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Elizabeth B. Hessami and Gabriel Monroe, Editors

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AMERICAN BAR ASSOCIATION
SECTION OF ENVIRONMENT,
ENERGY, AND RESOURCES

CALENDAR OF SECTION EVENTS

March 28–29, 2017
Water Law Conference
Los Angeles, CA

March 29, 2017
Environmental Summit of the Americas
Los Angeles, CA

March 29–31, 2017
46th Spring Conference
Los Angeles, CA

April 20, 2017
A New Era of Environmental Law: Foundations and Principles Colloquium
White Plains, NY

April 25–29, 2017
SIL 2017 Spring Meeting
Washington, DC

June 11–13, 2017
SIL Europe Forum
Barcelona, Spain

October 18–21, 2017
25th Fall Conference
Baltimore, MD

October 24–27, 2017
SIL Fall Meeting
Miami, FL

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MESSAGE FROM THE CHAIRS
Fatima Maria Ahmad, Stephanie Altman, Shannon Martin Dilley, Anastasia Telesetsky, and Julia Wyman

As the chairs of the International Environmental and Resources Law Committee (IERLC), Marine Resources Committee (MRC), and the Section of International Law’s (SIL) International Environmental Law Committee (IELC), we are pleased to offer a joint newsletter focusing on oceans.

The global ocean is a complex and vital resource for life on earth. Providing oxygen, absorbing carbon dioxide, and providing a habitat for a major food source for humans, the ocean is critical to human survival. However, our global ocean is in trouble. This newsletter focuses on a range of issues threatening the survival of the ocean and efforts being made to address them. The flora and fauna within the ocean are being diminished at an alarming rate. Rising global temperatures, invasive species, over-utilization by man of fisheries, contamination, habitat degradation, and pollution are all current challenges to the health of our seas. This newsletter delves into some of the most pressing problems our oceans face and some of the legal strategies to address them. We present articles on innovative UN resolutions to new regulatory frameworks to protect our seas, just to name a few.

Susan Polizzotto, J.D., M.A., delves into the issue of conserving marine biodiversity in areas beyond national jurisdiction under the recently enacted United Nations General Assembly adopted Resolution 69/292. Xiao Recio-Blanco, J.D., S.J.D., addresses the creation of new marine protected areas (MPAs) in waters under national jurisdiction and the enforcement of these areas. Bettina Enderle, Ph.D., and Nora-Phoebe Erler, LL.M., explain the Ballast Water Convention, a recently enacted international treaty, which specifically deals with the introduction of alien invasive species and sets enforceable obligations. Priya Sundareshan, J.D., M.S., takes a close look at sustainable seafood and the health of our U.S. fisheries. The article delves into overfishing, fraud in the seafood business, and the Magnuson-Stevens Act (MSA). Finally, Victoria Clarke, J.D., discusses existing regulatory frameworks for offshore wind in the United States and European case studies.

We are pleased to report that SEER held another successful 24th Fall Conference in Denver, Colorado. We encourage members to attend and enjoy interesting CLE content and networking with colleagues. SEER continues to provide timely information and assistance to our members to aid them in becoming better lawyers. Please take note that the Section of Environment, Energy, and Resources’ Environmental Summit of the Americas will be held on March 28, 2017, and the 46th Spring Conference on March 28–29, 2017—both will be held in Los Angeles. Additionally, the ABA Section of International Law 2017 Spring Conference will take place in Washington, D.C.

Our committees enjoy active participation by members, with quality programs arising from member involvement. If you want to get more involved in any of our committees’ activities, please let our committee chairs know (IERLC—Stephanie Altman at stephanie.l.altman@gmail.com or Shannon Martin Dilley at dilleyshannon@gmail.com; MRC—Julia Wyman at jwyman@rwu.edu; and SIL IELC—Fatima Maria Ahmad at fatima.maria.ahmad@gmail.com or Anastasia Telesetsky at atelesetsky@uidaho.edu). Additional information is available on the committee websites.

Our newsletter editors are always ready to entertain article ideas and we also welcome periodic guest editors to help put together these newsletters. If you wish to propose an article, please contact our committee newsletter vice chairs (IERLC: Elizabeth B. Hessami at ebeh777@aol.com or Gabriel Monroe at Gabriel.Monroe@arb.ca.gov; MRC: Catherine Janasie at cjanasie@olemiss.edu; and SIL: Susan Polizzotto at susanpolizzotto@gmail.com).

Stephanie Altman and Shannon Martin Dilley, co-chairs of the International Environmental and Resources Law Committee, Julia Wyman, Marine Resources Committee, Fatima Maria Ahmad and Anastasia Telesetsky, co-chairs of the International Environmental Law Committee in the Section of International Law.
CONSERVING MARINE BIODIVERSITY IN AREAS BEYOND NATIONAL JURISDICTION
Susan Polizzotto

Introduction


This article summarizes the status of the PrepCom’s work and advocates for accelerated effort. Jacques Cousteau said, “People protect what they love,” available at http://voices.nationalgeographic.com/2010/06/11/jacques_cousteau_would_be_hear/. The high seas lie beyond a horizon few people ever personally experience, but this doesn’t excuse complacency or mistaken beliefs about marine biodiversity there. Measuring progress on a comprehensive conservation instrument in multiyear increments cedes time to a multitude of threats endangering marine life. The sooner a high seas governance framework backed by a legally binding instrument can be promulgated, the better the odds for high seas marine biodiversity.

Overview


Current laws and policy do not sufficiently protect marine biodiversity. According to the Global Ocean Report (2014), they are “weak, fragmented and poorly implemented . . . Different bodies regulate different industries and sectors, and in many cases, modern principles of ecosystem-based management, precaution and the application of the polluter-pays principle have yet to be brought to bear” (available at https://issuu.com/missionocean/docs/goc_full_report/18and). Also because decision making is usually by consensus, vocal minorities can thwart progress despite majority support. Id.

With most of the ocean existing beyond the jurisdiction of any nation, an international legally binding instrument is needed to protect biodiversity in, on, and under it. This goal can’t be achieved ad hoc. The instrument must be comprehensive to effectively address jurisdictional gaps, create enforcement mechanisms, and enable consistent, coordinated, and cooperative efforts among States and other stakeholders. While progress toward this goal is paced in two-to-fifteen-year or more increments, high seas marine biodiversity remains vulnerable.

Status of UN Preparatory Committee (PrepCom) efforts

The Preparatory Committee (PrepCom) set up by the UN General Assembly met twice in 2016,
most recently in August-September. Informal working groups within the committee focused on five topics: marine genetic resources, including questions about benefit sharing; area-based management tools, including marine protected areas; environmental impact assessments; capacity building and the transfer of marine technology; and cross-cutting issues. Each group reported to the chair who documented potential areas of convergent views and issues requiring further discussion. Highlights of the second session of the Preparatory Committee as of September 2016 are summarized below. A full report is available at http://www.un.org/depts/los/biodiversity/prepcom_files/Prep_Com_II_Chair_overview_to_MS.pdf.

The number of issues requiring further discussion outweighed convergent views three to one. Half the time allotted has elapsed yet more than 100 issues remain. This situation raises questions of how important it is to resolve every issue up front, and whether the interests of marine biodiversity are better served by acting now, specifically in areas where agreement already exists.

Marine Genetic Resources
- **Areas of convergence of views**: benefit sharing for non-monetary benefits; respecting the rights of coastal States over their continental shelves; the usefulness of agreeing on key concept definitions and drawing upon definitions in existing instruments.
- **Issues for further discussion**: whether to include monetary benefits or not; whether the common heritage of mankind and freedom of the high seas are mutually exclusive; whether to regulate access to marine genetic resources; whether to have a benefit-sharing mechanism; whether to address intellectual property rights in an international instrument; the role of traditional knowledge in the conservation and sustainable use of marine biodiversity.

Environmental Impact Assessments (EIA)
- **Areas of convergence of views**: an intent to not undermine existing legal instruments and frameworks and relevant global, regional, and sectoral bodies, as stipulated in Resolution 69/292; the concept that EIAs should contribute to conservation and sustainable use of marine biological diversity; the need for transparency in the EIA process, involvement of States and establishment of ABMT /MPA (such as transparency and ecosystem and science-based approaches); States’ obligations to protect and preserve the marine environment; the concept that ABMT and MPA should collectively contribute to the objective of conservation and sustainable use of marine biological diversity.
- **Issues for further discussion**: the identification and role of stakeholders; consultation with and consent of coastal States in designating MPAs; the procedural and decision-making process; ways and means to implement the obligation to protect and preserve the marine environment; the usefulness of defining ABMT and MPA; whether definitions should be based on existing ones and adapted to the context; the need to include a definition of marine reserves; principles and approaches such as adjacency, inclusiveness, accountability, flexibility, cost-effectiveness, participatory approach, integrated approach (multi-sectoral and adaptive management), balance between conservation and sustainable use, States as stewards of marine environment, cooperation as provided for in Article 197 of UNCLOS, liability and the polluter-pays principle, etc.; an avenue for seeking the necessary scientific input to any policymaking body; how to provide scientific input for policymaking under the new instrument; whether ABMT/MPA should contribute to rehabilitation and restoration of ocean ecosystems and health.
relevant stakeholders, and dissemination of assessment reports; making EIA reports publicly available.

• Issues for further discussion: whether transboundary impacts should be included in EIAs or treated as a separate procedure of Transboundary EIAs (TEIAs); role of coastal States and UN in any TEIAs conducted in areas beyond national jurisdiction that may impact areas within national jurisdiction; thresholds and criteria for identifying activities requiring EIA; whether a lower threshold should apply for areas identified as significant; whether the instrument should cover activities within national jurisdiction that may have an impact beyond national jurisdiction; international oversight and involvement in EIA process, at what level (regional/global) and stages; who should be responsible for deciding an EIA is required, conducting EIAs, reviewing EIA reports, deciding on the admissibility of an activity, and monitoring and reviewing activities; whether the instrument should include provisions for compliance and liability; the need for strategic environmental assessments (SEAs); whether SEAs can be linked to marine spatial planning; clarification of the concept, scope, fiscal policy, and procedural aspects of SEAs; identity of stakeholders and how consultations with them should be conducted; whether to develop a list of prohibited activities; whether costs of conducting EIAs should be borne by the proponent of an activity; the need for a central repository for EIAs, and whether this function could be fulfilled by an existing body; the interests of people who have not attained full independence or other self-governing status recognized by the UN, or people of a territory under colonial domination.

• Issues for further discussion: definitions, meaning, and scope of marine technology and which technology should be transferred from which category of countries; the terms and conditions, role of partnerships, and mechanisms required for follow-up on results; whether/how to address intellectual property rights and innovation, establish a funding mechanism, link a funding mechanism with a benefit-sharing regime, coordinate with existing programs and mechanisms and across different partnerships and organizations, conduct periodic review of needs and priorities, and incentivize the private sector; monitoring, reporting, and evaluation consistent with other existing instruments; building upon work and lessons learned from existing instruments and mechanisms (strengthen and harmonize with them rather than duplicate or undermine them); using indigenous peoples’ and local community knowledge as a source for capacity building, and using capacity building as an enabler to help them engage in activities relevant to the implementing agreement.

Cross-cutting Issues

• Areas of convergence of views: the instrument will be consistent with the overall objective of Resolution 69/292 and take the form of an implementing agreement under UNCLOS; definitions should be consistent with UNCLOS; universal participation in the instrument
should be sought; participation should be open to all States regardless of whether they are parties to UNCLOS; incorporation of relevant principles of UNCLOS and respect for its balance of rights, obligations, and interests; respect for the law of the sea; the instrument should not undermine existing relevant instruments and frameworks, or relevant global, regional, and sectoral bodies; respect for coastal States’ sovereignty and territorial integrity, and their rights over all areas under their national jurisdiction, including their continental shelves beyond 200 nautical miles where applicable; using biodiversity of areas beyond national jurisdiction for peaceful purposes only; using ecosystem and science-based approaches; public participation and availability of information transparency, accountability, and good governance; the need for capacity building and technology transfer; due regard for the rights of others.

• Issues for further discussion: whether the instrument’s objectives should include promotion of international cooperation and coordination, benefit sharing, addressing threats and imminent dangers to oceans, addressing existing legal and implementation gaps, revitalization and recovery of damaged marine ecosystems, contribution to poverty alleviation, and contribution to mitigating the effects of ocean acidification and climate change; whether the guiding principles/approaches should include common heritage of mankind, freedom of the high seas, equal rights of States (coastal or land-locked) in areas beyond national jurisdiction, fair/equitable use of resources, fair/equitable benefit sharing, stewardship for present and future generations, precautionary principle/approach, adaptive management, role of women, incorporation of traditional and local knowledge, adjacency and the requirement to consult, common concern of humankind, the special interests and needs of developing countries, State liability for damages to/endangerment of the marine environment, and the polluter pays principle; the form of a global level decision-making forum; the role of existing scientific and technical bodies and processes; the form of a scientific forum; roles of the International Seabed Authority and Division of Ocean Affairs and the Law of the Sea; relationship of the institutional arrangement with existing regional and sectoral bodies; inclusion of a compliance mechanism, and potential development of a review of implementation and compliance mechanism, and a dispute resolution mechanism in addition to those in UNCLOS.

Recommendations

The PrepCom should complete a draft instrument on time or ahead of schedule. Total consensus may not be possible and much could be lost attempting it. Harvard professor emeritus Edward O. Wilson cautions: “The biosphere does not belong to us; we belong to it,” available at https://eowilsonfoundation.org/e-o-wilson-writes-article-for-sierra-club-magazine-on-why-we-need-the-half-earth-solution/. Human beings use and shape the environment, but are also shaped by it and reap the consequences of collective human action. Paleontologists estimate the current rate of biodiversity loss is 100 to 1000 times higher now than before the dawn of humans. Id. The effect of human activity on the environment has surged such that by 2020 global wildlife populations will have declined by two-thirds in just half a century. http://wwf.panda.org/what_we_do/how_we_work/policy/conventions/cbd/. Time is of the essence.

Early in 2017, the PrepCom should redouble efforts to resolve the outstanding issues. The chair’s intention to circulate a compilation of proposals for elements of a draft text before the next session will encourage momentum, but the committee as a whole must be more aggressive. By mid-year it ought to shift from discussions into the actual
drafting phase, focusing on areas of consensus as a core foundation for the instrument. In a separate memorandum or appendix, it can recommend items for future negotiation, a notional schedule for periodic review, and procedures for proposing amendments. The PrepCom should provide the draft instrument to the chair by September 2017 so it can be reviewed and submitted to the General Assembly before year-end.

In the event scientific or technical information to support consensus is not available, PrepCom should take a cautionary approach and overprotect rather than underprotect marine biodiversity. This will minimize situations where critical species are left exposed because their importance wasn’t understood at the time of drafting. By employing a precautionary approach, the instrument can be amended and policies relaxed, if appropriate, once actual risk and consequences are known. The rate and consequentiality of loss and subsequent detrimental impacts on humanity aren’t easily reversed if action comes too little, too late.

Focusing on an initial draft of convergent views by mid-2017 would enable a timely achievement of the PrepCom mandate. Among the approximate 32 areas of convergence thus far are commitments to respect national sovereignty, territorial integrity, and the roles of existing ocean governance authorities and regional sea programs. Work can thus be responsibly accelerated without compromising national sovereignty and the existing international infrastructure and oversight.

Conclusion

Given the enormous stakes, delaying a draft instrument until consensus can be reached on all items enumerated in the chair’s 2016 overview would seriously compromise timely mitigation of an urgent, large-scale, deteriorating marine environment. Achieving a perfect solution is unrealistic and unnecessary. What is necessary are best efforts, an aggressive timetable, and sufficient political will to finalize and promulgate an international legally binding framework by 2018 that substantially protects marine biodiversity in current critical areas as a major step in the right direction. Further amendments will be required to reflect future consensus on remaining issues, as well as to address the worsening decline of marine ecosystems.

Susan Polizzotto (JD, MA National Security), attorney, writer, and community volunteer in the Wilmington, N.C., area. She served on active duty in the U.S. Coast Guard for 20 years, retiring at the rank of Commander. Her military career highlights include Command at Sea of the Cutter TAMPA and Staff Judge Advocate of the Maritime Law Enforcement Academy. As a liaison officer at the Department of State, she assisted in responding to international search and rescue cases, natural disasters including the 2010 earthquake in Haiti, Somali piracy incidents, and other maritime operational threats. She co-authored The European Community in 1992: An Integrated Approach to Economy and Ecology, 4 BYU L. Rev. 1759 (1990).
ENHANCING THE EFFECTIVENESS OF MARINE PROTECTED AREA ENFORCEMENT THROUGH LEGAL REFORM
Xiao Recio-Blanco

Introduction

The Convention on Biological Diversity’s (CBD) “Aichi Target 11” and other more recent international conservation conferences call for the creation of new marine protected areas (MPAs) in waters under national jurisdiction. However, a major concern is that old and new MPA designations will exist only on paper and that countries will focus on formally complying with the agreed target but not on implementing the declared MPAs and making them enforceable. The declaration of new MPAs must necessarily be reinforced by an update of the regulatory framework that ensures adequate protection of marine spaces at both the domestic and the international level.

Under Aichi Target 11, countries have pledged to protect at least 10 percent of the world’s coastal and marine areas by 2020. This objective has been reinforced by the UN 2015 Sustainable Development Goal 14 but is still far from being achieved. As recent studies suggest, the target seems to be well below what is needed to ensure sound marine conservation. See generally, e.g., Bethan O’Leary et al., Effective Coverage Targets for Ocean Protection, Conservation Letters 2016, available at http://onlinelibrary.wiley.com/doi/10.1111/conl.12247/full. Most recent international commitments have called on coastal countries to increase the designations of large MPAs to cover up to 30 percent of waters under national jurisdiction by 2030. See IUCN, 053—Increasing Marine Protected Area Coverage for Effective Marine Biodiversity Conservation, 2016, available at https://portals.iucn.org/congress/motion/053. Meanwhile, the United Nations is hosting negotiations with regard to the creation of a new international, legally binding instrument for the protection of marine biodiversity in areas beyond national jurisdiction. See, Preparatory Committee Established by General Assembly Resolution 69/292: Development of an International Legally Binding Instrument Under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction, available at http://www.un.org/depts/los/biodiversity/prepcom.htm. Both initiatives can rapidly increase the percentage of the world’s oceans under some form of legal protection.

Effective MPA implementation begins with a design that facilitates monitoring and enforcement. Without effective enforcement strategies and an adequate legal framework, MPAs are at risk of becoming “paper parks,” which are protected areas that have been enacted by way of a domestic law or regulation but seldom, if ever, enforced. As countries formally fulfill Aichi Target 11, and new areas are added to the map of global MPAs, this may create an illusion of effective protection, but with almost no real-world conservation effects.

Big Picture Overview and Key Problems

Good regulation is a fundamental element for the health of MPAs. Lately, more interdisciplinary studies focus on the role of socioeconomic factors in sound management of MPAs, including the effects of local regulation. See, e.g., Rebecca L. Gruby et al., Toward a Social Science Research Agenda for Large Marine Protected Areas, Conservation Letters 2015, available at http://onlinelibrary.wiley.com/doi/10.1111/conl.12194/abstract; Joshua E. Cinner et al., Bright Sports Among the World’s Coral Reefs, Nature, 2016, available at https://www.ncbi.nlm.nih.gov/pubmed/27309809; Bárbara Horta e Costa et al., A Regulation-Based Classification System for Marine Protected Areas (MPAs), 72 Marine Pol’y (2016), available at http://www.sciencedirect.com/science/article/pii/S0308597X16300197. In these studies, the conversation is centered on how the lack of adequate regulatory frameworks and ineffective implementation constitute the most relevant threats.
to ocean biodiversity in general, and to MPAs in particular.

During 2016, the Environmental Law Institute confronted the problem of MPA law implementation and enforcement through the development of a handbook on legal tools for strengthening MPA enforcement laws and regulations. This is a resource for governments, legislatures, and civil society to identify regulatory needs and implement legal reforms. The handbook provides legal options to solve some common problems, along with model language that might be used to install those regulatory options in the legal framework. These options are based on international experience and reflect best practices that have the potential to be replicated in other countries that face similar implementation problems. 

New and old MPAs will only be able to provide their many ocean conservation benefits if they are effectively enforced. The legal research done for the drafting of the MPA handbook uncovered a series of priorities and objectives for effective MPA enforcement:

First, the problems affecting MPA implementation and enforcement are varied and arise from a wide array of sources. Consequently, the whole universe of challenges limiting the effectiveness of MPA law in all places and at all times is almost impossible to grasp. However, it is feasible to identify the most common challenges affecting MPA law. In addition, legal research on fisheries management and environmental protection has led to the identification of approaches that, under certain conditions, can effectively address these common problems.

Second, MPA enforcement can be strengthened by focusing on targeted regulatory reforms instead of attempting to completely refurbish domestic legal frameworks. This approach is preferred because approving directed legal reforms is less politically costly than passing new legislation. Furthermore, many nations already have good environmental protection laws, and MPA enforcement laws only constitute a small, highly specialized fraction of them. Some legal provisions, such as those establishing the distribution of enforcement powers or the criteria for gathering evidence of MPA violations, need refining to become more effective tools of ocean conservation.

Third, the approach to MPA enforcement regulation has to be quite different with respect to large MPAs in the Exclusive Economic Zone (EEZ) of countries than the management of small and near-shore MPAs. Large offshore MPAs in the EEZ are mostly affected by illegal actors from distant water fleets and large industrial fishing vessels. While not perfect, this type of activity can be monitored through the use of remote sensing technology such as Vessel Monitoring Systems (VMS), Automatic Identification Systems (AIS), and other technological approaches to surveillance. On the other hand, small and near-shore MPAs are affected by a wider range of human activities from small-scale or artisanal fishing and large-scale fishing to recreational boating and diving, coastal development, and land-based pollution. Surveillance and enforcement of near-shore MPAs will require a stronger reliance on co-management and self-regulation.

A Few Examples of MPA Law Reform

Addressing the whole universe of challenges affecting adequate MPA enforcement from a general perspective is neither feasible nor desirable, given the fact that the specific conditions of MPA management in different regions of the world vary widely; MPAs are located in waters under the jurisdiction of states governed by their own legal frameworks—each with its nuances and peculiarities—and affected by a series of international legal instruments.

Nevertheless, a literature review on MPA law and policy allows us to identify a series of common
challenges affecting most MPAs around the world. These issues include weak enforcement authority, difficulty making proof of MPA violations admissible in court, limited financial resources and technical capacity, and legal barriers that impede the adoption of new enforcement technologies.

Some of these dilemmas can be addressed with straightforward and targeted legal reforms such as establishing more no-take zones and fishing bans within the boundaries of existing MPAs or providing strong presumptions that shift the burden of proof, or making the proof of MPA violations less challenging for enforcement agencies. The designation of MPAs that include large no-take zones where no fishing is allowed is desirable because no-take MPAs render large conservation benefits and are easier to monitor by technological or remote means than mixed-use areas. Other problems demand effective international cooperation and cannot be fully addressed unilaterally by a single coastal state.

The following examples provide an overview of how targeted regulatory reforms can help increase the effectiveness of MPA surveillance and enforcement, contributing to sound MPA implementation.

**Exercising the Right to Hot Pursuit**

Some international illegal, unreported, and unregulated (IUU) fishing networks act in and out of the High Seas. The UN Convention on the Law of the Sea (UNCLOS) defines a pair of requirements with which coastal states must comply in order to perform a legal “hot pursuit” of a fishing vessel onto the High Seas. UNCLOS § 111. First, pursuit must be uninterrupted and, second, lawful hot pursuit “ceases as soon as the ship pursued enters the territorial sea of its own State or of a third State.” UNCLOS § 111.3. Under traditional international law, the only way to ensure an uninterrupted pursuit was to maintain direct contact with the pursued vessel via ship or aircraft, and this imposes a significant logistical and economic burden on the state undertaking the pursuit.

There are two options nations can adopt to increase the efficacy of their hot-pursuit provisions. First, coastal countries can adopt provisions that allow for the use of remote monitoring technologies to fulfill the requirements of legal hot pursuit. International agreements such as the Australia-France Agreement on Cooperative Enforcement of Fisheries Law, Agreement on Cooperative Enforcement of Fisheries Laws Between the Government of Australia and the Government of the French Republic in the Maritime Areas Adjacent to the French Southern and Antarctic Territories, Heard Island and the McDonald Islands, 2007, available at http://www.fao.org/fishery/shared/faolextrans.jsp?xp_ISIS_MFN=119433&xp_faoLexLang=F&xp_lang=fr, encourage a more updated, flexible interpretation of the concept of hot pursuit by enabling its exercise through the use of “technical means.” The concept of “technical means” allows coastal states to use satellite data as valid instruments to ensure the uninterrupted pursuit of foreign vessels, and to gather evidence of their illegal actions. It is important to mention that this approach has not to date been tested in international litigation and is subject to legal challenge. In addition, the Australia-France agreement provides that one state party may take over the pursuit commenced by the other party and share in the costs of the operation. Id. at art. 4.4.

**Distribution of Enforcement Powers**

A symptom of the general fragmentation of ocean governance is that in many countries several different agencies possess law enforcement authority over MPAs. In some cases, these jurisdictions are contradictory. MPA legal reform can help solve this problem by indicating which agencies or institutions should lead enforcement actions, and which institutions have authority to prosecute and adjudicate. Key to the success of any MPA are the government officials who possess the legal authority, skills, training, and resources to fully and fairly implement and enforce the law. Also, law enforcement officers should possess a broad range of enforcement powers. The law should not present barriers to enforcement agencies
working together, and it may authorize cross-deputization and even the temporary or permanent appointment of foreign officers for enforcement purposes through shiprider agreements.

**Lack of Admissible Evidence of Illegal Actions**
In order to demonstrate a person’s liability for violating MPA laws, the prosecuting authority bears the legal burden of proving the violation before a court or other tribunal. The enforcement officers must present admissible evidence that persuades the court that the law was violated and that the accused person was responsible for the violation. Obtaining, preserving, and presenting evidence of MPA violations that are both admissible and persuasive can be challenging. Difficulties are particularly acute when a country has limited enforcement resources; where the violation occurs away from shore; the alleged violator claims that he had permission; or a combination of these factors is in play.

A country can facilitate successful enforcement actions by ensuring that its laws, to the greatest extent possible, account for the challenges of proving MPA violations. This can be done in several ways, including broadening standards of admissibility for evidence used to prove legal violations at sea and by adopting rebuttable legal presumptions that, in specified situations, assign the initial burden of proof to the alleged violator. Strict liability provisions can apply under certain circumstances, such as when the violator is found in possession of a protected species or when the violator takes actions that constitute a clear danger to the health and stability of an MPA. For example, according to the 2014 Barbuda (Coastal Zoning and Management) Regulations, vessels engaged in catch-and-release fishing in the Codrington Lagoon shall not possess any fish on board. Consequently, any fish found on board a vessel engaging in catch-and-release fishing in Codrington Lagoon is presumed to have been caught illegally. See 2014 Barbuda (Coastal Zoning and Management) Regulations § 11. (3), available at http://faolex.fao.org/docs/pdf/ant139375.pdf.

Given the difficulty of obtaining, preserving, and presenting evidence in legal proceedings, a country’s laws should provide for the admissibility of any type of reliable evidence to prove MPA violations. This review of evidentiary laws to facilitate proof of MPA violations will need to ensure adequate compliance with the rule of law. At a minimum, the law should not discriminate against particular types of evidence, including evidence associated with the emerging technologies discussed earlier. Evidence to prove violations of MPA law comes from a variety of sources, such as photographs, video recordings, satellite data, or other electronic information revealing a ship’s location and course, witness testimony (either from an enforcement officer, a citizen, or anyone else), or catch and equipment found aboard a vessel.

**Seeking Innovative Legal Approaches to Enhance MPA Enforcement**

MPA implementation and enforcement must be analyzed within the broader framework of the need for ocean governance reform. The traditional fragmentation of ocean governance, with many specialized agencies focusing on one or a narrow set of sea uses, complicates ocean resources management and conservation even further. It also means that ocean attorneys interested in MPA enforcement should look beyond the realm of ocean conservation laws and identify other existing legal instruments that, even if not created with ocean conservation in mind, may provide significant conservation benefits, such as vessel routing regulations, fisheries concessions and other exclusive rights laws, or transparency and access to information rules.

**Conclusion**

Many problems affect the effective implementation of MPAs, from the traditional fragmentation of ocean resources management regulations to the significant differences between domestic legal frameworks. As countries implement Aichi Target 11 and create new
international, legally binding instruments for the protection of marine biodiversity in areas beyond national jurisdiction, it is important for these countries to identify MPA law challenges and seek innovative legal approaches to enforcement. By addressing common legal problems such as the dearth of adequate legal instruments to create MPAs, weak enforcement authority, and legal barriers that impede the adoption of new enforcement technologies, countries can bridge the significant gap between MPA enactment and MPA implementation.

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The Transition Tracker Resources Page will be updated regularly to keep you apprised of key developments under the new administration.

www.ambar.org/environtransition

With the Ballast Water Convention concluded under the auspices of the International Maritime Organization (IMO), for the first time an international treaty specifically deals with the introduction of alien invasive species and sets enforceable obligations. The Convention entering into force in September 2017 will therefore be an important step forward in addressing the alien invasive species issue but it also entails obligations and challenges for the shipping industry as well as for flag and coastal states.

**Ballast Water as a Vector**

One of the major contributors to the problem of invasive species in marine environments is the discharge of ballast water. Ballast water may contain algae, mollusks, fish, or pathogens which, when released with the ballast water, can invade new environments and have devastating effects, especially in coastal areas. B.C. Foster, Pollutants Without Half-lives: The Role of Federal Environmental Laws in Controlling Ballast Water Discharges of Exotic Species, 30 ENVTL. L. 99 (2000). Vessels take up ballast water to enhance stability when they are not carrying cargo, but fully loaded ships also contain some ballast water as it is not possible for installed pumps to entirely remove it. D. Minchin & S. Gollasch, Vectors—How Exotics Get Around, in INVASIVE AQUATIC SPECIES OF EUROPE—DISTRIBUTION, IMPACT AND MANAGEMENT 187 (E. Leppäkoski, S. Gollasch & S. Olenin eds., 2002). Every day more than 3000 species are carried around the world in ballast water tanks. J. Firestone & J.J. Corbett, Coastal and Port Environments: International Legal and Policy Responses to Reduce Ballast Water Introductions of Potentially Invasive Species, 36 OCEAN DEV. & INT’L LAW 291 (2005). The zebra mussel (Dreissena polymorpha) invaded the Great Lakes via ballast water. NATIONAL RESEARCH COUNCIL, GREAT LAKES SHIPPING, TRADE, AND AQUATIC INVASIVE SPECIES SPECIAL REPORT 291 (2008).

**Ballast Water Convention**

On September 8, 2017, the IMO’s Ballast Water Convention (BWC) will enter into force. International Convention for the Control and
Management of Ships’ Ballast Water and Sediments (London) of 13 February 2004, EMuT 2004/13. It is the first multilateral treaty addressing a specific pathway for alien invasive species introduction. The BWC sets standards for all ships, not just those flying the flag of states that are parties to the Convention. One of the basic IMO principles is the “no more favorable treatment principle,” which enables port states to enforce standards on all ships entering their ports regardless of whether a particular flag state has ratified the BWC. Thus, even though the United States has not ratified the BWC, it may still apply to U.S. flagships if they enter ports or waters under the jurisdiction of states who are parties to the Convention.

**Ballast Water Management**

The Convention sets minimum standards for ballast water management; for example, every ship is obliged to have a ballast water record book and a ballast water management plan on board and to implement the plan. Upon request, these must be shown to the port authorities who can also take samples of the ship’s ballast water. Noncompliance can be addressed by the flag state and/or the port state. States may regulate administrative fines in case of infringements and hold shipping companies liable for the costs entailed by noncompliance with the BWC. The extent of liability will, however, depend on the implementation in the relevant state. Ballast water exchange must generally occur at least 200 nautical miles from the nearest land and in waters at least 200 meters deep. Each operation with respect to ballast water has to be recorded in the ballast water record book.

The BWC also establishes for ships, depending on their time of construction and ballast water capacity, ballast water performance standards determining the permitted concentration of viable organisms and harmful microbes in discharged ballast water. Once the Convention enters into force, ships will be required to have effective on-board systems for ballast water treatment. Ballast water management systems can be “mechanical, physical, chemical, and biological processes” such as filtration, ultraviolet radiation, or ozone treatment. Ballast water management systems require approval by the competent administration. With regard to systems using viruses or fungi to act on harmful aquatic organisms and pathogens (active substances), IMO approval is required. The complex procedure for approval is conducted in a two-tier process granting first basic and then final approval. In this process, risks to the environment, human health, property, and resources are evaluated. IMO, List of Ballast Water Management Systems That Make Use of Active Substances Which Received Basic Approval from IMO/ List of Ballast Water Management Systems That Make Use of Active Substances Which Received Final Approval from IMO, available at [http://www.imo.org/en/OurWork/Environment/BallastWaterManagement/Documents/Table%20of%20BA%20FA%20TA%20updated%20November%202016.pdf](http://www.imo.org/en/OurWork/Environment/BallastWaterManagement/Documents/Table%20of%20BA%20FA%20TA%20updated%20November%202016.pdf) (last visited Jan. 9, 2017).

**Requirements Beyond BWC**

The BWC also allows states, individually or jointly, to take more extensive measures, stipulating special requirements for certain areas with respect to ballast water exchange. These requirements can relate to the uptake as well as to the discharge of ballast water. For example, New Zealand has established areas where ballast water exchange may occur on the high seas for ships en route to New Zealand. M. GIBBS ET AL., IDENTIFICATION OF BALLAST WATER EXCHANGE AREAS FOR VESSELS EN ROUTE TO NEW ZEALAND PREPARED FOR THE MINISTRY OF FISHERIES 1–21 (2002). The BWC also contains several exemptions, e.g., individual parties are allowed to grant exemptions on the basis of a risk assessment. The reason for including this exception was to relieve vessels that are engaged in regional fishing activities or coastal shipping from the burden that compliance with the BWC would entail. K.N. Scott, Defending the World Below the Brine—Managing Alien Invasive Species Under the 2004 Ballast Water Convention—A New Zealand Perspective, 14 J. INT’L MAR. L. 321 (2008).
Still, some national requirements already go beyond the regulations of the BWC. The ballast water performance standards implemented by California are, for example, much stricter than those of the BWC. Under California law, no alien species larger than 50 micrometers can be discharged. The BWC, by contrast, allows less than 10 alien species of this size per cubic meter. California State Lands Commission, *Performance Standards for Ballast Water Discharge*, available at http://www.slc.ca.gov/Programs/MISP/InfoShts/PerfStd.pdf (last visited Jan. 9, 2017).

**Extension of Port State Jurisdiction**

The BWC extends port state jurisdiction further than other IMO instruments. The port state has far-reaching inspection rights and, in case of violations, the right to detain the ship without being obliged to give reasons. With regard to ballast water sampling, however, the port state has the obligation not to cause disproportionate delays to the “operation, movement or departure of the ship.” Undue delay or detention of a ship can entitle the shipping company to claim damages. In order to comply with BWC standards and to enforce those standards when inspecting ships, the port state’s knowledge and capacity is an important feature—especially in developing countries. The so-called GloBallast Partnership is an important capacity-building element in this respect. The project is being implemented by the United Nations Development Programme (UNDP) and executed by the IMO with inter alia shipping and port industries, national administrations, and international environmental nongovernmental organizations as partners. The project running from 2007 to June 2017 aims at preparing developing countries for implementation of the BWC and compliance with its requirements. *GloBallast Partnerships Project 2007–2017*, available at http://globallast.imo.org/ (last visited Jan. 9, 2017). The BWC also provides for violations to be sanctioned by the flag state or the coastal state, which has the choice to either start proceedings based on its national laws or provide the administration of the ship’s flag state with information and evidence of the violation.

**Outlook**

The BWC has the potential to become an efficient instrument for reducing the introduction of alien invasive species to the marine environment. It impacts flag and coastal states as well as shipping companies, which must comply with management and handling obligations and reporting requirements. Furthermore, it applies universally to the ships of parties and non-parties, thus enforcing worldwide standards. Also, the BWC enables port states to take measures, which may be tools not only to protect the environment but also to pursue economic interests. Ultimately, the entry into force of the BWC, which has been awaited for more than 10 years is an important step forward to safeguard marine diversity.

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LACK OF ACCOUNTABILITY IN THE NEW ENGLAND GROUNDFISH FISHERY AND U.S. TREATY IMPLICATIONS
Priya Sundareshan

An increasing number of restaurants feature sustainable seafood. Many fish species that were depleted through the classic “tragedy of the commons” recovered as a result of effective implementation of federal laws and policies outlawing overfishing and mandating rebuilding. But why do many New England groundfish species, such as the iconic cod, continue to suffer from overfishing? Lack of both monitoring and accountability to fishing quotas play a significant role.

The Magnuson-Stevens Fisheries Conservation and Management Act (MSA), enacted in 1976, governs fisheries in federal waters of the United States. 16 U.S.C. § 1801 et seq. Under the MSA, regional fishery management councils composed of private stakeholders and governmental officials develop the rules governing each fishery, which the National Oceanic and Atmospheric Administration (NOAA) reviews for consistency with the statute and regulations. Id. § 1852. The MSA also contains strong conservation provisions including prohibiting overfishing, mandating recovery of overfished species, and establishing binding catch limits and accountability measures to keep catch within those limits. Id. §§ 1851(a)(1)-(10); 1853(a)(15); 1852(h)(6).

Under this framework, many fisheries have turned the corner from environmental disasters to sustainability success stories. As of 2016, NOAA reports that 40 previously overfished stocks around the United States have been successfully rebuilt to a sustainable population size. NOAA Fisheries, Celebrating 40 Rebuilt Stocks in U.S. Fisheries (Oct. 12, 2016), http://www.nmfs.noaa.gov/sfa/publications/feature_stories/2016/40th_rebuilt.html. Catch share programs, in which fishing entities (individuals, vessels, cooperatives, communities, or others) have a license to catch a proportion of the total catch, have helped achieve this success by aligning conservation and economic incentives (as a fish population grows, so does the value of a catch share). Catch shares often replace burdensome conventional management regulations such as gear requirements or restrictions, trip limits, or closing areas to fishing while allowing fishermen more flexibility. NOAA Fisheries, Catch Shares, http://www.fisheries.noaa.gov/sfa/management/catch_shares/index.html (last visited Jan. 19, 2017).

But despite implementing a type of catch share that allocates fishing privileges to voluntary groups of permit holders who are jointly and severally responsible for adhering to permit requirements and quota levels, see NOAA Fisheries Greater Atlantic Region, Sectors, Northeast Multispecies, https://www.greateratlantic.fisheries.noaa.gov/sustainable/species/multispecies/, the New England groundfish fishery has not benefitted to the extent many expected. Assessments of many stocks in the fishery have repeatedly shown that although catch ostensibly stays below applicable limits, overfishing has occurred. See, e.g., Final Rule, Framework Adjustment 55, 81 Fed. Reg. 26,412, 26, 430 (May 2, 2016) (setting new catch limits and reducing monitoring levels, among other actions, and recognizing this pattern). As of late 2015, 13 of the 20 groundfish stocks were either overfished or the overfished status was unknown (although for those stocks for which status was known, 5 of 17 stocks are still experiencing overfishing). Stock Assessment Update of 20 Northeast Groundfish Stocks Through 2014, NOAA, Northeast Fisheries Science Center Ref. Doc. 15-24 (Oct. 2015), available at http://www.nefsc.noaa.gov/nefsc/publications/.

Recent developments—including the indictment of major industry player Carlos Rafael and government studies showing a pattern of systemic bias and misreporting—indicate that the lack of accountability in the fishery increases management and scientific uncertainty and is a major reason for ongoing overfishing. This
threatens both the sustainability of the stocks and the economic viability of those who fish for a living; for example, the recently adopted 2016–2018 Georges Bank cod quota represents a 95 percent reduction from the 2015 quota. 81 Fed. Reg. at 26,430. Continued overfishing also has international implications because certain stocks (including Georges Bank cod) are jointly managed with Canada under an international agreement. International Fisheries Agreement Clarification Act, Pub. L. No. 111-348, tit. 2, 124 Stat. 3671 (2011). Fortunately, the New England Fishery Management Council (Council) has recently decided to improve groundfish monitoring to ensure accountability and obtain accurate data.

**Insufficient and Ineffective Monitoring**

Regulators currently monitor the fishery using two programs: (1) at-sea monitors who collect basic information on fish discarded at sea and length sampling of some fish on 10 percent of all fishing trips, and (2) additional human observers who collect more complex biological information on an additional 4 percent of all trips. In addition, NOAA uses vessel-monitoring systems, self-reporting on vessel trip reports (VTRs), and dealer reports to monitor total catch. 81 Fed. Reg. at 26,420. The governing fishery management plan (FMP) explicitly states that the monitoring levels in the fishery will not reach 100 percent, Amendment 16, 75 Fed. Reg. 18,113 (Apr. 9, 2010), and a series of additional monitoring reductions over time have left the fishery with coverage at drastically low levels. For example, dockside monitors instituted when the groundfish sectors were first organized were eliminated in 2013. Interim Final Rule, Framework Adjustment 48, 78 Fed. Reg. 26,118 (May 3, 2013).

Human observers are expensive, and regulators are continually pressured to lower costs by reducing the number of fishing trips that must take an observer with them out to sea, especially since 2016, when observer costs were transferred from the agency to industry. See, e.g., Emily Yehle, *Senators Press NOAA to Fund At-Sea Monitors*, E&E News, Mar. 4, 2016, http://www.eenews.net/eedaily/2016/03/04/stories/1060033453. In May 2016, NOAA approved changes to the monitoring calculation that reduced observer levels to 14 percent of fishing trips in the 2016 fishing year, down from the 41 percent coverage that would have otherwise been required. 81 Fed. Reg. at 26,419 (identifying cost as the reason to reduce monitoring levels).

But with levels so low, what monitoring occurs is of little use. Extrapolating from the discard data collected on observed trips to generalize about discarding on all trips hinges on the assumption that fishing behavior is the same on observed and unobserved trips. Yet NOAA scientists have documented the “observer effect”: a demonstrable difference in fishing behavior (such as the areas fished, length of trip, and fish targeted) with an observer on board. Dr. Chad Demarest, *Observer Effects*, Northeast Fisheries Science Center Social Sciences Branch, presentation (Sept. 19, 2012). In short, if a low percentage of trips are monitored, a fisherman can bear the loss of fishing differently on the monitored trips while making up for lost profits on unmonitored trips. This observer bias skews the data, hurting our knowledge of the total catch and stock status.

Low monitoring levels can also breed the conditions for some to build illegal practices into their operations. In February 2016, the New England fishing world was rocked by the arrest of Carlos Rafael, the owner of at least 36 fishing vessels (controlling about one-fifth of the New Bedford, Massachusetts, commercial fishing fleet) and 44 permits (worth about $80 million in 2015). Mike Lawrence, *Carlos Rafael Trial Could Have Huge Stakes*, SOUTHCOAST TODAY, June 29, 2016. As the owner of many fishing vessels—as well as the dealer they offloaded to—Rafael allegedly sold fish that he did not have quota for, falsely recording the fish as species for which he did own quota on both the VTRs and dealer reports. Affidavit of Special Agent Ronald Mullet in Support of Criminal Complaint (Feb. 24, 2016). He then sold the fish for cash to an associate to sell on the black market and smuggled the cash
to Portugal. *Id.* Rafael allegedly falsely reported species information for more than 815,000 pounds of fish between 2012 and 2016. Lawrence, *supra.* He claimed to have conducted his operations this way for over 30 years, netting $668,000 in one six-month period. *Id.* Because Rafael owned both the vessels and the dealers they offloaded to, his fraud belies the idea that self-reporting and dealer reporting will offset the deficiencies of low monitoring. *Oceana v. Pritzker*, 26 F. Supp. 3d 33, 51 (D.D.C. 2014) (court reasoning that other safeguards, such as self-reporting and reporting by dealers, still exist as a complementary check such that observer levels can be further reduced).

Rafael’s fraud is breathtaking in scope, but a recent study by scientists at NOAA’s Northeast Fisheries Science Center has uncovered a similar problem occurring at sea, where vessels appear to be both misreporting and underreporting their catch on VTRs. Dr. Michael Palmer, Presentation to Groundfish Plan Development Team Meeting, Boston, Mass. (Aug. 31, 2016). Many groundfish stocks are managed in specified stock areas—for example, cod is separately managed as Georges Bank (GB) and Gulf of Maine (GOM) cod stocks. Palmer analyzed vessel fishing speed (confirmed by satellite pings) against the submitted VTRs and found that many vessels are likely fishing in multiple stock areas but only reporting that the fish they caught were from stock areas with the least-restrictive catch limits. Based on this analysis, it is likely that catch limits of four stocks (GOM cod, eastern GB cod, GOM haddock, and southern New England winter flounder) have been exceeded multiple times over the last five years, and for eastern GB cod, the catch may have been 2.5 times the catch limit. *Id.* This level of misreporting appears significant enough to affect the region’s ability to properly manage groundfish catch within the legal commercial catch limits, potentially sabotaging recovery efforts and contributing to overfishing.

**Lack of Enforcement and Weak Penalties**

Less stringent agency enforcement may also have contributed to the problems with accountability in the groundfish fishery. An in-depth investigation from 2010 to 2012 of NOAA’s Asset Forfeiture Fund (AFF) by the Department of Commerce’s Office of Inspector General (IG), stemming from complaints in New England, may have contributed to reluctance to enforce in the region. NOAA deposits the majority of civil fines and penalties it collects under the MSA, Endangered Species Act, Marine Mammal Protection Act, and Lacey Act into the AFF, which is used for “expenses directly related to investigations and civil or criminal enforcement proceedings, including any necessary expenses for equipment, training, travel, witnesses,” among other things. 16 U.S.C. § 1861(e)(1)(C).

The IG concluded that NOAA failed to adequately track monies in the AFF or collect data about the associated offenses and penalties, resulting in an appearance of impropriety about NOAA’s use of the AFF. See, e.g., U.S. Department of Commerce Office of Inspector General, National Oceanic and Atmospheric Administration, *More Action Needed to Improve Controls in Asset Forfeiture Fund*, Final Report No. OIG-12-019-I (Feb. 8, 2012). NOAA has since implemented reforms and clearly delineated policies to address the issues, Memorandum from Paul Doremus, NMFS Deputy Assistant Administrator for Operations, Updated Policy on Prohibited and Authorized Uses of the Asset Forfeiture Fund (July 15, 2015), but the investigation may have had a chilling effect.

Lack of strong statutory penalties further weakens enforcement. While the MSA authorizes civil penalties, permit sanctions, and forfeitures as penalties for violations, criminal penalties are not available for substantive violations of a fishery management plan (FMP) under the MSA, such as overharvesting or fishing in closed areas. Christopher L. Hale, *Domestic Fisheries Enforcement*, U.S. ATT’YS BULL., Sept. 2015, at 23–28. Instead, the MSA includes criminal penalties only for actions such as assaulting observers. 16 U.S.C. § 1859. Prosecutors therefore must rely on harder-to-prove violations of the Lacey Act—either making false records about fish transported in
interstate commerce, or trafficking, which requires the knowing export/import/etc. of illegally obtained fish—in order to impose the type of substantive penalty that could deter major violations. Hale at 24–27. Complicating attempts to prosecute FMP violations, the Lacey Act prohibits using an FMP violation as the underlying offense to establish the illegality of the fish for the purposes of making a trafficking charge. 16 U.S.C. § 3377(a). This leaves only the Lacey Act false records charge, a felony with imprisonment for up to five years if the market value of the illegal fish is $350 or greater, which requires proof that a defendant knowingly made false vessel trip reports (VTRs) or dealer reports. 16 U.S.C. §§ 3372, 3373(d). Since these tools are only available to prosecute a subset of fishery violations, it is difficult to impose effective consequences on those who violate the MSA.

**International Implications of Inadequate Monitoring**

Fish do not recognize political boundaries, and New England groundfish are no different. Three groundfish stocks (GB yellowtail flounder, eastern GB cod, and eastern GB haddock) are jointly managed by the United States and Canada under the U.S./Canada Transboundary Resource Sharing Understanding, International Fisheries Agreement Clarification Act, Pub. L. No. 111-348, tit. 2, 124 Stat. 3671 (2011). If the U.S. fishery exceeds its quota for these stocks, the overage must be deducted from the following year’s quota. See, e.g., 81 Fed. Reg. at 26,414. The evidence of vessel misreporting across stock areas described earlier strongly suggests that the eastern GB cod stock—shared between the United States and Canada, and for which catch limits could have been exceeded by 2.5 times—have been caught over the limits allowed by the Transboundary Resource Sharing Understanding. If so, Canada could express concern about impacts to shared New England groundfish populations.

**Opportunity Exists for Reform**

Challenges in the New England groundfish fishery appear to stem in large part from the lack of careful monitoring and accountability to fishing quotas. Higher levels of monitoring and other solutions to assess the true level of catch and provide accurate biological data are needed in order to help address the fishery’s woes. Recent analyses concerning observer bias and misreporting have prompted the New England Fishery Management Council and NOAA to advance a new amendment to the groundfish FMP focused on improving accountability and collecting reliable and accurate fishing data. Improved monitoring can also produce the data needed to address new challenges posed by mounting evidence of the rapid and unpredictable effects of climate change on New England groundfish stocks. E.g., J.A. Hare et al., *A Vulnerability Assessment of Fish and Invertebrates to Climate Change on the Northeast U.S. Continental Shelf* (Feb. 3, 2016), doi:10.1371/journal.pone.0146756; Emily Klein et al., *Effects of Climate Change on Four New England Groundfish Species*, 26 REV. FISH BIOLOGY & FISHERIES (Aug. 11, 2016). An amendment that includes a combination of tools, such as dockside monitoring and electronic monitoring and reporting technologies, could lead to improved reporting and eventual recovery of New England species under the MSA, as we have seen in many other fisheries of the United States.

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Introduction

As the energy industry untethers from nonrenewable energy sources such as offshore oil drilling, the renewable energy sector has quickly grown and proven itself to be both financially prosperous and environmentally stable. While renewable energy has a significantly smaller environmental impact, and is arguably better for the environment, its development may cause unintentional harm, for example, the impacts on the marine environment caused by the construction of offshore wind farms. These developments continue to create novel threats to marine mammal species despite doing so at an indisputably lower rate than non-renewable developments. This article looks at the existing regulatory framework for offshore wind in the United States and makes recommendations for improvements based on gaps in U.S. policy and lessons learned from European case studies. This article argues that the United States should have more mitigation measures for offshore wind developments’ impact on marine mammals based on findings from European countries’ studies of their operating farms. This article recommends expanding the regulatory framework and enforcement mechanism for marine mammal protections as well as improving and implementing best practices.

Offshore Wind Farms

As the United States is only in the developmental stages of implementing offshore wind farms, it lags behind several European countries with farms comprised of staggering wind turbines that “harness the energy of strong, consistent winds that are found over the oceans.” Bureau of Ocean Energy Management, Offshore Wind Energy, available at https://www.boem.gov/Offshore-Wind-Energy/ (last visited Dec. 11, 2016).

In recent EU and nongovernmental organization assessments of offshore wind farms’ environmental impacts, there are some concerns regarding the impact of increased noise levels on marine mammal species. Helen Bailey et al., Assessing Environmental Impacts of Offshore Wind Farms: Lessons Learned and Recommendations for the Future, Aquatic Biosystems (Sept. 14, 2014), https://aquaticbiosystems.biomedcentral.com/articles/10.1186/2046-9063-10-8. While the noise levels from operational wind turbines are unlikely to be dangerous to animals, pile driving, the process by which turbine foundations are built during the construction phase of wind farms emits sound at a decibel that negatively impacts marine mammal species. Of note, several marine mammals have yet to recover from damage caused by pile-driving noise pollution a decade ago during offshore wind farm construction in Europe. Marine Mammal Commission, Renewable Energy Development and Marine Mammals, available at https://www.mmc.gov/priority-topics/offshore-energy-development-and-marine-mammals/renewable-energy-development-and-marine-mammals/ (last visited Dec. 11, 2016). In addition to increased noise levels, offshore wind farms pose the additional risk that fish may collide with turbine foundations. Moreover, offshore wind farms may influence changes to “benthic and pelagic habitats[,]” alter food webs, cause pollution from vessels, and release contaminants from seabed settlements. Id.

By contrast, offshore wind farms have the potential to positively impact marine mammals. For instance, wind turbine foundations may form artificial reefs, which encourage animals to attach and breed. An increase in shellfish population near some offshore wind farms would provide increased food supply for marine mammals. Id. Offshore wind farms often require the creation of a safety buffer zone where fishing is prohibited, therefore sheltering marine species and leading to population growth. For marine mammals, this provides an increase in foraging opportunities. Id.
Existing U.S. Offshore Renewable Energy Regulatory Framework

The Bureau of Ocean Energy Management (BOEM), which has regulatory authority over the wind energy leasing process, reviews lease requests and issues leases for wind farms. Presently, BOEM is reviewing and approving leases for wind farms in both the Atlantic and Pacific Oceans. This application process will require permit seekers to (1) apply for, and obtain a lease; (2) create a site assessment plan; and (3) receive approval for the construction and operation plan. Id. Even though BOEM has issued guidelines for renewable energy developments and marine and hydrokinetic energy projects on the Outer Continental Shelf (OCS), these guidelines only broadly reference environmental analysis. See QUALIFICATION GUIDELINES TO ACQUIRE AND HOLD RENEWABLE ENERGY LEASES AND GRANTS AND ALTERNATE USE GRANTS ON THE U.S. OUTER CONTINENTAL SHELF (Sept. 12 2012), https://www.boem.gov/Renewable-Energy-Program/Regulatory-Information/QualificationGuidelines-pdf.aspx; see also BOEM/FERC GUIDELINES ON REGULATION OF MARINE AND HYDROKINETIC ENERGY PROJECTS ON THE OCS (July 19, 2012), https://www.boem.gov/ Renewable-Energy-Program/Regulatory-Information/QualificationGuidelines-pdf.aspx.

National Marine Fisheries Service (NMFS) and Fish and Wildlife Service (FWS) enforce section 101(a)(5)(A) and (D) of the Marine Mammal Protection Act (MMPA). The MMPA authorizes incidental takings in OCS planning areas. See 16 U.S.C. 1371 §101 (1979). Generally, the MMPA prohibits any intentional taking of marine animals, including, but not limited to hunting, harassing, capturing, or killing. Id. However, incidental takings are permitted under the act when they meet three criteria. First, the taking must be small in number. Second, it must not have more than a “negligible impact” on marine mammals. Lastly, the taking must not have an “unmitigable adverse impact” on the availability of marine mammals for “subsistence uses.” Id. By contrast, with respect to renewable energy developments, NMFS and FWS require mitigation, monitoring, and reporting measures. See Marine Mammal Commission, Renewable Energy Development and Marine Mammals.

As mentioned, European countries have already utilized offshore wind farms as energy sources in their waters. Still, uncertainty remains regarding potential short-term and long-term impacts of offshore renewable energy development on marine mammals in U.S. waters. Id. It is important to note, however, that marine mammal species in U.S. waters differ from those found in European countries’ waters, so potential impacts and mitigation measures may vary. Nonetheless, the impact assessments conducted by the EU cover the impact on and implementation of offshore renewable energy as related to marine mammal species, which in turn provides the United States with invaluable lessons for regulatory framework. The EU’s processes for conducting such assessments and the findings from those assessments allow BOEM and the Federal Energy Regulatory Commission (FERC) to make more effective assessment processes and lease approvals that meet a stricter scrutiny for protection of marine mammals in the United States. As Europe has already expended resources to conduct such research, the United States is fortunate to have access to these studies in advance of offshore wind farm construction or hydrokinetic energy generator installations. Using existing research from comparable European developments, U.S. energy regulatory agencies can improve the existing framework and practices, substantially lessening the impact of these offshore renewable energy developments on marine mammals.

Lessons Learned from European Union Offshore Wind Farm Projects

Offshore renewable energy projects and the processes by which they are approved are much more established in Europe than in the United States. Currently, there are 84 offshore wind farms in European countries’ waters. EUROPEAN WIND ENERGY ASSOCIATION, EUROPEAN OFFSHORE WIND INDUSTRY KEY TRENDS AND STATISTICS 2015 at 3, available at http://www.ewea.org/fileadmin/files/library/publications/statistics/EWEA-European-Offshore-
The OSPAR Commission, a cooperative mechanism for marine environment protection made up of 15 European governments, assessed the environmental impact of offshore wind farms. Danish Energy Authority, *Offshore Wind Farms and the Environment*, available at http://ec.europa.eu/ourcoast/download.cfm?fileID=978 (last visited Dec. 11, 2016). OSPAR’s assessment highlights key safeguards implemented from the time a wind farm project proposal is submitted to the wind farm’s construction through to the wind farm’s operation. Building permits obtained for wind farms require comprehensive environmental monitoring programs relying on environmental impact assessment findings. *Id.* at 18.

With regard to marine mammal impact, the assessments specifically monitor marine mammal behavior patterns near the wind farm sites. This ensures steps taken will have minimal impact on marine mammal species. In particular, OSPAR released an assessment conducted for two recent European wind farm projects that explored the farm construction’s impact on harbor porpoises and seals. The studies found that land seals were essentially unaffected by the wind farms, while harbor porpoise populations decreased during wind farm construction and operation. *Id.* at 28. The wind farm sites were discovered to be more heavily relied upon for foraging areas for seals, but there was no apparent change in seal behavior aside from a decrease in seal presence near the farm during pile-driving activities. Wind farm construction caused harbor porpoises to move away from the site and the porpoise population density remains in slow recovery even though construction ceased 10 years ago. From these studies, scientists discovered that harbor porpoises are hypersensitive to pile-driving construction noise. *Id.* at 30. This information, gathered over a decade, can steer the United States to increase safeguards for noise-sensitive marine mammals.

**Recommendations**

While the marine mammal species in the United States differ from those off European countries’ coasts, the United States can still learn from OSPAR’s findings and take subsequent protective measures. Initially, BOEM and FERC should amend their existing guidelines for leasing processes, or create additional guidelines to highlight energy projects’ impact on marine mammals. BOEM and FERC can improve current leasing schemes to better define the area of potential effect for marine mammals. Moreover, environmental impact assessments should identify the scale and species significance of any impact that offshore renewable energy developments may cause. Furthermore, the offshore renewable energy regulatory scheme can learn from the risk assessment and mitigation measures already present in the offshore nonrenewable energy sector, such as those currently required of offshore oil drilling projects. See Bailey et al., *supra* at 4.

Additionally, the U.S. offshore renewable energy regulatory framework should incorporate marine spatial planning (MSP) considerations. MSP is an open and transparent process of evaluating ocean uses and assessing potential utilization of resources. *Analysis Group, Planning for Offshore Energy Development* at 3, available at http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/planning_for_ocean_energy_development_complete.pdf (last visited Dec. 11, 2016). MSP can serve to improve technical information for potential wind farm sites; improve information collection coordination across federal and state processes; increase participation and access to information from government, private, and nongovernmental stakeholders; and aid the U.S. government in determining how to efficiently permit offshore renewable energy projects. *Id.*

Most expediently, NMFS should broaden its interpretation of an “incidental take” within the meaning of MMPA section 101(a)(5)(A) and (D). Currently, mitigation measures for pile-driving impacts on marine mammals include delaying pile driving if a marine mammal approaches the site closely enough to sustain an injury and prohibiting pile driving during low visibility times. See Marine Mammal Commission, *supra*. Specifically, the new
interpretation could ensure that incidental takings will not be authorized where a previous taking has resulted in slow or nonexistent recovery for marine mammal species impacted by wind farm construction without additional mitigation efforts for pile-driving noise levels. For instance, the construction could be permitted contingent on the use of “sound attenuation devices” during the pile-driving phase.

While species in the United States differ from those in Europe, certain connections can be made between noise-sensitive marine mammals in both regions. For example, the European harbor porpoise population’s behavior has been severely impacted by pile-driving activities without full recovery. In the United States, the North Atlantic right whale is likely to be similarly impacted during wind farm construction, based on their known sensitivity to noise. U.S. DEP’T OF ENERGY, MONITORING AND MITIGATION ALTERNATIVES FOR PROTECTION OF NORTH ATLANTIC RIGHT WHALES DURING OFFSHORE WIND FARM INSTALLATION, available at http://www.pnnl.gov/main/publications/external/technical_reports/PNNL-21959.pdf.

Like the harbor porpoises, the right whale population may not fully recover from pile driving’s noise impact, even well after construction is complete and the wind farm begins to operate. The right whale should serve as an example of a U.S. marine mammal species that is particularly vulnerable to the impacts of pile driving and, as such, pile driving should not be an authorized incidental taking under section 101(a)(5)(A) where the activity is determined to have any impact on the right whale population, and similarly sensitive species, where noise attenuation methods would prove insufficient. Instead, mitigation efforts should include utilizing alternative methods and technology instead of impact hammers during offshore wind farm construction. See K.-H. Elmer et al., MEASUREMENT AND REDUCTION OF OFFSHORE WIND TURBINE CONSTRUCTION NOISE, 30 DEWI MAGAZIN, Feb. 2007, at 36. Such alternatives may include vibratory pile driving; drilled, gravity, and bucket foundations; and floating turbines. Sven Koschinski, DEVELOPMENT OF NOISE MITIGATION MEASURES IN OFFSHORE WIND FARM CONSTRUCTION at 4–5 (2013), available at https://www.cbd.int/doc/meetings/mar/mcbem-2014-01/other/mcbem-2014-01-submission-noise-mitigation-en.pdf.

Conclusion

In sum, the U.S. agencies responsible for offshore renewable energy regulation can improve safeguards for marine mammals throughout each phase of the leasing/permitting process. The United States can look to lessons learned from Europe’s experience with particularly vulnerable species and the renewable energy industry can deploy sound-sensitive technology to ensure species fully recover after offshore wind farm construction. U.S. enforcement agencies still have further to go and should seek to broaden the scope of their review of incidental taking authorizations pursuant to MMPA section 101(a)(5)(A) to look at the permanent effects of harassment caused by offshore wind farm development. This multi-pronged approach would significantly improve marine mammal habitat and population security in the new era of offshore renewable energy development.

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