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Welcome to this very special joint newsletter for the SEER Marine Resources and SEER and SIL International Environmental Law Committees! The oceans have always had a very clear connection to international law, dating back to ancient custom. Attempts to conform the international rules that apply to the oceans range from Hugo Grotius's 1609 *Mare Liberum* to the most recent incarnation of the United Nations Convention on the Law of the Sea and the United States's recurring debate over whether to ratify that treaty. Our three committees are therefore very happy to present this joint newsletter recognizing that connection.

The articles in this newsletter address a variety of current topics at the intersection of marine resources and international law. One article, for instance—"Papahânaumokuâkea Inscribed as World Heritage Site"—describes how the World Heritage Convention recently changed the status of an American marine resource, the Papahânaumokuâkea Marine National Monument. This huge marine reserve protects the coral reef ecosystem of the Northwestern Hawaiian Islands, and it is now one of the few World Heritage Sites that was designated for both its ecological and its cultural importance.

Other articles address emerging issues of global importance. In "Before the Sun Sets: Changing Ocean Chemistry, Global Marine Resources, and the Limits of Our Legal Tools to Address Harm," Mark Spalding discusses the increasingly recognized—and increasingly concerning—problem of ocean acidification, which has been described by some as climate change's "evil twin." Like climate change itself, ocean acidification requires a global solution—and it also provides perspectives regarding reliance on geo-engineering as a solution to more conventional climate change problems. Chad McGuire, in turn, takes up the

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Brett Grosko, Editor

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intersection of international trade and marine species in "Marine Mammals and International Trade: Balancing Social Conscience with Trade Obligations—A Summary and Update on the World Trade Organization Seal Products Dispute."

Finally, of course, the oceans and associated coastal areas play important roles in both domestic energy development and world energy and environmental issues, and two articles in this newsletter discuss that intersection. Oil spills have long been a concern in marine environmental protection, and the summer 2010 Gulf oil spill focused world attention on the continuing threat that oil spills pose to the marine environment, prompting reformation of offshore drilling regulation both in the United States and abroad. Moreover, Gulf oil spill issues were the subject of sessions at both the ABA SEER 18th Section Fall Meeting in New Orleans in September 2010 and the ABA SEER 40th Annual Conference on Environmental Law in Salt Lake City in March 2011. "Ban on the Use and Carriage of Heavy Grade Oils in Antarctica" discusses this persistent environmental threat in a different environment, examining the growing threat of an oil spill in Antarctica and its surrounding waters. This threat, the author argues, could undermine the international agreements to keep Antarctica as an international and peaceful ecological preserve. In turn, Roberto Liesegang and Maristela Abla Rossetti discuss Brazil's development of its vast oil fields in "Brazilian Pre-Salt Oil Reserve Exploration: Regulatory and Environmental Aspects."

We hope you enjoy this informative exploration into these new developments and critical matters. Please contact Brett Grosko at bgrosko@verizon.net, if you would like to contribute to future issues of our newsletters.

PAPAHÂNAUMOKUÂKEA INSCRIBED AS WORLD HERITAGE SITE

Ole Varmer
Theodore M. Beuttler

On December 3, 2010, resource managers, marine scientists, conservation activists, political leaders and policy makers commemorated the inscription of the Papahânaumokuâkea Marine National Monument in the northwestern islands of Hawaii on the World Heritage list. They were also commemorating the 10th anniversary of the establishment of the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve ("Reserve") by President Bill Clinton. At that time, the Reserve became the single largest nature preserve ever established in the United States. Calling the designation "a bold and visionary action," President Clinton recognized the work of an unprecedented coalition of government agencies, conservation groups, and concerned citizens as "[a] big step forward, not only for the United States, but for the oceans around the world . . . setting a new global standard for coral reef and wildlife protection." The Reserve is now part of Papahanaumokuakea Marine National Monument, created by President George W. Bush in 2006. On July 30, 2010, "Papahânaumokuâkea" was designated as the first mixed site in the United States being recognized as a place of "outstanding universal value" for both its natural heritage and its cultural heritage under the 1972 World Heritage Convention ("Convention"). It is also the world's first cultural seascape recognized for its continuing connections to living indigenous people.

Over the past few decades, this Convention has become the mechanism for international cooperation on the conservation of the cultural and natural heritage of international significance by its Parties through their domestic laws and management plans. Today, 187 countries or States are Parties to the Convention, making it an almost universally accepted set of principles and framework of action. *See* http://whc.unesco.org/pg.cfm?cid=246.

This article will provide an overview of the World Heritage Convention and how it facilitates the cooperation among Parties in their respective protection and management of natural and cultural resources of mutual interest. It will also provide an overview of how and why the very special place in the marine environment, now known as Papahânaumokuâkea, was inscribed on this most prestigious list of predominantly terrestrial sites. Finally, it discusses how the listing of this and other sites in the marine environment have extended beyond the territories of nations and onto their continental shelf and exclusive economic zone (EEZ) and whether it is possible that the World Heritage Convention may someday include sites in the high seas, such as the *Titanic*, which will be protected by the 2001 UNESCO Convention on the Protection of Underwater Cultural Heritage on the 100th anniversary of its sinking in April 2012.

I. The Development of the 1972 World Heritage Convention and List of Sites of Natural and Cultural Heritage: U.S. Leadership

A. The Catalyst for International Cooperation on Certain Heritage

Enactment of international and domestic environmental and historic preservations laws can often be traced to a harm or threat to resources that raises concern sufficient for action by governments. In the case of the World Heritage Convention, the catalyst was the impending loss of ancient Egyptian temples at Abu Simbel from flooding caused by the construction of the Aswan Dam. In response, fifty nations acting in conjunction with the United Nations Educational, Scientific and Cultural Organization (UNESCO) came together to assist in an $80 million project that included disassembling and relocating the temples to higher ground. The project was a recognition of the international cultural significance of the Abu Simbel temples and helped lead to the development of the World Heritage Convention as an agreement between Parties to use their national sovereignty and authority to protect and manage cultural resources of outstanding value to the world. With the help of the International Council on Monuments and Sites (ICOMOS), parties to UNESCO began preparation of a draft convention on the protection of cultural heritage. During this same

period there was also interest in protecting natural resources as a result of the developing environmental movement.

B. United States Leadership in Developing the World Heritage Convention

The United States played a significant, leading role in the development of the 1972 World Heritage Convention and particularly in proposing that its scope include natural as well as cultural heritage. At a White House conference in Washington, D.C., in 1965, the United States called for a "World Heritage Trust" that would stimulate international cooperation to protect "the world's superb natural and scenic areas and historic sites for the present and the future of the entire world citizenry." In 1968, the International Union for Conservation of Nature (IUCN) developed similar proposals for its members. These proposals were presented to the 1972 United Nations Conference on the Human Environment in Stockholm. Eventually, a single text was agreed upon by all parties concerned, and the Convention Concerning the Protection of World Cultural and Natural Heritage was adopted by the General Conference of UNESCO on November 16, 1972. By regarding heritage as both cultural and natural, the Convention underscores the ways in which people interact with nature, and of the fundamental need to preserve the balance between the two. *See* http://whc.unesco.org/en/convention/#Brief-History. In 1973, the United States became the first nation to ratify the Convention by a vote in the Senate of 95-0. The Convention entered into force on December 17, 1975, after ratification by the requisite number of States Parties. The United States has served as a member of the World Heritage Committee for much of that body's existence and in 1978 hosted the first committee meeting that listed sites. Of the 12 sites listed at that time, two were in the United States: Mesa Verde and Yellowstone National Parks. The United States has always remained a party to the Convention and has participated in meetings despite withdrawing from UNESCO in 1984 over concerns about budget, management, and politicization. *See* http://www.unesco.jp/meguro/reprint/rejoin.htm. Between 1978 and 1994, twenty United States sites were inscribed.

II. U.S. Obligations Under the World Heritage Convention

As a party to the Convention, the United States is obligated to "ensure the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage . . . situated on its territory" and take "effective and active measures" to protect this heritage (Convention Arts. 4, 5). The Convention calls on all States Parties to "recognize that such heritage constitutes a world heritage for whose protection it is the duty of the international community as a whole to co-operate," but does so while "fully respecting the sovereignty of the States on whose territory the cultural and natural heritage . . . is situated, and without prejudice to property right provided by national legislation." (Convention Art. 6, *available at* http://whc.unesco.org/en/conventiontext/). The listing of a site does not in any way result in the loss of sovereignty, rights, or authority over the site. To the contrary, listing reflects a promise by the Party to protect and manage a particular site in a manner consistent with its own laws and management plans as described in the nomination package. If a listed site subsequently is included on the list of World Heritage Sites in Danger (Art. 11), the Party is obligated to undertake appropriate measures to enhance or fulfill the protection and management promised when it was inscribed or risk having the site delisted.

III. Listing of Papahânaumokuâkea as a World Heritage Site

Under the Convention, the list of sites is determined and maintained by the World Heritage Committee. The committee is composed of 21 elected representatives of nations that are parties to the Convention. The IUCN, the International Centre for the Study of the Preservation and Restoration of Cultural Properties (ICCROM), and ICOMOS make recommendations to the committee as to whether sites meet the stringent standards for listing under the Convention and its implementing guidelines. In general, the committee adds about 25–30 sites per year to the list. Today, there are 911 sites on the list, located in 151 countries around the world.

Pursuant to its authority under federal law, the National Park Service completed the process to identify sites to be nominated by the United States to the World Heritage Committee and announced the decision in early 2009. 16 U.S.C. § 470a-1, a-2, d; 36 C.F.R. § 73; 74 Fed. Reg. 5,677 (2009). Papahânaumokuâkea was among the sites nominated by the United States and submitted to the World Heritage Committee. *See* 74 Fed. Reg. 5,677 (2009). The committee determined, based on the recommendations of its advisory bodies (ICOMOS and IUCN), that the nomination met at least one of the necessary criteria. The site was inscribed on the World Heritage list in July of 2010 during the committee's meeting in Brasilia.

The addition of Papahânaumokuâkea to the list of World Heritage Convention sites is a nod to more than a century of domestic efforts designed to protect the rich cultural and natural resources of the Northwestern Hawaiian Islands (NWHI). The NWHI have been federally protected since 1909, Exec. Order No. 1019, and have been designated as a National Wildlife Refuge for over 70 years. 5 Fed. Reg. 147 (1940). As mentioned above, in 2000, President Clinton declared the federal submerged lands and waters surrounding the NWHI as a Coral Reef Ecosystem Reserve, extending federal protections approximately 50 nautical miles out from the state of Hawaii's seaward boundary. Exec. Order No. 13178, 65 Fed. Reg. 76,903 (2000); Exec. Order No. 13196, 66 Fed. Reg. 7,395 (2001). The state of Hawaii strengthened these protections in 2005 when it created the Northwestern Hawaiian Islands Marine Refuge, a state-regulated, restricted-entry protection zone encompassing all NWHI land and waters within Hawaii's jurisdiction. HAW. CODE R. § *13-60.5*. In 2006, President Bush exercised his discretion under the Antiquities Act by issuing Presidential Proclamation 8031, which established the Northwestern Hawaiian Islands Marine National Monument (subsequently renamed Papahânaumokuâkea). 71 Fed. Reg. 36,443 (2006). As codified in regulations promulgated by the Department of Commerce through the National Oceanic and Atmospheric Administration, and the Department of the Interior through the Fish and Wildlife Service, the proclamation prohibits, inter alia, the taking, possessing, injuring, or damaging of any living or nonliving Monument resource within Papahânaumokuâkea, and subjects prospective entrants to strict permit requirements. 50 C.F.R. pt. 404 (2006).

IV. Recognition of the Outstanding Value of Papahânaumokuâkea's Natural and Cultural Heritage

A. Natural Heritage

The remote chain of atolls and surrounding waters represent the first U.S. site to be added to the World Heritage list in over 15 years and the nation's first on the list of "mixed sites" designated for their outstanding value for both their natural heritage and their cultural heritage. Papahânaumokuâkea includes a 1200-mile-long string of coral islands, atolls, seamounts, banks, and shoals, running northwest from the main Hawaiian Islands. The nearly pristine environment represents a complete, holistic cross section of a Pacific archipelagic ecosystem and supports a large number of species found nowhere else, including 23 species that are listed as threatened or endangered. The marine waters are described as a top-predator-dominated ecosystem and include a large number of species found nowhere else in the world. Nomination for Inscription of Papahânaumokuâkea Marine National Monument for Inscription on the World Heritage List, 2009; 74 Fed. Reg. 5,677 (Jan. 30, 2009); Papahânaumokuâkea Marine National Monument Management Plan (2008).

B. Cultural Heritage

The islands and their significant archaeological sites also have deep cosmological and traditional significance for living Native Hawaiian culture as an ancestral environment, as an embodiment of the Hawaiian concept of kinship between people and the natural world, and as the place where it is believed that life originates and to where the spirits return after death. On two of the islands, Nihoa and Mokumanamana, there are archaeological remains relating to pre-European settlement and use. Natural and cultural heritage are inseparably linked at Papahânaumokuâkea and it is the world's first cultural

seascape recognized for its continuing connections to living, indigenous people.

Papahânaumokuâkea also reflects the rich maritime history of the Hawaiian Islands. Currently, 60 known shipwreck sites have been identified, the earliest dating back to 1822. Combined with known American and Japanese aircraft losses that occurred during the Battle of Midway, there are a total of 127 potential maritime resource sites, giving the area a significant and relatively undisturbed marine archaeological legacy. Nomination for Inscription of Papahânaumokuâkea Marine National Monument for Inscription on the World Heritage List, 2009.

V. Protection and Management Under the World Heritage Convention

The World Heritage Convention is the most widely adopted international agreement for nature conservation and cultural preservation. The listing of a site does not affect the ownership, sovereignty, jurisdiction, or control of a site by the nation nominating it and does not provide any ownership, jurisdiction, or control to the United Nations, UNESCO, or any other international organization. Listing does, however, document international recognition of the value of a site and the commitment by the sovereign nation and the site's owners for its long-term protection and management under applicable domestic laws. The legal significance of this inscription is really more about international recognition of the domestic laws and management programs applied by the United States and Hawaii to protect and manage Papahânaumokuâkea than the application of any new international law.

Papahânaumokuâkea is cooperatively managed to ensure ecological integrity and achieve strong, long-term protection and perpetuation of Northwestern Hawaiian Island ecosystems, Native Hawaiian culture, and heritage resources for current and future generations. Three co-trustees—the Department of Commerce, Department of the Interior, and state of Hawaii—protect and manage this special place. Papahânaumokuâkea is perhaps one of the first sites in the United States, if not the world, in which the very restrictive measures on activities for protecting the natural heritage also help preserve the cultural heritage as the heritage is inextricably linked particularly to the first nation people of Hawaii. Accordingly, throughout the process of developing the laws and management plans, there has been a substantial effort by the United States to cooperate with the state of Hawaii in consulting with representatives of Native Hawaiian people.

VI. Broadening the Geographic Scope of the World Heritage Convention: From the Territory and Territorial Sea to the EEZ and Continental Shelf: Next Step, High Seas—Titanic?

As humans are terrestrial beings, it is no surprise that most, if not all, of the sites inscribed during the Convention's first decade were predominantly terrestrial. Although some sites that were listed included coastal water components, they were all within the territorial jurisdiction of the State, including its territorial sea. In 1972, a State's maritime jurisdiction under customary international law was simply the territorial sea that, under the old "cannon shot rule," was limited to three nautical miles (nm) out from the State's coastline. This was generally regarded as the limit that a coastal State could control through cannons stationed along its coastline. Beyond the 3-nm line were the high seas where a coastal State had no maritime jurisdiction, with the possible exception of a customs zone or contiguous zone for purposes of controlling customs and trafficking in the territory.

However, just as the Law of the Sea has evolved to recognize the need of coastal States to extend their jurisdiction and control in the marine environment to a 12-nm territorial sea and a 200-nm exclusive economic zone (EEZ), so has the World Heritage Committee's interest to list sites farther out in the marine environment to provide international recognition of the heritage beyond a State's territory and well into its EEZ. This is consistent with international recognition of domestic laws, jurisdiction, and authority by which a nation can protect its heritage far out into the marine environment.

In addition to Papahânaumokuâkea, another significant addition to the list of World Heritage sites in 2010 was

the Phoenix Islands Protected Area (PIPA), an expanse of over 400,000 sq. km. off of Kiribati, comprising the largest marine protected area in the world. With outer boundaries reaching as far as 200 nm from Kiribati's coastline, PIPA is the first World Heritage site to extend to the full limit of a State's EEZ. Just as the Law of the Sea recognizes that a nation's continental shelf may extend beyond the 200-nm EEZ under Article 76, it is reasonable to conclude that the World Heritage Committee could expand the recognition of heritage of outstanding universal value that may be located on this extended portion of the continental shelf. Perhaps the best candidate may be the wreck site of RMS *Titanic*, which is already the subject of protection under an international agreement and various orders under the maritime law of salvage. On April 14–15, 2012, the 100th anniversary of its sinking, it will become an "underwater cultural heritage" and thus protected by the laws of nations that are parties to the 2001 UNESCO Convention on the Protection of Underwater Cultural Heritage.

Ole Varmer and **Theodore M. Beuttler** *are attorney-advisors at the National Oceanic and Atmospheric Administration (NOAA), Office of General Counsel. The views expressed herein are theirs alone, and do not necessarily reflect those of NOAA, the Department of Commerce, or any other agency.*

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BEFORE THE SUN SETS: CHANGING OCEAN CHEMISTRY, GLOBAL MARINE RESOURCES, AND THE LIMITS OF OUR LEGAL TOOLS TO ADDRESS HARM

Mark J. Spalding

Introduction

What we are about to see in the ocean is like the moments after the sun sets in the desert: the character of the mountains and landscape changes—losing their glow and warm colors, becoming gray and featureless. The ocean is receiving much of the emissions from cars, power plants, and factories in its role as our largest natural carbon sink, but cannot absorb all such CO_2 from the atmosphere in its plankton and plants. Thus in a simple chemical reaction, the CO_2 instead is dissolved in water, but not fixed in plants or animals, and decreases the pH of the water, making it more acidic. This has begun to change the pH of the ocean as a whole, and is expected to adversely affect the ability of calcium-based organisms to thrive. As the pH drops, we will see the loss of light under water, and our coral reefs will lose their color, our fish eggs, urchins, and shellfish will dissolve, the kelp forests will shrink, and our underwater world will become gray and featureless. There will be a new dawn when the color and life return, after the system rebalances itself, but it is unlikely that any of us will be here to see it.

While we are changing the ocean's chemistry at an unnatural speed and rate, we begin with the premise that we all want and would collectively benefit from restoring and maintaining the pH of the world ocean at a level that supports resilient and productive seas, under the terms with which we are familiar. What do we need to do to advance ocean acidification (OA) mitigation and adaptation strategies? The chemistry is straightforward. The predicted continuation of the trend toward greater acidity is broadly predictable, and harder to predict specifically. The effects on species that live in calcium bicarbonate shells and reefs are easy to imagine. Harm to oceanic phytoplankton and zooplankton communities, the basis of the food web and thus all commercial marine species harvest, is harder to predict, both geographically and temporally. We know the "how" and the "why" but not a lot about "how much, where, or when." We may learn more after a report is submitted from the January 2011 Intergovernmental Panel on Climate Change Workshop on Impacts of Ocean Acidification on Marine Biology and Ecosystems. In the absence of a timeline, absolute predictability, and geographic certainty about the impacts of ocean acidification (both indirect and direct), the members of the conservation community calling for precautionary and urgent action on ocean acidification to restore and promote a balanced ocean will be slowed up by some who want to know more specifics about when do we expect to reach thresholds that will affect certain species, and specifics about which parts of the ocean will be most affected and when. Some of those applying the brakes will be scientists who want to do more research, others will be those who want to maintain the fossil fuel-based status quo.

It is challenging to develop models for present and projected economic effects on the commerce in specific species and the people who depend on it. Likewise, we may not yet be able to fully evaluate the cost of inaction on affected communities, especially those whose coral reef resources are the basis of their economy, food security, and societal structure. However, we can begin to list the economically affected constituencies—among them coastal communities; the shrimp, lobster, and crab fisheries; and the commercial shellfish harvesters and farmers. We can thus start to quantify the damages, or the costs of adaptation, such as installing extensive filtering and pH balancing systems in the short term and moving to onshore closed system aquaculture of shellfish and other animals. We can also presume that it will be increasingly difficult for open ocean shellfish farmers to buy insurance or to obtain financing for their operations.

This is a globally important economic issue: ocean bivalve mariculture (scallops, oysters, and mussels) alone has skyrocketed in the past two decades—doubling in the United States and representing hundreds of millions of dollars in direct and indirect economic activity (Andrew 2009 (citations omitted)). Often promoted as a small-scale sustainable

community economic development tool, local bivalve, mussel, and pearl mariculture employs more than 200,000 people in coastal villages in India. Mariculture of the giant clam is an emerging industry in remote areas such as the Solomon Islands, where over-exploitation decimated the natural population of these mollusks on which communities depend.

Half the human population lives on or near a coast, and the ocean provides a substantial portion of the daily protein intake for hundreds of millions of people worldwide. Thus, ocean acidification presents a significant potential threat to food security. Food insecurity, in turn, can result in the various international security concerns that emerge from competition over basic food resources, forced migration, and growing numbers of refugees.

From an international marine resources law perspective, we have a bad balance of equities and insufficient development of facts. The cause of OA is global, as are the potential solutions. But most of the costs are local in the form of lost fisheries, lost diving/snorkel tourism, and eventually, local protein shortages due to a substantial loss of the productivity of the ocean. We do not have a specific international law related to OA. When we look to extant international marine resources treaties, we do not have many levers to use to force large CO_2 emitting nations to change their behaviors. In the United States, there *may* be a limited use of the Clean Water Act to declare certain water bodies as "impaired" as a result of pH changes. Likewise, we may be able to use the National Environmental Policy Act, the Endangered Species Act, etc., to protect habitat and species from OA. However, none of these laws really contemplated CO_2 pollution indirectly causing chemical shifts of pH in our nation's waters, interpretation of law can go either way, and so the legal outcome is unpredictable. Thus, we get to the old saw that trial lawyers like to use: "If the facts are not on your side, argue the law. If neither is on your side, argue like hell." So, we have to be prepared to address this chemical modification loudly and often and hope to heck that moral suasion will overcome mankind's inclination toward inertia.

The Monaco Declaration (October 2008) was approved by 155 scientists from 26 countries, who are leaders of research on ocean acidification, including its impacts. The following is a summary of declaration's headings, and is perhaps the beginning of a call to action: (1) ocean acidification is under way; (2) ocean acidification trends are already detectable; (3) ocean acidification is accelerating and severe damages are imminent; (4) ocean acidification will have socioeconomic impacts; (5) ocean acidification is rapid, but recovery will be slow; and (6) ocean acidification can be controlled only by limiting future atmospheric CO_2 levels.

In short, we can assume that there are significant commercial, antipoverty, and national security interests that should fall into line with ocean conservation interests to call for policy and law solutions that result in OA mitigation and adaptation strategies. We know that ocean ecosystems are very resilient, so if this coalition of the self-interested can come together and move quickly, it is probably not too late to proceed to a time and place in which we are promoting the natural re-balancing of ocean chemistry.

I. International Law and Marine Natural Resources

Relevant international agreements establish a "fire alarm" system that could call attention to the problem of ocean acidification at the global level. Those agreements include the UN Convention on Biological Diversity, the Kyoto Protocol, and the UN Convention on the Law of the Sea. As a result, we have a process that could bring the issue to the attention of the parties to each of those agreements, using the power of moral suasion to embarrass the governments into acting. This is especially important because the harm is mostly anticipated and widely dispersed, rather than present, clear, and isolated. As we have already seen in looking at climate change effects more broadly, if there continues to be little or no collective global action, many of the most vulnerable will examine what additional legal rights they may have.

Obviously attempts should be made to reach agreement on acting on OA before any nation resorts

to international litigation against the biggest emitters of CO_2 in an effort to halt the trend toward OA. In the United States, misperceptions about the role of international treaties in domestic affairs abound. Any international litigation might galvanize the public to demand reduced U.S. participation in any international agreements such as environmental treaties. On the other hand, such litigation, plus a call to protect jobs related to the ocean, might give the sitting administration adequate cover to make urgently needed commitments.

The UN Convention on Biological Diversity does not mention OA, but its focus on conservation of biological diversity certainly is triggered by our concerns over OA, which has been discussed at various conferences of the parties. At the very least, we can expect the Secretariat to actively monitor and report on OA going forward.

The London Convention and Protocol and the MARPOL, the International Maritime Organization agreements on marine pollution are too narrowly focused on dumping, emitting, and discharge by ocean-going vessels to really be of much assistance in addressing OA.

The UN Framework Convention on Climate Change (UNFCC) and the Kyoto Protocol are the main vehicles for addressing climate change. Neither the convention nor the protocol refers to ocean acidification. And, the "obligations" of the UNFCC parties are expressed as voluntary. At best, the conferences of the parties to this convention will offer a time and place to discuss OA. However, the poor outcomes of the Copenhagen climate summit and the Conference of the Parties in Cancun do not bode well for action any time soon. And, a very small group of conservatives are bringing to bear significant financial resources in the United States, as well as in other nations, to make climate change a political "third rail" for which those who raise it can be summarily dismissed as extremists who are seeking to undermine the American way of life, choice, and capitalism itself.

Similarly, the UN Convention on the Law of the Sea (UNCLOS) does not mention OA. But it does expressly cover the rights and responsibilities of the Parties in relation to protection of the ocean. Articles 194 and 207 in particular endorse the idea that parties to the UNCLOS must prevent, reduce, and control pollution of the marine environment. Perhaps when drafted these provisions did not have OA in mind, but this obligation, combined with provisions for responsibility and liability as well as for compensation and recourse to the legal system in each nation, may present some avenues to engage the parties to address OA. Thus, UNCLOS may be the strongest arrow in our quiver, but the United States has never ratified it.

Arguably, once UNCLOS came into force in 1994, it became customary international law and the United States is bound to live up to its provisions. But we would be foolish to say it would be that simple to pull the United States into the UNCLOS dispute settlement mechanism when calling upon it to answer to a vulnerable country's demand for action on OA. In addition, even if the United States and China, the world's two largest emitters, were engaged in such a mechanism, the complaining party might have a hard time proving harm, or that the two emitter governments specifically caused the harm, which are jurisdictional requirements for the UNCLOS dispute settlement mechanism.

II. U.S. Domestic Law, Opportunities to Address the Most Significant Emitter

Ocean acidification is a global issue that requires domestic action. We can take proactive steps to address the issue, or we can fall into crisis-driven policy making (often with all-or-nothing outcomes). In 2009, following the efforts of many advocates including Stephen Lutz, Ph.D. (of the Ocean Foundation's Blue Climate Solutions project), Congress passed the Federal Ocean Acidification Research and Monitoring (FOARAM) Act, which calls for the establishment of a federal ocean acidification planning process/program, which is to include (1) a robust observing network, (2) research to fulfill critical information needs, (3) assessments and support to provide relevant information to decision makers, (4) data management, (5) facilities and training of OA researchers, and (6) effective program planning and management. In this

manner, we have a start toward better understanding of the problem, but probably not a sufficiently preventative approach. (Unfortunately, funding cuts proposed in the House of Representatives would abolish NOAA's nearly completed integrated ocean acidification program and strategic research plan, eliminating essential research that helps protect the millions of jobs associated with marine fisheries and coastal recreation opportunities.)

Ocean acidification is not really tied back to a specific private firm or industry sector. Thus, we are really talking about government inaction to curb CO_2 emissions in general, which is not very easily addressed using domestic courts. In addition, because OA is not broadcast pollution sent across a boundary, but is pollution drawn inward by the ocean as a carbon sink (which we want it to be able to do, or else we would be much worse off), we may not be able to reach the direct harm causation threshold to gain jurisdiction. There may be problems of proof (absence of immediate damages—harm/costs), and it is unlikely that one can obtain real injunctive relief, or punitive damages. Lastly, almost every single government (or person) contributes to CO_2 emissions, so no one can really come to court with "clean hands" (and we will note that a similar no-harm principle would limit the use of the International Court of Justice).

The first domestic legal action in the country was brought under the federal Clean Water Act and was filed in U.S. District Court in Seattle in May 2009. The Center for Biological Diversity asserted that the U.S. Environmental Protection Agency (and the state of Washington) had failed to recognize the impacts of ocean acidification on waters off the state of Washington, as they are required to do under section 303(d) of the Clean Water Act. The CBD complaint looks to demonstrate that CO_2 is a pollutant that is causing a change in pH that falls within the definition of "impaired waters" that require remediation. The current standard which dates from 1976 (and which has been adopted by most states) requires a finding of impairment if waters deviate more than 0.2 pH units from natural variation. There is no question that the waters off Washington state exceed these criteria. As a result, OA has been blamed for failures of some shellfish farm harvests, and, despite investments in specialized filtration systems, it has been predicted that one or more shellfish mariculture harvests in Washington will experience full commercial failure within the next 24 months (Personal conversation with Tony Haymet of Scripps Institution of Oceanography, Oct. 19, 2010).

CBD and EPA settled the May 2009 lawsuit and it was voluntarily dismissed by CBD in March 2010. In November 2010, to fulfill its settlement obligations in part, EPA released an official memorandum to assist regions and states in preparing, reviewing, and reporting the impacts of ocean acidification (thus formally acknowledging CBD's interpretation of the Clean Water Act). However, according to a December 1, 2010, blog posting by the Center for Ocean Solutions regarding the memorandum, there is a concern that while the guidance reinforces the requirement to list a water body as impaired upon the deviation from norm of 0.2 pH units, very few coastal states have the high-resolution instruments necessary to measure the baseline pH level, determine the natural level of pH variation, and actually track changes in pH.

Although the memorandum does not impose new regulations for pH in the ocean, it is still an important step in recognizing ocean acidification as a serious problem for ocean and marine resources. Importantly, it gives the go-ahead to states and territories that have access to reliable pH data to include acidifying waters in their 303(d) "impaired" lists. While this memorandum marks progress in regulation related to OA, it is likely to be caught up in the concerted attack by conservatives funded by fossil fuel industry donated dollars to question whether EPA even has authority to regulate greenhouse gas emissions.

Another avenue for using the rule of law to ensure that adequate attention is paid to OA is the Endangered Species Act, which covers listing species, the design of management plans to promote recovery, encourages international cooperation (something rare), and prescribing prohibited taking of such endangered species. On January 25, 2011, the Center for Biological Diversity "filed a notice of its intent to sue the National Marine Fisheries Service for the agency's

failure to protect 82 imperiled coral species under the Endangered Species Act. These corals, all of which occur in U.S. waters ranging from Florida and Hawaii to U.S. territories in the Caribbean and Pacific, face numerous dangers, but global warming and ocean acidification are the overarching threats to their survival." (CBD, 2011).

Our National Environmental Policy Act, in addition to creating the President's Council on Environmental Quality and promoting the enhancement of the environment, requires environmental impact statements that could now (with the November 2010 EPA memorandum on OA) be called upon to limit federal government action that might harm the environment in the context of ocean acidification.

Insurance against failure of harvested or farmed shellfish may be one answer to compensation for harm to commercial interests as the result of OA, but it is unlikely to be an affordable solution and only gets to the compensation issue, and not to prevention of harm.

Conclusion

International marine natural resources really are part of the foundation of our economies and the stability of nations. Ocean acidification is a dire threat to those resources. Right now the probability of harm is high, and the consequences if they are allowed to occur are serious. We have no mandatory rule of law to trigger reduction of CO_2 emissions (and even our international good intentions expire in 2012), thus we have to use the laws we have to urge new international policy. Such an international policy should address:

- Restoration of marine plant communities like sea grass meadows, mangroves, etc., that will in turn restore the ocean's capacity to naturally fix and sequester carbon
- Reduction of land-based and nonpoint pollution sources including nitrates, sulfates, and traditional pollutants that exacerbate and/or contribute to OA
- Increasing protected habitat and habitat connectivity

  [These first three items could be paid for via a resilience fund consistent with the precautionary principle (for example, we could substantially increase the cost of coal, oil, and gas leases to seed such a fund).]
- Adding the evidence of OA and the harm it is bringing to our efforts to reduce CO_2 output currently undertaken in the context of addressing global climate change
- Support for the inclusion of coastal and marine ecosystem carbon and OA in international climate change negotiation texts
- Identification of rehabilitation/compensation schemes for OA environmental damage (standard polluter pays concept) that makes inaction far less of an option
- Reduction of other stressors, such as overfishing and use of destructive fishing gear, on marine ecosystems to increase resilience in the face of ocean acidification
- Curtailment of subsidies for coal, oil, and gas exploration and development, and replacement with support for renewable wind, solar, and ocean energy sources
- Mitigation by reducing CO_2 emissions (to achieve less than 350 ppm concentrations).

In the absence of new policies (and their good-faith implementation), we can expect attempts at international litigation, and we have already begun to see domestic litigation. The cumulative effects of this litigation may eventually take its toll on resistance to change. But we have to remember that at the same time OA is just one stressor of many acting to harm marine natural resources, that it undermines resilience and that all the stressors cumulate in causing harm. In the end, the cost of inaction will by far exceed the economic cost of acting. We need to act before the sun sets. But that would require present-day sacrifice, which is up there with "eating less and exercising more" as an appealing choice to pursue.

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MARINE MAMMALS AND INTERNATIONAL TRADE: BALANCING SOCIAL CONSCIENCE WITH TRADE OBLIGATIONS—A SUMMARY AND UPDATE ON THE WORLD TRADE ORGANIZATION SEAL PRODUCTS DISPUTE

Chad J. McGuire

Introduction

It should come as no surprise that the use and trade in marine mammals have generated a great deal of international debate. Domestically in the United States, federal laws including the Endangered Species Act (16 U.S.C. § 1531 et seq.) and the Marine Mammal Protection Act (16 U.S.C. §1361 et seq.) have often highlighted the morality questions surrounding our treatment of marine mammals. In addition, the commercial success of programs such as Animal Planet's *Whale Wars*, and documentaries such as *The Cove*, have heightened a global public awareness focusing on the treatment of marine mammals.

One marine mammal species presently at the center of an international dispute is the pinnipeds, or fin-footed mammals, commonly referred to as seals. Currently, the European Union is attempting to expand trade restrictions associated with the importation of seal products that began in the 1980s. The new restrictions are frustrating a few northern hemisphere countries and co-signatories to international trade agreements, specifically Canada and Norway. Seal hunting occurs in these countries, and the products form the basis of certain exports aimed at European markets. Thus, the expansion of the ban by the European Union has the potential to impact international trade between World Trade Organization countries. As such, there are legal issues touched upon by the proposed expansion.

The purpose of this article is to provide a summary of the current debate surrounding the proposed European Union expansion of barriers to trade in seal products. This article will also identify some of the potential legal issues at the heart of the ban. Finally, some policy considerations that may arise depending on how this case ultimately resolves itself will be highlighted. What is reinforced in this case study is the notion that the interaction between domestic policy and international law can often create unique frustrations where seemingly independent goals can lead to legal conflicts. This case study is an example of how these legal conflicts can arise, how such conflicts may be resolved, and the impact of such resolutions for the international community.

I. History of the European Ban on the Importation of Seal Products

Beginning in the 1980s, Western European countries (hereinafter collectively, the EU) have consistently espoused a policy of limiting the importation of seal-related products. In the 1980s, the focus was largely on the seal pup skins and related products. This coincided with a ban by Canada that ended commercial hunting of white coat seal pups. This undoubtedly was due, in part, to the pressure placed on the respective governments through citizen awareness and action at this time.

More recently, the EU has adopted regulations expanding this earlier ban to all types of seal products from commercial hunting. For example, the more recent regulations of 2009 expand the ban from white coat pups to seals of any age hunted for commercial purposes, including products derived from those activities (*see* Regulation (EC) No 1007/2009 of the European Parliament and of the Council, 2009 O.J. (l286) 36, *available at* http://trade.ec.europa.eu/doclib/docs/2009/november/tradoc_145264.pdf). Certain countries that hunt seals and use their products in trade, led by Canada, have challenged the new EU regulations as being prohibitive to trade in violation of World Trade Organization agreements. (A summary of the Canadian complaint, and associated documents, can be found here: http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds400_e.htm.)

The Canadian position against the EU's action is centered on free trade principles, where the main argument suggests the EU cannot take unilateral steps to prevent the importation of seal products when doing so impacts free trade agreements to which the EU is a signatory. The EU, in turn, believes its actions do not

directly implicate these free trade agreements, and further, even if the EU seal product ban did implicate certain free trade agreements, such agreements contain important exceptions that apply in this case.

The current status of this case is pending as of January 2011. Canada filed an official request for consultation with the World Trade Organization in November 2009 (joined by a request by Norway in 2010 for similar consultations), and the parties are now in dispute resolution consultations. While the ultimate outcome of this process is unknown, the legal and policy issues raised are worth considering. This article will now highlight a few of the legal issues presented in the case, as well as some of the policy considerations that may arise depending on the ultimate resolution of this case.

II. Legal Issues Presented

The countries of Canada and Norway have identified a number of international legal issues relevant to the proposed EU action. Specifically, Canada claims the proposed EU regulation for implementation of the seal product ban is inconsistent with various articles of the Technical Barriers to Trade (TBT) Agreement; various articles of the General Agreement on Tariffs and Trade 1994 (GATT); and Article 4.2 of the Agriculture Agreement. Norway essentially mirrors the arguments made by Canada in its complaint for consultation with the WTO.

The basis for these legal claims includes the following logic: The EU seal product ban establishes a prohibition on the importation of certain seal products, but makes exceptions that discriminate in favor of EU countries, as well as certain non-EU countries beyond Norway and Canada. In addition, there is a basis for argument that the EU regulation contains a certification process that is discriminatory and trade restrictive in violation of a number of international agreements, which the EU is signatory to. There is also a more technical safeguarding argument that suggests the proposed regulations do not establish adequate procedures to ensure the seal produce ban is capable of being fully enforced after implementation.

The common characteristics of the arguments for and against the legitimacy of the EU seal ban may be divided into the following categories: discrimination claims, necessity defenses, and protectionism. The basis for each categorical legal claim is explained in further detail below.

A. Discrimination Claims

The discrimination claims made by Canada and Norway focus on preference, or where the EU action is resulting in discrimination against or amongst foreign products. One of the main tenets of the World Trade Organization is to ensure fairness and nondiscrimination in global trade. The EU argues its ban is nondiscriminatory because it is neutral, applying to all seal products regardless of origin. Canada and Norway counter the impact of ban is discriminatory because it focuses unnecessarily on seal products. For example, the seal exporting countries argue that if the EU wanted to prevent acts of animal cruelty (obviously a purpose behind the EU ban), then why limit the action to seal products? Why not include such EU member actions as bullfighting, which can be rationally argued to be rife with animal cruelty. This argument is bolstered by the fact that EU member countries do not themselves engage in the exportation of seal products, the target of the importation ban, but EU members do engage in other acts of arguable immorality toward animals such as bullfighting. If the purpose of the regulation is to protect animal welfare, then an honest policy movement by the EU would capture all aspects of animal cruelty. By focusing only on activities existing outside of EU-member countries (or creating exceptions for EU-member activities), the regulation is facially discriminatory.

The EU may rationally counter such arguments by articulating the specific reasons for the ban, its relation to sovereign self-determination, and highlighting where exceptions exist within existing international trade agreements. One such exception is the defense of necessity, which is described next.

B. Necessity

Beyond the discrimination claims, there is also the question of whether the EU seal product ban is necessary to achieve its animal welfare goals, and

tangentially whether this form of ban is the least restrictive means of achieving animal welfare goals. Necessity is often presented as a defense to a claim that a nation is violating international trade obligations. For example, it may be possible for a country to technically violate a trade obligation if the reason for the violation is to protect public morals (GATT Article XX(a)), or the violation is being done to protect life or health (GATT Article XX(b)).

The EU will likely focus much of its rationale for the expanded regulations on necessity grounds. For example, the EU may argue the regulations are simply a natural extension of the original ban on certain seal products from the 1980s. The current expansion now simply codifies preexisting public moral concerns allowed under GATT Article XX(a), and also to protect fundamental public health considerations under GATT XX(b). The Canada/Norway response will likely focus on the discriminatory impact this expansion has, limiting the necessity argument by noting the acceptance by the EU of these seal products since the 1980s even while the EU has limited other seal products since that time, thus casting doubt on the genuineness of the authenticity defense.

C. Protectionism

Protectionism claims can be made under both the GATT and TBT Agreements identified above. However, a major difference between these two international agreements is the GATT allows for exceptions to protectionism when there is a valid basis, such as the *necessity* defenses under Articles XX(a) and XX(b) identified above. The Technical Barriers to Trade Agreement or, TBT , in contrast, has limited exceptions when it comes to protectionism. Thus, under a direct reading, one may find the EU ban violates the TBT because the ban actually engages in protectionism of animals beyond EU borders, also known as extraterritorial protectionism. However, the extent to which the TBT Agreement is applicable in this case is not presently known. This is mainly because the TBT is a newer trade agreement with limited legal precedent from which insights may be drawn.

Defenses to TBT violation claims include possible subject matter jurisdiction. For example, the TBT prohibits *technical* barriers to trade. A prohibition on seal products has little to do with "technical" barriers per se, and thus it may be argued the TBT simply does not apply to the proposed EU regulation. It may also be argued that the EU regulation is no more restrictive than necessary to achieve a fundamental purpose, that purpose being to protect animal welfare. Indeed, the TBT Agreement, while providing no substantive provisions allowing the current EU action, does suggest in its preamble that countries should be free to take necessary measures to ensure the protection of, amongst other national interests, animal health and the environment. This preamble language alone may be argued to justify the actions of the EU, even under TBT scrutiny, so long as the actions themselves are not arbitrary, but rather reasonable in scope and application.

Questions do arise as to the merits of these defenses. For example, the TBT Agreement does not have substantive exceptions for health, safety, or public moral enforcement. In short, the TBT Agreement's mandatory language suggests, if it applies in this case, the EU ban might be seen as restrictive. Meanwhile, the more permissive language included in the TBT preamble suggests there are exceptions for health, safety, and animal welfare that might be implicated to support the EU seal product ban. Ultimately, the resolution will likely depend on which areas of the TBT Agreement are given weight as negotiations unfold during the WTO consultation process.

III. Policy Issues for Consideration

Now that some of the legal issues have been considered, the remainder of this article turns to a few policy questions. Relevant areas of inquiry include how the resolution of this case might impact the perceived validity of international trade agreements. For example, a restrictive interpretation favoring free trade might suggest important moral considerations of nations will be limited in favor of international trade. A more liberal interpretation favoring the EU ban might leave some countries questioning the overall validity and enforcement of international trade agreements. These policy questions are further outlined below.

A. Policy Implications of a Restrictive "Pro-Trade" Interpretation

Any resolution of this current dispute that leads to a restrictive interpretation would likely favor the enforcement of international trade obligations over individual country norms. While this may be a good result for those who favor freedom of international trade, it carries a heavy lesson for countries that value their capacity to make unilateral decisions supporting moral convictions. For the EU, the lesson of a restrictive resolution might be that certain international trade agreements come at the expense of advocating a particular moral position, or at the very least finding alternative ways to express moral convictions that are less directly connected to trade, especially importation bans.

Some might argue a resolution favoring trade over individual nation norms will ultimately benefit goals of globalization, while having a limited impact on national sovereignty. This is especially true where alternative mechanisms to express preferences exist in the marketplace. For example, the United States proposed tuna importation ban in the 1980s, aimed at protecting against dolphin bycatch, was struck down as an unlawful barrier against trade. However consumer preference, where dolphin safe tuna was chosen by the American public, ultimately led to an effective result because pressure was placed on exporters to alter their fishing techniques in order to protect dolphins. Consumer choice, rather than direct government action, limited demand on moral grounds, ultimately achieving the intended goal.

While the results may be different, the alternative of relying on consumer choice to advocate a moral position can play a significant, and maybe more appropriate, role in expressing specific nation preferences. The EU citizenry can always choose to not purchase imported seal products, thus creating an effective ban their importation. With no viable market, the sourcing countries must either find other markets, or alter their exporting strategy. As with the U.S. dolphin-safe tuna saga, the moral debate may likely be better played out in the marketplace rather than through a government-based ban. This is especially true when such a ban has implications that go beyond the moral question, and begin to impact fundamental assumptions about the assurances free trade agreements provide between countries.

B. Policy Implications of a Liberal "Pro National Morals" Interpretation

A more liberal interpretation, one that favors the EU ban in the face of free trade challenges, presents a different set of policy considerations. As suggested above, the more obvious impact of a decision supporting the EU ban is the reduced confidence member countries might have in the validity and enforceability of free trade agreements in general. If a signatory to a free trade agreement can rely on individual moral convictions to prevent the importation of certain products, then one can imagine countries employing "morality" as a means to block the importing of certain "immoral" products in specific situations. Even when such morality claims may be successfully challenged in a dispute resolution forum, like the WTO, a reduced confidence in the enforceability of the trade agreement can result from the possibility that countries may successfully challenge trade obligations on morality grounds. The lack of clarity alone can have consequences for free trade.

Thus, the policy considerations surrounding a liberal interpretation are focused largely on the impacts such an interpretation can have on fostering free trade agreements, as well as supporting incentives for countries to become signatories to such agreements. There is little doubt most market economy countries favor free trade. However, most of these countries also enjoy the fruits of sovereignty, which include fundamental rights like self-determination. The balance to be struck here may be between the relative merits of exceptions to free trade for reasons such as defending morals, as outlined in Article XX(a) of GATT for example, and the need to ensure free trade agreements meet their fundamental tenet, free trade, while also fostering assurance that other countries will not readily be capable of frustrating the fundamental purpose of such agreements. Such a balancing act can be difficult, and the ultimate resolution of this present dispute will provide some interesting insights into how the mandates of free trade agreements are currently viewed in the international community.

Conclusion

As suggested at the beginning of this article, there is an inherent frustration that arises when a country yields some measure of sovereignty for the benefits connected to international free trade agreements. This case study of the expanded EU ban on seal product imports is a prime example of how these frustrations may arise. In this case, the EU desires to enforce basic moral principles it associates with the protection of marine mammals. However, its capacity to do so impacts international trade agreements that help to support open markets from which the EU benefits. The question then becomes one of balancing national sovereignty, and specifically moral expressions within a sovereign, against the impacts such actions have on the fundamental purpose of international agreements, in this case freedom of trade.

What this article points out is the legal basis for the EU's actions is both potentially supported (GATT), while also potentially violating international agreements (TA). While there may be no clear basis to legally call an outcome of this present case, the consultation and negotiations that occur between the countries within the WTO framework will be telling in determining the current state of this balance between sovereign rights and international obligations. From a policy standpoint, the ultimate resolution of this case may impact the future expectations of countries when it comes to free trade agreements. A liberal result might diminish the expectations that free trade agreements can be relied upon to enforce free trade obligations. Meanwhile, a conservative result might work to diminish the capacity of nations to enforce their moral voices. Whatever the result, this case is likely to have impacts that extend well beyond the boundaries of the seals that are at the heart of the present controversy.

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BAN ON THE USE AND CARRIAGE OF HEAVY GRADE OILS IN ANTARCTICA

Peter Oppenheimer

The Significance of Antarctica and Its Marine Environment

Antarctica, a large, frozen landmass surrounded by the Southern Ocean's sea ice, holds most of the world's ice and fresh water. While it is perhaps the coldest, driest, and windiest place on Earth, the Antarctic region's extensive sea ice supports a richly diverse ecosystem. In a 1997 study, the U.S. Antarctic Program External Panel described the Antarctic sea ice zone as "one of the most dynamic biological systems on Earth," supporting bountiful sea life and impressive fisheries (U.S. ANTARCTIC PROGRAM EXTERNAL PANEL, THE UNITED STATES IN ANTARCTICA (1997), http://www.nsf.gov/pubs/1997/antpanel/3enviro.htm (last visited Feb. 1, 2011)).

In 1959, 12 nations signed the Antarctic Treaty, setting aside the continent as a scientific preserve and banning all military activity. These nations' initial scientific and political interests in Antarctica have gradually evolved into a genuine recognition of the need to protect the area's marine environment. This need culminated in the signing of the Protocol on Environmental Protection to the Antarctic Treaty, or the Madrid Protocol, in 1991. The primary objective of the protocol is the protection of the Antarctic environment and associated ecosystems. The protocol requires all activities in Antarctica to be planned and conducted in a manner that will avoid significant changes in the marine environment.

Threats to the Antarctic Marine Environment

As shipping and fishing in the Southern Ocean has increased over the last decade, so has the risk of vessel incidents in the region. A significant portion of the current shipping activity in Antarctica involves cruise ships, and statistics show that cruise tourism has trended upward since earlier in the decade, stabilizing recently. According to the International Association of Antarctica Tour Operators (IAATO), 36,875 tourists visited Antarctica during the 2009–2010 season as compared to 27,950 in the 2004–2005 season and 11,423 in the 2001–2002 season (*Tourism Statistics*, INT'L ASS'N OF ANTARCTIC TOUR OPERATORS, http://www.iaato.org/tourism_stats.html (last visited Feb. 1, 2011)).

In 2007, the M/V *Explorer*, a polar class cruise ship, sank off the Antarctic Peninsula after colliding with an iceberg. Fortunately, all aboard were rescued and only a small amount of relatively light grade oil was released. Many of the larger cruise ships and fishing vessels that operate in Antarctic waters use heavy grade oil (HGO) as their fuel. HGO is slow to break down in the ocean, persists longer in low temperatures and thus could have a significant adverse impact on Antarctica's near-pristine marine ecosystem if released or spilled. It likely would be extremely difficult and costly to remediate as well. The combustion of HGO as a fuel also produces high emissions of sulphur oxide and greenhouse gases.

Given the biological richness and vulnerability of the Antarctic marine environment to vessel source pollution, the area south of 60 degrees south latitude has been designated as a Special Area under Annexes I, II, and V of the International Convention for the Prevention of Pollution from Ships (MARPOL). Special Area designation under these three annexes, which respectively regulate discharges into the sea of oil, noxious liquid substances, and garbage, imposes more stringent discharge requirements on vessels transiting these waters and provides a higher level of protection for the marine environment.

Threats Addressed Through an International Effort

At its 60th session in 2010, the International Maritime Organization's Marine Environment Protection Committee (MEPC) adopted an amendment to Annex I of MARPOL to ban the use or carriage in bulk as cargo of HGO by vessels in Antarctic waters. This ban, which takes effect on August 1, 2011, will minimize risks to the marine environment in the Antarctic and the Southern Ocean from potential spills or releases of HGO.

This amendment to MARPOL Annex I, like many other environmental protection measures, was the result of concerted efforts by several stakeholders. The process began when Norway raised the issue at the

27th Antarctic Treaty Consultative Meeting (ATCM) in 2004. Recognizing the potential threat of the use of HGO by ships operating in the Antarctic Sea area, Norway indicated that the area south of 60 degrees south latitude required extra protection from the risk of oil discharge and spillages. Norway noted that HGO is widely used by cruise ships and large fishing vessels in Antarctic waters, and highlighted the characteristics of HGO that could have devastating consequences for the environment in the event of a spill. Agreeing that the issue warranted further investigation, the Antarctic Treaty Consultative Parties asked the Council of Managersof National Antarctic Programs (COMNAP) and IAATO to conduct a study and report to ATCM on the present and planned use of heavy fuel by ships in Antarctic waters.

The IAATO/COMNAP report, presented in June 2005, concluded that operational pollution by heavy fuels is recognized as the biggest threat of ships at sea (COMNAP/IAATO, *The Use of Heavy Fuel Oil in Antarctic Waters*, https://www.comnap.aq/publications/comnapatcm/2005_28atcm_ip067Rev1/view (last visited Feb. 1, 2011)). The report provided the justification for ATCM Decision 8 (2005), through which ATCPs requested the International Maritime Organization to examine mechanisms to restrict the use of HGO in Antarctic waters in light of the high risk of fuel release in the areas and the high potential for adverse environmental impacts associated with a spill (Antarctic Treaty Consultative Meeting, *The Use of Heavy Fuel Oil (HFO) in Antarctica*, Decision 8 (July 17, 2005), http://www.ats.aq/documents/cep/atcm28_d8_e.pdf (last visited Feb. 1, 2011)).

In 2006, Norway submitted a formal proposal to MEPC to amend MARPOL Annex I to prohibit the use and carriage of HGO in the Antarctic Sea area, initiating discussions and negotiations (International Maritime Organization [IMO], *Use and Carriage of Heavy Grade Oil on Ships in the Antarctic Sea*, submitted by Norway, IMO Doc. MEPC 54/6/4 (Jan. 13, 2006)).

Subsequently, New Zealand submitted valuable data and technical information relevant to the debate, helping to resolve some divisive issues (International Maritime Organization [IMO], *Use and Carriage of Heavy Grade Oil on Ships in the Antarctic Area*, submitted by New Zealand, IMO Doc. BLG 12/16/1 (Nov. 30, 2007)).

While from the beginning many member governments and NGOs supported Norway's proposal in principle, several issues needed resolution before the member governments could settle on the final text of a MARPOL amendment. For example, a decision was reached to exempt search-and-rescue vessels from the new ban. The strongest opposition to the proposed HGO ban came from the cruise industry. The Cruise Lines International Association (CLIA) expressed concerns about the negative effect the ban could have on the cruise industry and the subsequent economic consequences (*see* International Maritime Organization [IMO], *Comments on Proposed Amendments to MARPOL Annex I*, submitted by Cruise Lines International Association (CLIA), IMO Doc. MEPC 59/10/8 (May 20, 2009)). Specifically, it noted that lighter grade fuels are more expensive, and that such costs would result in higher fares for passengers (*id*. at 3–4). CLIA suggested that there would be a significant impact not only to the vessel operators but also to the economies of port cities due to a reduction in cruises around the South American continent (*id*. at 2).

Conclusion

The protection of the Antarctic region and its marine environment is consistent with the obligation of all nations under customary international law as reflected in the Law of the Sea Convention to protect and preserve the marine environment. Although the Antarctic region and its rich marine biodiversity are beyond the jurisdiction and control of any one county, nations acting together through international organizations can adopt meaningful protections for Antarctica's unique and fragile ecosystems.

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BRAZILIAN PRE-SALT OIL RESERVE EXPLORATION: REGULATORY AND ENVIRONMENTAL ASPECTS

Roberto Liesegang
Maristela Abla Rossetti

Introduction

The purpose of this article is to provide an overview of the way in which Brazil is attempting to secure and develop some of its recent large oil field finds over the last decade. Specifically, the article reviews the regulatory and environmental aspects associated with the development of these fields. Questions are raised about how the legal framework will be developed to best apply this important resource find to the benefit of the people of Brazil at-large. Some recommendations are made in this regard, including important policy directions needing to be addressed to fully realize the social benefits and potential of this important resource.

The last decade (2000–2009) will likely be remembered in Brazil as the oil decade. This statement is supported by recent national oil reserves discovered by the government-controlled company Petróleo Brasileiro S/A (PETROBRAS) (*see* Brazilian Federal Law 2004/53, Brazilian Federal Law 9478/97 for information on government control of Petrobras). Indeed, this most recent discovery could place Brazil among the largest oil exporters in the world.

These reserves are found in an unexplored area technically called *pre-salt reserves* because they lie under an approximately 2-km layer of salt, deep below the seabed. For that reason, oil and natural gas reserves are probably five to seven thousand feet below sea level. (A summary of the geological information regarding this large reserve is *available at* http://www.petrobras.com.br/minisite/presal/pt/perguntas-respostas/.)

The pre-salt reserves include several fields spread along the Brazilian coast, stretching from waters off Espírito Santo state southward via Rio de Janeiro, São Paulo, and Paraná states to Santa Catarina. According to Petrobras, the Lula Field, which is the main pre-salt field, is expected to produce as much as five to eight billion barrels (http://www.petrobras.com.br/minisite/presal/pt/perguntas-respostas/). Should these estimates be confirmed, the pre-salt reserves could place Brazil among the ten largest oil producers worldwide.

The policies designed to revert this huge energy and business potential to the direct and indirect benefit of the population, thus accelerating the development of the country as a whole, have been widely discussed in Brazil.

Regulatory Aspects

The old Brazilian Oil Law (Law 9478/97), which is still in force and which shall continue regulating areas not included in the pre-salt region, states that Brazilian oil fields shall be explored under a concession model. In short, the government grants a concession to explore oil wells, but ownership of the wells is not transferred to the concessionaire. The government remains owner of the wells even after the concession is granted. Such concession only grants the concessionaire the right to explore the well, which allows the research and oil extraction under the conditions proscribed by law. However, Law 12351/2010 was enacted on December 22, 2010. This new piece of legislation impacts oil, natural gas, and other fluid hydrocarbons extraction and production under a *production-sharing* model in pre-salt and strategic areas.

Under the new production-sharing model, the contractor engages, on its own account and at its own risk, in exploration, analysis, development, and production activities and, in the case of a commercial discovery, it acquires the right to (1) appropriate the cost oil, which is a portion of the produced oil that may be required only in case of a commercial discovery and which corresponds to the cost of its investments in the exploration, analysis, development, production, and deactivation of facilities; (2) the production volume corresponding to the royalties owed; as well as (3) a portion of the surplus oil, in the agreed proportion and under the agreed terms and conditions.

Both models involve (a) auctions of oil blocks involving several companies, and (b) ownership of the wells remaining in the hands of the government. Under the

sharing model, the company offering the highest percentage of oil to the government is the winner.

We understand that Petrobras will derive most of the benefits of the production-sharing model, because the company already owns a substantial share of the pre-salt blocks explored to date. In addition, Petrobras derives statutory benefits in view of the fact that it will be allowed to operate all blocks under the future model and that it will participate in the syndicates authorized to explore the pre-salt layer.

Allocation of the royalties from oil exploration among the Brazilian states and municipalities is also a conflicting issue. Pursuant to the new law, royalties from oil exploration shall be paid to the producing states and municipalities (Article 49, Law 9478/1997). However, the Brazilian Congress is already discussing a proposal to regulate the distribution of the royalties from oil exploration among all Brazilian states and municipalities.

As stated by Norman Gall in his article, *Oil in Deep Waters*, published in the Brazilian newspaper *O Estado de São Paulo* on January 30, 2011, "Lula's successor as Brazil's president, Dilma Rousseff, supervised drafting of the new legal framework while chairing the Petrobras governing board before entering the 2010 election campaign. Furious Congressional debate on the new institutional regime focused almost entirely on distribution of royalties among states and municipalities, neglecting the governance and technical issues posed by deep-water exploration and production."

The aforementioned Law 12351/2010 has also approved the creation of a social fund to receive part of the pre-salt oil revenues to support state-run social, economic, and environmental programs. However, there are still no specifications on how the investments of this fund will be allocated.

Environmental Aspects

After the 2010 incident involving the British Petroleum Deepwater Horizon platform in the Gulf of Mexico and in view of the new regulation concerning exploration of the pre-salt layer, the Brazilian government was expected to hold in-depth discussions on the environmental aspects related to the matter. However, the legal framework designed to regulate oil exploration and production in the pre-salt area has not been followed by specific federal laws to regulate the environmental aspects related to this issue.

In an attempt to regulate these aspects, the São Paulo state government has organized a multidisciplinary team by means of Executive Order No. 53392/2008, involving several state departments, for the purpose of studying and evaluating the environmental impacts of pre-salt oil exploration in the Santos Basin. On the other hand, the Brazilian Congress and the Brazilian Council for the Environment—CONAMA (an agency within the Ministry of Environment, which has been created to resolve on environmentally friendly rules and standards)—have not yet established criteria for preventing and combating pollution from the pre-salt layer exploration. Therefore, environmental licensing in the pre-salt areas is subject to the same procedures contemplated in CONAMA Resolution No. 237/1997 for other undertakings and activities deemed actually or potentially pollutant.

In this regard, there is still no law on criteria and methods to guarantee a safe operation by means of prior risk analyses for the purpose of establishing the level of detail and the scope of the studies required for environmental licensing of the activity and the actions to be performed to minimize and prevent incidents. In addition, in violation of rules contemplated in the Brazilian Federal Constitution and in the Brazilian Environmental Policy, which contemplates the joint and several liability of direct and indirect polluting agents for environmental damages, Law 12351/2010 has excluded the Brazilian federal government from the list of entities liable for environmental damages resulting from pre-salt oil exploration, even though the federal government is entitled to part of the pre-salt oil surplus (and is therefore an indirect polluting agent).

Pursuant to the provisions of Law 12351/2010, the federal government and Pré-Sal Petróleo S.A. - PPSA (a state-owned company incorporated to manage production-sharing agreements) will not be liable for

any risk involved in the exploration, evaluation, development, production, and deactivation of exploration and production facilities under the sharing agreements. Although Law 12351/2010 is not clear with regard to the environmental liability of the federal government and of PPSA, we understand that the wording of the provisions of such law could be construed to exempt the federal government and PPSA from liability with regard to costs, investments, and environmental risks.

We also understand that since the federal government is a party to these sharing agreements through the Ministry of Mines and Energy, owns part of the natural resources, and is entitled to proceeds generated through this activity, it could not be excluded from the list of entities subject to joint and several liability and should be liable for environmental damages. Therefore, we conclude that the Brazilian government should create a legal framework contemplating the environmental protection of pre-salt areas, similar to the initiative of the São Paulo tate government, so that Brazil is able to foster economic development and environmental protection.

Conclusion

In short, the discovery and future exploration of pre-salt oil fields will certainly affect the Brazilian society as a whole, both positively and negatively. The Brazilian society will benefit from technological evolution, capital investment, a boost in the domestic economy, and other possibilities of economic development offered by this scenario. On the other hand, such exploration could cause irreparable damage to the environment. The Brazilian government is preparing the Brazilian legal framework for this scenario, creating new forms and tools to authorize oil exploration for the benefit of society, new forms of royalty distribution to the Brazilian states and municipalities, establishment of mechanisms to receive these resources, and guarantee of reinvestment of such funds in society, in addition to the preservation of the society in order to achieve sustainable oil exploration. However, to the extent that these tools are used, the Brazilian society should require strict compliance with these rules. Government industrial policies should not only foster economic development, but should also do so while maintaining and advancing environmental and social interests. Social and environmental interests should be preserved, aiming at an exploration of resources in partnership with the society and designed to preserve the environment.

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Right Tree for the Right Place at the Right Time

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