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# Boundary Objects and Global Consensus: Scalar Narratives of Marine Conservation in the Convention on Biological Diversity

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*Noella J. Gray, Rebecca L. Gruby, and Lisa M. Campbell\**

The global number of marine protected areas (MPAs) has increased dramatically in recent years, resulting in a fivefold increase in area covered since 2003.<sup>1</sup> Like terrestrial protected areas, MPAs are defined by the International Union for Conservation of Nature (IUCN) as any “clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.”<sup>2</sup> They range in size, purpose, resource use policies, and governance structures, for example, from large no-take areas identified for their ecological value and administered by states, to small, multi-use areas protected by communities. “Marine protected area” is thus an umbrella term that refers to a variety of spatial approaches to marine conservation.

While individual MPAs are the outcome of particular political processes and struggles, the cumulative global increase in MPA number and coverage is the result of a coordinated international effort.<sup>3</sup> Proponents of an expanded global MPA system are primarily scientists and conservationists from the global North, who argue that an ambitious system of MPAs is required to counter the precipitous global decline in ocean conditions, including the loss of marine biodiversity.<sup>4</sup> In comparison to terrestrial protected areas, the global number of

\* Collaborative event ethnography relies on collaboration in coordinating field work, collecting and analyzing data, and thinking through meaning, and this paper reflects the efforts of the larger team working on site in Nagoya, Japan, at CBD COP10. The CBD COP10 CEE team included project leaders J. Peter Brosius, Lisa M. Campbell, Noella J. Gray, and Kenneth I. MacDonald; and researchers Maggie Bourque, Catherine Corson, Juan Luis Dammert B., Eial Dujovny, Shannon Hagerman, Sarah Hitchner, Shannon Greenberg, Rebecca Gruby, Edward M. Maclin, Kimberly R. Marion Suiseeya, Deborah Scott, Daniel Suarez, and Rebecca Witter. The research was supported by the US National Science Foundation (award nos. 1027194 and 1027201). We also thank three anonymous reviewers for their comments.

1. Spalding et al. 2013.
2. Dudley 2008, 8.
3. Gray 2010.
4. Christie 2011.

MPAs is small, and rapid expansion of the global MPA system has only begun in the past ten years.<sup>5</sup> As of 2013, there were 10,280 MPAs in the world, covering 2.3 percent of the global ocean area.<sup>6</sup> The Convention on Biological Diversity (CBD) has played a key role in supporting the development of an international system of MPAs, most notably through its marine protected areas targets (10 percent of coastal and marine areas, initially by 2012, now by 2020)<sup>7</sup> and through its support of an international scientific effort to identify possible areas for protection on the high seas.<sup>8</sup>

Critics of efforts to expand the global MPA system, however, note a variety of concerns. Some critiques are sympathetic, in support of MPAs but concerned that many are not effectively designed, planned, or managed; create an illusion of protection when management is absent (“paper parks”); represent insufficient islands of protection in a sea of degradation; and have negative social impacts that may ultimately undermine conservation.<sup>9</sup> These critics are particularly concerned that the rush to create MPAs, motivated by the CBD target, increases the likelihood of ineffective MPAs. Other critiques are more trenchant, noting the social injustices associated with many MPAs such as displacement, dispossession, and negative livelihood impacts, a problem that has long been identified in relation to terrestrial protected areas.<sup>10</sup> To some extent, debates about the MPA target mirror more general debates about the utility of science-based, top-down MPAs, versus participatory, bottom-up MPAs, and whether these two approaches can be integrated effectively to achieve both biodiversity conservation and social equity.<sup>11</sup>

Why does MPA coverage continue to increase, in spite of concerns both about MPAs themselves and the utility of the target? Why does the CBD continue to support the expansion of MPAs as a primary tool for marine biodiversity conservation? While MPAs were never intended to be the only, or most important, component of the CBD’s marine conservation program,<sup>12</sup> the measurability of MPAs and absence of other reliable metrics has led to a focus on MPAs (and meeting the MPA target) as the primary means of pursuing marine conservation.<sup>13</sup> However, measurability alone does not explain the widespread proliferation of MPAs. We argue that the MPA concept is a boundary object, flexible enough to enable diverse groups with divergent agendas to align at

5. Spalding et al. 2013; Wood et al. 2008.

6. Spalding et al. 2013.

7. In 2002, the CBD established their overall “2010 biodiversity target,” elaborated in 2004 to include specific sub-targets, including Target 1.1, to have “At least 10 percent of each of the world’s ecological regions effectively conserved [i.e., designated as protected area].” At CBD COP10, parties agreed to new targets for 2020, including a reaffirmation of the 10 percent target for MPAs. See CBD 2004; CBD 2010a.

8. CBD 2009.

9. Agardy et al. 2011; Spalding et al. 2013.

10. Adams and Hutton 2007; De Santo 2013.

11. Aswani et al. 2012; Gray 2010; Fox et al. 2012.

12. CBD 1998; Vierros 2006. For a discussion of the implications of CBD COP10 for marine conservation more generally, see de Santo 2012.

13. Spalding et al. 2013.

the CBD around the goal of increasing MPA coverage. Conservation actors engaged in international governance processes articulate their agendas using scalar narratives regarding the appropriate scale at which to plan, implement, and govern MPAs, just as they do in particular geographical locations.<sup>14</sup> As a boundary object, the MPA concept accommodates their distinct, sometimes conflicting, scalar narratives and associated agendas. This analysis demonstrates both the utility and limitations of boundary objects for global environmental governance, as they simultaneously enable agreement and prevent consideration of differences and alternatives.

We begin by describing our conceptual framework, focusing on the role of boundary objects and scalar narratives in environmental governance. Next, we present the results of collaborative ethnography conducted at the CBD's Tenth Conference of the Parties (CBD COP10), held October 18–29, 2010, in Nagoya, Japan. We focus on two distinct scalar narratives evident at CBD COP10: a global narrative in support of MPAs on the high seas, based on ecologically and biologically significant areas (EBSAs), and a local narrative in support of locally managed MPAs. Finally, we consider the emergence of the regional scale in relation to both of these topics and the implications of accommodating distinct scalar narratives in global MPA efforts.

## Conceptualizing the International MPA Effort

### *Boundary Objects*

Star and Griesemer introduced the concept of boundary objects to explain how members of diverse social worlds successfully cooperate in producing coherent scientific representations, despite their different interests and agendas. They define boundary objects as:

objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use, and become strongly structured in individual-site use . . . They have different meanings in different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation.<sup>15</sup>

Building on the work of Latour, Callon, and other scholars of science and technology studies who examine the efforts of scientists to enroll others in their projects (a process of “translation”), Star and Griesemer examine how multiple actors work to interest one another in their various agendas.<sup>16</sup> Boundary objects may be things (e.g., maps, timelines) or concepts (e.g., participatory develop-

14. Sievanen et al. 2013.

15. Star and Griesemer 1989, 393.

16. Callon 1986; Latour 1987; Star and Griesemer 1989.

ment, scientific theories) that orient actors' actions and interactions in relation to a particular project or institution.<sup>17</sup> They do not divide or separate groups, but rather provide a bridge for exchange by enabling groups to tack between vague, weakly structured meanings and more specific, strongly structured interpretations.<sup>18</sup> Their interpretive flexibility facilitates cooperation among a range of actors in the absence of consensus.<sup>19</sup>

In relation to environmental conservation and governance, the boundary object helps to explain the popularity and utility of a range of concepts, including ecological indicators, conservation corridors, watersheds, and the Forest Stewardship Council's "tick tree" symbol for certified wood.<sup>20</sup> For example, watersheds function as a boundary object by resonating with three distinct epistemic communities: the scientific community, for whom watersheds are the natural ecological scale for governance; the neoliberal community, for whom watersheds represent a decentralized level of governance; and the grassroots community, for whom watersheds offer a localized focus that facilitates greater public participation.<sup>21</sup> Cohen argues that governance of hydrological systems has been rescaled to the watershed level in recent years in part because of the malleability of the watershed concept—it meets the diverse needs and interests of these three groups.<sup>22</sup> This paper builds on Cohen's assessment of the role of boundary objects in supporting the social construction of scales for environmental governance. In contrast to the watershed concept that implies a preferred scale for implementing environmental governance, the MPA concept accommodates multiple scalar narratives, each of which reflects the interests of its proponents. Thus, in addition to fixing the scale at which environmental governance is conceptualized, boundary objects may also support consensus by accommodating multiple scales.

MPAs are conceptualized at a variety of spatial scales and can encompass the ideals of both participatory approaches that allow for sustainable use of resources and exclusive approaches that restrict use.<sup>23</sup> In its weakly structured form, the MPA as boundary object refers simply to spatial approaches to marine conservation. In more strongly structured uses, MPAs take a variety of specific forms with respect to governance structures, rules for use, and modes for incorporating knowledge.

### *Scalar Narratives of Environmental Governance*

Drawing on work by geographers and others, we understand scale as a political tool that social actors define and construct in support of particular agendas,

17. Green 2010; Star 2010.

18. Eden 2009; Star 2010.

19. Fujimura 1992; Star 2010.

20. Cohen 2012; Eden 2009; Goldman 2009; Turnhout 2009.

21. Cohen 2012.

22. Cohen 2012.

23. Gray 2010. Compare with Goldman 2009 on conservation corridors.

such as gaining control over natural resources and/or a governance process, rather than as fixed entities with unambiguous meanings.<sup>24</sup> From this perspective, spatial scales of social and ecological organization are fluid and relational; it is the relationships among embedded scales (e.g., local, regional, global) that are subject to production through political struggle.<sup>25</sup> Although this literature acknowledges ontologically real scalar properties of ecological processes, it also recognizes that decisions over which ecological processes or scales to emphasize are often strategic and political.<sup>26</sup> Understanding scale as constructed focuses analytical attention on who is constructing it, how they are doing so, to what ends, and with what implications.<sup>27</sup>

The evolution of environmental governance in recent decades can be characterized by processes of rescaling: scaling down from states to local levels of government; scaling up from states to international institutions, agreements, and networks; and scaling out from centralized to inclusive, participatory decision-making processes.<sup>28</sup> This rescaling requires, and results from, the concurrent production of scalar narratives that frame environmental problems and solutions; struggles over the scale at which governance is planned and implemented are simultaneously struggles over the right to control and benefit from governance processes.<sup>29</sup> Scalar narratives are stories that assert particular “relationships among processes, scale, and outcomes.”<sup>30</sup> These stories associate spaces, actors, and processes at particular scales to explain events, legitimize governance interventions, and, in the process, serve distinct political projects.<sup>31</sup> For example, a narrative of global environmental problems simultaneously empowers international institutions to set policy agendas, prioritizes scientific knowledge, and justifies a variety of policy interventions at regional, national, and local levels.<sup>32</sup> International institutions such as the CBD are thus significant for their role in facilitating the construction of scales of governance and defining relations among them—at global and other scales. Actors such as environmental groups strategically employ a variety of scalar strategies in international venues to advance their goals.<sup>33</sup> It is therefore essential to study the “movement of actors, ideas, and knowledge up, down, and across scales,” and to interrogate how multiple actors and ideas work to construct these various scales within international institutions, and with what consequences.<sup>34</sup> Toward this end, we identify two scalar narratives leveraged in support of MPAs at CBD COP10 and

24. McCarthy 2005; Neumann 2009; van Lieshout et al. 2011.

25. Brown and Purcell 2005.

26. Campbell 2007; Cohen 2012; van Lieshout et al. 2011.

27. McCarthy 2005.

28. Lemos and Agrawal 2006; Reed and Bruyneel 2010.

29. Adger et al. 2001; Sievanen et al. 2013.

30. Sievanen et al. 2013, 208. For further discussion of scalar narratives, see González 2006; Swyngedouw 1997.

31. See also Harrison 2006 and van Lieshout et al. 2011 on scalar framing, a comparable concept.

32. Jasanoff 1996; MacDonald 2005; Miller 2007; Taylor and Buttel 1992.

33. McCarthy 2005.

34. O’Neill et al. 2013, 446.

interrogate the varied interests they reflect. Our analysis reveals that, as a boundary object, MPAs are malleable enough to accommodate different scalar narratives that reflect diverse social and environmental agendas.

## Collaborative Event Ethnography of CBD COP10

### *Methods*

The status of MPAs as a boundary object is not an inherent property of the MPA concept; rather, its flexibility is produced through the claims and repeated interactions of the diverse social actors who employ the term and link it to particular conservation strategies and scalar narratives within a shared institutional context. The CBD COP presents an opportunity to observe the production of these claims and interactions. Normally dispersed in time and space, multiple actors from diverse social worlds assemble at the CBD COP to work collectively towards marine biodiversity conservation as a global community.

To study how and why the international conservation community continues to promote MPAs as the primary tool for marine conservation, we engaged in collaborative event ethnography (CEE) at CBD COP10. CEE is an approach in which a team of researchers studies a large international environmental event and collaboratively collects and analyzes data (see Campbell, Corson et al., this issue).<sup>35</sup> O'Neill et al. identify CEE as one innovative method for the study of contemporary global environmental governance, especially given the increasing attention to scale.<sup>36</sup> For this study, five of the seventeen researchers on the CEE team followed marine issues across formal negotiations, side events, and other fora, including "Oceans Day," a full day of marine-themed side events. The authors collaborated on analyzing our observations after the meeting. In total, we observed approximately 18 hours of formal negotiations (in Working Group I and meetings of the marine contact and friends of the chair groups) and 24 side events (averaging 1.5 hours each) focused specifically on MPAs or marine conservation (see Table 1). Our data consist of ethnographic fieldnotes of these events. We took detailed notes on presentations and statements, as well as audio recordings and photographs, to document the specific ways delegates discussed relevant topics. We recorded reflective fieldnotes, to connect our observations to our theoretical interests (Campbell, Corson et al., this issue). This analysis draws on our fieldnotes from these various events, including reflections by individual researchers at the event as well as comparisons across all researchers' observations after the event. This collaborative effort strengthens our analysis; while each author followed particular topics or debates related to marine conservation (e.g., the high seas or LMMAs), our comparison across these topics enables an overall assessment of MPAs at CBD COP10. All authors were engaged

35. Brosius and Campbell 2010.

36. O'Neill et al. 2013.

**Table 1**

Marine-Related Sessions at CBD COP10 Observed by the Authors

<i>Date(s)</i>	<i>Session #: Title</i>	<i>Sponsor</i>
<i>Negotiations</i>		
Oct. 18, 28	Working Group I	n/a
Oct.20, 22, 25, 26	Contact group (marine)	n/a
Oct. 27	Friends of the chair (marine)	n/a
<i>Side Events</i>		
Oct.18	1744: Observation of Marine Biodiversity	Ministry of Education, Culture, Sports, Science and Technology of Japan
Oct.18	2110: Presentation of the Marine Protected Areas Gap Analysis	ASEAN Centre for Biodiversity
Oct.19	2123: Launch of Regional Seas Biodiversity Outlook	United Nations Environment Programme—Regional Seas Programme
Oct. 19	Rio Conventions Ecosystem Pavilion: Marine Protected Areas	IUCN World Commission on Protected Areas
Oct. 20	1825: Achieving The 2020 Targets: Protecting the Right Areas	Conservation International
Oct. 20	1822: The Global Ocean Biodiversity Initiative (GOBI): Applying the CBD Criteria to Identify Ecologically Significant Areas in the High Seas	CBD Secretariat, Germany, IUCN, GOBI, Census of Marine Life, OBIS, and the Marine Conservation Biology Institute
Oct. 20	1844: Advancing the Biodiversity and Climate Adaptation Agenda in the Western Indian Ocean	Global Island Partnership (GLISPA)
Oct. 20	Rio Conventions Ecosystem Pavilion: Traditional Knowledge Initiative	UNU-IAS, Conservation International, Equator Initiative UNDP
Oct. 20	2130: The Role Of Marine Reserves and Wildlife Sanctuaries in Conserving Large Pelagic Species	Pew Environment Group
Oct. 21	1734: Getting it right: Incorporating Social Aspects into MPA Planning and Implementation	International Collective In Support of Fishworkers (ICSF); World Forum of Fisher Peoples
Oct. 21	2125: Emergency Marine Rescue Plan: Implementing the Roadmap to Recovery	Greenpeace International



**Table 1**  
(Continued)

<i>Date(s)</i>	<i>Session #: Title</i>	<i>Sponsor</i>
Oct. 21	1832: The Impacts of Destructive Fishing Practices, Unsustainable Fishing, and Illegal, Unreported, and Unregulated (IUU) Fishing on Marine Biodiversity and Habitats	UNEP and FAO
Oct. 22	1919: Valuing and Managing Marine Resources for Human Wellbeing	Fondazione Eni Enrico Mattei, Conservation International
Oct. 22	2194: ICCAs in Coastal and Marine Environments: Learning from Long-Standing and Brand New Examples Throughout the World	IUCN CEESP, ICCA CONSORTIUM, UNEP/WCMC, GEF SGP
Oct. 22	2215: Pacific SIDS: Value Island Biodiversity: It's Our Life	Secretariat for the Pacific Environment Regional Programme (SPREP)
Oct. 23	Oceans Day, full day of side events	Global Forum on Oceans, Coasts and Islands; Secretariat of the CBD; GEF; Ocean Policy Research Foundation, Japan; Ministry of Ecology, Energy, Sustainable Development and the Sea, France; University of Delaware
Oct. 25	2072: Ecosystem Based Management and Adaption Lessons from the Pacific	Wildlife Conservation Society
Oct. 26	Rio Conventions Ecosystem Pavilion: Oceans and Coastal Adaptation: Emerging Issues	Secretariat of the CBD, ICLEI-Local Governments for Sustainability, IUCN and other partners
Oct. 27	2282: Towards the Southern Oceans Conservation: Three New Marine Protected Areas In Argentina's Seas	Fundacion Vida Silvestre Argentina
Oct. 27	2305: The Micronesia Biosecurity Plan	US National Invasive Species Council
Oct. 28	2281: Pacific Ocean 2020 Challenge—A Healthy Ocean For Future Generations	World Future Council
Oct. 28	1798: Experience in Implementing High Seas Marine Protected Areas	WWF Germany

**Table 1***(Continued)*

<i>Date(s)</i>	<i>Session #: Title</i>	<i>Sponsor</i>
Oct. 28	2292: Advances in Marine Conservation in Chile: Lesson Learned, Virtuous Partnerships and Challenges for New MPAs	WWF Chile
Oct. 28	2054: Marine and Coastal Protected Areas: Towards A Better Governance of the Mediterranean	UNEP, Mediterranean Action Plan, IUCN, WWF
<i>Other Events</i>		
Oct. 23	Indian Ocean Partnership Planning Event	Global Island Partnership (GLISPA)
Oct. 26	Micronesia and Caribbean Challenges, Press Conference	Lifeweb

in data collection, analysis, and writing, to fully realize the benefits of collaborative research.<sup>37</sup>

### *Conserving Marine Biodiversity on the High Seas*

A dominant issue on the marine agenda at CBD COP10 was the question of how to protect marine biodiversity on the high seas—those areas beyond national jurisdiction where individual states do not exercise legal control. The high seas are problematic for the CBD, as they are not under the jurisdiction of the parties, nor does the CBD have authority for their management. Efforts to expand the global network of MPAs and move toward the 10-percent target are thus hampered by the lack of legal clarity regarding how to establish MPAs on the high seas. However, oceans advocates continue to lobby for an implementing agreement under the UN Convention on the Law of the Sea that would provide this clarity regarding all aspects of conservation and sustainable use of marine biodiversity on the high seas.<sup>38</sup> In the meantime, the CBD has focused on establishing scientific criteria to identify EBSAs (areas that may warrant enhanced management or protection, including via MPAs) to “maintain, protect and conserve global marine biodiversity.”<sup>39</sup> In discussions of the high seas, a narrative is evident in which marine biodiversity is a global phenomenon and

37. Mauthner and Doucet 2008.

38. Ban et al. 2014; Campbell et al. 2013; Gjerde 2008.

39. CBD 2009, 4. See also CBD 2006, 2008.

should be documented through a global scientific exercise (identification of EBSAs), implying that MPAs will help protect and conserve EBSAs.

Two conflicts informed the development of the global scalar narrative at CBD COP10. The first conflict concerned the act of identifying and building an inventory of EBSAs, with some delegates identifying this as a scientific exercise and others insisting it is a political process. Delegates debated this point at length during the Marine Contact Group on October 22, 2010. Brazil argued that “the use of the word identification in itself is already a political, a very political, significant step.” Argentina agreed: “We share . . . concerns that identification is a political process by nature.” However, other delegates disagreed. For example, the EU suggested that “if parties do not like what scientists come up with they are free to make a decision on that . . . the CBD can have an incredibly important role here, on a scientific and technical basis.” By framing the identification of EBSAs as a global scientific exercise, actors sought to distinguish between identifying potential MPAs and actually establishing MPAs, a political act for which neither the CBD nor its parties have authority on the high seas. During side events, NGO representatives also emphasized EBSAs as scientific rather than political. According to one member of the NGO-academic partnership Global Ocean Biodiversity Initiative (GOBI), the purpose of EBSAs is to “aggregate data . . . MPA design is a socio-political process; collating data is a biological process.”<sup>40</sup> However, the goal is clearly to inform the establishment of MPAs in support of reaching the MPA target, as stated in COP decisions.<sup>41</sup> During the contact group, Norway drew this link explicitly: “Creating such an inventory [of EBSAs is] a scientific step . . . creating such an inventory is a good tool to move things forward towards achieving the target for MPAs by 2012.” There is thus a simultaneous recognition of MPA establishment as “political” while framing the identification of potential MPA sites as a “scientific” concern. In terms of scale, a global *ecological* scale, supported by the scientific identification of EBSAs, is acceptable, while a global *governance* scale, implied through the political identification of EBSAs and MPAs, is contested. As a boundary object, MPAs can be interpreted in different ways by different actors, depending on context and venue. For some actors, MPAs follow logically from EBSA identification, while other actors question this link. Because negotiators must agree on final text for COP decisions, they must fix a strongly structured vision of MPAs in relation to EBSAs. In formal negotiating sessions related to EBSAs and high seas at COP10, MPAs are sites that may (but need not) be informed by a global scientific exercise.

The second conflict related to EBSAs concerns the potential shift of limited financial resources away from supporting the activities of the parties within their national jurisdiction toward efforts led by scientists and international environmental groups on the high seas. During meetings of Working Group I,

40. Side event “Marine Protected Areas,” Oct. 19, 2010. See Table 1.

41. CBD 2006, 2008.

parties often accompanied their reference to national progress towards the MPA target with a plea for additional resources; as Indonesia stated, “financial and technical assistance has not been sufficient.” In order to support domestic efforts, Indonesia proposed that the draft COP10 marine decision be amended to “advance effective management and establishment of MPAs in areas *within* national jurisdiction” [italics added].

In both conflicts, the scientific exercise of identifying EBSAs is perceived by some as political—in the first case, because it implies a global governance scale, which is disputed, and in the second case, because it implies a change in distribution of funds away from the national level (and developing country governments) to the international level (and NGOs/intergovernmental organizations/scientific groups). To address these conflicts, delegates worked to construct the regional scale as a solution, both as a scale of governance and as the level at which activities would be funded. Given the absence of an implementing mechanism for high seas MPAs, several NGO actors suggested that more effort be made to work through regional organizations and agreements. According to an IUCN representative, “Regional seas . . . that’s where there’s high seas conservation progress [i.e., MPAs have been established by the parties to regional agreements].”<sup>42</sup> The GOBI Project coordinator tried to dispel the concern that “high seas are a rich country issue” by suggesting that a regional approach could “engage everybody.”<sup>43</sup> Finally, a representative of Greenpeace International distinguished between the science-based process of identifying EBSAs and the political process of establishing MPAs through regional institutions, using the case of EBSAs in the Mediterranean under the Barcelona Convention.<sup>44</sup>

This regional scale solution was also constructed through negotiations in the marine contact group, where it was agreed that the EBSA process would advance through “a series of regional workshops . . . with a primary objective to facilitate the description of ecologically or biologically significant marine areas” (Decision X/29, para 36). During the final negotiations on the marine decision on October 27, the parties agreed to a series of regional-level workshops, along with a separate paragraph devoted to support for capacity building through additional workshops, which could “address other regional priorities.”<sup>45</sup> The region was thus seen as a means of advancing the EBSA process while also providing the support desired by developing country parties.

Overall, the negotiations and discussions about EBSAs at CBD COP10 relied on a global scalar narrative that established a global problem (marine biodiversity in crisis, lack of knowledge of this crisis), which could be solved by a global scientific effort (identifying EBSAs) and implemented at a regional scale (EBSA workshops, regional agreements that establish MPAs). This global

42. Side event “Marine Protected Areas.”

43. Side event 1822.

44. Side event 1798.

45. CBD 2010b.

narrative corresponds with a strongly structured version of the MPA as boundary object that resolves both conflicts identified above.

### *Conserving Marine Biodiversity through Local Efforts*

Concurrent with the EBSA debates, we observed a separate discussion in other venues at CBD COP10 regarding MPA design and implementation at the local scale. Two groups directed this discussion: delegates, donors, and NGOs representing Pacific Islands; and fisher organizations, such as the International Collective in Support of Fishworkers and the World Forum of Fisher Peoples. Both groups identified externally driven, top-down MPAs as exclusionary, contextually inappropriate, and ineffective. For example, as a Brazilian anthropologist argued, "in developing countries this model of imposed protected areas, either by NGOs or by government, is not working at all. Either they have to be proposed by local people or it's very hard for them to work."<sup>46</sup>

Rather than contesting MPAs altogether, this group drew upon a local scalar narrative that situated locally driven MPA approaches, such as locally managed marine areas (LMMAs) or marine extractive reserves, as preferable alternatives to the flawed approach of "top down, target driven, non-inclusive [MPA] processes."<sup>47</sup> The local-scale MPA narrative promotes community participation, sustainable use of resources, local or traditional knowledge, customary marine tenure institutions, and recognition of local people as integral components of marine systems. This narrative was leveraged at CBD COP10 in support of locally driven MPAs as a means for more effectively achieving both biodiversity conservation and social goals, such as livelihoods and food security.

One side event, hosted by the Secretariat of the Pacific Regional Environment Programme, featured Pacific Islanders clad in vibrant indigenous textiles greeting attendees with a necklace of seashells. The event was a celebration of humanity (as opposed to science), in which LMMAs were extolled as an example of culturally appropriate, "participatory marine protected areas" where communities control every aspect of decision-making.<sup>48</sup> One participant summarized the scalar logic underwriting LMMAs thus:

Many concepts that we would think of as being relatively new and science based . . . [such as] marine protected areas, have in fact been traditionally used in the Pacific Islands for a long time . . . It also makes sense to strengthen and build upon these kinds of local management systems that . . . provide culturally appropriate methods of implementing the CBD.<sup>49</sup>

Unlike the global MPA narrative that emphasizes science, local-scale proponents highlighted the importance of local knowledge. This participant

46. Side event 1734.

47. Flyer distributed at side event 1734.

48. Side event 2215.

49. Side event "Traditional Knowledge Initiative."

continued, “effective marine management relies on the best available knowledge base and in many places this is actually local knowledge, traditional knowledge.”<sup>50</sup> Proponents of the local narrative also prioritized social rather than scientific measures of success. One representative of a donor agency stated:

We are not very interested about [whether LMMAs are] scientific or not. We see that it is terrific in terms of ownership of the people, and . . . The most important thing is to get people to manage as much as they can by themselves.<sup>51</sup>

At the same time, this LMMA donor was careful not to equate the local scale with small-scale conservation, arguing that the cumulative area under protection through LMMAs is “quite significant at least in numbers.” In other words, small sites collectively networked across large regions can ultimately yield the large-scale benefits of interest to LMMA donors and conservationists interested in meeting CBD targets.

Small island developing states (SIDS) more broadly are also working to construct the regional scale as a way of framing their conservation efforts.<sup>52</sup> Indeed, many SIDS have been moving toward transnational cooperative approaches, such as the Micronesia Challenge and the Caribbean Challenge, whereby environmental NGOs and governments collectively commit to implementing protected area networks across large spatial scales in an attempt to reach, and often exceed, agreed-upon conservation targets across a region.<sup>53</sup> In side events, formal interventions, and planning meetings at CBD COP10, representatives from governments, the CBD secretariat, NGOs, and other organizations marshaled two related arguments for the regional protected area policy model. The first focused on the ability of large-scale collaborations to attract donor funds for conservation and the attendant self-determination this allows. For example, a delegate from Palau said, “When we started the [Micronesia] challenge, the number one ingredient is ownership and number two is control . . . when you have ownership and you know what you want, donors will come looking for you.”<sup>54</sup> This goal of self-determination was contrasted with donor-driven projects. The second, less prominent argument for regional commitments combined elements from the first (leverage of funding) with the need to manage at ecologically significant scales. A representative of the Secretariat of the Pacific Regional Environment Programme (SPREP) observed:

Marine species are not interested in artificial national boundaries. If we are to conserve such species then we must work cooperatively as a region.

50. Side event “Traditional Knowledge Initiative.”

51. Representative of Fonds Français pour l’Environnement Mondial (FFEM), side event 2215.

52. Gruby and Campbell 2013.

53. Although the Micronesia Challenge emerged in 2006 as a decidedly protected area focused instrument, means for achieving its conservation targets have been subject to debate within participating Pacific Islands and now include alternative approaches. See Gruby 2013.

54. Indian Ocean Partnership Planning Event, Oct. 23, 2010.

Donors, regional organizations such as SPREP, and NGOs, should pay attention to these examples.<sup>55</sup>

This regional policy model places the responsibility for policy initiation and design on national levels of government, regional organizations, environmental NGOs, and other political elites, although it may in theory support and integrate local initiatives such as LMMAs. For example, the SPREP representative cited above argued in the same presentation:

The development of protected areas, for example, must reflect the unique system of land ownership and customary tenure in the Pacific rather than slavishly following western models of national parks and protected areas.<sup>56</sup>

Overall, discussions about local approaches to MPAs at CBD COP10 relied on a local scalar narrative that established a problem both global (marine biodiversity in crisis) and local (livelihoods under threat), which can only be solved through local initiatives (LMMAs that account for local knowledge and needs) that can be networked, coordinated, and funded at a regional scale. This local narrative thus corresponds with a strongly structured version of the MPA as boundary object that is distinct from the version identified in relation to EBSAs.

## Conclusions

To conserve marine biological diversity, CBD parties have focused their efforts on supporting MPAs, establishing a target of protecting 10 percent of the world's oceans by 2020. Although the measurability of MPAs makes them appealing for assessing progress, measurability alone does not explain the concerted and ongoing international effort to promote MPA establishment. We illustrate that CBD COP10 participants with divergent agendas drew on distinct scalar narratives to promote MPAs as both science-driven solutions for the high seas and as participatory solutions that support local livelihoods. This ability of the MPA concept to accommodate multiple interests and approaches—its role as a boundary object—enables CBD parties to reach consensus on their ongoing support of MPAs.

Boundary objects take on strongly structured meanings in particular sites but weakly structured meanings in common use. Particular sites may include physical locations (e.g., a specific MPA in a specific place) as well as sites within an institutional context, such as discussions of EBSAs or LMMAs at CBD COP10, both of which reflected strongly structured, but different, meanings. In discussions of EBSAs, the emphasis was on the role of science in identifying possible sites for protection and the role of states and other legitimate international institutions in designating MPAs. In contrast, discussions of LMMAs focused on the role of local communities and local knowledge in guiding MPA

55. Side Event 2215.

56. Side Event 2215.

establishment and governance, and the importance of cultural concerns. These two strongly structured interpretations of the MPA concept rarely intersected at CBD COP10. However, both EBSAs (and by extension, potential MPAs on the high seas) and LMMAs were promoted at CBD COP10 as significant for contributing to efforts to meet the CBD target for MPA coverage.

One point on which the EBSA and LMMA discussions converge is the regional scale as a means of implementing and supporting MPAs. It is common for NGOs and other actors to construct new scales and to simultaneously defend multiple scales, as their strategies are driven by specific interests and commitments (e.g., conservation and science-driven planning or support of local livelihoods) rather than scalar configurations *per se*.<sup>57</sup> The region thus provides common ground for diverse actors and agendas, just as the watershed does for different epistemic communities associated with water management.<sup>58</sup> However, unlike the watershed, which divergent proponents all promote as the ideal governance scale, the region is constructed in relation to other processes at either the local or global scale within two distinct MPA narratives. Rather than suggesting agreement on the regional scale as the most appropriate for conceptualizing MPAs, or directly fixing tensions between the global and local narratives,<sup>59</sup> coalescence on the region demonstrates that scalar narratives can be strategically useful for framing issues so as to mask underlying differences in priorities and values. Those concerned with EBSAs and the high seas are scaling down to the region as a way of finding institutions that can establish MPAs. The global narrative emphasizes a science-based approach that identifies areas of global biological significance, largely ignoring human uses of and interests in the high seas, and then moves to the region as a governance scale for supporting the priorities of international actors. In contrast, the local narrative links processes of community engagement to both biodiversity and social outcomes, situating the local scale and local priorities as a starting point for effective and legitimate governance of MPAs, which can then be networked to meet targets and leverage resources at the regional scale. Although both narratives work to construct the region as a useful scale for MPAs, the scalar relations implied by each narrative are quite different. The regional scale is not invoked as a way of reconciling these differences, but as a solution for distinct challenges faced by proponents of each narrative.

The case of MPAs at the CBD offers insight into the function of boundary objects in relation to scalar politics and environmental governance. In some cases, boundary objects may align with a specific spatial and governance scale, such as a watershed, and multiple actors may find their interests served at that scale.<sup>60</sup> In other cases, boundary objects may correspond to multiple scales. MPAs can be created at multiple spatial scales and associated with multiple

57. McCarthy 2005.

58. See Cohen 2012.

59. Sievanen et al. 2013.

60. Cohen 2012.



governance scales; this scalar flexibility is part of what enables them to function as boundary objects.<sup>61</sup> In addition, this case demonstrates the important function of boundary objects in accommodating multiple scalar narratives and relations. In other words, not only can MPAs be created and governed at multiple scales, but they can also support multiple, sometimes conflicting scalar narratives (about the appropriate scale at which to conceptualize marine conservation problems and solutions). In environmental governance, actors typically invoke scalar narratives as a means of explicitly defending their own position or challenging other actors' positions; scalar narratives serve to highlight differences in priorities and preferred processes and outcomes.<sup>62</sup> However, when scalar narratives are invoked in conjunction with a boundary object, these differences may be obscured rather than highlighted, enabling consensus rather than conflict.

In terms of global environmental governance, this case demonstrates both the advantages and disadvantages of boundary objects. The primary advantage of boundary objects for environmental governance is their ability to support consensus and orient the actions of multiple actors with diverse, often conflicting agendas. One goal of this paper is to illustrate ethnographically how and why the concept of MPAs serves the interests of multiple actors engaged in negotiations and policy development at the CBD and thus continues to dominate the CBD's marine conservation agenda.<sup>63</sup> The potential and limitations of boundary objects for aligning actors and motivating conservation action have been investigated primarily in relation to specific locations and projects;<sup>64</sup> this case demonstrates the utility of the concept for better understanding how tensions may be resolved or suppressed in international institutions. Similarly, the analysis of how the MPA as boundary object incorporates distinct scalar narratives helps explain how and why diverse groups (e.g., indigenous groups, conservation organizations, state agencies, private business) strategically align around protected areas as a conservation tool.<sup>65</sup>

While boundary objects may facilitate consensus and strategic alignment, they have disadvantages for global environmental governance. First, they prevent conflicts and differences from being openly addressed. Rather than resolving conflicts, boundary objects support a consensus that defers conflicts to other venues (e.g., planning processes for and implementation of specific MPAs). Second, once consensus is built around a boundary object, that object proliferates through science and policy networks and informs specific practices, regardless of whether it is the most appropriate tool in any given situation.<sup>66</sup> The reliance of states, international organizations, and donors on "blueprint" approaches—

61. See also Goldman 2009 on conservation corridors.

62. McCarthy 2005; Sievanen et al. 2013.

63. Compare with Corson et al. forthcoming 2014 on terrestrial protected areas.

64. Cohen 2012; Eden 2009; Goldman 2009; Turnhout 2009.

65. Adams and Hutton 2007; Corson et al. forthcoming 2014; West et al. 2006.

66. Goldman 2009.

and the problems with this reliance—have been well documented.<sup>67</sup> Building international consensus around a boundary object not only limits the consideration of differences but also restricts innovation and the consideration of alternative solutions and approaches. In the case of MPAs at the CBD, not only are differences not considered (e.g., the most appropriate scale at which to govern and implement MPAs), but MPAs are promoted as *the* marine conservation tool. One result is that the proliferation of the boundary object can be equated with successful policy implementation (i.e., MPAs are increasing in number and extent), whether or not ecologically effective and socially just conservation is actually being achieved.<sup>68</sup>

Concerned that the current emphasis on counting MPAs as a means of measuring progress on marine conservation is misleading, Spalding et al. suggest that “there would be considerable value in improving the common understanding of the definition of an MPA.”<sup>69</sup> While clarifying MPA definitions may help to clarify what is actually occurring on the oceans, it may not support ongoing efforts to reach and maintain a global consensus on MPAs as a conservation tool. With a more strongly structured definition, some groups will no longer see their interests represented on the MPA agenda.<sup>70</sup> We argue that underpinning the global consensus on MPAs is a lack of consensus on what constitutes MPAs and the processes through which they should be implemented. Although the CBD relies on consensus as a decision-making mechanism, its ability to accommodate a lack of consensus, through the use of boundary objects, may be just as significant.

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67. Forsyth 2003; Roe 1991.

68. See Mosse 2004.

69. Spalding et al. 2013, 233.

70. This became evident during other moments at the COP, for example, when including “other effective area-based conservation measures” in the protected areas target was discussed. See Campbell, Hagerman and Gray, this issue.

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