

Chapter 36

WORLD-MAKING THROUGH MAPPING: LARGE SCALE MARINE PROTECTED AREAS AND THE TRANSFORMATION OF THE GLOBAL OCEAN

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Forthcoming in: The Routledge Handbook of Critical Resource Geography (eds.) E. Havice, M. Himley and G. Valdivia

Abstract

Ocean conservation is a global concern and marine protected areas (MPAs) are prominent on the ocean conservation agenda. Although MPAs cover less than eight percent of global oceans, area coverage has expanded 15-fold since 1993. Until 2006, visualizations of this expansion were underwhelming; global maps of MPAs showed mostly thin lines of blue hugging coastlines, barely detectable “edges” to the vast undifferentiated ocean. This began to change when the United States (US) established a large scale MPA (LSMPA), the Papahānaumokuākea US Marine National Monument. LSMPAs have proliferated since, with currently 37 LSMPAs designated. Global maps now reveal the oceans as a differentiated space: what was once uniform is now disrupted by LSMPA polygons signifying spaces of conservation where resource use is prohibited or limited. In this chapter, we explore what kind of world-making is performed through global maps of LSMPAs. While these maps perform progress towards “global oceans conserved,” LSMPA expansion can be understood differently: as assertions of sovereignty by small island developing states, evidence of neocolonial conservation or NGO success, or spaces of management. In examining the intersections among mapping, performance, and world-making, we interrogate the “unmaking” and “remaking” of ocean resources and the implications for governing the global ocean.

World-making through mapping: Large scale marine protected areas and the transformation of the global ocean

Ocean conservation is a global concern and marine protected areas (MPAs) are prominent on the ocean conservation agenda (Campbell et al. 2016). Although terrestrial protected areas (PAs) date to the late 1800s, MPAs have a more recent history. From fewer than 500 MPAs prior to 1985 (Kelleher 1999), MPAs number around 17,000 in 2020, covering almost eight percent of global oceans and 17 percent of oceans within the 200 mile exclusive economic zone (EEZ) of coastal states (as at April 17, 2020, <https://www.protectedplanet.net/marine>, Protected Areas Coverage in 2020).

In this chapter, we theorize MPA expansion as a world-making project through which global oceans are transformed. World-making concerns the relationship between “representing” and

“being in” the world (Goodman 1978; Hollinshead, Ateljevic, and Ali 2009; Escobar 2018) and can occur at a variety of social and geographic scales; it is additionally meaningful for our analysis given the global scale of ocean transformation. Transformation can take many forms, including materially when MPAs restrict or eliminate resource use. From a critical resource geography perspective, this represents an “unmaking” of resources with value in extraction (e.g., as fish, oil, or other commodities) and a “remaking” of resources with value in non-extraction (e.g., as carbon sinks, recreation opportunity or political capital). We are interested in how MPA expansion — and in particular, global maps documenting that expansion—transforms “imaginative geographies” (Gregory 1995) of the oceans, shaping the way oceans and ocean resources are seen and, in turn, possibilities for governing them.

Drawing on critical cartography, we understand maps of MPA expansion as both processual (in a state of “becoming” rather than settled) and performative (both reflecting and shaping the world). Mapping is key to the world-making we describe, as global maps of MPAs, incrementally and repeatedly added to, perform progress towards “global oceans conserved.” To support our argument, we organize the chapter as follows. First, we review imaginative geographies of oceans and situate our work in critical cartography. Second, we draw on our research on the global expansion of MPAs generally and emergence of LSMPAs specifically to illustrate the processual and performative nature of mapping. We analyze the work done by the maps of progress towards “global oceans conserved” and we look for points of “slippage” (Gibson-Graham 2008), where alternative ocean worlds are possible, by making **with** our own maps.

Imagining oceans, governing oceans

In *The Social Construction of the Ocean*, Steinberg (2001) explores the link between how humans imagine and govern oceans. A dominant western construction of oceans as “unpeopled” spaces of nature supports prioritizing the free, frictionless, and unfettered movement (of military, capital, and communications) across a smooth surface. Oceans have also been imagined as an inexhaustible source of resources and sink for pollution, an imaginative geography that suggests governance is unnecessary (Gray 2018). These long-standing constructions increasingly compete with alternatives that “people” oceans in various ways. For example, the “middle passage” — the trans-Atlantic route followed by ships carrying enslaved Africans to the Americas — invokes a geography of the ocean that is “only thinkable through ... traces of extreme violence and loss” (Lehman 2018, 298) and that, in turn, directs efforts to commemorate it. Contemporary discourses of Blue Economy position oceans as a frontier for capitalist expansion (Havice and Zalik 2018) and also as spaces where small scale fishers make their living and where Blue Justice is needed (Silver et al. 2015; Voyer et al. 2018). In contrast, MPA proponents concerned about biodiversity invoke an “overuse narrative” (Steinberg 2008) that describes oceans as in crisis and need of intervention. This narrative has recently been extended to the high seas, as conservationists concerned with “governance gaps” construct an imaginative geography that recognizes remote open water spaces as amenable to enclosure for conservation (Gray 2018).

Since many people are “underexposed” to oceans (Steinberg 2008), with limited or no material interactions, imaginative geographies are particularly important to how people understand ocean worlds. Although discourses (e.g., blue economy), narratives (e.g., of overuse), and metaphors (e.g., sources and sinks) all inform and reflect imaginative geographies of oceans and ocean resources, in this chapter we focus on the world-making accomplished through mapping. From a

starting point in 2006, maps of global oceans have changed incrementally with dramatic results. What was once mapped as a vast, undifferentiated “blank” space has been disrupted by more, and especially larger, LSMPA polygons (see Figures 36.1 and 36.2). Maps “stimulate the imagination of their audiences” (Caquard 2011, 136) and inform how society conceptualizes human-ocean relations (St Martin 2001; Steinberg 2009; Boucquey et al. 2019). Again, “underexposure” to oceans means that maps and visualizations are a key to how oceans are seen and known and geographic imaginaries formed.

Seeing and knowing are always partial, and mapmakers choose what to represent on their maps (see Chapter 37 by Bryan, in this volume). Prior to the critical turn in cartography, mapmakers grappled with the implications of choice but treated it as a technical necessity that could be made objectively. Beginning in the 1980s, geographers began to question the “truth value” of maps as objects (Kitchin and Dodge 2007) and to treat choice as reflecting the values and biases of mapmakers. Thus, critical cartography sought to reveal the “hidden, and sometimes hideous, narratives and agendas embedded in maps” (Caquard 2011, 136), or their “second text” (Kitchin and Dodge 2007). The point in identifying hidden agendas was to circumvent or oppose them and counter-mapping emerged as one way of doing so. In short, cartographers recognized maps as political.

The critical approach broadened beyond revealing the politics of maps to consider maps as both performative and processual (Caquard and Cartwright 2014). A performative understanding of maps attends to the “work that maps do, how they act and shape our understanding of the world” (Pickles 2004, 12). In representing, maps simultaneously “provide the very conditions of possibility for the worlds we inhabit and the subjects we become” (Pickles 2004, 5). A processual understanding of maps shifts the focus from “ontology (what things are) to ontogenetic (how things become)” (Caquard 2015, 229). Maps become through data, knowledge, and practices that combine to co-produce reality (Crampton 2009), such that maps are not so much copies of the world but achievements (compare to Hollinshead, Ateljevic, and Ali 2009). If early critical work deconstructed and exposed the “second text” of maps, this phase of critical cartography situated maps as a “compelling form of storytelling” (Caquard 2011, 136). It is in the use of the map, the repetition of the map’s story in a “particular setting for a particular purpose” (Caquard 2015, 229) that world-making can occur. Maps are made not just by the mapmaker but every time someone engages with them (Rossetto 2012)

Drawing on data, knowledge, and practices arising from our research on the human dimensions of LSMPAs (Gruby et al. 2017; Gruby et al. 2016), we engage with maps of progress towards “global oceans conserved” in two ways. First, we engage as map-readers, identifying the dominant story of progress towards “global oceans conserved” and contextualizing it in the politics of global marine conservation. Second, we engage as mapmakers. We look for points of slippage and ontogenetic possibility by re-mapping LSMPAs to tell alternative stories about the transformation of global oceans and ocean resources. Our goal is to think through the role of mapping in the LSMPA phenomenon and, in doing so, bring critical cartographic theory to bear on questions of the making and unmaking of ocean spaces and resources.

Performing progress towards “global oceans conserved”

MPAs are central to global conservation efforts, as reflected in global targets for biodiversity conservation. The Convention on Biological Diversity's (CBD) Aichi Target 11 encourages expansion of protected areas, and its marine component envisions that, by 2020, 10 percent of "coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through ... protected areas and other effective area based conservation measures..." (CBD 2010). Among the CBD's 20 Aichi Targets, the MPA component of Target 11, specifically its area coverage component, is one of the few likely to be met on schedule (UNEP-WCMC, IUCN, and NGS 2018; Campbell and Gray 2019).

Progress towards Target 11 in part reflects opportunity. When the CBD adopted its first MPA target in 2002, MPAs covered less than one percent of the ocean, leaving ample room for expansion. Although MPAs have increased in number, most MPAs are coastal and small (almost two-thirds are less than five square kilometers); we exclude them from our global maps as most cannot be seen at that scale. In contrast, LSMPAs are defined as larger than 100,000 km². Three LSMPAs were established prior to the 2002 target (Figure 36.1), but LSMPAs emerged as a phenomenon beginning in 2006 when the US declared the Papahānaumokuākea US Marine National Monument and Kiribati announced its intention to create an LSMPA in ten percent of its EEZ, the 12th largest EEZ in the world. LSMPAs have proliferated since and as of this writing there are 37 LSMPAs (Figure 36.2), the majority in EEZs of small islands. More than half of LSMPAs are larger than 250,000 km² and five are larger than 1,000,000 km² (as at April 21, 2020, <http://www.mpatlas.org/protectiondashboard/very-large-mpas>, Very Large MPAs). Whether or not individual LSMPAs are established because of CBD Aichi Target 11, the LSMPA phenomenon will underwrite any success in reaching it. The 20 largest LSMPAs account for more than 65 percent of global MPA coverage (as at April 17, 2020, <https://www.protectedplanet.net/marine>, Size Distribution)

<FIGURE 36.1 ABOUT HERE>

<FIGURE 36.2 ABOUT HERE>

Figure 36.1: LSMPAs prior to 2002

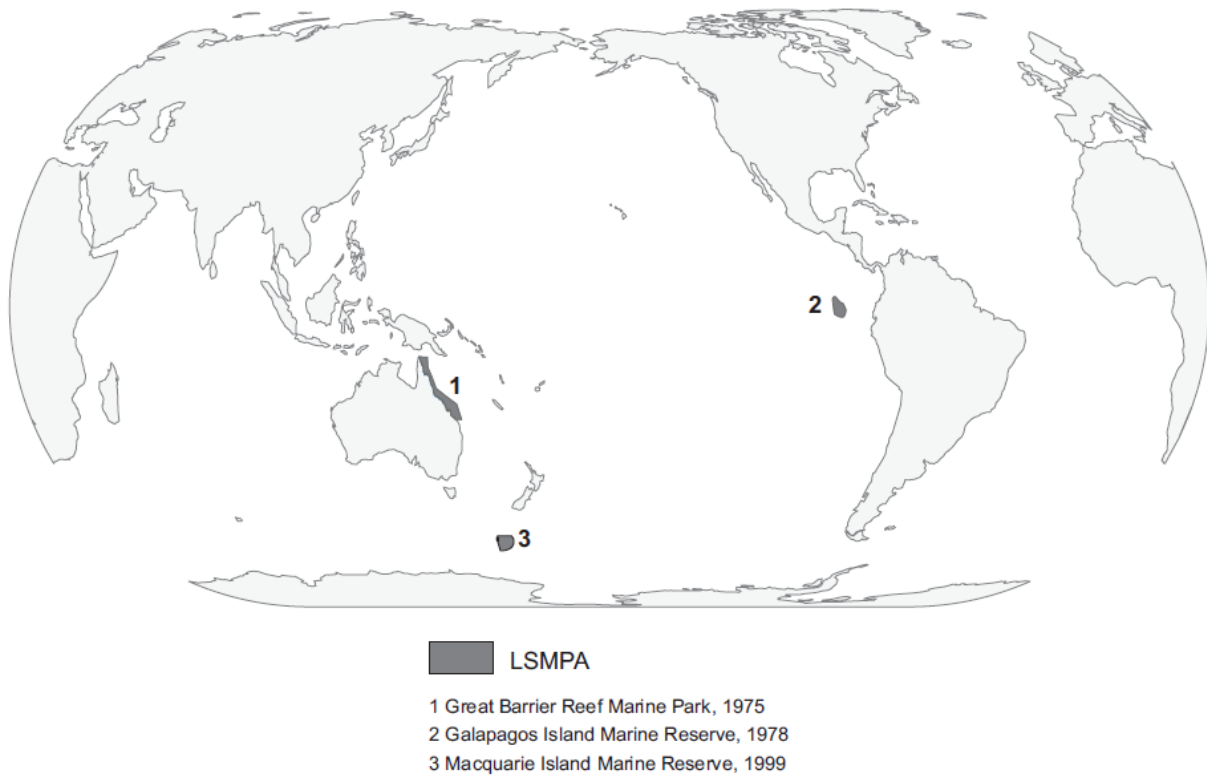
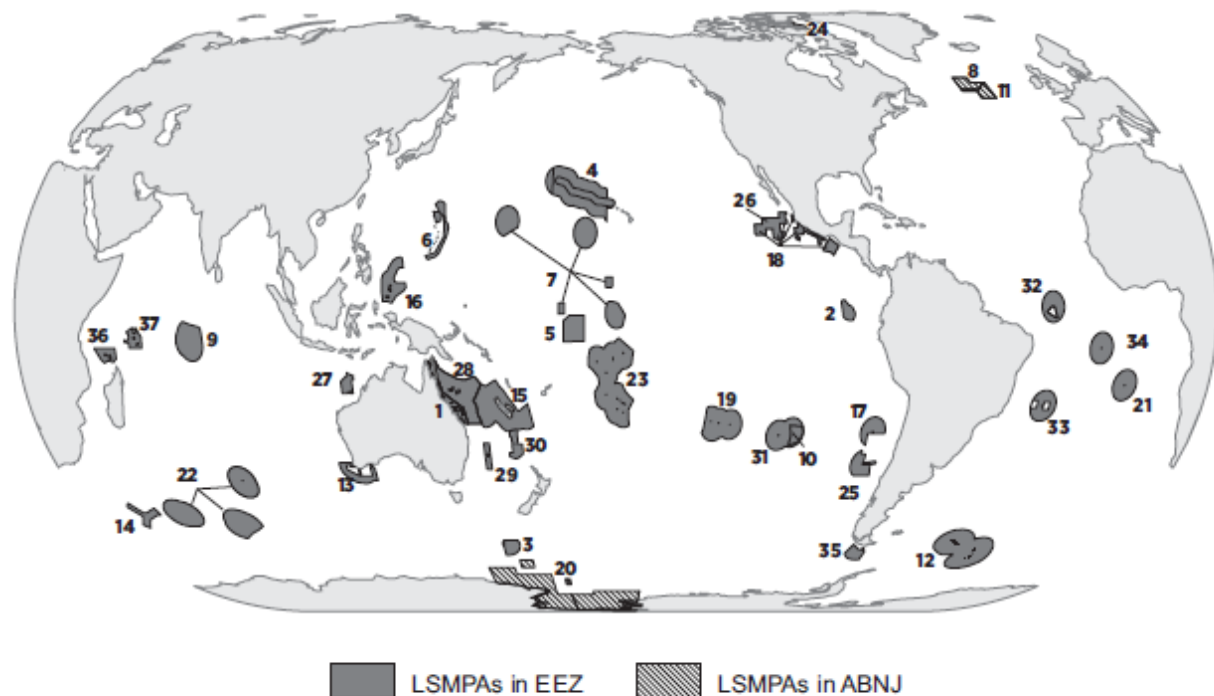


Figure 36.2: LSMPAs as of March 2020



- | | |
|--|---|
| 1 Great Barrier Reef Marine Park, 1975 | 20 Ross Sea Protected Area, 2016 |
| 2 Galapagos Marine Reserve, 1978 | 21 St Helena Marine Protection Zone, 2016 |
| 3 Macquarie Island Marine Reserve, 1999 | 22 Terres Australes Francaises, 2016 |
| 4 Papahānaumokuākea Marine National Monument, 2006, 2016 | 23 Maraë Moana Marine Park, 2017 |
| 5 Phoenix Islands Protected Area, 2008 | 24 Tallurūtiup Imanga/Lancaster Sound National Marine Conservation Area, 2017 |
| 6 Marianas Trench Marine National Monument, 2009 | 25 Mar de Juan Fernández Marine Park, 2017 |
| 7 Pacific Remote Islands Marine National Monument, 2009 | 26 Revillagigedo National Park, 2017 |
| 8 Charlie Gibbs North MPA, 2010 | 27 Argo-Rowley Terrace Commonwealth Marine Reserve, 2018 |
| 9 Chagos Marine Protected Area, 2010 | 28 Coral Sea Commonwealth Marine Reserve, 2018 |
| 10 Motu Motiro Hiva Marine Park, 2010 | 29 Lord Howe Commonwealth Marine Reserved, 2018 |
| 11 Charlie Gibbs South MPA, 2012 | 30 Norfolk Marine Park, 2018 |
| 12 South Georgia and South Sandwich Islands MPA, 2012 | 31 Rapa Nui MPA, 2018 |
| 13 South-west Corner Marine Park, 2013 | 32 Sao Pedro e Sao Paulo Environmental Protection Area, 2018 |
| 14 Prince Edward Island MPA, 2013 | 33 Trinidad e Marim Vez Environmental Protection Area, 2018 |
| 15 Natural Park of the Coral Sea, 2014 | 34 Ascension Island MPA, 2019 |
| 16 Palau National Marine Sanctuary, 2015 | 35 Diego Ramirez-Drake Passage Marine Park, 2019 |
| 17 Nazca-Desaventuradas Marine Park, 2016 | 36 Aldabra MPA, 2020 |
| 18 Pacifico Mexicano Profundo, 2016 | 37 Amirantes MPA, 2020 |
| 19 Pitcairn Islands Marine Reserve, 2016 | |

The global expansion of LSMPAs is a world-making project, supported by and illustrative of processual and performative mapping. In moving from [Figure 36.1](#) to [Figure 36.2](#) over an 18-year period, the map of global oceans has been transformed from an undifferentiated blank space to one marked with LSMPA polygons, each representing a space of conservation in which resources once valued for extraction are reimagined and remade as resources valued for non-extraction (e.g., coral reefs supporting fisheries are transformed into tourist attractions). While this transformation occurs with MPAs generally, the scope of transformation via LSMPAs is unprecedented with entire EEZs and their resources remade. Although individual LSMPAs have their own stories, we argue that the power of the world-making project is in the collection, the iterative expansion of LSMPAs and maps of LSMPAs through repetition. As each additional LSMPA moves Parties to the CBD closer to achieving CBD Aichi Target 11, global maps of LSMPAs inspire the creation of more LSMPAs. [Figure 36.2](#) reflects incremental, cumulative progress by countries towards shared goals as negotiated in multilateral forums like the CBD, which in turn reinforces the relevance of those forums and targets-based governance. In

performing progress towards “global oceans conserved,” the map does work for global environmental governance.

Our maps are made with data from the World Database on Protected Areas (WDPA), the official dataset the CBD uses to measure progress towards Aichi Target 11. **Figure 36.2** is our map of progress towards “global oceans conserved,” but there are others. The Atlas of Marine Protection (hereafter MPA Atlas) starts with WDPA data and replaces or updates MPA records using national or regional databases. It also distinguishes among LSMPAs according to level of protection (ranging from strictly protected to multiple-use areas) and legal status (whether the site is declared, designated, or implemented) (as at April 21, 2020, http://www.mpatlas.org/media/filer_public/ff/1d/ff1dc244-06f7-461a-a407-c33ff0009fa4/vlmpa_jan2019.jpg). The WDPA produces its own map that includes all MPAs, large and small (as at April 21, 2020, https://www.protectedplanet.net/MPA_Map.pdf).

The differences among these maps arise from choices made by mapmakers. For example, we include the full extent of the Marea Moana Marine Park (Cook Islands) as registered in the WDPA; the MPA Atlas does not. We exclude the announced by undesignated Kermadec Islands Ocean Sanctuary (New Zealand): The MPA Atlas also excludes it, but the WDPA includes it. The implications of our choices will be discussed further below, but in spite of the differences among **Figure 36.2**, the MPA Atlas map, and the WDPA map, all three perform progress towards “global oceans conserved.”

As LSMPAs have expanded so too has debate about their ecological, economic, political, and social costs and benefits. Debate is captured in numerous scientific articles and the popular press. While we review and contribute to this debate elsewhere (Gruby et al. 2017), here we are interested in two features of the relationship between the debate about LSMPAs and LSMPA expansion. First, regardless of the merits of different points in the debate, the debate’s existence, extent, and nature reflect the significance of LSMPAs as a world-making project. LSMPAs have expanded at a fast rate and over a large extent, with each successive “largest” LSMPA announcement garnering mainstream press coverage. This attention draws a response, both from those supportive of LSMPAs and concerned that they are being oversold as the solution for ocean conservation. Second, maps performing progress towards “global oceans conserved” (**Figure 36.2**) motivate and simultaneously obscure points in the debate. For example, motivated by concerns that many LSMPAs allow resource extraction (Sala et al. 2018), the MPA Atlas map differentiates levels of protection and legal status in order to accurately describe protection “on the water.” The map can be read as a “check” on the story of progress. However, the map simultaneously reinforces the sense of progress: Distinguishing among different levels of protection implies differentiated conservation action and suggests that further progress is possible as LSMPA status can be updated when new implementation measures are enacted. The map changes and evolves as progress continues.

With the dominant performance of progress towards “global oceans conserved” in mind, we turn to four alternative maps. We made two of these: a map of LSMPAs in small island developing states (SIDS) (**Figure 36.3**) and a map of countries with the most LSMPA coverage (**Figure 36.4**). Two maps were made by others: a map of LSMPAs included in the Pew Bertarelli Ocean Legacy project (**Figure 36.5, replicated by us**) and a map of LSMPAs that are members of Big

Ocean Network (Figure 36.6, reproduced with permission). Each alternative counters or modifies the dominant performance of progress towards “global oceans conserved.”

LSMPAs in small island developing states (SIDS)

We are interested in how SIDS, motivated by the inequitable distribution of costs and benefits of global conservation initiatives, have responded to increased interest in marine conservation. SIDS (the group designation of 38 islands nations within the United Nations [UN]) have emerged as important actors in global forums with ocean interests, positioned as “ripe for developing, testing, and implementing new or expanded governance arrangements for ocean conservation” (Silver and Campbell 2018, 241). Relative to their position in the international political economy, SIDS play an outsized role in climate change diplomacy in part by exercising “moral leadership” (Betzold 2010). For marine biodiversity, Pacific SIDS have positioned themselves as leaders within the CBD and leverage this position to access resources and exert influence (Gruby and Campbell 2013). Establishing LSMPAs is well aligned with these efforts, and with work by several SIDS to rebrand SIDS as “Large Ocean States,” a challenge to institutionalized discourses that emphasize their small size and vulnerability (Chan 2018; Mawyer and Jacka 2018; Silver and Campbell 2018).

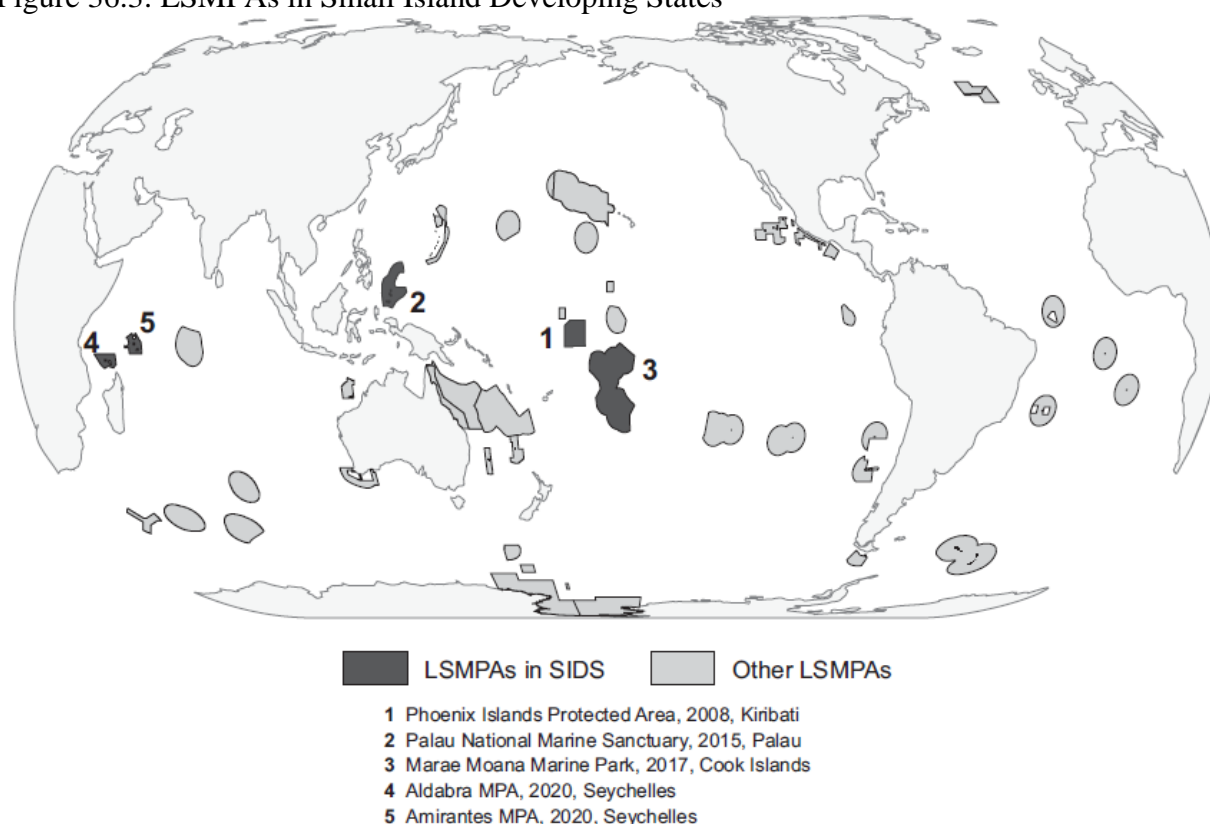
Maps of LSMPAs make islands visible collectively by directing attention to oceans and individually by making islands too small to see on a global map visible with their large EEZs filled in to highlight an LSMPA. LSMPA maps thus reinforce the Large Ocean State discourse, particularly when based on a “realist conception of power in international politics” as linked to territorial size (Chan 2018, 540). LSMPA maps project sovereignty over state space, and some states may realize increased sovereignty by using the LSMPA to protect biodiversity and/or claim benefits from resource use, e.g., in fisheries, tourism, or seabed mining. Although some LSMPAs are EEZ-wide “no-take” zones where resource extraction is prohibited, others include no-take LSMPAs within part of the EEZ or have designed an EEZ-wide LSMPA as multi-use. Palau, for example, has divided its EEZ into three zones including the no-take Palau National Marine Sanctuary and an area for domestic fisheries intended to reclaim sovereignty over tuna resources (Gruby et al. 2017). Sovereignty is further strengthened when visibility is enhanced via remote monitoring and surveillance through, for example, the Project Eyes on the Seas program, a partnership between The Pew Charitable Trusts and Satellite Applications Catapult. Made available to help monitor and enforce LSMPAs specifically, these technologies can help SIDS overcome long-standing challenges associated with exercising sovereignty more generally (Chan 2018).

The global LSMPA map can support a story of increased island visibility and sovereignty and SIDS as leaders in ocean conservation. However, only three countries in the UN SIDS grouping — Kiribati, Palau, and Seychelles — have implemented LSMPAs (Figure 36.3). Most LSMPAs have been implemented by former colonial states in what are now territories, dependencies, and protectorates of those states. We mapped Figure 36.3 to think through the relationship between LSMPAs and sovereignty as well as potential sovereignty gains that LSMPAs present for non-sovereign territories. For example, we include Cook Islands in Figure 36.3 even though it is not in the UN SIDS group due to its “free association” with New Zealand. However, some UN agencies recognize it as a SIDS. Further, the country is self-governed, a Cook Islander was the original LSMPA proponent, and a notion of Cook Islands nationalism was mobilized through the

LSMPA project (Durbin 2018). There may be islands not fully sovereign that see LSMPAs as a means to bring attention to or facilitate governance ambitions. However, the global map of LSMPAs obscures the complex and heterogeneous sovereign status of many islands, and the historical context from which sovereign status has emerged. States are not named in many global LSMPA maps (including Figure 36.2). In mapping Figure 36.3, we attempt to balance a story that acknowledges SIDS and island agency while revealing that most LSMPAs are not in SIDS. The question is not just whether and how LSMPAs enhance sovereignty, but sovereignty for whom? We explore this question in relation to contested state sovereignty in our next map.

<FIGURE 36.3 ABOUT HERE>

Figure 36.3: LSMPAs in Small Island Developing States

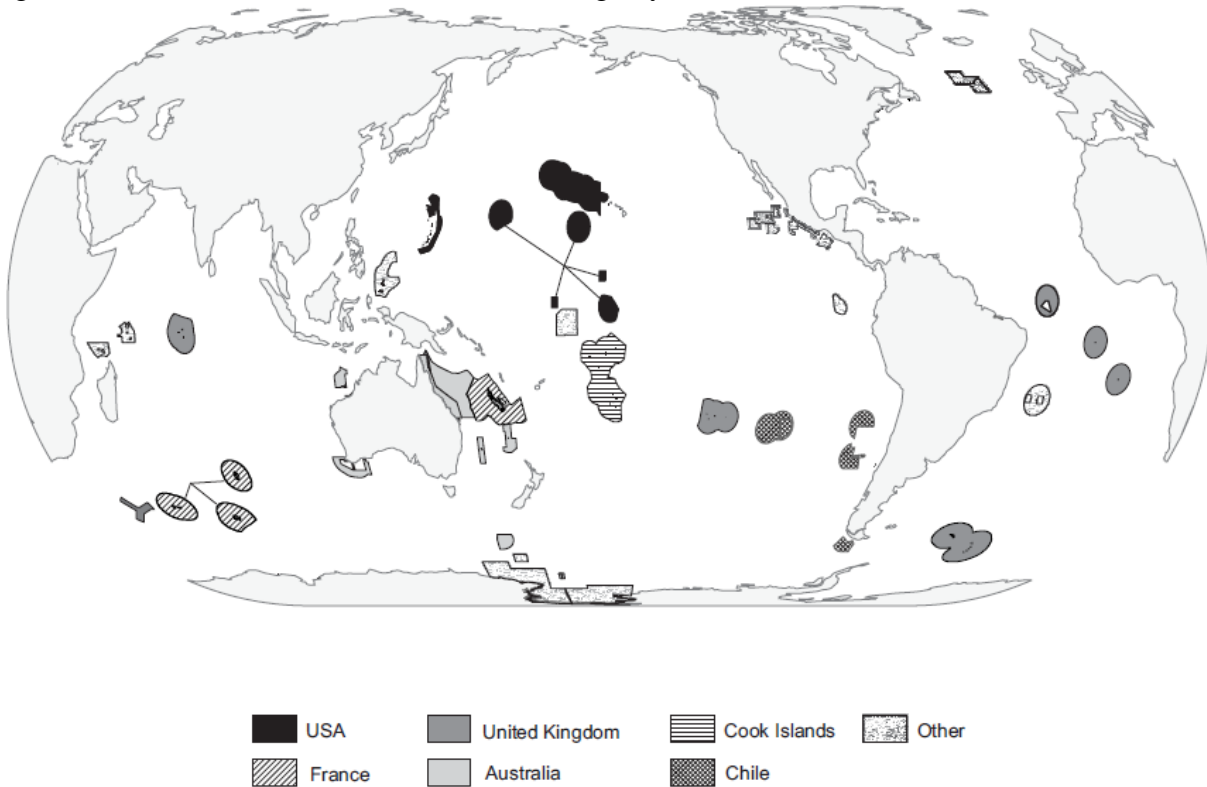


LMPAs as an extension of neocolonial conservation

Figure 36.4 maps LSMPAs according to countries that have the most MPA area coverage: the US, United Kingdom (UK), France, Cook Islands, Australia, and Chile. With the exception of Australia and Cook Islands, these countries have achieved this coverage in large part via LSMPAs established in former colonies now governed as territories, dependencies, and protectorates, and often thousands of miles distant from the administrative center of sovereign power. This global LSMPA map visualizes the ongoing influence of a handful of wealthy and powerful nations that “rule the waves” militarily and economically. Figure 36.4 tells a story of a neocolonial ocean conservation project in which wealthy countries that have benefited from extractive activities in global oceans meet international conservation targets by establishing LSMPAs around distant oceanic islands. In doing so, these countries strengthen their own moral leadership in international forums like the CBD, where they can leverage MPA accomplishments in pursuit of other goals.

<FIGURE 36.4 ABOUT HERE>

Figure 36.4: Nations with most LSMPA coverage by area



In revealing a neocolonial ocean conservation project, we draw attention to the role of LSMPAs in asserting sovereignty in places where it may be contested. The most egregious example is the UK government's establishment of a no-take LSMPA in the British Indian Ocean Territory (BIOT), or Chagos Archipelago, in 2010. The Chagos Archipelago was excised in 1965 from the former British colony of Mauritius. Mauritius and displaced native Chagossians dispute UK sovereignty (Sand 2012) and the UK was widely criticized for using the LSMPA to reinforce territorial claims (De Santo 2020). Although the UN High Court ruled in favor of Mauritius' territorial claim in February 2019 and the UN General Assembly supported the ruling in May 2019, the UK has refused to abide by the decision. Other LSMPA designations in UK overseas territories have been less politically fraught; e.g., Pitcairn Islands Marine Reserve reportedly enjoys unanimous support among inhabitants (Alger and Dauvergne 2017). Regardless, it is clear that LSMPAs are a priority of and initiated by the UK government; the UK government's Blue Belt Program aims to establish MPAs in four million square kilometers of oceans in UK overseas territories. As of this writing, it has reached 3.6 M km² (as at April 17, 2020, <https://www.protectedplanet.net/marine>, Coverage of National Waters).

The UK has also pursued marine conservation in domestic waters but via a decentralized and participatory approach to siting, establishing, and regulating marine conservation zones (MCZs). As of this writing, 211,000 km² were protected or 29 percent of the domestic EEZ. However, less than 0.001 percent of MCZs are strongly or fully protected versus at least 50 percent of LSMPAs in overseas territories. Similar trends are seen in other countries with LSMPAs in island

dependencies, with more and more fully protected areas than in domestic waters. Although the US is an exception with almost equal percentage protected in domestic waters and overseas, this is only because Papahānaumokuākea is in Hawai'i, a state within the US. Without Papahānaumokuākea, the US has less than one percent of its domestic waters in strong or full protection where most forms of resource extraction are prohibited (O'Leary et al. 2016).

However, a map that reveals LSMPAs as a neocolonial conservation project can miss the story of how Indigenous peoples in particular places have mobilized in response to LSMPAs. For example, native Hawaiians have been involved with the establishment and ongoing management of Papahānaumokuākea US Marine National Monument, which, according to Kikiloi et al. (2017), increasingly reflects native Hawaiians' priorities and values, enhances cultural connection, and facilitates cultural practice. In Rapa Nui (Easter Island), Chile, a contested and initially top-down LSMPA process provided an opening to negotiate the relationship between the Chilean state and Rapa Nui as a "special territory" of Chile (Gruby et al. 2017). Through Rapanui resistance and subsequent consultations, an initial vision for a no-take marine park transitioned to a multi-use MPA that will be co-administered by a Sea Council with majority Indigenous Rapanui members (Zigler 2020). These examples illustrate that LSMPAs can provide opportunities for Indigenous peoples to strengthen connections or claims to ocean spaces. They temper the story of LSMPAs as neocolonial conservation and highlight sovereignty as a concern of Indigenous peoples within states. But the possibilities should not be overstated. In both Hawai'i and Rapa Nui, indigenous responses to LSMPAs are varied. For example, some Rapanui assert that an LSMPA established without Chilean recognition of Rapanui sovereignty over land and sea is an extension of neocolonial power (Zigler 2020). A global map revealing LSMPAs either as neocolonial control or indigenous empowerment fails to capture place-based politics at particular sites.

LSMPAs as NGO accomplishment

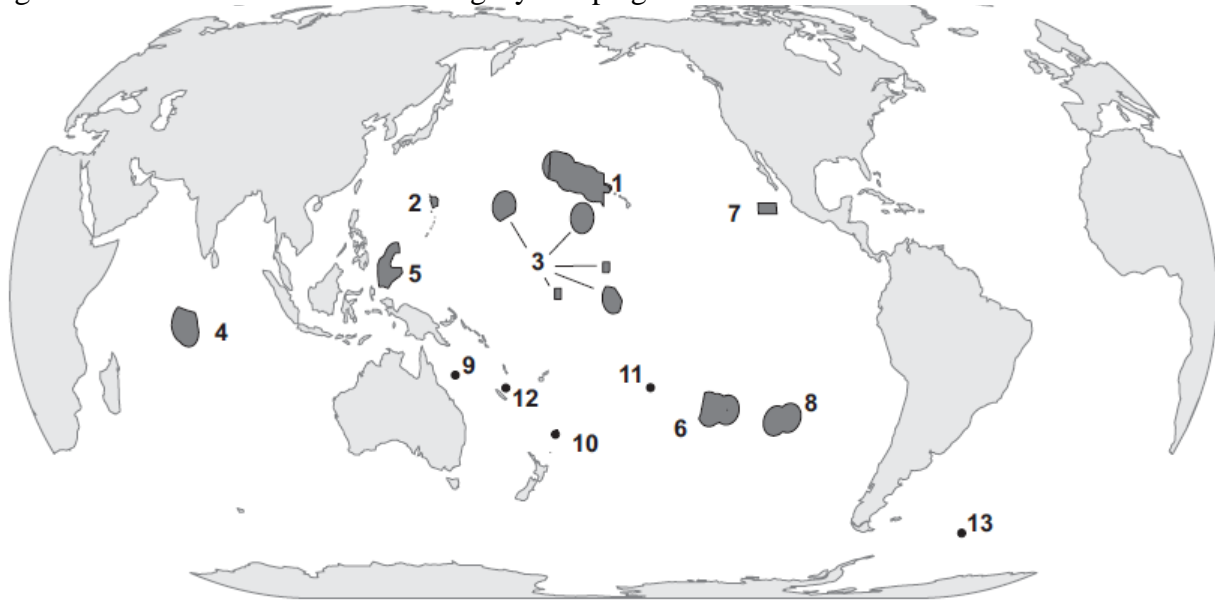
Environmental non-government organizations (NGOs) have played a central role in LSMPA expansion and "the emergence of a large MPA norm" (Alger and Dauvergne 2017, 31). National Geographic has led scientific expeditions to support the establishment of LSMPAs in remote areas through its Pristine Seas project. Conservation International was key in the establishment of Kiribati's Phoenix Islands Protected Area. The Nature Conservancy innovated a debt for "blue" nature swap to support marine spatial planning throughout Seychelles' EEZ, which resulted in the recent designation of two LSMPAs. The Pew Charitable Trusts' Pew Bertarelli Ocean Legacy project (hereafter Pew) aims to establish 15 fully protected marine parks of 200,000 km² or larger by 2022. We focus on Pew in this alternative because it was the main NGO involved in four of five LSMPA sites we have studied (Gruby et al. 2017), and because it updates its own map of progress (as at April 21, 2020, <https://www.pewtrusts.org/en/projects/pew-bertarelli-ocean-legacy>, Where We Work).

We replicate Pew's latest map (Figure 36.5). Although the scale is global, the map omits LSMPAs where Pew has not campaigned and sites where Pew has campaigned but LSMPAs were not established. LSMPAs in sites where Pew campaigns are complete appear as polygons. Dots denote active campaigns, even where LSMPAs have been established; these are sites where Pew is campaigning for enhanced protection. Overall, the map performs progress towards

“global oceans conserved,” but this time emphasizing Pew’s work. More generally, the map performs NGOs as legitimate and effective actors in global ocean conservation.

<FIGURE 36.5 ABOUT HERE>

Figure 36.5: Pew-Bertarelli Ocean Legacy campaign sites



Designated Sites

- 1. Papahānaumokuākea Marine National Monument
- 2. Mariana Trench Marine National Monument
- 3. Pacific Remote Islands Marine National Monument
- 4. British Indian Ocean territory Marine Reserve
- 5. Palau National Marine Sanctuary
- 6. Pitcairn Islands Marine Reserve
- 7. Revillagigedo Archipelago National Park
- 8. Rapa Nui Marine Protected Area and Motu Motiro Hiva Marine Park

Active Sites

- 9. Coral Sea Commonwealth Marine Reserve
- 10. Kermadec/Rangitāhua Ocean Sanctuary
- 11. French Polynesia
- 12. New Caledonia Coral Sea Natural Park
- 13. South Georgia and the South Sandwich Islands

Again, this map obscures as much as it reveals. The role of NGOs in establishing particular LSMPAs can be contentious. Opponents of LSMPAs mobilized concerns about Pew as an “outside” and “foreign” organization to successfully resist an LSMPA in Bermuda (Gruby et al. 2017) and unsuccessfully resist one in CNMI (Richmond et al. 2019). In Kiribati, views on Conservation International’s role in the Phoenix Islands Protected Area are mixed (Mitchell 2017). Alternatively, Alger and Dauvergne (2017) credit Pew with its investment in Pitcairn Islands, where the head of the campaign knocked on “every door” to garner unanimous support for the LSMPA. However, concerns about NGO involvement are also broader than individual campaigns. Even among LSMPA advocates, the role of NGOs and NGO claims about that role are sometimes contested. For example, Pew lists on its website LSMPAs “that governments have already designated as a result of *our work* [emphasis added]” (<https://www.pewtrusts.org/nb/projects/pew-bertarelli-ocean-legacy/where-we-work>, as at April 17, 2020). Pew, like all NGOs, needs to demonstrate their effectiveness to retain support from funders; this is their reality (Jepson 2005). However, in our research, some national and local actors complained that their own efforts to secure LSMPAs are overlooked or undermined by NGO claims.

These complaints reflect more than interpersonal politics or resentment about who gets credit for what. They speak to concerns about sovereignty. Occurring at a time when many governments are in retreat from large projects to govern public resources, LSMPA expansion has only been possible through support by mostly US-based NGOs and philanthropies. NGOs and their funders are negotiating “hybrid forms of governance” (Campbell et al. 2016, 531), private-public ventures, often labeled as partnerships (Chan 2018). They bring funding and technology to the partnerships to support the drive to designate, implement, and monitor LSMPAs. In return, NGOs demonstrate their effectiveness in securing ocean conservation, but they also sometimes gain authority over ocean space. In Kiribati, Conservation International and the New England Aquarium have seats on the board of directors for the Phoenix Islands Protected Areas Conservation Trust (Mawyer and Jakka 2018). In Seychelles, The Nature Conservancy has a seat on the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) (Silver and Campbell 2018). These groups decide how finances will be allocated and to what kinds of activities, and thus influence state decision-making. Maps detailing NGO accomplishment only hint at the complexities in this kind “articulated” sovereignty (Lunstrum 2013).

LSMPAs as spaces of management

The final global LSMPA map (**Figure 36.6**) is made by Big Ocean, a peer learning network “created by managers for managers,” to support information exchange and communicate the value of LSMPAs to the broader conservation community (<https://bigoceanmanagers.org/>, as at April 17, 2020). Big Ocean has published a research agenda for LSMPAs (Wagner 2013) and co-hosted a workshop on the human dimensions of LSMPAs (Christie et al. 2017). In partnership with the IUCN World Commission on Protected Areas Large-Scale MPA Task Force, it published a guide for design and management of LSMPAs (Lewis et al. 2017). In emphasizing LSMPAs as spaces of management, Big Ocean pushes back on critiques that LSMPAs are “paper parks.” Big Ocean describes LSMPAs as the “greatest hope for achieving marine conservation goals such as the Convention on Biodiversity’s Aichi Target 11” and the leverage this affords, particularly when LSMPA managers act together: “The size of LSMPAs accentuates their inter-governmental and global significance; they can often affect international marine policies in ways that smaller scale MPAs cannot” (<https://bigoceanmanagers.org/>, as at April 17, 2020).

<**FIGURE 36.6** ABOUT HERE>

Figure 36.6: Big Ocean network of LSMPAs

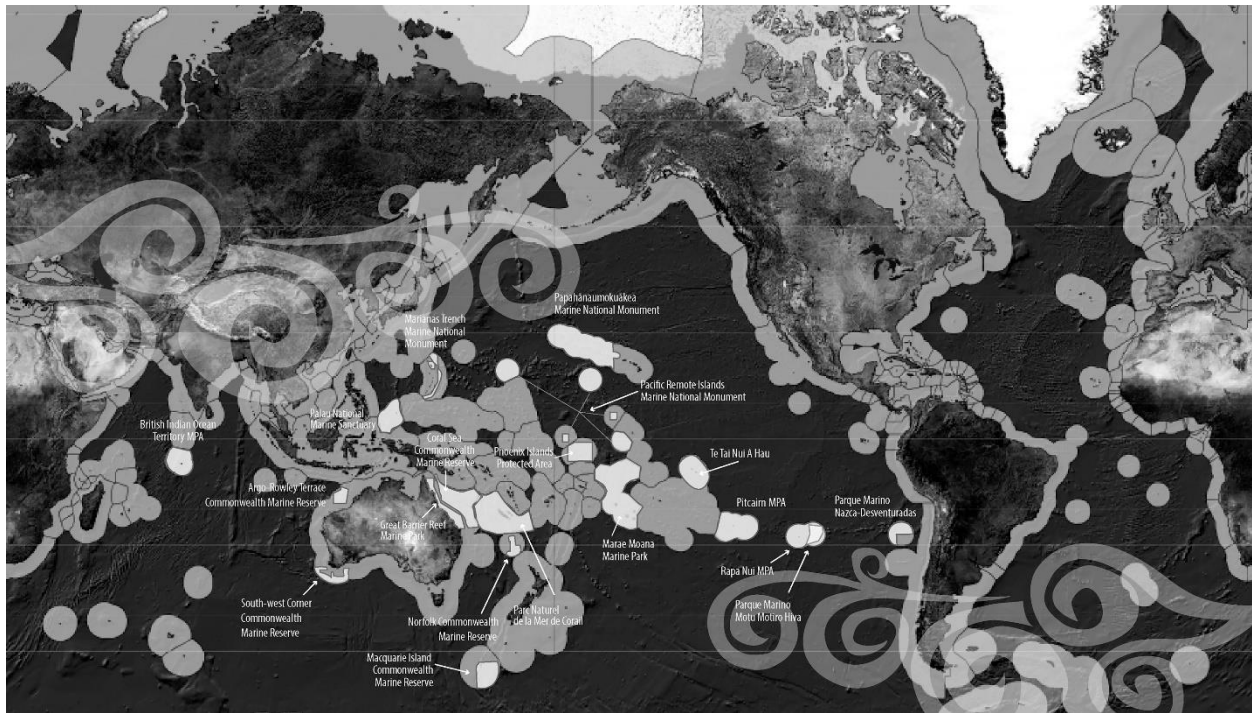


Figure 36.6 maps Big Ocean members. Members are marked as belonging to the network with infill (bright yellow in the color version, <https://bigoceanmanagers.org/big-ocean-site-map>, as at June 30, 2020) but also as distinct, with LSMPA names in the language of the site included on the map. The work of Big Ocean “enlivens” the LSMPA seascape as a social space, where managers cooperate, collaborate, and learn together. Relations among managers are simultaneously relations among states (LSMPA managers are representatives of national government agencies.) and among island people linked through shared ocean values and sometimes histories. Although not exclusive to the Pacific Ocean and not all LSMPA managers are Pacific Islanders, the map with its artwork suggestive of wind or waves invokes a sense of Pacific islands identity.

We engage **Figure 36.6** informed by our broader understanding of LSMPAs and of Big Ocean. We co-organized the human dimensions workshop referenced above and have presented our research results to Big Ocean. But our engagement is also informed by anthropologist Epeli Hau'ofa's (1994, 1998) essays on the need for a regional Oceanic identity that recognizes mobility and connection and is centered on the sea. He preferred the term Oceania to the more common label of Pacific Islands, a label that for him was connected “to an official world of states and nationalities” (Hau'ofa 1998, 402) and their interests. In contrast, “Oceania is a world of social networks that crisscross the ocean.... It is a world that we have created largely through our own efforts” (Hau'ofa 1998, 392). As we engage with **Figure 36.6**, we envision LSMPA managers (rather than states) moving and connecting across space, focused on a shared commitment to safeguarding the oceans. However, Big Ocean also reflects the challenges Oceania faces within a political economic order based on “neocolonial dependency” and “patron states” (Hau'ofa 1998, 399). Many Big Ocean member sites are in island dependencies of former colonial powers, and Big Ocean has largely been funded by the US government. We read these tensions in the map, one that both reinforces territories of nation states while invoking an

alternative space of oceans as connected, mobile, and dynamic, a “sea of islands” rather than “islands in the sea” (Hau'ofa 1994).

Conclusions

In writing about US President George W. Bush's decision in 2006 to establish what was then the largest MPA on the planet, Steinberg (2008, 2083) suggested there was “ample evidence to question the long-range social significance” of that action. With hindsight, we see the social significance in the repeated performance (37 times and counting) of LSMPAs. The proliferation of LSMPAs is a world-making project and mapping is key to that project. The map of progress towards global oceans conserved supports a new imaginative geography in which the construction of oceans as unpeopled or inexhaustible is replaced by oceans in need of and amenable to area-based conservation (see also Gray 2018). The map reinforces existing oceans governance by highlighting nation states and their EEZs. It also promotes the role of multilateral cooperation generally, and the CBD specifically; the value of targets-based governance generally, and Aichi Target 11 specifically. It centers islands, and particularly Pacific islands, as key to these efforts and makes them newly visible, both as Large Ocean States and as key players in global marine conservation efforts. Performance and process interact; each LSMPA inspires the next, as the global cache increases and achieving Aichi Target 11 comes closer to reality. Maps document LSMPA expansion and motivate LSMPA expansion; they are products of ocean conservation and productive of it.

Whether or not CBD Aichi Target 11 is reached by the 2020 deadline, the progress visualized in the map will be celebrated. But it will also be challenged, and an important challenge will come from conservationists committed to MPA expansion. They will draw on the MPA Atlas map that differentiates LSMPAs according to level of resource protection and legal status. Their goal is for more, more strictly protected MPAs, not in 10, but 30-50 percent of the ocean (Campbell and Gray 2019). Although they acknowledge the importance of LSMPAs in reaching Aichi Target 11 and in bringing attention to marine conservation, some conservationists are concerned that without remarking resources such that value accrues from non-extractive use, LSMPAs may be “paper parks” and their collection “just” a mapping project. We suggest these concerns reflect an understanding that a mapping project is never “just” that. Maps of progress towards “global oceans conserved” underwrite a new imaginative geography of oceans as increasingly conserved, and the power of that imaginative geography may undermine claims that further conservation is needed.

A processual understanding of mapping in critical cartography attends to the ontogenetic, i.e., how things become. The dominant global LSMPA map *becomes* though individual countries taking actions that, collectively, are counted towards a shared goal. The incremental addition of each new (and often larger) LSMPA to the map contributes to the performance of progress and inspires further action. We have also engaged in a map-making process to look for slippage in the dominant story of LSMPAs and propose alternative or modified stories. Our maps emerge (or become) from our research on the human dimensions of LSMPAs and our interests in the politics of global marine conservation. These interests guided some technical choices in the mapping process, for example, our decision to categorize Cook Islands as a SIDS rather than a nation in “free association” with New Zealand. We wanted to recognize Cook Islands agency and sovereignty in [Figure 36.3](#) more than we wanted to strengthen our critique of neocolonial oceans

in **Figure 36.4**. By engaging as mapmakers, we gained new insights into research we have been conducting for over a decade; the maps we made sometimes challenged our assumptions about the LSMPA phenomenon giving us direct experience with the power of mapping, seeing how our choices shaped how we interpreted the LSMPA world-making project and the countries that feature in it. However, we do not imply that our maps have power equal to those produced by NGOs, multilateral organizations, or management agencies. The world-making effects of our alternatives, published in a book for an academic audience of resource geographers, will be limited if they go no further.

Critical cartography directed us to reflect on our own mapping process. We mapped alternatives and then interrogated them by, for example, pointing out the ways our map of neocolonial oceans (**Figure 36.4**) obscures relations among particular LSMPAs, island governments, NGOs, and people, including Indigenous people. Doing so revealed our central concern about the LSMPAs world-making project: its scale. Although “world-making” does not imply a particular geographic or social scale, it is apt here given the size of LSMPAs and the global scope of the effort to conserve oceans. “The size of LSMPAs accentuates their inter-governmental and global significance” (<https://bigoceanmanagers.org/impact>, as at April 17, 2020), and part of that significance is that they can be mapped and made visible at a global scale. The map of progress towards “global oceans conserved” also performs “the global” as a relevant scale where conservation can be done and outcomes and impacts assessed. But just as a map of progress towards “global oceans conserved” obscures the various points of debate about LSMPAs, all global maps of LSMPAs — including those we produced — obscure the outcomes and experiences of individual LSMPAs, nationally and locally. Individual LSMPAs are the “outcomes of particular political processes and struggles” (Gray, Gruby, and Campbell 2014, 64) and succeed or fail in particular places. Their impacts for people, resources, and the marine environment will be multiple, complex, uneven, interacting and evolving, place and context specific. A global map of LSMPAs cannot be the only way we understand LSMPAs as a world-making project. The world enacted in the global map has consequences in particular places.

Reference List

Alger, Justin, and Peter Dauvergne. 2017. "The Politics of Pacific Ocean Conservation: Lessons from the Pitcairn Islands Marine Reserve." *Pacific Affairs* 90 (1): 29–50. doi: 10.5509/201790129.

Betzold, Carola. 2010. "'Borrowing' Power to Influence International Negotiations: AOSIS in the Climate Change Regime, 1990–1997." *Politics* 30 (3): 131–148.

Boucquey, Noëlle, Kevin St Martin, Luke Fairbanks, Lisa M. Campbell, and Sarah Wise. 2019. "Ocean Data Portals: Performing a New Infrastructure for Ocean Governance." *Environment and Planning D: Society and Space* 37 (3): 484–503. doi: 10.1177/0263775818822829.

Campbell, Lisa M., Noella J. Gray, Luke Fairbanks, Jennifer J. Silver, Rebecca L. Gruby, Bradford A. Dubik, and Xavier Basurto. 2016. "Global Oceans Governance: New and Emerging Issues." *Annual Review of Environment and Resources* 41: 517–543. doi: 10.1146/annurev-environ-102014-021121.

- Campbell, Lisa M., and Noella J. Gray. 2019. "Area Expansion Versus Effective and Equitable Management in International Marine Protected Areas Goals and Targets." *Marine Policy* 100: 192–199. doi: 10.1016/j.marpol.2018.11.030.
- Caquard, Sébastien. 2011. "Cartography I: Mapping Narrative Cartography." *Progress in Human Geography* 37 (1): 135–144. doi: 10.1177/0309132511423796.
- Caquard, Sébastien. 2015. "Cartography III: A Post-Representational Perspective on Cognitive Cartography." *Progress in Human Geography* 39 (2): 225–235. doi: 10.1177/0309132514527039.
- Caquard, Sébastien, and William Cartwright. 2014. "Narrative Cartography: From Mapping Stories to the Narrative of Maps and Mapping." *The Cartographic Journal: Cartography and Narratives* 51 (2): 101–106. doi: 10.1179/0008704114Z.000000000130.
- CBD. 2010. *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Tenth Meeting (Decision X/2, Annex IV)*. Nagoya, Japan: Convention on Biological Diversity.
- Chan, Nicholas. 2018. "'Large Ocean States': Sovereignty, Small Islands, and Marine Protected Areas in Global Oceans Governance." *Global Governance* 24 (4): 537–555. doi: 10.1163/19426720-02404005.
- Christie, Patrick, Nathan J. Bennett, Noella J. Gray, T. 'Aulani Wilhelm, Nai'a Lewis, John Parks, Natalie C. Ban, Rebecca L. Gruby, Lindsay Gordon, Jon Day, Sue Taei, and Alan M. Friedlander. 2017. "Why People Matter in Ocean Governance: Incorporating Human Dimensions into Large-Scale Marine Protected Areas." *Marine Policy* 84: 273–284. doi: 10.1016/j.marpol.2017.08.002.
- Crampton, Jeremy W. 2009. "Cartography: Performative, Participatory, Political." *Progress in Human Geography* 33 (6): 840–848. doi: 10.1177/0309132508105000.
- De Santo, Elizabeth M. 2020. "Militarized Marine Protected Areas in Overseas Territories: Conserving Biodiversity, Geopolitical Positioning, and Securing Resources in the 21st Century." *Ocean and Coastal Management* 184. doi: 10.1016/j.ocecoaman.2019.105006.
- Durbin, Trevor J. 2018. "'What Now, Fishgate?': Scandal, Marae Moana, and Nation Making in the Cook Islands." *Contemporary Pacific* 30 (1): 1–31. doi: 10.1353/cp.2018.0002.
- Escobar, Arturo. 2018. *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*. Durham, NC: Duke University Press.
- Gibson-Graham, J. K. 2008. "Diverse Economies: Performative Practices for 'Other Worlds.'" *Progress in Human Geography* 32 (5): 613–632. doi: 10.1177/0309132508090821.
- Goodman, Nelson. 1978. *Ways of Worldmaking*. Hassocks, Sussex: Harvester.

Gray, Noella J. 2018. "Charted Waters? Tracking the Production of Conservation Territories on the High Seas." *International Social Science Journal* 68 (229-230): 257–272. doi: 10.1111/issj.12158.

Gray, Noella J., Rebecca L. Gruby, and Lisa M. Campbell. 2014. "Boundary Objects and Global Consensus: Scalar Narratives of Marine Conservation in the Convention on Biological Diversity." *Global Environmental Politics* 14 (3): 64–83.

Gregory, Derek. 1995. "Imaginative Geographies." *Progress in Human Geography* 19 (4): 447–485.

Gruby, Rebecca L., and Lisa M. Campbell. 2013. "Scalar Politics and the Region: Strategies for Transcending Pacific Island Smallness on a Global Environmental Governance Stage." *Environment and Planning A* 45 (9): 2046–2063.

Gruby, Rebecca L., Luke Fairbanks, Leslie Acton, Evan Artis, Lisa M. Campbell, Noella J. Gray, Lillian Mitchell, Sarah Bess Jones Zigler, and Katie Wilson. 2017. "Conceptualizing Social Outcomes of Large Marine Protected Areas." *Coastal Management* 45 (6): 416–435. doi: 10.1080/08920753.2017.1373449.

Gruby, Rebecca L., Noella J. Gray, Lisa M. Campbell, and Leslie Acton. 2016. "Toward a Social Science Research Agenda for Large Marine Protected Areas." *Conservation Letters* 9 (3): 153–163. doi: 10.1111/conl.12194.

Hau'ofa, Epeli. 1994. "Our Sea of Islands." *The Contemporary Pacific* 6 (1): 147–161.

Hau'ofa, Epeli. 1998. "The Ocean in Us." *The Contemporary Pacific* 10 (2): 392–410.

Havice, Elizabeth, and Anna Zalik. 2018. "Ocean Frontiers: Epistemologies, Jurisdictions, Commodifications." *International Social Science Journal* 68 (229-230): 219–235. doi: 10.1111/issj.12198.

Hollinshead, Keith, Irena Ateljevic, and Nazia Ali. 2009. "Worldmaking Agency—Worldmaking Authority: The Sovereign Constitutive Role of Tourism." *Tourism Geographies* 11 (4): 427–443. doi: 10.1080/14616680903262562.

Jepson, Paul. 2005. "Governance and Accountability of Environmental NGOs." *Environmental Science & Policy* 8 (5): 515–524.

Kelleher, Graeme. 1999. *Guidelines for Marine Protected Areas*. Gland, CH: IUCN.

Kikiloi, Kekuewa, Alan M. Friedlander, 'Aulani Wilhelm, Nai'a Lewis, Kalani Quiocho, William 'Āila Jr, and Sol Kaho'ohalahala. 2017. "Papahānaumokuākea: Integrating Culture in the Design

and Management of One of the World's Largest Marine Protected Areas." *Coastal Management* 45 (6): 436–451. doi: 10.1080/08920753.2017.1373450.

Kitchin, Rob, and Martin Dodge. 2007. "Rethinking Maps." *Progress in Human Geography* 31 (3): 331–344. doi: 10.1177/0309132507077082.

Lehman, Jessica. 2018. "Marine Cultural Heritage: Frontier or Centre?" *International Social Science Journal* 68 (229-230): 291–301. doi: 10.1111/issj.12155.

Lewis, Nai'a, Jon C. Day, Daniel Wagner, Carlos Gaymer, Alan Friedlander, John Parks, 'Aulani Wilhelm, et al. 2017. *Large-Scale Marine Protected Areas: Guidelines for Design and Management*. Vol. 26 of *Best Practice Protected Areas Guidelines Series*. Gland, CH: IUCN.

Lunstrum, Elizabeth. 2013. "Articulated Sovereignty: Extending Mozambican State Power through the Great Limpopo Transfrontier Park." *Political Geography* 36: 1–11. doi: 10.1016/j.polgeo.2013.04.003.

Mawyer, Alexander, and Jerry K. Jacka. 2018. "Sovereignty, Conservation and Island Ecological Futures." *Environmental Conservation* 45 (3): 238–251. doi: 10.1017/S037689291800019X.

Mitchell, Lillian. 2017. "Governing Large Marine Protected Areas: Insights from the Remote Phoenix Islands Protected Area." Master's Thesis, University of Guelph.
<http://hdl.handle.net/10214/11420>

O'Leary, Bethan C., Marit Winther-Janson, John M. Bainbridge, Jemma Aitken, Julie P. Hawkins, and Callum M. Roberts. 2016. "Effective Coverage Targets for Ocean Protection." *Conservation Letters* 9 (6): 398–404. doi: 10.1111/conl.12247.

Pickles, John. 2004. *A History of Spaces: Cartographic Reason, Mapping and the Geo-Coded World*. Oxon, UK: Routledge.

Rossetto, Tania. 2012. "Embodying the Map: Tourism Practices in Berlin." *Tourist Studies* 12 (1): 28–51.

Sala, Enric, Jane Lubchenco, Kirsten Grorud-Colvert, Catherine Novelli, Callum Roberts, and U. Rashid Sumaila. 2018. "Assessing Real Progress Towards Effective Ocean Protection." *Marine Policy* 91: 11–13. doi: 10.1016/j.marpol.2018.02.004.

Silver, Jennifer J., Noella J. Gray, Lisa M. Campbell, Luke W. Fairbanks, and Rebecca L. Gruby. 2015. "Blue Economy and Competing Discourses in International Oceans Governance." *Journal of Environment & Development* 24 (2): 135–160. doi: 10.1177/1070496515580797.

Silver, Jennifer J., and Lisa M. Campbell. 2018. "Conservation, Development and the Blue Frontier: the Republic of Seychelles' Debt Restructuring for Marine Conservation and Climate Adaptation Program: Conservation, Development and the Blue Frontier." *International Social Science Journal* 68 (229-230): 241–256. doi: 10.1111/issj.12156.

St Martin, Kevin. 2001. "Making Space for Community Resource Management in Fisheries." *Annals of the Association of American Geographers* 91 (1): 122–142.

Steinberg, Philip E. 2001. *The Social Construction of the Ocean*. New York: Cambridge University Press.

Steinberg, Philip E. 2008. "It's So Easy Being Green: Overuse, Underexposure, and the Marine Environmental Consensus." *Geography Compass* 2 (6): 2080–2096.

Steinberg, Philip E. 2009. "Sovereignty, Territory, and the Mapping of Mobility: A View from the Outside." *Annals of the Association of American Geographers* 99 (3): 467–495. doi: 10.1080/00045600902931702.

UNEP-WCMC, IUCN, and NGS. 2018. *Protected Planet Report 2018*. Cambridge, UK: UNEP-WCMC, IUCN and NGS.

Voyer, Michelle, Genevieve Quirk, Alistair McIlgorm, and Kamal Azmi. 2018. "Shades of Blue: What do Competing Interpretations of the Blue Economy Mean for Oceans Governance?" *Journal of Environmental Policy & Planning* 20 (5): 595–616. doi: 10.1080/1523908X.2018.1473153.

Wagner, Daniel, ed. 2013. "Big Ocean: A Shared Research Agenda for Large-Scale Marine Protected Areas." In *Big Ocean: Papahānaumokuākea Marine National Monument & UNESCO World Heritage Site, and the NOAA Office of National Marine Sanctuaries*. Auckland, NZ: 25th International Congress for Conservation Biology