.P. Crosby, R. Griffis, M.A. Hixon, T. Hourigan, K. Koltes, J.E. Maragos, A. Simons, J.T. Tilmant, A rationale for minimum 20–30% no-take protection, *Proceedings 9th International Coral Reef Symposium, Bali, Indonesia, 2000*, pp. 615–619.
- [5] S.D. Gaines, C. White, M.H. Carr, S. Palumbi, Designing marine reserve networks for both conservation and fisheries management, *Proc. Natl. Acad. Sci. U. S. A* 107 (2010) 18286–18293, <https://doi.org/10.1073/pnas.0906473107>.
- [6] B.C. O'Leary, M. Winther-Janson, J.M. Bainbridge, J. Aitken, J.P. Hawkins, C.M. Roberts, Effective coverage targets for ocean protection, *Conserv. Lett.* 9 (2016) 398–404, <https://doi.org/10.1111/conl.12247>.
- [7] G.J. Edgar, R.D. Stuart-Smith, T.J. Willis, S. Kininmonth, S.C. Baker, S. Banks, N.S. Barrett, M.A. Becerro, A.T.F. Bernard, J. Berkhout, C.D. Buxton, S.J. Campbell, A.T. Cooper, M. Davey, S.C. Edgar, G. Foerster, D.E. Galvan, A.J. Irigoyen, D.J. Kushner, R. Moura, P.E. Parnell, N.T. Shears, G. Soler, E.M.A. Strain, R.J. Thomson, Global conservation outcomes depend on marine protected areas with five key features, *Nature* 506 (2014) 216–220, <https://doi.org/10.1038/nature13022>.
- [8] J. Lubchenco, K. Grorud-Colvert, Making waves: the science and politics of ocean

- protection, *Science* 350 (2015) 382–383, <https://doi.org/10.1126/science.aad5443>.
- [9] J.E.M. Watson, E.S. Darling, O. Venter, M. Maron, J. Walston, H.P. Possingham, N. Dudley, M. Hockings, M. Barnes, T.M. Brooks, Bolder science needed now for protected areas, *Conserv. Biol.* 30 (2016) 243–248, <https://doi.org/10.1111/cobi.12645>.
 - [10] T. Agardy, J. Claudet, J.C. Day, 'Dangerous Targets' revisited: old dangers in new contexts plague marine protected areas, *Aquat. Conserv. Mar. Freshw. Ecosyst.* 26 (2016) 7–23, <https://doi.org/10.1002/aqc.2675>.
 - [11] D.A. Gill, M.B. Mascia, G.N. Ahmadi, L. Glew, S.E. Lester, M. Barnes, I. Craigie, E.S. Darling, C.M. Free, J. Geldmann, S. Holst, O.P. Jensen, A.T. White, X. Basurto, L. Coad, R.D. Gates, G. Guannel, P.J. Mumby, H. Thomas, S. Whitmee, S. Woodley, H.E. Fox, Capacity shortfalls hinder the performance of marine protected areas globally, *Nature* 543 (2017) 665–669, <https://doi.org/10.1038/nature21708>.
 - [12] S. Giakoumi, J. McGowan, M. Mills, M. Beger, R.H. Bustamante, A. Charles, P. Christie, M. Fox, P. Garcia-Borboroglu, S. Gelcich, P. Guidetti, P. Mackelworth, J.M. Maina, L. McCook, F. Micheli, L.E. Morgan, P.J. Mumby, L.M. Reyes, A. White, K. Grorud-Colvert, H.P. Possingham, Revisiting "success" and "failure" of marine protected areas: a conservation scientist perspective, *Front. Mar. Sci.* 5 (2018), <https://doi.org/10.3389/fmars.2018.00223>.
 - [13] E. Sala, J. Lubchenco, K. Grorud-Colvert, C. Novelli, C. Roberts, U.R. Sumaila, Assessing real progress towards effective ocean protection, *Mar. Pol.* 91 (2018) 11–13, <https://doi.org/10.1016/j.marpol.2018.02.004>.
 - [14] M. Maron, J.S. Simmonds, J.E.M. Watson, Bold nature retention targets are essential for the global environment agenda, *Nature Ecol. Evol.* 2 (2018) 1194–1195, <https://doi.org/10.1038/s41559-018-0595-2>.
 - [15] D. Laffoley, N. Dudley, H. Jonas, D. MacKinnon, K. MacKinnon, M. Hockings, S. Woodley, An introduction to 'other effective area-based conservation measures' under Aichi Target 11 of the Convention on Biological Diversity: origin, interpretation and emerging ocean issues, *Aquat. Conserv. Mar. Freshw. Ecosyst.* 27 (2017) 130–137, <https://doi.org/10.1002/aqc.2783>.
 - [16] I. Chollett, S.J. Box, P.J. Mumby, Quantifying the squeezing or stretching of fisheries as they adapt to displacement by marine reserves, *Conserv. Biol.* 30 (2016) 166–175, <https://doi.org/10.1111/cobi.12573>.
 - [17] D. Diz, D. Johnson, M. Riddell, S. Rees, J. Battle, K. Gjerde, S. Hennige, J.M. Roberts, Mainstreaming marine biodiversity into the SDGs: the role of other effective area-based conservation measures (SDG 14.5), *Mar. Pol.* 93 (2018) 251–261, <https://doi.org/10.1016/j.marpol.2017.08.019>.
 - [18] J.E. Cinner, T. Daw, C. Huchery, P. Thoya, A. Wamukota, M. Cedras, C. Abunge, Winners and losers in marine conservation: Fishers' displacement and livelihood benefits from marine reserves, *Soc. Nat. Resour.* 27 (2014) 994–1005, <https://doi.org/10.1080/08941920.2014.918229>.
 - [19] IUCN, WCPA, IUCN Green List of Protected and Conserved Areas: Standard, Version 1.1, IUCN, Gland, Switzerland, 2016.
 - [20] Convention on Biological Diversity, Protected Areas and Other Effective Area-Based Conservation Measures. Recommendation Adopted by the Subsidiary Body on Scientific, Technical, and Technological Advice. CBD/SBSTTA/REC/22/5, Montreal, Canada, (2018).
 - [21] L. Boonzaier, D. Pauly, Marine protection targets: an updated assessment of global progress, *Oryx* 50 (2016) 27–35, <https://doi.org/10.1017/S0030605315000848>.
 - [22] L. Morgan, E. Pike, R. Moffitt, How much of the ocean is protected? Biodiversity 0 (2018) 1–4, <https://doi.org/10.1080/14888386.2018.1469432>.
 - [23] B. Neumann, S. Unger, From voluntary commitments to ocean sustainability, *Science* 363 (2019) 35–36, <https://doi.org/10.1126/science.aav5727>.
 - [24] A.N. Rife, B. Erisman, A. Sanchez, O. Aburto-Oropeza, When good intentions are not enough ... Insights on networks of "paper park" marine protected areas, *Conserv. Lett.* 6 (2013) 200–212, <https://doi.org/10.1111/j.1755-263X.2012.00303.x>.
 - [25] S. Giakoumi, C. Scianna, J. Plass-Johnson, F. Micheli, K. Grorud-Colvert, P. Thiriet, J. Claudet, G. Di Carlo, A. Di Franco, S.D. Gaines, J.A. Garcia-Charton, J. Lubchenco, J. Reimer, E. Sala, P. Guidetti, Ecological effects of full and partial protection in the crowded Mediterranean Sea: a regional meta-analysis, *Sci. Rep.* 7 (2017) 8940, <https://doi.org/10.1038/s41598-017-08850-w>.
 - [26] A. Ruiz-Frau, H.P. Possingham, G. Edwards-Jones, C.J. Klein, D. Segan, M.J. Kaiser, A multidisciplinary approach in the design of marine protected areas: integration of science and stakeholder based methods, *Ocean Coast Manag.* 103 (2015) 86–93, <https://doi.org/10.1016/j.ocecoaman.2014.11.012>.
 - [27] E. Saarman, M. Gleason, J. Ugoretz, S. Airamé, M. Carr, E. Fox, A. Frimodig, T. Mason, J. Vasques, The role of science in supporting marine protected area network planning and design in California, *Ocean Coast Manag.* 74 (2013) 45–56, <https://doi.org/10.1016/j.ocecoaman.2012.08.021>.
 - [28] M. Gleason, E. Fox, S. Ashcraft, J. Vasques, E. Whiteman, P. Serpa, E. Saarman, M. Caldwell, A. Frimodig, M. Miller-Henson, J. Kirlin, B. Ota, E. Pope, M. Weber, K. Wiseman, Designing a network of marine protected areas in California: achievements, costs, lessons learned, and challenges ahead, *Ocean Coast Manag.* 74 (2013) 90–101, <https://doi.org/10.1016/j.ocecoaman.2012.08.013>.
 - [29] N.C. Ban, C.R. Picard, A.C.J. Vincent, Comparing and integrating community-based and science-based approaches to prioritizing marine areas for protection, *Conserv. Biol.* 23 (2009) 899–910.
 - [30] T. Chaigneau, T.M. Daw, Individual and village-level effects on community support for Marine Protected Areas (MPAs) in the Philippines, *Mar. Pol.* 51 (2015) 499–506, <https://doi.org/10.1016/j.marpol.2014.08.007>.
 - [31] M. Sowman, J. Sunde, Social impacts of marine protected areas in South Africa on coastal fishing communities, *Ocean Coast Manag.* 157 (2018) 168–179, <https://doi.org/10.1016/j.ocecoaman.2018.02.013>.
 - [32] K. Grorud-Colvert, J. Claudet, B.N. Tissot, J.E. Caselle, M.H. Carr, J.C. Day, A.M. Friedlander, S.E. Lester, T.L. de Loma, D. Malone, W.J. Walsh, Marine protected area networks: assessing whether the whole is greater than the sum of its parts, *PLoS One* 9 (2014), <https://doi.org/10.1371/journal.pone.0102298> e102298.
 - [33] R.A. Magris, R.L. Pressey, R. Weeks, N.C. Ban, Integrating connectivity and climate change into marine conservation planning, *Biol. Conserv.* 170 (2014) 207–221, <https://doi.org/10.1016/j.biocon.2013.12.032>.
 - [34] A. McNeill, J. Clifton, E.S. Harvey, Attitudes to a marine protected area are associated with perceived social impacts, *Mar. Pol.* 94 (2018) 106–118, <https://doi.org/10.1016/j.marpol.2018.04.020>.
 - [35] K. Nyborg, J.M. Anderies, A. Dannenberg, T. Lindahl, C. Schill, M. Schlüter, W.N. Adger, K.J. Arrow, S. Barrett, S. Carpenter, F.S. Chapin, A.-S. Crépin, G. Daily, P. Ehrlich, C. Folke, W. Jager, N. Kautsky, S.A. Levin, O.J. Madsen, S. Polasky, M. Scheffer, B. Walker, E.U. Weber, J. Wilen, A. Xepapadeas, A. de Zeeuw, Social norms as solutions, *Science* 354 (2016) 42–43, <https://doi.org/10.1126/science.aaf8317>.
 - [36] J. Lubchenco, E.B. Cerny-Chipman, J.N. Reimer, S.A. Levin, The right incentives enable ocean sustainability successes and provide hope for the future, *Proc. Natl. Acad. Sci. U. S. A.* 113 (2016) 14507–14514, <https://doi.org/10.1073/pnas.1604982113>.
 - [37] PISCO, University of Nice Sophia Antipolis, The Science of Marine Reserves, 3rd Edition, Mediterranean, (2016) www.piscoweb.org.